

# FCC SAR Test Report

APPLICANT : Motorola Mobility LLC  
EQUIPMENT : Mobile Cellular Phone  
BRAND NAME : Motorola  
MODEL NAME : XT2615-1, XT2615-2, XT2615-3, XT2615V  
FCC ID : IHDT56AT9  
STANDARD : FCC 47 CFR Part 2 (2.1093)

We, Sporton International Inc. (Shenzhen), would like to declare that the tested sample has been evaluated in accordance with the test procedures given in 47 CFR Part 2.1093 and FCC KDB and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. (Shenzhen), the test report shall not be reproduced except in full.

Hank Huang



Approved by: Hank Huang

**Sporton International Inc. (Shenzhen)**  
1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055  
People's Republic of China



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**Sporton International Inc. (Shenzhen)**  
TEL : +86-755-86379589 / FAX : +86-755-86379595  
FCC ID : IHDT56AT9

## 1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for **Motorola Mobility LLC, Mobile Cellular Phone, XT2615-1, XT2615-2, XT2615-3, XT2615V**, are as follows.

| Highest 1g SAR Summary |                |                  |                             |                                |                                  |                                                          |
|------------------------|----------------|------------------|-----------------------------|--------------------------------|----------------------------------|----------------------------------------------------------|
| Equipment Class        | Frequency Band |                  | Head<br>(Separation<br>0mm) | Hotspot<br>(Separation<br>5mm) | Body-worn<br>(Separation<br>5mm) | Highest<br>Simultaneous<br>Transmission<br>1g SAR (W/kg) |
|                        |                |                  | 1g SAR (W/kg)               |                                |                                  |                                                          |
| Licensed               | GSM            | GSM850           | 0.51                        | 1.17                           | 1.17                             | 1.58                                                     |
|                        |                | GSM1900          | 0.07                        | 1.20                           | 1.22                             |                                                          |
|                        | WCDMA          | WCDMA II         | 0.11                        | 1.14                           | 1.08                             |                                                          |
|                        |                | WCDMA IV         | 0.20                        | 1.20                           | 0.99                             |                                                          |
|                        |                | WCDMA V          | 0.39                        | 1.00                           | 1.00                             |                                                          |
|                        | LTE            | LTE Band 7       | 0.37                        | 0.97                           | 0.99                             |                                                          |
|                        |                | LTE Band 12/17   | 0.62                        | 0.66                           | 0.66                             |                                                          |
|                        |                | LTE Band 13      | 0.56                        | 0.92                           | 0.92                             |                                                          |
|                        |                | LTE Band 14      | 0.60                        | 0.94                           | 0.94                             |                                                          |
|                        |                | LTE Band 25/2    | 0.45                        | 0.98                           | 0.98                             |                                                          |
|                        |                | LTE Band 26/5    | 0.41                        | 0.93                           | 0.93                             |                                                          |
|                        |                | LTE Band 30      | 0.43                        | 0.75                           | 0.75                             |                                                          |
|                        |                | LTE Band 66/4    | 0.35                        | 0.85                           | 0.80                             |                                                          |
|                        |                | LTE Band 71      | 0.39                        | 0.45                           | 0.45                             |                                                          |
|                        |                | LTE Band 41/38   | 0.32                        | 0.92                           | 0.92                             |                                                          |
|                        |                | LTE Band 48      | 0.65                        | 0.40                           | 0.56                             |                                                          |
|                        | 5G NR          | FR1 n7           | 0.24                        | 1.18                           | 1.18                             |                                                          |
|                        |                | FR1 n12          | 0.67                        | 0.49                           | 0.61                             |                                                          |
|                        |                | FR1 n14          | 0.60                        | 0.92                           | 0.92                             |                                                          |
|                        |                | FR1 n25/2        | 0.52                        | 1.00                           | 0.97                             |                                                          |
|                        |                | FR1 n26/5        | 0.58                        | 1.13                           | 1.13                             |                                                          |
|                        |                | FR1 n30          | 0.12                        | 0.98                           | 0.98                             |                                                          |
|                        |                | FR1 n66          | 0.69                        | 0.99                           | 1.07                             |                                                          |
|                        |                | FR1 n70          | 0.57                        | 0.86                           | 0.88                             |                                                          |
|                        |                | FR1 n71          | 0.41                        | 0.43                           | 0.43                             |                                                          |
|                        |                | FR1 n41          | 0.70                        | 0.79                           | 0.79                             |                                                          |
|                        |                | FR1 n48          | 0.53                        | 0.33                           | 0.50                             |                                                          |
|                        |                | FR1 n77/78       | 0.75                        | 1.14                           | 1.14                             |                                                          |
| DTS                    | WLAN           | WLAN2.4GHz       | 0.96                        | 0.79                           | 0.91                             | 1.58                                                     |
| NII                    |                | WLAN5GHz         | 0.78                        | 0.33                           | 0.96                             | 1.58                                                     |
| DSS                    | Bluetooth      | 2.4GHz Bluetooth | 0.43                        | 0.32                           | 0.32                             | 1.58                                                     |

| Highest 10g SAR Summary |                |                |                                                     |                                                     |
|-------------------------|----------------|----------------|-----------------------------------------------------|-----------------------------------------------------|
| Equipment Class         | Frequency Band |                | Product Specific 10g SAR (W/kg)<br>(Separation 0mm) | Highest Simultaneous Transmission<br>10g SAR (W/kg) |
| Licensed                | GSM            | GSM850         | 2.19                                                | 3.67                                                |
|                         |                | GSM1900        | 2.88                                                |                                                     |
|                         | WCDMA          | WCDMA II       | 3.14                                                |                                                     |
|                         |                | WCDMA IV       | 2.72                                                |                                                     |
|                         |                | WCDMA V        | 1.74                                                |                                                     |
|                         | LTE            | LTE Band 7     | 2.57                                                |                                                     |
|                         |                | LTE Band 13    | 1.53                                                |                                                     |
|                         |                | LTE Band 25/2  | 2.65                                                |                                                     |
|                         |                | LTE Band 26/5  | 1.46                                                |                                                     |
|                         |                | LTE Band 30    | 2.36                                                |                                                     |
|                         |                | LTE Band 66/4  | 2.36                                                |                                                     |
|                         |                | LTE Band 41/38 | 2.27                                                |                                                     |
|                         |                | LTE Band 48    | 1.74                                                |                                                     |
|                         | 5G NR          | FR1 n7         | 2.77                                                |                                                     |
|                         |                | FR1 n25/2      | 3.09                                                |                                                     |
|                         |                | FR1 n26/5      | 1.25                                                |                                                     |
|                         |                | FR1 n30        | 2.88                                                |                                                     |
|                         |                | FR1 n66        | 2.30                                                |                                                     |
|                         |                | FR1 n70        | 2.35                                                |                                                     |
|                         |                | FR1 n41        | 2.33                                                |                                                     |
|                         |                | FR1 n48        | 1.10                                                |                                                     |
|                         |                | FR1 n77/78     | 2.67                                                |                                                     |
| DTS                     | WLAN           | WLAN2.4GHz     | 1.82                                                | 3.67                                                |
| NII                     |                | WLAN5GHz       | 1.52                                                | 3.67                                                |
| DXX                     | NFC            | 13.56MHz       | <0.10                                               | 3.67                                                |
| Date of Testing:        |                |                | 2025/6/19 ~ 2025/7/13                               |                                                     |

**Remark:**

1. This device supports LTE B2 / B4 / B5 / B17 / B38 and B25 / B66 / B26 / B12 / B41. Since the supported frequency span for LTE B4 / B5 / B17 / B38 falls completely within the supports frequency span for LTE B25 / B66 / B26 / B12 / B41, both LTE bands have the same target power, and both LTE bands share the same transmission path; therefore, SAR was only assessed for LTE B25 / B66 / B26 / B12 / B41.
2. This device supports 5GNR n5 / n2 / n78 and n26 / n25 / n77. Since the supported frequency span for 5GNR n5 / n2 / n78 falls completely within the supports frequency span for n26 / n25 / n77, both 5GNR bands have the same target power, and both 5GNR bands share the same transmission path; therefore, SAR was only assessed for n26 / n25 / n77.
3. This is a variant report for XT2615-1, XT2615-2, XT2615-3, XT2615V. The different between them refer to the XT2615-1, XT2615-2, XT2615-3, XT2615V\_Operational Description of Product Equality Declaration which is exhibit separately. According to the difference, only GSM850 Ant0 for head and 5G NR n41/ n77/ n78 Ant2 for Product Specific 10g SAR performed full SAR testing, all other bands only the worst cases from original test report (Sporton Report Number FA482618-02, FA482618 and FA482618A) were verified for the differences.

**Declaration of Conformity:**

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

**Comments and Explanations:**

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg for Partial-Body 1g SAR, 4.0 W/kg for Product Specific 10g SAR) specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-1992, and had been tested in accordance with the



measurement methods and procedures specified in IEEE 1528-2013 and FCC KDB publications.

## **2. Administration Data**

Sporton International Inc. (Shenzhen) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.01.

| Testing Laboratory |                                                                                                                                                                            |                     |                                |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------------------|
| Test Firm          | Sporton International Inc. (Shenzhen)                                                                                                                                      |                     |                                |
| Test Site Location | 1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055<br>People's Republic of China<br>TEL: +86-755-86379589<br>FAX: +86-755-86379595 |                     |                                |
| Test Site No.      | Sporton Site No.                                                                                                                                                           | FCC Designation No. | FCC Test Firm Registration No. |
|                    | SAR03-SZ                                                                                                                                                                   | CN1256              | 421272                         |

| Applicant    |                                                    |
|--------------|----------------------------------------------------|
| Company Name | Motorola Mobility LLC                              |
| Address      | 222 W,Merchandise Mart Plaza, Chicago IL 60654 USA |

| Manufacturer |                                                    |
|--------------|----------------------------------------------------|
| Company Name | Motorola Mobility LLC                              |
| Address      | 222 W,Merchandise Mart Plaza, Chicago IL 60654 USA |

## **3. Guidance Applied**

The Specific Absorption Rate (SAR) testing specification, method, and procedure for this device is in accordance with the following standards:

- FCC 47 CFR Part 2 (2.1093)
- ANSI/IEEE C95.1-1992
- IEEE 1528-2013
- IEC/IEEE 62209-1528:2020
- FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04
- FCC KDB 865664 D02 SAR Reporting v01r02
- FCC KDB 447498 D01 General RF Exposure Guidance v06
- FCC KDB 648474 D04 SAR Evaluation Considerations for Wireless Handsets v01r03
- FCC KDB 248227 D01 802.11 Wi-Fi SAR v02r02
- FCC KDB 616217 D04 SAR for laptop and tablets v01r02
- FCC KDB 941225 D01 3G SAR Procedures v03r01
- FCC KDB 941225 D05 SAR for LTE Devices v02r05
- FCC KDB 941225 D05A Rel.10 LTE SAR Test Guidance v01r02
- FCC KDB 941225 D06 Hotspot Mode SAR v02r01



## 4. Equipment Under Test (EUT) Information

### 4.1 General Information

| Product Feature & Specification         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Equipment Name                          | Mobile Cellular Phone                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Brand Name                              | Motorola                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Model Name                              | XT2615-1, XT2615-2, XT2615-3, XT2615V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| FCC ID                                  | IHDT56AT9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| IMEI Code                               | Sample 1<br>350173620027699/350173620027707, 350173620027632/350173620027640<br>Sample 2<br>352641630034036/352641630034044<br>Sample 3<br>355834510019113/355834510019121                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Wireless Technology and Frequency Range | GSM850: 824 MHz ~ 849 MHz<br>GSM1900: 1850 MHz ~ 1910 MHz<br>WCDMA Band II: 1850 MHz ~ 1910 MHz<br>WCDMA Band IV: 1710 MHz ~ 1755 MHz<br>WCDMA Band V: 824 MHz ~ 849 MHz<br>LTE Band 2: 1850 MHz ~ 1910 MHz<br>LTE Band 4: 1710 MHz ~ 1755 MHz<br>LTE Band 5: 824 MHz ~ 849 MHz<br>LTE Band 7: 2500 MHz ~ 2570 MHz<br>LTE Band 12: 699 MHz ~ 716 MHz<br>LTE Band 13: 777 MHz ~ 787 MHz<br>LTE Band 14: 788 MHz ~ 798 MHz<br>LTE Band 17: 704 MHz ~ 716 MHz<br>LTE Band 25: 1850 MHz ~ 1915 MHz<br>LTE Band 26: 814 MHz ~ 849 MHz<br>LTE Band 30: 2305 MHz ~ 2315 MHz<br>LTE Band 38: 2570 MHz ~ 2620 MHz<br>LTE Band 41: 2496 MHz ~ 2690 MHz<br>LTE Band 48: 3550 MHz ~ 3700 MHz<br>LTE Band 66: 1710 MHz ~ 1780 MHz<br>LTE Band 71: 663 MHz ~ 698 MHz<br>5G NR n2: 1850 MHz ~ 1910 MHz<br>5G NR n5: 824 MHz ~ 849 MHz<br>5G NR n7: 2500 MHz ~ 2570 MHz<br>5G NR n12: 699 MHz ~ 716 MHz<br>5G NR n14: 788 MHz ~ 798 MHz<br>5G NR n25: 1850 MHz ~ 1915 MHz<br>5G NR n26: 814 MHz ~ 849 MHz<br>5G NR n30: 2305 MHz ~ 2315 MHz<br>5G NR n41: 2496 MHz ~ 2690 MHz<br>5G NR n48: 3550 MHz ~ 3700 MHz<br>5G NR n66: 1710 MHz ~ 1780 MHz<br>5G NR n70: 1695 MHz ~ 1710 MHz<br>5G NR n71: 663 MHz ~ 698 MHz<br>5G NR n77: 3450 MHz ~ 3550 MHz, 3700 MHz ~ 3980 MHz<br>5G NR n78: 3450 MHz ~ 3550 MHz, 3700 MHz ~ 3800 MHz<br>WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz<br>WLAN 5.2GHz Band: 5180 MHz ~ 5240 MHz<br>WLAN 5.3GHz Band: 5260 MHz ~ 5320 MHz<br>WLAN 5.5GHz Band: 5500 MHz ~ 5720 MHz<br>WLAN 5.8GHz Band: 5745 MHz ~ 5825 MHz<br>Bluetooth: 2402 MHz ~ 2480 MHz<br>NFC: 13.56 MHz |
| Mode                                    | GSM/GPRS/EGPRS<br>RMC/AMR 12.2Kbps                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

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| <b>HW Version</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | DVT2                                                                                                                                                                                                                                                                                                                   |
| <b>SW Version</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | WWN36.6                                                                                                                                                                                                                                                                                                                |
| <b>GSM / (E)GPRS Transfer mode</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Class B – EUT cannot support Packet Switched and Circuit Switched Network simultaneously but can automatically switch between Packet and Circuit Switched Network.                                                                                                                                                     |
| <b>EUT Stage</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Identical Prototype                                                                                                                                                                                                                                                                                                    |
| <b>Remark:</b> <ol style="list-style-type: none"> <li>1. This device supports VoIP in GPRS, EGPRS, WCDMA, LTE and 5G NR (e.g. for 3rd-party VoIP), LTE supports VoLTE operation.</li> <li>2. This device 2.4GHz WLAN support hotspot operation and Bluetooth support tethering applications.</li> <li>3. This device 5.2GHz WLAN/5.8GHz WLAN support hotspot operation, and 5.2GHz WLAN/5.8GHz WLAN supports WiFi Direct (GC/GO), and 5.3GHz / 5.5GHz supports WiFi Direct (GC only).</li> <li>4. This device does not support DTM operation and supports GPRS/EGPRS mode up to multi-slot class 12.</li> <li>5. This device supports dual SIM dual standby. The WWAN radio transmission will be enabled by either one SIM at a time (single active).</li> <li>6. The device implements the power management and proximity sensor /receiver detection/hotspot mode for SAR compliance at different exposure conditions (head, body-worn, hotspot, extremity) and the MediaTek TA-SAR will manage to ensure the power level not exceeding the associated power table. Details about the power management decision and sensor detection are provided in the operational description. And the device will invoke corresponding work scenarios power level base on frequency bands/antennas, which can refer to power table at appendix E and original report.</li> <li>7. For WLAN when transmit simultaneous with WWAN/BT, power reduction will be activated to head exposure condition. For WLAN when transmit simultaneous with WWAN and Proximity sensors trigger, power reduction will be activated to body-worn and extremity exposure conditions.</li> <li>8. For some WWAN bands, sensor on power level is higher than hotspot power level, so front/back sensor on SAR can represent hotspot conservatively.</li> <li>9. LTE Band41 supports HPUE with higher power. For HPUE power is higher than power class 3 but with lower duty cycle, the maximum average power for class 2 and class 3 is almost the same, so chose power class 3 full SAR testing and power class 2 verify the worst case of power class 3 SAR.</li> <li>10. This device supports HPUE for 5G NR n41/77/78 with class 2 level, HPUE power has been measured separately. For 5G NR n41/77/78 performed full SAR testing with class 2 and HPUE SAR can represent power class 3 level SAR.</li> <li>11. For 5G NR bands, using FTM to perform SAR with default 100% transmission.</li> <li>12. There are three samples, the different between them refer to the XT2615-1, XT2615-2, XT2615-3, XT2615V_ Product Equality Declaration which is exhibit separately. According to the differences, sample 1 was chosen to perform full SAR testing and sample 2/3 verified the worst case of sample 1.</li> <li>13. The four model names are only for different market purpose, and all the others are the same.</li> <li>14. This device supports 5G NR FR1 bands as following table, including NSA mode and SA mode. NSA and SA mode performed SAR separately.</li> </ol> |                                                                                                                                                                                                                                                                                                                        |



**<5G NR>**

| Mode | Band | Duplex | SCS(KHz) | Bandwidths(BW)                                          |
|------|------|--------|----------|---------------------------------------------------------|
| NSA  | n2   | FDD    | 15       | 5, 10, 15, 20, 25, 30, 35, 40                           |
|      | n5   | FDD    | 15       | 5, 10, 15, 20                                           |
|      | n7   | FDD    | 15       | 5, 10, 15, 20, 25, 30, 35, 40, 50                       |
|      | n12  | FDD    | 15       | 5, 10, 15                                               |
|      | n25  | FDD    | 15       | 5, 10, 15, 20, 25, 30, 35, 40                           |
|      | n30  | FDD    | 15       | 5, 10                                                   |
|      | n66  | FDD    | 15       | 10, 15, 20, 25, 30, 35, 40, 45                          |
|      | n71  | FDD    | 15       | 10, 15, 20, 25, 30, 35                                  |
|      | n41  | TDD    | 30       | 10, 15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100 |
|      | n48  | TDD    | 30       | 10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100             |
|      | n77  | TDD    | 30       | 10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100         |
| SA   | n78  | TDD    | 30       | 10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100         |
|      | n2   | FDD    | 15       | 5, 10, 15, 20, 25, 30, 35, 40                           |
|      | n5   | FDD    | 15       | 5, 10, 15, 20                                           |
|      | n7   | FDD    | 15       | 5, 10, 15, 20, 25, 30, 35, 40, 50                       |
|      | n12  | FDD    | 15       | 5, 10, 15                                               |
|      | n14  | FDD    | 15       | 5, 10                                                   |
|      | n25  | FDD    | 15       | 5, 10, 15, 20, 25, 30, 35, 40                           |
|      | n26  | FDD    | 15       | 5, 10, 15, 20                                           |
|      | n30  | FDD    | 15       | 5, 10                                                   |
|      | n66  | FDD    | 15       | 5, 10, 15, 20, 25, 30, 35, 40, 45                       |
|      | n70  | FDD    | 15       | 5, 10, 15                                               |
|      | n71  | FDD    | 15       | 5, 10, 15, 20, 25, 30, 35                               |
|      | n41  | TDD    | 30       | 10, 15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100 |
|      | n48  | TDD    | 30       | 10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100             |
|      | n77  | TDD    | 30       | 10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100         |
|      | n78  | TDD    | 30       | 10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100         |

## 4.2 General LTE SAR Test and Reporting Considerations

| Summarized necessary items addressed in KDB 941225 D05 v02r05           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                         |       |        |        |        |          |  |  |            |                                                               |  |  |  |  |  |          |         |         |       |        |        |        |      |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |         |     |  |  |  |  |  |     |
|-------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|-------|--------|--------|--------|----------|--|--|------------|---------------------------------------------------------------|--|--|--|--|--|----------|---------|---------|-------|--------|--------|--------|------|-----|-----|-----|------|------|------|-----|--------|-----|-----|-----|------|------|------|-----|--------|-----|-----|-----|------|------|------|-----|--------|-----|-----|-----|------|------|------|-----|--------|-----|-----|-----|------|------|------|-----|---------|-----|--|--|--|--|--|-----|
| FCC ID                                                                  | IHDT56AT9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                         |       |        |        |        |          |  |  |            |                                                               |  |  |  |  |  |          |         |         |       |        |        |        |      |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |         |     |  |  |  |  |  |     |
| Equipment Name                                                          | Mobile Cellular Phone                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                         |       |        |        |        |          |  |  |            |                                                               |  |  |  |  |  |          |         |         |       |        |        |        |      |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |         |     |  |  |  |  |  |     |
| Operating Frequency Range of each LTE transmission band                 | LTE Band 2: 1850 MHz ~ 1910 MHz<br>LTE Band 4: 1710 MHz ~ 1755 MHz<br>LTE Band 5: 824 MHz ~ 849 MHz<br>LTE Band 7: 2500 MHz ~ 2570 MHz<br>LTE Band 12: 699 MHz ~ 716 MHz<br>LTE Band 13: 777 MHz ~ 787 MHz<br>LTE Band 14: 788 MHz ~ 798 MHz<br>LTE Band 17: 704 MHz ~ 716 MHz<br>LTE Band 25: 1850 MHz ~ 1915 MHz<br>LTE Band 26: 814 MHz ~ 849 MHz<br>LTE Band 30: 2305 MHz ~ 2315 MHz<br>LTE Band 38: 2570 MHz ~ 2620 MHz<br>LTE Band 41: 2496 MHz ~ 2690 MHz<br>LTE Band 48: 3550 MHz ~ 3700 MHz<br>LTE Band 66: 1710 MHz ~ 1780 MHz<br>LTE Band 71: 663 MHz ~ 698 MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                         |       |        |        |        |          |  |  |            |                                                               |  |  |  |  |  |          |         |         |       |        |        |        |      |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |         |     |  |  |  |  |  |     |
| Channel Bandwidth                                                       | LTE Band 2:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz<br>LTE Band 4:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz<br>LTE Band 5:1.4MHz, 3MHz, 5MHz, 10MHz<br>LTE Band 7: 5MHz, 10MHz, 15MHz, 20MHz<br>LTE Band 12:1.4MHz, 3MHz, 5MHz, 10MHz<br>LTE Band 13: 5MHz, 10MHz<br>LTE Band 14: 5MHz, 10MHz<br>LTE Band 17: 5MHz, 10MHz<br>LTE Band 25:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz<br>LTE Band 26:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz<br>LTE Band 30: 5MHz, 10MHz<br>LTE Band 38: 5MHz, 10MHz, 15MHz, 20MHz<br>LTE Band 41: 5MHz, 10MHz, 15MHz, 20MHz<br>LTE Band 48: 5MHz, 10MHz, 15MHz, 20MHz<br>LTE Band 66:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz<br>LTE Band 71: 5MHz, 10MHz, 15MHz, 20MHz                                                                                                                                                                                                                                                                                                                                                                                  |                                                                         |       |        |        |        |          |  |  |            |                                                               |  |  |  |  |  |          |         |         |       |        |        |        |      |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |         |     |  |  |  |  |  |     |
| uplink modulations used                                                 | QPSK / 16QAM / 64QAM / 256QAM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                         |       |        |        |        |          |  |  |            |                                                               |  |  |  |  |  |          |         |         |       |        |        |        |      |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |         |     |  |  |  |  |  |     |
| LTE Voice / Data requirements                                           | Voice and Data                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                         |       |        |        |        |          |  |  |            |                                                               |  |  |  |  |  |          |         |         |       |        |        |        |      |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |         |     |  |  |  |  |  |     |
| LTE Release Version                                                     | R15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                         |       |        |        |        |          |  |  |            |                                                               |  |  |  |  |  |          |         |         |       |        |        |        |      |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |         |     |  |  |  |  |  |     |
| CA Support                                                              | Supported, Uplink and Downlink                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                         |       |        |        |        |          |  |  |            |                                                               |  |  |  |  |  |          |         |         |       |        |        |        |      |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |         |     |  |  |  |  |  |     |
| LTE MPR permanently built-in by design                                  | <table><tr><th colspan="8">Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3</th></tr><tr><th rowspan="2">Modulation</th><th colspan="6">Channel bandwidth / Transmission bandwidth (N<sub>RB</sub>)</th><th rowspan="2">MPR (dB)</th></tr><tr><th>1.4 MHz</th><th>3.0 MHz</th><th>5 MHz</th><th>10 MHz</th><th>15 MHz</th><th>20 MHz</th></tr><tr><td>QPSK</td><td>&gt; 5</td><td>&gt; 4</td><td>&gt; 8</td><td>&gt; 12</td><td>&gt; 16</td><td>&gt; 18</td><td>≤ 1</td></tr><tr><td>16 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 1</td></tr><tr><td>16 QAM</td><td>&gt; 5</td><td>&gt; 4</td><td>&gt; 8</td><td>&gt; 12</td><td>&gt; 16</td><td>&gt; 18</td><td>≤ 2</td></tr><tr><td>64 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 2</td></tr><tr><td>64 QAM</td><td>&gt; 5</td><td>&gt; 4</td><td>&gt; 8</td><td>&gt; 12</td><td>&gt; 16</td><td>&gt; 18</td><td>≤ 3</td></tr><tr><td>256 QAM</td><td colspan="6">≥ 1</td><td>≤ 5</td></tr></table> | Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3 |       |        |        |        |          |  |  | Modulation | Channel bandwidth / Transmission bandwidth (N <sub>RB</sub> ) |  |  |  |  |  | MPR (dB) | 1.4 MHz | 3.0 MHz | 5 MHz | 10 MHz | 15 MHz | 20 MHz | QPSK | > 5 | > 4 | > 8 | > 12 | > 16 | > 18 | ≤ 1 | 16 QAM | ≤ 5 | ≤ 4 | ≤ 8 | ≤ 12 | ≤ 16 | ≤ 18 | ≤ 1 | 16 QAM | > 5 | > 4 | > 8 | > 12 | > 16 | > 18 | ≤ 2 | 64 QAM | ≤ 5 | ≤ 4 | ≤ 8 | ≤ 12 | ≤ 16 | ≤ 18 | ≤ 2 | 64 QAM | > 5 | > 4 | > 8 | > 12 | > 16 | > 18 | ≤ 3 | 256 QAM | ≥ 1 |  |  |  |  |  | ≤ 5 |
| Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                         |       |        |        |        |          |  |  |            |                                                               |  |  |  |  |  |          |         |         |       |        |        |        |      |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |         |     |  |  |  |  |  |     |
| Modulation                                                              | Channel bandwidth / Transmission bandwidth (N <sub>RB</sub> )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                         |       |        |        |        | MPR (dB) |  |  |            |                                                               |  |  |  |  |  |          |         |         |       |        |        |        |      |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |         |     |  |  |  |  |  |     |
|                                                                         | 1.4 MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 3.0 MHz                                                                 | 5 MHz | 10 MHz | 15 MHz | 20 MHz |          |  |  |            |                                                               |  |  |  |  |  |          |         |         |       |        |        |        |      |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |         |     |  |  |  |  |  |     |
| QPSK                                                                    | > 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | > 4                                                                     | > 8   | > 12   | > 16   | > 18   | ≤ 1      |  |  |            |                                                               |  |  |  |  |  |          |         |         |       |        |        |        |      |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |         |     |  |  |  |  |  |     |
| 16 QAM                                                                  | ≤ 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | ≤ 4                                                                     | ≤ 8   | ≤ 12   | ≤ 16   | ≤ 18   | ≤ 1      |  |  |            |                                                               |  |  |  |  |  |          |         |         |       |        |        |        |      |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |         |     |  |  |  |  |  |     |
| 16 QAM                                                                  | > 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | > 4                                                                     | > 8   | > 12   | > 16   | > 18   | ≤ 2      |  |  |            |                                                               |  |  |  |  |  |          |         |         |       |        |        |        |      |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |         |     |  |  |  |  |  |     |
| 64 QAM                                                                  | ≤ 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | ≤ 4                                                                     | ≤ 8   | ≤ 12   | ≤ 16   | ≤ 18   | ≤ 2      |  |  |            |                                                               |  |  |  |  |  |          |         |         |       |        |        |        |      |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |         |     |  |  |  |  |  |     |
| 64 QAM                                                                  | > 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | > 4                                                                     | > 8   | > 12   | > 16   | > 18   | ≤ 3      |  |  |            |                                                               |  |  |  |  |  |          |         |         |       |        |        |        |      |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |         |     |  |  |  |  |  |     |
| 256 QAM                                                                 | ≥ 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                         |       |        |        |        | ≤ 5      |  |  |            |                                                               |  |  |  |  |  |          |         |         |       |        |        |        |      |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |         |     |  |  |  |  |  |     |
| LTE A-MPR                                                               | In the base station simulator configuration, Network Setting value is set to NS_01 to disable A-MPR during SAR testing and the LTE SAR tests was transmitting on all TTI frames (Maximum TTI)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                         |       |        |        |        |          |  |  |            |                                                               |  |  |  |  |  |          |         |         |       |        |        |        |      |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |         |     |  |  |  |  |  |     |
| Spectrum plots for RB configuration                                     | A properly configured base station simulator was used for the SAR and power measurement; therefore, spectrum plots for each RB allocation and offset configuration are not included in the SAR report.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                         |       |        |        |        |          |  |  |            |                                                               |  |  |  |  |  |          |         |         |       |        |        |        |      |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |         |     |  |  |  |  |  |     |
| Power reduction applied to satisfy SAR compliance                       | Yes, when operating in Proximity sensors/receiver/hotspot detect mechanism, head/body-worn /hotspot/extremity will trigger reduced power for some bands applied to satisfy SAR compliance, the detail please referred to section 14 and original report.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                         |       |        |        |        |          |  |  |            |                                                               |  |  |  |  |  |          |         |         |       |        |        |        |      |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |         |     |  |  |  |  |  |     |
| LTE Carrier Aggregation Combinations                                    | Inter-Band and Intra-Band possible combinations and the detail power verification please referred to section 14 and original report.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                         |       |        |        |        |          |  |  |            |                                                               |  |  |  |  |  |          |         |         |       |        |        |        |      |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |         |     |  |  |  |  |  |     |
| LTE Carrier Aggregation Additional Information                          | 1. This device supports LTE Carrier Aggregation (CA) in the uplink for intra-band and inter-band with two component carriers in the uplink. SAR Measurements and conducted powers were evaluated per FCC Guidance.<br>2. This device supports maximum of 2 carriers in the downlink and 2 carriers in the uplink.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                         |       |        |        |        |          |  |  |            |                                                               |  |  |  |  |  |          |         |         |       |        |        |        |      |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |         |     |  |  |  |  |  |     |

| Transmission (H, M, L) channel numbers and frequencies in each LTE band |                   |             |                  |             |                  |             |                  |             |                  |             |                  |             |
|-------------------------------------------------------------------------|-------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
| LTE Band 2                                                              |                   |             |                  |             |                  |             |                  |             |                  |             |                  |             |
|                                                                         | Bandwidth 1.4 MHz |             | Bandwidth 3 MHz  |             | Bandwidth 5 MHz  |             | Bandwidth 10 MHz |             | Bandwidth 15 MHz |             | Bandwidth 20 MHz |             |
|                                                                         | Ch. #             | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) |
| L                                                                       | 18607             | 1850.7      | 18615            | 1851.5      | 18625            | 1852.5      | 18650            | 1855        | 18675            | 1857.5      | 18700            | 1860        |
| M                                                                       | 18900             | 1880        | 18900            | 1880        | 18900            | 1880        | 18900            | 1880        | 18900            | 1880        | 18900            | 1880        |
| H                                                                       | 19193             | 1909.3      | 19185            | 1908.5      | 19175            | 1907.5      | 19150            | 1905        | 19125            | 1902.5      | 19100            | 1900        |
| LTE Band 4                                                              |                   |             |                  |             |                  |             |                  |             |                  |             |                  |             |
|                                                                         | Bandwidth 1.4 MHz |             | Bandwidth 3 MHz  |             | Bandwidth 5 MHz  |             | Bandwidth 10 MHz |             | Bandwidth 15 MHz |             | Bandwidth 20 MHz |             |
|                                                                         | Ch. #             | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) |
| L                                                                       | 19957             | 1710.7      | 19965            | 1711.5      | 19975            | 1712.5      | 20000            | 1715        | 20025            | 1717.5      | 20050            | 1720        |
| M                                                                       | 20175             | 1732.5      | 20175            | 1732.5      | 20175            | 1732.5      | 20175            | 1732.5      | 20175            | 1732.5      | 20175            | 1732.5      |
| H                                                                       | 20393             | 1754.3      | 20385            | 1753.5      | 20375            | 1752.5      | 20350            | 1750        | 20325            | 1747.5      | 20300            | 1745        |
| LTE Band 5                                                              |                   |             |                  |             |                  |             |                  |             |                  |             |                  |             |
|                                                                         | Bandwidth 1.4 MHz |             | Bandwidth 3 MHz  |             | Bandwidth 5 MHz  |             | Bandwidth 10 MHz |             | Bandwidth 15 MHz |             | Bandwidth 20 MHz |             |
|                                                                         | Ch. #             | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) |
| L                                                                       | 20407             | 824.7       | 20415            | 825.5       | 20425            | 826.5       | 20450            | 829         | 20450            | 829         | 20450            | 829         |
| M                                                                       | 20525             | 836.5       | 20525            | 836.5       | 20525            | 836.5       | 20525            | 836.5       | 20525            | 836.5       | 20525            | 836.5       |
| H                                                                       | 20643             | 848.3       | 20635            | 847.5       | 20625            | 846.5       | 20600            | 844         | 20600            | 844         | 20600            | 844         |
| LTE Band 7                                                              |                   |             |                  |             |                  |             |                  |             |                  |             |                  |             |
|                                                                         | Bandwidth 5 MHz   |             | Bandwidth 10 MHz |             | Bandwidth 15 MHz |             | Bandwidth 20 MHz |             | Bandwidth 20 MHz |             | Bandwidth 20 MHz |             |
|                                                                         | Ch. #             | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) |
| L                                                                       | 20775             | 2502.5      | 20800            | 2505        | 20825            | 2507.5      | 20850            | 2510        | 20850            | 2510        | 20850            | 2510        |
| M                                                                       | 21100             | 2535        | 21100            | 2535        | 21100            | 2535        | 21100            | 2535        | 21100            | 2535        | 21100            | 2535        |
| H                                                                       | 21425             | 2567.5      | 21400            | 2565        | 21375            | 2562.5      | 21350            | 2560        | 21350            | 2560        | 21350            | 2560        |
| LTE Band 12                                                             |                   |             |                  |             |                  |             |                  |             |                  |             |                  |             |
|                                                                         | Bandwidth 1.4 MHz |             | Bandwidth 3 MHz  |             | Bandwidth 5 MHz  |             | Bandwidth 10 MHz |             | Bandwidth 15 MHz |             | Bandwidth 20 MHz |             |
|                                                                         | Ch. #             | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) |
| L                                                                       | 23017             | 699.7       | 23025            | 700.5       | 23035            | 701.5       | 23060            | 704         | 23060            | 704         | 23060            | 704         |
| M                                                                       | 23095             | 707.5       | 23095            | 707.5       | 23095            | 707.5       | 23095            | 707.5       | 23095            | 707.5       | 23095            | 707.5       |
| H                                                                       | 23173             | 715.3       | 23165            | 714.5       | 23155            | 713.5       | 23130            | 711         | 23130            | 711         | 23130            | 711         |
| LTE Band 13                                                             |                   |             |                  |             |                  |             |                  |             |                  |             |                  |             |
|                                                                         | Bandwidth 5 MHz   |             |                  |             | Bandwidth 10 MHz |             |                  |             | Bandwidth 10 MHz |             |                  |             |
|                                                                         | Channel #         |             | Freq.(MHz)       |             | Channel #        |             | Freq.(MHz)       |             | Channel #        |             | Freq.(MHz)       |             |
| L                                                                       | 23205             |             | 779.5            |             | 23230            |             | 782              |             | 23230            |             | 782              |             |
| M                                                                       | 23230             |             | 782              |             | 23230            |             | 782              |             | 23230            |             | 782              |             |
| H                                                                       | 23255             |             | 784.5            |             | 23230            |             | 782              |             | 23230            |             | 782              |             |
| LTE Band 14                                                             |                   |             |                  |             |                  |             |                  |             |                  |             |                  |             |
|                                                                         | Bandwidth 5 MHz   |             |                  |             | Bandwidth 10 MHz |             |                  |             | Bandwidth 10 MHz |             |                  |             |
|                                                                         | Channel #         |             | Channel #        |             | Channel #        |             | Freq.(MHz)       |             | Channel #        |             | Freq.(MHz)       |             |
| L                                                                       | 23305             |             | 790.5            |             | 23330            |             | 793              |             | 23330            |             | 793              |             |
| M                                                                       | 23330             |             | 793              |             | 23330            |             | 793              |             | 23330            |             | 793              |             |
| H                                                                       | 23355             |             | 795.5            |             | 23330            |             | 793              |             | 23330            |             | 793              |             |
| LTE Band 17                                                             |                   |             |                  |             |                  |             |                  |             |                  |             |                  |             |
|                                                                         | Bandwidth 5 MHz   |             |                  |             | Bandwidth 10 MHz |             |                  |             | Bandwidth 10 MHz |             |                  |             |
|                                                                         | Channel #         |             | Freq.(MHz)       |             | Channel #        |             | Freq. (MHz)      |             | Channel #        |             | Freq. (MHz)      |             |
| L                                                                       | 23755             |             | 706.5            |             | 23780            |             | 709              |             | 23780            |             | 709              |             |
| M                                                                       | 23790             |             | 710              |             | 23790            |             | 710              |             | 23790            |             | 710              |             |
| H                                                                       | 23825             |             | 713.5            |             | 23800            |             | 711              |             | 23800            |             | 711              |             |
| LTE Band 25                                                             |                   |             |                  |             |                  |             |                  |             |                  |             |                  |             |
|                                                                         | Bandwidth 1.4 MHz |             | Bandwidth 3 MHz  |             | Bandwidth 5 MHz  |             | Bandwidth 10 MHz |             | Bandwidth 15 MHz |             | Bandwidth 20 MHz |             |
|                                                                         | Ch. #             | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) |
| L                                                                       | 26047             | 1850.7      | 26055            | 1851.5      | 26065            | 1852.5      | 26090            | 1855        | 26115            | 1857.5      | 26140            | 1860        |
| M                                                                       | 26340             | 1880        | 26340            | 1880        | 26340            | 1880        | 26340            | 1880        | 26340            | 1880        | 26340            | 1880        |
| H                                                                       | 26683             | 1914.3      | 26675            | 1913.5      | 26665            | 1912.5      | 26640            | 1910        | 26615            | 1907.5      | 26590            | 1905        |
| LTE Band 26                                                             |                   |             |                  |             |                  |             |                  |             |                  |             |                  |             |
|                                                                         | Bandwidth 1.4 MHz |             | Bandwidth 3 MHz  |             | Bandwidth 5 MHz  |             | Bandwidth 10 MHz |             | Bandwidth 15 MHz |             | Bandwidth 20 MHz |             |
|                                                                         | Ch. #             | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) |
| L                                                                       | 26697             | 814.7       | 26705            | 815.5       | 26715            | 816.5       | 26740            | 819         | 26765            | 821.5       | 26790            | 824         |
| M                                                                       | 26865             | 831.5       | 26865            | 831.5       | 26865            | 831.5       | 26865            | 831.5       | 26865            | 831.5       | 26865            | 831.5       |
| H                                                                       | 27033             | 848.3       | 27025            | 847.5       | 27015            | 846.5       | 26990            | 844         | 26965            | 841.5       | 26940            | 838         |

| LTE Band 30 |                 |            |                  |            |
|-------------|-----------------|------------|------------------|------------|
|             | Bandwidth 5 MHz |            | Bandwidth 10 MHz |            |
|             | Channel #       | Freq.(MHz) | Channel #        | Freq.(MHz) |
| L           | 27685           | 2307.5     | 27710            | 2310       |
| M           | 27710           | 2310       |                  |            |
| H           | 27735           | 2312.5     |                  |            |

| LTE Band 38 |                 |             |                  |             |                  |             |                  |             |
|-------------|-----------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
|             | Bandwidth 5 MHz |             | Bandwidth 10 MHz |             | Bandwidth 15 MHz |             | Bandwidth 20 MHz |             |
|             | Ch. #           | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) |
| L           | 37775           | 2572.5      | 37800            | 2575        | 37825            | 2577.5      | 37850            | 2580        |
| M           | 38000           | 2595        | 38000            | 2595        | 38000            | 2595        | 38000            | 2595        |
| H           | 38225           | 2617.5      | 38200            | 2615        | 38175            | 2612.5      | 38150            | 2610        |

| LTE Band 41 |                 |             |                  |             |                  |             |                  |             |
|-------------|-----------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
|             | Bandwidth 5 MHz |             | Bandwidth 10 MHz |             | Bandwidth 15 MHz |             | Bandwidth 20 MHz |             |
|             | Ch. #           | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) |
| L           | 39675           | 2498.5      | 39700            | 2501        | 39725            | 2503.5      | 39750            | 2506        |
| LM          | 40148           | 2545.8      | 40160            | 2547        | 40173            | 2548.3      | 40185            | 2549.5      |
| M           | 40620           | 2593        | 40620            | 2593        | 40620            | 2593        | 40620            | 2593        |
| HM          | 41093           | 2640.3      | 41080            | 2639        | 41068            | 2637.8      | 41055            | 2636.5      |
| H           | 41565           | 2687.5      | 41540            | 2685        | 41515            | 2682.5      | 41490            | 2680        |

| LTE Band 66 |                   |             |                 |             |                 |             |                  |             |                  |             |                  |             |
|-------------|-------------------|-------------|-----------------|-------------|-----------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
|             | Bandwidth 1.4 MHz |             | Bandwidth 3 MHz |             | Bandwidth 5 MHz |             | Bandwidth 10 MHz |             | Bandwidth 15 MHz |             | Bandwidth 20 MHz |             |
|             | Ch. #             | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) |
| L           | 131979            | 1710.7      | 131987          | 1711.5      | 131997          | 1712.5      | 132022           | 1715        | 132047           | 1717.5      | 132072           | 1720        |
| M           | 132322            | 1745        | 132322          | 1745        | 132322          | 1745        | 132322           | 1745        | 132322           | 1745        | 132322           | 1745        |
| H           | 132665            | 1779.3      | 132657          | 1778.5      | 132647          | 1777.5      | 132622           | 1775        | 132597           | 1772.5      | 132572           | 1770        |

| LTE Band 71 |                 |             |                  |             |                  |             |                  |             |
|-------------|-----------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
|             | Bandwidth 5 MHz |             | Bandwidth 10 MHz |             | Bandwidth 15 MHz |             | Bandwidth 20 MHz |             |
|             | Ch. #           | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) |
| L           | 133147          | 665.5       | 133172           | 668         | 133197           | 670.5       | 133222           | 673         |
| M           | 133247          | 675.5       | 133272           | 678         | 133297           | 680.5       | 133322           | 683         |
| H           | 133447          | 695.5       | 133422           | 693         | 133397           | 690.5       | 133372           | 688         |

| LTE Band 48 |                 |             |                  |             |                  |             |                  |             |
|-------------|-----------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
|             | Bandwidth 5 MHz |             | Bandwidth 10 MHz |             | Bandwidth 15 MHz |             | Bandwidth 20 MHz |             |
|             | Ch. #           | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) |
| L           | 55265           | 3552.5      | 55290            | 3555        | 55315            | 3557.5      | 55340            | 3560        |
| LM          | 55810           | 3607        | 55815            | 3607.5      | 55820            | 3608        | 55830            | 3609        |
| MH          | 56170           | 3643        | 56165            | 3642.5      | 56160            | 3642        | 56150            | 3641        |
| H           | 56715           | 3697.5      | 56690            | 3695        | 56665            | 3692.5      | 56640            | 3690        |

**<For LTE SA Overlap Bands Description>**
**1) LTE Bands BW**

| Band        | 1.4 MHz | 3 MHz | 5 MHz | 10 MHz | 15 MHz | 20 MHz |
|-------------|---------|-------|-------|--------|--------|--------|
| LTE Band 2  | Yes     | Yes   | Yes   | Yes    | Yes    | Yes    |
| LTE Band 25 | Yes     | Yes   | Yes   | Yes    | Yes    | Yes    |
| LTE Band 4  | Yes     | Yes   | Yes   | Yes    | Yes    | Yes    |
| LTE Band 66 | Yes     | Yes   | Yes   | Yes    | Yes    | Yes    |
| LTE Band 5  | Yes     | Yes   | Yes   | Yes    |        |        |
| LTE Band 26 | Yes     | Yes   | Yes   | Yes    | Yes    |        |
| LTE Band 12 | Yes     | Yes   | Yes   | Yes    |        |        |
| LTE Band 17 |         |       | Yes   | Yes    |        |        |

**2) LTE Bands tune up:**

| Band        | Ant   | Full<br>Tune-up<br>Limit | ECI 2<br>Tune-up<br>Limit | ECI 3<br>Tune-up<br>Limit | ECI 4<br>Tune-up<br>Limit | ECI 7<br>Tune-up<br>Limit | ECI 10<br>Tune-up<br>Limit | ECI 12<br>Tune-up<br>Limit |
|-------------|-------|--------------------------|---------------------------|---------------------------|---------------------------|---------------------------|----------------------------|----------------------------|
| LTE Band 2  | Ant0  | 24                       | 24                        | 18.5                      | 24                        | 17                        | 21                         |                            |
| LTE Band 25 | Ant0  | 24                       | 24                        | 18.5                      | 24                        | 17                        | 21                         |                            |
| LTE Band 2  | Ant.4 | 24                       | 16.5                      | 17                        | 24                        | 14                        |                            | 20                         |
| LTE Band 25 | Ant.4 | 24                       | 16.5                      | 17                        | 24                        | 14                        |                            | 20                         |
| LTE Band 4  | Ant0  | 24                       | 24                        | 19                        | 24                        | 18                        | 22                         |                            |
| LTE Band 66 | Ant0  | 24                       | 24                        | 19                        | 24                        | 18                        | 22                         |                            |
| LTE Band 4  | Ant.4 | 24                       | 15.5                      | 17                        | 24                        | 14                        |                            | 19                         |
| LTE Band 66 | Ant.4 | 24                       | 15.5                      | 17                        | 24                        | 14                        |                            | 19                         |
| LTE Band 5  | Ant0  | 24                       | 24                        | 22                        | 24                        | 22                        | 24                         |                            |
| LTE Band 26 | Ant0  | 24                       | 24                        | 22                        | 24                        | 22                        | 24                         |                            |
| LTE Band 5  | Ant.4 | 24                       | 22.2                      | 23.2                      | 24                        | 21.2                      |                            | 24                         |
| LTE Band 26 | Ant.4 | 24                       | 22.2                      | 23.2                      | 24                        | 21.2                      |                            | 24                         |
| LTE Band 12 | Ant0  | 24                       | 24                        | 24                        | 24                        | 24                        | 24                         |                            |
| LTE Band 17 | Ant0  | 24                       | 24                        | 24                        | 24                        | 24                        | 24                         |                            |
| LTE Band 12 | Ant.4 | 24                       | 23.2                      | 23.7                      | 24                        | 22.2                      |                            | 24                         |
| LTE Band 17 | Ant.4 | 24                       | 23.2                      | 23.7                      | 24                        | 22.2                      |                            | 24                         |

### 4.3 General 5G NR SAR Test and Reporting Considerations

| 5G NR Information                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operating Frequency Range of each 5G NR transmission band | 5G NR n2: 1850 MHz ~ 1910 MHz<br>5G NR n5: 824 MHz ~ 849 MHz<br>5G NR n7: 2500 MHz ~ 2570 MHz<br>5G NR n12: 699 MHz ~ 716 MHz<br>5G NR n14: 788 MHz ~ 798 MHz<br>5G NR n25: 1850 MHz ~ 1915 MHz<br>5G NR n26: 814 MHz ~ 849 MHz<br>5G NR n30: 2305 MHz ~ 2315 MHz<br>5G NR n41: 2496 MHz ~ 2690 MHz<br>5G NR n48: 3550 MHz ~ 3700 MHz<br>5G NR n66: 1710 MHz ~ 1780 MHz<br>5G NR n70: 1695 MHz ~ 1710 MHz<br>5G NR n71: 663 MHz ~ 698 MHz<br>5G NR n77: 3450 MHz ~ 3550 MHz, 3700 MHz ~ 3980 MHz<br>5G NR n78: 3450 MHz ~ 3550 MHz, 3700 MHz ~ 3800 MHz |
| Channel Bandwidth                                         | The detail please refers to section 4.1 5GNR FR1 bands table.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| SCS                                                       | FDD: SCS15KHz, TDD: SCS30KHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| uplink modulations used                                   | DFT-s-OFDM: PI/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM<br>CP-OFDM: QPSK / 16QAM / 64QAM / 256QAM                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| A-MPR (Additional MPR) disabled for SAR Testing?          | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| LTE Anchor Bands for n2                                   | LTE B4/5/7/12/13/14/30/48/66/71                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| LTE Anchor Bands for n5                                   | LTE B2/4/730/66/48                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| LTE Anchor Bands for n7                                   | LTE B2/4/5/12/66                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| LTE Anchor Bands for n12                                  | LTE B2/66                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| LTE Anchor Bands for n25                                  | LTE B7/12/26/66                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| LTE Anchor Bands for n30                                  | LTE B2/5/12/14/66                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| LTE Anchor Bands for n66                                  | LTE B2/5/7/12/13/14/30/48/71                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| LTE Anchor Bands for n71                                  | LTE B2/7/48/66                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| LTE Anchor Bands for n41                                  | LTE B2/4/5/12/25/26/66/71                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| LTE Anchor Bands for n48                                  | LTE B5/71                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| LTE Anchor Bands for n77                                  | LTE B2/5/7/12/13/14/25/26/30/66/71                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| LTE Anchor Bands for n78                                  | LTE B2/4/5/7/12/13/25/66/71                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

| Transmission (H, M, L) channel numbers and frequencies in each 5G NR band |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |  |
|---------------------------------------------------------------------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|--|
| NR Band 2                                                                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |  |
| Bandwidth 5MHz                                                            |             | Bandwidth 10MHz |             | Bandwidth 15MHz |             | Bandwidth 20MHz |             | Bandwidth 25MHz |             | Bandwidth 30MHz |             | Bandwidth 35MHz |             | Bandwidth 40MHz |             |  |
| Ch. #                                                                     | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) |  |
| L 370500                                                                  | 1852.5      | 371000          | 1855        | 371500          | 1857.5      | 372000          | 1860        | 372500          | 1862.5      | 373000          | 1865        | 373500          | 1867.5      | 374000          | 1870        |  |
| M 376000                                                                  | 1880        | 376000          | 1880        | 376000          | 1880        | 376000          | 1880        | 376000          | 1880        | 376000          | 1880        | 376000          | 1880        | 376000          | 1880        |  |
| H 381500                                                                  | 1907.5      | 381000          | 1905        | 380500          | 1902.5      | 380000          | 1900        | 379500          | 1897.5      | 379000          | 1895        | 378500          | 1892.5      | 378000          | 1890        |  |

| NR Band 5      |             |                 |             |                 |             |                 |             |  |
|----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|--|
| Bandwidth 5MHz |             | Bandwidth 10MHz |             | Bandwidth 15MHz |             | Bandwidth 20MHz |             |  |
| Ch. #          | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) |  |
| L 165300       | 826.5       | 165800          | 829         | 166300          | 831.5       | 166800          | 834         |  |
| M 167300       | 836.5       | 167300          | 836.5       | 167300          | 836.5       | 167300          | 836.5       |  |
| H 169300       | 846.5       | 168800          | 844         | 168300          | 841.5       | 167800          | 839         |  |

| NR Band 7 |                   |                |                    |                |                    |                |                    |                |                    |                |                    |                |                    |                |                    |                |                    |                |
|-----------|-------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|
|           | Bandwidth<br>5MHz |                | Bandwidth<br>10MHz |                | Bandwidth<br>15MHz |                | Bandwidth<br>20MHz |                | Bandwidth<br>25MHz |                | Bandwidth<br>30MHz |                | Bandwidth<br>35MHz |                | Bandwidth<br>40MHz |                | Bandwidth<br>50MHz |                |
|           | Ch. #             | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) |
| L         | 500500            | 2502.5         | 501000             | 2505           | 501500             | 2507.5         | 502000             | 2510           | 502500             | 2512.5         | 503000             | 2515           | 503500             | 2517.5         | 504000             | 2520           | 505000             | 2525           |
| M         | 507000            | 2535           | 507000             | 2535           | 507000             | 2535           | 507000             | 2535           | 507000             | 2535           | 507000             | 2535           | 507000             | 2535           | 507000             | 2535           | 507000             | 2535           |
| H         | 513500            | 2567.5         | 513000             | 2565           | 512500             | 2562.5         | 512000             | 2560           | 511500             | 2557.5         | 511000             | 2555           | 510500             | 2552.5         | 510000             | 2550           | 509000             | 2545           |

| NR Band 12     |             |                 |             |                 |             |  |
|----------------|-------------|-----------------|-------------|-----------------|-------------|--|
| Bandwidth 5MHz |             | Bandwidth 10MHz |             | Bandwidth 15MHz |             |  |
| Ch. #          | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) |  |
| L 140300       | 701.5       | 140800          | 704         | 141300          | 706.5       |  |
| M 141500       | 707.5       | 141500          | 707.5       | 141500          | 707.5       |  |
| H 142700       | 713.5       | 142200          | 711         | 141700          | 708.5       |  |



| NR Band 14     |        |             |                 |             |  |
|----------------|--------|-------------|-----------------|-------------|--|
| Bandwidth 5MHz |        |             | Bandwidth 10MHz |             |  |
|                | Ch. #  | Freq. (MHz) | Ch. #           | Freq. (MHz) |  |
| L              | 158100 | 790.5       | 158600          | 793         |  |
| M              | 158600 | 793         |                 |             |  |
| H              | 159100 | 795.5       |                 |             |  |

| NR Band 25 |                   |                |                    |                |                    |                |                    |                |                    |                |                    |                |                    |                |                    |                |
|------------|-------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|
|            | Bandwidth<br>5MHz |                | Bandwidth<br>10MHz |                | Bandwidth<br>15MHz |                | Bandwidth<br>20MHz |                | Bandwidth<br>25MHz |                | Bandwidth<br>30MHz |                | Bandwidth<br>35MHz |                | Bandwidth<br>40MHz |                |
|            | Ch. #             | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) |
| L          | 370500            | 1852.5         | 371000             | 1855           | 371500             | 1857.5         | 372000             | 1860           | 372500             | 1862.5         | 373000             | 1865           | 373500             | 1867.5         | 374000             | 1870           |
| M          | 376500            | 1882.5         | 376500             | 1882.5         | 376500             | 1882.5         | 376500             | 1882.5         | 376500             | 1882.5         | 376500             | 1882.5         | 376500             | 1882.5         | 376500             | 1882.5         |
| H          | 382500            | 1912.5         | 382000             | 1910           | 381500             | 1907.5         | 381000             | 1905           | 380500             | 1902.5         | 380000             | 1900           | 379500             | 1897.5         | 379000             | 1895           |

| NR Band 26 |                |             |                 |             |                 |             |                 |             |
|------------|----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|
|            | Bandwidth 5MHz |             | Bandwidth 10MHz |             | Bandwidth 15MHz |             | Bandwidth 20MHz |             |
|            | Ch. #          | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) |
| L          | 163300         | 816.5       | 163800          | 819         | 164300          | 821.5       | 164800          | 824         |
| M          | 166300         | 831.5       | 166300          | 831.5       | 166300          | 831.5       | 166300          | 831.5       |
| H          | 169300         | 846.5       | 168800          | 844         | 168300          | 841.5       | 167800          | 839         |

| NR Band 30     |        |             |                 |             |  |
|----------------|--------|-------------|-----------------|-------------|--|
| Bandwidth 5MHz |        |             | Bandwidth 10MHz |             |  |
|                | Ch. #  | Freq. (MHz) | Ch. #           | Freq. (MHz) |  |
| L              | 461500 | 2307.5      | 462000          | 2310        |  |
| M              | 462000 | 2310        |                 |             |  |
| H              | 462500 | 2312.5      |                 |             |  |

| NR Band 66        |                |                    |                |                    |                |                    |                |                    |                |                    |                |                    |                |                    |                |                    |                |        |
|-------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------|
| Bandwidth<br>5MHz |                | Bandwidth<br>10MHz |                | Bandwidth<br>15MHz |                | Bandwidth<br>20MHz |                | Bandwidth<br>25MHz |                | Bandwidth<br>30MHz |                | Bandwidth<br>35MHz |                | Bandwidth<br>40MHz |                | Bandwidth<br>45MHz |                |        |
| Ch. #             | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) |        |
| L                 | 342500         | 1712.5             | 343000         | 1715               | 343500         | 1717.5             | 344000         | 1720               | 344500         | 1722.5             | 345000         | 1725               | 345500         | 1727.5             | 346000         | 1730               | 346500         | 1732.5 |
| M                 | 349000         | 1745               | 349000         | 1745               | 349000         | 1745               | 349000         | 1745               | 349000         | 1745               | 349000         | 1745               | 349000         | 1745               | 349000         | 1745               | 349000         | 1745   |
| H                 | 355500         | 1777.5             | 355000         | 1775               | 354500         | 1772.5             | 354000         | 1770               | 353500         | 1767.5             | 353000         | 1765               | 352500         | 1762.5             | 352000         | 1760               | 351500         | 1757.5 |

| NR Band 70 |                |             |                 |             |                 |             |
|------------|----------------|-------------|-----------------|-------------|-----------------|-------------|
|            | Bandwidth 5MHz |             | Bandwidth 10MHz |             | Bandwidth 15MHz |             |
|            | Ch. #          | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) |
| L          | 339500         | 1697.5      | 340000          | 1700        | 340500          | 1702.5      |
| M          | 340500         | 1702.5      | 340500          | 1702.5      |                 |             |
| H          | 341500         | 1707.5      | 341000          | 1705        |                 |             |

| NR Band 71 |                |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |
|------------|----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|
|            | Bandwidth 5MHz |             | Bandwidth 10MHz |             | Bandwidth 15MHz |             | Bandwidth 20MHz |             | Bandwidth 25MHz |             | Bandwidth 30MHz |             | Bandwidth 25MHz |             |
|            | Ch. #          | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) |
| L          | 133100         | 665.5       | 133600          | 668         | 134100          | 670.5       | 134600          | 673         | 135100          | 675.5       | 135600          | 678         |                 |             |
| M          | 136100         | 680.5       | 136100          | 680.5       | 136100          | 680.5       | 136100          | 680.5       | 136100          | 680.5       | 136100          | 680.5       | 136100          | 680.5       |
| H          | 139100         | 695.5       | 138600          | 693         | 138100          | 690.5       | 137600          | 688         | 137100          | 685.5       | 136600          | 683         |                 |             |

| NR Band 41         |                |                    |                |                    |                |                    |                |                    |                |                    |                |                    |                |                    |                |                    |                |                    |                |                    |                |                    |                |                    |                |                     |                |         |
|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|---------------------|----------------|---------|
| Bandwidth<br>10MHz |                | Bandwidth<br>15MHz |                | Bandwidth<br>20MHz |                | Bandwidth<br>25MHz |                | Bandwidth<br>30MHz |                | Bandwidth<br>35MHz |                | Bandwidth<br>40MHz |                | Bandwidth<br>45MHz |                | Bandwidth<br>50MHz |                | Bandwidth<br>60MHz |                | Bandwidth<br>70MHz |                | Bandwidth<br>80MHz |                | Bandwidth<br>90MHz |                | Bandwidth<br>100MHz |                |         |
| Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #               | Freq.<br>(MHz) |         |
| L                  | 500202         | 2501.01            | 500700         | 2503.5             | 501204         | 2506.02            | 501702         | 2508.51            | 502200         | 2511               | 502704         | 2513.52            | 503202         | 2516.01            | 503700         | 2518.5             | 504204         | 2521.02            | 505200         | 2526               | 500202         | 2501.01            | 507204         | 2536.02            | 508200         | 2541                | 509202         | 2546.01 |
| M                  | 518598         | 2592.99            | 518598         | 2592.99            | 518598         | 2592.99            | 518598         | 2592.99            | 518598         | 2592.99            | 518598         | 2592.99            | 518598         | 2592.99            | 518598         | 2592.99            | 518598         | 2592.99            | 518598         | 2592.99            | 518598         | 2592.99            | 518598         | 2592.99            | 518598         | 2592.99             | 518598         | 2592.99 |
| H                  | 537000         | 2685               | 536496         | 2682.48            | 535998         | 2679.99            | 535500         | 2677.5             | 534996         | 2674.98            | 534498         | 2672.49            | 534000         | 2670               | 533496         | 2667.48            | 532998         | 2664.99            | 531996         | 2659.98            | 537000         | 2685               | 529998         | 2649.99            | 528996         | 2644.98             | 528000         | 2640    |

| NR Band48       |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                  |             |         |
|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|------------------|-------------|---------|
| Bandwidth 10MHz |             | Bandwidth 15MHz |             | Bandwidth 20MHz |             | Bandwidth 30MHz |             | Bandwidth 40MHz |             | Bandwidth 50MHz |             | Bandwidth 60MHz |             | Bandwidth 70MHz |             | Bandwidth 80MHz |             | Bandwidth 90MHz |             | Bandwidth 100MHz |             |         |
| Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #            | Freq. (MHz) |         |
| L               | 637000      | 3555            | 637168      | 3557.52         | 637334      | 3560.01         | 637668      | 3565.02         | 638000      | 3570            | 638334      | 3575.01         | 638668      | 3580.02         | 639000      | 3585            | 639334      | 3590.01         | 639668      | 3595.02          | 640000      | 3600    |
| M               | 641666      | 3624.99         | 641666      | 3624.99         | 641666      | 3624.99         | 641666      | 3624.99         | 641666      | 3624.99         | 641666      | 3624.99         | 641666      | 3624.99         | 641666      | 3624.99         | 641666      | 3624.99         | 641666      | 3624.99          | 641666      | 3624.99 |
| H               | 646332      | 3694.98         | 646166      | 3692.49         | 646000      | 3690            | 645666      | 3684.99         | 645332      | 3679.98         | 645000      | 3675            | 644666      | 3669.99         | 644332      | 3664.98         | 644000      | 3660            | 643666      | 3654.99          | 643332      | 3649.98 |



| NR Band 77         |                |                    |                |                    |                |                    |                |                    |                |                    |                |                    |                |                    |                |                    |                |                    |                |                    |                |                     |                |      |
|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|---------------------|----------------|------|
| Bandwidth<br>10MHz |                | Bandwidth<br>15MHz |                | Bandwidth<br>20MHz |                | Bandwidth<br>25MHz |                | Bandwidth<br>30MHz |                | Bandwidth<br>40MHz |                | Bandwidth<br>50MHz |                | Bandwidth<br>60MHz |                | Bandwidth<br>70MHz |                | Bandwidth<br>80MHz |                | Bandwidth<br>90MHz |                | Bandwidth<br>100MHz |                |      |
| Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #               | Freq.<br>(MHz) |      |
| L                  | 647000         | 3705               | 647168         | 3707.52            | 647334         | 3710.01            | 647500         | 3712.5             | 647668         | 3715.02            | 648000         | 3720               | 648334         | 3725.01            | 648668         | 3730.02            | 649000         | 3735               | 649334         | 3740.01            | 649668         | 3745.02             | 650000         | 3750 |
| M                  | 656000         | 3840               | 656000         | 3840               | 656000         | 3840               | 656000         | 3840.00            | 656000         | 3840.00            | 656000         | 3840               | 656000         | 3840               | 656000         | 3840               | 656000         | 3840               | 656000         | 3840               | 656000         | 3840                | 656000         | 3840 |
| H                  | 665000         | 3975               | 664832         | 3972.48            | 664666         | 3969.99            | 664500         | 3967.50            | 664332         | 3964.98            | 664000         | 3960               | 663666         | 3954.99            | 663332         | 3949.98            | 663000         | 3945               | 662666         | 3939.99            | 662332         | 3934.98             | 662000         | 3930 |

| NR Band 78         |                |                    |                |                    |                |                    |                |                    |                |                    |                |                    |                |                    |                |                    |                |                    |                |                    |                |                     |                |      |
|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|---------------------|----------------|------|
| Bandwidth<br>10MHz |                | Bandwidth<br>15MHz |                | Bandwidth<br>20MHz |                | Bandwidth<br>25MHz |                | Bandwidth<br>30MHz |                | Bandwidth<br>40MHz |                | Bandwidth<br>50MHz |                | Bandwidth<br>60MHz |                | Bandwidth<br>70MHz |                | Bandwidth<br>80MHz |                | Bandwidth<br>90MHz |                | Bandwidth<br>100MHz |                |      |
| Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #               | Freq.<br>(MHz) |      |
| L                  | 647000         | 3705               | 647168         | 3707.52            | 647334         | 3710.01            | 647500         | 3712.5             | 647668         | 3715.02            | 648000         | 3720               | 648334         | 3725.01            | 648668         | 3730.02            | 649000         | 3735               | 649334         | 3740.01            | 649668         | 3745.02             |                |      |
| M                  | 650000         | 3750               | 650000         | 3750               | 650000         | 3750               | 650000         | 3750.00            | 650000         | 3750.00            | 650000         | 3750               | 650000         | 3750               | 650000         | 3750               | 650000         | 3750               | 650000         | 3750               | 650000         | 3750                | 650000         | 3750 |
| H                  | 653000         | 3795               | 652834         | 3792.51            | 652668         | 3790.02            | 652500         | 3787.5             | 652334         | 3785.01            | 652000         | 3780               | 651668         | 3775.02            | 651334         | 3770.01            | 651000         | 3765               | 650668         | 3760.02            | 650334         | 3755.01             |                |      |

For &lt;3450 MHz ~ 3550 MHz &gt;

| NR Band 77         |                |                    |                |                    |                |                    |                |                    |                |                    |                |                    |                |                    |                |                    |                |                    |                |                    |                |                     |                |         |
|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|---------------------|----------------|---------|
| Bandwidth<br>10MHz |                | Bandwidth<br>15MHz |                | Bandwidth<br>20MHz |                | Bandwidth<br>25MHz |                | Bandwidth<br>30MHz |                | Bandwidth<br>40MHz |                | Bandwidth<br>50MHz |                | Bandwidth<br>60MHz |                | Bandwidth<br>70MHz |                | Bandwidth<br>80MHz |                | Bandwidth<br>90MHz |                | Bandwidth<br>100MHz |                |         |
| Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #               | Freq.<br>(MHz) |         |
| L                  | 630334         | 3455.01            | 630500         | 3457.5             | 630668         | 3460.02            | 630834         | 3462.51            | 631000         | 3465               | 631334         | 3470.01            | 631668         | 3475.02            | 632000         | 3480               | 632334         | 3485.01            | 632668         | 3490.02            | 633000         | 3495                |                |         |
| M                  | 633334         | 3500.01            | 633334         | 3500.01            | 633334         | 3500.01            | 633334         | 3500.01            | 633334         | 3500.01            | 633334         | 3500.01            | 633334         | 3500.01            | 633334         | 3500.01            | 633334         | 3500.01            | 633334         | 3500.01            | 633334         | 3500.01             | 633334         | 3500.01 |
| H                  | 636334         | 3545.01            | 636168         | 3542.52            | 636000         | 3540               | 635834         | 3537.51            | 635668         | 3535.02            | 635334         | 3530.01            | 635000         | 3525               | 634668         | 3520.02            | 634334         | 3515.01            | 634000         | 3510               | 633668         | 3505.02             |                |         |

| NR Band 78         |                |                    |                |                    |                |                    |                |                    |                |                    |                |                    |                |                    |                |                    |                |                    |                |                    |                |                     |                |         |
|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|---------------------|----------------|---------|
| Bandwidth<br>10MHz |                | Bandwidth<br>15MHz |                | Bandwidth<br>20MHz |                | Bandwidth<br>25MHz |                | Bandwidth<br>30MHz |                | Bandwidth<br>40MHz |                | Bandwidth<br>50MHz |                | Bandwidth<br>60MHz |                | Bandwidth<br>70MHz |                | Bandwidth<br>80MHz |                | Bandwidth<br>90MHz |                | Bandwidth<br>100MHz |                |         |
| Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #              | Freq.<br>(MHz) | Ch. #               | Freq.<br>(MHz) |         |
| L                  | 630334         | 3455.01            | 630500         | 3457.5             | 630668         | 3460.02            | 630834         | 3462.51            | 631000         | 3465               | 631334         | 3470.01            | 631668         | 3475.02            | 632000         | 3480               | 632334         | 3485.01            | 632668         | 3490.02            | 633000         | 3495                |                |         |
| M                  | 633334         | 3500.01            | 633334         | 3500.01            | 633334         | 3500.01            | 633334         | 3500.01            | 633334         | 3500.01            | 633334         | 3500.01            | 633334         | 3500.01            | 633334         | 3500.01            | 633334         | 3500.01            | 633334         | 3500.01            | 633334         | 3500.01             | 633334         | 3500.01 |
| H                  | 636334         | 3545.01            | 636168         | 3542.52            | 636000         | 3540               | 635834         | 3537.51            | 635668         | 3535.02            | 635334         | 3530.01            | 635000         | 3525               | 634668         | 3520.02            | 634334         | 3515.01            | 634000         | 3510               | 633668         | 3505.02             |                |         |



**<For NR SA Overlap Bands Description>**
**1) NR Bands BW**

| Band    | Duplex | SCS(KHz) | Bandwidths(BW)                       |
|---------|--------|----------|--------------------------------------|
| FR1 n2  | FDD    | 15       | 5, 10, 15, 20,25,30,35,40            |
| FR1 n25 | FDD    | 15       | 5, 10, 15, 20,25,30,35,40            |
| FR1 n5  | TDD    | 30       | 5,10,15,20                           |
| FR1 n26 | TDD    | 30       | 5,10,15,20                           |
| FR1 n77 | TDD    | 30       | 10,15,20,25,30,40,50,60,70,80,90,100 |
| FR1 n78 | TDD    | 30       | 10,15,20,25,30,40,50,60,70,80,90,100 |

**2) NR SA Bands Tune up:**

| Band        | Ant   | Full<br>Tune-up<br>Limit | ECI 2<br>Tune-up<br>Limit | ECI 3<br>Tune-up<br>Limit | ECI 4<br>Tune-up<br>Limit | ECI 7<br>Tune-up<br>Limit | ECI 10<br>Tune-up<br>Limit | ECI 11<br>Tune-up<br>Limit | ECI 12<br>Tune-up<br>Limit | ECI 13<br>Tune-up<br>Limit |
|-------------|-------|--------------------------|---------------------------|---------------------------|---------------------------|---------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| FR1 n2      | Ant 0 | 24                       | 24                        | 18.5                      | 24                        | 17.5                      | 22                         |                            |                            |                            |
| FR1 n25     | Ant 0 | 24                       | 24                        | 18.5                      | 24                        | 17.5                      | 22                         |                            |                            |                            |
| FR1 n2      | Ant 4 | 24                       | 15                        | 19                        | 24                        | 16                        |                            |                            | 21.5                       |                            |
| FR1 n25     | Ant 4 | 24                       | 15                        | 19                        | 24                        | 16                        |                            |                            | 21.5                       |                            |
| FR1 n5      | Ant 0 | 24                       | 24                        | 22.5                      | 24                        | 22.5                      | 24                         |                            |                            |                            |
| FR1 n26     | Ant 0 | 24                       | 24                        | 22.5                      | 24                        | 22.5                      | 24                         |                            |                            |                            |
| FR1 n5      | Ant 4 | 24                       | 21.5                      | 23                        | 24                        | 21.5                      |                            |                            | 24                         |                            |
| FR1 n26     | Ant 4 | 24                       | 21.5                      | 23                        | 24                        | 21.5                      |                            |                            | 24                         |                            |
| FR1 n77 PC3 | Ant 5 | 24                       | 16                        | 15.5                      | 24                        | 14                        |                            |                            |                            | 20.5                       |
| FR1 n78 PC3 | Ant 5 | 24                       | 16                        | 15.5                      | 24                        | 14                        |                            |                            |                            | 20.5                       |
| FR1 n77 PC2 | Ant 5 | 27                       | 16                        | 15.5                      | 27                        | 14                        |                            |                            |                            | 20.5                       |
| FR1 n78 PC2 | Ant 5 | 27                       | 16                        | 15.5                      | 27                        | 14                        |                            |                            |                            | 20.5                       |
| FR1 n77 PC3 | Ant 1 | 24                       | 24                        | 24                        | 24                        | 24                        |                            | 24                         |                            |                            |
| FR1 n78 PC3 | Ant 1 | 24                       | 24                        | 24                        | 24                        | 24                        |                            | 24                         |                            |                            |
| FR1 n77 PC2 | Ant 1 | 26.5                     | 26.5                      | 24.5                      | 26.5                      | 24.5                      |                            | 26.5                       |                            |                            |
| FR1 n78 PC2 | Ant 1 | 26.5                     | 26.5                      | 24.5                      | 26.5                      | 24.5                      |                            | 26.5                       |                            |                            |
| FR1 n77 PC3 | Ant 2 | 24                       | 24                        | 17.5                      | 20                        | 16                        |                            |                            |                            |                            |
| FR1 n78 PC3 | Ant 2 | 24                       | 24                        | 17.5                      | 20                        | 16                        |                            |                            |                            |                            |
| FR1 n77 PC2 | Ant 2 | 27                       | 27                        | 17.5                      | 21                        | 16                        |                            |                            |                            |                            |
| FR1 n78 PC2 | Ant 2 | 27                       | 27                        | 17.5                      | 21                        | 16                        |                            |                            |                            |                            |
| FR1 n77 PC3 | Ant 8 | 24                       | 24                        | 18.5                      | 21.5                      | 16                        |                            |                            |                            |                            |
| FR1 n78 PC3 | Ant 8 | 24                       | 24                        | 18.5                      | 21.5                      | 16                        |                            |                            |                            |                            |
| FR1 n77 PC2 | Ant 8 | 27                       | 27                        | 18.5                      | 21.5                      | 16                        |                            |                            |                            |                            |
| FR1 n78 PC2 | Ant 8 | 27                       | 27                        | 18.5                      | 21.5                      | 16                        |                            |                            |                            |                            |

## 5. TA-SAR feature for RF Exposure compliance

WWAN bands are all enabled with MediaTek TA-SAR Gen2 feature to improve antenna performance by applying separate SAR budgets to each predefined antenna group. This feature performs time averaging algorithm in real time to control and manage transmitting power and ensure the time-averaged RF exposure is in compliance with FCC requirements all the time.

Note that WLAN/BT operations are not enabled with TA-SAR Gen2 feature.

The FCC RF exposure limit is defined based on time-averaged RF exposure. The product implements MediaTek TA-SAR feature which controls the instantaneous transmitting power for WWAN transmitter to ensure the product in compliance with FCC RF exposure limit over a defined time window, for SAR (transmit frequency  $\leq 6\text{GHz}$ ). To control and manage transmitting power in real time and to ensure at all times the time-averaged RF exposure is compliant to the regulation requirement.

The purpose of this report (Part 1 test) is to demonstrate that the EUT meets FCC SAR limits when transmitting in static transmission scenario at maximum allowable time-averaged power levels.

The P<sub>limit</sub> values correspond to SAR<sub>design\_target</sub>. The power will be fixed at the static reduce power level at different exposure conditions for RF exposure compliance. For the GSM (TDD) P<sub>limit</sub> power levels in the table correspond to the burst average power levels which don't account for TX duty cycle.

This report describes the procedures for the SAR char generation, and the parameters obtained from SAR characterization (referred to as SAR char, respectively) will be used as input for TA-SAR Gen2 algorithm. SAR char will be entered via the MediaTek's NV suggestion to enable the TA-SAR Gen2 Feature.

### <Terminologies in this report>

|                                     |                                                                                                                                         |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| <b>P<sub>limit</sub></b>            | The time-averaged RF power which corresponds to SAR <sub>design_target</sub> .                                                          |
| <b>P<sub>max</sub></b>              | Maximum target power level                                                                                                              |
| <b>SAR<sub>design_target</sub>:</b> | The design target for SAR compliance. It should be less than regulatory SAR limit to account for all device design related uncertainty. |
| <b>SAR char</b>                     | P <sub>limit</sub> for all the technologies/bands for all applicable ECI                                                                |

### <SAR Characterization>

SAR char must be generated to cover all radio configurations and usage scenarios that the wireless device supports for operating at 6 GHz or below. It will then be used as input for TA-SAR Gen2 algorithm to control and manage RF exposure for  $f < 6\text{GHz}$ .

### SPLSR\_Group (Antenna Group):

|                              |                                  |
|------------------------------|----------------------------------|
| <b>Antenna Group 0 (AG0)</b> | ANT0 & ANT1                      |
| <b>Antenna Group 1 (AG1)</b> | ANT2 & ANT4 & ANT5 & ANT7 & ANT8 |

**<SAR design target and uncertainty>**

| Item              | Uncertainty dB (k=2) |
|-------------------|----------------------|
| Total uncertainty | 1.5                  |

To account for total uncertainty, SAR\_design\_target should be determined as:

$$SAR_{design\_target} < SAR_{regulatory\_limit} \times 10^{\frac{-total\ uncertainty}{10}}$$

The TA-SAR Gen2 algorithm maintains the time-averaged transmit power, in turn, time-averaged RF exposure of SAR\_design\_target, below the predefined time-averaged power limit, for each characterized technology and band.

TA-SAR allows the device to transmit at higher power instantaneously, as high as Pmax, when needed, but enforces power limiting to maintain time-averaged transmit power to Plimit.

**<Plimit for supported technologies and bands >**

| Band            | Antenna | ECI 2 | ECI 3 | ECI 4 | ECI 7 | ECI 10 | ECI 11 | ECI 12 | ECI 13 | Pmax* |
|-----------------|---------|-------|-------|-------|-------|--------|--------|--------|--------|-------|
| GSM850          | Ant 0   | 23.5  | 23.0  | 25.5  | 23.0  | 26.1   |        |        |        | 25.5  |
| GSM1900         | Ant 0   | 33.3  | 19.0  | 22.5  | 17.5  | 21.5   |        |        |        | 22.5  |
| WCDMA II        | Ant 0   | 32.3  | 17.5  | 23.0  | 16.0  | 20.5   |        |        |        | 23.0  |
| WCDMA IV        | Ant 0   | 29.2  | 18.5  | 23.0  | 17.5  | 21.5   |        |        |        | 23.0  |
| WCDMA V         | Ant 0   | 26.7  | 21.0  | 23.0  | 21.0  | 23.4   |        |        |        | 23.0  |
| LTE Band 2      | Ant 0   | 26.9  | 17.5  | 23.0  | 16.0  | 20.0   |        |        |        | 23.0  |
| LTE Band 2      | Ant 4   | 15.5  | 16.0  | 23.0  | 13.0  |        |        | 19.0   |        | 23.0  |
| LTE Band 4      | Ant 0   | 29.8  | 18.0  | 23.0  | 17.0  | 21.0   |        |        |        | 23.0  |
| LTE Band 4      | Ant 4   | 14.5  | 16.0  | 23.0  | 13.0  |        |        | 18.0   |        | 23.0  |
| LTE Band 5      | Ant 0   | 27.2  | 21.0  | 23.0  | 21.0  | 26.3   |        |        |        | 23.0  |
| LTE Band 5      | Ant 4   | 21.2  | 22.2  | 23.0  | 20.2  |        |        | 23.0   |        | 23.0  |
| LTE Band 7      | Ant 1   | 27.0  | 18.5  | 23.0  | 18.5  |        | 21.0   |        |        | 23.0  |
| LTE Band 7      | Ant 4   | 28.1  | 28.0  | 23.0  | 23.9  |        |        | 23.0   |        | 23.0  |
| LTE Band 12     | Ant 0   | 29.5  | 24.6  | 23.0  | 24.6  | 23.0   |        |        |        | 23.0  |
| LTE Band 12     | Ant 4   | 22.2  | 22.7  | 23.0  | 21.2  |        |        | 23.0   |        | 23.0  |
| LTE Band 13     | Ant 0   | 27.9  | 23.0  | 23.0  | 23.0  | 26.5   |        |        |        | 23.0  |
| LTE Band 13     | Ant 4   | 21.2  | 22.7  | 23.0  | 21.2  |        |        | 23.0   |        | 23.0  |
| LTE Band 14     | Ant 0   | 28.2  | 23.0  | 23.0  | 23.0  | 23.0   |        |        |        | 23.0  |
| LTE Band 14     | Ant 4   | 20.7  | 22.2  | 23.0  | 20.7  |        |        | 23.0   |        | 23.0  |
| LTE Band 17     | Ant 0   | 29.5  | 24.6  | 23.0  | 24.6  | 23.0   |        |        |        | 23.0  |
| LTE Band 17     | Ant 4   | 22.2  | 22.7  | 23.0  | 21.2  |        |        | 23.0   |        | 23.0  |
| LTE Band 25     | Ant 0   | 26.9  | 17.5  | 23.0  | 16.0  | 20.0   |        |        |        | 23.0  |
| LTE Band 25     | Ant 4   | 15.5  | 16.0  | 23.0  | 13.0  |        |        | 19.0   |        | 23.0  |
| LTE Band 26     | Ant 0   | 27.2  | 21.0  | 23.0  | 21.0  | 26.3   |        |        |        | 23.0  |
| LTE Band 26     | Ant 4   | 21.2  | 22.2  | 23.0  | 20.2  |        |        | 23.0   |        | 23.0  |
| LTE Band 30     | Ant 1   | 31.3  | 18.0  | 23.0  | 18.0  |        | 20.0   |        |        | 23.0  |
| LTE Band 30     | Ant 4   | 25.7  | 24.9  | 23.0  | 21.5  |        |        | 23.0   |        | 23.0  |
| LTE Band 38     | Ant 1   | 26.2  | 18.4  | 21.0  | 18.4  |        | 20.9   |        |        | 21.0  |
| LTE Band 41 PC3 | Ant 1   | 26.2  | 18.4  | 22.4  | 18.4  |        | 20.9   |        |        | 21.0  |
| LTE Band 41 PC2 | Ant 1   |       |       |       |       |        |        |        |        | 22.4  |
| LTE Band 48     | Ant 5   | 14.5  | 14.0  | 21.0  | 13.0  |        |        |        | 19.5   | 21.0  |
| LTE Band 66     | Ant 0   | 29.8  | 18.0  | 23.0  | 17.0  | 21.0   |        |        |        | 23.0  |
| LTE Band 66     | Ant 4   | 14.5  | 16.0  | 23.0  | 13.0  |        |        | 18.0   |        | 23.0  |
| LTE Band 71     | Ant 0   | 29.9  | 26.4  | 23.0  | 26.4  | 23.0   |        |        |        | 23.0  |
| LTE Band 71     | Ant 4   | 25.1  | 24.2  | 23.0  | 23.0  |        |        | 23.0   |        | 23.0  |
| n2              | Ant 0   | 33.7  | 17.5  | 23.0  | 16.5  | 21.0   |        |        |        | 23.0  |
| n2              | Ant 4   | 14.0  | 18.0  | 23.0  | 15.0  |        |        | 20.5   |        | 23.0  |

|         |       |      |      |      |      |      |      |      |      |      |
|---------|-------|------|------|------|------|------|------|------|------|------|
| n5      | Ant 0 | 28.7 | 21.5 | 23.0 | 21.5 | 26.5 |      |      |      | 23.0 |
| n5      | Ant 4 | 20.5 | 22.0 | 23.0 | 20.5 |      |      | 23.0 |      | 23.0 |
| n7      | Ant 1 | 30.2 | 20.0 | 23.0 | 20.0 |      | 21.5 |      |      | 23.0 |
| n12     | Ant 0 | 31.0 | 26.2 | 23.0 | 26.2 | 23.0 |      |      |      | 23.0 |
| n12     | Ant 4 | 22.0 | 22.0 | 23.0 | 20.5 |      |      | 23.0 |      | 23.0 |
| n14     | Ant 0 | 30.2 | 24.3 | 23.0 | 24.3 | 23.0 |      |      |      | 23.0 |
| n14     | Ant 4 | 21.0 | 22.0 | 23.0 | 20.5 |      |      | 23.0 |      | 23.0 |
| n25     | Ant 0 | 33.7 | 17.5 | 23.0 | 16.5 | 21.0 |      |      |      | 23.0 |
| n25     | Ant 4 | 14.0 | 18.0 | 23.0 | 15.0 |      |      | 20.5 |      | 23.0 |
| n26     | Ant 0 | 28.7 | 21.5 | 23.0 | 21.5 | 26.5 |      |      |      | 23.0 |
| n26     | Ant 4 | 20.5 | 22.0 | 23.0 | 20.5 |      |      | 23.0 |      | 23.0 |
| n30     | Ant 1 | 33.0 | 19.0 | 23.0 | 19.0 |      | 21.0 |      |      | 23.0 |
| n41 PC3 | Ant 1 | 26.0 | 18.5 | 26.0 | 18.5 |      | 21.0 |      |      | 23.0 |
| n41 PC2 | Ant 1 |      |      |      |      |      |      |      |      | 26.0 |
| n41 PC3 | Ant 4 | 16.0 | 15.5 | 26.0 | 12.5 |      |      | 21.0 |      | 23.0 |
| n41 PC2 | Ant 4 |      |      |      |      |      |      |      |      | 26.0 |
| n41 PC3 | Ant 2 | 28.4 | 16.0 | 20.0 | 14.5 |      |      |      |      | 23.0 |
| n41 PC2 | Ant 2 |      |      |      |      |      |      |      |      | 26.0 |
| n41 PC3 | Ant 7 | 17.5 | 14.5 | 20.0 | 13.0 |      |      |      |      | 23.0 |
| n41 PC2 | Ant 7 |      |      |      |      |      |      |      |      | 26.0 |
| n48     | Ant 5 | 14.5 | 14.5 | 23.0 | 13.0 |      |      |      | 19.0 | 23.0 |
| n66     | Ant 0 | 29.7 | 18.0 | 23.0 | 17.5 | 21.5 |      |      |      | 23.0 |
| n66     | Ant 4 | 15.5 | 19.0 | 23.0 | 15.5 |      |      | 21.5 |      | 23.0 |
| n70     | Ant 0 | 31.1 | 18.0 | 23.0 | 17.5 | 21.5 |      |      |      | 23.0 |
| n70     | Ant 4 | 15.5 | 19.0 | 23.0 | 15.5 |      |      | 21.5 |      | 23.0 |
| n71     | Ant 0 | 31.3 | 27.5 | 23.0 | 27.5 | 23.0 |      |      |      | 23.0 |
| n71     | Ant 4 | 26.2 | 25.5 | 23.0 | 23.9 |      |      | 23.0 |      | 23.0 |
| n77 PC3 | Ant 5 | 15.0 | 14.5 | 26.0 | 13.0 |      |      |      | 19.5 | 23.0 |
| n77 PC2 | Ant 5 |      |      |      |      |      |      |      |      | 26.0 |
| n77 PC3 | Ant 1 | 36.7 | 23.5 | 25.5 | 23.5 |      | 25.5 |      |      | 23.0 |
| n77 PC2 | Ant 1 |      |      |      |      |      |      |      |      | 25.5 |
| n77 PC3 | Ant 2 | 32.1 | 16.5 | 19.0 | 15.0 |      |      |      |      | 23.0 |
| n77 PC2 | Ant 2 |      |      |      |      |      |      |      |      | 26.0 |
| n77 PC3 | Ant 8 | 27.3 | 17.5 | 20.5 | 15.0 |      |      |      |      | 23.0 |
| n77 PC2 | Ant 8 |      |      |      |      |      |      |      |      | 26.0 |
| n78 PC3 | Ant 5 | 15.0 | 14.0 | 26.0 | 12.5 |      |      |      | 19.5 | 23.0 |
| n78 PC2 | Ant 5 |      |      |      |      |      |      |      |      | 26.0 |
| n78 PC3 | Ant 1 | 36.7 | 23.5 | 25.5 | 23.5 |      | 25.5 |      |      | 23.0 |
| n78 PC2 | Ant 1 |      |      |      |      |      |      |      |      | 25.5 |
| n78 PC3 | Ant 2 | 32.1 | 16.5 | 19.0 | 15.0 |      |      |      |      | 23.0 |
| n78 PC2 | Ant 2 |      |      |      |      |      |      |      |      | 26.0 |
| n78 PC3 | Ant 8 | 27.3 | 17.5 | 20.5 | 15.0 |      |      |      |      | 23.0 |
| n78 PC2 | Ant 8 |      |      |      |      |      |      |      |      | 26.0 |

Note:

- 1) \*Pmax is used for RF tune up procedure. The maximum allowed output power is equal to Pmax + 1.0 dB device uncertainty.
- 2) All Plimit power levels entered in the Table correspond to average power levels after accounting for duty cycle in the case TDD modulation schemes (for e.g., GSM & LTE TDD & NR TDD).
- 3) The max allowed output power is the Plimit + 1.0 dB device uncertainty, and if Plimit is higher than Pmax, the device output power will be Pmax instead.

## 6. RF Exposure Limits

### 6.1 Uncontrolled Environment

Uncontrolled Environments are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure. The general population/uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity.

### 6.2 Controlled Environment

Controlled Environments are defined as locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, (i.e. as a result of employment or occupation). In general, occupational/controlled exposure limits are applicable to situations in which persons are exposed as a consequence of their employment, who have been made fully aware of the potential for exposure and can exercise control over their exposure. The exposure category is also applicable when the exposure is of a transient nature due to incidental passage through a location where the exposure levels may be higher than the general population/uncontrolled limits, but the exposed person is fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

**Limits for Occupational/Controlled Exposure (W/kg)**

| Whole-Body | Partial-Body | Hands, Wrists, Feet and Ankles |
|------------|--------------|--------------------------------|
| 0.4        | 8.0          | 20.0                           |

**Limits for General Population/Uncontrolled Exposure (W/kg)**

| Whole-Body | Partial-Body | Hands, Wrists, Feet and Ankles |
|------------|--------------|--------------------------------|
| 0.08       | 1.6          | 4.0                            |

Whole-Body SAR is averaged over the entire body, partial-body SAR is averaged over any 1gram of tissue defined as a tissue volume in the shape of a cube. SAR for hands, wrists, feet and ankles is averaged over any 10 grams of tissue defined as a tissue volume in the shape of a cube.

## **7. Specific Absorption Rate (SAR)**

### **7.1 Introduction**

SAR is related to the rate at which energy is absorbed per unit mass in an object exposed to a radio field. The SAR distribution in a biological body is complicated and is usually carried out by experimental techniques or numerical modeling. The standard recommends limits for two tiers of groups, occupational/controlled and general population/uncontrolled, based on a person's awareness and ability to exercise control over his or her exposure. In general, occupational/controlled exposure limits are higher than the limits for general population/uncontrolled.

### **7.2 SAR Definition**

The SAR definition is the time derivative (rate) of the incremental energy (dW) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dv) of a given density (ρ). The equation description is as below:

$$SAR = \frac{d}{dt} \left( \frac{dW}{dm} \right) = \frac{d}{dt} \left( \frac{dW}{\rho dv} \right)$$

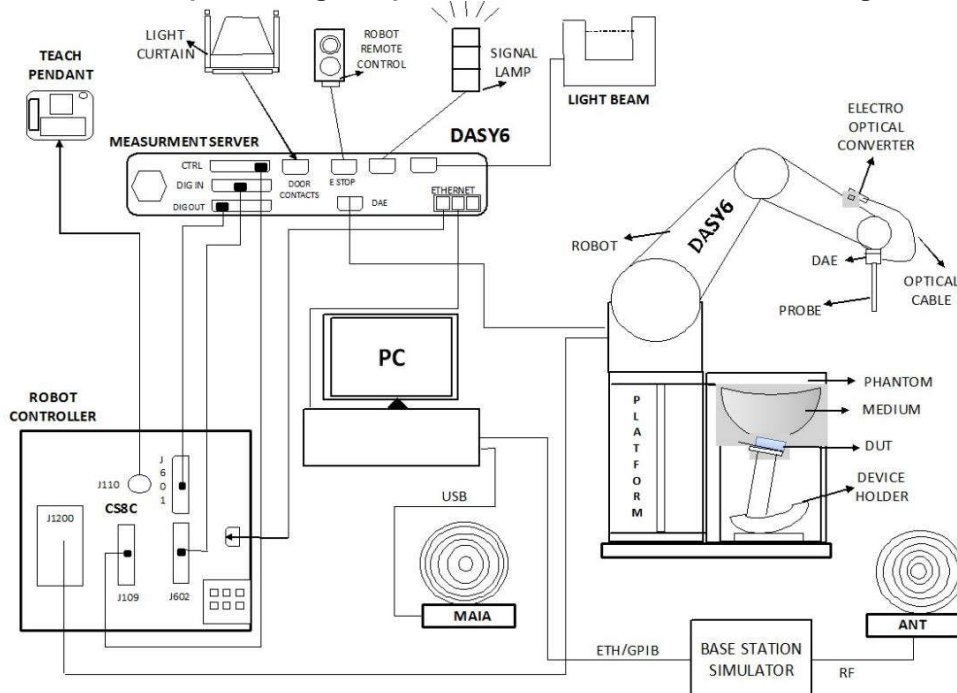
SAR is expressed in units of Watts per kilogram (W/kg)

$$SAR = \frac{\sigma |E|^2}{\rho}$$

Where: σ is the conductivity of the tissue, ρ is the mass density of the tissue and E is the RMS electrical field strength.

## 8. System Description and Setup

The DASY system used for performing compliance tests consists of the following items:



- A standard high precision 6-axis robot with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic Field probe optimized and calibrated for the targeted measurement.
- A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running Win7 or Win10 and the DASY5 or DASY6 software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

## 8.1 E-Field Probe

The SAR measurement is conducted with the dosimetric probe (manufactured by SPEAG). The probe is specially designed and calibrated for use in liquid with high permittivity. The dosimetric probe has special calibration in liquid at different frequency. This probe has a built in optical surface detection system to prevent from collision with phantom.

### <EX3DV4 Probe>

|                      |                                                                                                                                                           |                                                                                    |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| <b>Construction</b>  | Symmetric design with triangular core<br>Built-in shielding against static charges<br>PEEK enclosure material (resistant to organic solvents, e.g., DGBE) |  |
| <b>Frequency</b>     | 4 MHz – 10 GHz<br>Linearity: $\pm 0.2$ dB (30 MHz – 10 GHz)                                                                                               |                                                                                    |
| <b>Directivity</b>   | $\pm 0.3$ dB in TSL (rotation around probe axis)<br>$\pm 0.5$ dB in TSL (rotation normal to probe axis)                                                   |                                                                                    |
| <b>Dynamic Range</b> | 10 $\mu$ W/g – >100 mW/g<br>Linearity: $\pm 0.2$ dB (noise: typically <1 $\mu$ W/g)                                                                       |                                                                                    |
| <b>Dimensions</b>    | Overall length: 337 mm (tip: 20 mm)<br>Tip diameter: 2.5 mm (body: 12 mm)<br>Typical distance from probe tip to dipole centers: 1 mm                      |                                                                                    |

### <ES3DV3 Probe>

|                      |                                                                                                                                                                                  |                                                                                     |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| <b>Construction</b>  | Symmetric design with triangular core<br>Interleaved sensors<br>Built-in shielding against static charges<br>PEEK enclosure material (resistant to organic solvents, e.g., DGBE) |  |
| <b>Frequency</b>     | 10 MHz – 4 GHz;<br>Linearity: $\pm 0.2$ dB (30 MHz – 4 GHz)                                                                                                                      |                                                                                     |
| <b>Directivity</b>   | $\pm 0.2$ dB in TSL (rotation around probe axis)<br>$\pm 0.3$ dB in TSL (rotation normal to probe axis)                                                                          |                                                                                     |
| <b>Dynamic Range</b> | 5 $\mu$ W/g – >100 mW/g;<br>Linearity: $\pm 0.2$ dB                                                                                                                              |                                                                                     |
| <b>Dimensions</b>    | Overall length: 337 mm (tip: 20 mm)<br>Tip diameter: 3.9 mm (body: 12 mm)<br>Distance from probe tip to dipole centers: 2.0 mm                                                   |                                                                                     |

## 8.2 Data Acquisition Electronics (DAE)

The data acquisition electronics (DAE) consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder and control logic unit. Transmission to the measurement server is accomplished through an optical downlink for data and status information as well as an optical uplink for commands and the clock.

The input impedance of the DAE is 200 MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.



**Photo of DAE**



### 8.3 Phantom

#### <SAM Twin Phantom>

|                          |                                                         |                                                                                    |
|--------------------------|---------------------------------------------------------|------------------------------------------------------------------------------------|
| <b>Shell Thickness</b>   | 2 ± 0.2 mm;<br>Center ear point: 6 ± 0.2 mm             |  |
| <b>Filling Volume</b>    | Approx. 25 liters                                       |                                                                                    |
| <b>Dimensions</b>        | Length: 1000 mm; Width: 500 mm; Height: adjustable feet |                                                                                    |
| <b>Measurement Areas</b> | Left Hand, Right Hand, Flat Phantom                     |                                                                                    |

The bottom plate contains three pair of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections. A white cover is provided to tap the phantom during off-periods to prevent water evaporation and changes in the liquid parameters. On the phantom top, three reference markers are provided to identify the phantom position with respect to the robot.

#### <ELI Phantom>

|                        |                                                  |                                                                                     |
|------------------------|--------------------------------------------------|-------------------------------------------------------------------------------------|
| <b>Shell Thickness</b> | 2 ± 0.2 mm (sagging: <1%)                        |  |
| <b>Filling Volume</b>  | Approx. 30 liters                                |                                                                                     |
| <b>Dimensions</b>      | Major ellipse axis: 600 mm<br>Minor axis: 400 mm |                                                                                     |

The ELI phantom is intended for compliance testing of handheld and body-mounted wireless devices or for evaluating transmitters operating at low frequencies. ELI is fully compatible with standard and all known tissue simulating liquids.

## 8.4 Device Holder

### <Mounting Device for Hand-Held Transmitter>

In combination with the Twin SAM V5.0/V5.0c or ELI phantoms, the Mounting Device for Hand-Held Transmitters enables rotation of the mounted transmitter device to specified spherical coordinates. At the heads, the rotation axis is at the ear opening. Transmitter devices can be easily and accurately positioned according to IEC 62209-1, IEEE 1528, FCC, or other specifications. The device holder can be locked for positioning at different phantom sections (left head, right head, flat). And upgrade kit to Mounting Device to enable easy mounting of wider devices like big smart-phones, e-books, small tablets, etc. It holds devices with width up to 140 mm.



Mounting Device for Hand-Held Transmitters



Mounting Device Adaptor for Wide-Phones

### <Mounting Device for Laptops and other Body-Worn Transmitters>

The extension is lightweight and made of POM, acrylic glass and foam. It fits easily on the upper part of the mounting device in place of the phone positioned. The extension is fully compatible with the SAM Twin and ELI phantoms.



Mounting Device for Laptops

## 9. Measurement Procedures

The measurement procedures are as follows:

### <Conducted power measurement>

- (a) For WWAN power measurement, use base station simulator to configure EUT WWAN transmission in conducted connection with RF cable, at maximum power in each supported wireless interface and frequency band.
- (b) Read the WWAN RF power level from the base station simulator.
- (c) For WLAN/BT power measurement, use engineering software to configure EUT WLAN/BT continuously transmission, at maximum RF power in each supported wireless interface and frequency band
- (d) Connect EUT RF port through RF cable to the power meter, and measure WLAN/BT output power

### <SAR measurement>

- (a) Use base station simulator to configure EUT WWAN transmission in radiated connection, and engineering software to configure EUT WLAN/BT continuously transmission, at maximum RF power, in the highest power channel.
- (b) Place the EUT in the positions as Appendix D demonstrates.
- (c) Set scan area, grid size and other setting on the DASY software.
- (d) Measure SAR results for the highest power channel on each testing position.
- (e) Find out the largest SAR result on these testing positions of each band
- (f) Measure SAR results for other channels in worst SAR testing position if the reported SAR of highest power channel is larger than 0.8 W/kg

According to the test standard, the recommended procedure for assessing the peak spatial-average SAR value consists of the following steps:

- (a) Power reference measurement
- (b) Area scan
- (c) Zoom scan
- (d) Power drift measurement

### 9.1 Spatial Peak SAR Evaluation

The procedure for spatial peak SAR evaluation has been implemented according to the test standard. It can be conducted for 1g and 10g, as well as for user-specific masses. The DASY software includes all numerical procedures necessary to evaluate the spatial peak SAR value.

The base for the evaluation is a "cube" measurement. The measured volume must include the 1g and 10g cubes with the highest averaged SAR values. For that purpose, the center of the measured volume is aligned to the interpolated peak SAR value of a previously performed area scan.

The entire evaluation of the spatial peak values is performed within the post-processing engine (SEMCAD). The system always gives the maximum values for the 1g and 10g cubes. The algorithm to find the cube with highest averaged SAR is divided into the following stages:

- (a) Extraction of the measured data (grid and values) from the Zoom Scan
- (b) Calculation of the SAR value at every measurement point based on all stored data (A/D values and measurement parameters)
- (c) Generation of a high-resolution mesh within the measured volume
- (d) Interpolation of all measured values from the measurement grid to the high-resolution grid
- (e) Extrapolation of the entire 3-D field distribution to the phantom surface over the distance from sensor to surface
- (f) Calculation of the averaged SAR within masses of 1g and 10g

## 9.2 Power Reference Measurement

The Power Reference Measurement and Power Drift Measurements are for monitoring the power drift of the device under test in the batch process. The minimum distance of probe sensors to surface determines the closest measurement point to phantom surface. This distance cannot be smaller than the distance of sensor calibration points to probe tip as defined in the probe properties.

## 9.3 Area Scan

The area scan is used as a fast scan in two dimensions to find the area of high field values, before doing a fine measurement around the hot spot. The sophisticated interpolation routines implemented in DASY software can find the maximum found in the scanned area, within a range of the global maximum. The range (in dB) is specified in the standards for compliance testing. For example, a 2 dB range is required in IEEE standard 1528 and IEC 62209 standards, whereby 3 dB is a requirement when compliance is assessed in accordance with the ARIB standard (Japan), if only one zoom scan follows the area scan, then only the absolute maximum will be taken as reference. For cases where multiple maximums are detected, the number of zoom scans has to be increased accordingly.

Area scan parameters extracted from FCC KDB 865664 D01v01r04 SAR measurement 100 MHz to 6 GHz.

|                                                                                                        | $\leq 3$ GHz                                                                                                                                                                                                                                                           | $> 3$ GHz                                              |
|--------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
| Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface | $5 \pm 1$ mm                                                                                                                                                                                                                                                           | $\frac{1}{2} \cdot \delta \cdot \ln(2) \pm 0.5$ mm     |
| Maximum probe angle from probe axis to phantom surface normal at the measurement location              | $30^\circ \pm 1^\circ$                                                                                                                                                                                                                                                 | $20^\circ \pm 1^\circ$                                 |
| Maximum area scan spatial resolution: $\Delta x_{\text{Area}}, \Delta y_{\text{Area}}$                 | $\leq 2$ GHz: $\leq 15$ mm<br>$2 - 3$ GHz: $\leq 12$ mm                                                                                                                                                                                                                | $3 - 4$ GHz: $\leq 12$ mm<br>$4 - 6$ GHz: $\leq 10$ mm |
|                                                                                                        | When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be $\leq$ the corresponding x or y dimension of the test device with at least one measurement point on the test device. |                                                        |

## 9.4 Zoom Scan

Zoom scans are used to assess the peak spatial SAR values within a cubic averaging volume containing 1 gram and 10 gram of simulated tissue. The zoom scan measures points (refer to table below) within a cube whose base faces are centered on the maxima found in a preceding area scan job within the same procedure. When the measurement is done, the zoom scan evaluates the averaged SAR for 1 gram and 10 gram and displays these values next to the job's label.

Zoom scan parameters extracted from FCC KDB 865664 D01v01r04 SAR measurement 100 MHz to 6 GHz.

|                                                                                                                                                                                                                                                                                                                                           |                                           |                                                                                             | $\leq 3\text{ GHz}$                                                             | $> 3\text{ GHz}$                                                                                                        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|---------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Maximum zoom scan spatial resolution: $\Delta x_{\text{Zoom}}, \Delta y_{\text{Zoom}}$                                                                                                                                                                                                                                                    |                                           |                                                                                             | $\leq 2\text{ GHz}: \leq 8\text{ mm}$<br>$2 - 3\text{ GHz}: \leq 5\text{ mm}^*$ | $3 - 4\text{ GHz}: \leq 5\text{ mm}^*$<br>$4 - 6\text{ GHz}: \leq 4\text{ mm}^*$                                        |
| Maximum zoom scan spatial resolution, normal to phantom surface                                                                                                                                                                                                                                                                           | uniform grid: $\Delta z_{\text{Zoom}}(n)$ |                                                                                             | $\leq 5\text{ mm}$                                                              | $3 - 4\text{ GHz}: \leq 4\text{ mm}$<br>$4 - 5\text{ GHz}: \leq 3\text{ mm}$<br>$5 - 6\text{ GHz}: \leq 2\text{ mm}$    |
|                                                                                                                                                                                                                                                                                                                                           | graded grid                               | $\Delta z_{\text{Zoom}}(1)$ : between 1 <sup>st</sup> two points closest to phantom surface | $\leq 4\text{ mm}$                                                              | $3 - 4\text{ GHz}: \leq 3\text{ mm}$<br>$4 - 5\text{ GHz}: \leq 2.5\text{ mm}$<br>$5 - 6\text{ GHz}: \leq 2\text{ mm}$  |
|                                                                                                                                                                                                                                                                                                                                           |                                           | $\Delta z_{\text{Zoom}}(n>1)$ : between subsequent points                                   | $\leq 1.5 \cdot \Delta z_{\text{Zoom}}(n-1)$                                    |                                                                                                                         |
| Minimum zoom scan volume                                                                                                                                                                                                                                                                                                                  | x, y, z                                   |                                                                                             | $\geq 30\text{ mm}$                                                             | $3 - 4\text{ GHz}: \geq 28\text{ mm}$<br>$4 - 5\text{ GHz}: \geq 25\text{ mm}$<br>$5 - 6\text{ GHz}: \geq 22\text{ mm}$ |
| Note: $\delta$ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.                                                                                                                                                                                         |                                           |                                                                                             |                                                                                 |                                                                                                                         |
| * When zoom scan is required and the <u>reported</u> SAR from the <u>area scan based 1-g SAR estimation</u> procedures of KDB 447498 is $\leq 1.4\text{ W/kg}$ , $\leq 8\text{ mm}$ , $\leq 7\text{ mm}$ and $\leq 5\text{ mm}$ zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz. |                                           |                                                                                             |                                                                                 |                                                                                                                         |

## 9.5 Volume Scan Procedures

The volume scan is used to assess overlapping SAR distributions for antennas transmitting in different frequency bands. It is equivalent to an oversized zoom scan used in standalone measurements. The measurement volume will be used to enclose all the simultaneous transmitting antennas. For antennas transmitting simultaneously in different frequency bands, the volume scan is measured separately in each frequency band. In order to sum correctly to compute the 1g aggregate SAR, the EUT remain in the same test position for all measurements and all volume scan use the same spatial resolution and grid spacing. When all volume scan were completed, the software, SEMCAD postprocessor can combine and subsequently superpose these measurement data to calculating the multiband SAR.

## 9.6 Power Drift Monitoring

All SAR testing is under the EUT install full charged battery and transmit maximum output power. In DASY measurement software, the power reference measurement and power drift measurement procedures are used for monitoring the power drift of EUT during SAR test. Both these procedures measure the field at a specified reference position before and after the SAR testing. The software will calculate the field difference in dB. If the power drifts more than 5%, the SAR will be retested.

## 10. Test Equipment List

| Manufacturer  | Name of Equipment             | Type/Model    | Serial Number | Calibration   |               |
|---------------|-------------------------------|---------------|---------------|---------------|---------------|
|               |                               |               |               | Last Cal.     | Due Date      |
| SPEAG         | 750MHz System Validation Kit  | D750V3        | 1099          | Dec. 13, 2024 | Dec. 12, 2025 |
| SPEAG         | 835MHz System Validation Kit  | D835V2        | 4d162         | Dec. 13, 2024 | Dec. 12, 2025 |
| SPEAG         | 1750MHz System Validation Kit | D1750V2       | 1137          | Oct. 15, 2024 | Oct. 14, 2025 |
| SPEAG         | 1900MHz System Validation Kit | D1900V2       | 5d182         | Dec. 16, 2024 | Dec. 15, 2025 |
| SPEAG         | 2300MHz System Validation Kit | D2300V2       | 1056          | Oct. 16, 2024 | Oct. 15, 2025 |
| SPEAG         | 2450MHz System Validation Kit | D2450V2       | 924           | Nov. 03, 2023 | Nov. 01, 2025 |
| SPEAG         | 2600MHz System Validation Kit | D2600V2       | 1070          | Dec. 13, 2024 | Dec. 12, 2025 |
| SPEAG         | 3500MHz System Validation Kit | D3500V2       | 1037          | Nov. 20, 2023 | Nov. 18, 2025 |
| SPEAG         | 3700MHz System Validation Kit | D3700V2       | 1008          | Nov. 20, 2023 | Nov. 18, 2025 |
| SPEAG         | 3900MHz System Validation Kit | D3900V2       | 1022          | Aug. 18, 2022 | Aug. 17, 2025 |
| SPEAG         | 5000MHz System Validation Kit | D5GHzV2       | 1341          | Dec. 12, 2024 | Dec. 11, 2025 |
| SPEAG         | 13MHz System Validation Kit   | CLA13         | 1023          | Jan. 20, 2025 | Jan. 19, 2026 |
| SPEAG         | Data Acquisition Electronics  | DAE4          | 1664          | Jul. 10, 2024 | Jul. 09, 2025 |
| SPEAG         | Data Acquisition Electronics  | DAE4          | 1437          | Apr. 16, 2025 | Apr. 15, 2026 |
| SPEAG         | Dosimetric E-Field Probe      | ES3DV3        | 3282          | Jan. 23, 2025 | Jan. 22, 2026 |
| SPEAG         | Dosimetric E-Field Probe      | EX3DV4        | 3819          | Aug. 22, 2024 | Aug. 21, 2025 |
| SPEAG         | SAM Twin Phantom              | QD 000 P40 CD | 1670          | NCR           | NCR           |
| SPEAG         | SAM Twin Phantom              | QD 000 P40 CD | 1795          | NCR           | NCR           |
| SPEAG         | ELI Phantom                   | QD OVA 004 AA | 1225          | NCR           | NCR           |
| SPEAG         | Phone Positioner              | N/A           | N/A           | NCR           | NCR           |
| Anritsu       | Radio communication analyzer  | MT8820C       | 6201341952    | Dec. 26, 2024 | Dec. 25, 2025 |
| Anritsu       | Radio communication analyzer  | MT8820C       | 6201563813    | Dec. 26, 2024 | Dec. 25, 2025 |
| Anritsu       | Radio communication analyzer  | MT8821C       | 6272416837    | Apr. 01, 2025 | Mar. 31, 2026 |
| Anritsu       | Radio communication analyzer  | MT8821C       | 6272416846    | Apr. 01, 2025 | Mar. 31, 2026 |
| Anritsu       | Radio communication analyzer  | MT8821C       | 6272416863    | Apr. 01, 2025 | Mar. 31, 2026 |
| Keysight      | Network Analyzer              | E5071C        | MY46523671    | Oct. 15, 2024 | Oct. 14, 2025 |
| Speag         | Dielectric Assessment KIT     | DAK-3.5       | 1144          | Aug. 20, 2024 | Aug. 19, 2025 |
| Speag         | Dielectric Assessment KIT     | DAK-12        | 1170          | Nov. 19, 2024 | Nov. 18, 2025 |
| Agilent       | Signal Generator              | N5181A        | MY50145381    | Dec. 26, 2024 | Dec. 25, 2025 |
| Anritsu       | Power Sensor                  | MA2411B       | 1306099       | Oct. 15, 2024 | Oct. 14, 2025 |
| Anritsu       | Power Meter                   | ML2495A       | 1349001       | Oct. 15, 2024 | Oct. 14, 2025 |
| Anritsu       | Power Sensor                  | MA2411B       | 1218010       | Oct. 14, 2024 | Oct. 13, 2025 |
| Anritsu       | Power Meter                   | ML2495A       | 1339473       | Dec. 26, 2024 | Dec. 25, 2025 |
| R&S           | Signal Generator              | SMB100A       | 175779        | Dec. 26, 2024 | Dec. 25, 2025 |
| R&S           | CBT BLUETOOTH TESTER          | CBT           | 100963        | Dec. 26, 2024 | Dec. 25, 2025 |
| R&S           | Spectrum Analyzer             | FSP7          | 100818        | Jul. 04, 2024 | Jul. 03, 2025 |
| R&S           | Spectrum Analyzer             | FSP7          | 100818        | Jul. 03, 2025 | Jul. 02, 2026 |
| TES           | Hygrometer                    | 1310          | 200505600     | Jul. 08, 2024 | Jul. 07, 2025 |
| TES           | Hygrometer                    | 1310          | 220305411     | Jan. 02, 2025 | Jan. 01, 2026 |
| Anymetre      | Thermo-Hygrometer             | JR593         | 2015030903    | Dec. 28, 2024 | Dec. 27, 2025 |
| Anymetre      | Thermo-Hygrometer             | JR593         | 2015102801    | Dec. 28, 2024 | Dec. 27, 2025 |
| SPEAG         | Device Holder                 | N/A           | N/A           | N/A           | N/A           |
| AR            | Amplifier                     | 5S1G4         | 0333096       | Note 1        |               |
| Mini-Circuits | Amplifier                     | ZVE-3W-83+    | 599201528     | Note 1        |               |
| Mini-Circuits | Amplifier                     | ZVA-183W-S+   | 726202215     | Note 1        |               |
| ARRA          | Power Divider                 | A3200-2       | N/A           | Note 1        |               |
| ET Industries | Dual Directional Coupler      | C-058-10      | N/A           | Note 1        |               |
| Jinkexinhua   | Attenuator                    | 10db-8G       | N/A           | Note 1        |               |

**Note:**

- Prior to system verification and validation, the path loss from the signal generator to the system check source and the power meter, which includes the amplifier, cable, attenuator and directional coupler, was measured by the



- network analyzer. The reading of the power meter was offset by the path loss difference between the path to the power meter and the path to the system check source to monitor the actual power level fed to the system check
- Referring to KDB 865664 D01v01r04, the dipole calibration interval can be extended to 3 years with justification. The dipoles are also not physically damaged, or repaired during the interval.
  - The justification data of dipole can be found in appendix C. The return loss is < -20dB, within 20% of prior calibration, the impedance is within 5 ohm of prior calibration.

## 11. System Verification

### 11.1 Tissue Simulating Liquids

For the measurement of the field distribution inside the SAM phantom with DASY, the phantom must be filled with around 25 liters of homogeneous body tissue simulating liquid. For head SAR testing, the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15 cm, which is shown in Fig. 11.1. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm, which is shown in Fig. 11.2.

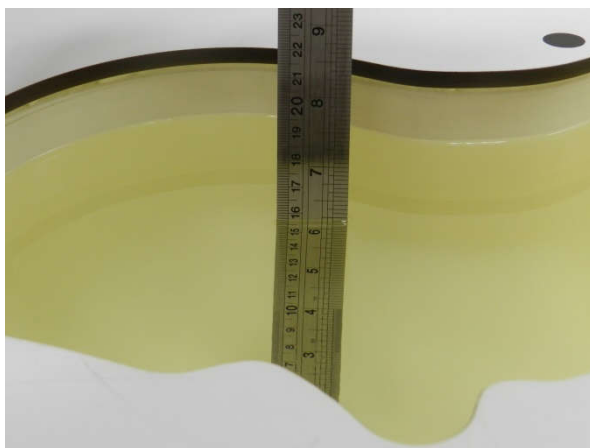


Fig 11.1 Photo of Liquid Height for Head SAR



Fig 11.2 Photo of Liquid Height for Body SAR

### 11.2 Tissue Verification

The following tissue formulations are provided for reference only as some of the parameters have not been thoroughly verified. The composition of ingredients may be modified accordingly to achieve the desired target tissue parameters required for routine SAR evaluation.

| Frequency (MHz)  | Water (%) | Sugar (%) | Cellulose (%) | Salt (%) | Preventol (%) | DGBE (%) | Conductivity (σ) | Permittivity (ε <sub>r</sub> ) |
|------------------|-----------|-----------|---------------|----------|---------------|----------|------------------|--------------------------------|
| For Head         |           |           |               |          |               |          |                  |                                |
| 750              | 41.1      | 57.0      | 0.2           | 1.4      | 0.2           | 0        | 0.89             | 41.9                           |
| 835              | 40.3      | 57.9      | 0.2           | 1.4      | 0.2           | 0        | 0.90             | 41.5                           |
| 1800, 1900, 2000 | 55.2      | 0         | 0             | 0.3      | 0             | 44.5     | 1.40             | 40.0                           |
| 2450             | 55.0      | 0         | 0             | 0        | 0             | 45.0     | 1.80             | 39.2                           |
| 2600             | 54.8      | 0         | 0             | 0.1      | 0             | 45.1     | 1.96             | 39.0                           |

#### Simulating Liquid for 5GHz, Manufactured by SPEAG

| Ingredients        | (% by weight) |
|--------------------|---------------|
| Water              | 64~78%        |
| Mineral oil        | 11~18%        |
| Emulsifiers        | 9~15%         |
| Additives and Salt | 2~3%          |



## &lt;Tissue Dielectric Parameter Check Results&gt;

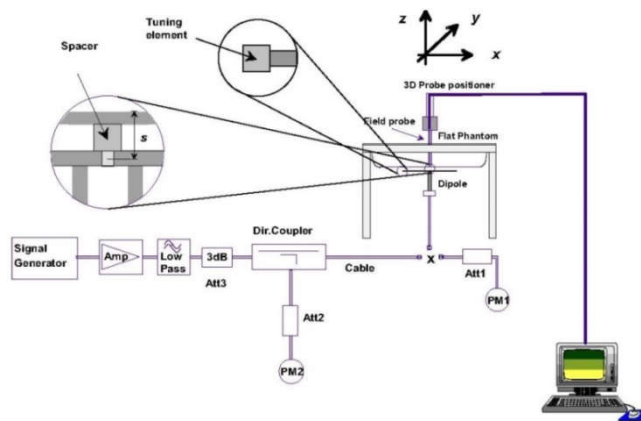
| Frequency (MHz) | Tissue Type | Liquid Temp. (°C) | Conductivity (σ) | Permittivity (ε <sub>r</sub> ) | Conductivity Target (σ) | Permittivity Target (ε <sub>r</sub> ) | Delta (σ) (%) | Delta (ε <sub>r</sub> ) (%) | Limit (%) | Date      |
|-----------------|-------------|-------------------|------------------|--------------------------------|-------------------------|---------------------------------------|---------------|-----------------------------|-----------|-----------|
| 750             | Head        | 22.2              | 0.920            | 42.811                         | 0.89                    | 41.90                                 | 3.37          | 2.17                        | ±5        | 2025/6/23 |
| 835             | Head        | 22.1              | 0.904            | 41.132                         | 0.90                    | 41.50                                 | 0.44          | -0.89                       | ±5        | 2025/6/27 |
| 1750            | Head        | 22.2              | 1.365            | 41.256                         | 1.37                    | 40.10                                 | -0.36         | 2.88                        | ±5        | 2025/6/26 |
| 1900            | Head        | 22.3              | 1.433            | 40.643                         | 1.40                    | 40.00                                 | 2.36          | 1.61                        | ±5        | 2025/6/20 |
| 2300            | Head        | 22.4              | 1.686            | 40.389                         | 1.67                    | 39.50                                 | 0.96          | 2.25                        | ±5        | 2025/6/23 |
| 2450            | Head        | 22.5              | 1.782            | 37.866                         | 1.80                    | 39.20                                 | -1.00         | -3.40                       | ±5        | 2025/6/19 |
| 2600            | Head        | 22.3              | 1.950            | 39.841                         | 1.96                    | 39.00                                 | -0.51         | 2.16                        | ±5        | 2025/6/21 |
| 3500            | Head        | 22.1              | 2.855            | 37.001                         | 2.91                    | 37.90                                 | -1.89         | -2.37                       | ±5        | 2025/6/29 |
| 3700            | Head        | 22.4              | 3.006            | 36.765                         | 3.12                    | 37.70                                 | -3.65         | -2.48                       | ±5        | 2025/6/22 |
| 3900            | Head        | 22.5              | 3.166            | 36.540                         | 3.33                    | 37.51                                 | -4.92         | -2.59                       | ±5        | 2025/6/24 |
| 5250            | Head        | 22.1              | 4.637            | 35.863                         | 4.71                    | 35.95                                 | -1.55         | -0.24                       | ±5        | 2025/6/28 |
| 5600            | Head        | 22.4              | 4.985            | 35.366                         | 5.07                    | 35.50                                 | -1.68         | -0.38                       | ±5        | 2025/6/30 |
| 5800            | Head        | 22.3              | 5.220            | 35.085                         | 5.27                    | 35.30                                 | -0.95         | -0.61                       | ±5        | 2025/6/25 |
| 750             | Head        | 22.1              | 0.922            | 42.982                         | 0.89                    | 41.90                                 | 3.60          | 2.58                        | ±5        | 2025/7/9  |
| 835             | Head        | 22.5              | 0.942            | 42.638                         | 0.90                    | 41.50                                 | 4.67          | 2.74                        | ±5        | 2025/7/13 |
| 1750            | Head        | 22.4              | 1.384            | 40.854                         | 1.37                    | 40.10                                 | 1.02          | 1.88                        | ±5        | 2025/7/3  |
| 1900            | Head        | 22.1              | 1.453            | 40.537                         | 1.40                    | 40.00                                 | 3.79          | 1.34                        | ±5        | 2025/7/12 |
| 2300            | Head        | 22.3              | 1.735            | 39.905                         | 1.67                    | 39.50                                 | 3.89          | 1.03                        | ±5        | 2025/7/8  |
| 2450            | Head        | 22.2              | 1.852            | 39.723                         | 1.80                    | 39.20                                 | 2.89          | 1.33                        | ±5        | 2025/7/4  |
| 2600            | Head        | 22.3              | 1.971            | 39.560                         | 1.96                    | 39.00                                 | 0.56          | 1.44                        | ±5        | 2025/7/7  |
| 3500            | Head        | 22.1              | 2.807            | 39.425                         | 2.91                    | 37.90                                 | -3.54         | 4.02                        | ±5        | 2025/7/10 |
| 3700            | Head        | 22.3              | 2.993            | 39.070                         | 3.12                    | 37.70                                 | -4.07         | 3.63                        | ±5        | 2025/7/6  |
| 3900            | Head        | 22.2              | 3.187            | 38.750                         | 3.33                    | 37.51                                 | -4.29         | 3.31                        | ±5        | 2025/7/11 |
| 5250            | Head        | 22.5              | 4.724            | 36.694                         | 4.71                    | 35.95                                 | 0.30          | 2.07                        | ±5        | 2025/7/5  |
| 5600            | Head        | 22.2              | 5.125            | 36.051                         | 5.07                    | 35.50                                 | 1.08          | 1.55                        | ±5        | 2025/7/2  |
| 5800            | Head        | 22.4              | 5.362            | 35.695                         | 5.27                    | 35.30                                 | 1.75          | 1.12                        | ±5        | 2025/7/9  |
| 750             | Head        | 22.3              | 0.885            | 43.900                         | 0.89                    | 41.90                                 | -0.56         | 4.77                        | ±5        | 2025/7/11 |
| 835             | Head        | 22.5              | 0.919            | 43.300                         | 0.90                    | 41.50                                 | 2.11          | 4.34                        | ±5        | 2025/7/11 |
| 2450            | Head        | 22.6              | 1.820            | 41.000                         | 1.80                    | 39.20                                 | 1.11          | 4.59                        | ±5        | 2025/7/11 |
| 2600            | Head        | 22.4              | 1.940            | 40.700                         | 1.96                    | 39.00                                 | -1.02         | 4.36                        | ±5        | 2025/7/12 |
| 3500            | Head        | 22.4              | 2.770            | 39.200                         | 2.91                    | 37.90                                 | -4.81         | 3.43                        | ±5        | 2025/7/12 |
| 3900            | Head        | 22.3              | 3.200            | 38.600                         | 3.33                    | 37.51                                 | -3.90         | 2.91                        | ±5        | 2025/7/13 |
| 5250            | Head        | 22.6              | 4.590            | 36.200                         | 4.71                    | 35.95                                 | -2.55         | 0.70                        | ±5        | 2025/7/13 |
| 5800            | Head        | 22.7              | 5.170            | 35.300                         | 5.27                    | 35.30                                 | -1.90         | 0.00                        | ±5        | 2025/7/13 |
| 13              | Head        | 22.6              | 0.770            | 56.441                         | 0.75                    | 55.00                                 | 2.67          | 2.62                        | ±5        | 2025/7/12 |



### 11.3 System Performance Check Results

Comparing to the original SAR value provided by SPEAG, the verification data should be within its specification of 10 %. Below table shows the target SAR and measured SAR after normalized to 1W input power. The table below indicates the system performance check can meet the variation criterion and the plots can be referred to Appendix A of this report.

| Date      | Frequency (MHz) | Tissue Type | Input Power (mW) | Dipole S/N | Probe S/N | DAE S/N | Measured 1g SAR (W/kg) | Targeted 1g SAR (W/kg) | Normalized 1g SAR (W/kg) | Deviation (%) | Measured 10g SAR (W/kg) | Targeted 10g SAR (W/kg) | Normalized 10g SAR (W/kg) | Deviation (%) |
|-----------|-----------------|-------------|------------------|------------|-----------|---------|------------------------|------------------------|--------------------------|---------------|-------------------------|-------------------------|---------------------------|---------------|
| 2025/6/23 | 750             | Head        | 250              | 1099       | 3282      | 1664    | 2.060                  | 8.280                  | 8.24                     | -0.48         | 1.310                   | 5.370                   | 5.24                      | -2.42         |
| 2025/6/27 | 835             | Head        | 250              | 4d162      | 3282      | 1664    | 2.190                  | 9.080                  | 8.76                     | -3.52         | 1.380                   | 5.850                   | 5.52                      | -5.64         |
| 2025/6/26 | 1750            | Head        | 250              | 1137       | 3282      | 1664    | 9.330                  | 36.800                 | 37.32                    | 1.41          | 4.930                   | 19.600                  | 19.72                     | 0.61          |
| 2025/6/20 | 1900            | Head        | 250              | 5d182      | 3282      | 1664    | 10.200                 | 39.800                 | 40.8                     | 2.51          | 5.370                   | 21.000                  | 21.48                     | 2.29          |
| 2025/6/23 | 2300            | Head        | 250              | 1056       | 3282      | 1664    | 11.800                 | 48.600                 | 47.2                     | -2.88         | 5.670                   | 23.400                  | 22.68                     | -3.08         |
| 2025/6/19 | 2450            | Head        | 250              | 924        | 3282      | 1664    | 12.400                 | 52.300                 | 49.6                     | -5.16         | 5.960                   | 24.500                  | 23.84                     | -2.69         |
| 2025/6/21 | 2600            | Head        | 250              | 1070       | 3282      | 1664    | 13.300                 | 56.500                 | 53.2                     | -5.84         | 6.170                   | 25.200                  | 24.68                     | -2.06         |
| 2025/6/29 | 3500            | Head        | 100              | 1037       | 3819      | 1664    | 6.490                  | 65.400                 | 64.9                     | -0.76         | 2.460                   | 24.700                  | 24.6                      | -0.40         |
| 2025/6/22 | 3700            | Head        | 100              | 1008       | 3819      | 1664    | 6.650                  | 67.200                 | 66.5                     | -1.04         | 2.370                   | 24.400                  | 23.7                      | -2.87         |
| 2025/6/24 | 3900            | Head        | 100              | 1022       | 3819      | 1664    | 6.440                  | 66.400                 | 64.4                     | -3.01         | 2.270                   | 23.700                  | 22.7                      | -4.22         |
| 2025/6/28 | 5250            | Head        | 100              | 1341       | 3819      | 1664    | 8.260                  | 79.100                 | 82.6                     | 4.42          | 2.350                   | 22.400                  | 23.5                      | 4.91          |
| 2025/6/30 | 5600            | Head        | 100              | 1341       | 3819      | 1664    | 8.490                  | 82.800                 | 84.9                     | 2.54          | 2.470                   | 23.800                  | 24.7                      | 3.78          |
| 2025/6/25 | 5800            | Head        | 100              | 1341       | 3819      | 1664    | 7.650                  | 79.900                 | 76.5                     | -4.26         | 2.270                   | 22.900                  | 22.7                      | -0.87         |
| 2025/7/9  | 750             | Head        | 250              | 1099       | 3282      | 1437    | 2.160                  | 8.280                  | 8.64                     | 4.35          | 1.330                   | 5.370                   | 5.32                      | -0.93         |
| 2025/7/13 | 835             | Head        | 250              | 4d162      | 3282      | 1437    | 2.260                  | 9.080                  | 9.04                     | -0.44         | 1.420                   | 5.850                   | 5.68                      | -2.91         |
| 2025/7/3  | 1750            | Head        | 250              | 1137       | 3282      | 1437    | 8.680                  | 36.800                 | 34.72                    | -5.65         | 4.700                   | 19.600                  | 18.8                      | -4.08         |
| 2025/7/12 | 1900            | Head        | 250              | 5d182      | 3282      | 1437    | 10.100                 | 39.800                 | 40.4                     | 1.51          | 5.250                   | 21.000                  | 21                        | 0.00          |
| 2025/7/8  | 2300            | Head        | 250              | 1056       | 3282      | 1437    | 12.700                 | 48.600                 | 50.8                     | 4.53          | 5.970                   | 23.400                  | 23.88                     | 2.05          |
| 2025/7/4  | 2450            | Head        | 250              | 924        | 3282      | 1437    | 12.900                 | 52.300                 | 51.6                     | -1.34         | 6.090                   | 24.500                  | 24.36                     | -0.57         |
| 2025/7/7  | 2600            | Head        | 250              | 1070       | 3282      | 1437    | 13.800                 | 56.500                 | 55.2                     | -2.30         | 5.970                   | 25.200                  | 23.88                     | -5.24         |
| 2025/7/10 | 3500            | Head        | 100              | 1037       | 3819      | 1437    | 6.930                  | 65.400                 | 69.3                     | 5.96          | 2.580                   | 24.700                  | 25.8                      | 4.45          |
| 2025/7/6  | 3700            | Head        | 100              | 1008       | 3819      | 1437    | 6.740                  | 67.200                 | 67.4                     | 0.30          | 2.320                   | 24.400                  | 23.2                      | -4.92         |
| 2025/7/11 | 3900            | Head        | 100              | 1022       | 3819      | 1437    | 6.520                  | 66.400                 | 65.2                     | -1.81         | 2.350                   | 23.700                  | 23.5                      | -0.84         |
| 2025/7/5  | 5250            | Head        | 100              | 1341       | 3819      | 1437    | 7.850                  | 79.100                 | 78.5                     | -0.76         | 2.270                   | 22.400                  | 22.7                      | 1.34          |
| 2025/7/2  | 5600            | Head        | 100              | 1341       | 3819      | 1437    | 8.200                  | 82.800                 | 82                       | -0.97         | 2.440                   | 23.800                  | 24.4                      | 2.52          |
| 2025/7/9  | 5800            | Head        | 100              | 1341       | 3819      | 1437    | 8.180                  | 79.900                 | 81.8                     | 2.38          | 2.370                   | 22.900                  | 23.7                      | 3.49          |
| 2025/7/11 | 750             | Head        | 250              | 1099       | 3819      | 1437    | 2.210                  | 8.280                  | 8.84                     | 6.76          | 1.420                   | 5.370                   | 5.68                      | 5.77          |
| 2025/7/11 | 835             | Head        | 250              | 4d162      | 3819      | 1437    | 2.430                  | 9.080                  | 9.72                     | 7.05          | 1.570                   | 5.850                   | 6.28                      | 7.35          |
| 2025/7/11 | 2450            | Head        | 250              | 924        | 3819      | 1437    | 12.700                 | 52.300                 | 50.8                     | -2.87         | 6.140                   | 24.500                  | 24.56                     | 0.24          |
| 2025/7/12 | 2600            | Head        | 250              | 1070       | 3819      | 1437    | 13.800                 | 56.500                 | 55.2                     | -2.30         | 6.200                   | 25.200                  | 24.8                      | -1.59         |
| 2025/7/12 | 3500            | Head        | 100              | 1037       | 3819      | 1437    | 6.490                  | 65.400                 | 64.9                     | -0.76         | 2.520                   | 24.700                  | 25.2                      | 2.02          |
| 2025/7/13 | 3900            | Head        | 100              | 1022       | 3819      | 1437    | 6.930                  | 66.400                 | 69.3                     | 4.37          | 2.350                   | 23.700                  | 23.5                      | -0.84         |
| 2025/7/13 | 5250            | Head        | 100              | 1341       | 3819      | 1437    | 7.930                  | 79.100                 | 79.3                     | 0.25          | 2.380                   | 22.400                  | 23.8                      | 6.25          |
| 2025/7/13 | 5800            | Head        | 100              | 1341       | 3819      | 1437    | 8.080                  | 79.900                 | 80.8                     | 1.13          | 2.280                   | 22.900                  | 22.8                      | -0.44         |
| 2025/7/12 | 13              | Head        | 250              | 1023       | 3819      | 1437    | 0.144                  | 0.587                  | 0.576                    | -2.37         | 0.092                   | 0.366                   | 0.368                     | -0.54         |



**Fig 11.3.1 System Performance Check Setup**



**Fig 11.3.2 Setup Photo**



**Fig 8.3.2 Setup Photo**

## 12. RF Exposure Positions

### 12.1 Ear and handset reference point

Figure 12.1.1 shows the front, back, and side views of the SAM phantom. The center-of-mouth reference point is labeled “M,” the left ear reference point (ERP) is marked “LE,” and the right ERP is marked “RE.” Each ERP is 15 mm along the B-M (back-mouth) line behind the entrance-to-ear-canal (EEC) point, as shown in Figure 12.1.2 The Reference Plane is defined as passing through the two ear reference points and point M. The line N-F (neck-front), also called the reference pivoting line, is normal to the Reference Plane and perpendicular to both a line passing through RE and LE and the B-M line (see Figure 12.1.3). Both N-F and B-M lines should be marked on the exterior of the phantom shell to facilitate handset positioning. Posterior to the N-F line the ear shape is a flat surface with 6 mm thickness at each ERP, and forward of the N-F line the ear is truncated, as illustrated in Figure 12.1.2. The ear truncation is introduced to preclude the ear lobe from interfering with handset tilt, which could lead to unstable positioning at the cheek.

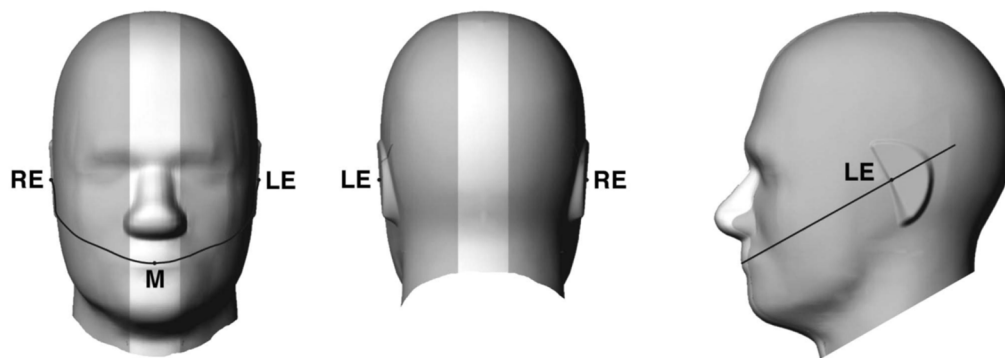


Fig 12.1.1 Front, back, and side views of SAM twin phantom

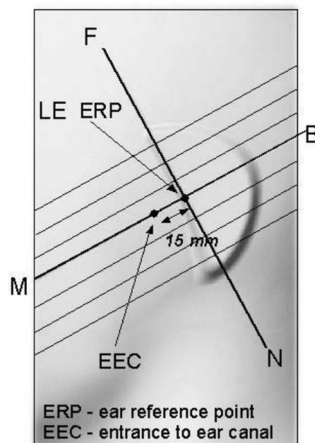


Fig 12.1.2 Close-up side view of phantom showing the ear region.

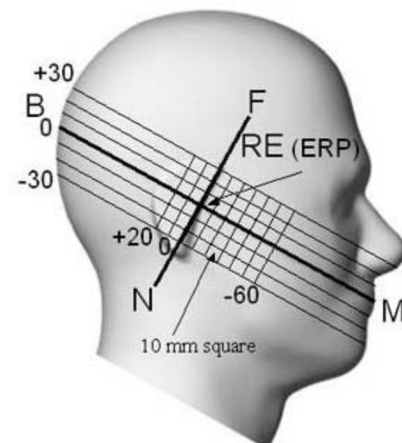


Fig 12.1.3 Side view of the phantom showing relevant markings and seven cross-sectional plane locations

## 12.2 Definition of the cheek position

1. Ready the handset for talk operation, if necessary. For example, for handsets with a cover piece (flip cover), open the cover. If the handset can transmit with the cover closed, both configurations must be tested.
2. Define two imaginary lines on the handset—the vertical centerline and the horizontal line. The vertical centerline passes through two points on the front side of the handset—the midpoint of the width  $w_t$  of the handset at the level of the acoustic output (point A in Figure 12.2.1 and Figure 12.2.2), and the midpoint of the width  $w_b$  of the bottom of the handset (point B). The horizontal line is perpendicular to the vertical centerline and passes through the center of the acoustic output (see Figure 12.2.1). The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output; however, the acoustic output may be located elsewhere on the handset. Also note that the vertical centerline is not necessarily parallel to the front face of the handset (see Figure 12.2.2), especially for clamshell handsets, handsets with flip covers, and other irregularly-shaped handsets.
3. Position the handset close to the surface of the phantom such that point A is on the (virtual) extension of the line passing through points RE and LE on the phantom (see Figure 12.2.3), such that the plane defined by the vertical centerline and the horizontal line of the handset is approximately parallel to the sagittal plane of the phantom.
4. Translate the handset towards the phantom along the line passing through RE and LE until handset point A touches the pinna at the ERP.
5. While maintaining the handset in this plane, rotate it around the LE-RE line until the vertical centerline is in the plane normal to the plane containing B-M and N-F lines, i.e., the Reference Plane.
6. Rotate the handset around the vertical centerline until the handset (horizontal line) is parallel to the N-F line.
7. While maintaining the vertical centerline in the Reference Plane, keeping point A on the line passing through RE and LE, and maintaining the handset contact with the pinna, rotate the handset about the N-F line until any point on the handset is in contact with a phantom point below the pinna on the cheek. See Figure 12.2.3. The actual rotation angles should be documented in the test report.

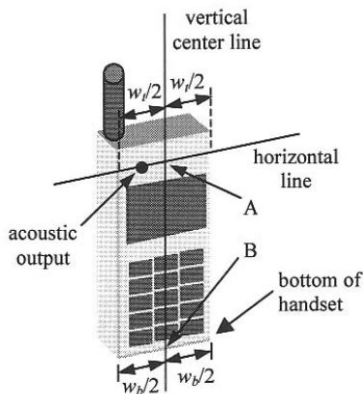


Fig 12.2.1 Handset vertical and horizontal reference lines—"fixed case"

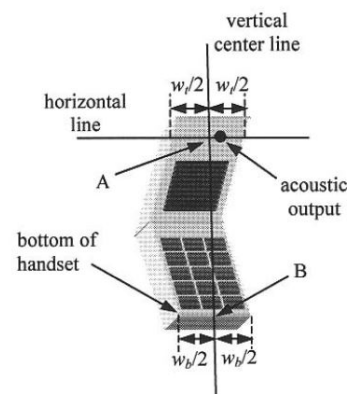


Fig 12.2.2 Handset vertical and horizontal reference lines—"clam-shell case"

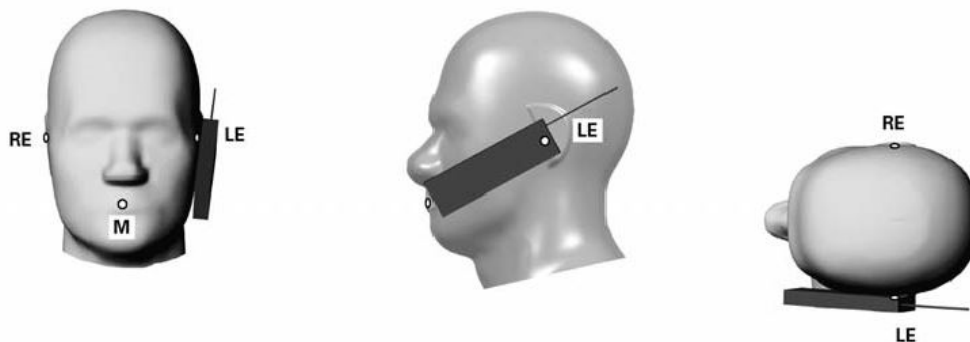
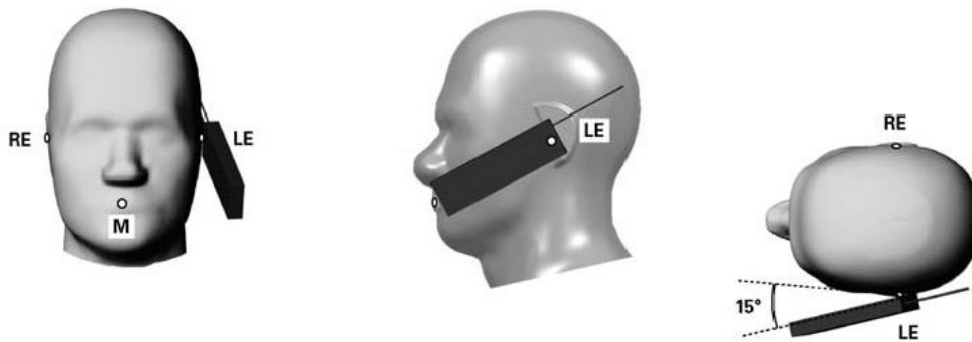


Fig 12.2.3 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

### 12.3 Definition of the tilt position

1. Ready the handset for talk operation, if necessary. For example, for handsets with a cover piece (flip cover), open the cover. If the handset can transmit with the cover closed, both configurations must be tested.
2. While maintaining the orientation of the handset, move the handset away from the pinna along the line passing through RE and LE far enough to allow a rotation of the handset away from the cheek by 15°.
3. Rotate the handset around the horizontal line by 15°.
4. While maintaining the orientation of the handset, move the handset towards the phantom on the line passing through RE and LE until any part of the handset touches the ear. The tilt position is obtained when the contact point is on the pinna. See Figure 12.3.1. If contact occurs at any location other than the pinna, e.g., the antenna at the back of the phantom head, the angle of the handset should be reduced. In this case, the tilt position is obtained if any point on the handset is in contact with the pinna and a second point



**Fig 12.3.1 Tilt position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which define the Reference Plane for handset positioning, are indicated.**

## 12.4 Body Worn Accessory

Body-worn operating configurations are tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration (see Figure 11.4). Per KDB648474 D04v01r03, body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in FCC KDB 447498 D01v06 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode, when applicable. When the reported SAR for body-worn accessory, measured without a headset connected to the handset is  $> 1.2 \text{ W/kg}$ , the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a handset attached to the handset.

Accessories for body-worn operation configurations are divided into two categories: those that do not contain metallic components and those that do contain metallic components. When multiple accessories that do not contain metallic components are supplied with the device, the device is tested with only the accessory that dictates the closest spacing to the body. Then multiple accessories that contain metallic components are test with the device with each accessory. If multiple accessories share an identical metallic component (i.e. the same metallic belt-clip used with different holsters with no other metallic components) only the accessory that dictates the closest spacing to the body is tested.

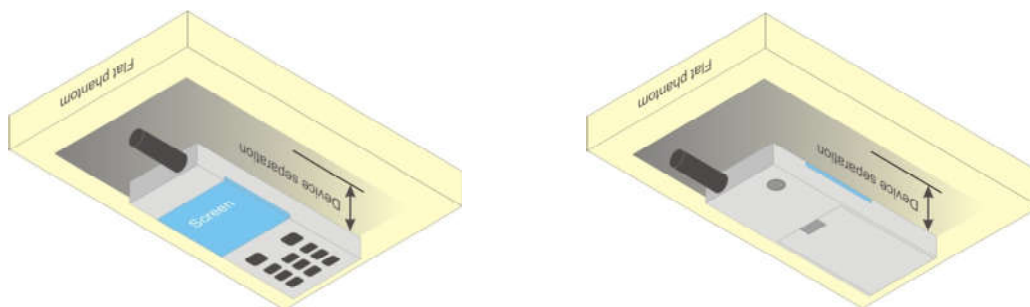


Fig 12.4 Body Worn Position

## 12.5 Product Specific 10g SAR Exposure

For smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm, that can provide similar mobile web access and multimedia support found in mini-tablets or UMPC mini-tablets and support voice calls next to the ear, According to KDB648474 D04v01r03, the following phablet procedures should be applied to evaluate SAR compliance for each applicable wireless modes and frequency band. Devices marketed as phablets, regardless of form factors and operating characteristics must be tested as a phablet to determine SAR compliance

1. The normally required head and body-worn accessory SAR test procedures for handsets, including hotspot mode, must be applied.
2. The UMPC mini-tablet procedures must also be applied to test the SAR of all surfaces and edges with an antenna located at  $\leq 25$  mm from that surface or edge, in direct contact with a flat phantom, for 10-g extremity SAR according to the body-equivalent tissue dielectric parameters in KDB 865664 to address interactive hand use exposure conditions.<sup>6</sup> The UMPC mini-tablet 1-g SAR at 5 mm is not required. When hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg.

## 12.6 Wireless Router

Some battery-operated handsets have the capability to transmit and receive user through simultaneous transmission of WIFI simultaneously with a separate licensed transmitter. The FCC has provided guidance in FCC KDB Publication 941225 D06 v02r01 where SAR test considerations for handsets ( $L \times W \geq 9$  cm x 5 cm) are based on a composite test separation distance of 10mm from the front, back and edges of the device containing transmitting antennas within 2.5cm of their edges, determined from general mixed use conditions for this type of devices. Since the hotspot SAR results may overlap with the body-worn accessory SAR requirements, the more conservative configurations can be considered, thus excluding some body-worn accessory SAR tests.

When the user enables the personal wireless router functions for the handset, actual operations include simultaneous transmission of both the WIFI transmitter and another licensed transmitter. Both transmitters often do not transmit at the same transmitting frequency and thus cannot be evaluated for SAR under actual use conditions due to the limitations of the SAR assessment probes. Therefore, SAR must be evaluated for each frequency transmission and mode separately and spatially summed with the WIFI transmitter according to FCC KDB Publication 447498 D01v06 publication procedures. The "Portable Hotspot" feature on the handset was NOT activated during SAR assessments, to ensure the SAR measurements were evaluated for a single transmission frequency RF signal at a time.



### **13. Conducted RF Output Power (Unit: dBm)**

The detailed conducted power table can refer to Appendix E.

#### **<GSM Conducted Power>**

1. Per KDB 447498 D01v06, the maximum output power channel is used for SAR testing and for further SAR test reduction.
2. Per KDB 941225 D01v03r01, for SAR test reduction for GSM / GPRS / EDGE modes is determined by the source-based time-averaged output power including tune-up tolerance. The mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested.
3. Other configurations of GSM / GPRS / EDGE are considered as secondary modes. The 3G SAR test reduction procedure is applied, when the maximum output power and tune-up tolerance specified for production units in a secondary mode is  $\leq \frac{1}{4}$  dB higher than the primary mode, SAR measurement is not required for the secondary mode.



**5G NR Output Power (Unit: dBm)**

**General Note:**

1. 5G NR n2/n5/n7/n12/n25/n30/n66/n71/n41/n48/n77/n78 is NSA mode.
2. 5G NR n2/n5/n7/n12/n14/n25/n26/n30/n66/n70/n71/n41/n48/n77/n78 is SA mode.
3. For 5G NR test procedure was following step similar FCC KDB 941225 D05:
  - a. For DFT-OFDM and CP-OFDM output power measurement reduction, according to 38.101 maximum power reduction for power class2 and 3, the CP-OFDM mode will not higher than DFT-OFDM mode, therefore, similar FCC KDB 941225 D05 procedure for other modulation output power for each RB allocation configuration is > not ½ dB higher than the same configuration in DFT-s QPSK and the reported SAR for the DFT-s QPSK configuration is ≤ 1.45 W/kg; CP-OFDM testing is not required.
  - b. For DFT-OFDM output power measurement reduction, according to 38.101 maximum power reduction for power class2 and 3, for 16QAM/64QAM/256QAM and smaller bandwidth output power will spot check largest channel bandwidth worst RB configuration to ensure the 16QAM/64QAM/256QAM and smaller bandwidth output power will not ½ dB higher than the same configuration in the largest supported bandwidth.
  - c. SAR testing start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel
  - d. 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure
  - e. QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested
  - f. PI/2 BPSK/16QAM/64QAM/256QAM output powers according to 3GPP MPR will not ½ dB higher than the same configuration in QPSK, also reported SAR for the QPSK configuration is less than 1.45 W/kg, PI/2 BPSK /16QAM/64QAM/256QAM SAR testing are not required.
  - g. Smaller bandwidth output power for each RB allocation configuration for this device will not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg, smaller bandwidth SAR testing is not required for this device
4. For 5G NR bands, using FTM to perform SAR with default 100% transmission.
5. For 5GNR, the simultaneous transmission analysis is used standalone SAR at total power level to show compliance.
6. NSA and SA mode should perform SAR separately. For the maximum power of NSA mode is the same as SA total power level, so SA SAR can represent NSA mode SAR.
7. 5GNR NSA mode, the power level is the same as 5GNR SA mode, so 5GNR NSA mode and SA mode power table only show one time.
8. 5G NR supports CP-OFDM and DFT-s-OFDM modulation, for DFT-s-OFDM power is higher than CP-OFDM, so only show DFT-s-OFDM power table and chose DFT-s-OFDM to perform SAR testing.
9. For DFT-s-OFDM and CP-OFDM output power measurement reduction, according to 38.101 maximum power reduction for the CP-OFDM mode will not higher than DFT-s-OFDM mode, therefore, CP-OFDM measurement is unnecessary.
10. This device supports HPUE for 5GNR n41/77/78 with class 2 level, HPUE power has been measured separately. For 5GNR n41/77/78 performed full SAR testing with class 2.

**<3GPP 38.101 MPR for EN-DC>**
**Table 6.2.2-1 Maximum power reduction (MPR) for power class 3**

| Modulation |           | MPR (dB)            |                      |                      |
|------------|-----------|---------------------|----------------------|----------------------|
|            |           | Edge RB allocations | Outer RB allocations | Inner RB allocations |
| DFT-s-OFDM | Pi/2 BPSK | $\leq 3.5^1$        | $\leq 1.2^1$         | $\leq 0.2^1$         |
|            |           | $\leq 0.5^2$        | $\leq 0.5^2$         | 0 <sup>2</sup>       |
|            | QPSK      | $\leq 1$            |                      | 0                    |
|            | 16 QAM    | $\leq 2$            |                      | $\leq 1$             |
|            | 64 QAM    | $\leq 2.5$          |                      |                      |
| CP-OFDM    | 256 QAM   | $\leq 4.5$          |                      |                      |
|            | QPSK      | $\leq 3$            |                      | $\leq 1.5$           |
|            | 16 QAM    | $\leq 3$            |                      | $\leq 2$             |
|            | 64 QAM    | $\leq 3.5$          |                      |                      |
|            | 256 QAM   | $\leq 6.5$          |                      |                      |

NOTE 1: Applicable for UE operating in TDD mode with Pi/2 BPSK modulation and UE indicates support for UE capability *powerBoosting-pi2BPSK* and if the IE *powerBoostPi2BPSK* is set to 1 and 40 % or less slots in radio frame are used for UL transmission for bands n40, n41, n77, n78 and n79. The reference power of 0 dB MPR is 26 dBm.

NOTE 2: Applicable for UE operating in FDD mode, or in TDD mode in bands other than n40, n41, n77, n78 and n79 with Pi/2 BPSK modulation and if the IE *powerBoostPi2BPSK* is set to 0 and if more than 40 % of slots in radio frame are used for UL transmission for bands n40, n41, n77, n78 and n79.

**Table 6.2.2-2 Maximum power reduction (MPR) for power class 2**

| Modulation |           | MPR (dB)            |                      |                      |
|------------|-----------|---------------------|----------------------|----------------------|
|            |           | Edge RB allocations | Outer RB allocations | Inner RB allocations |
| DFT-s-OFDM | Pi/2 BPSK | $\leq 3.5$          | $\leq 0.5$           | 0                    |
|            | QPSK      | $\leq 3.5$          | $\leq 1$             | 0                    |
|            | 16 QAM    | $\leq 3.5$          | $\leq 2$             | $\leq 1$             |
|            | 64 QAM    | $\leq 3.5$          | $\leq 2.5$           |                      |
|            | 256 QAM   | $\leq 4.5$          |                      |                      |
| CP-OFDM    | QPSK      | $\leq 3.5$          | $\leq 3$             | $\leq 1.5$           |
|            | 16 QAM    | $\leq 3.5$          | $\leq 3$             | $\leq 2$             |
|            | 64 QAM    | $\leq 3.5$          |                      |                      |
|            | 256 QAM   | $\leq 6.5$          |                      |                      |

**<EN-DC combination>**

| ENDC        | Main Antenna Tx |       | ASD <sub>iv</sub> Tx |          |
|-------------|-----------------|-------|----------------------|----------|
|             | LTE TX          | NR TX | LTE TX               | NR TX    |
| DC_12A_n25A | ANT4            | ANT0  | ANT0                 | ANT4     |
| DC_12A_n2A  | ANT4            | ANT0  | ANT0                 | ANT4     |
| DC_12A_n30A | ANT4            | ANT1  | ANT0                 | ANT1     |
| DC_12A_n41A | ANT4            | ANT1  | ANT0                 | ANT1     |
| DC_12A_n66A | ANT4            | ANT0  | ANT0                 | ANT4     |
| DC_12A_n77A | ANT0            | ANT5  | ANT4                 | ANT1/2/8 |
| DC_12A_n78A | ANT0            | ANT5  |                      |          |
| DC_12A_n7A  | ANT4            | ANT1  |                      |          |
| DC_13A_n2A  | ANT4            | ANT0  | ANT0                 | ANT4     |
| DC_13A_n66A | ANT4            | ANT0  | ANT0                 | ANT4     |
| DC_13A_n77A | ANT0            | ANT5  | ANT4                 | ANT1/2/8 |
| DC_13A_n78A | ANT0            | ANT5  |                      |          |
| DC_14A_n2A  | ANT4            | ANT0  | ANT0                 | ANT4     |
| DC_14A_n30A | ANT4            | ANT1  | ANT0                 | ANT1     |
| DC_14A_n66A | ANT4            | ANT0  | ANT0                 | ANT4     |
| DC_14A_n77A | ANT0            | ANT5  | ANT4                 | ANT1/2/8 |
| DC_25A_n41A | ANT4            | ANT1  | ANT0                 | ANT1     |
| DC_25A_n77A | ANT0            | ANT5  | ANT4                 | ANT1/2/8 |
| DC_25A_n78A | ANT0            | ANT5  |                      |          |
| DC_26A_n25A | ANT4            | ANT0  | ANT0                 | ANT4     |
| DC_26A_n41A | ANT4            | ANT1  | ANT0                 | ANT1     |
| DC_26A_n77A | ANT0            | ANT5  | ANT4                 | ANT1/2/8 |
| DC_2A_n12A  | ANT0            | ANT4  | ANT4                 | ANT0     |
| DC_2A_n30A  | ANT4            | ANT1  | ANT0                 | ANT1     |
| DC_2A_n41A  | ANT4            | ANT1  | ANT0                 | ANT1     |
| DC_2A_n5A   | ANT0            | ANT4  | ANT4                 | ANT0     |



|             |      |      |      |          |
|-------------|------|------|------|----------|
| DC_2A_n66A  | ANT0 | ANT4 | ANT4 | ANT0     |
| DC_2A_n71A  | ANT0 | ANT4 | ANT4 | ANT0     |
| DC_2A_n77A  | ANT0 | ANT5 | ANT4 | ANT1/2/8 |
| DC_2A_n78A  | ANT0 | ANT5 |      |          |
| DC_2A_n7A   | ANT4 | ANT1 |      |          |
| DC_30A_n2A  | ANT1 | ANT4 | ANT1 | ANT0     |
| DC_30A_n5A  | ANT1 | ANT4 | ANT1 | ANT0     |
| DC_30A_n66A | ANT1 | ANT4 | ANT1 | ANT0     |
| DC_30A_n77A | ANT4 | ANT5 | ANT4 | ANT1/2/8 |
| DC_48A_n2A  | ANT5 | ANT0 | ANT5 | ANT4     |
| DC_48A_n5A  | ANT5 | ANT0 | ANT5 | ANT4     |
| DC_48A_n66A | ANT5 | ANT0 | ANT5 | ANT4     |
| DC_48A_n71A | ANT5 | ANT0 | ANT5 | ANT4     |
| DC_4A_n2A   | ANT0 | ANT4 | ANT4 | ANT0     |
| DC_4A_n41A  | ANT4 | ANT1 | ANT0 | ANT1     |
| DC_4A_n5A   | ANT0 | ANT4 | ANT4 | ANT0     |
| DC_4A_n78A  | ANT0 | ANT5 |      |          |
| DC_4A_n7A   | ANT4 | ANT1 |      |          |
| DC_5A_n2A   | ANT4 | ANT0 | ANT0 | ANT4     |
| DC_5A_n30A  | ANT4 | ANT1 | ANT0 | ANT1     |
| DC_5A_n41A  | ANT4 | ANT1 | ANT0 | ANT1     |
| DC_5A_n48A  | ANT0 | ANT5 | ANT4 | ANT5     |
| DC_5A_n66A  | ANT4 | ANT0 | ANT0 | ANT4     |
| DC_5A_n77A  | ANT0 | ANT5 | ANT4 | ANT1/2/8 |
| DC_5A_n78A  | ANT0 | ANT5 |      |          |
| DC_5A_n7A   | ANT4 | ANT1 |      |          |
| DC_66A_n12A | ANT0 | ANT4 | ANT4 | ANT0     |
| DC_66A_n25A | ANT0 | ANT4 | ANT4 | ANT0     |
| DC_66A_n2A  | ANT0 | ANT4 | ANT4 | ANT0     |
| DC_66A_n30A | ANT4 | ANT1 | ANT0 | ANT1     |
| DC_66A_n41A | ANT4 | ANT1 | ANT0 | ANT1     |
| DC_66A_n5A  | ANT0 | ANT4 | ANT4 | ANT0     |
| DC_66A_n71A | ANT4 | ANT0 | ANT0 | ANT4     |
| DC_66A_n77A | ANT0 | ANT5 | ANT4 | ANT1/2/8 |
| DC_66A_n78A | ANT0 | ANT5 |      |          |
| DC_66A_n7A  | ANT4 | ANT1 |      |          |
| DC_71A_n2A  | ANT4 | ANT0 | ANT0 | ANT4     |
| DC_71A_n41A | ANT4 | ANT1 | ANT0 | ANT1     |
| DC_71A_n48A | ANT0 | ANT5 | ANT4 | ANT5     |
| DC_71A_n66A | ANT4 | ANT0 | ANT0 | ANT4     |
| DC_71A_n78A | ANT0 | ANT5 |      |          |
| DC_71A_n77A | ANT0 | ANT5 | ANT4 | ANT1/2/8 |
| DC_7A_n25A  | ANT1 | ANT4 |      |          |
| DC_7A_n2A   | ANT1 | ANT4 |      |          |
| DC_7A_n5A   | ANT1 | ANT4 |      |          |
| DC_7A_n66A  | ANT1 | ANT4 |      |          |
| DC_7A_n71A  | ANT1 | ANT4 |      |          |
| DC_7A_n77A  | ANT4 | ANT5 |      |          |
| DC_7A_n78A  | ANT4 | ANT5 |      |          |



## 14. SAR Test Results

### 14.1 Head SAR

| Plot No. | Band        | BW (MHz) | Modulation | RB Size | RB offset | Mode              | Test Position | Gap (mm) | Antenna | Power State | Ch.    | Freq. (MHz) | Sample | Average Power (dBm) | Tune-Up Limit (dBm) | Tune-up Scaling Factor | Duty Cycle % | Duty Cycle Scaling Factor | Power Drift (dB) | Measured 1g SAR (W/kg) | Reported 1g SAR (W/kg) |
|----------|-------------|----------|------------|---------|-----------|-------------------|---------------|----------|---------|-------------|--------|-------------|--------|---------------------|---------------------|------------------------|--------------|---------------------------|------------------|------------------------|------------------------|
| 750MHz   |             |          |            |         |           |                   |               |          |         |             |        |             |        |                     |                     |                        |              |                           |                  |                        |                        |
|          | LTE Band 71 | 20M      | QPSK       | 1       | 0         | -                 | Right Cheek   | 0mm      | Ant 0   | ECI 2       | 133297 | 680.5       | 1      | 23.11               | 24.00               | 1.227                  | -            | -                         | 0.04             | 0.153                  | 0.188                  |
| 01       | LTE Band 71 | 20M      | QPSK       | 1       | 0         | -                 | Right Cheek   | 0mm      | Ant 4   | ECI 2       | 133297 | 680.5       | 1      | 23.16               | 24.00               | 1.213                  | -            | -                         | 0.11             | 0.317                  | 0.385                  |
|          | LTE Band 12 | 10M      | QPSK       | 1       | 0         | -                 | Right Cheek   | 0mm      | Ant 0   | ECI 2       | 23095  | 707.5       | 1      | 23.07               | 24.00               | 1.239                  | -            | -                         | 0.17             | 0.202                  | 0.250                  |
| 02       | LTE Band 12 | 10M      | QPSK       | 1       | 0         | -                 | Right Cheek   | 0mm      | Ant 4   | ECI 2       | 23095  | 707.5       | 1      | 22.19               | 23.20               | 1.262                  | -            | -                         | 0.11             | 0.489                  | 0.617                  |
|          | LTE Band 13 | 10M      | QPSK       | 1       | 0         | -                 | Right Cheek   | 0mm      | Ant 0   | ECI 2       | 23230  | 782         | 1      | 23.04               | 24.00               | 1.247                  | -            | -                         | 0.02             | 0.299                  | 0.373                  |
| 03       | LTE Band 13 | 10M      | QPSK       | 1       | 0         | -                 | Right Cheek   | 0mm      | Ant 4   | ECI 2       | 23230  | 782         | 1      | 21.14               | 22.20               | 1.276                  | -            | -                         | 0.11             | 0.438                  | 0.559                  |
|          | LTE Band 14 | 10M      | QPSK       | 1       | 0         | -                 | Right Cheek   | 0mm      | Ant 0   | ECI 2       | 23330  | 793         | 1      | 22.99               | 24.00               | 1.262                  | -            | -                         | 0.16             | 0.211                  | 0.266                  |
| 04       | LTE Band 14 | 10M      | QPSK       | 1       | 0         | -                 | Right Cheek   | 0mm      | Ant 4   | ECI 2       | 23330  | 793         | 1      | 20.58               | 21.70               | 1.294                  | -            | -                         | 0.04             | 0.465                  | 0.602                  |
|          | FR1 n71     | 35M      | QPSK       | 90      | 45        | DFT-15            | Right Cheek   | 0mm      | Ant 0   | ECI 2       | 136100 | 680.5       | 1      | 22.87               | 24.00               | 1.297                  | -            | -                         | -0.19            | 0.121                  | 0.157                  |
| 05       | FR1 n71     | 35M      | QPSK       | 1       | 1         | DFT-15            | Right Cheek   | 0mm      | Ant 4   | ECI 2       | 136100 | 680.5       | 1      | 22.99               | 24.00               | 1.262                  | -            | -                         | 0.09             | 0.325                  | 0.410                  |
|          | FR1 n12     | 15M      | QPSK       | 36      | 22        | DFT-15            | Right Cheek   | 0mm      | Ant 0   | ECI 2       | 141500 | 707.5       | 1      | 22.87               | 24.00               | 1.297                  | -            | -                         | -0.14            | 0.135                  | 0.175                  |
| 06       | FR1 n12     | 15M      | QPSK       | 36      | 22        | DFT-15            | Right Cheek   | 0mm      | Ant 4   | ECI 2       | 141500 | 707.5       | 1      | 21.94               | 23.00               | 1.276                  | -            | -                         | 0.16             | 0.521                  | 0.665                  |
|          | FR1 n14     | 10M      | QPSK       | 1       | 1         | DFT-15            | Right Cheek   | 0mm      | Ant 0   | ECI 2       | 158600 | 793         | 1      | 23.13               | 24.00               | 1.222                  | -            | -                         | 0.01             | 0.177                  | 0.216                  |
| 07       | FR1 n14     | 10M      | QPSK       | 1       | 1         | DFT-15            | Right Cheek   | 0mm      | Ant 4   | ECI 2       | 158600 | 793         | 1      | 20.96               | 22.00               | 1.271                  | -            | -                         | 0.13             | 0.473                  | 0.601                  |
| 835MHz   |             |          |            |         |           |                   |               |          |         |             |        |             |        |                     |                     |                        |              |                           |                  |                        |                        |
| 08       | GSM850      | -        | -          | -       | -         | GPRS (4 Tx slots) | Right Cheek   | 0mm      | Ant 0   | ECI 2       | 189    | 836.4       | 1      | 26.88               | 27.50               | 1.153                  | -            | -                         | 0.07             | 0.445                  | 0.513                  |
|          | GSM850      | -        | -          | -       | -         | GPRS (4 Tx slots) | Right Cheek   | 0mm      | Ant 0   | ECI 2       | 189    | 836.4       | 2      | 26.88               | 27.50               | 1.153                  | -            | -                         | -0.01            | 0.427                  | 0.493                  |
|          | GSM850      | -        | -          | -       | -         | GPRS (4 Tx slots) | Right Cheek   | 0mm      | Ant 0   | ECI 2       | 189    | 836.4       | 3      | 26.88               | 27.50               | 1.153                  | -            | -                         | 0.17             | 0.386                  | 0.445                  |
|          | GSM850      | -        | -          | -       | -         | GPRS (4 Tx slots) | Right Tilted  | 0mm      | Ant 0   | ECI 2       | 189    | 836.4       | 1      | 26.88               | 27.50               | 1.153                  | -            | -                         | 0.07             | 0.214                  | 0.247                  |
|          | GSM850      | -        | -          | -       | -         | GPRS (4 Tx slots) | Left Cheek    | 0mm      | Ant 0   | ECI 2       | 189    | 836.4       | 1      | 26.88               | 27.50               | 1.153                  | -            | -                         | -0.15            | 0.397                  | 0.458                  |
|          | GSM850      | -        | -          | -       | -         | GPRS (4 Tx slots) | Left Tilted   | 0mm      | Ant 0   | ECI 2       | 189    | 836.4       | 1      | 26.88               | 27.50               | 1.153                  | -            | -                         | 0.01             | 0.245                  | 0.283                  |
|          | GSM850      | -        | -          | -       | -         | GPRS (4 Tx slots) | Right Cheek   | 0mm      | Ant 0   | ECI 2       | 128    | 824.2       | 1      | 26.75               | 27.50               | 1.189                  | -            | -                         | 0.13             | 0.426                  | 0.506                  |
|          | GSM850      | -        | -          | -       | -         | GPRS (4 Tx slots) | Right Cheek   | 0mm      | Ant 0   | ECI 2       | 251    | 848.8       | 1      | 27.02               | 27.50               | 1.117                  | -            | -                         | -0.17            | 0.445                  | 0.497                  |
| 09       | WCDMA V     | -        | -          | -       | -         | RMC 12.2Kbps      | Right Cheek   | 0mm      | Ant 0   | ECI 2       | 4182   | 836.4       | 1      | 23.36               | 24.00               | 1.159                  | -            | -                         | 0.03             | 0.332                  | 0.385                  |
|          | LTE Band 26 | 15M      | QPSK       | 1       | 0         | -                 | Right Cheek   | 0mm      | Ant 0   | ECI 2       | 26865  | 831.5       | 1      | 23.31               | 24.00               | 1.172                  | -            | -                         | 0.04             | 0.323                  | 0.379                  |
| 10       | LTE Band 26 | 15M      | QPSK       | 1       | 0         | -                 | Right Cheek   | 0mm      | Ant 4   | ECI 2       | 26865  | 831.5       | 1      | 21.45               | 22.20               | 1.189                  | -            | -                         | 0.02             | 0.344                  | 0.409                  |
|          | LTE Band 26 | 15M      | QPSK       | 1       | 0         | -                 | Right Cheek   | 0mm      | Ant 4   | ECI 2       | 26865  | 831.5       | 2      | 21.45               | 22.20               | 1.189                  | -            | -                         | -0.15            | 0.306                  | 0.364                  |
|          | LTE Band 26 | 15M      | QPSK       | 1       | 0         | -                 | Right Cheek   | 0mm      | Ant 4   | ECI 2       | 26865  | 831.5       | 3      | 21.45               | 22.20               | 1.189                  | -            | -                         | -0.1             | 0.311                  | 0.370                  |
|          | FR1 n26     | 20M      | QPSK       | 50      | 28        | DFT-15            | Right Cheek   | 0mm      | Ant 0   | ECI 2       | 166300 | 831.5       | 1      | 23.05               | 24.00               | 1.245                  | -            | -                         | 0.06             | 0.241                  | 0.300                  |
| 11       | FR1 n26     | 20M      | QPSK       | 50      | 28        | DFT-15            | Right Cheek   | 0mm      | Ant 4   | ECI 2       | 166300 | 831.5       | 1      | 20.64               | 21.50               | 1.219                  | -            | -                         | 0.05             | 0.473                  | 0.577                  |
| 1750MHz  |             |          |            |         |           |                   |               |          |         |             |        |             |        |                     |                     |                        |              |                           |                  |                        |                        |
| 12       | WCDMA IV    | -        | -          | -       | -         | RMC 12.2Kbps      | Right Cheek   | 0mm      | Ant 0   | ECI 2       | 1413   | 1732.6      | 1      | 23.44               | 24.00               | 1.138                  | -            | -                         | -0.01            | 0.174                  | 0.198                  |
|          | LTE Band 66 | 20M      | QPSK       | 1       | 0         | -                 | Right Cheek   | 0mm      | Ant 0   | ECI 2       | 132322 | 1745        | 1      | 23.25               | 24.00               | 1.189                  | -            | -                         | -0.01            | 0.148                  | 0.176                  |
| 13       | LTE Band 66 | 20M      | QPSK       | 1       | 0         | -                 | Right Tilted  | 0mm      | Ant 4   | ECI 2       | 132322 | 1745        | 1      | 14.63               | 15.50               | 1.222                  | -            | -                         | 0.11             | 0.283                  | 0.346                  |
|          | FR1 n70     | 15M      | QPSK       | 1       | 1         | DFT-15            | Right Cheek   | 0mm      | Ant 0   | ECI 2       | 340500 | 1702.5      | 1      | 23.20               | 24.00               | 1.202                  | -            | -                         | 0.17             | 0.123                  | 0.148                  |
| 14       | FR1 n70     | 15M      | QPSK       | 36      | 22        | DFT-15            | Right Tilted  | 0mm      | Ant 4   | ECI 2       | 340500 | 1702.5      | 1      | 15.69               | 16.50               | 1.205                  | -            | -                         | -0.02            | 0.475                  | 0.572                  |
|          | FR1 n66     | 45M      | QPSK       | 1       | 1         | DFT-15            | Right Cheek   | 0mm      | Ant 0   | ECI 2       | 349000 | 1745        | 1      | 23.17               | 24.00               | 1.211                  | -            | -                         | -0.05            | 0.125                  | 0.151                  |
| 15       | FR1 n66     | 45M      | QPSK       | 120     | 60        | DFT-15            | Right Tilted  | 0mm      | Ant 4   | ECI 2       | 349000 | 1745        | 1      | 15.68               | 16.50               | 1.208                  | -            | -                         | -0.06            | 0.574                  | 0.693                  |
| 1900MHz  |             |          |            |         |           |                   |               |          |         |             |        |             |        |                     |                     |                        |              |                           |                  |                        |                        |
| 16       | GSM1900     | -        | -          | -       | -         | GPRS (4 Tx slots) | Right Cheek   | 0mm      | Ant 0   | ECI 2       | 661    | 1880        | 1      | 26.14               | 26.50               | 1.086                  | -            | -                         | 0.11             | 0.067                  | 0.073                  |
| 17       | WCDMA II    | -        | -          | -       | -         | RMC 12.2Kbps      | Right Cheek   | 0mm      | Ant 0   | ECI 2       | 9400   | 1880        | 1      | 23.74               | 24.00               | 1.062                  | -            | -                         | -0.15            | 0.099                  | 0.105                  |
|          | LTE Band 25 | 20M      | QPSK       | 1       | 0         | -                 | Right Cheek   | 0mm      | Ant 0   | ECI 2       | 26340  | 1880        | 1      | 23.20               | 24.00               | 1.202                  | -            | -                         | 0.14             | 0.101                  | 0.121                  |
|          | LTE Band 25 | 20M      | QPSK       | 1       | 0         | -                 | Right Cheek   | 0mm      | Ant 0   | ECI 2       | 26340  | 1880        | 2      | 23.20               | 24.00               | 1.202                  | -            | -                         | 0.18             | 0.091                  | 0.109                  |
|          | LTE Band 25 | 20M      | QPSK       | 1       | 0         | -                 | Right Cheek   | 0mm      | Ant 0   | ECI 2       | 26340  | 1880        | 3      | 23.20               | 24.00               | 1.202                  | -            | -                         | -0.09            | 0.067                  | 0.081                  |
| 18       | LTE Band 25 | 20M      | QPSK       | 1       | 0         | -                 | Right Tilted  | 0mm      | Ant 4   | ECI 2       | 26340  | 1880        | 1      | 15.85               | 16.50               | 1.161                  | -            | -                         | 0.08             | 0.383                  | 0.445                  |
|          | LTE Band 25 | 20M      | QPSK       | 1       | 0         | -                 | Right Tilted  | 0mm      | Ant 4   | ECI 2       | 26340  | 1880        | 2      | 15.85               | 16.50               | 1.161                  | -            | -                         | 0.08             | 0.292                  | 0.339                  |



# FCC SAR Test Report

Report No. : FA561221

|         |             |      |      |     |     |        |              |     |       |       |        |         |   |       |       |       |      |       |       |       |       |
|---------|-------------|------|------|-----|-----|--------|--------------|-----|-------|-------|--------|---------|---|-------|-------|-------|------|-------|-------|-------|-------|
|         | LTE Band 25 | 20M  | QPSK | 1   | 0   | -      | Right Tilted | 0mm | Ant 4 | ECI 2 | 26340  | 1880    | 3 | 15.85 | 16.50 | 1.161 | -    | -     | -0.18 | 0.260 | 0.302 |
|         | FR1 n25     | 40M  | QPSK | 1   | 1   | DFT-15 | Right Cheek  | 0mm | Ant 0 | ECI 2 | 376500 | 1882.5  | 1 | 23.06 | 24.00 | 1.242 | -    | -     | 0.14  | 0.070 | 0.087 |
| 19      | FR1 n25     | 40M  | QPSK | 108 | 54  | DFT-15 | Right Tilted | 0mm | Ant 4 | ECI 2 | 376500 | 1882.5  | 1 | 14.15 | 15.00 | 1.216 | -    | -     | 0.04  | 0.430 | 0.523 |
| 2300MHz |             |      |      |     |     |        |              |     |       |       |        |         |   |       |       |       |      |       |       |       |       |
|         | LTE Band 30 | 10M  | QPSK | 25  | 0   | -      | Left Cheek   | 0mm | Ant 1 | ECI 2 | 27710  | 2310    | 1 | 22.27 | 24.00 | 1.489 | -    | -     | -0.04 | 0.134 | 0.200 |
| 20      | LTE Band 30 | 10M  | QPSK | 1   | 0   | -      | Right Tilted | 0mm | Ant 4 | ECI 2 | 27710  | 2310    | 1 | 22.81 | 24.00 | 1.315 | -    | -     | -0.03 | 0.330 | 0.434 |
| 21      | FR1 n30     | 10M  | QPSK | 1   | 1   | DFT-15 | Right Cheek  | 0mm | Ant 1 | ECI 2 | 462000 | 2310    | 1 | 23.33 | 24.00 | 1.167 | -    | -     | 0.02  | 0.103 | 0.120 |
| 2600MHz |             |      |      |     |     |        |              |     |       |       |        |         |   |       |       |       |      |       |       |       |       |
| 22      | LTE Band 7  | 20M  | QPSK | 1   | 0   | -      | Left Cheek   | 0mm | Ant 1 | ECI 2 | 21350  | 2560    | 1 | 23.41 | 24.00 | 1.146 | -    | -     | 0.08  | 0.325 | 0.372 |
|         | LTE Band 7  | 20M  | QPSK | 1   | 0   | -      | Left Cheek   | 0mm | Ant 1 | ECI 2 | 21350  | 2560    | 2 | 23.41 | 24.00 | 1.146 | -    | -     | 0.06  | 0.314 | 0.360 |
|         | LTE Band 7  | 20M  | QPSK | 1   | 0   | -      | Left Cheek   | 0mm | Ant 1 | ECI 2 | 21350  | 2560    | 3 | 23.41 | 24.00 | 1.146 | -    | -     | 0.04  | 0.288 | 0.330 |
|         | LTE Band 7  | 20M  | QPSK | 1   | 0   | -      | Right Tilted | 0mm | Ant 4 | ECI 2 | 21350  | 2560    | 1 | 23.09 | 24.00 | 1.233 | -    | -     | -0.04 | 0.164 | 0.202 |
| 23      | LTE Band 41 | 20M  | QPSK | 1   | 0   | -      | Left Cheek   | 0mm | Ant 1 | ECI 2 | 41490  | 2680    | 1 | 26.40 | 27.00 | 1.148 | 42.9 | 1.009 | 0.18  | 0.275 | 0.319 |
| 24      | FR1 n7      | 50M  | QPSK | 135 | 68  | DFT-15 | Left Cheek   | 0mm | Ant 1 | ECI 2 | 507000 | 2535    | 1 | 23.32 | 24.00 | 1.169 | -    | -     | 0.01  | 0.205 | 0.240 |
|         | FR1 n41     | 100M | QPSK | 135 | 69  | DFT-30 | Left Cheek   | 0mm | Ant 1 | ECI 2 | 518598 | 2592.99 | 1 | 26.20 | 27.00 | 1.202 | -    | -     | 0.01  | 0.448 | 0.539 |
|         | FR1 n41     | 100M | QPSK | 135 | 69  | DFT-30 | Left Cheek   | 0mm | Ant 1 | ECI 2 | 518598 | 2592.99 | 2 | 26.20 | 27.00 | 1.202 | -    | -     | 0.05  | 0.447 | 0.537 |
|         | FR1 n41     | 100M | QPSK | 135 | 69  | DFT-30 | Left Cheek   | 0mm | Ant 1 | ECI 2 | 518598 | 2592.99 | 3 | 26.20 | 27.00 | 1.202 | -    | -     | -0.12 | 0.410 | 0.493 |
|         | FR1 n41     | 100M | QPSK | 1   | 1   | DFT-30 | Right Tilted | 0mm | Ant 4 | ECI 2 | 518598 | 2592.99 | 1 | 16.25 | 17.00 | 1.189 | -    | -     | 0.15  | 0.501 | 0.595 |
|         | FR1 n41     | 100M | QPSK | 1   | 1   | DFT-30 | Right Tilted | 0mm | Ant 4 | ECI 2 | 518598 | 2592.99 | 2 | 16.25 | 17.00 | 1.189 | -    | -     | 0.02  | 0.472 | 0.561 |
|         | FR1 n41     | 100M | QPSK | 1   | 1   | DFT-30 | Right Tilted | 0mm | Ant 4 | ECI 2 | 518598 | 2592.99 | 3 | 16.25 | 17.00 | 1.189 | -    | -     | -0.09 | 0.440 | 0.523 |
|         | FR1 n41     | 100M | QPSK | 135 | 69  | DFT-30 | Right Cheek  | 0mm | Ant 2 | ECI 2 | 518598 | 2592.99 | 1 | 26.18 | 27.00 | 1.208 | -    | -     | -0.19 | 0.323 | 0.390 |
|         | FR1 n41     | 100M | QPSK | 135 | 69  | DFT-30 | Right Cheek  | 0mm | Ant 2 | ECI 2 | 518598 | 2592.99 | 2 | 26.18 | 27.00 | 1.208 | -    | -     | 0.04  | 0.316 | 0.382 |
|         | FR1 n41     | 100M | QPSK | 135 | 69  | DFT-30 | Right Cheek  | 0mm | Ant 2 | ECI 2 | 518598 | 2592.99 | 3 | 26.18 | 27.00 | 1.208 | -    | -     | -0.13 | 0.237 | 0.286 |
| 25      | FR1 n41     | 100M | QPSK | 135 | 69  | DFT-30 | Left Cheek   | 0mm | Ant 7 | ECI 2 | 518598 | 2592.99 | 1 | 17.62 | 18.50 | 1.225 | -    | -     | -0.11 | 0.568 | 0.696 |
|         | FR1 n41     | 100M | QPSK | 135 | 69  | DFT-30 | Left Cheek   | 0mm | Ant 7 | ECI 2 | 518598 | 2592.99 | 2 | 17.62 | 18.50 | 1.225 | -    | -     | -0.04 | 0.402 | 0.492 |
|         | FR1 n41     | 100M | QPSK | 135 | 69  | DFT-30 | Left Cheek   | 0mm | Ant 7 | ECI 2 | 518598 | 2592.99 | 3 | 17.62 | 18.50 | 1.225 | -    | -     | 0.19  | 0.384 | 0.470 |
| 3-4GHz  |             |      |      |     |     |        |              |     |       |       |        |         |   |       |       |       |      |       |       |       |       |
| 26      | LTE Band 48 | 20M  | QPSK | 1   | 0   | -      | Left Tilted  | 0mm | Ant 5 | ECI 2 | 56150  | 3641    | 1 | 16.41 | 17.50 | 1.285 | 62.9 | 1.006 | 0.04  | 0.506 | 0.654 |
| 27      | FR1 n48     | 100M | QPSK | 135 | 69  | DFT-30 | Left Tilted  | 0mm | Ant 5 | ECI 2 | 641666 | 3624.99 | 1 | 14.37 | 15.50 | 1.297 | -    | -     | 0.05  | 0.406 | 0.527 |
|         | FR1 n77     | 100M | QPSK | 270 | 0   | DFT-30 | Left Cheek   | 0mm | Ant 5 | ECI 2 | 633332 | 3499.98 | 1 | 14.56 | 16.00 | 1.393 | -    | -     | -0.1  | 0.317 | 0.442 |
|         | FR1 n77     | 100M | QPSK | 1   | 1   | DFT-30 | Left Tilted  | 0mm | Ant 5 | ECI 2 | 656000 | 3840    | 1 | 14.63 | 16.00 | 1.371 | -    | -     | -0.16 | 0.339 | 0.465 |
|         | FR1 n77     | 100M | QPSK | 1   | 1   | DFT-30 | Left Tilted  | 0mm | Ant 5 | ECI 2 | 656000 | 3840    | 2 | 14.63 | 16.00 | 1.371 | -    | -     | 0.09  | 0.269 | 0.369 |
|         | FR1 n77     | 100M | QPSK | 1   | 1   | DFT-30 | Left Tilted  | 0mm | Ant 5 | ECI 2 | 656000 | 3840    | 3 | 14.63 | 16.00 | 1.371 | -    | -     | -0.08 | 0.263 | 0.361 |
|         | FR1 n77     | 100M | QPSK | 1   | 271 | DFT-30 | Left Tilted  | 0mm | Ant 1 | ECI 2 | 633332 | 3499.98 | 1 | 25.72 | 26.50 | 1.197 | -    | -     | 0.07  | 0.051 | 0.061 |
|         | FR1 n77     | 100M | QPSK | 135 | 69  | DFT-30 | Right Tilted | 0mm | Ant 1 | ECI 2 | 656000 | 3840    | 1 | 25.43 | 26.50 | 1.279 | -    | -     | 0.1   | 0.061 | 0.078 |
|         | FR1 n77     | 100M | QPSK | 135 | 69  | DFT-30 | Right Tilted | 0mm | Ant 1 | ECI 2 | 656000 | 3840    | 2 | 25.43 | 26.50 | 1.279 | -    | -     | 0.06  | 0.104 | 0.133 |
|         | FR1 n77     | 100M | QPSK | 135 | 69  | DFT-30 | Right Tilted | 0mm | Ant 1 | ECI 2 | 656000 | 3840    | 3 | 25.43 | 26.50 | 1.279 | -    | -     | -0.04 | 0.094 | 0.120 |
|         | FR1 n77     | 100M | QPSK | 135 | 69  | DFT-30 | Right Cheek  | 0mm | Ant 2 | ECI 2 | 633332 | 3499.98 | 1 | 25.95 | 27.00 | 1.274 | -    | -     | -0.08 | 0.163 | 0.208 |
|         | FR1 n77     | 100M | QPSK | 135 | 69  | DFT-30 | Right Cheek  | 0mm | Ant 2 | ECI 2 | 633332 | 3499.98 | 2 | 25.95 | 27.00 | 1.274 | -    | -     | -0.07 | 0.204 | 0.260 |
|         | FR1 n77     | 100M | QPSK | 135 | 69  | DFT-30 | Right Cheek  | 0mm | Ant 2 | ECI 2 | 633332 | 3499.98 | 3 | 25.95 | 27.00 | 1.274 | -    | -     | -0.05 | 0.151 | 0.192 |
|         | FR1 n77     | 100M | QPSK | 135 | 69  | DFT-30 | Right Cheek  | 0mm | Ant 2 | ECI 2 | 656000 | 3840    | 1 | 26.04 | 27.00 | 1.247 | -    | -     | 0.05  | 0.056 | 0.070 |
| 28      | FR1 n77     | 100M | QPSK | 1   | 1   | DFT-30 | Left Tilted  | 0mm | Ant 8 | ECI 2 | 633332 | 3499.98 | 1 | 26.16 | 27.00 | 1.213 | -    | -     | 0.04  | 0.615 | 0.746 |
|         | FR1 n77     | 100M | QPSK | 1   | 1   | DFT-30 | Left Tilted  | 0mm | Ant 8 | ECI 2 | 633332 | 3499.98 | 2 | 26.16 | 27.00 | 1.213 | -    | -     | -0.18 | 0.521 | 0.632 |
|         | FR1 n77     | 100M | QPSK | 1   | 1   | DFT-30 | Left Tilted  | 0mm | Ant 8 | ECI 2 | 633332 | 3499.98 | 3 | 26.16 | 27.00 | 1.213 | -    | -     | 0     | 0.583 | 0.707 |
|         | FR1 n77     | 100M | QPSK | 135 | 69  | DFT-30 | Left Tilted  | 0mm | Ant 8 | ECI 2 | 656000 | 3840    | 1 | 26.13 | 27.00 | 1.222 | -    | -     | 0.11  | 0.179 | 0.219 |

| Plot No.       | Band       | Mode                | Test Position | Gap (mm) | Antenna | Power State | Ch. | Freq. (MHz) | Sample | Average Power (dBm) | Tune-Up Limit (dBm) | Tune-up Scaling Factor | Duty Cycle % | Duty Cycle Scaling Factor | Power Drift (dB) | Measured 1g SAR (W/kg) | Reported 1g SAR (W/kg) |
|----------------|------------|---------------------|---------------|----------|---------|-------------|-----|-------------|--------|---------------------|---------------------|------------------------|--------------|---------------------------|------------------|------------------------|------------------------|
| <b>2450MHz</b> |            |                     |               |          |         |             |     |             |        |                     |                     |                        |              |                           |                  |                        |                        |
| 29             | Bluetooth  | DH5 1Mbps           | Left Cheek    | 0mm      | Ant 6   | Full Power  | 78  | 2480        | 1      | 12.30               | 14.00               | 1.479                  | 76.89        | 1.083                     | 0.07             | 0.269                  | <b>0.431</b>           |
| 30             | WLAN2.4GHz | 802.11b 1Mbps       | Left Cheek    | 0mm      | Ant 6   | Standalone  | 11  | 2462        | 1      | 16.00               | 17.50               | 1.413                  | 100          | 1.000                     | -0.03            | 0.678                  | <b>0.958</b>           |
|                | WLAN2.4GHz | 802.11b 1Mbps       | Left Cheek    | 0mm      | Ant 6   | Standalone  | 11  | 2462        | 2      | 16.00               | 17.50               | 1.413                  | 100          | 1.000                     | 0.08             | 0.547                  | 0.773                  |
|                | WLAN2.4GHz | 802.11b 1Mbps       | Left Cheek    | 0mm      | Ant 6   | Standalone  | 11  | 2462        | 3      | 16.00               | 17.50               | 1.413                  | 100          | 1.000                     | 0.16             | 0.513                  | 0.725                  |
| <b>5000MHz</b> |            |                     |               |          |         |             |     |             |        |                     |                     |                        |              |                           |                  |                        |                        |
| 31             | WLAN5.3GHz | 802.11ac-VHT80 MCS0 | Left Tilted   | 0mm      | Ant 6   | Standalone  | 58  | 5290        | 1      | 12.89               | 14.00               | 1.291                  | 100          | 1.000                     | 0.14             | 0.601                  | <b>0.776</b>           |
|                | WLAN5.3GHz | 802.11ac-VHT80 MCS0 | Left Tilted   | 0mm      | Ant 6   | Standalone  | 58  | 5290        | 2      | 12.89               | 14.00               | 1.291                  | 100          | 1.000                     | 0.06             | 0.504                  | 0.651                  |
|                | WLAN5.3GHz | 802.11ac-VHT80 MCS0 | Left Tilted   | 0mm      | Ant 6   | Standalone  | 58  | 5290        | 3      | 12.89               | 14.00               | 1.291                  | 100          | 1.000                     | 0.06             | 0.497                  | 0.642                  |
| 32             | WLAN5.5GHz | 802.11ac-VHT80 MCS0 | Left Tilted   | 0mm      | Ant 6   | Standalone  | 122 | 5610        | 1      | 11.10               | 12.50               | 1.380                  | 100          | 1.000                     | 0.16             | 0.360                  | <b>0.497</b>           |
| 33             | WLAN5.8GHz | 802.11ac-VHT80 MCS0 | Left Tilted   | 0mm      | Ant 6   | Standalone  | 155 | 5775        | 1      | 11.57               | 13.00               | 1.390                  | 100          | 1.000                     | -0.05            | 0.390                  | <b>0.542</b>           |





## 14.2 Hotspot SAR

| Plot No. | Band        | BW (MHz) | Modulation | RB Size | RB offset | Mode              | Test Position | Gap (mm) | Antenna | Power State | Ch.    | Freq. (MHz) | Sample | Average Power (dBm) | Tune-Up Limit (dBm) | Tune-up Scaling Factor | Duty Cycle % | Duty Cycle Scaling Factor | Power Drift (dB) | Measured 1g SAR (W/kg) | Reported 1g SAR (W/kg) |
|----------|-------------|----------|------------|---------|-----------|-------------------|---------------|----------|---------|-------------|--------|-------------|--------|---------------------|---------------------|------------------------|--------------|---------------------------|------------------|------------------------|------------------------|
| 750MHz   |             |          |            |         |           |                   |               |          |         |             |        |             |        |                     |                     |                        |              |                           |                  |                        |                        |
| 34       | LTE Band 71 | 20M      | QPSK       | 1       | 0         | -                 | Back          | 5mm      | Ant 0   | ECI 7       | 133297 | 680.5       | 1      | 23.11               | 24.00               | 1.227                  | -            | -                         | 0.03             | 0.368                  | 0.452                  |
|          | LTE Band 71 | 20M      | QPSK       | 1       | 0         | -                 | Back          | 5mm      | Ant 4   | ECI 7       | 133297 | 680.5       | 1      | 23.16               | 24.00               | 1.213                  | -            | -                         | -0.17            | 0.355                  | 0.431                  |
| 35       | LTE Band 12 | 10M      | QPSK       | 1       | 0         | -                 | Back          | 5mm      | Ant 0   | ECI 7       | 23095  | 707.5       | 1      | 23.07               | 24.00               | 1.239                  | -            | -                         | 0.02             | 0.533                  | 0.660                  |
|          | LTE Band 12 | 10M      | QPSK       | 1       | 0         | -                 | Back          | 5mm      | Ant 4   | ECI 7       | 23095  | 707.5       | 1      | 21.31               | 22.20               | 1.227                  | -            | -                         | 0                | 0.417                  | 0.512                  |
| 36       | LTE Band 13 | 10M      | QPSK       | 1       | 0         | -                 | Back          | 5mm      | Ant 0   | ECI 7       | 23230  | 782         | 1      | 23.04               | 24.00               | 1.247                  | -            | -                         | 0.04             | 0.735                  | 0.917                  |
|          | LTE Band 13 | 10M      | QPSK       | 1       | 0         | -                 | Back          | 5mm      | Ant 4   | ECI 7       | 23230  | 782         | 1      | 21.09               | 22.20               | 1.291                  | -            | -                         | 0.14             | 0.435                  | 0.562                  |
|          | LTE Band 13 | 10M      | QPSK       | 1       | 0         | -                 | Back          | 5mm      | Ant 4   | ECI 7       | 23230  | 782         | 2      | 21.09               | 22.20               | 1.291                  | -            | -                         | -0.07            | 0.411                  | 0.531                  |
|          | LTE Band 13 | 10M      | QPSK       | 1       | 0         | -                 | Back          | 5mm      | Ant 4   | ECI 7       | 23230  | 782         | 3      | 21.09               | 22.20               | 1.291                  | -            | -                         | 0.11             | 0.392                  | 0.506                  |
| 37       | LTE Band 14 | 10M      | QPSK       | 1       | 0         | -                 | Back          | 5mm      | Ant 0   | ECI 7       | 23330  | 793         | 1      | 22.99               | 24.00               | 1.262                  | -            | -                         | 0.05             | 0.742                  | 0.936                  |
|          | LTE Band 14 | 10M      | QPSK       | 1       | 0         | -                 | Back          | 5mm      | Ant 4   | ECI 7       | 23330  | 793         | 1      | 20.72               | 21.70               | 1.253                  | -            | -                         | 0.1              | 0.429                  | 0.538                  |
|          | FR1 n71     | 35M      | QPSK       | 1       | 1         | DFT-15            | Back          | 5mm      | Ant 0   | ECI 7       | 136100 | 680.5       | 1      | 22.96               | 24.00               | 1.271                  | -            | -                         | -0.18            | 0.314                  | 0.399                  |
| 38       | FR1 n71     | 35M      | QPSK       | 1       | 1         | DFT-15            | Back          | 5mm      | Ant 4   | ECI 7       | 136100 | 680.5       | 1      | 22.99               | 24.00               | 1.262                  | -            | -                         | -0.05            | 0.340                  | 0.429                  |
| 39       | FR1 n12     | 15M      | QPSK       | 36      | 22        | DFT-15            | Back          | 5mm      | Ant 0   | ECI 7       | 141500 | 707.5       | 1      | 22.87               | 24.00               | 1.297                  | -            | -                         | 0.1              | 0.375                  | 0.486                  |
|          | FR1 n12     | 15M      | QPSK       | 36      | 22        | DFT-15            | Back          | 5mm      | Ant 4   | ECI 7       | 141500 | 707.5       | 1      | 20.44               | 21.50               | 1.276                  | -            | -                         | -0.05            | 0.358                  | 0.457                  |
| 40       | FR1 n14     | 10M      | QPSK       | 25      | 14        | DFT-15            | Back          | 5mm      | Ant 0   | ECI 7       | 158600 | 793         | 1      | 23.06               | 24.00               | 1.242                  | -            | -                         | 0                | 0.738                  | 0.916                  |
|          | FR1 n14     | 10M      | QPSK       | 1       | 1         | DFT-15            | Back          | 5mm      | Ant 4   | ECI 7       | 158600 | 793         | 1      | 20.47               | 21.50               | 1.268                  | -            | -                         | -0.12            | 0.377                  | 0.478                  |
| 835MHz   |             |          |            |         |           |                   |               |          |         |             |        |             |        |                     |                     |                        |              |                           |                  |                        |                        |
| 41       | GSM850      | -        | -          | -       | -         | GPRS (4 Tx slots) | Back          | 5mm      | Ant 0   | ECI 7       | 189    | 836.4       | 1      | 25.92               | 27.00               | 1.282                  | -            | -                         | 0.07             | 0.913                  | 1.171                  |
| 42       | WCDMA V     | -        | -          | -       | -         | RMC 12.2Kbps      | Back          | 5mm      | Ant 0   | ECI 7       | 4233   | 846.6       | 1      | 20.93               | 22.00               | 1.279                  | -            | -                         | 0.11             | 0.780                  | 0.998                  |
| 43       | LTE Band 26 | 15M      | QPSK       | 1       | 0         | -                 | Back          | 5mm      | Ant 0   | ECI 7       | 26965  | 841.5       | 1      | 21.28               | 22.00               | 1.180                  | -            | -                         | 0.13             | 0.784                  | 0.925                  |
|          | LTE Band 26 | 15M      | QPSK       | 1       | 0         | -                 | Back          | 5mm      | Ant 4   | ECI 7       | 26865  | 831.5       | 1      | 20.19               | 21.20               | 1.262                  | -            | -                         | -0.02            | 0.351                  | 0.443                  |
| 44       | FR1 n26     | 20M      | QPSK       | 1       | 1         | DFT-15            | Back          | 5mm      | Ant 0   | ECI 7       | 166300 | 831.5       | 1      | 21.76               | 22.50               | 1.186                  | -            | -                         | -0.12            | 0.954                  | 1.131                  |
|          | FR1 n26     | 20M      | QPSK       | 1       | 1         | DFT-15            | Back          | 5mm      | Ant 0   | ECI 7       | 166300 | 831.5       | 2      | 21.76               | 22.50               | 1.186                  | -            | -                         | -0.01            | 0.581                  | 0.689                  |
|          | FR1 n26     | 20M      | QPSK       | 1       | 1         | DFT-15            | Back          | 5mm      | Ant 0   | ECI 7       | 166300 | 831.5       | 3      | 21.76               | 22.50               | 1.186                  | -            | -                         | 0.1              | 0.609                  | 0.722                  |
|          | FR1 n26     | 20M      | QPSK       | 50      | 28        | DFT-15            | Back          | 5mm      | Ant 4   | ECI 7       | 166300 | 831.5       | 1      | 20.56               | 21.50               | 1.242                  | -            | -                         | -0.09            | 0.398                  | 0.494                  |
|          | FR1 n26     | 20M      | QPSK       | 50      | 28        | DFT-15            | Back          | 5mm      | Ant 4   | ECI 7       | 166300 | 831.5       | 2      | 20.56               | 21.50               | 1.242                  | -            | -                         | -0.11            | 0.302                  | 0.375                  |
|          | FR1 n26     | 20M      | QPSK       | 50      | 28        | DFT-15            | Back          | 5mm      | Ant 4   | ECI 7       | 166300 | 831.5       | 3      | 20.56               | 21.50               | 1.242                  | -            | -                         | 0.09             | 0.301                  | 0.374                  |
| 1750MHz  |             |          |            |         |           |                   |               |          |         |             |        |             |        |                     |                     |                        |              |                           |                  |                        |                        |
| 45       | WCDMA IV    | -        | -          | -       | -         | RMC 12.2Kbps      | Bottom Side   | 5mm      | Ant 0   | ECI 7       | 1513   | 1752.6      | 1      | 17.29               | 18.50               | 1.321                  | -            | -                         | 0.02             | 0.907                  | 1.198                  |
|          | WCDMA IV    | -        | -          | -       | -         | RMC 12.2Kbps      | Bottom Side   | 5mm      | Ant 0   | ECI 7       | 1513   | 1752.6      | 2      | 17.29               | 18.50               | 1.321                  | -            | -                         | 0.12             | 0.855                  | 1.130                  |
|          | WCDMA IV    | -        | -          | -       | -         | RMC 12.2Kbps      | Bottom Side   | 5mm      | Ant 0   | ECI 7       | 1513   | 1752.6      | 3      | 17.29               | 18.50               | 1.321                  | -            | -                         | 0.14             | 0.835                  | 1.103                  |
| 46       | LTE Band 66 | 20M      | QPSK       | 1       | 0         | -                 | Bottom Side   | 5mm      | Ant 0   | ECI 7       | 132322 | 1745        | 1      | 17.13               | 18.00               | 1.222                  | -            | -                         | 0.01             | 0.694                  | 0.848                  |
|          | LTE Band 66 | 20M      | QPSK       | 1       | 0         | -                 | Top Side      | 5mm      | Ant 4   | ECI 7       | 132322 | 1745        | 1      | 13.15               | 14.00               | 1.216                  | -            | -                         | 0.04             | 0.213                  | 0.259                  |
| 47       | FR1 n70     | 15M      | QPSK       | 75      | 0         | DFT-15            | Bottom Side   | 5mm      | Ant 0   | ECI 7       | 340500 | 1702.5      | 1      | 17.51               | 18.50               | 1.256                  | -            | -                         | 0.13             | 0.687                  | 0.863                  |
|          | FR1 n70     | 15M      | QPSK       | 36      | 22        | DFT-15            | Top Side      | 5mm      | Ant 4   | ECI 7       | 340500 | 1702.5      | 1      | 15.66               | 16.50               | 1.213                  | -            | -                         | -0.12            | 0.464                  | 0.563                  |
|          | FR1 n70     | 15M      | QPSK       | 36      | 22        | DFT-15            | Top Side      | 5mm      | Ant 4   | ECI 7       | 340500 | 1702.5      | 2      | 15.66               | 16.50               | 1.213                  | -            | -                         | -0.07            | 0.422                  | 0.512                  |
|          | FR1 n70     | 15M      | QPSK       | 36      | 22        | DFT-15            | Top Side      | 5mm      | Ant 4   | ECI 7       | 340500 | 1702.5      | 3      | 15.66               | 16.50               | 1.213                  | -            | -                         | -0.15            | 0.401                  | 0.487                  |
| 48       | FR1 n66     | 45M      | QPSK       | 120     | 60        | DFT-15            | Bottom Side   | 5mm      | Ant 0   | ECI 7       | 349000 | 1745        | 1      | 17.56               | 18.50               | 1.242                  | -            | -                         | 0.14             | 0.798                  | 0.991                  |
|          | FR1 n66     | 45M      | QPSK       | 1       | 1         | DFT-15            | Top Side      | 5mm      | Ant 4   | ECI 7       | 349000 | 1745        | 1      | 15.74               | 16.50               | 1.191                  | -            | -                         | -0.18            | 0.412                  | 0.491                  |
| 1900MHz  |             |          |            |         |           |                   |               |          |         |             |        |             |        |                     |                     |                        |              |                           |                  |                        |                        |
| 49       | GSM1900     | -        | -          | -       | -         | GPRS (4 Tx slots) | Bottom Side   | 5mm      | Ant 0   | ECI 7       | 810    | 1909.8      | 1      | 20.54               | 21.50               | 1.247                  | -            | -                         | -0.05            | 0.961                  | 1.199                  |
| 50       | WCDMA II    | -        | -          | -       | -         | RMC 12.2Kbps      | Bottom Side   | 5mm      | Ant 0   | ECI 7       | 9538   | 1907.6      | 1      | 16.01               | 17.00               | 1.256                  | -            | -                         | 0.02             | 0.906                  | 1.138                  |
| 51       | LTE Band 25 | 20M      | QPSK       | 1       | 0         | -                 | Bottom Side   | 5mm      | Ant 0   | ECI 7       | 26140  | 1860        | 1      | 16.01               | 17.00               | 1.256                  | -            | -                         | 0.08             | 0.777                  | 0.976                  |
|          | LTE Band 25 | 20M      | QPSK       | 1       | 0         | -                 | Top Side      | 5mm      | Ant 4   | ECI 7       | 26340  | 1880        | 1      | 13.18               | 14.00               | 1.208                  | -            | -                         | -0.08            | 0.260                  | 0.314                  |
|          | LTE Band 25 | 20M      | QPSK       | 1       | 0         | -                 | Top Side      | 5mm      | Ant 4   | ECI 7       | 26340  | 1880        | 2      | 13.18               | 14.00               | 1.208                  | -            | -                         | -0.18            | 0.231                  | 0.279                  |
|          | LTE Band 25 | 20M      | QPSK       | 1       | 0         | -                 | Top Side      | 5mm      | Ant 4   | ECI 7       | 26340  | 1880        | 3      | 13.18               | 14.00               | 1.208                  | -            | -                         | -0.19            | 0.218                  | 0.263                  |
| 52       | FR1 n25     | 40M      | QPSK       | 1       | 1         | DFT-15            | Bottom Side   | 5mm      | Ant 0   | ECI 7       | 376500 | 1882.5      | 1      | 16.60               | 17.50               | 1.230                  | -            | -                         | 0.09             | 0.809                  | 0.995                  |
|          | FR1 n25     | 40M      | QPSK       | 1       | 1         | DFT-15            | Top Side      | 5mm      | Ant 4   | ECI 7       | 376500 | 1882.5      | 1      | 20.76               | 21.50               | 1.186                  | -            | -                         | 0.06             | 0.512                  | 0.607                  |
| 2300MHz  |             |          |            |         |           |                   |               |          |         |             |        |             |        |                     |                     |                        |              |                           |                  |                        |                        |



# FCC SAR Test Report

Report No. : FA561221

|         |             |      |      |     |    |        |          |     |       |         |        |         |   |       |       |       |      |       |       |       |       |
|---------|-------------|------|------|-----|----|--------|----------|-----|-------|---------|--------|---------|---|-------|-------|-------|------|-------|-------|-------|-------|
| 53      | LTE Band 30 | 10M  | QPSK | 1   | 0  | -      | Back     | 5mm | Ant 1 | ECI 7   | 27710  | 2310    | 1 | 18.19 | 19.00 | 1.205 | -    | -     | 0.09  | 0.618 | 0.745 |
|         | LTE Band 30 | 10M  | QPSK | 1   | 0  | -      | Top Side | 5mm | Ant 4 | ECI 7   | 27710  | 2310    | 1 | 21.50 | 22.50 | 1.259 | -    | -     | 0.01  | 0.428 | 0.539 |
|         | LTE Band 30 | 10M  | QPSK | 1   | 0  | -      | Top Side | 5mm | Ant 4 | ECI 7   | 27710  | 2310    | 2 | 21.50 | 22.50 | 1.259 | -    | -     | 0.14  | 0.362 | 0.456 |
|         | LTE Band 30 | 10M  | QPSK | 1   | 0  | -      | Top Side | 5mm | Ant 4 | ECI 7   | 27710  | 2310    | 3 | 21.50 | 22.50 | 1.259 | -    | -     | -0.14 | 0.353 | 0.444 |
| 54      | FR1 n30     | 10M  | QPSK | 1   | 1  | DFT-15 | Back     | 5mm | Ant 1 | ECI 7   | 462000 | 2310    | 1 | 19.39 | 20.00 | 1.151 | -    | -     | 0.02  | 0.855 | 0.984 |
|         | FR1 n30     | 10M  | QPSK | 1   | 1  | DFT-15 | Back     | 5mm | Ant 1 | ECI 7   | 462000 | 2310    | 2 | 19.39 | 20.00 | 1.151 | -    | -     | -0.18 | 0.651 | 0.749 |
|         | FR1 n30     | 10M  | QPSK | 1   | 1  | DFT-15 | Back     | 5mm | Ant 1 | ECI 7   | 462000 | 2310    | 3 | 19.39 | 20.00 | 1.151 | -    | -     | 0.17  | 0.715 | 0.823 |
| 2600MHz |             |      |      |     |    |        |          |     |       |         |        |         |   |       |       |       |      |       |       |       |       |
| 55      | LTE Band 7  | 20M  | QPSK | 1   | 0  | -      | Back     | 5mm | Ant 1 | ECI 7   | 21350  | 2560    | 1 | 18.44 | 19.50 | 1.276 | -    | -     | -0.13 | 0.761 | 0.971 |
|         | LTE Band 7  | 20M  | QPSK | 1   | 0  | -      | Top Side | 5mm | Ant 4 | ECI 7   | 20850  | 2510    | 1 | 23.12 | 24.00 | 1.225 | -    | -     | -0.05 | 0.287 | 0.351 |
| 56      | LTE Band 41 | 20M  | QPSK | 1   | 0  | -      | Back     | 5mm | Ant 1 | ECI 7   | 41055  | 2636.5  | 1 | 20.17 | 21.40 | 1.327 | 62.9 | 1.006 | -0.14 | 0.685 | 0.915 |
| 57      | FR1 n7      | 50M  | QPSK | 1   | 1  | DFT-15 | Back     | 5mm | Ant 1 | ECI 3/7 | 507000 | 2535    | 1 | 20.37 | 21.00 | 1.156 | -    | -     | -0.02 | 1.020 | 1.179 |
| 58      | FR1 n41     | 100M | QPSK | 1   | 1  | DFT-30 | Back     | 5mm | Ant 1 | ECI 7   | 518598 | 2592.99 | 1 | 18.69 | 19.50 | 1.205 | -    | -     | -0.05 | 0.659 | 0.794 |
|         | FR1 n41     | 100M | QPSK | 1   | 1  | DFT-30 | Top Side | 5mm | Ant 4 | ECI 7   | 518598 | 2592.99 | 1 | 12.82 | 13.50 | 1.169 | -    | -     | 0.13  | 0.286 | 0.334 |
|         | FR1 n41     | 100M | QPSK | 1   | 1  | DFT-30 | Back     | 5mm | Ant 2 | ECI 7   | 518598 | 2592.99 | 1 | 14.85 | 15.50 | 1.161 | -    | -     | 0.17  | 0.255 | 0.296 |
|         | FR1 n41     | 100M | QPSK | 1   | 1  | DFT-30 | Back     | 5mm | Ant 2 | ECI 7   | 518598 | 2592.99 | 2 | 14.85 | 15.50 | 1.161 | -    | -     | 0.13  | 0.210 | 0.244 |
|         | FR1 n41     | 100M | QPSK | 1   | 1  | DFT-30 | Back     | 5mm | Ant 2 | ECI 7   | 518598 | 2592.99 | 3 | 14.85 | 15.50 | 1.161 | -    | -     | 0.11  | 0.173 | 0.201 |
|         | FR1 n41     | 100M | QPSK | 1   | 1  | DFT-30 | Back     | 5mm | Ant 7 | ECI 7   | 518598 | 2592.99 | 1 | 13.23 | 14.00 | 1.194 | -    | -     | -0.13 | 0.335 | 0.400 |
|         | FR1 n41     | 100M | QPSK | 1   | 1  | DFT-30 | Back     | 5mm | Ant 7 | ECI 7   | 518598 | 2592.99 | 2 | 13.23 | 14.00 | 1.194 | -    | -     | -0.05 | 0.288 | 0.344 |
|         | FR1 n41     | 100M | QPSK | 1   | 1  | DFT-30 | Back     | 5mm | Ant 7 | ECI 7   | 518598 | 2592.99 | 3 | 13.23 | 14.00 | 1.194 | -    | -     | -0.05 | 0.252 | 0.301 |
| 3-4GHz  |             |      |      |     |    |        |          |     |       |         |        |         |   |       |       |       |      |       |       |       |       |
| 59      | LTE Band 48 | 20M  | QPSK | 1   | 0  | -      | Back     | 5mm | Ant 5 | ECI 7   | 56150  | 3641    | 1 | 14.92 | 16.00 | 1.282 | 62.9 | 1.006 | -0.18 | 0.307 | 0.396 |
|         | LTE Band 48 | 20M  | QPSK | 1   | 0  | -      | Back     | 5mm | Ant 5 | ECI 7   | 56150  | 3641    | 2 | 14.92 | 16.00 | 1.282 | 62.9 | 1.006 | -0.11 | 0.301 | 0.388 |
|         | LTE Band 48 | 20M  | QPSK | 1   | 0  | -      | Back     | 5mm | Ant 5 | ECI 7   | 56150  | 3641    | 3 | 14.92 | 16.00 | 1.282 | 62.9 | 1.006 | -0.05 | 0.306 | 0.395 |
| 60      | FR1 n48     | 100M | QPSK | 1   | 1  | DFT-30 | Back     | 5mm | Ant 5 | ECI 7   | 641666 | 3624.99 | 1 | 12.86 | 14.00 | 1.300 | -    | -     | -0.13 | 0.250 | 0.325 |
|         | FR1 n77     | 100M | QPSK | 135 | 69 | DFT-30 | Back     | 5mm | Ant 5 | ECI 7   | 633332 | 3499.98 | 1 | 12.67 | 14.00 | 1.358 | -    | -     | -0.1  | 0.243 | 0.330 |
|         | FR1 n77     | 100M | QPSK | 1   | 1  | DFT-30 | Back     | 5mm | Ant 5 | ECI 7   | 656000 | 3840    | 1 | 12.72 | 14.00 | 1.343 | -    | -     | -0.12 | 0.275 | 0.369 |
|         | FR1 n77     | 100M | QPSK | 1   | 1  | DFT-30 | Back     | 5mm | Ant 1 | ECI 7   | 633332 | 3499.98 | 1 | 23.59 | 24.50 | 1.233 | -    | -     | 0.02  | 0.301 | 0.371 |
|         | FR1 n77     | 100M | QPSK | 1   | 1  | DFT-30 | Back     | 5mm | Ant 1 | ECI 7   | 656000 | 3840    | 1 | 23.34 | 24.50 | 1.306 | -    | -     | 0.05  | 0.429 | 0.560 |
|         | FR1 n77     | 100M | QPSK | 1   | 1  | DFT-30 | Back     | 5mm | Ant 1 | ECI 7   | 656000 | 3840    | 2 | 23.34 | 24.50 | 1.306 | -    | -     | 0.18  | 0.439 | 0.573 |
| 61      | FR1 n77     | 100M | QPSK | 1   | 1  | DFT-30 | Back     | 5mm | Ant 1 | ECI 7   | 656000 | 3840    | 3 | 23.34 | 24.50 | 1.306 | -    | -     | -0.12 | 0.869 | 1.135 |
|         | FR1 n77     | 100M | QPSK | 1   | 1  | DFT-30 | Back     | 5mm | Ant 2 | ECI 7   | 633332 | 3499.98 | 1 | 14.93 | 16.00 | 1.279 | -    | -     | -0.11 | 0.154 | 0.197 |
|         | FR1 n77     | 100M | QPSK | 1   | 1  | DFT-30 | Back     | 5mm | Ant 2 | ECI 7   | 633332 | 3499.98 | 2 | 14.93 | 16.00 | 1.279 | -    | -     | -0.1  | 0.146 | 0.187 |
|         | FR1 n77     | 100M | QPSK | 1   | 1  | DFT-30 | Back     | 5mm | Ant 2 | ECI 7   | 633332 | 3499.98 | 3 | 14.93 | 16.00 | 1.279 | -    | -     | -0.15 | 0.070 | 0.090 |
|         | FR1 n77     | 100M | QPSK | 1   | 1  | DFT-30 | Back     | 5mm | Ant 2 | ECI 7   | 656000 | 3840    | 1 | 14.88 | 16.00 | 1.294 | -    | -     | -0.03 | 0.116 | 0.150 |
|         | FR1 n77     | 100M | QPSK | 1   | 1  | DFT-30 | Back     | 5mm | Ant 8 | ECI 7   | 633332 | 3499.98 | 1 | 14.54 | 16.00 | 1.400 | -    | -     | 0.02  | 0.363 | 0.508 |
|         | FR1 n77     | 100M | QPSK | 270 | 0  | DFT-30 | Back     | 5mm | Ant 8 | ECI 7   | 656000 | 3840    | 1 | 14.45 | 16.00 | 1.429 | -    | -     | -0.13 | 0.182 | 0.260 |
|         | FR1 n77     | 100M | QPSK | 270 | 0  | DFT-30 | Back     | 5mm | Ant 8 | ECI 7   | 656000 | 3840    | 2 | 14.45 | 16.00 | 1.429 | -    | -     | 0.1   | 0.181 | 0.259 |
|         | FR1 n77     | 100M | QPSK | 270 | 0  | DFT-30 | Back     | 5mm | Ant 8 | ECI 7   | 656000 | 3840    | 3 | 14.45 | 16.00 | 1.429 | -    | -     | 0.13  | 0.216 | 0.309 |

| Plot No. | Band       | Mode                | Test Position | Gap (mm) | Antenna | Power State | Ch. | Freq. (MHz) | Sample | Average Power (dBm) | Tune-Up Limit (dBm) | Tune-up Scaling Factor | Duty Cycle % | Duty Cycle Scaling Factor | Power Drift (dB) | Measured 1g SAR (W/kg) | Reported 1g SAR (W/kg) |
|----------|------------|---------------------|---------------|----------|---------|-------------|-----|-------------|--------|---------------------|---------------------|------------------------|--------------|---------------------------|------------------|------------------------|------------------------|
| WLAN     |            |                     |               |          |         |             |     |             |        |                     |                     |                        |              |                           |                  |                        |                        |
| 62       | Bluetooth  | DH5 1Mbps           | Back          | 5mm      | Ant 6   | Full Power  | 0   | 2402        | 1      | 12.00               | 14.00               | 1.585                  | 76.89        | 1.083                     | 0.19             | 0.188                  | 0.323                  |
| 63       | WLAN2.4GHz | 802.11b 1Mbps       | Back          | 5mm      | Ant 6   | Hotspot     | 11  | 2462        | 1      | 16.50               | 18.00               | 1.413                  | 100.00       | 1.000                     | -0.04            | 0.558                  | 0.788                  |
|          | WLAN2.4GHz | 802.11b 1Mbps       | Back          | 5mm      | Ant 6   | Hotspot     | 11  | 2462        | 2      | 16.50               | 18.00               | 1.413                  | 100.00       | 1.000                     | 0.13             | 0.536                  | 0.757                  |
|          | WLAN2.4GHz | 802.11b 1Mbps       | Back          | 5mm      | Ant 6   | Hotspot     | 11  | 2462        | 3      | 16.50               | 18.00               | 1.413                  | 100.00       | 1.000                     | 0.09             | 0.455                  | 0.643                  |
| 64       | WLAN5.2GHz | 802.11ac-VHT80 MCS0 | Back          | 5mm      | Ant 6   | Hotspot     | 42  | 5210        | 1      | 8.85                | 10.00               | 1.303                  | 100.00       | 1.000                     | 0.01             | 0.248                  | 0.323                  |
| 65       | WLAN5.8GHz | 802.11ac-VHT80 MCS0 | Top Side      | 5mm      | Ant 6   | hotspot     | 155 | 5775        | 1      | 9.28                | 10.50               | 1.324                  | 100.00       | 1.000                     | -0.14            | 0.248                  | 0.328                  |
|          | WLAN5.8GHz | 802.11ac-VHT80 MCS0 | Top Side      | 5mm      | Ant 6   | hotspot     | 155 | 5775        | 2      | 9.28                | 10.50               | 1.324                  | 100.00       | 1.000                     | 0.12             | 0.240                  | 0.318                  |
|          | WLAN5.8GHz | 802.11ac-VHT80 MCS0 | Top Side      | 5mm      | Ant 6   | hotspot     | 155 | 5775        | 3      | 9.28                | 10.50               | 1.324                  | 100.00       | 1.000                     | 0.16             | 0.219                  | 0.290                  |





## 14.3 Body Worn Accessory SAR

| Plot No. | Band         | BW (MHz) | Modulation | RB Size | RB offset | Mode              | Test Position | Gap (mm) | Antenna | Power State | Ch.                | Freq. (MHz) | Sample | Average Power (dBm) | Tune-Up Limit (dBm) | Tune-up Scaling Factor | Duty Cycle % | Duty Cycle Scaling Factor | Power Drift (dB) | Measured 1g SAR (W/kg) | Reported 1g SAR (W/kg) |
|----------|--------------|----------|------------|---------|-----------|-------------------|---------------|----------|---------|-------------|--------------------|-------------|--------|---------------------|---------------------|------------------------|--------------|---------------------------|------------------|------------------------|------------------------|
| 750MHz   |              |          |            |         |           |                   |               |          |         |             |                    |             |        |                     |                     |                        |              |                           |                  |                        |                        |
| 66       | LTE Band 71  | 20M      | QPSK       | 1       | 0         | -                 | Back          | 5mm      | Ant 0   | ECI 3       | 133297             | 680.5       | 1      | 23.11               | 24.00               | 1.227                  | -            | -                         | 0.02             | 0.368                  | 0.452                  |
|          | LTE Band 71  | 20M      | QPSK       | 1       | 0         | -                 | Back          | 5mm      | Ant 4   | ECI 3       | 133297             | 680.5       | 1      | 23.16               | 24.00               | 1.213                  | -            | -                         | 0.1              | 0.251                  | 0.305                  |
| 67       | LTE Band 12  | 10M      | QPSK       | 1       | 0         | -                 | Back          | 5mm      | Ant 0   | ECI 3       | 23095              | 707.5       | 1      | 23.07               | 24.00               | 1.239                  | -            | -                         | 0.02             | 0.533                  | 0.660                  |
|          | LTE Band 12  | 10M      | QPSK       | 1       | 0         | -                 | Back          | 5mm      | Ant 4   | ECI 3       | 23095              | 707.5       | 1      | 22.67               | 23.70               | 1.268                  | -            | -                         | 0.08             | 0.486                  | 0.616                  |
| 68       | LTE Band 13  | 10M      | QPSK       | 1       | 0         | -                 | Back          | 5mm      | Ant 0   | ECI 3       | 23230              | 782         | 1      | 23.04               | 24.00               | 1.247                  | -            | -                         | 0.04             | 0.735                  | 0.917                  |
|          | LTE Band 13  | 10M      | QPSK       | 1       | 0         | -                 | Back          | 5mm      | Ant 4   | ECI 3       | 23230              | 782         | 1      | 22.75               | 23.70               | 1.245                  | -            | -                         | -0.19            | 0.573                  | 0.713                  |
| 69       | LTE Band 14  | 10M      | QPSK       | 1       | 0         | -                 | Back          | 5mm      | Ant 0   | ECI 3       | 23330              | 793         | 1      | 22.99               | 24.00               | 1.262                  | -            | -                         | 0.05             | 0.742                  | 0.936                  |
|          | LTE Band 14  | 10M      | QPSK       | 1       | 0         | -                 | Back          | 5mm      | Ant 4   | ECI 3       | 23330              | 793         | 1      | 22.12               | 23.20               | 1.282                  | -            | -                         | -0.09            | 0.556                  | 0.713                  |
|          | FR1 n71      | 35M      | QPSK       | 1       | 1         | DFT-15            | Back          | 5mm      | Ant 0   | ECI 3/7     | 136100             | 680.5       | 1      | 22.96               | 24.00               | 1.271                  | -            | -                         | -0.18            | 0.314                  | 0.399                  |
| 70       | FR1 n71      | 35M      | QPSK       | 1       | 1         | DFT-15            | Back          | 5mm      | Ant 4   | ECI 3/7     | 136100             | 680.5       | 1      | 22.99               | 24.00               | 1.262                  | -            | -                         | -0.05            | 0.340                  | 0.429                  |
|          | FR1 n12      | 15M      | QPSK       | 36      | 22        | DFT-15            | Back          | 5mm      | Ant 0   | ECI 3/7     | 141500             | 707.5       | 1      | 22.87               | 24.00               | 1.297                  | -            | -                         | 0.1              | 0.375                  | 0.486                  |
| 71       | FR1 n12      | 15M      | QPSK       | 1       | 1         | DFT-15            | Back          | 5mm      | Ant 4   | ECI 3       | 141500             | 707.5       | 1      | 21.95               | 23.00               | 1.274                  | -            | -                         | 0.13             | 0.482                  | 0.614                  |
| 72       | FR1 n14      | 10M      | QPSK       | 25      | 14        | DFT-15            | Back          | 5mm      | Ant 0   | ECI 3/7     | 158600             | 793         | 1      | 23.06               | 24.00               | 1.242                  | -            | -                         | 0                | 0.738                  | 0.916                  |
|          | FR1 n14      | 10M      | QPSK       | 25      | 14        | DFT-15            | Back          | 5mm      | Ant 4   | ECI 3       | 158600             | 793         | 1      | 21.92               | 23.00               | 1.282                  | -            | -                         | 0.04             | 0.543                  | 0.696                  |
| 835MHz   |              |          |            |         |           |                   |               |          |         |             |                    |             |        |                     |                     |                        |              |                           |                  |                        |                        |
| 73       | GSM850       | -        | -          | -       | -         | GPRS (4 Tx slots) | Back          | 5mm      | Ant 0   | ECI 3/7     | 189                | 836.4       | 1      | 25.92               | 27.00               | 1.282                  | -            | -                         | 0.07             | 0.913                  | 1.171                  |
| 74       | WCDMA V      | -        | -          | -       | -         | RMC 12.2Kbps      | Back          | 5mm      | Ant 0   | ECI 3/7     | 4233               | 846.6       | 1      | 20.93               | 22.00               | 1.279                  | -            | -                         | 0.11             | 0.780                  | 0.998                  |
| 75       | LTE Band 26  | 15M      | QPSK       | 1       | 0         | -                 | Back          | 5mm      | Ant 0   | ECI 3/7     | 26965              | 841.5       | 1      | 21.28               | 22.00               | 1.180                  | -            | -                         | 0.13             | 0.784                  | 0.925                  |
|          | LTE Band 26  | 15M      | QPSK       | 1       | 0         | -                 | Back          | 5mm      | Ant 4   | ECI 3       | 26965              | 841.5       | 1      | 22.11               | 23.20               | 1.285                  | -            | -                         | 0.14             | 0.635                  | 0.816                  |
|          | LTE Band 26  | 15M      | QPSK       | 1       | 0         | -                 | Back          | 5mm      | Ant 4   | ECI 3       | 26965              | 841.5       | 2      | 22.11               | 23.20               | 1.285                  | -            | -                         | -0.08            | 0.582                  | 0.748                  |
|          | LTE Band 26  | 15M      | QPSK       | 1       | 0         | -                 | Back          | 5mm      | Ant 4   | ECI 3       | 26965              | 841.5       | 3      | 22.11               | 23.20               | 1.285                  | -            | -                         | 0.17             | 0.560                  | 0.720                  |
| 76       | FR1 n26      | 20M      | QPSK       | 1       | 1         | DFT-15            | Back          | 5mm      | Ant 0   | ECI 7       | 166300             | 831.5       | 1      | 21.76               | 22.50               | 1.186                  | -            | -                         | -0.12            | 0.954                  | 1.131                  |
|          | FR1 n26      | 20M      | QPSK       | 1       | 1         | DFT-15            | Back          | 5mm      | Ant 0   | ECI 3/7     | 166300             | 831.5       | 2      | 21.76               | 22.50               | 1.186                  | -            | -                         | -0.09            | 0.576                  | 0.683                  |
|          | FR1 n26      | 20M      | QPSK       | 1       | 1         | DFT-15            | Back          | 5mm      | Ant 0   | ECI 3/7     | 166300             | 831.5       | 3      | 21.76               | 22.50               | 1.186                  | -            | -                         | 0.17             | 0.629                  | 0.746                  |
|          | FR1 n26      | 20M      | QPSK       | 50      | 28        | DFT-15            | Back          | 5mm      | Ant 4   | ECI 3       | 166300             | 831.5       | 1      | 22.04               | 23.00               | 1.247                  | -            | -                         | -0.18            | 0.564                  | 0.704                  |
| 1750MHz  |              |          |            |         |           |                   |               |          |         |             |                    |             |        |                     |                     |                        |              |                           |                  |                        |                        |
| 77       | WCDMA IV     | -        | -          | -       | -         | RMC 12.2Kbps      | Back          | 5mm      | Ant 0   | ECI 3       | 1513               | 1752.6      | 1      | 18.44               | 19.50               | 1.276                  | -            | -                         | 0.16             | 0.779                  | 0.994                  |
| 78       | LTE Band 66  | 20M      | QPSK       | 1       | 0         | -                 | Back          | 5mm      | Ant 0   | ECI 3       | 132572             | 1770        | 1      | 18.07               | 19.00               | 1.239                  | -            | -                         | 0.16             | 0.642                  | 0.795                  |
|          | LTE Band 66  | 20M      | QPSK       | 1       | 0         | -                 | Back          | 5mm      | Ant 4   | ECI 3       | 132322             | 1745        | 1      | 16.10               | 17.00               | 1.230                  | -            | -                         | -0.1             | 0.366                  | 0.450                  |
|          | LTE Band 66C | 20M      | QPSK       | 1       | 0         | -                 | Back          | 5mm      | Ant 4   | ECI 3       | 132322+1745+132520 | 1764.8      | 1      | 15.95               | 17.00               | 1.274                  | -            | -                         | 0.11             | 0.392                  | 0.499                  |
|          | LTE Band 66C | 20M      | QPSK       | 1       | 0         | -                 | Back          | 5mm      | Ant 4   | ECI 3       | 132322+1745+132520 | 1764.8      | 2      | 15.95               | 17.00               | 1.274                  | -            | -                         | 0.18             | 0.308                  | 0.392                  |
|          | LTE Band 66C | 20M      | QPSK       | 1       | 0         | -                 | Back          | 5mm      | Ant 4   | ECI 3       | 132322+1745+132520 | 1764.8      | 3      | 15.95               | 17.00               | 1.274                  | -            | -                         | -0.14            | 0.310                  | 0.395                  |
|          | FR1 n70      | 15M      | QPSK       | 1       | 1         | DFT-15            | Back          | 5mm      | Ant 0   | ECI 3       | 340500             | 1702.5      | 1      | 18.05               | 19.00               | 1.245                  | -            | -                         | -0.02            | 0.606                  | 0.754                  |
| 79       | FR1 n70      | 15M      | QPSK       | 75      | 0         | DFT-15            | Back          | 5mm      | Ant 4   | ECI 3       | 340500             | 1702.5      | 1      | 19.20               | 20.00               | 1.202                  | -            | -                         | 0.04             | 0.731                  | 0.879                  |
| 80       | FR1 n66      | 45M      | QPSK       | 120     | 60        | DFT-15            | Back          | 5mm      | Ant 0   | ECI 3       | 349000             | 1745        | 1      | 18.07               | 19.00               | 1.239                  | -            | -                         | -0.03            | 0.864                  | 1.070                  |
|          | FR1 n66      | 45M      | QPSK       | 1       | 1         | DFT-15            | Back          | 5mm      | Ant 4   | ECI 3       | 349000             | 1745        | 1      | 19.32               | 20.00               | 1.169                  | -            | -                         | 0.07             | 0.802                  | 0.938                  |
| 1900MHz  |              |          |            |         |           |                   |               |          |         |             |                    |             |        |                     |                     |                        |              |                           |                  |                        |                        |
| 81       | GSM1900      | -        | -          | -       | -         | GPRS (4 Tx slots) | Back          | 5mm      | Ant 0   | ECI 3       | 810                | 1909.8      | 1      | 22.00               | 23.00               | 1.259                  | -            | -                         | -0.08            | 0.967                  | 1.217                  |
| 82       | WCDMA II     | -        | -          | -       | -         | RMC 12.2Kbps      | Back          | 5mm      | Ant 0   | ECI 3       | 9538               | 1907.6      | 1      | 17.51               | 18.50               | 1.256                  | -            | -                         | 0.18             | 0.858                  | 1.078                  |
|          | WCDMA II     | -        | -          | -       | -         | RMC 12.2Kbps      | Back          | 5mm      | Ant 0   | ECI 3       | 9538               | 1907.6      | 2      | 17.51               | 18.50               | 1.256                  | -            | -                         | -0.19            | 0.698                  | 0.877                  |
|          | WCDMA II     | -        | -          | -       | -         | RMC 12.2Kbps      | Back          | 5mm      | Ant 0   | ECI 3       | 9538               | 1907.6      | 3      | 17.51               | 18.50               | 1.256                  | -            | -                         | -0.19            | 0.740                  | 0.929                  |
| 83       | LTE Band 25  | 20M      | QPSK       | 1       | 0         | -                 | Back          | 5mm      | Ant 0   | ECI 3       | 26140              | 1860        | 1      | 17.46               | 18.50               | 1.271                  | -            | -                         | -0.18            | 0.774                  | 0.983                  |
|          | LTE Band 25  | 20M      | QPSK       | 1       | 0         | -                 | Back          | 5mm      | Ant 4   | ECI 3       | 26590              | 1905        | 1      | 15.98               | 17.00               | 1.265                  | -            | -                         | -0.18            | 0.206                  | 0.261                  |
|          | FR1 n25      | 40M      | QPSK       | 1       | 1         | DFT-15            | Back          | 5mm      | Ant 0   | ECI 3       | 376500             | 1882.5      | 1      | 17.57               | 18.50               | 1.239                  | -            | -                         | -0.17            | 0.707                  | 0.876                  |
| 84       | FR1 n25      | 40M      | QPSK       | 1       | 1         | DFT-15            | Back          | 5mm      | Ant 4   | ECI 3       | 376500             | 1882.5      | 1      | 18.15               | 19.00               | 1.216                  | -            | -                         | 0.15             | 0.794                  | 0.966                  |
| 2300MHz  |              |          |            |         |           |                   |               |          |         |             |                    |             |        |                     |                     |                        |              |                           |                  |                        |                        |
| 85       | LTE Band 30  | 10M      | QPSK       | 1       | 0         | -                 | Back          | 5mm      | Ant 1   | ECI 3/7     | 27710              | 2310        | 1      | 18.19               | 19.00               | 1.205                  | -            | -                         | 0.09             | 0.618                  | 0.745                  |
|          | LTE Band 30  | 10M      | QPSK       | 1       | 0         | -                 | Back          | 5mm      | Ant 4   | ECI 3       | 27710              | 2310        | 1      | 22.81               | 24.00               | 1.315                  | -            | -                         | -0.07            | 0.429                  | 0.564                  |



# FCC SAR Test Report

Report No. : FA561221

|         |             |      |      |     |    |        |      |     |       |         |        |         |   |       |       |       |      |       |       |       |       |
|---------|-------------|------|------|-----|----|--------|------|-----|-------|---------|--------|---------|---|-------|-------|-------|------|-------|-------|-------|-------|
| 86      | FR1 n30     | 10M  | QPSK | 1   | 1  | DFT-15 | Back | 5mm | Ant 1 | ECI 7   | 462000 | 2310    | 1 | 19.39 | 20.00 | 1.151 | -    | -     | 0.02  | 0.855 | 0.984 |
| 2600MHz |             |      |      |     |    |        |      |     |       |         |        |         |   |       |       |       |      |       |       |       |       |
| 87      | LTE Band 7  | 20M  | QPSK | 1   | 0  | -      | Back | 5mm | Ant 1 | ECI 3/7 | 21350  | 2560    | 1 | 18.34 | 19.50 | 1.306 | -    | -     | -0.13 | 0.761 | 0.994 |
|         | LTE Band 7  | 20M  | QPSK | 1   | 0  | -      | Back | 5mm | Ant 1 | ECI 3/7 | 21350  | 2560    | 2 | 18.34 | 19.50 | 1.306 | -    | -     | -0.02 | 0.696 | 0.909 |
|         | LTE Band 7  | 20M  | QPSK | 1   | 0  | -      | Back | 5mm | Ant 1 | ECI 3/7 | 21350  | 2560    | 3 | 18.34 | 19.50 | 1.306 | -    | -     | -0.17 | 0.674 | 0.880 |
|         | LTE Band 7  | 20M  | QPSK | 1   | 0  | -      | Back | 5mm | Ant 4 | ECI 3   | 21100  | 2535    | 1 | 23.20 | 24.00 | 1.202 | -    | -     | 0.11  | 0.193 | 0.232 |
| 88      | LTE Band 41 | 20M  | QPSK | 1   | 0  | -      | Back | 5mm | Ant 1 | ECI 3/7 | 41055  | 2636.5  | 1 | 20.17 | 21.40 | 1.327 | 62.9 | 1.006 | -0.14 | 0.685 | 0.915 |
| 89      | FR1 n7      | 50M  | QPSK | 1   | 1  | DFT-15 | Back | 5mm | Ant 1 | ECI 3/7 | 507000 | 2535    | 1 | 20.37 | 21.00 | 1.156 | -    | -     | -0.02 | 1.020 | 1.179 |
| 90      | FR1 n41     | 100M | QPSK | 1   | 1  | DFT-30 | Back | 5mm | Ant 1 | ECI 3/7 | 518598 | 2592.99 | 1 | 18.69 | 19.50 | 1.205 | -    | -     | -0.05 | 0.659 | 0.794 |
|         | FR1 n41     | 100M | QPSK | 1   | 1  | DFT-30 | Back | 5mm | Ant 4 | ECI 3   | 518598 | 2592.99 | 1 | 15.75 | 16.50 | 1.189 | -    | -     | -0.16 | 0.577 | 0.686 |
|         | FR1 n41     | 100M | QPSK | 1   | 1  | DFT-30 | Back | 5mm | Ant 4 | ECI 3   | 518598 | 2592.99 | 2 | 15.75 | 16.50 | 1.189 | -    | -     | -0.11 | 0.554 | 0.658 |
|         | FR1 n41     | 100M | QPSK | 1   | 1  | DFT-30 | Back | 5mm | Ant 4 | ECI 3   | 518598 | 2592.99 | 3 | 15.75 | 16.50 | 1.189 | -    | -     | 0.08  | 0.494 | 0.587 |
|         | FR1 n41     | 100M | QPSK | 1   | 1  | DFT-30 | Back | 5mm | Ant 2 | ECI 3   | 518598 | 2592.99 | 1 | 16.38 | 17.00 | 1.153 | -    | -     | -0.13 | 0.331 | 0.382 |
|         | FR1 n41     | 100M | QPSK | 1   | 1  | DFT-30 | Back | 5mm | Ant 2 | ECI 3   | 518598 | 2592.99 | 2 | 16.38 | 17.00 | 1.153 | -    | -     | 0.03  | 0.329 | 0.379 |
|         | FR1 n41     | 100M | QPSK | 1   | 1  | DFT-30 | Back | 5mm | Ant 2 | ECI 3   | 518598 | 2592.99 | 3 | 16.38 | 17.00 | 1.153 | -    | -     | 0.19  | 0.237 | 0.273 |
|         | FR1 n41     | 100M | QPSK | 1   | 1  | DFT-30 | Back | 5mm | Ant 7 | ECI 3   | 518598 | 2592.99 | 1 | 14.63 | 15.50 | 1.222 | -    | -     | 0.02  | 0.498 | 0.608 |
|         | FR1 n41     | 100M | QPSK | 1   | 1  | DFT-30 | Back | 5mm | Ant 7 | ECI 3   | 518598 | 2592.99 | 2 | 14.63 | 15.50 | 1.222 | -    | -     | -0.06 | 0.449 | 0.549 |
|         | FR1 n41     | 100M | QPSK | 1   | 1  | DFT-30 | Back | 5mm | Ant 7 | ECI 3   | 518598 | 2592.99 | 3 | 14.63 | 15.50 | 1.222 | -    | -     | 0.03  | 0.360 | 0.440 |
| 3-4GHz  |             |      |      |     |    |        |      |     |       |         |        |         |   |       |       |       |      |       |       |       |       |
| 91      | LTE Band 48 | 20M  | QPSK | 1   | 0  | -      | Back | 5mm | Ant 5 | ECI 3   | 56150  | 3641    | 1 | 15.88 | 17.00 | 1.294 | 62.9 | 1.006 | 0.03  | 0.429 | 0.559 |
|         | LTE Band 48 | 20M  | QPSK | 1   | 0  | -      | Back | 5mm | Ant 5 | ECI 3   | 56150  | 3641    | 2 | 15.88 | 17.00 | 1.294 | 62.9 | 1.006 | 0.06  | 0.392 | 0.510 |
|         | LTE Band 48 | 20M  | QPSK | 1   | 0  | -      | Back | 5mm | Ant 5 | ECI 3   | 56150  | 3641    | 3 | 15.88 | 17.00 | 1.294 | 62.9 | 1.006 | 0.09  | 0.340 | 0.443 |
| 92      | FR1 n48     | 100M | QPSK | 1   | 1  | DFT-30 | Back | 5mm | Ant 5 | ECI 3   | 641666 | 3624.99 | 1 | 14.39 | 15.50 | 1.291 | -    | -     | -0.07 | 0.388 | 0.501 |
|         | FR1 n77     | 100M | QPSK | 270 | 0  | DFT-30 | Back | 5mm | Ant 5 | ECI 3   | 633332 | 3499.98 | 1 | 14.09 | 15.50 | 1.384 | -    | -     | 0.16  | 0.327 | 0.452 |
|         | FR1 n77     | 100M | QPSK | 270 | 0  | DFT-30 | Back | 5mm | Ant 5 | ECI 3   | 656000 | 3840    | 1 | 14.05 | 15.50 | 1.396 | -    | -     | -0.03 | 0.360 | 0.503 |
|         | FR1 n77     | 100M | QPSK | 135 | 69 | DFT-30 | Back | 5mm | Ant 1 | ECI 3   | 633332 | 3499.98 | 1 | 22.72 | 24.00 | 1.343 | -    | -     | 0.11  | 0.331 | 0.444 |
|         | FR1 n77     | 100M | QPSK | 1   | 1  | DFT-30 | Back | 5mm | Ant 1 | ECI 3   | 656000 | 3840    | 1 | 22.83 | 24.00 | 1.309 | -    | -     | -0.12 | 0.465 | 0.609 |
|         | FR1 n77     | 100M | QPSK | 1   | 1  | DFT-30 | Back | 5mm | Ant 1 | ECI 3   | 656000 | 3840    | 2 | 22.83 | 24.00 | 1.309 | -    | -     | 0.04  | 0.450 | 0.589 |
| 93      | FR1 n77     | 100M | QPSK | 1   | 1  | DFT-30 | Back | 5mm | Ant 1 | ECI 3   | 656000 | 3840    | 3 | 22.83 | 24.00 | 1.309 | -    | -     | 0.01  | 0.869 | 1.138 |
|         | FR1 n77     | 100M | QPSK | 1   | 1  | DFT-30 | Back | 5mm | Ant 2 | ECI 3   | 633332 | 3499.98 | 1 | 16.45 | 17.50 | 1.274 | -    | -     | 0.16  | 0.119 | 0.152 |
|         | FR1 n77     | 100M | QPSK | 1   | 1  | DFT-30 | Back | 5mm | Ant 2 | ECI 3   | 633332 | 3499.98 | 2 | 16.45 | 17.50 | 1.274 | -    | -     | 0.16  | 0.097 | 0.124 |
|         | FR1 n77     | 100M | QPSK | 1   | 1  | DFT-30 | Back | 5mm | Ant 2 | ECI 3   | 633332 | 3499.98 | 3 | 16.45 | 17.50 | 1.274 | -    | -     | 0.02  | 0.052 | 0.066 |
|         | FR1 n77     | 100M | QPSK | 135 | 69 | DFT-30 | Back | 5mm | Ant 2 | ECI 3   | 656000 | 3840    | 1 | 16.42 | 17.50 | 1.282 | -    | -     | 0.14  | 0.183 | 0.235 |
|         | FR1 n77     | 100M | QPSK | 1   | 1  | DFT-30 | Back | 5mm | Ant 8 | ECI 3   | 633332 | 3499.98 | 1 | 17.09 | 18.50 | 1.384 | -    | -     | 0.19  | 0.592 | 0.819 |
|         | FR1 n77     | 100M | QPSK | 270 | 0  | DFT-30 | Back | 5mm | Ant 8 | ECI 3   | 656000 | 3840    | 1 | 16.98 | 18.50 | 1.419 | -    | -     | -0.17 | 0.333 | 0.473 |
|         | FR1 n77     | 100M | QPSK | 270 | 0  | DFT-30 | Back | 5mm | Ant 8 | ECI 3   | 656000 | 3840    | 2 | 16.98 | 18.50 | 1.419 | -    | -     | -0.18 | 0.257 | 0.365 |
|         | FR1 n77     | 100M | QPSK | 270 | 0  | DFT-30 | Back | 5mm | Ant 8 | ECI 3   | 656000 | 3840    | 3 | 16.98 | 18.50 | 1.419 | -    | -     | -0.05 | 0.307 | 0.436 |

| Plot No. | Band       | Mode                | Test Position | Gap (mm) | Antenna | Power State | Ch. | Freq. (MHz) | Sample | Average Power (dBm) | Tune-Up Limit (dBm) | Tune-up Scaling Factor | Duty Cycle % | Duty Cycle Scaling Factor | Power Drift (dB) | Measured 1g SAR (W/kg) | Reported 1g SAR (W/kg) |
|----------|------------|---------------------|---------------|----------|---------|-------------|-----|-------------|--------|---------------------|---------------------|------------------------|--------------|---------------------------|------------------|------------------------|------------------------|
| 2450MHz  |            |                     |               |          |         |             |     |             |        |                     |                     |                        |              |                           |                  |                        |                        |
| 94       | Bluetooth  | DH5 1Mbps           | Back          | 5mm      | Ant 6   | Full Power  | 0   | 2402        | 1      | 12.00               | 14.00               | 1.585                  | 76.89        | 1.083                     | 0.19             | 0.188                  | 0.323                  |
| 95       | WLAN2.4GHz | 802.11b 1Mbps       | Back          | 5mm      | Ant 6   | Standalone  | 11  | 2462        | 1      | 18.00               | 19.50               | 1.413                  | 100.00       | 1.000                     | -0.12            | 0.643                  | 0.908                  |
|          | WLAN2.4GHz | 802.11b 1Mbps       | Back          | 5mm      | Ant 6   | Standalone  | 11  | 2462        | 2      | 18.00               | 19.50               | 1.413                  | 100.00       | 1.000                     | 0.07             | 0.636                  | 0.898                  |
|          | WLAN2.4GHz | 802.11b 1Mbps       | Back          | 5mm      | Ant 6   | Standalone  | 11  | 2462        | 3      | 18.00               | 19.50               | 1.413                  | 100.00       | 1.000                     | -0.13            | 0.568                  | 0.802                  |
| 5000MHz  |            |                     |               |          |         |             |     |             |        |                     |                     |                        |              |                           |                  |                        |                        |
|          | WLAN5.3GHz | 802.11ac-VHT80 MCS0 | Back          | 5mm      | Ant 6   | Standalone  | 58  | 5290        | 1      | 11.72               | 13.00               | 1.343                  | 100.00       | 1.000                     | -0.01            | 0.705                  | 0.947                  |
| 96       | WLAN5.3GHz | 802.11ac-VHT80 MCS0 | Back          | 5mm      | Ant 6   | Standalone  | 58  | 5290        | 2      | 11.72               | 13.00               | 1.343                  | 100.00       | 1.000                     | 0.17             | 0.712                  | 0.956                  |
|          | WLAN5.3GHz | 802.11ac-VHT80 MCS0 | Back          | 5mm      | Ant 6   | Standalone  | 58  | 5290        | 3      | 11.72               | 13.00               | 1.343                  | 100.00       | 1.000                     | 0.07             | 0.645                  | 0.866                  |
| 97       | WLAN5.5GHz | 802.11ac-VHT80 MCS0 | Back          | 5mm      | Ant 6   | Standalone  | 122 | 5610        | 1      | 11.45               | 13.00               | 1.429                  | 100.00       | 1.000                     | 0.17             | 0.434                  | 0.620                  |
| 98       | WLAN5.8GHz | 802.11ac-VHT80 MCS0 | Back          | 5mm      | Ant 6   | Standalone  | 155 | 5775        | 1      | 11.90               | 13.50               | 1.445                  | 100.00       | 1.000                     | 0.16             | 0.386                  | 0.558                  |



## 14.4 Product specific 10g SAR

| Plot No. | Band        | BW (MHz) | Modulation | RB Size | RB offset | Mode              | Test Position | Gap (mm) | Antenna | Power State | Ch.    | Freq. (MHz) | Sample | Average Power (dBm) | Tune-Up Limit (dBm) | Tune-up Scaling Factor | Duty Cycle % | Duty Cycle Scaling Factor | Power Drift (dB) | Measured 10g SAR (W/kg) | Reported 10g SAR (W/kg) |
|----------|-------------|----------|------------|---------|-----------|-------------------|---------------|----------|---------|-------------|--------|-------------|--------|---------------------|---------------------|------------------------|--------------|---------------------------|------------------|-------------------------|-------------------------|
| 750MHz   |             |          |            |         |           |                   |               |          |         |             |        |             |        |                     |                     |                        |              |                           |                  |                         |                         |
| 99       | LTE Band 13 | 10M      | QPSK       | 1       | 0         | -                 | Back          | 0mm      | Ant 0   | ECI 10      | 23230  | 782         | 1      | 23.04               | 24.00               | 1.247                  | -            | -                         | 0.07             | 1.230                   | 1.534                   |
| 835MHz   |             |          |            |         |           |                   |               |          |         |             |        |             |        |                     |                     |                        |              |                           |                  |                         |                         |
| 100      | GSM850      | -        | -          | -       | -         | GPRS (4 Tx slots) | Bottom Side   | 0mm      | Ant 0   | ECI 10      | 189    | 836.4       | 1      | 28.74               | 29.50               | 1.191                  | -            | -                         | 0.12             | 1.840                   | 2.192                   |
| 101      | WCDMA V     | -        | -          | -       | -         | RMC 12.2Kbps      | Bottom Side   | 0mm      | Ant 0   | ECI 10      | 4132   | 826.4       | 1      | 23.35               | 24.00               | 1.161                  | -            | -                         | 0.08             | 1.500                   | 1.742                   |
|          | WCDMA V     | -        | -          | -       | -         | RMC 12.2Kbps      | Bottom Side   | 0mm      | Ant 0   | ECI 10      | 4132   | 826.4       | 2      | 23.35               | 24.00               | 1.161                  | -            | -                         | 0.07             | 1.350                   | 1.568                   |
|          | WCDMA V     | -        | -          | -       | -         | RMC 12.2Kbps      | Bottom Side   | 0mm      | Ant 0   | ECI 10      | 4132   | 826.4       | 3      | 23.35               | 24.00               | 1.161                  | -            | -                         | -0.14            | 1.460                   | 1.696                   |
| 102      | LTE Band 26 | 15M      | QPSK       | 1       | 0         | -                 | Back          | 0mm      | Ant 0   | ECI 10      | 26965  | 841.5       | 1      | 23.26               | 24.00               | 1.186                  | -            | -                         | -0.05            | 1.230                   | 1.458                   |
| 103      | FR1 n26     | 20M      | QPSK       | 50      | 28        | DFT-15            | Bottom Side   | 0mm      | Ant 0   | ECI 10      | 166300 | 831.5       | 1      | 23.05               | 24.00               | 1.245                  | -            | -                         | -0.05            | 1.000                   | 1.245                   |
| 1750MHz  |             |          |            |         |           |                   |               |          |         |             |        |             |        |                     |                     |                        |              |                           |                  |                         |                         |
| 104      | WCDMA IV    | -        | -          | -       | -         | RMC 12.2Kbps      | Bottom Side   | 0mm      | Ant 0   | ECI 10      | 1513   | 1752.6      | 1      | 21.40               | 22.50               | 1.288                  | -            | -                         | -0.06            | 2.110                   | 2.718                   |
|          | WCDMA IV    | -        | -          | -       | -         | RMC 12.2Kbps      | Bottom Side   | 0mm      | Ant 0   | ECI 10      | 1513   | 1752.6      | 2      | 21.40               | 22.50               | 1.288                  | -            | -                         | -0.01            | 2.040                   | 2.628                   |
|          | WCDMA IV    | -        | -          | -       | -         | RMC 12.2Kbps      | Bottom Side   | 0mm      | Ant 0   | ECI 10      | 1513   | 1752.6      | 3      | 21.40               | 22.50               | 1.288                  | -            | -                         | -0.1             | 2.070                   | 2.667                   |
| 105      | LTE Band 66 | 20M      | QPSK       | 1       | 0         | -                 | Bottom Side   | 0mm      | Ant 0   | ECI 10      | 132572 | 1770        | 1      | 20.94               | 22.00               | 1.276                  | -            | -                         | -0.01            | 1.850                   | 2.361                   |
|          | LTE Band 66 | 20M      | QPSK       | 1       | 0         | -                 | Top Side      | 0mm      | Ant 4   | ECI 12      | 132072 | 1720        | 1      | 18.05               | 19.00               | 1.245                  | -            | -                         | 0.08             | 0.675                   | 0.840                   |
| 106      | FR1 n70     | 15M      | QPSK       | 75      | 0         | DFT-15            | Bottom Side   | 0mm      | Ant 0   | ECI 10      | 340500 | 1702.5      | 1      | 21.43               | 22.50               | 1.279                  | -            | -                         | 0.11             | 1.840                   | 2.354                   |
|          | FR1 n70     | 15M      | QPSK       | 36      | 22        | DFT-15            | Back          | 0mm      | Ant 4   | ECI 7       | 340500 | 1702.5      | 1      | 21.67               | 22.50               | 1.211                  | -            | -                         | -0.09            | 1.600                   | 1.937                   |
|          | FR1 n66     | 45M      | QPSK       | 120     | 60        | DFT-15            | Bottom Side   | 0mm      | Ant 0   | ECI 10      | 349000 | 1745        | 1      | 21.63               | 22.50               | 1.222                  | -            | -                         | -0.04            | 1.740                   | 2.126                   |
| 107      | FR1 n66     | 45M      | QPSK       | 120     | 60        | DFT-15            | Top Side      | 0mm      | Ant 4   | ECI 7       | 349000 | 1745        | 1      | 21.67               | 22.50               | 1.211                  | -            | -                         | 0.07             | 1.900                   | 2.300                   |
| 1900MHz  |             |          |            |         |           |                   |               |          |         |             |        |             |        |                     |                     |                        |              |                           |                  |                         |                         |
| 108      | GSM1900     | -        | -          | -       | -         | GPRS (4 Tx slots) | Bottom Side   | 0mm      | Ant 0   | ECI 10      | 661    | 1880        | 1      | 24.67               | 25.50               | 1.211                  | -            | -                         | 0.07             | 2.380                   | 2.881                   |
| 109      | WCDMA II    | -        | -          | -       | -         | RMC 12.2Kbps      | Bottom Side   | 0mm      | Ant 0   | ECI 10      | 9262   | 1852.4      | 1      | 20.54               | 21.50               | 1.247                  | -            | -                         | -0.12            | 2.520                   | 3.143                   |
| 110      | LTE Band 25 | 20M      | QPSK       | 1       | 0         | -                 | Bottom Side   | 0mm      | Ant 0   | ECI 10      | 26140  | 1860        | 1      | 20.03               | 21.00               | 1.250                  | -            | -                         | 0.07             | 2.120                   | 2.651                   |
|          | LTE Band 25 | 20M      | QPSK       | 1       | 0         | -                 | Top Side      | 0mm      | Ant 4   | ECI 12      | 26340  | 1880        | 1      | 19.10               | 20.00               | 1.230                  | -            | -                         | 0.01             | 1.120                   | 1.378                   |
|          | LTE Band 25 | 20M      | QPSK       | 1       | 0         | -                 | Top Side      | 0mm      | Ant 4   | ECI 12      | 26340  | 1880        | 2      | 19.10               | 20.00               | 1.230                  | -            | -                         | -0.02            | 1.100                   | 1.353                   |
|          | LTE Band 25 | 20M      | QPSK       | 1       | 0         | -                 | Top Side      | 0mm      | Ant 4   | ECI 12      | 26340  | 1880        | 3      | 19.10               | 20.00               | 1.230                  | -            | -                         | 0.16             | 1.020                   | 1.255                   |
| 111      | FR1 n25     | 40M      | QPSK       | 1       | 1         | DFT-15            | Bottom Side   | 0mm      | Ant 0   | ECI 10      | 376500 | 1882.5      | 1      | 21.01               | 22.00               | 1.256                  | -            | -                         | 0.11             | 2.460                   | 3.090                   |
|          | FR1 n25     | 40M      | QPSK       | 1       | 1         | DFT-15            | Top Side      | 0mm      | Ant 4   | ECI 12      | 376500 | 1882.5      | 1      | 15.23               | 16.00               | 1.194                  | -            | -                         | 0.03             | 1.910                   | 2.281                   |
| 2300MHz  |             |          |            |         |           |                   |               |          |         |             |        |             |        |                     |                     |                        |              |                           |                  |                         |                         |
| 112      | LTE Band 30 | 10M      | QPSK       | 1       | 0         | -                 | Back          | 0mm      | Ant 1   | ECI 11      | 27710  | 2310        | 1      | 20.12               | 21.00               | 1.225                  | -            | -                         | 0.01             | 1.930                   | 2.364                   |
|          | LTE Band 30 | 10M      | QPSK       | 1       | 0         | -                 | Back          | 0mm      | Ant 1   | ECI 11      | 27710  | 2310        | 2      | 20.12               | 21.00               | 1.225                  | -            | -                         | -0.11            | 1.710                   | 2.094                   |
|          | LTE Band 30 | 10M      | QPSK       | 1       | 0         | -                 | Back          | 0mm      | Ant 1   | ECI 11      | 27710  | 2310        | 3      | 20.12               | 21.00               | 1.225                  | -            | -                         | -0.09            | 1.810                   | 2.217                   |
| 113      | FR1 n30     | 10M      | QPSK       | 1       | 1         | DFT-15            | Back          | 0mm      | Ant 1   | ECI 11      | 462000 | 2310        | 1      | 21.39               | 22.00               | 1.151                  | -            | -                         | 0.01             | 2.500                   | 2.877                   |
| 2600MHz  |             |          |            |         |           |                   |               |          |         |             |        |             |        |                     |                     |                        |              |                           |                  |                         |                         |
| 114      | LTE Band 7  | 20M      | QPSK       | 1       | 0         | -                 | Back          | 0mm      | Ant 1   | ECI 11      | 21350  | 2560        | 1      | 21.21               | 22.00               | 1.199                  | -            | -                         | -0.06            | 2.140                   | 2.567                   |
| 115      | LTE Band 41 | 20M      | QPSK       | 1       | 0         | -                 | Back          | 0mm      | Ant 1   | ECI 11      | 41055  | 2636.5      | 1      | 22.55               | 23.90               | 1.365                  | 62.9         | 1.006                     | 0.04             | 1.650                   | 2.265                   |
| 116      | FR1 n7      | 50M      | QPSK       | 1       | 1         | DFT-15            | Back          | 0mm      | Ant 1   | ECI 11      | 507000 | 2535        | 1      | 21.80               | 22.50               | 1.175                  | -            | -                         | -0.12            | 2.360                   | 2.773                   |
| 117      | FR1 n41     | 100M     | QPSK       | 1       | 1         | DFT-30            | Back          | 0mm      | Ant 1   | ECI 11      | 518598 | 2592.99     | 1      | 21.21               | 22.00               | 1.199                  | -            | -                         | 0.02             | 1.940                   | 2.327                   |
|          | FR1 n41     | 100M     | QPSK       | 1       | 1         | DFT-30            | Back          | 0mm      | Ant 4   | ECI 12      | 518598 | 2592.99     | 1      | 21.25               | 22.00               | 1.189                  | -            | -                         | -0.16            | 1.610                   | 1.913                   |
|          | FR1 n41     | 100M     | QPSK       | 1       | 1         | DFT-30            | Back          | 0mm      | Ant 4   | ECI 12      | 518598 | 2592.99     | 2      | 21.25               | 22.00               | 1.189                  | -            | -                         | 0.01             | 1.800                   | 2.139                   |
|          | FR1 n41     | 100M     | QPSK       | 1       | 1         | DFT-30            | Back          | 0mm      | Ant 4   | ECI 12      | 518598 | 2592.99     | 3      | 21.25               | 22.00               | 1.189                  | -            | -                         | 0.09             | 1.570                   | 1.866                   |
|          | FR1 n41     | 100M     | QPSK       | 1       | 1         | DFT-30            | Back          | 0mm      | Ant 2   | ECI 4       | 518598 | 2592.99     | 1      | 20.10               | 21.00               | 1.230                  | -            | -                         | 0.08             | 1.350                   | 1.661                   |
|          | FR1 n41     | 100M     | QPSK       | 1       | 1         | DFT-30            | Back          | 0mm      | Ant 2   | ECI 4       | 518598 | 2592.99     | 2      | 20.10               | 21.00               | 1.230                  | -            | -                         | -0.06            | 1.290                   | 1.587                   |
|          | FR1 n41     | 100M     | QPSK       | 1       | 1         | DFT-30            | Back          | 0mm      | Ant 2   | ECI 4       | 518598 | 2592.99     | 3      | 20.10               | 21.00               | 1.230                  | -            | -                         | 0.08             | 1.270                   | 1.562                   |
|          | FR1 n41     | 100M     | QPSK       | 135     | 69        | DFT-30            | Back          | 0mm      | Ant 2   | ECI 4       | 518598 | 2592.99     | 1      | 20.06               | 21.00               | 1.242                  | -            | -                         | 0.19             | 1.230                   | 1.527                   |
|          | FR1 n41     | 100M     | QPSK       | 270     | 0         | DFT-30            | Back          | 0mm      | Ant 2   | ECI 4       | 518598 | 2592.99     | 1      | 20.04               | 21.00               | 1.247                  | -            | -                         | 0.01             | 1.280                   | 1.597                   |
|          | FR1 n41     | 100M     | QPSK       | 1       | 1         | DFT-30            | Back          | 0mm      | Ant 7   | ECI 4       | 518598 | 2592.99     | 1      | 20.15               | 21.00               | 1.216                  | -            | -                         | 0.01             | 1.280                   | 1.557                   |
|          | FR1 n41     | 100M     | QPSK       | 1       | 1         | DFT-30            | Back          | 0mm      | Ant 7   | ECI 4       | 518598 | 2592.99     | 2      | 20.15               | 21.00               | 1.216                  | -            | -                         | -0.02            | 1.200                   | 1.459                   |
|          | FR1 n41     | 100M     | QPSK       | 1       | 1         | DFT-30            | Back          | 0mm      | Ant 7   | ECI 4       | 518598 | 2592.99     | 3      | 20.15               | 21.00               | 1.216                  | -            | -                         | -0.09            | 1.090                   | 1.326                   |
| 3-4GHz   |             |          |            |         |           |                   |               |          |         |             |        |             |        |                     |                     |                        |              |                           |                  |                         |                         |



# FCC SAR Test Report

Report No. : FA561221

|     |             |      |      |     |    |        |          |     |       |        |        |         |   |       |       |       |      |       |       |       |       |
|-----|-------------|------|------|-----|----|--------|----------|-----|-------|--------|--------|---------|---|-------|-------|-------|------|-------|-------|-------|-------|
| 118 | LTE Band 48 | 20M  | QPSK | 1   | 0  | -      | Back     | 0mm | Ant 5 | ECI 13 | 56150  | 3641    | 1 | 21.40 | 22.50 | 1.288 | 62.9 | 1.006 | 0.07  | 1.340 | 1.737 |
|     | LTE Band 48 | 20M  | QPSK | 1   | 0  | -      | Back     | 0mm | Ant 5 | ECI 13 | 56150  | 3641    | 2 | 21.40 | 22.50 | 1.288 | 62.9 | 1.006 | 0.07  | 1.270 | 1.646 |
|     | LTE Band 48 | 20M  | QPSK | 1   | 0  | -      | Back     | 0mm | Ant 5 | ECI 13 | 56150  | 3641    | 3 | 21.40 | 22.50 | 1.288 | 62.9 | 1.006 | -0.06 | 1.030 | 1.335 |
| 119 | FR1 n48     | 100M | QPSK | 1   | 1  | DFT-30 | Back     | 0mm | Ant 5 | ECI 13 | 641666 | 3624.99 | 1 | 19.00 | 20.00 | 1.259 | -    | -     | -0.08 | 0.873 | 1.099 |
|     | FR1 n77     | 100M | QPSK | 1   | 1  | DFT-30 | Top Side | 0mm | Ant 5 | ECI 13 | 633332 | 3499.98 | 1 | 19.16 | 20.50 | 1.361 | -    | -     | -0.01 | 0.933 | 1.270 |
|     | FR1 n77     | 100M | QPSK | 1   | 1  | DFT-30 | Top Side | 0mm | Ant 5 | ECI 13 | 656000 | 3840    | 1 | 19.14 | 20.50 | 1.368 | -    | -     | 0.16  | 0.836 | 1.143 |
|     | FR1 n77     | 100M | QPSK | 135 | 69 | DFT-30 | Back     | 0mm | Ant 1 | ECI 11 | 633332 | 3499.98 | 1 | 25.38 | 26.50 | 1.294 | -    | -     | 0.02  | 0.898 | 1.162 |
|     | FR1 n77     | 100M | QPSK | 135 | 69 | DFT-30 | Back     | 0mm | Ant 1 | ECI 11 | 656000 | 3840    | 1 | 25.43 | 26.50 | 1.279 | -    | -     | -0.13 | 1.160 | 1.484 |
|     | FR1 n77     | 100M | QPSK | 135 | 69 | DFT-30 | Back     | 0mm | Ant 1 | ECI 11 | 656000 | 3840    | 2 | 25.43 | 26.50 | 1.279 | -    | -     | 0.15  | 1.300 | 1.663 |
| 120 | FR1 n77     | 100M | QPSK | 135 | 69 | DFT-30 | Back     | 0mm | Ant 1 | ECI 11 | 656000 | 3840    | 3 | 25.43 | 26.50 | 1.279 | -    | -     | -0.12 | 2.090 | 2.674 |
|     | FR1 n77     | 100M | QPSK | 1   | 1  | DFT-30 | Back     | 0mm | Ant 2 | ECI 4  | 633332 | 3499.98 | 1 | 19.05 | 20.00 | 1.245 | -    | -     | 0.09  | 0.733 | 0.912 |
|     | FR1 n77     | 100M | QPSK | 135 | 69 | DFT-30 | Back     | 0mm | Ant 2 | ECI 4  | 633332 | 3499.98 | 1 | 19.00 | 20.00 | 1.259 | -    | -     | 0.17  | 0.877 | 1.104 |
|     | FR1 n77     | 100M | QPSK | 1   | 1  | DFT-30 | Back     | 0mm | Ant 2 | ECI 4  | 656000 | 3840    | 1 | 18.98 | 20.00 | 1.265 | -    | -     | -0.05 | 0.825 | 1.043 |
|     | FR1 n77     | 100M | QPSK | 135 | 69 | DFT-30 | Back     | 0mm | Ant 2 | ECI 4  | 656000 | 3840    | 1 | 18.93 | 20.00 | 1.279 | -    | -     | 0.07  | 1.060 | 1.356 |
|     | FR1 n77     | 100M | QPSK | 135 | 69 | DFT-30 | Back     | 0mm | Ant 2 | ECI 4  | 656000 | 3840    | 2 | 18.93 | 20.00 | 1.279 | -    | -     | 0.01  | 0.941 | 1.204 |
|     | FR1 n77     | 100M | QPSK | 135 | 69 | DFT-30 | Back     | 0mm | Ant 2 | ECI 4  | 656000 | 3840    | 3 | 18.93 | 20.00 | 1.279 | -    | -     | 0.04  | 0.756 | 0.967 |
|     | FR1 n77     | 100M | QPSK | 270 | 0  | DFT-30 | Back     | 0mm | Ant 2 | ECI 4  | 656000 | 3840    | 1 | 18.90 | 20.00 | 1.288 | -    | -     | 0.09  | 0.993 | 1.279 |
|     | FR1 n77     | 100M | QPSK | 1   | 1  | DFT-30 | Back     | 0mm | Ant 8 | ECI 4  | 633332 | 3499.98 | 1 | 20.07 | 21.50 | 1.390 | -    | -     | -0.06 | 1.060 | 1.473 |
|     | FR1 n77     | 100M | QPSK | 135 | 69 | DFT-30 | Back     | 0mm | Ant 8 | ECI 4  | 656000 | 3840    | 1 | 20.02 | 21.50 | 1.406 | -    | -     | -0.14 | 0.754 | 1.060 |

| Plot No. | Band       | Mode                | Test Position | Gap (mm) | Antenna | Power State | Ch. | Freq. (MHz) | Sample | Average Power (dBm) | Tune-Up Limit (dBm) | Tune-up Scaling Factor | Duty Cycle % | Duty Cycle Scaling Factor | Power Drift (dB) | Measured 10g SAR (W/kg) | Reported 10g SAR (W/kg) |
|----------|------------|---------------------|---------------|----------|---------|-------------|-----|-------------|--------|---------------------|---------------------|------------------------|--------------|---------------------------|------------------|-------------------------|-------------------------|
| WLAN     |            |                     |               |          |         |             |     |             |        |                     |                     |                        |              |                           |                  |                         |                         |
| 121      | WLAN2.4GHz | 802.11b 1Mbps       | Back          | 0mm      | Ant 6   | Standalone  | 11  | 2462        | 1      | 20.40               | 22.00               | 1.445                  | 100.00       | 1.000                     | 0.07             | 1.260                   | 1.821                   |
|          | WLAN2.4GHz | 802.11b 1Mbps       | Back          | 0mm      | Ant 6   | Standalone  | 11  | 2462        | 2      | 20.40               | 22.00               | 1.445                  | 100.00       | 1.000                     | 0.07             | 1.250                   | 1.807                   |
|          | WLAN2.4GHz | 802.11b 1Mbps       | Back          | 0mm      | Ant 6   | Standalone  | 11  | 2462        | 3      | 20.40               | 22.00               | 1.445                  | 100.00       | 1.000                     | -0.17            | 1.100                   | 1.590                   |
| 122      | WLAN5.2GHz | 802.11n-HT40 MCS0   | Top Side      | 0mm      | Ant 6   | Standalone  | 46  | 5230        | 1      | 17.11               | 18.50               | 1.377                  | 100.00       | 1.000                     | -0.01            | 1.100                   | 1.515                   |
| 123      | WLAN5.3GHz | 802.11n-HT40 MCS0   | Top Side      | 0mm      | Ant 6   | Standalone  | 54  | 5270        | 1      | 17.15               | 18.50               | 1.365                  | 100.00       | 1.000                     | 0.09             | 1.080                   | 1.474                   |
|          | WLAN5.5GHz | 802.11ac-VHT80 MCS0 | Top Side      | 0mm      | Ant 6   | Standalone  | 122 | 5610        | 1      | 16.89               | 18.50               | 1.449                  | 100.00       | 1.000                     | 0.05             | 0.673                   | 0.975                   |
|          | WLAN5.5GHz | 802.11ac-VHT80 MCS0 | Top Side      | 0mm      | Ant 6   | Standalone  | 122 | 5610        | 2      | 16.89               | 18.50               | 1.449                  | 100.00       | 1.000                     | 0.1              | 0.816                   | 1.182                   |
| 124      | WLAN5.5GHz | 802.11ac-VHT80 MCS0 | Top Side      | 0mm      | Ant 6   | Standalone  | 122 | 5610        | 3      | 16.89               | 18.50               | 1.449                  | 100.00       | 1.000                     | -0.03            | 0.948                   | 1.373                   |
| 125      | WLAN5.8GHz | 802.11ac-VHT80 MCS0 | Top Side      | 0mm      | Ant 6   | Standalone  | 155 | 5775        | 1      | 16.10               | 17.50               | 1.380                  | 100.00       | 1.000                     | 0.02             | 0.757                   | 1.045                   |

## <NFC SAR>

| Plot No. | Band | Mode | Test Position | Gap (mm) | Freq. (MHz) | Sample | Power Drift (dB) | Measured 10g SAR (W/kg) | Reported 10g SAR (W/kg) |
|----------|------|------|---------------|----------|-------------|--------|------------------|-------------------------|-------------------------|
| 126      | NFC  | ASK  | Back          | 0mm      | 13.56       | 1      | 0.11             | 0.023                   | 0.023                   |
|          | NFC  | ASK  | Back          | 0mm      | 13.56       | 2      | 0.14             | 0.017                   | 0.017                   |
|          | NFC  | ASK  | Back          | 0mm      | 13.56       | 3      | 0.12             | 0.021                   | 0.021                   |



## 14.5 Repeated SAR Measurement

&lt;1g&gt;

| Plot No. | Band     | BW (MHz) | Modulation | RB Size | RB offset | Mode              | Test Position | Gap (mm) | Antenna | Power State | Ch.    | Freq. (MHz) | Average Power (dBm) | Tune-Up Limit (dBm) | Tune-up Scaling Factor | Duty Cycle % | Duty Cycle Scaling Factor | Power Drift (dB) | Measured 1g SAR (W/kg) | Ratio | Reported 1g SAR (W/kg) |
|----------|----------|----------|------------|---------|-----------|-------------------|---------------|----------|---------|-------------|--------|-------------|---------------------|---------------------|------------------------|--------------|---------------------------|------------------|------------------------|-------|------------------------|
| 1st      | FR1 n26  | 20M      | QPSK       | 1       | 1         | DFT-15            | Back          | 5mm      | Ant 0   | ECI 7       | 166300 | 831.5       | 21.76               | 22.50               | 1.186                  | -            | -                         | -0.12            | 0.954                  | 1     | 1.131                  |
| 2nd      | FR1 n26  | 20M      | QPSK       | 1       | 1         | DFT-15            | Back          | 5mm      | Ant 0   | ECI 7       | 166300 | 831.5       | 21.76               | 22.50               | 1.186                  | -            | -                         | 0.11             | 0.931                  | 1.025 | 1.104                  |
| 1st      | WCDMA IV | -        | -          | -       | -         | RMC 12.2Kbps      | Bottom Side   | 5mm      | Ant 0   | ECI 7       | 1513   | 1752.6      | 17.29               | 18.50               | 1.321                  | -            | -                         | 0.02             | 0.907                  | 1     | 1.198                  |
| 2nd      | WCDMA IV | -        | -          | -       | -         | RMC 12.2Kbps      | Bottom Side   | 5mm      | Ant 0   | ECI 7       | 1513   | 1752.6      | 17.29               | 18.50               | 1.321                  | -            | -                         | 0.09             | 0.901                  | 1.007 | 1.190                  |
| 1st      | GSM1900  | -        | -          | -       | -         | GPRS (4 Tx slots) | Back          | 5mm      | Ant 0   | ECI 3       | 810    | 1909.8      | 22.00               | 23.00               | 1.259                  | -            | -                         | -0.08            | 0.967                  | 1     | 1.217                  |
| 2nd      | GSM1900  | -        | -          | -       | -         | GPRS (4 Tx slots) | Back          | 5mm      | Ant 0   | ECI 3       | 810    | 1909.8      | 22.00               | 23.00               | 1.259                  | -            | -                         | -0.03            | 0.954                  | 1.014 | 1.201                  |
| 1st      | FR1 n30  | 10M      | QPSK       | 1       | 1         | DFT-15            | Back          | 5mm      | Ant 1   | ECI 7       | 462000 | 2310        | 19.39               | 20.00               | 1.151                  | -            | -                         | 0.02             | 0.855                  | 1     | 0.984                  |
| 2nd      | FR1 n30  | 10M      | QPSK       | 1       | 1         | DFT-15            | Back          | 5mm      | Ant 1   | ECI 7       | 462000 | 2310        | 19.39               | 20.00               | 1.151                  | -            | -                         | 0.09             | 0.837                  | 1.022 | 0.963                  |
| 1st      | FR1 n7   | 50M      | QPSK       | 1       | 1         | DFT-15            | Back          | 5mm      | Ant 1   | ECI 3/7     | 507000 | 2535        | 20.37               | 21.00               | 1.156                  | -            | -                         | -0.02            | 1.020                  | 1     | 1.179                  |
| 2nd      | FR1 n7   | 50M      | QPSK       | 1       | 1         | DFT-15            | Back          | 5mm      | Ant 1   | ECI 3/7     | 507000 | 2535        | 20.37               | 21.00               | 1.156                  | -            | -                         | 0.04             | 0.988                  | 1.032 | 1.142                  |
| 1st      | FR1 n77  | 100M     | QPSK       | 1       | 1         | DFT-30            | Back          | 5mm      | Ant 1   | ECI 7       | 656000 | 3840        | 23.34               | 24.50               | 1.306                  | -            | -                         | -0.12            | 0.869                  | 1     | 1.135                  |
| 2nd      | FR1 n77  | 100M     | QPSK       | 1       | 1         | DFT-30            | Back          | 5mm      | Ant 1   | ECI 7       | 656000 | 3840        | 23.34               | 24.50               | 1.306                  | -            | -                         | -0.18            | 0.856                  | 1.015 | 1.118                  |

&lt;10g&gt;

| Plot No. | Band     | BW (MHz) | Modulation | RB Size | RB offset | Mode         | Test Position | Gap (mm) | Antenna | Power State | Ch.    | Freq. (MHz) | Average Power (dBm) | Tune-Up Limit (dBm) | Tune-up Scaling Factor | Duty Cycle % | Duty Cycle Scaling Factor | Power Drift (dB) | Measured 10g SAR (W/kg) | Ratio | Reported 10g SAR (W/kg) |
|----------|----------|----------|------------|---------|-----------|--------------|---------------|----------|---------|-------------|--------|-------------|---------------------|---------------------|------------------------|--------------|---------------------------|------------------|-------------------------|-------|-------------------------|
| 1st      | WCDMA IV | -        | -          | -       | -         | RMC 12.2Kbps | Bottom Side   | 0mm      | Ant 0   | ECI 10      | 1513   | 1752.6      | 21.40               | 22.50               | 1.288                  | -            | -                         | -0.06            | 2.110                   | 1     | 2.718                   |
| 2nd      | WCDMA IV | -        | -          | -       | -         | RMC 12.2Kbps | Bottom Side   | 0mm      | Ant 0   | ECI 10      | 1513   | 1752.6      | 21.40               | 22.50               | 1.288                  | -            | -                         | -0.16            | 2.030                   | 1.039 | 2.615                   |
| 1st      | WCDMA II | -        | -          | -       | -         | RMC 12.2Kbps | Bottom Side   | 0mm      | Ant 0   | ECI 10      | 9262   | 1852.4      | 20.54               | 21.50               | 1.247                  | -            | -                         | -0.12            | 2.520                   | 1     | 3.143                   |
| 2nd      | WCDMA II | -        | -          | -       | -         | RMC 12.2Kbps | Bottom Side   | 0mm      | Ant 0   | ECI 10      | 9262   | 1852.4      | 20.54               | 21.50               | 1.247                  | -            | -                         | -0.04            | 2.470                   | 1.020 | 3.081                   |
| 1st      | FR1 n30  | 10M      | QPSK       | 1       | 1         | DFT-15       | Back          | 0mm      | Ant 1   | ECI 11      | 462000 | 2310        | 21.39               | 22.00               | 1.151                  | -            | -                         | 0.01             | 2.500                   | 1     | 2.877                   |
| 2nd      | FR1 n30  | 10M      | QPSK       | 1       | 1         | DFT-15       | Back          | 0mm      | Ant 1   | ECI 11      | 462000 | 2310        | 21.39               | 22.00               | 1.151                  | -            | -                         | -0.03            | 2.410                   | 1.037 | 2.773                   |
| 1st      | FR1 n7   | 50M      | QPSK       | 1       | 1         | DFT-15       | Back          | 0mm      | Ant 1   | ECI 11      | 507000 | 2535        | 21.80               | 22.50               | 1.175                  | -            | -                         | -0.12            | 2.360                   | 1     | 2.773                   |
| 2nd      | FR1 n7   | 50M      | QPSK       | 1       | 1         | DFT-15       | Back          | 0mm      | Ant 1   | ECI 11      | 507000 | 2535        | 21.80               | 22.50               | 1.175                  | -            | -                         | 0.18             | 2.280                   | 1.035 | 2.679                   |
| 1st      | FR1 n77  | 100M     | QPSK       | 135     | 69        | DFT-30       | Back          | 0mm      | Ant 1   | ECI 11      | 656000 | 3840        | 25.43               | 26.50               | 1.279                  | -            | -                         | -0.12            | 2.090                   | 1     | 2.674                   |
| 2nd      | FR1 n77  | 100M     | QPSK       | 135     | 69        | DFT-30       | Back          | 0mm      | Ant 1   | ECI 11      | 656000 | 3840        | 25.43               | 26.50               | 1.279                  | -            | -                         | -0.08            | 2.020                   | 1.035 | 2.584                   |

## General Note:

1. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is  $\geq 0.8$ W/kg.
2. Per KDB 865664 D01v01r04, if the ratio among the repeated measurement is  $\leq 1.2$  and the measured SAR  $< 1.45$ W/kg, only one repeated measurement is required.
3. Per KDB 865664 D01v01r04, if the extremity repeated SAR is necessary, the same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds.
4. The ratio is the difference in percentage between original and repeated *measured* SAR.
5. All measurement SAR result is scaled-up to account for tune-up tolerance and is compliant.

## 15. Simultaneous Transmission Analysis

| No. | Simultaneous Transmission Configurations | Portable Handset |           |         |                          |
|-----|------------------------------------------|------------------|-----------|---------|--------------------------|
|     |                                          | Head             | Body-worn | Hotspot | Product specific 10g SAR |
| 1.  | WWAN + WLAN2.4GHz                        | Yes              | Yes       | Yes     | Yes                      |
| 2.  | WWAN + WLAN5GHz                          | Yes              | Yes       | Yes     | Yes                      |
| 3.  | WWAN + Bluetooth                         | Yes              | Yes       | Yes     | Yes                      |
| 4.  | WLAN5GHz+ Bluetooth                      | Yes              | Yes       | Yes     | Yes                      |
| 5.  | WWAN + WLAN5GHz+ Bluetooth               | Yes              | Yes       | Yes     | Yes                      |
| 6.  | WWAN + WLAN2.4GHz + NFC                  |                  |           |         | Yes                      |
| 7.  | WWAN + WLAN5GHz + NFC                    |                  |           |         | Yes                      |
| 8.  | WWAN + Bluetooth + NFC                   |                  |           |         | Yes                      |
| 9.  | WLAN5GHz+ Bluetooth + NFC                |                  |           |         | Yes                      |
| 10. | WWAN + WLAN5GHz+ Bluetooth + NFC         |                  |           |         | Yes                      |

### General Note:

- This device supports VoIP in GPRS, EGPRS, WCDMA, LTE and 5GNR (e.g. for 3rd-party VoIP), LTE supports VoLTE operation.
- WWAN above includes 5G NR bands and EN-DC combination.
- EUT will choose each GSM, WCDMA, LTE and 5GNR according to the network signal condition; therefore, they will not operate simultaneously at any moment.
- For EN-DC mode, MediaTek TA-SAR Gen2 algorithm in WWAN adds directly the time-averaged RF exposure from 4G(LTE) and time-averaged RF exposure from 5G NR. TA-SAR Gen2 algorithm controls the total RF exposure from both 4G and 5G NR to not exceed SAR exposure limit. Therefore, simultaneous transmission compliance between 4G+5G NR operation is demonstrated in the Part 2 Report during algorithm validation. In this Report, simultaneous transmission compliance was evaluated individually with other Radios (WLAN or BT) using one of 4G or 5G NR.
- This device 2.4GHz WLAN support hotspot operation and Bluetooth support tethering applications.
- This device 5.2GHz WLAN/5.8GHz WLAN support hotspot operation, and 5.2GHz WLAN/5.8GHz WLAN supports WLAN Direct (GC/GO), and 5.3GHz / 5.5GHz supports WLAN Direct (GC only).
- The worst case 5 GHz WLAN SAR for each configuration was used for SAR summation.
- According to the EUT characteristic, WLAN 5GHz and Bluetooth can transmit simultaneously.
- According to the EUT characteristic, WLAN 5GHz and WLAN 2.4GHz can't transmit simultaneously.
- According to the EUT characteristic, WLAN 2.4GHz and Bluetooth cannot transmit simultaneously.
- NFC can transmit simultaneously with other Radios in extremity exposure condition.
- For Headset SAR and non-Headset SAR always chose higher SAR to do co-located analysis.
- For simultaneously analysis, since the SAR summation of 3 transmitters can cover others combination of 2 transmitters, therefore in this section did not additional to evaluate 2TX combination of simultaneously transmission.
- For standalone WWAN, always choose the highest SAR among all WWAN bands within the selected antenna for each exposure position to perform simultaneous transmission analysis with WLAN/BT. This is the worst co-located analysis and can represent each band.
- The maximum SAR summation is calculated based on the same configuration and test position.
- Per KDB 447498 D01v06, simultaneous transmission SAR is compliant if,
  - 1g Scalar SAR summation < 1.6W/kg and 10g Scalar SAR summation < 4.0W/kg.
  - $SPLSR = (SAR1 + SAR2)^{1.5} / (\min. \text{ separation distance, mm})$ , and the peak separation distance is determined from the square root of  $[(x1-x2)^2 + (y1-y2)^2 + (z1-z2)^2]$ , where (x1, y1, z1) and (x2, y2, z2) are the coordinates of the extrapolated peak SAR locations in the zoom scan.
  - If  $SPLSR \leq 0.04$  for 1g SAR and  $SPLSR \leq 0.10$  for 10g SAR, simultaneously transmission SAR measurement is not necessary.
  - Simultaneously transmission SAR measurement, and the reported multi-band 1g SAR < 1.6W/kg and 10g SAR < 4.0W/kg.
  - The SPLSR calculated results please refer to section 15.6.
  - The SPLSR hotspot combination procedure (Hybrid SPLSR) allows for the aggregate SAR distribution of a collocated antenna pair—either obtained from a small enlarged zoom scan or through the algebraic summation of SAR values. This approach may also be considered for simultaneous transmission analysis. A small enlarged zoom scan was performed in section 15.8 for those with SPLSR exceeding 0.04 for 1g SAR, and that SAR was used for Simultaneous transmission analysis.
- The simultaneous transmission analysis was conducted in the following two steps:



- 1) Step1: If  $SPLSR \leq 0.04$  for 1g SAR and  $SPLSR \leq 0.10$  for 10g SAR, simultaneous transmission SAR measurement is not required. If  $SPLSR > 0.04$  for 1g SAR and  $SPLSR > 0.10$  for 10g SAR, proceed to Step 2;
- 2) Step 2: If  $SPLSR > 0.04$  for 1g SAR and  $SPLSR > 0.10$  for 10g SAR, select the worst-case WWAN band of AG1 corresponding to the SPLSR condition. Perform a small enlarged zoom scan with WiFi/BT to ensure that the 1g scalar SAR summation is less than 1.6 W/kg and the 10g scalar SAR summation is less than 4.0 W/kg.

### 15.1 5G NR + LTE + WLAN + BT Sim-Tx analysis

In 5G NR + LTE + WLAN + BT simultaneous transmission, 5G NR and LTE transmission are managed and controlled by MediaTek TA-SAR, while the RF exposure from WLAN and BT radios is managed using legacy approach, i.e., through a fixed power back-off if needed.

Since WLAN and BT do not employ time-averaging, 1gSAR and 10gSAR measurement for WLAN and BT need to be conducted at their corresponding rated power following current FCC test procedures to determine reported SAR values.

TA-SAR current implementation assumes hotspots from 5G NR and LTE are collocated. Therefore, for a total of 100% exposure margin, if LTE uses  $x$ , then the exposure margin left for 5G NR is capped to  $y$ . Thus, the compliance equation for LTE + 5G NR is

$$\begin{aligned} x \cdot A + y \cdot B + m &\leq 1 \\ x + y &= g \leq 1 \\ g + m &\leq 1 \end{aligned}$$

Where,  $A$  is normalized reported time-averaged SAR exposure ratio from LTE, and  $A \leq 1.0$ ;  $B$  is normalized reported time-averaged exposure ratio from 5G NR (i.e., SAR exposure for 5G FR1), and  $B \leq 1.0$ .

Let  $m$  = normalized reported SAR exposure ratio from WLAN+BT, then for compliance,

$$x \cdot A + y \cdot B + m \leq 1.0 \quad (1)$$

$$x \cdot A + y \cdot B \leq x \cdot \max(A, B) + (g-x) \cdot \max(A, B) \leq \max(A, B)$$

$$x \cdot A + (g-x) \cdot B + m \leq \max(A, B) + m \leq 1.0 \quad (2)$$

If  $A + m \leq 1.0$  and  $B + m \leq 1.0$  can be proven, then " $x \cdot A + y \cdot B + m \leq 1.0$ ". Therefore simultaneous transmission analysis for 5G NR + LTE + WLAN + BT can be performed in two steps

Step 1: Prove total exposure ratio (TER) of LTE + WLAN + BT < 1

Step 2: Prove total exposure ratio (TER) of 5G NR + WLAN + BT < 1

Else, if  $A + m > 1.0$  and/or  $B + m > 1.0$ , then the followings need to hold true for compliance:

- i.  $A$  and  $m$  are decoupled based on the SPLSR criteria, and
- ii.  $y \cdot B + m \leq 1.0$ , and
- iii.  $x \cdot A + y \cdot B \leq 1.0$

Note iii. is covered in Part 2 report; i. and ii. should be addressed in Part 2 report.

Above analysis is also apply to LTE inter-band uplink, LTE1 + LTE2 + WLAN + BT simultaneous transmission, so inter-band uplink CA no need to do additional simultaneously analysis again. Only required comply with total exposure ratio (TER) of LTE + WLAN + BT < 1.



The device also enabled Mediatek's TA-SAR Gen2 algorithm to improve antenna performance by applying separate SAR budgets to each predefined antenna group. There are two predefined antenna groups of AG0, AG1, more detail as following table. Each antenna group is spatially separated to others. Simultaneous transmission analysis is performed per antenna group. Below analysis demonstrates the spatially separation of AG0, AG1, and the compliance between AG0 and BT/WLAN/NFC and between AG1 and BT/WLAN/NFC.

Thus, the concept was to split the SAR/TER on the transmitting RATs even they are transmitting on different antennas. Such approach is considered as a worst-case scenario in terms of transmitting power. Thus, to enhance the performance of the transmission power of RATs, consider the spatial properties of each antenna and the correlations between the antenna's transmissions.

### SPLSR\_Group (Antenna Group):

|                              |                                  |
|------------------------------|----------------------------------|
| <b>Antenna Group 0 (AG0)</b> | ANT0 & ANT1                      |
| <b>Antenna Group 1 (AG1)</b> | ANT2 & ANT4 & ANT5 & ANT7 & ANT8 |

Note that WLAN/BT operations are not enabled with TA-SAR Gen2 feature.

The verification of spatial separation of the antenna groups is demonstrated through the following steps, together with WIF/BT simultaneous transmission analysis results.

- i) The highest reported SAR at Plimit (or Pmax when Plimit > Pmax) for each antenna should be obtained out of all supported technologies and frequency bands for each power index. Demonstrate that the sum of reported SAR of one antenna from each of the antenna groups and the sum of RF exposure from all supported radios outside of TAS feature should be less than the regulatory limit as given below for each power index.
- ii) If the sum of SAR from step i) is over 1.6 W/kg for 1g, demonstrate for a given power index that every antenna from one antenna group meets SPLSR criteria with every antenna in another antenna group for all frequency bands. SPLSR criteria must be demonstrated for all antenna pair combinations irrespective of supported simultaneous transmission scenarios, SPLSR Hotspot combination procedure (Hybrid SPLSR) also be considered for simultaneous transmission analysis.
- iii) If SPLSR evaluation and analysis is needed to determine compliance for a certain power index configuration, SPLSR is performed by taking the highest summation SAR for each of the supported technologies and bands per antenna, along with the minimum of peak SAR location distance. The minimum of peak location distance is documented in the Highest Report SAR and Hotspot Location below for each power index configuration.
- iv) In section 15.6 SPLSR analysis only evaluation Sim-Tx SAR configuration are rounded to two decimal higher or equal to 1.6W/kg.
- v) A small enlarged zoom scan SAR was used for Simultaneous transmission analysis, and the small enlarged zoom scan was performed in section 15.8 for those with SPLSR exceeding 0.04 for 1g SAR.
- vi) The analysis addresses the simultaneous transmission and the transition among non-simultaneous transmission radios.

For summed SAR results and SPLSR detailed analysis, please refer to section 15.2/15.3 / 15.4 / 15.5 / 15.6 /15.8 of this report. All of the combinations of sub6 antenna groups are sufficient to show that AG0 is mutually exclusive from AG1 and that simultaneous transmission cases will not exceed the SAR limit and therefore no measured volumetric simultaneous SAR summation is required per FCC KDB Publication 447498 D01v06 and IEEE 1528- 2013 Section 6.3.4.1.

## 15.2 Head Exposure Conditions

**General Note:** The unit of SAR evaluation is W/kg.

**Simultaneous Transmission Evaluation of WWAN+WLAN+BT:**

**<AG0 maximum reported SAR>:**

| Test Position | Ant 0 | Ant 1 | MAX          |
|---------------|-------|-------|--------------|
| Right Cheek   | 0.549 | 0.310 | <b>0.549</b> |
| Right Tilted  | 0.247 | 0.267 | <b>0.267</b> |
| Left Cheek    | 0.458 | 0.576 | <b>0.576</b> |
| Left Tilted   | 0.283 | 0.193 | <b>0.283</b> |

**<AG1 maximum reported SAR>:**

| Test Position | Ant 2 | Ant 4 | Ant 5 | Ant 7 | Ant 8 | MAX          |
|---------------|-------|-------|-------|-------|-------|--------------|
| Right Cheek   | 0.510 | 0.883 | 0.563 | 0.201 | 0.358 | <b>0.883</b> |
| Right Tilted  | 0.184 | 0.883 | 0.544 | 0.114 | 0.341 | <b>0.883</b> |
| Left Cheek    | 0.172 | 0.691 | 0.741 | 0.863 | 0.485 | <b>0.863</b> |
| Left Tilted   | 0.133 | 0.642 | 0.849 | 0.338 | 0.746 | <b>0.849</b> |

**<WLAN2.4GHz/5GHz+BT Worse-case SAR>:**

| NO            | 1                                | 2                               | 3                              | 1+3 Summed 1g SAR (W/kg) | WLAN+BT worse case   |
|---------------|----------------------------------|---------------------------------|--------------------------------|--------------------------|----------------------|
| Test Position | Bluetooth Ant 6<br>1g SAR (W/kg) | 2.4GWLAN Ant 6<br>1g SAR (W/kg) | 5G WLAN Ant 6<br>1g SAR (W/kg) | Summed 1g SAR (W/kg)     | Summed 1g SAR (W/kg) |
| Right Cheek   | 0.144                            | 0.210                           | 0.244                          | 0.388                    | 0.388                |
| Right Tilted  | 0.158                            | 0.175                           | 0.202                          | 0.360                    | 0.360                |
| Left Cheek    | 0.434                            | 0.639                           | 0.252                          | 0.686                    | 0.686                |
| Left Tilted   | 0.311                            | 0.365                           | 0.433                          | <b>0.744</b>             | <b>0.744</b>         |

**<Simultaneous Transmission analysis of AG0 + AG1 + WLAN+BT Worse-case>:**

| Test Position | AG0<br>1g SAR (W/kg) | AG1<br>1g SAR (W/kg) | WLAN/BT worst case<br>Summed 1g SAR (W/kg) | AG1+AG0+WLAN +BT worse case<br>Summed 1g SAR (W/kg) |
|---------------|----------------------|----------------------|--------------------------------------------|-----------------------------------------------------|
| Right Cheek   | 0.549                | 0.883                | 0.388                                      | <b>1.82</b>                                         |
| Right Tilted  | 0.267                | 0.883                | 0.360                                      | 1.51                                                |
| Left Cheek    | 0.576                | 0.863                | 0.686                                      | <b>2.13</b>                                         |
| Left Tilted   | 0.283                | 0.849                | 0.744                                      | <b>1.88</b>                                         |

Note: The results marked yellow in above table refers to the detailed analysis corresponding to each position below tables.

| Right Cheek     |               |               |                    |                             |               |
|-----------------|---------------|---------------|--------------------|-----------------------------|---------------|
| Ant combination | AG0           | AG1           | WLAN/BT worst case | AG0+AG1+WLAN +BT worst case | Note          |
|                 | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg)      | 1g SAR (W/kg)               |               |
| ANT0-ANT2       | 0.549         | 0.510         | 0.388              | 1.45                        | -             |
| ANT0-ANT4       | 0.549         | 0.883         | 0.388              | <b>1.82</b>                 | <b>Case 1</b> |
| ANT0-ANT5       | 0.549         | 0.563         | 0.388              | 1.50                        | -             |
| ANT0-ANT7       | 0.549         | 0.201         | 0.388              | 1.14                        | -             |
| ANT0-ANT8       | 0.549         | 0.358         | 0.388              | 1.30                        | -             |
| ANT1-ANT2       | 0.310         | 0.510         | 0.388              | 1.21                        | -             |
| ANT1-ANT4       | 0.310         | 0.883         | 0.388              | <b>1.58</b>                 | -             |
| ANT1-ANT5       | 0.310         | 0.563         | 0.388              | 1.26                        | -             |
| ANT1-ANT7       | 0.310         | 0.201         | 0.388              | 0.90                        | -             |
| ANT1-ANT8       | 0.310         | 0.358         | 0.388              | 1.06                        | -             |

| Right Cheek     |               |                                       |                   |                                 |
|-----------------|---------------|---------------------------------------|-------------------|---------------------------------|
| Ant combination | AG0           | AG1+WLAN5G+BT Multi-Band Combined SAR | AG0+AG1+WLAN5G+BT | Note                            |
|                 | 1g SAR (W/kg) | 1g SAR (W/kg)                         | 1g SAR (W/kg)     |                                 |
| ANT0-ANT4       | 0.549         | 0.895                                 | 1.44              | small enlarged zoom scan Case 2 |

| Right Cheek     |               |                                      |                  |                                 |
|-----------------|---------------|--------------------------------------|------------------|---------------------------------|
| Ant combination | AG0           | AG1+WLAN2.4G Multi-Band Combined SAR | AG0+AG1+WLAN2.4G | Note                            |
|                 | 1g SAR (W/kg) | 1g SAR (W/kg)                        | 1g SAR (W/kg)    |                                 |
| ANT0-ANT4       | 0.549         | 0.902                                | 1.45             | small enlarged zoom scan Case 3 |

| Left Cheek      |               |               |                    |                             |                |
|-----------------|---------------|---------------|--------------------|-----------------------------|----------------|
| Ant combination | AG0           | AG1           | WLAN/BT worst case | AG0+AG1+WLAN +BT worst case | Note           |
|                 | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg)      | 1g SAR (W/kg)               |                |
| ANT0-ANT2       | 0.458         | 0.172         | 0.686              | 1.32                        | -              |
| ANT0-ANT4       | 0.458         | 0.691         | 0.686              | <b>1.84</b>                 | <b>Case 4</b>  |
| ANT0-ANT5       | 0.458         | 0.741         | 0.686              | <b>1.89</b>                 | <b>Case 5</b>  |
| ANT0-ANT7       | 0.458         | 0.863         | 0.686              | <b>2.01</b>                 | <b>Case 6</b>  |
| ANT0-ANT8       | 0.458         | 0.485         | 0.686              | <b>1.63</b>                 | <b>Case 7</b>  |
| ANT1-ANT2       | 0.576         | 0.172         | 0.686              | 1.43                        | -              |
| ANT1-ANT4       | 0.576         | 0.691         | 0.686              | <b>1.95</b>                 | <b>Case 8</b>  |
| ANT1-ANT5       | 0.576         | 0.741         | 0.686              | <b>2.00</b>                 | <b>Case 9</b>  |
| ANT1-ANT7       | 0.576         | 0.863         | 0.686              | <b>2.13</b>                 | <b>Case 10</b> |
| ANT1-ANT8       | 0.576         | 0.485         | 0.686              | <b>1.75</b>                 | <b>Case 11</b> |

| Left Cheek      |               |                                       |                   |                                  |
|-----------------|---------------|---------------------------------------|-------------------|----------------------------------|
| Ant combination | AG0           | AG1+WLAN5G+BT Multi-Band Combined SAR | AG0+AG1+WLAN5G+BT | Note                             |
|                 | 1g SAR (W/kg) | 1g SAR (W/kg)                         | 1g SAR (W/kg)     |                                  |
| ANT0-ANT4       | 0.458         | 0.717                                 | 1.18              | small enlarged zoom scan Case 12 |

| Left Cheek      |               |                                      |                  |                                  |
|-----------------|---------------|--------------------------------------|------------------|----------------------------------|
| Ant combination | AG0           | AG1+WLAN2.4G Multi-Band Combined SAR | AG0+AG1+WLAN2.4G | Note                             |
|                 | 1g SAR (W/kg) | 1g SAR (W/kg)                        | 1g SAR (W/kg)    |                                  |
| ANT0-ANT4       | 0.458         | 0.757                                | 1.22             | small enlarged zoom scan Case 13 |

| Left Cheek      |     |                                       |                   |      |
|-----------------|-----|---------------------------------------|-------------------|------|
| Ant combination | AG0 | AG1+WLAN5G+BT Multi-Band Combined SAR | AG0+AG1+WLAN5G+BT | Note |



|                 | 1g SAR (W/kg) | 1g SAR (W/kg)                            | 1g SAR (W/kg)     |                                  |
|-----------------|---------------|------------------------------------------|-------------------|----------------------------------|
| ANT0-ANT5       | 0.458         | 0.744                                    | 1.20              | small enlarged zoom scan Case 14 |
| Left Cheek      |               |                                          |                   |                                  |
| Ant combination | AG0           | AG1+WLAN2.4G<br>Multi-Band Combined SAR  | AG0+AG1+WLAN2.4G  | Note                             |
|                 | 1g SAR (W/kg) | 1g SAR (W/kg)                            | 1g SAR (W/kg)     |                                  |
| ANT0-ANT5       | 0.458         | 0.829                                    | 1.29              | small enlarged zoom scan Case 15 |
| Left Cheek      |               |                                          |                   |                                  |
| Ant combination | AG0           | AG1+WLAN5G+BT<br>Multi-Band Combined SAR | AG0+AG1+WLAN5G+BT | Note                             |
|                 | 1g SAR (W/kg) | 1g SAR (W/kg)                            | 1g SAR (W/kg)     |                                  |
| ANT0-ANT7       | 0.458         | 0.941                                    | 1.40              | small enlarged zoom scan Case 16 |
| Left Cheek      |               |                                          |                   |                                  |
| Ant combination | AG0           | AG1+WLAN2.4G<br>Multi-Band Combined SAR  | AG0+AG1+WLAN2.4G  | Note                             |
|                 | 1g SAR (W/kg) | 1g SAR (W/kg)                            | 1g SAR (W/kg)     |                                  |
| ANT0-ANT7       | 0.458         | 0.986                                    | 1.44              | small enlarged zoom scan Case 17 |
| Left Cheek      |               |                                          |                   |                                  |
| Ant combination | AG0           | AG1+WLAN5G+BT<br>Multi-Band Combined SAR | AG0+AG1+WLAN5G+BT | Note                             |
|                 | 1g SAR (W/kg) | 1g SAR (W/kg)                            | 1g SAR (W/kg)     |                                  |
| ANT0-ANT8       | 0.458         | 0.625                                    | 1.08              | small enlarged zoom scan Case 18 |
| Left Cheek      |               |                                          |                   |                                  |
| Ant combination | AG0           | AG1+WLAN2.4G<br>Multi-Band Combined SAR  | AG0+AG1+WLAN2.4G  | Note                             |
|                 | 1g SAR (W/kg) | 1g SAR (W/kg)                            | 1g SAR (W/kg)     |                                  |
| ANT0-ANT8       | 0.458         | 0.720                                    | 1.18              | small enlarged zoom scan Case 19 |

| Left Tilted     |               |               |                    |                                |         |
|-----------------|---------------|---------------|--------------------|--------------------------------|---------|
| Ant combination | AG0           | AG1           | WLAN/BT worst case | AG0+AG1+WLAN +BT<br>worst case | Note    |
|                 | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg)      | 1g SAR (W/kg)                  |         |
| ANT0-ANT2       | 0.283         | 0.133         | 0.744              | 1.16                           | -       |
| ANT0-ANT4       | 0.283         | 0.642         | 0.744              | 1.67                           | Case 20 |
| ANT0-ANT5       | 0.283         | 0.849         | 0.744              | 1.88                           | Case 21 |
| ANT0-ANT7       | 0.283         | 0.338         | 0.744              | 1.37                           | -       |
| ANT0-ANT8       | 0.283         | 0.746         | 0.744              | 1.77                           | Case 22 |
| ANT1-ANT2       | 0.193         | 0.133         | 0.744              | 1.07                           | -       |
| ANT1-ANT4       | 0.193         | 0.642         | 0.744              | 1.58                           | -       |
| ANT1-ANT5       | 0.193         | 0.849         | 0.744              | 1.79                           | Case 23 |
| ANT1-ANT7       | 0.193         | 0.338         | 0.744              | 1.28                           | -       |
| ANT1-ANT8       | 0.193         | 0.746         | 0.744              | 1.68                           | Case 24 |

| Left Tilted     |               |                                          |                   |                                  |
|-----------------|---------------|------------------------------------------|-------------------|----------------------------------|
| Ant combination | AG0           | AG1+WLAN5G+BT<br>Multi-Band Combined SAR | AG0+AG1+WLAN5G+BT | Note                             |
|                 | 1g SAR (W/kg) | 1g SAR (W/kg)                            | 1g SAR (W/kg)     |                                  |
| ANT0-ANT4       | 0.283         | 0.698                                    | 0.98              | small enlarged zoom scan Case 25 |
| Left Tilted     |               |                                          |                   |                                  |
| Ant combination | AG0           | AG1+WLAN5G+BT<br>Multi-Band Combined SAR | AG0+AG1+WLAN5G+BT | Note                             |
|                 | 1g SAR (W/kg) | 1g SAR (W/kg)                            | 1g SAR (W/kg)     |                                  |



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|                 |               |                                          |                   |                                  |
|-----------------|---------------|------------------------------------------|-------------------|----------------------------------|
| ANT0-ANT4       | 0.283         | 0.692                                    | 0.98              | small enlarged zoom scan Case 26 |
| Left Tilted     |               |                                          |                   |                                  |
| Ant combination | AG0           | AG1+WLAN5G+BT<br>Multi-Band Combined SAR | AG0+AG1+WLAN5G+BT | Note                             |
|                 | 1g SAR (W/kg) | 1g SAR (W/kg)                            | 1g SAR (W/kg)     |                                  |
| ANT0-ANT5       | 0.283         | 0.948                                    | 1.23              | small enlarged zoom scan Case 27 |
| Left Tilted     |               |                                          |                   |                                  |
| Ant combination | AG0           | AG1+WLAN2.4G<br>Multi-Band Combined SAR  | AG0+AG1+WLAN2.4G  | Note                             |
|                 | 1g SAR (W/kg) | 1g SAR (W/kg)                            | 1g SAR (W/kg)     |                                  |
| ANT0-ANT5       | 0.283         | 0.872                                    | 1.16              | small enlarged zoom scan Case 28 |
| Left Tilted     |               |                                          |                   |                                  |
| Ant combination | AG0           | AG1+WLAN5G+BT<br>Multi-Band Combined SAR | AG0+AG1+WLAN5G+BT | Note                             |
|                 | 1g SAR (W/kg) | 1g SAR (W/kg)                            | 1g SAR (W/kg)     |                                  |
| ANT0-ANT8       | 0.283         | 0.865                                    | 1.15              | small enlarged zoom scan Case 29 |
| Left Tilted     |               |                                          |                   |                                  |
| Ant combination | AG0           | AG1+WLAN2.4G<br>Multi-Band Combined SAR  | AG0+AG1+WLAN2.4G  | Note                             |
|                 | 1g SAR (W/kg) | 1g SAR (W/kg)                            | 1g SAR (W/kg)     |                                  |
| ANT0-ANT8       | 0.283         | 0.862                                    | 1.15              | small enlarged zoom scan Case 30 |
| Left Tilted     |               |                                          |                   |                                  |
| Ant combination | AG0           | AG1+WLAN5G+BT<br>Multi-Band Combined SAR | AG0+AG1+WLAN5G+BT | Note                             |
|                 | 1g SAR (W/kg) | 1g SAR (W/kg)                            | 1g SAR (W/kg)     |                                  |
| ANT1-ANT5       | 0.193         | 0.948                                    | 1.14              | small enlarged zoom scan Case 31 |
| Left Tilted     |               |                                          |                   |                                  |
| Ant combination | AG0           | AG1+WLAN2.4G<br>Multi-Band Combined SAR  | AG0+AG1+WLAN2.4G  | Note                             |
|                 | 1g SAR (W/kg) | 1g SAR (W/kg)                            | 1g SAR (W/kg)     |                                  |
| ANT1-ANT5       | 0.193         | 0.872                                    | 1.07              | small enlarged zoom scan Case 32 |
| Left Tilted     |               |                                          |                   |                                  |
| Ant combination | AG0           | AG1+WLAN5G+BT<br>Multi-Band Combined SAR | AG0+AG1+WLAN5G+BT | Note                             |
|                 | 1g SAR (W/kg) | 1g SAR (W/kg)                            | 1g SAR (W/kg)     |                                  |
| ANT1-ANT8       | 0.193         | 0.865                                    | 1.06              | small enlarged zoom scan Case 33 |
| Left Tilted     |               |                                          |                   |                                  |
| Ant combination | AG0           | AG1+WLAN2.4G<br>Multi-Band Combined SAR  | AG0+AG1+WLAN2.4G  | Note                             |
|                 | 1g SAR (W/kg) | 1g SAR (W/kg)                            | 1g SAR (W/kg)     |                                  |
| ANT1-ANT8       | 0.193         | 0.862                                    | 1.06              | small enlarged zoom scan Case 34 |

### 15.3 Hotspot Exposure Conditions

**General Note:** The unit of SAR evaluation is W/kg.

**Simultaneous Transmission Evaluation of WWAN+WLAN+BT:**

**<AG0 maximum reported SAR>:**

| Test Position | Ant 0 | Ant 1 | MAX          |
|---------------|-------|-------|--------------|
| Front         | 0.864 | 0.722 | <b>0.864</b> |
| Back          | 1.281 | 1.266 | <b>1.281</b> |
| Left Side     | 0.784 | 0.687 | <b>0.784</b> |
| Right Side    | 1.079 | 0.000 | <b>1.079</b> |
| Top Side      | 0.000 | 0.000 | <b>0.000</b> |
| Bottom Side   | 1.274 | 0.994 | <b>1.274</b> |

**<AG1 maximum reported SAR>:**

| Test Position | Ant 2 | Ant 4 | Ant 5 | Ant 7 | Ant 8 | MAX          |
|---------------|-------|-------|-------|-------|-------|--------------|
| Front         | 0.060 | 0.454 | 0.256 | 0.169 | 0.000 | <b>0.454</b> |
| Back          | 0.599 | 0.612 | 0.611 | 0.576 | 0.596 | <b>0.612</b> |
| Left Side     | 0.143 | 0.243 | 0.000 | 0.000 | 0.000 | <b>0.243</b> |
| Right Side    | 0.000 | 0.000 | 0.145 | 0.309 | 0.248 | <b>0.309</b> |
| Top Side      | 0.059 | 0.612 | 0.379 | 0.040 | 0.070 | <b>0.612</b> |
| Bottom Side   | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | <b>0.000</b> |

**<WLAN2.4GHz/5GHz+BT Worse-case SAR>:**

| NO            | 1                                | 2                               | 3                              | 1+3 Summed 1g SAR (W/kg) | WLAN+BT worse case   |
|---------------|----------------------------------|---------------------------------|--------------------------------|--------------------------|----------------------|
| Test Position | Bluetooth Ant 6<br>1g SAR (W/kg) | 2.4GWLAN Ant 6<br>1g SAR (W/kg) | 5G WLAN Ant 6<br>1g SAR (W/kg) | Summed 1g SAR (W/kg)     | Summed 1g SAR (W/kg) |
| Front         | 0.204                            | 0.567                           | 0.279                          | 0.483                    | 0.567                |
| Back          | 0.348                            | 0.795                           | 0.611                          | <b>0.959</b>             | <b>0.959</b>         |
| Left Side     | 0.000                            | 0.000                           | 0.000                          | 0.000                    | 0.000                |
| Right Side    | 0.244                            | 0.587                           | 0.136                          | 0.380                    | 0.587                |
| Top Side      | 0.165                            | 0.411                           | 0.667                          | 0.832                    | 0.832                |
| Bottom Side   | 0.000                            | 0.000                           | 0.000                          | 0.000                    | 0.000                |

**<Simultaneous Transmission analysis of AG0 + AG1 + WLAN+BT Worse-case>:**

| Test Position | AG0<br>1g SAR (W/kg) | AG1<br>1g SAR (W/kg) | WLAN/BT worst case<br>Summed 1g SAR (W/kg) | AG1+AG0+WLAN +BT worse case<br>Summed 1g SAR (W/kg) |
|---------------|----------------------|----------------------|--------------------------------------------|-----------------------------------------------------|
| Front         | 0.864                | 0.454                | 0.567                                      | <b>1.89</b>                                         |
| Back          | 1.281                | 0.612                | 0.959                                      | <b>2.85</b>                                         |
| Left Side     | 0.784                | 0.243                | 0.000                                      | 1.03                                                |
| Right Side    | 1.079                | 0.309                | 0.587                                      | <b>1.98</b>                                         |
| Top Side      | 0.000                | 0.612                | 0.832                                      | 1.44                                                |
| Bottom Side   | 1.274                | 0.000                | 0.000                                      | 1.27                                                |

Note: The results marked yellow in above table refers to the detailed analysis corresponding to each position below tables.

| Front           |               |               |                    |                             |         |
|-----------------|---------------|---------------|--------------------|-----------------------------|---------|
| Ant combination | AG0           | AG1           | WLAN/BT worst case | AG0+AG1+WLAN +BT worst case | Note    |
|                 | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg)      | 1g SAR (W/kg)               |         |
| ANT0-ANT2       | 0.864         | 0.060         | 0.567              | 1.49                        | -       |
| ANT0-ANT4       | 0.864         | 0.454         | 0.567              | 1.89                        | Case 35 |
| ANT0-ANT5       | 0.864         | 0.256         | 0.567              | 1.69                        | Case 36 |
| ANT0-ANT7       | 0.864         | 0.169         | 0.567              | 1.60                        | Case 37 |
| ANT0-ANT8       | 0.864         | 0.000         | 0.567              | 1.43                        | -       |
| ANT1-ANT2       | 0.722         | 0.060         | 0.567              | 1.35                        | -       |
| ANT1-ANT4       | 0.722         | 0.454         | 0.567              | 1.74                        | Case 38 |
| ANT1-ANT5       | 0.722         | 0.256         | 0.567              | 1.55                        | -       |
| ANT1-ANT7       | 0.722         | 0.169         | 0.567              | 1.46                        | -       |
| ANT1-ANT8       | 0.722         | 0.000         | 0.567              | 1.29                        | -       |

| Back            |               |               |                    |                             |         |
|-----------------|---------------|---------------|--------------------|-----------------------------|---------|
| Ant combination | AG0           | AG1           | WLAN/BT worst case | AG0+AG1+WLAN +BT worst case | Note    |
|                 | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg)      | 1g SAR (W/kg)               |         |
| ANT0-ANT2       | 1.281         | 0.599         | 0.959              | 2.84                        | Case 39 |
| ANT0-ANT4       | 1.281         | 0.612         | 0.959              | 2.85                        | Case 40 |
| ANT0-ANT5       | 1.281         | 0.611         | 0.959              | 2.85                        | Case 41 |
| ANT0-ANT7       | 1.281         | 0.576         | 0.959              | 2.82                        | Case 42 |
| ANT0-ANT8       | 1.281         | 0.596         | 0.959              | 2.84                        | Case 43 |
| ANT1-ANT2       | 1.266         | 0.599         | 0.959              | 2.82                        | Case 44 |
| ANT1-ANT4       | 1.266         | 0.612         | 0.959              | 2.84                        | Case 45 |
| ANT1-ANT5       | 1.266         | 0.611         | 0.959              | 2.84                        | Case 46 |
| ANT1-ANT7       | 1.266         | 0.576         | 0.959              | 2.80                        | Case 47 |
| ANT1-ANT8       | 1.266         | 0.596         | 0.959              | 2.82                        | Case 48 |

| Right Side      |               |               |                    |                             |         |
|-----------------|---------------|---------------|--------------------|-----------------------------|---------|
| Ant combination | AG0           | AG1           | WLAN/BT worst case | AG0+AG1+WLAN +BT worst case | Note    |
|                 | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg)      | 1g SAR (W/kg)               |         |
| ANT0-ANT2       | 1.079         | 0.000         | 0.587              | 1.67                        | Case 49 |
| ANT0-ANT4       | 1.079         | 0.000         | 0.587              | 1.67                        | Case 50 |
| ANT0-ANT5       | 1.079         | 0.145         | 0.587              | 1.81                        | Case 51 |
| ANT0-ANT7       | 1.079         | 0.309         | 0.587              | 1.98                        | Case 52 |
| ANT0-ANT8       | 1.079         | 0.248         | 0.587              | 1.91                        | Case 53 |
| ANT1-ANT2       | 0.000         | 0.000         | 0.587              | 0.59                        | -       |
| ANT1-ANT4       | 0.000         | 0.000         | 0.587              | 0.59                        | -       |
| ANT1-ANT5       | 0.000         | 0.145         | 0.587              | 0.73                        | -       |
| ANT1-ANT7       | 0.000         | 0.309         | 0.587              | 0.90                        | -       |
| ANT1-ANT8       | 0.000         | 0.248         | 0.587              | 0.84                        | -       |



## 15.4 Body-Worn Accessory Exposure Conditions

**General Note:** The unit of SAR evaluation is W/kg.

**Simultaneous Transmission Evaluation of WWAN+WLAN+BT:**

**<AG0 maximum reported SAR>:**

| Test Position | Ant 0 | Ant 1 | MAX          |
|---------------|-------|-------|--------------|
| Front         | 1.103 | 0.724 | <b>1.103</b> |
| Back          | 1.281 | 1.281 | <b>1.281</b> |

**<AG1 maximum reported SAR>:**

| Test Position | Ant 2 | Ant 4 | Ant 5 | Ant 7 | Ant 8 | MAX          |
|---------------|-------|-------|-------|-------|-------|--------------|
| Front         | 0.057 | 0.812 | 0.389 | 0.260 | 0.000 | <b>0.812</b> |
| Back          | 0.802 | 0.966 | 0.891 | 0.827 | 0.859 | <b>0.966</b> |

**<WLAN2.4GHz/5GHz+BT Worse-case SAR>:**

| NO            | 1               | 2              | 3             | 1+3 Summed 1g SAR (W/kg) | WLAN+BT worse case   |
|---------------|-----------------|----------------|---------------|--------------------------|----------------------|
| Test Position | Bluetooth Ant 6 | 2.4GWLAN Ant 6 | 5G WLAN Ant 6 | Summed 1g SAR (W/kg)     | Summed 1g SAR (W/kg) |
|               | 1g SAR (W/kg)   | 1g SAR (W/kg)  | 1g SAR (W/kg) |                          |                      |
| Front         | 0.204           | 0.505          | 0.160         | 0.364                    | 0.505                |
| Back          | 0.348           | 0.645          | 0.305         | <b>0.653</b>             | <b>0.653</b>         |

**<Simultaneous Transmission analysis of AG0 + AG1 + WLAN+BT Worse-case>:**

| Test Position | AG0           | AG1           | WLAN/BT worst case   | AG1+AG0+WLAN +BT worse case |
|---------------|---------------|---------------|----------------------|-----------------------------|
|               | 1g SAR (W/kg) | 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Summed 1g SAR (W/kg)        |
| Front 5mm     | 1.103         | 0.812         | 0.505                | <b>2.42</b>                 |
| Back 5mm      | 1.281         | 0.966         | 0.653                | <b>2.90</b>                 |

Note: The results marked yellow in above table refers to the detailed analysis corresponding to each position below tables.

| Front           |               |               |                    |                             |         |
|-----------------|---------------|---------------|--------------------|-----------------------------|---------|
| Ant combination | AG0           | AG1           | WLAN/BT worst case | AG0+AG1+WLAN +BT worst case | Note    |
|                 | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg)      | 1g SAR (W/kg)               |         |
| ANT0-ANT2       | 1.103         | 0.057         | 0.505              | <b>1.67</b>                 | Case 54 |
| ANT0-ANT4       | 1.103         | 0.812         | 0.505              | <b>2.42</b>                 | Case 55 |
| ANT0-ANT5       | 1.103         | 0.389         | 0.505              | <b>2.00</b>                 | Case 56 |
| ANT0-ANT7       | 1.103         | 0.260         | 0.505              | <b>1.87</b>                 | Case 57 |
| ANT0-ANT8       | 1.103         | 0.000         | 0.505              | <b>1.61</b>                 | Case 58 |
| ANT1-ANT2       | 0.724         | 0.057         | 0.505              | 1.29                        | -       |
| ANT1-ANT4       | 0.724         | 0.812         | 0.505              | <b>2.04</b>                 | Case 59 |
| ANT1-ANT5       | 0.724         | 0.389         | 0.505              | <b>1.62</b>                 | Case 60 |
| ANT1-ANT7       | 0.724         | 0.260         | 0.505              | 1.49                        | -       |
| ANT1-ANT8       | 0.724         | 0.000         | 0.505              | 1.23                        | -       |

| Back            |               |               |                    |                             |         |
|-----------------|---------------|---------------|--------------------|-----------------------------|---------|
| Ant combination | AG0           | AG1           | WLAN/BT worst case | AG0+AG1+WLAN +BT worst case | Note    |
|                 | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg)      | 1g SAR (W/kg)               |         |
| ANT0-ANT2       | 1.281         | 0.802         | 0.653              | 2.74                        | Case 61 |
| ANT0-ANT4       | 1.281         | 0.966         | 0.653              | 2.90                        | Case 62 |
| ANT0-ANT5       | 1.281         | 0.891         | 0.653              | 2.83                        | Case 63 |
| ANT0-ANT7       | 1.281         | 0.827         | 0.653              | 2.76                        | Case 64 |
| ANT0-ANT8       | 1.281         | 0.859         | 0.653              | 2.79                        | Case 65 |
| ANT1-ANT2       | 1.281         | 0.802         | 0.653              | 2.74                        | Case 66 |
| ANT1-ANT4       | 1.281         | 0.966         | 0.653              | 2.90                        | Case 67 |
| ANT1-ANT5       | 1.281         | 0.891         | 0.653              | 2.83                        | Case 68 |
| ANT1-ANT7       | 1.281         | 0.827         | 0.653              | 2.76                        | Case 69 |
| ANT1-ANT8       | 1.281         | 0.859         | 0.653              | 2.79                        | Case 70 |

## 15.5 Product specific 10g SAR Exposure Conditions

**Remark:**

2. For Bluetooth Product specific 10g stand-alone SAR is not required for a transmitter or antenna, due to 1g hotspot SAR is <1.2W/kg.

**General Note:** The unit of SAR evaluation is W/kg.

**Simultaneous Transmission Evaluation of WWAN+WLAN+BT+NFC:**
**<AG0 maximum reported SAR>:**

| Test Position | Ant 0 | Ant 1 | MAX          |
|---------------|-------|-------|--------------|
| Front         | 2.693 | 1.433 | <b>2.693</b> |
| Back          | 3.028 | 3.186 | <b>3.186</b> |
| Left Side     | 0.000 | 1.320 | <b>1.320</b> |
| Right Side    | 0.000 | 0.000 | <b>0.000</b> |
| Top Side      | 0.000 | 0.000 | <b>0.000</b> |
| Bottom Side   | 3.195 | 3.034 | <b>3.195</b> |

**<AG1 maximum reported SAR>:**

| Test Position | Ant 2 | Ant 4 | Ant 5 | Ant 7 | Ant 8 | MAX          |
|---------------|-------|-------|-------|-------|-------|--------------|
| Front         | 0.000 | 2.336 | 1.744 | 1.569 | 0.000 | <b>2.336</b> |
| Back          | 1.661 | 2.470 | 2.294 | 2.299 | 2.293 | <b>2.470</b> |
| Left Side     | 0.231 | 1.426 | 0.000 | 0.000 | 0.000 | <b>1.426</b> |
| Right Side    | 0.000 | 0.000 | 0.554 | 1.816 | 0.000 | <b>1.816</b> |
| Top Side      | 0.000 | 2.473 | 2.357 | 0.000 | 0.000 | <b>2.473</b> |
| Bottom Side   | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | <b>0.000</b> |

**<WLAN2.4GHz/5GHz/BT Worse-case SAR>**

| NO            | 1                                 | 2                                | 3                               | 4                     | 2+4 Summed 10g SAR (W/kg) | 1+3+4 Summed 10g SAR (W/kg) | WLAN+BT worse case    |
|---------------|-----------------------------------|----------------------------------|---------------------------------|-----------------------|---------------------------|-----------------------------|-----------------------|
| Test Position | Bluetooth Ant 6<br>10g SAR (W/kg) | 2.4GWLAN Ant 6<br>10g SAR (W/kg) | 5G WLAN Ant 6<br>10g SAR (W/kg) | NFC<br>10g SAR (W/kg) | Summed 10g SAR (W/kg)     | Summed 10g SAR (W/kg)       | Summed 10g SAR (W/kg) |
| Front         | 0.000                             | 0.177                            | 0.496                           | 0.000                 | 0.177                     | 0.496                       | 0.496                 |
| Back          | 0.000                             | 0.668                            | 0.722                           | 0.023                 | 0.691                     | 0.745                       | 0.745                 |
| Left Side     | 0.000                             | 0.000                            | 0.000                           | 0.000                 | 0.000                     | 0.000                       | 0.000                 |
| Right Side    | 0.000                             | 0.482                            | 0.225                           | 0.000                 | 0.482                     | 0.225                       | 0.482                 |
| Top Side      | 0.000                             | 0.501                            | 1.081                           | 0.000                 | 0.501                     | 1.081                       | 1.081                 |
| Bottom Side   | 0.000                             | 0.000                            | 0.000                           | 0.000                 | 0.000                     | 0.000                       | 0.000                 |

**<Simultaneous Transmission analysis of AG0 + AG1 + WLAN/BT Worse-case+NFC>:**

| Test Position | AG0<br>10g SAR (W/kg) | AG1<br>10g SAR (W/kg) | WLAN/BT/NFC worst case<br>Summed 10g SAR (W/kg) | AG1+AG0+WLAN +BT worse case<br>Summed 10g SAR (W/kg) |
|---------------|-----------------------|-----------------------|-------------------------------------------------|------------------------------------------------------|
| Front         | 2.693                 | 2.336                 | 0.496                                           | <b>5.53</b>                                          |
| Back          | 3.186                 | 2.470                 | 0.745                                           | <b>6.40</b>                                          |
| Left Side     | 1.320                 | 1.426                 | 0.000                                           | 2.75                                                 |
| Right Side    | 0.000                 | 1.816                 | 0.482                                           | 2.30                                                 |
| Top Side      | 0.000                 | 2.473                 | 1.081                                           | 3.55                                                 |
| Bottom Side   | 3.195                 | 0.000                 | 0.000                                           | 3.20                                                 |

Note: The results marked yellow in above table refers to the detailed analysis corresponding to each position below tables.

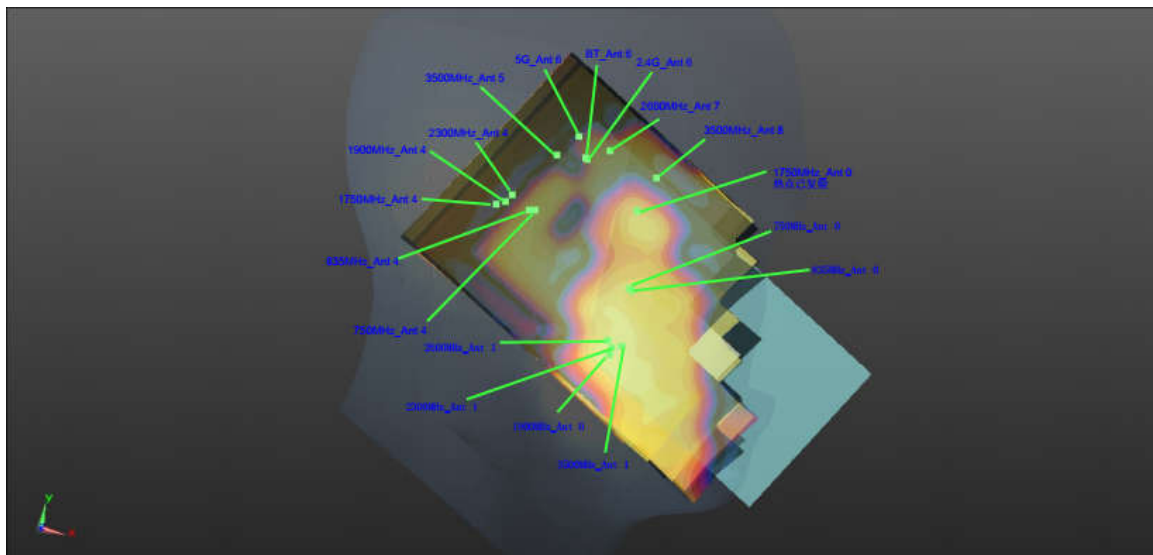
| Front           |                |                |                        |                             |         |
|-----------------|----------------|----------------|------------------------|-----------------------------|---------|
| Ant combination | AG0            | AG1            | WLAN/BT/NFC worst case | AG0+AG1+WLAN +BT worst case | Note    |
|                 | 10g SAR (W/kg) | 10g SAR (W/kg) | 10g SAR (W/kg)         | 10g SAR (W/kg)              |         |
| ANT0-ANT2       | 2.693          | 0.000          | 0.496                  | 3.19                        | -       |
| ANT0-ANT4       | 2.693          | 2.336          | 0.496                  | 5.53                        | Case 71 |
| ANT0-ANT5       | 2.693          | 1.744          | 0.496                  | 4.93                        | Case 72 |
| ANT0-ANT7       | 2.693          | 1.569          | 0.496                  | 4.76                        | Case 73 |
| ANT0-ANT8       | 2.693          | 0.000          | 0.496                  | 3.19                        | -       |
| ANT1-ANT2       | 1.433          | 0.000          | 0.496                  | 1.93                        | -       |
| ANT1-ANT4       | 1.433          | 2.336          | 0.496                  | 4.27                        | Case 74 |
| ANT1-ANT5       | 1.433          | 1.744          | 0.496                  | 3.67                        | -       |
| ANT1-ANT7       | 1.433          | 1.569          | 0.496                  | 3.50                        | -       |
| ANT1-ANT8       | 1.433          | 0.000          | 0.496                  | 1.93                        | -       |

| Back            |                |                |                        |                             |         |
|-----------------|----------------|----------------|------------------------|-----------------------------|---------|
| Ant combination | AG0            | AG1            | WLAN/BT/NFC worst case | AG0+AG1+WLAN +BT worst case | Note    |
|                 | 10g SAR (W/kg) | 10g SAR (W/kg) | 10g SAR (W/kg)         | 10g SAR (W/kg)              |         |
| ANT0-ANT2       | 3.028          | 1.661          | 0.745                  | 5.43                        | Case 75 |
| ANT0-ANT4       | 3.028          | 2.470          | 0.745                  | 6.24                        | Case 76 |
| ANT0-ANT5       | 3.028          | 2.294          | 0.745                  | 6.07                        | Case 77 |
| ANT0-ANT7       | 3.028          | 2.299          | 0.745                  | 6.07                        | Case 78 |
| ANT0-ANT8       | 3.028          | 2.293          | 0.745                  | 6.07                        | Case 79 |
| ANT1-ANT2       | 3.186          | 1.661          | 0.745                  | 5.59                        | Case 80 |
| ANT1-ANT4       | 3.186          | 2.470          | 0.745                  | 6.40                        | Case 81 |
| ANT1-ANT5       | 3.186          | 2.294          | 0.745                  | 6.23                        | Case 82 |
| ANT1-ANT7       | 3.186          | 2.299          | 0.745                  | 6.23                        | Case 83 |
| ANT1-ANT8       | 3.186          | 2.293          | 0.745                  | 6.22                        | Case 84 |

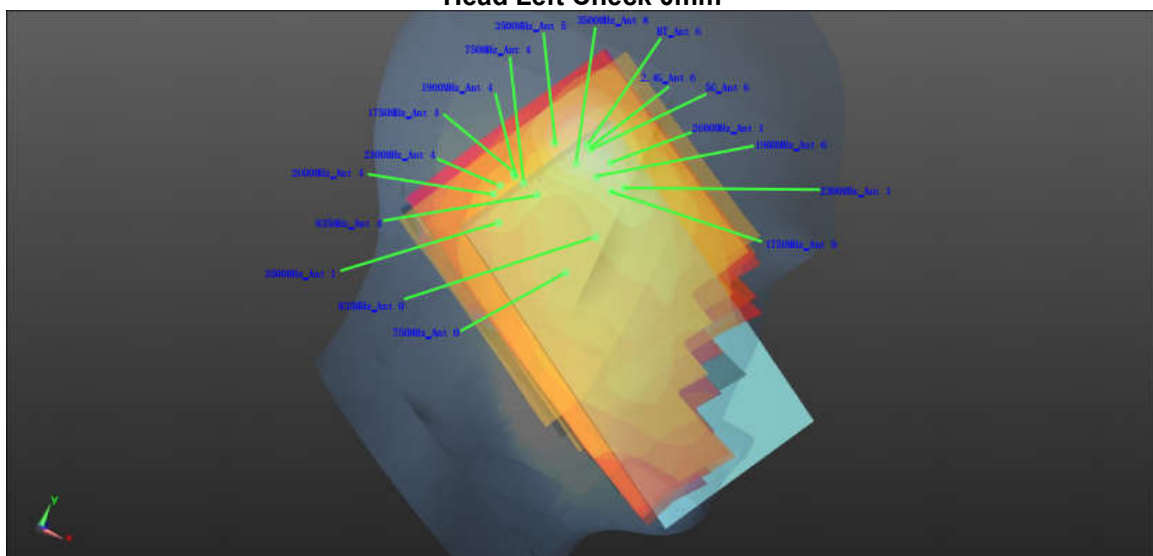
## 15.6 SPLSR Evaluation and Analysis

### General Note:

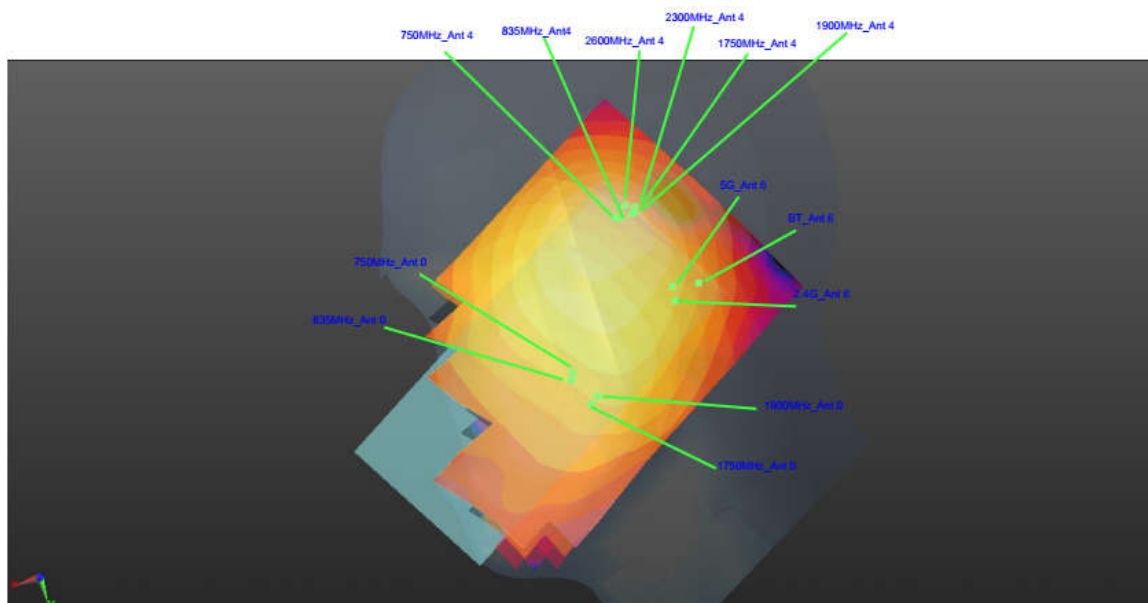
1. When standalone SAR is measured for both antennas in the pair, the peak location separation distance is computed by the square root of  $[(x_1-x_2)^2 + (y_1-y_2)^2 + (z_1-z_2)^2]$ , where  $(x_1, y_1, z_1)$  and  $(x_2, y_2, z_2)$  are the coordinates in the area scans or extrapolated peak SAR locations in the zoom scans, as appropriate.
2.  $SPLSR = (SAR_1 + SAR_2)1.5 / (\text{min. separation distance, mm})$ . If  $SPLSR \leq 0.04$  for 1g SAR and  $SPLSR \leq 0.10$  for 10g SAR, simultaneously transmission SAR measurement is not necessary.
3. Per April 2022 TCB Workshop Notes, WLAN /BT/ NFC was summed algebraically with the AG1 for the purposes of hybrid SPLSR combination and they are located at the top of the device
4. Per April 2022 TCB Workshop, instead of doing a small volume scan over a co-located antenna pair, used summing the SAR values of the co-located pair and using that value in SPLSR calculation. In the calculation used the minimum distance between the spatially separated antenna and the closest antenna of the co-located antenna pair to be conservative.
5. The detail hotspot point for each transmitter in each exposure condition are showing as below figure and the minimum 3D distance for each sum combination is used for SPLSR analysis.
6. The axis peak locations refer to Section 15.7.
7. The small enlarged zoom scan was performed in section 15.8 for those with SPLSR exceeding 0.04 for 1g SAR.



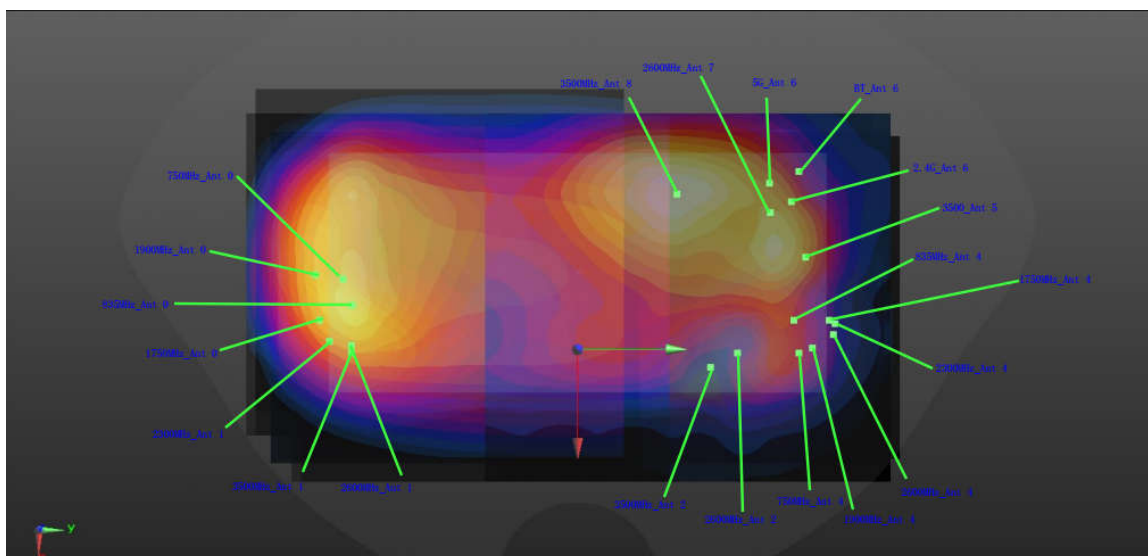
**Head Left Check 0mm**



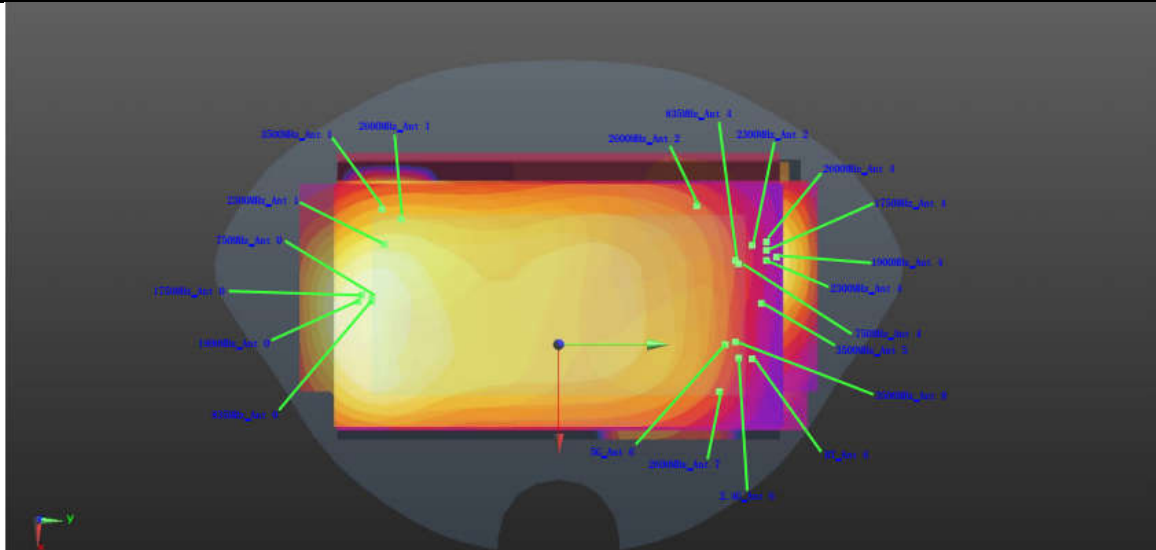
**Head Left Tilted 0mm**



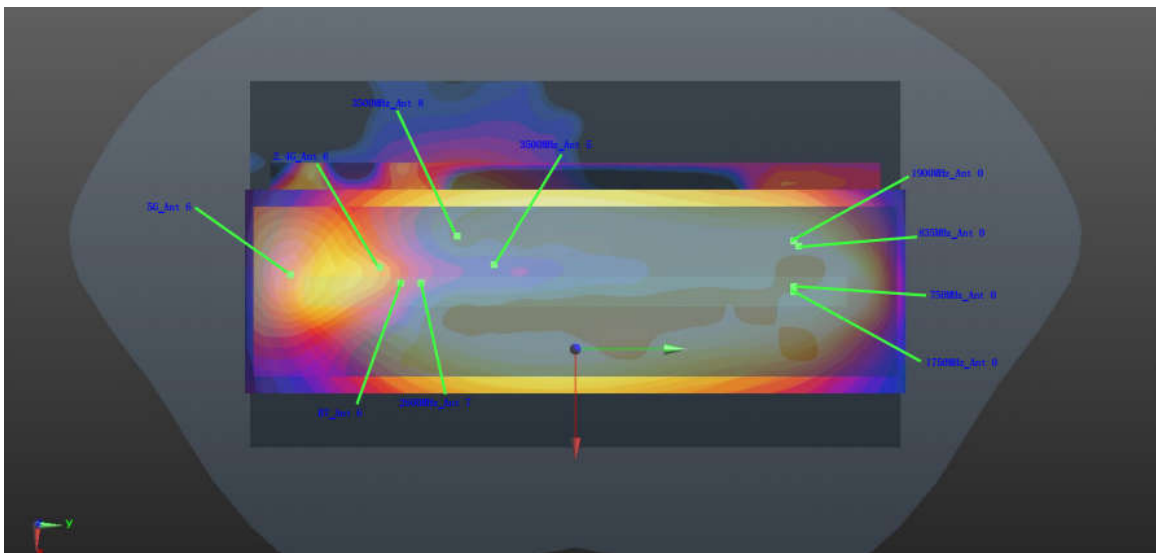
### Head Right Check 0mm



Hotspot&amp;Body\_Back\_5mm

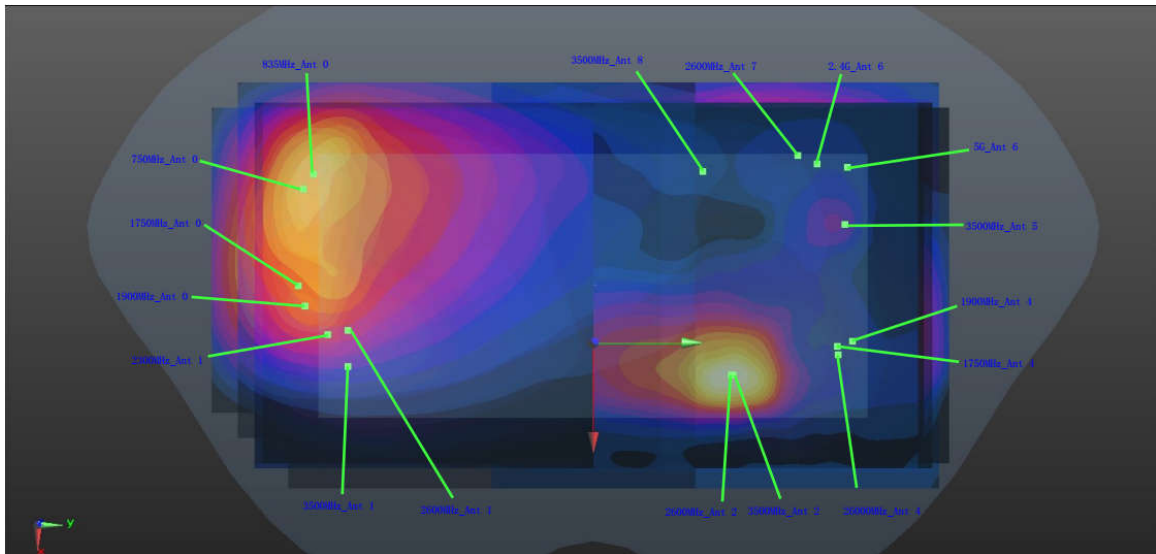


**Hotspot&Body\_Front\_5mm**

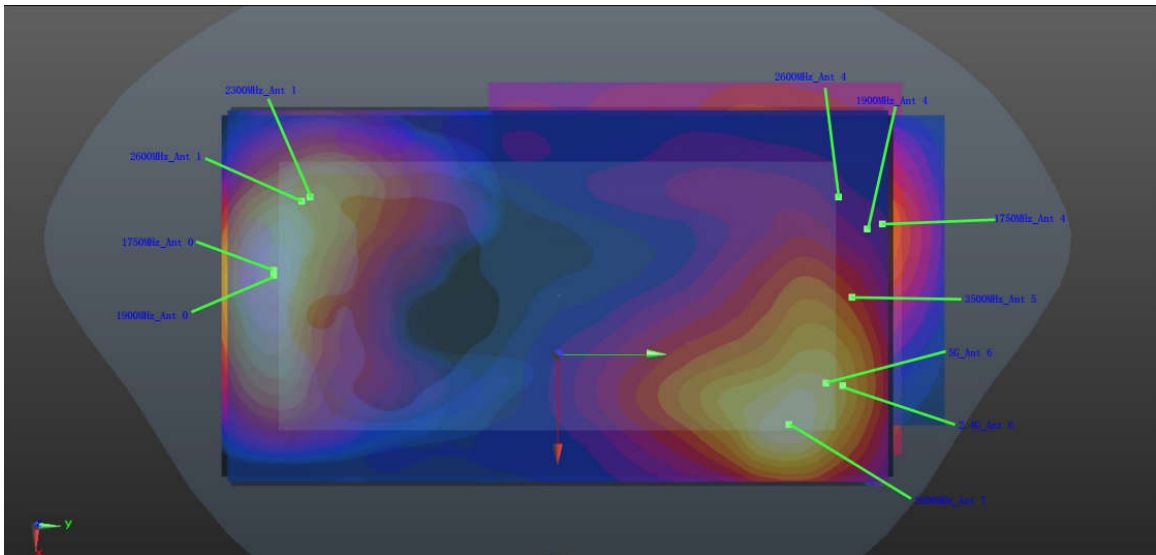


**Hotspot\_Right Side\_5mm**





**Extremity\_Back\_0mm**



**Extremity\_Front\_0mm**



## &lt;Head&gt;

| Case No | Band      | Position    | SAR (W/kg) | Summed | Gap   | SAR peak location (mm) |         |         | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR | Volume Scan Case No. |
|---------|-----------|-------------|------------|--------|-------|------------------------|---------|---------|------------------|-------------------|---------------|------------------|----------------------|
|         |           |             |            |        | (mm)  | X                      | Y       | Z       |                  |                   |               |                  |                      |
| Case 1  | AG0-Ant 0 | Right Cheek | 0.549      | 0.55   | 0mm   | 59.40                  | -266.00 | -173.00 | 71.0             | 1.82              | 0.03          | Not required     | 2&3                  |
|         | AG1-Ant 4 |             | 1.27       | 0mm    | 20.00 | -325.00                | -171.00 |         |                  |                   |               |                  |                      |
|         | WLAN/BT   |             |            | 0.388  | 0mm   |                        |         |         |                  |                   |               |                  |                      |
|         | AG0-Ant 0 | Right Cheek | 0.549      | 0.55   | 0mm   | 59.40                  | -266.00 | -173.00 | 45.4             | 1.82              | 0.05          | Required         |                      |
|         | AG1-Ant 4 |             | 1.27       | 0mm    |       |                        |         |         |                  |                   |               |                  |                      |
|         | WLAN/BT   |             |            | 0.388  | 0mm   | 19.10                  | -286.00 | -167.00 |                  |                   |               |                  |                      |

| Case No | Band      | Position   | SAR (W/kg) | Summed | Gap  | SAR peak location (mm) |        |         | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR | Volume Scan Case No. |
|---------|-----------|------------|------------|--------|------|------------------------|--------|---------|------------------|-------------------|---------------|------------------|----------------------|
|         |           |            |            |        | (mm) | X                      | Y      | Z       |                  |                   |               |                  |                      |
| Case 4  | AG0-Ant 0 | Left Cheek | 0.458      | 0.46   | 0mm  | 57.40                  | 310.00 | -176.00 | 62.2             | 1.84              | 0.04          | Not required     | 12&13                |
|         | AG1-Ant 4 |            | 0.691      | 1.38   | 0mm  | -4.40                  | 305.00 | -171.00 |                  |                   |               |                  |                      |
|         | WLAN/BT   |            | 0.686      |        | 0mm  |                        |        |         |                  |                   |               |                  |                      |
|         | AG0-Ant 0 | Left Cheek | 0.458      | 0.46   | 0mm  | 57.40                  | 310.00 | -176.00 | 34.9             | 1.84              | 0.07          | Required         |                      |
|         | AG1-Ant 4 |            | 0.691      | 1.38   | 0mm  |                        |        |         |                  |                   |               |                  |                      |
|         | WLAN/BT   |            | 0.686      |        | 0mm  | 28.10                  | 329.00 | -175.00 |                  |                   |               |                  |                      |

| Case No | Band      | Position   | SAR (W/kg) | Summed | Gap  | SAR peak location (mm) |        |         | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR | Volume Scan Case No. |
|---------|-----------|------------|------------|--------|------|------------------------|--------|---------|------------------|-------------------|---------------|------------------|----------------------|
|         |           |            |            |        | (mm) | X                      | Y      | Z       |                  |                   |               |                  |                      |
| Case 5  | AG0-Ant 0 | Left Cheek | 0.468      | 0.47   | 0mm  | 57.40                  | 310.00 | -176.00 | 41.9             | 1.90              | 0.06          | Required         | 14&15                |
|         | AG1-Ant 5 |            | 0.741      | 1.43   | 0mm  | 17.00                  | 321.00 | -174.00 |                  |                   |               |                  |                      |
|         | WLAN/BT   |            | 0.686      |        | 0mm  |                        |        |         |                  |                   |               |                  |                      |
|         | AG0-Ant 0 | Left Cheek | 0.468      | 0.47   | 0mm  | 57.40                  | 310.00 | -176.00 | 34.9             | 1.90              | 0.07          | Required         |                      |
|         | AG1-Ant 5 |            | 0.741      | 1.43   | 0mm  |                        |        |         |                  |                   |               |                  |                      |
|         | WLAN/BT   |            | 0.686      |        | 0mm  | 28.10                  | 329.00 | -175.00 |                  |                   |               |                  |                      |

| Case No | Band      | Position   | SAR (W/kg) | Summed | Gap   | SAR peak location (mm) |         |         | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR | Volume Scan Case No. |
|---------|-----------|------------|------------|--------|-------|------------------------|---------|---------|------------------|-------------------|---------------|------------------|----------------------|
|         |           |            |            |        | (mm)  | X                      | Y       | Z       |                  |                   |               |                  |                      |
| Case 6  | AG0-Ant 0 | Left Cheek | 0.458      | 0.46   | 0mm   | 57.40                  | 310.00  | -176.00 | 26.1             | 2.01              | 0.11          | Required         | 16&17                |
|         | AG1-Ant 7 |            | 0.863      | 0mm    | 38.80 | 328.00                 | -173.00 |         |                  |                   |               |                  |                      |
|         | WLAN/BT   |            | 0.686      | 0mm    |       |                        |         |         |                  |                   |               |                  |                      |
|         | AG0-Ant 0 | Left Cheek | 0.458      | 0.46   | 0mm   | 57.40                  | 310.00  | -176.00 | 34.9             | 2.01              | 0.08          | Required         |                      |
|         | AG1-Ant 7 |            | 0.863      | 0mm    |       |                        |         |         |                  |                   |               |                  |                      |
|         | WLAN/BT   |            | 0.686      | 0mm    | 28.10 | 329.00                 | -175.00 |         |                  |                   |               |                  |                      |

| Case No | Band      | Position   | SAR (W/kg) | Summed | Gap   | SAR peak location (mm) |         |         | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR | Volume Scan Case No. |
|---------|-----------|------------|------------|--------|-------|------------------------|---------|---------|------------------|-------------------|---------------|------------------|----------------------|
|         |           |            |            |        | (mm)  | X                      | Y       | Z       |                  |                   |               |                  |                      |
| Case 7  | AG0-Ant 0 | Left Cheek | 0.458      | 0.46   | 0mm   | 57.40                  | 310.00  | -176.00 | 16.4             | 1.63              | 0.13          | Required         | 18&19                |
|         | AG1-Ant 8 |            | 0.485      | 0mm    | 63.60 | 325.00                 | -174.00 |         |                  |                   |               |                  |                      |
|         | WLAN/BT   |            | 0.686      | 0mm    |       |                        |         |         |                  |                   |               |                  |                      |
|         | AG0-Ant 0 | Left Cheek | 0.458      | 0.46   | 0mm   | 57.40                  | 310.00  | -176.00 | 34.9             | 1.63              | 0.06          | Required         |                      |
|         | AG1-Ant 8 |            | 0.485      | 0mm    |       |                        |         |         |                  |                   |               |                  |                      |
|         | WLAN/BT   |            | 0.686      | 0mm    | 28.10 | 329.00                 | -175.00 |         |                  |                   |               |                  |                      |

| Case No | Band      | Position   | SAR (W/kg) | Summed | Gap      | SAR peak location (mm) |        |         | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---------|-----------|------------|------------|--------|----------|------------------------|--------|---------|------------------|-------------------|---------------|------------------|
|         |           |            |            |        | (mm)     | X                      | Y      | Z       |                  |                   |               |                  |
| Case 8  | AG0-Ant 1 | Left Cheek | 0.576      | 0.58   | 0mm      | 65.00                  | 251.00 | -173.00 | 81.0             | 1.95              | 0.03          | Not required     |
|         | AG1-Ant 4 |            | 0.691      | 1.38   | 0mm      | -3.90                  | 293.00 | -166.00 |                  |                   |               |                  |
|         | WLAN/BT   |            | 0.686      |        | 0mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 1 | Left Cheek | 0.576      | 0.58   | 0mm      | 65.00                  | 251.00 | -173.00 | 86.3             | 1.95              | 0.03          | Not required     |
|         | AG1-Ant 4 |            | 0.691      | 1.38   | 0mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |            | 0.686      |        | 0mm      | 28.10                  | 329.00 | -175.00 |                  |                   |               |                  |
| Case No | Band      | Position   | SAR (W/kg) | Summed | Gap (mm) | X                      | Y      | Z       | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 9  | AG0-Ant 1 | Left Cheek | 0.576      | 0.58   | 0mm      | 65.00                  | 251.00 | -173.00 | 90.7             | 2.00              | 0.03          | Not required     |



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|         | AG1-Ant 5 | Left Cheek | 0.741      | 1.43   | 0mm      | 17.00                  | 328.00 | -174.00 | 86.3             | 2.00              | 0.03          | Not required     |
|---------|-----------|------------|------------|--------|----------|------------------------|--------|---------|------------------|-------------------|---------------|------------------|
|         | WLAN/BT   |            | 0.686      |        | 0mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 1 |            | 0.576      |        | 0mm      | 65.00                  | 251.00 | -173.00 |                  |                   |               |                  |
|         | AG1-Ant 5 |            | 0.741      |        | 0mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |            | 0.686      |        | 0mm      | 28.10                  | 329.00 | -175.00 |                  |                   |               |                  |
| Case No | Band      | Position   | SAR (W/kg) | Summed | Gap (mm) | SAR peak location (mm) |        |         | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|         |           |            |            |        |          | X                      | Y      | Z       |                  |                   |               |                  |
| Case 10 | AG0-Ant 1 | Left Cheek | 0.576      | 1.55   | 0mm      | 65.00                  | 251.00 | -173.00 | 81.3             | 2.13              | 0.04          | Not required     |
|         | AG1-Ant 7 |            | 0.863      |        | 0mm      | 38.80                  | 328.00 | -173.00 |                  |                   |               |                  |
|         | WLAN/BT   |            | 0.686      |        | 0mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 1 | Left Cheek | 0.576      | 1.55   | 0mm      | 65.00                  | 251.00 | -173.00 | 86.3             | 2.13              | 0.04          | Not required     |
|         | AG1-Ant 7 |            | 0.863      |        | 0mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |            | 0.686      |        | 0mm      | 28.10                  | 329.00 | -175.00 |                  |                   |               |                  |
| Case No | Band      | Position   | SAR (W/kg) | Summed | Gap (mm) | SAR peak location (mm) |        |         | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|         |           |            |            |        |          | X                      | Y      | Z       |                  |                   |               |                  |
| Case 11 | AG0-Ant 1 | Left Cheek | 0.576      | 1.17   | 0mm      | 65.00                  | 251.00 | -173.00 | 74.0             | 1.75              | 0.03          | Not required     |
|         | AG1-Ant 8 |            | 0.485      |        | 0mm      | 63.60                  | 325.00 | -174.00 |                  |                   |               |                  |
|         | WLAN/BT   |            | 0.686      |        | 0mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 1 | Left Cheek | 0.576      | 1.17   | 0mm      | 65.00                  | 251.00 | -173.00 | 86.3             | 1.75              | 0.03          | Not required     |
|         | AG1-Ant 8 |            | 0.485      |        | 0mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |            | 0.686      |        | 0mm      | 28.10                  | 329.00 | -175.00 |                  |                   |               |                  |

| Case No | Band      | Position    | SAR (W/kg) | SAR (W/kg) | Gap (mm) | SAR peak location (mm) |        |         | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR | Volume Scan Case No. |
|---------|-----------|-------------|------------|------------|----------|------------------------|--------|---------|------------------|-------------------|---------------|------------------|----------------------|
|         |           |             |            |            |          | X                      | Y      | Z       |                  |                   |               |                  |                      |
| Case 20 | AG0-Ant 0 | Left Tilted | 0.283      | 0.28       | 0mm      | 33.50                  | 319.00 | -175.00 | 34.6             | 1.67              | 0.06          | Required         | 25&26                |
|         | AG1-Ant 4 |             | 0.642      | 1.39       | 0mm      | 1.65                   | 307.00 | -169.00 |                  |                   |               |                  |                      |
|         | WLAN/BT   |             | 0.744      |            | 0mm      |                        |        |         |                  |                   |               |                  |                      |
|         | AG0-Ant 0 | Left Tilted | 0.283      | 0.28       | 0mm      | 33.50                  | 319.00 | -175.00 | 11.5             | 1.67              | 0.19          | Required         |                      |
|         | AG1-Ant 4 |             | 0.642      | 1.39       | 0mm      |                        |        |         |                  |                   |               |                  |                      |
|         | WLAN/BT   |             | 0.744      |            | 0mm      | 28.10                  | 329.00 | -173.00 |                  |                   |               |                  |                      |
| Case No | Band      | Position    | SAR (W/kg) | SAR (W/kg) | Gap (mm) | SAR peak location (mm) |        |         | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR | Volume Scan Case No. |
|         |           |             |            |            |          | X                      | Y      | Z       |                  |                   |               |                  |                      |
| Case 21 | AG0-Ant 0 | Left Tilted | 0.283      | 0.28       | 0mm      | 33.50                  | 319.00 | -175.00 | 148.7            | 1.88              | 0.02          | Not required     | 27&28                |
|         | AG1-Ant 5 |             | 0.849      | 1.59       | 0mm      | 11.30                  | 322.00 | -322.00 |                  |                   |               |                  |                      |
|         | WLAN/BT   |             | 0.744      |            | 0mm      |                        |        |         |                  |                   |               |                  |                      |
|         | AG0-Ant 0 | Left Tilted | 0.283      | 0.28       | 0mm      | 33.50                  | 319.00 | -175.00 | 11.5             | 1.88              | 0.22          | Required         |                      |
|         | AG1-Ant 5 |             | 0.849      | 1.59       | 0mm      |                        |        |         |                  |                   |               |                  |                      |
|         | WLAN/BT   |             | 0.744      |            | 0mm      | 28.10                  | 329.00 | -173.00 |                  |                   |               |                  |                      |
| Case No | Band      | Position    | SAR (W/kg) | SAR (W/kg) | Gap (mm) | SAR peak location (mm) |        |         | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR | Volume Scan Case No. |
|         |           |             |            |            |          | X                      | Y      | Z       |                  |                   |               |                  |                      |
| Case 22 | AG0-Ant 0 | Left Tilted | 0.283      | 0.28       | 0mm      | 33.50                  | 319.00 | -175.00 | 8.5              | 1.77              | 0.28          | Required         | 29&30                |
|         | AG1-Ant 8 |             | 0.746      | 1.49       | 0mm      | 25.20                  | 321.00 | -175.00 |                  |                   |               |                  |                      |
|         | WLAN/BT   |             | 0.744      |            | 0mm      |                        |        |         |                  |                   |               |                  |                      |
|         | AG0-Ant 0 | Left Tilted | 0.283      | 0.28       | 0mm      | 33.50                  | 319.00 | -175.00 | 11.5             | 1.77              | 0.20          | Required         |                      |
|         | AG1-Ant 8 |             | 0.746      | 1.49       | 0mm      |                        |        |         |                  |                   |               |                  |                      |
|         | WLAN/BT   |             | 0.744      |            | 0mm      | 28.10                  | 329.00 | -173.00 |                  |                   |               |                  |                      |
| Case No | Band      | Position    | SAR (W/kg) | SAR (W/kg) | Gap (mm) | SAR peak location (mm) |        |         | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR | Volume Scan Case No. |
|         |           |             |            |            |          | X                      | Y      | Z       |                  |                   |               |                  |                      |
| Case 23 | AG0-Ant 1 | Left Tilted | 0.193      | 0.19       | 0mm      | 38.20                  | 327.00 | -173.00 | 151.5            | 1.79              | 0.02          | Not required     | 31&32                |
|         | AG1-Ant 5 |             | 0.849      | 1.59       | 0mm      | 11.30                  | 322.00 | -322.00 |                  |                   |               |                  |                      |
|         | WLAN/BT   |             | 0.744      |            | 0mm      |                        |        |         |                  |                   |               |                  |                      |
|         | AG0-Ant 1 | Left Tilted | 0.193      | 0.19       | 0mm      | 38.20                  | 327.00 | -173.00 | 10.3             | 1.79              | 0.23          | Required         |                      |
|         | AG1-Ant 5 |             | 0.849      | 1.59       | 0mm      |                        |        |         |                  |                   |               |                  |                      |



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|         | WLAN/BT   |             | 0.744      |            | 0mm  | 28.10                  | 329.00 | -173.00 |                  |                   |               |                  |                      |
|---------|-----------|-------------|------------|------------|------|------------------------|--------|---------|------------------|-------------------|---------------|------------------|----------------------|
| Case No | Band      | Position    | SAR (W/kg) | SAR (W/kg) | Gap  | SAR peak location (mm) |        |         | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR | Volume Scan Case No. |
|         |           |             |            |            | (mm) | X                      | Y      | Z       |                  |                   |               |                  |                      |
| Case 24 | AG0-Ant 1 | Left Tilted | 0.193      | 0.19       | 0mm  | 38.20                  | 327.00 | -173.00 | 14.5             | 1.68              | 0.15          | Required         | 33&34                |
|         | AG1-Ant 8 |             | 0.746      | 1.49       | 0mm  | 25.20                  | 321.00 | -175.00 |                  |                   |               |                  |                      |
|         | WLAN/BT   |             | 0.744      |            | 0mm  |                        |        |         |                  |                   |               |                  |                      |
|         | AG0-Ant 1 | Left Tilted | 0.193      | 0.19       | 0mm  | 38.20                  | 327.00 | -173.00 | 10.3             | 1.68              | 0.21          | Required         |                      |
|         | AG1-Ant 8 |             | 0.746      | 1.49       | 0mm  |                        |        |         |                  |                   |               |                  |                      |
|         | WLAN/BT   |             | 0.744      |            | 0mm  | 28.10                  | 329.00 | -173.00 |                  |                   |               |                  |                      |

## <Hotspot>

| Case No | Band      | Position | SAR (W/kg) | Summed | Gap (mm) | SAR peak location (mm) |        |         | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---------|-----------|----------|------------|--------|----------|------------------------|--------|---------|------------------|-------------------|---------------|------------------|
|         |           |          |            |        |          | X                      | Y      | Z       |                  |                   |               |                  |
| Case 35 | AG0-Ant 0 | Front    | 0.864      | 0.86   | 5mm      | -20.00                 | -81.00 | -205.00 | 158.4            | 1.89              | 0.02          | Not required     |
|         | AG1-Ant 4 |          | 0.454      | 1.02   | 5mm      | -36.50                 | 76.50  | -205.00 |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.567      |        | 5mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 0 | Front    | 0.864      | 0.86   | 5mm      | -20.00                 | -81.00 | -205.00 | 154.8            | 1.89              | 0.02          | Not required     |
|         | AG1-Ant 4 |          | 0.454      | 1.02   | 5mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.567      |        | 5mm      | 1.00                   | 72.40  | -205.00 |                  |                   |               |                  |
| Case 36 | AG0-Ant 0 | Front    | 0.864      | 0.86   | 5mm      | -20.00                 | -81.00 | -205.00 | 169.1            | 1.69              | 0.01          | Not required     |
|         | AG1-Ant 5 |          | 0.256      | 0.82   | 5mm      | -17.80                 | 88.00  | -209.00 |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.567      |        | 5mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 0 | Front    | 0.864      | 0.86   | 5mm      | -20.00                 | -81.00 | -205.00 | 154.8            | 1.69              | 0.01          | Not required     |
|         | AG1-Ant 5 |          | 0.256      | 0.82   | 5mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.567      |        | 5mm      | 1.00                   | 72.40  | -205.00 |                  |                   |               |                  |
| Case 37 | AG0-Ant 0 | Front    | 0.864      | 0.86   | 5mm      | -20.00                 | -81.00 | -205.00 | 155.9            | 1.60              | 0.01          | Not required     |
|         | AG1-Ant 7 |          | 0.169      | 0.74   | 5mm      | 20.20                  | 69.60  | -205.00 |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.567      |        | 5mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 0 | Front    | 0.864      | 0.86   | 5mm      | -20.00                 | -81.00 | -205.00 | 154.8            | 1.60              | 0.01          | Not required     |
|         | AG1-Ant 7 |          | 0.169      | 0.74   | 5mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.567      |        | 5mm      | 1.00                   | 72.40  | -205.00 |                  |                   |               |                  |
| Case 38 | AG0-Ant 1 | Front    | 0.722      | 0.72   | 5mm      | -54.20                 | -68.40 | -205.00 | 146.0            | 1.74              | 0.02          | Not required     |
|         | AG1-Ant 4 |          | 0.454      | 1.02   | 5mm      | -36.50                 | 76.50  | -205.00 |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.567      |        | 5mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 1 | Front    | 0.722      | 0.72   | 5mm      | -54.20                 | -68.40 | -205.00 | 151.2            | 1.74              | 0.02          | Not required     |
|         | AG1-Ant 4 |          | 0.454      | 1.02   | 5mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.567      |        | 5mm      | 1.00                   | 72.40  | -205.00 |                  |                   |               |                  |

| Case No | Band      | Position | SAR (W/kg) | Summed | Gap (mm) | SAR peak location (mm) |        |         | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---------|-----------|----------|------------|--------|----------|------------------------|--------|---------|------------------|-------------------|---------------|------------------|
|         |           |          |            |        |          | X                      | Y      | Z       |                  |                   |               |                  |
| Case 39 | AG0-Ant 0 | Back     | 1.281      | 1.28   | 5mm      | -14.50                 | -73.50 | -206.00 | 122.2            | 2.84              | 0.04          | Not required     |
|         | AG1-Ant 2 |          | 0.599      | 1.56   | 5mm      | 6.00                   | 47.00  | -205.00 |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.959      |        | 5mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 0 | Back     | 1.281      | 1.28   | 5mm      | -14.50                 | -73.50 | -206.00 | 143.5            | 2.84              | 0.03          | Not required     |
|         | AG1-Ant 2 |          | 0.599      | 1.56   | 5mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.959      |        | 5mm      | -48.20                 | 66.00  | -205.00 |                  |                   |               |                  |
| Case No | Band      | Position | SAR        | Summed | Gap      | SAR peak location (mm) |        |         | 3D               | Summed            | SPLSR         | Simultaneous     |



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|         |           |          | (W/kg)     |        | (mm)     | X                      | Y      | Z       | distance (mm)    | SAR (W/kg)        | Results       | SAR              |
|---------|-----------|----------|------------|--------|----------|------------------------|--------|---------|------------------|-------------------|---------------|------------------|
| Case 40 | AG0-Ant 0 | Back     | 1.281      | 1.28   | 5mm      | -14.50                 | -73.50 | -206.00 | 144.1            | 2.85              | 0.03          | Not required     |
|         | AG1-Ant 4 |          | 0.612      | 1.57   | 5mm      | -9.50                  | 70.50  | -206.00 |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.959      |        | 5mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 0 | Back     | 1.281      | 1.28   | 5mm      | -14.50                 | -73.50 | -206.00 | 143.5            | 2.85              | 0.03          | Not required     |
|         | AG1-Ant 4 |          | 0.612      | 1.57   | 5mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.959      |        | 5mm      | -48.20                 | 66.00  | -205.00 |                  |                   |               |                  |
| Case No | Band      | Position | SAR (W/kg) | Summed | Gap (mm) | SAR peak location (mm) |        |         | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 41 | AG0-Ant 0 | Back     | 1.281      | 1.28   | 5mm      | -14.50                 | -73.50 | -206.00 | 148.7            | 2.85              | 0.03          | Not required     |
|         | AG1-Ant 5 |          | 0.611      | 1.57   | 5mm      | -30.20                 | 74.40  | -206.00 |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.959      |        | 5mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 0 | Back     | 1.281      | 1.28   | 5mm      | -14.50                 | -73.50 | -206.00 | 143.5            | 2.85              | 0.03          | Not required     |
|         | AG1-Ant 5 |          | 0.611      | 1.57   | 5mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.959      |        | 5mm      | -48.20                 | 66.00  | -205.00 |                  |                   |               |                  |
| Case No | Band      | Position | SAR (W/kg) | Summed | Gap (mm) | SAR peak location (mm) |        |         | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 42 | AG0-Ant 0 | Back     | 1.281      | 1.28   | 5mm      | -14.50                 | -73.50 | -206.00 | 141.6            | 2.82              | 0.03          | Not required     |
|         | AG1-Ant 7 |          | 0.576      | 1.54   | 5mm      | -54.20                 | 62.40  | -205.00 |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.959      |        | 5mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 0 | Back     | 1.281      | 1.28   | 5mm      | -14.50                 | -73.50 | -206.00 | 143.5            | 2.82              | 0.03          | Not required     |
|         | AG1-Ant 7 |          | 0.576      | 1.54   | 5mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.959      |        | 5mm      | -48.20                 | 66.00  | -205.00 |                  |                   |               |                  |
| Case No | Band      | Position | SAR (W/kg) | Summed | Gap (mm) | SAR peak location (mm) |        |         | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 43 | AG0-Ant 0 | Back     | 1.281      | 1.28   | 5mm      | -14.50                 | -73.50 | -206.00 | 121.4            | 2.84              | 0.04          | Not required     |
|         | AG1-Ant 8 |          | 0.596      | 1.56   | 5mm      | -50.60                 | 42.40  | -207.00 |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.959      |        | 5mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 0 | Back     | 1.281      | 1.28   | 5mm      | -14.50                 | -73.50 | -206.00 | 143.5            | 2.84              | 0.03          | Not required     |
|         | AG1-Ant 8 |          | 0.596      | 1.56   | 5mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.959      |        | 5mm      | -48.20                 | 66.00  | -205.00 |                  |                   |               |                  |
| Case No | Band      | Position | SAR (W/kg) | Summed | Gap (mm) | SAR peak location (mm) |        |         | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 44 | AG0-Ant 1 | Back     | 1.266      | 1.27   | 5mm      | -1.40                  | -74.80 | -205.00 | 122.0            | 2.82              | 0.04          | Not required     |
|         | AG1-Ant 2 |          | 0.599      | 1.56   | 5mm      | 6.00                   | 47.00  | -205.00 |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.959      |        | 5mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 1 | Back     | 1.266      | 1.27   | 5mm      | -1.40                  | -74.80 | -205.00 | 148.4            | 2.82              | 0.03          | Not required     |
|         | AG1-Ant 2 |          | 0.599      | 1.56   | 5mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.959      |        | 5mm      | -48.20                 | 66.00  | -205.00 |                  |                   |               |                  |
| Case No | Band      | Position | SAR (W/kg) | Summed | Gap (mm) | SAR peak location (mm) |        |         | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 45 | AG0-Ant 1 | Back     | 1.266      | 1.27   | 5mm      | -1.40                  | -74.80 | -205.00 | 145.5            | 2.84              | 0.03          | Not required     |
|         | AG1-Ant 4 |          | 0.612      | 1.57   | 5mm      | -9.50                  | 70.50  | -206.00 |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.959      |        | 5mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 1 | Back     | 1.266      | 1.27   | 5mm      | -1.40                  | -74.80 | -205.00 | 148.4            | 2.84              | 0.03          | Not required     |
|         | AG1-Ant 4 |          | 0.612      | 1.57   | 5mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.959      |        | 5mm      | -48.20                 | 66.00  | -205.00 |                  |                   |               |                  |
| Case No | Band      | Position | SAR (W/kg) | Summed | Gap (mm) | SAR peak location (mm) |        |         | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 46 | AG0-Ant 1 | Back     | 1.266      | 1.27   | 5mm      | -1.40                  | -74.80 | -205.00 | 152.0            | 2.84              | 0.03          | Not required     |
|         | AG1-Ant 5 |          | 0.611      | 1.57   | 5mm      | -30.20                 | 74.40  | -206.00 |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.959      |        | 5mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 1 | Back     | 1.266      | 1.27   | 5mm      | -1.40                  | -74.80 | -205.00 | 148.4            | 2.84              | 0.03          | Not required     |



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|         | AG1-Ant 5 |          | 0.611      | 1.57   | 5mm      |                        |        |         |                  |                   |               |                  |
|---------|-----------|----------|------------|--------|----------|------------------------|--------|---------|------------------|-------------------|---------------|------------------|
|         | WLAN/BT   |          | 0.959      |        | 5mm      | -48.20                 | 66.00  | -205.00 |                  |                   |               |                  |
| Case No | Band      | Position | SAR (W/kg) | Summed | Gap (mm) | SAR peak location (mm) |        |         | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 47 | AG0-Ant 1 | Back     | 1.266      | 1.27   | 5mm      | -1.40                  | -74.80 | -205.00 | 147.0            | 2.80              | 0.03          | Not required     |
|         | AG1-Ant 7 |          | 0.576      | 1.54   | 5mm      | -54.20                 | 62.40  | -205.00 |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.959      |        | 5mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 1 | Back     | 1.266      | 1.27   | 5mm      | -1.40                  | -74.80 | -205.00 | 148.4            | 2.80              | 0.03          | Not required     |
|         | AG1-Ant 7 |          | 0.576      | 1.54   | 5mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.959      |        | 5mm      | -48.20                 | 66.00  | -205.00 |                  |                   |               |                  |
| Case No | Band      | Position | SAR (W/kg) | Summed | Gap (mm) | SAR peak location (mm) |        |         | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 48 | AG0-Ant 1 | Back     | 1.266      | 1.27   | 5mm      | -1.40                  | -74.80 | -205.00 | 127.1            | 2.82              | 0.04          | Not required     |
|         | AG1-Ant 8 |          | 0.596      | 1.56   | 5mm      | -50.60                 | 42.40  | -207.00 |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.959      |        | 5mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 1 | Back     | 1.266      | 1.27   | 5mm      | -1.40                  | -74.80 | -205.00 | 148.4            | 2.82              | 0.03          | Not required     |
|         | AG1-Ant 8 |          | 0.596      | 1.56   | 5mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.959      |        | 5mm      | -48.20                 | 66.00  | -205.00 |                  |                   |               |                  |

| Case No | Band      | Position   | SAR (W/kg) | Summed | Gap (mm) | SAR peak location (mm) |        |         | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---------|-----------|------------|------------|--------|----------|------------------------|--------|---------|------------------|-------------------|---------------|------------------|
| Case 49 | AG0-Ant 0 | Right Side | 1.079      | 1.08   | 5mm      | -32.00                 | 64.50  | -206.00 | 117.4            | 1.67              | 0.02          | Not required     |
|         | WLAN/BT   |            | 0.587      | 0.59   | 5mm      | -24.20                 | -52.60 | -205.00 |                  |                   |               |                  |
| Case No | Band      | Position   | SAR (W/kg) | Summed | Gap (mm) | SAR peak location (mm) |        |         | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 50 | AG0-Ant 0 | Right Side | 1.079      | 1.08   | 5mm      | -32.00                 | 64.50  | -206.00 | 117.4            | 1.67              | 0.02          | Not required     |
|         | WLAN/BT   |            | 0.587      | 0.59   | 5mm      | -24.20                 | -52.60 | -205.00 |                  |                   |               |                  |
| Case No | Band      | Position   | SAR (W/kg) | Summed | Gap (mm) | SAR peak location (mm) |        |         | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 51 | AG0-Ant 0 | Right Side | 1.079      | 1.08   | 5mm      | -32.00                 | 64.50  | -206.00 | 88.8             | 1.81              | 0.03          | Not required     |
|         | AG1-Ant 5 |            | 0.145      | 0.73   | 5mm      | -25.00                 | -24.00 | -209.00 |                  |                   |               |                  |
|         | WLAN/BT   |            | 0.587      |        | 5mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 0 | Right Side | 1.079      | 1.08   | 5mm      | -32.00                 | 64.50  | -206.00 | 117.4            | 1.81              | 0.02          | Not required     |
|         | AG1-Ant 5 |            | 0.145      | 0.73   | 5mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |            | 0.587      |        | 5mm      | -24.20                 | -52.60 | -205.00 |                  |                   |               |                  |
| Case No | Band      | Position   | SAR (W/kg) | Summed | Gap (mm) | SAR peak location (mm) |        |         | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 52 | AG0-Ant 0 | Right Side | 1.079      | 1.08   | 5mm      | -32.00                 | 64.50  | -206.00 | 110.8            | 1.98              | 0.03          | Not required     |
|         | AG1-Ant 7 |            | 0.309      | 0.90   | 5mm      | -19.40                 | -45.60 | -205.00 |                  |                   |               |                  |
|         | WLAN/BT   |            | 0.587      |        | 5mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 0 | Right Side | 1.079      | 1.08   | 5mm      | -32.00                 | 64.50  | -206.00 | 117.4            | 1.98              | 0.02          | Not required     |
|         | AG1-Ant 7 |            | 0.309      | 0.90   | 5mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |            | 0.587      |        | 5mm      | -24.20                 | -52.60 | -205.00 |                  |                   |               |                  |
| Case No | Band      | Position   | SAR (W/kg) | Summed | Gap (mm) | SAR peak location (mm) |        |         | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 53 | AG0-Ant 0 | Right Side | 1.079      | 1.08   | 5mm      | -32.00                 | 64.50  | -206.00 | 99.4             | 1.91              | 0.03          | Not required     |
|         | AG1-Ant 8 |            | 0.248      | 0.84   | 5mm      | -33.40                 | -34.80 | -209.00 |                  |                   |               |                  |
|         | WLAN/BT   |            | 0.587      |        | 5mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 0 | Right Side | 1.079      | 1.08   | 5mm      | -32.00                 | 64.50  | -206.00 | 117.4            | 1.91              | 0.02          | Not required     |
|         | AG1-Ant 8 |            | 0.248      | 0.84   | 5mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |            | 0.587      |        | 5mm      | -24.20                 | -52.60 | -205.00 |                  |                   |               |                  |





## &lt;Body-worn&gt;

| Case No | Band      | Position | SAR (W/kg) | Summed | Gap      | SAR peak location (mm) |        |         | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---------|-----------|----------|------------|--------|----------|------------------------|--------|---------|------------------|-------------------|---------------|------------------|
|         |           |          |            |        | (mm)     | X                      | Y      | Z       |                  |                   |               |                  |
| Case 54 | AG0-Ant 0 | Front    | 1.103      | 1.10   | 5mm      | -20.00                 | -81.00 | -205.00 | 146.6            | 1.67              | 0.01          | Not required     |
|         | AG1-Ant 2 |          | 0.057      | 0.56   | 5mm      | -60.20                 | 60.00  | -205.00 |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.505      |        | 5mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 0 | Front    | 1.103      | 1.10   | 5mm      | -20.00                 | -81.00 | -205.00 | 154.8            | 1.67              | 0.01          | Not required     |
|         | AG1-Ant 2 |          | 0.057      | 0.56   | 5mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.505      |        | 5mm      | 1.00                   | 72.40  | -205.00 |                  |                   |               |                  |
| Case No | Band      | Position | SAR (W/kg) | Summed | Gap (mm) | X                      | Y      | Z       | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 55 | AG0-Ant 0 | Front    | 1.103      | 1.10   | 5mm      | -20.00                 | -81.00 | -205.00 | 158.4            | 2.42              | 0.02          | Not required     |
|         | AG1-Ant 4 |          | 0.812      | 1.32   | 5mm      | -36.50                 | 76.50  | -205.00 |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.505      |        | 5mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 0 | Front    | 1.103      | 1.10   | 5mm      | -20.00                 | -81.00 | -205.00 | 154.8            | 2.42              | 0.02          | Not required     |
|         | AG1-Ant 4 |          | 0.812      | 1.32   | 5mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.505      |        | 5mm      | 1.00                   | 72.40  | -205.00 |                  |                   |               |                  |
| Case No | Band      | Position | SAR (W/kg) | Summed | Gap (mm) | X                      | Y      | Z       | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 56 | AG0-Ant 0 | Front    | 1.103      | 1.10   | 5mm      | -20.00                 | -81.00 | -205.00 | 169.1            | 2.00              | 0.02          | Not required     |
|         | AG1-Ant 5 |          | 0.389      | 0.89   | 5mm      | -17.80                 | 88.00  | -209.00 |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.505      |        | 5mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 0 | Front    | 1.103      | 1.10   | 5mm      | -20.00                 | -81.00 | -205.00 | 154.8            | 2.00              | 0.02          | Not required     |
|         | AG1-Ant 5 |          | 0.389      | 0.89   | 5mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.505      |        | 5mm      | 1.00                   | 72.40  | -205.00 |                  |                   |               |                  |
| Case No | Band      | Position | SAR (W/kg) | Summed | Gap (mm) | X                      | Y      | Z       | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 57 | AG0-Ant 0 | Front    | 1.103      | 1.10   | 5mm      | -20.00                 | -81.00 | -205.00 | 155.9            | 1.87              | 0.02          | Not required     |
|         | AG1-Ant 7 |          | 0.260      | 0.77   | 5mm      | 20.20                  | 69.60  | -205.00 |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.505      |        | 5mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 0 | Front    | 1.103      | 1.10   | 5mm      | -20.00                 | -81.00 | -205.00 | 154.8            | 1.87              | 0.02          | Not required     |
|         | AG1-Ant 7 |          | 0.260      | 0.77   | 5mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.505      |        | 5mm      | 1.00                   | 72.40  | -205.00 |                  |                   |               |                  |
| Case No | Band      | Position | SAR (W/kg) | Summed | Gap (mm) | X                      | Y      | Z       | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 58 | AG0-Ant 0 | Front    | 1.103      | 1.10   | 5mm      | -20.00                 | -81.00 | -205.00 | 157.8            | 1.61              | 0.01          | Not required     |
|         | AG1-Ant 8 |          | 0.000      | 0.51   | 5mm      | -1.00                  | 75.60  | -208.00 |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.505      |        | 5mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 0 | Front    | 1.103      | 1.10   | 5mm      | -20.00                 | -81.00 | -205.00 | 154.8            | 1.61              | 0.01          | Not required     |
|         | AG1-Ant 8 |          | 0.000      | 0.51   | 5mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.505      |        | 5mm      | 1.00                   | 72.40  | -205.00 |                  |                   |               |                  |
| Case No | Band      | Position | SAR (W/kg) | Summed | Gap (mm) | X                      | Y      | Z       | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 59 | AG0-Ant 1 | Front    | 0.724      | 0.72   | 5mm      | -54.20                 | -68.40 | -205.00 | 146.0            | 2.04              | 0.02          | Not required     |
|         | AG1-Ant 4 |          | 0.812      | 1.32   | 5mm      | -36.50                 | 76.50  | -205.00 |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.505      |        | 5mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 1 | Front    | 0.724      | 0.72   | 5mm      | -54.20                 | -68.40 | -205.00 | 151.2            | 2.04              | 0.02          | Not required     |
|         | AG1-Ant 4 |          | 0.812      | 1.32   | 5mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.505      |        | 5mm      | 1.00                   | 72.40  | -205.00 |                  |                   |               |                  |
| Case No | Band      | Position | SAR (W/kg) | Summed | Gap (mm) | X                      | Y      | Z       | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 60 | AG0-Ant 1 | Front    | 0.724      | 0.72   | 5mm      | -54.20                 | -68.40 | -205.00 | 160.6            | 1.62              | 0.01          | Not required     |
|         | AG1-Ant 5 |          | 0.389      | 0.89   | 5mm      | -17.80                 | 88.00  | -209.00 |                  |                   |               |                  |





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|  |           |       |       |      |     |        |        |         |       |      |      |              |
|--|-----------|-------|-------|------|-----|--------|--------|---------|-------|------|------|--------------|
|  | WLAN/BT   | Front | 0.505 | 0.89 | 5mm |        |        |         | 151.2 | 1.62 | 0.01 | Not required |
|  | AG0-Ant 1 |       | 0.724 |      | 5mm | -54.20 | -68.40 | -205.00 |       |      |      |              |
|  | AG1-Ant 5 |       | 0.389 |      | 5mm |        |        |         |       |      |      |              |
|  | WLAN/BT   |       | 0.505 |      | 5mm | 1.00   | 72.40  | -205.00 |       |      |      |              |

| Case No | Band      | Position | SAR (W/kg) | Summed | Gap      | SAR peak location (mm) |        |         | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---------|-----------|----------|------------|--------|----------|------------------------|--------|---------|------------------|-------------------|---------------|------------------|
|         |           |          |            |        | (mm)     | X                      | Y      | Z       |                  |                   |               |                  |
| Case 61 | AG0-Ant 0 | Back     | 1.281      | 1.28   | 5mm      | -14.50                 | -73.50 | -206.00 | 122.2            | 2.74              | 0.04          | Not required     |
|         | AG1-Ant 2 |          | 0.802      | 1.46   | 5mm      | 6.00                   | 47.00  | -205.00 |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.653      |        | 5mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 0 | Back     | 1.281      | 1.28   | 5mm      | -14.50                 | -73.50 | -206.00 | 143.5            | 2.74              | 0.03          | Not required     |
|         | AG1-Ant 2 |          | 0.802      | 1.46   | 5mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.653      |        | 5mm      | -48.20                 | 66.00  | -205.00 |                  |                   |               |                  |
| Case No | Band      | Position | SAR (W/kg) | Summed | Gap (mm) | X                      | Y      | Z       | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 62 | AG0-Ant 0 | Back     | 1.281      | 1.28   | 5mm      | -14.50                 | -73.50 | -206.00 | 144.1            | 2.90              | 0.03          | Not required     |
|         | AG1-Ant 4 |          | 0.966      | 1.62   | 5mm      | -9.50                  | 70.50  | -206.00 |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.653      |        | 5mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 0 | Back     | 1.281      | 1.28   | 5mm      | -14.50                 | -73.50 | -206.00 | 143.5            | 2.90              | 0.03          | Not required     |
|         | AG1-Ant 4 |          | 0.966      | 1.62   | 5mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.653      |        | 5mm      | -48.20                 | 66.00  | -205.00 |                  |                   |               |                  |
| Case No | Band      | Position | SAR (W/kg) | Summed | Gap (mm) | X                      | Y      | Z       | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 63 | AG0-Ant 0 | Back     | 1.281      | 1.28   | 5mm      | -14.50                 | -73.50 | -206.00 | 148.7            | 2.83              | 0.03          | Not required     |
|         | AG1-Ant 5 |          | 0.891      | 1.54   | 5mm      | -30.20                 | 74.40  | -206.00 |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.653      |        | 5mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 0 | Back     | 1.281      | 1.28   | 5mm      | -14.50                 | -73.50 | -206.00 | 143.5            | 2.83              | 0.03          | Not required     |
|         | AG1-Ant 5 |          | 0.891      | 1.54   | 5mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.653      |        | 5mm      | -48.20                 | 66.00  | -205.00 |                  |                   |               |                  |
| Case No | Band      | Position | SAR (W/kg) | Summed | Gap (mm) | X                      | Y      | Z       | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 64 | AG0-Ant 0 | Back     | 1.281      | 1.28   | 5mm      | -14.50                 | -73.50 | -206.00 | 141.6            | 2.76              | 0.03          | Not required     |
|         | AG1-Ant 7 |          | 0.827      | 1.48   | 5mm      | -54.20                 | 62.40  | -205.00 |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.653      |        | 5mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 0 | Back     | 1.281      | 1.28   | 5mm      | -14.50                 | -73.50 | -206.00 | 143.5            | 2.76              | 0.03          | Not required     |
|         | AG1-Ant 7 |          | 0.827      | 1.48   | 5mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.653      |        | 5mm      | -48.20                 | 66.00  | -205.00 |                  |                   |               |                  |
| Case No | Band      | Position | SAR (W/kg) | Summed | Gap (mm) | X                      | Y      | Z       | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 65 | AG0-Ant 0 | Back     | 1.281      | 1.28   | 5mm      | -14.50                 | -73.50 | -206.00 | 121.4            | 2.79              | 0.04          | Not required     |
|         | AG1-Ant 8 |          | 0.859      | 1.51   | 5mm      | -50.60                 | 42.40  | -207.00 |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.653      |        | 5mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 0 | Back     | 1.281      | 1.28   | 5mm      | -14.50                 | -73.50 | -206.00 | 143.5            | 2.79              | 0.03          | Not required     |
|         | AG1-Ant 8 |          | 0.859      | 1.51   | 5mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.653      |        | 5mm      | -48.20                 | 66.00  | -205.00 |                  |                   |               |                  |
| Case No | Band      | Position | SAR (W/kg) | Summed | Gap (mm) | X                      | Y      | Z       | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 66 | AG0-Ant 1 | Back     | 1.281      | 1.28   | 5mm      | -1.40                  | -74.80 | -205.00 | 122.0            | 2.74              | 0.04          | Not required     |
|         | AG1-Ant 2 |          | 0.802      | 1.46   | 5mm      | 6.00                   | 47.00  | -205.00 |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.653      |        | 5mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 1 | Back     | 1.281      | 1.28   | 5mm      | -1.40                  | -74.80 | -205.00 | 148.4            | 2.74              | 0.03          | Not required     |
|         | AG1-Ant 2 |          | 0.802      | 1.46   | 5mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.653      |        | 5mm      | -48.20                 | 66.00  | -205.00 |                  |                   |               |                  |



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| Case No | Band      | Position | SAR (W/kg) | Summed | Gap      | SAR peak location (mm) |        |         | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---------|-----------|----------|------------|--------|----------|------------------------|--------|---------|------------------|-------------------|---------------|------------------|
|         |           |          |            |        | (mm)     | X                      | Y      | Z       |                  |                   |               |                  |
| Case 67 | AG0-Ant 1 | Back     | 1.281      | 1.28   | 5mm      | -1.40                  | -74.80 | -205.00 | 145.5            | 2.90              | 0.03          | Not required     |
|         | AG1-Ant 4 |          | 0.966      | 1.62   | 5mm      | -9.50                  | 70.50  | -206.00 |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.653      |        | 5mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 1 | Back     | 1.281      | 1.28   | 5mm      | -1.40                  | -74.80 | -205.00 | 148.4            | 2.90              | 0.03          | Not required     |
|         | AG1-Ant 4 |          | 0.966      | 1.62   | 5mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.653      |        | 5mm      | -48.20                 | 66.00  | -205.00 |                  |                   |               |                  |
| Case No | Band      | Position | SAR (W/kg) | Summed | Gap (mm) | X                      | Y      | Z       | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 68 | AG0-Ant 1 | Back     | 1.281      | 1.28   | 5mm      | -1.40                  | -74.80 | -205.00 | 152.0            | 2.83              | 0.03          | Not required     |
|         | AG1-Ant 5 |          | 0.891      | 1.54   | 5mm      | -30.20                 | 74.40  | -206.00 |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.653      |        | 5mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 1 | Back     | 1.281      | 1.28   | 5mm      | -1.40                  | -74.80 | -205.00 | 148.4            | 2.83              | 0.03          | Not required     |
|         | AG1-Ant 5 |          | 0.891      | 1.54   | 5mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.653      |        | 5mm      | -48.20                 | 66.00  | -205.00 |                  |                   |               |                  |
| Case No | Band      | Position | SAR (W/kg) | Summed | Gap (mm) | X                      | Y      | Z       | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 69 | AG0-Ant 1 | Back     | 1.281      | 1.28   | 5mm      | -1.40                  | -74.80 | -205.00 | 147.0            | 2.76              | 0.03          | Not required     |
|         | AG1-Ant 7 |          | 0.827      | 1.48   | 5mm      | -54.20                 | 62.40  | -205.00 |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.653      |        | 5mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 1 | Back     | 1.281      | 1.28   | 5mm      | -1.40                  | -74.80 | -205.00 | 148.4            | 2.76              | 0.03          | Not required     |
|         | AG1-Ant 7 |          | 0.827      | 1.48   | 5mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.653      |        | 5mm      | -48.20                 | 66.00  | -205.00 |                  |                   |               |                  |
| Case No | Band      | Position | SAR (W/kg) | Summed | Gap (mm) | X                      | Y      | Z       | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 70 | AG0-Ant 1 | Back     | 1.281      | 1.28   | 5mm      | -1.40                  | -74.80 | -205.00 | 127.1            | 2.79              | 0.04          | Not required     |
|         | AG1-Ant 8 |          | 0.859      | 1.51   | 5mm      | -50.60                 | 42.40  | -207.00 |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.653      |        | 5mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 1 | Back     | 1.281      | 1.28   | 5mm      | -1.40                  | -74.80 | -205.00 | 148.4            | 2.79              | 0.03          | Not required     |
|         | AG1-Ant 8 |          | 0.859      | 1.51   | 5mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.653      |        | 5mm      | -48.20                 | 66.00  | -205.00 |                  |                   |               |                  |

## <Extremity>

| Case No | Band      | Position | SAR (W/kg) | Summed | Gap      | SAR peak location (mm) |        |         | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---------|-----------|----------|------------|--------|----------|------------------------|--------|---------|------------------|-------------------|---------------|------------------|
|         |           |          |            |        | (mm)     | X                      | Y      | Z       |                  |                   |               |                  |
| Case 71 | AG0-Ant 0 | Front    | 2.693      | 2.69   | 0mm      | -23.00                 | -82.50 | -206.00 | 165.7            | 5.53              | 0.08          | Not required     |
|         | AG1-Ant 4 |          | 2.336      | 2.83   | 0mm      | -45.80                 | 81.60  | -205.00 |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.496      |        | 0mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 0 | Front    | 2.693      | 2.69   | 0mm      | -23.00                 | -82.50 | -206.00 | 163.5            | 5.53              | 0.08          | Not required     |
|         | AG1-Ant 4 |          | 2.336      | 2.83   | 0mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.496      |        | 0mm      | 8.20                   | 78.00  | -204.00 |                  |                   |               |                  |
| Case No | Band      | Position | SAR (W/kg) | Summed | Gap (mm) | X                      | Y      | Z       | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 72 | AG0-Ant 0 | Front    | 2.693      | 2.69   | 0mm      | -23.00                 | -82.50 | -206.00 | 168.2            | 4.93              | 0.07          | Not required     |
|         | AG1-Ant 5 |          | 1.744      | 2.24   | 0mm      | -16.60                 | 85.60  | -209.00 |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.496      |        | 0mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 0 | Front    | 2.693      | 2.69   | 0mm      | -23.00                 | -82.50 | -206.00 | 163.5            | 4.93              | 0.07          | Not required     |
|         | AG1-Ant 5 |          | 1.744      | 2.24   | 0mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.496      |        | 0mm      | 8.20                   | 78.00  | -204.00 |                  |                   |               |                  |
| Case No | Band      | Position | SAR (W/kg) | Summed | Gap (mm) | X                      | Y      | Z       | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 73 | AG0-Ant 0 | Front    | 2.693      | 2.69   | 0mm      | -23.00                 | -82.50 | -206.00 | 155.8            | 4.76              | 0.07          | Not required     |



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|         | AG1-Ant 7 |          | 1.569      | 2.07   | 0mm      | 20.20                  | 67.20  | -204.00 | 163.5            | 4.76              | 0.06          | Not required     |
|---------|-----------|----------|------------|--------|----------|------------------------|--------|---------|------------------|-------------------|---------------|------------------|
|         | WLAN/BT   |          | 0.496      |        | 0mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 0 | Front    | 2.693      | 2.07   | 0mm      | -23.00                 | -82.50 | -206.00 |                  |                   |               |                  |
|         | AG1-Ant 7 |          | 1.569      |        | 0mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.496      |        | 0mm      | 8.20                   | 78.00  | -204.00 |                  |                   |               |                  |
| Case No | Band      | Position | SAR (W/kg) | Summed | Gap (mm) | SAR peak location (mm) |        |         | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 74 | AG0-Ant 1 | Front    | 1.433      | 2.83   | 0mm      | -45.80                 | -72.00 | -204.00 | 153.6            | 4.27              | 0.06          | Not required     |
|         | AG1-Ant 4 |          | 2.336      |        | 0mm      | -45.80                 | 81.60  | -205.00 |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.496      |        | 0mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 1 | Front    | 1.433      | 2.83   | 0mm      | -45.80                 | -72.00 | -204.00 | 159.4            | 4.27              | 0.06          | Not required     |
|         | AG1-Ant 4 |          | 2.336      |        | 0mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.496      |        | 0mm      | 8.20                   | 78.00  | -204.00 |                  |                   |               |                  |

| Case No | Band      | Position | SAR (W/kg) | Summed | Gap (mm) | SAR peak location (mm) |        |         | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---------|-----------|----------|------------|--------|----------|------------------------|--------|---------|------------------|-------------------|---------------|------------------|
| Case 75 | AG0-Ant 0 | Back     | 3.028      | 3.03   | 0mm      | -42.00                 | -84.60 | -206.00 | 132.7            | 5.43              | 0.10          | Not required     |
|         | AG1-Ant 2 |          | 1.661      |        | 0mm      | 10.60                  | 37.20  | -206.00 |                  |                   |               |                  |
|         | NFC       |          | 0.023      |        | 0mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.722      |        | 0mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 0 | Back     | 3.028      | 3.03   | 0mm      | -42.00                 | -84.60 | -206.00 | 158.0            | 5.43              | 0.08          | Not required     |
|         | AG1-Ant 2 |          | 1.661      |        | 0mm      |                        |        |         |                  |                   |               |                  |
|         | NFC       |          | 0.023      |        | 0mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.722      |        | 0mm      | -45.80                 | 73.40  | -205.00 |                  |                   |               |                  |
|         | AG0-Ant 0 | Back     | 3.028      | 3.03   | 0mm      | -42.00                 | -84.60 | -206.00 | 174.2            | 5.43              | 0.07          | Not required     |
|         | AG1-Ant 2 |          | 1.661      |        | 0mm      |                        |        |         |                  |                   |               |                  |
|         | NFC       |          | 0.023      |        | 0mm      | 13.50                  | 78.50  | -180.00 |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.722      |        | 0mm      |                        |        |         |                  |                   |               |                  |
| Case No | Band      | Position | SAR (W/kg) | Summed | Gap (mm) | SAR peak location (mm) |        |         | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 76 | AG0-Ant 0 | Back     | 3.028      | 3.03   | 0mm      | -42.00                 | -84.60 | -206.00 | 161.6            | 6.24              | 0.10          | Not required     |
|         | AG1-Ant 4 |          | 2.470      |        | 0mm      | -24.50                 | 76.00  | -205.00 |                  |                   |               |                  |
|         | NFC       |          | 0.023      |        | 0mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.722      |        | 0mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 0 | Back     | 3.028      | 3.03   | 0mm      | -42.00                 | -84.60 | -206.00 | 158.0            | 6.24              | 0.10          | Not required     |
|         | AG1-Ant 4 |          | 2.470      |        | 0mm      |                        |        |         |                  |                   |               |                  |
|         | NFC       |          | 0.023      |        | 0mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.722      |        | 0mm      | -45.80                 | 73.40  | -205.00 |                  |                   |               |                  |
|         | AG0-Ant 0 | Back     | 3.028      | 3.03   | 0mm      | -42.00                 | -84.60 | -206.00 | 174.2            | 6.24              | 0.09          | Not required     |
|         | AG1-Ant 4 |          | 2.470      |        | 0mm      |                        |        |         |                  |                   |               |                  |
|         | NFC       |          | 0.023      |        | 0mm      | 13.50                  | 78.50  | -180.00 |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.722      |        | 0mm      |                        |        |         |                  |                   |               |                  |
| Case No | Band      | Position | SAR (W/kg) | Summed | Gap (mm) | SAR peak location (mm) |        |         | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 77 | AG0-Ant 0 | Back     | 3.028      | 3.03   | 0mm      | -42.00                 | -84.60 | -206.00 | 159.2            | 6.07              | 0.09          | Not required     |
|         | AG1-Ant 5 |          | 2.294      |        | 0mm      | -35.00                 | 74.40  | -206.00 |                  |                   |               |                  |
|         | NFC       |          | 0.023      |        | 0mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.722      |        | 0mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 0 | Back     | 3.028      | 3.03   | 0mm      | -42.00                 | -84.60 | -206.00 | 158.0            | 6.07              | 0.09          | Not required     |
|         | AG1-Ant 5 |          | 2.294      |        | 0mm      |                        |        |         |                  |                   |               |                  |
|         | NFC       |          | 0.023      |        | 0mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.722      |        | 0mm      | -45.80                 | 73.40  | -205.00 |                  |                   |               |                  |
|         | AG0-Ant 0 | Back     | 3.028      | 3.03   | 0mm      | -42.00                 | -84.60 | -206.00 | 174.2            | 6.07              | 0.09          | Not required     |
|         | AG1-Ant 5 |          | 2.294      |        | 0mm      |                        |        |         |                  |                   |               |                  |
|         | NFC       |          | 0.023      |        | 0mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.722      |        | 0mm      |                        |        |         |                  |                   |               |                  |



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|         | NFC       |          | 0.023      | 0.75   | 0mm      | 13.50                  | 78.50  | -180.00 |                  |                   |               |                  |
|---------|-----------|----------|------------|--------|----------|------------------------|--------|---------|------------------|-------------------|---------------|------------------|
|         | WLAN/BT   |          | 0.722      |        | 0mm      |                        |        |         |                  |                   |               |                  |
| Case No | Band      | Position | SAR (W/kg) | Summed | Gap (mm) | SAR peak location (mm) |        |         | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|         |           |          |            |        |          | X                      | Y      | Z       |                  |                   |               |                  |
| Case 78 | AG0-Ant 0 | Back     | 3.028      | 3.03   | 0mm      | -42.00                 | -94.60 | -206.00 | 155.6            | 6.07              | 0.10          | Not required     |
|         | AG1-Ant 7 |          | 2.299      | 2.30   | 0mm      | -55.40                 | 60.40  | -205.00 |                  |                   |               |                  |
|         | NFC       |          | 0.023      | 0.75   | 0mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.722      |        | 0mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 0 | Back     | 3.028      | 3.03   | 0mm      | -42.00                 | -84.60 | -206.00 | 158.0            | 6.07              | 0.09          | Not required     |
|         | AG1-Ant 7 |          | 2.299      | 2.30   | 0mm      |                        |        |         |                  |                   |               |                  |
|         | NFC       |          | 0.023      | 0.75   | 0mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.722      |        | 0mm      | -45.80                 | 73.40  | -205.00 |                  |                   |               |                  |
|         | AG0-Ant 0 | Back     | 3.028      | 3.03   | 0mm      | -42.00                 | -84.60 | -206.00 | 174.2            | 6.07              | 0.09          | Not required     |
|         | AG1-Ant 7 |          | 2.299      | 2.30   | 0mm      |                        |        |         |                  |                   |               |                  |
|         | NFC       |          | 0.023      | 0.75   | 0mm      | 13.50                  | 78.50  | -180.00 |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.722      |        | 0mm      |                        |        |         |                  |                   |               |                  |
| Case No | Band      | Position | SAR (W/kg) | Summed | Gap (mm) | SAR peak location (mm) |        |         | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|         |           |          |            |        |          | X                      | Y      | Z       |                  |                   |               |                  |
| Case 79 | AG0-Ant 0 | Back     | 3.028      | 3.03   | 0mm      | -42.00                 | -84.60 | -206.00 | 159.2            | 6.07              | 0.09          | Not required     |
|         | AG1-Ant 8 |          | 2.293      | 2.29   | 0mm      | -49.00                 | 74.40  | -209.00 |                  |                   |               |                  |
|         | NFC       |          | 0.023      | 0.75   | 0mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.722      |        | 0mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 0 | Back     | 3.028      | 3.03   | 0mm      | -42.00                 | -84.60 | -206.00 | 158.0            | 6.07              | 0.09          | Not required     |
|         | AG1-Ant 8 |          | 2.293      | 2.29   | 0mm      |                        |        |         |                  |                   |               |                  |
|         | NFC       |          | 0.023      | 0.75   | 0mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.722      |        | 0mm      | -45.80                 | 73.40  | -205.00 |                  |                   |               |                  |
|         | AG0-Ant 0 | Back     | 3.028      | 3.03   | 0mm      | -42.00                 | -84.60 | -206.00 | 174.2            | 6.07              | 0.09          | Not required     |
|         | AG1-Ant 8 |          | 2.293      | 2.29   | 0mm      |                        |        |         |                  |                   |               |                  |
|         | NFC       |          | 0.023      | 0.75   | 0mm      | 13.50                  | 78.50  | -180.00 |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.722      |        | 0mm      |                        |        |         |                  |                   |               |                  |
| Case No | Band      | Position | SAR (W/kg) | Summed | Gap (mm) | SAR peak location (mm) |        |         | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|         |           |          |            |        |          | X                      | Y      | Z       |                  |                   |               |                  |
| Case 80 | AG0-Ant 1 | Back     | 3.186      | 3.19   | 0mm      | 2.40                   | -98.40 | -205.00 | 135.9            | 5.59              | 0.10          | Not required     |
|         | AG1-Ant 2 |          | 1.661      | 1.66   | 0mm      | 10.60                  | 37.20  | -206.00 |                  |                   |               |                  |
|         | NFC       |          | 0.023      | 0.75   | 0mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.722      |        | 0mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 1 | Back     | 3.186      | 3.19   | 0mm      | 2.40                   | -78.40 | -205.00 | 159.3            | 5.59              | 0.08          | Not required     |
|         | AG1-Ant 2 |          | 1.661      | 1.66   | 0mm      |                        |        |         |                  |                   |               |                  |
|         | NFC       |          | 0.023      | 0.75   | 0mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.722      |        | 0mm      | -45.80                 | 73.40  | -205.00 |                  |                   |               |                  |
|         | AG0-Ant 1 | Back     | 3.186      | 3.19   | 0mm      | 2.40                   | -78.40 | -205.00 | 159.3            | 5.59              | 0.08          | Not required     |
|         | AG1-Ant 2 |          | 1.661      | 1.66   | 0mm      |                        |        |         |                  |                   |               |                  |
|         | NFC       |          | 0.023      | 0.75   | 0mm      | 13.50                  | 78.50  | -180.00 |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.722      |        | 0mm      |                        |        |         |                  |                   |               |                  |
| Case No | Band      | Position | SAR (W/kg) | Summed | Gap (mm) | SAR peak location (mm) |        |         | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|         |           |          |            |        |          | X                      | Y      | Z       |                  |                   |               |                  |
| Case 81 | AG0-Ant 1 | Back     | 3.186      | 3.19   | 0mm      | 2.40                   | -98.40 | -205.00 | 176.5            | 6.40              | 0.09          | Not required     |
|         | AG1-Ant 4 |          | 2.470      | 2.47   | 0mm      | -24.50                 | 76.00  | -205.00 |                  |                   |               |                  |
|         | NFC       |          | 0.023      | 0.75   | 0mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.722      |        | 0mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 1 | Back     | 3.186      | 3.19   | 0mm      | 2.40                   | -98.40 | -205.00 | 178.4            | 6.40              | 0.09          | Not required     |
|         | AG1-Ant 4 |          | 2.470      | 2.47   | 0mm      |                        |        |         |                  |                   |               |                  |
|         | NFC       |          | 0.023      | 0.75   | 0mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.722      |        | 0mm      | -45.80                 | 73.40  | -205.00 |                  |                   |               |                  |



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|         | AG0-Ant 1 | Back     | 3.186      | 3.19   | 0mm      | 2.40                   | -98.40 | -205.00 | 179.0            | 6.40              | 0.09          | Not required     |
|---------|-----------|----------|------------|--------|----------|------------------------|--------|---------|------------------|-------------------|---------------|------------------|
|         | AG1-Ant 4 |          | 2.470      | 2.47   | 0mm      |                        |        |         |                  |                   |               |                  |
|         | NFC       |          | 0.023      | 0.75   | 0mm      | 13.50                  | 78.50  | -180.00 |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.722      |        | 0mm      |                        |        |         |                  |                   |               |                  |
| Case No | Band      | Position | SAR (W/kg) | Summed | Gap (mm) | SAR peak location (mm) |        |         | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|         |           |          |            |        |          | X                      | Y      | Z       |                  |                   |               |                  |
| Case 82 | AG0-Ant 1 | Back     | 3.186      | 3.19   | 0mm      | 2.40                   | -78.40 | -205.00 | 157.3            | 6.23              | 0.10          | Not required     |
|         | AG1-Ant 5 |          | 2.294      | 2.29   | 0mm      | -35.00                 | 74.40  | -206.00 |                  |                   |               |                  |
|         | NFC       |          | 0.023      | 0.75   | 0mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.722      |        | 0mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 1 | Back     | 3.186      | 3.19   | 0mm      | 2.40                   | -78.40 | -205.00 | 159.3            | 6.23              | 0.10          | Not required     |
|         | AG1-Ant 5 |          | 2.294      | 2.29   | 0mm      |                        |        |         |                  |                   |               |                  |
|         | NFC       |          | 0.023      | 0.75   | 0mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.722      |        | 0mm      | -45.80                 | 73.40  | -205.00 |                  |                   |               |                  |
|         | AG0-Ant 1 | Back     | 3.186      | 3.19   | 0mm      | 2.40                   | -78.40 | -205.00 | 159.3            | 6.23              | 0.10          | Not required     |
|         | AG1-Ant 5 |          | 2.294      | 2.29   | 0mm      |                        |        |         |                  |                   |               |                  |
|         | NFC       |          | 0.023      | 0.75   | 0mm      | 13.50                  | 78.50  | -180.00 |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.722      |        | 0mm      |                        |        |         |                  |                   |               |                  |
| Case No | Band      | Position | SAR (W/kg) | Summed | Gap (mm) | SAR peak location (mm) |        |         | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|         |           |          |            |        |          | X                      | Y      | Z       |                  |                   |               |                  |
| Case 83 | AG0-Ant 1 | Back     | 3.186      | 3.19   | 0mm      | 2.40                   | -98.40 | -205.00 | 169.0            | 6.23              | 0.09          | Not required     |
|         | AG1-Ant 7 |          | 2.299      | 2.30   | 0mm      | -55.40                 | 60.40  | -205.00 |                  |                   |               |                  |
|         | NFC       |          | 0.023      | 0.75   | 0mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.722      |        | 0mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 1 | Back     | 3.186      | 3.19   | 0mm      | 2.40                   | -78.40 | -205.00 | 159.3            | 6.23              | 0.10          | Not required     |
|         | AG1-Ant 7 |          | 2.299      | 2.30   | 0mm      |                        |        |         |                  |                   |               |                  |
|         | NFC       |          | 0.023      | 0.75   | 0mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.722      |        | 0mm      | -45.80                 | 73.40  | -205.00 |                  |                   |               |                  |
|         | AG0-Ant 1 | Back     | 3.186      | 3.19   | 0mm      | 2.40                   | -78.40 | -205.00 | 159.3            | 6.23              | 0.10          | Not required     |
|         | AG1-Ant 7 |          | 2.299      | 2.30   | 0mm      |                        |        |         |                  |                   |               |                  |
|         | NFC       |          | 0.023      | 0.75   | 0mm      | 13.50                  | 78.50  | -180.00 |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.722      |        | 0mm      |                        |        |         |                  |                   |               |                  |
| Case No | Band      | Position | SAR (W/kg) | Summed | Gap (mm) | SAR peak location (mm) |        |         | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|         |           |          |            |        |          | X                      | Y      | Z       |                  |                   |               |                  |
| Case 84 | AG0-Ant 1 | Back     | 3.186      | 3.19   | 0mm      | 2.40                   | -78.40 | -205.00 | 161.3            | 6.22              | 0.10          | Not required     |
|         | AG1-Ant 8 |          | 2.293      | 2.29   | 0mm      | -49.00                 | 74.40  | -209.00 |                  |                   |               |                  |
|         | NFC       |          | 0.023      | 0.75   | 0mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.722      |        | 0mm      |                        |        |         |                  |                   |               |                  |
|         | AG0-Ant 1 | Back     | 3.186      | 3.19   | 0mm      | 2.40                   | -78.40 | -205.00 | 159.3            | 6.22              | 0.10          | Not required     |
|         | AG1-Ant 8 |          | 2.293      | 2.29   | 0mm      |                        |        |         |                  |                   |               |                  |
|         | NFC       |          | 0.023      | 0.75   | 0mm      |                        |        |         |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.722      |        | 0mm      | -45.80                 | 73.40  | -205.00 |                  |                   |               |                  |
|         | AG0-Ant 1 | Back     | 3.186      | 3.19   | 0mm      | 2.40                   | -78.40 | -205.00 | 159.3            | 6.22              | 0.10          | Not required     |
|         | AG1-Ant 8 |          | 2.293      | 2.29   | 0mm      |                        |        |         |                  |                   |               |                  |
|         | NFC       |          | 0.023      | 0.75   | 0mm      | 13.50                  | 78.50  | -180.00 |                  |                   |               |                  |
|         | WLAN/BT   |          | 0.722      |        | 0mm      |                        |        |         |                  |                   |               |                  |

**15.7 SAR Peak Locations of Maximum Reported SAR****General Note:**

1. The SAR Peak Locations of maximum reported SAR corresponding to each position of each frequency band of each antenna in the below tables are as follows.
2. The unit of SAR evaluation is W/kg. The unit of x, y, z with Axis evaluation is mm.

**<Head>**

| Right Cheek       |                                                    |             |                      |                      |                      |                      |                      |                      |                      |                      |
|-------------------|----------------------------------------------------|-------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Freq.             | Support.Band                                       |             | Ant 0                | Ant 1                | Ant 2                | Ant 4                | Ant 5                | Ant 6                | Ant 7                | Ant 8                |
| 750MHz            | LTE.Band.12/13/14/17<br>FR1.n71/n12/n14            | Max,SAR     | NA                   |                      |                      | NA                   |                      |                      |                      |                      |
|                   |                                                    | Axis(X,Y,Z) | X:59.4 Y:-266 Z:-173 |                      |                      | X:20.6 Y:-326 Z:-172 |                      |                      |                      |                      |
| 835MHz            | GSM850,<br>WCDMA.V<br>LTE.Band.5/26<br>FR1.n5/n26  | Max,SAR     | NA                   |                      |                      | NA                   |                      |                      |                      |                      |
|                   |                                                    | Axis(X,Y,Z) | X:56.9 Y:-264 Z:-174 |                      |                      | X:19.2 Y:-325 Z:-172 |                      |                      |                      |                      |
| 1750MHz           | WCDMA.IV<br>LTE.Band.4/66<br>FR1.n66/n70           | Max,SAR     | NA                   |                      |                      | NA                   |                      |                      |                      |                      |
|                   |                                                    | Axis(X,Y,Z) | X:56 Y:-254 Z:-173   |                      |                      | X:20 Y:-325 Z:-171   |                      |                      |                      |                      |
| 1900MHz           | GSM1900<br>WCDMA.II<br>LTE.Band.2/25<br>FR1.n2/n25 | Max,SAR     | NA                   |                      |                      | NA                   |                      |                      |                      |                      |
|                   |                                                    | Axis(X,Y,Z) | X:57.5 Y:-250 Z:-172 |                      |                      | X:20.1 Y:-326 Z:-171 |                      |                      |                      |                      |
| 2300MHz           | LTE.Band.30<br>FR1.n30                             | Max,SAR     |                      | NA                   |                      | NA                   |                      |                      |                      |                      |
|                   |                                                    | Axis(X,Y,Z) |                      | X:58.4 Y:-248 Z:-172 |                      | X:20.7 Y:-328 Z:-172 |                      |                      |                      |                      |
| 2450MHz           | 2.4GWLAN                                           | Max,SAR     |                      |                      |                      |                      |                      | NA                   |                      |                      |
|                   |                                                    | Axis(X,Y,Z) |                      |                      |                      |                      |                      | X:15.9 Y:-288 Z:-168 |                      |                      |
| 2450MHz           | Bluetooth                                          | Max,SAR     |                      |                      |                      |                      |                      | NA                   |                      |                      |
|                   |                                                    | Axis(X,Y,Z) |                      |                      |                      |                      |                      | X:19.1 Y:-286 Z:-169 |                      |                      |
| 2600MHz           | LTE.Band.7/38/41<br>FR1.n7/38/41                   | Max,SAR     |                      | NA                   | NA                   | NA                   |                      |                      | NA                   |                      |
|                   |                                                    | Axis(X,Y,Z) |                      | X:70.1 Y:-306 Z:-173 | X:47.8 Y:-331 Z:-173 | X:20.5 Y:-327 Z:-173 |                      |                      | X:13.9 Y:-277 Z:-166 |                      |
| 3500MHz           | LTE.Band.48<br>FR1.n48/n77/n78                     | Max,SAR     |                      | NA                   | NA                   |                      | NA                   |                      |                      | NA                   |
|                   |                                                    | Axis(X,Y,Z) |                      | X:74.6 Y:-301 Z:-174 | X:50.8 Y:-337 Z:-173 |                      | X:17.3 Y:-302 Z:-172 |                      |                      | X:49.5 Y:-250 Z:-173 |
| 5250/5600/5750MHz | 5G WLAN                                            | Max,SAR     |                      |                      |                      |                      |                      | NA                   |                      |                      |
|                   |                                                    | Axis(X,Y,Z) |                      |                      |                      |                      |                      | X:4.51 Y:-286 Z:-167 |                      |                      |

| Left Cheek        |                                                    |             |                      |                     |                     |                      |                   |                     |                     |                     |
|-------------------|----------------------------------------------------|-------------|----------------------|---------------------|---------------------|----------------------|-------------------|---------------------|---------------------|---------------------|
| Freq.             | Support.Band                                       |             | Ant 0                | Ant 1               | Ant 2               | Ant 4                | Ant 5             | Ant 6               | Ant 7               | Ant 8               |
| 750MHz            | LTE.Band.12/13/14/17<br>FR1.n71/n12/n14            | Max,SAR     | NA                   |                     |                     | NA                   |                   |                     |                     |                     |
|                   |                                                    | Axis(X,Y,Z) | X:62.1 Y:-275 Z:-174 |                     |                     | X:-13.1 Y:300 Z:-172 |                   |                     |                     |                     |
| 835MHz            | GSM850,<br>WCDMA.V<br>LTE.Band.5/26<br>FR1.n5/n26  | Max,SAR     | NA                   |                     |                     | NA                   |                   |                     |                     |                     |
|                   |                                                    | Axis(X,Y,Z) | X:62.7 Y:-276 Z:-174 |                     |                     | X:-15.4 Y:300 Z:-171 |                   |                     |                     |                     |
| 1750MHz           | WCDMA.IV<br>LTE.Band.4/66<br>FR1.n66/n70           | Max,SAR     | NA                   |                     |                     | NA                   |                   |                     |                     |                     |
|                   |                                                    | Axis(X,Y,Z) | X:57.4 Y:310 Z:-176  |                     |                     | X:-1.46 Y:303 Z:-168 |                   |                     |                     |                     |
| 1900MHz           | GSM1900<br>WCDMA.II<br>LTE.Band.2/25<br>FR1.n2/n25 | Max,SAR     | NA                   |                     |                     | NA                   |                   |                     |                     |                     |
|                   |                                                    | Axis(X,Y,Z) | X:60.7 Y:276 Z:-173  |                     |                     | X:-4.4 Y:305 Z:-171  |                   |                     |                     |                     |
| 2300MHz           | LTE.Band.30<br>FR1.n30                             | Max,SAR     |                      | NA                  |                     | NA                   |                   |                     |                     |                     |
|                   |                                                    | Axis(X,Y,Z) |                      | X:60.7 Y:249 Z:-173 |                     | X:-1.42 Y:299 Z:-167 |                   |                     |                     |                     |
| 2450MHz           | 2.4GWLAN                                           | Max,SAR     |                      |                     |                     |                      |                   | NA                  |                     |                     |
|                   |                                                    | Axis(X,Y,Z) |                      |                     |                     |                      |                   | X:28.1 Y:329 Z:-175 |                     |                     |
| 2450MHz           | Bluetooth                                          | Max,SAR     |                      |                     |                     |                      |                   | NA                  |                     |                     |
|                   |                                                    | Axis(X,Y,Z) |                      |                     |                     |                      |                   | X:27.2 Y:330 Z:-173 |                     |                     |
| 2600MHz           | LTE.Band.7/38/41<br>FR1.n7/38/41                   | Max,SAR     |                      | NA                  | NA                  | NA                   |                   |                     | NA                  |                     |
|                   |                                                    | Axis(X,Y,Z) |                      | X:59.7 Y:250 Z:-173 | X:22.2 Y:319 Z:-172 | X:-3.93 Y:293 Z:-166 |                   |                     | X:38.8 Y:328 Z:-173 |                     |
| 3500MHz           | LTE.Band.48<br>FR1.n48/n77/n78                     | Max,SAR     |                      | NA                  | NA                  |                      | NA                |                     |                     | NA                  |
|                   |                                                    | Axis(X,Y,Z) |                      | X:65 Y:251 Z:-173   | X:53.2 Y:259 Z:-175 |                      | X:17 Y:321 Z:-174 |                     |                     | X:63.6 Y:325 Z:-174 |
| 5250/5600/5750MHz | 5G WLAN                                            | Max,SAR     |                      |                     |                     |                      |                   | NA                  |                     |                     |
|                   |                                                    | Axis(X,Y,Z) |                      |                     |                     |                      |                   | X:26.9 Y:336 Z:-174 |                     |                     |



| Left Tilted       |                                                    |             |                     |                     |                      |                     |                     |                     |
|-------------------|----------------------------------------------------|-------------|---------------------|---------------------|----------------------|---------------------|---------------------|---------------------|
| Freq.             | Support,Band                                       |             | Ant 0               | Ant 1               | Ant 4                | Ant 5               | Ant 6               | Ant 8               |
| 750MHz            | LTE,Band,12/13/14/17<br>FR1,n71/n12/n14            | Max,SAR     | NA                  |                     | NA                   |                     |                     |                     |
|                   |                                                    | Axis(X,Y,Z) | X:41 Y:295 Z:-176   |                     | X:7.75 Y:304 Z:-171  |                     |                     |                     |
| 835MHz            | GSM850,<br>WCDMA,V<br>LTE,Band,5/26<br>FR1,n5/n26  | Max,SAR     | NA                  |                     | NA                   |                     |                     |                     |
|                   |                                                    | Axis(X,Y,Z) | X:45.8 Y:296 Z:-176 |                     | X:14.8 Y:302 Z:-171  |                     |                     |                     |
| 1750MHz           | WCDMA,IV<br>LTE,Band,4/66<br>FR1,n66/n70           | Max,SAR     | NA                  |                     | NA                   |                     |                     |                     |
|                   |                                                    | Axis(X,Y,Z) | X:43.7 Y:316 Z:-174 |                     | X:1.65 Y:307 Z:-169  |                     |                     |                     |
| 1900MHz           | GSM1900<br>WCDMA,II<br>LTE,Band,2/25<br>FR1,n2/n25 | Max,SAR     | NA                  |                     | NA                   |                     |                     |                     |
|                   |                                                    | Axis(X,Y,Z) | X:33.5 Y:319 Z:-175 |                     | X:3.1 Y:305 Z:-171   |                     |                     |                     |
| 2300MHz           | LTE,Band,30<br>FR1,n30                             | Max,SAR     |                     | NA                  | NA                   |                     |                     |                     |
|                   |                                                    | Axis(X,Y,Z) |                     | X:47.9 Y:320 Z:-174 | X:-1.41 Y:299 Z:-167 |                     |                     |                     |
| 2450MHz           | 2.4GWLAN                                           | Max,SAR     |                     |                     |                      |                     | NA                  |                     |
|                   |                                                    | Axis(X,Y,Z) |                     |                     |                      |                     | X:27.4 Y:329 Z:-173 |                     |
| 2450MHz           | Bluetooth                                          | Max,SAR     |                     |                     |                      |                     | NA                  |                     |
|                   |                                                    | Axis(X,Y,Z) |                     |                     |                      |                     | X:28.1 Y:329 Z:-173 |                     |
| 2600MHz           | LTE,Band,7/38/41<br>FR1,n7/38/41                   | Max,SAR     |                     | NA                  | NA                   |                     |                     |                     |
|                   |                                                    | Axis(X,Y,Z) |                     | X:38.2 Y:327 Z:-173 | X:-2.76 Y:295 Z:295  |                     |                     |                     |
| 3500MHz           | LTE Band,48<br>FR1,n48/n77/n78                     | Max,SAR     |                     | NA                  |                      | NA                  |                     | NA                  |
|                   |                                                    | Axis(X,Y,Z) |                     | X:4.18 Y:285 Z:-168 |                      | X:11.3 Y:322 Z:-322 |                     | X:25.2 Y:321 Z:-175 |
| 5250/5600/5750MHz | 5G WLAN                                            | Max,SAR     |                     |                     |                      |                     | NA                  |                     |
|                   |                                                    | Axis(X,Y,Z) |                     |                     |                      |                     | X:25.9 Y:330 Z:-174 |                     |

**<Hotspot>**

| Front             |                                                    |             |                        |                        |                     |                       |                     |                   |                      |                    |
|-------------------|----------------------------------------------------|-------------|------------------------|------------------------|---------------------|-----------------------|---------------------|-------------------|----------------------|--------------------|
| Freq.             | Support,Band                                       |             | Ant 0                  | Ant 1                  | Ant 2               | Ant 4                 | Ant 5               | Ant 6             | Ant 7                | Ant 8              |
| 750MHz            | LTE,Band,12/13/14/17<br>FR1,n71/n12/n14            | Max,SAR     | NA                     |                        |                     | NA                    |                     |                   |                      |                    |
|                   |                                                    | Axis(X,Y,Z) | X:-20 Y:-81 Z:-205     |                        |                     | X:-36.5 Y:76.5 Z:-205 |                     |                   |                      |                    |
| 835MHz            | GSM850,<br>WCDMA,V<br>LTE,Band,5/26<br>FR1,n5/n26  | Max,SAR     | NA                     |                        |                     | NA                    |                     |                   |                      |                    |
|                   |                                                    | Axis(X,Y,Z) | X:-18.5 Y:-82.5 Z:-205 |                        |                     | X:-33.5 Y:78 Z:-205   |                     |                   |                      |                    |
| 1750MHz           | WCDMA,IV<br>LTE,Band,4/66<br>FR1,n66/n70           | Max,SAR     | NA                     |                        |                     | NA                    |                     |                   |                      |                    |
|                   |                                                    | Axis(X,Y,Z) | X:-21.5 Y:-85.5 Z:-205 |                        |                     | X:-36.5 Y:90 Z:-205   |                     |                   |                      |                    |
| 1900MHz           | GSM1900<br>WCDMA,II<br>LTE,Band,2/25<br>FR1,n2/n25 | Max,SAR     | NA                     |                        |                     | NA                    |                     |                   |                      |                    |
|                   |                                                    | Axis(X,Y,Z) | X:-18.5 Y:-87 Z:-205   |                        |                     | X:-38 Y:94.5 Z:-205   |                     |                   |                      |                    |
| 2300MHz           | LTE,Band,30<br>FR1,n30                             | Max,SAR     |                        | NA                     |                     | NA                    |                     |                   |                      |                    |
|                   |                                                    | Axis(X,Y,Z) |                        | X:-43.4 Y:-75.6 Z:-205 |                     | X:-41 Y:90 Z:-205     |                     |                   |                      |                    |
| 2450MHz           | 2.4GWLAN                                           | Max,SAR     |                        |                        |                     |                       |                     | NA                |                      |                    |
|                   |                                                    | Axis(X,Y,Z) |                        |                        |                     |                       |                     | X:5.8 Y:78 Z:-205 |                      |                    |
| 2450MHz           | Bluetooth                                          | Max,SAR     |                        |                        |                     |                       |                     | NA                |                      |                    |
|                   |                                                    | Axis(X,Y,Z) |                        |                        |                     |                       |                     | X:1 Y:72.4 Z:-205 |                      |                    |
| 2600MHz           | LTE,Band,7/38/41<br>FR1,n7/38/41                   | Max,SAR     |                        | NA                     | NA                  | NA                    |                     |                   | NA                   |                    |
|                   |                                                    | Axis(X,Y,Z) |                        | X:-54.2 Y:-68.4 Z:-205 | X:-60.2 Y:60 Z:-205 | X:-44.6 Y:90 Z:-205   |                     |                   | X:20.2 Y:69.6 Z:-205 |                    |
| 3500MHz           | LTE Band,48<br>FR1,n48/n77/n78                     | Max,SAR     |                        | NA                     | NA                  |                       | NA                  |                   |                      | NA                 |
|                   |                                                    | Axis(X,Y,Z) |                        | X:-58.6 Y:-76.8 Z:-209 | X:-43 Y:84 Z:-209   |                       | X:-17.8 Y:88 Z:-209 |                   |                      | X:-1 Y:75.6 Z:-208 |
| 5250/5600/5750MHz | 5G WLAN                                            | Max,SAR     |                        |                        |                     |                       |                     | NA                |                      |                    |
|                   |                                                    | Axis(X,Y,Z) |                        |                        |                     |                       |                     | X:6 Y:84 Z:-208   |                      |                    |





| Back              |                                                    |             |                        |                       |                     |                      |                       |                       |                       |                       |
|-------------------|----------------------------------------------------|-------------|------------------------|-----------------------|---------------------|----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Freq.             | Support,Band                                       |             | Ant 0                  | Ant 1                 | Ant 2               | Ant 4                | Ant 5                 | Ant 6                 | Ant 7                 | Ant 8                 |
| 750MHz            | LTE,Band,12/13/14/17<br>FR1,n71/n12/n14            | Max,SAR     | NA                     |                       |                     | NA                   |                       |                       |                       |                       |
|                   |                                                    | Axis(X,Y,Z) | X:-14.5 Y:-73.5 Z:-206 |                       |                     | X:2 Y:80 Z:-205      |                       |                       |                       |                       |
| 835MHz            | GSM850,<br>WCDMA,V<br>LTE,Band,5/26<br>FR1,n5/n26  | Max,SAR     | NA                     |                       |                     | NA                   |                       |                       |                       |                       |
|                   |                                                    | Axis(X,Y,Z) | X:-35.5 Y:-90.5 Z:-205 |                       |                     | X:-9.5 Y:70.5 Z:-206 |                       |                       |                       |                       |
| 1750MHz           | WCDMA,IV<br>LTE,Band,4/66<br>FR1,n66/n70           | Max,SAR     | NA                     |                       |                     | NA                   |                       |                       |                       |                       |
|                   |                                                    | Axis(X,Y,Z) | X:-9.5 Y:-84 Z:-205    |                       |                     | X:-9.5 Y:82 Z:-205   |                       |                       |                       |                       |
| 1900MHz           | GSM1900<br>WCDMA,II<br>LTE,Band,2/25<br>FR1,n2/n25 | Max,SAR     | NA                     |                       |                     | NA                   |                       |                       |                       |                       |
|                   |                                                    | Axis(X,Y,Z) | X:-23.5 Y:-87 Z:-206   |                       |                     | X:-0.5 Y:76.5 Z:76.5 |                       |                       |                       |                       |
| 2300MHz           | LTE,Band,30<br>FR1,n30                             | Max,SAR     |                        | NA                    |                     | NA                   |                       |                       |                       |                       |
|                   |                                                    | Axis(X,Y,Z) |                        | X:-1.4 Y:-74.8 Z:-205 |                     | X:-8.6 Y:84 Z:-8.6   |                       |                       |                       |                       |
| 2450MHz           | 2.4GWLAN                                           | Max,SAR     |                        |                       |                     |                      |                       | NA                    |                       |                       |
|                   |                                                    | Axis(X,Y,Z) |                        |                       |                     |                      |                       | X:-48.2 Y:66 Z:-205   |                       |                       |
| 2450MHz           | Bluetooth                                          | Max,SAR     |                        |                       |                     |                      |                       | NA                    |                       |                       |
|                   |                                                    | Axis(X,Y,Z) |                        |                       |                     |                      |                       | X:-44.6 Y:67.8 Z:-207 |                       |                       |
| 2600MHz           | LTE,Band,7/38/41<br>FR1,n7/38/41                   | Max,SAR     |                        | NA                    | NA                  | NA                   |                       |                       | NA                    |                       |
|                   |                                                    | Axis(X,Y,Z) |                        | X:-2.6 Y:-78.6 Z:-205 | X:6 Y:47 Z:-205     | X:-3.8 Y:81.6 Z:-205 |                       |                       | X:-54.2 Y:62.4 Z:-205 |                       |
| 3500MHz           | LTE,Band,48<br>FR1,n48/n77/n78                     | Max,SAR     |                        | NA                    | NA                  |                      | NA                    |                       |                       | NA                    |
|                   |                                                    | Axis(X,Y,Z) |                        | X:1 Y:-78.6 Z:-206    | X:5.8 Y:49.4 Z:-206 |                      | X:-30.2 Y:74.4 Z:-206 |                       |                       | X:-50.6 Y:42.4 Z:-207 |
| 5250/5600/5750MHz | 5G WLAN                                            | Max,SAR     |                        |                       |                     |                      |                       | NA                    |                       |                       |
|                   |                                                    | Axis(X,Y,Z) |                        |                       |                     |                      |                       | X:-58 Y:74 Z:-206     |                       |                       |

| Right Side        |                                                    |             |                     |                    |                        |                        |                        |
|-------------------|----------------------------------------------------|-------------|---------------------|--------------------|------------------------|------------------------|------------------------|
| Freq.             | Support,Band                                       |             | Ant 0               | Ant 5              | Ant 6                  | Ant 7                  | Ant 8                  |
| 750MHz            | LTE,Band,12/13/14/17<br>FR1,n71/n12/n14            | Max,SAR     | NA                  |                    |                        |                        |                        |
|                   |                                                    | Axis(X,Y,Z) | X:-32 Y:64.5 Z:-206 |                    |                        |                        |                        |
| 835MHz            | GSM850,<br>WCDMA,V<br>LTE,Band,5/26<br>FR1,n5/n26  | Max,SAR     | NA                  |                    |                        |                        |                        |
|                   |                                                    | Axis(X,Y,Z) | X:-29 Y:72.5 Z:-206 |                    |                        |                        |                        |
| 1750MHz           | WCDMA,IV<br>LTE,Band,4/66<br>FR1,n66/n70           | Max,SAR     | NA                  |                    |                        |                        |                        |
|                   |                                                    | Axis(X,Y,Z) | X:-30.5 Y:74 Z:-206 |                    |                        |                        |                        |
| 1900MHz           | GSM1900<br>WCDMA,II<br>LTE,Band,2/25<br>FR1,n2/n25 | Max,SAR     | NA                  |                    |                        |                        |                        |
|                   |                                                    | Axis(X,Y,Z) | X:-32 Y:64.5 Z:-206 |                    |                        |                        |                        |
| 2300MHz           | LTE,Band,30<br>FR1,n30                             | Max,SAR     |                     |                    |                        |                        |                        |
|                   |                                                    | Axis(X,Y,Z) |                     |                    |                        |                        |                        |
| 2450MHz           | 2.4GWLAN                                           | Max,SAR     |                     |                    | NA                     |                        |                        |
|                   |                                                    | Axis(X,Y,Z) |                     |                    | X:-24.2 Y:-52.6 Z:-205 |                        |                        |
| 2450MHz           | Bluetooth                                          | Max,SAR     |                     |                    | NA                     |                        |                        |
|                   |                                                    | Axis(X,Y,Z) |                     |                    | X:-24.2 Y:-57.6 Z:-205 |                        |                        |
| 2600MHz           | LTE,Band,7/38/41<br>FR1,n7/38/41                   | Max,SAR     |                     |                    |                        | NA                     |                        |
|                   |                                                    | Axis(X,Y,Z) |                     |                    |                        | X:-19.4 Y:-45.6 Z:-205 |                        |
| 3500MHz           | LTE,Band,48<br>FR1,n48/n77/n78                     | Max,SAR     |                     | NA                 |                        |                        | NA                     |
|                   |                                                    | Axis(X,Y,Z) |                     | X:-25 Y:-24 Z:-209 |                        |                        | X:-33.4 Y:-34.8 Z:-209 |
| 5250/5600/5750MHz | 5G WLAN                                            | Max,SAR     |                     |                    | NA                     |                        |                        |
|                   |                                                    | Axis(X,Y,Z) |                     |                    | X:-19.4 Y:-52.8 Z:-208 |                        |                        |



## &lt;Body-worn&gt;

| Front             |                                                    |             |                        |                        |                     |                       |                     |                   |                      |                    |
|-------------------|----------------------------------------------------|-------------|------------------------|------------------------|---------------------|-----------------------|---------------------|-------------------|----------------------|--------------------|
| Freq.             | Support,Band                                       |             | Ant 0                  | Ant 1                  | Ant 2               | Ant 4                 | Ant 5               | Ant 6             | Ant 7                | Ant 8              |
| 750MHz            | LTE,Band,12/13/14/17<br>FR1,n71/n12/n14            | Max,SAR     | NA                     |                        |                     | NA                    |                     |                   |                      |                    |
|                   |                                                    | Axis(X,Y,Z) | X:-20 Y:-81 Z:-205     |                        |                     | X:-36.5 Y:76.5 Z:-205 |                     |                   |                      |                    |
| 835MHz            | GSM850,<br>WCDMA,V<br>LTE,Band,5/26<br>FR1,n5/n26  | Max,SAR     | NA                     |                        |                     | NA                    |                     |                   |                      |                    |
|                   |                                                    | Axis(X,Y,Z) | X:-18.5 Y:-82.5 Z:-205 |                        |                     | X:-33.5 Y:78 Z:-205   |                     |                   |                      |                    |
| 1750MHz           | WCDMA,IV<br>LTE,Band,4/66<br>FR1,n66/n70           | Max,SAR     | NA                     |                        |                     | NA                    |                     |                   |                      |                    |
|                   |                                                    | Axis(X,Y,Z) | X:-21.5 Y:-85.5 Z:-205 |                        |                     | X:-36.5 Y:90 Z:-205   |                     |                   |                      |                    |
| 1900MHz           | GSM1900<br>WCDMA,II<br>LTE,Band,2/25<br>FR1,n2/n25 | Max,SAR     | NA                     |                        |                     | NA                    |                     |                   |                      |                    |
|                   |                                                    | Axis(X,Y,Z) | X:-18.5 Y:-87 Z:-205   |                        |                     | X:-38 Y:94.5 Z:-205   |                     |                   |                      |                    |
| 2300MHz           | LTE,Band,30<br>FR1,n30                             | Max,SAR     |                        | NA                     |                     | NA                    |                     |                   |                      |                    |
|                   |                                                    | Axis(X,Y,Z) |                        | X:-43.4 Y:-75.6 Z:-205 |                     | X:-41 Y:90 Z:-205     |                     |                   |                      |                    |
| 2450MHz           | 2.4GWLAN                                           | Max,SAR     |                        |                        |                     |                       |                     | NA                |                      |                    |
|                   |                                                    | Axis(X,Y,Z) |                        |                        |                     |                       |                     | X:5.8 Y:78 Z:-205 |                      |                    |
| 2450MHz           | Bluetooth                                          | Max,SAR     |                        |                        |                     |                       |                     | NA                |                      |                    |
|                   |                                                    | Axis(X,Y,Z) |                        |                        |                     |                       |                     | X:1 Y:72.4 Z:-205 |                      |                    |
| 2600MHz           | LTE,Band,7/38/41<br>FR1,n7/38/41                   | Max,SAR     |                        | NA                     | NA                  | NA                    |                     |                   | NA                   |                    |
|                   |                                                    | Axis(X,Y,Z) |                        | X:-54.2 Y:-68.4 Z:-205 | X:-60.2 Y:60 Z:-205 | X:-44.6 Y:90 Z:-205   |                     |                   | X:20.2 Y:69.6 Z:-205 |                    |
| 3500              | LTE Band,48<br>FR1,n48/n77/n78                     | Max,SAR     |                        | NA                     | NA                  |                       | NA                  |                   |                      | NA                 |
|                   |                                                    | Axis(X,Y,Z) |                        | X:-58.6 Y:-76.8 Z:-209 | X:-43 Y:84 Z:-209   |                       | X:-17.8 Y:88 Z:-209 |                   |                      | X:-1 Y:75.6 Z:-208 |
| 5250/5600/5750MHz | 5G WLAN                                            | Max,SAR     |                        |                        |                     |                       |                     | NA                |                      |                    |
|                   |                                                    | Axis(X,Y,Z) |                        |                        |                     |                       |                     | X:6 Y:84 Z:-208   |                      |                    |

| Back              |                                                    |             |                        |                       |                     |                      |                       |                       |                       |                       |
|-------------------|----------------------------------------------------|-------------|------------------------|-----------------------|---------------------|----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Freq.             | Support,Band                                       |             | Ant 0                  | Ant 1                 | Ant 2               | Ant 4                | Ant 5                 | Ant 6                 | Ant 7                 | Ant 8                 |
| 750MHz            | LTE,Band,12/13/14/17<br>FR1,n71/n12/n14            | Max,SAR     | NA                     |                       |                     | NA                   |                       |                       |                       |                       |
|                   |                                                    | Axis(X,Y,Z) | X:-14.5 Y:-73.5 Z:-206 |                       |                     | X:2 Y:80 Z:-205      |                       |                       |                       |                       |
| 835MHz            | GSM850,<br>WCDMA,V<br>LTE,Band,5/26<br>FR1,n5/n26  | Max,SAR     | NA                     |                       |                     | NA                   |                       |                       |                       |                       |
|                   |                                                    | Axis(X,Y,Z) | X:-35.5 Y:-90.5 Z:-205 |                       |                     | X:-9.5 Y:70.5 Z:-206 |                       |                       |                       |                       |
| 1750MHz           | WCDMA,IV<br>LTE,Band,4/66<br>FR1,n66/n70           | Max,SAR     | NA                     |                       |                     | NA                   |                       |                       |                       |                       |
|                   |                                                    | Axis(X,Y,Z) | X:-9.5 Y:-84 Z:-205    |                       |                     | X:-9.5 Y:82 Z:-205   |                       |                       |                       |                       |
| 1900MHz           | GSM1900<br>WCDMA,II<br>LTE,Band,2/25<br>FR1,n2/n25 | Max,SAR     | NA                     |                       |                     | NA                   |                       |                       |                       |                       |
|                   |                                                    | Axis(X,Y,Z) | X:-23.5 Y:-87 Z:-206   |                       |                     | X:-0.5 Y:76.5 Z:76.5 |                       |                       |                       |                       |
| 2300MHz           | LTE,Band,30<br>FR1,n30                             | Max,SAR     |                        | NA                    |                     | NA                   |                       |                       |                       |                       |
|                   |                                                    | Axis(X,Y,Z) |                        | X:-1.4 Y:-74.8 Z:-205 |                     | X:-8.6 Y:84 Z:-8.6   |                       |                       |                       |                       |
| 2450MHz           | 2.4GWLAN                                           | Max,SAR     |                        |                       |                     |                      |                       | NA                    |                       |                       |
|                   |                                                    | Axis(X,Y,Z) |                        |                       |                     |                      |                       | X:-48.2 Y:66 Z:-205   |                       |                       |
| 2450MHz           | Bluetooth                                          | Max,SAR     |                        |                       |                     |                      |                       | NA                    |                       |                       |
|                   |                                                    | Axis(X,Y,Z) |                        |                       |                     |                      |                       | X:-44.6 Y:67.8 Z:-207 |                       |                       |
| 2600MHz           | LTE,Band,7/38/41<br>FR1,n7/38/41                   | Max,SAR     |                        | NA                    | NA                  | NA                   |                       |                       | NA                    |                       |
|                   |                                                    | Axis(X,Y,Z) |                        | X:-2.6 Y:-78.6 Z:-205 | X:6 Y:47 Z:-205     | X:-3.8 Y:81.6 Z:-205 |                       |                       | X:-54.2 Y:62.4 Z:-205 |                       |
| 3500              | LTE Band,48<br>FR1,n48/n77/n78                     | Max,SAR     |                        | NA                    | NA                  |                      | NA                    |                       |                       | NA                    |
|                   |                                                    | Axis(X,Y,Z) |                        | X:1 Y:-78.6 Z:-206    | X:5.8 Y:49.4 Z:-206 |                      | X:-30.2 Y:74.4 Z:-206 |                       |                       | X:-50.6 Y:42.4 Z:-207 |
| 5250/5600/5750MHz | 5G WLAN                                            | Max,SAR     |                        |                       |                     |                      |                       | NA                    |                       |                       |
|                   |                                                    | Axis(X,Y,Z) |                        |                       |                     |                      |                       | X:-58 Y:74 Z:-206     |                       |                       |



## &lt;Extremity&gt;

| Front             |                                                    |             |                      |                        |                       |                       |                   |                      |
|-------------------|----------------------------------------------------|-------------|----------------------|------------------------|-----------------------|-----------------------|-------------------|----------------------|
| Freq.             | Support,Band                                       |             | Ant 0                | Ant 1                  | Ant 4                 | Ant 5                 | Ant 6             | Ant 7                |
| 750MHz            | LTE,Band,12/13/14/17<br>FR1,n71/n12/n14            | Max,SAR     |                      |                        |                       |                       |                   |                      |
|                   |                                                    | Axis(X,Y,Z) |                      |                        |                       |                       |                   |                      |
| 835MHz            | GSM850,<br>WCDMA,V<br>LTE,Band,5/26<br>FR1,n5/n26  | Max,SAR     |                      |                        |                       |                       |                   |                      |
|                   |                                                    | Axis(X,Y,Z) |                      |                        |                       |                       |                   |                      |
| 1750MHz           | WCDMA,IV<br>LTE,Band,4/66<br>FR1,n66/n70           | Max,SAR     | NA                   |                        | NA                    |                       |                   |                      |
|                   |                                                    | Axis(X,Y,Z) | X:-25 Y:-83.6 Z:-206 |                        | X:-42.3 Y:82.6 Z:-205 |                       |                   |                      |
| 1900MHz           | GSM1900<br>WCDMA,II<br>LTE,Band,2/25<br>FR1,n2/n25 | Max,SAR     | NA                   |                        | NA                    |                       |                   |                      |
|                   |                                                    | Axis(X,Y,Z) | X:-23 Y:-82.5 Z:-206 |                        | X:-43.6 Y:83.7 Z:-205 |                       |                   |                      |
| 2300MHz           | LTE,Band,30<br>FR1,n30                             | Max,SAR     |                      | NA                     |                       |                       |                   |                      |
|                   |                                                    | Axis(X,Y,Z) |                      | X:-44.6 Y:-75.6 Z:-204 |                       |                       |                   |                      |
| 2450MHz           | 2.4GWLAN                                           | Max,SAR     |                      |                        |                       |                       | NA                |                      |
|                   |                                                    | Axis(X,Y,Z) |                      |                        |                       |                       | X:8.2 Y:78 Z:-204 |                      |
| 2450MHz           | Bluetooth                                          | Max,SAR     |                      |                        |                       |                       |                   |                      |
|                   |                                                    | Axis(X,Y,Z) |                      |                        |                       |                       |                   |                      |
| 2600MHz           | LTE,Band,7/38/41<br>FR1,n7/38/41                   | Max,SAR     |                      | NA                     | NA                    |                       |                   | NA                   |
|                   |                                                    | Axis(X,Y,Z) |                      | X:-45.8 Y:-72 Z:-204   | X:-45.8 Y:81.6 Z:-205 |                       |                   | X:20.2 Y:67.2 Z:-204 |
| 3500              | LTE Band,48<br>FR1,n48/n77/n78                     | Max,SAR     |                      |                        |                       | NA                    |                   |                      |
|                   |                                                    | Axis(X,Y,Z) |                      |                        |                       | X:-16.6 Y:85.6 Z:-209 |                   |                      |
| 5250/5600/5750MHz | 5G WLAN                                            | Max,SAR     |                      |                        |                       |                       | NA                |                      |
|                   |                                                    | Axis(X,Y,Z) |                      |                        |                       |                       | X:9 Y:84 Z:-206   |                      |

| Back              |                                                    |             |                        |                      |                      |                      |                     |                       |                       |
|-------------------|----------------------------------------------------|-------------|------------------------|----------------------|----------------------|----------------------|---------------------|-----------------------|-----------------------|
| Freq.             | Support,Band                                       |             | Ant 0                  | Ant 1                | Ant 2                | Ant 4                | Ant 5               | Ant 6                 | Ant 7                 |
| 750MHz            | LTE,Band,12/13/14/17<br>FR1,n71/n12/n14            | Max,SAR     | NA                     |                      |                      |                      |                     |                       |                       |
|                   |                                                    | Axis(X,Y,Z) | X:-45.5 Y:-95.5 Z:-205 |                      |                      |                      |                     |                       |                       |
| 835MHz            | GSM850,<br>WCDMA,V<br>LTE,Band,5/26<br>FR1,n5/n26  | Max,SAR     | NA                     |                      |                      |                      |                     |                       |                       |
|                   |                                                    | Axis(X,Y,Z) | X:-42 Y:-94.6 Z:-206   |                      |                      |                      |                     |                       |                       |
| 1750MHz           | WCDMA,IV<br>LTE,Band,4/66<br>FR1,n66/n70           | Max,SAR     | NA                     |                      |                      | NA                   |                     |                       |                       |
|                   |                                                    | Axis(X,Y,Z) | X:-43.8 Y:-96.6 Z:-206 |                      |                      | X:-8.5 Y:83 Z:-205   |                     |                       |                       |
| 1900MHz           | GSM1900<br>WCDMA,II<br>LTE,Band,2/25<br>FR1,n2/n25 | Max,SAR     | NA                     |                      |                      | NA                   |                     |                       |                       |
|                   |                                                    | Axis(X,Y,Z) | X:-45 Y:-97.3 Z:-206   |                      |                      | X:-9.3 Y:81.2 Z:-205 |                     |                       |                       |
| 2300MHz           | LTE,Band,30<br>FR1,n30                             | Max,SAR     |                        | NA                   |                      |                      |                     |                       |                       |
|                   |                                                    | Axis(X,Y,Z) |                        | X:2.4 Y:-98.4 Z:-205 |                      |                      |                     |                       |                       |
| 2450MHz           | 2.4GWLAN                                           | Max,SAR     |                        |                      |                      |                      |                     | NA                    |                       |
|                   |                                                    | Axis(X,Y,Z) |                        |                      |                      |                      |                     | X:-45.8 Y:73.4 Z:-205 |                       |
| 2450MHz           | Bluetooth                                          | Max,SAR     |                        |                      |                      |                      |                     |                       |                       |
|                   |                                                    | Axis(X,Y,Z) |                        |                      |                      |                      |                     |                       |                       |
| 2600MHz           | LTE,Band,7/38/41<br>FR1,n7/38/41                   | Max,SAR     |                        | NA                   | NA                   | NA                   |                     |                       | NA                    |
|                   |                                                    | Axis(X,Y,Z) |                        | X:2.4 Y:-98.6 Z:-206 | X:9.4 Y:41.2 Z:-206  | X:-24.5 Y:76 Z:-205  |                     |                       | X:-55.4 Y:60.4 Z:-205 |
| 3500              | LTE Band,48<br>FR1,n48/n77/n78                     | Max,SAR     |                        | NA                   | NA                   |                      | NA                  |                       | NA                    |
|                   |                                                    | Axis(X,Y,Z) |                        | X:2 Y:-99.4 Z:-206   | X:10.6 Y:37.2 Z:-206 |                      | X:-35 Y:74.4 Z:-206 |                       | X:-49 Y:74.4 Z:-209   |
| 5250/5600/5750MHz | 5G WLAN                                            | Max,SAR     |                        |                      |                      |                      |                     | NA                    |                       |
|                   |                                                    | Axis(X,Y,Z) |                        |                      |                      |                      |                     | X:-59.3 Y:74.5 Z:-206 |                       |

|     |             |                      |
|-----|-------------|----------------------|
| NFC | Max,SAR     | NA                   |
|     | Axis(X,Y,Z) | X:13.5 Y:78.5 Z:-180 |

## **15.8 Volume Scan Test procedure and SAR Results**

### **General Note:**

1. When simultaneous transmission SAR measurements are required in different frequency bands not covered by a single probe calibration point then separate tests for each frequency band are performed. The tests are performed using enlarged zoom scans which are processed, by means of superposition, using the DASY6 volume scan postprocessing procedures to determine the 1-g SAR for the aggregate SAR distribution.
2. The following test procedure is based on KDB 865664 D01:
  - a) Other than a larger measurement volume to enclose all antennas and radiating structures of the test device, the measurement requirements of an enlarged zoom scan are the same as those required by a normal zoom scan.
  - b) All simultaneous transmitting antennas and radiating structures must be included in the enlarged zoom scan measurement region projected onto the phantom.
  - c) Grid setting is used finer resolution in all different frequency bands.
  - d) Scan range is capturing enough wide for both SAR distribution.
  - e) Perform enlarged zoom scan (Volume scan) on the co-located antenna pair to determine 1g/10g aggregate SAR.
  - f) The SPLSR hotspot combination procedure (Hybrid SPLSR) allows for the aggregate SAR distribution of a collocated antenna pair—either obtained from a small enlarged zoom scan or through the algebraic summation of SAR values. This approach may also be considered for simultaneous transmission analysis.
3. To extract and process measurements within different frequency bands, the SEMCAD X Post-processor performs the combination and subsequent superposition of these measurement data via DASY6= Combined Multi-TX zoom scan SAR.
4. During multi-TX SAR combination, the SAR scaling factors were input into the SEMCAD X software to account for tune-up tolerance.
5. The detailed small enlarged zoom scan SAR Result Plot is in the appendix B.



| Case NO    | Band        | BW (MHz) | Modulation | RB Size | RB offset | Mode                | Test Position | Gap (mm) | Antenna | Power State  | Ch.    | Freq. (MHz) | Duty Cycle % | Duty Cycle Scaling Factor | Measured 1g SAR (W/kg) | Reported 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Multi-Band Combined 1g SAR (W/kg) |
|------------|-------------|----------|------------|---------|-----------|---------------------|---------------|----------|---------|--------------|--------|-------------|--------------|---------------------------|------------------------|------------------------|----------------------|-----------------------------------|
| Case 2     | LTE Band 26 | 15M      | QPSK       | 1       | 0         | -                   | Right Cheek   | 0mm      | Ant 4   | ECI 2        | 26865  | 831.5       |              | 1.000                     | 0.743                  | 0.883                  | 1.271                | 0.895                             |
|            | Bluetooth   | -        | -          | -       | -         | DH5 1Mbps           | Right Cheek   | 0mm      | Ant 6   | Full Power   | 78     | 2480        | 76.89        | 1.083                     | 0.090                  | 0.144                  |                      |                                   |
|            | WLAN5GHz    | -        | -          | -       | -         | 802.11ac-VHT80 MCS0 | Right Cheek   | 0mm      | Ant 6   | Simultaneous | 155    | 5775        | 100          | 1.000                     | 0.180                  | 0.244                  |                      |                                   |
| Case 3     | LTE Band 26 | 15M      | QPSK       | 1       | 0         | -                   | Right Cheek   | 0mm      | Ant 4   | ECI 2        | 26865  | 831.5       |              | 1.000                     | 0.743                  | 0.883                  | 1.093                | 0.902                             |
|            | WLAN2.4GHz  | -        | -          | -       | -         | 802.11b 1Mbps       | Right Cheek   | 0mm      | Ant 6   | Simultaneous | 6      | 2437        | 100.00       | 1.000                     | 0.163                  | 0.210                  |                      |                                   |
| Case 12    | FR1 n12     | 15M      | QPSK       | 1       | 1         | DFT-15              | Left Cheek    | 0mm      | Ant 4   | ECI 2        | 141500 | 707.5       |              | 1.000                     | 0.550                  | 0.691                  | 1.377                | 0.717                             |
|            | Bluetooth   | -        | -          | -       | -         | DH5 1Mbps           | Left Cheek    | 0mm      | Ant 6   | Full Power   | 78     | 2480        | 76.89        | 1.083                     | 0.271                  | 0.434                  |                      |                                   |
|            | WLAN5GHz    | -        | -          | -       | -         | 802.11ac-VHT80 MCS0 | Left Cheek    | 0mm      | Ant 6   | Simultaneous | 58     | 5290        | 100.00       | 1.000                     | 0.191                  | 0.252                  |                      |                                   |
| Case 13    | FR1 n12     | 15M      | QPSK       | 1       | 1         | DFT-15              | Left Cheek    | 0mm      | Ant 4   | ECI 2        | 141500 | 707.5       |              | 1.000                     | 0.550                  | 0.691                  | 1.330                | 0.757                             |
|            | WLAN2.4GHz  | -        | -          | -       | -         | 802.11b 1Mbps       | Left Cheek    | 0mm      | Ant 6   | Simultaneous | 11     | 2462        | 100.00       | 1.000                     | 0.485                  | 0.639                  |                      |                                   |
| Case 14    | FR1 n77     | 100M     | QPSK       | 270     | 0         | DFT-30              | Left Cheek    | 0mm      | Ant 5   | ECI 2        | 633332 | 3499.98     |              | 1.000                     | 0.532                  | 0.741                  | 1.427                | 0.744                             |
|            | Bluetooth   | -        | -          | -       | -         | DH5 1Mbps           | Left Cheek    | 0mm      | Ant 6   | Full Power   | 78     | 2480        | 76.89        | 1.083                     | 0.271                  | 0.434                  |                      |                                   |
|            | WLAN5GHz    | -        | -          | -       | -         | 802.11ac-VHT80 MCS0 | Left Cheek    | 0mm      | Ant 6   | Simultaneous | 58     | 5290        | 100.00       | 1.000                     | 0.191                  | 0.252                  |                      |                                   |
| Case 15    | FR1 n77     | 100M     | QPSK       | 270     | 0         | DFT-30              | Left Cheek    | 0mm      | Ant 5   | ECI 2        | 633332 | 3499.98     |              | 1.000                     | 0.532                  | 0.741                  | 1.380                | 0.829                             |
|            | WLAN2.4GHz  | -        | -          | -       | -         | 802.11b 1Mbps       | Left Cheek    | 0mm      | Ant 6   | Simultaneous | 11     | 2462        | 100.00       | 1.000                     | 0.485                  | 0.639                  |                      |                                   |
| Case 16    | FR1 n41     | 100M     | QPSK       | 135     | 69        | DFT-30              | Left Cheek    | 0mm      | Ant 7   | ECI 2        | 518598 | 2592.99     |              | 1.000                     | 0.705                  | 0.863                  | 1.549                | 0.941                             |
|            | Bluetooth   | -        | -          | -       | -         | DH5 1Mbps           | Left Cheek    | 0mm      | Ant 6   | Full Power   | 78     | 2480        | 76.89        | 1.083                     | 0.271                  | 0.434                  |                      |                                   |
|            | WLAN5GHz    | -        | -          | -       | -         | 802.11ac-VHT80 MCS0 | Left Cheek    | 0mm      | Ant 6   | Simultaneous | 58     | 5290        | 100.00       | 1.000                     | 0.191                  | 0.252                  |                      |                                   |
| Case 17    | FR1 n41     | 100M     | QPSK       | 135     | 69        | DFT-30              | Left Cheek    | 0mm      | Ant 7   | ECI 2        | 518598 | 2592.99     |              | 1.000                     | 0.705                  | 0.863                  | 1.502                | 0.986                             |
|            | WLAN2.4GHz  | -        | -          | -       | -         | 802.11b 1Mbps       | Left Cheek    | 0mm      | Ant 6   | Simultaneous | 11     | 2462        | 100.00       | 1.000                     | 0.485                  | 0.639                  |                      |                                   |
| Case 18    | FR1 n77     | 100M     | QPSK       | 135     | 69        | DFT-30              | Left Cheek    | 0mm      | Ant 8   | ECI 2        | 633332 | 3499.98     |              | 1.000                     | 0.391                  | 0.485                  | 1.171                | 0.625                             |
|            | Bluetooth   | -        | -          | -       | -         | DH5 1Mbps           | Left Cheek    | 0mm      | Ant 6   | Full Power   | 78     | 2480        | 76.89        | 1.083                     | 0.271                  | 0.434                  |                      |                                   |
|            | WLAN5GHz    | -        | -          | -       | -         | 802.11ac-VHT80 MCS0 | Left Cheek    | 0mm      | Ant 6   | Simultaneous | 58     | 5290        | 100.00       | 1.000                     | 0.191                  | 0.252                  |                      |                                   |
| Case 19    | FR1 n77     | 100M     | QPSK       | 135     | 69        | DFT-30              | Left Cheek    | 0mm      | Ant 8   | ECI 2        | 633332 | 3499.98     |              | 1.000                     | 0.391                  | 0.485                  | 1.124                | 0.72                              |
|            | WLAN2.4GHz  | -        | -          | -       | -         | 802.11b 1Mbps       | Left Cheek    | 0mm      | Ant 6   | Simultaneous | 11     | 2462        | 100.00       | 1.000                     | 0.485                  | 0.639                  |                      |                                   |
| Case 25    | FR1 n12     | 15M      | QPSK       | 36      | 22        | DFT-15              | Left Tilted   | 0mm      | Ant 4   | ECI 2        | 141500 | 707.5       |              | 1.000                     | 0.503                  | 0.642                  | 1.386                | 0.698                             |
|            | Bluetooth   | -        | -          | -       | -         | DH5 1Mbps           | Left Tilted   | 0mm      | Ant 6   | Full Power   | 78     | 2480        | 76.89        | 1.083                     | 0.194                  | 0.311                  |                      |                                   |
|            | WLAN5GHz    | -        | -          | -       | -         | 802.11ac-VHT80 MCS0 | Left Tilted   | 0mm      | Ant 6   | Simultaneous | 58     | 5290        | 100.00       | 1.000                     | 0.328                  | 0.433                  |                      |                                   |
| Case 26    | FR1 n12     | 15M      | QPSK       | 36      | 22        | DFT-15              | Left Tilted   | 0mm      | Ant 4   | ECI 2        | 141500 | 707.5       |              | 1.000                     | 0.503                  | 0.642                  | 1.007                | 0.692                             |
|            | WLAN2.4GHz  | -        | -          | -       | -         | 802.11b 1Mbps       | Left Tilted   | 0mm      | Ant 6   | Simultaneous | 6      | 2437        | 100.00       | 1.000                     | 0.283                  | 0.365                  |                      |                                   |
| Case 27/31 | FR1 n77     | 100M     | QPSK       | 1       | 1         | DFT-30              | Left Tilted   | 0mm      | Ant 5   | ECI 2        | 656000 | 3840        |              | 1.000                     | 0.619                  | 0.849                  | 1.593                | 0.948                             |
|            | Bluetooth   | -        | -          | -       | -         | DH5 1Mbps           | Left Tilted   | 0mm      | Ant 6   | Full Power   | 78     | 2480        | 76.89        | 1.083                     | 0.194                  | 0.311                  |                      |                                   |
|            | WLAN5GHz    | -        | -          | -       | -         | 802.11ac-VHT80 MCS0 | Left Tilted   | 0mm      | Ant 6   | Simultaneous | 58     | 5290        | 100.00       | 1.000                     | 0.328                  | 0.433                  |                      |                                   |
| Case 28/32 | FR1 n77     | 100M     | QPSK       | 1       | 1         | DFT-30              | Left Tilted   | 0mm      | Ant 5   | ECI 2        | 656000 | 3840        |              | 1.000                     | 0.619                  | 0.849                  | 1.214                | 0.872                             |
|            | WLAN2.4GHz  | -        | -          | -       | -         | 802.11b 1Mbps       | Left Tilted   | 0mm      | Ant 6   | Simultaneous | 6      | 2437        | 100.00       | 1.000                     | 0.283                  | 0.365                  |                      |                                   |
| Case 29/33 | FR1 n77     | 100M     | QPSK       | 1       | 1         | DFT-30              | Left Tilted   | 0mm      | Ant 8   | ECI 2        | 633332 | 3499.98     |              | 1.000                     | 0.615                  | 0.746                  | 1.490                | 0.865                             |
|            | Bluetooth   | -        | -          | -       | -         | DH5 1Mbps           | Left Tilted   | 0mm      | Ant 6   | Full Power   | 78     | 2480        | 76.89        | 1.083                     | 0.194                  | 0.311                  |                      |                                   |
|            | WLAN5GHz    | -        | -          | -       | -         | 802.11ac-VHT80 MCS0 | Left Tilted   | 0mm      | Ant 6   | Simultaneous | 58     | 5290        | 100.00       | 1.000                     | 0.328                  | 0.433                  |                      |                                   |
| Case 30/34 | FR1 n77     | 100M     | QPSK       | 1       | 1         | DFT-30              | Left Tilted   | 0mm      | Ant 8   | ECI 2        | 633332 | 3499.98     |              | 1.000                     | 0.615                  | 0.746                  | 1.111                | 0.862                             |
|            | WLAN2.4GHz  | -        | -          | -       | -         | 802.11b 1Mbps       | Left Tilted   | 0mm      | Ant 6   | Simultaneous | 6      | 2437        | 100.00       | 1.000                     | 0.283                  | 0.365                  |                      |                                   |

Test Engineer : Kevin Xu, David Dai, Bin He

## 16. Uncertainty Assessment

Per KDB 865664 D01 SAR measurement 100MHz to 6GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg and the measured 10-g SAR within a frequency band is < 3.75 W/kg. The expanded SAR measurement uncertainty must be  $\leq 30\%$ , for a confidence interval of  $k = 2$ . If these conditions are met, extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval. For this device, the highest measured 1-g SAR is less 1.5W/kg and highest measured 10-g SAR is less 3.75W/kg. Therefore, the measurement uncertainty table is not required in this report.

Declaration of Conformity:

The test results with all measurement uncertainty excluded is presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

The component of uncertainty may generally be categorized according to the methods used to evaluate them. The evaluation of uncertainty by the statistical analysis of a series of observations is termed a Type A evaluation of uncertainty. The evaluation of uncertainty by means other than the statistical analysis of a series of observation is termed a Type B evaluation of uncertainty. Each component of uncertainty, however evaluated, is represented by an estimated standard deviation, termed standard uncertainty, which is determined by the positive square root of the estimated variance.

A Type A evaluation of standard uncertainty may be based on any valid statistical method for treating data. This includes calculating the standard deviation of the mean of a series of independent observations; using the method of least squares to fit a curve to the data in order to estimate the parameter of the curve and their standard deviations; or carrying out an analysis of variance in order to identify and quantify random effects in certain kinds of measurement.

A type B evaluation of standard uncertainty is typically based on scientific judgment using all of the relevant information available. These may include previous measurement data, experience, and knowledge of the behavior and properties of relevant materials and instruments, manufacture's specification, data provided in calibration reports and uncertainties assigned to reference data taken from handbooks. Broadly speaking, the uncertainty is either obtained from an outdoor source or obtained from an assumed distribution, such as the normal distribution, rectangular or triangular distributions indicated in table below.

| Uncertainty Distributions          | Normal      | Rectangular  | Triangular   | U-Shape      |
|------------------------------------|-------------|--------------|--------------|--------------|
| Multi-plying Factor <sup>(a)</sup> | $1/k^{(b)}$ | $1/\sqrt{3}$ | $1/\sqrt{6}$ | $1/\sqrt{2}$ |

(a) standard uncertainty is determined as the product of the multiplying factor and the estimated range of variations in the measured quantity

(b)  $k$  is the coverage factor

### Standard Uncertainty for Assumed Distribution

The combined standard uncertainty of the measurement result represents the estimated standard deviation of the result. It is obtained by combining the individual standard uncertainties of both Type A and Type B evaluation using the usual "root-sum-squares" (RSS) methods of combining standard deviations by taking the positive square root of the estimated variances.

Expanded uncertainty is a measure of uncertainty that defines an interval about the measurement result within which the measured value is confidently believed to lie. It is obtained by multiplying the combined standard uncertainty by a coverage factor. Typically, the coverage factor ranges from 2 to 3. Using a coverage factor allows the true value of a measured quantity to be specified with a defined probability within the specified uncertainty range. For purpose of this document, a coverage factor two is used, which corresponds to confidence interval of about 95 %. The DASY uncertainty Budget is shown in the following tables.

The judgment of conformity in the report is based on the measurement results excluding the measurement uncertainty.

| Uncertainty Budget<br>According to IEC/IEEE 62209-1528<br>(Frequency band: 4 MHz - 10 GHz range) |                    |             |       |         |          |                                |                                 |
|--------------------------------------------------------------------------------------------------|--------------------|-------------|-------|---------|----------|--------------------------------|---------------------------------|
| Error Description                                                                                | Uncert. Value (±%) | Prob. Dist. | Div.  | (Ci) 1g | (Ci) 10g | Standard Uncertainty (1g) (±%) | Standard Uncertainty (10g) (±%) |
| <b>Measurement System errors</b>                                                                 |                    |             |       |         |          |                                |                                 |
| Probe calibration                                                                                | 18.6               | N           | 2     | 1       | 1        | 9.3                            | 9.3                             |
| Probe calibration drift                                                                          | 1.7                | R           | 1.732 | 1       | 1        | 1.0                            | 1.0                             |
| Probe linearity and detection Limit                                                              | 4.7                | R           | 1.732 | 1       | 1        | 2.7                            | 2.7                             |
| Broadband signal                                                                                 | 2.8                | R           | 1.732 | 1       | 1        | 1.6                            | 1.6                             |
| Probe isotropy                                                                                   | 7.6                | R           | 1.732 | 1       | 1        | 4.4                            | 4.4                             |
| Other probe and data acquisition errors                                                          | 2.4                | N           | 1     | 1       | 1        | 2.4                            | 2.4                             |
| RF ambient and noise                                                                             | 1.8                | N           | 1     | 1       | 1        | 1.8                            | 1.8                             |
| Probe positioning errors                                                                         | 0.006              | N           | 1     | 0.5     | 0.5      | 0.0                            | 0.0                             |
| Data processing errors                                                                           | 4.0                | N           | 1     | 1       | 1        | 4.0                            | 4.0                             |
| <b>Phantom and Device Errors</b>                                                                 |                    |             |       |         |          |                                |                                 |
| Measurement of phantom conductivity ( $\sigma$ )                                                 | 2.5                | N           | 1     | 0.78    | 0.71     | 2.0                            | 1.8                             |
| Temperature effects (medium)                                                                     | 5.4                | R           | 1.732 | 0.78    | 0.71     | 2.4                            | 2.2                             |
| Shell permittivity                                                                               | 14.0               | R           | 1.732 | 0.5     | 0.5      | 4.0                            | 4.0                             |
| Distance between the radiating element of the DUT and the phantom medium                         | 2.0                | N           | 1     | 2       | 2        | 4.0                            | 4.0                             |
| Repeatability of positioning the DUT or source against the phantom                               | 1.0                | N           | 1     | 1       | 1        | 1.0                            | 1.0                             |
| Device holder effects                                                                            | 3.6                | N           | 1     | 1       | 1        | 3.6                            | 3.6                             |
| Effect of operating mode on probe sensitivity                                                    | 2.4                | R           | 1.732 | 1       | 1        | 1.4                            | 1.4                             |
| Time-average SAR                                                                                 | 1.7                | R           | 1.732 | 1       | 1        | 1.0                            | 1.0                             |
| Variation in SAR due to drift in output of DUT                                                   | 2.5                | N           | 1     | 1       | 1        | 2.5                            | 2.5                             |
| Validation antenna uncertainty (validation measurement only)                                     | 0.0                | N           | 1     | 1       | 1        | 0.0                            | 0.0                             |
| Uncertainty in accepted power (validation measurement only)                                      | 0.0                | N           | 1     | 1       | 1        | 0.0                            | 0.0                             |
| <b>Correction to the SAR results</b>                                                             |                    |             |       |         |          |                                |                                 |
| Phantom deviation from target ( $\epsilon^{\sim}, \sigma$ )                                      | 1.9                | N           | 1     | 1       | 0.84     | 1.9                            | 1.6                             |
| SAR scaling                                                                                      | 0.0                | R           | 1.732 | 1       | 1        | 0.0                            | 0.0                             |
| <b>Combined Std. Uncertainty</b>                                                                 |                    |             |       |         |          | <b>14.5%</b>                   | <b>14.4%</b>                    |
| <b>Coverage Factor for 95 %</b>                                                                  |                    |             |       |         |          | <b>K=2</b>                     | <b>K=2</b>                      |
| <b>Expanded STD Uncertainty</b>                                                                  |                    |             |       |         |          | <b>29.0%</b>                   | <b>28.8%</b>                    |



## **17. References**

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- [9] FCC KDB 248227 D01 v02r02, "SAR Guidance for IEEE 802.11 (WiFi) Transmitters", Oct 2015.
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- [14] FCC KDB 941225 D06 v02r01, "SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities", Oct 2015.
- [15] FCC KDB 447498 D01 v06, "Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies", Oct 2015

## **Appendixes**

Please refer to separated files for the following appendixes

**Appendix A. Plots of System Performance Check**

**Appendix B. Plots of High SAR Measurement**

**Appendix C. DASYS Calibration Certificate**

**Appendix D. Test Setup Photos**

**Appendix E. Conducted RF Output Power Table**

**Appendix F. Power reduction mechanism verification**

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