TEST REPORT

APPLICANT	:	Nubia Technology Co., Ltd.
PRODUCT NAME	:	5G Mobile Phone
MODEL NAME	:	NX666J
BRAND NAME	:	REDMAGIC
FCC ID	:	2AHJO-NX666J
STANDARD(S)	:	FCC 47 CFR Part 2(2.1093) IEEE 1528-2013
RECEIPT DATE	:	2021-03-15
TEST DATE	:	2021-03-23 to 2021-04-27
ISSUE DATE	:	2021-05-12

Edited by : Liang Yumei

Liang Yumei (Rapporteur)

Approved by:

Peng Huarui (Supervisor)

MORLAB

SHENZHEN MORLAB COMMUNICATIONS TECHNOLOGY Co., Ltd.
FL1-3, Building A, FeiYang Science Park, No.8 LongChang Road,
Block67, BaoAn District, ShenZhen , GuangDong Province, P. R. China

Tel: 86-755-36698555 Fax: 86-755-36698525
Http://www.morlab.cn E-mail: service@morlab.cn

DIRECTORY

Changed History		
Version	**Date**	**Reason for Change**
1.0	2021-05-06	First edition
2.0	2021-05-12	Updated the specification of power reduction method defined in section 16

1. SAR Results Summary

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

Frequency Band		Highest SAR Summary			
		Head (Gap 0mm)	Body-worn (Gap 10mm)	Hotspot (Gap 10mm)	Extremity (Gap 0mm)
		1g SAR (W/kg)			10g SAR (W/kg)
GSM	GSM850	0.718	0.717	0.717	N/A
	GSM1900	1.179	0.386	0.498	N/A
WCDMA	WCDMA Band II	1.070	0.846	1.090	2.980
	WCDMA Band IV	1.145	0.795	1.056	2.635
	WCDMA Band V	0.642	1.037	1.037	N/A
CDMA	CDMA BC0	0.303	0.983	0.983	N/A
	CDMA BC1	1.036	0.682	1.010	N/A
LTE	LTE Band 2	1.072	0.976	1.121	2.270
	LTE Band 4	1.167	0.874	1.189	N/A
	LTE Band 5	0.599	1.132	1.132	N/A
	LTE Band 7	1.111	0.885	0.932	N/A
	LTE Band 12/17	0.274	0.432	0.432	N/A
	LTE Band 18	0.543	0.787	0.787	N/A
	LTE Band 19	0.700	1.030	1.030	N/A
	LTE Band 26	0.557	0.869	0.869	N/A
	LTE Band 38	0.924	0.332	0.482	N/A
	LTE Band 40A	0.999	0.547	0.808	N/A
	LTE Band 40B	0.878	0.563	0.916	N/A
5G NR	n41	1.131	0.505	1.138	N/A
WLAN	2.4GHz WLAN	0.542	0.175	0.175	N/A
	5GHz WLAN	0.896	0.179	0.179	0.251
2.4GHz Band	Bluetooth (Estimated)	N/A	0.060	0.060	N/A

Max Scaled SAR_{1g} (W/Kg):	Head:	1.179 W/kg	Limit(W/kg): 1.6 W/kg
	Body-worn:	1.132 W/kg	
	Hotspot:	1.189 W/kg	
Max Scaled SAR_{10g} (W/Kg):	Extremity:	2.980 W/kg	Limit(W/kg): 4.0 W/kg

Highest Simultaneous Transmission SAR_{1g} (W/Kg):	1.589 W/kg	Limit(W/kg): 1.6 W/kg

Note:

1. This device is in compliance with Specific Absorption Rate (SAR) for general population or uncontrolled exposure limits (1.6W/kg as averaged over any 1 gram of tissue; specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-1992), and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528-2013 and FCC KDB publications.
2. When the test result is a critical value, we will use the measurement uncertainty give the judgment result based on the 95% risk level.

2. Technical Information

Note: Provide by applicant.

2.1. Applicant and Manufacturer Information

Applicant:	Nubia Technology Co., Ltd.
Applicant Address:	Room 1801, Building 2, Chongwen Park, Nanshan Zhiyuan, No.3370, Liuxian Rd, Nanshan District, Shenzhen City, Guangdong Province, P. R. China
Manufacturer:	Nubia Technology Co., Ltd.
Manufacturer Address:	Room 1801, Building 2, Chongwen Park, Nanshan Zhiyuan, No.3370, Liuxian Rd, Nanshan District, Shenzhen City, Guangdong Province, P. R. China

2.2. Equipment under Test (EUT) Description

Product Name:	5G Mobile Phone
IMEI:	864483050021131 864483050020984
Hardware Version:	NX666J_EUHW1.0
Software Version:	NX666J_ENCommon_V2.06
Frequency Bands:	GSM 850: 824 MHz ~ 849 MHz GSM 1900: 1850 MHz ~ 1910 MHz WCDMA Band II: 1850 MHz ~ 1910 MHz WCDMA Band IV: 1710 MHz ~ 1755 MHz WCDMA Band V: 824 MHz ~ 849 MHz CDMA BC 0: 824 MHz ~ 849 MHz CDMA BC 1: 1850 MHz ~ 1910 MHz LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 12: 699 MHz ~ 716 MHz LTE Band 17: 704 MHz ~ 716 MHz LTE Band 18: 815 MHz ~ 830 MHz LTE Band 19: 830 MHz ~ 845 MHz LTE Band 26: 814 MHz ~ 849 MHz LTE Band 38: 2570 MHz ~ 2620MHz LTE Band 40A: 2305 MHz ~ 2315 MHz LTE Band 40B: 2350 MHz ~ 2360 MHz

	5G NR n41: 2515 MHz ~ 2675 MHz WLAN 2.4GHz: 2412 MHz ~ 2462 MHz WLAN 5.2GHz: 5180 MHz ~ 5240 MHz WLAN 5.3GHz: 5260 MHz ~ 5320 MHz WLAN 5.8GHz: 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz NFC: 13.56 MHz	
Modulation Mode:	GSM/GPRS: GMSK EDGE: 8PSK WCDMA: QPSK, 16QAM CDMA2000 1XRTT: QPSK CDMA2000 1XEV-DO: QPSK LTE: QPSK, 16QAM, 64QAM 5G NR: DFT-s-OFDM/CP-OFDM, PI/2 BPSK QPSK, 16QAM, 64QAM, 256QAM 802.11b: DSSS 802.11a/g/n-HT20/HT40/ac-VHT20/40/80: OFDM 802.11ax-HEW20/40/80 : OFDMA BR+EDR: GFSK(1Mbps), π/4-DQPSK(2Mbps), 8-DPSK(3Mbps) Bluetooth LE: GFSK(1Mbps/2Mbps) NFC: ASK	
Multi-slot Class:	GPRS: Multi-slot Class 33 EDGE: Multi-slot Class 33	
Operation Class:	Class B	
Carrier Aggregation:	Downlink	
Hotspot Mode:	Support (5G WLAN only for B1 & B4)	
WLAN MIMO:	Support	
Antenna Type:	WWAN: Fixed Internal Antenna WLAN: PIFA Antenna Bluetooth: PIFA Antenna NFC: Loop Antenna	
Battery:	Manufacturer:	Dongguan Amperex Technology Limited
	Model Name:	Li3941T44PGh836548
	Capacity:	4100mAh
	Rated Voltage:	3.87V
RAM :	12G+256G	
SIM Cards Description:	SIM 1	GSM+WCDMA+LTE+5G NR
	SIM 2	GSM+WCDMA+LTE+5G NR
	For dual SIM card version, both SIM 1 and SIM 2 share the same chipset unit and tested as a single chipset, the SIM 1 was selected	

	for testing.

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 %
Air Pressure:	980-1020 hPa

Test Frequency:	GSM 850MHz/1900MHz WCDMA Band II/IV/V CDMA BC 0/1 FDD-LTE Band 2/4/5/12/17/18/19/26 TDD-LTE Band 38/40A/40B 5G NR n41 WLAN 2.4GHz WLAN 5GHz
Operation Mode:	Call established
Power Level:	GSM 850 MHz (Maximum output power(level 5) GSM 1900MHz (Maximum output power(level 0) WCDMA Band II/IV/V (All Up Bits) CDMA BC 0/1 (All Up Bits) FDD-LTE Band 2/4/5/12/17/18/19/26 (Maximum output power) TDD-LTE Band 38/40A/40B (Maximum output power) 5G NR n41 (Maximum output power) WLAN 2.4GHz WLAN 5GHz

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.

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.

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.

5. Applied Reference Documents

Leading reference documents for testing:

Identity	Document Title	Method Determination /Remark
FCC 47CFR Part 2(2.1093)	Radio Frequency Radiation Exposure Evaluation: Portable Devices	No deviation
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	No deviation
KDB 447498 D01v06	General RF Exposure Guidance	No deviation
KDB 248227 D01v02r02	SAR Measurement Procedures for 802.11 Transmitters	No deviation
KDB 865664 D01v01r04	SAR Measurement 100 MHz to 6 GHz	No deviation
KDB 865664 D02v01r02	RF Exposure Reporting	No deviation
KDB 648474 D04v01r03	Handset SAR	No deviation
KDB 941225 D01v03r01	3G SAR MEAUREMENT PROCEDURES	No deviation
KDB 941225 D05v02r05	SAR Evaluation Consideration for LTE Devices	No deviation
KDB 941225 D06v02r01	SAR Evaluation Procedures For Portable Devices With Wireless Router Capabilities	No deviation
Note 1: The test item is not applicable. **Note 2:** Additions to, deviation, or exclusions from the method shall be judged in the "method determination" column of add, deviate or exclude from the specific method shall be explained in the "Remark" of the above table.		

6. SAR Measurement System

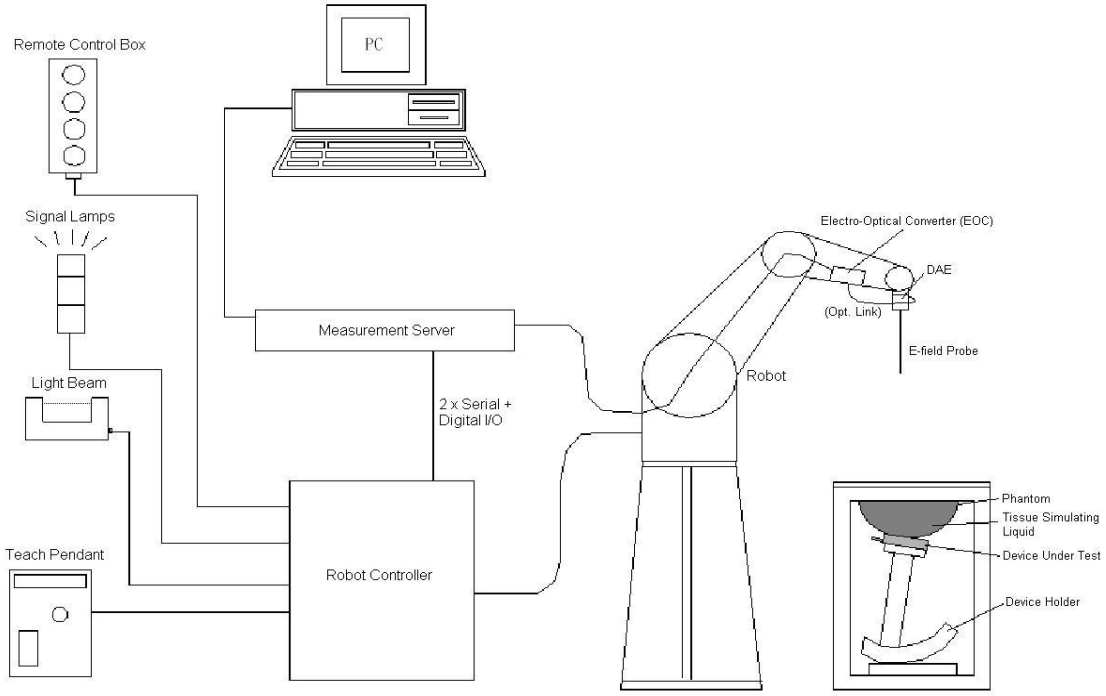


Fig 6.1 SPEAG DASY System Configurations

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

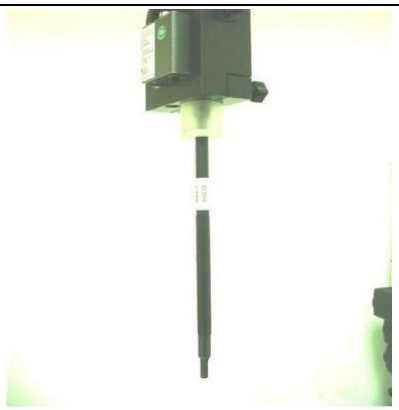
- A standard high precision 6-axis robot with controller, a teach pendant and software.
- A data acquisition electronic (DAE) attached to the robot arm extension.
- A dosimetric probe equipped with an optical surface detector system.
- The electro-optical converter (ECO) performs the conversion between 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)	 **Fig 6.2 Photo of ES3DV3**
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	

<EX3DV4 Probe>

Construction	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)	 **Fig 6.3 Photo of EX3DV4**
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	

➢ **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 appendix C 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 bit 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

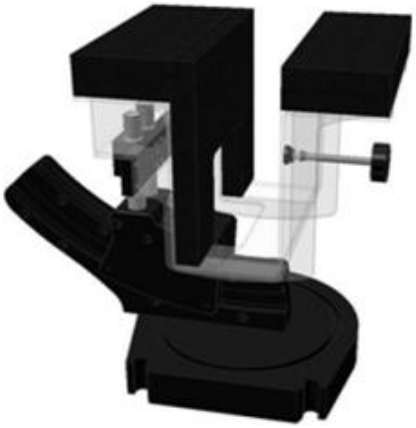


Fig 6.10 Laptop Extension Kit

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:

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

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

With V_i = compensated signal of channel i, (i = x, y, z)
$Norm_i$ = sensor sensitivity of channel i, (i = x, y, z), μV/(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 Number	Calibration	
				Last Cal.	Due Date
SPEAG	750MHz System Validation Kit	D750V3	1173	2018.06.21	2021.06.20
SPEAG	835MHz System Validation Kit	D835V2	4d227	2018.06.22	2021.06.21
SPEAG	1750MHz System Validation Kit	D1750V2	1160	2018.06.25	2021.06.24
SPEAG	1900MHz System Validation Kit	D1900V2	5d221	2018.06.22	2021.06.21
SPEAG	2300MHz System Validation Kit	D2300V2	1107	2020.06.03	2021.06.02
SPEAG	2450MHz System Validation Kit	D2450V2	805	2018.10.26	2021.10.25
SPEAG	2600MHz System Validation Kit	D2600V2	1139	2018.06.25	2021.06.24
SPEAG	5000MHz System Validation Kit	D5GHzV2	1176	2018.11.06	2021.11.05
SPEAG	Dosimetric E-Field Probe	EX3DV4	7608	2020.11.27	2021.11.26
SPEAG	Dosimetric E-Field Probe	EX3DV4	3823	2021.01.22	2022.01.21
SPEAG	Data Acquisition Electronics	DAE4	480	2020.06.02	2021.06.01
SPEAG	Dielectric Assessment KIT	DAK-3.5	1279	2020.11.03	2021.11.02
SPEAG	SAM Twin Phantom 2	QD 000 P40 CB	TP-1464	NCR	NCR
SPEAG	Phone Positioner	N/A	N/A	NCR	NCR
R&S	Network Emulator	CMW500	165755	2021.02.25	2022.02.24
Agilent	Network Analyzer	E5071B	MY42404762	2021.03.29	2022.03.28
mini-circuits	Amplifier	ZHL-42W+	608501717	NCR	NCR
mini-circuits	Amplifier	ZVE-8G+	754401735	NCR	NCR
Agilent	Signal Generator	N5182B	MY53050509	2021.03.25	2022.03.24
Agilent	Power Senor	N8482A	MY41090849	2020.10.19	2021.10.18
Agilent	Power Meter	E4416A	MY45102093	2020.10.19	2021.10.18
Anritsu	Power Sensor	MA2411B	N/A	2020.10.19	2021.10.18
Anritsu	Power Meter	NRVD	101066	2020.10.19	2021.10.18
Agilent	Dual Directional Coupler	778D	50422	NA	NA
MCL	Attenuation	351-218-010	N/A	NA	NA
KTJ	Thermo meter	TA298	N/A	2021.01.15	2022.01.14
N/A	Tissue Simulating Liquids	700-6000MHz	N/A	24H	

Note:

1. The calibration certificate of DASY can be referred to appendix E 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 1W input power according to the ratio of1W 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 15cm.For head SAR testing, the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15cm. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15cm, 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.Thenominaldielectricvaluesofthe tissue simulating liquids in the phantom and the tolerance of 5%are listed in below table.

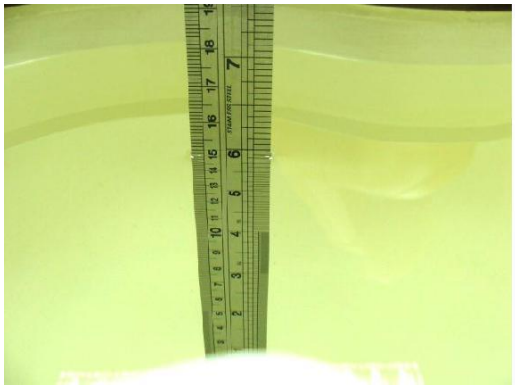


Fig 7.1 Photo of Liquid Height for Head SAR

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	0.894	0.89	0.45	±5	2021.03.23
835	HSL	22.2	0.912	0.90	1.33	±5	2021.03.27
835	HSL	22.3	0.923	0.90	2.56	±5	2021.03.30
1750	HSL	22.2	1.360	1.37	-0.73	±5	2021.04.01
1750	HSL	22.1	1.412	1.37	3.07	±5	2021.04.03
1900	HSL	22.2	1.426	1.40	1.86	±5	2021.04.06
1900	HSL	22.3	1.383	1.40	-1.21	±5	2021.04.24
2300	HSL	22.1	1.692	1.67	1.32	±5	2021.04.10
2300	HSL	22.2	1.633	1.67	-2.22	±5	2021.04.12
2450	HSL	22.2	1.832	1.80	1.78	±5	2021.04.13
2600	HSL	22.3	1.972	1.96	0.61	±5	2021.04.20
2600	HSL	22.2	1.923	1.96	-1.89	±5	2021.04.27
5250	HSL	22.3	3.086	3.05	1.18	±5	2021.04.16
5250	HSL	22.2	3.122	3.05	2.36	±5	2021.04.17
5750	HSL	22.1	3.422	3.34	2.46	±5	2021.04.18
5750	HSL	22.1	3.352	3.34	0.36	±5	2021.04.21
Frequency (MHz)	**Tissue Type**	**Liquid Temp.(℃)**	**Permittivity (εr)**	**Permittivity Target (εr)**	**Delta (εr) (%)**	**Limit (%)**	**Date**
750	HSL	22.1	40.830	41.90	-2.55	±5	2021.03.23
835	HSL	22.2	41.241	41.50	-0.62	±5	2021.03.27
835	HSL	22.3	41.182	41.50	-0.77	±5	2021.03.30
1750	HSL	22.2	39.250	40.10	-2.12	±5	2021.04.01
1750	HSL	22.1	39.322	40.10	-1.94	±5	2021.04.03
1900	HSL	22.2	39.852	40.00	-0.37	±5	2021.04.06
1900	HSL	22.3	40.263	40.00	0.66	±5	2021.04.24
2300	HSL	22.1	39.235	39.50	-0.67	±5	2021.04.10
2300	HSL	22.2	39.422	39.50	-0.20	±5	2021.04.12
2450	HSL	22.2	38.922	39.20	-0.71	±5	2021.04.13
2600	HSL	22.3	38.923	39.00	-0.20	±5	2021.04.20
2600	HSL	22.2	39.153	39.00	0.39	±5	2021.04.27

5250	HSL	22.3	37.533	37.70	-0.44	±5	2021.04.16
5250	HSL	22.2	37.624	37.70	-0.20	±5	2021.04.17
5750	HSL	22.1	36.892	37.00	-0.29	±5	2021.04.18
5750	HSL	22.1	37.211	37.00	0.57	±5	2021.04.21

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 24 dBm (250 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

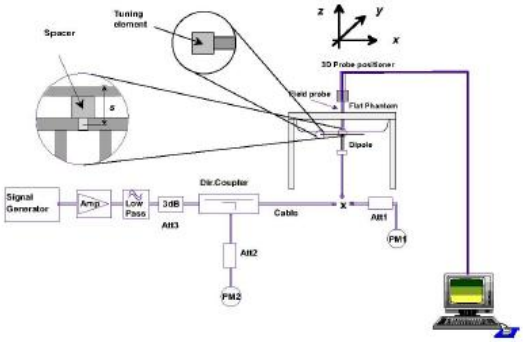


Fig 8.2 System Setup for System Evaluation

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)	Tissue Type	Input Power(mW)	Dipole S/N	Probe S/N	DAE S/N
750	HSL	250	D750V3-1173	7608	480
835	HSL	250	D835V2-4d227	3823	480
1750	HSL	250	D1750V2-1160	3823	480
1900	HSL	250	D1900V2_5d221	3823	480
2300	HSL	250	D2450V2-805	3823	480
2450	HSL	250	D2450V2-805	3823	480
2600	HSL	250	D2600V2-1139	3823	480
5250	HSL	100	D5GHzV2-1176-5750	3823	480
5600	HSL	100	D5GHzV2-1176-5600	3823	480
5750	HSL	100	D5GHzV2-1176-5750	3823	480

<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
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
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	Input Power (mW)	Measured 1g SAR (W/kg)	Targeted 1g SAR (W/kg)	Normalized 1g SAR (W/kg)	Deviation (%)
2021.03.23	750	HSL	250	2.04	8.26	8.16	-1.21
2021.03.27	835	HSL	250	2.31	9.34	9.24	-1.07
2021.03.30	835	HSL	250	2.35	9.34	9.4	0.64
2021.04.01	1750	HSL	250	9.35	37.10	37.4	0.81
2021.04.03	1750	HSL	250	9.41	37.10	37.64	1.46
2021.04.06	1900	HSL	250	10.26	39.50	41.04	3.90
2021.04.24	1900	HSL	250	10.21	39.50	40.84	3.39
2021.04.10	2300	HSL	250	12.56	48.40	50.24	3.80
2021.04.12	2300	HSL	250	12.53	48.40	50.12	3.55
2021.04.13	2450	HSL	250	13.62	52.00	54.48	4.77
2021.04.20	2600	HSL	250	13.83	54.00	55.304	2.41
2021.04.27	2600	HSL	250	13.66	54.00	54.648	1.20
2021.04.16	5250	HSL	100	7.96	78.90	79.6	0.89
2021.04.17	5250	HSL	100	8.04	78.90	80.4	1.90
2021.04.18	5750	HSL	100	8.13	80.00	81.3	1.63
2021.04.21	5750	HSL	100	8.06	80.00	80.6	0.75

Date	Frequency (MHz)	Tissue Type	Input Power (mW)	Measured 10g SAR (W/kg)	Targeted 10g SAR (W/kg)	Normalized 10g SAR (W/kg)	Deviation (%)
2021.03.23	750	HSL	250	1.37	5.45	5.48	0.55
2021.03.27	835	HSL	250	1.49	6.07	5.96	-1.81
2021.03.30	835	HSL	250	1.52	6.07	6.08	0.16
2021.04.01	1750	HSL	250	5.12	20.00	20.48	2.40
2021.04.03	1750	HSL	250	5.21	20.00	20.84	4.20
2021.04.06	1900	HSL	250	5.23	20.60	20.92	1.55
2021.04.24	1900	HSL	250	5.32	20.60	21.28	3.30
2021.04.10	2300	HSL	250	5.97	23.00	23.88	3.83
2021.04.12	2300	HSL	250	5.93	23.00	23.72	3.13
2021.04.13	2450	HSL	250	6.19	24.10	24.76	2.74
2021.04.20	2600	HSL	250	6.06	24.50	24.24	-1.06
2021.04.27	2600	HSL	250	6.23	24.50	24.92	1.71
2021.04.16	5250	HSL	100	2.29	22.50	22.9	1.78
2021.04.17	5250	HSL	100	2.18	22.50	21.8	-3.11
2021.04.18	5750	HSL	100	2.32	22.60	23.2	2.65
2021.04.21	5750	HSL	100	2.26	22.60	22.6	0.00

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

9. EUT Testing Position

This EUT was tested in six different positions. They are right cheek/right tilted/left cheek/left tilted for head, Front/Back of the EUT with phantom 10 mm gap, as illustrated below, please refer to Appendix 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

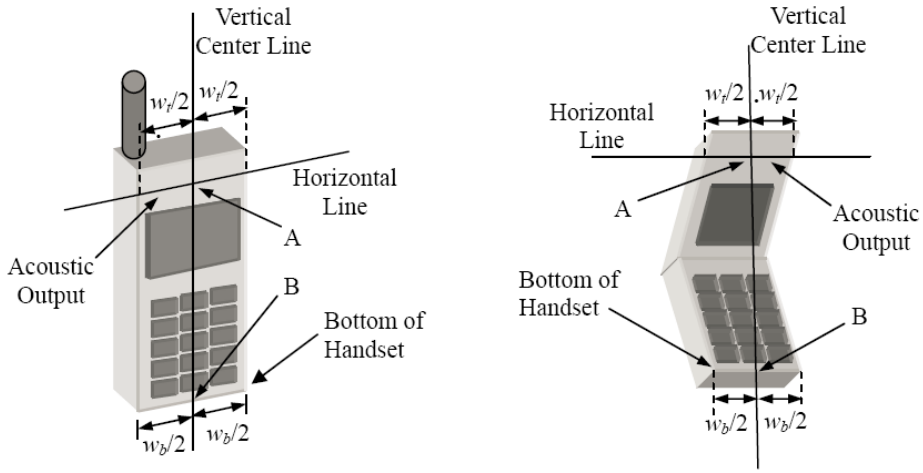


Fig. 9.2 Illustration for Handset Vertical and Horizontal Reference Lines

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)

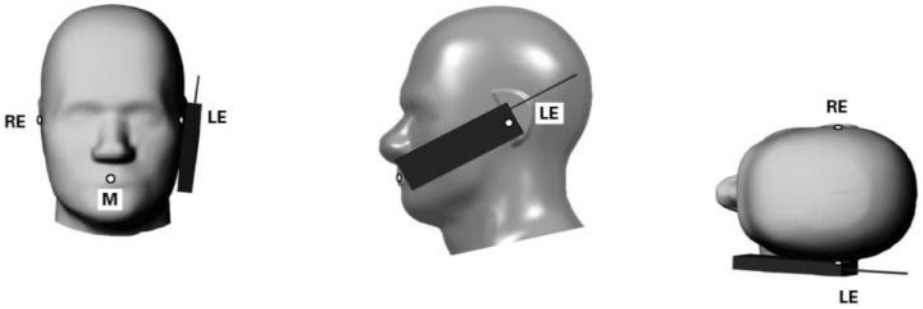


Fig 9.3 Illustration for Cheek Position

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).

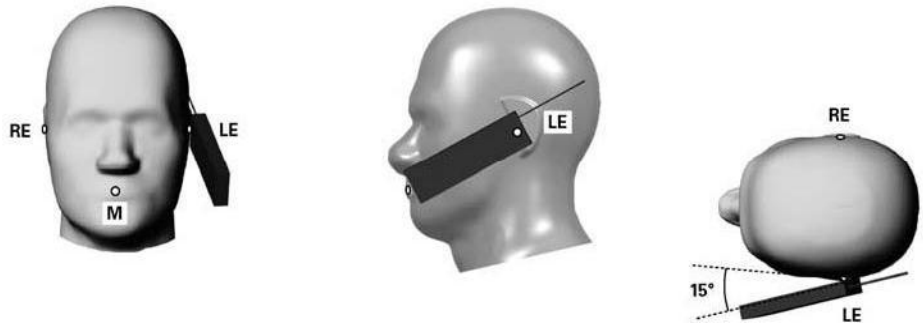


Fig 9.4 Illustration for Tilted Position

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.

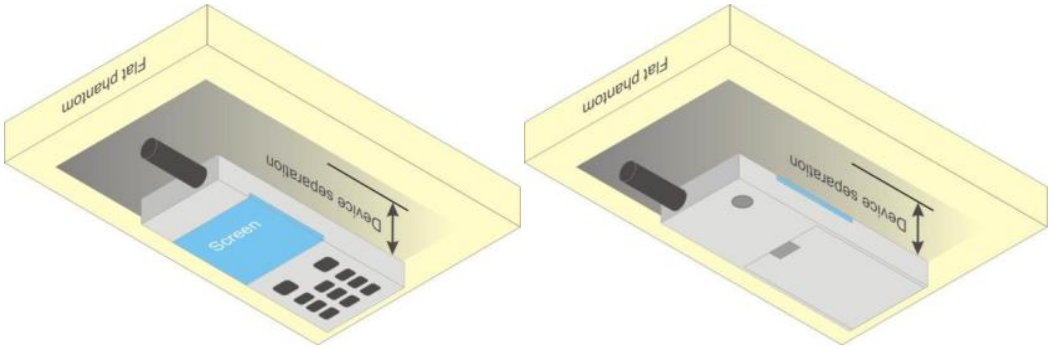


Fig 9.5 Illustration for Body Worn Position

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).

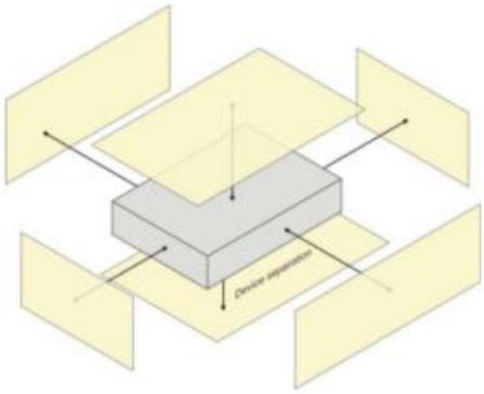


Fig 9.6 Illustration for Hotspot Position

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 Appendix D demonstrates.

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

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

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

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

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

(a) Power reference measurement.

(b) Area scan.

(c) Zoom scan.

(d) Power drift measurement.

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 1g and 10g, as well as for user-specific masses. The DASY software includes all numerical procedures necessary to evaluate the spatial peak SAR value.

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

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

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

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 a10mm² step integral, with 1mm 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 IEEE1528-2003.

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/m³ 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 1g cube is 10mm, with the side

length of the 10 g cube 21,5mm.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 5x5x7 (8mmx8mmx5mm) providing a volume of 32mm in the X & Y axis, and 30mm 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 16mm * 8 to16 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 1mm 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 dimensional 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 2.5cm 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 are 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 method 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:	1Up4Down	2Up3Down	3Up2Down	4Up1Down
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.		

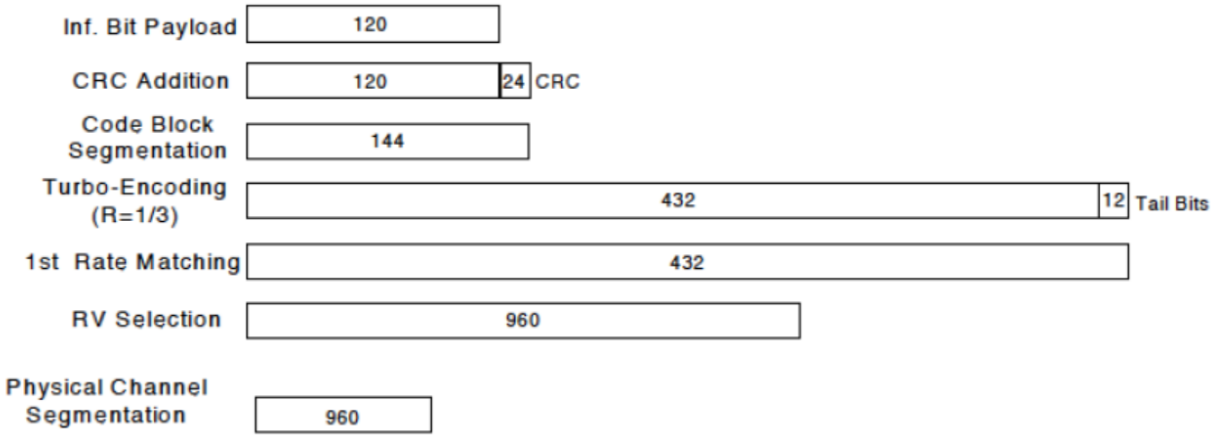


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

<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	3.0	5	10	15	20	Target	MPR
	MHz	MHz	MHz	MHz	MHz	MHz	(dB)	(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 0.5dBmeasurement tolerance

LTE Bands

LTE Bands	Channel bandwidth / Transmission bandwidth configuration [RB]					
	1.4	3.0	5	10	15	20
	MHz	MHz	MHz	MHz	MHz	MHz
2	√	√	√	√	√	√
4	√	√	√	√	√	√
5	√	√	√	√	N/A	N/A
12	N/A	N/A	√	√	N/A	N/A
17	N/A	N/A	√	√	N/A	N/A
18	N/A	N/A	√	√	√	N/A
19	N/A	N/A	√	√	√	N/A
26	√	√	√	√	√	N/A
38	N/A	N/A	√	√	√	√
40A	√	√	√	√	N/A	N/A
40B	N/A	N/A	√	√	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 refers to the annex E of this report.

14. LTE Carrier Aggregation

14.1. 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	2X2 MIMO	Restriction	Completely Covered by Measurement Superset
1	CA_2A-2A	2A	-	No
2	CA_4A-4A	4A	-	No
3	CA_5A-5A	5A	-	No

➢ **LTE Downlink Carrier Aggregation Conducted Power**

1. According to KDB941225 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.

15. 5G NR EN-DC Consideration

➢ **General Guidance**

1. It is only limited to operate at EN-DC (NSA) 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 uplink 1-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**

5G-NR	EN-DC Combination	LTE Uplink	5G-NR Uplink	SCS (kHz)	Maximum Bandwidth (MHz)
TDD	2A-n41	2A	n41	30	100
TDD	2C-n41	2C	n41	30	100

➢ **Maximum Power for EN-DC**

EN-DC Configuration	LTE Signal Carrier				5G NR		
	Band	BW (MHz)	Maximum Power(dBm)		Band	BW (MHz)	Maximum Power(dBm)
			Standalone	EN-DC Active			EN-DC Active
EN-DC_2A-n41	2	20	25.0	25.0	n41	100	26.0
EN-DC_2C-n41	2	20	25.0	24.5	n41	100	26.0

Note：The total power of EN-DC refers to SZ21020185W12.

16. Hotspot Mode Evaluation Procedure

➢ **EUT Antenna Location**

The Antenna Location in Annex B.
Antenna supports TX bands: ANT 1: GSM 850, UMTS Band V, CDMA BC 0, LTE Band 5/12/17/18/19/26; ANT 2: GSM1900, WCDMA Band 2/4, CDMA BC 1, LTE Band 2/4/7/38/40A/40B; ANT 4: GSM1900, WCDMA Band 2/4, CDMA BC 1, LTE Band 2/4/7/38/40A/40B; ANT 5: 5G n41; ANT 6: 5G n41; ANT 8: WLAN 2.4GHz CH0/WLAN 5GHz CH0/Bluetooth; ANT 9: WLAN 2.4GHz CH1; ANT 10: WLAN 5GHz CH1;

➢ **Power reduction work principle:**

1. While the device WWAN is transmitting at the WCDMA Band II/IV, CDMA BC1, LTE Band 2/4/7/40A/40B, 5G NR N41 top antenna and 5G NR N41 bottom antenna and the audio is actively routed through the earpiece receiver, the receiver is on and the power reduction applies.
2. The selection between head and body power levels is based on an audio receiver detection mechanism. The audio receiver is used to determining head or body scenario.

Remark:

1. This device has WWAN top and bottom transmitter antennas which can refer to antenna location chapter.
2. The device is capable of switching between the top antenna and bottom antenna based on signal strength.
3. For WWAN transmitter (4 sets of power reduction levels).

a) Head exposure conditions:

Reduced power level 1

While the device WWAN is transmitting at the WWAN top antenna during non ENDC (LTE band 2 and 5G NR n41 double connection), and the audio is actively routed through the earpiece receiver, and the receiver is on which indicating the next-to-head condition, power reduction enabled for those bands.

Reduced power level 2

While the device WWAN is transmitting at the WWAN top antenna, during ENDC (LTE band 2 and 5G NR n41 double connection), and the audio is actively routed through the earpiece receiver, and the receiver is on which indicating the next-to-head condition, power reduction enabled for those bands.

b) Body exposure condition:

Reduced power level 1

While the device is transmitting at the WWAN bottom antenna during non ENDC (LTE band 2 and 5G NR n41 double connection) and when the device turns on the hotspot, WCDMA Band II/IV, LTE Band 4 will be reduced power.

Reduced power level 2

While the device is transmitting at the WWAN bottom antenna, during ENDC mode, the LTE band 2 and 5G NR n41 will be reduced power.

➢ **EUT Antenna Distance**

Antenna Location	Front	Back	Left	Right	Top	Bottom
ANT 1 Antenna	＜5mm	＜5mm	＜5mm	＞25mm	166mm	＜5mm
ANT 2 Antenna	＜5mm	＜5mm	＜5mm	＜25mm	139mm	＜5mm
ANT 4 Antenna	＜5mm	＜5mm	＜5mm	＞25mm	＜5mm	157mm
ANT 5 Antenna	＜5mm	＜5mm	＜5mm	＞25mm	＜5mm	150mm
ANT 6 Antenna	＜5mm	＜5mm	＜5mm	＞25mm	＜5mm	160mm
ANT 7 Antenna	＜5mm	＜5mm	＞25mm	＜5mm	＜5mm	157mm
ANT 8 Antenna	＜5mm	＜5mm	＞25mm	＜5mm	＜5mm	157mm
ANT 9 Antenna	＜5mm	＜5mm	＞25mm	＜5mm	＜25mm	140mm
ANT 10 Antenna	＜5mm	＜5mm	＞25mm	＜25mm	＜5mm	160mm

➢ **Hotspot Evaluation**

Assessment	Hotspot side for SAR Test distance: 10mm					
Antennas	Front	Back	Left	Right	Top	Bottom
ANT 1	Yes	Yes	Yes	No	No	Yes
ANT 2	Yes	Yes	Yes	Yes	No	Yes
ANT 3	Yes	Yes	Yes	Yes	Yes	No
ANT 4	Yes	Yes	Yes	No	Yes	No
ANT 5	Yes	Yes	Yes	No	Yes	No
ANT 6	Yes	Yes	Yes	No	Yes	No
ANT 7	No	No	No	No	No	No
ANT 8	Yes	Yes	No	Yes	Yes	No
ANT 9	Yes	Yes	No	Yes	Yes	No
ANT 10	Yes	Yes	No	Yes	Yes	No

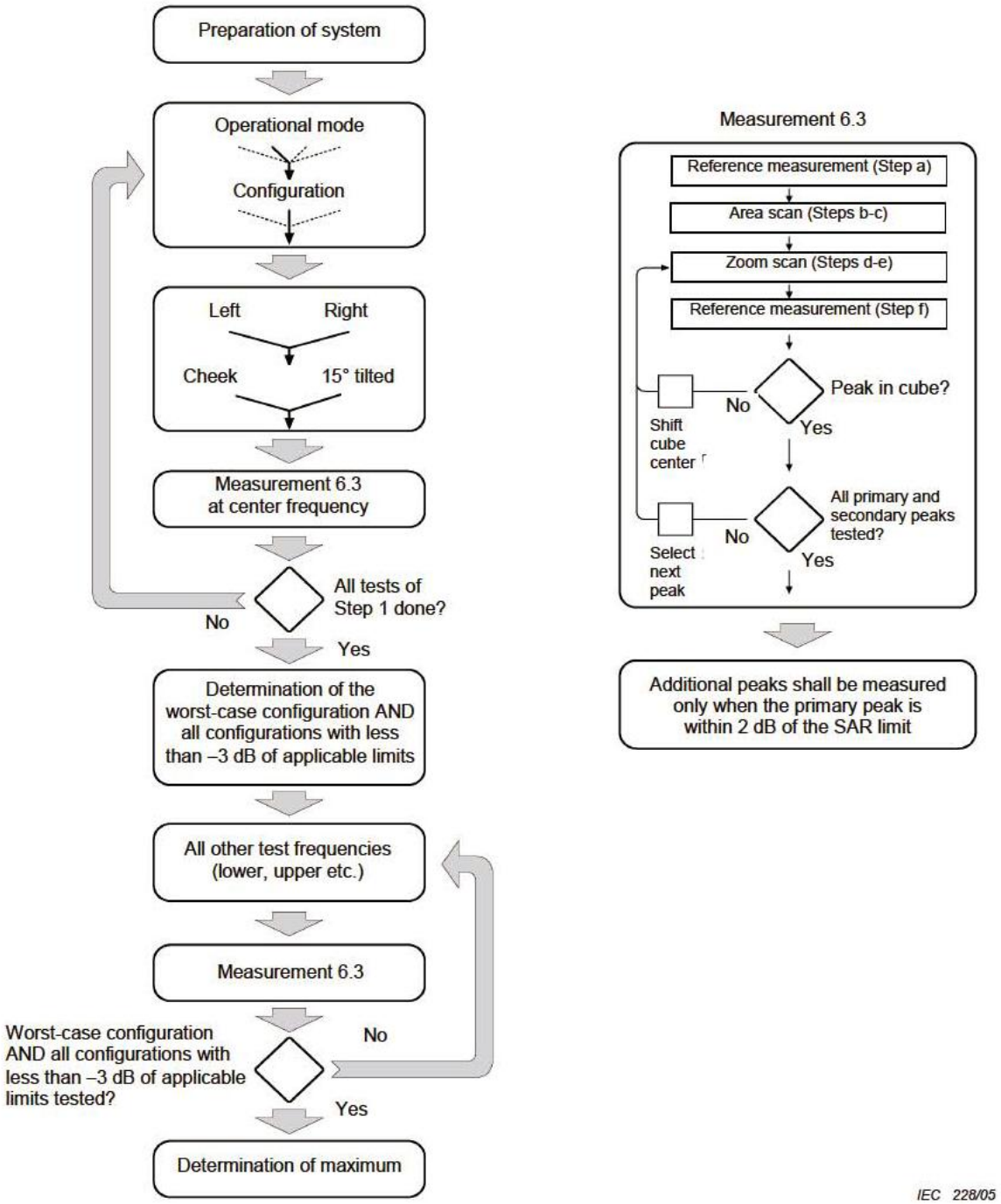
Note :

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.

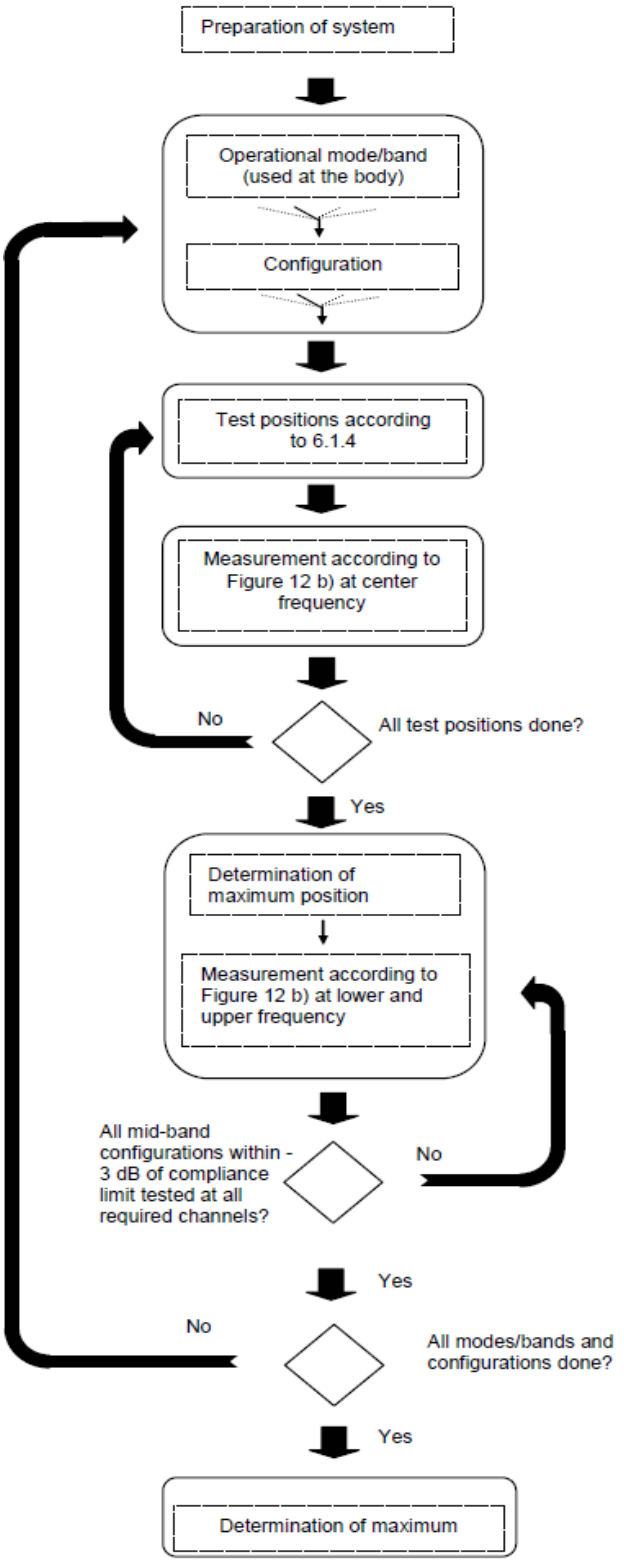
3. Referring to KDB 941225 D06, when the overall device length and width are ≥ 9cm*5cm, the test distance is 10 mm. SAR must be measured for all sides and surfaces with a transmitting antenna located within 25mm from that surface or edge.
4. For WWAN antennas, all of the surfaces or edges will be tested except the bottom side though they are greater than 25mm between the antennas and surfaces or edges in this report.

17. Block Diagram of the Tests to be Performed

17.1. Head



17.2. Body



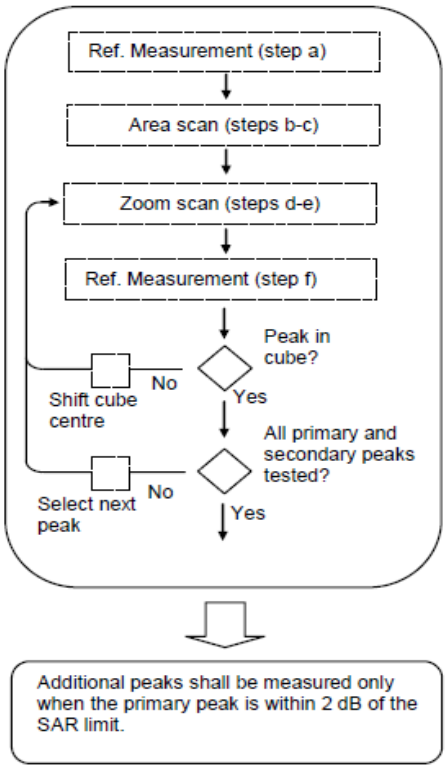


Figure 12b – General procedure

18. Test Results List

18.1. 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 EUT respectively defined the top and bottom antenna maximum power in the software. The top and bottom antenna will switch automatically according to the receiver signal strength and maximum transmission power level.
8. For CA intra-band uplink, SAR measurement was performed at the worst condition of standalone carrier, and it was performed separately for CA inter-band uplink according to the TCB workshop publication in October 2018.
9. The 5G NR SAR measurement procedure should be followed the TCB workshop publication in October 2020:
   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 uplink 1-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.
10. 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.
11. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required when the measured SAR is ≥ 0.8W/kg.
12. 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.
13. 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 ≤ 0.8 W/kg, no further SAR testing is required in that exposure configuration.

14. 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 ≤ 1.2 W/kg.
15. According to KDB 865664 D02v01r02, SAR plot is required for the highest measured SAR in each exposure configuration, wireless mode and frequency band combination.
16. The WLAN Reported 1g SAR (W/kg) has been calculated together with the duty cycle scaling factor 1.0 for 2.4G WLAN, 1.009 for 5G WLAN 802.11ax-20, 1.007 for 5G WLAN 802.11802.11n-40 and 1.039 for Bluetooth.
17. According to the report (Report No. SZ21020185W06), the maximum E-field level at 3m which was converted to EIRP is closed to zero, therefore it is not required for RF exposure.

18.2. Head SAR Data

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)
Ant 1 (Full Power)								
1#	GPRS 850(4 TX slots)	Right Cheek	189	27.92	28.50	1.143	0.628	0.718
	GPRS 850(4 TX slots)	Right Tilt	189	27.92	28.50	1.143	0.243	0.278
	GPRS 850(4 TX slots)	Left Cheek	189	27.92	28.50	1.143	0.204	0.233
	GPRS 850(4 TX slots)	Left Tilt	189	27.92	28.50	1.143	0.141	0.161
Ant 4 (Full Power)								
	GPRS 1900(3 TX slots)	Right Cheek	661	24.47	25.00	1.130	1.020	1.152
	GPRS 1900(3 TX slots)	Right Tilt	661	24.47	25.00	1.130	0.854	0.965
	GPRS 1900(3 TX slots)	Left Cheek	661	24.47	25.00	1.130	0.537	0.607
	GPRS 1900(3 TX slots)	Left Tilt	661	24.47	25.00	1.130	0.761	0.860
2#	GPRS 1900(3 TX slots)	Right Cheek	512	24.10	25.00	1.230	0.958	1.179
	GPRS 1900(3 TX slots)	Right Cheek	810	24.44	25.00	1.138	0.874	0.994
	GPRS 1900(3 TX slots)	Right Tilt	512	24.10	25.00	1.230	0.791	0.973
	GPRS 1900(3 TX slots)	Right Tilt	810	24.44	25.00	1.138	0.732	0.833
	GPRS 1900(3 TX slots)	Left Tilt	512	24.10	25.00	1.230	0.728	0.896
	GPRS 1900(3 TX slots)	Left Tilt	810	24.44	25.00	1.138	0.404	0.460
Ant 2 (Full Power)								
	GPRS 1900(4 TX slots)	Right Cheek	661	24.25	25.00	1.189	0.071	0.085
	GPRS 1900(4 TX slots)	Right Tilt	661	24.25	25.00	1.189	0.049	0.058
	GPRS 1900(4 TX slots)	Left Cheek	661	24.25	25.00	1.189	0.052	0.061
	GPRS 1900(4 TX slots)	Left Tilt	661	24.25	25.00	1.189	0.035	0.042
Ant 4 (Reduction Power)								
	Band II/RMC 12.2Kbps	Right Cheek	9400	17.43	18.00	1.140	0.898	1.024
	Band II/RMC 12.2Kbps	Right Tilt	9400	17.43	18.00	1.140	0.758	0.864
	Band II/RMC 12.2Kbps	Left Cheek	9400	17.43	18.00	1.140	0.350	0.399
	Band II/RMC 12.2Kbps	Left Tilt	9400	17.43	18.00	1.140	0.480	0.547
3#	Band II/RMC 12.2Kbps	Right Cheek	9262	17.41	18.00	1.146	0.934	1.070
	Band II/RMC 12.2Kbps	Right Cheek	9538	17.39	18.00	1.151	0.772	0.888
	Band II/RMC 12.2Kbps	Right Tilt	9262	17.41	18.00	1.146	0.763	0.874
	Band II/RMC 12.2Kbps	Right Tilt	9538	17.39	18.00	1.151	0.585	0.673
Ant 2 (Full Power)								
	Band II/RMC 12.2Kbps	Right Cheek	9400	23.79	24.50	1.178	0.120	0.141
	Band II/RMC 12.2Kbps	Right Tilt	9400	23.79	24.50	1.178	0.070	0.083

	Band II/RMC 12.2Kbps	Left Cheek	9400	23.79	24.50	1.178	0.099	0.116
	Band II/RMC 12.2Kbps	Left Tilt	9400	23.79	24.50	1.178	0.059	0.069
Ant 4 (Reduction Power)								
	Band IV/RMC 12.2Kbps	Right Cheek	1413	19.08	19.50	1.102	0.759	0.836
	Band IV/RMC 12.2Kbps	Right Tilt	1413	19.08	19.50	1.102	0.705	0.777
	Band IV/RMC 12.2Kbps	Left Cheek	1413	19.08	19.50	1.102	0.328	0.361
	Band IV/RMC 12.2Kbps	Left Tilt	1413	19.08	19.50	1.102	0.432	0.476
	Band IV/RMC 12.2Kbps	Right Cheek	1312	19.07	19.50	1.104	0.611	0.675
4#	Band IV/RMC 12.2Kbps	Right Cheek	1513	19.04	19.50	1.112	1.030	1.145
Ant 2 (Full Power)								
	Band IV/RMC 12.2Kbps	Right Cheek	1413	23.81	24.50	1.172	0.136	0.159
	Band IV/RMC 12.2Kbps	Right Tilt	1413	23.81	24.50	1.172	0.078	0.092
	Band IV/RMC 12.2Kbps	Left Cheek	1413	23.81	24.50	1.172	0.105	0.123
	Band IV/RMC 12.2Kbps	Left Tilt	1413	23.81	24.50	1.172	0.075	0.088
Ant 1 (Full Power)								
5#	Band V/RMC 12.2Kbps	Right Cheek	4182	24.15	24.50	1.084	0.592	0.642
	Band V/RMC 12.2Kbps	Right Tilt	4182	24.15	24.50	1.084	0.242	0.262
	Band V/RMC 12.2Kbps	Left Cheek	4182	24.15	24.50	1.084	0.220	0.239
	Band V/RMC 12.2Kbps	Left Tilt	4182	24.15	24.50	1.084	0.130	0.141
Ant 1 (Full Power)								
6#	BC0/ RTAP 153.6Kbps	Right Cheek	384	24.16	24.50	1.081	0.280	0.303
	BC0/ RTAP 153.6Kbps	Right Tilt	384	24.16	24.50	1.081	0.199	0.215
	BC0/ RTAP 153.6Kbps	Left Cheek	384	24.16	24.50	1.081	0.173	0.187
	BC0/ RTAP 153.6Kbps	Left Tilt	384	24.16	24.50	1.081	0.111	0.120
Ant 4 (Reduction Power)								
	BC1/ RTAP 153.6Kbps	Right Cheek	600	19.40	20.00	1.148	0.867	0.995
	BC1/ RTAP 153.6Kbps	Right Tilt	600	19.40	20.00	1.148	0.846	0.971
	BC1/ RTAP 153.6Kbps	Left Cheek	600	19.40	20.00	1.148	0.333	0.382
	BC1/ RTAP 153.6Kbps	Left Tilt	600	19.40	20.00	1.148	0.463	0.532
7#	BC1/ RTAP 153.6Kbps	Right Cheek	25	19.34	20.00	1.164	0.890	1.036
	BC1/ RTAP 153.6Kbps	Right Cheek	1175	19.35	20.00	1.161	0.736	0.855
	BC1/ RTAP 153.6Kbps	Right Tilt	25	19.34	20.00	1.164	0.734	0.854
	BC1/ RTAP 153.6Kbps	Right Tilt	1175	19.35	20.00	1.161	0.584	0.678
Ant 2 (Full Power)								
	BC1/ RTAP 153.6Kbps	Right Cheek	600	24.05	24.50	1.109	0.369	0.409
	BC1/ RTAP 153.6Kbps	Right Tilt	600	24.05	24.50	1.109	0.144	0.160
	BC1/ RTAP 153.6Kbps	Left Cheek	600	24.05	24.50	1.109	0.184	0.204
	BC1/ RTAP 153.6Kbps	Left Tilt	600	24.05	24.50	1.109	0.082	0.091

	BC1/ RTAP 153.6Kbps	Right Cheek	600	24.05	24.50	1.109	0.369	0.409
Ant 4 (Reduction Power)								
	LTE Band 2/1RB#0 20M	Right Cheek	18900	18.67	19.00	1.079	0.948	1.023
	LTE Band 2/1RB#0 20M	Right Tilt	18900	18.67	19.00	1.079	0.840	0.906
	LTE Band 2/1RB#0 20M	Left Cheek	18900	18.67	19.00	1.079	0.346	0.373
	LTE Band 2/1RB#0 20M	Left Tilt	18900	18.67	19.00	1.079	0.462	0.498
8#	LTE Band 2/1RB#0 20M	Right Cheek	18700	18.63	19.00	1.089	0.984	1.072
	LTE Band 2/1RB#0 20M	Right Cheek	19100	18.47	19.00	1.130	0.866	0.978
	LTE Band 2/1RB#0 20M	Right Tilt	18700	18.63	19.00	1.089	0.948	1.032
	LTE Band 2/1RB#0 20M	Right Tilt	19100	18.47	19.00	1.130	0.830	0.938
	LTE Band 2/50RB#0 20M	Right Cheek	18900	17.65	18.00	1.084	0.744	0.806
	LTE Band 2/50RB#0 20M	Right Tilt	18900	17.65	18.00	1.084	0.706	0.765
	LTE Band 2/50RB#0 20M	Left Cheek	18900	17.65	18.00	1.084	0.293	0.318
	LTE Band 2/50RB#0 20M	Left Tilt	18900	17.65	18.00	1.084	0.392	0.425
	LTE Band 2/50RB#0 20M	Right Cheek	18700	17.62	18.00	1.091	0.687	0.750
	LTE Band 2/50RB#0 20M	Right Cheek	19100	17.59	18.00	1.099	0.691	0.759
	LTE Band 2/**100RB#0** 20M	Right Cheek	18900	17.39	18.00	1.151	0.735	0.846
Ant 2 (Full Power)								
	LTE Band 2/1RB#0 20M	Right Cheek	18900	24.26	25.00	1.186	0.132	0.157
	LTE Band 2/1RB#0 20M	Right Tilt	18900	24.26	25.00	1.186	0.041	0.049
	LTE Band 2/1RB#0 20M	Left Cheek	18900	24.26	25.00	1.186	0.054	0.064
	LTE Band 2/1RB#0 20M	Left Tilt	18900	24.26	25.00	1.186	0.023	0.027
	LTE Band 2/50RB#0 20M	Right Cheek	18900	23.26	24.00	1.186	0.112	0.132
	LTE Band 2/50RB#0 20M	Right Tilt	18900	23.26	24.00	1.186	0.033	0.039
	LTE Band 2/50RB#0 20M	Left Cheek	18900	23.26	24.00	1.186	0.043	0.051
	LTE Band 2/50RB#0 20M	Left Tilt	18900	23.26	24.00	1.186	0.019	0.023
Ant 4 (Reduction Power)								
	LTE Band 4/1RB#0 20M	Right Cheek	20175	20.04	20.50	1.112	0.896	0.996
	LTE Band 4/1RB#0 20M	Right Tilt	20175	20.04	20.50	1.112	0.719	0.799
	LTE Band 4/1RB#0 20M	Left Cheek	20175	20.04	20.50	1.112	0.276	0.307
	LTE Band 4/1RB#0 20M	Left Tilt	20175	20.04	20.50	1.112	0.282	0.314
	LTE Band 4/1RB#0 20M	Right Cheek	20050	19.74	20.50	1.191	0.806	0.960
9#	LTE Band 4/1RB#0 20M	Right Cheek	20300	20.00	20.50	1.122	1.040	1.167
	LTE Band 4/50RB#0 20M	Right Cheek	20175	18.91	19.50	1.146	0.773	0.885
	LTE Band 4/50RB#0 20M	Right Tilt	20175	18.91	19.50	1.146	0.644	0.738

	LTE Band 4/50RB#0 20M	Left Cheek	20175	18.91	19.50	1.146	0.216	0.247
	LTE Band 4/50RB#0 20M	Left Tilt	20175	18.91	19.50	1.146	0.281	0.322
	LTE Band 4/50RB#0 20M	Right Cheek	20050	18.89	19.50	1.151	0.822	0.946
	LTE Band 4/50RB#0 20M	Right Cheek	20300	18.86	19.50	1.159	0.709	0.822
	LTE Band 4/**100RB#0** 20M	Right Cheek	20175	18.84	19.50	1.164	0.737	0.858
Ant 2 (Full Power)								
	LTE Band 4/1RB#0 20M	Right Cheek	20175	24.48	25.00	1.127	0.212	0.239
	LTE Band 4/1RB#0 20M	Right Tilt	20175	24.48	25.00	1.127	0.034	0.039
	LTE Band 4/1RB#0 20M	Left Cheek	20175	24.48	25.00	1.127	0.085	0.096
	LTE Band 4/1RB#0 20M	Left Tilt	20175	24.48	25.00	1.127	0.031	0.035
	LTE Band 4/50RB#0 20M	Right Cheek	20175	23.48	24.00	1.127	0.166	0.188
	LTE Band 4/50RB#0 20M	Right Tilt	20175	23.48	24.00	1.127	0.029	0.032
	LTE Band 4/50RB#0 20M	Left Cheek	20175	23.48	24.00	1.127	0.056	0.063
	LTE Band 4/50RB#0 20M	Left Tilt	20175	23.48	24.00	1.127	0.025	0.028
Ant 1 (Full Power)								
10#	LTE Band 5/1RB#0 10M	Right Cheek	20525	24.59	25.00	1.099	0.545	0.599
	LTE Band 5/1RB#0 10M	Right Tilt	20525	24.59	25.00	1.099	0.236	0.259
	LTE Band 5/1RB#0 10M	Left Cheek	20525	24.59	25.00	1.099	0.142	0.156
	LTE Band 5/1RB#0 10M	Left Tilt	20525	24.59	25.00	1.099	0.131	0.144
	LTE Band 5/25RB#0 10M	Right Cheek	20525	23.55	24.00	1.109	0.394	0.437
	LTE Band 5/25RB#0 10M	Right Tilt	20525	23.55	24.00	1.109	0.192	0.213
	LTE Band 5/25RB#0 10M	Left Cheek	20525	23.55	24.00	1.109	0.169	0.187
	LTE Band 5/25RB#0 10M	Left Tilt	20525	23.55	24.00	1.109	0.110	0.122
Ant 4 (Reduction Power)								
	LTE Band 7/1RB#0 20M	Right Cheek	21100	18.16	19.00	1.213	0.843	1.023
	LTE Band 7/1RB#0 20M	Right Tilt	21100	18.16	19.00	1.213	0.635	0.771
	LTE Band 7/1RB#0 20M	Left Cheek	21100	18.16	19.00	1.213	0.372	0.451
	LTE Band 7/1RB#0 20M	Left Tilt	21100	18.16	19.00	1.213	0.318	0.386
11#	LTE Band 7/1RB#0 20M	Right Cheek	20850	18.06	19.00	1.242	0.895	1.111
	LTE Band 7/1RB#0 20M	Right Cheek	21350	17.99	19.00	1.262	0.739	0.932
	LTE Band 7/50RB#0 20M	Right Cheek	21100	17.03	17.50	1.114	0.713	0.794
	LTE Band 7/50RB#0 20M	Right Tilt	21100	17.03	17.50	1.114	0.482	0.537
	LTE Band 7/50RB#0 20M	Left Cheek	21100	17.03	17.50	1.114	0.312	0.348
	LTE Band 7/50RB#0 20M	Left Tilt	21100	17.03	17.50	1.114	0.258	0.287
	LTE Band 7/**100RB#0** 20M	Right Cheek	21100	16.98	17.50	1.127	0.702	0.791

Ant 2 (Full Power)								
	LTE Band 7/1RB#0 20M	Right Cheek	21100	24.25	25.00	1.189	0.309	0.367
	LTE Band 7/1RB#0 20M	Right Tilt	21100	24.25	25.00	1.189	0.057	0.067
	LTE Band 7/1RB#0 20M	Left Cheek	21100	24.25	25.00	1.189	0.064	0.076
	LTE Band 7/1RB#0 20M	Left Tilt	21100	24.25	25.00	1.189	0.049	0.058
	LTE Band 7/50RB#0 20M	Right Cheek	21100	23.38	24.00	1.153	0.241	0.278
	LTE Band 7/50RB#0 20M	Right Tilt	21100	23.38	24.00	1.153	0.042	0.048
	LTE Band 7/50RB#0 20M	Left Cheek	21100	23.38	24.00	1.153	0.050	0.058
	LTE Band 7/50RB#0 20M	Left Tilt	21100	23.38	24.00	1.153	0.041	0.047
Ant 1 (Full Power)								
12#	LTE Band 12/1RB#0 10M	Right Cheek	23095	24.69	25.00	1.074	0.255	0.274
	LTE Band 12/1RB#0 10M	Right Tilt	23095	24.69	25.00	1.074	0.144	0.154
	LTE Band 12/1RB#0 10M	Left Cheek	23095	24.69	25.00	1.074	0.114	0.122
	LTE Band 12/1RB#0 10M	Left Tilt	23095	24.69	25.00	1.074	0.100	0.108
	LTE Band 12/25RB#0 10M	Right Cheek	23095	23.69	24.00	1.074	0.209	0.225
	LTE Band 12/25RB#0 10M	Right Tilt	23095	23.69	24.00	1.074	0.114	0.122
	LTE Band 12/25RB#0 10M	Left Cheek	23095	23.69	24.00	1.074	0.097	0.104
	LTE Band 12/25RB#0 10M	Left Tilt	23095	23.69	24.00	1.074	0.082	0.088
Ant 1 (Full Power)								
13#	LTE Band 18/1RB#0 15M	Right Cheek	23925	24.29	25.00	1.178	0.461	0.543
	LTE Band 18/1RB#0 15M	Right Tilt	23925	24.29	25.00	1.178	0.167	0.196
	LTE Band 18/1RB#0 15M	Left Cheek	23925	24.29	25.00	1.178	0.135	0.159
	LTE Band 18/1RB#0 15M	Left Tilt	23925	24.29	25.00	1.178	0.093	0.110
	LTE Band 18/36RB#0 15M	Right Cheek	23925	23.45	24.00	1.135	0.317	0.359
	LTE Band 18/36RB#0 15M	Right Tilt	23925	23.45	24.00	1.135	0.144	0.163
	LTE Band 18/36RB#0 15M	Left Cheek	23925	23.45	24.00	1.135	0.120	0.136
	LTE Band 18/36RB#0 15M	Left Tilt	23925	23.45	24.00	1.135	0.085	0.096
Ant 1 (Full Power)								
14#	LTE Band 19/1RB#0 15M	Right Cheek	24075	24.39	25.00	1.151	0.608	0.700
	LTE Band 19/1RB#0 15M	Right Tilt	24075	24.39	25.00	1.151	0.267	0.308
	LTE Band 19/1RB#0 15M	Left Cheek	24075	24.39	25.00	1.151	0.213	0.245
	LTE Band 19/1RB#0 15M	Left Tilt	24075	24.39	25.00	1.151	0.129	0.149
	LTE Band 19/36RB#0 15M	Right Cheek	24075	23.52	24.00	1.117	0.500	0.558
	LTE Band 19/36RB#0 15M	Right Tilt	24075	23.52	24.00	1.117	0.228	0.255

	LTE Band 19/36RB#0 15M	Left Cheek	24075	23.52	24.00	1.117	0.184	0.206
	LTE Band 19/36RB#0 15M	Left Tilt	24075	23.52	24.00	1.117	0.115	0.129
Ant 1 (Full Power)								
15#	LTE Band 26/1RB#0 15M	Right Cheek	26865	24.49	25.00	1.125	0.495	0.557
	LTE Band 26/1RB#0 15M	Right Tilt	26865	24.49	25.00	1.125	0.223	0.251
	LTE Band 26/1RB#0 15M	Left Cheek	26865	24.49	25.00	1.125	0.182	0.204
	LTE Band 26/1RB#0 15M	Left Tilt	26865	24.49	25.00	1.125	0.136	0.153
	LTE Band 26/36RB#0 15M	Right Cheek	26865	23.67	24.00	1.079	0.420	0.453
	LTE Band 26/36RB#0 15M	Right Tilt	26865	23.67	24.00	1.079	0.187	0.202
	LTE Band 26/36RB#0 15M	Left Cheek	26865	23.67	24.00	1.079	0.158	0.171
	LTE Band 26/36RB#0 15M	Left Tilt	26865	23.67	24.00	1.079	0.114	0.123
Ant 4 (Full Power)								
	LTE Band 38/1RB#0 20M	Right Cheek	38000	23.04	23.50	1.112	0.613	0.686
16#	LTE Band 38/1RB#0 20M	Right Tilt	38000	23.04	23.50	1.112	0.826	0.924
	LTE Band 38/1RB#0 20M	Left Cheek	38000	23.04	23.50	1.112	0.278	0.311
	LTE Band 38/1RB#0 20M	Left Tilt	38000	23.04	23.50	1.112	0.403	0.451
	LTE Band 38/1RB#0 20M	Right Tilt	37850	22.85	23.50	1.161	0.649	0.758
	LTE Band 38/1RB#0 20M	Right Tilt	38150	22.91	23.50	1.146	0.703	0.810
	LTE Band 38/**100RB#0** 20M	Right Tilt	38000	22.22	22.50	1.067	0.624	0.670
	LTE Band 38/50RB#0 10M	Right Cheek	38000	22.28	22.50	1.052	0.517	0.547
	LTE Band 38/50RB#0 10M	Right Tilt	38000	22.28	22.50	1.052	0.708	0.749
	LTE Band 38/50RB#0 10M	Left Cheek	38000	22.28	22.50	1.052	0.231	0.244
	LTE Band 38/50RB#0 10M	Left Tilt	38000	22.28	22.50	1.052	0.316	0.334
Ant 2 (Full Power)								
	LTE Band 38/1RB#0 20M	Right Cheek	38000	24.17	25.00	1.211	0.330	0.402
	LTE Band 38/1RB#0 20M	Right Tilt	38000	24.17	25.00	1.211	0.090	0.110
	LTE Band 38/1RB#0 20M	Left Cheek	38000	24.17	25.00	1.211	0.105	0.128
	LTE Band 38/1RB#0 20M	Left Tilt	38000	24.17	25.00	1.211	0.094	0.114
	LTE Band 38/50RB#0 10M	Right Cheek	38000	23.48	24.00	1.127	0.263	0.298
	LTE Band 38/50RB#0 10M	Right Tilt	38000	23.48	24.00	1.127	0.083	0.094
	LTE Band 38/50RB#0 10M	Left Cheek	38000	23.48	24.00	1.127	0.085	0.096
	LTE Band 38/50RB#0 10M	Left Tilt	38000	23.48	24.00	1.127	0.078	0.088
Ant 4 (Reduction Power)								
17#	LTE Band 40A/1RB#0 10M	Right Cheek	38750	21.19	22.00	1.205	0.824	0.999
	LTE Band 40A/1RB#0 10M	Right Tilt	38750	21.19	22.00	1.205	0.687	0.833

	LTE Band 40A/1RB#0 10M	Left Cheek	38750	21.19	22.00	1.205	0.395	0.479
	LTE Band 40A/1RB#0 10M	Left Tilt	38750	21.19	22.00	1.205	0.476	0.577
	LTE Band 40A/25RB#0 10M	Right Cheek	38750	20.22	21.00	1.197	0.764	0.920
	LTE Band 40A/25RB#0 10M	Right Tilt	38750	20.22	21.00	1.197	0.558	0.672
	LTE Band 40A/25RB#0 10M	Left Cheek	38750	20.22	21.00	1.197	0.326	0.392
	LTE Band 40A/25RB#0 10M	Left Tilt	38750	20.22	21.00	1.197	0.396	0.477
	LTE Band 40A/50RB#0 10M	Right Cheek	38750	20.20	21.00	1.202	0.697	0.843
Ant 2 (Full Power)								
	LTE Band 40A/1RB#0 10M	Right Cheek	38750	24.13	25.00	1.222	0.213	0.262
	LTE Band 40A/1RB#0 10M	Right Tilt	38750	24.13	25.00	1.222	0.086	0.106
	LTE Band 40A/1RB#0 10M	Left Cheek	38750	24.13	25.00	1.222	0.154	0.189
	LTE Band 40A/1RB#0 10M	Left Tilt	38750	24.13	25.00	1.222	0.125	0.154
	LTE Band 40A/25RB#0 10M	Right Cheek	38750	23.23	24.00	1.194	0.203	0.244
	LTE Band 40A/25RB#0 10M	Right Tilt	38750	23.23	24.00	1.194	0.077	0.092
	LTE Band 40A/25RB#0 10M	Left Cheek	38750	23.23	24.00	1.194	0.107	0.129
	LTE Band 40A/25RB#0 10M	Left Tilt	38750	23.23	24.00	1.194	0.048	0.058
Ant 4 (Reduction Power)								
18#	LTE Band 40B/1RB#0 10M	Right Cheek	39200	21.03	21.50	1.114	0.783	0.878
	LTE Band 40B/1RB#0 10M	Right Tilt	39200	21.03	21.50	1.114	0.685	0.768
	LTE Band 40B/1RB#0 10M	Left Cheek	39200	21.03	21.50	1.114	0.352	0.395
	LTE Band 40B/1RB#0 10M	Left Tilt	39200	21.03	21.50	1.114	0.357	0.400
	LTE Band 40B/25RB#0 10M	Right Cheek	39200	20.42	21.00	1.143	0.666	0.766
	LTE Band 40B/25RB#0 10M	Right Tilt	39200	20.42	21.00	1.143	0.686	0.789
	LTE Band 40B/25RB#0 10M	Left Cheek	39200	20.42	21.00	1.143	0.259	0.298
	LTE Band 40B/25RB#0 10M	Left Tilt	39200	20.42	21.00	1.143	0.281	0.323
	LTE Band 40B/**50RB#0** 10M	Right Cheek	39200	20.40	21.00	1.148	0.657	0.759
Ant 2 (Full Power)								
	LTE Band 40B/1RB#0 10M	Right Cheek	39200	24.15	25.00	1.216	0.239	0.292
	LTE Band 40B/1RB#0 10M	Right Tilt	39200	24.15	25.00	1.216	0.098	0.120
	LTE Band 40B/1RB#0 10M	Left Cheek	39200	24.15	25.00	1.216	0.115	0.141
	LTE Band 40B/1RB#0 10M	Left Tilt	39200	24.15	25.00	1.216	0.045	0.055
	LTE Band 40B/25RB#0 10M	Right Cheek	39200	23.37	24.00	1.156	0.156	0.181
	LTE Band 40B/25RB#0 10M	Right Tilt	39200	23.37	24.00	1.156	0.067	0.078
	LTE Band 40B/25RB#0 10M	Left Cheek	39200	23.37	24.00	1.156	0.097	0.113

	LTE Band 40B/25RB#0 10M	Left Tilt	39200	23.37	24.00	1.156	0.049	0.057
Ant 6 (Reduction Power)								
	5G NR n41/1RB#1 100M	Right Cheek	519000	23.32	23.50	1.042	0.951	0.991
	5G NR n41/1RB#1 100M	Right Tilt	519000	23.32	23.50	1.042	0.756	0.788
	5G NR n41/1RB#1 100M	Left Cheek	519000	23.32	23.50	1.042	0.687	0.716
	5G NR n41/1RB#1 100M	Left Tilt	519000	23.32	23.50	1.042	0.716	0.746
	5G NR n41/1RB#1 100M	Right Cheek	513000	23.24	23.50	1.062	0.919	0.976
19#	5G NR n41/1RB#1 100M	Right Cheek	516000	23.30	23.50	1.047	1.080	1.131
	5G NR n41/1RB#1 100M	Right Cheek	522000	23.23	23.50	1.064	0.897	0.955
	5G NR n41/1RB#1 100M	Right Cheek	525000	23.21	23.50	1.069	1.050	1.123
	5G NR n41/1RB#1 100M	Right Tilt	513000	23.24	23.50	1.062	0.731	0.776
	5G NR n41/1RB#1 100M	Right Tilt	516000	23.30	23.50	1.047	0.859	0.899
	5G NR n41/1RB#1 100M	Right Tilt	522000	23.23	23.50	1.064	0.713	0.759
	5G NR n41/1RB#1 100M	Right Tilt	525000	23.21	23.50	1.069	0.835	0.892
	5G NR n41/1RB#1 100M	Left Cheek	513000	23.24	23.50	1.062	0.664	0.705
	5G NR n41/1RB#1 100M	Left Cheek	516000	23.30	23.50	1.047	0.678	0.710
	5G NR n41/1RB#1 100M	Left Cheek	522000	23.23	23.50	1.064	0.648	0.690
	5G NR n41/1RB#1 100M	Left Cheek	525000	23.21	23.50	1.069	0.669	0.715
	5G NR n41/1RB#1 100M	Left Tilt	513000	23.24	23.50	1.062	0.692	0.735
	5G NR n41/1RB#1 100M	Left Tilt	516000	23.30	23.50	1.047	0.711	0.745
	5G NR n41/1RB#1 100M	Left Tilt	522000	23.23	23.50	1.064	0.675	0.719
	5G NR n41/1RB#1 100M	Left Tilt	525000	23.21	23.50	1.069	0.691	0.739
	5G NR n41/1RB#1 100M	Right Cheek	519000	22.34	22.50	1.038	0.870	0.903
	5G NR n41/1RB#1 100M	Right Tilt	519000	22.34	22.50	1.038	0.711	0.738
	5G NR n41/1RB#1 100M	Left Cheek	519000	22.34	22.50	1.038	0.638	0.662
	5G NR n41/1RB#1 100M	Left Tilt	519000	22.34	22.50	1.038	0.711	0.738
	5G NR n41/1RB#1 100M	Right Cheek	513000	22.25	22.50	1.059	0.841	0.891
	5G NR n41/1RB#1 100M	Right Cheek	516000	22.40	22.50	1.023	0.988	1.011
	5G NR n41/1RB#1 100M	Right Cheek	522000	22.28	22.50	1.052	0.821	0.863
	5G NR n41/1RB#1 100M	Right Cheek	525000	22.26	22.50	1.057	0.961	1.015
	5G NR n41/**270RB#0** 100M	Right Cheek	519000	22.31	22.50	1.045	0.769	0.803
Ant 5 (Reduction Power)								
	5G NR n41/1RB#1 100M	Right Cheek	519000	21.62	22.00	1.091	0.802	0.875
	5G NR n41/1RB#1 100M	Right Tilt	519000	21.62	22.00	1.091	0.244	0.266
	5G NR n41/1RB#1 100M	Left Cheek	519000	21.62	22.00	1.091	0.158	0.172
	5G NR n41/1RB#1 100M	Left Tilt	519000	21.62	22.00	1.091	0.068	0.074
	5G NR n41/1RB#1 100M	Right Cheek	513000	21.58	22.00	1.102	0.773	0.851

	5G NR n41/1RB#1 100M	Right Cheek	516000	21.54	22.00	1.112	0.888	0.987
	5G NR n41/1RB#1 100M	Right Cheek	522000	21.55	22.00	1.109	0.749	0.831
	5G NR n41/1RB#1 100M	Right Cheek	525000	21.61	22.00	1.094	0.711	0.778
	5G NR n41/135RB#1 100M	Right Cheek	519000	20.55	21.00	1.109	0.735	0.815
	5G NR n41/135RB#1 100M	Right Tilt	519000	20.55	21.00	1.109	0.207	0.230
	5G NR n41/135RB#1 100M	Left Cheek	519000	20.55	21.00	1.109	0.178	0.197
	5G NR n41/135RB#1 100M	Left Tilt	519000	20.55	21.00	1.109	0.075	0.083
	5G NR n41/135RB#1 100M	Right Cheek	513000	20.51	21.00	1.119	0.720	0.806
	5G NR n41/135RB#1 100M	Right Cheek	516000	20.50	21.00	1.122	0.827	0.928
	5G NR n41/135RB#1 100M	Right Cheek	522000	20.53	21.00	1.114	0.698	0.777
	5G NR n41/135RB#1 100M	Right Cheek	525000	20.52	21.00	1.117	0.662	0.740
	5G NR n41/**100RB#1** 100M	Right Cheek	519000	20.17	21.00	1.211	0.713	0.863
Ant 8 (Full Power)								
	WLAN2.4GHz/802.11b	Right Cheek	11	15.69	16.5	1.205	0.172	0.207
	WLAN2.4GHz/802.11b	Right Tilt	11	15.69	16.5	1.205	0.111	0.134
20#	WLAN2.4GHz/802.11b	Left Cheek	11	15.69	16.5	1.205	0.450	0.542
	WLAN2.4GHz/802.11b	Left Tilt	11	15.69	16.5	1.205	0.271	0.327
Ant 9 (Full Power)								
	WLAN2.4GHz/802.11b	Right Cheek	1	15.95	16.5	1.135	0.027	0.031
	WLAN2.4GHz/802.11b	Right Tilt	1	15.95	16.5	1.135	0.030	0.034
	WLAN2.4GHz/802.11b	Left Cheek	1	15.95	16.5	1.135	0.065	0.074
	WLAN2.4GHz/802.11b	Left Tilt	1	15.95	16.5	1.135	0.028	0.032
Ant 8 (Full Power)								
	WLAN5.2GHz/802.11ax20 RU26	Right Cheek	36	13.60	14.00	1.096	0.261	0.289
	WLAN5.2GHz/802.11ax20 RU26	Right Tilt	36	13.60	14.00	1.096	0.301	0.333
	WLAN5.2GHz/802.11ax20 RU26	Left Cheek	36	13.60	14.00	1.096	0.439	0.486
21#	WLAN5.2GHz/802.11ax20 RU26	Left Tilt	36	13.60	14.00	1.096	0.507	0.561
Ant 10 (Full Power)								
	WLAN5.2GHz/802.11ax20 RU26	Right Cheek	48	13.93	14.50	1.140	0.040	0.046
	WLAN5.2GHz/802.11ax20 RU26	Right Tilt	48	13.93	14.50	1.140	0.038	0.044
	WLAN5.2GHz/802.11ax20 RU26	Left Cheek	48	13.93	14.50	1.140	0.030	0.034
	WLAN5.2GHz/802.11ax20 RU26	Left Tilt	48	13.93	14.50	1.140	0.025	0.029
Ant 8 (Full Power)								
	WLAN5.3GHz/802.11ax20 RU26	Right Cheek	64	13.30	14.00	1.175	0.117	0.139
	WLAN5.3GHz/802.11ax20 RU26	Right Tilt	64	13.30	14.00	1.175	0.281	0.333
	WLAN5.3GHz/802.11ax20 RU26	Left Cheek	64	13.30	14.00	1.175	0.531	0.629
22#	WLAN5.3GHz/802.11ax20 RU26	Left Tilt	64	13.30	14.00	1.175	0.737	0.874

Ant 10 (Full Power)								
	WLAN5.3GHz/802.11n-40	Right Cheek	62	13.01	13.50	1.119	0.033	0.037
	WLAN5.3GHz/802.11n-40	Right Tilt	62	13.01	13.50	1.119	0.020	0.023
	WLAN5.3GHz/802.11n-40	Left Cheek	62	13.01	13.50	1.119	0.032	0.036
	WLAN5.3GHz/802.11n-40	Left Tilt	62	13.01	13.50	1.119	0.029	0.032
Ant 8 (Full Power)								
	WLAN5.8GHz/802.11ax20 RU242	Right Cheek	157	13.31	14.00	1.172	0.365	0.432
	WLAN5.8GHz/802.11ax20 RU242	Right Tilt	157	13.31	14.00	1.172	0.383	0.453
	WLAN5.8GHz/802.11ax20 RU242	Left Cheek	157	13.31	14.00	1.172	0.698	0.826
	WLAN5.8GHz/802.11ax20 RU242	Left Tilt	157	13.31	14.00	1.172	0.476	0.563
23#	WLAN5.8GHz/802.11ax20 RU242	Left Cheek	149	13.22	13.50	1.067	0.833	0.896
	WLAN5.8GHz/802.11ax20 RU242	Left Cheek	165	12.80	13.50	1.175	0.722	0.856
Ant 10 (Full Power)								
	WLAN5.8GHz/802.11a	Right Cheek	157	12.88	13.50	1.153	0.039	0.045
	WLAN5.8GHz/802.11a	Right Tilt	157	12.88	13.50	1.153	0.042	0.049
	WLAN5.8GHz/802.11a	Left Cheek	157	12.88	13.50	1.153	0.070	0.081
	WLAN5.8GHz/802.11a	Left Tilt	157	12.88	13.50	1.153	0.078	0.090

18.3. Head SAR Data for EN-DC

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)
Ant 4 (Reduction Power)								
24#	LTE Band 2/1RB#0 20M	Right Cheek	18900	15.42	15.50	1.019	0.607	0.618
	LTE Band 2/1RB#0 20M	Right Tilt	18900	15.42	15.50	1.019	0.539	0.549
	LTE Band 2/1RB#0 20M	Left Cheek	18900	15.42	15.50	1.019	0.235	0.239
	LTE Band 2/1RB#0 20M	Left Tilt	18900	15.42	15.50	1.019	0.293	0.298
	LTE Band 2/50RB#0 20M	Right Cheek	18900	14.45	14.50	1.012	0.523	0.529
	LTE Band 2/50RB#0 20M	Right Tilt	18900	14.45	14.50	1.012	0.430	0.435
	LTE Band 2/50RB#0 20M	Left Cheek	18900	14.45	14.50	1.012	0.199	0.201
	LTE Band 2/50RB#0 20M	Left Tilt	18900	14.45	14.50	1.012	0.263	0.266
Ant 2 (Reduction Power)								
	LTE Band 2/1RB#0 20M	20.39	20.50	1.026	0.132	0.135	20.39	20.50
	LTE Band 2/1RB#0 20M	20.39	20.50	1.026	0.041	0.042	20.39	20.50
	LTE Band 2/1RB#0 20M	20.39	20.50	1.026	0.054	0.056	20.39	20.50

	LTE Band 2/1RB#0 20M	20.39	20.50	1.026	0.023	0.023	20.39	20.50
	LTE Band 2/50RB#0 20M	19.39	19.50	1.026	0.112	0.114	19.39	19.50
	LTE Band 2/50RB#0 20M	19.39	19.50	1.026	0.033	0.034	19.39	19.50
	LTE Band 2/50RB#0 20M	19.39	19.50	1.026	0.043	0.044	19.39	19.50
	LTE Band 2/50RB#0 20M	19.39	19.50	1.026	0.019	0.020	19.39	19.50
Ant 6 (Reduction Power)								
25#	5G NR n41/1RB#0 100M	Right Cheek	519000	21.47	21.50	1.007	0.581	0.585
	5G NR n41/1RB#0 100M	Right Tilt	519000	21.47	21.50	1.007	0.437	0.440
	5G NR n41/1RB#0 100M	Left Cheek	519000	21.47	21.50	1.007	0.486	0.489
	5G NR n41/1RB#0 100M	Left Tilt	519000	21.47	21.50	1.007	0.405	0.408
	5G NR n41/135RB#0 100M	Right Cheek	519000	20.41	20.50	1.021	0.451	0.460
	5G NR n41/135RB#0 100M	Right Tilt	519000	20.41	20.50	1.021	0.356	0.363
	5G NR n41/135RB#0 100M	Left Cheek	519000	20.41	20.50	1.021	0.458	0.468
	5G NR n41/135RB#0 100M	Left Tilt	519000	20.41	20.50	1.021	0.391	0.399
Ant 5 (Reduction Power)								
	5G NR n41/1RB#0 100M	Right Cheek	519000	20.45	20.50	1.012	0.498	0.504
	5G NR n41/1RB#0 100M	Right Tilt	519000	20.45	20.50	1.012	0.220	0.223
	5G NR n41/1RB#0 100M	Left Cheek	519000	20.45	20.50	1.012	0.133	0.135
	5G NR n41/1RB#0 100M	Left Tilt	519000	20.45	20.50	1.012	0.056	0.057
	5G NR n41/135RB#0 100M	Right Cheek	519000	19.32	19.50	1.042	0.456	0.476
	5G NR n41/135RB#0 100M	Right Tilt	519000	19.32	19.50	1.042	0.129	0.134
	5G NR n41/135RB#0 100M	Left Cheek	519000	19.32	19.50	1.042	0.111	0.115
	5G NR n41/135RB#0 100M	Left Tilt	519000	19.32	19.50	1.042	0.046	0.048

18.4. Body SAR Data

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)
Ant 1 (Full Power)								
	GPRS 850(4 TX slots)	Front Side	189	27.92	28.50	1.143	0.594	0.678
26#	GPRS 850(4 TX slots)	Back Side	189	27.92	28.50	1.143	0.627	0.717
	GPRS 850(4 TX slots)	Right Side	189	27.92	28.50	1.143	0.401	0.459
	GPRS 850(4 TX slots)	Bottom Side	189	27.92	28.50	1.143	0.188	0.215
Ant 4 (Full Power)								
	GPRS 1900(3 TX slots)	Front Side	661	24.47	25.00	1.130	0.217	0.245
27#	GPRS 1900(3 TX slots)	Back Side	661	24.47	25.00	1.130	0.342	0.386
	GPRS 1900(3 TX slots)	Left Side	661	24.47	25.00	1.130	0.234	0.264
	GPRS 1900(3 TX slots)	Top Side	661	24.47	25.00	1.130	0.233	0.263
Ant 2 (Full Power)								
	GPRS 1900(4 TX slots)	Front Side	661	24.25	25.00	1.189	0.203	0.241
	GPRS 1900(4 TX slots)	Back Side	661	24.25	25.00	1.189	0.239	0.284
	GPRS 1900(4 TX slots)	Left Side	661	24.25	25.00	1.189	0.076	0.090
	GPRS 1900(4 TX slots)	Right Side	661	24.25	25.00	1.189	0.097	0.116
28#	GPRS 1900(4 TX slots)	Bottom Side	661	24.25	25.00	1.189	0.419	0.498
Ant 4 (Full Power)								
	Band II/RMC 12.2Kbps	Front Side	9400	22.74	23.50	1.191	0.433	0.516
	Band II/RMC 12.2Kbps	Back Side	9400	22.74	23.50	1.191	0.701	0.835
	Band II/RMC 12.2Kbps	Left Side	9400	22.74	23.50	1.191	0.439	0.523
	Band II/RMC 12.2Kbps	Top Side	9400	22.74	23.50	1.191	0.500	0.596
29#	Band II/RMC 12.2Kbps	Back Side	9262	22.72	23.50	1.197	0.707	0.846
	Band II/RMC 12.2Kbps	Back Side	9538	22.73	23.50	1.194	0.535	0.639
Ant 2 (Reduction Power)								
	Band II/RMC 12.2Kbps	Front Side	9400	22.38	23.00	1.153	0.587	0.677
	Band II/RMC 12.2Kbps	Back Side	9400	22.38	23.00	1.153	0.711	0.820
	Band II/RMC 12.2Kbps	Left Side	9400	22.38	23.00	1.153	0.274	0.316
	Band II/RMC 12.2Kbps	Right Side	9400	22.38	23.00	1.153	0.443	0.510
30#	Band II/RMC 12.2Kbps	Bottom Side	9400	22.38	23.00	1.153	0.945	1.090
	Band II/RMC 12.2Kbps	Back Side	9262	22.16	23.00	1.213	0.628	0.762
	Band II/RMC 12.2Kbps	Back Side	9538	22.37	23.00	1.156	0.612	0.708
	Band II/RMC 12.2Kbps	Bottom Side	9262	22.16	23.00	1.213	0.732	0.888
	Band II/RMC 12.2Kbps	Bottom Side	9538	22.37	23.00	1.156	0.651	0.753
Ant 4 (Full Power)								

	Band IV/RMC 12.2Kbps	Front Side	1413	22.88	23.50	1.153	0.313	0.361
	Band IV/RMC 12.2Kbps	Back Side	1413	22.88	23.50	1.153	0.427	0.493
	Band IV/RMC 12.2Kbps	Left Side	1413	22.88	23.50	1.153	0.378	0.436
	Band IV/RMC 12.2Kbps	Top Side	1413	22.88	23.50	1.153	0.573	0.661
Ant 2 (Reduction Power)								
	Band IV/RMC 12.2Kbps	Front Side	1413	22.43	23.00	1.140	0.605	0.689
31#	Band IV/RMC 12.2Kbps	Back Side	1413	22.43	23.00	1.140	0.697	0.795
	Band IV/RMC 12.2Kbps	Left Side	1413	22.43	23.00	1.140	0.177	0.201
	Band IV/RMC 12.2Kbps	Right Side	1413	22.43	23.00	1.140	0.335	0.383
32#	Band IV/RMC 12.2Kbps	Bottom Side	1413	22.43	23.00	1.140	0.926	1.056
	Band IV/RMC 12.2Kbps	Bottom Side	1312	22.33	23.00	1.167	0.769	0.897
	Band IV/RMC 12.2Kbps	Bottom Side	1513	22.39	23.00	1.151	0.835	0.961
Ant 1 (Full Power)								
	Band V/RMC 12.2Kbps	Front Side	4182	24.15	24.50	1.084	0.852	0.924
33#	Band V/RMC 12.2Kbps	Back Side	4182	24.15	24.50	1.084	0.957	1.037
	Band V/RMC 12.2Kbps	Right Side	4182	24.15	24.50	1.084	0.347	0.377
	Band V/RMC 12.2Kbps	Bottom Side	4182	24.15	24.50	1.084	0.334	0.362
	Band V/RMC 12.2Kbps	Front Side	4132	24.08	24.50	1.102	0.670	0.738
	Band V/RMC 12.2Kbps	Front Side	4233	24.10	24.50	1.096	0.861	0.944
	Band V/RMC 12.2Kbps	Back Side	4132	24.08	24.50	1.102	0.688	0.758
	Band V/RMC 12.2Kbps	Back Side	4233	24.10	24.50	1.096	0.912	1.000
Ant 1 (Full Power)								
	BC0/RTAP 153.6Kbps	Front Side	384	24.16	24.50	1.081	0.820	0.887
34#	BC0/RTAP 153.6Kbps	Back Side	384	24.16	24.50	1.081	0.909	0.983
	BC0/RTAP 153.6Kbps	Right Side	384	24.16	24.50	1.081	0.280	0.303
	BC0/RTAP 153.6Kbps	Bottom Side	384	24.16	24.50	1.081	0.294	0.318
	BC0/RTAP 153.6Kbps	Front Side	1013	23.90	24.50	1.148	0.328	0.376
	BC0/RTAP 153.6Kbps	Front Side	777	24.04	24.50	1.112	0.724	0.804
	BC0/RTAP 153.6Kbps	Back Side	1013	23.90	24.50	1.148	0.679	0.780
	BC0/RTAP 153.6Kbps	Back Side	777	24.04	24.50	1.112	0.643	0.715
Ant 4 (Full Power)								
	BC1/RTAP 153.6Kbps	Front Side	600	23.03	23.50	1.114	0.549	0.612
35#	BC1/RTAP 153.6Kbps	Back Side	600	23.03	23.50	1.114	0.612	0.682
	BC1/RTAP 153.6Kbps	Left Side	600	23.03	23.50	1.114	0.579	0.645
	BC1/RTAP 153.6Kbps	Top Side	600	23.03	23.50	1.114	0.827	0.922
36#	BC1/RTAP 153.6Kbps	Top Side	25	22.95	23.50	1.135	0.890	1.010
	BC1/RTAP 153.6Kbps	Top Side	1175	22.96	23.50	1.132	0.639	0.724
Ant 2 (Full Power)								

	BC1/RTAP 153.6Kbps	Front Side	600	24.05	24.50	1.109	0.488	0.541
	BC1/RTAP 153.6Kbps	Back Side	600	24.05	24.50	1.109	0.606	0.672
	BC1/RTAP 153.6Kbps	Back Side	600	24.05	24.50	1.109	0.609	0.675
	BC1/RTAP 153.6Kbps	Left Side	600	24.05	24.50	1.109	0.190	0.211
	BC1/RTAP 153.6Kbps	Right Side	600	24.05	24.50	1.109	0.228	0.253
	BC1/RTAP 153.6Kbps	Bottom Side	600	24.05	24.50	1.109	0.802	0.890
	BC1/RTAP 153.6Kbps	Bottom Side	25	24.03	24.50	1.114	0.709	0.790
Ant 4 (Full Power)								
	LTE Band 2/1RB#0 20M	Front Side	18900	21.93	22.50	1.140	0.358	0.409
	LTE Band 2/1RB#0 20M	Back Side	18900	21.93	22.50	1.140	0.590	0.673
	LTE Band 2/1RB#0 20M	Left Side	18900	21.93	22.50	1.140	0.505	0.576
	LTE Band 2/1RB#0 20M	Top Side	18900	21.93	22.50	1.140	0.642	0.732
	LTE Band 2/1RB#0 20M	Top Side	18700	21.89	22.50	1.151	0.855	0.984
	LTE Band 2/1RB#0 20M	Top Side	19100	21.73	22.50	1.194	0.773	0.923
	LTE Band 2/50RB#0 20M	Front Side	18900	20.91	21.50	1.146	0.290	0.333
	LTE Band 2/50RB#0 20M	Back Side	18900	20.91	21.50	1.146	0.462	0.529
	LTE Band 2/50RB#0 20M	Left Side	18900	20.91	21.50	1.146	0.395	0.452
	LTE Band 2/50RB#0 20M	Top Side	18900	20.91	21.50	1.146	0.412	0.471
Ant 2 (Reduction Power)								
	LTE Band 2/1RB#0 20M	Front Side	18900	22.95	23.50	1.135	0.686	0.779
37#	LTE Band 2/1RB#0 20M	Back Side	18900	22.95	23.50	1.135	0.860	0.976
	LTE Band 2/1RB#0 20M	Left Side	18900	22.95	23.50	1.135	0.289	0.328
	LTE Band 2/1RB#0 20M	Right Side	18900	22.95	23.50	1.135	0.375	0.425
38#	LTE Band 2/1RB#0 20M	Bottom Side	18900	22.95	23.50	1.135	0.988	1.121
	LTE Band 2/1RB#0 20M	Front Side	18700	22.74	23.50	1.191	0.625	0.745
	LTE Band 2/1RB#0 20M	Front Side	19100	22.67	23.50	1.211	0.637	0.771
	LTE Band 2/1RB#0 20M	Back Side	18700	22.74	23.50	1.191	0.766	0.912
	LTE Band 2/1RB#0 20M	Back Side	19100	22.67	23.50	1.211	0.803	0.973
	LTE Band 2/1RB#0 20M	Bottom Side	18700	22.74	23.50	1.191	0.891	1.061
	LTE Band 2/1RB#0 20M	Bottom Side	19100	22.67	23.50	1.211	0.896	1.085
	LTE Band 2/50RB#0 20M	Front Side	18900	21.95	22.50	1.135	0.476	0.540
	LTE Band 2/50RB#0 20M	Back Side	18900	21.95	22.50	1.135	0.605	0.687
	LTE Band 2/50RB#0 20M	Left Side	18900	21.95	22.50	1.135	0.216	0.245
	LTE Band 2/50RB#0 20M	Right Side	18900	21.95	22.50	1.135	0.267	0.303
	LTE Band 2/50RB#0 20M	Bottom Side	18900	21.95	22.50	1.135	0.789	0.895
	LTE Band 2/50RB#0 20M	Bottom Side	18700	21.84	22.50	1.164	0.724	0.842

	LTE Band 2/50RB#0 20M	Bottom Side	19100	21.80	22.50	1.175	0.809	0.950
	LTE Band 2/**100RB#0** 20M	Bottom Side	18900	21.74	22.50	1.191	0.559	0.666
Ant 4 (Full Power)								
	LTE Band 4/1RB#0 20M	Front Side	20175	23.18	23.50	1.076	0.271	0.292
	LTE Band 4/1RB#0 20M	Back Side	20175	23.18	23.50	1.076	0.326	0.350
	LTE Band 4/1RB#0 20M	Left Side	20175	23.18	23.50	1.076	0.409	0.441
	LTE Band 4/1RB#0 20M	Top Side	20175	23.18	23.50	1.076	0.465	0.501
	LTE Band 4/50RB#0 20M	Front Side	20175	22.05	22.50	1.109	0.207	0.229
	LTE Band 4/50RB#0 20M	Back Side	20175	22.05	22.50	1.109	0.282	0.312
	LTE Band 4/50RB#0 20M	Left Side	20175	22.05	22.50	1.109	0.289	0.321
	LTE Band 4/50RB#0 20M	Top Side	20175	22.05	22.50	1.109	0.391	0.434
Ant 2 (Full Power)								
	LTE Band 4/1RB#0 20M	Front Side	20175	24.48	24.50	1.005	0.691	0.694
39#	LTE Band 4/1RB#0 20M	Back Side	20175	24.48	24.50	1.005	0.870	0.874
	LTE Band 4/1RB#0 20M	Left Side	20175	24.48	24.50	1.005	0.203	0.204
	LTE Band 4/1RB#0 20M	Right Side	20175	24.48	24.50	1.005	0.349	0.350
	LTE Band 4/1RB#0 20M	Bottom Side	20175	24.48	24.50	1.005	1.030	1.035
	LTE Band 4/1RB#0 20M	Back Side	20050	24.27	24.50	1.054	0.693	0.731
	LTE Band 4/1RB#0 20M	Back Side	20300	24.20	24.50	1.072	0.758	0.813
	LTE Band 4/1RB#0 20M	Bottom Side	20050	24.27	24.50	1.054	1.004	1.058
40#	LTE Band 4/1RB#0 20M	Bottom Side	20300	24.20	24.50	1.072	1.110	1.189
	LTE Band 4/50RB#0 20M	Front Side	20175	23.48	24.00	1.127	0.588	0.662
	LTE Band 4/50RB#0 20M	Back Side	20175	23.48	24.00	1.127	0.623	0.703
	LTE Band 4/50RB#0 20M	Left Side	20175	23.48	24.00	1.127	0.155	0.175
	LTE Band 4/50RB#0 20M	Right Side	20175	23.48	24.00	1.127	0.266	0.300
	LTE Band 4/50RB#0 20M	Bottom Side	20175	23.48	24.00	1.127	0.892	1.006
	LTE Band 4/50RB#0 20M	Bottom Side	20050	23.37	24.00	1.156	0.779	0.900
	LTE Band 4/50RB#0 20M	Bottom Side	20300	23.33	24.00	1.167	0.866	1.010
	LTE Band 4/**100RB#0** 20M	Bottom Side	20175	23.27	24.00	1.183	0.812	0.961
Ant 1 (Full Power)								
	LTE Band 5/1RB#0 10M	Front Side	20525	24.59	25.00	1.099	0.861	0.947
41#	LTE Band 5/1RB#0 10M	Back Side	20525	24.59	25.00	1.099	1.030	1.132
	LTE Band 5/1RB#0 10M	Right Side	20525	24.59	25.00	1.099	0.334	0.367
	LTE Band 5/1RB#0 10M	Bottom Side	20525	24.59	25.00	1.099	0.307	0.338
	LTE Band 5/1RB#0 10M	Front Side	20450	24.24	25.00	1.191	0.637	0.759
	LTE Band 5/1RB#0 10M	Front Side	20600	24.50	25.00	1.122	0.798	0.895

	LTE Band 5/1RB#0 10M	Back Side	20450	24.24	25.00	1.191	0.713	0.849
	LTE Band 5/1RB#0 10M	Back Side	20600	24.50	25.00	1.122	0.920	1.032
	LTE Band 5/25RB#0 10M	Front Side	20525	23.55	24.00	1.109	0.739	0.820
	LTE Band 5/25RB#0 10M	Back Side	20525	23.55	24.00	1.109	0.805	0.892
	LTE Band 5/25RB#0 10M	Right Side	20525	23.55	24.00	1.109	0.242	0.268
	LTE Band 5/25RB#0 10M	Bottom Side	20525	23.55	24.00	1.109	0.259	0.288
	LTE Band 5/25RB#0 10M	Front Side	20450	23.50	24.00	1.122	0.552	0.619
	LTE Band 5/25RB#0 10M	Front Side	20600	23.45	24.00	1.135	0.663	0.752
	LTE Band 5/25RB#0 10M	Back Side	20450	23.50	24.00	1.122	0.591	0.663
	LTE Band 5/25RB#0 10M	Back Side	20600	23.45	24.00	1.135	0.759	0.861
	LTE Band 5/**50RB#0** 10M	Back Side	20525	23.48	24.00	1.127	0.623	0.702
Ant 4 (Full Power)								
	LTE Band 7/1RB#0 20M	Front Side	21100	23.18	23.50	1.076	0.585	0.629
	LTE Band 7/1RB#0 20M	Back Side	21100	23.18	23.50	1.076	0.646	0.695
	LTE Band 7/1RB#0 20M	Left Side	21100	23.18	23.50	1.076	0.236	0.254
	LTE Band 7/1RB#0 20M	Top Side	21100	23.18	23.50	1.076	0.595	0.640
	LTE Band 7/50RB#0 20M	Front Side	21100	22.05	22.50	1.109	0.465	0.516
	LTE Band 7/50RB#0 20M	Back Side	21100	22.05	22.50	1.109	0.511	0.567
	LTE Band 7/50RB#0 20M	Left Side	21100	22.05	22.50	1.109	0.190	0.211
	LTE Band 7/50RB#0 20M	Top Side	21100	22.05	22.50	1.109	0.316	0.350
Ant 2 (Full Power)								
	LTE Band 7/1RB#0 20M	Front Side	21100	24.25	25.00	1.189	0.683	0.811
42#	LTE Band 7/1RB#0 20M	Back Side	21100	24.25	25.00	1.189	0.745	0.885
	LTE Band 7/1RB#0 20M	Left Side	21100	24.25	25.00	1.189	0.134	0.159
	LTE Band 7/1RB#0 20M	Right Side	21100	24.25	25.00	1.189	0.238	0.283
43#	LTE Band 7/1RB#0 20M	Bottom Side	21100	24.25	25.00	1.189	0.784	0.932
	LTE Band 7/1RB#0 20M	Front Side	20850	24.22	25.00	1.197	0.683	0.817
	LTE Band 7/1RB#0 20M	Front Side	21350	24.21	25.00	1.199	0.624	0.748
	LTE Band 7/1RB#0 20M	Back Side	20850	24.22	25.00	1.197	0.725	0.868
	LTE Band 7/1RB#0 20M	Back Side	21350	24.21	25.00	1.199	0.585	0.702
	LTE Band 7/1RB#0 20M	Bottom Side	20850	24.22	25.00	1.197	0.720	0.862
	LTE Band 7/1RB#0 20M	Bottom Side	21350	24.21	25.00	1.199	0.724	0.869
	LTE Band 7/50RB#0 20M	Front Side	21100	23.38	24.00	1.153	0.540	0.623
	LTE Band 7/50RB#0 20M	Back Side	21100	23.38	24.00	1.153	0.520	0.600
	LTE Band 7/50RB#0 20M	Left Side	21100	23.38	24.00	1.153	0.104	0.120

	LTE Band 7/50RB#0 20M	Right Side	21100	23.38	24.00	1.153	0.190	0.219
	LTE Band 7/50RB#0 20M	Bottom Side	21100	23.38	24.00	1.153	0.593	0.684
	LTE Band 7/**100RB#0** 20M	Bottom Side	21100	24.25	25.00	1.189	0.537	0.638
Ant 1 (Full Power)								
	LTE Band 12/1RB#0 10M	Front Side	23095	24.69	25.00	1.074	0.397	0.426
44#	LTE Band 12/1RB#0 10M	Back Side	23095	24.69	25.00	1.074	0.402	0.432
	LTE Band 12/1RB#0 10M	Right Side	23095	24.69	25.00	1.074	0.175	0.188
	LTE Band 12/1RB#0 10M	Bottom Side	23095	24.69	25.00	1.074	0.132	0.142
	LTE Band 12/25RB#0 10M	Front Side	23095	23.69	24.00	1.074	0.328	0.352
	LTE Band 12/25RB#0 10M	Back Side	23095	23.69	24.00	1.074	0.330	0.354
	LTE Band 12/25RB#0 10M	Right Side	23095	23.69	24.00	1.074	0.145	0.156
	LTE Band 12/25RB#0 10M	Bottom Side	23095	23.69	24.00	1.074	0.107	0.115
Ant 1 (Full Power)								
	LTE Band 18/1RB#0 15M	Front Side	23925	24.29	25.00	1.178	0.623	0.733
45#	LTE Band 18/1RB#0 15M	Back Side	23925	24.29	25.00	1.178	0.668	0.787
	LTE Band 18/1RB#0 15M	Right Side	23925	24.29	25.00	1.178	0.269	0.317
	LTE Band 18/1RB#0 15M	Bottom Side	23925	24.29	25.00	1.178	0.193	0.227
	LTE Band 18/36RB#0 15M	Front Side	23925	23.45	24.00	1.135	0.560	0.636
	LTE Band 18/36RB#0 15M	Back Side	23925	23.45	24.00	1.135	0.587	0.000
	LTE Band 18/36RB#0 15M	Right Side	23925	23.45	24.00	1.135	0.204	0.232
	LTE Band 18/36RB#0 15M	Bottom Side	23925	23.45	24.00	1.135	0.179	0.203
Ant 1 (Full Power)								
	LTE Band 19/1RB#0 15M	Front Side	24075	24.39	25.00	1.151	0.796	0.916
46#	LTE Band 19/1RB#0 15M	Back Side	24075	24.39	25.00	1.151	0.895	1.030
	LTE Band 19/1RB#0 15M	Right Side	24075	24.39	25.00	1.151	0.296	0.341
	LTE Band 19/1RB#0 15M	Bottom Side	24075	24.39	25.00	1.151	0.278	0.320
	LTE Band 19/**75RB#0** 15M	Back Side	24075	23.49	24.00	1.125	0.725	0.815
	LTE Band 19/36RB#0 15M	Front Side	24075	23.52	24.00	1.117	0.697	0.779
	LTE Band 19/36RB#0 15M	Back Side	24075	23.52	24.00	1.117	0.761	0.850
	LTE Band 19/36RB#0 15M	Right Side	24075	23.52	24.00	1.117	0.228	0.255
	LTE Band 19/36RB#0 15M	Bottom Side	24075	23.52	24.00	1.117	0.251	0.280
Ant 1 (Full Power)								
	LTE Band 26/1RB#0 15M	Front Side	26865	24.49	25.00	1.125	0.712	0.801
47#	LTE Band 26/1RB#0 15M	Back Side	26865	24.49	25.00	1.125	0.773	0.869
	LTE Band 26/1RB#0 15M	Right Side	26865	24.49	25.00	1.125	0.394	0.443

	LTE Band 26/1RB#0 15M	Bottom Side	26865	24.49	25.00	1.125	0.025	0.029
	LTE Band 26/**75RB#0** 15M	Back Side	26865	23.51	24.00	1.119	0.641	0.718
	LTE Band 26/36RB#0 15M	Front Side	26865	23.67	24.00	1.079	0.601	0.648
	LTE Band 26/36RB#0 15M	Back Side	26865	23.67	24.00	1.079	0.651	0.703
	LTE Band 26/36RB#0 15M	Right Side	26865	23.67	24.00	1.079	0.361	0.390
	LTE Band 26/36RB#0 15M	Bottom Side	26865	23.67	24.00	1.079	0.221	0.239
Ant 4 (Full Power)								
	LTE Band 38/1RB#0 20M	Front Side	38000	23.04	23.50	1.112	0.232	0.260
	LTE Band 38/1RB#0 20M	Back Side	38000	23.04	23.50	1.112	0.233	0.261
	LTE Band 38/1RB#0 20M	Left Side	38000	23.04	23.50	1.112	0.112	0.126
	LTE Band 38/1RB#0 20M	Top Side	38000	23.04	23.50	1.112	0.204	0.228
	LTE Band 38/50RB#0 20M	Front Side	38000	22.28	22.50	1.052	0.193	0.204
	LTE Band 38/50RB#0 20M	Back Side	38000	22.28	22.50	1.052	0.185	0.196
	LTE Band 38/50RB#0 20M	Left Side	38000	22.28	22.50	1.052	0.092	0.098
	LTE Band 38/50RB#0 20M	Top Side	38000	22.28	22.50	1.052	0.160	0.169
Ant 2 (Full Power)								
	LTE Band 38/1RB#0 20M	Front Side	38000	24.17	25.00	1.211	0.272	0.332
48#	LTE Band 38/1RB#0 20M	Back Side	38000	24.17	25.00	1.211	0.273	0.332
	LTE Band 38/1RB#0 20M	Left Side	38000	24.17	25.00	1.211	0.038	0.047
	LTE Band 38/1RB#0 20M	Right Side	38000	24.17	25.00	1.211	0.097	0.118
49#	LTE Band 38/1RB#0 20M	Bottom Side	38000	24.17	25.00	1.211	0.396	0.482
	LTE Band 38/50RB#0 20M	Front Side	38000	23.48	24.00	1.127	0.219	0.248
	LTE Band 38/50RB#0 20M	Back Side	38000	23.48	24.00	1.127	0.223	0.252
	LTE Band 38/50RB#0 20M	Left Side	38000	23.48	24.00	1.127	0.034	0.039
	LTE Band 38/50RB#0 20M	Right Side	38000	23.48	24.00	1.127	0.080	0.090
	LTE Band 38/50RB#0 20M	Bottom Side	38000	23.48	24.00	1.127	0.317	0.359
Ant 4 (Full Power)								
	LTE Band 40A/1RB#0 10M	Front Side	38750	22.91	23.50	1.146	0.148	0.170
	LTE Band 40A/1RB#0 10M	Back Side	38750	22.91	23.50	1.146	0.206	0.237
	LTE Band 40A/1RB#0 10M	Left Side	38750	22.91	23.50	1.146	0.117	0.135
	LTE Band 40A/1RB#0 10M	Top Side	38750	22.91	23.50	1.146	0.193	0.223
	LTE Band 40A/25RB#0 10M	Front Side	38750	21.94	22.50	1.138	0.121	0.138
	LTE Band 40A/25RB#0 10M	Back Side	38750	21.94	22.50	1.138	0.167	0.191
	LTE Band 40A/25RB#0 10M	Left Side	38750	21.94	22.50	1.138	0.094	0.108

	LTE Band 40A/25RB#0 10M	Top Side	38750	21.94	22.50	1.138	0.153	0.175
Ant 2 (Full Power)								
	LTE Band 40A/1RB#0 10M	Front Side	38750	24.13	25.00	1.222	0.308	0.379
50#	LTE Band 40A/1RB#0 10M	Back Side	38750	24.13	25.00	1.222	0.445	0.547
	LTE Band 40A/1RB#0 10M	Left Side	38750	24.13	25.00	1.222	0.104	0.128
	LTE Band 40A/1RB#0 10M	Right Side	38750	24.13	25.00	1.222	0.213	0.262
51#	LTE Band 40A/1RB#0 10M	Bottom Side	38750	24.13	25.00	1.222	0.657	0.808
	LTE Band 40A/25RB#0 10M	Front Side	38750	23.23	24.00	1.194	0.247	0.297
	LTE Band 40A/25RB#0 10M	Back Side	38750	23.23	24.00	1.194	0.355	0.426
	LTE Band 40A/25RB#0 10M	Left Side	38750	23.23	24.00	1.194	0.059	0.071
	LTE Band 40A/25RB#0 10M	Right Side	38750	23.23	24.00	1.194	0.122	0.147
	LTE Band 40A/25RB#0 10M	Bottom Side	38750	23.23	24.00	1.194	0.490	0.589
	LTE Band 40A/50RB#0 10M	Bottom Side	38750	23.30	24.00	1.175	0.453	0.535
Ant 4 (Full Power)								
	LTE Band 40B/1RB#0 10M	Front Side	39200	22.89	23.50	1.151	0.137	0.158
	LTE Band 40B/1RB#0 10M	Back Side	39200	22.89	23.50	1.151	0.179	0.207
	LTE Band 40B/1RB#0 10M	Left Side	39200	22.89	23.50	1.151	0.100	0.116
	LTE Band 40B/1RB#0 10M	Top Side	39200	22.89	23.50	1.151	0.140	0.162
	LTE Band 40B/25RB#0 10M	Front Side	39200	22.09	22.50	1.099	0.107	0.119
	LTE Band 40B/25RB#0 10M	Back Side	39200	22.09	22.50	1.099	0.139	0.154
	LTE Band 40B/25RB#0 10M	Left Side	39200	22.09	22.50	1.099	0.080	0.088
	LTE Band 40B/25RB#0 10M	Top Side	39200	22.09	22.50	1.099	0.110	0.121
Ant 2 (Full Power)								
	LTE Band 40B/1RB#0 10M	Front Side	39200	24.15	25.00	1.216	0.316	0.291
52#	LTE Band 40B/1RB#0 10M	Back Side	39200	24.15	25.00	1.216	0.460	0.563
	LTE Band 40B/1RB#0 10M	Left Side	39200	24.15	25.00	1.216	0.128	0.157
	LTE Band 40B/1RB#0 10M	Right Side	39200	24.15	25.00	1.216	0.217	0.265
53#	LTE Band 40B/1RB#0 10M	Bottom Side	39200	24.15	25.00	1.216	0.749	0.916
	LTE Band 40B/25RB#0 10M	Front Side	39200	23.37	24.00	1.156	0.253	0.294
	LTE Band 40B/25RB#0 10M	Back Side	39200	23.37	24.00	1.156	0.362	0.421
	LTE Band 40B/25RB#0 10M	Left Side	39200	23.37	24.00	1.156	0.105	0.122
	LTE Band 40B/25RB#0 10M	Right Side	39200	23.37	24.00	1.156	0.171	0.199
	LTE Band 40B/25RB#0 10M	Bottom Side	39200	23.37	24.00	1.156	0.537	0.625
	LTE Band 40B/50RB#0 10M	Bottom Side	39200	23.38	24.00	1.153	0.519	0.602
Ant 6（Full Power）								

	5G NR n41/1RB#0 100M	Front Side	519000	24.74	25.00	1.062	0.160	0.170
	5G NR n41/1RB#0 100M	Back Side	519000	24.74	25.00	1.062	0.274	0.291
	5G NR n41/1RB#0 100M	Left Side	519000	24.74	25.00	1.062	0.020	0.022
	5G NR n41/1RB#0 100M	Top Side	519000	24.74	25.00	1.062	0.459	0.487
	5G NR n41/135RB#0 100M	Front Side	519000	23.92	24.00	1.019	0.094	0.095
	5G NR n41/135RB#0 100M	Back Side	519000	23.92	24.00	1.019	0.197	0.201
	5G NR n41/135RB#0 100M	Left Side	519000	23.92	24.00	1.019	0.016	0.016
	5G NR n41/135RB#0 100M	Top Side	519000	23.92	24.00	1.019	0.354	0.361
Ant 5（Full Power）								
54#	5G NR n41/1RB#0 100M	Front Side	519000	25.61	26.00	1.094	0.462	0.505
	5G NR n41/1RB#0 100M	Back Side	519000	25.61	26.00	1.094	0.458	0.501
55#	5G NR n41/1RB#0 100M	Left Side	519000	25.61	26.00	1.094	1.040	1.138
	5G NR n41/1RB#0 100M	Top Side	519000	25.61	26.00	1.094	0.075	0.082
	5G NR n41/1RB#0 100M	Left Side	513000	25.52	26.00	1.117	0.912	1.019
	5G NR n41/1RB#0 100M	Left Side	516000	25.55	26.00	1.109	0.997	1.106
	5G NR n41/1RB#0 100M	Left Side	522000	25.54	26.00	1.112	0.935	1.039
	5G NR n41/1RB#0 100M	Left Side	525000	25.51	26.00	1.119	0.949	1.062
	5G NR n41/135RB#0 100M	Front Side	519000	24.92	25.00	1.019	0.412	0.420
	5G NR n41/135RB#0 100M	Back Side	519000	24.92	25.00	1.019	0.444	0.452
	5G NR n41/135RB#0 100M	Left Side	519000	24.92	25.00	1.019	0.760	0.774
	5G NR n41/135RB#0 100M	Top Side	519000	24.92	25.00	1.019	0.069	0.070
	5G NR n41/**270RB#0** 100M	Left Side	519000	24.59	25.00	1.099	0.731	0.803
Ant 8 (Full Power)								
	WLAN2.4GHz/802.11b	Front Side	11	15.69	16.5	1.205	0.070	0.084
	WLAN2.4GHz/802.11b	Back Side	11	15.69	16.5	1.205	0.071	0.085
	WLAN2.4GHz/802.11b	Right Side	11	15.69	16.5	1.205	0.032	0.038
	WLAN2.4GHz/802.11b	Top Side	11	15.69	16.5	1.205	0.026	0.031
Ant 9 (Full Power)								
	WLAN2.4GHz/802.11b	Front Side	1	15.95	16.5	1.135	0.027	0.030
56#	WLAN2.4GHz/802.11b	Back Side	1	15.95	16.5	1.135	0.154	0.175
	WLAN2.4GHz/802.11b	Right Side	1	15.95	16.5	1.135	0.040	0.046
	WLAN2.4GHz/802.11b	Top Side	1	15.95	16.5	1.135	0.038	0.043
Ant 8 (Full Power)								
	WLAN5.2GHz/802.11ax20 RU26	Front Side	36	13.60	14.00	1.096	0.055	0.061
	WLAN5.2GHz/802.11ax20 RU26	Back Side	36	13.60	14.00	1.096	0.084	0.093
	WLAN5.2GHz/802.11ax20 RU26	Right Side	36	13.60	14.00	1.096	0.100	0.110

57#	WLAN5.2GHz/802.11ax20 RU26	Top Side	36	13.60	14.00	1.096	0.133	0.147
Ant 10 (Full Power)								
	WLAN5.2GHz/802.11ax20 RU26	Front Side	48	13.93	14.50	1.140	0.031	0.035
	WLAN5.2GHz/802.11ax20 RU26	Back Side	48	13.93	14.50	1.140	0.093	0.107
	WLAN5.2GHz/802.11ax20 RU26	Right Side	48	13.93	14.50	1.140	0.031	0.035
	WLAN5.2GHz/802.11ax20 RU26	Top Side	48	13.93	14.50	1.140	0.054	0.062
Ant 8 (Full Power)								
	WLAN5.3GHz/802.11ax-20 RU26	Front Side	64	13.30	14.00	1.175	0.079	0.093
58#	WLAN5.3GHz/802.11ax-20 RU26	Back Side	64	13.30	14.00	1.175	0.102	0.121
Ant 10 (Full Power)								
	WLAN5.3GHz/802.11n-40	Front Side	62	13.01	13.50	1.119	0.017	0.020
	WLAN5.3GHz/802.11n-40	Back Side	62	13.01	13.50	1.119	0.105	0.118
Ant 8 (Full Power)								
	WLAN5.8GHz/802.11ax20 RU242	Front Side	157	13.31	14.00	1.172	0.113	0.134
59#	WLAN5.8GHz/802.11ax20 RU242	Back Side	157	13.31	14.00	1.172	0.151	0.179
	WLAN5.8GHz/802.11ax20 RU242	Right Side	157	13.31	14.00	1.172	0.098	0.116
	WLAN5.8GHz/802.11ax20 RU242	Top Side	157	13.31	14.00	1.172	0.081	0.096
Ant 10 (Full Power)								
	WLAN5.8GHz/802.11a	Front Side	157	12.88	13.50	1.153	0.023	0.027
	WLAN5.8GHz/802.11a	Back Side	157	12.88	13.50	1.153	0.124	0.143
	WLAN5.8GHz/802.11a	Right Side	157	12.88	13.50	1.153	0.032	0.036
	WLAN5.8GHz/802.11a	Top Side	157	12.88	13.50	1.153	0.066	0.077
Ant 8 (Full Power)								
	Bluetooth/1Mbps	Front Side	39	13.18	14	1.208	0.021	0.026
60#	Bluetooth/1Mbps	Back Side	39	13.18	14	1.208	0.048	0.060
	Bluetooth/1Mbps	Right Side	39	13.18	14	1.208	0.012	0.015
	Bluetooth/1Mbps	Top Side	39	13.18	14	1.208	0.042	0.053

18.5. Body SAR Data for EN-DC

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)
Ant 4 (Reduction Power)								
	LTE Band 2/1RB#0 20M	Front Side	18900	18.51	19.00	1.119	0.192	0.215
	LTE Band 2/1RB#0 20M	Back Side	18900	18.51	19.00	1.119	0.373	0.418
	LTE Band 2/1RB#0 20M	Left Side	18900	18.51	19.00	1.119	0.220	0.246
	LTE Band 2/1RB#0 20M	Top Side	18900	18.51	19.00	1.119	0.435	0.487
	LTE Band 2/50RB#0 20M	Front Side	18900	17.49	18.00	1.125	0.147	0.165
	LTE Band 2/50RB#0 20M	Back Side	18900	17.49	18.00	1.125	0.225	0.253
	LTE Band 2/50RB#0 20M	Left Side	18900	17.49	18.00	1.125	0.124	0.139
	LTE Band 2/50RB#0 20M	Top Side	18900	17.49	18.00	1.125	0.417	0.469
Ant 2 (Reduction Power)								
	LTE Band 2/1RB#0 20M	Front Side	18900	20.39	20.50	1.026	0.566	0.580
	LTE Band 2/1RB#0 20M	Back Side	18900	20.39	20.50	1.026	0.458	0.470
	LTE Band 2/1RB#0 20M	Left Side	18900	20.39	20.50	1.026	0.098	0.101
	LTE Band 2/1RB#0 20M	Right Side	18900	20.39	20.50	1.026	0.156	0.160
61#	LTE Band 2/1RB#0 20M	Bottom Side	18900	20.39	20.50	1.026	0.768	0.788
	LTE Band 2/50RB#0 20M	Front Side	18900	19.39	19.50	1.026	0.446	0.458
	LTE Band 2/50RB#0 20M	Back Side	18900	19.39	19.50	1.026	0.338	0.347
	LTE Band 2/50RB#0 20M	Left Side	18900	19.39	19.50	1.026	0.069	0.070
	LTE Band 2/50RB#0 20M	Right Side	18900	19.39	19.50	1.026	0.125	0.128
	LTE Band 2/50RB#0 20M	Bottom Side	18900	19.39	19.50	1.026	0.599	0.614
Ant 6 (Full Power)								
	5G NR n41/1RB#0 100M	Front Side	519000	24.74	25.00	1.062	0.160	0.170
	5G NR n41/1RB#0 100M	Back Side	519000	24.74	25.00	1.062	0.274	0.291
	5G NR n41/1RB#0 100M	Left Side	519000	24.74	25.00	1.062	0.020	0.022
	5G NR n41/1RB#0 100M	Top Side	519000	24.74	25.00	1.062	0.459	0.487
	5G NR n41/135RB#0 100M	Front Side	519000	23.92	24.00	1.019	0.094	0.095
	5G NR n41/135RB#0 100M	Back Side	519000	23.92	24.00	1.019	0.197	0.201
	5G NR n41/135RB#0 100M	Left Side	519000	23.92	24.00	1.019	0.016	0.016
	5G NR n41/135RB#0 100M	Top Side	519000	23.92	24.00	1.019	0.354	0.361
Ant 5 (Reduction Power)								

	5G NR n41/1RB#0 100M	Front Side	519000	23.75	24.00	1.059	0.292	0.309
	5G NR n41/1RB#0 100M	Back Side	519000	23.75	24.00	1.059	0.314	0.333
62#	5G NR n41/1RB#0 100M	Left Side	519000	23.75	24.00	1.059	0.689	0.730
	5G NR n41/1RB#0 100M	Top Side	519000	23.75	24.00	1.059	0.049	0.051
	5G NR n41/135RB#0 100M	Front Side	519000	23.34	23.50	1.038	0.251	0.260
	5G NR n41/135RB#0 100M	Back Side	519000	23.34	23.50	1.038	0.263	0.273
	5G NR n41/135RB#0 100M	Left Side	519000	23.34	23.50	1.038	0.596	0.618
	5G NR n41/135RB#0 100M	Top Side	519000	23.34	23.50	1.038	0.046	0.047

18.6. Repeated SAR Assessment

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.
5. Repeated SAR as below:

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)
OR.	GPRS 1900(3 TX slots)	Right Cheek	512	24.10	25.00	1.230	0.958	1.179
1st	GPRS 1900(3 TX slots)	Right Cheek	512	24.10	25.00	1.230	0.942	1.159
OR.	Band II/RMC 12.2Kbps	Right Cheek	9262	17.41	18.00	1.146	0.934	1.070
1st	Band II/RMC 12.2Kbps	Right Cheek	9262	17.41	18.00	1.146	0.925	1.060
OR.	Band IV/RMC 12.2Kbps	Right Cheek	1513	19.04	19.50	1.112	1.030	1.145
1st	Band IV/RMC 12.2Kbps	Right Cheek	1513	19.04	19.50	1.112	1.010	1.123
OR.	BC1/ RTAP 153.6Kbps	Right Cheek	25	19.34	20.00	1.164	0.890	1.036
1st	BC1/ RTAP 153.6Kbps	Right Cheek	25	19.34	20.00	1.164	0.879	1.023
OR.	LTE Band 2/1RB#0 20M	Right Cheek	18700	18.63	19.00	1.089	0.984	1.072
1st	LTE Band 2/1RB#0 20M	Right Cheek	18700	18.63	19.00	1.089	0.979	1.066
OR.	LTE Band 4/1RB#0 20M	Right Cheek	20300	20.00	20.50	1.122	1.040	1.167
1st	LTE Band 4/1RB#0 20M	Right Cheek	20300	20.00	20.50	1.122	1.002	1.124
OR.	LTE Band 7/1RB#0 20M	Right Cheek	20850	18.06	19.00	1.242	0.895	1.111

1st	LTE Band 7/1RB#0 20M	Right Cheek	20850	18.06	19.00	1.242	0.889	1.104
OR.	LTE Band 38/1RB#0 20M	Right Tilt	38000	23.04	23.50	1.112	0.826	0.924
1st	LTE Band 38/1RB#0 20M	Right Tilt	38000	23.04	23.50	1.112	0.819	0.916
OR.	LTE Band 40A/1RB#0 10M	Right Cheek	38750	21.19	22.00	1.205	0.824	0.999
1st	LTE Band 40A/1RB#0 10M	Right Cheek	38750	21.19	22.00	1.205	0.821	0.995
OR.	NR N41/1RB#1 100M	Right Cheek	516000	24.68	25.00	1.076	1.080	1.163
1st	NR N41/1RB#1 100M	Right Cheek	516000	24.68	25.00	1.076	1.010	1.087
OR.	WLAN5.8GHz/802.11ax-20 RU242	Left Cheek	149	13.22	13.50	1.067	0.833	0.896
1st	WLAN5.8GHz/802.11ax-20 RU242	Left Cheek	149	13.22	13.50	1.067	0.867	0.962
OR.	Band II/RMC 12.2Kbps	Bottom Side	9400	22.38	23.00	1.153	0.945	1.090
1st	Band II/RMC 12.2Kbps	Bottom Side	9400	22.38	23.00	1.153	0.935	1.078
OR.	Band IV/RMC 12.2Kbps	Bottom Side	1413	22.43	23.00	1.140	0.926	1.056
1st	Band IV/RMC 12.2Kbps	Bottom Side	1413	22.43	23.00	1.140	0.918	1.047
OR.	Band V/RMC 12.2Kbps	Back Side	4182	24.15	24.50	1.084	0.957	1.037
1st	Band V/RMC 12.2Kbps	Back Side	4182	24.15	24.50	1.084	0.951	1.031
OR.	BC1/ RTAP 153.6Kbps	Top Side	25	22.95	23.50	1.135	0.890	1.010
1st	BC1/ RTAP 153.6Kbps	Top Side	25	22.95	23.50	1.135	0.887	1.007
OR.	LTE Band 2/1RB#0 20M	Bottom Side	18900	22.95	23.50	1.135	0.988	1.121
1st	LTE Band 2/1RB#0 20M	Bottom Side	18900	22.95	23.50	1.135	0.979	1.111
OR.	LTE Band 4/1RB#0 20M	Bottom Side	20300	24.20	24.50	1.072	1.110	1.189
1st	LTE Band 4/1RB#0 20M	Bottom Side	20300	24.20	24.50	1.072	1.090	1.168
OR.	LTE Band 5/1RB#0 10M	Back Side	20525	24.59	25.00	1.099	1.030	1.132
1st	LTE Band 5/1RB#0 10M	Back Side	20525	24.59	25.00	1.099	1.000	1.099
OR.	LTE Band 19/1RB#0 15M	Back Side	24075	24.39	25.00	1.151	0.895	1.030

1st	LTE Band 19/1RB#0 15M	Back Side	24075	24.39	25.00	1.151	0.891	1.025
OR.	5G NR n41/1RB#1 100M	Left Side	519000	25.61	26.00	1.094	1.040	1.138
1st	5G NR n41/1RB#1 100M	Left Side	519000	25.61	26.00	1.094	1.002	1.096

18.7. Extremity SAR Assessment

Guidance:

1. According to KDB 648747 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.
3. 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.
4. According to the user manual, the EUT diagonal size is greater than 16cm, therefore the 0mm extremity SAR of WLAN 5GHz is required. There are two types of antennas in this device, only the worst test position was tested the extremity SAR in this report.
5. Test results as below:

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)
Ant 2 (Reduction Power)								
	Band II/RMC 12.2Kbps	Bottom Side	9400	22.38	23.00	1.153	2.340	2.699
63#	Band II/RMC 12.2Kbps	Bottom Side	9262	22.16	23.00	1.213	2.456	2.980
	Band II/RMC 12.2Kbps	Bottom Side	9538	22.37	23.00	1.156	2.422	2.800
Ant 2 (Reduction Power)								
	Band IV/RMC 12.2Kbps	Bottom Side	1413	22.43	23.00	1.140	2.290	2.611
	Band IV/RMC 12.2Kbps	Bottom Side	1312	22.33	23.00	1.167	2.209	2.577
64#	Band IV/RMC 12.2Kbps	Bottom Side	1513	22.39	23.00	1.151	2.290	2.635
Ant 2 (Reduction Power)								
	LTE Band 2/1RB#0 20M	Back Side	18900	22.95	23.50	1.135	1.390	1.578
65#	LTE Band 2/1RB#0 20M	Bottom Side	18900	22.95	23.50	1.135	2.000	2.270
	LTE Band 2/1RB#0 20M	Bottom Side	18700	22.74	23.50	1.191	1.474	1.756
	LTE Band 2/1RB#0 20M	Bottom Side	19100	22.67	23.50	1.211	1.489	1.802
Ant 8 (Full Power)								
66#	WLAN5.3GHz/802.11ax-20 RU26	Back Side	64	13.30	14.00	1.175	0.212	0.251
Ant 10 (Full Power)								
	WLAN5.3GHz/802.11n-40	Back Side	62	13.01	13.50	1.119	0.160	0.180

19. Simultaneous Transmission Evaluation

19.1. Simultaneous Transmission Consideration

No.	Simultaneous Transmission Consideration	Head	Body-Worn	Hotspot
1	WWAN(2G/3G/4G)+WLAN 2.4GHz(Ant 8/Ant 9)	Yes	Yes	Yes
2	WWAN(2G/3G/4G)+WLAN 5.2GHz/5.8GHz(Ant 8/Ant 10)	Yes	Yes	Yes
3	WWAN(2G/3G/4G)+WLAN 5.3GHz (Ant 8/Ant 10)	Yes	Yes	No
4	WWAN 5G NR+WLAN 2.4GHz(Ant 8/Ant 9)	Yes	Yes	Yes
5	WWAN 5G NR+WLAN 5.2GHz/5.8GHz(Ant 8/Ant 10)	Yes	Yes	Yes
6	WWAN 5G NR+WLAN 5.3GHz (Ant 8/Ant 10)	Yes	Yes	No
7	WWAN(2G/3G/4G)+Bluetooth(Ant 8)	No	Yes	Yes
8	WWAN 5G NR+ Bluetooth(Ant 8)	No	Yes	Yes
9	WLAN 2.4GHz(Ant 3)+Bluetooth(Ant 8)	No	Yes	Yes
10	WLAN 5.2GHz/5.8GHz(Ant 10)+Bluetooth(Ant 8)	No	Yes	Yes
11	WLAN 5.3GHz (Ant 10)+Bluetooth(Ant 8)	No	Yes	No
12	WWAN(2G/3G/4G)+WLAN 2.4GHz(MIMO)	Yes	Yes	Yes
13	WWAN(2G/3G/4G)+WLAN 5GHz(MIMO)	Yes	Yes	Yes
14	WWAN 5G NR+WLAN 2.4GHz(MIMO)	Yes	Yes	Yes
15	WWAN 5G NR+WLAN 5GHz(MIMO)	Yes	Yes	Yes

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, because the software mechanism have been incorporated to guarantee that the WLAN 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: (SAR1 + SAR2) ^ 1.5/Ri ≤ 0.04,
Ri is the separation distance between the peak SAR locations for the antenna pair in mm.

5. 2.4G&5G MIMO SAR were combined standalone SAR of CH0 and CH1.
6. When it supports transmit simultaneously at WWAN+WLAN MIMO mode, the co-location SAR of WWAN+WLAN (standalone SAR) would not be recorded in this report.
7. This device does not support simultaneous transmission of WWAN(2/3/4G/SA/ENDC)+WLAN 2.4GHz+ WLAN 5 GHz mode.

19.2. Simultaneous Transmission Analysis

➢ **Head Data for EN-DC Combination**

EN-DC Combination	Exposure Position	Standalone 1g SAR (W/kg)		EN-DC Summed 1g SAR (W/kg)
		LTE Carrier	5G NR	
EN-DC_2A-n41	Right Cheek	0.618	0.585	1.203
	Right Tilt	0.549	0.440	0.989
	Left Cheek	0.239	0.489	0.728
	Left Tilt	0.298	0.408	0.706
EN-DC_2C-n41	Right Cheek	0.618	0.585	1.203
	Right Tilt	0.549	0.440	0.989
	Left Cheek	0.239	0.489	0.728
	Left Tilt	0.298	0.408	0.706

➢ **Head Data for WLAN MIMO for 2.4GHz & 5GHz**

Exposure Position	1	2	3	4	1+2 Summed 1g SAR (W/kg)	3+4 Summed 1g SAR (W/kg)
	2.4GHz WLAN Ant 8	2.4GHz WLAN Ant 9	5GHz WLAN Ant 8	5GHz WLAN Ant 10		
	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)		
Right Cheek	0.207	0.031	0.432	0.046	0.238	0.478
Right Tilt	0.134	0.034	0.453	0.049	0.168	0.502
Left Cheek	0.542	0.074	0.896	0.081	0.616	0.977
Left Tilt	0.327	0.032	0.874	0.090	0.359	0.964

➢ **Head Simultaneous Transmission for WWAN(2/3/4G/SA)+WLAN MIMO**

WWAN Band	Exposure Position	1	2	3	1+2 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)
		WWAN	2.4GHz WLAN	5GHz WLAN		
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)		
GSM 850	Right Cheek	0.718	0.238	0.478	0.956	1.196
	Right Tilt	0.278	0.168	0.502	0.446	0.780
	Left Cheek	0.233	0.616	0.977	0.849	1.210
	Left Tilt	0.161	0.359	0.964	0.520	1.125
GSM 1900	Right Cheek	1.179	0.238	0.478	1.417	1.657
	Right Tilt	0.973	0.168	0.502	1.141	1.475
	Left Cheek	0.607	0.616	0.977	1.223	1.584
	Left Tilt	0.896	0.359	0.964	1.255	1.860
WCDMA II	Right Cheek	1.070	0.238	0.478	1.308	1.548
	Right Tilt	0.874	0.168	0.502	1.042	1.376
	Left Cheek	0.399	0.616	0.977	1.015	1.376

	Left Tilt	0.547	0.359	0.964	0.906	1.511
WCDMA IV	Right Cheek	1.145	0.238	0.478	1.383	1.623
	Right Tilt	0.777	0.168	0.502	0.945	1.279
	Left Cheek	0.361	0.616	0.977	0.977	1.338
	Left Tilt	0.476	0.359	0.964	0.835	1.440
WCDMA V	Right Cheek	0.642	0.238	0.478	0.880	1.120
	Right Tilt	0.262	0.168	0.502	0.430	0.764
	Left Cheek	0.239	0.616	0.977	0.855	1.216
	Left Tilt	0.141	0.359	0.964	0.500	1.105
CDMA BC0	Right Cheek	0.303	0.238	0.478	0.541	0.781
	Right Tilt	0.215	0.168	0.502	0.383	0.717
	Left Cheek	0.187	0.616	0.977	0.803	1.164
	Left Tilt	0.120	0.359	0.964	0.479	1.084
CDMA BC1	Right Cheek	1.036	0.238	0.478	1.274	1.514
	Right Tilt	0.971	0.168	0.502	1.139	1.473
	Left Cheek	0.382	0.616	0.977	0.998	1.359
	Left Tilt	0.532	0.359	0.964	0.891	1.496
LTE Band 2	Right Cheek	1.072	0.238	0.478	1.310	1.550
	Right Tilt	1.032	0.168	0.502	1.200	1.534
	Left Cheek	0.373	0.616	0.977	0.989	1.350
	Left Tilt	0.498	0.359	0.964	0.857	1.462
LTE Band 4	Right Cheek	1.167	0.238	0.478	1.405	1.645
	Right Tilt	0.799	0.168	0.502	0.967	1.301
	Left Cheek	0.307	0.616	0.977	0.923	1.284
	Left Tilt	0.322	0.359	0.964	0.681	1.286
LTE Band 5	Right Cheek	0.599	0.238	0.478	0.837	1.077
	Right Tilt	0.259	0.168	0.502	0.427	0.761
	Left Cheek	0.187	0.616	0.977	0.803	1.164
	Left Tilt	0.144	0.359	0.964	0.503	1.108
LTE Band 7	Right Cheek	1.111	0.238	0.478	1.349	1.589
	Right Tilt	0.771	0.168	0.502	0.939	1.273
	Left Cheek	0.451	0.616	0.977	1.067	1.428
	Left Tilt	0.386	0.359	0.964	0.745	1.350
LTE Band 12/17	Right Cheek	0.274	0.238	0.478	0.512	0.752
	Right Tilt	0.154	0.168	0.502	0.322	0.656
	Left Cheek	0.122	0.616	0.977	0.738	1.099
	Left Tilt	0.108	0.359	0.964	0.467	1.072
LTE Band 18	Right Cheek	0.543	0.238	0.478	0.781	1.021
	Right Tilt	0.196	0.168	0.502	0.364	0.698
	Left Cheek	0.159	0.616	0.977	0.775	1.136
	Left Tilt	0.110	0.359	0.964	0.469	1.074

LTE Band 19	Right Cheek	0.700	0.238	0.478	0.938	1.178
	Right Tilt	0.308	0.168	0.502	0.476	0.810
	Left Cheek	0.245	0.616	0.977	0.861	1.222
	Left Tilt	0.149	0.359	0.964	0.508	1.113
LTE Band 26	Right Cheek	0.557	0.238	0.478	0.795	1.035
	Right Tilt	0.251	0.168	0.502	0.419	0.753
	Left Cheek	0.204	0.616	0.977	0.820	1.181
	Left Tilt	0.153	0.359	0.964	0.512	1.117
LTE Band 38	Right Cheek	0.686	0.238	0.478	0.924	1.164
	Right Tilt	0.924	0.168	0.502	1.092	1.426
	Left Cheek	0.311	0.616	0.977	0.927	1.288
	Left Tilt	0.451	0.359	0.964	0.810	1.415
LTE Band 40A	Right Cheek	0.999	0.238	0.478	1.237	1.477
	Right Tilt	0.833	0.168	0.502	1.001	1.335
	Left Cheek	0.479	0.616	0.977	1.095	1.456
	Left Tilt	0.577	0.359	0.964	0.936	1.541
LTE Band 40B	Right Cheek	0.878	0.238	0.478	1.116	1.356
	Right Tilt	0.789	0.168	0.502	0.957	1.291
	Left Cheek	0.395	0.616	0.977	1.011	1.372
	Left Tilt	0.400	0.359	0.964	0.759	1.364
5G NR n41	Right Cheek	1.131	0.238	0.478	1.369	1.609
	Right Tilt	0.899	0.168	0.502	1.067	1.401
	Left Cheek	0.716	0.616	0.977	1.332	1.693
	Left Tilt	0.746	0.359	0.964	1.105	1.710

➢ Head Simultaneous Transmission for WWAN(EN-DC)+WLAN MIMO

WWAN Band	Exposure Position	1	2	3	1+2 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)
		WWAN	2.4GHz WLAN	5GHz WLAN		
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)		
2A-n41	Right Cheek	1.203	0.238	0.478	1.441	1.681
	Right Tilt	0.989	0.168	0.502	1.157	1.491
	Left Cheek	0.728	0.616	0.977	1.344	1.705
	Left Tilt	0.706	0.359	0.964	1.065	1.670
2C-n41	Right Cheek	1.203	0.238	0.478	1.441	1.681
	Right Tilt	0.989	0.168	0.502	1.157	1.491
	Left Cheek	0.728	0.616	0.977	1.344	1.705
	Left Tilt	0.706	0.359	0.964	1.065	1.670

➢ Body Data for WLAN MIMO

Exposure Position	1 2.4GHz WLAN Ant 8 1g SAR (W/kg)	2 2.4GHz WLAN Ant 9 1g SAR (W/kg)	3 5GHz WLAN Ant 8 1g SAR (W/kg)	4 5GHz WLAN Ant 10 1g SAR (W/kg)	1+2 Summed 1g SAR (W/kg)	3+4 Summed 1g SAR (W/kg)
Front Side	0.084	0.030	0.134	0.035	0.114	0.169
Back Side	0.085	0.175	0.179	0.143	0.260	0.322
Left Side	0.000	0.000	0.000	0.000	0.000	0.000
Right Side	0.038	0.046	0.116	0.036	0.084	0.152
Top Side	0.031	0.043	0.147	0.077	0.074	0.224
Bottom Side	0.000	0.000	0.000	0.000	0.000	0.000

➢ Body Data for EN-DC Combination

EN-DC Combination	Exposure Position	Standalone 1g SAR (W/kg)		Summed 1g SAR (W/kg)
		LTE Carrier	5G NR	
2A-n41	Front Side	0.580	0.309	0.889
	Back Side	0.470	0.333	0.803
	Left Side	0.246	0.730	0.976
	Right Side	0.160	0.000	0.16
	Top Side	0.487	0.487	0.974
	Bottom Side	0.788	0.000	0.788
2C-n41	Front Side	0.580	0.309	0.889
	Back Side	0.470	0.333	0.803
	Left Side	0.246	0.730	0.976
	Right Side	0.160	0.000	0.16
	Top Side	0.487	0.487	0.974
	Bottom Side	0.788	0.000	0.788

➢ Body Simultaneous Transmission for WWAN(2/3/4G/SA)+WLAN MIMO

WWAN Band	Exposure Position	1	2	3	1+2 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)
		WWAN	2.4GHz WLAN	5GHz WLAN		
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)		
GSM 850	Front Side	0.678	0.114	0.169	0.792	0.847
	Back Side	0.717	0.260	0.322	0.977	1.039
	Left Side	0.000	0.000	0.000	0.000	0.000
	Right Side	0.459	0.084	0.152	0.543	0.611
	Top Side	0.000	0.074	0.224	0.074	0.224
	Bottom Side	0.215	0.000	0.000	0.215	0.215
GSM 1900	Front Side	0.245	0.114	0.169	0.359	0.414
	Back Side	0.386	0.260	0.322	0.646	0.708
	Left Side	0.264	0.000	0.000	0.264	0.264
	Right Side	0.116	0.084	0.152	0.200	0.268
	Top Side	0.263	0.074	0.224	0.337	0.487
	Bottom Side	0.498	0.000	0.000	0.498	0.498
WCDMA II	Front Side	0.677	0.114	0.169	0.791	0.846
	Back Side	0.846	0.260	0.322	1.106	1.168
	Left Side	0.523	0.000	0.000	0.523	0.523
	Right Side	0.510	0.084	0.152	0.594	0.662
	Top Side	0.596	0.074	0.224	0.670	0.820
	Bottom Side	1.090	0.000	0.000	1.090	1.090
WCDMA IV	Front Side	0.689	0.114	0.169	0.803	0.858
	Back Side	0.795	0.260	0.322	1.055	1.117
	Left Side	0.436	0.000	0.000	0.436	0.436
	Right Side	0.383	0.084	0.152	0.467	0.535
	Top Side	0.661	0.074	0.224	0.735	0.885
	Bottom Side	1.056	0.000	0.000	1.056	1.056
WCDMA V	Front Side	0.944	0.114	0.169	1.058	1.113
	Back Side	1.037	0.260	0.322	1.297	1.359
	Left Side	0.000	0.000	0.000	0.000	0.000
	Right Side	0.377	0.084	0.152	0.461	0.529
	Top Side	0.000	0.074	0.224	0.074	0.224
	Bottom Side	0.362	0.000	0.000	0.362	0.362
CDMA BC0	Front Side	0.887	0.114	0.169	1.001	1.056
	Back Side	0.983	0.260	0.322	1.243	1.305
	Left Side	0.000	0.000	0.000	0.000	0.000

	Right Side	0.303	0.084	0.152	0.387	0.455
	Top Side	0.000	0.074	0.224	0.074	0.224
	Bottom Side	0.318	0.000	0.000	0.318	0.318
CDMA BC1	Front Side	0.612	0.114	0.169	0.726	0.781
	Back Side	0.682	0.260	0.322	0.942	1.004
	Left Side	0.645	0.000	0.000	0.645	0.645
	Right Side	0.253	0.084	0.152	0.337	0.405
	Top Side	1.010	0.074	0.224	1.084	1.234
	Bottom Side	0.890	0.000	0.000	0.890	0.890
LTE Band 2	Front Side	0.779	0.114	0.169	0.893	0.948
	Back Side	1.004	0.260	0.322	1.264	1.326
	Left Side	0.576	0.000	0.000	0.576	0.576
	Right Side	0.425	0.084	0.152	0.509	0.577
	Top Side	0.984	0.074	0.224	1.058	1.208
	Bottom Side	1.121	0.000	0.000	1.121	1.121
LTE Band 4	Front Side	0.694	0.114	0.169	0.808	0.863
	Back Side	0.874	0.260	0.322	1.134	1.196
	Left Side	0.441	0.000	0.000	0.441	0.441
	Right Side	0.350	0.084	0.152	0.434	0.502
	Top Side	0.501	0.074	0.224	0.575	0.725
	Bottom Side	1.189	0.000	0.000	1.189	1.189
LTE Band 5	Front Side	0.947	0.114	0.169	1.061	1.116
	Back Side	1.132	0.260	0.322	1.392	1.454
	Left Side	0.000	0.000	0.000	0.000	0.000
	Right Side	0.367	0.084	0.152	0.451	0.519
	Top Side	0.000	0.074	0.224	0.074	0.224
	Bottom Side	0.338	0.000	0.000	0.338	0.338
LTE Band 7	Front Side	0.817	0.114	0.169	0.931	0.986
	Back Side	0.885	0.260	0.322	1.145	1.207
	Left Side	0.254	0.000	0.000	0.254	0.254
	Right Side	0.283	0.084	0.152	0.367	0.435
	Top Side	0.640	0.074	0.224	0.714	0.864
	Bottom Side	0.932	0.000	0.000	0.932	0.932
LTE Band 12/17	Front Side	0.426	0.114	0.169	0.540	0.595
	Back Side	0.432	0.260	0.322	0.692	0.754
	Left Side	0.000	0.000	0.000	0.000	0.000
	Right Side	0.188	0.084	0.152	0.272	0.340
	Top Side	0.000	0.074	0.224	0.074	0.224

	Bottom Side	0.142	0.000	0.000	0.142	0.142
LTE Band 18	Front Side	0.733	0.114	0.169	0.847	0.902
	Back Side	0.787	0.260	0.322	1.047	1.109
	Left Side	0.000	0.000	0.000	0.000	0.000
	Right Side	0.317	0.084	0.152	0.401	0.469
	Top Side	0.000	0.074	0.224	0.074	0.224
	Bottom Side	0.227	0.000	0.000	0.227	0.227
LTE Band 19	Front Side	0.916	0.114	0.169	1.030	1.085
	Back Side	1.030	0.260	0.322	1.290	1.352
	Left Side	0.000	0.000	0.000	0.000	0.000
	Right Side	0.341	0.084	0.152	0.425	0.493
	Top Side	0.000	0.074	0.224	0.074	0.224
	Bottom Side	0.320	0.000	0.000	0.320	0.320
LTE Band 26	Front Side	0.801	0.114	0.169	0.915	0.970
	Back Side	0.869	0.260	0.322	1.129	1.191
	Left Side	0.000	0.000	0.000	0.000	0.000
	Right Side	0.443	0.084	0.152	0.527	0.595
	Top Side	0.000	0.074	0.224	0.074	0.224
	Bottom Side	0.239	0.000	0.000	0.239	0.239
LTE Band 38	Front Side	0.332	0.114	0.169	0.446	0.501
	Back Side	0.332	0.260	0.322	0.592	0.654
	Left Side	0.126	0.000	0.000	0.126	0.126
	Right Side	0.118	0.084	0.152	0.202	0.270
	Top Side	0.228	0.074	0.224	0.302	0.452
	Bottom Side	0.482	0.000	0.000	0.482	0.482
LTE Band 40A	Front Side	0.379	0.114	0.169	0.493	0.548
	Back Side	0.547	0.260	0.322	0.807	0.869
	Left Side	0.135	0.000	0.000	0.135	0.135
	Right Side	0.262	0.084	0.152	0.346	0.414
	Top Side	0.223	0.074	0.224	0.297	0.447
	Bottom Side	0.808	0.000	0.000	0.808	0.808
LTE Band 40B	Front Side	0.294	0.114	0.169	0.408	0.463
	Back Side	0.563	0.260	0.322	0.823	0.885
	Left Side	0.157	0.000	0.000	0.157	0.157
	Right Side	0.265	0.084	0.152	0.349	0.417
	Top Side	0.162	0.074	0.224	0.236	0.386
	Bottom Side	0.916	0.000	0.000	0.916	0.916
5G NR N41	Front Side	0.505	0.114	0.169	0.619	0.674

	Back Side	0.501	0.260	0.322	0.761	0.823
	Left Side	1.138	0.000	0.000	1.138	1.138
	Right Side	0.000	0.084	0.152	0.084	0.152
	Top Side	0.487	0.074	0.224	0.561	0.711
	Bottom Side	0.000	0.000	0.000	0.000	0.000

➢ Body Simultaneous Transmission for WWAN(EN-DC)+WLAN MIMO

WWAN Band	Exposure Position	1	2	3	1+2 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)
		WWAN	2.4GHz WLAN	5GHz WLAN		
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)		
2A-n41	Front Side	0.889	0.114	0.169	1.003	1.058
	Back Side	0.803	0.260	0.322	1.063	1.125
	Left Side	0.976	0.000	0.000	0.976	0.976
	Right Side	0.16	0.084	0.152	0.244	0.312
	Top Side	0.974	0.074	0.224	1.048	1.198
	Bottom Side	0.788	0.000	0.000	0.788	0.788
2C-n41	Front Side	0.889	0.114	0.169	1.003	1.058
	Back Side	0.803	0.260	0.322	1.063	1.125
	Left Side	0.976	0.000	0.000	0.976	0.976
	Right Side	0.16	0.084	0.152	0.244	0.312
	Top Side	0.974	0.074	0.224	1.048	1.198
	Bottom Side	0.788	0.000	0.000	0.788	0.788

➢ Body Simultaneous Transmission for WWAN(2/3/4G/SA)+WLAN+Bluetooth

WWAN Band	Exposure Position	1	2	3	4	1+2+4 Summed 1g SAR (W/kg)	1+3+4 Summed 1g SAR (W/kg)
		WWAN	2.4GHz (Ant 8)	5GHz (Ant 10)	Bluetooth Estimated		
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)		
GSM 850	Front Side	0.678	0.030	0.035	0.026	0.734	0.739
	Back Side	0.717	0.175	0.143	0.060	0.952	0.920
	Left Side	0.000	0.000	0.000	0.000	0.000	0.000
	Right Side	0.459	0.046	0.036	0.015	0.520	0.510
	Top Side	0.000	0.043	0.077	0.053	0.096	0.130
	Bottom Side	0.215	0.000	0.000	0.000	0.215	0.215
GSM 1900	Front Side	0.245	0.030	0.035	0.026	0.301	0.306
	Back Side	0.386	0.175	0.143	0.060	0.621	0.589
	Left Side	0.264	0.000	0.000	0.000	0.264	0.264

	Right Side	0.116	0.046	0.036	0.015	0.177	0.167
	Top Side	0.263	0.043	0.077	0.053	0.359	0.393
	Bottom Side	0.498	0.000	0.000	0.000	0.498	0.498
WCDMA II	Front Side	0.677	0.030	0.035	0.026	0.733	0.738
	Back Side	0.846	0.175	0.143	0.060	1.081	1.049
	Left Side	0.523	0.000	0.000	0.000	0.523	0.523
	Right Side	0.510	0.046	0.036	0.015	0.571	0.561
	Top Side	0.596	0.043	0.077	0.053	0.692	0.726
	Bottom Side	1.090	0.000	0.000	0.000	1.090	1.090
WCDMA IV	Front Side	0.689	0.030	0.035	0.026	0.745	0.750
	Back Side	0.795	0.175	0.143	0.060	1.030	0.998
	Left Side	0.436	0.000	0.000	0.000	0.436	0.436
	Right Side	0.383	0.046	0.036	0.015	0.444	0.434
	Top Side	0.661	0.043	0.077	0.053	0.757	0.791
	Bottom Side	1.056	0.000	0.000	0.000	1.056	1.056
WCDMA V	Front Side	0.944	0.030	0.035	0.026	1.000	1.005
	Back Side	1.037	0.175	0.143	0.060	1.272	1.240
	Left Side	0.000	0.000	0.000	0.000	0.000	0.000
	Right Side	0.377	0.046	0.036	0.015	0.438	0.428
	Top Side	0.000	0.043	0.077	0.053	0.096	0.130
	Bottom Side	0.362	0.000	0.000	0.000	0.362	0.362
CDMA BC0	Front Side	0.887	0.030	0.035	0.026	0.943	0.948
	Back Side	0.983	0.175	0.143	0.060	1.218	1.186
	Left Side	0.000	0.000	0.000	0.000	0.000	0.000
	Right Side	0.303	0.046	0.036	0.015	0.364	0.354
	Top Side	0.000	0.043	0.077	0.053	0.096	0.130
	Bottom Side	0.318	0.000	0.000	0.000	0.318	0.318
CDMA BC1	Front Side	0.612	0.030	0.035	0.026	0.668	0.673
	Back Side	0.682	0.175	0.143	0.060	0.917	0.885
	Left Side	0.645	0.000	0.000	0.000	0.645	0.645
	Right Side	0.253	0.046	0.036	0.015	0.314	0.304
	Top Side	1.010	0.043	0.077	0.053	1.106	1.140
	Bottom Side	0.890	0.000	0.000	0.000	0.890	0.890
LTE Band 2	Front Side	0.779	0.030	0.035	0.026	0.835	0.840
	Back Side	1.004	0.175	0.143	0.060	1.239	1.207
	Left Side	0.576	0.000	0.000	0.000	0.576	0.576
	Right Side	0.425	0.046	0.036	0.015	0.486	0.476
	Top Side	0.984	0.043	0.077	0.053	1.080	1.114

	Bottom Side	1.121	0.000	0.000	0.000	1.121	1.121
LTE Band 4	Front Side	0.694	0.030	0.035	0.026	0.750	0.755
	Back Side	0.874	0.175	0.143	0.060	1.109	1.077
	Left Side	0.441	0.000	0.000	0.000	0.441	0.441
	Right Side	0.350	0.046	0.036	0.015	0.411	0.401
	Top Side	0.501	0.043	0.077	0.053	0.597	0.631
	Bottom Side	1.189	0.000	0.000	0.000	1.189	1.189
LTE Band 5	Front Side	0.947	0.030	0.035	0.026	1.003	1.008
	Back Side	1.132	0.175	0.143	0.060	1.367	1.335
	Left Side	0.000	0.000	0.000	0.000	0.000	0.000
	Right Side	0.367	0.046	0.036	0.015	0.428	0.418
	Top Side	0.000	0.043	0.077	0.053	0.096	0.130
	Bottom Side	0.338	0.000	0.000	0.000	0.338	0.338
LTE Band 7	Front Side	0.817	0.030	0.035	0.026	0.873	0.878
	Back Side	0.885	0.175	0.143	0.060	1.120	1.088
	Left Side	0.254	0.000	0.000	0.000	0.254	0.254
	Right Side	0.283	0.046	0.036	0.015	0.344	0.334
	Top Side	0.640	0.043	0.077	0.053	0.736	0.770
	Bottom Side	0.932	0.000	0.000	0.000	0.932	0.932
LTE Band 12/17	Front Side	0.426	0.030	0.035	0.026	0.482	0.487
	Back Side	0.432	0.175	0.143	0.060	0.667	0.635
	Left Side	0.000	0.000	0.000	0.000	0.000	0.000
	Right Side	0.188	0.046	0.036	0.015	0.249	0.239
	Top Side	0.000	0.043	0.077	0.053	0.096	0.130
	Bottom Side	0.142	0.000	0.000	0.000	0.142	0.142
LTE Band 18	Front Side	0.733	0.030	0.035	0.026	0.789	0.794
	Back Side	0.787	0.175	0.143	0.060	1.022	0.990
	Left Side	0.000	0.000	0.000	0.000	0.000	0.000
	Right Side	0.317	0.046	0.036	0.015	0.378	0.368
	Top Side	0.000	0.043	0.077	0.053	0.096	0.130
	Bottom Side	0.227	0.000	0.000	0.000	0.227	0.227
LTE Band 19	Front Side	0.916	0.030	0.035	0.026	0.972	0.977
	Back Side	1.030	0.175	0.143	0.060	1.265	1.233
	Left Side	0.000	0.000	0.000	0.000	0.000	0.000
	Right Side	0.341	0.046	0.036	0.015	0.402	0.392
	Top Side	0.000	0.043	0.077	0.053	0.096	0.130
	Bottom Side	0.320	0.000	0.000	0.000	0.320	0.320
LTE Band 26	Front Side	0.801	0.030	0.035	0.026	0.857	0.862

	Back Side	0.869	0.175	0.143	0.060	1.104	1.072
	Left Side	0.000	0.000	0.000	0.000	0.000	0.000
	Right Side	0.443	0.046	0.036	0.015	0.504	0.494
	Top Side	0.000	0.043	0.077	0.053	0.096	0.130
	Bottom Side	0.239	0.000	0.000	0.000	0.239	0.239
LTE Band 38	Front Side	0.332	0.030	0.035	0.026	0.388	0.393
	Back Side	0.332	0.175	0.143	0.060	0.567	0.535
	Left Side	0.126	0.000	0.000	0.000	0.126	0.126
	Right Side	0.118	0.046	0.036	0.015	0.179	0.169
	Top Side	0.228	0.043	0.077	0.053	0.324	0.358
	Bottom Side	0.482	0.000	0.000	0.000	0.482	0.482
LTE Band 40A	Front Side	0.379	0.030	0.035	0.026	0.435	0.440
	Back Side	0.547	0.175	0.143	0.060	0.782	0.750
	Left Side	0.135	0.000	0.000	0.000	0.135	0.135
	Right Side	0.262	0.046	0.036	0.015	0.323	0.313
	Top Side	0.223	0.043	0.077	0.053	0.319	0.353
	Bottom Side	0.808	0.000	0.000	0.000	0.808	0.808
LTE Band 41B	Front Side	0.294	0.030	0.035	0.026	0.350	0.355
	Back Side	0.563	0.175	0.143	0.060	0.798	0.766
	Left Side	0.157	0.000	0.000	0.000	0.157	0.157
	Right Side	0.265	0.046	0.036	0.015	0.326	0.316
	Top Side	0.162	0.043	0.077	0.053	0.258	0.292
	Bottom Side	0.916	0.000	0.000	0.000	0.916	0.916
5G NR n41	Front Side	0.505	0.030	0.035	0.026	0.561	0.566
	Back Side	0.501	0.175	0.143	0.060	0.736	0.704
	Left Side	1.138	0.000	0.000	0.000	1.138	1.138
	Right Side	0.000	0.046	0.036	0.015	0.061	0.051
	Top Side	0.487	0.043	0.077	0.053	0.583	0.617
	Bottom Side	0.000	0.000	0.000	0.000	0.000	0.000

➢ **Body Simultaneous Transmission for WWAN(EN-DC)+WLAN+Bluetooth**

WWAN Band	Exposure Position	1	2	3	4	1+2+4 Summed 1g SAR (W/kg)	1+3+4 Summed 1g SAR (W/kg)
		WWAN	2.4GHz (Ant 9)	5GHz (Ant 10)	Bluetooth Estimated		
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)		
2A-n41	Front Side	0.889	0.030	0.035	0.026	0.945	0.950
	Back Side	0.803	0.175	0.143	0.060	1.038	1.006
	Left Side	0.976	0.000	0.000	0.000	0.976	0.976
	Right Side	0.16	0.046	0.036	0.015	0.221	0.211
	Top Side	0.974	0.043	0.077	0.053	1.070	1.104
	Bottom Side	0.788	0.000	0.000	0.000	0.788	0.788
2C-n41	Front Side	0.889	0.030	0.035	0.026	0.945	0.950
	Back Side	0.803	0.175	0.143	0.060	1.038	1.006
	Left Side	0.976	0.000	0.000	0.000	0.976	0.976
	Right Side	0.16	0.046	0.036	0.015	0.221	0.211
	Top Side	0.974	0.043	0.077	0.053	1.070	1.104
	Bottom Side	0.788	0.000	0.000	0.000	0.788	0.788

19.3. SPLSR Assessment and Analysis

➢ **General Guidance**

1. Per KDB 447498, When standalone SAR is measured, the peak location is determined by the x, y, z coordinates of the extrapolated and interpolated results reported by the zoom scan measurement, or area scan measurement when area scan based 1-g SAR estimation is applicable.
2. When standalone SAR is measured for both antennas in the pair, the peak location separation distance is computed by the square root of $[(x_1-x_2)^2 + (y_1-y_2)^2 + (z_1-z_2)^2]$, where (x_1, y_1, z_1) and (x_2, y_2, z_2) are the coordinates in the area scans or extrapolated peak SAR locations in the zoom scans, as appropriate.
3. The ratio is determined by $(SAR_1 + SAR_2)^{1.5}/R_i$, rounded to two decimal digits, and must be ≤ 0.04 for all antenna pairs in the configuration to qualify for 1-g SAR test exclusion.
4. SPLSR analysis for EN-DC+Bluetooth mode may not be required for the SAR measurement of Bluetooth has been exempted.

➢ **SPLSR Analysis Results**

Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (cm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				X	Y	Z				
GSM1900	Right Cheek	0.958	10	0.0398	-0.331	-0.173	307.7	1.36	0.01	Not required
5.2GHz Ant 8		0.365	10	-0.00854	-0.302	-0.167				
5.8GHz Ant 10		0.040	10	0.00476	-0.287	-0.168				

Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (cm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				X	Y	Z				
GSM1900	Left Tilt	0.728	10	0.022	-0.316	-0.172	989.3	1.54	0.00	Not required
5.3GHz Ant 8		0.737	10	0.0254	0.331	-0.172				
5.8GHz Ant 10		0.078	10	0.0454	0.326	-0.172				

Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (cm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				X	Y	Z				
WCDMA Band II	Right Cheek	0.934	10	0.048	-0.316	-0.172	322.1	1.34	0.00	Not required
5.2GHz Ant 8		0.365	10	-0.00854	-0.302	-0.167				
5.8GHz Ant 10		0.040	10	0.00476	-0.287	-0.168				

Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (cm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				X	Y	Z				
WCDMA Band IV	Right Cheek	1.030	10	0.0393	-0.333	-0.173	306.0	1.44	0.01	Not required
5.2GHz Ant 8		0.365	10	-0.00854	-0.302	-0.167				
5.8GHz Ant 10		0.040	10	0.00476	-0.287	-0.168				

Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (cm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				X	Y	Z				
LTE Band 4	Right Cheek	1.040	10	-0.342	-0.342	-0.172	449.4	1.45	0.00	Not required
5.2GHz Ant 8		0.365	10	-0.00854	-0.302	-0.167				
5.8GHz Ant 10		0.040	10	0.00476	-0.287	-0.168				

Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (cm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				X	Y	Z				
NR N41	Right Cheek	1.080	10	0.048	-0.316	-0.172	322.1	1.49	0.01	Not required
5.2GHz Ant 8		0.365	10	-0.00854	-0.302	-0.167				
5.8GHz Ant 10		0.040	10	0.00476	-0.287	-0.168				

Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (cm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				X	Y	Z				
NR N41	Left Cheek	0.687	10	0.00208	0.301	-0.171	406.7	1.59	0.00	Not required
5.8GHz Ant 8		0.833	10	0.031	0.328	-0.173				
5.8GHz Ant 10		0.070	10	0.032	0.335	-0.173				

Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (cm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				X	Y	Z				
NR N41	Left Tilt	0.716	10	0.008	0.305	-0.171	397.2	1.53	0.00	Not required
5.3GHz		0.737	10	0.0254	0.331	-0.172				
5.8GHz		0.078	10	0.0454	0.326	-0.172				

Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (cm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				X	Y	Z				
LTE Band 2	Right Cheek	0.607	10	0.013	0.315	-0.171	591.6	2.09	0.01	Not required
NR N41		1.080	10	0.048	-0.316	-0.172				
5.2GHz Ant 8		0.365	10	-0.00854	-0.302	-0.167				
5.8GHz Ant 10		0.040	10	0.00476	-0.287	-0.168				

Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (cm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				X	Y	Z				
LTE Band 2	Left Cheek	0.235	10	-0.018	0.305	-0.171	97.4	1.83	0.03	Not required
NR N41		0.687	10	0.00208	0.301	-0.171				
5.8GHz Ant 8		0.833	10	0.031	0.328	-0.173				
5.8GHz Ant 10		0.070	10	0.032	0.335	-0.173				

Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (cm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				X	Y	Z				
LTE Band 2	Left Tilt	0.293	10	-0.0169	0.31	-0.171	90.1	1.82	0.03	Not required
NR N41		0.716	10	0.008	0.305	-0.171				
5.3GHz Ant 8		0.737	10	0.0254	0.331	-0.172				
5.8GHz Ant 10		0.078	10	0.0454	0.326	-0.172				

Remark:

The plots of SPLSR please refer to the annex D.

20. Uncertainty Assessment

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

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

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

Uncertainty	Normal	Rectangular	Triangular	U-Shape
Multi-plying Factor[a]	1/k[b]	$1/\sqrt{3}$	$1/\sqrt{6}$	$1/\sqrt{2}$

Standard Uncertainty for Assumed Distribution

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

(b) κ is the coverage factor

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

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

Error Description	Uncertainty Value (±%)	Probability	Divisor	(Ci) 1g	(Ci) 10g	Standard Uncertainty (1g) (±%)	Standard Uncertainty (10g) (±%)
Measurement System							
Probe Calibration	6.0	N	1	1	1	6.0	6.0
Axial Isotropy	4.7	R	1.732	0.7	0.7	1.9	1.9
Hemispherical Isotropy	9.6	R	1.732	0.7	0.7	3.9	3.9
Boundary Effects	1.0	R	1.732	1	1	0.6	0.6
Linearity	4.7	R	1.732	1	1	2.7	2.7
System Detection Limits	1.0	R	1.732	1	1	0.6	0.6
Modulation Response	3.2	R	1.732	1	1	1.8	1.8
Readout Electronics	0.3	N	1	1	1	0.3	0.3
Response Time	0.0	R	1.732	1	1	0.0	0.0
Integration Time	2.6	R	1.732	1	1	1.5	1.5
RF Ambient Noise	3.0	R	1.732	1	1	1.7	1.7
RF Ambient Reflections	3.0	R	1.732	1	1	1.7	1.7
Probe Positioner	0.4	R	1.732	1	1	0.2	0.2
Probe Positioning	2.9	R	1.732	1	1	1.7	1.7
Max. SAR Eval.	2.0	R	1.732	1	1	1.2	1.2
Test Sample Related							
Device Positioning	3.0	N	1	1	1	3.0	3.0
Device Holder	3.6	N	1	1	1	0.089	0.089
Power Drift	5.0	R	1.732	1	1	2.9	2.9
Power Scaling	0.0	R	1.732	1	1	0.0	0.0
Phantom and Setup							
Phantom Uncertainty	6.1	R	1.732	1	1	3.5	3.5
SAR correction	0.0	R	1.732	1	0.84	0.0	0.0
Liquid Conductivity Repeatability	0.2	N	1	0.78	0.71	0.1	0.1
Liquid Conductivity (target)	5.0	R	1.732	0.78	0.71	2.3	2.0
Liquid Conductivity (mea.)	2.5	R	1.732	0.78	0.71	1.1	1.0
Temp. unc. - Conductivity	3.4	R	1.732	0.78	0.71	1.5	1.4
Liquid Permittivity Repeatability	0.15	N	1	0.23	0.26	0.0	0.0
Liquid Permittivity (target)	5.0	R	1.732	0.23	0.26	0.7	0.8
Liquid Permittivity (mea.)	2.5	R	1.732	0.23	0.26	0.3	0.4
Temp. unc. - Permittivity	0.83	R	1.732	0.23	0.26	0.1	0.1
Combined Std. Uncertainty						11.4%	11.4%
Coverage Factor for 95 %						K=2	K=2
Expanded STD Uncertainty						22.9%	22.7%

Error Description	Uncertainty Value (±%)	Probability	Divisor	(Ci) 1g	(Ci) 10g	Standard Uncertainty (1g) (±%)	Standard Uncertainty (10g) (±%)
Measurement System							
Probe Calibration	6.55	N	1	1	1	6.0	6.0
Axial Isotropy	4.7	R	1.732	0.7	0.7	1.9	1.9
Hemispherical Isotropy	9.6	R	1.732	0.7	0.7	3.9	3.9
Boundary Effects	2.0	R	1.732	1	1	1.2	1.2
Linearity	4.7	R	1.732	1	1	2.7	2.7
System Detection Limits	1.0	R	1.732	1	1	0.6	0.6
Modulation Response	3.2	R	1.732	1	1	1.8	1.8
Readout Electronics	0.3	N	1	1	1	0.3	0.3
Response Time	0.0	R	1.732	1	1	0.0	0.0
Integration Time	2.6	R	1.732	1	1	1.5	1.5
RF Ambient Noise	3.0	R	1.732	1	1	1.7	1.7
RF Ambient Reflections	3.0	R	1.732	1	1	1.7	1.7
Probe Positioner	0.4	R	1.732	1	1	0.2	0.2
Probe Positioning	6.7	R	1.732	1	1	3.9	3.9
Max. SAR Eval.	4.0	R	1.732	1	1	2.3	2.3
Test Sample Related							
Device Positioning	3.0	N	1	1	1	3.0	3.0
Device Holder	3.6	N	1	1	1	0.089	0.089
Power Drift	5.0	R	1.732	1	1	2.9	2.9
Power Scaling	0.0	R	1.732	1	1	0.0	0.0
Phantom and Setup							
Phantom Uncertainty	6.1	R	1.732	1	1	3.8	3.8
SAR correction	0.0	R	1.732	1	0.84	0.0	0.0
Liquid Conductivity Repeatability	0.2	N	1	0.78	0.71	0.1	0.1
Liquid Conductivity (target)	5.0	R	1.732	0.78	0.71	2.3	2.0
Liquid Conductivity (mea.)	2.5	R	1.732	0.78	0.71	1.1	1.0
Temp. unc. - Conductivity	3.4	R	1.732	0.78	0.71	1.5	1.4
Liquid Permittivity Repeatability	0.15	N	1	0.23	0.26	0.0	0.0
Liquid Permittivity (target)	5.0	R	1.732	0.23	0.26	0.7	0.8
Liquid Permittivity (mea.)	2.5	R	1.732	0.23	0.26	0.3	0.4
Temp. unc. - Permittivity	0.83	R	1.732	0.23	0.26	0.1	0.1
Combined Std. Uncertainty						12.5%	12.5%
Coverage Factor for 95 %						K=2	K=2
Expanded STD Uncertainty						25.1 %	25.1%

Annex A General Information

1. Identification of the Responsible Testing Laboratory

Laboratory Name:	Morlab Laboratory of 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:	Morlab Laboratory of 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 ******