**SGS-CSTC Standards Technical Services Co., Ltd.**
**Shenzhen Branch**

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# *FCC SAR TEST REPORT*

| | |
|---|---|
| **Application No:** | SZEM1803001702RG |
| **Applicant:** | Hytera Communications Corporation Limited |
| **Manufacturer:** | Hytera Communications Corporation Limited |
| **Factory:** | Hytera Communications Corporation Limited Baolong Branch |
| **Product Name:** | Multi-mode Radio |
| **Model No.(EUT):** | PDC760 V1B1 |
| **Trade Mark:** | Hytera |
| **FCC ID:** | YAMPDC760V1B1 |
| **Standards:** | FCC 47CFR §2.1093 |
| **Date of Receipt:** | 2018-03-06 |
| **Date of Test:** | 2018-03-13 to 2018-04-02 |
| **Date of Issue:** | 2018-04-16 |
| **Test conclusion:** | **PASS *** |

* In the configuration tested, the EUT detailed in this report complied with the standards specified above.

Authorized Signature:

Derek Yang

Wireless Laboratory Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.

# REVISION HISTORY

| Revision Record | | | | |
|---|---|---|---|---|
| Version | Chapter | Date | Modifier | Remark |
| 01 | | 2018-04-16 | | Original |
| | | | | |
| | | | | |

# TEST SUMMARY

| Frequency Band | Maximum Reported SAR(W/kg) | | |
|---|---|---|---|
| | Head | Body-worn | Hotspot |
| GSM850 | 0.47 | 0.33 | 0.44 |
| GSM1900 | 0.42 | 0.18 | 0.68 |
| CDMA2000 BC0 | 0.62 | **0.57** | 0.68 |
| LTE Band 2 | 0.69 | 0.28 | 0.68 |
| LTE Band 4 | 0.31 | 0.45 | **1.13** |
| LTE Band 5 | 0.42 | 0.28 | 0.34 |
| LTE Band 7 | **1.38** | 0.43 | 0.82 |
| LTE Band 26 | 0.34 | 0.28 | 0.32 |
| LTE Band 38 | 0.98 | 0.16 | 0.47 |
| LTE Band 40 | 0.34 | 0.18 | 0.32 |
| LTE Band 41 | 1.12 | 0.16 | 0.47 |
| WI-FI (2.4GHz) | <0.10 | 0.12 | <0.10 |
| SAR Limited(w/kg) | 1.6 | | |
| Maximum Simultaneous Transmission SAR (W/kg) | | | |
| Scenario | Head | Body-worn(15mm) | Hotspot |
| Sum SAR | 1.50 | 0.61 | 1.19 |
| SPLSR | NA | NA | NA |
| SPLSR Limited | 0.04 | | |

**Approved & Released by**

Simon Ling

SAR Manager

**Tested by**

Mark Liu

SAR Engineer

# CONTENTS

# 1 General Information

## 1.1 Details of Client

| | |
|---|---|
| Applicant: | Hytera Communications Corporation Limited |
| Address: | Hytera Tower, Hi-Tech Industrial Park North, 9108# Beihuan Road, Nanshan District, Shenzhen, People's Republic of China |
| Manufacturer: | Hytera Communications Corporation Limited |
| Address: | Hytera Tower, Hi-Tech Industrial Park North, 9108# Beihuan Road, Nanshan District, Shenzhen, People's Republic of China |
| Factory: | Hytera Communications Corporation Limited Baolong Branch |
| Address: | Plant No.3, Hytera Hi-Tech Park, Baolong Industrial Area, Longgang District, Shenzhen, People's Republic of China |

## 1.2 Test Location

Company: SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

Address: No. 1 Workshop, M-10, Middle section, Science & Technology Park, Shenzhen, Guangdong, China

Post code: 518057

Telephone: +86 (0) 755 2601 2053

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E-mail: ee.shenzhen@sgs.com

## 1.3 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

**• CNAS (No. CNAS L2929)**

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

**• A2LA (Certificate No. 3816.01)**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

**• VCCI**

The 10m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-823, R-4188, T-1153 and C-2383 respectively.

**• FCC –Designation Number: CN1178**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1178. Test Firm Registration Number: 406779.

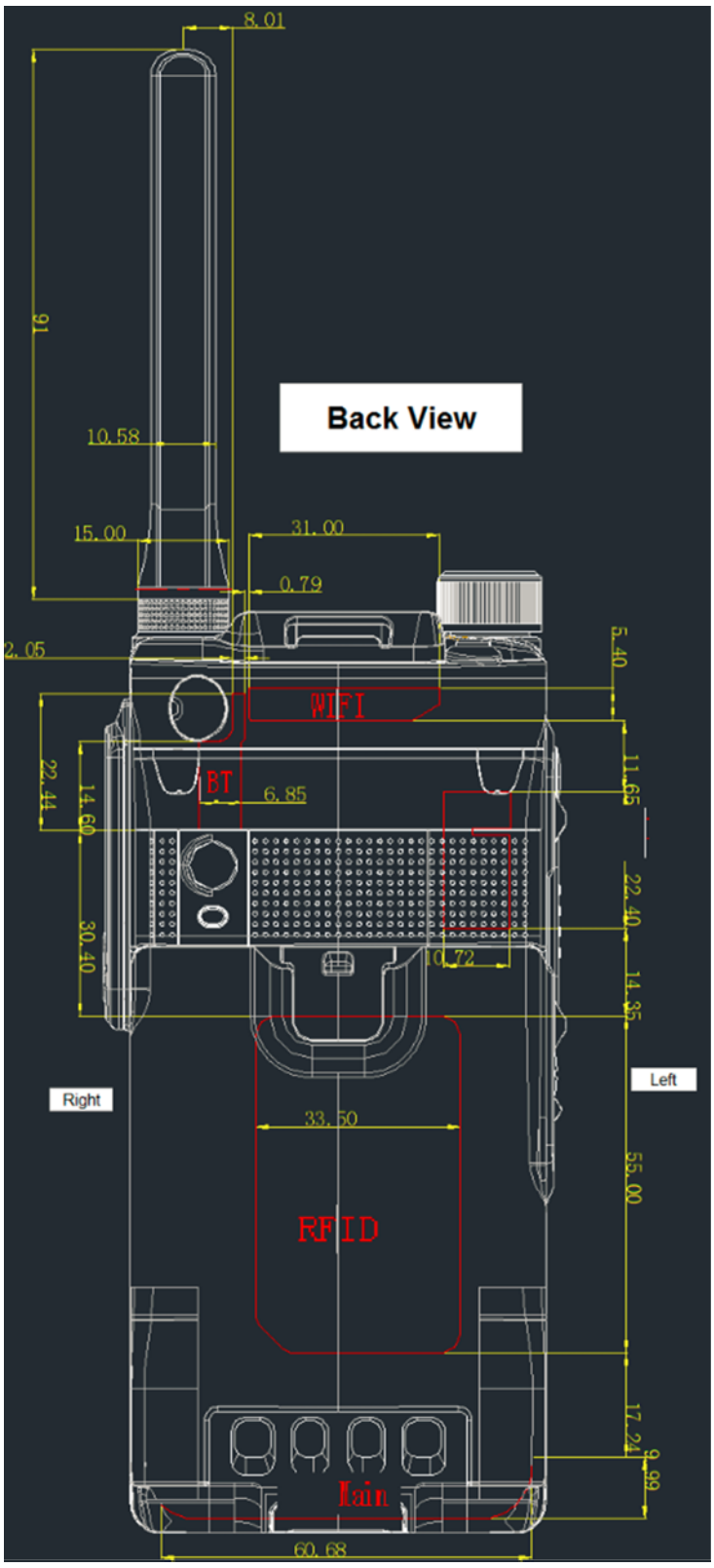
**• Industry Canada (IC)**

Two 3m Semi-anechoic chambers and the 10m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab have been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1, 4620C-2, 4620C-3.

## 1.4 General Description of EUT

| | | | |
|---|---|---|---|
| Device Type : | portable device | | |
| Exposure Category: | uncontrolled environment / general population | | |
| Product Name: | Multi-mode Radio | | |
| Model No.(EUT): | PDC760 V1B1 | | |
| Trade Mark: | Hytera | | |
| FCC ID: | YAMPDC760V1B1 | | |
| Product Phase: | production unit | | |
| SN: | A02B8A0207/ A02B8A0223/ A02B8A0203 | | |
| Hardware Version: | C | | |
| Software Version: | V1.7.03.000.01 | | |
| Antenna Type: | internal | | |
| Device Operating Configurations : | | | |
| Modulation Mode: | GSM: GMSK, 8PSK; CDMA:QPSK<br>LTE: QPSK,16QAM; WIFI: DSSS; OFDM; BT: GFSK, π/4DQPSK,8DPSK | | |
| Device Class: | B | | |
| GPRS Multi-slots Class: | 33 | EGPRS Multi-slots Class: | 33 |
| Power Class | 4,tested with power level 5(GSM850) | | |
| | 1,tested with power level 0(GSM1900) | | |
| | 3, tested with power control “all 1”(CDMA BC0) | | |
| | 3, tested with power control Max Power(LTE Band 2/4/5/7/26/38/40/41) | | |
| Frequency Bands: | Band | Tx (MHz) | Rx (MHz) |
| | GSM850 | 824~849 | 869~894 |
| | GSM1900 | 1850~1910 | 1930~1990 |
| | CDMA BC0 | 824~849 | 869~894 |
| | LTE Band 2 | 1850~1910 | 1930~1990 |
| | LTE Band 4 | 1710~1755 | 2110~2155 |
| | LTE Band 5 | 824~849 | 869~894 |
| | LTE Band 7 | 2500~2570 | 2620~2690 |
| | LTE Band 26 | 814~849 | 859~894 |
| | LTE Band 38 | 2570~2620 | 2570~2620 |
| | LTE Band 40 | 2300~2400 | 2300~2400 |
| | LTE Band 41 | 2496~2690 | 2496~2690 |
| | WIFI2.4G | 2412~2462 | 2412~2462 |
| | BT | 2402~2480 | 2402~2480 |
| Battery Information: | Model: BP2901 | | |
| | Rated capacity :DC 7.6V, 2900mAh, 22.04Wh | | |
| | Manufacturer: Roofer Technology (Shenzhen) Co., Ltd. | | |

### 1.4.1 DUT Antenna Locations(Back View)



The test device is a Multi-mode Radio. The display diagonal dimension is 121mm and the overall diagonal dimension of this device is 159mm.

According to the distance between LTE/GSM/CDMA antennas and the sides of the EUT we can draw the conclusion that:

| EUT Sides for SAR Testing | | | | | | |
|---|---|---|---|---|---|---|
| Mode | Front | Back | Left | Right | Top | Bottom |
| Main Antenna | Yes | Yes | Yes | Yes | No | No |
| 2.4G WIFI | Yes | Yes | Yes | Yes | No | Yes |

Table 1：EUT Sides for SAR Testing

Note:

1) When the antenna-to-edge distance is greater than 2.5cm, such position does not need to be tested.

## 1.5 Test Specification

| Identity | Document Title |
|---|---|
| FCC 47CFR §2.1093 | Radiofrequency Radiation Exposure Evaluation: Portable Devices |
| ANSI/IEEE Std C95.1 – 1992 | Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz – 300 GHz. |
| IEEE 1528-2013 | Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques |
| KDB 941225 D01 3G SAR Procedures v03r01 | 3G SAR Measurement Procedures |
| KDB 248227 D01 802.11 Wi-Fi SAR v02r02 | SAR GUIDANCE FOR IEEE 802.11 (Wi-Fi) TRANSMITTERS |
| KDB 941225 D05 SAR for LTE Devices v02r05 | SAR EVALUATION CONSIDERATIONS FOR LTE DEVICES |
| KDB 941225 D06 Hotspot Mode SAR v02r01 | SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities |
| KDB 648474 D04 Handset SAR v01r03 | SAR Evaluation Considerations for Wireless Handsets |
| KDB447498 D01 General RF Exposure Guidance v06 | Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies |
| KDB447498 D03 Supplement C Cross-Reference v01 | OET Bulletin 65, Supplement C Cross-Reference |
| KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04 | SAR Measurement Requirements for 100 MHz to 6 GHz |
| KDB 865664 D02 RF Exposure Reporting v01r02 | RF Exposure Compliance Reporting and Documentation Considerations |

## 1.6 RF exposure limits

| Human Exposure | Uncontrolled Environment General Population | Controlled Environment Occupational |
|---|---|---|
| **Spatial Peak SAR*** (Brain*Trunk) | **1.60 W/kg** | 8.00 W/kg |
| **Spatial Average SAR**** (Whole Body) | 0.08 W/kg | 0.40 W/kg |
| **Spatial Peak SAR***** (Hands/Feet/Ankle/Wrist) | 4.00 W/kg | 20.00 W/kg |

**Notes:**

* The Spatial Peak value of the SAR averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time

** The Spatial Average value of the SAR averaged over the whole body.

*** The Spatial Peak value of the SAR averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.

**Uncontrolled Environments** are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure.

**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.)

# 2 Laboratory Environment

| | |
|---|---|
| Temperature | Min. = 18°C, Max. = 25 °C |
| Relative humidity | Min. = 30%, Max. = 70% |
| Ground system resistance | < 0.5 Ω |
| Ambient noise is checked and found very low and in compliance with requirement of standards.<br>Reflection of surrounding objects is minimized and in compliance with requirement of standards. | |

Table 2 : The Ambient Conditions

# 3 SAR Measurements System Configuration

## 3.1 The SAR Measurement System

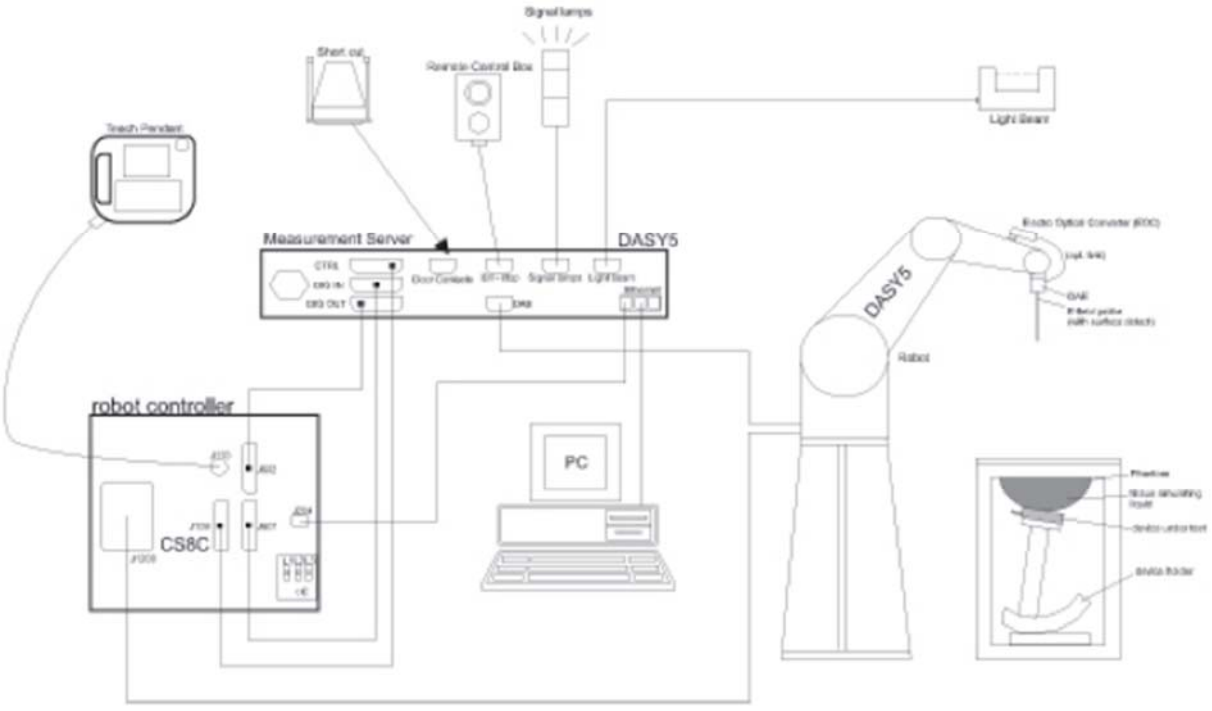
This SAR Measurement System uses a Computer-controlled 3-D stepper motor system (SPEAG DASY5 professional system). A E-field probe is used to determine the internal electric fields. The SAR can be obtained from the equation SAR= σ (|Ei|2)/ ρ where σ and ρ are the conductivity and mass density of the tissue-Simulate.

The DASY5 system for performing compliance tests consists of the following items:
A standard high precision 6-axis robot (Stabile RX family) with controller, teach pendant and software. An arm extension for accommodation the data acquisition electronics (DAE).

A dosimetric probe, i.e., an isotropic E-field probe optimized and calibrated for usage in tissue simulating liquid. The probe is equipped with an optical surface detector system.

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 between optical and electrical of the signals for the digital communication to DAE and for the analog signal from the optical surface detection. The EOC is connected to the measurement server.




F-1. SAR Measurement System Configuration

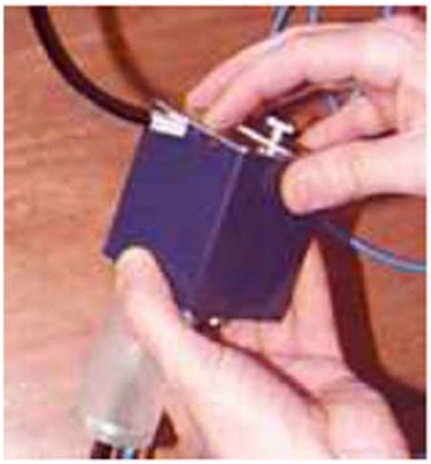
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- A probe alignment unit which improves the (absolute) accuracy of the probe positioning.
- A computer operating Windows 7.
- DASY5 software.
- Remote control with teach pendant and additional circuitry for robot safety such as warning lamps, etc.
- The SAM twin phantom enabling testing left-hand, right-hand and Body Worn usage.
- The device holder for handheld mobile phones.
- Tissue simulating liquid mixed according to the given recipes.
- Validation dipole kits allowing to validating the proper functioning of the system.

## 3.2 Isotropic E-field Probe EX3DV4

| | |
|---|---|
|  | Symmetrical design with triangular core<br>Built-in shielding against static charges<br>PEEK enclosure material (resistant to organic solvents, e.g., DGBE) |
| **Calibration** | ISO/IEC 17025 calibration service available. |
| **Frequency** | 10 MHz to > 6 GHz<br>Linearity: ± 0.2 dB (30 MHz to 6 GHz) |
| **Directivity** | ± 0.3 dB in TSL (rotation around probe axis)<br>± 0.5 dB in TSL (rotation normal to probe axis) |
| **Dynamic Range** | 10 µW/g to > 100 mW/g<br>Linearity: ± 0.2 dB (noise: typically < 1 µW/g) |
| **Dimensions** | 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 |
| **Application** | High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields); the only probe that enables compliance testing for frequencies up to 6 GHz with precision of better 30%. |
| **Compatibility** | DASY3, DASY4, DASY52 SAR and higher, EASY4/MRI |

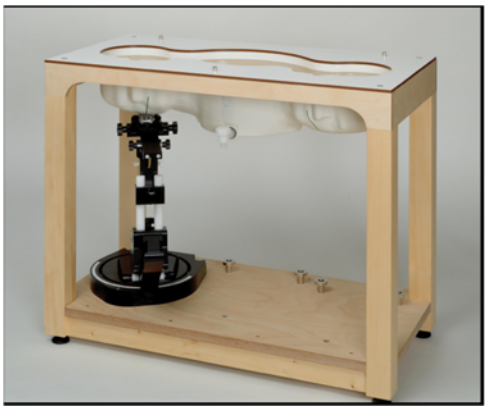
## 3.3 Data Acquisition Electronics (DAE)

| | |
|---|---|
| **Model** | DAE4 |
| **Construction** | Signal amplifier, multiplexer, A/D converter and control logic. Serial optical link for communication with DASY4/5 embedded system (fully remote controlled). Two step probe touch detector for mechanical surface detection and emergency robot stop. |
| **Measurement Range** | -100 to +300 mV (16 bit resolution and two range settings: 4mV,400mV) |
| **Input Offset Voltage** | < 5µV (with auto zero) |
| **Input Bias Current** | < 50 f A |
| **Dimensions** | 60 x 60 x 68 mm |



## 3.4 SAM Twin Phantom

| | |
|---|---|
| **Material** | Vinylester, glass fiber reinforced (VE-GF) |
| **Liquid Compatibility** | Compatible with all SPEAG tissue simulating liquids (incl. DGBE type) |
| **Shell Thickness** | 2 ± 0.2 mm (6 ± 0.2 mm at ear point) |
| **Dimensions (incl. Wooden Support)** | Length: 1000 mm<br>Width: 500 mm<br>Height: adjustable feet |
| **Filling Volume** | approx. 25 liters |
| **Wooden Support** | SPEAG standard phantom table |



The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE 1528 and IEC 62209-1. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents evaporation of the liquid. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids by teaching three points with the robot.

Twin SAM V5.0 has the same shell geometry and is manufactured from the same material as Twin SAM V4.0, but has reinforced top structure.

## 3.5 ELI Phantom

| | |
|---|---|
| **Material** | Vinylester, glass fiber reinforced (VE-GF) |
| **Liquid Compatibility** | Compatible with all SPEAG tissue simulating liquids (incl. DGBE type) |
| **Shell Thickness** | 2.0 ± 0.2 mm (bottom plate) |
| **Dimensions** | Major axis: 600 mm<br>Minor axis: 400 mm |
| **Filling Volume** | approx. 30 liters |
| **Wooden Support** | SPEAG standard phantom table |

Phantom for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI is fully compatible with the IEC 62209-2 standard and all known tissue simulating liquids. ELI has been optimized regarding its performance and can be integrated into our standard phantom tables. A cover prevents evaporation of the liquid. Reference markings on the phantom allow installation of the complete setup, including all predefined phantom positions and measurement grids, by teaching three points. The phantom is compatible with all SPEAG dosimetric probes and dipoles.

ELI V5.0 has the same shell geometry and is manufactured from the same material as ELI4, but has reinforced top structure.

## 3.6 Device Holder for Transmitters

F-2. **Device Holder for Transmitters**

- The DASY device holder is designed to cope with different positions given in the standard. It has two scales for the device rotation (with respect to the body axis) and the device inclination (with respect to the line between the ear reference points). The rotation centres for both scales are the ear reference point (ERP). Thus the device needs no repositioning when changing the angles.
- The DASY device holder has been made out of low-loss POM material having the following dielectric parameters: relative permittivity ε=3 and loss tangent δ=0.02. The amount of dielectric material has been reduced in the closest vicinity of the device, since measurements have suggested that the influence of the clamp on the test results could thus be lowered.

## 3.7 Measurement procedure

### 3.7.1 Scanning procedure

### Step 1: Power reference measurement

The “reference” and “drift” measurements are located at the beginning and end of the batch process. They measure the field drift at one single point in the liquid over the complete procedure.

### Step 2: *Area scan*

The SAR distribution at the exposed side of the head was measured at a distance of 4mm from the inner surface of the shell. The area covered the entire dimension of the head and the horizontal grid spacing was 15mm*15mm or 12mm*12mm or 10mm*10mm.Based on the area scan data, the area of the maximum absorption was determined by spline interpolation.

### Step 3: *Zoom scan*

Around this point, a volume of 32mm*32mm*30mm (f≤2GHz), 30mm*30mm*30mm (f for 2-3GHz) and 24mm*24mm*22mm (f for 5-6GHz) was assessed by measuring 5x5x7 points (f≤2GHz), 7x7x7 points (f for 2-3GHz) and 7x7x12 points (f for 5-6GHz). On this basis of this data set, the spatial peak SAR value was evaluated with the following procedure:

The data at the surface was extrapolated, since the centre of the dipoles is 2.0mm away from the tip of the probe and the distance between the surface and the lowest measuring point is 1.2mm. (This can be variable. Refer to the probe specification).The extrapolation was based on a least square algorithm. A polynomial of the fourth order was calculated through the points in z-axes. This polynomial was then used to evaluate the points between the surface and the probe tip. The maximum interpolated value was searched with a straight-forward algorithm. Around this maximum the SAR values averaged over the spatial volumes (1g or 10g) were computed using the 3D-Spline interpolation algorithm. The volume was integrated with the trapezoidal algorithm. One thousand points were interpolated to calculate the average. All neighbouring volumes were evaluated until no neighboring volume with a higher average value was found.

The area and zoom scan resolutions specified in the table below must be applied to the SAR measurements Probe boundary effect error compensation is required for measurements with the probe tip closer than half a probe tip diameter to the phantom surface. Both the probe tip diameter and sensor offset distance must satisfy measurement protocols; to ensure probe boundary effect errors are minimized and the higher fields closest to the phantom surface can be correctly measured and extrapolated to the phantom surface for computing 1-g SAR. Tolerances of the post-processing algorithms must be verified by the test laboratory for the scan resolutions used in the SAR measurements, according to the reference distribution functions specified in IEEE Std. 1528-2013.

| | | | ≤ 3 GHz | > 3 GHz |
|---|---|---|---|---|
| Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface | | | 5 ± 1 mm | ½·δ·ln(2) ± 0.5 mm |
| Maximum probe angle from probe axis to phantom surface normal at the measurement location | | | 30° ± 1° | 20° ± 1° |
| Maximum area scan spatial resolution: $\Delta x_{Area}$, $\Delta y_{Area}$ | | | ≤ 2 GHz: ≤ 15 mm<br>2 – 3 GHz: ≤ 12 mm | 3 – 4 GHz: ≤ 12 mm<br>4 – 6 GHz: ≤ 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 ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device. | |
| Maximum zoom scan spatial resolution: $\Delta x_{Zoom}$, $\Delta y_{Zoom}$ | | | ≤ 2 GHz: ≤ 8 mm<br>2 – 3 GHz: ≤ 5 mm* | 3 – 4 GHz: ≤ 5 mm*<br>4 – 6 GHz: ≤ 4 mm* |
| Maximum zoom scan spatial resolution, normal to phantom surface | uniform grid: $\Delta z_{Zoom}(n)$ | | ≤ 5 mm | 3 – 4 GHz: ≤ 4 mm<br>4 – 5 GHz: ≤ 3 mm<br>5 – 6 GHz: ≤ 2 mm |
| | graded grid | $\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface | ≤ 4 mm | 3 – 4 GHz: ≤ 3 mm<br>4 – 5 GHz: ≤ 2.5 mm<br>5 – 6 GHz: ≤ 2 mm |
| | | $\Delta z_{Zoom}(n>1)$: between subsequent points | ≤ 1.5·$\Delta z_{Zoom}(n-1)$ | |
| Minimum zoom scan volume | x, y, z | | ≥ 30 mm | 3 – 4 GHz: ≥ 28 mm<br>4 – 5 GHz: ≥ 25 mm<br>5 – 6 GHz: ≥ 22 mm |

## Step 4: Power reference measurement (drift)

The Power Drift Measurement job measures the field at the same location as the most recent power reference measurement job within the same procedure, and with the same settings. The indicated drift is mainly the variation of the DUT's output power and should vary max. ± 5 %

### 3.7.2 Data Storage

The DASY software stores the acquired data from the data acquisition electronics as raw data (in microvolt readings from the probe sensors), together with all necessary software parameters for the data evaluation (probe calibration data, liquid parameters and device frequency and modulation data) in measurement files with the extension ".DAE4". The software evaluates the desired unit and format for output each time the data is visualized or exported. This allows verification of the complete software setup even after the measurement and allows correction of incorrect parameter settings. For example, if a measurement has been performed with a wrong crest factor parameter in the device setup, the parameter can be corrected afterwards and the data can be re-evaluated. The measured data can be visualized or exported in different units or formats, depending on the selected probe type ([V/m], [A/m], [°C], [m W/g], [m W/cm²], [dBrel], etc.). Some of these units are not available in certain situations or show meaningless results, e.g., a SAR output in a lossless media will always be zero. Raw data can also be exported to perform the evaluation with other software packages.

### 3.7.3 Data Evaluation by SEMCAD

The SEMCAD software automatically executes the following procedures to calculate the field units from the microvolt readings at the probe connector. The parameters used in the evaluation are stored in the configuration modules of the software:

| | | |
|---|---|---|
| Probe parameters: | - Sensitivity | Normi, ai0, ai1, ai2 |
| | - Conversion factor | ConvFi |
| | - Diode compression point | Dcpi |
| Device parameters: | - Frequency | f |
| | - Crest factor | cf |
| Media parameters: | - Conductivity | ε |
| | - Density | ρ |

These parameters must be set correctly in the software. They can be found in the component documents or they can be imported into the software from the configuration files issued for the DASY components. In the direct measuring mode of the multimeter option, the parameters of the actual system setup are used. In the scan visualization and export modes, the parameters stored in the corresponding document files are used.

The first step of the evaluation is a linearization of the filtered input signal to account for the compression characteristics of the detector diode. The compensation depends on the input signal, the diode type and the DC-transmission factor from the diode to the evaluation electronics.

If the exciting field is pulsed, the crest factor of the signal must be known to correctly compensate for peak power.

The formula for each channel can be given as:

$$V_i = U_i + U_i^2 \cdot cf / dcp_i$$

With Vi = compensated signal of channel i ( i = x, y, z )

Ui = input signal of channel i ( i = x, y, z )

cf = crest factor of exciting field (DASY parameter)

dcp i = diode compression point (DASY parameter)

From the compensated input signals the primary field data for each channel can be evaluated:

E-field probes:

$$E_i = (V_i / Norm_i \cdot ConvF)^{1/2}$$

H-field probes:

$$H_i = (V_i)^{1/2} \cdot (a_{i0} + a_{i1} f + a_{i2} f^2) / f$$

With Vi = compensated signal of channel i (i = x, y, z)
Normi = sensor sensitivity of channel I (i = x, y, z)
[mV/(V/m)2] for E-field Probes
ConvF = sensitivity enhancement in solution
aij = sensor sensitivity factors for H-field probes
f = carrier frequency [GHz]
Ei = electric field strength of channel i in V/m

Hi = magnetic field strength of channel i in A/m

The RSS value of the field components gives the total field strength (Hermitian magnitude):

$$E_{tot} = (E_x^2 + E_y^2 + E_z^2)^{1/2}$$

The primary field data are used to calculate the derived field units.

$$SAR = (Etot^2 \cdot \sigma) / (\varepsilon \cdot 1000)$$

with SAR = local specific absorption rate in mW/g

Etot = total field strength in V/m

σ= conductivity in [mho/m] or [Siemens/m]

ε= equivalent tissue density in g/cm3

Note that the density is normally set to 1 (or 1.06), to account for actual brain density rather than the density of the simulation liquid. The power flow density is calculated assuming the excitation field to be a free space field.

$$P_{pwe} = E_{tot}^2 / 3770 \text{ or } P_{pwe} = H_{tot}^2 \cdot 37.7$$

with Ppwe = equivalent power density of a plane wave in mW/cm2
Etot = total electric field strength in V/m

Htot = total magnetic field strength in A/m

# 4 SAR measurement variability and uncertainty

## 4.1 SAR measurement variability

Per KDB865664 D01 SAR measurement 100 MHz to 6 GHz v01r04, SAR measurement variability must be assessed for each frequency band, which is determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. The additional measurements are repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg; steps 2) through 4) do not apply.

2) When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.

3) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).

4) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

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.

## 4.2 SAR measurement uncertainty

Per KDB865664 D01 SAR Measurement 100 MHz to 6 GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg, the extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval. The equivalent ratio (1.5/1.6) is applied to extremity and occupational exposure conditions.

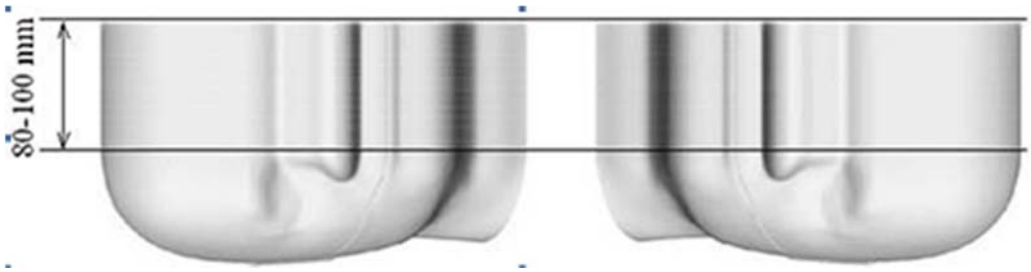
# 5 Description of Test Position

## 5.1 Head Exposure Condition

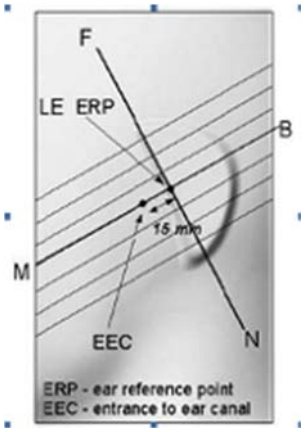
### 5.1.1 SAM Phantom Shape


F-3. Front, back, and side views of SAM (model for the phantom shell). Full-head model is for illustration purposes only-procedures in this recommended practice are intended primarily for the phantom setup.

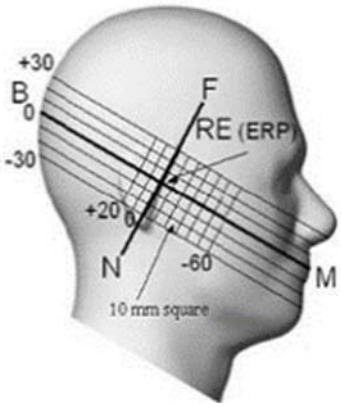
Note: The centre strip including the nose region has a different thickness tolerance.




F-4. Sagittally bisected phantom with extended perimeter (shown placed on its side as used for SAR measurements)

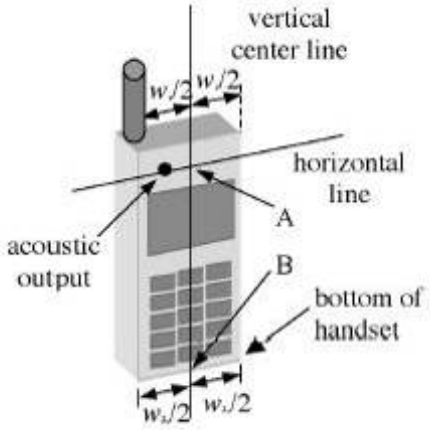



F-5. Close-up side view of phantom, showing the ear region, N-F and B-M lines, and seven cross-sectional plane locations

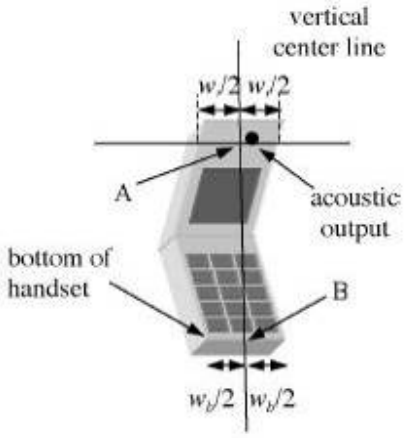



F-6. Side view of the phantom showing relevant markings and seven cross-sectional plane locations

### 5.1.2 EUT constructions




F-7. Handset vertical and horizontal reference lines-“fixed case”




F-8. Handset vertical and horizontal reference lines-“clam-shell case”

### 5.1.3 Definition of the “cheek” position

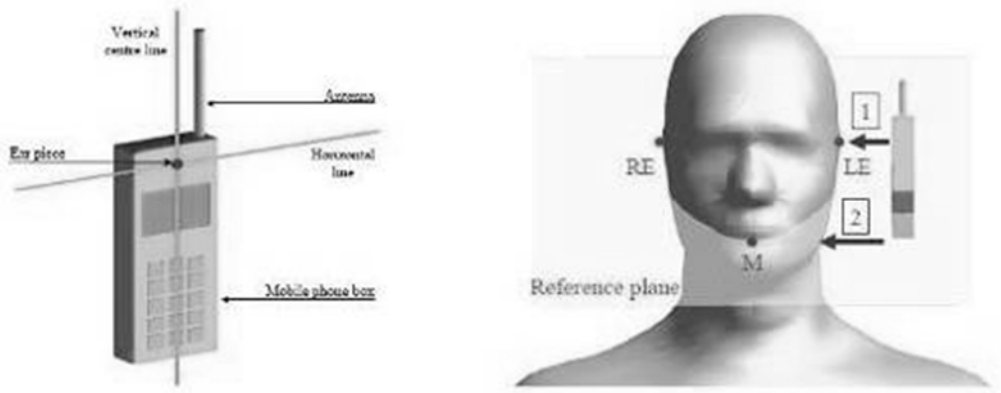
a) Position the device with the vertical centre line of the body of the device and the horizontal line crossing the centre of the ear piece in a plane parallel to the sagittal plane of the phantom ("initial position"). While maintaining the device in this plane, align the vertical centre line with the reference plane containing the three ear and mouth reference points (M, RE and LE) and align the centre of the ear piece with the line RE-LE.

b) Translate the mobile phone box towards the phantom with the ear piece aligned with the line LE-RE until telephone touches the ear. While maintaining the device in the reference plane and maintaining the phone contact with the ear, move the bottom of the box until any point on the front side is in contact with the cheek of the phantom or until contact with the ear is lost.

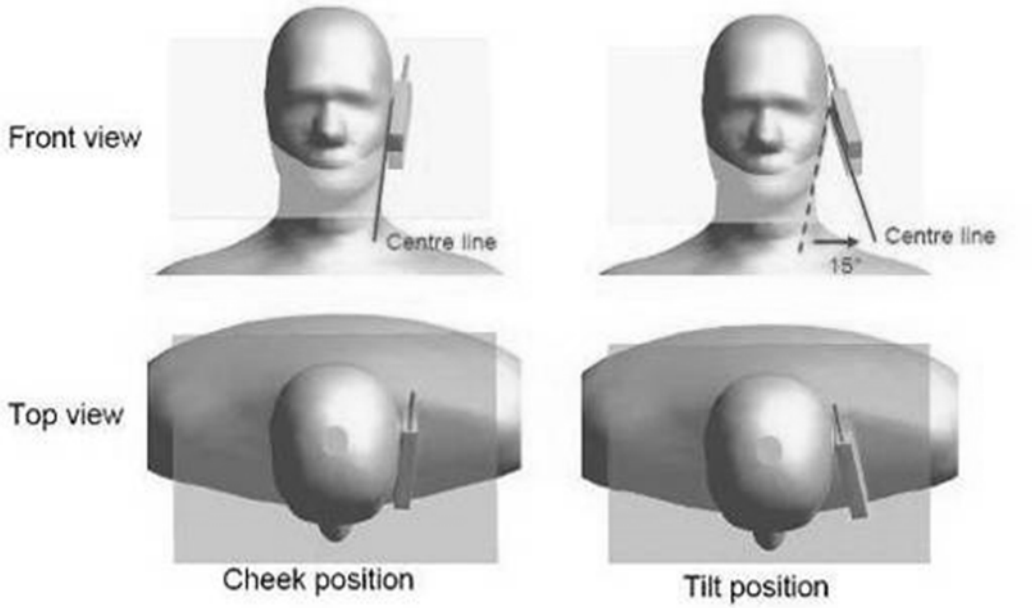
### 5.1.4 Definition of the "tilted" position

a) Position the device in the "cheek" position described above;

b) While maintaining the device in the reference plane described above and pivoting against the ear, move it outward away from the mouth by an angle of 15 degrees or until contact with the ear is lost.




F-9. **Definition of the reference lines and points, on the phone and on the phantom and initial position**




F-10. **"Cheek" and "tilt" positions of the mobile phone on the left side**

## 5.2 Body Exposure Condition

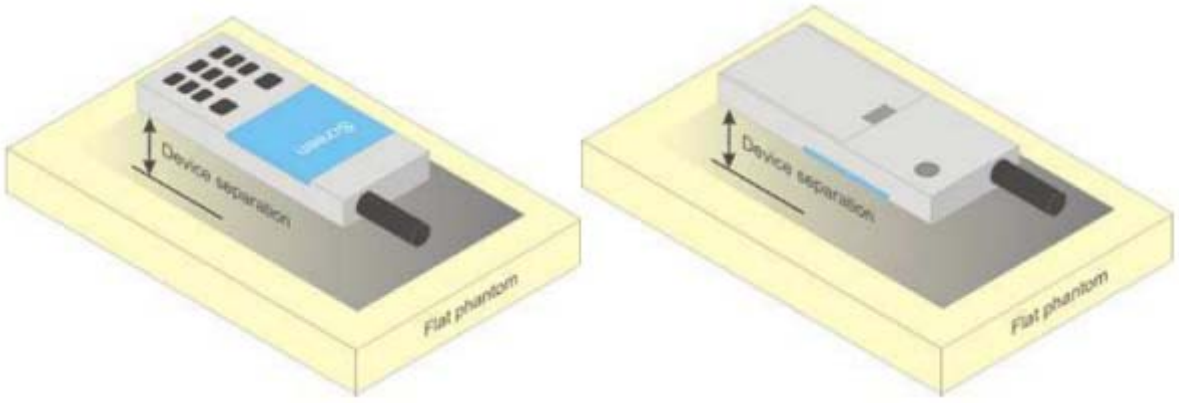
### 5.2.1 Body-worn accessory exposure conditions

Body-worn operating configurations should be tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in normal use configurations.

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. Per FCC KDB Publication 648474 D04, 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 Publication 447498 D01 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 a body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset 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 tested 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.

Body-worn accessories may not always be supplied or available as options for some devices intended to be authorized for body-worn use. In this case, a test configuration with a separation distance between the back of the device and the flat phantom is used. Test position spacing was documented. Transmitters that are designed to operate in front of a person's face, as in push-to-talk configurations, are tested for SAR compliance with the front of the device positioned to face the flat phantom in head fluid. For devices that are carried next to the body such as a shoulder, waist or chest-worn transmitters, SAR compliance is tested with the accessories, including headsets and microphones, attached to the device and positioned against a flat phantom in a normal use configuration.




F-11. **Test positions for body-worn devices**

### 5.2.2 Wireless Router exposure conditions

Some battery-operated handsets have the capability to transmit and receive user data through simultaneous transmission of WIFI simultaneously with a separate licensed transmitter. The FCC has provided guidance in FCC KDB Publication 941225 D06 where SAR test considerations for handsets (L x W ≥ 9 cm x 5 cm) are based on a composite test separation distance of 10 mm from the front, back and edges of the device containing transmitting antennas within 2.5 cm of their edges, determined from general mixed use conditions for this type of devices. For devices with form factors smaller than 9 cm x 5 cm, a test separation distance of 5 mm is required.

# 6 SAR System Check Procedure

## 6.1 Tissue Simulate Liquid

### 6.1.1 Recipes for Tissue Simulate Liquid

The bellowing tables give the recipes for tissue simulating liquids to be used in different frequency bands：

| Ingredients (% by weight) | Frequency (MHz) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 450 | | 835 | | 1800-2000 | | 2300-2700 | |
| Tissue Type | Head | Body | Head | Body | Head | Body | Head | Body |
| Water | 38.56 | 51.16 | 40.30 | 50.75 | 55.24 | 70.17 | 55.00 | 68.53 |
| Salt (NaCl) | 3.95 | 1.49 | 1.38 | 0.94 | 0.31 | 0.39 | 0.2 | 0.1 |
| Sucrose | 56.32 | 46.78 | 57.90 | 48.21 | 0 | 0 | 0 | 0 |
| HEC | 0.98 | 0.52 | 0.24 | 0 | 0 | 0 | 0 | 0 |
| Bactericide | 0.19 | 0.05 | 0.18 | 0.10 | 0 | 0 | 0 | 0 |
| Tween | 0 | 0 | 0 | 0 | 44.45 | 29.44 | 44.80 | 31.37 |
| Salt: 99+% Pure Sodium Chloride<br>Water: De-ionized, 16 MΩ+ resistivity<br>Tween: Polyoxyethylene (20) sorbitan monolaurate | | | | | Sucrose: 98+% Pure Sucrose<br>HEC: Hydroxyethyl Cellulose | | | |
| HSL5GHz is composed of the following ingredients：<br>Water：50-65%<br>Mineral oil：10-30%<br>Emulsifiers：8-25%<br>Sodium salt：0-1.5% | | | | | | | | |
| MSL5GHz is composed of the following ingredients：<br>Water：64-78%<br>Mineral oil：11-18%<br>Emulsifiers：9-15%<br>Sodium salt：2-3% | | | | | | | | |

Table 3：Recipe of Tissue Simulate Liquid

### 6.1.2 Measurement for Tissue Simulate Liquid

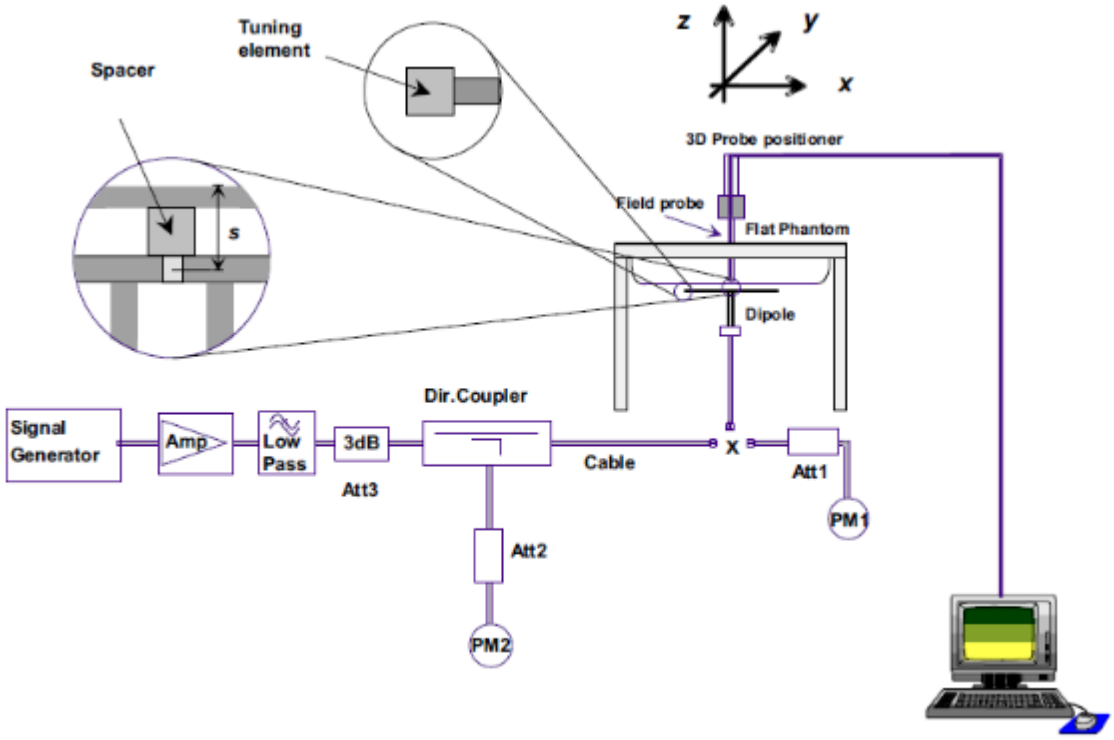
The dielectric properties for this Tissue Simulate Liquids were measured by using the Agilent Model 85070E Dielectric Probe in conjunction with Agilent E5071C Network Analyzer (300 KHz-8500 MHz). The Conductivity (σ) and Permittivity (ρ) are listed in bellow table. For the SAR measurement given in this report. The temperature variation of the Tissue Simulate Liquids was 22±2°C.

| Measurement for Tissue Simulate Liquid | | | | | | | |
|---|---|---|---|---|---|---|---|
| Tissue Type | Measured Frequency (MHz) | Target Tissue (±5%) | | Measured Tissue | | Liquid Temp. | Measured Date |
| | | $\varepsilon_r$ | σ(S/m) | $\varepsilon_r$ | σ(S/m) | (℃) | |
| 835 Head | 835 | 41.5 (39.43~43.58) | 0.90 (0.86~0.95) | 42.113 | 0.905 | 22.1 | 2018/3/13 |
| 835 Body | 835 | 55.2 (52.44~57.96) | 0.97 (0.92~1.02) | 54.389 | 0.986 | 22.1 | 2018/3/17 |
| 1750 Head | 1750 | 40.1 (38.10~42.11) | 1.37 (1.30~1.44) | 38.467 | 1.328 | 22.2 | 2018/3/14 |
| 1750 Body | 1750 | 53.4 (50.73~56.07) | 1.49 (1.42~1.56) | 53.127 | 1.547 | 22.2 | 2018/3/15 |
| 1900 Head | 1900 | 40.0 (38.00~42.00) | 1.40 (1.33~1.47) | 40.58 | 1.373 | 22.3 | 2018/3/14 |
| 1900 Body | 1900 | 53.3 (50.64~55.97) | 1.52 (1.44~1.60) | 53.237 | 1.51 | 22.3 | 2018/3/15 |
| 2300 Head | 2300 | 39.5 (37.53~41.48) | 1.61 (1.53~1.69) | 38.576 | 1.687 | 22.1 | 2018/3/18 |
| 2300 Body | 2300 | 52.9 (50.26~55.55) | 1.81 (1.71~1.89) | 52.996 | 1.773 | 22.1 | 2018/3/21 |
| 2450 Head | 2450 | 39.20 (37.24~41.16) | 1.80 (1.71~1.89) | 38.488 | 1.878 | 22 | 2018/4/2 |
| 2450 Body | 2450 | 52.70 (50.07~55.34) | 1.95 (1.85~2.05) | 50.802 | 1.938 | 22 | 2018/4/2 |
| 2600 Head | 2600 | 39.0 (37.05~40.95) | 1.96 (1.86~2.06) | 37.449 | 2.026 | 22.1 | 2018/3/19 |
| 2600 Head | 2600 | 39.0 (37.05~40.95) | 1.96 (1.86~2.06) | 38.949 | 1.978 | 22.1 | 2018/3/22 |
| 2600 Body | 2600 | 52.50 (49.88~55.13) | 2.16 (2.05~2.27) | 52.093 | 2.158 | 22.1 | 2018/3/20 |

Table 1： Measurement result of Tissue electric parameters

## 6.2 SAR System Check

The microwave circuit arrangement for system check is sketched in bellow figure. The daily system accuracy verification occurs within the flat section of the SAM phantom. A SAR measurement was performed to see if the measured SAR was within +/- 10% from the target SAR values. The tests were conducted on the same days as the measurement of the EUT. The obtained results from the system accuracy verification are displayed in the following table. During the tests, the ambient temperature of the laboratory was in the range 22±2°C, the relative humidity was in the range 60% and the liquid depth above the ear reference points was above 15 cm in all the cases. It is seen that the system is operating within its specification, as the results are within acceptable tolerance of the reference values.




F-12. the microwave circuit arrangement used for SAR system check

### 6.2.1 Justification for Extended SAR Dipole Calibrations

1) Referring to KDB865664 D01 requirements for dipole calibration, instead of the typical annual calibration recommended by measurement standards, longer calibration intervals of up to three years may be considered when it is demonstrated that the SAR target, impedance and return loss of a dipole have remain stable according to the following requirements. Each measured dipole is expected to evaluate with the following criteria at least on annual interval in Appendix C.
a) There is no physical damage on the dipole;
b) System check with specific dipole is within 10% of calibrated value;
c) Return-loss is within 10% of calibrated measurement;
d) Impedance is within 5Ω from the previous measurement.

2) Network analyzer probe calibration against air, distilled water and a shorting block performed before measuring liquid parameters.

### 6.2.2 Summary System Check Result(s)

| Validation Kit | | Measured SAR 250mW | Measured SAR 250mW | Measured SAR (normalized to 1w) | Measured SAR (normalized to 1w) | Target SAR (normalized to 1w) (±10%) | Target SAR (normalized to 1w) (±10%) | Liquid Temp. (℃) | Measured Date |
|---|---|---|---|---|---|---|---|---|---|
| | | 1g (W/kg) | 10g (W/kg) | 1g (W/kg) | 10g (W/kg) | 1-g(W/kg) | 10-g(W/kg) | | |
| D835V2 | Head | 2.47 | 1.64 | 9.88 | 6.56 | 9.59 (8.63~10.55) | 6.29 (5.66~6.92) | 22.1 | 2018/3/13 |
| | Body | 2.45 | 1.6 | 9.8 | 6.4 | 9.65 (8.69~10.62) | 6.46 (5.81~7.11) | 22.1 | 2018/3/17 |
| D1750V2 | Head | 8.8 | 4.72 | 35.2 | 18.88 | 36.7 (33.03~40.37) | 19.5 (17.55~21.45) | 22.2 | 2018/3/14 |
| | Body | 9.6 | 5.09 | 38.4 | 20.36 | 37 (33.30~40.70) | 19.7 (17.73~21.67) | 22.2 | 2018/3/15 |
| D1900V2 | Head | 10.2 | 5.27 | 40.8 | 21.08 | 40.7 (36.63~44.77) | 21.1 (18.99~23.21) | 22.3 | 2018/3/14 |
| | Body | 10.8 | 5.68 | 43.2 | 22.72 | 41.6 (37.44~45.76) | 21.4 (19.26~23.54) | 22.3 | 2018/3/15 |
| D2300V2 | Head | 12.6 | 6 | 50.4 | 24 | 48.1 (43.29~52.91) | 23.1 (20.79~25.41) | 21.8 | 2018/3/18 |
| | Body | 11.6 | 5.64 | 46.4 | 22.56 | 47.5 (42.75~52.25) | 22.9 (20.61~25.19) | 21.9 | 2018/3/21 |
| D2450V2 | Head | 13.7 | 6.33 | 54.8 | 25.32 | 53.1 (47.79~58.41) | 24.9 (22.41~27.39) | 22 | 2018/4/2 |
| | Body | 12.4 | 5.83 | 49.6 | 23.32 | 51.0 (45.9~56.1) | 23.5 (21.15~25.85) | 22 | 2018/4/2 |
| D2600V2 | Head | 14.4 | 6.33 | 57.6 | 25.32 | 56.6 (50.94~62.26) | 25.4 (22.86~27.94) | 22.1 | 2018/3/19 |
| | Head | 13.9 | 6.18 | 55.6 | 24.72 | 56.6 (50.94~62.26) | 25.4 (22.86~27.94) | 22.1 | 2018/3/22 |
| | Body | 13.3 | 6.01 | 53.2 | 24.04 | 54.2 (48.78~59.62) | 24.3 (21.87~26.73) | 22.1 | 2018/3/20 |

Table 2： SAR System Check Result

### 6.2.3 Detailed System Check Results

Please see the Appendix A

# 7 Test Configuration

## 7.1 3G SAR Test Reduction Procedure

According to KDB 941225D01, in the following procedures, the mode tested for SAR is referred to as the primary mode. The equivalent modes considered for SAR test reduction are denoted as secondary modes. Both primary and secondary modes must be in the same frequency band. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode. This is referred to as the 3G SAR test reduction procedure in the following SAR test guidance, where the primary mode is identified in the applicable wireless mode test procedures and the secondary mode is wireless mode being considered for SAR test reduction by that procedure. When the 3G SAR test reduction procedure is not satisfied, it is identified as “otherwise” in the applicable procedures; SAR measurement is required for the secondary mode.

## 7.2 Operation Configurations

### 7.2.1 GSM Test Configuration

SAR tests for GSM 850 and GSM 1900, a communication link is set up with a base station by air link. Using CMU200 the power lever is set to “5”and “0” in SAR of GSM 850 and GSM 1900. The tests in the band of GSM 850 and GSM 1900 are performed in the mode of GPRS/EGPRS function. Since the GPRS class is 33 for this EUT, it has at most 4 timeslots in uplink and at most 5 timeslots in downlink, the maximum total timeslot is 6. The EGPRS class is 33 for this EUT, it has at most 4 timeslots in uplink, and at most 5 timeslots in downlink, the maximum total timeslot is 6.

SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power specified for production units, including tune-up tolerance. The data 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.

When SAR tests for EGPRS mode is necessary, GMSK modulation should be used to minimize SAR measurement error due to higher peak-to-average power (PAR) ratios inherent in 8-PSK.

The 3G SAR test reduction procedure is applied to 8-PSK EDGE with GMSK GPRS/EDGE as the primary mode

### 7.2.2 CDMA Test Configuration

**1）. 1x RTT Handsets**

The following procedures apply to CDMA 2000 Release 0 and Release A single carrier (1x RTT) handsets operating with Mobile Protocol Revision 6 or 7 (MOB_P_REV 6 or 7). The default test configuration is to measure SAR in RC3 with an established radio link between the handset and a communication test set. SAR in RC1 is selectively confirmed according to the 3G SAR test reduction procedure with RC3 as the primary mode. The forward and reverse links are configured with the same RC for SAR measurement. Maximum output power is verified by applying the procedures defined in 3GPP2 C. S0011 and TIA-98-E. SAR must be measured according to these maximum output conditions and requirements in KDB Publication 447498 D01.

**2）. Output Power Verification**

Maximum output power is verified on the high, middle and low channels according to procedures in section 4.4.5.2 of 3GPP2 C.S0011/TIA-98-E. Results for at least steps 3, 4 and 10 of the power measurement procedures are required in the SAR report. Steps 3 and 4 are measured using Loopback Service Option SO55 with power control bits in “All Up” condition. TDSO/SO32 may be used instead of SO55 for step 4. Step 10 is measured using TDSO/SO32 with power control bits in the “Bits Hold” condition (i.e. alternative Up/Down Bits). All power measurements defined in C.S0011/TIA-98-E that are inapplicable to the handset or cannot be measured due to technical or equipment limitations must be clearly identified in the test report.

**3）. Head SAR**

SAR for next to the ear head exposure is measured in RC3 with the handset configured to transmit at full rate in SO55. The 3G SAR test reduction procedure is applied to RC1 with RC3 as the primary mode; otherwise, SAR is required for the channel with maximum measured output in RC1 using the head exposure configuration that results in the highest reported SAR in RC3.

**4）. Body-Worn Accessory SAR**

Body-worn accessory SAR is measured in RC3 with the handset configured in TDSO/SO32 to transmit at full rate on FCH only with all other code channels disabled. The body-worn accessory procedures in KDB Publication 447498 D01 are applied. The 3G SAR test reduction procedure is applied to the multiple code channel configuration (FCH+SCHn), with FCH only as the primary mode. Otherwise, SAR is required for multiple code channel configuration (FCH + SCHn), with FCH at full rate and SCH0 enabled at 9600 bps, using the highest reported SAR configuration for FCH only. When multiple code channels are enabled, the transmitter output can shift by more than 0.5 dB and may lead to higher SAR drifts and SCH dropouts.

The 3G SAR test reduction procedure is applied to body-worn accessory SAR in RC1 with RC3 as the primary mode. Otherwise, SAR is required for RC1, with SO55 and full rate, using the highest reported SAR configuration for body-worn accessory exposure in RC3.

**5）. Handsets with built-in Ev-Do**

For handsets with Ev-Do capabilities, the 3G SAR test reduction procedure is applied to Ev-Do Rev. 0 with 1x RTT RC3 as the primary mode to determine body-worn accessory test requirements. Otherwise, body-worn accessory SAR is required for Rev. 0, at 153.6 kbps, using the highest reported SAR configuration for body-worn accessory exposure in RC3.

The 3G SAR test reduction procedure is applied separately to Rev. A and Rev. B, with Rev. 0 as the primary mode to determine body-worn accessory SAR test requirements. When SAR is not required for Rev. 0, the 3G SAR test reduction is applied with 1x RTT RC3 as the primary mode. Otherwise, SAR is required for Rev. A or Rev. B, with a Reverse Data Channel payload size of 4096 bits and a Termination Target of 16 slots defined for Subtype 2 and 3 Physical Layer configurations, using the highest reported SAR configuration for body-worn accessory exposure in Rev. 0 or RC3, as appropriate.

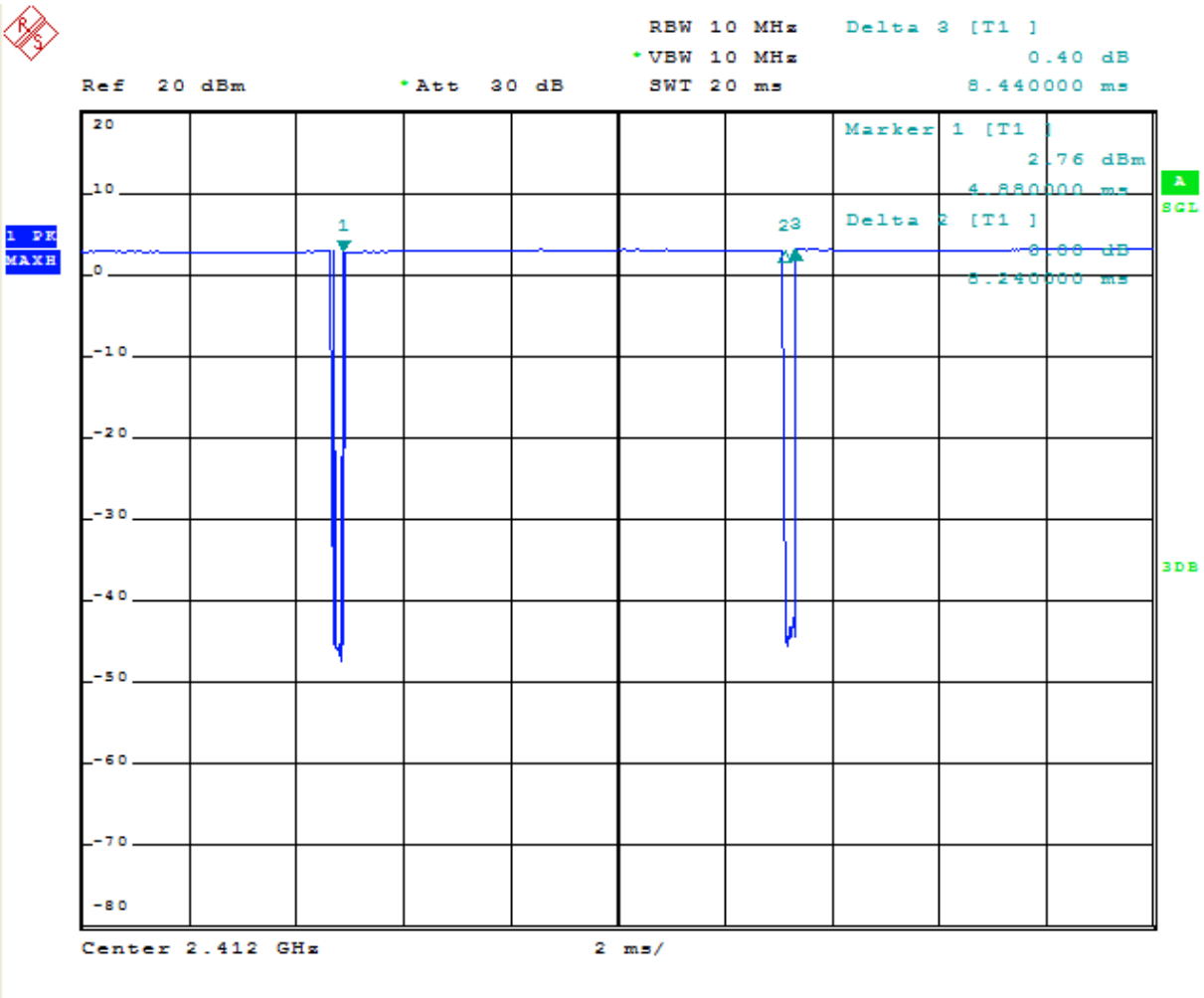
A Forward Traffic Channel data rate corresponding to the 2-slot version of 307.2 kbps with ACK Channel transmitting in all slots is configured in the downlink for Rev. 0, Rev. A and Rev. B

## 7.2.3 WiFi Test Configuration

A Wi-Fi device must be configured to transmit continuously at the required data rate, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools for SAR measurement.

### 7.2.3.1 Duty cycle

2.4GHz Wi-Fi 802.11b:
duty cycle=8.24/8.44=97.63%



#### 7.2.3.2 Initial Test Position SAR Test Reduction Procedure

DSSS and OFDM configurations are considered separately according to the required SAR procedures. SAR is measured in the initial test position using the 802.11 transmission mode configuration required by the DSSS procedure or initial test configuration and subsequent test configuration(s) according to the OFDM procedures. The initial test position procedure is described in the following:

1）. When the reported SAR of the initial test position is ≤ 0.4 W/kg, further SAR measurement is not required for the other (remaining) test positions in that exposure configuration and 802.11 transmission mode combinations within the frequency band or aggregated band. SAR is also not required for that exposure configuration in the subsequent test configuration(s).
2）. When the reported SAR of the initial test position is > 0.4 W/kg, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position using subsequent highest extrapolated or estimated 1-g SAR conditions determined by area scans or next closest/smallest test separation distance and maximum RF coupling test positions based on manufacturer justification, on the highest maximum output power channel, until the reported SAR is ≤ 0.8 W/kg or all required test positions (left, right, touch, tilt or subsequent surfaces and edges) are tested.
3）. For all positions/configurations tested using the initial test position and subsequent test positions, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions/configurations on the subsequent next highest measured output power channel(s) until the reported SAR is ≤ 1.2 W/kg or all required channels are tested. a) Additional power measurements may be required for this step, which should be limited to those necessary for identifying the subsequent highest output power channels.

#### 7.2.3.3 Initial Test Configuration Procedures

An initial test configuration is determined for OFDM transmission modes according to the channel bandwidth, modulation and data rate combination(s) with the highest maximum output power specified for production units in each standalone and aggregated frequency band. SAR is measured using the highest measured maximum output power channel. For configurations with the same specified or measured maximum output power, additional transmission mode and test channel selection procedures are required. SAR test reduction for subsequent highest output test channels is determined according to *reported* SAR of the initial test configuration.
For next to the ear, hotspot mode and UMC mini-tablet exposure configurations where multiple test positions are required, the initial test position procedure is applied to minimize the number of test positions required for SAR measurement using the initial test configuration transmission mode. For fixed exposure conditions that do not have multiple SAR test positions, SAR is measured in the transmission mode determined by the initial test configuration.
When the *reported* SAR of the initial test configuration is > 0.8 W/kg, SAR measurement is required for subsequent next highest measured output power channel(s) in the initial test configuration until *reported* SAR is ≤ 1.2 W/kg or all required channels are tested.

#### 7.2.3.4 Subsequent Test Configuration Procedures

SAR measurement requirements for the remaining 802.11 transmission mode configurations that have not been tested in the initial test configuration are determined separately for each standalone and aggregated frequency band, in each exposure condition, according to the maximum output power specified for production units. The initial test position procedure is applied to next to the ear, UMPC mini-tablet and hotspot mode configurations. When the same maximum output power is specified for multiple transmission modes, additional power measurements may be required to determine if SAR measurements are required for subsequent highest output power channels in a subsequent test configuration. The subsequent test configuration and SAR measurement procedures are described in the following.

1）. When SAR test exclusion provisions of KDB Publication 447498 are applicable and SAR measurement is not required for the initial test configuration, SAR is also not required for the next highest maximum output power transmission mode subsequent test configuration(s) in that frequency band or aggregated band and exposure configuration.
2）. When the highest *reported* SAR for the initial test configuration (when applicable, include subsequent highest output channels), according to the initial test position or fixed exposure position requirements, is adjusted by the ratio of the subsequent test configuration to initial test configuration specified maximum

output power and the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for that subsequent test configuration.

3）. The number of channels in the initial test configuration and subsequent test configuration can be different due to differences in channel bandwidth. When SAR measurement is required for a subsequent test configuration and the channel bandwidth is smaller than that in the initial test configuration, all channels in the subsequent test configuration that overlap with the larger bandwidth channel tested in the initial test configuration should be used to determine the highest maximum output power channel. This step requires additional power measurement to identify the highest maximum output power channel in the subsequent test configuration to determine SAR test reduction.

a) SAR should first be measured for the channel with highest measured output power in the subsequent test configuration.

b) SAR for subsequent highest measured maximum output power channels in the subsequent test configuration is required only when the *reported* SAR of the preceding higher maximum output power channel(s) in the subsequent test configuration is > 1.2 W/kg or until all required channels are tested. i) For channels with the same measured maximum output power, SAR should be measured using the channel closest to the center frequency of the larger channel bandwidth channel in the initial test configuration.

4）. SAR measurements for the remaining highest specified maximum output power OFDM transmission mode configurations that have not been tested in the initial test configuration (highest maximum output) or subsequent test configuration(s) (subsequent next highest maximum output power) is determined by recursively applying the subsequent test configuration procedures in this section to the remaining configurations according to the following:

a) replace “subsequent test configuration” with “next subsequent test configuration” (i.e., subsequent next highest specified maximum output power configuration)

b) replace “initial test configuration” with “all tested higher output power configurations”

#### 7.2.3.5 2.4 GHz WiFi SAR Procedures

Separate SAR procedures are applied to DSSS and OFDM configurations in the 2.4 GHz band to simplify DSSS test requirements. For 802.11b DSSS SAR measurements, DSSS SAR procedure applies to fixed exposure test position and initial test position procedure applies to multiple exposure test positions. When SAR measurement is required for an OFDM configuration, the initial test configuration, subsequent test configuration and initial test position procedures are applied. The SAR test exclusion requirements for 802.11g/n OFDM configurations are described in following.

- **802.11b DSSS SAR Test Requirements**

SAR is measured for 2.4 GHz 802.11b DSSS using either a fixed test position or, when applicable, the initial test position procedure. SAR test reduction is determined according to the following:

1）. When the reported SAR of the highest measured maximum output power channel for the exposure configuration is ≤ 0.8 W/kg, no further SAR testing is required for 802.11b DSSS in that exposure configuration.

2）. When the reported SAR is > 0.8 W/kg, SAR is required for that exposure configuration using the next highest measured output power channel. When any reported SAR is > 1.2 W/kg, SAR is required for the third channel; i.e., all channels require testing.

- **2.4 GHz 802.11g/n OFDM SAR Test Exclusion Requirements**

When SAR measurement is required for 2.4 GHz 802.11g/n OFDM configurations, the measurement and test reduction procedures for OFDM are applied (section 5.3, including sub-sections). SAR is not required for the following 2.4 GHz OFDM conditions.

1）. When KDB Publication 447498 SAR test exclusion applies to the OFDM configuration.

2）. When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg.

- **SAR Test Requirements for OFDM configurations**

When SAR measurement is required for 802.11 g/n OFDM configurations, each standalone and frequency aggregated band is considered separately for SAR test reduction. In applying the initial test configuration and subsequent test configuration procedures, the 802.11 transmission configuration with the highest specified maximum output power and the channel within a test configuration with the highest measured maximum output power should be clearly distinguished to apply the procedures.

### 7.2.1 LTE Test Configuration

LTE modes were tested according to FCC KDB 941225 D05 publication. Please see notes after the tabulated SAR data for required test configurations. Establishing connections with base station simulators ensure a consistent means for testing SAR and are recommended for evaluating SAR [4]. The R&S CMW500 was used for LTE output power measurements and SAR testing. Max power control was used so the UE transmits with maximum output power during SAR testing. SAR must be measured with the maximum TTI (transmit time interval) supported by the device in each LTE configuration.

**TDD LTE test consideration**

For Time-Division Duplex (TDD) systems, SAR must be tested using a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by the defined 3GPP LTE TDD configurations.

SAR was tested with the highest transmission duty factor (63.33%) using Uplink-downlink configuration 0 and Special subframe configuration 7.

LTE TDD Band support 3GPP TS 36.211 section 4.2 for Type 2 Frame Structure and Table 4.2-2 for uplink-downlink configurations and Table 4.2-1 for Special subframe configurations.

Frame structure type 2:

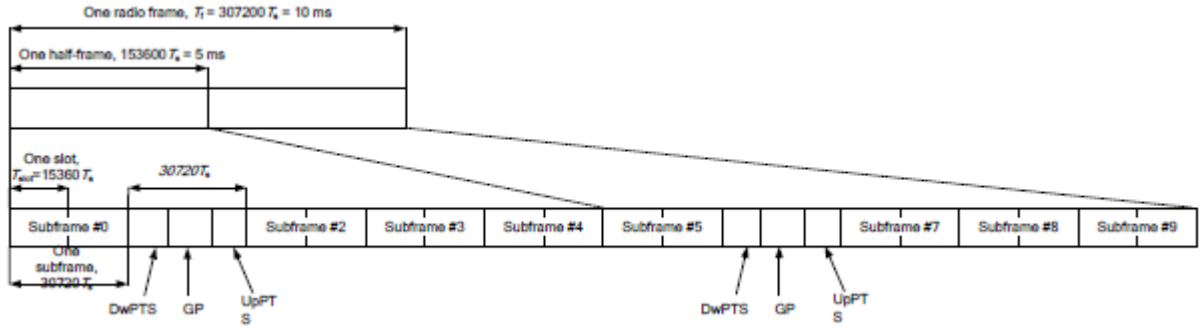



Table 4.2-1: Configuration of special subframe (lengths of DwPTS/GP/UpPTS).

| Special subframe configuration | Normal cyclic prefix in downlink | | | Extended cyclic prefix in downlink | | |
|---|---|---|---|---|---|---|
| | DwPTS | UpPTS | | DwPTS | UpPTS | |
| | | Normal cyclic prefix in uplink | Extended cyclic prefix in uplink | | Normal cyclic prefix in uplink | Extended cyclic prefix in uplink |
| 0 | 6592.Ts | 2192.Ts | 2560.Ts | 7680.Ts | 2192.Ts | 2560.Ts |
| 1 | 19760.Ts | | | 20480.Ts | | |
| 2 | 21952.Ts | | | 23040.Ts | | |
| 3 | 24144.Ts | | | 25600.Ts | | |
| 4 | 26336.Ts | | | 7680.Ts | 4384.Ts | 5120.Ts |
| 5 | 6592.Ts | 4384.Ts | 5120.Ts | 20480.Ts | | |
| 6 | 19760.Ts | | | 23040.Ts | | |
| 7 | 21952.Ts | | | 25600.Ts | | |
| 8 | 24144.Ts | | | - | - | - |
| 9 | 13168.Ts | | | - | - | - |

Table 4.2-2: Uplink-downlink configurations.

| Uplink-downlink configuration | Downlink-to-Uplink Switch-point periodicity | Subframe number | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 0 | 5 ms | D | S | U | U | U | D | S | U | U | U |
| 1 | 5 ms | D | S | U | U | D | D | S | U | U | D |
| 2 | 5 ms | D | S | U | D | D | D | S | U | D | D |
| 3 | 10 ms | D | S | U | U | U | D | D | D | D | D |
| 4 | 10 ms | D | S | U | U | D | D | D | D | D | D |
| 5 | 10 ms | D | S | U | D | D | D | D | D | D | D |
| 6 | 5 ms | D | S | U | U | U | D | S | U | U | D |

**Calculated Duty Cycle=[Extended cyclic prefix in uplink x (Ts) x # of S + # of U]/10ms**

| Uplink-Downlink Configuration | Downlink-to-Uplink Switch-point Periodicity | Subframe Number | | | | | | | | | | Calculated Duty Cycle (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| 0 | 5 ms | D | S | U | U | U | D | S | U | U | U | 63.33 |
| 1 | 5 ms | D | S | U | U | D | D | S | U | U | D | 43.33 |
| 2 | 5 ms | D | S | U | D | D | D | S | U | D | D | 23.33 |
| 3 | 10 ms | D | S | U | U | U | D | D | D | D | D | 31.67 |
| 4 | 10 ms | D | S | U | U | D | D | D | D | D | D | 21.67 |
| 5 | 10 ms | D | S | U | D | D | D | D | D | D | D | 11.67 |
| 6 | 5 ms | D | S | U | U | U | D | S | U | U | D | 53.33 |

**A) Spectrum Plots for RB Configurations**

A properly configured base station simulator was used for SAR tests and power measurements. Therefore, spectrum plots for RB configurations were not required to be included in this report.

**B ) MPR**

MPR is permanently implemented for this device by the manufacturer. The specific manufacturer target MPR is indicated alongside the SAR results. MPR is enabled for this device, according to 3GPP TS36.101 V13.5.0 (201609) Section 6.2.3 – 6.2.5 under Table 6.2.3-1.

| Modulation | Channel bandwidth / Transmission bandwidth ($N_{RB}$) | | | | | | 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 |

**C) A-MPR**

A-MPR (Additional MPR) has been disabled for all SAR tests by setting NS=01 on the base station simulator.

**D) Largest channel bandwidth standalone SAR test requirements**

1) QPSK with 1 RB allocation

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. When the reported SAR is ≤ 0.8 W/kg, testing of the

remaining RB offset configurations and required test channels is not required for 1 RB allocation; otherwise, SAR is required for the remaining required test channels and only for the RB offset configuration with the highest output power for that channel. When the reported SAR of a required test channel is > 1.45 W/kg, SAR is required for all three RB offset configurations for that required test channel.

2) QPSK with 50% RB allocation
The procedures required for 1 RB allocation in 1) are applied to measure the SAR for QPSK with 50% RB allocation.
3) QPSK with 100% RB allocation
For 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 in 1) and 2) 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.

4) Higher order modulations
For each modulation besides QPSK; e.g., 16-QAM, 64-QAM, apply the QPSK procedures in above sections to mnrequired for testing, SAR is required only when the highest maximum output power for the configuration in the higher order modulation is > ½ dB higher than the same configuration in QPSK or when the reported SAR for the QPSK configuration is > 1.45 W/kg.

**E) Other channel bandwidth standalone SAR test requirements**
For the other channel bandwidths used by the device in a frequency band, apply all the procedures required for the largest channel bandwidth in section A) to determine the channels and RB configurations that need SAR testing and only measure SAR when the highest maximum output power of a configuration requiring testing in the smaller channel bandwidth is > ½ dB higher than the equivalent channel configurations in the largest channel bandwidth configuration or the reported SAR of a configuration for the largest channel bandwidth is > 1.45 W/kg.

# 8 Test Result

## 8.1 Measurement of RF Conducted Power

### 8.1.1 Conducted Power Of GSM

| GSM 850 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Burst Output Power(dBm) | | | | | Tune up | Division Factors | Frame-Average Output Power(dBm) | | | Tune up |
| Channel | | 128 | 190 | 251 | | | 128 | 190 | 251 | |
| GSM (GMSK) | GSM | 32.20 | 32.30 | 32.40 | 33 | -9.19 | 23.01 | 23.11 | 23.21 | 23.81 |
| GPRS/EGPRS (GMSK) | 1 TX Slot | 32.17 | 32.21 | 32.34 | 33 | -9.19 | 22.98 | 23.02 | 23.15 | 23.81 |
| | 2 TX Slots | 32.14 | 32.2 | 32.27 | 33 | -6.18 | 25.96 | 26.02 | 26.09 | 26.82 |
| | 3 TX Slots | 30.55 | 30.84 | 30.69 | 31 | -4.42 | 26.13 | 26.42 | 26.27 | 26.58 |
| | 4 TX Slots | 29.88 | 29.79 | 29.72 | 30 | -3.17 | 26.71 | 26.62 | 26.55 | **26.83** |
| EGPRS (8PSK) | 1 TX Slot | 25.63 | 25.82 | 25.74 | 26 | -9.19 | 16.44 | 16.63 | 16.55 | 16.81 |
| | 2 TX Slots | 25.63 | 25.81 | 25.66 | 26 | -6.18 | 19.45 | 19.63 | 19.48 | 19.82 |
| | 3 TX Slots | 23.64 | 23.62 | 23.53 | 24 | -4.42 | 19.22 | 19.20 | 19.11 | 19.58 |
| | 4 TX Slots | 22.52 | 22.48 | 22.33 | 23 | -3.17 | 19.35 | 19.31 | 19.16 | 19.83 |
| **GSM 1900** | | | | | | | | | | |
| Burst Output Power(dBm) | | | | | Tune up | Division Factors | Frame-Average Output Power(dBm) | | | Tune up |
| Channel | | 512 | 661 | 810 | | | 512 | 661 | 810 | |
| GSM (GMSK) | GSM | 29.61 | 29.45 | 29.03 | 30 | -9.19 | 20.42 | 20.26 | 19.84 | 20.81 |
| GPRS/EGPRS (GMSK) | 1 TX Slot | 29.29 | 29.44 | 29.00 | 30 | -9.19 | 20.1 | 20.25 | 19.81 | 20.81 |
| | 2 TX Slots | 28.71 | 28.56 | 28.82 | 29 | -6.18 | 22.53 | 22.38 | 22.64 | 22.82 |
| | 3 TX Slots | 28.21 | 27.99 | 27.96 | 29 | -4.42 | 23.79 | 23.57 | 23.54 | 24.58 |
| | 4 TX Slots | 27.42 | 26.96 | 26.78 | 28 | -3.17 | 24.25 | 23.79 | 23.61 | **24.83** |
| EGPRS (8PSK) | 1 TX Slot | 26.34 | 26.41 | 26.32 | 27 | -9.19 | 17.15 | 17.22 | 17.13 | 17.81 |
| | 2 TX Slots | 25.58 | 25.52 | 25.41 | 26 | -6.18 | 19.40 | 19.34 | 19.23 | 19.82 |
| | 3 TX Slots | 25.25 | 25.17 | 24.97 | 26 | -4.42 | 20.83 | 20.75 | 20.55 | 21.58 |
| | 4 TX Slots | 25.02 | 25.00 | 24.99 | 26 | -3.17 | 21.85 | 21.83 | 21.82 | 22.83 |

Table 3: Conducted Power Of GSM

Note:

1) CMW500 measures GSM peak and average output power for active timeslots. For SAR the time based average power is relevant. The difference in between depends on the duty cycle of the TDMA signal:

| No. of timeslots | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Duty Cycle | 1:8.3 | 1:4.15 | 1:2.77 | 1:2.075 |
| Time based avg. power compared to slotted avg. power | -9.19 | -6.18 | -4.42 | -3.17 |

2) The frame-averaged power is linearly proportion to the slot number configured and it is linearly scaled the maximum burst-averaged power based on time slots.

### 8.1.2 Conducted Power Of CDMA

| CDMA BC0(850MHz) | | | | | |
|---|---|---|---|---|---|
| Average Conducted Power(dBm) | | | | | |
| Channel | | 1013 | 384 | 777 | Tune up |
| 1xRTT | RC1 SO55 (Loopback) | 21.50 | 21.60 | 21.40 | 22 |
| | RC3 SO55 (Loopback) | 21.34 | 21.25 | 21.17 | 22 |
| | RC3 SO32 (+FCH) | 21.21 | 21.12 | 21.04 | 22 |
| | RC3 SO32 (FCH+SCH) | 21.16 | 21.05 | 21.00 | 22 |
| 1xEVDO | RTAP 153.6Kbps | 21.62 | 21.37 | 21.24 | 22 |
| | RETAP 4096Bits | 21.42 | 21.21 | 21.11 | 22 |

Table 4：Conducted Power Of CDMA

### 8.1.3 Conducted Power Of LTE

| LTE Band 2 | | | | Conducted Power(dBm) | | | |
|---|---|---|---|---|---|---|---|
| Bandwidth | Modulation | RB size | RB offset | Channel 18607 | Channel 18900 | Channel 19193 | Tune up |
| 1.4MHz | QPSK | 1 | 0 | 21.9 | 21.72 | 21.54 | 22 |
| | | 1 | 2 | 21.77 | 21.78 | 21.75 | 22 |
| | | 1 | 5 | 21.83 | 21.77 | 21.55 | 22 |
| | | 3 | 0 | 21.91 | 21.66 | 21.66 | 22 |
| | | 3 | 2 | 21.92 | 21.78 | 21.62 | 22 |
| | | 3 | 3 | 21.86 | 21.8 | 21.67 | 22 |
| | | 6 | 0 | 20.81 | 20.67 | 20.46 | 21 |
| | 16QAM | 1 | 0 | 21.08 | 20.47 | 20.02 | 21.5 |
| | | 1 | 2 | 21.22 | 20.93 | 20.68 | 21.5 |
| | | 1 | 5 | 20.71 | 20.36 | 20.36 | 21.5 |
| | | 3 | 0 | 20.89 | 20.93 | 20.73 | 21.5 |
| | | 3 | 2 | 20.88 | 21.04 | 20.77 | 21.5 |
| | | 3 | 3 | 20.74 | 20.96 | 20.89 | 21.5 |
| | | 6 | 0 | 19.7 | 19.55 | 19.54 | 20 |
| Bandwidth | Modulation | RB size | RB offset | Channel 18615 | Channel 18900 | Channel 19185 | Tune up |
| 3MHz | QPSK | 1 | 0 | 21.84 | 21.79 | 21.72 | 22 |
| | | 1 | 7 | 21.96 | 21.84 | 21.54 | 22 |
| | | 1 | 14 | 21.97 | 21.87 | 21.89 | 22 |
| | | 8 | 0 | 20.79 | 20.69 | 20.67 | 21 |
| | | 8 | 4 | 20.82 | 20.66 | 20.64 | 21 |
| | | 8 | 7 | 20.83 | 20.67 | 20.65 | 21 |
| | | 15 | 0 | 20.86 | 20.68 | 20.64 | 21 |
| | 16QAM | 1 | 0 | 20.88 | 20.35 | 20.36 | 21 |
| | | 1 | 7 | 20.75 | 20.64 | 20.62 | 21 |
| | | 1 | 14 | 20.48 | 20.33 | 20.36 | 21 |
| | | 8 | 0 | 19.89 | 19.4 | 19.53 | 20.5 |
| | | 8 | 4 | 19.97 | 19.41 | 19.64 | 20.5 |
| | | 8 | 7 | 20.06 | 19.38 | 19.8 | 20.5 |
| | | 15 | 0 | 19.87 | 19.81 | 19.56 | 20 |
| Bandwidth | Modulation | RB size | RB offset | Channel 18625 | Channel 18900 | Channel 19175 | Tune up |
| 5MHz | QPSK | 1 | 0 | 21.87 | 21.87 | 21.57 | 22.5 |
| | | 1 | 13 | 22.39 | 22.2 | 21.91 | 22.5 |
| | | 1 | 24 | 21.86 | 21.7 | 21.6 | 22.5 |
| | | 12 | 0 | 20.78 | 20.57 | 20.62 | 21 |
| | | 12 | 6 | 20.82 | 20.66 | 20.59 | 21 |
| | | 12 | 13 | 20.79 | 20.68 | 20.66 | 21 |
| | | 25 | 0 | 20.86 | 20.68 | 20.6 | 21 |
| | 16QAM | 1 | 0 | 20.41 | 20.64 | 20.95 | 21 |
| | | 1 | 13 | 20.86 | 20.63 | 21.18 | 21 |
| | | 1 | 24 | 20.34 | 20.61 | 20.62 | 21 |
| | | 12 | 0 | 19.84 | 19.62 | 19.66 | 20 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | 12 | 6 | 19.59 | 19.63 | 19.41 | 20 |
| | | 12 | 13 | 19.49 | 19.64 | 19.73 | 20 |
| | | 25 | 0 | 19.77 | 19.94 | 19.54 | 20 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel | Channel | Channel | Tune up |
| | | | | 18650 | 18900 | 19150 | |
| **10MHz** | QPSK | 1 | 0 | 22.04 | 21.93 | 21.73 | 22.5 |
| | | 1 | 25 | 21.9 | 21.89 | 21.73 | 22.5 |
| | | 1 | 49 | 21.81 | 21.87 | 21.74 | 22.5 |
| | | 25 | 0 | 20.87 | 20.79 | 20.62 | 21 |
| | | 25 | 13 | 20.8 | 20.75 | 20.63 | 21 |
| | | 25 | 25 | 20.75 | 20.69 | 20.65 | 21 |
| | | 50 | 0 | 20.8 | 20.8 | 20.66 | 21 |
| | 16QAM | 1 | 0 | 20.46 | 20.42 | 20.19 | 21 |
| | | 1 | 25 | 20.93 | 20.88 | 20.89 | 21 |
| | | 1 | 49 | 20.54 | 20.07 | 20.32 | 21 |
| | | 25 | 0 | 19.92 | 19.96 | 19.67 | 20 |
| | | 25 | 13 | 19.91 | 19.76 | 19.54 | 20 |
| | | 25 | 25 | 19.79 | 19.66 | 19.63 | 20 |
| | | 50 | 0 | 19.81 | 19.65 | 19.64 | 20 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel | Channel | Channel | Tune up |
| | | | | 18675 | 18900 | 19125 | |
| **15MHz** | QPSK | 1 | 0 | 21.81 | 21.97 | 21.56 | 22.5 |
| | | 1 | 38 | 22.06 | 22.48 | 21.98 | 22.5 |
| | | 1 | 74 | 21.68 | 21.71 | 21.78 | 22.5 |
| | | 36 | 0 | 20.79 | 20.82 | 20.63 | 21 |
| | | 36 | 18 | 20.78 | 20.73 | 20.61 | 21 |
| | | 36 | 39 | 20.74 | 20.65 | 20.59 | 21 |
| | | 75 | 0 | 20.8 | 20.78 | 20.6 | 21 |
| | 16QAM | 1 | 0 | 20.69 | 20.62 | 20.12 | 21 |
| | | 1 | 38 | 20.35 | 20.58 | 20.27 | 21 |
| | | 1 | 74 | 19.92 | 20.06 | 20.12 | 21 |
| | | 36 | 0 | 19.87 | 19.86 | 19.54 | 20 |
| | | 36 | 18 | 19.72 | 19.73 | 19.55 | 20 |
| | | 36 | 39 | 19.77 | 19.75 | 19.58 | 20 |
| | | 75 | 0 | 19.7 | 19.88 | 19.57 | 20 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel | Channel | Channel | Tune up |
| | | | | 18700 | 18900 | 19100 | |
| **20MHz** | QPSK | 1 | 0 | 22.12 | 21.81 | 21.78 | 22.5 |
| | | 1 | 50 | **22.13** | **22.17** | **22.04** | 22.5 |
| | | 1 | 99 | 21.73 | 21.8 | 21.72 | 22.5 |
| | | 50 | 0 | **20.83** | **20.84** | **20.66** | 21 |
| | | 50 | 25 | 20.8 | 20.8 | 20.68 | 21 |
| | | 50 | 50 | 20.72 | 20.66 | 20.67 | 21 |
| | | 100 | 0 | 20.77 | **20.79** | 20.66 | 21 |
| | 16QAM | 1 | 0 | 20.57 | 20.44 | 20 | 21 |
| | | 1 | 50 | 20.3 | 20.69 | 20.07 | 21 |
| | | 1 | 99 | 20.03 | 19.97 | 20.5 | 21 |
| | | 50 | 0 | 19.8 | 19.78 | 19.68 | 20 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | 50 | 25 | 19.66 | 19.91 | 19.62 | 20 |
| | | 50 | 50 | 19.49 | 19.73 | 19.72 | 20 |
| | | 100 | 0 | 19.68 | 19.74 | 19.65 | 20 |

| LTE Band 4 | | | | Conducted Power(dBm) | | | |
|---|---|---|---|---|---|---|---|
| Bandwidth | Modulation | RB size | RB offset | Channel 19957 | Channel 20175 | Channel 20393 | Tune up |
| 1.4MHz | QPSK | 1 | 0 | 22.33 | 22.59 | 22.24 | 23 |
| | | 1 | 2 | 22.18 | 22.6 | 22.42 | 23 |
| | | 1 | 5 | 22.3 | 22.54 | 22.24 | 23 |
| | | 3 | 0 | 22.39 | 22.42 | 22.1 | 23 |
| | | 3 | 2 | 22.42 | 22.58 | 22.28 | 23 |
| | | 3 | 3 | 22.38 | 22.54 | 22.25 | 23 |
| | | 6 | 0 | 21.42 | 21.42 | 21.37 | 22 |
| | 16QAM | 1 | 0 | 21.66 | 21.29 | 20.99 | 22 |
| | | 1 | 2 | 21.56 | 21.36 | 21.51 | 22 |
| | | 1 | 5 | 21.47 | 21.18 | 21.44 | 22 |
| | | 3 | 0 | 21.47 | 21.14 | 21.24 | 22 |
| | | 3 | 2 | 21.7 | 21.45 | 21.41 | 22 |
| | | 3 | 3 | 21.8 | 21.27 | 21.34 | 22 |
| | | 6 | 0 | 20.64 | 20.53 | 20.29 | 21 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel 19965 | Channel 20175 | Channel 20385 | Tune up |
| 3MHz | QPSK | 1 | 0 | 22.29 | 22.54 | 22.16 | 23 |
| | | 1 | 7 | 22.43 | 22.55 | 22.27 | 23 |
| | | 1 | 14 | 22.22 | 22.53 | 22.41 | 23 |
| | | 8 | 0 | 21.48 | 21.51 | 21.29 | 22 |
| | | 8 | 4 | 21.47 | 21.57 | 21.41 | 22 |
| | | 8 | 7 | 21.47 | 21.59 | 21.34 | 22 |
| | | 15 | 0 | 21.42 | 21.51 | 21.23 | 22 |
| | 16QAM | 1 | 0 | 21.46 | 21.25 | 21.35 | 21.5 |
| | | 1 | 7 | 21.45 | 21.18 | 20.91 | 21.5 |
| | | 1 | 14 | 20.95 | 21.3 | 21.35 | 21.5 |
| | | 8 | 0 | 20.64 | 20.34 | 20.4 | 21 |
| | | 8 | 4 | 20.57 | 20.41 | 20.18 | 21 |
| | | 8 | 7 | 20.53 | 20.66 | 20.64 | 21 |
| | | 15 | 0 | 20.53 | 20.64 | 20.39 | 21 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel 19975 | Channel 20175 | Channel 20375 | Tune up |
| 5MHz | QPSK | 1 | 0 | 22.34 | 22.47 | 22.33 | 23 |
| | | 1 | 13 | 22.73 | 22.96 | 22.78 | 23 |
| | | 1 | 24 | 22.35 | 22.44 | 22.37 | 23 |
| | | 12 | 0 | 21.49 | 21.52 | 21.34 | 22 |
| | | 12 | 6 | 21.46 | 21.58 | 21.37 | 22 |
| | | 12 | 13 | 21.37 | 21.46 | 21.43 | 22 |
| | | 25 | 0 | 21.41 | 21.49 | 21.39 | 22 |
| | 16QAM | 1 | 0 | 21.81 | 21 | 21.47 | 22 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | 1 | 13 | 20.61 | 20.86 | 20.79 | 22 |
| | | 1 | 24 | 21.09 | 20.8 | 20.49 | 22 |
| | | 12 | 0 | 20.68 | 20.54 | 20.26 | 21 |
| | | 12 | 6 | 20.67 | 20.34 | 20.48 | 21 |
| | | 12 | 13 | 20.68 | 20.49 | 20.41 | 21 |
| | | 25 | 0 | 20.62 | 20.67 | 20.37 | 21 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel 20000 | Channel 20175 | Channel 20350 | Tune up |
| **10MHz** | QPSK | 1 | 0 | 22.47 | 22.57 | 22.35 | 23 |
| | | 1 | 25 | 22.82 | 22.8 | 22.81 | 23 |
| | | 1 | 49 | 22.41 | 22.59 | 22.47 | 23 |
| | | 25 | 0 | 21.41 | 21.54 | 21.61 | 22 |
| | | 25 | 13 | 21.51 | 21.54 | 21.38 | 22 |
| | | 25 | 25 | 21.5 | 21.51 | 21.4 | 22 |
| | | 50 | 0 | 21.49 | 21.59 | 21.41 | 22 |
| | 16QAM | 1 | 0 | 21.5 | 20.99 | 21.1 | 22 |
| | | 1 | 25 | 21.44 | 21.8 | 21.14 | 22 |
| | | 1 | 49 | 21.47 | 21.48 | 21.35 | 22 |
| | | 25 | 0 | 20.43 | 20.6 | 20.69 | 21 |
| | | 25 | 13 | 20.6 | 20.8 | 20.47 | 21 |
| | | 25 | 25 | 20.57 | 20.57 | 20.51 | 21 |
| | | 50 | 0 | 20.62 | 20.55 | 20.36 | 21 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel 20025 | Channel 20175 | Channel 20325 | Tune up |
| **15MHz** | QPSK | 1 | 0 | 22.56 | 22.57 | 22.22 | 23 |
| | | 1 | 38 | 22.91 | 22.45 | 22.82 | 23 |
| | | 1 | 74 | 22.52 | 22.3 | 22.04 | 23 |
| | | 36 | 0 | 21.58 | 21.54 | 21.42 | 22 |
| | | 36 | 18 | 21.55 | 21.5 | 21.4 | 22 |
| | | 36 | 39 | 21.48 | 21.51 | 21.45 | 22 |
| | | 75 | 0 | 21.56 | 21.55 | 21.36 | 22 |
| | 16QAM | 1 | 0 | 21.47 | 21.62 | 21.11 | 22 |
| | | 1 | 38 | 21.32 | 21.42 | 21.49 | 22 |
| | | 1 | 74 | 21.35 | 21.49 | 21.47 | 22 |
| | | 36 | 0 | 20.63 | 20.6 | 20.48 | 21 |
| | | 36 | 18 | 20.59 | 20.57 | 20.47 | 21 |
| | | 36 | 39 | 20.54 | 20.48 | 20.31 | 21 |
| | | 75 | 0 | 20.53 | 20.53 | 20.44 | 21 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel 20050 | Channel 20175 | Channel 20300 | Tune up |
| **20MHz** | QPSK | 1 | 0 | 22.43 | 22.7 | 22.59 | 23 |
| | | 1 | 50 | **22.76** | **22.86** | **22.59** | 23 |
| | | 1 | 99 | 22.41 | 22.19 | 22.05 | 23 |
| | | 50 | 0 | 21.54 | **21.62** | 21.55 | 22 |
| | | 50 | 25 | 21.53 | 21.55 | 21.41 | 22 |
| | | 50 | 50 | 21.6 | 21.46 | 21.32 | 22 |
| | | 100 | 0 | 21.5 | **21.55** | 21.52 | 22 |
| | 16QAM | 1 | 0 | 21.6 | 21.66 | 20.83 | 22 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | 1 | 50 | 21.34 | 21.18 | 21.46 | 22 |
| | | 1 | 99 | 20.97 | 21.46 | 21.32 | 22 |
| | | 50 | 0 | 20.52 | 20.76 | 20.66 | 21 |
| | | 50 | 25 | 20.58 | 20.67 | 20.55 | 21 |
| | | 50 | 50 | 20.6 | 20.44 | 20.4 | 21 |
| | | 100 | 0 | 20.49 | 20.52 | 20.54 | 21 |

| LTE Band 5 | | | | Conducted Power(dBm) | | | |
|---|---|---|---|---|---|---|---|
| **Bandwidth** | Modulation | RB size | RB offset | Channel 20407 | Channel 20525 | Channel 20643 | Tune up |
| **1.4MHz** | QPSK | 1 | 0 | 22.65 | 22.85 | 22.84 | 23 |
| | | 1 | 2 | 22.76 | 22.72 | 22.99 | 23 |
| | | 1 | 5 | 22.97 | 22.84 | 22.94 | 23 |
| | | 3 | 0 | 22.7 | 22.82 | 22.85 | 23 |
| | | 3 | 2 | 22.7 | 22.81 | 22.92 | 23 |
| | | 3 | 3 | 22.86 | 22.83 | 22.83 | 23 |
| | | 6 | 0 | 21.83 | 21.81 | 21.81 | 22 |
| | 16QAM | 1 | 0 | 21.17 | 21.5 | 21.39 | 22 |
| | | 1 | 2 | 21.73 | 21.61 | 21.69 | 22 |
| | | 1 | 5 | 21.33 | 21.7 | 21.84 | 22 |
| | | 3 | 0 | 21.66 | 21.66 | 21.63 | 22 |
| | | 3 | 2 | 21.84 | 21.58 | 21.92 | 22 |
| | | 3 | 3 | 21.99 | 21.77 | 21.79 | 22 |
| | | 6 | 0 | 20.77 | 20.48 | 20.85 | 21 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel 20415 | Channel 20525 | Channel 20635 | Tune up |
| **3MHz** | QPSK | 1 | 0 | 22.8 | 22.89 | 22.77 | 23 |
| | | 1 | 7 | 22.87 | 22.78 | 22.89 | 23 |
| | | 1 | 14 | 22.77 | 22.93 | 22.82 | 23 |
| | | 8 | 0 | 21.83 | 21.83 | 21.73 | 22 |
| | | 8 | 4 | 21.77 | 21.82 | 21.91 | 22 |
| | | 8 | 7 | 21.88 | 21.83 | 21.89 | 22 |
| | | 15 | 0 | 21.9 | 21.83 | 21.86 | 22 |
| | 16QAM | 1 | 0 | 21.45 | 21.53 | 21.43 | 22 |
| | | 1 | 7 | 21.45 | 21.76 | 21.52 | 22 |
| | | 1 | 14 | 21.31 | 21.28 | 21.9 | 22 |
| | | 8 | 0 | 20.81 | 20.58 | 20.91 | 21 |
| | | 8 | 4 | 20.98 | 20.57 | 21.07 | 21 |
| | | 8 | 7 | 20.76 | 20.51 | 20.89 | 21 |
| | | 15 | 0 | 20.62 | 20.66 | 20.94 | 21 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel 20425 | Channel 20525 | Channel 20625 | Tune up |
| **5MHz** | QPSK | 1 | 0 | 22.56 | 22.89 | 22.72 | 23.5 |
| | | 1 | 13 | 23.3 | 23.32 | 23.02 | 23.5 |
| | | 1 | 24 | 22.86 | 22.88 | 22.96 | 23.5 |
| | | 12 | 0 | 21.86 | 21.97 | 21.73 | 22 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | 12 | 6 | 21.8 | 21.77 | 21.7 | 22 |
| | | 12 | 13 | 21.85 | 21.71 | 21.79 | 22 |
| | | 25 | 0 | 21.88 | 21.83 | 21.65 | 22 |
| | | 1 | 0 | 21.69 | 21.15 | 21.36 | 22.5 |
| | | 1 | 13 | 21.63 | 21.46 | 22.14 | 22.5 |
| | | 1 | 24 | 21.56 | 21.47 | 21.84 | 22.5 |
| | 16QAM | 12 | 0 | 20.66 | 20.91 | 20.43 | 21 |
| | | 12 | 6 | 20.83 | 20.93 | 20.66 | 21 |
| | | 12 | 13 | 20.83 | 20.85 | 20.7 | 21 |
| | | 25 | 0 | 20.75 | 20.75 | 20.75 | 21 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel 20450 | Channel 20525 | Channel 20600 | Tune up |
| **10MHz** | | 1 | 0 | 22.79 | 22.83 | 22.9 | 23.5 |
| | | 1 | 25 | **23.06** | **23.15** | **23.04** | 23.5 |
| | | 1 | 49 | 23.07 | 22.81 | 23.15 | 23.5 |
| | QPSK | 25 | 0 | **21.87** | **21.96** | **21.73** | 22 |
| | | 25 | 13 | 21.92 | 21.81 | 21.87 | 22 |
| | | 25 | 25 | 21.82 | 21.75 | 21.74 | 22 |
| | | 50 | 0 | 21.76 | 21.83 | 21.83 | 22 |
| | | 1 | 0 | 21.72 | 21.74 | 21.45 | 22.5 |
| | | 1 | 25 | 21.61 | 21.43 | 22.01 | 22.5 |
| | | 1 | 49 | 21.65 | 21.7 | 21.58 | 22.5 |
| | 16QAM | 25 | 0 | 20.93 | 20.86 | 20.68 | 21 |
| | | 25 | 13 | 20.85 | 20.71 | 20.78 | 21 |
| | | 25 | 25 | 20.84 | 20.86 | 20.64 | 21 |
| | | 50 | 0 | 20.75 | 20.8 | 20.66 | 21 |

| **LTE Band 7** | | | | **Conducted Power(dBm)** | | | |
|---|---|---|---|---|---|---|---|
| **Bandwidth** | Modulation | RB size | RB offset | Channel 20775 | Channel 21100 | Channel 21425 | Tune up |
| **5MHz** | | 1 | 0 | 21.77 | 21.83 | 21.5 | 22.5 |
| | | 1 | 13 | 21.91 | 22.15 | 21.7 | 22.5 |
| | | 1 | 24 | 21.67 | 21.72 | 21.59 | 22.5 |
| | QPSK | 12 | 0 | 20.82 | 20.6 | 20.41 | 21 |
| | | 12 | 6 | 20.7 | 20.62 | 20.42 | 21 |
| | | 12 | 13 | 20.58 | 20.61 | 20.42 | 21 |
| | | 25 | 0 | 20.59 | 20.62 | 20.53 | 21 |
| | | 1 | 0 | 20.55 | 20.16 | 20.15 | 21.5 |
| | | 1 | 13 | 20.99 | 21.05 | 20.4 | 21.5 |
| | | 1 | 24 | 20.13 | 20.14 | 19.93 | 21.5 |
| | 16QAM | 12 | 0 | 19.7 | 19.76 | 19.56 | 20 |
| | | 12 | 6 | 19.51 | 19.85 | 19.62 | 20 |
| | | 12 | 13 | 19.51 | 19.64 | 19.42 | 20 |
| | | 25 | 0 | 19.69 | 19.88 | 19.57 | 20 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel 20800 | Channel 21100 | Channel 21400 | Tune up |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 10MHz | QPSK | 1 | 0 | 21.77 | 22.01 | 21.78 | 22.5 |
| | | 1 | 25 | 22.07 | 21.94 | 21.85 | 22.5 |
| | | 1 | 49 | 21.94 | 21.94 | 21.71 | 22.5 |
| | | 25 | 0 | 20.77 | 20.77 | 20.6 | 21 |
| | | 25 | 13 | 20.69 | 20.76 | 20.57 | 21 |
| | | 25 | 25 | 20.65 | 20.72 | 20.64 | 21 |
| | | 50 | 0 | 20.64 | 20.76 | 20.61 | 21 |
| | 16QAM | 1 | 0 | 20.65 | 20.74 | 20.48 | 21 |
| | | 1 | 25 | 21 | 20.49 | 20.8 | 21 |
| | | 1 | 49 | 20.08 | 20.78 | 20.66 | 21 |
| | | 25 | 0 | 19.87 | 19.88 | 19.69 | 20 |
| | | 25 | 13 | 19.81 | 19.88 | 19.69 | 20 |
| | | 25 | 25 | 19.94 | 19.91 | 19.74 | 20 |
| | | 50 | 0 | 19.92 | 19.86 | 19.82 | 20 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel 20825 | Channel 21100 | Channel 21375 | Tune up |
| 15MHz | QPSK | 1 | 0 | 21.91 | 21.95 | 21.87 | 23 |
| | | 1 | 38 | 22.14 | 22.71 | 22.29 | 23 |
| | | 1 | 74 | 21.83 | 21.96 | 21.67 | 23 |
| | | 36 | 0 | 20.68 | 20.72 | 20.72 | 21 |
| | | 36 | 18 | 20.75 | 20.78 | 20.59 | 21 |
| | | 36 | 39 | 20.71 | 20.74 | 20.6 | 21 |
| | | 75 | 0 | 20.73 | 20.72 | 20.64 | 21 |
| | 16QAM | 1 | 0 | 20.64 | 20.21 | 20.7 | 21 |
| | | 1 | 38 | 20.5 | 21.04 | 20.53 | 21 |
| | | 1 | 74 | 20.28 | 20.13 | 20.53 | 21 |
| | | 36 | 0 | 19.83 | 19.78 | 19.94 | 20 |
| | | 36 | 18 | 19.81 | 19.85 | 19.7 | 20 |
| | | 36 | 39 | 19.82 | 19.82 | 19.77 | 20 |
| | | 75 | 0 | 19.88 | 19.88 | 19.72 | 20 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel 20850 | Channel 21100 | Channel 21350 | Tune up |
| 20MHz | QPSK | 1 | 0 | 21.82 | 21.72 | 21.81 | 22.5 |
| | | 1 | 50 | **22.08** | **22.32** | **22.23** | 22.5 |
| | | 1 | 99 | 21.79 | 21.94 | 21.68 | 22.5 |
| | | 50 | 0 | **20.73** | **20.78** | **20.63** | 21 |
| | | 50 | 25 | 20.73 | 20.72 | 20.77 | 21 |
| | | 50 | 50 | 20.74 | 20.69 | 20.62 | 21 |
| | | 100 | 0 | 20.73 | **20.75** | 20.63 | 21 |
| | 16QAM | 1 | 0 | 20.59 | 20.58 | 20.39 | 21 |
| | | 1 | 50 | 20.88 | 20.29 | 20.8 | 21 |
| | | 1 | 99 | 20.62 | 20.8 | 20.57 | 21 |
| | | 50 | 0 | 19.86 | 19.82 | 19.63 | 20 |
| | | 50 | 25 | 19.9 | 19.7 | 19.66 | 20 |
| | | 50 | 50 | 19.91 | 19.71 | 19.61 | 20 |
| | | 100 | 0 | 19.89 | 19.74 | 19.8 | 20 |

| LTE FDD Band 26 | | | | Conducted Power(dBm) | | | |
|---|---|---|---|---|---|---|---|
| **Bandwidth** | Modulation | RB size | RB offset | Channel 26697 | Channel 26865 | Channel 27033 | Tune up |
| **1.4MHz** | QPSK | 1 | 0 | 22.35 | 22.4 | 22.54 | 23 |
| | | 1 | 2 | 22.41 | 22.88 | 22.5 | 23 |
| | | 1 | 5 | 22.39 | 22.73 | 22.53 | 23 |
| | | 3 | 0 | 22.39 | 22.42 | 22.53 | 23 |
| | | 3 | 2 | 22.4 | 22.33 | 22.61 | 23 |
| | | 3 | 3 | 22.35 | 22.34 | 22.54 | 23 |
| | | 6 | 0 | 21.28 | 21.54 | 21.46 | 22 |
| | 16QAM | 1 | 0 | 21.38 | 21.37 | 21.52 | 22 |
| | | 1 | 2 | 21.22 | 21.09 | 21.1 | 22 |
| | | 1 | 5 | 21.18 | 21 | 21.18 | 22 |
| | | 3 | 0 | 21.29 | 21.42 | 21.32 | 22 |
| | | 3 | 2 | 21.37 | 21.54 | 21.33 | 22 |
| | | 3 | 3 | 21.45 | 21.47 | 21.48 | 22 |
| | | 6 | 0 | 20.19 | 20.51 | 20.6 | 21 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel 26705 | Channel 26865 | Channel 27025 | Tune up |
| **3MHz** | QPSK | 1 | 0 | 22.29 | 22.37 | 22.23 | 22.5 |
| | | 1 | 7 | 22.26 | 22.43 | 22.37 | 22.5 |
| | | 1 | 14 | 22.46 | 22.3 | 22.29 | 22.5 |
| | | 8 | 0 | 21.34 | 21.48 | 21.42 | 21.5 |
| | | 8 | 4 | 21.34 | 21.42 | 21.43 | 21.5 |
| | | 8 | 7 | 21.41 | 21.5 | 21.37 | 21.5 |
| | | 15 | 0 | 21.45 | 21.45 | 21.4 | 21.5 |
| | 16QAM | 1 | 0 | 21.03 | 20.71 | 21.33 | 21.5 |
| | | 1 | 7 | 20.99 | 21.04 | 21.41 | 21.5 |
| | | 1 | 14 | 20.78 | 21.18 | 21.13 | 21.5 |
| | | 8 | 0 | 19.87 | 20 | 20.29 | 20.5 |
| | | 8 | 4 | 20.11 | 20.26 | 20.44 | 20.5 |
| | | 8 | 7 | 20.2 | 20.11 | 20.22 | 20.5 |
| | | 15 | 0 | 20.22 | 20.21 | 20.35 | 20.5 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel 26715 | Channel 26865 | Channel 27015 | Tune up |
| **5MHz** | QPSK | 1 | 0 | 22.01 | 22.14 | 22.03 | 23 |
| | | 1 | 13 | 22.62 | 22.49 | 22.64 | 23 |
| | | 1 | 24 | 22.39 | 22.27 | 22.44 | 23 |
| | | 12 | 0 | 21.32 | 21.41 | 21.38 | 21.5 |
| | | 12 | 6 | 21.43 | 21.41 | 21.4 | 21.5 |
| | | 12 | 13 | 21.41 | 21.39 | 21.33 | 21.5 |
| | | 25 | 0 | 21.34 | 21.43 | 21.31 | 22 |
| | 16QAM | 1 | 0 | 21.21 | 21.33 | 20.93 | 21.5 |
| | | 1 | 13 | 21.03 | 21.09 | 21.07 | 21.5 |
| | | 1 | 24 | 20.96 | 20.9 | 21.07 | 21.5 |
| | | 12 | 0 | 20.15 | 20.33 | 20.63 | 21 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | 12 | 6 | 20.12 | 20.49 | 20.47 | 21 |
| | | 12 | 13 | 20.27 | 20.39 | 20.28 | 21 |
| | | 25 | 0 | 20.34 | 20.55 | 20.4 | 21 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel 26750 | Channel 26865 | Channel 26990 | Tune up |
| **10MHz** | QPSK | 1 | 0 | 22.38 | 22.43 | 22.21 | 23 |
| | | 1 | 25 | 22.42 | 22.56 | 22.56 | 23 |
| | | 1 | 49 | 22.38 | 22.57 | 22.35 | 23 |
| | | 25 | 0 | 21.34 | 21.48 | 21.37 | 22 |
| | | 25 | 13 | 21.43 | 21.5 | 21.44 | 22 |
| | | 25 | 25 | 21.43 | 21.52 | 21.4 | 22 |
| | | 50 | 0 | 21.45 | 21.48 | 21.41 | 21.5 |
| | 16QAM | 1 | 0 | 21.26 | 20.85 | 21.33 | 22 |
| | | 1 | 25 | 21.19 | 21.05 | 21.61 | 22 |
| | | 1 | 49 | 21.36 | 21.1 | 21.16 | 22 |
| | | 25 | 0 | 20.58 | 20.57 | 20.55 | 21 |
| | | 25 | 13 | 20.49 | 20.56 | 20.31 | 21 |
| | | 25 | 25 | 20.33 | 20.58 | 20.42 | 21 |
| | | 50 | 0 | 20.46 | 20.42 | 20.43 | 21 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel 26775 | Channel 26865 | Channel 26965 | Tune up |
| **15MHz** | QPSK | 1 | 0 | 22.41 | 22.34 | 22.51 | 23 |
| | | 1 | 38 | 22.9 | **22.93** | 22.54 | 23 |
| | | 1 | 74 | 22.41 | 22.35 | 22.42 | 23 |
| | | 36 | 0 | 21.45 | **21.47** | 21.44 | 21.5 |
| | | 36 | 18 | 21.4 | 21.46 | 21.41 | 21.5 |
| | | 36 | 39 | 21.42 | 21.46 | 21.34 | 21.5 |
| | | 75 | 0 | 21.39 | 21.43 | 21.36 | 21.5 |
| | 16QAM | 1 | 0 | 20.98 | 20.64 | 20.7 | 21.5 |
| | | 1 | 38 | 21.35 | 21.08 | 21.11 | 21.5 |
| | | 1 | 74 | 21.36 | 21.04 | 21.33 | 21.5 |
| | | 36 | 0 | 20.37 | 20.19 | 20.4 | 21 |
| | | 36 | 18 | 20.32 | 20.5 | 20.35 | 21 |
| | | 36 | 39 | 20.27 | 20.47 | 20.37 | 21 |
| | | 75 | 0 | 20.41 | 20.5 | 20.31 | 21 |

| **LTE Band 38** | | | | **Conducted Power(dBm)** | | | Tune up |
|---|---|---|---|---|---|---|---|
| **Bandwidth** | Modulation | RB size | RB offset | Channel 37775 | Channel 38000 | Channel 38225 | |
| **5MHz** | QPSK | 1 | 0 | 21.95 | 21.71 | 21.77 | 22.5 |
| | | 1 | 13 | 22.23 | 21.94 | 22.08 | 22.5 |
| | | 1 | 24 | 21.92 | 21.77 | 21.97 | 22.5 |
| | | 12 | 0 | 20.88 | 20.71 | 20.81 | 21 |
| | | 12 | 6 | 20.98 | 20.79 | 20.99 | 21 |
| | | 12 | 13 | 20.96 | 20.78 | 21 | 21 |
| | | 25 | 0 | 20.98 | 20.9 | 21.03 | 21.5 |
| | 16QAM | 1 | 0 | 20.56 | 20.31 | 20.36 | 21 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | 1 | 13 | 20.66 | 20.5 | 20.55 | 21 |
| | | 1 | 24 | 20.55 | 20.39 | 20.67 | 21 |
| | | 12 | 0 | 19.84 | 19.57 | 19.66 | 20 |
| | | 12 | 6 | 19.83 | 19.75 | 19.85 | 20 |
| | | 12 | 13 | 19.82 | 19.73 | 19.81 | 20 |
| | | 25 | 0 | 19.86 | 19.69 | 19.85 | 20 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel 37800 | Channel 38000 | Channel 38200 | Tune up |
| **10MHz** | QPSK | 1 | 0 | 22.06 | 21.93 | 22.05 | 22.5 |
| | | 1 | 25 | 22.06 | 21.91 | 22.05 | 22.5 |
| | | 1 | 49 | 21.96 | 21.91 | 21.89 | 22.5 |
| | | 25 | 0 | 21.03 | 20.82 | 20.99 | 21.5 |
| | | 25 | 13 | 20.89 | 20.91 | 21.01 | 21.5 |
| | | 25 | 25 | 20.88 | 20.86 | 21.01 | 21.5 |
| | | 50 | 0 | 20.93 | 20.9 | 21.02 | 21.5 |
| | 16QAM | 1 | 0 | 20.67 | 20.56 | 20.67 | 21 |
| | | 1 | 25 | 20.69 | 20.56 | 20.78 | 21 |
| | | 1 | 49 | 20.52 | 20.48 | 20.69 | 21 |
| | | 25 | 0 | 19.89 | 20.03 | 19.9 | 20.5 |
| | | 25 | 13 | 20.18 | 20.14 | 20.14 | 20.5 |
| | | 25 | 25 | 20.02 | 20.19 | 20.25 | 20.5 |
| | | 50 | 0 | 20.05 | 19.75 | 19.92 | 20.5 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel 37825 | Channel 38000 | Channel 38175 | Tune up |
| **15MHz** | QPSK | 1 | 0 | 22.13 | 21.81 | 21.69 | 22.5 |
| | | 1 | 38 | 22.17 | 22.07 | 22.23 | 22.5 |
| | | 1 | 74 | 22 | 22.03 | 22.12 | 22.5 |
| | | 36 | 0 | 20.92 | 20.91 | 21.01 | 21.5 |
| | | 36 | 18 | 20.95 | 20.87 | 20.92 | 21.5 |
| | | 36 | 39 | 20.91 | 20.84 | 21.17 | 21.5 |
| | | 75 | 0 | 20.85 | 20.9 | 21.11 | 21.5 |
| | 16QAM | 1 | 0 | 20.67 | 20.5 | 20.53 | 21 |
| | | 1 | 38 | 20.54 | 20.54 | 20.63 | 21 |
| | | 1 | 74 | 20.55 | 20.44 | 20.68 | 21 |
| | | 36 | 0 | 19.98 | 19.88 | 19.85 | 20.5 |
| | | 36 | 18 | 19.94 | 19.94 | 20 | 20.5 |
| | | 36 | 39 | 20.01 | 19.93 | 19.86 | 20.5 |
| | | 75 | 0 | 19.88 | 19.92 | 19.92 | 20 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel 37850 | Channel 38000 | Channel 38150 | Tune up |
| **20MHz** | QPSK | 1 | 0 | 21.92 | 21.73 | 22.25 | 22.5 |
| | | 1 | 50 | 22.02 | **22.46** | 22.28 | 22.5 |
| | | 1 | 99 | 21.76 | 21.94 | 22.02 | 22.5 |
| | | 50 | 0 | 20.91 | **21.04** | 20.89 | 21.5 |
| | | 50 | 25 | 20.94 | 20.87 | 20.94 | 21.5 |
| | | 50 | 50 | 20.86 | 20.95 | 20.79 | 21.5 |
| | | 100 | 0 | 20.91 | 21.11 | 21.09 | 21.5 |
| | 16QAM | 1 | 0 | 20.56 | 20.53 | 20.6 | 21 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | 1 | 50 | 20.65 | 20.81 | 20.86 | 21 |
| | | 1 | 99 | 20.43 | 20.45 | 20.48 | 21 |
| | | 50 | 0 | 19.93 | 19.97 | 19.82 | 20 |
| | | 50 | 25 | 19.98 | 19.8 | 19.98 | 20 |
| | | 50 | 50 | 19.81 | 19.97 | 19.91 | 20 |
| | | 100 | 0 | 19.84 | 19.85 | 19.86 | 20 |

| LTE Band 40 | | | | Conducted Power(dBm) | | | Tune up |
|---|---|---|---|---|---|---|---|
| **Bandwidth** | Modulation | RB size | RB offset | Channel 38675 | Channel 39150 | Channel 39625 | |
| **5MHz** | QPSK | 1 | 0 | 21.97 | 21.72 | 21.78 | 22.5 |
| | | 1 | 13 | 22.14 | 21.91 | 22.05 | 22.5 |
| | | 1 | 24 | 21.91 | 21.67 | 21.75 | 22.5 |
| | | 12 | 0 | 20.85 | 20.59 | 20.7 | 21 |
| | | 12 | 6 | 20.88 | 20.67 | 20.75 | 21 |
| | | 12 | 13 | 20.83 | 20.63 | 20.73 | 21 |
| | | 25 | 0 | 20.91 | 20.67 | 20.69 | 21 |
| | 16QAM | 1 | 0 | 20.4 | 20.18 | 20.19 | 21 |
| | | 1 | 13 | 20.59 | 20.24 | 20.3 | 21 |
| | | 1 | 24 | 20.35 | 20.1 | 20.15 | 21 |
| | | 12 | 0 | 19.75 | 19.49 | 19.63 | 20 |
| | | 12 | 6 | 19.79 | 19.91 | 19.68 | 20 |
| | | 12 | 13 | 19.72 | 19.62 | 19.65 | 20 |
| | | 25 | 0 | 19.91 | 19.58 | 19.63 | 20 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel 38700 | Channel 39150 | Channel 39600 | Tune up |
| **10MHz** | QPSK | 1 | 0 | 22.08 | 21.81 | 21.97 | 22.5 |
| | | 1 | 25 | 21.98 | 21.87 | 21.92 | 22.5 |
| | | 1 | 49 | 21.88 | 21.73 | 21.77 | 22.5 |
| | | 25 | 0 | 21.02 | 20.79 | 20.78 | 21.5 |
| | | 25 | 13 | 20.88 | 20.67 | 20.7 | 21.5 |
| | | 25 | 25 | 20.83 | 20.67 | 20.68 | 21.5 |
| | | 50 | 0 | 20.88 | 20.67 | 20.75 | 21 |
| | 16QAM | 1 | 0 | 20.59 | 20.41 | 20.42 | 21 |
| | | 1 | 25 | 20.63 | 20.48 | 20.49 | 21 |
| | | 1 | 49 | 20.34 | 20.2 | 20.21 | 21 |
| | | 25 | 0 | 19.81 | 19.62 | 19.71 | 20.5 |
| | | 25 | 13 | 19.96 | 19.68 | 20.1 | 20.5 |
| | | 25 | 25 | 19.91 | 19.56 | 19.71 | 20.5 |
| | | 50 | 0 | 19.96 | 19.58 | 19.86 | 20 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel 38725 | Channel 39150 | Channel 39575 | Tune up |
| **15MHz** | QPSK | 1 | 0 | 22.06 | 21.85 | 21.99 | 22.5 |
| | | 1 | 38 | 21.98 | 21.72 | 22.1 | 22.5 |
| | | 1 | 74 | 21.81 | 21.83 | 21.84 | 22.5 |
| | | 36 | 0 | 20.96 | 20.72 | 20.72 | 21 |
| | | 36 | 18 | 20.79 | 20.67 | 20.72 | 21 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | 36 | 39 | 20.75 | 20.64 | 20.66 | 21 |
| | | 75 | 0 | 20.85 | 20.69 | 20.81 | 22 |
| | | 1 | 0 | 20.61 | 20.41 | 20.41 | 21 |
| | | 1 | 38 | 20.32 | 20.24 | 20.48 | 21 |
| | | 1 | 74 | 20.42 | 20.11 | 20.28 | 21 |
| | 16QAM | 36 | 0 | 19.97 | 19.66 | 19.85 | 20 |
| | | 36 | 18 | 19.72 | 19.72 | 19.67 | 20 |
| | | 36 | 39 | 19.9 | 19.57 | 19.83 | 20 |
| | | 75 | 0 | 19.83 | 19.72 | 19.73 | 20 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel 38750 | Channel 39150 | Channel 39550 | Tune up |
| **20MHz** | QPSK | 1 | 0 | 22.05 | **22.24** | 21.84 | 22.5 |
| | | 1 | 50 | 21.93 | 22.15 | 22.21 | 22.5 |
| | | 1 | 99 | 21.7 | 21.55 | 21.76 | 22.5 |
| | | 50 | 0 | 20.82 | **20.96** | 20.81 | 21 |
| | | 50 | 25 | 20.81 | 20.94 | 20.75 | 21 |
| | | 50 | 50 | 20.75 | 20.63 | 20.72 | 21 |
| | | 100 | 0 | 20.73 | **20.87** | 20.86 | 21 |
| | 16QAM | 1 | 0 | 20.49 | 20.45 | 20.25 | 21 |
| | | 1 | 50 | 20.7 | 20.38 | 20.51 | 21 |
| | | 1 | 99 | 20.25 | 19.99 | 20.19 | 21 |
| | | 50 | 0 | 19.93 | 19.79 | 19.71 | 20 |
| | | 50 | 25 | 19.88 | 19.73 | 19.85 | 20 |
| | | 50 | 50 | 19.82 | 19.75 | 19.66 | 20 |
| | | 100 | 0 | 19.84 | 19.63 | 19.76 | 20 |

| **LTE FDD Band 41** | | | | **Conducted Power(dBm)** | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Bandwidth** | Modulation | RB size | RB offset | Channel 39675 | Channel 40148 | Channel 40620 | Channel 41093 | Channel 41565 | Tune up |
| **5MHz** | QPSK | 1 | 0 | 21.79 | 21.27 | 22.02 | 21.72 | 22.08 | 22.5 |
| | | 1 | 13 | 21.99 | 21.64 | 22.12 | 22.14 | 22.27 | 22.5 |
| | | 1 | 24 | 21.94 | 21.46 | 21.94 | 21.94 | 21.94 | 22.5 |
| | | 12 | 0 | 20.63 | 20.39 | 20.82 | 20.82 | 20.82 | 21 |
| | | 12 | 6 | 20.69 | 20.39 | 20.87 | 20.58 | 20.89 | 21 |
| | | 12 | 13 | 20.82 | 20.34 | 20.8 | 20.67 | 20.86 | 21 |
| | | 25 | 0 | 20.74 | 20.38 | 20.87 | 20.81 | 20.92 | 21 |
| | 16QAM | 1 | 0 | 20.2 | 19.85 | 20.46 | 20.43 | 20.49 | 21 |
| | | 1 | 13 | 20.33 | 20 | 20.58 | 20.51 | 20.56 | 21 |
| | | 1 | 24 | 20.27 | 19.79 | 20.38 | 20.44 | 20.42 | 21 |
| | | 12 | 0 | 19.6 | 19.24 | 19.75 | 19.75 | 19.75 | 20 |
| | | 12 | 6 | 19.92 | 19.33 | 19.82 | 19.65 | 19.91 | 20 |
| | | 12 | 13 | 19.8 | 19.29 | 19.83 | 19.77 | 19.85 | 20 |
| | | 25 | 0 | 19.66 | 19.24 | 19.82 | 19.8 | 19.87 | 20 |

| Bandwidth | Modulation | RB size | RB offset | Channel 39700 | Channel 40160 | Channel 40620 | Channel 41080 | Channel 41540 | Tune up |
|---|---|---|---|---|---|---|---|---|---|
| 10MHz | QPSK | 1 | 0 | 21.95 | 21.53 | 22.22 | 22.08 | 22.39 | 22.5 |
| | | 1 | 25 | 22.01 | 21.53 | 21.99 | 21.62 | 21.92 | 22.5 |
| | | 1 | 49 | 22.08 | 21.58 | 21.97 | 21.77 | 21.82 | 22.5 |
| | | 25 | 0 | 20.82 | 20.41 | 20.89 | 20.59 | 20.75 | 22 |
| | | 25 | 13 | 20.9 | 20.41 | 20.88 | 20.91 | 20.94 | 22 |
| | | 25 | 25 | 20.81 | 20.33 | 20.85 | 20.85 | 20.85 | 22 |
| | | 50 | 0 | 20.85 | 20.38 | 21.04 | 21.21 | 21.32 | 21.5 |
| | 16QAM | 1 | 0 | 20.54 | 20.09 | 20.81 | 20.63 | 20.88 | 21 |
| | | 1 | 25 | 20.82 | 20.22 | 20.7 | 20.7 | 20.7 | 21 |
| | | 1 | 49 | 20.66 | 19.97 | 20.53 | 20.26 | 20.57 | 21 |
| | | 25 | 0 | 20.05 | 19.35 | 19.91 | 19.84 | 19.96 | 21 |
| | | 25 | 13 | 20.15 | 19.69 | 20.27 | 20.05 | 20.44 | 21 |
| | | 25 | 25 | 20.15 | 19.63 | 20.07 | 20.07 | 20.07 | 21 |
| | | 50 | 0 | 20.01 | 19.49 | 20.04 | 20 | 20.05 | 21 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel 39725 | Channel 40173 | Channel 40620 | Channel 41068 | Channel 41515 | Tune up |
| 15MHz | QPSK | 1 | 0 | 21.81 | 21.38 | 22.07 | 22.01 | 22.08 | 22.5 |
| | | 1 | 38 | 22.01 | 21.65 | 22.23 | 22.05 | 22.41 | 22.5 |
| | | 1 | 74 | 21.91 | 21.64 | 21.91 | 21.88 | 21.94 | 22.5 |
| | | 36 | 0 | 20.69 | 20.38 | 20.98 | 20.92 | 20.99 | 22 |
| | | 36 | 18 | 20.6 | 20.35 | 20.8 | 20.56 | 20.82 | 22 |
| | | 36 | 39 | 20.75 | 20.29 | 20.77 | 20.81 | 20.85 | 22 |
| | | 75 | 0 | 20.71 | 20.36 | 20.76 | 20.69 | 20.79 | 21 |
| | 16QAM | 1 | 0 | 20.32 | 20.01 | 20.67 | 20.56 | 20.72 | 21 |
| | | 1 | 38 | 20.32 | 20.12 | 20.56 | 20.62 | 20.71 | 21 |
| | | 1 | 74 | 20.33 | 20.13 | 20.48 | 20.41 | 20.45 | 21 |
| | | 36 | 0 | 19.73 | 19.34 | 20.04 | 20.23 | 20.44 | 20.5 |
| | | 36 | 18 | 19.59 | 19.22 | 19.76 | 19.82 | 19.85 | 20.5 |
| | | 36 | 39 | 19.79 | 19.26 | 19.95 | 19.78 | 19.96 | 20.5 |
| | | 75 | 0 | 19.78 | 19.37 | 19.87 | 19.9 | 19.93 | 20 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel 39750 | Channel 40185 | Channel 40620 | Channel 41055 | Channel 41490 | Tune up |
| 20MHz | QPSK | 1 | 0 | 21.68 | 21.22 | 21.98 | 21.74 | 21.99 | 22.5 |
| | | 1 | 50 | 22.22 | 21.61 | **22.49** | 22.21 | 22.46 | 22.5 |
| | | 1 | 99 | 21.78 | 21.59 | 22 | 22.03 | 22.25 | 22.5 |
| | | 50 | 0 | 20.7 | 20.41 | **20.99** | 20.77 | 20.98 | 21 |
| | | 50 | 25 | 20.76 | 20.34 | 20.96 | 20.63 | 20.79 | 21 |
| | | 50 | 50 | 20.56 | 20.48 | 20.82 | 20.98 | 20.98 | 21 |
| | | 100 | 0 | 20.8 | 20.38 | **20.8** | 20.37 | 20.58 | 21 |
| | 16QAM | 1 | 0 | 20.27 | 19.94 | 20.57 | 20.24 | 20.33 | 21 |
| | | 1 | 50 | 20.7 | 20.22 | 20.8 | 20.67 | 20.83 | 21 |
| | | 1 | 99 | 20.41 | 19.98 | 20.28 | 20.28 | 20.28 | 21 |
| | | 50 | 0 | 19.69 | 19.42 | 19.99 | 19.78 | 19.99 | 20.5 |
| | | 50 | 25 | 19.68 | 19.35 | 20.07 | 20.01 | 20.05 | 20.5 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 50 | 50 | 19.72 | 19.49 | 19.93 | 19.95 | 19.97 | 20.5 |
| | | 100 | 0 | 19.8 | 19.38 | 19.9 | 19.92 | 19.96 | 20 |

Table 5：Conducted Power Of LTE

### 8.1.4 Conducted Power of WIFI and BT

| Wi-Fi | Average Power (dBm) for Data Rates (Mbps) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 2450MHz | Channel | 1 | 2 | 5.5 | 11 | / | / | / | / | Tune up |
| 802.11b | 1 | 13.22 | 13.21 | 13.21 | 13.2 | / | / | / | / | 14 |
| | 6 | **13.51** | 13.44 | 13.47 | 13.4 | / | / | / | / | 14 |
| | 11 | 13.29 | 13.25 | 13.22 | 13.21 | / | / | / | / | 14 |
| 802.11g | Channel | 6 | 9 | 12 | 18 | 24 | 36 | 48 | 54 | Tune up |
| | 1 | 9.34 | 9.33 | 9.31 | 9.31 | 9.3 | 9.25 | 9.22 | 9.2 | 9.5 |
| | 6 | 8.81 | 8.77 | 8.79 | 8.8 | 8.8 | 8.75 | 8.74 | 8.71 | 9.5 |
| | 11 | 7.22 | 7.18 | 7.15 | 7.14 | 7.17 | 7.12 | 7.11 | 7.1 | 9.5 |
| 802.11n-HT20 | Channel | 6.5 | 13 | 19.5 | 26 | 39 | 52 | 58.5 | 65 | Tune up |
| | 1 | 9.41 | 9.37 | 9.38 | 9.35 | 9.36 | 9.37 | 9.33 | 9.26 | 9.5 |
| | 6 | 8.62 | 8.55 | 8.57 | 8.54 | 8.52 | 8.57 | 8.55 | 8.53 | 9.5 |
| | 11 | 7.92 | 7.89 | 7.88 | 7.88 | 7.84 | 7.85 | 7.81 | 7.86 | 9.5 |

Table 6 : Conducted Power Of WIFI

Note:

a) Power must be measured at each transmit antenna port according to the DSSS and OFDM transmission configurations in each standalone and aggregated frequency band.

b) Power measurement is required for the transmission mode configuration with the highest maximum output power specified for production units.

1) When the same highest maximum output power specification applies to multiple transmission modes, the largest channel bandwidth configuration with the lowest order modulation and lowest data rate is measured.

2) When the same highest maximum output power is specified for multiple largest channel bandwidth configurations with the same lowest order modulation or lowest order modulation and lowest data rate, power measurement is required for all equivalent 802.11 configurations with the same maximum output power.

c) For each transmission mode configuration, power must be measured for the highest and lowest channels; and at the mid-band channel(s) when there are at least 3 channels. For configurations with multiple mid-band channels, due to an even number of channels, both channels should be measured.

| BT | | | Tune up (dBm) | Average Conducted Power(dBm) |
|---|---|---|---|---|
| Modulation | Channel | Frequency(MHz) | | |
| GFSK | 0 | 2402 | 3.5 | 2.13 |
| | 39 | 2441 | 3.5 | 3.22 |
| | 78 | 2480 | 3.5 | 1.79 |
| π/4DQPSK | 0 | 2402 | 4 | 2.98 |
| | 39 | 2441 | 4 | 3.96 |
| | 78 | 2480 | 4 | 2.52 |
| 8DPSK | 0 | 2402 | 4.5 | 3.19 |
| | 39 | 2441 | 4.5 | 4.23 |
| | 78 | 2480 | 4.5 | 2.83 |

| BLE | | | Tune up (dBm) | Average Conducted Power(dBm) |
|---|---|---|---|---|
| Modulation | Channel | Frequency(MHz) | | |
| GFSK | 0 | 2402 | 3.5 | 2.13 |
| | 19 | 2440 | 3.5 | 3.26 |
| | 39 | 2480 | 3.5 | 1.82 |

Table 7 : Conducted Power Of BT

## 8.2 Stand-alone SAR test evaluation

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Test Exclusion Threshold condition is satisfied. These test exclusion conditions are based on source-based time-averaged maximum conducted output power of the RF channel requiring evaluation, adjusted for tune-up tolerance, and the minimum test separation distance required for the exposure conditions.

| Freq. Band | Frequency (GHz) | Position | Average Power | | Test Separation (mm) | Calculate Value | Exclusion Threshold | Exclusion (Y/N) |
|---|---|---|---|---|---|---|---|---|
| | | | dBm | mW | | | | |
| Wi-Fi | 2.48 | Head | 14 | 25.1 2 | 0 | 7.9 | 3 | N |
| | | Body-worn | 14 | 25.12 | 15 | 2.6 | 3 | Y |
| | | hotspot | 14 | 25.12 | 10 | 3.9 | 3 | N |
| Bluetooth | 2.48 | Head | 4.5 | 2.8 | 0 | 0.9 | 3 | Y |
| | | Body-worn | 4.5 | 2.8 | 15 | 0.3 | 3 | Y |
| | | hotspot | 4.5 | 2.8 | 10 | 0.4 | 3 | Y |

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:
[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] · [√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where
• f(GHz) is the RF channel transmit frequency in GHz
• Power and distance are rounded to the nearest mW and mm before calculation
• The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

## 8.3 Measurement of SAR Data

### 8.3.1 SAR Result Of GSM850

| Test position | Test mode | Test Ch./Freq. | Duty Cycle | SAR (W/kg) 1-g | Power Drift (dB) | Conducted Power (dBm) | Tune up Limit (dBm) | Scaled factor | Scaled SAR (W/kg) | Liquid Temp | SAR limit (W/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Head Test data | | | | | | | | | | | |
| Left cheek | GSM | 190/836.6 | 1:8.3 | 0.380 | -0.09 | 32.3 | 33 | 1.175 | 0.446 | 22.1 | 1.6 |
| Left tilted | GSM | 190/836.6 | 1:8.3 | 0.260 | 0.03 | 32.3 | 33 | 1.175 | 0.305 | 22.1 | 1.6 |
| Right cheek | GSM | 190/836.6 | 1:8.3 | 0.397 | 0.11 | 32.3 | 33 | 1.175 | **0.466** | 22.1 | 1.6 |
| Right tilted | GSM | 190/836.6 | 1:8.3 | 0.250 | 0.12 | 32.3 | 33 | 1.175 | 0.294 | 22.1 | 1.6 |
| Head Test Data at the worst case with SIM2 | | | | | | | | | | | |
| Right cheek | GSM | 190/836.6 | 1:8.3 | 0.391 | 0.14 | 32.3 | 33 | 1.175 | 0.459 | 22.1 | 1.6 |
| Body worn Test data(Separate 15mm) | | | | | | | | | | | |
| Front side | GSM | 190/836.6 | 1:8.3 | 0.278 | 0.15 | 32.3 | 33 | 1.175 | 0.327 | 22.1 | 1.6 |
| Back side | GSM | 190/836.6 | 1:8.3 | 0.140 | 0.11 | 32.3 | 33 | 1.175 | 0.164 | 22.1 | 1.6 |
| Body worn Test data at the worst case with SIM2(Separate 15mm) | | | | | | | | | | | |
| Front side | GSM | 190/836.6 | 1:8.3 | 0.284 | 0.12 | 32.3 | 33 | 1.175 | **0.334** | 22.1 | 1.6 |
| Body worn Test data at the worst case (Separate 0mm) | | | | | | | | | | | |
| Back side | GSM | 190/836.6 | 1:8.3 | 0.134 | -0.04 | 32.3 | 33 | 1.175 | 0.157 | 22.1 | 1.6 |
| Hotspot Test data(Separate 10mm) | | | | | | | | | | | |
| Front side | GPRS 4TS | 190/836.6 | 1:2.075 | 0.403 | 0.03 | 29.79 | 30 | 1.050 | 0.423 | 22.1 | 1.6 |
| Back side | GPRS 4TS | 190/836.6 | 1:2.075 | 0.184 | 0.01 | 29.79 | 30 | 1.050 | 0.193 | 22.1 | 1.6 |
| Left side | GPRS 4TS | 190/836.6 | 1:2.075 | 0.154 | -0.04 | 29.79 | 30 | 1.050 | 0.162 | 22.1 | 1.6 |
| Right side | GPRS 4TS | 190/836.6 | 1:2.075 | 0.294 | -0.02 | 29.79 | 30 | 1.050 | 0.309 | 22.1 | 1.6 |
| Bottom side | GPRS 4TS | 190/836.6 | 1:2.075 | 0.177 | -0.06 | 29.79 | 30 | 1.050 | 0.186 | 22.1 | 1.6 |
| Hotspot Test Data at the worst case with SIM2(10mm) | | | | | | | | | | | |
| Front side | GPRS 4TS | 190/836.6 | 1:2.075 | 0.417 | -0.04 | 29.79 | 30 | 1.050 | **0.438** | 22.1 | 1.6 |

Table 8： SAR of GSM 850 for Head and Body

Note:

1) The maximum Scaled SAR value is marked in bold. Graph Results refer to Appendix B

2) If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

### 8.3.2 SAR Result Of GSM1900

| Test position | Test mode | Test Ch./Freq. | Duty Cycle | SAR (W/kg) 1-g | Power Drift (dB) | Conducted Power (dBm) | Tune up Limit (dBm) | Scaled factor | Scaled SAR (W/kg) | Liquid Temp | SAR limit (W/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Head Test data | | | | | | | | | | | |
| Left cheek | GSM | 661/1880 | 1:8.3 | 0.368 | 0.08 | 29.45 | 30 | 1.135 | **0.418** | 22.3 | 1.6 |
| Left tilted | GSM | 661/1880 | 1:8.3 | 0.126 | 0.08 | 29.45 | 30 | 1.135 | 0.143 | 22.3 | 1.6 |
| Right cheek | GSM | 661/1880 | 1:8.3 | 0.177 | 0.19 | 29.45 | 30 | 1.135 | 0.201 | 22.3 | 1.6 |
| Right tilted | GSM | 661/1880 | 1:8.3 | 0.0653 | 0.09 | 29.45 | 30 | 1.135 | 0.074 | 22.3 | 1.6 |
| Head Test data at Worst Case With SIM2 | | | | | | | | | | | |
| Left cheek | GSM | 661/1880 | 1:8.3 | 0.368 | 0.08 | 29.45 | 30 | 1.135 | 0.418 | 22.3 | 1.6 |
| Body worn Test data(Separate 15mm) | | | | | | | | | | | |
| Front side | GSM | 661/1880 | 1:8.3 | 0.15 | -0.15 | 29.45 | 30 | 1.135 | **0.170** | 22.3 | 1.6 |
| Back side | GSM | 661/1880 | 1:8.3 | 0.147 | 0.08 | 29.45 | 30 | 1.135 | 0.167 | 22.3 | 1.6 |
| Body worn Test data at Worst Case With SIM2(Separate 15mm) | | | | | | | | | | | |
| Front side | GSM | 661/1880 | 1:8.3 | 0.144 | 0.19 | 29.45 | 30 | 1.135 | 0.163 | 22.3 | 1.6 |
| Body worn Test data at the worst case (Separate 0mm) | | | | | | | | | | | |
| Back side | GSM | 661/1880 | 1:8.3 | 0.145 | -0.07 | 29.45 | 30 | 1.135 | 0.165 | 22.3 | 1.6 |
| Hotspot Test data(Separate 10mm) | | | | | | | | | | | |
| Front side | GPRS 4TS | 661/1880 | 1:2.075 | 0.318 | -0.04 | 26.96 | 28 | 1.271 | 0.404 | 22.3 | 1.6 |
| Back side | GPRS 4TS | 661/1880 | 1:2.075 | 0.228 | -0.04 | 26.96 | 28 | 1.271 | 0.290 | 22.3 | 1.6 |
| Left side | GPRS 4TS | 661/1880 | 1:2.075 | 0.535 | 0.01 | 26.96 | 28 | 1.271 | **0.680** | 22.3 | 1.6 |
| Right side | GPRS 4TS | 661/1880 | 1:2.075 | 0.151 | 0.02 | 26.96 | 28 | 1.271 | 0.192 | 22.3 | 1.6 |
| Bottom side | GPRS 4TS | 661/1880 | 1:2.075 | 0.475 | 0.03 | 26.96 | 28 | 1.271 | 0.604 | 22.3 | 1.6 |
| Hotspot Test data at Worst Case With SIM2(Separate 10mm) | | | | | | | | | | | |
| Left side | GPRS 4TS | 661/1880 | 1:2.075 | 0.523 | -0.02 | 26.96 | 28 | 1.271 | 0.665 | 22.3 | 1.6 |

Table 9： SAR of GSM 1900 for Head and Body

Note:

1) The maximum Scaled SAR value is marked in bold. Graph Results refer to Appendix B

2) If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

### 8.3.3 SAR Result Of CDMA BC0

| Test position | Test mode | Test Ch./Freq. | Duty Cycle | SAR (W/kg) 1-g | Power Drift (dB) | Conducted Power (dBm) | Tune up Limit (dBm) | Scaled factor | Scaled SAR (W/kg) | Liquid Temp | SAR limit (W/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Head Test data | | | | | | | | | | | |
| Left cheek | 1xRTT(RC3 SO55) | 384/836.52 | 1:1 | 0.518 | -0.18 | 21.25 | 22 | 1.189 | **0.616** | 22.1 | 1.6 |
| Left tilted | 1xRTT(RC3 SO55) | 384/836.52 | 1:1 | 0.335 | 0.1 | 21.25 | 22 | 1.189 | 0.398 | 22.1 | 1.6 |
| Right cheek | 1xRTT(RC3 SO55) | 384/836.52 | 1:1 | 0.487 | -0.07 | 21.25 | 22 | 1.189 | 0.579 | 22.1 | 1.6 |
| Right tilted | 1xRTT(RC3 SO55) | 384/836.52 | 1:1 | 0.345 | 0.01 | 21.25 | 22 | 1.189 | 0.410 | 22.1 | 1.6 |
| Head Test data at Worst Case With SIM2 | | | | | | | | | | | |
| Left cheek | 1xRTT(RC3 SO55) | 384/836.52 | 1:1 | 0.515 | 0.08 | 21.25 | 22 | 1.189 | 0.612 | 22.1 | 1.6 |
| Body worn Test data(Separate 15mm) | | | | | | | | | | | |
| Front side | 1xRTT(RC3 SO32) | 384/836.52 | 1:1 | 0.462 | -0.15 | 21.12 | 22 | 1.225 | **0.566** | 22.1 | 1.6 |
| Back side | 1xRTT(RC3 SO32) | 384/836.52 | 1:1 | 0.253 | -0.02 | 21.12 | 22 | 1.225 | 0.310 | 22.1 | 1.6 |
| Body worn Test data at Worst Case With SIM2(Separate 15mm) | | | | | | | | | | | |
| Front side | 1xRTT(RC3 SO32) | 384/836.52 | 1:1 | 0.433 | 0.05 | 21.12 | 22 | 1.225 | 0.530 | 22.1 | 1.6 |
| Body worn Test data at the worst case (Separate 0mm) | | | | | | | | | | | |
| Front side | 1xRTT(RC3 SO32) | 384/836.52 | 1:1 | 0.276 | 0.16 | 21.12 | 22 | 1.225 | 0.338 | 22.1 | 1.6 |
| Hotspot Test data(Separate 10mm) | | | | | | | | | | | |
| Front side | 1xRTT(RC3 SO32) | 384/836.52 | 1:1 | 0.553 | -0.03 | 21.12 | 22 | 1.225 | **0.677** | 22.1 | 1.6 |
| Back side | 1xRTT(RC3 SO32) | 384/836.52 | 1:1 | 0.265 | -0.07 | 21.12 | 22 | 1.225 | 0.325 | 22.1 | 1.6 |
| Left side | 1xRTT(RC3 SO32) | 384/836.52 | 1:1 | 0.301 | -0.04 | 21.12 | 22 | 1.225 | 0.369 | 22.1 | 1.6 |
| Right side | 1xRTT(RC3 SO32) | 384/836.52 | 1:1 | 0.359 | -0.03 | 21.12 | 22 | 1.225 | 0.440 | 22.1 | 1.6 |
| Bottom side | 1xRTT(RC3 SO32) | 384/836.52 | 1:1 | 0.2 | 0.08 | 21.12 | 22 | 1.225 | 0.245 | 22.1 | 1.6 |
| Front side | 1XEVDO RTAP 153.6Kbps | 384/836.52 | 1:1 | 0.463 | -0.01 | 21.37 | 22 | 1.156 | 0.535 | 22.1 | 1.6 |
| Front side | 1XEVDO RETAP 4096Bits | 384/836.52 | 1:1 | 0.47 | 0.02 | 21.21 | 22 | 1.199 | 0.564 | 22.1 | 1.6 |
| Hotspot Test data at Worst Case With SIM2(Separate 10mm) | | | | | | | | | | | |
| Front side | 1xRTT(RC3 SO32) | 384/836.52 | 1:1 | 0.549 | 0.13 | 21.12 | 22 | 1.225 | 0.672 | 22.1 | 1.6 |

Table 10： SAR of CDMA BC0 for Head and Body

Note:

1) The maximum Scaled SAR value is marked in bold. Graph results refer to Appendix B

2) If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

### 8.3.4 SAR Result Of LTE Band 2

| Test position | BW. | Test mode | Test Ch./Freq. | Duty Cycle | SAR (W/kg) 1-g | Power Drift (dB) | Conducted power (dBm) | Tune up Limit (dBm) | Scaled factor | Scaled SAR (W/kg) | Liquid Temp. | SAR limit (W/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Head Test data(1RB_50 offset) | | | | | | | | | | | | |
| Left cheek | 20 | QPSK | 18900/1880 | 1:1 | 0.636 | 0.02 | 22.17 | 22.5 | 1.079 | **0.686** | 22.3 | 1.6 |
| Left tilted | 20 | QPSK | 18900/1880 | 1:1 | 0.221 | -0.03 | 22.17 | 22.5 | 1.079 | 0.238 | 22.3 | 1.6 |
| Right cheek | 20 | QPSK | 18900/1880 | 1:1 | 0.305 | 0.06 | 22.17 | 22.5 | 1.079 | 0.329 | 22.3 | 1.6 |
| Right tilted | 20 | QPSK | 18900/1880 | 1:1 | 0.107 | 0.08 | 22.17 | 22.5 | 1.079 | 0.115 | 22.3 | 1.6 |
| Head Test data(50%RB) | | | | | | | | | | | | |
| Left cheek | 20 | QPSK | 18900/1880 | 1:1 | 0.459 | -0.08 | 20.84 | 21 | 1.038 | 0.476 | 22.3 | 1.6 |
| Left tilted | 20 | QPSK | 18900/1880 | 1:1 | 0.16 | 0.06 | 20.84 | 21 | 1.038 | 0.166 | 22.3 | 1.6 |
| Right cheek | 20 | QPSK | 18900/1880 | 1:1 | 0.219 | -0.14 | 20.84 | 21 | 1.038 | 0.227 | 22.3 | 1.6 |
| Right tilted | 20 | QPSK | 18900/1880 | 1:1 | 0.0772 | -0.06 | 20.84 | 21 | 1.038 | 0.080 | 22.3 | 1.6 |
| Head Test data at Worst Case With SIM2(1RB_50 offset) | | | | | | | | | | | | |
| Left cheek | 20 | QPSK | 18900/1880 | 1:1 | 0.578 | 0.01 | 22.17 | 22.5 | 1.079 | 0.624 | 22.3 | 1.6 |
| Body worn Test data(Separate 15mm 1RB_50 offset) | | | | | | | | | | | | |
| Front side | 20 | QPSK | 18900/1880 | 1:1 | 0.255 | 0.04 | 22.17 | 22.5 | 1.079 | **0.275** | 22.3 | 1.6 |
| Back side | 20 | QPSK | 18900/1880 | 1:1 | 0.159 | -0.17 | 22.17 | 22.5 | 1.079 | 0.172 | 22.3 | 1.6 |
| Body worn Test data (Separate 15mm 50%RB) | | | | | | | | | | | | |
| Front side | 20 | QPSK | 18900/1880 | 1:1 | 0.182 | 0.04 | 20.84 | 21 | 1.038 | 0.189 | 22.3 | 1.6 |
| Back side | 20 | QPSK | 18900/1880 | 1:1 | 0.159 | -0.07 | 20.84 | 21 | 1.038 | 0.165 | 22.3 | 1.6 |
| Body worn Test data at Worst Case With SIM2(Separate 15mm 1RB_0 offset) | | | | | | | | | | | | |
| Front side | 20 | QPSK | 18900/1880 | 1:1 | 0.253 | 0.14 | 22.17 | 22.5 | 1.079 | 0.273 | 22.3 | 1.6 |
| Body worn Test data at the worst case (Separate 0mm 1RB_50 offset) | | | | | | | | | | | | |
| Back side | 20 | QPSK | 18900/1880 | 1:1 | 0.204 | 0.09 | 22.17 | 22.5 | 1.079 | 0.220 | 22.3 | 1.6 |
| Hotspot Test data(Separate 10mm 1RB_50 offset) | | | | | | | | | | | | |
| Front side | 20 | QPSK | 18900/1880 | 1:1 | 0.346 | 0.07 | 22.17 | 22.5 | 1.079 | 0.373 | 22.3 | 1.6 |
| Back side | 20 | QPSK | 18900/1880 | 1:1 | 0.332 | 0.11 | 22.17 | 22.5 | 1.079 | 0.358 | 22.3 | 1.6 |
| Left side | 20 | QPSK | 18900/1880 | 1:1 | 0.631 | 0.12 | 22.17 | 22.5 | 1.079 | **0.681** | 22.3 | 1.6 |
| Right side | 20 | QPSK | 18900/1880 | 1:1 | 0.183 | 0.18 | 22.17 | 22.5 | 1.079 | 0.197 | 22.3 | 1.6 |
| Bottom side | 20 | QPSK | 18900/1880 | 1:1 | 0.531 | 0.14 | 22.17 | 22.5 | 1.079 | 0.573 | 22.3 | 1.6 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hotspot Test data (Separate 10mm 50%RB) | | | | | | | | | | | | |
| Front side | 20 | QPSK | 18900/1880 | 1:1 | 0.266 | -0.03 | 20.84 | 21 | 1.038 | 0.276 | 22.3 | 1.6 |
| Back side | 20 | QPSK | 18900/1880 | 1:1 | 0.25 | 0.01 | 20.84 | 21 | 1.038 | 0.259 | 22.3 | 1.6 |
| Left side | 20 | QPSK | 18900/1880 | 1:1 | 0.489 | 0.01 | 20.84 | 21 | 1.038 | 0.507 | 22.3 | 1.6 |
| Right side | 20 | QPSK | 18900/1880 | 1:1 | 0.145 | -0.01 | 20.84 | 21 | 1.038 | 0.150 | 22.3 | 1.6 |
| Bottom side | 20 | QPSK | 18900/1880 | 1:1 | 0.388 | -0.03 | 20.84 | 21 | 1.038 | 0.403 | 22.3 | 1.6 |
| Hotspot Test data at Worst Case With SIM2(Separate 10mm 1RB_50 offset) | | | | | | | | | | | | |
| Left side | 20 | QPSK | 18900/1880 | 1:1 | 0.626 | 0.12 | 22.17 | 22.5 | 1.079 | 0.675 | 22.3 | 1.6 |

Table 11： SAR of LTE Band 2 for Head and Body

Note:

1) The maximum Scaled SAR value is marked in bold. Graph results refer to Appendix B

2) If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

### 8.3.5 SAR Result Of LTE Band 4

| Test position | BW. | Test mode | Test Ch./Freq. | Duty Cycle | SAR (W/kg) 1-g | Power Drift (dB) | Conducted power (dBm) | Tune up Limit (dBm) | Scaled factor | Scaled SAR (W/kg) | Liquid Temp. | SAR limit (W/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Head Test data(1RB_50 offset) | | | | | | | | | | | | |
| Left cheek | 20 | QPSK | 20175/1732.5 | 1:1 | 0.296 | -0.13 | 22.86 | 23 | 1.033 | **0.306** | 22.2 | 1.6 |
| Left tilted | 20 | QPSK | 20175/1732.5 | 1:1 | 0.0497 | 0.02 | 22.86 | 23 | 1.033 | 0.051 | 22.2 | 1.6 |
| Right cheek | 20 | QPSK | 20175/1732.5 | 1:1 | 0.143 | 0.07 | 22.86 | 23 | 1.033 | 0.148 | 22.2 | 1.6 |
| Right tilted | 20 | QPSK | 20175/1732.5 | 1:1 | 0.0574 | 0.12 | 22.86 | 23 | 1.033 | 0.059 | 22.2 | 1.6 |
| Head Test data(50%RB) | | | | | | | | | | | | |
| Left cheek | 20 | QPSK | 20175/1732.5 | 1:1 | 0.22 | 0.08 | 21.62 | 22 | 1.091 | 0.240 | 22.2 | 1.6 |
| Left tilted | 20 | QPSK | 20175/1732.5 | 1:1 | 0.0375 | 0.05 | 21.62 | 22 | 1.091 | 0.041 | 22.2 | 1.6 |
| Right cheek | 20 | QPSK | 20175/1732.5 | 1:1 | 0.11 | -0.06 | 21.62 | 22 | 1.091 | 0.120 | 22.2 | 1.6 |
| Right tilted | 20 | QPSK | 20175/1732.5 | 1:1 | 0.0463 | 0.12 | 21.62 | 22 | 1.091 | 0.051 | 22.2 | 1.6 |
| Head Test data at Worst Case With SIM2(1RB_50 offset) | | | | | | | | | | | | |
| Left cheek | 20 | QPSK | 20175/1732.5 | 1:1 | 0.274 | 0.12 | 22.86 | 23 | 1.033 | 0.283 | 22.2 | 1.6 |
| Body worn Test data(Separate 15mm 1RB_50 offset) | | | | | | | | | | | | |
| Front side | 20 | QPSK | 20175/1732.5 | 1:1 | 0.352 | 0.07 | 22.86 | 23 | 1.033 | 0.364 | 22.2 | 1.6 |
| Back side | 20 | QPSK | 20175/1732.5 | 1:1 | 0.307 | 0.09 | 22.86 | 23 | 1.033 | 0.317 | 22.2 | 1.6 |
| Body worn Test data (Separate 15mm 50%RB) | | | | | | | | | | | | |
| Front side | 20 | QPSK | 20175/1732.5 | 1:1 | 0.29 | 0.03 | 21.62 | 22 | 1.091 | 0.317 | 22.2 | 1.6 |
| Back side | 20 | QPSK | 20175/1732.5 | 1:1 | 0.246 | 0.16 | 21.62 | 22 | 1.091 | 0.268 | 22.2 | 1.6 |
| Body worn Test data at Worst Case With SIM2(Separate 15mm 1RB_0 offset) | | | | | | | | | | | | |
| Front side | 20 | QPSK | 20175/1732.5 | 1:1 | 0.349 | -0.01 | 22.86 | 23 | 1.033 | 0.360 | 22.2 | 1.6 |
| Body worn Test data at the worst case (Separate 0mm 1RB_50 offset) | | | | | | | | | | | | |
| Back side | 20 | QPSK | 20175/1732.5 | 1:1 | 0.412 | 0.12 | 22.59 | 23 | 1.099 | **0.453** | 22.2 | 1.6 |
| Hotspot Test data(Separate 10mm 1RB_50 offset) | | | | | | | | | | | | |
| Front side | 20 | QPSK | 20175/1732.5 | 1:1 | 0.694 | 0.01 | 22.86 | 23 | 1.033 | 0.717 | 22.2 | 1.6 |
| Back side | 20 | QPSK | 20175/1732.5 | 1:1 | 0.453 | 0.02 | 22.86 | 23 | 1.033 | 0.468 | 22.2 | 1.6 |
| Left side | 20 | QPSK | 20175/1732.5 | 1:1 | 0.772 | 0.13 | 22.86 | 23 | 1.033 | 0.797 | 22.2 | 1.6 |
| Right side | 20 | QPSK | 20175/1732.5 | 1:1 | 0.234 | 0.05 | 22.86 | 23 | 1.033 | 0.242 | 22.2 | 1.6 |
| Bottom side | 20 | QPSK | 20175/1732.5 | 1:1 | 1.05 | 0.09 | 22.86 | 23 | 1.033 | 1.084 | 22.2 | 1.6 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bottom side | 20 | QPSK | 20050/1720 | 1:1 | 0.978 | -0.07 | 22.76 | 23 | 1.057 | 1.034 | 22.2 | 1.6 |
| Bottom side | 20 | QPSK | 20300/1745 | 1:1 | 1.03 | -0.07 | 22.59 | 23 | 1.099 | **1.132** | 22.2 | 1.6 |
| Bottom side-repeat | 20 | QPSK | 20175/1732.5 | 1:1 | 0.998 | -0.08 | 22.86 | 23 | 1.033 | 1.031 | 22.2 | 1.6 |
| Hotspot Test data (Separate 10mm 50%RB) | | | | | | | | | | | | |
| Front side | 20 | QPSK | 20175/1732.5 | 1:1 | 0.543 | 0.01 | 21.62 | 22 | 1.091 | 0.593 | 22.2 | 1.6 |
| Back side | 20 | QPSK | 20175/1732.5 | 1:1 | 0.345 | 0.07 | 21.62 | 22 | 1.091 | 0.377 | 22.2 | 1.6 |
| Left side | 20 | QPSK | 20175/1732.5 | 1:1 | 0.596 | -0.02 | 21.62 | 22 | 1.091 | 0.650 | 22.2 | 1.6 |
| Right side | 20 | QPSK | 20175/1732.5 | 1:1 | 0.177 | -0.08 | 21.62 | 22 | 1.091 | 0.193 | 22.2 | 1.6 |
| Bottom side | 20 | QPSK | 20175/1732.5 | 1:1 | 0.774 | -0.05 | 21.62 | 22 | 1.091 | 0.845 | 22.2 | 1.6 |
| Bottom side | 20 | QPSK | 20050/1720 | 1:1 | 0.783 | -0.02 | 21.54 | 22 | 1.112 | 0.870 | 22.2 | 1.6 |
| Bottom side | 20 | QPSK | 20300/1745 | 1:1 | 0.8 | -0.08 | 21.55 | 22 | 1.109 | 0.887 | 22.2 | 1.6 |
| Hotspot Test data (Separate 10mm 100%RB) | | | | | | | | | | | | |
| Bottom side | 20 | QPSK | 20175/1732.5 | 1:1 | 0.767 | -0.03 | 21.55 | 22 | 1.109 | 0.851 | 22.2 | 1.6 |
| Hotspot Test data at Worst Case With SIM2(Separate 10mm 1RB_50 offset) | | | | | | | | | | | | |
| Bottom side | 20 | QPSK | 20300/1745 | 1:1 | 0.996 | -0.17 | 22.59 | 23 | 1.099 | 1.095 | 22.2 | 1.6 |

Table 12： SAR of LTE Band 4 for Head and Body

Note:

1) The maximum Scaled SAR value is marked in bold. Graph results refer to Appendix B

2) If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

### 8.3.6 SAR Result Of LTE Band 5

| Test position | BW. | Test mode | Test Ch./Freq. | Duty Cycle | SAR (W/kg) 1-g | Power Drift (dB) | Conducted power (dBm) | Tune up Limit (dBm) | Scaled factor | Scaled SAR (W/kg) | Liquid Temp. | SAR limit (W/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Head Test data(1RB_25 offset) | | | | | | | | | | | | |
| Left cheek | 10 | QPSK | 20525/836.5 | 1:1 | 0.336 | 0.03 | 23.15 | 23.5 | 1.084 | 0.364 | 22.1 | 1.6 |
| Left tilted | 10 | QPSK | 20525/836.5 | 1:1 | 0.232 | 0.08 | 23.15 | 23.5 | 1.084 | 0.251 | 22.1 | 1.6 |
| Right cheek | 10 | QPSK | 20525/836.5 | 1:1 | 0.387 | -0.01 | 23.15 | 23.5 | 1.084 | **0.419** | 22.1 | 1.6 |
| Right tilted | 10 | QPSK | 20525/836.5 | 1:1 | 0.243 | 0.07 | 23.15 | 23.5 | 1.084 | 0.263 | 22.1 | 1.6 |
| Head Test data(50%RB_0 offset) | | | | | | | | | | | | |
| Left cheek | 10 | QPSK | 20525/836.5 | 1:1 | 0.255 | 0.01 | 21.96 | 22 | 1.009 | 0.257 | 22.1 | 1.6 |
| Left tilted | 10 | QPSK | 20525/836.5 | 1:1 | 0.169 | 0.01 | 21.96 | 22 | 1.009 | 0.171 | 22.1 | 1.6 |
| Right cheek | 10 | QPSK | 20525/836.5 | 1:1 | 0.279 | 0.18 | 21.96 | 22 | 1.009 | 0.282 | 22.1 | 1.6 |
| Right tilted | 10 | QPSK | 20525/836.5 | 1:1 | 0.182 | 0.11 | 21.96 | 22 | 1.009 | 0.184 | 22.1 | 1.6 |
| Head Test Data at the worst case with SIM2(1RB_25 offset) | | | | | | | | | | | | |
| Right cheek | 10 | QPSK | 20600/844 | 1:1 | 0.37 | 0.14 | 23.15 | 23.5 | 1.084 | 0.401 | 22.1 | 1.6 |
| Body worn Test data(Separate 15mm 1RB_25 offset) | | | | | | | | | | | | |
| Front side | 10 | QPSK | 20525/836.5 | 1:1 | 0.259 | -0.06 | 23.15 | 23.5 | 1.084 | **0.281** | 22.1 | 1.6 |
| Back side | 10 | QPSK | 20525/836.5 | 1:1 | 0.119 | 0.13 | 23.15 | 23.5 | 1.084 | 0.129 | 22.1 | 1.6 |
| Body worn Test data (Separate 15mm 50%RB_0 offset) | | | | | | | | | | | | |
| Front side | 10 | QPSK | 20525/836.5 | 1:1 | 0.186 | 0.04 | 21.96 | 22 | 1.009 | 0.188 | 22.1 | 1.6 |
| Back side | 10 | QPSK | 20525/836.5 | 1:1 | 0.0944 | -0.05 | 21.96 | 22 | 1.009 | 0.095 | 22.1 | 1.6 |
| Body worn Test data at Worst Case With SIM2(Separate 15mm 1RB_25 offset) | | | | | | | | | | | | |
| Front side | 10 | QPSK | 20525/836.5 | 1:1 | 0.24 | -0.17 | 23.15 | 23.5 | 1.084 | 0.260 | 22.1 | 1.6 |
| Body worn Test data at the worst case (Separate 0mm 1RB_25 offset) | | | | | | | | | | | | |
| Back side | 10 | QPSK | 20525/836.5 | 1:1 | 0.121 | 0.03 | 23.15 | 23.5 | 1.084 | 0.131 | 22.1 | 1.6 |
| Hotspot Test data (Separate 10mm 1RB_25 offset) | | | | | | | | | | | | |
| Front side | 10 | QPSK | 20525/836.5 | 1:1 | 0.316 | 0.02 | 23.15 | 23.5 | 1.084 | **0.343** | 22.1 | 1.6 |
| Back side | 10 | QPSK | 20525/836.5 | 1:1 | 0.137 | 0.03 | 23.15 | 23.5 | 1.084 | 0.148 | 22.1 | 1.6 |
| Left side | 10 | QPSK | 20525/836.5 | 1:1 | 0.135 | -0.02 | 23.15 | 23.5 | 1.084 | 0.146 | 22.1 | 1.6 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Right side | 10 | QPSK | 20525/836.5 | 1:1 | 0.241 | 0.1 | 23.15 | 23.5 | 1.084 | 0.261 | 22.1 | 1.6 |
| Bottom side | 10 | QPSK | 20525/836.5 | 1:1 | 0.144 | 0.15 | 23.15 | 23.5 | 1.084 | 0.156 | 22.1 | 1.6 |
| Hotspot Test data (Separate 10mm 50%RB_0 offset) | | | | | | | | | | | | |
| Front side | 10 | QPSK | 20525/836.5 | 1:1 | 0.245 | -0.01 | 21.96 | 22 | 1.009 | 0.247 | 22.1 | 1.6 |
| Back side | 10 | QPSK | 20525/836.5 | 1:1 | 0.107 | -0.04 | 21.96 | 22 | 1.009 | 0.108 | 22.1 | 1.6 |
| Left side | 10 | QPSK | 20525/836.5 | 1:1 | 0.107 | -0.15 | 21.96 | 22 | 1.009 | 0.108 | 22.1 | 1.6 |
| Right side | 10 | QPSK | 20525/836.5 | 1:1 | 0.194 | 0.03 | 21.96 | 22 | 1.009 | 0.196 | 22.1 | 1.6 |
| Bottom side | 10 | QPSK | 20525/836.5 | 1:1 | 0.119 | -0.07 | 21.96 | 22 | 1.009 | 0.120 | 22.1 | 1.6 |
| Hotspot Test data at Worst Case With SIM2 (Separate 10mm 1RB_25 offset) | | | | | | | | | | | | |
| Front side | 10 | QPSK | 20525/836.5 | 1:1 | 0.316 | 0.12 | 23.15 | 23.5 | 1.084 | **0.343** | 22.1 | 1.6 |

Table 13： SA SAR of LTE Band 5 for Head and Body

Note:

1) The maximum Scaled SAR value is marked in bold. Graph results refer to Appendix B

2) If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

### 8.3.7 SAR Result Of LTE Band 7

| Test position | BW. | Test mode | Test Ch./Freq. | Duty Cycle | SAR (W/kg) 1-g | Power Drift (dB) | Conducted power (dBm) | Tune up Limit (dBm) | Scaled factor | Scaled SAR (W/kg) | Liquid Temp. | SAR limit (W/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Head Test data(1RB_50 offset) | | | | | | | | | | | | |
| Left cheek | 20 | QPSK | 21100/2535.5 | 1:1 | 0.728 | 0.07 | 22.32 | 22.5 | 1.042 | 0.759 | 22.1 | 1.6 |
| Left tilted | 20 | QPSK | 21100/2535.5 | 1:1 | 0.41 | 0.05 | 22.32 | 22.5 | 1.042 | 0.427 | 22.1 | 1.6 |
| Right cheek | 20 | QPSK | 21100/2535.5 | 1:1 | 1.32 | 0.13 | 22.32 | 22.5 | 1.042 | 1.376 | 22.1 | 1.6 |
| Right tilted | 20 | QPSK | 21100/2535.5 | 1:1 | 0.26 | 0.02 | 22.32 | 22.5 | 1.042 | 0.271 | 22.1 | 1.6 |
| Right cheek | 20 | QPSK | 20850/2510 | 1:1 | 1.08 | -0.09 | 22.08 | 22.5 | 1.102 | 1.190 | 22.1 | 1.6 |
| Right cheek | 20 | QPSK | 21350/2560 | 1:1 | 1.3 | 0.05 | 22.23 | 22.5 | 1.064 | **1.383** | 22.1 | 1.6 |
| Right cheek_ Repeat SAR | 20 | QPSK | 21100/2535.5 | 1:1 | 1.27 | 0.09 | 22.32 | 22.5 | 1.042 | 1.324 | 22.1 | 1.6 |
| Head Test data(50%RB_0 offse) | | | | | | | | | | | | |
| Left cheek | 20 | QPSK | 21100/2535.5 | 1:1 | 0.522 | -0.07 | 20.78 | 21 | 1.052 | 0.549 | 22.1 | 1.6 |
| Left tilted | 20 | QPSK | 21100/2535.5 | 1:1 | 0.278 | 0.09 | 20.78 | 21 | 1.052 | 0.292 | 22.1 | 1.6 |
| Right cheek | 20 | QPSK | 21100/2535.5 | 1:1 | 0.929 | 0.04 | 20.78 | 21 | 1.052 | 0.977 | 22.1 | 1.6 |
| Right tilted | 20 | QPSK | 21100/2535.5 | 1:1 | 0.167 | 0.08 | 20.78 | 21 | 1.052 | 0.176 | 22.1 | 1.6 |
| Right cheek | 20 | QPSK | 20850/2510 | 1:1 | 0.76 | 0.06 | 20.73 | 21 | 1.064 | 0.809 | 22.1 | 1.6 |
| Right cheek | 20 | QPSK | 21350/2560 | 1:1 | 1.09 | 0.06 | 20.63 | 21 | 1.089 | 1.187 | 22.1 | 1.6 |
| Head Test data(100%RB) | | | | | | | | | | | | |
| Right cheek | 20 | QPSK | 21100/2535.5 | 1:1 | 0.929 | 0.04 | 20.75 | 21 | 1.059 | 0.984 | 22.1 | 1.6 |
| Head Test data at Worst Case With SIM2(1RB_50 offset) | | | | | | | | | | | | |
| Right cheek | 20 | QPSK | 21350/2560 | 1:1 | 1.27 | 0.15 | 22.23 | 22.5 | 1.064 | 1.351 | 22.1 | 1.6 |
| Body worn Test data(Separate 15mm 1RB_50 offset) | | | | | | | | | | | | |
| Front side | 20 | QPSK | 21100/2535.5 | 1:1 | 0.262 | -0.01 | 22.32 | 22.5 | 1.042 | 0.273 | 22.1 | 1.6 |
| Back side | 20 | QPSK | 21100/2535.5 | 1:1 | 0.414 | 0.05 | 22.32 | 22.5 | 1.042 | **0.432** | 22.1 | 1.6 |
| Body worn Test data (Separate 15mm 50%RB_0 offset) | | | | | | | | | | | | |
| Front side | 20 | QPSK | 21100/2535.5 | 1:1 | 0.215 | 0.16 | 20.78 | 21 | 1.052 | 0.226 | 22.1 | 1.6 |
| Back side | 20 | QPSK | 21100/2535.5 | 1:1 | 0.288 | 0.05 | 20.78 | 21 | 1.052 | 0.303 | 22.1 | 1.6 |
| Body worn Test data at Worst Case With SIM2(Separate 15mm 1RB_50 offset) | | | | | | | | | | | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Back side | 20 | QPSK | 21100/2535.5 | 1:1 | 0.41 | 0.03 | 22.32 | 22.5 | 1.042 | 0.427 | 22.1 | 1.6 |
| Body worn Test data at the worst case (Separate 0mm 1RB_50 offset) | | | | | | | | | | | | |
| Back side | 20 | QPSK | 21100/2535.5 | 1:1 | 0.347 | 0.02 | 22.08 | 22.5 | 1.102 | 0.382 | 22.1 | 1.6 |
| Hotspot Test data (Separate 10mm 1RB_50 offset_0 offse) | | | | | | | | | | | | |
| Front side | 20 | QPSK | 21100/2535.5 | 1:1 | 0.460 | 0.09 | 22.32 | 22.5 | 1.042 | 0.479 | 22.1 | 1.6 |
| Back side | 20 | QPSK | 21100/2535.5 | 1:1 | 0.589 | 0.07 | 22.32 | 22.5 | 1.042 | 0.614 | 22.1 | 1.6 |
| Left side | 20 | QPSK | 21100/2535.5 | 1:1 | 0.492 | 0.02 | 22.32 | 22.5 | 1.042 | 0.513 | 22.1 | 1.6 |
| Right side | 20 | QPSK | 21100/2535.5 | 1:1 | 0.335 | -0.18 | 22.32 | 22.5 | 1.042 | 0.349 | 22.1 | 1.6 |
| Bottom side | 20 | QPSK | 21100/2535.5 | 1:1 | 0.353 | 0.09 | 22.32 | 22.5 | 1.042 | 0.368 | 22.1 | 1.6 |
| Back side | 20 | QPSK | 20850/2510 | 1:1 | 0.744 | -0.02 | 22.08 | 22.5 | 1.102 | **0.820** | 22.1 | 1.6 |
| Back side | 20 | QPSK | 21350/2560 | 1:1 | 0.378 | 0.05 | 22.23 | 22.5 | 1.064 | 0.402 | 22.1 | 1.6 |
| Hotspot Test data (Separate 10mm 50%RB_0 offse) | | | | | | | | | | | | |
| Front side | 20 | QPSK | 21100/2535.5 | 1:1 | 0.370 | 0.11 | 20.78 | 21 | 1.052 | 0.389 | 22.1 | 1.6 |
| Back side | 20 | QPSK | 21100/2535.5 | 1:1 | 0.539 | 0.03 | 20.78 | 21 | 1.052 | 0.567 | 22.1 | 1.6 |
| Left side | 20 | QPSK | 21100/2535.5 | 1:1 | 0.400 | 0.03 | 20.78 | 21 | 1.052 | 0.421 | 22.1 | 1.6 |
| Right side | 20 | QPSK | 21100/2535.5 | 1:1 | 0.258 | -0.08 | 20.78 | 21 | 1.052 | 0.271 | 22.1 | 1.6 |
| Bottom side | 20 | QPSK | 21100/2535.5 | 1:1 | 0.288 | 0.14 | 20.78 | 21 | 1.052 | 0.303 | 22.1 | 1.6 |
| Hotspot Test data (Separate 10mm 100%RB_0 offse) | | | | | | | | | | | | |
| Back side | 20 | QPSK | 21100/2535.5 | 1:1 | 0.733 | 0.01 | 20.75 | 21 | 1.102 | 0.776 | 22.1 | 1.6 |
| Hotspot Test data at Worst Case With SIM2(Separate 10mm 1RB_50 offset) | | | | | | | | | | | | |
| Back side | 20 | QPSK | 20850/2510 | 1:1 | 0.735 | -0.12 | 22.08 | 22.5 | 1.102 | 0.810 | 22.1 | 1.6 |

Table 14： SAR of LTE Band 7 for Head and Body

Note:

1) The maximum Scaled SAR value is marked in bold. Graph results refer to Appendix B

2) If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

### 8.3.8 SAR Result Of LTE Band 26

| Test position | BW. | Test mode | Test Ch./Freq. | Duty Cycle | SAR (W/kg) 1-g | Power Drift (dB) | Conducted power (dBm) | Tune up Limit (dBm) | Scaled factor | Scaled SAR (W/kg) | Liquid Temp. | SAR limit (W/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Head Test data(1RB_38 offset) | | | | | | | | | | | | |
| Left cheek | 15 | QPSK | 26865/831.5 | 1:1 | 0.336 | 0.08 | 22.93 | 23 | 1.016 | **0.341** | 22.1 | 1.6 |
| Left tilted | 15 | QPSK | 26865/831.5 | 1:1 | 0.207 | 0.04 | 22.93 | 23 | 1.016 | 0.210 | 22.1 | 1.6 |
| Right cheek | 15 | QPSK | 26865/831.5 | 1:1 | 0.292 | -0.01 | 22.93 | 23 | 1.016 | 0.297 | 22.1 | 1.6 |
| Right tilted | 15 | QPSK | 26865/831.5 | 1:1 | 0.212 | 0.02 | 22.93 | 23 | 1.016 | 0.215 | 22.1 | 1.6 |
| Head Test data(36%RB_0 offset) | | | | | | | | | | | | |
| Left cheek | 15 | QPSK | 26865/831.5 | 1:1 | 0.265 | 0.14 | 21.47 | 21.5 | 1.007 | 0.267 | 22.1 | 1.6 |
| Left tilted | 15 | QPSK | 26865/831.5 | 1:1 | 0.166 | 0.06 | 21.47 | 21.5 | 1.007 | 0.167 | 22.1 | 1.6 |
| Right cheek | 15 | QPSK | 26865/831.5 | 1:1 | 0.233 | 0.01 | 21.47 | 21.5 | 1.007 | 0.235 | 22.1 | 1.6 |
| Right tilted | 15 | QPSK | 26865/831.5 | 1:1 | 0.173 | 0.18 | 21.47 | 21.5 | 1.007 | 0.174 | 22.1 | 1.6 |
| Head Test data at Worst Case With SIM2(1RB_38 offset) | | | | | | | | | | | | |
| Left cheek | 15 | QPSK | 26865/831.5 | 1:1 | 0.333 | 0.04 | 22.93 | 23 | 1.016 | 0.338 | 22.1 | 1.6 |
| Body worn Test data(Separate 15mm 1RB_38 offset) | | | | | | | | | | | | |
| Front side | 15 | QPSK | 26865/831.5 | 1:1 | 0.271 | -0.01 | 22.93 | 23 | 1.016 | **0.275** | 22.1 | 1.6 |
| Back side | 15 | QPSK | 26865/831.5 | 1:1 | 0.109 | 0.03 | 22.93 | 23 | 1.016 | 0.111 | 22.1 | 1.6 |
| Body worn Test data (Separate 15mm 36%RB_0 offset) | | | | | | | | | | | | |
| Front side | 15 | QPSK | 26865/831.5 | 1:1 | 0.205 | -0.14 | 21.47 | 21.5 | 1.007 | 0.206 | 22.1 | 1.6 |
| Back side | 15 | QPSK | 26865/831.5 | 1:1 | 0.087 | -0.04 | 21.47 | 21.5 | 1.007 | 0.088 | 22.1 | 1.6 |
| Body worn Test data at Worst Case With SIM2(Separate 15mm 1RB_38 offset) | | | | | | | | | | | | |
| Front side | 15 | QPSK | 26865/831.5 | 1:1 | 0.255 | -0.15 | 22.93 | 23 | 1.016 | 0.259 | 22.1 | 1.6 |
| Body worn Test data at the worst case (Separate 0mm 1RB_38 offset) | | | | | | | | | | | | |
| Back side | 15 | QPSK | 26865/831.5 | 1:1 | 0.113 | 0.01 | 22.93 | 23 | 1.016 | 0.115 | 22.1 | 1.6 |
| Hotspot Test data (Separate 10mm 1RB_38 offset) | | | | | | | | | | | | |
| Front side | 15 | QPSK | 26865/831.5 | 1:1 | 0.318 | 0.06 | 22.93 | 23 | 1.016 | **0.323** | 22.1 | 1.6 |
| Back side | 15 | QPSK | 26865/831.5 | 1:1 | 0.122 | -0.03 | 22.93 | 23 | 1.016 | 0.124 | 22.1 | 1.6 |
| Left side | 15 | QPSK | 26865/831.5 | 1:1 | 0.158 | -0.12 | 22.93 | 23 | 1.016 | 0.161 | 22.1 | 1.6 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Right side | 15 | QPSK | 26865/831.5 | 1:1 | 0.242 | 0.09 | 22.93 | 23 | 1.016 | 0.246 | 22.1 | 1.6 |
| Bottom side | 15 | QPSK | 26865/831.5 | 1:1 | 0.136 | -0.18 | 22.93 | 23 | 1.016 | 0.138 | 22.1 | 1.6 |
| Hotspot Test data (Separate 10mm 36%RB_0 offset) | | | | | | | | | | | | |
| Front side | 15 | QPSK | 26865/831.5 | 1:1 | 0.249 | -0.08 | 21.47 | 21.5 | 1.007 | 0.251 | 22.1 | 1.6 |
| Back side | 15 | QPSK | 26865/831.5 | 1:1 | 0.094 | -0.14 | 21.47 | 21.5 | 1.007 | 0.095 | 22.1 | 1.6 |
| Left side | 15 | QPSK | 26865/831.5 | 1:1 | 0.122 | 0.04 | 21.47 | 21.5 | 1.007 | 0.123 | 22.1 | 1.6 |
| Right side | 15 | QPSK | 26865/831.5 | 1:1 | 0.193 | 0.02 | 21.47 | 21.5 | 1.007 | 0.194 | 22.1 | 1.6 |
| Bottom side | 15 | QPSK | 26865/831.5 | 1:1 | 0.111 | -0.01 | 21.47 | 21.5 | 1.007 | 0.112 | 22.1 | 1.6 |
| Hotspot Test data at Worst Case With SIM2(Separate 10mm 1RB_38 offset) | | | | | | | | | | | | |
| Front side | 15 | QPSK | 26865/831.5 | 1:1 | 0.312 | 0.05 | 22.93 | 23 | 1.016 | 0.317 | 22.1 | 1.6 |

Table 15： SAR of LTE Band 26 for Head and Body

Note:

1) The maximum Scaled SAR value is marked in bold. Graph results refer to Appendix B

2) If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

### 8.3.9 SAR Result Of LTE Band 38

| Test position | BW. | Test mode | Test Ch./Freq. | Duty Cycle | SAR (W/kg) 1-g | Power Drift (dB) | Conducted power (dBm) | Tune up Limit (dBm) | Scaled factor | Scaled SAR (W/kg) | Liquid Temp. | SAR limit( W/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Head Test data(1RB_0 offset) | | | | | | | | | | | | |
| Left cheek | 20 | QPSK | 38000/2595 | 1:1.58 | 0.468 | -0.07 | 22.46 | 22.5 | 1.009 | 0.472 | 22.1 | 1.6 |
| Left tilted | 20 | QPSK | 38000/2595 | 1:1.58 | 0.229 | 0.05 | 22.46 | 22.5 | 1.009 | 0.231 | 22.1 | 1.6 |
| Right cheek | 20 | QPSK | 38000/2595 | 1:1.58 | 0.838 | 0.04 | 22.46 | 22.5 | 1.009 | 0.846 | 22.1 | 1.6 |
| Right tilted | 20 | QPSK | 38000/2595 | 1:1.58 | 0.181 | 0.06 | 22.46 | 22.5 | 1.009 | 0.183 | 22.1 | 1.6 |
| Right cheek | 20 | QPSK | 37850/2580 | 1:1.58 | 0.874 | 0.01 | 22.02 | 22.5 | 1.117 | **0.976** | 22.1 | 1.6 |
| Right cheek | 20 | QPSK | 38150/2610 | 1:1.58 | 0.709 | 0.03 | 22.28 | 22.5 | 1.052 | 0.746 | 22.1 | 1.6 |
| Head Test data(50%RB) | | | | | | | | | | | | |
| Left cheek | 20 | QPSK | 38000/2595 | 1:1.58 | 0.39 | -0.09 | 21.04 | 21.5 | 1.112 | 0.434 | 22.1 | 1.6 |
| Left tilted | 20 | QPSK | 38000/2595 | 1:1.58 | 0.18 | 0.08 | 21.04 | 21.5 | 1.112 | 0.200 | 22.1 | 1.6 |
| Right cheek | 20 | QPSK | 38000/2595 | 1:1.58 | 0.601 | 0.06 | 21.04 | 21.5 | 1.112 | 0.668 | 22.1 | 1.6 |
| Right tilted | 20 | QPSK | 38000/2595 | 1:1.58 | 0.112 | -0.03 | 21.04 | 21.5 | 1.112 | 0.125 | 22.1 | 1.6 |
| Head Test data(100%RB_0 offset) | | | | | | | | | | | | |
| Right cheek | 20 | QPSK | 38000/2595 | 1:1.58 | 0.572 | 0.18 | 21.11 | 21.5 | 1.094 | 0.626 | 22.1 | 1.6 |
| Head Test data at Worst Case With SIM2(1RB_0 offset) | | | | | | | | | | | | |
| Right cheek | 20 | QPSK | 37850/2580 | 1:1.58 | 0.835 | 0.06 | 22.02 | 22.5 | 1.117 | 0.933 | 22.1 | 1.6 |
| Body worn Test data(Separate 15mm 1RB_0 offset) | | | | | | | | | | | | |
| Front side | 20 | QPSK | 38000/2595 | 1:1.58 | 0.152 | 0.15 | 22.46 | 22.5 | 1.009 | **0.153** | 22.1 | 1.6 |
| Back side | 20 | QPSK | 38000/2595 | 1:1.58 | 0.103 | 0.01 | 22.46 | 22.5 | 1.009 | 0.104 | 22.1 | 1.6 |
| Body worn Test data (Separate 15mm 50%RB) | | | | | | | | | | | | |
| Front side | 20 | QPSK | 38000/2595 | 1:1.58 | 0.125 | -0.02 | 21.04 | 21.5 | 1.112 | 0.139 | 22.1 | 1.6 |
| Back side | 20 | QPSK | 38000/2595 | 1:1.58 | 0.08 | -0.02 | 21.04 | 21.5 | 1.112 | 0.089 | 22.1 | 1.6 |
| Body worn Test data at Worst Case With SIM2(Separate 15mm 1RB_0 offset) | | | | | | | | | | | | |
| Front side | 20 | QPSK | 38000/2595 | 1:1.58 | 0.15 | 0.01 | 22.46 | 22.5 | 1.009 | 0.151 | 22.1 | 1.6 |
| Body worn Test data at the worst case (Separate 0mm 1RB_50 offset) | | | | | | | | | | | | |
| Back side | 20 | QPSK | 38000/2595 | 1:1.58 | 0.151 | 0.06 | 22.46 | 22.5 | 1.009 | 0.152 | 22.1 | 1.6 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hotspot Test data(Separate 10mm 1RB_0 offset) | | | | | | | | | | | | |
| Front side | 20 | QPSK | 38000/2595 | 1:1.58 | 0.322 | 0.07 | 22.46 | 22.5 | 1.009 | 0.325 | 22.1 | 1.6 |
| Back side | 20 | QPSK | 38000/2595 | 1:1.58 | 0.211 | 0.03 | 22.46 | 22.5 | 1.009 | 0.213 | 22.1 | 1.6 |
| Left side | 20 | QPSK | 38000/2595 | 1:1.58 | 0.465 | 0.08 | 22.46 | 22.5 | 1.009 | **0.469** | 22.1 | 1.6 |
| Right side | 20 | QPSK | 38000/2595 | 1:1.58 | 0.24 | 0.12 | 22.46 | 22.5 | 1.009 | 0.242 | 22.1 | 1.6 |
| Bottom side | 20 | QPSK | 38000/2595 | 1:1.58 | 0.277 | 0.05 | 22.46 | 22.5 | 1.009 | 0.280 | 22.1 | 1.6 |
| Hotspot Test data (Separate 10mm 50%RB) | | | | | | | | | | | | |
| Front side | 20 | QPSK | 38000/2595 | 1:1.58 | 0.239 | -0.04 | 21.04 | 21.5 | 1.112 | 0.266 | 22.1 | 1.6 |
| Back side | 20 | QPSK | 38000/2595 | 1:1.58 | 0.169 | 0.02 | 21.04 | 21.5 | 1.112 | 0.188 | 22.1 | 1.6 |
| Left side | 20 | QPSK | 38000/2595 | 1:1.58 | 0.378 | 0.02 | 21.04 | 21.5 | 1.112 | 0.420 | 22.1 | 1.6 |
| Right side | 20 | QPSK | 38000/2595 | 1:1.58 | 0.188 | 0.06 | 21.04 | 21.5 | 1.112 | 0.209 | 22.1 | 1.6 |
| Bottom side | 20 | QPSK | 38000/2595 | 1:1.58 | 0.216 | 0.04 | 21.04 | 21.5 | 1.112 | 0.240 | 22.1 | 1.6 |
| Hotspot Test data at Worst Case With SIM2(Separate 10mm 1RB_0 offset) | | | | | | | | | | | | |
| Left side | 20 | QPSK | 38000/2595 | 1:1.58 | 0.461 | 0.04 | 22.46 | 22.5 | 1.009 | 0.465 | 22.1 | 1.6 |

Table 16： SAR of LTE Band 38 for Head and Body

Note:

1) The maximum Scaled SAR value is marked in bold. Graph results refer to Appendix B

2) If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

## 8.3.10SAR Result Of LTE Band 40

| Test position | BW. | Test mode | Test Ch./Freq. | Duty Cycle | SAR (W/kg) 1-g | Power Drift (dB) | Conducted power (dBm) | Tune up Limit (dBm) | Scaled factor | Scaled SAR (W/kg) | Liquid Temp. | SAR limit (W/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Head Test data(1RB_0 offset) | | | | | | | | | | | | |
| Left cheek | 20 | QPSK | 39150/2350 | 1:1.58 | 0.231 | -0.06 | 22.24 | 22.5 | 1.062 | 0.245 | 22.1 | 1.6 |
| Left tilted | 20 | QPSK | 39150/2350 | 1:1.58 | 0.136 | -0.07 | 22.24 | 22.5 | 1.062 | 0.144 | 22.1 | 1.6 |
| Right cheek | 20 | QPSK | 39150/2350 | 1:1.58 | 0.317 | 0.03 | 22.24 | 22.5 | 1.062 | **0.337** | 22.1 | 1.6 |
| Right tilted | 20 | QPSK | 39150/2350 | 1:1.58 | 0.1 | -0.18 | 22.24 | 22.5 | 1.062 | 0.106 | 22.1 | 1.6 |
| Head Test data(50%RB) | | | | | | | | | | | | |
| Left cheek | 20 | QPSK | 39150/2350 | 1:1.58 | 0.189 | -0.06 | 20.96 | 21 | 1.009 | 0.191 | 22.1 | 1.6 |
| Left tilted | 20 | QPSK | 39150/2350 | 1:1.58 | 0.114 | -0.01 | 20.96 | 21 | 1.009 | 0.115 | 22.1 | 1.6 |
| Right cheek | 20 | QPSK | 39150/2350 | 1:1.58 | 0.253 | -0.02 | 20.96 | 21 | 1.009 | 0.255 | 22.1 | 1.6 |
| Right tilted | 20 | QPSK | 39150/2350 | 1:1.58 | 0.068 | -0.01 | 20.96 | 21 | 1.009 | 0.069 | 22.1 | 1.6 |
| Head Test data at Worst Case With SIM2(1RB_0 offset) | | | | | | | | | | | | |
| Right cheek | 20 | QPSK | 39150/2350 | 1:1.58 | 0.29 | 0.09 | 22.24 | 22.5 | 1.062 | 0.308 | 22.1 | 1.6 |
| Body worn Test data(Separate 15mm 1RB_0 offset) | | | | | | | | | | | | |
| Front side | 20 | QPSK | 39150/2350 | 1:1.58 | 0.084 | 0.06 | 22.24 | 22.5 | 1.062 | 0.089 | 22.1 | 1.6 |
| Back side | 20 | QPSK | 39150/2350 | 1:1.58 | 0.100 | 0.17 | 22.24 | 22.5 | 1.062 | 0.106 | 22.1 | 1.6 |
| Body worn Test data (Separate 15mm 50%RB) | | | | | | | | | | | | |
| Front side | 20 | QPSK | 39150/2350 | 1:1.58 | 0.067 | -0.02 | 20.96 | 21 | 1.009 | 0.068 | 22.1 | 1.6 |
| Back side | 20 | QPSK | 39150/2350 | 1:1.58 | 0.0899 | 0.13 | 20.96 | 21 | 1.009 | 0.091 | 22.1 | 1.6 |
| Body worn Test data at Worst Case With SIM2(Separate 15mm 1RB_0 offset) | | | | | | | | | | | | |
| Back side | 20 | QPSK | 39150/2350 | 1:1.58 | 0.099 | 0.01 | 22.24 | 22.5 | 1.062 | 0.105 | 22.1 | 1.6 |
| Body worn Test data at the worst case (Separate 0mm 1RB_0 offset) | | | | | | | | | | | | |
| Back side | 20 | QPSK | 39150/2350 | 1:1.58 | 0.173 | 0.05 | 22.24 | 22.5 | 1.062 | **0.184** | 22.1 | 1.6 |
| Hotspot Test data (Separate 10mm 1RB_0 offset) | | | | | | | | | | | | |
| Front side | 20 | QPSK | 39150/2350 | 1:1.58 | 0.159 | 0.18 | 22.24 | 22.5 | 1.062 | 0.169 | 22.1 | 1.6 |
| Back side | 20 | QPSK | 39150/2350 | 1:1.58 | 0.173 | 0.07 | 22.24 | 22.5 | 1.062 | 0.184 | 22.1 | 1.6 |
| Left side | 20 | QPSK | 39150/2350 | 1:1.58 | 0.300 | 0.07 | 22.24 | 22.5 | 1.062 | **0.319** | 22.1 | 1.6 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Right side | 20 | QPSK | 39150/2350 | 1:1.58 | 0.145 | 0.09 | 22.24 | 22.5 | 1.062 | 0.154 | 22.1 | 1.6 |
| Bottom side | 20 | QPSK | 39150/2350 | 1:1.58 | 0.114 | -0.03 | 22.24 | 22.5 | 1.062 | 0.121 | 22.1 | 1.6 |
| Hotspot Test data (Separate 10mm 50%RB) | | | | | | | | | | | | |
| Front side | 20 | QPSK | 39150/2350 | 1:1.58 | 0.127 | -0.01 | 20.96 | 21 | 1.009 | 0.128 | 22.1 | 1.6 |
| Back side | 20 | QPSK | 39150/2350 | 1:1.58 | 0.155 | -0.13 | 20.96 | 21 | 1.009 | 0.156 | 22.1 | 1.6 |
| Left side | 20 | QPSK | 39150/2350 | 1:1.58 | 0.234 | 0.01 | 20.96 | 21 | 1.009 | 0.236 | 22.1 | 1.6 |
| Right side | 20 | QPSK | 39150/2350 | 1:1.58 | 0.12 | 0.18 | 20.96 | 21 | 1.009 | 0.121 | 22.1 | 1.6 |
| Bottom side | 20 | QPSK | 39150/2350 | 1:1.58 | 0.103 | 0.19 | 20.96 | 21 | 1.009 | 0.104 | 22.1 | 1.6 |
| Hotspot Test data at Worst Case With SIM2(Separate 10mm 1RB_0 offset) | | | | | | | | | | | | |
| Left side | 20 | QPSK | 39150/2350 | 1:1.58 | 0.297 | 0.03 | 22.24 | 22.5 | 1.062 | 0.315 | 22.1 | 1.6 |

Table 17： SAR of LTE Band 40 for Head and Body

Note:

1) The maximum Scaled SAR value is marked in bold. Graph results refer to Appendix B

2) If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

## 8.3.11SAR Result Of LTE Band 41

| Test position | BW. | Test mode | Test Ch./Freq. | Duty Cycle | SAR (W/kg) 1-g | Power Drift (dB) | Conducted power (dBm) | Tune up Limit (dBm) | Scaled factor | Scaled SAR (W/kg) | Liquid Temp. | SAR limit (W/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Head Test data (1RB_0 offset) | | | | | | | | | | | | |
| Left cheek | 20 | QPSK | 40620/2593 | 1:1.58 | 0.44 | -0.05 | 22.49 | 22.5 | 1.002 | 0.441 | 22.1 | 1.6 |
| Left tilted | 20 | QPSK | 40620/2593 | 1:1.58 | 0.212 | 0.16 | 22.49 | 22.5 | 1.002 | 0.212 | 22.1 | 1.6 |
| Right cheek | 20 | QPSK | 40620/2593 | 1:1.58 | 0.798 | -0.03 | 22.49 | 22.5 | 1.002 | 0.800 | 22.1 | 1.6 |
| Right tilted | 20 | QPSK | 40620/2593 | 1:1.58 | 0.121 | 0.05 | 22.49 | 22.5 | 1.002 | 0.121 | 22.1 | 1.6 |
| Right cheek | 20 | QPSK | 39750/2506 | 1:1.58 | 0.732 | 0.08 | 22.22 | 22.5 | 1.067 | 0.781 | 22.1 | 1.6 |
| Right cheek | 20 | QPSK | 40185/2549.5 | 1:1.58 | 0.915 | 0.01 | 21.61 | 22.5 | 1.227 | **1.123** | 22.1 | 1.6 |
| Right cheek | 20 | QPSK | 41055/2636.5 | 1:1.58 | 0.596 | -0.11 | 22.21 | 22.5 | 1.069 | 0.637 | 22.1 | 1.6 |
| Right cheek | 20 | QPSK | 41490/2680 | 1:1.58 | 0.495 | 0.06 | 22.46 | 22.5 | 1.009 | 0.500 | 22.1 | 1.6 |
| Head Test data (50%RB) | | | | | | | | | | | | |
| Left cheek | 20 | QPSK | 40620/2593 | 1:1.58 | 0.328 | -0.01 | 20.99 | 21 | 1.002 | 0.329 | 22.1 | 1.6 |
| Left tilted | 20 | QPSK | 40620/2593 | 1:1.58 | 0.158 | 0.19 | 20.99 | 21 | 1.002 | 0.158 | 22.1 | 1.6 |
| Right cheek | 20 | QPSK | 40620/2593 | 1:1.58 | 0.58 | -0.03 | 20.99 | 21 | 1.002 | 0.581 | 22.1 | 1.6 |
| Right tilted | 20 | QPSK | 40620/2593 | 1:1.58 | 0.1 | 0.06 | 20.99 | 21 | 1.002 | 0.100 | 22.1 | 1.6 |
| Head Test data (100%RB_0 offset) | | | | | | | | | | | | |
| Right cheek | 20 | QPSK | 40620/2593 | 1:1.58 | 0.576 | -0.01 | 20.8 | 21 | 1.047 | 0.603 | 22.1 | 1.6 |
| Head Test data at Worst Case With SIM2(1RB_0 offset) | | | | | | | | | | | | |
| Right cheek | 20 | QPSK | 40185/2549.5 | 1:1.58 | 0.901 | 0.11 | 21.61 | 22.5 | 1.227 | 1.106 | 22.1 | 1.6 |
| Body worn Test data (Separate 15mm 1RB_0 offset) | | | | | | | | | | | | |
| Front side | 20 | QPSK | 40620/2593 | 1:1.58 | 0.151 | 0.13 | 22.49 | 22.5 | 1.002 | **0.151** | 22.1 | 1.6 |
| Back side | 20 | QPSK | 40620/2593 | 1:1.58 | 0.087 | 0.05 | 22.49 | 22.5 | 1.002 | 0.087 | 22.1 | 1.6 |
| Body worn Test data (Separate 15mm 50%RB) | | | | | | | | | | | | |
| Front side | 20 | QPSK | 40620/2593 | 1:1.58 | 0.115 | -0.13 | 20.99 | 21 | 1.002 | 0.115 | 22.1 | 1.6 |
| Back side | 20 | QPSK | 40620/2593 | 1:1.58 | 0.067 | -0.5 | 20.99 | 21 | 1.002 | 0.067 | 22.1 | 1.6 |
| Body worn Test data at Worst Case With SIM2(1RB_0 offset) | | | | | | | | | | | | |
| Front side | 20 | QPSK | 40620/2593 | 1:1.58 | 0.150 | 0.01 | 22.49 | 22.5 | 1.002 | 0.150 | 22.1 | 1.6 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Body Worn Test data at the worst case (Separate 0mm 1RB_0 offset) | | | | | | | | | | | | |
| Back side | 20 | QPSK | 40620/2593 | 1:1.58 | 0.150 | 0.07 | 22.49 | 22.5 | 1.002 | 0.150 | 22.1 | 1.6 |
| Hotspot Test data (Separate 10mm 1RB_0 offset) | | | | | | | | | | | | |
| Front side | 20 | QPSK | 40620/2593 | 1:1.58 | 0.28 | 0.12 | 22.49 | 22.5 | 1.002 | 0.281 | 22.1 | 1.6 |
| Back side | 20 | QPSK | 40620/2593 | 1:1.58 | 0.186 | 0.14 | 22.49 | 22.5 | 1.002 | 0.186 | 22.1 | 1.6 |
| Left side | 20 | QPSK | 40620/2593 | 1:1.58 | 0.468 | 0.06 | 22.49 | 22.5 | 1.002 | **0.469** | 22.1 | 1.6 |
| Right side | 20 | QPSK | 40620/2593 | 1:1.58 | 0.234 | 0.02 | 22.49 | 22.5 | 1.002 | 0.235 | 22.1 | 1.6 |
| Bottom side | 20 | QPSK | 40620/2593 | 1:1.58 | 0.247 | -0.12 | 22.49 | 22.5 | 1.002 | 0.248 | 22.1 | 1.6 |
| Hotspot Test data (Separate 10mm 50%RB) | | | | | | | | | | | | |
| Front side | 20 | QPSK | 40620/2593 | 1:1.58 | 0.204 | -0.07 | 20.99 | 21 | 1.002 | 0.204 | 22.1 | 1.6 |
| Back side | 20 | QPSK | 40620/2593 | 1:1.58 | 0.146 | 0.06 | 20.99 | 21 | 1.002 | 0.146 | 22.1 | 1.6 |
| Left side | 20 | QPSK | 40620/2593 | 1:1.58 | 0.349 | -0.01 | 20.99 | 21 | 1.002 | 0.350 | 22.1 | 1.6 |
| Right side | 20 | QPSK | 40620/2593 | 1:1.58 | 0.172 | 0.06 | 20.99 | 21 | 1.002 | 0.172 | 22.1 | 1.6 |
| Bottom side | 20 | QPSK | 40620/2593 | 1:1.58 | 0.187 | 0.04 | 20.99 | 21 | 1.002 | 0.187 | 22.1 | 1.6 |
| Hotspot Test data at Worst Case With SIM2(1RB_0 offset) | | | | | | | | | | | | |
| Left side | 20 | QPSK | 40620/2593 | 1:1.58 | 0.464 | 0.16 | 22.49 | 22.5 | 1.002 | 0.465 | 22.1 | 1.6 |

Table 18： SAR of LTE Band 41 for Head and Body

Note:

1) The maximum Scaled SAR value is marked in bold. Graph results refer to Appendix B

2) If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

## 8.3.12 SAR Result Of 2.4GHz WIFI

| Test position | Test mode | Test Ch./Freq. | Duty Cycle % | Duty Cycle Scaled factor | SAR (W/kg) 1-g | Power drift (dB) | Conducted power (dBm) | Tune up Limit (dBm) | Scaled factor | Scaled SAR (W/kg) | Liquid Temp. | SAR limit (W/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Head Test data | | | | | | | | | | | | |
| Left cheek | 802.11b | 6/2437 | 97.63 | 1.024 | 0.015 | 0.03 | 13.51 | 14 | 1.119 | 0.017 | 22 | 1.6 |
| Left tilted | 802.11b | 6/2437 | 97.63 | 1.024 | 0.018 | 0.06 | 13.51 | 14 | 1.119 | 0.021 | 22 | 1.6 |
| Right cheek | 802.11b | 6/2437 | 97.63 | 1.024 | 0.029 | 0.03 | 13.51 | 14 | 1.119 | 0.033 | 22 | 1.6 |
| Right tilted | 802.11b | 6/2437 | 97.63 | 1.024 | 0.037 | 0.02 | 13.51 | 14 | 1.119 | **0.042** | 22 | 1.6 |
| Body worn Test data(Separate 15mm) | | | | | | | | | | | | |
| Front side | 802.11b | 6/2437 | 97.63 | 1.024 | 0.00378 | -0.07 | 13.51 | 14 | 1.119 | 0.004 | 22 | 1.6 |
| Back side | 802.11b | 6/2437 | 97.63 | 1.024 | 0.03 | -0.07 | 13.51 | 14 | 1.119 | 0.034 | 22 | 1.6 |
| Body worn Test data at the worst case (Separate 0mm) | | | | | | | | | | | | |
| Back side | 802.11b | 6/2437 | 97.63 | 1.024 | 0.107 | 0.06 | 13.51 | 14 | 1.119 | **0.123** | 22 | 1.6 |
| Hotspot Test data (Separate 10mm) | | | | | | | | | | | | |
| Front side | 802.11b | 6/2437 | 97.63 | 1.024 | 0.00571 | 0.07 | 13.51 | 14 | 1.119 | 0.007 | 22 | 1.6 |
| Back side | 802.11b | 6/2437 | 97.63 | 1.024 | 0.043 | 0.05 | 13.51 | 14 | 1.119 | **0.049** | 22 | 1.6 |
| Left side | 802.11b | 6/2437 | 97.63 | 1.024 | 0.013 | 0.05 | 13.51 | 14 | 1.119 | 0.015 | 22 | 1.6 |
| Right side | 802.11b | 6/2437 | 97.63 | 1.024 | 0.00619 | 0.04 | 13.51 | 14 | 1.119 | 0.007 | 22 | 1.6 |

Table 19： SAR of 2.4GHz WIFI for Head and Body

Note:

1) The maximum Scaled SAR value is marked in bold. Graph results refer to Appendix B

2) If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

3) Each channel was tested at the lowest data rate.

4) When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg, 802.11g/n OFDM SAR Test is not required.

## 8.4 Multiple Transmitter Evaluation

### 8.4.1 Simultaneous SAR SAR test evaluation

**Simultaneous Transmission**

| NO. | Simultaneous Transmission Configuration | Head | Body worn | Hotspot |
|---|---|---|---|---|
| 1 | GSM(Voice) + WiFi | Yes | Yes | No |
| 2 | GSM(Voice) + BT | Yes | Yes | No |
| 3 | CDMA(Voice) + WiFi | Yes | Yes | No |
| 4 | CDMA(Voice) + BT | Yes | Yes | No |
| 5 | GPRS / EDGE(Data) + WiFi | No | Yes | Yes |
| 6 | GPRS / EDGE(Data) + BT | No | Yes | Yes |
| 7 | CDMA(Data) + WiFi | No | Yes | Yes |
| 8 | CDMA(Data) + BT | No | Yes | Yes |
| 9 | LTE(Data) + WiFi | Yes | Yes | Yes |
| 10 | LTE(Data) + BT | Yes | Yes | Yes |
| 11 | BT+WIFI | Yes | Yes | Yes |

Note:

1) Wi-Fi 2.4G and Bluetooth do not share the same Tx antenna and can transmit simultaneously.

2) The device does not support DTM function.

### 8.4.2 Estimated SAR

When the standalone SAR test exclusion is applied to an antenna that transmits simultaneously with other antennas, the standalone SAR must be estimated according to the following to determine simultaneous transmission SAR test exclusion:

• (max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)]·[√f(GHz)/x] W/kg for test separation distances ≤ 50 mm;

Where x = 7.5 for 1-g SAR, and x = 18.75 for 10-g SAR.

• 0.4 W/kg for 1-g SAR and 1.0 W/kg for 10-g SAR, when the test separation distances is > 50 mm.

**Estimated SAR Result**

| Freq. Band | Frequency (GHz) | Test Position | Max. power(dBm) | Max. power(mw) | Test Separation (mm) | Estimated SAR 1g (W/kg) |
|---|---|---|---|---|---|---|
| Bluetooth | 2.48 | Head | 4.5 | 2.8 | 0 | 0.118 |
| Bluetooth | 2.48 | Hotspot | 4.5 | 2.8 | 10 | 0.059 |
| Bluetooth | 2.48 | Body-worn | 4.5 | 2.8 | 0 | 0.118 |
| Bluetooth | 2.48 | Body-worn | 4.5 | 2.8 | 15 | 0.039 |

**1) Simultaneous Transmission SAR Summation Scenario for head**

| WWAN Band | Exposure position | ① MAX.WWAN SAR(W/kg) | ②MAX. WLAN SAR (W/kg) | ③ MAX.BT SAR (W/kg) | Summed SAR①+② | Summed SAR①+③ | Summed SAR ②+③ | Case NO. |
|---|---|---|---|---|---|---|---|---|
| GSM850 | Left Touch | 0.446 | 0.017 | 0.118 | 0.463 | 0.564 | 0.135 | No |
| | Left Tilt | 0.305 | 0.021 | 0.118 | 0.326 | 0.423 | 0.139 | No |
| | Right Touch | 0.466 | 0.033 | 0.118 | 0.499 | 0.584 | 0.151 | No |
| | Right Tilt | 0.294 | 0.042 | 0.118 | 0.336 | 0.412 | 0.160 | No |
| GSM1900 | Left Touch | 0.418 | 0.017 | 0.118 | 0.435 | 0.536 | 0.135 | No |
| | Left Tilt | 0.143 | 0.021 | 0.118 | 0.164 | 0.261 | 0.139 | No |
| | Right Touch | 0.201 | 0.033 | 0.118 | 0.234 | 0.319 | 0.151 | No |
| | Right Tilt | 0.074 | 0.042 | 0.118 | 0.116 | 0.192 | 0.160 | No |
| CDMA BC0 | Left Touch | 0.616 | 0.017 | 0.118 | 0.633 | 0.734 | 0.135 | No |
| | Left Tilt | 0.398 | 0.021 | 0.118 | 0.419 | 0.516 | 0.139 | No |
| | Right Touch | 0.579 | 0.033 | 0.118 | 0.612 | 0.697 | 0.151 | No |
| | Right Tilt | 0.410 | 0.042 | 0.118 | 0.452 | 0.528 | 0.160 | No |
| LTE Band 2 | Left Touch | 0.686 | 0.017 | 0.118 | 0.703 | 0.804 | 0.135 | No |
| | Left Tilt | 0.238 | 0.021 | 0.118 | 0.259 | 0.356 | 0.139 | No |
| | Right Touch | 0.329 | 0.033 | 0.118 | 0.362 | 0.447 | 0.151 | No |
| | Right Tilt | 0.115 | 0.042 | 0.118 | 0.157 | 0.233 | 0.160 | No |
| LTE Band 4 | Left Touch | 0.306 | 0.017 | 0.118 | 0.323 | 0.424 | 0.135 | No |
| | Left Tilt | 0.051 | 0.021 | 0.118 | 0.072 | 0.169 | 0.139 | No |
| | Right Touch | 0.148 | 0.033 | 0.118 | 0.181 | 0.266 | 0.151 | No |
| | Right Tilt | 0.059 | 0.042 | 0.118 | 0.101 | 0.177 | 0.160 | No |
| LTE Band 5 | Left Touch | 0.364 | 0.017 | 0.118 | 0.381 | 0.482 | 0.135 | No |
| | Left Tilt | 0.251 | 0.021 | 0.118 | 0.272 | 0.369 | 0.139 | No |
| | Right Touch | 0.419 | 0.033 | 0.118 | 0.452 | 0.537 | 0.151 | No |
| | Right Tilt | 0.263 | 0.042 | 0.118 | 0.305 | 0.381 | 0.160 | No |
| LTE Band 7 | Left Touch | 0.759 | 0.017 | 0.118 | 0.776 | 0.877 | 0.135 | No |
| | Left Tilt | 0.427 | 0.021 | 0.118 | 0.448 | 0.545 | 0.139 | No |
| | Right Touch | 1.383 | 0.033 | 0.118 | 1.416 | **1.501** | 0.151 | No |
| | Right Tilt | 0.271 | 0.042 | 0.118 | 0.313 | 0.389 | 0.160 | No |
| LTE Band | Left Touch | 0.341 | 0.017 | 0.118 | 0.358 | 0.459 | 0.135 | No |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 26 | Left Tilt | 0.210 | 0.021 | 0.118 | 0.231 | 0.328 | 0.139 | No |
| | Right Touch | 0.297 | 0.033 | 0.118 | 0.330 | 0.415 | 0.151 | No |
| | Right Tilt | 0.215 | 0.042 | 0.118 | 0.257 | 0.333 | 0.160 | No |
| LTE Band 38 | Left Touch | 0.472 | 0.017 | 0.118 | 0.489 | 0.590 | 0.135 | No |
| | Left Tilt | 0.231 | 0.021 | 0.118 | 0.252 | 0.349 | 0.139 | No |
| | Right Touch | 0.976 | 0.033 | 0.118 | 1.009 | 1.094 | 0.151 | No |
| | Right Tilt | 0.183 | 0.042 | 0.118 | 0.225 | 0.301 | 0.160 | No |
| LTE Band 40 | Left Touch | 0.245 | 0.017 | 0.118 | 0.262 | 0.363 | 0.135 | No |
| | Left Tilt | 0.144 | 0.021 | 0.118 | 0.165 | 0.262 | 0.139 | No |
| | Right Touch | 0.337 | 0.033 | 0.118 | 0.370 | 0.455 | 0.151 | No |
| | Right Tilt | 0.106 | 0.042 | 0.118 | 0.148 | 0.224 | 0.160 | No |
| LTE Band 41 | Left Touch | 0.441 | 0.017 | 0.118 | 0.458 | 0.559 | 0.135 | No |
| | Left Tilt | 0.212 | 0.021 | 0.118 | 0.233 | 0.330 | 0.139 | No |
| | Right Touch | 1.123 | 0.033 | 0.118 | 1.156 | 1.241 | 0.151 | No |
| | Right Tilt | 0.121 | 0.042 | 0.118 | 0.163 | 0.239 | 0.160 | No |

**2) Simultaneous Transmission SAR Summation Scenario for body worn(15mm)**

| WWAN Band | Exposure position | ① MAX.WWAN SAR(W/kg) | ② MAX.WLAN SAR(W/kg) | ③MAX.BT SAR(W/kg) | Summed SAR①+② | Summed SAR①+③ | Summed SAR②+③ | Case NO. |
|---|---|---|---|---|---|---|---|---|
| GSM850 | Front | 0.334 | 0.004 | 0.039 | 0.338 | 0.373 | 0.043 | No |
| | Back | 0.164 | 0.034 | 0.039 | 0.198 | 0.203 | 0.073 | No |
| GSM1900 | Front | 0.170 | 0.004 | 0.039 | 0.174 | 0.209 | 0.043 | No |
| | Back | 0.167 | 0.034 | 0.039 | 0.201 | 0.206 | 0.073 | No |
| CDMA BC0 | Front | 0.566 | 0.004 | 0.039 | 0.570 | **0.605** | 0.043 | No |
| | Back | 0.310 | 0.034 | 0.039 | 0.344 | 0.349 | 0.073 | No |
| LTE Band 2 | Front | 0.275 | 0.004 | 0.039 | 0.279 | 0.314 | 0.043 | No |
| | Back | 0.172 | 0.034 | 0.039 | 0.206 | 0.211 | 0.073 | No |
| LTE Band 4 | Front | 0.364 | 0.004 | 0.039 | 0.368 | 0.403 | 0.043 | No |
| | Back | 0.317 | 0.034 | 0.039 | 0.351 | 0.356 | 0.073 | No |
| LTE Band 5 | Front | 0.281 | 0.004 | 0.039 | 0.285 | 0.320 | 0.043 | No |
| | Back | 0.129 | 0.034 | 0.039 | 0.163 | 0.168 | 0.073 | No |
| LTE Band 7 | Front | 0.273 | 0.004 | 0.039 | 0.277 | 0.312 | 0.043 | No |
| | Back | 0.432 | 0.034 | 0.039 | 0.466 | 0.471 | 0.073 | No |
| LTE Band 26 | Front | 0.275 | 0.004 | 0.039 | 0.279 | 0.314 | 0.043 | No |
| | Back | 0.111 | 0.034 | 0.039 | 0.145 | 0.150 | 0.073 | No |
| LTE Band 38 | Front | 0.153 | 0.004 | 0.039 | 0.157 | 0.192 | 0.043 | No |
| | Back | 0.104 | 0.034 | 0.039 | 0.138 | 0.143 | 0.073 | No |
| LTE Band 40 | Front | 0.089 | 0.004 | 0.039 | 0.093 | 0.128 | 0.043 | No |
| | Back | 0.106 | 0.034 | 0.039 | 0.140 | 0.145 | 0.073 | No |
| LTE Band 41 | Front | 0.151 | 0.004 | 0.039 | 0.155 | 0.190 | 0.043 | No |
| | Back | 0.087 | 0.034 | 0.039 | 0.121 | 0.126 | 0.073 | No |

**3) Simultaneous Transmission SAR Summation Scenario for body worn(0mm)**

| WWAN Band | Exposure position | ① MAX.WWAN SAR(W/kg) | ② MAX.WLAN SAR(W/kg) | ③MAX.BT SAR(W/kg) | Summed SAR①+② | Summed SAR①+③ | Summed SAR②+③ | Case NO. |
|---|---|---|---|---|---|---|---|---|
| GSM850 | Back | 0.141 | 0.123 | 0.118 | 0.264 | 0.259 | 0.241 | No |
| GSM1900 | Back | 0.184 | 0.123 | 0.118 | 0.307 | 0.302 | 0.241 | No |
| CDMA BC0 | Back | 0.338 | 0.123 | 0.118 | 0.461 | 0.456 | 0.241 | No |
| LTE Band 2 | Back | 0.220 | 0.123 | 0.118 | 0.343 | 0.338 | 0.241 | No |
| LTE Band 4 | Back | 0.453 | 0.123 | 0.118 | **0.576** | 0.571 | 0.241 | No |
| LTE Band 5 | Back | 0.131 | 0.123 | 0.118 | 0.254 | 0.249 | 0.241 | No |
| LTE Band 7 | Back | 0.382 | 0.123 | 0.118 | 0.505 | 0.500 | 0.241 | No |
| LTE Band 26 | Back | 0.115 | 0.123 | 0.118 | 0.238 | 0.233 | 0.241 | No |
| LTE Band 38 | Back | 0.157 | 0.123 | 0.118 | 0.280 | 0.275 | 0.241 | No |
| LTE Band 40 | Back | 0.184 | 0.123 | 0.118 | 0.307 | 0.302 | 0.241 | No |
| LTE Band 41 | Back | 0.155 | 0.123 | 0.118 | 0.278 | 0.273 | 0.241 | No |

**4) Simultaneous Transmission SAR Summation Scenario for hotspot**

| WWAN Band | Exposure position | ① MAX.WWAN SAR(W/kg) | ② MAX.WLAN SAR(W/kg) | ③MAX.BT SAR(W/kg) | Summed SAR①+② | Summed SAR①+③ | Summed SAR②+③ | Case NO. |
|---|---|---|---|---|---|---|---|---|
| GSM850 | Front | 0.438 | 0.007 | 0.059 | 0.445 | 0.497 | 0.066 | No |
| | Back | 0.193 | 0.049 | 0.059 | 0.242 | 0.252 | 0.108 | No |
| | Left | 0.162 | 0.015 | 0.059 | 0.177 | 0.221 | 0.074 | No |
| | Right | 0.309 | 0.007 | 0.059 | 0.316 | 0.368 | 0.066 | No |
| | Top | 0.000 | 0.000 | 0.059 | 0.000 | 0.059 | 0.059 | No |
| | Bottom | 0.186 | 0.000 | 0.059 | 0.186 | 0.245 | 0.059 | No |
| GSM1900 | Front | 0.404 | 0.007 | 0.059 | 0.411 | 0.463 | 0.066 | No |
| | Back | 0.290 | 0.049 | 0.059 | 0.339 | 0.349 | 0.108 | No |
| | Left | 0.680 | 0.015 | 0.059 | 0.695 | 0.739 | 0.074 | No |
| | Right | 0.192 | 0.007 | 0.059 | 0.199 | 0.251 | 0.066 | No |
| | Top | 0.000 | 0.000 | 0.059 | 0.000 | 0.059 | 0.059 | No |
| | Bottom | 0.604 | 0.000 | 0.059 | 0.604 | 0.663 | 0.059 | No |
| CDMA BC0 | Front | 0.677 | 0.007 | 0.059 | 0.684 | 0.736 | 0.066 | No |
| | Back | 0.325 | 0.049 | 0.059 | 0.374 | 0.384 | 0.108 | No |
| | Left | 0.369 | 0.015 | 0.059 | 0.384 | 0.428 | 0.074 | No |
| | Right | 0.440 | 0.007 | 0.059 | 0.447 | 0.499 | 0.066 | No |
| | Top | 0.000 | 0.000 | 0.059 | 0.000 | 0.059 | 0.059 | No |
| | Bottom | 0.245 | 0.000 | 0.059 | 0.245 | 0.304 | 0.059 | No |
| LTE Band 2 | Front | 0.373 | 0.007 | 0.059 | 0.380 | 0.432 | 0.066 | No |
| | Back | 0.358 | 0.049 | 0.059 | 0.407 | 0.417 | 0.108 | No |
| | Left | 0.681 | 0.015 | 0.059 | 0.696 | 0.740 | 0.074 | No |
| | Right | 0.197 | 0.007 | 0.059 | 0.204 | 0.256 | 0.066 | No |
| | Top | 0.000 | 0.000 | 0.059 | 0.000 | 0.059 | 0.059 | No |
| | Bottom | 0.573 | 0.000 | 0.059 | 0.573 | 0.632 | 0.059 | No |
| LTE Band 4 | Front | 0.717 | 0.007 | 0.059 | 0.724 | 0.776 | 0.066 | No |
| | Back | 0.468 | 0.049 | 0.059 | 0.517 | 0.527 | 0.108 | No |
| | Left | 0.818 | 0.015 | 0.059 | 0.833 | 0.877 | 0.074 | No |
| | Right | 0.242 | 0.007 | 0.059 | 0.249 | 0.301 | 0.066 | No |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Top | 0.000 | 0.000 | 0.059 | 0.000 | 0.059 | 0.059 | No |
| | Bottom | 1.132 | 0.000 | 0.059 | 1.132 | **1.191** | 0.059 | No |
| LTE Band 5 | Front | 0.343 | 0.007 | 0.059 | 0.350 | 0.402 | 0.066 | No |
| | Back | 0.148 | 0.049 | 0.059 | 0.197 | 0.207 | 0.108 | No |
| | Left | 0.146 | 0.015 | 0.059 | 0.161 | 0.205 | 0.074 | No |
| | Right | 0.261 | 0.007 | 0.059 | 0.268 | 0.320 | 0.066 | No |
| | Top | 0.000 | 0.000 | 0.059 | 0.000 | 0.059 | 0.059 | No |
| | Bottom | 0.156 | 0.000 | 0.059 | 0.156 | 0.215 | 0.059 | No |
| LTE Band 7 | Front | 0.479 | 0.007 | 0.059 | 0.486 | 0.538 | 0.066 | No |
| | Back | 0.820 | 0.049 | 0.059 | 0.869 | 0.879 | 0.108 | No |
| | Left | 0.513 | 0.015 | 0.059 | 0.528 | 0.572 | 0.074 | No |
| | Right | 0.349 | 0.007 | 0.059 | 0.356 | 0.408 | 0.066 | No |
| | Top | 0.000 | 0.000 | 0.059 | 0.000 | 0.059 | 0.059 | No |
| | Bottom | 0.368 | 0.000 | 0.059 | 0.368 | 0.427 | 0.059 | No |
| LTE Band 26 | Front | 0.323 | 0.007 | 0.059 | 0.330 | 0.382 | 0.066 | No |
| | Back | 0.124 | 0.049 | 0.059 | 0.173 | 0.183 | 0.108 | No |
| | Left | 0.161 | 0.015 | 0.059 | 0.176 | 0.220 | 0.074 | No |
| | Right | 0.246 | 0.007 | 0.059 | 0.253 | 0.305 | 0.066 | No |
| | Top | 0.000 | 0.000 | 0.059 | 0.000 | 0.059 | 0.059 | No |
| | Bottom | 0.138 | 0.000 | 0.059 | 0.138 | 0.197 | 0.059 | No |
| LTE Band 38 | Front | 0.325 | 0.007 | 0.059 | 0.332 | 0.384 | 0.066 | No |
| | Back | 0.213 | 0.049 | 0.059 | 0.262 | 0.272 | 0.108 | No |
| | Left | 0.469 | 0.015 | 0.059 | 0.484 | 0.528 | 0.074 | No |
| | Right | 0.242 | 0.007 | 0.059 | 0.249 | 0.301 | 0.066 | No |
| | Top | 0.000 | 0.000 | 0.059 | 0.000 | 0.059 | 0.059 | No |
| | Bottom | 0.280 | 0.000 | 0.059 | 0.280 | 0.339 | 0.059 | No |
| LTE Band 40 | Front | 0.169 | 0.007 | 0.059 | 0.176 | 0.228 | 0.066 | No |
| | Back | 0.184 | 0.049 | 0.059 | 0.233 | 0.243 | 0.108 | No |
| | Left | 0.319 | 0.015 | 0.059 | 0.334 | 0.378 | 0.074 | No |
| | Right | 0.154 | 0.007 | 0.059 | 0.161 | 0.213 | 0.066 | No |
| | Top | 0.000 | 0.000 | 0.059 | 0.000 | 0.059 | 0.059 | No |
| | Bottom | 0.121 | 0.000 | 0.059 | 0.121 | 0.180 | 0.059 | No |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| LTE Band 41 | Front | 0.281 | 0.007 | 0.059 | 0.288 | 0.340 | 0.066 | No |
| | Back | 0.186 | 0.049 | 0.059 | 0.235 | 0.245 | 0.108 | No |
| | Left | 0.469 | 0.015 | 0.059 | 0.484 | 0.528 | 0.074 | No |
| | Right | 0.235 | 0.007 | 0.059 | 0.242 | 0.294 | 0.066 | No |
| | Top | 0.000 | 0.000 | 0.059 | 0.000 | 0.059 | 0.059 | No |
| | Bottom | 0.248 | 0.000 | 0.059 | 0.248 | 0.307 | 0.059 | No |

# 9 Equipment list

| Test Platform | SPEAG DASY5 Professional |
|---|---|
| Location | SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch |
| Description | SAR Test System (Frequency range 300MHz-6GHz) |
| Software Reference | DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373) |

**Hardware Reference**

| Equipment | | Manufacturer | Model | Serial Number | Calibration Date | Due date of calibration |
|---|---|---|---|---|---|---|
| ☒ | Robot | Staubli | TX60L | F14/5T2NA1/A/01 | NCR | NCR |
| ☒ | Robot | Staubli | TX60L | F13/5PP1B1/A/01 | NCR | NCR |
| ☒ | ELI | SPEAG | ELI V5.0 | 1239 | NCR | NCR |
| ☒ | Twin Phantom | SPEAG | SAM 1 | 1141 | NCR | NCR |
| ☒ | Twin Phantom | SPEAG | SAM 1 | 1824 | NCR | NCR |
| ☒ | DAE | SPEAG | DAE4 | 1267 | 2017-11-28 | 2018-11-27 |
| ☒ | E-Field Probe | SPEAG | EX3DV4 | 3923 | 2017-08-24 | 2018-08-23 |
| ☒ | E-Field Probe | SPEAG | EX3DV4 | 3962 | 2018-01-11 | 2019-01-10 |
| ☒ | Validation Kits | SPEAG | D835V2 | 4d105 | 2016-12-08 | 2019-12-07 |
| ☒ | Validation Kits | SPEAG | D1750V2 | 1149 | 2016-06-23 | 2019-06-22 |
| ☒ | Validation Kits | SPEAG | D1950V3 | 1138 | 2016-12-07 | 2019-12-06 |
| ☒ | Validation Kits | SPEAG | D2300V2 | 1072 | 2016-06-21 | 2019-06-20 |
| ☒ | Validation Kits | SPEAG | D2450V2 | 733 | 2016-12-07 | 2019-12-06 |
| ☒ | Validation Kits | SPEAG | D2600V2 | 1125 | 2016-06-22 | 2019-06-21 |
| ☒ | Agilent Network Analyzer | Agilent | E5071C | MY46523590 | 2018-03-13 | 2019-03-12 |
| ☒ | Dielectric Probe Kit | Agilent | 85070E | US01440210 | NCR | NCR |
| ☒ | Universal Radio Communication Tester | R&S | CMW500 | 124587 | 2017/11/24 | 2018/11/23 |
| ☒ | RF Bi-Directional Coupler | Agilent | 86205-60001 | MY31400031 | NCR | NCR |
| ☒ | Signal Generator | Agilent | N5171B | MY53050736 | 2018-03-13 | 2019-03-12 |
| ☒ | Preamplifier | Mini-Circuits | ZHL-42W | 15542 | NCR | NCR |
| ☒ | Power Meter | Agilent | E4416A | GB41292095 | 2018-03-13 | 2019-03-12 |
| ☒ | Power Sensor | Agilent | 8481H | MY41091234 | 2018-03-13 | 2019-03-12 |
| ☒ | Power Sensor | R&S | NRP-Z92 | 100025 | 2018-03-13 | 2019-03-12 |
| ☒ | Attenuator | SHX | TS2-3dB | 30704 | NCR | NCR |
| ☒ | Coaxial low pass filter | Mini-Circuits | VLF-2500(+) | NA | NCR | NCR |
| ☒ | Coaxial low pass filter | Microlab Fxr | LA-F13 | NA | NCR | NCR |
| ☒ | 50 Ω coaxial load | Mini-Circuits | KARN-50+ | 00850 | NCR | NCR |
| ☒ | DC POWER SUPPLY | SAKO | SK1730SL 5A | NA | NCR | NCR |

| | | | | | | |
|---|---|---|---|---|---|---|
| ☒ | Speed reading thermometer | MingGao | T809 | NA | 2018-03-13 | 2019-03-12 |
| ☒ | Humidity and Temperature Indicator | KIMTOKA | KIMTOKA | NA | 2018-03-13 | 2019-03-12 |

# 10 Calibration certificate

Please see the Appendix C

# 11 Photographs

Please see the Appendix D

# Appendix A: Detailed System Validation Results

# Appendix B: Detailed Test Results

# Appendix C: Calibration certificate

# Appendix D: Photographs

**---END---**