TEST REPORT

APPLICANT	:	Sun Cupid Technology (HK) Ltd.
PRODUCT NAME	:	5G Smartphone
MODEL NAME	:	S6710X
MARKETING NAME		NUU B40, B40
BRAND NAME	:	NUU
FCC ID	:	2ADINS6710X
STANDARD(S)	:	FCC 47 CFR Part 2 (2.1093) IEEE 1528-2013
RECEIPT DATE	:	2025-07-14
TEST DATE	:	2025-07-21 to 2025-08-08
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DIRECTORY

Changed History		
Version	**Date**	**Reason for Change**
1.0	2025-08-22	First edition

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during test as bellows:
<Highest Reported SAR Summary>

Frequency Band		Highest SAR Summary			
		Head (Gap 0 mm)	Body-worn (Gap 15 mm)	Hotspot (Gap 10 mm)	Extremity (Gap 0 mm)
		1g SAR (W/kg)			10g SAR (W/kg)
GSM	GSM850	0.313	0.318	0.585	N/A
	GSM1900	0.047	0.352	1.048	1.676
WCDMA	WCDMA II	0.068	0.535	0.899	1.364
	WCDMA IV	0.065	0.501	0.659	1.610
	WCDMA V	0.170	0.168	0.346	N/A
LTE	LTE Band 2	0.597	0.775	0.936	1.906
	LTE Band 5	0.212	0.217	0.388	N/A
	LTE Band 7	0.188	0.432	0.402	N/A
	LTE Band 12/17	0.138	0.195	0.216	N/A
	LTE Band 13	0.145	0.167	0.268	N/A
	LTE Band 25	0.089	0.570	0.899	1.326
	LTE Band 26	0.137	0.130	0.264	N/A
	LTE Band 48	0.974	0.173	0.251	N/A
	LTE Band 66/4	0.582	0.580	0.783	1.629
	LTE Band 71	0.157	0.215	0.279	N/A
5G NR	n2	0.633	0.605	0.750	1.375
	n5	0.146	0.141	0.294	N/A
	n25	0.550	0.561	0.692	1.236
	n41	0.162	0.334	0.483	1.173
	n48	0.248	0.265	0.214	N/A
	n66	0.585	0.475	0.864	1.057
	n71	0.086	0.124	0.197	N/A
	n77	0.684	0.219	0.299	N/A
WLAN	2.4GHz WLAN	0.507	0.188	0.256	N/A
	5GHz WLAN	0.349	0.201	0.652	N/A
2.4GHz Band	Bluetooth	0.345	0.076	0.142	N/A

Highest Simultaneous Transmission SAR_{1g} (W/Kg):	1.585	Limit (W/kg): 1.6

Note:

1. This device is in compliance with Specific Absorption Rate (SAR) for general population or uncontrolled exposure limits (1.6 W/kg as averaged over any 1 gram of tissue; specified in FCC 47 CFR part 1 (1.1310) and ANSI/IEEE C95.1-1992), and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528-2013 and FCC KDB publications.
2. For FDD-LTE Band 4/17 is full covered by FDD-LTE Band 66/12, therefore only FDD-LTE Band 66/12 was tested.
3. The declarations of EUT presented in the report are provided by applicant and/or manufacturer, and the test laboratory is not responsible for the accuracy of the information.

2. Technical Information

Note: Provide by applicant.

2.1. Applicant and Manufacturer Information

Applicant:	Sun Cupid Technology (HK) Ltd.
Applicant Address:	16/F, CEO Tower, 77 Wing Hong Street, Cheung Sha Wan, Kowloon, HongKong.
Manufacturer:	Sun Cupid Technology (HK) Ltd.
Manufacturer Address:	16/F, CEO Tower, 77 Wing Hong Street, Cheung Sha Wan, Kowloon, HongKong.

2.2. Equipment under Test (EUT) Description

Product Name:	5G Smartphone
EUT No.:	25#, 26#
Hardware Version:	S6710X-01
Software Version:	S6710X-AM-V-MV25608-03
Frequency Bands:	GSM 850: 824 MHz ~ 849 MHz GSM 1900: 1850 MHz ~ 1910 MHz WCDMA II: 1850 MHz ~ 1910 MHz WCDMA IV: 1710 MHz ~ 1755 MHz WCDMA V: 824 MHz ~ 849 MHz LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 7: 2500 MHz ~ 2570 MHz LTE Band 12: 699 MHz ~ 716 MHz LTE Band 13: 777 MHz ~ 787 MHz LTE Band 17: 704 MHz ~ 716 MHz LTE Band 25: 1850 MHz ~1915 MHz LTE Band 26: 814 MHz ~ 849 MHz LTE Band 48: 3550 MHz ~ 3700 MHz LTE Band 66: 1710 MHz ~ 1780 MHz LTE Band 71: 633 MHz ~ 698 MHz 5G NR n2: 1850 MHz ~ 1910 MHz 5G NR n5: 824 MHz ~ 849 MHz 5G NR n25: 1850 MHz ~1915 MHz 5G NR n41: 2496 MHz ~ 2690 MHz

	5G NR n48: 3550 MHz ~13700 MHz 5G NR n66: 1710 MHz ~ 1780 MHz 5G NR n71: 663 MHz ~ 698 MHz 5G NR n77: 3300 MHz ~ 4200 MHz WLAN 2.4GHz: 2412 MHz ~ 2472 MHz WLAN 5.2GHz: 5180 MHz ~ 5240 MHz WLAN 5.3GHz: 5260 MHz ~ 5320 MHz WLAN 5.5GHz: 5500 MHz ~ 5700 MHz WLAN 5.8GHz: 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz	
Modulation Mode:	GSM/GPRS: GMSK EDGE: 8PSK WCDMA: QPSK, 16QAM LTE: QPSK, 16QAM, 64QAM 5G NR: DFT-s-OFDM/CP-OFDM, PI/2 BPSK QPSK, 16QAM, 64QAM, 256QAM 802.11b: DSSS 802.11a/g: OFDM 802.11n-HT20/40: OFDM 802.11ac-VHT20/40/80: OFDM BR+EDR: GFSK (1Mbps), π/4-DQPSK (2Mbps), 8-DPSK (3Mbps) Bluetooth LE: GFSK (1Mbps, 2Mbps)	
Multi-slot Class:	GPRS: Multi-slot Class 12 EDGE: Multi-slot Class 12	
Operation Class:	Class B	
VoLTE Mode:	Support	
VoWIFI Mode:	Support	
Hotspot Mode:	Support	
Antenna Type:	WWAN: PIFA Antenna WLAN: PIFA Antenna Bluetooth: PIFA Antenna	
SIM Cards Description:	SIM 1	GSM+WCDMA+LTE+5G NR
	SIM 2	GSM+WCDMA+LTE+5G NR

Note: For more detailed description, please refer to specification or user manual supplied by the applicant and/or manufacturer.

2.3. Environment of Test Site/Conditions

Normal Temperature (NT):	20-25 °C
Relative Humidity:	30-75 %

During SAR test, EUT is in Traffic Mode (Channel Allocated) at Normal Voltage Condition. A communication link is set up with a System Simulator (SS) by air link, and a call is established.

The EUT shall use its internal transmitter. The antenna(s), battery and accessories shall be those specified by the Factory. The EUT battery must be fully charged and checked periodically during the test to ascertain uniform power output. If a wireless link is used, the antenna connected to the output of the base station simulator shall be placed at least 50 cm away from the handset.
The signal transmitted by the simulator to the antenna feeding point shall be lower than the output power level of the handset by at least 35 dB.

3. Specific Absorption Rate (SAR)

3.1. Introduction

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

3.2. SAR Definition

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

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

SAR is expressed in units of Watts per kilogram (W/kg).
SAR measurement can be either related to the temperature elevation in tissue by,

$$\mathbf{SAR} = \mathbf{C}\left(\frac{\boldsymbol{\delta}\mathbf{T}}{\boldsymbol{\delta}\mathbf{t}}\right)$$

Where C is the specific head capacity, δT is the temperature rise and δt the exposure duration, or related to the electrical field in the tissue by

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

Where σ is the conductivity of the tissue, ρ is the mass density of the tissue and $|E|$ is the rmselectrical field strength.

However for evaluating SAR of low power transmitter, electrical field measurement is typically applied.

4. RF Exposure Limits

4.1. Uncontrolled Environment

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

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

Type Exposure	Uncontrolled Environment Limit
Spatial Peak SAR (1g cube tissue for head and trunk)	1.6 W/kg
Spatial Peak SAR (10g cube tissue for limbs)	4.0 W/kg
Spatial Peak SAR (1g cube tissue for whole body)	0.08 W/kg

Note:

1. Occupational/Uncontrolled Environments are defined as locations where there is exposure that may be incurred by people who are aware of the potential for exposure (i.e. as a result of employment or occupation).
2. Whole-Body SAR is averaged over the entire body, partial-body SAR is averaged over any 1gram of tissue defined as a tissue volume in the shape of a cube. SAR for hands, wrists, feet and ankles is averaged over any 10 grams of tissue defined as a tissue volume in the shape of a cube.

4.2. Controlled Environment

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

5. Applied Reference Documents

Leading reference documents for testing:

Identity	Document Title	Remark
FCC 47 CFR Part 2 (2.1093)	Radio Frequency Radiation Exposure Evaluation: Portable Devices	/
IEEE 1528-2013	IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques	/
KDB 447498 D01v06	General RF Exposure Guidance	/
KDB 248227 D01v02r02	SAR Measurement Procedures for 802.11 Transmitters	/
KDB 865664 D01v01r04	SAR Measurement 100 MHz to 6 GHz	/
KDB 865664 D02v01r02	RF Exposure Reporting	/
KDB 648474 D04v01r03	Handset SAR	/
KDB 941225 D01v03r01	3G SAR MEAUREMENT PROCEDURES	/
KDB 941225 D05v02r05	SAR Evaluation Consideration for LTE Devices	/
KDB 941225 D06v02r01	SAR Evaluation Procedures For Portable Devices With Wireless Router Capabilities	/
Note: Any additions, deviation, or exclusions from the method shall be noted in the “Remark”.		

6. SAR Measurement System

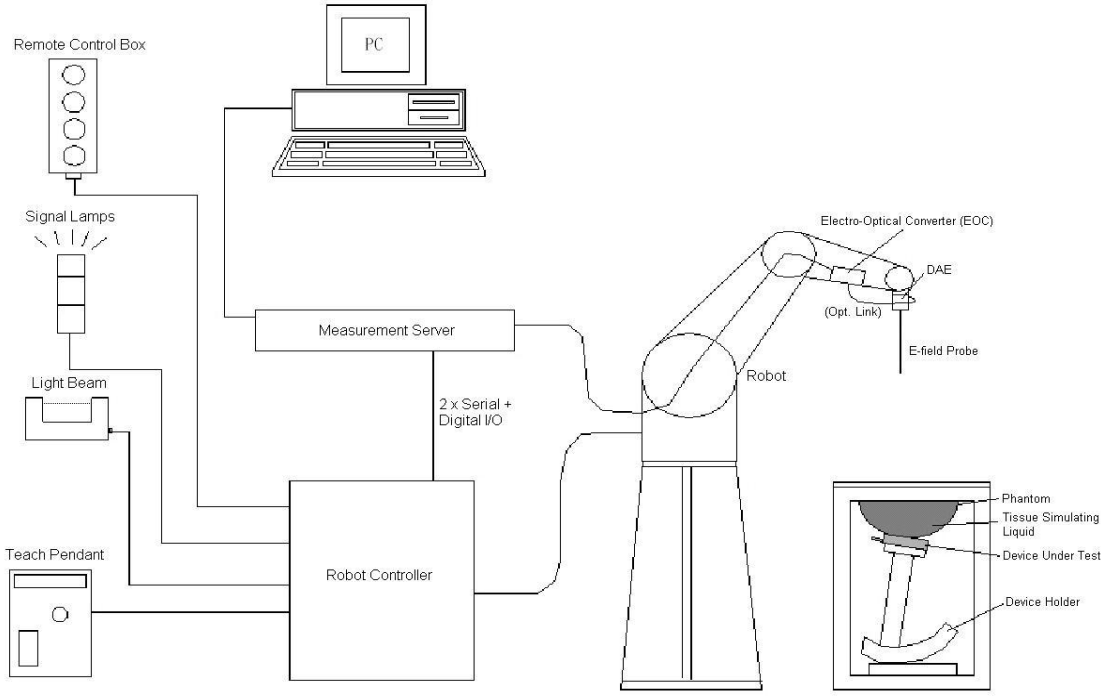


Fig 6.1 SPEAG DASY System Configurations

The DASY system for performance compliance tests is illustrated above graphically. This system consists of the following items:

- A standard high precision 6-axis robot with controller, a teach pendant and software.
- A data acquisition electronic (DAE) attached to the robot arm extension.
- A dosimetric probe equipped with an optical surface detector system.
- The electro-optical converter (ECO) performs the conversion between optical and electrical signals
- A measurement server performs the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- A probe alignment unit which improves the accuracy of the probe positioning.
- A computer operating Windows XP.
- DASY software.
- Remove control with teach pendant and additional circuitry for robot safety such as warming lamps, etc.
- The SAM twin phantom.
- A device holder.
- Tissue simulating liquid.
- Dipole for evaluating the proper functioning of the system.
- Some of the components are described in details in the following sub-sections.

6.1. E-Field Probe

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

➢ **E-Field Probe Specification**

<ES3DV3 Probe>

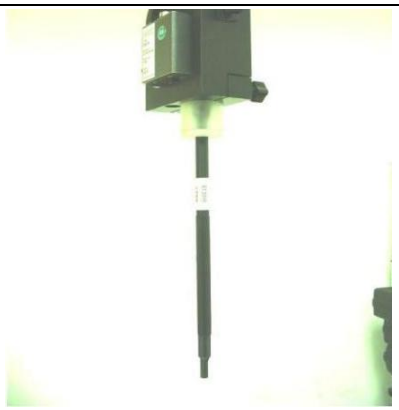
Construction	Symmetrical design with triangular core Built-in optical fiber for surface detection system. Built-in shielding against static charges. PEEK enclosure material (resistant to organic solvents, e.g., DGBE)	
Frequency	10 MHz to 3 GHz; Linearity: ± 0.2 dB	
Directivity	± 0.2 dB in HSL (rotation around probe axis) ± 0.4 dB in HSL (rotation normal to probe axis)	
Dynamic Range	5 µW/g to 100 mW/g; Linearity: ± 0.2 dB	
Dimensions	Overall length: 330 mm (Tip: 16 mm) Tip diameter: 6.8 mm (Body: 12 mm) Distance from probe tip to dipole centers: 2.7 mm	

Fig 6.2 Photo of ES3DV3

<EX3DV4 Probe>

Construction	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)	
Frequency	10 MHz to 6 GHz; Linearity: ± 0.2 dB	
Directivity	± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)	
Dynamic Range	10 µW/g to 100 mW/g; Linearity: ± 0.2 dB	
Dimensions	Overall length: 330 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm	

Fig 6.3 Photo of EX3DV4

➢ **E-Field Probe Calibration**

Each probe needs to be calibrated according to a dosimetric assessment procedure with accuracy better than ± 10%. The spherical isotropy shall be evaluated and within ± 0.25 dB. The sensitivity parameters (NormX, NormY, and NormZ), the diode compression parameter (DCP) and the conversion factor (ConvF) of the probe are tested. The calibration data can be referred to annex G of this report.

6.2. Data Acquisition Electronics (DAE)

The data acquisition electronics (DAE) consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast16 bit AD-converter and a command decoder and control logic unit. AD-converter and a command decoder and control logic unit. Transmission to the measurement server is accomplished through an optical downlink for data and status information as well as an optical uplink for commands and the clock. The input impedance of the DAE is 200MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.

Fig 6.4 Photo of DAE

6.3. Robot

The SPEAG DASY system uses the high precision robots (DASY4: RX90BL; DASY5: TX90XL) type from Stäubli SA (France). For the 6-axis controller system, the robot controller version (DASY4: CS7MB; DASY5: CS8c) from Stäubli is used. The Stäubli robot series have many features that are important for our application:
High precision (repeatability ±0.035 mm)
High reliability (industrial design)
Jerk-free straight movements
Low ELF interference (the closed metallic construction shields against motor control fields)

Fig 6.5 Photo of DASY5

6.4. Measurement Server

The measurement server is based on a PC/104 CPU board with CPU (DASY4: 166 MHz, Intel Pentium; DASY5: 400 MHz, Intel Celeron), chip disk (DASY4: 32 MB; DASY5: 128 MB), RAM (DASY4: 64 MB, DASY5: 128 MB). The necessary circuits for communication with the DAE electronic box, as well as the 16 bits AD converter system for optical detection and digital I/O interface are contained on the DASY I/O board, which is directly connected to the PC/104 bus of the CPU board. The measurement server performs all the real-time data evaluation for field measurements and surface detection, controls robot movements and handles safety operations.

Fig 6.6 Photo of Server for DASY5

6.5. Light Beam Unit

The light beam switch allows automatic "tooling" of the probe. During the process, the actual position of the probe tip with respect to the robot arm is measured, as well as the probe length and the horizontal probe offset. The software then corrects all movements, such that the robot coordinates are valid for the probe tip.

The repeatability of this process is better than 0.1 mm. If a position has been taught with an aligned probe, the same position will be reached with another aligned probe within 0.1 mm, even if the other probe has different dimensions. During probe rotations, the probe tip will keep its actual position.

Fig. 6.7 Photo of Light Beam

6.6. Phantom

<SAM Twin Phantom>

Shell Thickness	2 ± 0.2 mm (sagging: <1%) Center ear point: 6 ± 0.2 mm
Filling Volume	Approx. 25 liters
Dimensions	Length: 1000 mm; Width: 500 mm; Height: adjustable feet
Measurement Areas	Left Head, Right Head, Flat Phantom

Fig. 6.8 Photo of SAM Phantom

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

6.7. Device Holder

<Device Holder for SAM Twin Phantom>

The SAR in the phantom is approximately inversely proportional to the square of the distance between the source and the liquid surface. For a source at 5 mm distance, a positioning uncertainty of ± 0.5 mm would produce a SAR uncertainty of ± 20 %. Accurate device positioning is therefore crucial for accurate and repeatable measurements. The positions in which the devices must be measured are defined by the standards.

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 center for both scales is the ear reference point (EPR). Thus the device needs no repositioning when changing the angles.

The DASY device holder is constructed 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.

<Laptop Extension Kit>

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

Fig 6.9 Device Holder

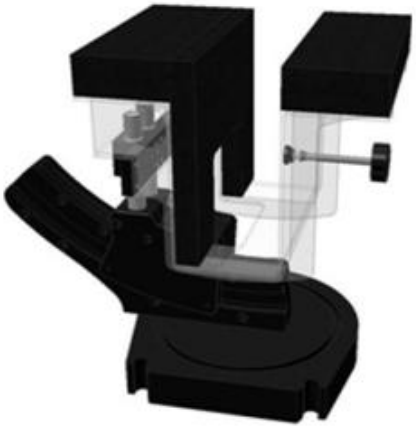


Fig 6.10 Laptop Extension Kit

6.8. Data Storage and Evaluation

➢ **Data Storage**

The DASY software stores the assessed data from the data acquisition electronics as raw data (in microvolt readings from the probe sensors), together with all the necessary software parameters for the data evaluation (probe calibration data, liquid parameters and device frequency and modulation data) in measurement files. The post-processing 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 erroneous parameter settings. For example, if a measurement has been performed with an incorrect crest factor parameter in the device setup, the parameter can be corrected afterwards and the data can be reevaluated.
The measured data can be visualized or exported in different units or formats, depending on the selected probe type (e.g., [V/m], [A/m], [Mw/g]). Some of these units are not available in certain situations or give meaningless results, e.g., a SAR-output in a non-lose media, will always be zero. Raw data can also be exported to perform the evaluation with other software packages.

➢ **Data Evaluation**

The DASY post-processing software (SEMCAD) 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	$Norm_i$, a_{i0}, a_{i1}, a_{i2}
	- Conversion factor	$ConvF_i$
	- Diode compression point	dcpi
Device parameters:	- Frequency	f
	- Crest factor	cf
Media parameters:	- Conductivity	σ
	- 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 multi-meter 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:

$$V_i = U_i + U_i^2 \times \frac{cf}{dcp_i}$$

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)
dcpi = diode compression point (DASY parameter)

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

E-field Probes: $E_i = \sqrt{\frac{V_i}{Norm_i \times ConvF}}$

H-field Probes: $H_i = \sqrt{V_i} \times \frac{a_{i0} + a_{i1} + a_{i2} f^2}{f}$

With V_i = compensated signal of channel I, (I = x, y, z)
$Norm_i$ = sensor sensitivity of channel I, (I = x, y, z), Mv/(V/m)^2 forE-field
Probes ConvF = sensitivity enhancement in solution
a_{ij} = sensor sensitivity factors for H-field probes
f = carrier frequency [GHz]
E_i = electric field strength of channel I in V/m
H_i = magnetic field strength of channel I in A/m

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

$$E_{tot} = \sqrt{E_x^2 + E_y^2 + E_z^2}$$

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

$$SAR = E_{tot}^2 \times \frac{\sigma}{\rho \times 1000}$$

with SAR = local specific absorption rate in mW/g
E_{tot} = total field strength in V/m
σ = conductivity in [mho/m] or [Siemens/m]
ρ = equivalent tissue density in g/cm^3

Note that the density is set to 1, to account for actual head tissue density rather than the density of the tissue simulating liquid.

6.9. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial No./ SW Version	Calibration	
				Last Cal.	Due Date
SPEAG	750MHz System Validation Kit	D750V3	1223	2022.08.22	2025.08.21
SPEAG	900MHz System Validation Kit	D900V2	1d064	2024.10.21	2027.10.20
SPEAG	1800MHz System Validation Kit	D1800V2	2d158	2024.10.21	2027.10.20
SPEAG	2000MHz System Validation Kit	D2000V2	1050	2024.10.22	2027.10.21
SPEAG	2450MHz System Validation Kit	D2450V2	805	2024.10.22	2027.10.21
SPEAG	2600MHz System Validation Kit	D2600V2	1198	2024.10.23	2027.10.22
SPEAG	3500MHz System Validation Kit	D3500V2	1104	2024.10.21	2027.10.20
SPEAG	3700MHz System Validation Kit	D3700V2	1076	2024.10.23	2027.10.22
SPEAG	3900MHz System Validation Kit	D3900V2	1046	2024.10.21	2027.10.20
SPEAG	5000MHz System Validation Kit	D5GHzV2	1176	2024.10.22	2027.10.21
SPEAG	DOSIMETRIC ASSESSMENT SYSTEM Software	DASY6	52.10.4.1527	NCR	NCR
SPEAG	Dosimetric E-Field Probe	EX3DV4	7608	2025.03.20	2026.03.19
SPEAG	Data Acquisition Electronics	DAE4	1643	2025.03.21	2026.03.20
SPEAG	Twin-SAM	QD 000 P41 Ax	2020	NCR	NCR
SPEAG	Phone Positioner	N/A	N/A	NCR	NCR
R&S	Network Emulator	CMW500	165755	2025.01.06	2026.01.05
Anritsu	Network Emulator	MT8820C	6201274521	2025.01.06	2026.01.05
Agilent	Network Analyzer	E5071B	MY42404762	2025.01.06	2026.01.05
SPEAG	Dielectric Assessment KIT	DAK-3.5	1279	2025.03.18	2026.03.17
mini-circuits	Amplifier	ZHL-42W+	608501717	NCR	NCR
mini-circuits	Amplifier	ZVE-8G+	754401735	NCR	NCR
Agilent	Signal Generator	N5182B	MY53050509	2024.09.11	2025.09.10
R&S	Power Senor	NRP8S	103215	2025.01.06	2026.01.05
Agilent	Power Meter	E4416A	MY45102093	2024.09.11	2025.09.10
R&S	Power Sensor	NRP8S	103240	2025.01.06	2026.01.05
Anritsu	Power Meter	E4418B	GB43318055	2025.05.15	2026.05.14
Agilent	Dual Directional Coupler	778D	50422	NA	NA
MCL	Attenuation	351-218-010	N/A	NA	NA
R&S	Spectrum Analyzer	N9030A	MY54170556	2024.09.18	2025.09.17
KTJ	Thermo meter	TA298	N/A	2024.11.20	2025.11.19

SPEAG	Tissue Simulating Liquids	HBBL600-10000V6	24H

Note:

1. The calibration certificate of DASY can be referred to annex G of this report.
2. The Insertion Loss calibration of Dual Directional Coupler and Attenuator were characterized via the network analyzer and compensated during system check.
3. The dielectric probe kit was calibrated via the network analyzer, with the specified procedure (calibrated in pure water) and calibration kit (standard) short circuit, before the dielectric measurement. The specific procedure and calibration kit are provided by SPEAG.
4. In system check we need to monitor the level on the power meter, and adjust the power amplifier level to have precise power level to the dipole; the measured SAR will be normalized to 1 W input power according to the ratio of 1 W to the input power to the dipole. For system check, the calibration of the power amplifier is deemed not critically required for correct measurement; the power meter is critical and we do have calibration for it.
5. Attenuator insertion loss is calibrated by the network Analyzer, which the calibration is valid, before system check.
6. N.C.R means No Calibration Requirement.

7. Tissue Simulating Liquids

For SAR measurement of the field distribution inside the phantom, the phantom must be filled with homogeneous tissue simulating liquid to a depth of at least 15 cm. For head SAR testing, the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15 cm. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm, which is shown in Fig. 7.1. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm, which is shown in Fig. 7.2. The nominal dielectric values of the tissue simulating liquids in the phantom and the tolerance of 5% are listed in below table.

Fig 7.1 Photo of Liquid Height for Head SAR

Fig 7.2 Photo of Liquid Height for Body SAR

The following table gives the recipes for tissue simulating liquids

Frequency (MHz)	Water (%)	Sugar (%)	Cellulose (%)	Salt (%)	Preventol (%)	DGBE (%)	Conductivity (σ)	Permittivity (εr)
Head								
750	41.1	57.0	0.2	1.4	0.2	0	0.89	41.9
835	40.3	57.9	0.2	1.4	0.2	0	0.90	41.5
1800,1900,2000	55.2	0	0	0.3	0	44.5	1.40	40.0
2450	55.0	0	0	0	0	45.0	1.80	39.2
2600	54.8	0	0	0.1	0	45.1	1.96	39.0
Body								
750	51.7	47.2	0	0.9	0.1	0	0.96	55.5
835	50.8	48.2	0	0.9	0.1	0	0.97	55.2
1800,1900,2000	70.2	0	0	0.4	0	29.4	1.52	53.3
2450	68.6	0	0	0	0	31.4	1.95	52.7
2600	68.1	0	0	0.1	0	31.8	2.16	52.5

Simulating Liquid for 5GHz, Manufactured by SPEAG.

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

Note: Please refer to the validation results for dielectric parameters of each frequency band.
The dielectric properties of the tissue simulating liquids were verified prior to the SAR evaluation using a SPEAG Dielectric Assessment KIT and an Agilent Network Analyzer.

Table 1: Dielectric Performance of Tissue Simulating Liquid

Frequency (MHz)	Tissue Type	Liquid Temp. (℃)	Conductivity (σ)	Conductivity Target (σ)	Delta (σ) (%)	Limit (%)	Date
750	HSL	22.1	0.913	0.89	2.58	±5	2025/7/21
750	HSL	22.2	0.920	0.89	3.37	±5	2025/7/22
900	HSL	22.3	0.977	0.97	0.72	±5	2025/7/23
900	HSL	22.1	0.963	0.97	-0.72	±5	2025/7/24
1800	HSL	22.1	1.385	1.40	-1.07	±5	2025/7/25
1800	HSL	22.2	1.389	1.40	-0.79	±5	2025/7/26
1800	HSL	22.2	1.364	1.40	-2.57	±5	2025/7/27
1800	HSL	22.3	1.378	1.40	-1.57	±5	2025/7/28
1800	HSL	22.1	1.388	1.40	-0.86	±5	2025/7/29
1800	HSL	22.1	1.374	1.40	-1.86	±5	2025/7/30
2000	HSL	22.1	1.421	1.40	1.50	±5	2025/7/31
2450	HSL	22.1	1.855	1.80	3.06	±5	2025/8/1
2600	HSL	22.2	1.939	1.96	-1.07	±5	2025/8/2
2600	HSL	22.1	1.995	1.96	1.79	±5	2025/8/8
3500	HSL	22.2	2.863	2.91	-1.62	±5	2025/8/3
3700	HSL	22.1	2.931	3.05	-3.90	±5	2025/8/4
3900	HSL	22.3	3.114	3.15	-1.14	±5	2025/8/5
5250	HSL	22.1	4.759	4.71	1.04	±5	2025/8/6
5750	HSL	22.3	5.023	5.22	-3.77	±5	2025/8/7
Frequency (MHz)	**Tissue Type**	**Liquid Temp. (℃)**	**Permittivity (εr)**	**Permittivity Target (εr)**	**Delta (εr) (%)**	**Limit (%)**	**Date**
750	HSL	22.1	41.229	41.90	-1.60	±5	2025/7/21
750	HSL	22.2	41.158	41.90	-1.77	±5	2025/7/22
900	HSL	22.3	40.675	41.50	-1.99	±5	2025/7/23
900	HSL	22.1	40.751	41.50	-1.80	±5	2025/7/24
1800	HSL	22.1	40.360	40.00	0.90	±5	2025/7/25
1800	HSL	22.2	40.357	40.00	0.89	±5	2025/7/26
1800	HSL	22.2	39.818	40.00	-0.46	±5	2025/7/27
1800	HSL	22.3	40.468	40.00	1.17	±5	2025/7/28
1800	HSL	22.1	40.359	40.00	0.90	±5	2025/7/29

1800	HSL	22.1	40.471	40.00	1.18	±5	2025/7/30
2000	HSL	22.1	39.768	40.00	-0.58	±5	2025/7/31
2450	HSL	22.1	39.414	39.20	0.55	±5	2025/8/1
2600	HSL	22.2	38.739	39.00	-0.67	±5	2025/8/2
2600	HSL	22.1	38.434	39.00	-1.45	±5	2025/8/8
3500	HSL	22.2	39.221	37.90	3.49	±5	2025/8/3
3700	HSL	22.1	37.005	37.70	-1.84	±5	2025/8/4
3900	HSL	22.3	36.263	37.50	-3.30	±5	2025/8/5
5250	HSL	22.1	35.556	35.95	-1.10	±5	2025/8/6
5750	HSL	22.3	34.327	35.35	-2.89	±5	2025/8/7

8. SAR System Verification

Each DASY system is equipped with one or more system validation kits. These units, together with the predefined measurement procedures within the DASY software, enable the user to conduct the system performance check and system validation. System validation kit includes a dipole, tripod holder to fix it underneath the flat phantom and a corresponding distance holder.

8.1. Purpose of System Performance Check

The system performance check verifies that the system operates within its specifications. System and operator errors can be detected and corrected. It is recommended that the system performance check be performed prior to any usage of the system in order to guarantee reproducible results. The system performance check uses normal SAR measurements in a simplified setup with a well characterized source. This setup was selected to give a high sensitivity to all parameters that might fail or vary over time. The system check does not intend to replace the calibration of the components, but indicates situations where the system uncertainty is exceeded due to drift or failure.

8.2. System Setup

The output power on dipole port must be calibrated to 250 mW or 100 mW before dipole is connected. In the simplified setup for system evaluation, the DUT is replaced by a calibrated dipole and the power source is replaced by a continuous wave which comes from a signal generator. The calibrated dipole must be placed beneath the flat phantom section of the SAM twin phantom with the correct distance holder. The distance holder should touch the phantom surface with a light pressure at the reference marking and be oriented parallel to the long side of the phantom. The system check verifies that the system operates within its specifications. It is performed daily or before every SAR

measurement. The system check uses normal SAR measurements in the flat section of the phantom with a matched dipole at a specified distance. The system verification setup is shown as below.

Fig 8.1 Photo of Dipole Setup

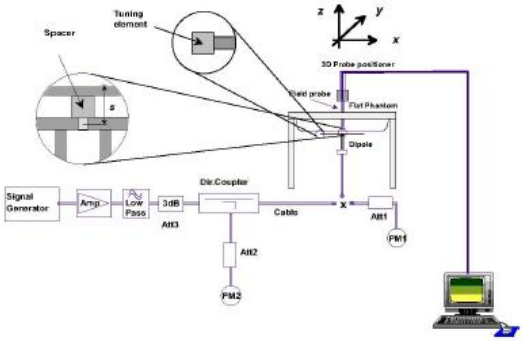


Fig 8.2 System Setup for System Evaluation

8.3. Validation Results

After system check testing, the SAR result will be normalized to 1W forward input power and compared with the reference SAR value derived from validation dipole certificate report. The deviation of system check should be within 10%.

<Validation Setup>

Frequency (MHz)	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N
750	250	D750V3-1223	7608	1643
900	250	D900V2-1d064	7608	1643
1800	250	D1800V2-2d158	7608	1643
2000	100	D2000V2-1050	7608	1643
2450	100	D2450V2-805	7608	1643
2600	100	D2600V2-1198	7608	1643
3500	100	D3500V2-1104	7608	1643
3700	100	D3700V2-1076	7608	1643
3900	100	D3900V2-1046	7608	1643
5250	100	D5GHzV2-1176-5250	7608	1643
5750	100	D5GHzV2-1176-5750	7608	1643

<System Validation>

Frequency (MHz)	Tissue Type	Conductivity (σ)	Permittivity (εr)	CW Signal Validation		
				Sensitivity	Probe Linearity	Probe Isotropy
750	HSL	0.851	42.43	PASS	PASS	PASS
835	HSL	0.898	41.88	PASS	PASS	PASS
1750	HSL	1.386	39.91	PASS	PASS	PASS
1800	HSL	1.449	41.26	PASS	PASS	PASS
1900	HSL	1.435	39.65	PASS	PASS	PASS
2000	HSL	1.451	39.42	PASS	PASS	PASS
2300	HSL	1.764	38.99	PASS	PASS	PASS
2450	HSL	1.863	38.85	PASS	PASS	PASS
2600	HSL	1.973	38.58	PASS	PASS	PASS
3400	HSL	2.88	38.10	PASS	PASS	PASS
3500	HSL	2.91	37.90	PASS	PASS	PASS
3700	HSL	3.05	37.70	PASS	PASS	PASS
3900	HSL	3.15	37.50	PASS	PASS	PASS
4100	HSL	3.25	37.20	PASS	PASS	PASS
4200	HSL	3.34	37.00	PASS	PASS	PASS
4400	HSL	3.58	36.70	PASS	PASS	PASS
4600	HSL	3.70	36.60	PASS	PASS	PASS
4800	HSL	3.82	36.40	PASS	PASS	PASS
4900	HSL	3.96	36.20	PASS	PASS	PASS
5250	HSL	4.528	35.32	PASS	PASS	PASS
5600	HSL	4.905	34.89	PASS	PASS	PASS
5750	HSL	5.077	34.28	PASS	PASS	PASS

Frequency (MHz)	Tissue Type	Conductivity (σ)	Permittivity (εr)	Modulation Signal Validation		
				Mod. Type	Duty Factor	PAR
750	HSL	0.851	42.43	N/A	N/A	N/A
835	HSL	0.898	41.88	GMSK	PASS	N/A
1750	HSL	1.386	39.91	N/A	N/A	N/A
1800	HSL	1.449	41.26	N/A	N/A	N/A
1900	HSL	1.435	39.65	GMSK	PASS	N/A
2000	HSL	1.451	39.42	GMSK	PASS	N/A
2300	HSL	1.764	38.99	OFDM	PASS	PASS
2450	HSL	1.863	38.85	OFDM	PASS	PASS
2600	HSL	1.973	38.58	TDD	PASS	N/A
3400	HSL	2.88	38.10	OFDM	PASS	PASS
3500	HSL	2.91	37.90	OFDM	PASS	PASS
3700	HSL	3.05	37.70	OFDM	PASS	PASS
3900	HSL	3.15	37.50	OFDM	PASS	PASS
4100	HSL	3.25	37.20	OFDM	PASS	PASS
4200	HSL	3.34	37.00	OFDM	PASS	PASS
4400	HSL	3.58	36.70	OFDM	PASS	PASS
4600	HSL	3.70	36.60	OFDM	PASS	PASS
4800	HSL	3.82	36.40	OFDM	PASS	PASS
4900	HSL	3.96	36.20	OFDM	PASS	PASS
5250	HSL	4.528	35.32	OFDM	N/A	PASS
5600	HSL	4.905	34.89	OFDM	N/A	PASS
5750	HSL	5.077	34.28	OFDM	N/A	PASS

<Validation Results>

Date	Frequency (MHz)	Tissue Type	Measured 1g SAR (W/kg)	Targeted 1g SAR (W/kg)	Normalized 1g SAR (W/kg)	Deviation (%)
2025/7/21	750	HSL	2.26	8.54	9.04	5.85
2025/7/22	750	HSL	2.29	8.54	9.16	7.26
2025/7/23	900	HSL	2.88	10.90	11.52	5.69
2025/7/24	900	HSL	2.74	10.90	10.96	0.55
2025/7/25	1800	HSL	9.66	39.20	38.64	-1.43
2025/7/26	1800	HSL	9.72	39.20	38.88	-0.82
2025/7/27	1800	HSL	9.91	39.20	39.64	1.12
2025/7/28	1800	HSL	9.69	39.20	38.76	-1.12
2025/7/29	1800	HSL	9.78	39.20	39.12	-0.20
2025/7/30	1800	HSL	9.67	39.20	38.68	-1.33
2025/7/31	2000	HSL	4.23	41.40	42.3	2.17
2025/8/1	2450	HSL	4.98	52.80	49.8	-5.68
2025/8/2	2600	HSL	5.19	55.90	51.9	-7.16
2025/8/8	2600	HSL	5.63	55.90	56.3	0.72
2025/8/3	3500	HSL	7.11	66.70	71.1	6.60
2025/8/4	3700	HSL	7.26	67.50	72.6	7.56
2025/8/5	3900	HSL	7.13	68.00	71.3	4.85
2025/8/6	5250	HSL	8.15	77.30	81.5	5.43
2025/8/7	5750	HSL	8.29	77.20	82.9	7.38

Date	Frequency (MHz)	Tissue Type	Measured 10g SAR (W/kg)	Targeted 10g SAR (W/kg)	Normalized 10g SAR (W/kg)	Deviation (%)
2025/7/21	750	HSL	1.49	5.57	5.96	7.00
2025/7/22	750	HSL	1.52	5.57	6.08	9.16
2025/7/23	900	HSL	1.85	7.00	7.4	5.71
2025/7/24	900	HSL	1.79	7.00	7.16	2.29
2025/7/25	1800	HSL	5.26	20.70	21.04	1.64
2025/7/26	1800	HSL	5.44	20.70	21.76	5.12
2025/7/27	1800	HSL	5.36	20.70	21.44	3.57
2025/7/28	1800	HSL	5.53	20.70	22.12	6.86
2025/7/29	1800	HSL	5.27	20.70	21.08	1.84
2025/7/30	1800	HSL	5.21	20.70	20.84	0.68
2025/7/31	2000	HSL	2.09	21.00	20.9	-0.48
2025/8/1	2450	HSL	2.44	24.50	24.4	-0.41

2025/8/2	2600	HSL	2.53	24.90	25.3	1.61
2025/8/8	2600	HSL	2.52	24.90	25.2	1.20
2025/8/3	3500	HSL	2.48	25.30	24.8	-1.98
2025/8/4	3700	HSL	2.52	24.70	25.2	2.02
2025/8/5	3900	HSL	2.28	23.60	22.8	-3.39
2025/8/6	5250	HSL	2.18	21.50	21.8	1.40
2025/8/7	5750	HSL	2.24	21.20	22.4	5.66

Note: System checks the specific test data please see annex C.

9. EUT Testing Position

This EUT was tested in ten different positions. They are right cheek/right tilted/left cheek/left tilted for head, front/back/left/right/top/bottom of the EUT with phantom 10 mm gap, as illustrated below, please refer to annex B for the test setup photos.

9.1. Handset Reference Points

The vertical centre line passes through two points on the front side of the handset – the midpoint of the width wt of the handset at the level of the acoustic output, and the midpoint of the width wb of the bottom of the handset.
The horizontal line is perpendicular to the vertical centre line and passes the center of the acoustic output. The horizontal line is also tangential to the handset at point A.
The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output; however, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centre line is not necessarily parallel to the front face of the handset, especially for clamshell handsets, handsets with flip covers, and other irregularly shaped handsets.

Fig. 9.1 Illustration for Cheek Position

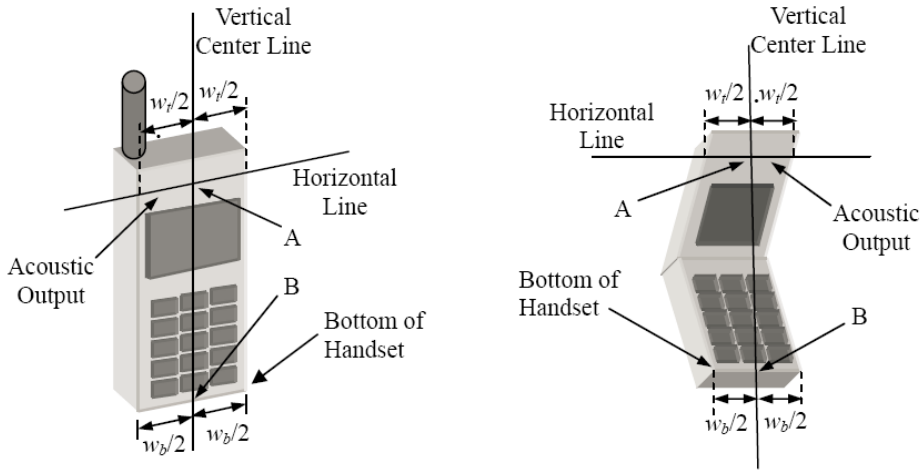


Fig. 9.2 Illustration for Handset Vertical and Horizontal Reference Lines

9.2. Positioning for Cheek / Touch

To position the device with the vertical center line of the body of the device and the horizontal line crossing the center piece in a plane parallel to the sagittal plane of the phantom. While maintaining the device in this plane, align the vertical center line with the reference plane containing the three ear and mouth reference point (M: Mouth, RE: Right Ear and LE: Left Ear) and align the center of the ear piece with the line RE-LE.

To move the device towards the phantom with the ear piece aligned with the line LE-RE until the phone touched the ear. While maintaining the device in the reference plane and maintaining the phone contact with the ear, move the bottom of the phone until any point on the front side is in contact with the cheek of the phantom or until contact with the ear is lost (see below figure)

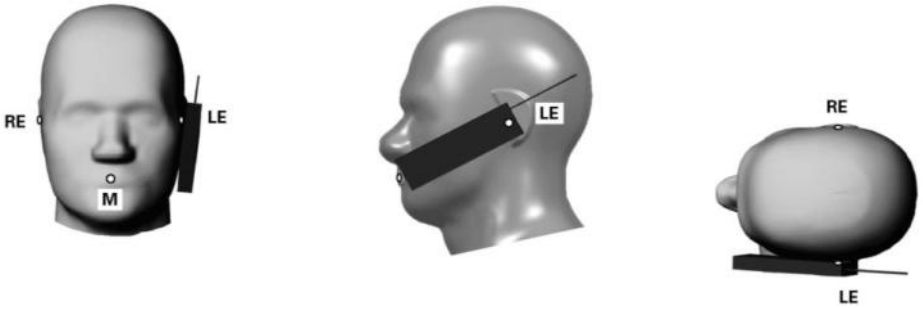


Fig 9.3 Illustration for Cheek Position

9.3. Positioning for Ear / 15º Tilt

To position the device in the “cheek” position described above.
While maintaining the device the reference plane described above and pivoting against the ear, moves it outward away from the mouth by an angle of 15 degrees or until contact with the ear is lost (see figure below).

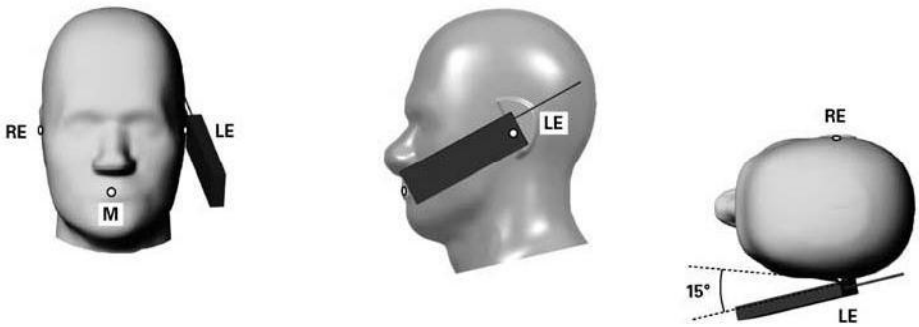


Fig 9.4 Illustration for Tilted Position

9.4. SAR Evaluation near the Mouth/Jaw Regions of the Phantom

Antennas located near the bottom of a phone may require SAR measurements around the mouth and jaw regions of the SAM head phantom. This typically applies to clam-shell style phones that are generally longer in the unfolded normal use positions or to certain older style long rectangular phones.

Under these circumstances, the following procedures apply, adopted from the FCC guidance on SAR handsets document FCC KDB Publication 648474 D04v01r03. The SAR required in these regions of SAM should be measured using a flat phantom. The phone should be positioned with a separation distance of 4 mm between the ear reference point (ERP) and the outer surface of the flat phantom shell. While maintaining this distance at the ERP location, the low (bottom) edge of the phone should be lowered from the phantom to establish the same separation distance between the peak SAR locations identified by the truncated partial SAR distribution measured with the SAM phantom. The distance from the peak SAR location to the phone is determined by the straight line passing perpendicularly through the phantom surface. When it is not feasible to maintain 4 mm separation at the ERP while also establishing the required separation at the peak SAR location, the top edge of the phone will be allowed to touch the phantom with a separation < 4 mm at the ERP. The phone should not be tilted to the left or right while placed in this inclined position to the flat phantom.

9.5. Body-worn Configurations

The body-worn configurations shall be tested with the supplied accessories (belt-clips, holsters, etc.) attached to the device in normal use configuration.

For body-worn and other configurations a flat phantom shall be used which is comprised of material with electrical properties similar to the corresponding tissues.

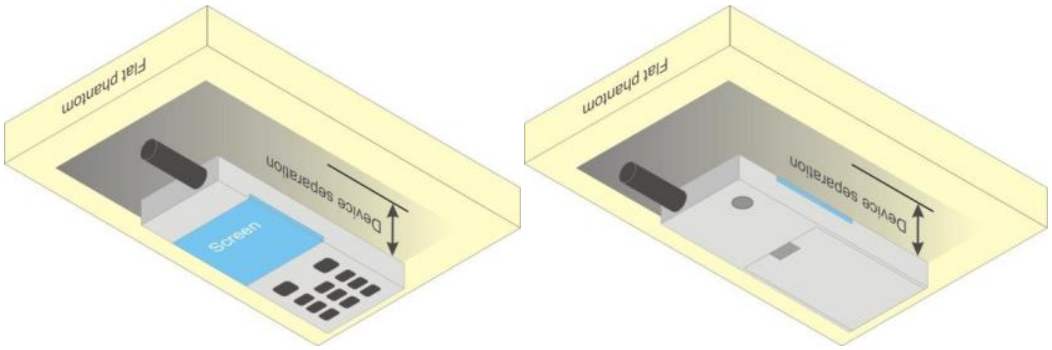


Fig 9.5 Illustration for Body Worn Position

9.6. Hotspot Mode Exposure Position Conditions

For handsets that support hotspot mode operations, with wireless router capabilities and various web browsing functions, the relevant hand and body exposure conditions are tested according to the hotspot SAR procedures in KDB 941225. A test separation distance of 10 mm is required between the phantom and all surfaces and edges with a transmitting antenna located within 25 mm from that surface or edge. When the form factor of a handset is smaller than 9 cm x 5 cm, a test separation distance of 5 mm (instead of 10 mm) is required for testing hotspot mode. When the separation distance required for body-worn accessory testing is larger than or equal to that tested for hotspot mode, in the same wireless mode and for the same surface of the phone, the hotspot mode SAR data may be used to support body-worn accessory SAR compliance for that particular configuration (surface).

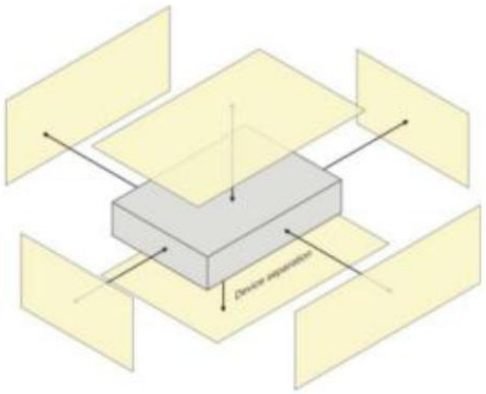


Fig 9.6 Illustration for Hotspot Position

10. Measurement Procedures

The measurement procedures are as follows:

<Conducted power measurement>

(a) For WWAN power measurement, use base station simulator to configure EUT WWAN transmission in conducted connection with RF cable, at maximum power in each supported wireless interface and frequency band.

(b) Read the WWAN RF power level from the base station simulator.

(c) For WLAN/BT power measurement, use engineering software to configure EUT WLAN/BT continuously transmission, at maximum RF power in each supported wireless interface and frequency band.

(d) Connect EUT RF port through RF cable to the power meter, and measure WLAN/BT output power.

<SAR measurement>

(a) Use base station simulator to configure EUT WWAN transmission in radiated connection, and engineering software to configure EUT WLAN/BT continuously transmission, at maximum RF power, in the highest power channel.

(b) Place the EUT in the positions as annex B demonstrates.

(c) Set scan area, grid size and other setting on the DASY software.

(d) Measure SAR results for the highest power channel on each testing position.

(e) Find out the largest SAR result on these testing positions of each band.

(f) Measure SAR results for other channels in worst SAR testing position if the reported SAR of highest power channel is larger than 0.8 W/kg.

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

(a) Power reference measurement.

(b) Area scan.

(c) Zoom scan.

(d) Power drift measurement.

10.1. Spatial Peak SAR Evaluation

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

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

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

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

10.2. Power Reference Measurement

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

10.3. Area Scan Procedures

Area scans are defined prior to the measurement process being executed with a user defined variable spacing between each measurement point (integral) allowing low uncertainty measurements to be conducted. Scans defined for FCC applications utilize a 10 mm^2 step integral, with 1 mm interpolation used to locate the peak SAR area used for zoom scan assessments.

When an Area Scan has measured all reachable points, it computes the field maxima founding the scanned area, within a range of the global maximum. The range (in dB) is specified in the standards for compliance testing. For example, a 2 dB range is required in IEEE 1528-2003.

10.4. Zoom Scan Procedures

Zoom Scans are used to assess the peak spatial SAR values within a cubic averaging volume containing 1 g and 10 g of simulated tissue. A density of 1000 kg/m^3 is used to represent the head and body tissue density and not the phantom liquid density, in order to be consistent with the definition of the liquid dielectric properties, i.e. the side length of the 1 g cube is 10 mm, with the side

length of the 10 g cube 21.5 mm. The zoom scan integer steps can be user defined so as to reduce uncertainty, but normal practice for typical test applications utilize a physical step of 5 x 5 x 7 (8 mm x 8 mm x 5 mm) providing a volume of 32 mm in the X & Y axis, and 30 mm in the Z axis.

10.5. SAR Averaged Methods

In DASY, the interpolation and extrapolation are both based on the modified Quadratic Sheppard's method. The interpolation scheme combines a least-square fitted function method and a weighted average method which are the two basic types of computational interpolation and approximation.

Extrapolation routines are used to obtain SAR values between the lowest measurement points and the inner phantom surface. The extrapolation distance is determined by the surface detection distance and the probe sensor offset. The uncertainty increases with the extrapolation distance. To keep the uncertainty within 1% for the 1 g and 10 g cubes, the extrapolation distance should not be larger than 5 mm.

10.6. Power Drift Monitoring

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

11. SAR Test Procedure

11.1. General Scan Requirements

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.

<table>
<tr><td colspan="3"></td><td>≤ 3 GHz</td><td>> 3 GHz</td></tr>
<tr><td colspan="3">Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface</td><td>5 mm ± 1 mm</td><td>½·δ·ln(2) mm ± 0.5 mm</td></tr>
<tr><td colspan="3">Maximum probe angle from probe axis to phantom surface normal at the measurement location</td><td>30° ± 1°</td><td>20° ± 1°</td></tr>
<tr><td colspan="3" rowspan="2">Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}</td><td>≤ 2 GHz: ≤ 15 mm
2 – 3 GHz: ≤ 12 mm</td><td>3 – 4 GHz: ≤ 12 mm
4 – 6 GHz: ≤ 10 mm</td></tr>
<tr><td colspan="2">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.</td></tr>
<tr><td colspan="3">Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}</td><td>≤ 2 GHz: ≤ 8 mm
2 – 3 GHz: ≤ 5 mm*</td><td>3 – 4 GHz: ≤ 5 mm*
4 – 6 GHz: ≤ 4 mm*</td></tr>
<tr><td rowspan="3">Maximum zoom scan spatial resolution, normal to phantom surface</td><td colspan="2">uniform grid: $\Delta z_{Zoom}(n)$</td><td>≤ 5 mm</td><td>3 – 4 GHz: ≤ 4 mm
4 – 5 GHz: ≤ 3 mm
5 – 6 GHz: ≤ 2 mm</td></tr>
<tr><td rowspan="2">graded grid</td><td>$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface</td><td>≤ 4 mm</td><td>3 – 4 GHz: ≤ 3 mm
4 – 5 GHz: ≤ 2.5 mm
5 – 6 GHz: ≤ 2 mm</td></tr>
<tr><td>$\Delta z_{Zoom}(n>1)$: between subsequent points</td><td colspan="2">≤ 1.5·$\Delta z_{Zoom}(n-1)$ mm</td></tr>
<tr><td>Minimum zoom scan volume</td><td colspan="2">x, y, z</td><td>≥ 30 mm</td><td>3 – 4 GHz: ≥ 28 mm
4 – 5 GHz: ≥ 25 mm
5 – 6 GHz: ≥ 22 mm</td></tr>
<tr><td colspan="5">Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see IEEE Std 1528-2013 for details.
* When zoom scan is required and the reported SAR from the area scan based 1-g SAR estimation procedures of KDB Publication 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.</td></tr>
</table>

11.2. Test Procedure

The Following steps are used for each test position

1. Establish a call with the maximum output power with a base station simulator. The connection between the mobile and the base station simulator is established via air interface.
2. Measurement of the local E-field value at a fixed location. This value serves as a reference value for calculating a possible power drift.
3. Measurement of the SAR distribution with a grid of 8 to 16 mm * 8 to 16 mm and a constant distance to the inner surface of the phantom. Since the sensors cannot directly measure at the inner phantom surface, the values between the sensors and the inner phantom surface are extrapolated. With these values the area of the maximum SAR is calculated by an interpolation scheme.
4. Around this point, a cube of 30 * 30 * 30 mm or 32 * 32 * 32 mm is assessed by measuring 5 or 8 * 5 or 8*4 or 5 mm. With these data, the peak spatial-average SAR value can be calculated.

11.3. Description of Interpolation/Extrapolation Scheme

The local SAR inside the phantom is measured using small dipole sensing elements inside a probe body. The probe tip must not be in contact with the phantom surface in order to minimize measurements errors, but the highest local SAR will occur at the surface of the phantom.

An extrapolation is using to determinate this highest local SAR values. The extrapolation is based on a fourth-order least-square polynomial fit of measured data. The local SAR value is then extrapolated from the liquid surface with a 1 mm step.

The measurements have to be performed over a limited time (due to the duration of the battery) so the step of measurement is high. It could vary between 5 and 8 mm. To obtain an accurate assessment of the maximum SAR averaged over 10 grams and 1 gram requires a very fine resolution in the three dimensionals scanned data array.

11.4. Wireless Router

Some battery-operated handsets have the capability to transmit and receive user through simultaneous transmission of WIFI simultaneously with a separate licensed transmitter. The FCC has provided guidance in FCC KDB Publication 941225 D06 v02r01 where SAR test considerations for handsets (L x W ≥ 9 cm x 5 cm) are based on a composite test separation distance of 10 from the front, back and edges of the device containing transmitting antennas within 2.5 cm of their edges,

determined form general mixed use conditions for this type of devices. Since the hotspot SAR results may overlap with the body-worn accessory SAR requirements, the more conservative configurations can be considered, thus excluding some body-worn accessory SAR tests.

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

12. SAR Test Configuration

<GSM Mode>

A summary of these settings is illustrated below:
For GSM850 frequency band, the power control is set to 5 for GSM/GPRS mode (GSMK-CS1) and set to 8 for EDGE mode (MCS5); For GSM1900 frequency band, the power control is set to 0 for GSM/GPRS mode (GSMK-CS1) and set to 2 for EDGE mode (MCS5).

1. Per KDB 447498 D01v06, the maximum output power channel is used for SAR testing and for further SAR test reduction.
2. Per KDB 941225 D01v03r01, SAR test reduction for GSM / GPRS / EDGE modes is determined by the source-based time-averaged output power including tune-up tolerance. The mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested. Therefore, the GPRS (4Tx slots) for GSM850/GSM1900 is considered as the primary mode.
3. Other configurations of GSM / GPRS / EDGE are considered as secondary modes.

Timeslot consignations:

Remark:

1. The frame-averaged power is linearly reported the maximum burst averaged power over 8 time slots. The calculated methods are shown as below:
   The duty cycle “x” of different time slots as below:
   1 TX slot is 1/8, 2 TX slots is 2/8, 3 TX slots is 3/8 and 4 TX slots is 4/8
   Based on the calculation formula:
   Frame-averaged power = Burst averaged power + 10 1og (x)
   So,
   Frame-averaged power (1 TX slot) = Burst averaged power (1 TX slot)– 9.03
   Frame-averaged power (2 TX slots) = Burst averaged power (2 TX slots)– 6.02
   Frame-averaged power (3 TX slots) = Burst averaged power (3 TX slots)– 4.26
   Frame-averaged power (4 TX slots) = Burst averaged power (4 TX slots) – 3.01
2. CS1 coding scheme was used in GPRS conducted power measurements and SAR testing, MCS5 coding scheme was used in EGPRS conducted power measurements and SAR testing (if necessary).

No. of Slots:	Slot 1	Slot 2	Slot 3	Slot 4
Slot Consignation:	1Up 4Down	2Up 3Down	3Up 2Down	4Up 1Down
Duty Cycle:	1:8.3	1:4.15	1:2.77	1:2.08
Correct Factor:	-9.03dB	-6.02dB	-4.26dB	-3.01dB

<WCDMA Mode>

Summary of UMTS conducted power measurement:

1. The 3G SAR test reduction procedure is applied, when the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode, SAR measurement is not required for the secondary mode.
2. The following tests were conducted according to the test requirements outlines in 3GPP TS 34.121 specification.
3. The procedures in KDB 941225 D01v03r01 are applied for 3GPP Rel. 6 HSPA to configure the device in the required sub-test mode(s) to determine SAR test exclusion.
4. For HSPA+ devices supporting 16 QAM in the uplink, power measurements procedure is according to the configurations in Table C.11.1.4 of 3GPP TS 34.121-1.
5. Per KDB 941225 D01v03r01, RMC 12.2kbps setting is used to evaluate SAR. The maximum output power and tune-up tolerance specified for production units in HSDPA / HSUPA / DC-HSDPA / HSPA+ is ≤ ¼ dB higher than RMC 12.2Kbps or when the highest reported SAR of the RMC12.2Kbps is scaled by the ratio of specified maximum output power and tune-up tolerance of HSDPA / HSUPA / DC-HSDPA / HSPA+ to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA / HSPA+, and according to the following RF output power, the output power results of the secondary modes (HSDPA / HSUPA / DC-HSDPA / HSPA+) are less than ¼ dB higher than the primary modes; therefore, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA / HSPA+.
6. A fixed level power reduction is applied for WCDMA Band II when handset open Hotspot mode, the power reduction triggered.

HSDPA Setup Configuration

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{hs} (1)	CM (dB) (2)
1	2/15	15/15	64	2/15	4/15	0.0
2	12/15 (3)	15/15 (3)	64	12/15 (3)	24/15	1.0
3	15/15	8/15	64	15/8	30/15	1.5
4	15/15	4/15	64	15/4	30/15	1.5

Note 1: Δ_{ACK}, Δ_{NACK} and $\Delta_{CQI} = 8 \Leftrightarrow A_{hs} = \beta_{hs}/\beta_c = 30/15 \Leftrightarrow \beta_{hs} = 30/15 * \beta_c$
Note 2: CM = 1 for β_c/β_d =12/15, β_{hs}/β_c=24/15.
Note 3: For subtest 2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TF1, TF1) to β_c = 11/15 and β_d = 15/15.

HSUPA Setup Configuration

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{hs}(1)	β_{ec}	β_{ed}	β_{ed} (SF)	β_{ed} (codes)	CM(2) (dB)	MPR (dB)	AG(4) Index	E-TFCI
1	11/15(3)	15/15(3)	64	11/15(3)	22/15	209/225	1039/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	β_{ed1}: 47/15 β_{ed2}: 47/15	4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15(4)	15/15(4)	64	15/15(4)	30/15	24/15	134/15	4	1	1.0	0.0	21	81

Note 1: Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 8 ⇔ $A_{hs} = \beta_{hs}/\beta_c$ = 30/15 ⇔ β_{hs}= 30/15 *β_c.
Note 2: CM = 1 for β_c/β_d =12/15, β_{hs}/β_c=24/15. For all other combinations of DPDCH, DPCCH, HS- DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference.
Note 3: For subtest 1 the β_c/β_d ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TF1, TF1) to β_c = 10/15 and β_d = 15/15.
Note 4: For subtest 5 the β_c/β_d ratio of 15/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TF1, TF1) to β_c = 14/15 and β_d = 15/15.
Note 5: Testing UE using E-DPDCH Physical Layer category 1 Sub-test 3 is not required according to TS 25.306 Table 5.1g.
Note 6: β_{ed} cannot be set directly; it is set by Absolute Grant Value.

HSPA+ 3GPP release 7 (uplink category 7) 16QAM, Setup Configuration:

Table C.11.1.4: β values for transmitter characteristics tests with HS-DPCCH and E-DCH with 16QAM

Sub-test	β_c (Note3)	β_d	β_{HS} (Note1)	β_{ec}	β_{ed} (2xSF2) (Note 4)	β_{ed} (2xSF4) (Note 4)	CM (dB) (Note 2)	MPR (dB) (Note 2)	AG Index (Note 4)	E-TFCI (Note 5)	E-TFCI (boost)
1	1	0	30/15	30/15	β_{ed}1: 30/15 β_{ed}2: 30/15	β_{ed}3: 24/15 β_{ed}4: 24/15	3.5	2.5	14	105	105

Note 1: Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with $\beta_{hs} = 30/15 * \beta_c$.
Note 2: CM = 3.5 and the MPR is based on the relative CM difference, MPR = MAX(CM-1,0).
Note 3: DPDCH is not configured, therefore the β_c is set to 1 and β_d = 0 by default.
Note 4: β_{ed} can not be set directly; it is set by Absolute Grant Value.
Note 5: All the sub-tests require the UE to transmit 2SF2+2SF4 16QAM EDCH and they apply for UE using E-DPDCH category 7. E-DCH TTI is set to 2ms TTI and E-DCH table index = 2. To support these E-DCH configurations DPDCH is not allocated. The UE is signaled to use the extrapolation algorithm.

DC-HSDPA Setup Configuration

The following tests were completed according to procedures in section 7.3.13 of 3GPP TS34.108 v9.5.0. A summary of these settings are illustrated below:
Downlink Physical Channels are set as per 3GPP TS34.121-1 v9.0.0 E.5.

Table E.5.0: Levels for HSDPA connection setup

Parameter During Connection setup	Unit	Value
P-CPICH_Ec/Ior	dB	-10
P-CCPCH and SCH_Ec/Ior	dB	-12
PICH _Ec/Ior	dB	-15
HS-PDSCH	dB	off
HS-SCCH_1	dB	off
DPCH_Ec/Ior	dB	-5
OCNS_Ec/Ior	dB	-3.1

Call is set up as per 3GPP TS34.108 v9.5.0 sub clause 7.3.13

The configurations of the fixed reference channels for HSDPA RF tests are described in 3GPP TS 34.121, annex C for FDD and 3GPP TS 34.122.

Table C.8.1.12: Fixed Reference Channel H-Set 12

Parameter	Unit	Value
Nominal Avg. Inf. Bit Rate	kbps	60
Inter-TTI Distance	TTI's	1
Number of HARQ Processes	Processes	6
Information Bit Payload (N_{INF})	Bits	120
Number Code Blocks	Blocks	1
Binary Channel Bits Per TTI	Bits	960
Total Available SML's in UE	SML's	19200
Number of SML's per HARQ Proc.	SML's	3200
Coding Rate		0.15
Number of Physical Channel Codes	Codes	1
Modulation		QPSK
Note 1: The RMC is intended to be used for DC-HSDPA mode and both cells shall transmit with identical parameters as listed in the table.		
Note 2: Maximum number of transmission is limited to 1, i.e., retransmission is not allowed. The redundancy and constellation version 0 shall be used.		

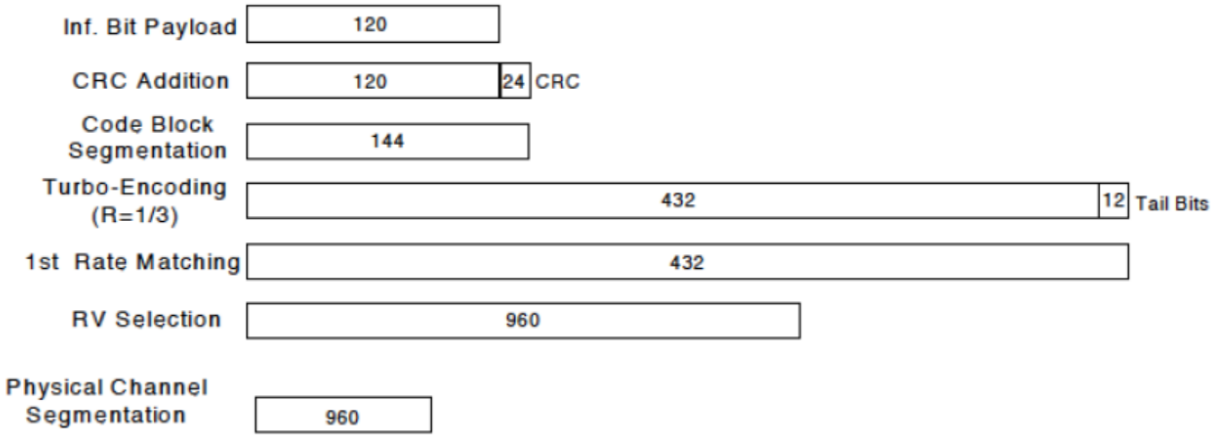


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

<CDMA Mode>

1xEV-DO Rev. B

Call box setup procedure
1xEV-DO Release B
1> CMW 500 Signal Generator > 1xEV-DO Taskbar Enable
2> CMW 500 1xEV-DO Signaling Configuration Window >
3> 1xEV-DO Signaling On Window:
Under Access Network Control:
Band Class: BC0: US Cellular
RF Channel: 31
1xEV-DO Power: -70 dBm
4> 1xEV-DO Signaling Configuration Window
Under RF Frequency Band / Channel: Enter Ch. Frequency

- Under Carrier Configuration: RF Frequency

For Two Carriers: Low Channel (1013)

	RF Channel	RF Channel Offset
Carrier [0]	31	0
Carrier [1]	1013	982

- Under Carrier Configuration: RF Pilot

	Carrier Sector	Active on AN	Assigned to AT
Pilot [0]	C0/S0	✓	✓
	CA/S1	✓	✓

For Three Carriers: Low Channel (1013)

	RF Channel	RF Channel Offset
Carrier [0]	72	0
Carrier [1]	31	-41
Carrier [2]	1013	941

- Under Carrier Configuration: RF Pilot

	Carrier Sector	Active on AN	Assigned to AT
Pilot [0]	C0/S0	✓	✓
Pilot [1]	C1/S1	✓	✓
Pilot [2]	C2/S2	✓	✓

<LTE Mode>

LTE Target MPR level

The device implements maximum power reduction per 3GPP 36.101 requirements where the MPR target is as below table. The MPR settings are implemented configured into firmware and cannot be disabled by the end user or LTE carrier network.

Modulation	Channel bandwidth / Transmission bandwidth configuration [RB]						MPR	3GPP
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	Target (dB)	MPR (dB)
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	1	≤ 1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	1	≤ 1
64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	2	≤ 2

Note: The measurement result showed some difference from the target MPR level, due to expected 0.5 dB measurement tolerance

LTE Bands

LTE Bands	Channel bandwidth / Transmission bandwidth configuration [RB]					
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz
2	√	√	√	√	√	√
4	√	√	√	√	√	√
5	√	√	√	√	N/A	N/A
7	N/A	N/A	√	√	√	√
12	√	√	√	√	N/A	N/A
13	N/A	N/A	√	√	N/A	N/A
17	N/A	N/A	√	√	N/A	N/A
25	√	√	√	√	√	√
26	√	√	√	√	√	N/A
48	N/A	N/A	√	√	√	√
66	√	√	√	√	√	√
71	N/A	N/A	√	√	√	√

Note:

1. Per KDB 941225 D05v02r05, when a properly configured base station simulator is used for the SAR and power measurements, spectrum plots for each RB allocation and offset configuration is not required.
2. Per KDB 941225 D05v02r05, 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.

3. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
4. Per KDB 941225 D05v02r05, 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 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.
5. Per KDB 941225 D05v02r05, 16QAM/64QAM output power for each RB allocation configuration is > not ½ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB941225 D05v02r05, 16QAM/64QAM SAR testing is not required.
6. Per KDB 941225 D05v02r05, smaller bandwidth output power for each RB allocation configuration is > not ½ Db higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported band width is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
7. For LTE B4 / B5 / B7 / B17 the maximum bandwidth does not support three non-overlapping channels, per KDB941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.
8. LTE band 2 / 12 SAR test was covered by Band 25 / 17; according to April 2015 TCB workshop, SAR test for overlapping LTE bands can be reduced if
   a. The maximum output power, including tolerance, for the smaller band is ≤ the larger band to qualify for the SAR test exclusion.
   b. The channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band.
9. According to 2017 TCB workshop, for 64 QAM and 16 QAM should be verified by checking the signal constellation with a call box to avoid incorrect maximum power levels due to MPR and other requirements associated with signal modulation, and the following figure is taken from the "Fundamental Measurement >> Modulation Analysis >>constellation" mode of the device connect to the CMW500 base station, therefore, the device 64QAM and 16QAMsignal modulation are correct. Identify if Maximum Power Reduction (MPR) is optional or mandatory, i.e. built-in by design: only mandatory MPR may be considered during SAR testing, when the maximum output power is permanently limited by the MPR implemented within the UE; and only for the applicable RB (resource block) configurations specified in LTE standards: b) A-MPR (additional MPR) must be disabled.
10. Per KDB 447498 D01v06, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
    a. Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.

b. For SAR testing of WLAN signal with non-100% duty cycle, the measured SAR is scaled-up by the duty cycle scaling factor which is equal to "1/ (duty cycle)"
c. For WWAN: Reported SAR (W/kg) = Measured SAR(W/kg) * Tune-up Scaling Factor
d. For WLAN/Bluetooth: Reported SAR (W/kg) = Measured SAR(W/kg) * Duty Cycle scaling factor * Tune-up scaling factor
e. For TDD LTE SAR measurement, the duty cycle 1:1.59 (62.9 %) was used perform testing and considering the theoretical duty cycle of 63.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 62.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix 63.3%/62.9% = 1.006 is applied to scale-up the measured SAR result. The Reported TDD LTE SAR = measured SAR (W/kg) * Tune-up Scaling Factor* scaling factor for extended cyclic prefix.

11. Per KDB 447498 D01v06, for each exposure position, testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is:≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz
12. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥0.8W/kg.
13. Per KDB 648474 D04v01r03, when the reported SAR for a body-worn accessory measured without a headset connected to the handset is ≤ 1.2 W/kg, SAR testing with a headset connected to the handset is not required.

<WLAN 2.4GHz>

1. SAR is measured for 2.4 GHz 802.11b DSSS using either the fixed test position or, when applicable, the initial test position procedure. SAR test reduction is determined according to the following:
   a. 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.
   b. When the reported SAR is > 0.8 W/kg, SAR is required for that position 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. 2.4 GHz 802.11 g/n OFDM are additionally evaluated for SAR if the highest reported SAR for 802.11b, adjusted by the ratio of the OFDM to DSSS specified maximum output power, is > 1.2 W/kg. When SAR is required for OFDM modes in 2.4 GHz band, the Initial Test configuration Procedures should be followed.
3. For held-to-ear and hotspot operations, the initial test position procedures were applied. The test position with the highest extrapolated peak SAR will be used as the initial test position. When

reported SAR for the initial test position is ≤ 0.4 W/kg, no additional testing for the remaining test positions was required. Otherwise, SAR is evaluated at the subsequent highest peak SAR positions until the reported SAR result is ≤ 0.8 W/kg or all test positions are measured.

4. Justification for test configurations for WLAN per KDB Publication 248227 D02DR02-41929 for 2.4 GHz WI-FI single transmission chain operations, the highest measured maximum output power channel for DSSS was selected for SAR measurement. SAR for OFDM modes (2.4 GHz802.11g/n) was not required due to the maximum allowed powers and the highest reported DSSSSAR.
5. A fixed level power reduction is applied for WiFi when handset operates "held to the body" condition or "held to the ear" condition, the power reduction triggered by audio receiver detection and call establish status.
6. Per KDB 248227 D01v02r02, In the 2.4 GHz band, separate SAR procedures are applied to DSSS and OFDM configurations to simplify DSSS test requirements.SAR is not required for the following 2.4 GHz OFDM conditions:
   a. When KDB Publication 447498 SAR test exclusion applies to the OFDM configuration.
   b. 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.

<WLAN 5GHz>

A) U-NII-1 and U-NII-2A Bands

For devices that operate in only one of the U-NII-1 and U-NII-2A bands, the normally required SAR procedures for OFDM configurations are applied. For devices that operate in both U-NII bands using the same transmitter and antenna(s), SAR test reduction is determined according to the following：

1. When the same maximum output power is specified for both bands, begin SAR measurement in U-NII-2A band by applying the OFDM SAR requirements. If the highest reported SAR for a test configuration is ≤ 1.2 W/kg, SAR is not required for U-NII-1 band for that configuration (802.11 mode and exposure condition); otherwise, both bands are tested independently for SAR.
2. When different maximum output power is specified for the bands, begin SAR measurement in the band with higher specified maximum output power. The highest reported SAR for the tested configuration is adjusted by the ratio of lower to higher specified maximum output power for the two bands. When the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for the band with lower maximum output power in that test configuration; otherwise, both bands are tested independently for SAR.
3. The two U-NII bands may be aggregated to support a 160 MHz channel on channel number 50.
4. Without additional testing, the maximum output power for this is limited to the lower of the maximum output power certified for the two bands. When SAR measurement is required for at least one of the bands and the highest reported SAR adjusted by the ratio of specified maximum output power of aggregated to standalone band is > 1.2 W/kg, SAR is required for the 160 MHz channel. This procedure does not apply to an aggregated band with maximum output higher than

the standalone band(s); the aggregated band must be tested independently for SAR. SAR is not required when the 160 MHz channel is operating at a reduced maximum power and also qualifies for SAR test exclusion.

B) U-NII-2C and U-NII-3 Bands

The frequency range covered by these bands is 380 MHz (5.47 – 5.85 GHz), which requires a minimum of at least two SAR probe calibration frequency points to support SAR measurements. when Terminal Doppler Weather Radar (TDWR) restriction applies, all channels that operate at 5.60 – 5.65 GHz must be included to apply the SAR test reduction and measurement procedures.
When the same transmitter and antenna(s) are used for U-NII-2C band and U-NII-3 band or 5.8 GHz band of §15.247, the bands may be aggregated to enable additional channels with 20, 40 or 80 MHz bandwidth to span across the band gap, as illustrated in Appendix B. The maximum output power for the additional band gap channels is limited to the lower of those certified for the bands. Unless band gap channels are permanently disabled, they must be considered for SAR testing. The frequency range covered by these bands is 380 MHz (5.47 – 5.85 GHz), which requires a minimum of at least two SAR probe calibration frequency points to support SAR measurements. To maintain SAR measurement accuracy and to facilitate test reduction, the channels in U-NII-2C band above 5.65 GHz may be grouped with the 5.8 GHz channels in U-NII-3 or §15.247 band to enable two SAR probe calibration frequency points to cover the bands, including the band gap channels. When band gap channels are supported and the bands are not aggregated for SAR testing, band gap channels must be considered independently in each band according to the normally required OFDM SAR measurement and probe calibration frequency points requirements.

C) OFDM Transmission Mode SAR Test Configuration and Channel Selection Requirements

The initial test configuration for 5 GHz OFDM transmission modes is determined by the 802.11 configuration with the highest maximum output power specified for production units, including tune-up tolerance, in each standalone and aggregated frequency band. SAR for the initial test configuration is measured using the highest maximum output power channel determined by the default power measurement procedures. When multiple configurations in a frequency band have the same specified maximum output power, the initial test configuration is determined according to the following steps applied sequentially.

1. The largest channel bandwidth configuration is selected among the multiple configurations with the same specified maximum output power.
2. If multiple configurations have the same specified maximum output power and largest channel bandwidth, the lowest order modulation among the largest channel bandwidth configurations is selected.
3. If multiple configurations have the same specified maximum output power, largest channel band width and lowest order modulation, the lowest data rate configuration among these configurations is selected.

4. When multiple transmission modes (802.11a/g/n/ac) have the same specified maximum output power, largest channel bandwidth, lowest order modulation and lowest data rate, the lowest order 802.11 mode is selected; i.e., 802.11a is chosen over 802.11n then 802.11ac or 802.11g is chosen over 802.11n. After an initial test configuration is determined, if multiple test channels have the same measured maximum output power, the channel chosen for SAR measurement is determined according to the following. These channel selection procedures apply to both the initial test configuration and subsequent test configuration(s), with respect to the default power measurement procedures or additional power measurements required for further SAR test reduction. The same procedures also apply to subsequent highest output power channel(s) selection.
5. The channel closest to mid-band frequency is selected for SAR measurement.
6. For channels with equal separation from mid-band frequency; for example, high and low channels or two mid-band channels, the higher frequency (number) channel is selected for SAR measurement.

D) SAR Test Requirements for OFDM configurations

When SAR measurement is required for 802.11 a/n/ac OFDM configurations, each standalone and frequency aggregated band is considered separately for SAR test reduction. When the sametransmitter and antenna(s) are used for U-NII-1 and U-NII-2A bands, additional SAR test reduction Vapplies. When band gap channels between U-NII-2C band and 5.8 GHz U-NII-3 or §15.247 bandare supported, the highest maximum output power transmission mode configuration and maximumoutput power channel across the bands must be used to determine SAR test reduction, accordingto the initial test configuration and subsequent test configuration requirements. In applying theinitial test configuration and subsequent test configuration procedures, the 802.11 transmissionconfiguration with the highest specified maximum output power and the channel within a testconfiguration with the highest measured maximum output power should be clearly distinguished toapply the procedures.

13. Conducted Power List

Remark: The output power of GSM/WCDMA/LTE/5G NR/WLAN/Bluetooth was recorded in annex E of this report.

14. LTE Carrier Aggregation

14.1. LTE Uplink Carrier Aggregation

➢ **Carrier Aggregation Configuration**

<Intra-band>

2CC Uplink Carrier Aggregation for Intra-band				
No.	Combination	MIMO	Restriction	Completely Covered by Measurement Superset
1	CA_48C	-	-	No
2	CA_66C	-	-	No

Note:

1. According to the 3GPP 36.101 table 6.2.2A-1 specifics that the aggregation maximum allowed output power is equivalent to the signal carrier scenario for intra-band contiguous carrier aggregation scenarios. When the non-contiguous RB allocation is applied the MPR shell complies with the table 6.2.3A defined in 3GPP 36.101.
2. According to the TCB Workshop publication, the output power of uplink CA would be measured with the wideband signal integration over the component carriers. And SAR measurement would be performed at the worst exposure condition of each band.
3. Additional SAR measurement for LTE UL CA with other DL CA combinations are not required when the maximum output power of this configuration is not ＞1/4 dB higher than the maximum output power for UL CA active.

<Inter-band>

2CC Uplink Carrier Aggregation for Inter-band				
No.	Combination	MIMO	Restriction	Completely Covered by Measurement Superset
1	CA_2A-4A	2A	-	No
2	CA_2A-5A	2A	-	No
3	CA_2A-7A	2A	-	No
4	CA_2A-12A	2A	-	No
5	CA_2A-66A	2A	-	No
6	CA_4A-5A	4A	-	No
7	CA_4A-7A	4A	-	No
8	CA_4A-12A	4A	-	No
9	CA_5A-7A	66A	-	No
10	CA_5A-66A	66A	-	No
11	CA_7A-66A	66A	-	No
12	CA_12A-66A	66A	-	No

Note:

According to October 2018 TCB Workshop publication, LTE uplink CA SAR assessment should follow:

a. If the signal uplink 1-g SAR values for each band are both less than 0.8 W/kg and the algebraic summation of the 1-g SAR values are less than 1.45 W/kg no additional measurements need to be performed.

b. If one or the signal uplink1-g SAR values is greater than 0.8 W/kg, instead of algebraically summing the 1-g SAR values, sum up the SAR distributions, similar to the enlarged zoom scan (volume scan) procedures found in FCC KDB Publication 865664 D01. And PAG is required for this case.

c. If the algebraic sum of the 1-g SAR values is > 1.45 W/kg additional measurements may have to be made. Submit a KDB inquiry for additional guidance. And PAG is required for this case.

14.2. LTE Downlink Carrier Aggregation

➢ **Carrier Aggregation Configuration**

For the device supports bands and bandwidths and configurations are provided as follow table was according to 3GPP.

2CC Downlink Carrier Aggregation				
No.	Combination	MIMO	Restriction	Completely Covered by Measurement Superset
1	CA_2A-2A	-	-	No
2	CA_2A-4A	-	-	No
3	CA_2A-5A	-	-	No
4	CA_2A-7A	-	-	No
5	CA_2A-12A	-	-	No
6	CA_2A-66A	-	-	No
7	CA_2A-71A	-	-	No
8	CA_4A-4A	-	-	No
9	CA_4A-5A	-	-	No
10	CA_4A-7A	-	-	No
11	CA_4A-12A	-	-	No
12	CA_4A-71A	-	-	No
13	CA_5A-7A	-	-	No
14	CA_5A-66A	-	-	No
15	CA_7A-66A	-	-	No
16	CA_12A-66A	-	-	No
17	CA_66A-66A	-	-	No
18	CA_66A-71A	-	-	No
19	CA_48C	-	-	No
20	CA_66C	-	-	No

➢ **LTE Downlink Carrier Aggregation Conducted Power**

1. According to KDB 941225 D05A v01r02, Uplink maximum output power measurement with downlink carrier aggregation active should be measured, using the highest output channel measured without downlink carrier aggregation, to confirm that uplink maximum output power with downlink carrier aggregation active remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output measured without downlink carrier aggregation active.
2. Uplink maximum output power with downlink carrier aggregation active does not show more than ¼ dB higher than the maximum output power without downlink carrier aggregation active, therefore SAR evaluation with downlink carrier aggregation active can be excluded.

3. For power measurement were control and acknowledge data is sent on uplink channels that operate identical to specifications when downlink carrier aggregation is inactive.
4. Selected highest measured power when downlink carrier aggregation is inactive for conducted power comparison with downlink carrier aggregation is active, to confirm that when downlink carrier aggregation is active uplink maximum output power remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output power measured when downlink carrier aggregation inactive.
5. For non-contiguous intra-band CA, the SCC selected to provide maximum separation from the PCC and must remain fully within the downlink transmission band.
6. For Intra-band, contiguous CA, the downlink channels selected to perform the uplink power measurement must satisfy
7. 3GPP channel spacing (5.4.1A of 3GPP TS 36.521 or equivalent) and channel bandwidth (5.4.2A) requirements.

$$\text{Nominal channel spacing} = \left\lfloor \frac{BW_{Channel(1)} + BW_{Channel(2)} - 0.1\left|BW_{Channel(1)} - BW_{Channel(2)}\right|}{0.6} \right\rfloor 0.3 \ \ [\text{MHz}]$$

8. The output power of CA downlink refers to the annex E of this report.

14.3. 5G NR Carrier Aggregation

➢ **Carrier Aggregation Configuration**

For the device supports bands and bandwidths and configurations are provided as follow table was according to 3GPP.

2CC Downlink Carrier Aggregation				
No.	**Combination**	**MIMO**	**Restriction**	**Completely Covered by Measurement Superset**
1	CA_n5A-n77A	-	-	No
2	CA_n77C	-	-	No
3	CA_n41A-n71A	-	-	No
4	CA_n41(2A)	-	-	No
5	CA_n25A-n71A	-	-	No
6	CA_n25A-n41A	-	-	No
7	CA_n41C	-	-	No
8	CA_n41A-n66A	-	-	No
9	CA_n71B	-	-	No
10	CA_n66A-n71A	-	-	No
11	CA_n25(2A)	-	-	No
12	CA_n25A-n66A	-	-	No
13	CA_n71(2A)	-	-	No
14	CA_n25A-n77A	-	-	No
15	CA_n41A-n77A	-	-	No
16	CA_n71A-n77A	-	-	No
17	CA_n66A-n77A	-	-	No
18	CA_n66(2A)	-	-	No
19	CA_n2A-n66A	-	-	No
20	CA_n66B	-	-	No
21	CA_n2A-n77A	-	-	No

Note:

3GPP channel spacing (5.4.1A of 3GPP TS 38.521 or equivalent) and channel bandwidth (5.3.2A) requirements.

For NR operating bands with 100 kHz channel raster:

$$\text{Nominal channel spacing} = \left\lfloor \frac{BW_{Channel(1)} + BW_{Channel(2)} - 2\left|GB_{Channel(1)} - GB_{Channel(2)}\right|}{0.6} \right\rfloor 0.3\,[\text{MHz}]$$

For NR operating bands with 15 kHz channel raster:

$$\text{Nominal channel spacing} = \left\lfloor \frac{BW_{Channel(1)} + BW_{Channel(2)} - 2\left|GB_{Channel(1)} - GB_{Channel(2)}\right|}{0.015 * 2^{n+1}} \right\rfloor 0.015 * 2^{n}\,[\text{MHz}]$$

15. 5G NR EN-DC Consideration

➢ **General Guidance**

1. It is limited to operate at EN-DC (NSA)/SA for 5G NR implementation according to the character of the device. SAR measurement should be performed separately for the limitations of the probe calculation factors.
2. When the EN-DC is active the output power of the LTE anchors is equal or less than the standalone carrier, therefore the LTE output power and SAR were estimated based on the standalone carrier to performed sim-TX analysis with 5G NR, WLAN and Bluetooth.
3. According to October 2020 TCB Workshop publication, EN-DC SAR assessment should follow:
   a. If the signal uplink 1-g SAR values for each band are both less than 0.8 W/kg and the algebraic summation of the 1-g SAR values are less than 1.45 W/kg no additional measurements need to be performed.
   b. If one or the signal uplink1-g SAR values is greater than 0.8 W/kg, instead of algebraically summing the 1-g SAR values, sum up the SAR distributions, similar to the enlarged zoom scan (volume scan) procedures found in FCC KDB Publication 865664 D01. And PAG is required for this case.
   c. If the algebraic sum of the 1-g SAR values is > 1.45 W/kg additional measurements may have to be made. Submit a KDB inquiry for additional guidance and PAG is required for this case.
   d. When the algebraic sum of the 1-g SAR values is > 1.6 W/kg, SPLSR analysis procedure should be applied.

➢ **5G NR anchor combination**

EN-DC Combination	LTE Uplink	5G-NR Uplink	SCS (kHz)	Maximum Bandwidth (MHz)
DC_5A_n2A	5A	n2A	15	20
DC_7A_n2A	7A	n2A	15	20
DC_12A_n2A	12A	n2A	15	20
DC_13A_n2A	13A	n2A	15	20
DC_66A_n2A	66A	n2A	15	20
DC_2A_n5A	2A	n5A	15	20
DC_66A_n5A	66A	n5A	15	20
DC_2A_n41A	2A	n41A	30	100
DC_4A_n41A	4A	n41A	30	100
DC_12A_n41A	12A	n41A	30	100
DC_66A_n41A	66A	n41A	30	100
DC_2A_n66A	2A	n66A	15	40
DC_5A_n66A	5A	n66A	15	40
DC_7A_n66A	7A	n66A	15	40
DC_12A_n66A	12A	n66A	15	40
DC_13A_n66A	13A	n66A	15	40
DC_2A_n77A	2A	n77A	30	100
DC_12A_n77A	12A	n77A	30	100
DC_13A_n77A	13A	n77A	30	100

16. Hotspot Mode Evaluation Procedure

➢ **EUT Antenna Location**

The location of antenna was recorded in annex B							
Single Band		ANT1	ANT2	ANT3	ANT4	ANT5	ANT6
GSM	GSM850	/	DRX	/	/	TRX	/
	GSM1900	/	DRX	/	/	TRX	/
WCDMA	WCDMA B2	/	DRX	/	/	TRX	/
	WCDMA B4	/	DRX	/	/	TRX	/
	WCDMA B5	/	DRX	/	/	TRX	/
LTE	LTE B2	TX/PRX2 (CA&ENDC)	DRX	/	/	TRX	DRX2
	LTE B4	PRX2	DRX	/	/	TRX	DRX2
	LTE B5	/	DRX	/	/	TRX	/
	LTE B7	/	DRX	/	/	TRX	/
	LTE B12	/	DRX	/	/	TRX	/
	LTE B13	/	DRX	/	/	TRX	/
	LTE B17	/	DRX	/	/	TRX	/
	LTE B25	/	DRX	/	/	TRX	DRX2
	LTE B26	/	DRX	/	/	TRX	/
	LTE B48	PRX2	/	TRX	DRX	/	PRX2
	LTE B66	TX/PRX2 (CA&ENDC)	DRX	/	/	TRX	DRX2
	LTE B71	/	DRX	/	/	TRX	/
NR	NR n2	TRX	DRX	/	/	PRX2	DRX2
	NR n5	/	DRX	/	/	TRX	/
	NR n25	TRX	DRX	/	/	PRX2	DRX2
	NR n41	/	DRX2	DRX	TRX	PRX2	/
	NR n48	PRX2	/	TRX	DRX	/	PRX2
	NR n66	TRX	DRX	/	/	PRX2	DRX2
	NR n71	/	DRX	/	/	TRX	/
	NR n77	PRX2	/	TRX	DRX	/	PRX2

Single Band	ANT0	ANT7
WiFi 5G	TX	/
WiFi 2.4G/Bluetooth	/	TX

➢ **EUT Antenna Distance**

Antenna	Antenna distance to surface or edges (mm)					
	Front	Back	Left	Right	Top	Bottom
ANT0	<5	<5	<5	>25	<5	>25
ANT1	<5	<5	<25	<25	<5	>25
ANT3	<5	<5	>25	<5	>25	>25
ANT4	<5	<5	<5	>25	>25	<5
ANT5	<5	<5	<25	<5	>25	<5
ANT7	<5	<5	<5	<5	<25	>25

➢ **Hotspot Evaluation**

Assessment	Hotspot Side for SAR Test Distance: 10 mm					
Antenna	Front	Back	Left	Right	Top	Bottom
ANT0	Yes	Yes	Yes	No	Yes	No
ANT1	Yes	Yes	Yes	Yes	Yes	No
ANT3	Yes	Yes	No	Yes	No	No
ANT4	Yes	Yes	Yes	No	No	Yes
ANT5	Yes	Yes	Yes	Yes	No	Yes
ANT7	Yes	Yes	Yes	Yes	Yes	No

Note :

1. The SAR evaluation procedures for Portable Devices with Wireless Router function is according to KDB 941225 D06 Hotspot SAR v02r01.
2. Head/Body-worn/Hotspot mode SAR assessments are required.
3. Referring to KDB 941225 D06, when the overall device length and width are ≥ 9 cm * 5 cm, the test distance is 10 mm. SAR must be measured for all sides and surfaces with a transmitting antenna located within 25 mm from that surface or edge.

17. Proximity Sensor Considerations

17.1. Proximity Sensor Triggering Distances

➢ **P-Sensor Triggering Distance Testing**

The EUT should be moved further away from and toward the flat phantom that fill with the tissue simulating liquid to determine the proximity sensor triggering distances. Conducted power is monitored qualitatively to identify the general triggering characteristics and recorded quantitatively, versus spacing, as required by the procedures.

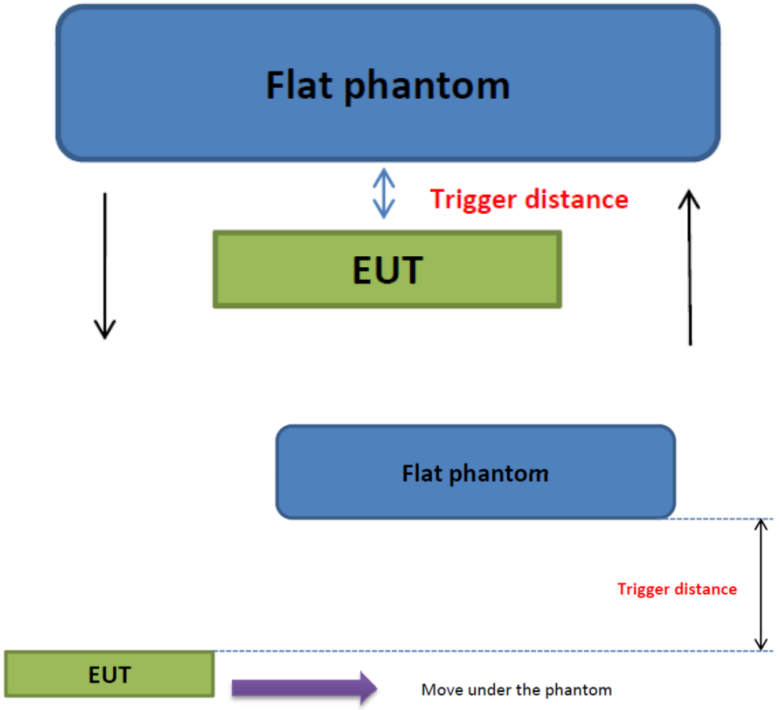


Fig.17.1 Illustration for proximity sensor trigger

➢ **P-Sensor Triggering Distance**

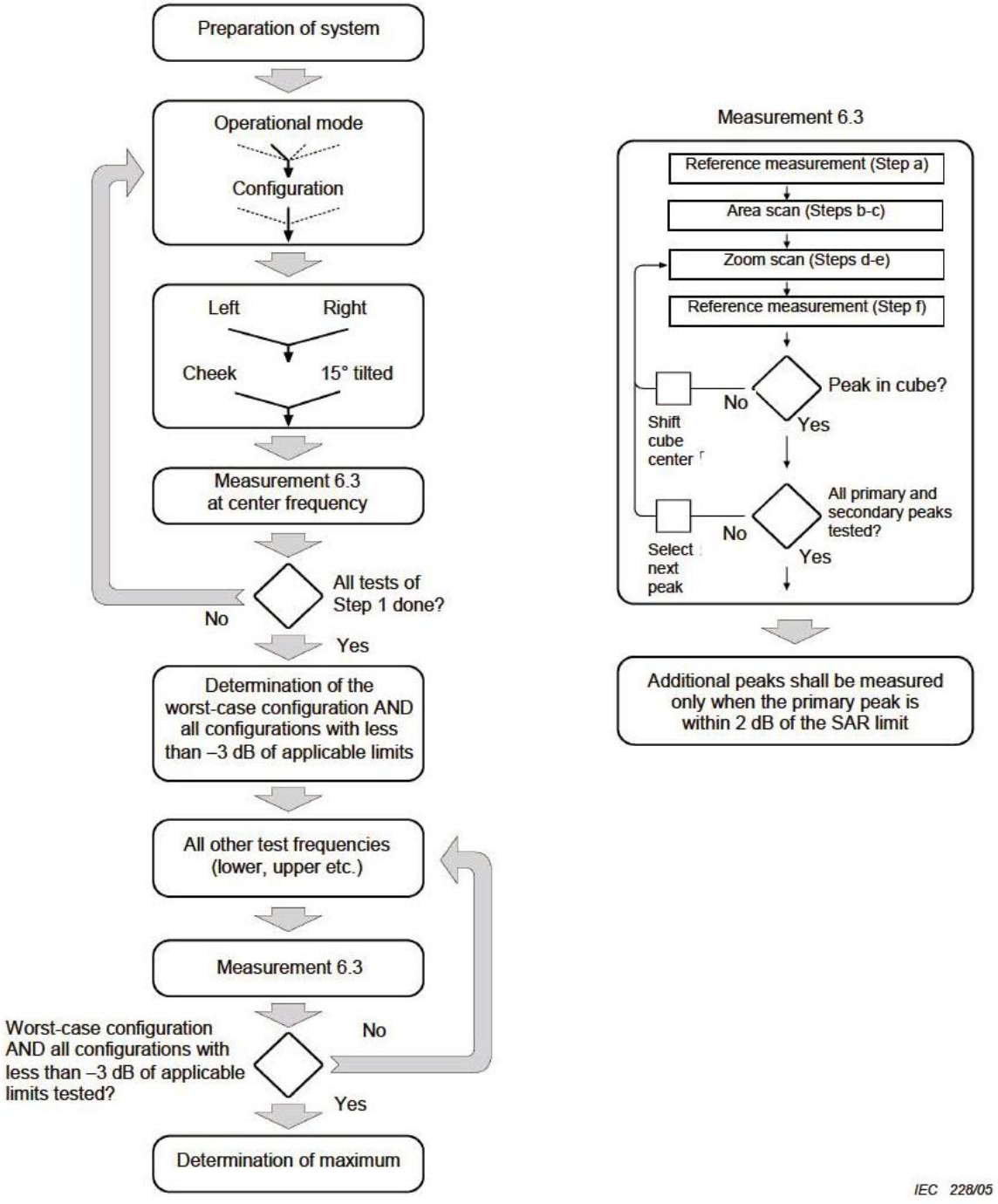
Proximity Sensor Trigger Distance (mm)					
Front Side	Back Side	Left Side	Right Side	Top Side	Bottom Side
11	15	12	15	12	14

17.2. Proximity Sensor Coverage

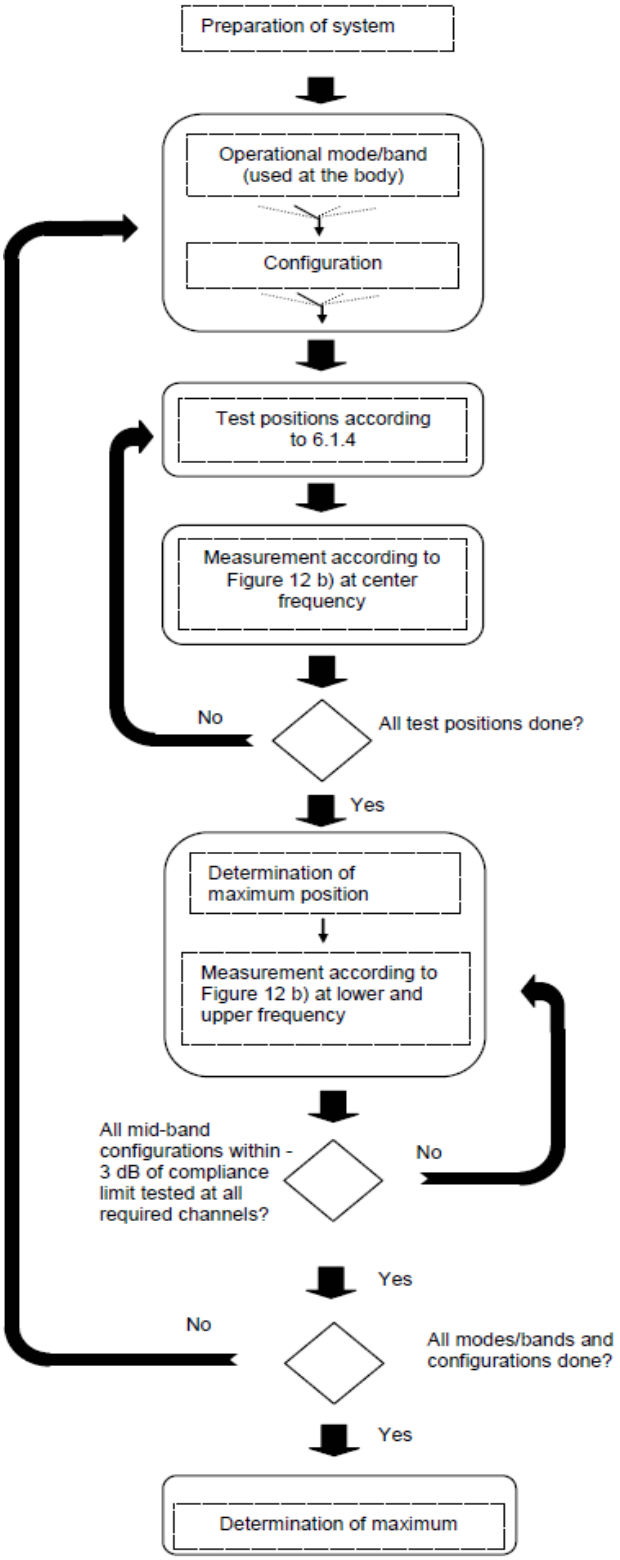
Proximity sensors are not normally designed to cover the entire back surface or edges of a tablet. The sensing regions are usually limited to areas near the sensor element. If a sensor is spatially offset from the antenna(s), it is necessary to verify sensor triggering for conditions where the antenna is next to the user but the sensor is laterally further away to ensure sensor coverage is sufficient for reducing the power to maintain compliance. For P-sensor coverage testing, the device is moved and “along the direction of maximum antenna and sensor offset”. Illustrating in the internal photo exhibit, although the sensor spatially offset, there is no trigger condition where the antenna is next to the user, the sensor is laterally further away, therefore proximity sensor coverage testing is not required.
This procedure is not required since the antenna, sensor and peak SAR location is overlapped with the sensor.

18. Block Diagram of the Tests to be Performed

18.1. Head



18.2. Body



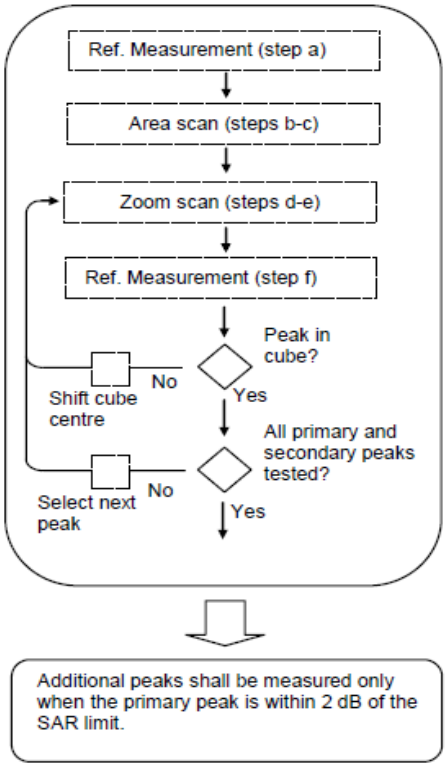


Figure 12b – General procedure

19. Test Results List

19.1. Test Guidance

1. Per KDB 447498 D01v06, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
   a. Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
   b. For SAR testing of WLAN signal with non-100% duty cycle, the measured SAR is scaled-up by the duty cycle scaling factor which is equal to "1 / (duty cycle)".
   c. For WWAN: Reported SAR (W/kg) = Measured SAR (W/kg) * Tune-up Scaling Factor.
   d. For WLAN/Bluetooth: Reported SAR (W/kg) = Measured SAR (W/kg) * Duty Cycle scaling factor * Tune-up scaling factor.
2. Per KDB 447498 D01v06, for each exposure position, testing of other required channels within the operating mode of a frequency band is not required when the *reported* 1-g or 10-g SAR for the mid-band or highest output power channel is:
   a. ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
   b. ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
   c. ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz
3. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥ 0.8W/kg.
4. Per KDB 648474 D04v01r03, when the reported SAR for a body-worn accessory measured without a headset connected to the handset is ≤ 1.2 W/kg, SAR testing with a headset connected to the handset is not required.
5. Per KDB648474 D04v01r03, for smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm, when hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg, however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, including tolerance, allowed for tablet modes to compare with the 1.2 W/kg SAR test reduction threshold.
6. Per KDB248227 D01v02r02, 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. The test frequencies established using test mode must correspond to the actual channel frequencies required for operations in the U.S. When 802.11 frame gaps are accounted for in the transmission, a maximum transmission duty factor of 92 - 96% is typically achievable in most test mode configurations. A minimum transmission duty factor of 85% is required to avoid certain hardware and device implementation issues related to wide range SAR scaling. In addition, a periodic

transmission duty factor is required for current generation SAR systems to measure SAR correctly. Unless it is permitted by specific KDB procedures or continuous transmission is specifically restricted by the device, the reported SAR must be scaled to 100% transmission duty factor to determine compliance at the maximum tune-up tolerance limit. When a device is not capable of sustaining continuous transmission or the output can become nonlinear, and it is limited by hardware design and unable to transmit at higher than 85% duty factor, a periodic duty factor within 15% of the maximum duty factor the device is capable of transmitting should be used. The reported SAR must be scaled to the maximum transmission duty factor to determine compliance. Descriptions of the procedures applied to establish the specific duty factor used for SAR testing are required in SAR reports to support the test results.

7. The EN-DC supports simultaneous transmission mode：
   LTE(support ENDC)+NR(support ENDC)+WiFi
   Thus, the calculation method for NSA is LTE + NR.
8. This device supports power reduction machine according to different using condition, and the power level applied follows below.

Power Level	Scene	Test Position
Full Power	N/A	Head/Hotspot/Body-worn/Extremity
Reduced Power Level 1	Receiver on	Head
Reduced Power Level 2	Hotspot on	Hotspot
Reduced Power Level 3	Sensor on	Extremity
Reduced Power Level 4	CA & ENDC	Head/Hotspot/Body-worn

19.2. Head SAR Data

➢ GSM Head SAR

Plot No.	Band/Mode	Test Position	CH.	Ave. Power (dBm)	Tune-up Limit (dBm)	Tune-up Scaling Factor	Meas. SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
Full Power (ANT5)								
1#	GPRS 850 (4TX slots)	Right Cheek	189	28.94	30.00	1.276	0.245	0.313
	GPRS 850 (4TX slots)	Right Tilt	189	28.94	30.00	1.276	0.114	0.146
	GPRS 850 (4TX slots)	Left Cheek	189	28.94	30.00	1.276	0.191	0.244
	GPRS 850 (4TX slots)	Left Tilt	189	28.94	30.00	1.276	0.100	0.128
Full Power (ANT5)								
2#	GPRS 1900 (4 TX slots)	Right Cheek	810	25.23	26.30	1.279	0.037	0.047
	GPRS 1900 (4 TX slots)	Right Tilt	810	25.23	26.30	1.279	0.028	0.036
	GPRS 1900 (4 TX slots)	Left Cheek	810	25.23	26.30	1.279	0.033	0.042
	GPRS 1900 (4 TX slots)	Left Tilt	810	25.23	26.30	1.279	0.028	0.036

➢ WCDMA Head SAR

Plot No.	Band/Mode	Test Position	CH.	Ave. Power (dBm)	Tune-up Limit (dBm)	Tune-up Scaling Factor	Meas. SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
Full Power (ANT5)								
3#	Band II/RMC 12.2Kbps	Right Cheek	9400	23.22	24.00	1.197	0.057	0.068
	Band II/RMC 12.2Kbps	Right Tilt	9400	23.22	24.00	1.197	0.050	0.060
	Band II/RMC 12.2Kbps	Left Cheek	9400	23.22	24.00	1.197	0.047	0.056
	Band II/RMC 12.2Kbps	Left Tilt	9400	23.22	24.00	1.197	0.035	0.042
Full Power (ANT5)								
4#	Band IV/RMC 12.2Kbps	Right Cheek	1413	23.33	24.00	1.167	0.056	0.065
	Band IV/RMC 12.2Kbps	Right Tilt	1413	23.33	24.00	1.167	0.043	0.050
	Band IV/RMC 12.2Kbps	Left Cheek	1413	23.33	24.00	1.167	0.048	0.056
	Band IV/RMC 12.2Kbps	Left Tilt	1413	23.33	24.00	1.167	0.036	0.042
Full Power (ANT5)								
5#	Band V/RMC 12.2Kbps	Right Cheek	4182	23.37	24.00	1.156	0.147	0.170
	Band V/RMC 12.2Kbps	Right Tilt	4182	23.37	24.00	1.156	0.072	0.083
	Band V/RMC 12.2Kbps	Left Cheek	4182	23.37	24.00	1.156	0.118	0.136
	Band V/RMC 12.2Kbps	Left Tilt	4182	23.37	24.00	1.156	0.064	0.074

➢ **LTE QPSK Head SAR**

Plot No.	Band/Mode	Test Position	CH.	Ave. Power (dBm)	Tune-up Limit (dBm)	Tune-up Scaling Factor	Meas. SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
Reduced Power Level 4 for CA&ENDC (ANT1)								
	LTE Band 2/1RB#0 20M	Right Cheek	18900	15.96	17.00	1.271	0.250	0.318
	LTE Band 2/1RB#0 20M	Right Tilt	18900	15.96	17.00	1.271	0.278	0.353
	LTE Band 2/1RB#0 20M	Left Cheek	18900	15.96	17.00	1.271	0.290	0.368
6#	LTE Band 2/1RB#0 20M	Left Tilt	18900	15.96	17.00	1.271	0.470	0.597
	LTE Band 2/50RB#0 20M	Right Cheek	18900	14.92	16.00	1.282	0.200	0.256
	LTE Band 2/50RB#0 20M	Right Tilt	18900	14.92	16.00	1.282	0.222	0.285
	LTE Band 2/50RB#0 20M	Left Cheek	18900	14.92	16.00	1.282	0.232	0.298
	LTE Band 2/50RB#0 20M	Left Tilt	18900	14.92	16.00	1.282	0.316	0.405
Full Power (ANT5)								
	LTE Band 2/1RB#0 20M	Right Cheek	18900	22.96	24.00	1.271	0.073	0.093
	LTE Band 2/1RB#0 20M	Right Tilt	18900	22.96	24.00	1.271	0.048	0.061
	LTE Band 2/1RB#0 20M	Left Cheek	18900	22.96	24.00	1.271	0.071	0.090
	LTE Band 2/1RB#0 20M	Left Tilt	18900	22.96	24.00	1.271	0.055	0.070
	CA_2/1RB#0 20M	Right Cheek	18999	22.23	23.00	1.194	0.062	0.074
	LTE Band 2/50RB#0 20M	Right Cheek	18900	21.92	23.00	1.282	0.051	0.065
	LTE Band 2/50RB#0 20M	Right Tilt	18900	21.92	23.00	1.282	0.034	0.044
	LTE Band 2/50RB#0 20M	Left Cheek	18900	21.92	23.00	1.282	0.050	0.064
	LTE Band 2/50RB#0 20M	Left Tilt	18900	21.92	23.00	1.282	0.039	0.050
Full Power (ANT5)								
7#	LTE Band 5/1RB#0 10M	Right Cheek	20525	23.93	25.00	1.279	0.166	0.212
	LTE Band 5/1RB#0 10M	Right Tilt	20525	23.93	25.00	1.279	0.079	0.101
	LTE Band 5/1RB#0 10M	Left Cheek	20525	23.93	25.00	1.279	0.124	0.159
	LTE Band 5/1RB#0 10M	Left Tilt	20525	23.93	25.00	1.279	0.067	0.086
	LTE Band 5/25RB#0 10M	Right Cheek	20525	22.89	24.00	1.291	0.116	0.150
	LTE Band 5/25RB#0 10M	Right Tilt	20525	22.89	24.00	1.291	0.055	0.071
	LTE Band 5/25RB#0 10M	Left Cheek	20525	22.89	24.00	1.291	0.087	0.112
	LTE Band 5/25RB#0 10M	Left Tilt	20525	22.89	24.00	1.291	0.047	0.061
Full Power (ANT4)								
8#	LTE Band 7/1RB#0 20M	Right Cheek	21100	23.05	24.00	1.245	0.151	0.188
	LTE Band 7/1RB#0 20M	Right Tilt	21100	23.05	24.00	1.245	0.045	0.056
	LTE Band 7/1RB#0 20M	Left Cheek	21100	23.05	24.00	1.245	0.102	0.127
	LTE Band 7/1RB#0 20M	Left Tilt	21100	23.05	24.00	1.245	0.094	0.117
	LTE Band 7/50RB#0 20M	Right Cheek	21100	22.04	23.00	1.247	0.106	0.132
	LTE Band 7/50RB#0 20M	Right Tilt	21100	22.04	23.00	1.247	0.032	0.040

	LTE Band 7/50RB#0 20M	Left Cheek	21100	22.04	23.00	1.247	0.071	0.089
	LTE Band 7/50RB#0 20M	Left Tilt	21100	22.04	23.00	1.247	0.066	0.082
Full Power (ANT5)								
9#	LTE Band 12/1RB#0 10M	Right Cheek	23095	23.08	24.00	1.236	0.112	0.138
	LTE Band 12/1RB#0 10M	Right Tilt	23095	23.08	24.00	1.236	0.055	0.068
	LTE Band 12/1RB#0 10M	Left Cheek	23095	23.08	24.00	1.236	0.086	0.106
	LTE Band 12/1RB#0 10M	Left Tilt	23095	23.08	24.00	1.236	0.046	0.057
	LTE Band 12/25RB#0 10M	Right Cheek	23095	22.03	23.00	1.250	0.078	0.098
	LTE Band 12/25RB#0 10M	Right Tilt	23095	22.03	23.00	1.250	0.039	0.049
	LTE Band 12/25RB#0 10M	Left Cheek	23095	22.03	23.00	1.250	0.060	0.075
	LTE Band 12/25RB#0 10M	Left Tilt	23095	22.03	23.00	1.250	0.032	0.040
Full Power (ANT5)								
10#	LTE Band 13/1RB#0 10M	Right Cheek	23230	23.13	24.00	1.222	0.119	0.145
	LTE Band 13/1RB#0 10M	Right Tilt	23230	23.13	24.00	1.222	0.072	0.088
	LTE Band 13/1RB#0 10M	Left Cheek	23230	23.13	24.00	1.222	0.088	0.108
	LTE Band 13/1RB#0 10M	Left Tilt	23230	23.13	24.00	1.222	0.052	0.064
	LTE Band 13/25RB#0 10M	Right Cheek	23230	22.10	23.00	1.230	0.083	0.102
	LTE Band 13/25RB#0 10M	Right Tilt	23230	22.10	23.00	1.230	0.050	0.062
	LTE Band 13/25RB#0 10M	Left Cheek	23230	22.10	23.00	1.230	0.062	0.076
	LTE Band 13/25RB#0 10M	Left Tilt	23230	22.10	23.00	1.230	0.036	0.044
Full Power (ANT5)								
11#	LTE Band 25/1RB#0 20M	Right Cheek	26365	23.07	24.00	1.239	0.072	0.089
	LTE Band 25/1RB#0 20M	Right Tilt	26365	23.07	24.00	1.239	0.040	0.050
	LTE Band 25/1RB#0 20M	Left Cheek	26365	23.07	24.00	1.239	0.071	0.088
	LTE Band 25/1RB#0 20M	Left Tilt	26365	23.07	24.00	1.239	0.038	0.047
	LTE Band 25/50RB#0 20M	Right Cheek	26365	22.06	23.00	1.242	0.050	0.062
	LTE Band 25/50RB#0 20M	Right Tilt	26365	22.06	23.00	1.242	0.028	0.035
	LTE Band 25/50RB#0 20M	Left Cheek	26365	22.06	23.00	1.242	0.048	0.060
	LTE Band 25/50RB#0 20M	Left Tilt	26365	22.06	22.06	1.000	0.027	0.027
Full Power (ANT5)								
12#	LTE Band 26/1RB#0 15M	Right Cheek	26865	23.13	24.00	1.222	0.112	0.137
	LTE Band 26/1RB#0 15M	Right Tilt	26865	23.13	24.00	1.222	0.052	0.064
	LTE Band 26/1RB#0 15M	Left Cheek	26865	23.13	24.00	1.222	0.086	0.105
	LTE Band 26/1RB#0 15M	Left Tilt	26865	23.13	24.00	1.222	0.047	0.057
	LTE Band 26/36RB#0 15M	Right Cheek	26865	22.10	23.00	1.230	0.078	0.096
	LTE Band 26/36RB#0 15M	Right Tilt	26865	22.10	23.00	1.230	0.036	0.044
	LTE Band 26/36RB#0 15M	Left Cheek	26865	22.10	23.00	1.230	0.060	0.074
	LTE Band 26/36RB#0 15M	Left Tilt	26865	22.10	23.00	1.230	0.033	0.041

Reduced Power Level 1 (ANT3)								
	LTE Band 48/1RB#0 20M	Right Cheek	55990	17.06	18.00	1.242	0.321	0.401
	LTE Band 48/1RB#0 20M	Right Tilt	55990	17.06	18.00	1.242	0.119	0.149
	LTE Band 48/1RB#0 20M	Left Cheek	55990	17.06	18.00	1.242	0.642	0.802
	LTE Band 48/1RB#0 20M	Left Tilt	55990	17.06	18.00	1.242	0.419	0.523
	LTE Band 48/1RB#0 20M	Left Cheek	55340	16.95	18.00	1.274	0.680	0.871
	LTE Band 48/1RB#0 20M	Left Cheek	55830	17.00	18.00	1.259	0.715	0.906
	LTE Band 48/1RB#0 20M	Left Cheek	56150	17.02	18.00	1.253	0.683	0.861
13#	LTE Band 48/1RB#0 20M	Left Cheek	56640	17.04	18.00	1.247	0.776	0.974
	CA_48/1RB#0 20M	Left Cheek	56089	16.39	17.00	1.151	0.726	0.840
	LTE Band 48/25RB#0 20M	Right Cheek	56640	16.07	17.00	1.239	0.225	0.280
	LTE Band 48/25RB#0 20M	Right Tilt	56640	16.07	17.00	1.239	0.083	0.103
	LTE Band 48/25RB#0 20M	Left Cheek	56640	16.07	17.00	1.239	0.449	0.560
	LTE Band 48/25RB#0 20M	Left Tilt	56640	16.07	17.00	1.239	0.293	0.365
Reduced Power Level 4 for CA&ENDC (ANT1)								
	LTE Band 66/1RB#0 20M	Right Cheek	132322	16.12	17.00	1.225	0.227	0.278
	LTE Band 66/1RB#0 20M	Right Tilt	132322	16.12	17.00	1.225	0.266	0.326
	LTE Band 66/1RB#0 20M	Left Cheek	132322	16.12	17.00	1.225	0.258	0.316
14#	LTE Band 66/1RB#0 20M	Left Tilt	132322	16.12	17.00	1.225	0.475	0.582
	LTE Band 66/50RB#0 20M	Right Cheek	132322	15.08	16.00	1.236	0.182	0.225
	LTE Band 66/50RB#0 20M	Right Tilt	132322	15.08	16.00	1.236	0.213	0.263
	LTE Band 66/50RB#0 20M	Left Cheek	132322	15.08	16.00	1.236	0.206	0.255
	LTE Band 66/50RB#0 20M	Left Tilt	132322	15.08	16.00	1.236	0.256	0.316
Full Power (ANT5)								
	LTE Band 66/1RB#0 20M	Right Cheek	132322	23.12	24.00	1.225	0.054	0.066
	LTE Band 66/1RB#0 20M	Right Tilt	132322	23.12	24.00	1.225	0.044	0.054
	LTE Band 66/1RB#0 20M	Left Cheek	132322	23.12	24.00	1.225	0.050	0.061
	LTE Band 66/1RB#0 20M	Left Tilt	132322	23.12	24.00	1.225	0.048	0.059
	CA_66/1RB#0 20M	Right Cheek	132521	22.33	23.00	1.167	0.046	0.054
	LTE Band 66/50RB#0 20M	Right Cheek	132322	22.08	23.00	1.236	0.038	0.047
	LTE Band 66/50RB#0 20M	Right Tilt	132322	22.08	23.00	1.236	0.031	0.038
	LTE Band 66/50RB#0 20M	Left Cheek	132322	22.08	23.00	1.236	0.035	0.043
	LTE Band 66/50RB#0 20M	Left Tilt	132322	22.08	23.00	1.236	0.034	0.042
Full Power (ANT5)								
15#	LTE Band 71/1RB#0 20M	Right Cheek	133322	23.95	25.00	1.274	0.123	0.157
	LTE Band 71/1RB#0 20M	Right Tilt	133322	23.95	25.00	1.274	0.061	0.078
	LTE Band 71/1RB#0 20M	Left Cheek	133322	23.95	25.00	1.274	0.093	0.118
	LTE Band 71/1RB#0 20M	Left Tilt	133322	23.95	25.00	1.274	0.053	0.067

	LTE Band 71/50RB#0 20M	Right Cheek	133322	22.94	24.00	1.276	0.086	0.110
	LTE Band 71/50RB#0 20M	Right Tilt	133322	22.94	24.00	1.276	0.043	0.055
	LTE Band 71/50RB#0 20M	Left Cheek	133322	22.94	24.00	1.276	0.065	0.083
	LTE Band 71/50RB#0 20M	Left Tilt	133322	22.94	24.00	1.276	0.037	0.047

➢ **5G NR DFT-S-QPSK Head SAR**

Plot No.	Band/Mode	Test Position	CH.	Ave. Power (dBm)	Tune-up Limit (dBm)	Tune-up Scaling Factor	Meas. SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
Reduced Power Level 1 (Ant1)								
	5G NR n2/1RB#1 20M	Right Cheek	376000	15.95	17.00	1.274	0.429	0.546
16#	5G NR n2/1RB#1 20M	Right Tilt	376000	15.95	17.00	1.274	0.497	0.633
	5G NR n2/1RB#1 20M	Left Cheek	376000	15.95	17.00	1.274	0.376	0.479
	5G NR n2/1RB#1 20M	Left Tilt	376000	15.95	17.00	1.274	0.487	0.620
	5G NR n2/50RB#25 20M	Right Cheek	376000	15.69	16.50	1.205	0.385	0.464
	5G NR n2/50RB#25 20M	Right Tilt	376000	15.69	16.50	1.205	0.443	0.534
	5G NR n2/50RB#25 20M	Left Cheek	376000	15.69	16.50	1.205	0.330	0.398
	5G NR n2/50RB#25 20M	Left Tilt	376000	15.69	16.50	1.205	0.273	0.329
Full Power (Ant5)								
17#	5G NR n5/1RB#1 20M	Right Cheek	167300	23.44	24.00	1.138	0.128	0.146
	5G NR n5/1RB#1 20M	Right Tilt	167300	23.44	24.00	1.138	0.037	0.042
	5G NR n5/1RB#1 20M	Left Cheek	167300	23.44	24.00	1.138	0.110	0.125
	5G NR n5/1RB#1 20M	Left Tilt	167300	23.44	24.00	1.138	0.028	0.032
	5G NR n5/50RB#25 20M	Right Cheek	167300	23.21	24.00	1.199	0.082	0.098
	5G NR n5/50RB#25 20M	Right Tilt	167300	23.21	24.00	1.199	0.029	0.035
	5G NR n5/50RB#25 20M	Left Cheek	167300	23.21	24.00	1.199	0.071	0.085
	5G NR n5/50RB#25 20M	Left Tilt	167300	23.21	24.00	1.199	0.022	0.026
Reduced Power Level 1 (Ant1)								
	5G NR n25/1RB#53 20M	Right Cheek	376500	16.08	17.00	1.236	0.358	0.442
18#	5G NR n25/1RB#53 20M	Right Tilt	376500	16.08	17.00	1.236	0.445	0.550
	5G NR n25/1RB#53 20M	Left Cheek	376500	16.08	17.00	1.236	0.389	0.481
	5G NR n25/1RB#53 20M	Left Tilt	376500	16.08	17.00	1.236	0.401	0.496
	5G NR n25/50RB#25 20M	Right Cheek	376500	16.04	17.00	1.247	0.284	0.354
	5G NR n25/50RB#25 20M	Right Tilt	376500	16.04	17.00	1.247	0.290	0.362
	5G NR n25/50RB#25 20M	Left Cheek	376500	16.04	17.00	1.247	0.319	0.398
	5G NR n25/50RB#25 20M	Left Tilt	376500	16.04	17.00	1.247	0.320	0.399
Full Power (Ant4) (PC2)								
	5G NR n41/1RB#136 100M	Right Cheek	518598	24.63	25.50	1.222	0.121	0.148

	5G NR n41/1RB#136 100M	Right Tilt	518598	24.63	25.50	1.222	0.070	0.086
19#	5G NR n41/1RB#136 100M	Left Cheek	518598	24.63	25.50	1.222	0.133	0.162
	5G NR n41/1RB#136 100M	Left Tilt	518598	24.63	25.50	1.222	0.102	0.125
	5G NR n41/137RB#67 100M	Right Cheek	518598	24.58	25.50	1.236	0.109	0.135
	5G NR n41/137RB#67 100M	Right Tilt	518598	24.58	25.50	1.236	0.039	0.048
	5G NR n41/137RB#67 100M	Left Cheek	518598	24.58	25.50	1.236	0.110	0.136
	5G NR n41/137RB#67 100M	Left Tilt	518598	24.58	25.50	1.236	0.082	0.101
Full Power (Ant4) (PC3)								
	5G NR n41/1RB#1 100M	Right Cheek	518598	21.61	22.50	1.227	0.089	0.109
	5G NR n41/1RB#1 100M	Right Tilt	518598	21.61	22.50	1.227	0.041	0.050
	5G NR n41/1RB#1 100M	Left Cheek	518598	21.61	22.50	1.227	0.107	0.131
	5G NR n41/1RB#1 100M	Left Tilt	518598	21.61	22.50	1.227	0.063	0.077
	5G NR n41/137RB#67 100M	Right Cheek	518598	21.55	22.50	1.245	0.069	0.086
	5G NR n41/137RB#67 100M	Right Tilt	518598	21.55	22.50	1.245	0.027	0.034
	5G NR n41/137RB#67 100M	Left Cheek	518598	21.55	22.50	1.245	0.084	0.105
	5G NR n41/137RB#67 100M	Left Tilt	518598	21.55	22.50	1.245	0.049	0.061
Reduced Power Level 1 (Ant3)								
	5G NR n48/1RB#136 100M	Right Cheek	641666	17.13	18.00	1.222	0.177	0.216
	5G NR n48/1RB#136 100M	Right Tilt	641666	17.13	18.00	1.222	0.067	0.082
20#	5G NR n48/1RB#136 100M	Left Cheek	641666	17.13	18.00	1.222	0.203	0.248
	5G NR n48/1RB#136 100M	Left Tilt	641666	17.13	18.00	1.222	0.156	0.191
	5G NR n48/137RB#67 100M	Right Cheek	641666	16.98	18.00	1.265	0.143	0.181
	5G NR n48/137RB#67 100M	Right Tilt	641666	16.98	18.00	1.265	0.057	0.072
	5G NR n48/137RB#67 100M	Left Cheek	641666	16.98	18.00	1.265	0.178	0.225
	5G NR n48/137RB#67 100M	Left Tilt	641666	16.98	18.00	1.265	0.122	0.154
Reduced Power Level 1 for ENDC (Ant1)								
	5G NR n66/1RB#108 40M	Right Cheek	349000	15.94	17.00	1.276	0.401	0.512
21#	5G NR n66/1RB#108 40M	Right Tilt	349000	15.94	17.00	1.276	0.458	0.585
	5G NR n66/1RB#108 40M	Left Cheek	349000	15.94	17.00	1.276	0.313	0.400
	5G NR n66/1RB#108 40M	Left Tilt	349000	15.94	17.00	1.276	0.345	0.440
	5G NR n66/108RB#54 40M	Right Cheek	349000	15.90	17.00	1.288	0.244	0.314
	5G NR n66/108RB#54 40M	Right Tilt	349000	15.90	17.00	1.288	0.257	0.331
	5G NR n66/108RB#54 40M	Left Cheek	349000	15.90	17.00	1.288	0.309	0.398
	5G NR n66/108RB#54 40M	Left Tilt	349000	15.90	17.00	1.288	0.274	0.353
Full Power (Ant5)								
	5G NR n71/1RB#1 20M	Right Cheek	136100	23.15	24.00	1.216	0.044	0.054
	5G NR n71/1RB#1 20M	Right Tilt	136100	23.15	24.00	1.216	0.028	0.034
22#	5G NR n71/1RB#1 20M	Left Cheek	136100	23.15	24.00	1.216	0.071	0.086

	5G NR n71/1RB#1 20M	Left Tilt	136100	23.15	24.00	1.216	0.040	0.049
	5G NR n71/50RB#25 20M	Right Cheek	136100	23.10	24.00	1.230	0.031	0.038
	5G NR n71/50RB#25 20M	Right Tilt	136100	23.10	24.00	1.230	0.020	0.025
	5G NR n71/50RB#25 20M	Left Cheek	136100	23.10	24.00	1.230	0.055	0.068
	5G NR n71/50RB#25 20M	Left Tilt	136100	23.10	24.00	1.230	0.029	0.036
Reduced Power Level 1 for ENDC (Ant3) (PC2)								
	5G NR n77/1RB#136 100M	Right Cheek	633334	19.96	21.00	1.271	0.196	0.249
	5G NR n77/1RB#136 100M	Right Tilt	633334	19.96	21.00	1.271	0.069	0.088
23#	5G NR n77/1RB#136 100M	Left Cheek	633334	19.96	21.00	1.271	0.538	0.684
	5G NR n77/1RB#136 100M	Left Tilt	633334	19.96	21.00	1.271	0.146	0.186
	5G NR n77/135RB#1 100M	Right Cheek	633334	19.78	20.50	1.180	0.154	0.182
	5G NR n77/135RB#1 100M	Right Tilt	633334	19.78	20.50	1.180	0.053	0.063
	5G NR n77/135RB#1 100M	Left Cheek	633334	19.78	20.50	1.180	0.224	0.264
	5G NR n77/135RB#1 100M	Left Tilt	633334	19.78	20.50	1.180	0.131	0.155
Reduced Power Level 1 for ENDC (Ant3) (PC3)								
	5G NR n77/1RB#136 100M	Right Cheek	633334	19.98	21.00	1.265	0.153	0.194
	5G NR n77/1RB#136 100M	Right Tilt	633334	19.98	21.00	1.265	0.077	0.097
	5G NR n77/1RB#136 100M	Left Cheek	633334	19.98	21.00	1.265	0.261	0.330
	5G NR n77/1RB#136 100M	Left Tilt	633334	19.98	21.00	1.265	0.108	0.137
	5G NR n77/135RB#1 100M	Right Cheek	633334	19.91	21.00	1.285	0.122	0.157
	5G NR n77/135RB#1 100M	Right Tilt	633334	19.91	21.00	1.285	0.044	0.057
	5G NR n77/135RB#1 100M	Left Cheek	633334	19.91	21.00	1.285	0.206	0.265
	5G NR n77/135RB#1 100M	Left Tilt	633334	19.91	21.00	1.285	0.089	0.114
Reduced Power Level 1 for ENDC (Ant3) (PC2)								
	5G NR n77/1RB#136 100M	Right Cheek	656000	20.12	21.00	1.225	0.193	0.236
	5G NR n77/1RB#136 100M	Right Tilt	656000	20.12	21.00	1.225	0.060	0.073
	5G NR n77/1RB#136 100M	Left Cheek	656000	20.12	21.00	1.225	0.418	0.512
	5G NR n77/1RB#136 100M	Left Tilt	656000	20.12	21.00	1.225	0.186	0.228
	5G NR n77/135RB#1 100M	Right Cheek	656000	20.02	21.00	1.253	0.161	0.202
	5G NR n77/135RB#1 100M	Right Tilt	656000	20.02	21.00	1.253	0.055	0.069
	5G NR n77/135RB#1 100M	Left Cheek	656000	20.02	21.00	1.253	0.256	0.321
	5G NR n77/135RB#1 100M	Left Tilt	656000	20.02	21.00	1.253	0.146	0.183
Reduced Power Level 1 for ENDC (Ant3) (PC3)								
	5G NR n77/1RB#136 100M	Right Cheek	656000	20.14	21.00	1.219	0.155	0.189
	5G NR n77/1RB#136 100M	Right Tilt	656000	20.14	21.00	1.219	0.053	0.065
	5G NR n77/1RB#136 100M	Left Cheek	656000	20.14	21.00	1.219	0.266	0.324
	5G NR n77/1RB#136 100M	Left Tilt	656000	20.14	21.00	1.219	0.125	0.152
	5G NR n77/135RB#1 100M	Right Cheek	656000	20.09	21.00	1.233	0.132	0.163

	5G NR n77/135RB#1 100M	Right Tilt	656000	20.09	21.00	1.233	0.048	0.059
	5G NR n77/135RB#1 100M	Left Cheek	656000	20.09	21.00	1.233	0.217	0.268
	5G NR n77/135RB#1 100M	Left Tilt	656000	20.09	21.00	1.233	0.100	0.123

➢ WLAN Head SAR

Plot No.	Band/Mode	Test Position	CH.	Ave. Power (dBm)	Tune-up Limit (dBm)	Tune-up Scaling Factor	Meas. SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
Reduced Power Level 1 (Ant7)								
24#	WLAN2.4GHz/802.11b	Right Cheek	6	14.18	14.50	1.076	0.470	0.507
	WLAN2.4GHz/802.11b	Right Tilt	6	14.18	14.50	1.076	0.169	0.182
	WLAN2.4GHz/802.11b	Left Cheek	6	14.18	14.50	1.076	0.185	0.200
	WLAN2.4GHz/802.11b	Left Tilt	6	14.18	14.50	1.076	0.077	0.083
Reduced Power Level 1 (Ant0)								
25#	WLAN5.2GHz/802.11n40	Right Cheek	46	11.77	12.00	1.054	0.263	0.286
	WLAN5.2GHz/802.11n40	Right Tilt	46	11.77	12.00	1.054	0.225	0.244
	WLAN5.2GHz/802.11n40	Left Cheek	46	11.77	12.00	1.054	0.171	0.186
	WLAN5.2GHz/802.11n40	Left Tilt	46	11.77	12.00	1.054	0.203	0.220
Reduced Power Level 1 (Ant0)								
26#	WLAN5.3GHz/802.11ac20	Right Cheek	52	11.94	12.50	1.138	0.261	0.301
	WLAN5.3GHz/802.11ac20	Right Tilt	52	11.94	12.50	1.138	0.246	0.284
	WLAN5.3GHz/802.11ac20	Left Cheek	52	11.94	12.50	1.138	0.170	0.196
	WLAN5.3GHz/802.11ac20	Left Tilt	52	11.94	12.50	1.138	0.197	0.227
Reduced Power Level 1 (Ant0)								
27#	WLAN5.5GHz/802.11ac40	Right Cheek	142	12.10	12.50	1.096	0.291	0.329
	WLAN5.5GHz/802.11ac40	Right Tilt	142	12.10	12.50	1.096	0.277	0.313
	WLAN5.5GHz/802.11ac40	Left Cheek	142	12.10	12.50	1.096	0.222	0.251
	WLAN5.5GHz/802.11ac40	Left Tilt	142	12.10	12.50	1.096	0.221	0.250
Reduced Power Level 1 (Ant0)								
28#	WLAN5.8GHz/802.11n20	Right Cheek	157	11.92	12.50	1.143	0.301	0.349
	WLAN5.8GHz/802.11n20	Right Tilt	157	11.92	12.50	1.143	0.219	0.254
	WLAN5.8GHz/802.11n20	Left Cheek	157	11.92	12.50	1.143	0.230	0.267
	WLAN5.8GHz/802.11n20	Left Tilt	157	11.92	12.50	1.143	0.211	0.245
Reduced Power Level 1 (Ant7)								
29#	Bluetooth/DH5	Right Cheek	0	7.82	8.50	1.169	0.272	0.345
	Bluetooth/DH5	Right Tilt	0	7.82	8.50	1.169	0.061	0.077
	Bluetooth/DH5	Left Cheek	0	7.82	8.50	1.169	0.093	0.118
	Bluetooth/DH5	Left Tilt	0	7.82	8.50	1.169	0.041	0.052

Note:

1. Per KDB 447498 D01v06, for each exposure position, if the highest output power channel Reported SAR ≤ 0.8W/kg, other channels SAR testing is not necessary.
2. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required when the measured SAR is ≥ 0.8W/kg.
3. Per KDB 941225 D05v02r05, 100% RB allocation SAR measurement is not required when the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg.
4. Per KDB 248227 D01v02r02, for 802.11b DSSS , when the reported SAR of the highest measured maximum output power channel for the exposure configuration is $\leqslant$ 0.8 W/kg, no further SAR testing is required in that exposure configuration.
5. Per KDB 248227 D01v02r02, OFDM SAR is not required 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 $\leqslant$ 1.2 W/kg. It is calculated as follows:
   $10^{(17.50-17.08)/10} * 1.003 * 0.47 = 0.519\ \mathrm{W/kg} \leqslant 1.2\ \mathrm{W/kg}$
   Thus, the OFDM SAR is not required.
6. According to KDB 865664 D02v01r02, SAR plot is required for the highest measured SAR in each exposure configuration, wireless mode and frequency band combination.
7. The 2.4G WLAN reported 1g SAR (W/kg) should be scaled with the duty cycle scaling factor 1.003, 1.015 for WLAN 5.2GHz 802.11n-HT20, 1.030 for WLAN 5.8GHz 802.11n-HT40, 1.015 for WLAN 5.3GHz 802.11ac-VHT20, and 1.030 for WLAN 5.5GHz 802.11 ac-VHT40.
8. According to 2016 Oct. TCB workshop for Bluetooth SAR consideration and the theoretical duty cycle is 83.3%, therefore the actual duty cycle will be scaled up to the theoretical value of Bluetooth reported SAR calculation. The duty cycle of Bluetooth is 76.85 %, Therefore the duty cycle scaling factor 1.084 should be used to calculating the reported SAR.

19.3. Hotspot SAR Data

➢ GSM Hotspot SAR

Plot No.	Band/Mode	Test Position	CH.	Ave. Power (dBm)	Tune-up Limit (dBm)	Tune-up Scaling Factor	Meas. SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
Full Power (Ant5)								
	GPRS 850(4 TX slots)	Front Side	189	28.94	30.00	1.276	0.311	0.397
30#	GPRS 850(4 TX slots)	Back Side	189	28.94	30.00	1.276	0.458	0.585
	GPRS 850(4 TX slots)	Right Side	189	28.94	30.00	1.276	0.068	0.087
	GPRS 850(4 TX slots)	Bottom Side	189	28.94	30.00	1.276	0.391	0.499
Full Power (Ant5)								
	GPRS 1900(4 TX slots)	Front Side	810	22.23	23.30	1.279	0.262	0.335
	GPRS 1900(4 TX slots)	Back Side	810	22.23	23.30	1.279	0.467	0.597
	GPRS 1900(4 TX slots)	Right Side	810	22.23	23.30	1.279	0.085	0.109
	GPRS 1900(4 TX slots)	Bottom Side	810	22.19	23.30	1.291	0.811	1.047
	GPRS 1900(4 TX slots)	Bottom Side	512	22.16	23.30	1.300	0.795	1.034
31#	GPRS 1900(4 TX slots)	Bottom Side	661	22.23	23.30	1.279	0.819	1.048

➢ WCDMA Hotspot SAR

Plot No.	Band/Mode	Test Position	CH.	Ave. Power (dBm)	Tune-up Limit (dBm)	Tune-up Scaling Factor	Meas. SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
Reduced Power Level 2 (Ant5)								
	Band II/RMC 12.2Kbps	Back Side	9400	19.22	20.00	1.197	0.215	0.257
	Band II/RMC 12.2Kbps	Back Side	9400	19.22	20.00	1.197	0.313	0.375
	Band II/RMC 12.2Kbps	Right Side	9400	19.22	20.00	1.197	0.255	0.305
	Band II/RMC 12.2Kbps	Bottom Side	9400	19.22	20.00	1.197	0.717	0.858
32#	Band II/RMC 12.2Kbps	Bottom Side	9262	19.12	20.00	1.225	0.734	0.899
	Band II/RMC 12.2Kbps	Bottom Side	9538	19.17	20.00	1.211	0.663	0.803
Reduced Power Level 2 (Ant5)								
	Band IV/RMC 12.2Kbps	Front Side	1413	19.33	20.00	1.167	0.226	0.264
	Band IV/RMC 12.2Kbps	Back Side	1413	19.33	20.00	1.167	0.309	0.361
	Band IV/RMC 12.2Kbps	Right Side	1413	19.33	20.00	1.167	0.106	0.124
33#	Band IV/RMC 12.2Kbps	Bottom Side	1413	19.33	20.00	1.167	0.565	0.659
Full Power (Ant5)								
	Band V/RMC 12.2Kbps	Front Side	4182	23.37	24.00	1.156	0.158	0.183
34#	Band V/RMC 12.2Kbps	Back Side	4182	23.37	24.00	1.156	0.299	0.346
	Band V/RMC 12.2Kbps	Right Side	4182	23.37	24.00	1.156	0.059	0.068
	Band V/RMC 12.2Kbps	Bottom Side	4182	23.37	24.00	1.156	0.282	0.326

➢ LTE QPSK Hotspot SAR

Plot No.	Band/Mode	Test Position	CH.	Ave. Power (dBm)	Tune-up Limit (dBm)	Tune-up Scaling Factor	Meas. SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
Reduced Power Level 4 for CA&ENDC (ANT1)								
	LTE Band 2/1RB#0 20M	Front Side	18900	17.96	19.00	1.271	0.155	0.197
	LTE Band 2/1RB#0 20M	Back Side	18900	17.96	19.00	1.271	0.369	0.469
	LTE Band 2/1RB#0 20M	Left Side	18900	17.96	19.00	1.271	0.009	0.011
	LTE Band 2/1RB#0 20M	Right Side	18900	17.96	19.00	1.271	0.022	0.028
	LTE Band 2/1RB#0 20M	Top Side	18900	17.96	19.00	1.271	0.582	0.739
	LTE Band 2/50RB#0 20M	Front Side	18900	16.92	18.00	1.282	0.124	0.159
	LTE Band 2/50RB#0 20M	Back Side	18900	16.92	18.00	1.282	0.270	0.346
	LTE Band 2/50RB#0 20M	Left Side	18900	16.92	18.00	1.282	0.007	0.009
	LTE Band 2/50RB#0 20M	Right Side	18900	16.92	18.00	1.282	0.018	0.023
	LTE Band 2/50RB#0 20M	Top Side	18900	16.92	18.00	1.282	0.175	0.224
Reduced Power Level 2 (ANT5)								
	LTE Band 2/1RB#0 20M	Front Side	18900	18.96	20.00	1.271	0.238	0.302
	LTE Band 2/1RB#0 20M	Back Side	18900	18.96	20.00	1.271	0.302	0.384
	LTE Band 2/1RB#0 20M	Right Side	18900	18.96	20.00	1.271	0.059	0.075
	LTE Band 2/1RB#0 20M	Bottom Side	18900	18.96	20.00	1.271	0.675	0.858
	LTE Band 2/1RB#0 20M	Bottom Side	18700	18.92	20.00	1.282	0.553	0.709
	LTE Band 2/1RB#0 20M	Bottom Side	19100	18.89	20.00	1.291	0.444	0.573
	LTE Band 2/50RB#0 20M	Front Side	18900	17.92	19.00	1.282	0.229	0.294
	LTE Band 2/50RB#0 20M	Back Side	18900	17.92	19.00	1.282	0.293	0.376
	LTE Band 2/50RB#0 20M	Right Side	18900	17.92	19.00	1.282	0.050	0.064
	LTE Band 2/50RB#0 20M	Bottom Side	18900	17.92	19.00	1.282	0.592	0.759
35#	LTE Band 2/50RB#0 20M	Bottom Side	18700	17.86	19.00	1.300	0.720	0.936
	LTE Band 2/50RB#0 20M	Bottom Side	19100	17.87	19.00	1.297	0.557	0.723
	CA_2/50RB#0 20M	Bottom Side	18999	18.23	19.00	1.194	0.506	0.604
Full Power (ANT5)								
	LTE Band 5/1RB#0 10M	Front Side	20525	23.93	25.00	1.279	0.163	0.209
36#	LTE Band 5/1RB#0 10M	Back Side	20525	23.93	25.00	1.279	0.303	0.388
	LTE Band 5/1RB#0 10M	Right Side	20525	23.93	25.00	1.279	0.147	0.188
	LTE Band 5/1RB#0 10M	Bottom Side	20525	23.93	25.00	1.279	0.269	0.344
	LTE Band 5/25RB#0 10M	Front Side	20525	22.89	24.00	1.291	0.137	0.177
	LTE Band 5/25RB#0 10M	Back Side	20525	22.89	24.00	1.291	0.201	0.260
	LTE Band 5/25RB#0 10M	Right Side	20525	22.89	24.00	1.291	0.108	0.139
	LTE Band 5/25RB#0 10M	Bottom Side	20525	22.89	24.00	1.291	0.234	0.302
Reduced Power Level 2 (ANT4)								

	LTE Band 7/1RB#0 20M	Front Side	21100	21.05	22.00	1.245	0.286	0.356
37#	LTE Band 7/1RB#0 20M	Back Side	21100	21.05	22.00	1.245	0.323	0.402
	LTE Band 7/1RB#0 20M	Left Side	21100	21.05	22.00	1.245	0.069	0.086
	LTE Band 7/1RB#0 20M	Bottom Side	21100	21.05	22.00	1.245	0.161	0.200
	LTE Band 7/50RB#0 20M	Front Side	21100	20.04	21.00	1.247	0.311	0.388
	LTE Band 7/50RB#0 20M	Back Side	21100	20.04	21.00	1.247	0.317	0.395
	LTE Band 7/50RB#0 20M	Left Side	21100	20.04	21.00	1.247	0.064	0.080
	LTE Band 7/50RB#0 20M	Bottom Side	21100	20.04	21.00	1.247	0.150	0.187
Full Power (ANT5)								
	LTE Band 12/1RB#0 10M	Front Side	23095	23.08	24.00	1.236	0.107	0.132
	LTE Band 12/1RB#0 10M	Back Side	23095	23.08	24.00	1.236	0.142	0.176
38#	LTE Band 12/1RB#0 10M	Right Side	23095	23.08	24.00	1.236	0.175	0.216
	LTE Band 12/1RB#0 10M	Bottom Side	23095	23.08	24.00	1.236	0.126	0.156
	LTE Band 12/25RB#0 10M	Front Side	23095	22.03	23.00	1.250	0.087	0.109
	LTE Band 12/25RB#0 10M	Back Side	23095	22.03	23.00	1.250	0.107	0.134
	LTE Band 12/25RB#0 10M	Right Side	23095	22.03	23.00	1.250	0.127	0.159
	LTE Band 12/25RB#0 10M	Bottom Side	23095	22.03	23.00	1.250	0.104	0.130
Full Power (ANT5)								
	LTE Band 13/1RB#0 10M	Front Side	23230	23.13	24.00	1.222	0.130	0.159
39#	LTE Band 13/1RB#0 10M	Back Side	23230	23.13	24.00	1.222	0.219	0.268
	LTE Band 13/1RB#0 10M	Right Side	23230	23.13	24.00	1.222	0.215	0.263
	LTE Band 13/1RB#0 10M	Bottom Side	23230	23.13	24.00	1.222	0.134	0.164
	LTE Band 13/25RB#0 10M	Front Side	23230	22.10	23.00	1.230	0.102	0.125
	LTE Band 13/25RB#0 10M	Back Side	23230	22.10	23.00	1.230	0.152	0.187
	LTE Band 13/25RB#0 10M	Right Side	23230	22.10	23.00	1.230	0.099	0.122
	LTE Band 13/25RB#0 10M	Bottom Side	23230	22.10	23.00	1.230	0.108	0.133
Reduced Power Level 2 (ANT5)								
	LTE Band 25/1RB#0 20M	Front Side	26365	19.07	20.00	1.239	0.231	0.286
	LTE Band 25/1RB#0 20M	Back Side	26365	19.07	20.00	1.239	0.359	0.445
	LTE Band 25/1RB#0 20M	Right Side	26365	19.07	20.00	1.239	0.051	0.063
	LTE Band 25/1RB#0 20M	Bottom Side	26365	19.07	20.00	1.239	0.698	0.865
	LTE Band 25/1RB#0 20M	Bottom Side	26140	19.00	20.00	1.259	0.685	0.862
	LTE Band 25/1RB#0 20M	Bottom Side	26590	19.03	20.00	1.250	0.626	0.783
	LTE Band 25/50RB#0 20M	Front Side	26365	18.06	19.00	1.242	0.222	0.276
	LTE Band 25/50RB#0 20M	Back Side	26365	18.06	19.00	1.242	0.285	0.354
	LTE Band 25/50RB#0 20M	Right Side	26365	18.06	18.06	1.000	0.051	0.051
	LTE Band 25/50RB#0 20M	Bottom Side	26365	18.06	18.06	1.000	0.685	0.685
40#	LTE Band 25/50RB#0 20M	Bottom Side	26140	18.00	19.00	1.259	0.714	0.899

	LTE Band 25/50RB#0 20M	Bottom Side	26590	18.01	19.00	1.256	0.608	0.764
Full Power (ANT5)								
	LTE Band 26/1RB#0 15M	Front Side	26865	23.13	24.00	1.222	0.107	0.131
41#	LTE Band 26/1RB#0 15M	Back Side	26865	23.13	24.00	1.222	0.216	0.264
	LTE Band 26/1RB#0 15M	Right Side	26865	23.13	24.00	1.222	0.097	0.119
	LTE Band 26/1RB#0 15M	Bottom Side	26865	23.13	24.00	1.222	0.215	0.263
	LTE Band 26/36RB#0 15M	Front Side	26865	22.10	23.00	1.230	0.088	0.108
	LTE Band 26/36RB#0 15M	Back Side	26865	22.10	23.00	1.230	0.141	0.173
	LTE Band 26/36RB#0 15M	Right Side	26865	22.10	23.00	1.230	0.048	0.059
	LTE Band 26/36RB#0 15M	Bottom Side	26865	22.10	23.00	1.230	0.176	0.217
Reduced Power Level 2 (ANT3)								
	LTE Band 48/1RB#0 20M	Front Side	55990	17.06	18.00	1.242	0.169	0.210
42#	LTE Band 48/1RB#0 20M	Back Side	55990	17.06	18.00	1.242	0.202	0.251
	LTE Band 48/1RB#0 20M	Left Side	55990	17.06	18.00	1.242	0.162	0.201
	CA_48/1RB#0 20M	Back Side	56089	16.39	17.00	1.151	0.191	0.220
	LTE Band 48/50RB#0 20M	Front Side	55990	16.07	17.00	1.239	0.108	0.134
	LTE Band 48/50RB#0 20M	Back Side	55990	16.07	17.00	1.239	0.169	0.209
	LTE Band 48/50RB#0 20M	Left Side	55990	16.07	17.00	1.239	0.112	0.139
Reduced Power Level 4 for CA&ENDC (ANT1)								
	LTE Band 66/1RB#0 20M	Front Side	132322	18.12	19.00	1.225	0.117	0.143
	LTE Band 66/1RB#0 20M	Back Side	132322	18.12	19.00	1.225	0.194	0.238
	LTE Band 66/1RB#0 20M	Left Side	132322	18.12	19.00	1.225	0.021	0.026
	LTE Band 66/1RB#0 20M	Right Side	132322	18.12	19.00	1.225	0.032	0.039
43#	LTE Band 66/1RB#0 20M	Top Side	132322	18.12	19.00	1.225	0.639	0.783
	LTE Band 66/50RB#0 20M	Front Side	132322	17.08	18.00	1.236	0.095	0.117
	LTE Band 66/50RB#0 20M	Back Side	132322	17.08	18.00	1.236	0.160	0.198
	LTE Band 66/50RB#0 20M	Left Side	132322	17.08	18.00	1.236	0.017	0.021
	LTE Band 66/50RB#0 20M	Right Side	132322	17.08	18.00	1.236	0.025	0.031
	LTE Band 66/50RB#0 20M	Top Side	132322	17.08	18.00	1.236	0.523	0.646
Reduced Power Level 2 (ANT5)								
	LTE Band 66/1RB#0 20M	Front Side	132322	19.12	20.00	1.225	0.207	0.253
	LTE Band 66/1RB#0 20M	Back Side	132322	19.12	20.00	1.225	0.265	0.325
	LTE Band 66/1RB#0 20M	Right Side	132322	19.12	20.00	1.225	0.065	0.080
	LTE Band 66/1RB#0 20M	Bottom Side	132322	19.12	20.00	1.225	0.522	0.639
	CA_66/1RB#0 20M	Bottom Side	132521	18.33	19.00	1.167	0.479	0.559
	LTE Band 66/50RB#0 20M	Front Side	132322	18.08	19.00	1.236	0.143	0.177
	LTE Band 66/50RB#0 20M	Back Side	132322	18.08	19.00	1.236	0.208	0.257
	LTE Band 66/50RB#0 20M	Right Side	132322	18.08	19.00	1.236	0.070	0.087

	LTE Band 66/50RB#0 20M	Bottom Side	132322	18.08	19.00	1.236	0.462	0.571
Full Power (ANT5)								
	LTE Band 71/1RB#0 20M	Front Side	133322	23.95	25.00	1.274	0.135	0.172
	LTE Band 71/1RB#0 20M	Back Side	133322	23.95	25.00	1.274	0.185	0.236
44#	LTE Band 71/1RB#0 20M	Right Side	133322	23.95	25.00	1.274	0.219	0.279
	LTE Band 71/1RB#0 20M	Bottom Side	133322	23.95	25.00	1.274	0.127	0.162
	LTE Band 71/50RB#0 20M	Front Side	133322	22.94	24.00	1.276	0.097	0.124
	LTE Band 71/50RB#0 20M	Back Side	133322	22.94	24.00	1.276	0.127	0.162
	LTE Band 71/50RB#0 20M	Right Side	133322	22.94	24.00	1.276	0.146	0.186
	LTE Band 71/50RB#0 20M	Bottom Side	133322	22.94	24.00	1.276	0.094	0.120

➢ 5G NR DFT-S-QPSK Hotspot SAR

Plot No.	Band/Mode	Test Position	CH.	Ave. Power (dBm)	Tune-up Limit (dBm)	Tune-up Scaling Factor	Meas. SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
Reduced Power Level 2 (Ant1)								
	5G NR n2/1RB#1 20M	Front Side	376000	19.95	21.00	1.274	0.280	0.357
	5G NR n2/1RB#1 20M	Back Side	376000	19.95	21.00	1.274	0.472	0.601
	5G NR n2/1RB#1 20M	Left Side	376000	19.95	21.00	1.274	0.026	0.033
	5G NR n2/1RB#1 20M	Right Side	376000	19.95	21.00	1.274	0.053	0.067
45#	5G NR n2/1RB#1 20M	Top Side	376000	19.95	21.00	1.274	0.589	0.750
	5G NR n2/50RB#25 20M	Front Side	376000	19.69	20.50	1.205	0.251	0.302
	5G NR n2/50RB#25 20M	Back Side	376000	19.69	20.50	1.205	0.453	0.546
	5G NR n2/50RB#25 20M	Left Side	376000	19.69	20.50	1.205	0.020	0.024
	5G NR n2/50RB#25 20M	Right Side	376000	19.69	20.50	1.205	0.039	0.047
	5G NR n2/50RB#25 20M	Top Side	376000	19.69	20.50	1.205	0.518	0.624
Full Power (Ant5)								
	5G NR n5/1RB#1 20M	Front Side	167300	23.44	24.00	1.138	0.113	0.129
46#	5G NR n5/1RB#1 20M	Back Side	167300	23.44	24.00	1.138	0.258	0.294
	5G NR n5/1RB#1 20M	Right Side	167300	23.44	24.00	1.138	0.023	0.026
	5G NR n5/1RB#1 20M	Bottom Side	167300	23.44	24.00	1.138	0.154	0.175
	5G NR n5/50RB#25 20M	Front Side	167300	23.21	24.00	1.199	0.088	0.106
	5G NR n5/50RB#25 20M	Back Side	167300	23.21	24.00	1.199	0.129	0.155
	5G NR n5/50RB#25 20M	Right Side	167300	23.21	24.00	1.199	0.019	0.023
	5G NR n5/50RB#25 20M	Bottom Side	167300	23.21	24.00	1.199	0.140	0.168
Reduced Power Level 2 (Ant1)								
	5G NR n25/1RB#53 20M	Front Side	376500	20.08	21.00	1.236	0.272	0.336
	5G NR n25/1RB#53 20M	Back Side	376500	20.08	21.00	1.236	0.462	0.571

	5G NR n25/1RB#53 20M	Left Side	376500	20.08	21.00	1.236	0.028	0.035
	5G NR n25/1RB#53 20M	Right Side	376500	20.08	21.00	1.236	0.049	0.061
	5G NR n25/1RB#53 20M	Top Side	376500	20.08	21.00	1.236	0.517	0.639
	5G NR n25/50RB#25 20M	Front Side	376500	20.04	21.00	1.247	0.260	0.324
	5G NR n25/50RB#25 20M	Back Side	376500	20.04	21.00	1.247	0.475	0.593
	5G NR n25/50RB#25 20M	Left Side	376500	20.04	21.00	1.247	0.022	0.027
	5G NR n25/50RB#25 20M	Right Side	376500	20.04	21.00	1.247	0.040	0.050
47#	5G NR n25/50RB#25 20M	Top Side	376500	20.04	21.00	1.247	0.555	0.692
Reduced Power Level 2 (Ant4) (PC2)								
	5G NR n41/1RB#136 100M	Front Side	518598	20.13	21.00	1.222	0.171	0.209
	5G NR n41/1RB#136 100M	Back Side	518598	20.13	21.00	1.222	0.377	0.461
48#	5G NR n41/1RB#136 100M	Left Side	518598	20.13	21.00	1.222	0.395	0.483
	5G NR n41/1RB#136 100M	Bottom Side	518598	20.13	21.00	1.222	0.121	0.148
	5G NR n41/137RB#67 100M	Front Side	518598	20.08	21.00	1.236	0.139	0.172
	5G NR n41/137RB#67 100M	Back Side	518598	20.08	21.00	1.236	0.282	0.349
	5G NR n41/137RB#67 100M	Left Side	518598	20.08	21.00	1.236	0.209	0.258
	5G NR n41/137RB#67 100M	Bottom Side	518598	20.08	21.00	1.236	0.110	0.136
Reduced Power Level 2 (Ant4) (PC3)								
	5G NR n41/1RB#1 100M	Front Side	518598	20.11	21.00	1.227	0.158	0.194
	5G NR n41/1RB#1 100M	Back Side	518598	20.11	21.00	1.227	0.321	0.394
	5G NR n41/1RB#1 100M	Left Side	518598	20.11	21.00	1.227	0.261	0.320
	5G NR n41/1RB#1 100M	Bottom Side	518598	20.11	21.00	1.227	0.087	0.107
	5G NR n41/137RB#67 100M	Front Side	518598	20.05	21.00	1.245	0.155	0.193
	5G NR n41/137RB#67 100M	Back Side	518598	20.05	21.00	1.245	0.308	0.383
	5G NR n41/137RB#67 100M	Left Side	518598	20.05	21.00	1.245	0.291	0.362
	5G NR n41/137RB#67 100M	Bottom Side	518598	20.05	21.00	1.245	0.079	0.098
Reduced Power Level 2 (Ant3)								
	5G NR n48/1RB#136 100M	Front Side	641666	17.13	18.00	1.222	0.077	0.094
	5G NR n48/1RB#136 100M	Back Side	641666	17.13	18.00	1.222	0.148	0.181
49#	5G NR n48/1RB#136 100M	Right Side	641666	17.13	18.00	1.222	0.175	0.214
	5G NR n48/137RB#67 100M	Front Side	641666	16.98	18.00	1.265	0.080	0.101
	5G NR n48/137RB#67 100M	Back Side	641666	16.98	18.00	1.265	0.141	0.178
	5G NR n48/137RB#67 100M	Right Side	641666	16.98	18.00	1.265	0.128	0.162
Reduced Power Level 2 (Ant1)								
	5G NR n66/1RB#108 40M	Front Side	349000	19.94	21.00	1.276	0.242	0.309
50#	5G NR n66/1RB#108 40M	Back Side	349000	19.94	21.00	1.276	0.677	0.864
	5G NR n66/1RB#108 40M	Left Side	349000	19.94	21.00	1.276	0.030	0.038
	5G NR n66/1RB#108 40M	Right Side	349000	19.94	21.00	1.276	0.064	0.082

	5G NR n66/1RB#108 40M	Top Side	349000	19.94	21.00	1.276	0.352	0.449
	5G NR n66/1RB#108 40M	Back Side	346000	19.91	21.00	1.285	0.640	0.823
	5G NR n66/1RB#108 40M	Back Side	352000	19.90	21.00	1.288	0.663	0.854
	5G NR n66/108RB#54 40M	Front Side	349000	19.90	21.00	1.288	0.206	0.265
	5G NR n66/108RB#54 40M	Back Side	349000	19.90	21.00	1.288	0.351	0.452
	5G NR n66/108RB#54 40M	Left Side	349000	19.90	21.00	1.288	0.022	0.028
	5G NR n66/108RB#54 40M	Right Side	349000	19.90	21.00	1.288	0.048	0.062
	5G NR n66/108RB#54 40M	Top Side	349000	19.90	21.00	1.288	0.290	0.374
Reduced Power Level 4 for ENDC(Ant1)								
	5G NR n66/1RB#108 40M	Front Side	349000	18.94	20.00	1.276	0.195	0.249
	5G NR n66/1RB#108 40M	Back Side	349000	18.94	20.00	1.276	0.545	0.696
	5G NR n66/1RB#108 40M	Left Side	349000	18.94	20.00	1.276	0.024	0.031
	5G NR n66/1RB#108 40M	Right Side	349000	18.94	20.00	1.276	0.052	0.066
	5G NR n66/1RB#108 40M	Top Side	349000	18.94	20.00	1.276	0.283	0.361
	5G NR n66/108RB#54 40M	Front Side	349000	18.90	20.00	1.288	0.167	0.215
	5G NR n66/108RB#54 40M	Back Side	349000	18.90	20.00	1.288	0.285	0.367
	5G NR n66/108RB#54 40M	Left Side	349000	18.90	20.00	1.288	0.018	0.023
	5G NR n66/108RB#54 40M	Right Side	349000	18.90	20.00	1.288	0.039	0.050
	5G NR n66/108RB#54 40M	Top Side	349000	18.90	20.00	1.288	0.236	0.304
Full Power (Ant5)								
	5G NR n71/1RB#1 20M	Front Side	136100	23.15	24.00	1.216	0.117	0.142
51#	5G NR n71/1RB#1 20M	Back Side	136100	23.15	24.00	1.216	0.162	0.197
	5G NR n71/1RB#1 20M	Right Side	136100	23.15	24.00	1.216	0.058	0.071
	5G NR n71/1RB#1 20M	Bottom Side	136100	23.15	24.00	1.216	0.101	0.123
	5G NR n71/50RB#25 20M	Front Side	136100	23.10	24.00	1.230	0.089	0.109
	5G NR n71/50RB#25 20M	Back Side	136100	23.10	24.00	1.230	0.123	0.151
	5G NR n71/50RB#25 20M	Right Side	136100	23.10	24.00	1.230	0.044	0.054
	5G NR n71/50RB#25 20M	Bottom Side	136100	23.10	24.00	1.230	0.077	0.095
Reduced Power Level 4 for ENDC (Ant3) (PC2)								
	5G NR n77/1RB#136 100M	Front Side	633334	19.96	21.00	1.271	0.099	0.126
	5G NR n77/1RB#136 100M	Back Side	633334	19.96	21.00	1.271	0.208	0.264
52#	5G NR n77/1RB#136 100M	Right Side	633334	19.96	21.00	1.271	0.235	0.299
	5G NR n77/135RB#1 100M	Front Side	633334	19.78	20.50	1.180	0.081	0.096
	5G NR n77/135RB#1 100M	Back Side	633334	19.78	20.50	1.180	0.219	0.258
	5G NR n77/135RB#1 100M	Right Side	633334	19.78	20.50	1.180	0.224	0.264
Reduced Power Level 4 for ENDC (Ant3) (PC3)								
	5G NR n77/1RB#136 100M	Front Side	633334	19.98	21.00	1.265	0.087	0.110
	5G NR n77/1RB#136 100M	Back Side	633334	19.98	21.00	1.265	0.192	0.243

	5G NR n77/1RB#136 100M	Right Side	633334	19.98	21.00	1.265	0.196	0.248
	5G NR n77/135RB#1 100M	Front Side	633334	19.91	21.00	1.285	0.077	0.099
	5G NR n77/135RB#1 100M	Back Side	633334	19.91	21.00	1.285	0.175	0.225
	5G NR n77/135RB#1 100M	Right Side	633334	19.91	21.00	1.285	0.173	0.222
Reduced Power Level 4 for ENDC (Ant3) (PC2)								
	5G NR n77/1RB#136 100M	Front Side	656000	20.12	21.00	1.225	0.102	0.125
	5G NR n77/1RB#136 100M	Back Side	656000	20.12	21.00	1.225	0.183	0.224
	5G NR n77/1RB#136 100M	Right Side	656000	20.12	21.00	1.225	0.231	0.283
	5G NR n77/135RB#1 100M	Front Side	656000	20.02	21.00	1.253	0.089	0.112
	5G NR n77/135RB#1 100M	Back Side	656000	20.02	21.00	1.253	0.178	0.223
	5G NR n77/135RB#1 100M	Right Side	656000	20.02	21.00	1.253	0.205	0.257
Reduced Power Level 4 for ENDC (Ant3) (PC3)								
	5G NR n77/1RB#136 100M	Front Side	656000	20.14	21.00	1.219	0.095	0.116
	5G NR n77/1RB#136 100M	Back Side	656000	20.14	21.00	1.219	0.167	0.204
	5G NR n77/1RB#136 100M	Right Side	656000	20.14	21.00	1.219	0.202	0.246
	5G NR n77/135RB#1 100M	Front Side	656000	20.09	21.00	1.233	0.072	0.089
	5G NR n77/135RB#1 100M	Back Side	656000	20.09	21.00	1.233	0.156	0.192
	5G NR n77/135RB#1 100M	Right Side	656000	20.09	21.00	1.233	0.179	0.221

➢ WLAN/BT Hotspot SAR

Plot No.	Band/Mode	Test Position	CH.	Ave. Power (dBm)	Tune-up Limit (dBm)	Tune-up Scaling Factor	Meas. SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
Reduced Power Level 2 (Ant7)								
	WLAN2.4GHz/802.11b	Front Side	6	18.18	18.50	1.076	0.132	0.143
53#	WLAN2.4GHz/802.11b	Back Side	6	18.18	18.50	1.076	0.237	0.256
	WLAN2.4GHz/802.11b	Left Side	6	18.18	18.50	1.076	0.206	0.222
	WLAN2.4GHz/802.11b	Right Side	6	18.18	18.50	1.076	0.034	0.037
	WLAN2.4GHz/802.11b	Top Side	6	18.18	18.50	1.076	0.057	0.062
Reduced Power Level 2 (Ant0)								
	WLAN5.2GHz/802.11n40	Front Side	46	13.27	13.50	1.054	0.139	0.151
	WLAN5.2GHz/802.11n40	Back Side	46	13.27	13.50	1.054	0.183	0.199
	WLAN5.2GHz/802.11n40	Left Side	46	13.27	13.50	1.054	0.054	0.059
	WLAN5.2GHz/802.11n40	Right Side	46	13.27	13.50	1.054	0.077	0.084
54#	WLAN5.2GHz/802.11n40	Top Side	46	13.27	13.50	1.054	0.450	0.489
Reduced Power Level 2 (Ant0)								
	WLAN5.3GHz/802.11ac20	Front Side	52	12.94	13.50	1.138	0.136	0.157
	WLAN5.3GHz/802.11ac20	Back Side	52	12.94	13.50	1.138	0.159	0.184
	WLAN5.3GHz/802.11ac20	Left Side	52	12.94	13.50	1.138	0.041	0.047

	WLAN5.3GHz/802.11ac20	Right Side	52	12.94	13.50	1.138	0.094	0.109
55#	WLAN5.3GHz/802.11ac20	Top Side	52	12.94	13.50	1.138	0.442	0.510
Reduced Power Level 2 (Ant0)								
	WLAN5.5GHz/802.11ac40	Front Side	142	13.10	13.50	1.096	0.172	0.194
	WLAN5.5GHz/802.11ac40	Back Side	142	13.10	13.50	1.096	0.288	0.325
	WLAN5.5GHz/802.11ac40	Left Side	142	13.10	13.50	1.096	0.059	0.067
	WLAN5.5GHz/802.11ac40	Right Side	142	13.10	13.50	1.096	0.095	0.107
56#	WLAN5.5GHz/802.11ac40	Top Side	142	13.10	13.50	1.096	0.530	0.599
Reduced Power Level 2 (Ant0)								
	WLAN5.8GHz/802.11n20	Front Side	157	12.92	13.50	1.143	0.164	0.190
	WLAN5.8GHz/802.11n20	Back Side	157	12.92	13.50	1.143	0.297	0.345
	WLAN5.8GHz/802.11n20	Left Side	157	12.92	13.50	1.143	0.068	0.079
	WLAN5.8GHz/802.11n20	Right Side	157	12.92	13.50	1.143	0.097	0.113
57#	WLAN5.8GHz/802.11n20	Top Side	157	12.92	13.50	1.143	0.562	0.652
Full Power (Ant7)								
	Bluetooth/DH5	Front Side	0	13.82	14.50	1.169	0.050	0.063
58#	Bluetooth/DH5	Back Side	0	13.82	14.50	1.169	0.112	0.142
	Bluetooth/DH5	Left Side	0	13.82	14.50	1.169	0.015	0.019
	Bluetooth/DH5	Right Side	0	13.82	14.50	1.169	0.006	0.008
	Bluetooth/DH5	Top Side	0	13.82	14.50	1.169	0.038	0.048

Note:

1. The 2.4G WLAN reported 1g SAR (W/kg) should be scaled with the duty cycle scaling factor 1.003, 1.015 for WLAN 5.2GHz 802.11n-HT20, 1.030 for WLAN 5.8GHz 802.11n-HT40, 1.015 for WLAN 5.3GHz 802.11ac-VHT20, and 1.030 for WLAN 5.5GHz 802.11 ac-VHT40.
2. According to 2016 Oct. TCB workshop for Bluetooth SAR consideration and the theoretical duty cycle is 83.3%, therefore the actual duty cycle will be scaled up to the theoretical value of Bluetooth reported SAR calculation. The duty cycle of Bluetooth is 76.85 %, Therefore the duty cycle scaling factor 1.084 should be used to calculating the reported SAR.

19.4. Body-worn SAR Data

➢ GSM Body-worn SAR

Plot No.	Band/Mode	Test Position	CH.	Ave. Power (dBm)	Tune-up Limit (dBm)	Tune-up Scaling Factor	Meas. SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
Full Power (Ant5)								
	GPRS 850(4 TX slots)	Front Side	189	28.94	30.00	1.276	0.182	0.232
59#	GPRS 850(4 TX slots)	Back Side	189	28.94	30.00	1.276	0.249	0.318
Full Power (Ant5)								
	GPRS 1900(4 TX slots)	Front Side	810	25.23	26.30	1.279	0.172	0.220
60#	GPRS 1900(4 TX slots)	Back Side	810	25.23	26.30	1.279	0.275	0.352

➢ WCDMA Body-worn SAR

Plot No.	Band/Mode	Test Position	CH.	Ave. Power (dBm)	Tune-up Limit (dBm)	Tune-up Scaling Factor	Meas. SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
Full Power (Ant5)								
	Band II/RMC 12.2Kbps	Front Side	9400	23.22	24.00	1.197	0.216	0.258
61#	Band II/RMC 12.2Kbps	Back Side	9400	23.22	24.00	1.197	0.447	0.535
Full Power (Ant5)								
	Band IV/RMC 12.2Kbps	Front Side	1413	23.33	24.00	1.167	0.205	0.239
62#	Band IV/RMC 12.2Kbps	Back Side	1413	23.33	24.00	1.167	0.429	0.501
Full Power (Ant5)								
	Band V/RMC 12.2Kbps	Front Side	4182	23.37	24.00	1.156	0.092	0.106
63#	Band V/RMC 12.2Kbps	Back Side	4182	23.37	24.00	1.156	0.145	0.168

➢ LTE QPSK Body-worn SAR

Plot No.	Band/Mode	Test Position	CH.	Ave. Power (dBm)	Tune-up Limit (dBm)	Tune-up Scaling Factor	Meas. SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
Full Power (ANT1)								
	LTE Band 2/1RB#0 20M	Front Side	18900	22.96	24.00	1.271	0.452	0.574
64#	LTE Band 2/1RB#0 20M	Back Side	18900	22.96	24.00	1.271	0.610	0.775
	LTE Band 2/50RB#0 20M	Front Side	18900	21.92	23.00	1.282	0.344	0.441
	LTE Band 2/50RB#0 20M	Back Side	18900	21.92	23.00	1.282	0.464	0.595
Full Power (ANT5)								
	LTE Band 2/1RB#0 20M	Front Side	18900	22.96	24.00	1.271	0.258	0.328
	LTE Band 2/1RB#0 20M	Back Side	18900	22.96	24.00	1.271	0.472	0.600
	CA_2/1RB#0 20M	Back Side	18999	22.23	23.00	1.194	0.435	0.519

	LTE Band 2/50RB#0 20M	Front Side	18900	21.92	23.00	1.282	0.196	0.251
	LTE Band 2/50RB#0 20M	Back Side	18900	21.92	23.00	1.282	0.262	0.336
Full Power (ANT5)								
	LTE Band 5/1RB#0 10M	Front Side	20525	23.93	25.00	1.279	0.115	0.147
65#	LTE Band 5/1RB#0 10M	Back Side	20525	23.93	25.00	1.279	0.170	0.217
	LTE Band 5/25RB#0 10M	Front Side	20525	22.89	24.00	1.291	0.098	0.127
	LTE Band 5/25RB#0 10M	Back Side	20525	22.89	24.00	1.291	0.106	0.137
Full Power (ANT4)								
	LTE Band 7/1RB#0 20M	Front Side	21100	23.05	24.00	1.245	0.257	0.320
66#	LTE Band 7/1RB#0 20M	Back Side	21100	23.05	24.00	1.245	0.347	0.432
	LTE Band 7/50RB#0 20M	Front Side	21100	22.04	23.00	1.247	0.226	0.282
	LTE Band 7/50RB#0 20M	Back Side	21100	22.04	23.00	1.247	0.222	0.277
Full Power (ANT5)								
	LTE Band 12/1RB#0 10M	Front Side	23095	23.08	24.00	1.236	0.127	0.157
67#	LTE Band 12/1RB#0 10M	Back Side	23095	23.08	24.00	1.236	0.158	0.195
	LTE Band 12/25RB#0 10M	Front Side	23095	22.03	23.00	1.250	0.107	0.134
	LTE Band 12/25RB#0 10M	Back Side	23095	22.03	23.00	1.250	0.114	0.143
Full Power (ANT5)								
	LTE Band 13/1RB#0 10M	Front Side	23230	23.13	24.00	1.222	0.117	0.143
68#	LTE Band 13/1RB#0 10M	Back Side	23230	23.13	24.00	1.222	0.137	0.167
	LTE Band 13/25RB#0 10M	Front Side	23230	22.10	23.00	1.230	0.096	0.118
	LTE Band 13/25RB#0 10M	Back Side	23230	22.10	23.00	1.230	0.098	0.121
Full Power (ANT5)								
	LTE Band 25/1RB#0 20M	Front Side	26365	23.07	24.00	1.239	0.256	0.317
69#	LTE Band 25/1RB#0 20M	Back Side	26365	23.07	24.00	1.239	0.460	0.570
	LTE Band 25/1RB#0 20M	Front Side	26365	22.06	23.00	1.242	0.189	0.235
	LTE Band 25/50RB#0 20M	Back Side	26365	22.06	23.00	1.242	0.256	0.318
Full Power (ANT5)								
	LTE Band 26/1RB#0 15M	Front Side	26865	23.13	24.00	1.222	0.081	0.099
70#	LTE Band 26/1RB#0 15M	Back Side	26865	23.13	24.00	1.222	0.106	0.130
	LTE Band 26/36RB#0 15M	Front Side	26865	22.10	23.00	1.230	0.068	0.084
	LTE Band 26/36RB#0 15M	Back Side	26865	22.10	23.00	1.230	0.078	0.096
Full Power (ANT3)								
	LTE Band 48/1RB#0 20M	Front Side	55990	23.06	24.00	1.242	0.075	0.093
71#	LTE Band 48/1RB#0 20M	Back Side	55990	23.06	24.00	1.242	0.139	0.173
	CA_48/1RB#0 20M	Back Side	56089	22.39	23.00	1.151	0.115	0.132
	LTE Band 48/50RB#0 20M	Front Side	56640	22.07	23.00	1.239	0.067	0.083
	LTE Band 48/50RB#0 20M	Back Side	56640	22.07	23.00	1.239	0.108	0.134

Full Power (ANT1)								
	LTE Band 66/1RB#0 20M	Front Side	132322	23.12	24.00	1.225	0.238	0.291
	LTE Band 66/1RB#0 20M	Back Side	132322	23.12	24.00	1.225	0.343	0.420
	LTE Band 66/50RB#0 20M	Front Side	132322	22.08	23.00	1.236	0.200	0.247
	LTE Band 66/50RB#0 20M	Back Side	132322	22.08	23.00	1.236	0.279	0.345
Full Power (ANT5)								
	LTE Band 66/1RB#0 20M	Front Side	132322	23.12	24.00	1.225	0.259	0.317
72#	LTE Band 66/1RB#0 20M	Back Side	132322	23.12	24.00	1.225	0.474	0.580
	CA_66/1RB#0 20M	Back Side	132521	22.33	23.00	1.167	0.441	0.515
	LTE Band 66/50RB#0 20M	Front Side	132322	22.08	23.00	1.236	0.211	0.261
	LTE Band 66/50RB#0 20M	Back Side	132322	22.08	23.00	1.236	0.298	0.368
Full Power (ANT5)								
	LTE Band 71/1RB#0 20M	Front Side	133322	23.95	25.00	1.274	0.141	0.180
73#	LTE Band 71/1RB#0 20M	Back Side	133322	23.95	25.00	1.274	0.169	0.215
	LTE Band 71/50RB#0 20M	Front Side	133322	22.94	24.00	1.276	0.106	0.135
	LTE Band 71/50RB#0 20M	Back Side	133322	22.94	24.00	1.276	0.128	0.163

➢ 5G NR DFT-S-QPSK Body-worn SAR

Plot No.	Band/Mode	Test Position	CH.	Ave. Power (dBm)	Tune-up Limit (dBm)	Tune-up Scaling Factor	Meas. SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
Full Power (Ant1)								
	5G NR n2/1RB#1 20M	Front Side	376000	22.95	24.00	1.274	0.196	0.250
74#	5G NR n2/1RB#1 20M	Back Side	376000	22.95	24.00	1.274	0.475	0.605
	5G NR n2/50RB#25 20M	Front Side	376000	22.69	23.50	1.205	0.188	0.227
	5G NR n2/50RB#25 20M	Back Side	376000	22.69	23.50	1.205	0.243	0.293
Full Power (Ant5)								
	5G NR n5/1RB#1 20M	Front Side	167300	23.44	24.00	1.138	0.081	0.092
75#	5G NR n5/1RB#1 20M	Back Side	167300	23.44	24.00	1.138	0.124	0.141
	5G NR n5/50RB#25 20M	Front Side	167300	23.21	24.00	1.199	0.044	0.053
	5G NR n5/50RB#25 20M	Back Side	167300	23.21	24.00	1.199	0.062	0.074
Full Power (Ant1)								
	5G NR n25/1RB#53 20M	Front Side	376500	22.58	23.50	1.236	0.177	0.219
76#	5G NR n25/1RB#53 20M	Back Side	376500	22.58	23.50	1.236	0.454	0.561
	5G NR n25/50RB#25 20M	Front Side	376500	22.54	23.50	1.247	0.114	0.142
	5G NR n25/50RB#25 20M	Back Side	376500	22.54	23.50	1.247	0.206	0.257
Full Power (Ant4) (PC2)								

	5G NR n41/1RB#136 100M	Front Side	518598	24.63	25.50	1.222	0.149	0.182
77#	5G NR n41/1RB#136 100M	Back Side	518598	24.63	25.50	1.222	0.273	0.334
	5G NR n41/137RB#67 100M	Front Side	518598	24.58	25.50	1.236	0.093	0.115
	5G NR n41/137RB#67 100M	Back Side	518598	24.58	25.50	1.236	0.174	0.215
Full Power (Ant4) (PC3)								
	5G NR n41/1RB#136 100M	Front Side	518598	21.61	22.50	1.227	0.104	0.128
	5G NR n41/1RB#136 100M	Back Side	518598	21.61	22.50	1.227	0.223	0.274
	5G NR n41/137RB#67 100M	Front Side	518598	21.55	22.50	1.245	0.085	0.106
	5G NR n41/137RB#67 100M	Back Side	518598	21.55	22.50	1.245	0.196	0.244
Full Power (Ant3)								
	5G NR n48/1RB#136 100M	Front Side	641666	22.13	23.00	1.222	0.154	0.188
78#	5G NR n48/1RB#136 100M	Back Side	641666	22.13	23.00	1.222	0.217	0.265
	5G NR n48/137RB#67 100M	Front Side	641666	21.98	23.00	1.265	0.098	0.124
	5G NR n48/137RB#67 100M	Back Side	641666	21.98	23.00	1.265	0.200	0.253
Full Power (Ant1)								
	5G NR n66/1RB#108 40M	Front Side	349000	22.94	24.00	1.276	0.149	0.190
79#	5G NR n66/1RB#108 40M	Back Side	349000	22.94	24.00	1.276	0.372	0.475
	5G NR n66/108RB#54 40M	Front Side	349000	22.90	24.00	1.288	0.123	0.158
	5G NR n66/108RB#54 40M	Back Side	349000	22.90	24.00	1.288	0.208	0.268
Full Power (Ant5)								
	5G NR n71/1RB#1 20M	Front Side	136100	23.15	24.00	1.216	0.049	0.060
80#	5G NR n71/1RB#1 20M	Back Side	136100	23.15	24.00	1.216	0.102	0.124
	5G NR n71/50RB#25 20M	Front Side	136100	23.10	24.00	1.230	0.036	0.044
	5G NR n71/50RB#25 20M	Back Side	136100	23.10	24.00	1.230	0.075	0.092
Full Power (Ant3) (PC2)								
	5G NR n77/1RB#136 100M	Front Side	633334	24.46	25.50	1.271	0.095	0.121
81#	5G NR n77/1RB#136 100M	Back Side	633334	24.46	25.50	1.271	0.172	0.219
	5G NR n77/135RB#1 100M	Front Side	633334	24.28	25.00	1.180	0.089	0.105
	5G NR n77/135RB#1 100M	Back Side	633334	24.28	25.00	1.180	0.180	0.212
Full Power (Ant3) (PC3)								
	5G NR n77/1RB#136 100M	Front Side	633334	20.98	22.00	1.265	0.074	0.094
	5G NR n77/1RB#136 100M	Back Side	633334	20.98	22.00	1.265	0.157	0.199
	5G NR n77/135RB#1 100M	Front Side	633334	20.91	22.00	1.285	0.065	0.084
	5G NR n77/135RB#1 100M	Back Side	633334	20.91	22.00	1.285	0.144	0.185
Full Power (Ant3) (PC2)								
	5G NR n77/1RB#136 100M	Front Side	656000	24.12	25.00	1.225	0.081	0.099
	5G NR n77/1RB#136 100M	Back Side	656000	24.12	25.00	1.225	0.171	0.209
	5G NR n77/135RB#1 100M	Front Side	656000	24.02	25.00	1.253	0.066	0.083

	5G NR n77/135RB#1 100M	Back Side	656000	24.02	25.00	1.253	0.161	0.202
Full Power (Ant3) (PC3)								
	5G NR n77/1RB#136 100M	Front Side	656000	21.14	22.00	1.219	0.081	0.099
	5G NR n77/1RB#136 100M	Back Side	656000	21.14	22.00	1.219	0.141	0.172
	5G NR n77/135RB#1 100M	Front Side	656000	21.09	22.00	1.233	0.064	0.079
	5G NR n77/135RB#1 100M	Back Side	656000	21.09	22.00	1.233	0.114	0.141

➢ **WLAN/BT Body-worn SAR**

Plot No.	Band/Mode	Test Position	CH.	Ave. Power (dBm)	Tune-up Limit (dBm)	Tune-up Scaling Factor	Meas. SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
Full Power (Ant7)								
	WLAN2.4GHz/802.11b	Front Side	6	20.18	20.50	1.076	0.071	0.077
82#	WLAN2.4GHz/802.11b	Back Side	6	20.18	20.50	1.076	0.174	0.188
Full Power (Ant0)								
	WLAN5.2GHz/802.11n40	Front Side	46	16.27	16.50	1.054	0.055	0.060
83#	WLAN5.2GHz/802.11n40	Back Side	46	16.27	16.50	1.054	0.139	0.151
Full Power (Ant0)								
	WLAN5.3GHz/802.11ac20	Front Side	52	16.44	17.00	1.138	0.061	0.070
84#	WLAN5.3GHz/802.11ac20	Back Side	52	16.44	17.00	1.138	0.139	0.161
Full Power (Ant0)								
	WLAN5.5GHz/802.11ac40	Front Side	142	17.10	17.50	1.096	0.049	0.055
85#	WLAN5.5GHz/802.11ac40	Back Side	142	17.10	17.50	1.096	0.178	0.201
Full Power (Ant0)								
	WLAN5.8GHz/802.11n20	Front Side	157	16.92	17.50	1.143	0.070	0.081
86#	WLAN5.8GHz/802.11n20	Back Side	157	16.92	17.50	1.143	0.169	0.196
Full Power (Ant7)								
	Bluetooth/DH5	Front Side	0	13.82	14.50	1.169	0.035	0.044
87#	Bluetooth/DH5	Back Side	0	13.82	14.50	1.169	0.060	0.076

Note:

1. The 2.4G WLAN reported 1g SAR (W/kg) should be scaled with the duty cycle scaling factor 1.003, 1.015 for WLAN 5.2GHz 802.11n-HT20, 1.030 for WLAN 5.8GHz 802.11n-HT40, 1.015 for WLAN 5.3GHz 802.11ac-VHT20, and 1.030 for WLAN 5.5GHz 802.11 ac-VHT40.
2. According to 2016 Oct. TCB workshop for Bluetooth SAR consideration and the theoretical duty cycle is 83.3%, therefore the actual duty cycle will be scaled up to the theoretical value of Bluetooth reported SAR calculation. The duty cycle of Bluetooth is 76.85 %, Therefore the duty cycle scaling factor 1.084 should be used to calculating the reported SAR.

19.5. Extremity SAR Assessment

➢ **General Guidance**

1. According to KDB 648474 D04v01r03 The UMPC mini-tablet procedures must also be applied to test the SAR of all surfaces and edges with an antenna located at ≤ 25 mm from that surface or edge, in direct contact with a flat phantom, for 10-g extremity SAR according to the body-equivalent tissue dielectric parameters in KDB Publication 865664 D01 to address interactive hand use exposure conditions.
2. When hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg; however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold per KDB 648474 D04v01r03.
3. According to the user manual, the EUT diagonal size is greater than 16 cm, therefore the 0 mm extremity SAR of WLAN 5GHz is required.

➢ **GSM Extremity SAR**

Plot No.	Band/Mode	Test Position	CH.	Ave. Power (dBm)	Tune-up Limit (dBm)	Tune-up Scaling Factor	Meas. SAR_{10g} (W/kg)	Reported SAR_{10g} (W/kg)
Full Power (Ant5)								
	GPRS 1900(4 TX slots)	Front Side	810	25.23	26.30	1.279	0.399	0.510
	GPRS 1900(4 TX slots)	Back Side	810	25.23	26.30	1.279	0.639	0.818
	GPRS 1900(4 TX slots)	Right Side	810	25.23	26.30	1.279	0.212	0.271
88#	GPRS 1900(4 TX slots)	Bottom Side	810	25.23	26.30	1.279	1.310	1.676

➢ **WCDMA Extremity SAR**

Plot No.	Band/Mode	Test Position	CH.	Ave. Power (dBm)	Tune-up Limit (dBm)	Tune-up Scaling Factor	Meas. SAR_{10g} (W/kg)	Reported SAR_{10g} (W/kg)
Reduced Power Level 3 (Ant5)								
	Band II/RMC 12.2Kbps	Front Side	9400	20.22	21.00	1.197	0.402	0.481
	Band II/RMC 12.2Kbps	Back Side	9400	20.22	21.00	1.197	0.605	0.724
	Band II/RMC 12.2Kbps	Right Side	9400	20.22	21.00	1.197	0.199	0.238
89#	Band II/RMC 12.2Kbps	Bottom Side	9400	20.22	21.00	1.197	1.140	1.364
Reduced Power Level 3 (Ant5)								
	Band IV/RMC 12.2Kbps	Front Side	1413	20.33	21.00	1.167	0.419	0.489
	Band IV/RMC 12.2Kbps	Back Side	1413	20.33	21.00	1.167	0.695	0.811
	Band IV/RMC 12.2Kbps	Right Side	1413	20.33	21.00	1.167	0.179	0.209
90#	Band IV/RMC 12.2Kbps	Bottom Side	1413	20.33	21.00	1.167	1.380	1.610

➢ **LTE QPSK Extremity SAR**

Plot No.	Band/Mode	Test Position	CH.	Ave. Power (dBm)	Tune-up Limit (dBm)	Tune-up Scaling Factor	Meas. SAR_{10g} (W/kg)	Reported SAR_{10g} (W/kg)
Reduced Power Level 3 (ANT1)								
	LTE Band 2/1RB#0 20M	Front Side	18900	18.96	20.00	1.271	0.395	0.502
	LTE Band 2/1RB#0 20M	Back Side	18900	18.96	20.00	1.271	0.967	1.229
	LTE Band 2/1RB#0 20M	Left Side	18900	18.96	20.00	1.271	0.020	0.025
	LTE Band 2/1RB#0 20M	Right Side	18900	18.96	20.00	1.271	0.064	0.082
91#	LTE Band 2/1RB#0 20M	Top Side	18900	18.96	20.00	1.271	1.500	1.906
	LTE Band 2/50RB#0 20M	Front Side	18900	17.92	19.00	1.282	0.316	0.405
	LTE Band 2/50RB#0 20M	Back Side	18900	17.92	19.00	1.282	0.651	0.835
	LTE Band 2/50RB#0 20M	Left Side	18900	17.92	19.00	1.282	0.015	0.019
	LTE Band 2/50RB#0 20M	Right Side	18900	17.92	19.00	1.282	0.049	0.063
	LTE Band 2/50RB#0 20M	Top Side	18900	17.92	19.00	1.282	0.419	0.538
Reduced Power Level 3 (ANT5)								
	LTE Band 2/1RB#0 20M	Front Side	18900	19.96	21.00	1.271	0.578	0.734
	LTE Band 2/1RB#0 20M	Back Side	18900	19.96	21.00	1.271	0.589	0.748
	LTE Band 2/1RB#0 20M	Right Side	18900	19.96	21.00	1.271	0.191	0.243
	LTE Band 2/1RB#0 20M	Bottom Side	18900	19.96	21.00	1.271	1.040	1.321
	LTE Band 2/1RB#0 20M	Front Side	18900	18.92	20.00	1.282	0.405	0.519
	LTE Band 2/50RB#0 20M	Back Side	18900	18.92	20.00	1.282	0.420	0.539
	LTE Band 2/50RB#0 20M	Right Side	18900	18.92	20.00	1.282	0.134	0.172
	LTE Band 2/50RB#0 20M	Bottom Side	18900	18.92	20.00	1.282	0.728	0.934
Reduced Power Level 3 (ANT5)								
	LTE Band 25/1RB#0 20M	Front Side	26365	21.07	22.00	1.239	0.524	0.649
	LTE Band 25/1RB#0 20M	Back Side	26365	21.07	22.00	1.239	0.574	0.711
	LTE Band 25/1RB#0 20M	Right Side	26365	21.07	22.00	1.239	0.402	0.498
92#	LTE Band 25/1RB#0 20M	Bottom Side	26365	21.07	22.00	1.239	1.070	1.326
	LTE Band 25/50RB#0 20M	Front Side	26365	20.06	21.00	1.242	0.367	0.456
	LTE Band 25/50RB#0 20M	Back Side	26365	20.06	21.00	1.242	0.402	0.499
	LTE Band 25/50RB#0 20M	Right Side	26365	20.06	20.06	1.000	0.319	0.319
	LTE Band 25/50RB#0 20M	Bottom Side	26365	20.06	20.06	1.000	0.749	0.749
Reduced Power Level 3 (ANT1)								
	LTE Band 66/1RB#0 20M	Front Side	132322	19.12	20.00	1.225	0.165	0.202
	LTE Band 66/1RB#0 20M	Back Side	132322	19.12	20.00	1.225	0.277	0.339
	LTE Band 66/1RB#0 20M	Left Side	132322	19.12	20.00	1.225	0.027	0.033
	LTE Band 66/1RB#0 20M	Right Side	132322	19.12	20.00	1.225	0.051	0.062
	LTE Band 66/1RB#0 20M	Top Side	132322	19.12	20.00	1.225	0.888	1.087

	LTE Band 66/50RB#0 20M	Front Side	132322	18.08	19.00	1.236	0.133	0.164
	LTE Band 66/50RB#0 20M	Back Side	132322	18.08	19.00	1.236	0.213	0.263
	LTE Band 66/50RB#0 20M	Left Side	132322	18.08	19.00	1.236	0.021	0.026
	LTE Band 66/50RB#0 20M	Right Side	132322	18.08	19.00	1.236	0.040	0.049
	LTE Band 66/50RB#0 20M	Top Side	132322	18.08	19.00	1.236	0.683	0.844
Reduced Power Level 3 (ANT5)								
	LTE Band 66/1RB#0 20M	Front Side	132322	20.12	21.00	1.225	1.040	1.274
	LTE Band 66/1RB#0 20M	Back Side	132322	20.12	21.00	1.225	0.648	0.794
	LTE Band 66/1RB#0 20M	Right Side	132322	20.12	21.00	1.225	0.355	0.435
93#	LTE Band 66/1RB#0 20M	Bottom Side	132322	20.12	21.00	1.225	1.330	1.629
	LTE Band 66/50RB#0 20M	Front Side	132322	19.08	20.00	1.236	0.728	0.900
	LTE Band 66/50RB#0 20M	Back Side	132322	19.08	20.00	1.236	0.454	0.561
	LTE Band 66/50RB#0 20M	Right Side	132322	19.08	20.00	1.236	0.249	0.308
	LTE Band 66/50RB#0 20M	Bottom Side	132322	19.08	20.00	1.236	1.300	1.607

➢ **5G NR DFT-S-QPSK Extremity SAR**

Plot No.	Band/Mode	Test Position	CH.	Ave. Power (dBm)	Tune-up Limit (dBm)	Tune-up Scaling Factor	Meas. SAR_{10g} (W/kg)	Reported SAR_{10g} (W/kg)
Reduced Power Level 3 (Ant1)								
94#	5G NR n2/1RB#1 20M	Front Side	376000	20.95	22.00	1.274	1.080	1.375
	5G NR n2/1RB#1 20M	Back Side	376000	20.95	22.00	1.274	0.849	1.081
	5G NR n2/1RB#1 20M	Left Side	376000	20.95	22.00	1.274	0.116	0.148
	5G NR n2/1RB#1 20M	Right Side	376000	20.95	22.00	1.274	0.164	0.209
	5G NR n2/1RB#1 20M	Top Side	376000	20.95	22.00	1.274	1.000	1.274
	5G NR n2/50RB#25 20M	Front Side	376000	20.69	21.50	1.205	0.914	1.101
	5G NR n2/50RB#25 20M	Back Side	376000	20.69	21.50	1.205	0.651	0.784
	5G NR n2/50RB#25 20M	Left Side	376000	20.69	21.50	1.205	0.080	0.096
	5G NR n2/50RB#25 20M	Right Side	376000	20.69	21.50	1.205	0.140	0.169
	5G NR n2/50RB#25 20M	Top Side	376000	20.69	21.50	1.205	0.783	0.944
Reduced Power Level 3 (Ant1)								
95#	5G NR n25/1RB#53 20M	Front Side	376500	21.08	22.00	1.236	1.000	1.236
	5G NR n25/1RB#53 20M	Back Side	376500	21.08	22.00	1.236	0.772	0.954
	5G NR n25/1RB#53 20M	Left Side	376500	21.08	22.00	1.236	0.101	0.125
	5G NR n25/1RB#53 20M	Right Side	376500	21.08	22.00	1.236	0.159	0.197
	5G NR n25/1RB#53 20M	Top Side	376500	21.08	22.00	1.236	0.908	1.122
	5G NR n25/50RB#25 20M	Front Side	376500	21.04	22.00	1.247	0.780	0.973
	5G NR n25/50RB#25 20M	Back Side	376500	21.04	22.00	1.247	0.594	0.741

	5G NR n25/50RB#25 20M	Left Side	376500	21.04	22.00	1.247	0.690	0.861
	5G NR n25/50RB#25 20M	Right Side	376500	21.04	22.00	1.247	0.127	0.158
	5G NR n25/50RB#25 20M	Top Side	376500	21.04	22.00	1.247	0.659	0.822
Reduced Power Level 3 (Ant4) (PC2)								
	5G NR n41/1RB#136 100M	Front Side	518598	22.13	23.00	1.222	0.659	0.805
96#	5G NR n41/1RB#136 100M	Back Side	518598	22.13	23.00	1.222	0.960	1.173
	5G NR n41/1RB#136 100M	Left Side	518598	22.13	23.00	1.222	0.839	1.025
	5G NR n41/1RB#136 100M	Bottom Side	518598	22.13	23.00	1.222	0.479	0.585
	5G NR n41/137RB#67 100M	Front Side	518598	22.08	23.00	1.236	0.585	0.723
	5G NR n41/137RB#67 100M	Back Side	518598	22.08	23.00	1.236	0.937	1.158
	5G NR n41/137RB#67 100M	Left Side	518598	22.08	23.00	1.236	0.818	1.011
	5G NR n41/137RB#67 100M	Bottom Side	518598	22.08	23.00	1.236	0.474	0.586
Reduced Power Level 3 (Ant1)								
97#	5G NR n66/1RB#108 40M	Front Side	349000	20.94	22.00	1.276	0.828	1.057
	5G NR n66/1RB#108 40M	Back Side	349000	20.94	22.00	1.276	0.644	0.822
	5G NR n66/1RB#108 40M	Left Side	349000	20.94	22.00	1.276	0.076	0.097
	5G NR n66/1RB#108 40M	Right Side	349000	20.94	22.00	1.276	0.094	0.120
	5G NR n66/1RB#108 40M	Top Side	349000	20.94	22.00	1.276	0.770	0.983
	5G NR n66/108RB#54 40M	Front Side	349000	20.90	22.00	1.288	0.681	0.877
	5G NR n66/108RB#54 40M	Back Side	349000	20.90	22.00	1.288	0.510	0.657
	5G NR n66/108RB#54 40M	Left Side	349000	20.90	22.00	1.288	0.060	0.077
	5G NR n66/108RB#54 40M	Right Side	349000	20.90	22.00	1.288	0.070	0.090
	5G NR n66/108RB#54 40M	Top Side	349000	20.90	22.00	1.288	0.788	1.015

19.6. Repeated SAR Assessment

➢ **General Note**

In accordance with published RF Exposure KDB procedure 865664 D01 SAR measurement 100 MHz to 6 GHz. These 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;
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.

➢ **Head Repeated SAR**

Plot No.	Band/Mode	Test Position	CH.	Ave. Power (dBm)	Tune-up Limit (dBm)	Tune-up Scaling Factor	Meas. SAR1g (W/kg)	Reported SAR1g (W/kg)
Reduced Power Level 1 (ANT3)								
OR.	LTE Band 48/1RB#0 20M	Left Cheek	56640	17.04	18.00	1.247	0.776	0.974
1st	LTE Band 48/1RB#0 20M	Left Cheek	56640	17.04	18.00	1.247	0.759	0.952

➢ **Hotspot Repeated SAR**

Plot No.	Band/Mode	Test Position	CH.	Ave. Power (dBm)	Tune-up Limit (dBm)	Tune-up Scaling Factor	Meas. SAR1g (W/kg)	Reported SAR1g (W/kg)
Reduced Power Level 2 (ANT5)								
OR.	GPRS 1900(4 TX slots)	Bottom Side	661	22.23	23.30	1.279	0.819	1.048
1st	GPRS 1900(4 TX slots)	Bottom Side	661	22.23	23.30	1.279	0.805	1.030
Reduced Power Level 2 (ANT5)								
OR.	LTE Band 2/50RB#0 20M	Bottom Side	18700	17.86	19.00	1.300	0.720	0.936
1st	LTE Band 2/50RB#0 20M	Bottom Side	18700	17.86	19.00	1.300	0.711	0.924

20. Simultaneous Transmission Evaluation

20.1. Simultaneous Transmission Consideration

No.	Simultaneous Transmission Consideration	Head	Body-Worn	Hotspot	Extremity
1	WWAN+WLAN 2.4GHz/5GHz	Yes	Yes	Yes	No
2	WWAN+Bluetooth	Yes	Yes	Yes	No

Note:

1. When the user enables the personal wireless router functions for the handset, actual operations include simultaneous transmission of the WWAN and WLAN transmitters. The "Portable Hotspot" feature on the handset was NOT activated, to ensure the SAR measurements were evaluated for a single transmission frequency RF signal.
2. The hotspot SAR result may overlap with the body-worn accessory SAR requirements, per KDB 941225 D06, the more conservative configurations can be considered, thus excluding some unnecessary body-worn accessory SAR tests.
3. Simultaneous Transmission SAR evaluation is not required for BT and WLAN 2.4GHz, because the software mechanism have been incorporated to guarantee that the WLAN 2.4GHz and Bluetooth transmitters would not simultaneously operate.
4. Per KDB 447498D01v06, simultaneous transmission SAR evaluation procedures is as followed:
   Step 1: If sum of 1 g SAR < 1.6 W/kg, Simultaneous SAR measurement is not required.
   Step 2: If sum of 1 g SAR > 1.6 W/kg, ratio of SAR to peak separation distance for pair of transmitters calculated.
   Step 3: If the ratio of SAR to peak separation distance is ≤ 0.04, Simultaneous SAR measurement is not required.
   Step 4: If the ratio of SAR to peak separation distance is > 0.04, Simultaneous SAR measurement is required and simultaneous transmission SAR value is calculated.
   (The ratio is determined by: $(SAR_1 + SAR_2)^{1.5} / R_i \leq 0.04$,
   Ri is the separation distance between the peak SAR locations for the antenna pair in mm.

20.2. Simultaneous Transmission Analysis

Remark: The simultaneous transmission data was recorded in annex F.

21. Uncertainty Assessment

According to KDB 865664 D01 SAR measurement 100 MHz to 6GHz, when the highest measured 1-g SAR is less than 1.5 W/kg and 10-g extremity SAR less than 3.75 W/kg, the expanded SAR measurement uncertainty must be less than 30% with a confidence interval of k=2. When these conditions are met, extensive SAR measurement uncertainty analysis described in IEEE 1528-2013 is not required in the SAR report and submitted for equipment approval. For this device, both the 1-g SAR is less than 1.5 W/kg. Therefore the measurement uncertainty table is not required in this report.

Annex A General Information

1. Identification of the Responsible Testing Laboratory

Laboratory Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Laboratory Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China
Telephone:	+86 755 36698555
Facsimile:	+86 755 36698525

2. Identification of the Responsible Testing Location

Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China

3. Facilities and Accreditations

The FCC designation number is CN1192, the test firm registration number is 226174.

Note：

The main report is end here and the other annex (B,C,D,E,F) will be submitted separately.

****** END OF MAIN REPORT ******