

FCC SAR TEST REPORT

Product Name: Mobile Phone
Trade Mark: iotapk, HONOR CHOICE
Model No.: GAS-L13
Report Number: 26073026340SAR-1
Test Standards: FCC 47 CFR Part 2 §2.1093
ANSI/IEEE C95.1-1992
IEEE Std 1528-2013
FCC ID: 2BAII-GAS-L13
Test Result: PASS
Date of Issue: September 27, 2026

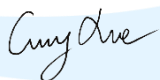
Prepared for:

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Version

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V1.0	September 27, 2026	Original Report



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1. GENERAL INFORMATION

1.1. STATEMENT OF COMPLIANCE

The maximum results of Specific Absorption Rate (SAR) found during testing for the EUT are as follows:

Equipment Class	Mode	Highest Reported Head SAR _{1g} (W/kg)	Highest Reported Body-worn SAR _{1g} (0.5 cm Gap) (W/kg)	Highest Reported Hotspot SAR _{1g} (0.5 cm Gap) (W/kg)
Limits		1.6 W/kg	1.6 W/kg	1.6 W/kg
PCE	GSM 850	0.306	1.009	1.009
	PCS 1900	0.599	0.800	0.800
	WCDMA Band II	0.427	0.398	0.398
	WCDMA Band IV	0.714	0.715	0.715
	WCDMA Band V	0.228	0.810	0.810
	LTE Band 2	0.332	0.385	0.385
	LTE Band 4	0.560	0.585	0.585
	LTE Band 5	0.261	0.718	0.718
	LTE Band 7	0.429	0.744	0.744
	LTE Band 13	0.084	0.272	0.272
	LTE Band 26	0.244	0.695	0.695
	LTE Band 38	0.315	0.558	0.558
	LTE Band 41	0.451	0.709	0.709
	LTE Band 66	0.625	0.698	0.698
DTS	2.4G WLAN	0.345	0.561	0.561
NII-1	5G WLAN	0.152	0.295	0.295
NII-2A	5G WLAN	0.174	0.225	--
NII-2C	5G WLAN	0.405	0.409	--
NII-3	5G WLAN	0.383	0.248	0.365
DSS	Bluetooth	0.086	0.080	0.080
Max. SAR		0.714	1.009	1.009
Highest Simultaneous Transmission SAR		Head (W/kg)	Body-worn (W/kg)	Hotspot (W/kg)
PCE + DTS		0.796	1.570	1.570
PCE + NII		0.971	1.418	1.304
PCE + DSS		0.752	1.089	1.089

1.2. CLIENT INFORMATION

Applicant:	Shenzhen Water World Information Co.,Ltd.
Address of Applicant:	Building 3, Dexinchang Wisdom Park, No.23, Heping Road, Qinghua Community, Longhua Subdistrict Longhua District, Shenzhen, Guangdong, China
Manufacturer:	Shenzhen Water World Information Co.,Ltd.
Address of Manufacturer:	Building 3, Dexinchang Wisdom Park, No.23, Heping Road, Qinghua Community, Longhua Subdistrict Longhua District, Shenzhen, Guangdong, China

1.3. EUT INFORMATION

1.3.1. General Description of EUT

Product Name:	Mobile Phone
Trade Mark:	iotapk, HONOR CHOICE
Model No.:	GAS-L13
DUT Stage:	Identical Prototype
Sample No:	S202609189686-ZJA01/7
Software Version:	FS376L5P_CF1_WX09_CD1666_HONOR_20260826_A16_VOLTE_W1258_L1_3_5 7_8_20_28F_38_40_41F_HONOR_GLOBAL_ALS_DualMic_FP_debug_190223 (Provided by the customer)
Hardware Version:	FS376-MB-0.1 (Provided by the customer)
Sample Received Date:	July 6, 2026
Sample Tested Date:	August 3, 2026 to August 17, 2026
Note: There are two different versions of this model. The main difference is that the secondary supply screen. For more detail, please refer to manufacturer's difference declaration letter. In electrical characteristics, the above configuration have the same circuit diagram and PCB layout. The original screen configuration was chosen to perform the SAR tests as representative.	

Remark:

The above EUT's information was provided by customer. Please refer to the specifications or user's manual for more detailed description.

1.3.2. Description of Accessories

Refer to Report 26073026340EMC-1 for accessories.

1.3.3. EUT Tx Frequency Bands

RF Type	Band(s)	Tx Frequency Range (Unit: MHz)
GSM	GSM 850:	824 - 849
	PCS 1900:	1850 - 1910
WCDMA	WCDMA Band II:	1850 - 1910
	WCDMA Band IV:	1710 - 1755
	WCDMA Band V:	824 - 849
LTE	LTE Band 2:	1850 - 1910
	LTE Band 4:	1710 - 1755
	LTE Band 5:	824 - 849
	LTE Band 7:	2500 - 2570
	LTE Band 13:	777 - 787
	LTE Band 26:	814 - 849
	LTE Band 38:	2570 - 2620
	LTE Band 41:	2496 - 2690
WLAN	LTE Band 66:	1710 - 1780
	2.4 GHz:	2412 - 2462
	U-NII-1:	5180 - 5240
	U-NII-2A:	5260 - 5320
	U-NII-2C:	5500 - 5720
Bluetooth	U-NII-3:	5745 - 5825
	2.4 GHz:	2402 - 2480
	13.553-13.567 MHz	13.56
NFC		

1.3.4. Wireless Technologies

GSM	Voice GPRS (Multi-Slot Class: 33-4UP) EDGE (Multi-Slot Class: 33-4UP)
WCDMA	RMC HSDPA HSUPA
LTE	QPSK,16QAM,64QAM VoLTE Note: SAR testing for LTE was performed on the maximum power mode.
2.4G WLAN	802.11b 802.11g 802.11n (HT20) 802.11n (HT40) Note: SAR testing for WLAN was performed on the maximum power mode.
5G WLAN	802.11a 802.11n (HT20/HT40) 802.11ac (VHT20/VHT40/VHT80) Note: SAR testing for WLAN was performed on the maximum power mode.
Bluetooth	BR+EDR LE,2LE, LE Code
Others	NFC, GPS/ Galileo/ BDS
Device Class (GSM)	B
Antenna Type	WWAN/ WLAN / Bluetooth/ RFID: FPC Antenna NFC: Loop Antenna
Power Reduction	Not Support
Dynamic Antenna	Not Support
Wireless Router (Hotspot)	2.4G WLAN: Support 5.2G WLAN: Support 5.3G WLAN: Not Support 5.6G WLAN: Not Support 5.8G WLAN: Support
VOIP	Support Note: Since this device supports VOIP capability through 3rd party apps software, we have evaluated data mode for head and body SAR.
Dual SIM	SIM 1: GSM + WCDMA + LTE SIM 2: GSM + WCDMA + LTE Note : This device support dual SIM but they share the same antenna. Since these two SIM are used for subscriber identification only and it is not related to RF identity, only SIM1 was used for SAR testing.

1.4. MAXIMUM CONDUCTED POWER

The maximum conducted average power including tune-up tolerance is shown as below.

➤ GSM

Mode	Maximum conducted average power (dBm)	
	GSM 850	DCS 1900
GSM (GMSK, 1Tx-slot)	33.5	26.0
GPRS (GMSK, 1Tx-slot)	33.5	26.0
GPRS (GMSK, 2Tx-slot)	32.0	25.0
GPRS (GMSK, 3Tx-slot)	30.5	23.0
GPRS (GMSK, 4Tx-slot)	27.5	21.5
EDGE (8PSK, 1Tx-slot)	28.0	23.0
EDGE (8PSK, 2Tx-slot)	25.5	22.0
EDGE (8PSK, 3Tx-slot)	23.0	20.0
EDGE (8PSK, 4Tx-slot)	20.5	18.5

➤ WCDMA

Mode	Maximum conducted average power (dBm)		
	WCDMA Band II	WCDMA Band IV	WCDMA Band V
RMC 12.2K	17.0	20.0	23.5
HSDPA Subtest-1	17.0	20.0	22.5
HSDPA Subtest-2	16.5	20.0	22.0
HSDPA Subtest-3	16.5	20.0	21.5
HSDPA Subtest-4	16.5	20.0	21.5
HSUPA Subtest-1	15.0	19.5	21.0
HSUPA Subtest-2	14.5	19.5	20.5
HSUPA Subtest-3	15.0	19.5	21.0
HSUPA Subtest-4	15.0	19.5	20.5
HSUPA Subtest-5	17.0	19.5	23.0

➤ LTE

Band	Maximum conducted average power (dBm)
LTE Band 2	17.0
LTE Band 4	18.5
LTE Band 5	23.5
LTE Band 7	15.0
LTE Band 13	23.5
LTE Band 26	23.5
LTE Band 38	17.0
LTE Band 41	17.0
LTE Band 66	19.0

➤ **2.4GHz WLAN**

Mode	Maximum conducted average power (dBm)
802.11b	17.0
802.11g	16.5
802.11n-HT20	16.5
802.11n-HT40	16.0

➤ **5GHz WLAN**

Mode	Maximum Conducted Power (dBm)			
	U-NII-1	U-NII-2A	U-NII-2C	U-NII-3
802.11a	17.0	17.0	13.5	14.0
802.11n-HT20	17.0	17.0	13.5	14.0
802.11n-HT40	16.5	16.5	12.5	14.0
802.11ac-VHT20	17.0	17.0	13.5	14.0
802.11ac-VHT40	16.5	16.5	12.5	14.0
802.11ac-VHT80	16.0	16.5	12.5	13.5

➤ **Bluetooth**

Mode	Modulation	Maximum conducted average power (dBm)
BR + EDR	GFSK	9.0
	$\pi/4$ -DQPSK	9.0
	8-DPSK	9.0
LE	GFSK	1.5
2LE	GFSK	1.5
LE Code (125k)	GFSK	1.5
LE Code (500k)	GFSK	1.5

➤ **NFC**

Frequency (MHz)	Maximum Field Strength
13.56	59.18 dB μ V/m at 3 meter

1.5. OTHER INFORMATION

None.

1.6. TEST LOCATION

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1.7. TEST FACILITY

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

Shenzhen UnionTrust Quality and Technology Co., Ltd.

Shenzhen UnionTrust Quality and Technology Co., Ltd.

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 UTTR-SAR-IEEE Std 1528-2013-V1.1

CNAS-Lab Code: L9069

The measuring equipment utilized to perform the tests documented in this report has been calibrated once a year or in accordance with the manufacturer's recommendations, and is traceable under the ISO/IEC 17025 to international or national standards. Equipment has been calibrated by accredited calibration laboratories.

A2LA-Lab Certificate No.: 4312.01

Shenzhen UnionTrust Quality and Technology Co., Ltd. has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

ISED Wireless Device Testing Laboratories

CAB identifier: CN0032

FCC Accredited Lab.

Designation Number: CN1194

Test Firm Registration Number: 259480

1.8. GUIDANCE STANDARD

The tests documented in this report were performed in accordance with FCC 47 CFR Part 2 §2.1093, IEEE Std 1528-2013, ANSI/IEEE C95.1-1992, the following FCC Published RF exposure KDB procedures:

1. 248227 D01 802.11 Wi-Fi SAR v02r02
2. 447498 D01 General RF Exposure Guidance v06
3. 447498 D03 Supplement C Cross-Reference v01
4. 648474 D04 Handset SAR v01r03
5. 865664 D01 SAR measurement 100 MHz to 6 GHz v01r04
6. 865664 D02 RF Exposure Reporting v01r02
7. 941225 D01 3G SAR Procedures v03r01
8. 941225 D05 SAR for LTE Devices v02r05
9. 941225 D05A LTE Rel.10 KDB Inquiry Sheet v01r02
10. 941225 D06 Hotspot Mode v02r01
11. 775926 D01 SAR Testing for Irregular Shaped Devices v01

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2. SPECIFIC ABSORPTION RATE (SAR)

2.1. 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, by appropriate techniques, to produce specific absorption rates (SARs) as averaged over the whole-body, any 1 g or any 10 g of tissue (defined as a tissue volume in the shape of a cube). All SAR values are to be averaged over any six-minute period. When portable device was used within 20 cm of the user's body, SAR evaluation of the device will be required. The SAR limit in chapter 2.3.

2.2. SAR DEFINITION

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

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

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

SAR measurement can be related to the electrical field in the tissue by

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

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

2.3. SAR LIMITS

Limits for Occupational/Controlled Exposure (W/kg)

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

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

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

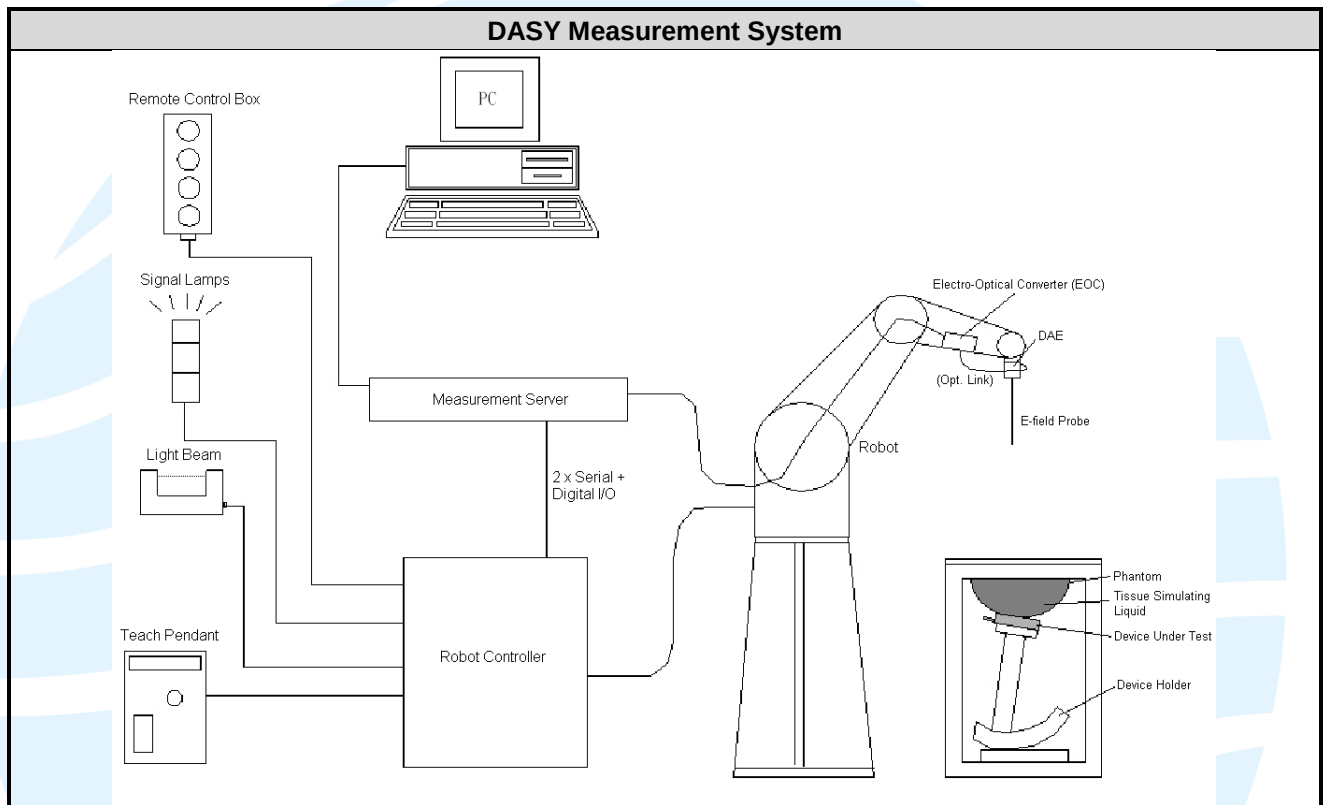
Note:

- 1) Whole-Body SAR is averaged over the entire body, partial-body SAR is averaged over any 1 gram 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.
- 2) At frequencies above 6.0 GHz, SAR limits are not applicable and MPE limits for power density should be applied at 5 cm or more from the transmitting device.
- 3) The SAR limit is specified in FCC 47 CFR Part 2 §2.1093, ANSI/IEEE C95.1-1992.

3. SAR MEASUREMENT SYSTEM

3.1. SPEAG DASY SYSTEM

DASY system consists of high precision robot, probe alignment sensor, phantom, robot controller, controlled measurement server and near-field probe. The robot includes six axes that can move to the precision position of the DASY5 software defined. The DASY software can define the area that is detected by the probe. The robot is connected to controlled box. Controlled measurement server is connected to the controlled robot box. The DAE includes amplifier, signal multiplexing, AD converter, offset measurement and surface detection. It is connected to the Electro-optical coupler (ECO). The ECO performs the conversion from the optical into digital electric signal of the DAE and transfers data to the PC.



3.1.1. Robot

The DASY system uses the high precision robots from Stäubli SA (France). For the 6-axis controller system, the robot controller version (DASY5: CS8Cspeag-TX60) from Stäubli is used. The Stäubli robot series have many features that are important for our application:

- High precision (repeatability ± 0.02 mm)
- High reliability (industrial design)
- Jerk-free straight movements
- Low ELF interference (the closed metallic construction shields against motor control fields)

3.1.2. Probe

The SAR measurement is conducted with the dosimetric probe. 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.

Model	EX3DV4	
Construction	Symmetrical design with triangular core. Built-in shielding against static charges. PEEK enclosure material (resistant to organic solvents, e.g., DGBE).	
Frequency	10 MHz to 6 GHz Linearity: ± 0.2 dB	
Directivity	± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)	
Dynamic Range	10 μ W/g to 100 mW/g Linearity: ± 0.2 dB (noise: typically < 1 μ W/g)	
Dimensions	Overall length: 337 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm	

Model	ES3DV3	
Construction	Symmetrical design with triangular core. Interleaved sensors. Built-in shielding against static charges. PEEK enclosure material (resistant to organic solvents, e.g., DGBE).	
Frequency	10 MHz to 4 GHz Linearity: ± 0.2 dB	
Directivity	± 0.2 dB in HSL (rotation around probe axis) ± 0.3 dB in tissue material (rotation normal to probe axis)	
Dynamic Range	5 μ W/g to 100 mW/g Linearity: ± 0.2 dB	
Dimensions	Overall length: 337 mm (Tip: 20 mm) Tip diameter: 3.9 mm (Body: 12 mm) Distance from probe tip to dipole centers: 2.0 mm	

3.1.3. Data Acquisition Electronics (DAE)

Model	DAE3, DAE4	
Construction	Signal amplifier, multiplexer, A/D converter and control logic. Serial optical link for communication with DASY embedded system (fully remote controlled). Two step probe touch detectors for mechanical surface detection and emergency robot stop.	
Measurement Range	-100 to +300 mV (16-bit resolution and two range settings: 4mV, 400mV)	
Input Voltage Offset	$< 5\mu$ V (with auto zero)	
Input Bias Current	< 50 fA	
Dimensions	60 x 60 x 68 mm	

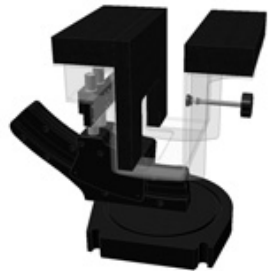
3.1.4. Phantom

Model	Twin SAM	
Construction	The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE 1528 and IEC 62209-1. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents evaporation of the liquid. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids by teaching three points with the robot.	
Material	Vinylester, glass fiber reinforced (VE-GF)	
Shell Thickness	2 ± 0.2 mm (6 ± 0.2 mm at ear point)	
Dimensions	Length: 1000 mm Width: 500 mm Height: adjustable feet	
Filling Volume	approx. 25 liters	

Model	ELI	
Construction	Phantom for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI is fully compatible with the IEC 62209-2 standard and all known tissue simulating liquids. ELI has been optimized regarding its performance and can be integrated into our standard phantom tables. A cover prevents evaporation of the liquid. Reference markings on the phantom allow installation of the complete setup, including all predefined phantom positions and measurement grids, by teaching three points. The phantom is compatible with all SPEAG dosimetric probes and dipoles.	
Material	Vinylester, glass fiber reinforced (VE-GF)	
Shell Thickness	2.0 ± 0.2 mm (bottom plate)	
Dimensions	Major axis: 600 mm Minor axis: 400 mm	
Filling Volume	approx. 30 liters	

3.1.5. Device Holder

Model	Mounting Device	
Construction	In combination with the Twin SAM Phantom or ELI4, the Mounting Device enables the rotation of the mounted transmitter device in spherical coordinates. Rotation point is the ear opening point. Transmitter devices can be easily and accurately positioned according to IEC, IEEE, FCC or other specifications. The device holder can be locked for positioning at different phantom sections (left head, right head, flat).	
Material	POM	

Model	Laptop Extensions Kit	
Construction	Simple but effective and easy-to-use extension for Mounting Device that facilitates the testing of larger devices according to IEC 62209-2 (e.g., laptops, cameras, etc.). It is lightweight and fits easily on the upper part of the Mounting Device in place of the phone positioner.	
Material	POM, Acrylic glass, Foam	

3.1.6. System Validation Dipoles

Model	D-Serial	
Construction	Symmetrical dipole with 1/4 balun. Enables measurement of feed point impedance with NWA. Matched for use near flat phantoms filled with tissue simulating solutions.	
Frequency	750 MHz to 5800 MHz	
Return Loss	> 20 dB	
Power Capability	> 100 W (f < 1GHz), > 40 W (f > 1GHz)	

3.2. SAR SCAN PROCEDURE

3.2.1. SAR Reference Measurement (drift)

Prior to the SAR test, local SAR shall be measured at a stationary reference point where the SAR exceeds the lower detection limit of the measurement system.

3.2.2. Area Scan

Measurement procedures for evaluating the SAR of wireless device start with a coarse measurement grid to determine the approximate location of the local peak SAR values. This is known as the area-scan procedure. All antennas and radiating structures that may contribute to the measured SAR or influence the SAR distribution must be included in the area scan. The area scan measurement resolution must enable the extrapolation algorithms of the SAR system to correctly identify the peak SAR location(s) for subsequent zoom scan measurements to correctly determine the 1-g SAR. Area scans are performed at a constant distance from the phantom surface, determined by the measurement frequencies. When a measured peak is closer than ½ the zoom scan volume dimension (x, y) from the edge of the area scan region, unless the entire peak and gram-averaging volume are both captured within the zoom scan volume, the area scan must be repeated by shifting and expanding the area scan region to ensure all peaks are away from the area scan boundary. The area scan resolutions specified in the table below must be applied to the SAR measurements.

	≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 mm ± 1 mm	½·δ·ln(2) mm ± 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	30° ± 1°	20° ± 1°
Maximum area scans spatial resolution: Δ x _{Area} , Δy _{Area}	≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
	When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	

3.2.3. Zoom Scan

To evaluate the peak spatial-average SAR values with respect to 1 g or 10 g cubes, fine resolution volume scans, called zoom scans, are performed at the peak SAR locations identified during the area scan. If the cube volume within the zoom scan chosen to calculate the peak spatial-average SAR touches any boundary of the zoom-scan volume, the zoom scan shall be repeated with the center of the zoom-scan volume shifted to the new maximum SAR location. For any secondary peaks found in the area scan that are within 2 dB of the maximum peak and are not within this zoom scan, the zoom scan shall be performed for such peaks, unless the peak spatial-average SAR at the location of the maximum peak is more than 2 dB below the applicable SAR limit (i.e., 1 W/kg for a 1.6 W/kg 1 g limit, or 1.26 W/kg for a 2 W/kg 10 g limit). The zoom scan resolutions specified in the table below must be applied to the SAR measurements.

			≤ 3 GHz	> 3 GHz
Maximum zoom scan spatial resolution: $\Delta x_{Zoom}, \Delta y_{Zoom}$			≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom Scan spatial resolution, normal to phantom surface	uniform grid: $\Delta Z_{Zoom}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta Z_{Zoom}(1)$: between 1 ST two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta Z_{Zoom}(n>1)$: between subsequent points	$\leq 1.5 \cdot \Delta Z_{Zoom}(n-1)$ mm	
Minimum zoom scan volume	x, y, z		≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm
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.				

3.2.4. SAR Drift Measurement

The local SAR (or conducted power) shall be measured at exactly the same location as in 3.2.1 section. The absolute value of the measurement drift (the difference between the SAR measured in 3.2.1 and 3.2.4 section) shall be recorded. The SAR drift shall be kept within ± 5%.

3.3. EQUIPMENT LIST

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Interval
System Validation Dipole	SPEAG	D750V3	1066	Jan. 02, 2024	3 Year
System Validation Dipole	SPEAG	D835V2	4d242	Jun. 07, 2024	3 Year
System Validation Dipole	SPEAG	D1750V2	1086	Mar. 14, 2024	3 Year
System Validation Dipole	SPEAG	D1900V2	509	Mar. 14, 2024	3 Year
System Validation Dipole	SPEAG	D2450V2	883	Jan.02, 2024	3 Year
System Validation Dipole	SPEAG	D2600V2	1082	Jan.02, 2024	3 Year
System Validation Dipole	SPEAG	D5GHzV2	1115	Jan.02, 2024	3 Year
Data Acquisition Electronics	SPEAG	DAE4	662	Dec. 15, 2025	1 Year
Dosimetric E-Field Probe	SPEAG	ES3DV3	3090	Dec.15, 2025	1 Year
Dosimetric E-Field Probe	SPEAG	EX3DV4	7506	Nov. 28, 2025	1 Year
Wideband Radio Communication Tester	R&S	CMW500	120932	Mar. 20, 2026	1 Year
UXM 5G Wireless Test Platform	KEYSIGHT	E7515B	MY59020226	Mar. 20, 2026	1 Year
ENA Series Network Analyzer	Agilent	8753ES	US39170317	Oct. 24, 2025	1 Year
Phantom Table	SPEAG	QD 000 P40 CB	TP-1335	N/A	N/A
Phantom Table	SPEAG	QD OVA 002 AA	TP-1254	N/A	N/A
Robot controller	STAUBLI	CS8Cspeag-TX60	F13/5R4XC1/C/01	N/A	N/A
Robot	STAUBLI	TX60Lspeag	F13/5R4XC1/A/01	N/A	N/A
Dielectric Assessment Kit	SPEAG	DAK-3.5	1070	N/A	N/A
USB/GPIB Interface	Agilent	82357B	N10149	N/A	N/A
Signal Generator	R&S	SMB100A	103718	Mar. 20, 2026	1 Year
POWER METER	R&S	NRP	101293	Oct. 24, 2025	1 Year
Thermometer	Shanghai Gao Zhi Precision Instrument Co., Ltd.	HB6801	101293	Oct. 29, 2025	1 Year
Dual Directional Coupler	Agilent	778D	MY52180234	Oct. 24, 2025	1 Year
Amplifier	Mini-Circuit	ZHL42	QA1252001	Mar. 20, 2026	1 Year
DC Source	Agilent	66319B	MY43000795	Oct. 24, 2025	1 Year

3.4. MEASUREMENT UNCERTAINTY

Per KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg, the extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval.

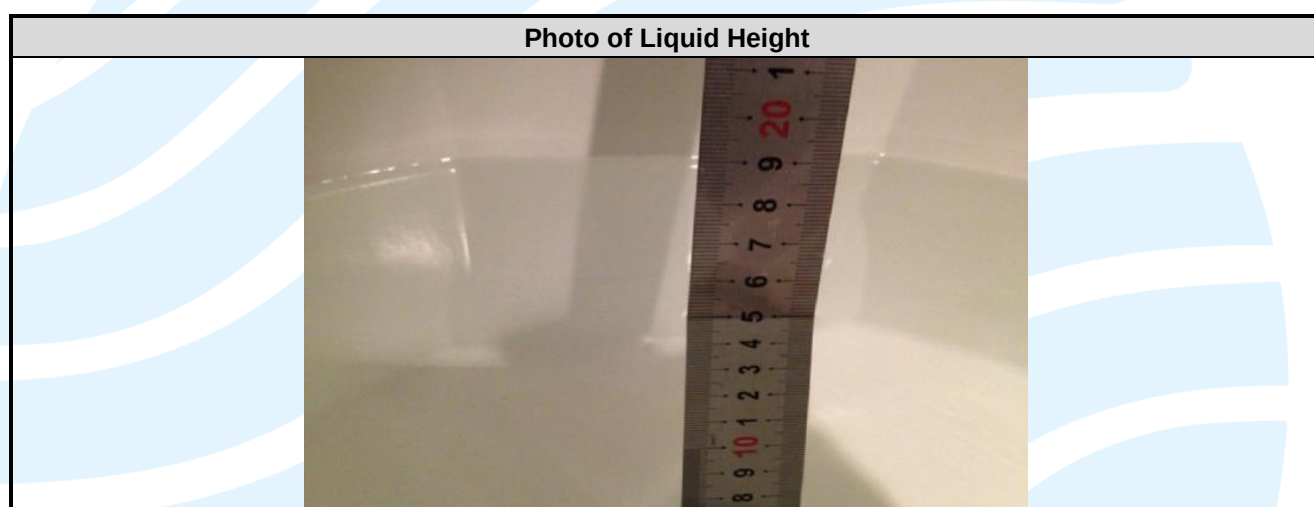
3.5. TISSUE DIELECTRIC PARAMETER MEASUREMENT & SYSTEM VERIFICATION

Per KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg, the extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval.

3.5.1. Tissue Simulating Liquids

The temperature of the tissue-equivalent medium used during measurement must also be within 18 °C to 25 °C and within ± 2 °C of the temperature when the tissue parameters are characterized. The dielectric parameters must be measured before the tissue-equivalent medium is used in a series of SAR measurements. The parameters should be re-measured after each 3 - 4 days of use; or earlier if the dielectric parameters can become out of tolerance.

The depth of tissue-equivalent liquid in a phantom must be ≥ 15.0 cm with $\leq \pm 0.5$ cm variation for SAR measurements ≤ 3 GHz and ≥ 10.0 cm with $\leq \pm 0.5$ cm variation for measurements > 3 GHz. The nominal dielectric values of the tissue simulating liquids in the phantom and the tolerance of 5% are listed in Table-3.1.



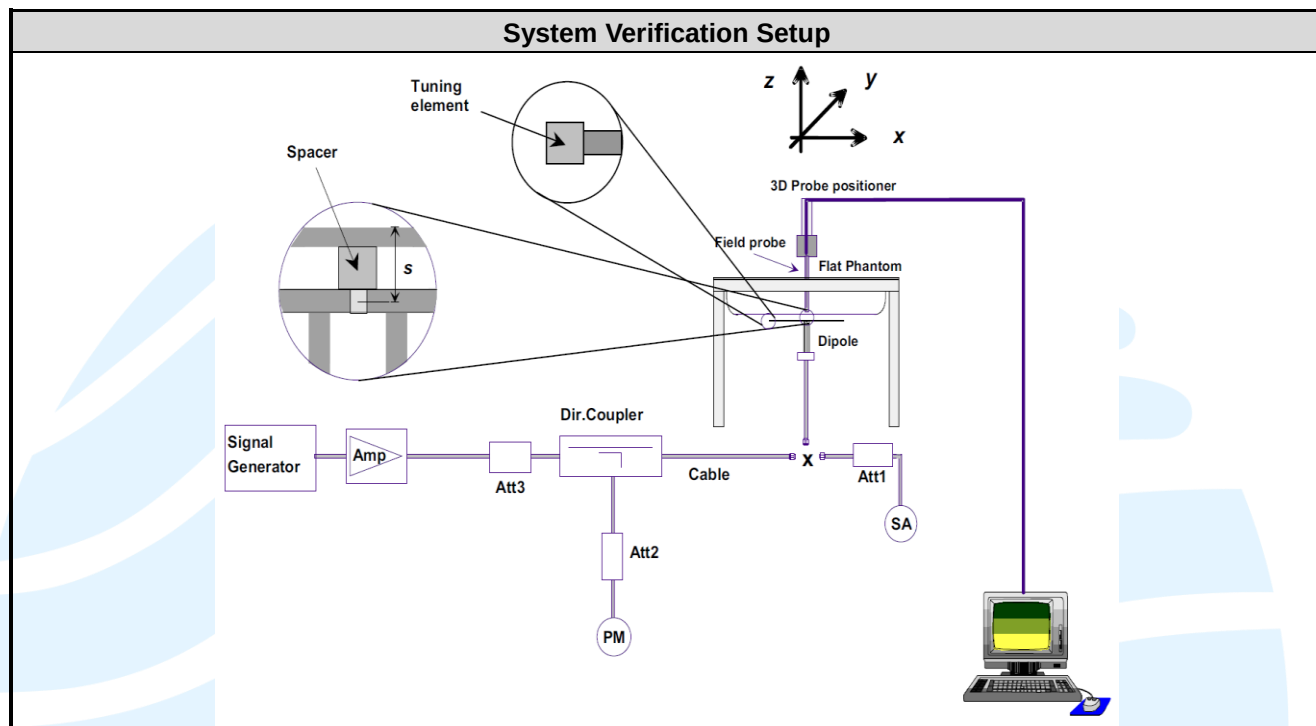
Tissue Dielectric Parameters for Head and Body				
Target Frequency	Head		Body	
(MHz)	ϵ_r	σ (S/m)	ϵ_r	σ (S/m)
750	41.9	0.89	55.5	0.96
835	41.5	0.90	55.2	0.97
900	41.5	0.97	55.0	1.05
1450	40.5	1.20	54.0	1.30
1640	40.3	1.29	53.8	1.40
1750	40.1	1.37	53.4	1.49
1800	40.0	1.40	53.3	1.52
1900	40.0	1.40	53.3	1.52
2000	40.0	1.40	53.3	1.52
2300	39.5	1.67	52.9	1.81
2450	39.2	1.80	52.7	1.95
2600	39.0	1.96	52.5	2.16
3500	37.9	2.91	51.3	3.31
5200	36.0	4.66	49.0	5.30
5300	35.9	4.76	48.9	5.42
5500	35.6	4.96	48.6	5.65
5600	35.5	5.07	48.5	5.77
5800	35.3	5.27	48.2	6.00
(ϵ_r = relative permittivity, σ = conductivity and $\rho = 1000$ kg/m ³)				

The following table gives the recipes for tissue simulating liquids.

Recipes of Tissue Simulating Liquid								
Tissue Type	Bactericide	DGBE	HEC	NaCl	Sucrose	Triton X-100	Water	Diethylene Glycol Mono-hexylether
H750	0.2	-	0.2	1.4	57.0	-	41.1	-
H835	0.1	-	1.0	1.4	57.0	-	40.5	-
H900	0.1	-	1.0	1.5	56.5	-	40.9	-
H1450	-	45.5	-	0.7	-	-	53.8	-
H1640	-	45.8	-	0.5	-	-	53.7	-
H1750	-	44.5	-	0.3	-	-	55.2	-
H1800	-	44.9	-	0.2	-	-	54.9	-
H1900	-	44.9	-	0.2	-	-	54.9	-
H2000	-	50	-	-	-	-	50	-
H2300	-	44.9	-	0.1	-	-	55.0	-
H2450	-	45.0	-	0.1	-	-	54.9	-
H2600	-	45.1	-	0.1	-	-	54.8	-
H3500	-	8.0	-	0.2	-	20.0	71.8	-
H5G	-	-	-	-	-	17.2	65.52	17.3
B750	0.2	-	0.2	0.8	48.8	-	50.0	-
B835	0.2	-	0.2	0.9	48.5	-	50.2	-
B900	0.2	-	0.2	0.9	48.2	-	50.5	-
B1450	-	34.0	-	0.3	-	-	65.7	-
B1640	-	32.5	-	0.3	-	-	67.2	-
B1750	-	29.4	-	0.4	-	-	70.2	-
B1800	-	29.5	-	0.4	-	-	70.1	-
B1900	-	29.5	-	0.3	-	-	70.2	-
B2000	-	30.0	-	0.2	-	-	69.8	-
B2300	-	31.0	-	0.1	-	-	68.9	-
B2450	-	31.4	-	0.1	-	-	68.5	-
B2600	-	31.8	-	0.1	-	-	68.1	-
B3500	-	28.8	-	0.1	-	-	71.1	-
B5G	-	-	-	-	-	10.7	78.6	10.7

3.5.2. System Check Description

The system check procedure provides a simple, fast, and reliable test method that can be performed daily or before every SAR measurement. The objective here is to ascertain that the measurement system has acceptable accuracy and repeatability. This test requires a flat phantom and a radiating source. The system verification setup is shown as below.



3.5.3. Tissue Verification

The measuring results for tissue simulating liquid are shown as below.

Test Date	Tissue Type	Frequency (MHz)	Liquid Temp. (°C)	Measured Conductivity (σ)	Measured Permittivity (ϵ_r)	Target Conductivity (σ)	Target Permittivity (ϵ_r)	Conductivity Deviation (%)	Permittivity Deviation (%)
Aug. 03, 2026	Head	750	21.0	0.889	40.811	0.90	42.00	-1.22	-2.83
Aug. 04, 2026	Head	835	21.0	0.944	40.189	0.90	41.50	4.89	-3.16
Aug. 06, 2026	Head	1750	21.2	1.320	39.495	1.37	40.10	-3.65	-1.51
Aug. 17, 2026	Head	1750	22.1	1.323	39.598	1.37	40.10	-3.43	-1.25
Aug. 07, 2026	Head	1900	21.0	1.453	38.852	1.40	40.00	3.79	-2.87
Aug. 11, 2026	Head	2450	21.3	1.859	39.506	1.80	39.20	3.28	0.78
Aug. 11, 2026	Head	2600	21.3	2.048	39.013	1.96	39.00	4.49	0.03
Aug. 12, 2026	Head	2600	21.4	1.953	39.596	1.96	39.00	-0.36	1.53
Aug. 15, 2026	Head	5250	21.2	4.485	37.137	4.71	35.90	-4.78	3.45
Aug. 16, 2026	Head	5250	21.9	4.514	36.542	4.71	35.90	-4.16	1.79
Aug. 16, 2026	Head	5600	21.9	4.841	36.479	5.07	35.50	-4.52	2.76
Aug. 16, 2026	Head	5800	21.9	5.021	36.492	5.27	35.30	-4.72	3.38

Note:

The dielectric properties of the tissue simulating liquid must be measured within 24 hours before the SAR testing and within $\pm 5\%$ of the target values. The variation of the liquid temperature must be within $\pm 2^\circ\text{C}$ during the test.

3.5.4. System Verification

The measuring result for system verification is tabulated as below.

Test Date	Tissue Type	Freq. (MHz)	1W Target SAR-1g (W/kg)	1W Target SAR-10g (W/kg)	Measured SAR-1g (W/kg)	Measured SAR-10g (W/kg)	Normalized to 1W SAR-1g (W/kg)	Normalized to 1W SAR-10g (W/kg)	Deviation 1g(%)	Deviation 10g(%)	Dipole S/N	Probe S/N	DAE S/N
Aug. 03, 2026	Head	750	8.60	5.64	2.140	1.430	8.56	5.72	-0.47	1.42	1066	3090	662
Aug. 04, 2026	Head	835	9.61	6.23	2.490	1.650	9.96	6.60	3.64	5.94	4d242	3090	662
Aug. 06, 2026	Head	1750	36.80	19.50	8.790	4.700	35.16	18.80	-4.46	-3.59	1086	3090	662
Aug. 17, 2026	Head	1750	36.80	19.50	9.030	4.820	36.12	19.28	-1.85	-1.13	1086	3090	662
Aug. 07, 2026	Head	1900	40.00	20.90	3.860	1.990	38.60	19.90	-3.50	-4.78	509	3090	662
Aug. 11, 2026	Head	2450	53.70	24.80	5.580	2.590	55.80	25.90	3.91	4.44	883	3090	662
Aug. 11, 2026	Head	2600	56.10	24.80	5.490	2.470	54.90	24.70	-2.14	-0.40	1082	3090	662
Aug. 12, 2026	Head	2600	56.10	24.80	5.340	2.400	53.40	24.00	-4.81	-3.23	1082	3090	662
Aug. 15, 2026	Head	5250	78.60	22.30	7.750	2.190	77.50	21.90	-1.40	-1.79	1115	7506	662
Aug. 16, 2026	Head	5250	78.60	22.30	7.620	2.150	76.20	21.50	-3.05	-3.59	1115	7506	662
Aug. 16, 2026	Head	5600	81.90	23.10	7.920	2.210	79.20	22.10	-3.30	-4.33	1115	7506	662
Aug. 16, 2026	Head	5800	78.60	22.00	7.640	2.140	76.40	21.40	-2.80	-2.73	1115	7506	662

Note:

Comparing to the reference SAR value, the validation data should be within its specification of 10%. The result indicates the system check can meet the variation criterion and the plots can be referred to Appendix A of this report.

4. SAR MEASUREMENT EVALUATION

4.1. EUT CONFIGURATION AND SETTING

Connections between EUT and System Simulator

For WWAN SAR testing, the EUT was linked and controlled by base station emulator. Communication between the EUT and the emulator was established by air link. The distance between the EUT and the communicating antenna of the emulator is larger than 50 cm and the output power radiated from the emulator antenna is at least 30 dB smaller than the output power of EUT. The EUT was set from the emulator to radiate maximum output power during SAR testing.

4.1.1. GSM Configuration and Testing

GSM (GMSK: CS1) voice mode transmits with 1 time slot. GPRS (GMSK: CS1) and EDGE (GMSK: MCS1, 8PSK: MCS9) may transmit up to 4 time slots in the 8 time-slot frame according to the multislot class implemented in a device.

4.1.2. WCDMA Configuration and Testing

WCDMA Handsets Head SAR

SAR for next to the ear head exposure is measured using a 12.2 kbps RMC with TPC bits configured to all "1's". The 3G SAR test reduction procedure is applied to AMR configurations with 12.2 kbps RMC as the primary mode.

WCDMA Handsets Body-worn SAR

SAR for body-worn configurations is measured using a 12.2 kbps RMC with TPC bits configured to all "1's". The 3G SAR test reduction procedure is applied to other spreading codes and multiple DPDCHn configurations supported by the handset with 12.2 kbps RMC as the primary mode.

Handsets with Release 5 HSDPA

The 3G SAR test reduction procedure is applied to HSDPA body-worn configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for HSDPA using the HSDPA body SAR procedures in the "Release 5 HSDPA Data Devices", for the highest reported SAR body-worn exposure configuration in 12.2 kbps RMC. Handsets with both HSDPA and HSUPA are tested according to Release 6 HSPA test procedures.

Handsets with Release 6 HSUPA

The 3G SAR test reduction procedure is applied to HSPA (HSUPA/HSDPA with RMC) body-worn configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for HSPA using the HSPA body SAR procedures in the "Release 6 HSPA Data Devices", for the highest reported body-worn exposure SAR configuration in 12.2 kbps RMC. When VOIP is applicable for next to the ear head exposure in HSPA, the 3G SAR test reduction procedure is applied to HSPA with 12.2 kbps RMC as the primary mode; otherwise, the same HSPA configuration used for body-worn measurements is tested for next to the ear head exposure.

Release 5 HSDPA Data Devices

The 3G SAR test reduction procedure is applied to body SAR with 12.2 kbps RMC as the primary mode. Otherwise, body SAR for HSDPA is measured using an FRC with H-Set 1 in Sub-test 1 and a 12.2 kbps RMC configured in Test Loop Mode 1, for the highest reported SAR configuration in 12.2 kbps RMC without HSDPA. HSDPA is configured according to the applicable UE category of a test device. The number of HS-DSCH / HS-PDSCHs, HARQ processes, minimum inter-TTI interval, transport block sizes and RV coding sequence are defined by the H-set. To maintain a consistent test configuration and stable transmission conditions, QPSK is used in the H-set for SAR testing. HS-DPCCH should be configured with a CQI feedback cycle of 4 ms and a CQI repetition factor of 2 to maintain a constant rate of active CQI slots. DPCCH and DPDCH gain factors (β_c , β_d), and HS-DPCCH power offset parameters (Δ_{ACK} , Δ_{NACK} , Δ_{CQI}) are set according to values indicated in below. The CQI value is determined by the UE category, transport block size, number of HS-PDSCHs and modulation used in the H-set.

Sub-test	β_c	β_d	β_d (SF)	β_c / β_d	$\beta_{hs}^{(1)}$	CM (dB) ⁽²⁾	MPR
1	2 / 15	15 / 15	64	2 / 15	4 / 15	0.0	0

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UTTR-SAR-IEEE Std 1528-2013-V1.1

2	12 / 15 ⁽³⁾	15 / 15 ⁽³⁾	64	12 / 15 ⁽³⁾	24 / 15	1.0	0
3	15 / 15	8 / 15	64	15 / 8	30 / 15	1.5	0.5
4	15 / 15	4 / 15	64	15 / 4	30 / 15	1.5	0.5

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 $\beta_c / \beta_d = 12 / 15$, $\beta_{hs} / \beta_c = 24 / 15$.

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 $\beta_c = 11 / 15$ and $\beta_d = 15 / 15$.

Release 6 HSPA Data Devices

The 3G SAR test reduction procedure is applied to body SAR with 12.2 kbps RMC as the primary mode. Otherwise, body SAR for HSPA is measured with E-DCH Sub-test 5, using H-Set 1 and QPSK for FRC and a 12.2 kbps RMC configured in Test Loop Mode 1 and power control algorithm 2, according to the highest reported body SAR configuration in 12.2 kbps RMC without HSPA. When VOIP applies to head exposure, the 3G SAR test reduction procedure is applied with 12.2 kbps RMC as the primary mode. Otherwise, the same HSPA configuration used for body SAR measurements are applied to head exposure testing. Due to inner loop power control requirements in HSPA, a communication test set is required for output power and SAR tests. The 12.2 kbps RMC, FRC H-set 1 and E-DCH configurations for HSPA are configured according to the β values indicated in below.

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	$\beta_{ed1}: 47/15$ $\beta_{ed2}: 47/15$	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 $\Delta_{CQI} = 8 \Leftrightarrow A_{hs} = \beta_{hs} / \beta_c = 30 / 15 \Leftrightarrow \beta_{hs} = 30 / 15 * \beta_c$.

Note 2: CM = 1 for $\beta_c / \beta_d = 12 / 15$, $\beta_{hs} / \beta_c = 24 / 15$. 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 $\beta_c = 10 / 15$ and $\beta_d = 15 / 15$.

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 $\beta_c = 14 / 15$ and $\beta_d = 15 / 15$.

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.

4.1.3. LTE Configuration and Testing

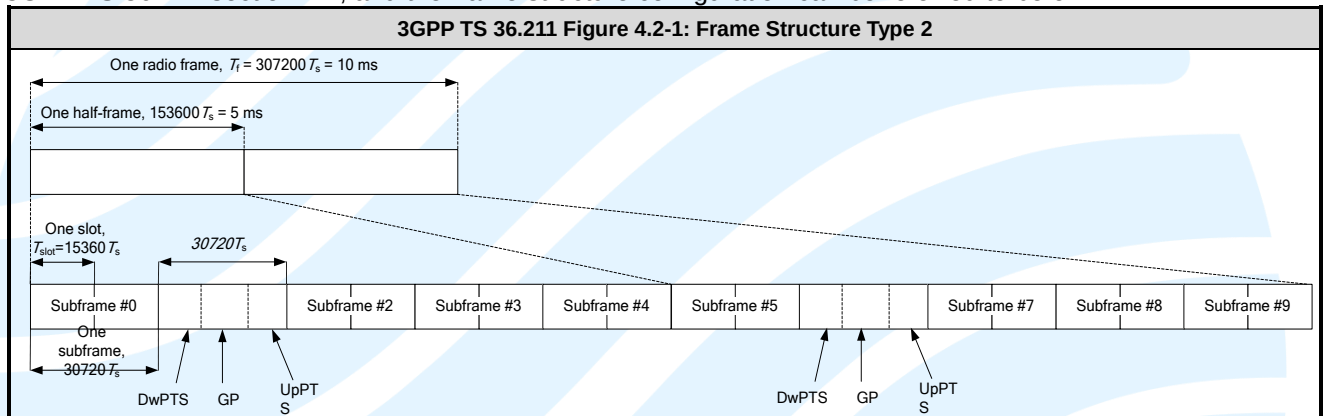
UE power class is category 3. The LTE maximum power reduction (MPR) in accordance with 3GPP TS 36.101 is active all times during LTE operation. The allowed MPR for the maximum output power please refer to the tune up procedure.

In addition, the device is compliant with additional maximum power reduction (A-MPR) requirements defined in 3GPP TS 36.101 section 6.2.4 that was disabled for all FCC compliance testing.

A properly configured base station simulator is used for the SAR and power measurements, so spectrum plots for each RB allocation and offset configuration are not included in the SAR report to demonstrate that the tested RB allocations have been correctly established at the maximum output power conditions.

TDD-LTE Setup Configurations

According to KDB 941225 D05, SAR testing for TDD-LTE device must be tested using a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by the defined 3GPP TDD-LTE configurations. The TDD-LTE of this device supports frame structure type 2 defined in 3GPP TS 36.211 section 4.2, and the frame structure configuration can be referred to below.



3GPP TS 36.211 Table 4.2-1: Configuration of Special Subframe						
Special Subframe Configuration	Normal Cyclic Prefix in Downlink			Extended Cyclic Prefix in Downlink		
	DwPTS	UpPTS		DwPTS	UpPTS	
		Normal Cyclic Prefix in Uplink	Extended Cyclic Prefix in Uplink		Normal Cyclic Prefix in Uplink	Extended Cyclic Prefix in Uplink
0	6592·Ts	2192·Ts	2560·Ts	7680·Ts	2192·Ts	2560·Ts
1	19760·Ts			20480·Ts		
2	21952·Ts			23040·Ts		
3	24144·Ts			25600·Ts		
4	26336·Ts	4384·Ts	5120·Ts	7680·Ts	4384·Ts	5120·Ts
5	6592·Ts			20480·Ts		
6	19760·Ts			23040·Ts		
7	21952·Ts			12800·Ts		
8	24144·Ts	-	-	-	-	-
9	13168·Ts			-	-	-

Uplink-Downlink Configurations and duty cycle												
Uplink-Downlink Configuration	Downlink-to-Uplink Switch-Point Periodicity	Subframe Number										Duty-Cycle
		0	1	2	3	4	5	6	7	8	9	
0	5 ms	D	S	U	U	U	D	S	U	U	U	63.33%
1	5 ms	D	S	U	U	D	D	S	U	U	D	43.33%
2	5 ms	D	S	U	D	D	D	S	U	D	D	23.33%
3	10 ms	D	S	U	U	U	D	D	D	D	D	31.67%
4	10 ms	D	S	U	U	D	D	D	D	D	D	21.67%
5	10 ms	D	S	U	D	D	D	D	D	D	D	11.67%
6	5 ms	D	S	U	U	U	D	S	U	U	D	53.33%

Considering the highest transmission duty cycle, TDD-LTE was tested using Uplink-Downlink Configuration 0 with 6 uplink subframe and 2 special subframe. The special subframe was set to special subframe configuration 7 using extended cyclic prefix uplink. Therefore, SAR testing for TDD-LTE was performed at the maximum output power with highest transmission duty cycle of 63.33%.

4.1.4. WLAN Configuration and Testing

In general, various vendor specific external test software and chipset based internal test modes are typically used for SAR measurement. These chipset-based test mode utilities are generally hardware and manufacturer dependent, and often include substantial flexibility to reconfigure or reprogram a device. 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. 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. The reported SAR must be scaled to 100% transmission duty factor to determine compliance at the maximum tune-up tolerance limit.

According to KDB 248227 D01, this device has installed WLAN engineering testing software which can provide continuous transmitting RF signal. During WLAN SAR testing, this device was operated to transmit continuously at the maximum transmission duty with specified transmission mode, operating frequency, lowest data rate, and maximum output power.

Initial Test Configuration

An initial test configuration is determined for OFDM transmission modes in 2.4 GHz and 5 GHz bands according to the channel bandwidth, modulation and data rate combination(s) with the highest maximum output power specified for production units in each standalone and aggregated frequency band. When the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11a/g/n/ac mode is used for SAR measurement, on the highest measured output power channel in the initial test configuration, for each frequency band.

Subsequent Test Configuration

SAR measurement requirements for the remaining 802.11 transmission mode configurations that have not been tested in the initial test configuration are determined separately for each standalone and aggregated frequency band, in each exposure condition, according to the maximum output power specified for production units. Additional power measurements may be required to determine if SAR measurements are required for subsequent highest output power channels in a subsequent test configuration. When the highest reported SAR for the initial test configuration according to the initial test position or fixed exposure position requirements, is adjusted by the ratio of the subsequent test configuration to initial test configuration specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for that subsequent test configuration.

SAR Test Configuration and Channel Selection

When multiple channel bandwidth configurations in a frequency band have the same specified maximum output power, the initial test configuration is using largest channel bandwidth, lowest order modulation, lowest data rate, and lowest order 802.11 mode (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.

- 1) The channel closest to mid-band frequency is selected for SAR measurement.
- 2) 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.

Test Reduction for U-NII-1 (5.2 GHz) and U-NII-2A (5.3 GHz) Bands

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).
- 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.

4.1.5. Bluetooth Configuration and Testing

For Bluetooth SAR testing was selected 1Mbps (DH5), due to its highest average power

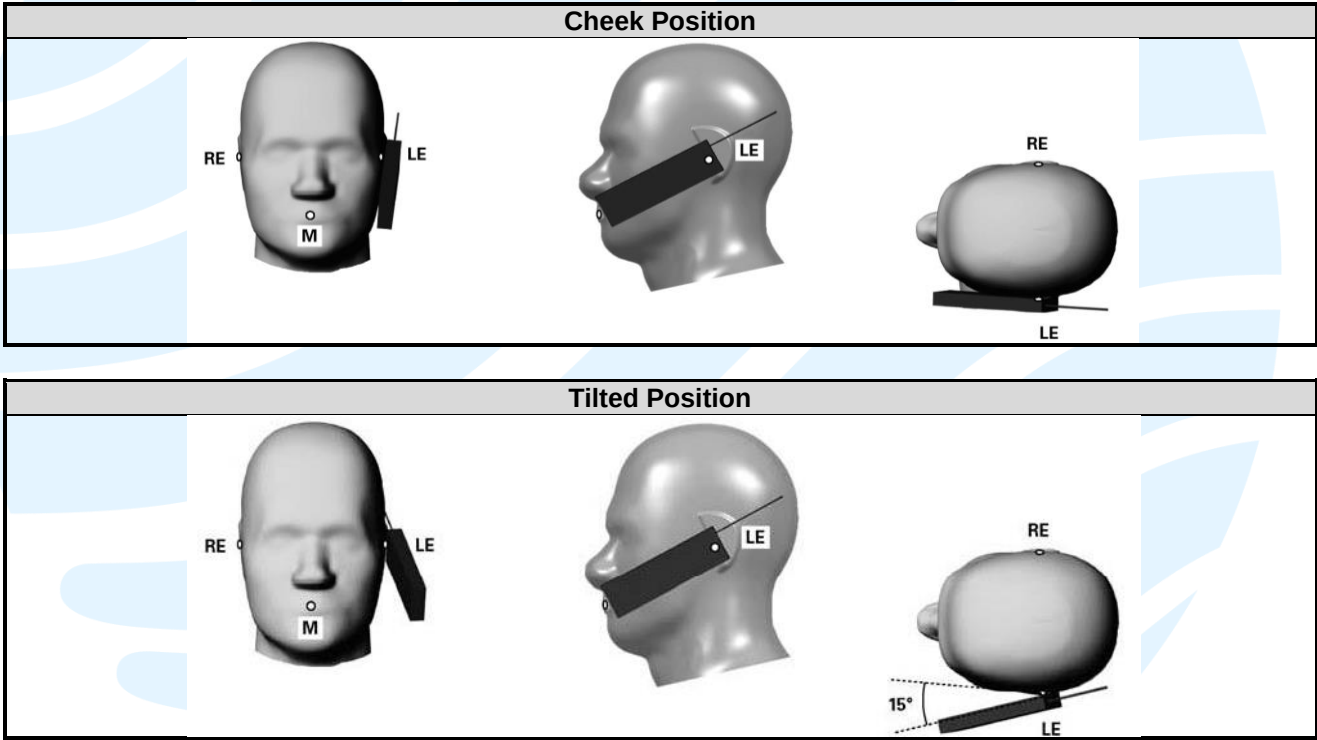


4.2. EUT TESTING POSITION

4.2.1. Head Exposure Conditions

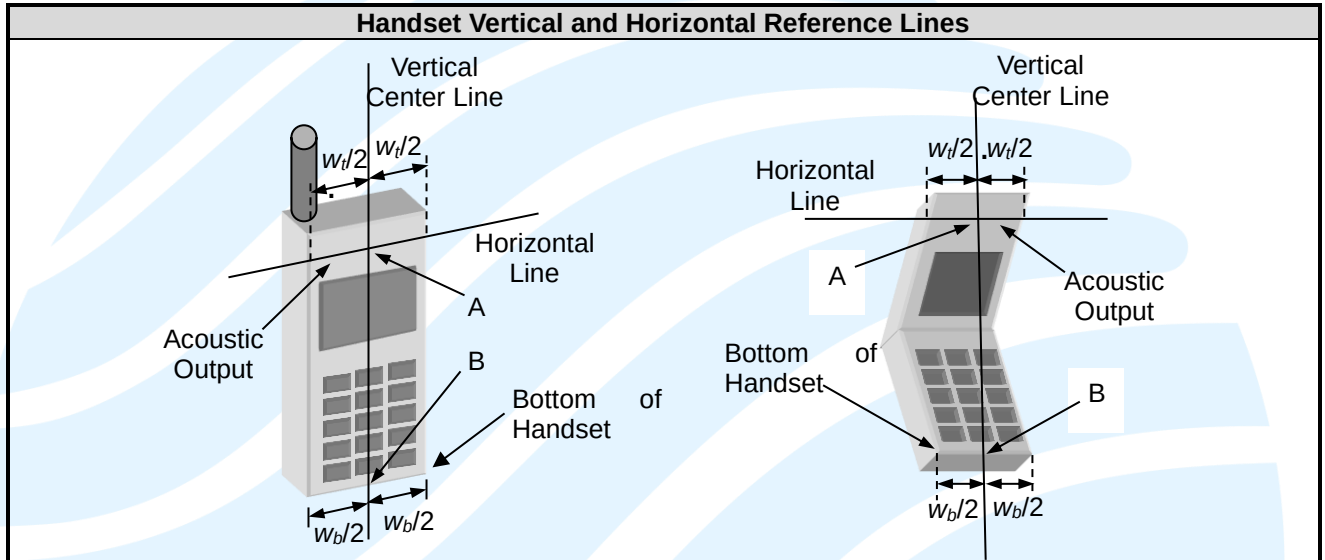
RF Exposure Conditions	Test Position	Separation Distance	SAR test exclusion
Head	Right Cheek	0 cm	N/A
	Right Tilted		
	Left Cheek		
	Left Tilted		

- Note:
- 1) Head exposure for voice mode of handset is limited to next to the ear exposure conditions.
 - 2) Devices that are designed to transmit next to the ear must be tested using the SAM phantom.
 - 3) Other head exposure conditions, for example, in-front-of the face, should be tested using a flat phantom according to the required published RF exposure KDB procedures.
 - 4) When data mode operates in next to the ear configurations, either data alone or in conjunction with voice transmissions, SAR evaluation is required for such use conditions.
 - 5) When device supports VoIP, SAR evaluation for head Exposure Conditions using the most appropriate wireless data mode configurations is required.



Define two imaginary lines on the handset

- 1) The vertical centerline passes through two points on the front side of the handset - the midpoint of the width w_t of the handset at the level of the acoustic output, and the midpoint of the width w_b of the bottom of the handset.
- 2) The horizontal line is perpendicular to the vertical centerline and passes through the center of the acoustic output. The horizontal line is also tangential to the face of the handset at point A.
- 3) 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 centerline is not necessarily parallel to the front face of the handset, especially for clamshell handsets, handsets with flip covers, and other irregularly shaped handsets.

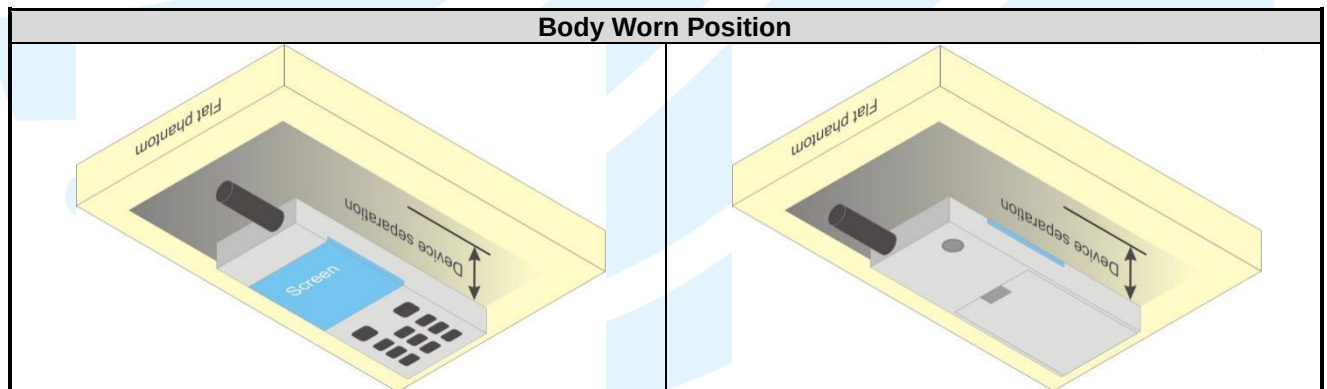


4.2.2. Body-worn Accessory Exposure Conditions

RF Exposure Conditions	Test Position	Separation Distance	SAR test exclusion
Body-worn	Front Face	0 ~ 2.5 cm	N/A
	Rear Face		

Note:

- 1) Body-worn accessories that do not contain metallic or conductive components may be tested according to worst-case exposure configurations, typically according to the smallest test separation distance required for the group of body-worn accessories with similar operating and exposure characteristics. All body-worn accessories containing metallic components are tested in conjunction with the host device.
- 2) Body-worn accessory SAR compliance is based on a single minimum test separation distance for all wireless and operating modes applicable to each body-worn accessory used by the host, and according to the relevant voice and/or data mode transmissions and operations. If a body-worn accessory supports voice only operations in its normal and expected use conditions, testing of data mode for body-worn compliance is not required.
- 3) A conservative minimum test separation distance for supporting off-the-shelf body-worn accessories that may be acquired by users of consumer handsets should be used to test for body-worn accessory SAR compliance. This distance is determined by the handset manufacturer according to the typical body-worn accessories users may acquire at the time of equipment certification, but not more than 2.5 cm, to enable users to purchase aftermarket body-worn accessories with the required minimum separation.
- 4) Devices that are designed to operate on the body of users using lanyards and straps or without requiring additional body-worn accessories must be tested for SAR compliance using a conservative minimum test separation distance ≤ 5 mm to support compliance.
- 5) When device supports VoIP, SAR evaluation for body-worn accessory Exposure Conditions using the most appropriate wireless data mode configurations is required.
- 6) Body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories.
- 7) When the reported SAR for a body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for the body-worn accessory with a headset attached to the handset.

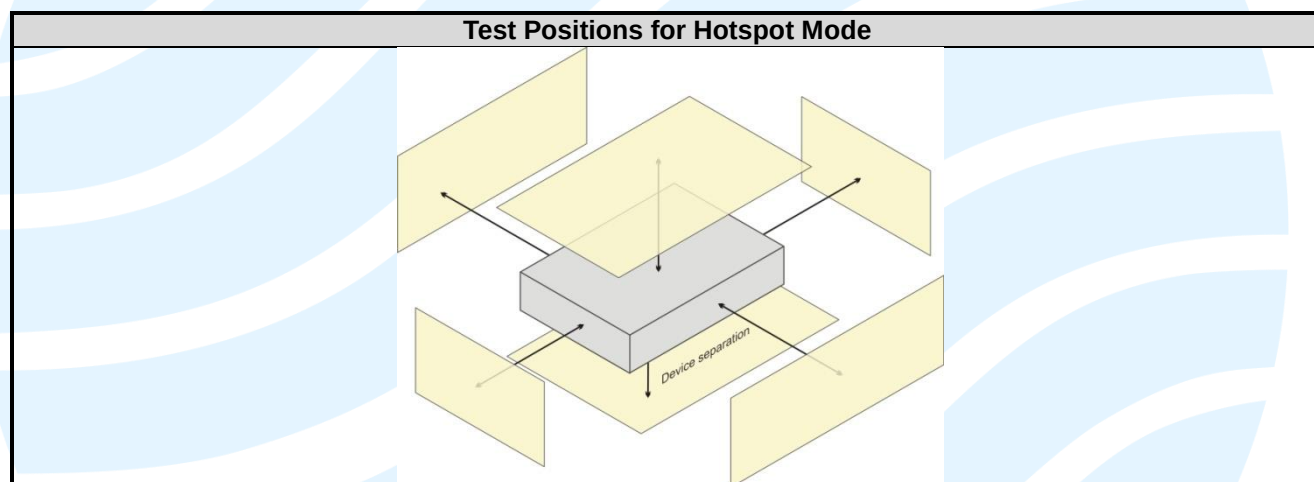


4.2.3. Hotspot Accessory Exposure Conditions

RF Exposure Conditions	Test Position	Separation Distance	SAR test exclusion
Hotspot	Front Face	1 cm	Note 2/3
	Rear Face		
	Left Side		
	Right Side		
	Top Side		
	Bottom Side		

Note:

- 1) The SAR test separation distance for hotspot mode is determined according to device form factor. When the overall length and width of a device is > 9 cm x 5 cm (~3.5" x 2"), a test separation distance of 10 mm is required for hotspot mode SAR measurements. A test separation distance of 5 mm or less is required for smaller devices. The SAR test separation distance for hotspot mode is determined according to device form factor.
- 2) Hotspot mode SAR is measured for all edges and surfaces of the device with a transmitting antenna located within 25 mm from that surface or edge.
- 3) Based on the antenna location shown on appendix D of this report, the SAR testing required for hotspot mode is listed on section 4.5.1.



4.2.4. Extremity Exposure Conditions

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

a) The normally required head and body-worn accessory SAR test procedures for handsets, including hotspot mode, must be applied.

b) 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. The 1-g SAR at 5 mm for UMPC mini-tablets is not required. When hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg. 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. The normal tablet procedures in KDB Publication 616217 are required when the overall diagonal dimension of the device is > 20.0 cm. Hotspot mode SAR is not required when normal tablet procedures are applied. Extremity 10-g SAR is also not required for the front (top) surface of larger form factor full size tablets. The more conservative normal tablet SAR results can be used to support phablet mode 10-g extremity SAR.

4.3. MEASURED CONDUCTED POWER RESULT

4.3.1. Conducted Power of GSM Bands

The measuring conducted average power (Unit: dBm) is shown as below.

Band	GSM 850			PCS 1900		
Channel	128	190	251	512	661	810
Frequency (MHz)	824.2	836.6	848.8	1850.2	1880.0	1909.8
Maximum Burst-Averaged Output Power						
GSM (GMSK, 1Tx-slot)	33.07	33.00	33.01	25.60	25.26	24.89
GPRS (GMSK, 1Tx-slot)	33.20	32.93	33.07	25.63	25.52	24.72
GPRS (GMSK, 2Tx-slot)	31.46	31.31	31.21	24.30	23.86	23.44
GPRS (GMSK, 3Tx-slot)	29.30	29.13	28.98	22.46	22.11	21.62
GPRS (GMSK, 4Tx-slot)	27.06	26.88	26.86	21.23	20.83	20.39
EDGE (8PSK, 1Tx-slot)	27.35	27.34	26.83	22.07	22.72	22.46
EDGE (8PSK, 2Tx-slot)	25.16	25.21	24.86	20.33	21.26	21.18
EDGE (8PSK, 3Tx-slot)	22.49	22.42	22.19	18.45	19.71	19.48
EDGE (8PSK, 4Tx-slot)	19.79	19.70	19.50	16.23	17.82	17.55
Maximum Frame-Averaged Output Power						
GSM (GMSK, 1Tx-slot)	24.07	24.00	24.01	16.60	16.26	15.89
GPRS (GMSK, 1Tx-slot)	24.20	23.93	24.07	16.63	16.52	15.72
GPRS (GMSK, 2Tx-slot)	25.46	25.31	25.21	18.30	17.86	17.44
GPRS (GMSK, 3Tx-slot)	25.04	24.87	24.72	18.20	17.85	17.36
GPRS (GMSK, 4Tx-slot)	24.06	23.88	23.86	18.23	17.83	17.39
EDGE (8PSK, 1Tx-slot)	18.35	18.34	17.83	13.07	13.72	13.46
EDGE (8PSK, 2Tx-slot)	19.16	19.21	18.86	14.33	15.26	15.18
EDGE (8PSK, 3Tx-slot)	18.23	18.16	17.93	14.19	15.45	15.22
EDGE (8PSK, 4Tx-slot)	16.79	16.70	16.50	13.23	14.82	14.55

Note:

- 1) SAR testing was performed on the maximum frame-averaged power mode.
- 2) The frame-averaged power is linearly proportion to the slot number configured and it is linearly scaled the maximum burst-averaged power based on time slots. The calculated method is shown as below:
- 3) Frame-averaged power = 10 x log (Burst-averaged power mW x Slot used / 8)

4.3.2. Conducted Power of WCDMA Bands

The measuring conducted average power (Unit: dBm) is shown as below.

Band	WCDMA Band II			WCDMA Band V			WCDMA Band IV		
Channel	9262	9400	9538	4132	4183	4233	1312	1412	1513
Frequency (MHz)	1852.4	1880.0	1907.6	826.4	836.6	846.6	1712.4	1732.4	1752.6
RMC 12.2K	16.73	16.65	16.74	22.97	23.02	22.99	19.63	19.56	19.49
HSDPA Subtest-1	16.69	16.60	16.57	22.03	22.15	22.07	19.29	19.43	19.29
HSDPA Subtest-2	16.12	16.03	16.00	21.50	21.62	21.52	19.22	19.36	19.21
HSDPA Subtest-3	16.23	16.14	16.11	21.12	21.24	21.15	19.14	19.29	19.13
HSDPA Subtest-4	15.86	15.77	15.78	21.03	21.13	21.03	19.14	19.31	19.15
HSUPA Subtest-1	14.14	14.35	14.39	20.34	20.59	20.36	18.79	18.89	18.65
HSUPA Subtest-2	13.91	14.12	14.18	19.94	20.12	19.90	19.13	19.07	19.08
HSUPA Subtest-3	14.68	14.65	14.69	20.53	20.60	20.44	18.84	18.79	18.79
HSUPA Subtest-4	14.46	14.40	14.42	19.92	19.89	19.70	19.21	18.87	18.85
HSUPA Subtest-5	16.46	16.39	16.37	22.53	22.61	22.61	19.06	19.00	19.05

4.3.3. Conducted Power of LTE Bands

The measuring conducted average power (Unit: dBm) is shown as below.

➤ LTE Band 2

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)	64QAM			3GPP MPR (dB)
			Low CH	Mid CH	High CH		Low CH	Mid CH	High CH		Low CH	Mid CH	High CH	
			18607	18900	19193		18607	18900	19193		18607	18900	19193	
			1850.7 MHz	1880.0 MHz	1909.3 MHz		1850.7 MHz	1880.0 MHz	1909.3 MHz		1850.7 MHz	1880.0 MHz	1909.3 MHz	
2 / 1.4M	1	0	16.74	16.64	16.62	0	15.94	15.73	15.75	1	15.44	15.64	15.46	2
	1	3	16.75	16.69	16.64	0	15.97	15.71	15.77	1	15.37	15.65	15.51	2
	1	5	16.73	16.67	16.64	0	16.01	15.75	15.74	1	15.38	15.67	15.53	2
	3	0	15.93	15.69	15.72	0	15.22	14.80	14.79	1	14.56	14.81	14.39	2
	3	1	15.93	15.71	15.74	0	15.18	14.82	14.83	1	14.47	14.83	14.63	2
	3	3	15.92	15.70	15.75	0	15.18	14.80	14.85	1	14.64	14.57	14.52	2
	6	0	15.93	15.75	15.76	1	15.19	14.81	14.84	2	13.41	13.84	13.33	3

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)	64QAM			3GPP MPR (dB)
			Low CH	Mid CH	High CH		Low CH	Mid CH	High CH		Low CH	Mid CH	High CH	
			18615	18900	19185		18615	18900	19185		18615	18900	19185	
			1851.5 MHz	1880.0 MHz	1908.5 MHz		1851.5 MHz	1880.0 MHz	1908.5 MHz		1851.5 MHz	1880.0 MHz	1908.5 MHz	
2 / 3M	1	0	16.75	16.71	16.63	0	15.88	15.75	15.72	1	15.35	15.54	15.57	2
	1	8	16.75	16.72	16.68	0	15.84	15.71	15.71	1	15.38	15.48	15.52	2
	1	14	16.73	16.68	16.64	0	15.84	15.67	15.66	1	15.35	15.60	15.46	2
	8	0	15.88	15.77	15.75	1	14.91	14.69	14.78	2	13.57	13.80	13.37	3
	8	4	15.86	15.72	15.71	1	14.91	14.72	14.84	2	13.42	13.77	13.56	3
	8	7	15.86	15.76	15.76	1	14.87	14.70	14.85	2	13.49	13.61	13.55	3
	15	0	15.84	15.72	15.74	1	14.88	14.71	14.86	2	13.56	13.80	13.38	3

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)	64QAM			3GPP MPR (dB)
			Low CH	Mid CH	High CH		Low CH	Mid CH	High CH		Low CH	Mid CH	High CH	
			18625	18900	19175		18625	18900	19175		18625	18900	19175	
			1852.5 MHz	1880.0 MHz	1907.5 MHz		1852.5 MHz	1880.0 MHz	1907.5 MHz		1852.5 MHz	1880.0 MHz	1907.5 MHz	
2 / 5M	1	0	16.69	16.75	16.63	0	15.86	15.93	15.89	1	15.43	15.66	15.45	2
	1	13	16.73	16.76	16.67	0	15.89	15.91	15.93	1	15.33	15.59	15.48	2
	1	24	16.72	16.72	16.67	0	15.92	15.88	15.92	1	15.44	15.57	15.48	2
	12	0	15.96	15.92	15.86	1	15.02	15.01	15.14	2	13.44	13.81	13.47	3
	12	6	15.92	15.91	15.88	1	15.07	14.97	15.18	2	13.48	13.78	13.70	3
	12	13	15.88	15.92	15.83	1	15.11	14.95	15.20	2	13.59	13.70	13.44	3
	25	0	15.90	15.95	15.86	1	15.07	14.90	15.19	2	13.54	13.81	13.38	3

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)	64QAM			3GPP MPR (dB)
			Low CH	Mid CH	High CH		Low CH	Mid CH	High CH		Low CH	Mid CH	High CH	
			18650	18900	19150		18650	18900	19150		18650	18900	19150	
			1855.0 MHz	1880.0 MHz	1905.0 MHz		1855.0 MHz	1880.0 MHz	1905.0 MHz		1855.0 MHz	1880.0 MHz	1905.0 MHz	
2 / 10M	1	0	16.70	16.69	16.65	0	15.85	15.83	15.80	1	15.36	15.62	15.44	2
	1	25	16.74	16.74	16.67	0	15.88	15.79	15.76	1	15.40	15.61	15.53	2
	1	49	16.71	16.70	16.63	0	15.85	15.82	15.76	1	15.36	15.63	15.37	2
	25	0	15.79	15.88	15.87	1	14.91	15.05	14.96	2	13.52	13.83	13.49	3
	25	12	15.84	15.84	15.83	1	14.92	15.05	15.00	2	13.43	13.88	13.58	3
	25	25	15.89	15.89	15.81	1	14.90	15.05	14.96	2	13.45	13.64	13.48	3
	50	0	15.86	15.85	15.82	1	14.86	15.09	14.95	2	13.43	13.85	13.41	3

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)	64QAM			3GPP MPR (dB)
			Low CH	Mid CH	High CH		Low CH	Mid CH	High CH		Low CH	Mid CH	High CH	
			18675	18900	19125		18675	18900	19125		18675	18900	19125	
			1857.5 MHz	1880.0 MHz	1902.5 MHz		1857.5 MHz	1880.0 MHz	1902.5 MHz		1857.5 MHz	1880.0 MHz	1902.5 MHz	
2 / 15M	1	0	16.68	16.64	16.62	0	15.84	15.82	15.95	1	15.45	15.67	15.59	2
	1	37	16.71	16.69	16.64	0	15.86	15.81	15.92	1	15.43	15.65	15.55	2
	1	74	16.67	16.67	16.63	0	15.84	15.79	15.87	1	15.37	15.64	15.52	2
	36	0	15.80	15.80	15.87	1	14.97	15.01	15.00	2	13.44	13.84	13.54	3
	36	20	15.81	15.81	15.92	1	15.00	15.02	14.95	2	13.47	13.79	13.61	3
	36	39	15.82	15.85	15.97	1	15.03	15.01	14.96	2	13.55	13.69	13.52	3
	75	0	15.85	15.82	15.97	1	15.05	14.99	14.95	2	13.52	13.83	13.47	3

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)	64QAM			3GPP MPR (dB)
			Low CH	Mid CH	High CH		Low CH	Mid CH	High CH		Low CH	Mid CH	High CH	
			18700	18900	19100		18700	18900	19100		18700	18900	19100	
			1860.0 MHz	1880.0 MHz	1900.0 MHz		1860.0 MHz	1880.0 MHz	1900.0 MHz		1860.0 MHz	1880.0 MHz	1900.0 MHz	
2 / 20M	1	0	16.66	16.71	16.64	0	15.66	15.89	15.65	1	15.53	15.67	15.64	2
	1	50	16.68	16.72	16.64	0	15.64	15.88	15.66	1	15.52	15.68	15.59	2
	1	99	16.66	16.70	16.60	0	15.59	15.85	15.64	1	15.52	15.70	15.56	2
	50	0	15.72	15.89	15.67	1	14.70	14.90	14.64	2	13.58	13.85	13.56	3
	50	25	15.69	15.88	15.70	1	14.65	14.83	14.61	2	13.51	13.88	13.71	3
	50	50	15.65	15.90	15.66	1	14.63	14.83	14.64	2	13.65	13.73	13.57	3
	100	0	15.66	15.92	15.62	1	14.60	14.88	14.64	2	13.56	13.92	13.51	3

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UTTR-SAR-IEEE Std 1528-2013-V1.1

➤ LTE Band 4

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)	64QAM			3GPP MPR (dB)
			Low CH	Mid CH	High CH		Low CH	Mid CH	High CH		Low CH	Mid CH	High CH	
			19957	20175	20393		19957	20175	20393		19957	20175	20393	
			1710.7 MHz	1732.5 MHz	1754.3 MHz		1710.7 MHz	1732.5 MHz	1754.3 MHz		1710.7 MHz	1732.5 MHz	1754.3 MHz	
4 / 1.4M	1	0	17.64	17.74	17.69	0	16.90	16.92	17.00	1	16.54	16.60	16.60	2
	1	3	17.67	17.74	17.72	0	16.86	16.92	16.96	1	16.50	16.64	16.75	2
	1	5	17.65	17.73	17.70	0	16.86	16.88	16.98	1	16.50	16.76	16.74	2
	3	0	16.84	16.96	16.93	0	16.00	15.90	16.07	1	15.83	14.96	14.65	2
	3	1	16.83	16.96	16.95	0	15.98	15.87	16.08	1	15.93	14.95	14.61	2
	3	3	16.85	16.93	16.99	0	15.98	15.84	16.08	1	15.95	14.72	14.81	2
	6	0	16.86	16.89	16.96	1	16.01	15.87	16.09	2	14.72	14.96	14.56	3

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)	64QAM			3GPP MPR (dB)
			Low CH	Mid CH	High CH		Low CH	Mid CH	High CH		Low CH	Mid CH	High CH	
			19965	20175	20385		19965	20175	20385		19965	20175	20385	
			1711.5 MHz	1732.5 MHz	1753.5 MHz		1711.5 MHz	1732.5 MHz	1753.5 MHz		1711.5 MHz	1732.5 MHz	1753.5 MHz	
4 / 3M	1	0	17.72	17.74	17.75	0	16.77	16.96	16.93	1	16.45	16.50	16.71	2
	1	8	17.73	17.79	17.77	0	16.73	16.95	16.97	1	16.51	16.47	16.76	2
	1	14	17.69	17.76	17.73	0	16.74	16.93	17.02	1	16.47	16.69	16.67	2
	8	0	16.74	16.93	16.98	1	15.85	15.96	16.28	2	14.84	14.95	14.63	3
	8	4	16.71	16.88	16.99	1	15.89	16.01	16.33	2	14.88	14.89	14.54	3
	8	7	16.74	16.93	16.94	1	15.84	15.98	16.30	2	14.80	14.76	14.84	3
	15	0	16.78	16.92	16.90	1	15.80	15.95	16.26	2	14.87	14.92	14.61	3

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)	64QAM			3GPP MPR (dB)
			Low CH	Mid CH	High CH		Low CH	Mid CH	High CH		Low CH	Mid CH	High CH	
			19975	20175	20375		19975	20175	20375		19975	20175	20375	
			1712.5 MHz	1732.5 MHz	1752.5 MHz		1712.5 MHz	1732.5 MHz	1752.5 MHz		1712.5 MHz	1732.5 MHz	1752.5 MHz	
4 / 5M	1	0	17.73	17.73	17.77	0	16.76	16.98	16.81	1	16.53	16.62	16.59	2
	1	13	17.75	17.76	17.80	0	16.72	16.99	16.79	1	16.46	16.58	16.72	2
	1	24	17.70	17.75	17.75	0	16.77	16.99	16.76	1	16.56	16.66	16.69	2
	12	0	16.74	16.96	16.83	1	15.97	16.18	15.94	2	14.71	14.96	14.73	3
	12	6	16.75	16.98	16.81	1	15.94	16.22	15.95	2	14.94	14.90	14.68	3
	12	13	16.72	16.96	16.85	1	15.92	16.17	15.94	2	14.90	14.85	14.73	3
	25	0	16.75	16.95	16.82	1	15.88	16.13	15.89	2	14.85	14.93	14.61	3

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)	64QAM			3GPP MPR (dB)
			Low CH	Mid CH	High CH		Low CH	Mid CH	High CH		Low CH	Mid CH	High CH	
			20000	20175	20350		20000	20175	20350		20000	20175	20350	
			1715.0 MHz	1732.5 MHz	1750.0 MHz		1715.0 MHz	1732.5 MHz	1750.0 MHz		1715.0 MHz	1732.5 MHz	1750.0 MHz	
4 / 10M	1	0	17.71	17.79	17.77	0	16.80	17.00	16.80	1	16.46	16.58	16.58	2
	1	25	17.76	17.80	17.80	0	16.84	17.03	16.80	1	16.53	16.60	16.77	2
	1	49	17.73	17.78	17.78	0	16.81	17.07	16.81	1	16.48	16.72	16.58	2
	25	0	16.80	16.95	16.90	1	15.91	16.23	16.07	2	14.79	14.98	14.75	3
	25	12	16.79	16.92	16.87	1	15.85	16.24	16.07	2	14.89	15.00	14.56	3
	25	25	16.82	16.94	16.85	1	15.84	16.26	16.11	2	14.76	14.79	14.77	3
	50	0	16.81	16.95	16.82	1	15.87	16.29	16.16	2	14.74	14.97	14.64	3

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)	64QAM			3GPP MPR (dB)
			Low CH	Mid CH	High CH		Low CH	Mid CH	High CH		Low CH	Mid CH	High CH	
			20025	20175	20325		20025	20175	20325		20025	20175	20325	
			1717.5 MHz	1732.5 MHz	1747.5 MHz		1717.5 MHz	1732.5 MHz	1747.5 MHz		1717.5 MHz	1732.5 MHz	1747.5 MHz	
4 / 15M	1	0	17.76	17.74	17.79	0	16.93	16.77	16.81	1	16.55	16.63	16.73	2
	1	37	17.78	17.79	17.82	0	16.91	16.75	16.83	1	16.56	16.64	16.79	2
	1	74	17.75	17.74	17.79	0	16.88	16.74	16.85	1	16.49	16.73	16.73	2
	36	0	16.95	16.78	16.85	1	15.96	15.84	15.92	2	14.71	14.99	14.80	3
	36	20	16.92	16.76	16.86	1	16.01	15.81	15.90	2	14.93	14.91	14.59	3
	36	39	16.91	16.79	16.86	1	15.98	15.84	15.94	2	14.86	14.84	14.81	3
	75	0	16.90	16.78	16.82	1	16.93	16.77	16.81	2	14.83	14.95	14.70	3

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)	64QAM			3GPP MPR (dB)
			Low CH	Mid CH	High CH		Low CH	Mid CH	High CH		Low CH	Mid CH	High CH	
			20050	20175	20300		20050	20175	20300		20050	20175	20300	
			1720.0 MHz	1732.5 MHz	1745.0 MHz		1720.0 MHz	1732.5 MHz	1745.0 MHz		1720.0 MHz	1732.5 MHz	1745.0 MHz	
4 / 20M	1	0	17.77	17.79	17.78	0	16.92	17.05	16.85	1	16.63	16.63	16.78	2
	1	50	17.81	17.83	17.83	0	16.92	17.02	16.85	1	16.65	16.67	16.83	2
	1	99	17.78	17.79	17.81	0	16.93	16.98	16.85	1	16.64	16.79	16.77	2
	50	0	16.99	17.04	16.82	1	16.03	16.21	16.04	2	14.85	15.00	14.82	3
	50	25	16.96	17.00	16.87	1	16.05	16.19	16.05	2	14.97	15.00	14.69	3
	50	50	16.96	17.05	16.87	1	16.02	16.21	16.06	2	14.96	14.88	14.86	3
	100	0	16.97	17.04	16.85	1	16.03	16.18	16.01	2	14.87	15.04	14.74	3

➤ LTE Band 5

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)	64QAM			3GPP MPR (dB)
			Low CH	Mid CH	High CH		Low CH	Mid CH	High CH		Low CH	Mid CH	High CH	
			20407	20525	20643		20407	20525	20643		20407	20525	20643	
			824.7 MHz	836.5 MHz	848.3 MHz		824.7 MHz	836.5 MHz	848.3 MHz		824.7 MHz	836.5 MHz	848.3 MHz	
5 / 1.4M	1	0	22.72	22.76	22.87	0	21.77	21.87	22.01	1	21.61	21.61	21.69	2
	1	3	22.73	22.80	22.89	0	21.81	21.87	21.98	1	21.60	21.82	21.68	2
	1	5	22.69	22.78	22.87	0	21.86	21.85	21.96	1	21.55	21.69	21.67	2
	3	0	21.77	21.95	22.00	0	21.08	20.88	20.98	1	20.83	20.90	20.80	2
	3	1	21.81	21.91	21.95	0	21.11	20.89	20.95	1	21.04	20.84	20.83	2
	3	3	21.84	21.95	22.00	0	21.14	20.86	20.96	1	20.82	20.64	20.95	2
	6	0	21.80	21.90	22.02	1	21.11	20.82	20.99	2	19.90	19.84	19.70	3

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)	64QAM			3GPP MPR (dB)
			Low CH	Mid CH	High CH		Low CH	Mid CH	High CH		Low CH	Mid CH	High CH	
			20415	20525	20635		20415	20525	20635		20415	20525	20635	
			825.5 MHz	836.5 MHz	847.5 MHz		825.5 MHz	836.5 MHz	847.5 MHz		825.5 MHz	836.5 MHz	847.5 MHz	
5 / 3M	1	0	22.74	22.79	22.83	0	21.97	21.88	22.14	1	21.63	21.58	21.73	2
	1	8	22.77	22.79	22.88	0	21.95	21.91	22.15	1	21.62	21.78	21.74	2
	1	14	22.74	22.78	22.87	0	21.96	21.87	22.19	1	21.63	21.78	21.66	2
	8	0	21.98	21.80	22.07	1	20.98	20.99	21.35	2	19.83	19.71	19.95	3
	8	4	21.94	21.84	22.12	1	20.95	20.93	21.34	2	20.11	19.82	19.74	3
	8	7	21.93	21.85	22.15	1	20.99	20.94	21.36	2	19.76	19.58	19.95	3
	15	0	21.95	21.85	22.18	1	21.02	20.97	21.36	2	19.88	19.81	19.88	3

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)	64QAM			3GPP MPR (dB)
			Low CH	Mid CH	High CH		Low CH	Mid CH	High CH		Low CH	Mid CH	High CH	
			20425	20525	20625		20425	20525	20625		20425	20525	20625	
			826.5 MHz	836.5 MHz	846.5 MHz		826.5 MHz	836.5 MHz	846.5 MHz		826.5 MHz	836.5 MHz	846.5 MHz	
5 / 5M	1	0	22.74	22.79	22.82	0	21.82	21.91	22.08	1	21.56	21.69	21.68	2
	1	13	22.79	22.84	22.84	0	21.80	21.93	22.04	1	21.53	21.80	21.76	2
	1	24	22.76	22.83	22.79	0	21.79	21.95	21.99	1	21.64	21.71	21.54	2
	12	0	21.76	21.90	22.04	1	21.02	21.03	21.03	2	19.91	19.81	19.94	3
	12	6	21.79	21.94	22.08	1	21.04	21.02	21.00	2	20.06	19.82	19.64	3
	12	13	21.83	21.95	22.05	1	21.03	20.97	20.97	2	19.84	19.71	19.84	3
	25	0	21.82	21.92	22.08	1	21.04	21.01	20.96	2	19.93	19.89	19.73	3

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)	64QAM			3GPP MPR (dB)
			Low CH	Mid CH	High CH		Low CH	Mid CH	High CH		Low CH	Mid CH	High CH	
			20450	20525	20600		20450	20525	20600		20450	20525	20600	
			829.0 MHz	836.5 MHz	844.0 MHz		829.0 MHz	836.5 MHz	844.0 MHz		829.0 MHz	836.5 MHz	844.0 MHz	
5 / 10M	1	0	22.81	22.84	22.81	0	22.04	21.99	22.06	1	21.70	21.70	21.81	2
	1	25	22.83	22.87	22.82	0	22.04	22.00	22.06	1	21.67	21.87	21.82	2
	1	49	22.83	22.87	22.78	0	22.08	22.04	22.06	1	21.69	21.87	21.74	2
	25	0	22.08	21.95	21.96	1	21.28	21.21	21.14	2	19.94	19.91	19.96	3
	25	12	22.12	21.98	21.98	1	21.26	21.20	21.18	2	20.12	19.94	19.83	3
	25	25	22.08	21.93	22.00	1	21.27	21.20	21.19	2	19.90	19.76	20.00	3
	50	0	22.05	21.96	22.02	1	21.22	21.20	21.17	2	19.95	19.96	19.90	3

➤ LTE Band 7

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)	64QAM			3GPP MPR (dB)
			Low CH	Mid CH	High CH		Low CH	Mid CH	High CH		Low CH	Mid CH	High CH	
			20775	21100	21425		20775	21100	21425		20775	21100	21425	
			2502.5 MHz	2535.0 MHz	2567.5 MHz		2502.5 MHz	2535.0 MHz	2567.5 MHz		2502.5 MHz	2535.0 MHz	2567.5 MHz	
7 / 5M	1	0	14.43	14.42	14.43	0	13.50	13.57	13.57	1	13.24	13.27	13.28	2
	1	13	14.46	14.44	14.46	0	13.50	13.56	13.60	1	13.23	13.47	13.23	2
	1	24	14.43	14.40	14.45	0	13.49	13.57	13.58	1	13.31	13.31	13.19	2
	12	0	13.49	13.65	13.52	1	12.68	12.73	12.82	2	11.39	11.46	11.35	3
	12	6	13.50	13.65	13.56	1	12.71	12.74	12.78	2	11.35	11.60	11.31	3
	12	13	13.46	13.62	13.54	1	12.74	12.70	12.75	2	11.23	11.49	11.43	3
	25	0	13.46	13.59	13.57	1	12.71	12.68	12.72	2	11.39	11.58	11.41	3

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)	64QAM			3GPP MPR (dB)
			Low CH	Mid CH	High CH		Low CH	Mid CH	High CH		Low CH	Mid CH	High CH	
			20800	21100	21400		20800	21100	21400		20800	21100	21400	
			2505.0 MHz	2535.0 MHz	2565.0 MHz		2505.0 MHz	2535.0 MHz	2565.0 MHz		2505.0 MHz	2535.0 MHz	2565.0 MHz	
7 / 10M	1	0	14.53	14.49	14.43	0	13.67	13.64	13.55	1	13.20	13.27	13.17	2
	1	25	14.55	14.51	14.48	0	13.67	13.59	13.59	1	13.33	13.45	13.16	2
	1	49	14.50	14.47	14.47	0	13.66	13.61	13.63	1	13.29	13.45	13.25	2
	25	0	13.71	13.66	13.56	1	12.90	12.76	12.81	2	11.38	11.54	11.46	3
	25	12	13.72	13.71	13.51	1	12.89	12.71	12.86	2	11.41	11.63	11.33	3
	25	25	13.71	13.66	13.52	1	12.91	12.72	12.85	2	11.26	11.40	11.38	3
	50	0	13.68	13.61	13.50	1	12.95	12.77	12.85	2	11.37	11.61	11.34	3

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)	64QAM			3GPP MPR (dB)
			Low CH	Mid CH	High CH		Low CH	Mid CH	High CH		Low CH	Mid CH	High CH	
			20825	21100	21375		20825	21100	21375		20825	21100	21375	
			2507.5 MHz	2535.0 MHz	2562.5 MHz		2507.5 MHz	2535.0 MHz	2562.5 MHz		2507.5 MHz	2535.0 MHz	2562.5 MHz	
7 / 15M	1	0	14.51	14.49	14.39	0	13.50	13.83	13.41	1	13.34	13.30	13.26	2
	1	37	14.54	14.51	14.43	0	13.47	13.82	13.42	1	13.22	13.50	13.14	2
	1	74	14.50	14.50	14.38	0	13.47	13.83	13.46	1	13.33	13.35	13.19	2
	36	0	13.60	13.74	13.46	1	12.59	13.04	12.47	2	11.36	11.39	11.53	3
	36	20	13.58	13.77	13.43	1	12.65	13.08	12.46	2	11.36	11.68	11.33	3
	36	39	13.53	13.76	13.43	1	12.70	13.07	12.49	2	11.25	11.34	11.37	3
	75	0	13.50	13.78	13.44	1	12.68	13.12	12.46	2	11.45	11.56	11.27	3

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)	64QAM			3GPP MPR (dB)
			Low CH	Mid CH	High CH		Low CH	Mid CH	High CH		Low CH	Mid CH	High CH	
			20850	21100	21350		20850	21100	21350		20850	21100	21350	
			2510.0 MHz	2535.0 MHz	2560.0 MHz		2510.0 MHz	2535.0 MHz	2560.0 MHz		2510.0 MHz	2535.0 MHz	2560.0 MHz	
7 / 20M	1	0	14.51	14.53	14.46	0	13.57	13.69	13.59	1	13.40	13.39	13.30	2
	1	50	14.52	14.54	14.46	0	13.60	13.70	13.58	1	13.36	13.54	13.32	2
	1	99	14.50	14.51	14.43	0	13.61	13.73	13.59	1	13.36	13.51	13.39	2
	50	0	13.56	13.74	13.54	1	12.78	12.90	12.69	2	11.42	11.56	11.54	3
	50	25	13.52	13.70	13.54	1	12.79	12.94	12.74	2	11.52	11.70	11.36	3
	50	50	13.55	13.69	13.52	1	12.81	12.99	12.72	2	11.37	11.51	11.52	3
	100	0	13.57	13.65	13.56	1	12.78	12.97	12.68	2	11.47	11.65	11.45	3

➤ **LTE Band 13**

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)	64QAM			3GPP MPR (dB)
			Low CH 23205	Mid CH 23230	High CH 23255		Low CH 23205	Mid CH 23230	High CH 23255		Low CH 23205	Mid CH 23230	High CH 23255	
			779.5 MHz	782.0 MHz	784.5 MHz		779.5 MHz	782.0 MHz	784.5 MHz		779.5 MHz	782.0 MHz	784.5 MHz	
13 / 5M	1	0	22.85	22.84	22.82	0	21.78	21.99	21.89	1	21.85	21.70	21.66	2
	1	13	22.89	22.88	22.84	0	21.74	21.95	21.93	1	21.73	21.88	21.84	2
	1	24	22.85	22.87	22.82	0	21.70	21.91	21.88	1	21.71	21.87	21.78	2
	12	0	21.85	21.94	21.86	1	20.93	20.92	21.12	2	19.85	19.76	19.86	3
	12	6	21.82	21.94	21.91	1	20.96	20.94	21.15	2	19.64	19.94	19.91	3
	12	13	21.79	21.94	21.87	1	20.98	20.96	21.18	2	19.61	19.76	19.87	3
	25	0	21.74	21.95	21.85	1	20.98	21.01	21.16	2	19.64	19.95	19.74	3

LTE Band / BW	RB Size	RB Offset	QPSK	3GPP MPR (dB)	16QAM	3GPP MPR (dB)	64QAM	3GPP MPR (dB)
			Mid CH 23230		Mid CH 23230		Mid CH 23230	
			782.0 MHz		782.0 MHz		782.0 MHz	
13 / 10M	1	0	22.88	0	21.91	1	21.72	2
	1	25	23.17	0	21.93	1	22.03	2
	1	49	22.88	0	21.92	1	21.84	2
	25	0	22.04	1	21.12	2	20.04	3
	25	12	22.01	1	21.12	2	19.83	3
	25	25	21.98	1	21.10	2	19.98	3
	50	0	21.96	1	21.10	2	19.85	3

➤ LTE Band 26

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)	64QAM			3GPP MPR (dB)
			Low CH	Mid CH	High CH		Low CH	Mid CH	High CH		Low CH	Mid CH	High CH	
			26697	26865	27033		26697	26865	27033		26697	26865	27033	
			814.7 MHz	831.5 MHz	848.3 MHz		814.7 MHz	831.5 MHz	848.3 MHz		814.7 MHz	831.5 MHz	848.3 MHz	
26 / 1.4M	1	0	22.82	22.83	22.82	0	22.01	21.99	22.01	1	21.68	21.73	21.54	2
	1	13	22.86	22.86	22.83	0	22.01	22.03	21.96	1	21.55	21.79	21.62	2
	1	24	22.83	22.85	22.82	0	22.00	22.03	21.92	1	21.64	21.89	21.74	2
	12	0	21.99	22.06	22.04	0	21.02	21.09	21.03	1	20.85	20.63	20.75	2
	12	6	21.98	22.04	21.99	0	21.07	21.03	21.00	1	20.67	20.99	20.64	2
	12	13	21.94	22.01	22.02	0	21.05	21.05	21.01	1	20.64	20.76	20.81	2
	25	0	21.98	22.04	22.03	1	21.06	21.02	21.01	2	19.68	19.91	19.72	3

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)	64QAM			3GPP MPR (dB)
			Low CH	Mid CH	High CH		Low CH	Mid CH	High CH		Low CH	Mid CH	High CH	
			26705	26865	27025		26705	26865	27025		26705	26865	27025	
			815.5 MHz	831.5 MHz	847.5 MHz		815.5 MHz	831.5 MHz	847.5 MHz		815.5 MHz	831.5 MHz	847.5 MHz	
26 / 3M	1	0	22.89	22.91	22.87	0	22.09	22.05	22.13	1	21.62	21.61	21.65	2
	1	13	22.90	22.95	22.88	0	22.08	22.03	22.09	1	21.64	21.92	21.68	2
	1	24	22.88	22.92	22.87	0	22.08	22.00	22.14	1	21.66	21.79	21.68	2
	12	0	22.07	22.06	22.09	1	21.15	21.14	21.27	2	19.85	19.65	19.89	3
	12	6	22.11	22.06	22.13	1	21.13	21.18	21.33	2	19.72	19.87	19.51	3
	12	13	22.15	22.07	22.16	1	21.09	21.22	21.29	2	19.67	19.83	19.79	3
	25	0	22.12	22.05	22.16	1	21.12	21.19	21.28	2	19.78	19.88	19.77	3

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)	64QAM			3GPP MPR (dB)
			Low CH	Mid CH	High CH		Low CH	Mid CH	High CH		Low CH	Mid CH	High CH	
			26715	26865	27015		26715	26865	27015		26715	26865	27015	
			816.5 MHz	831.5 MHz	846.5 MHz		816.5 MHz	831.5 MHz	846.5 MHz		816.5 MHz	831.5 MHz	846.5 MHz	
26 / 5M	1	0	22.85	22.81	22.84	0	21.90	21.81	22.06	1	21.64	21.68	21.49	2
	1	13	22.86	22.86	22.88	0	21.91	21.85	22.06	1	21.55	21.91	21.77	2
	1	24	22.82	22.82	22.83	0	21.91	21.84	22.04	1	21.67	21.81	21.70	2
	12	0	21.95	21.88	22.03	1	20.95	21.02	21.26	2	19.79	19.79	19.84	3
	12	6	21.91	21.83	22.07	1	20.91	21.00	21.24	2	19.75	19.99	19.50	3
	12	13	21.95	21.80	22.07	1	20.91	20.98	21.28	2	19.55	19.72	19.80	3
	25	0	21.92	21.81	22.08	1	20.86	20.98	21.31	2	19.75	19.85	19.70	3

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)	64QAM			3GPP MPR (dB)
			Low CH	Mid CH	High CH		Low CH	Mid CH	High CH		Low CH	Mid CH	High CH	
			26740	26865	26990		26740	26865	26990		26740	26865	26990	
			819.0 MHz	831.5 MHz	844.0 MHz		819.0 MHz	831.5 MHz	844.0 MHz		819.0 MHz	831.5 MHz	844.0 MHz	
26 / 10M	1	0	22.84	22.92	22.85	0	22.02	22.20	21.90	1	21.59	21.69	21.46	2
	1	25	22.89	22.92	22.89	0	21.99	22.24	21.85	1	21.60	21.86	21.67	2
	1	49	22.84	22.87	22.85	0	21.95	22.20	21.81	1	21.54	21.80	21.84	2
	25	0	22.00	22.09	21.95	1	21.15	21.25	20.97	2	19.79	19.81	19.77	3
	25	12	22.03	22.12	21.92	1	21.20	21.26	20.94	2	19.75	19.87	19.50	3
	25	25	21.98	22.15	21.94	1	21.20	21.25	20.97	2	19.59	19.83	19.81	3
	50	0	22.00	22.16	21.93	1	21.21	21.21	20.96	2	19.68	19.80	19.74	3

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)	64QAM			3GPP MPR (dB)
			Low CH 26765	Mid CH 26865	High CH 26965		Low CH 26765	Mid CH 26865	High CH 26965		Low CH 26765	Mid CH 26865	High CH 26965	
			821.5 MHz	831.5 MHz	841.5 MHz		821.5 MHz	831.5 MHz	841.5 MHz		821.5 MHz	831.5 MHz	841.5 MHz	
26 / 15M	1	0	22.83	22.92	22.90	0	21.89	22.02	21.92	1	21.77	21.78	21.65	2
	1	37	22.87	22.94	22.93	0	21.86	21.98	21.92	1	21.71	21.94	21.79	2
	1	74	22.83	22.92	22.89	0	21.84	22.01	21.93	1	21.69	21.92	21.85	2
	36	0	21.94	22.01	21.90	1	20.88	21.02	21.03	2	19.94	19.83	19.90	3
	36	20	21.96	22.03	21.90	1	20.93	20.97	21.01	2	19.78	20.03	19.66	3
	36	39	21.93	21.99	21.91	1	20.92	20.93	20.99	2	19.75	19.88	19.91	3
	75	0	21.94	21.98	21.94	1	20.88	20.89	21.01	2	19.84	19.98	19.83	3

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➤ LTE Band 38

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)	64QAM			3GPP MPR (dB)
			Low CH 37775	Mid CH 38000	High CH 38225		Low CH 37775	Mid CH 38000	High CH 38225		Low CH 37775	Mid CH 38000	High CH 38225	
			2572.5 MHz	2595.0 MHz	2617.5 MHz		2572.5 MHz	2595.0 MHz	2617.5 MHz		2572.5 MHz	2595.0 MHz	2617.5 MHz	
38 / 5M	1	0	16.43	16.51	16.44	0	15.65	15.65	15.73	1	15.37	15.49	15.33	2
	1	13	16.46	16.51	16.47	0	15.61	15.70	15.78	1	15.26	15.44	15.37	2
	1	24	16.46	16.51	16.47	0	15.62	15.73	15.73	1	15.35	15.48	15.34	2
	12	0	15.57	15.70	15.67	1	14.86	14.96	14.81	2	13.50	13.40	13.50	3
	12	6	15.62	15.66	15.71	1	14.91	15.01	14.80	2	13.73	13.58	13.31	3
	12	13	15.63	15.63	15.75	1	14.94	14.98	14.83	2	13.15	13.74	13.44	3
	25	0	15.66	15.65	15.75	1	14.93	14.94	14.84	2	13.27	13.62	13.33	3

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)	64QAM			3GPP MPR (dB)
			Low CH 37800	Mid CH 38000	High CH 38200		Low CH 37800	Mid CH 38000	High CH 38200		Low CH 37800	Mid CH 38000	High CH 38200	
			2575.0 MHz	2595.0 MHz	2615.0 MHz		2575.0 MHz	2595.0 MHz	2615.0 MHz		2575.0 MHz	2595.0 MHz	2615.0 MHz	
38 / 10M	1	0	16.47	16.57	16.51	0	15.65	15.75	15.50	1	15.37	15.45	15.43	2
	1	25	16.52	16.58	16.51	0	15.62	15.72	15.53	1	15.32	15.37	15.49	2
	1	49	16.48	16.55	16.50	0	15.59	15.77	15.52	1	15.40	15.46	15.42	2
	25	0	15.72	15.71	15.53	1	14.65	15.01	14.77	2	13.35	13.39	13.43	3
	25	12	15.71	15.71	15.49	1	14.67	15.04	14.76	2	13.66	13.70	13.31	3
	25	25	15.70	15.75	15.50	1	14.69	15.01	14.77	2	13.23	13.72	13.57	3
	50	0	15.70	15.70	15.50	1	14.66	15.01	14.76	2	13.37	13.59	13.26	3

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)	64QAM			3GPP MPR (dB)
			Low CH 37825	Mid CH 38000	High CH 38175		Low CH 37825	Mid CH 38000	High CH 38175		Low CH 37825	Mid CH 38000	High CH 38175	
			2577.5 MHz	2595.0 MHz	2612.5 MHz		2577.5 MHz	2595.0 MHz	2612.5 MHz		2577.5 MHz	2595.0 MHz	2612.5 MHz	
38 / 15M	1	0	16.50	16.51	16.47	0	15.54	15.65	15.59	1	15.43	15.37	15.51	2
	1	37	16.51	16.56	16.48	0	15.51	15.67	15.56	1	15.32	15.36	15.51	2
	1	74	16.47	16.52	16.45	0	15.50	15.67	15.51	1	15.43	15.35	15.31	2
	36	0	15.52	15.63	15.65	1	14.75	14.78	14.55	2	13.35	13.44	13.39	3
	36	20	15.49	15.66	15.62	1	14.74	14.77	14.53	2	13.71	13.68	13.34	3
	36	39	15.48	15.63	15.62	1	14.73	14.75	14.56	2	13.16	13.73	13.52	3
	75	0	15.51	15.63	15.63	1	14.75	14.78	14.61	2	13.37	13.71	13.35	3

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)	64QAM			3GPP MPR (dB)
			Low CH 37850	Mid CH 38000	High CH 38150		Low CH 37850	Mid CH 38000	High CH 38150		Low CH 37850	Mid CH 38000	High CH 38150	
			2580.0 MHz	2595.0 MHz	2610.0 MHz		2580.0 MHz	2595.0 MHz	2610.0 MHz		2580.0 MHz	2595.0 MHz	2610.0 MHz	
38 / 20M	1	0	16.48	16.54	16.52	0	15.47	15.72	15.49	1	15.44	15.50	15.52	2
	1	50	16.53	16.56	16.52	0	15.47	15.67	15.51	1	15.37	15.56	15.52	2
	1	99	16.48	16.51	16.52	0	15.42	15.70	15.51	1	15.44	15.51	15.48	2
	50	0	15.53	15.75	15.56	1	14.51	14.87	14.77	2	13.53	13.57	13.56	3
	50	25	15.53	15.77	15.60	1	14.49	14.88	14.83	2	13.76	13.77	13.50	3
	50	50	15.51	15.74	15.57	1	14.53	14.85	14.84	2	13.33	13.74	13.57	3
	100	0	15.51	15.71	15.53	1	14.54	14.80	14.88	2	13.41	13.71	13.42	3

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➤ LTE Band 41

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)	64QAM			3GPP MPR (dB)
			Low CH	Mid CH	High CH		Low CH	Mid CH	High CH		Low CH	Mid CH	High CH	
			39675	40620	41565		39675	40620	41565		39675	40620	41565	
			2498.5 MHz	2593.0 MHz	2687.5 MHz		2498.5 MHz	2593.0 MHz	2687.5 MHz		2498.5 MHz	2593.0 MHz	2687.5 MHz	
41 / 5M	1	0	16.41	16.42	16.41	0	15.44	15.52	15.48	1	15.30	15.43	15.35	2
	1	13	16.46	16.43	16.45	0	15.40	15.49	15.51	1	15.34	15.39	15.34	2
	1	24	16.45	16.41	16.45	0	15.41	15.53	15.53	1	15.40	15.32	15.23	2
	12	0	15.46	15.60	15.54	1	14.43	14.67	14.65	2	13.41	13.11	13.46	3
	12	6	15.45	15.61	15.52	1	14.40	14.73	14.67	2	13.51	13.26	13.45	3
	12	13	15.43	15.60	15.54	1	14.37	14.73	14.71	2	13.36	13.30	13.36	3
	25	0	15.46	15.56	15.51	1	14.35	14.70	14.70	2	13.34	13.19	13.26	3

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)	64QAM			3GPP MPR (dB)
			Low CH	Mid CH	High CH		Low CH	Mid CH	High CH		Low CH	Mid CH	High CH	
			39700	40620	41540		39700	40620	41540		39700	40620	41540	
			2501.0 MHz	2593.0 MHz	2685.0 MHz		2501.0 MHz	2593.0 MHz	2685.0 MHz		2501.0 MHz	2593.0 MHz	2685.0 MHz	
41 / 10M	1	0	16.43	16.44	16.47	0	15.41	15.44	15.69	1	15.25	15.27	15.29	2
	1	25	16.46	16.45	16.48	0	15.40	15.45	15.73	1	15.31	15.33	15.37	2
	1	49	16.45	16.45	16.46	0	15.36	15.50	15.77	1	15.21	15.42	15.27	2
	25	0	15.55	15.46	15.61	1	14.58	14.70	14.92	2	13.43	13.28	13.40	3
	25	12	15.51	15.48	15.63	1	14.63	14.74	14.91	2	13.36	13.25	13.46	3
	25	25	15.46	15.46	15.63	1	14.63	14.74	14.91	2	13.24	13.16	13.39	3
	50	0	15.43	15.48	15.68	1	14.66	14.71	14.95	2	13.33	13.22	13.36	3

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)	64QAM			3GPP MPR (dB)
			Low CH	Mid CH	High CH		Low CH	Mid CH	High CH		Low CH	Mid CH	High CH	
			39725	40620	41515		39725	40620	41515		39725	40620	41515	
			2503.5 MHz	2593.0 MHz	2682.5 MHz		2503.5 MHz	2593.0 MHz	2682.5 MHz		2503.5 MHz	2593.0 MHz	2682.5 MHz	
41 / 15M	1	0	16.47	16.49	16.42	0	15.55	15.62	15.44	1	15.25	15.45	15.40	2
	1	37	16.49	16.50	16.47	0	15.56	15.59	15.40	1	15.37	15.35	15.35	2
	1	74	16.47	16.46	16.43	0	15.60	15.59	15.39	1	15.30	15.27	15.42	2
	36	0	15.52	15.53	15.51	1	14.84	14.68	14.65	2	13.40	13.18	13.55	3
	36	20	15.53	15.52	15.48	1	14.86	14.71	14.66	2	13.43	13.32	13.39	3
	36	39	15.54	15.56	15.46	1	14.83	14.76	14.65	2	13.26	13.23	13.51	3
	75	0	15.50	15.61	15.45	1	14.82	14.76	14.64	2	13.34	13.19	13.21	3

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)	64QAM			3GPP MPR (dB)
			Low CH	Mid CH	High CH		Low CH	Mid CH	High CH		Low CH	Mid CH	High CH	
			39750	40620	41490		39750	40620	41490		39750	40620	41490	
			2506.0 MHz	2593.0 MHz	2680.0 MHz		2506.0 MHz	2593.0 MHz	2680.0 MHz		2506.0 MHz	2593.0 MHz	2680.0 MHz	
41 / 20M	1	0	16.49	16.51	16.48	0	15.51	15.40	15.48	1	15.42	15.47	15.44	2
	1	50	16.49	16.52	16.49	0	15.48	15.38	15.48	1	15.38	15.52	15.51	2
	1	99	16.45	16.49	16.46	0	15.45	15.33	15.44	1	15.41	15.45	15.42	2
	50	0	15.52	15.49	15.59	1	14.67	14.44	14.46	2	13.52	13.31	13.59	3
	50	25	15.56	15.44	15.57	1	14.68	14.47	14.47	2	13.56	13.44	13.47	3
	50	50	15.57	15.42	15.52	1	14.68	14.43	14.50	2	13.39	13.31	13.52	3
	100	0	15.54	15.41	15.50	1	14.71	14.46	14.49	2	13.44	13.31	13.39	3

➤ LTE Band 66

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)	64QAM			3GPP MPR (dB)
			Low CH	Mid CH	High CH		Low CH	Mid CH	High CH		Low CH	Mid CH	High CH	
			131979	132322	132665		131979	132322	132665		131979	132322	132665	
			1710.7 MHz	1745 MHz	1779.3 MHz		1710.7 MHz	1745 MHz	1779.3 MHz		1710.7 MHz	1745 MHz	1779.3 MHz	
66 / 1.4M	1	0	18.42	18.58	18.69	0	17.47	17.59	17.71	1	17.46	17.53	17.36	2
	1	3	18.42	18.60	18.70	0	17.51	17.60	17.66	1	17.35	17.61	17.51	2
	1	5	18.41	18.56	18.68	0	17.47	17.62	17.65	1	17.42	17.55	17.48	2
	3	0	17.41	17.62	17.72	0	16.68	16.69	16.88	1	16.68	16.47	16.47	2
	3	1	17.43	17.60	17.73	0	16.66	16.62	16.90	1	16.74	16.42	16.47	2
	3	3	17.45	17.58	17.74	0	16.65	16.65	16.90	1	16.61	16.36	16.56	2
	6	0	17.43	17.57	17.76	1	16.69	16.69	16.86	2	15.52	15.41	15.29	3

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)	64QAM			3GPP MPR (dB)
			Low CH	Mid CH	High CH		Low CH	Mid CH	High CH		Low CH	Mid CH	High CH	
			131987	132322	132657		131987	132322	132657		131987	132322	132657	
			1711.5 MHz	1745 MHz	1778.5 MHz		1711.5 MHz	1745 MHz	1778.5 MHz		1711.5 MHz	1745 MHz	1778.5 MHz	
66 / 3M	1	0	18.48	18.59	18.68	0	17.49	17.76	17.83	1	17.37	17.43	17.47	2
	1	8	18.49	18.60	18.69	0	17.53	17.78	17.85	1	17.36	17.44	17.52	2
	1	14	18.44	18.60	18.65	0	17.48	17.82	17.82	1	17.39	17.48	17.41	2
	8	0	17.50	17.74	17.84	1	16.61	16.83	16.88	2	15.69	15.46	15.45	3
	8	4	17.53	17.73	17.82	1	16.67	16.89	16.81	2	15.69	15.36	15.40	3
	8	7	17.52	17.75	17.87	1	16.70	16.89	16.84	2	15.46	15.40	15.59	3
	15	0	17.51	17.80	17.87	1	16.74	16.86	16.85	2	15.67	15.37	15.34	3

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)	64QAM			3GPP MPR (dB)
			Low CH	Mid CH	High CH		Low CH	Mid CH	High CH		Low CH	Mid CH	High CH	
			131997	132322	132647		131997	132322	132647		131997	132322	132647	
			1712.5 MHz	1745 MHz	1777.5 MHz		1712.5 MHz	1745 MHz	1777.5 MHz		1712.5 MHz	1745 MHz	1777.5 MHz	
66 / 5M	1	0	18.51	18.59	18.63	0	17.71	17.56	17.94	1	17.45	17.55	17.35	2
	1	13	18.52	18.63	18.66	0	17.73	17.52	17.94	1	17.31	17.55	17.48	2
	1	24	18.47	18.59	18.63	0	17.68	17.56	17.96	1	17.48	17.45	17.43	2
	12	0	17.70	17.65	17.87	1	16.93	16.80	17.02	2	15.56	15.47	15.55	3
	12	6	17.74	17.66	17.89	1	16.96	16.83	16.97	2	15.75	15.37	15.54	3
	12	13	17.72	17.61	17.94	1	16.94	16.84	16.96	2	15.56	15.49	15.48	3
	25	0	17.68	17.59	17.94	1	16.91	16.85	17.01	2	15.65	15.38	15.34	3

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)	64QAM			3GPP MPR (dB)
			Low CH	Mid CH	High CH		Low CH	Mid CH	High CH		Low CH	Mid CH	High CH	
			132022	132322	132622		132022	132322	132622		132022	132322	132622	
			1715.0 MHz	1745 MHz	1775 MHz		1715.0 MHz	1745 MHz	1775 MHz		1715.0 MHz	1745 MHz	1775 MHz	
66 / 10M	1	0	18.51	18.59	18.60	0	17.67	17.77	17.92	1	17.38	17.51	17.34	2
	1	25	18.55	18.62	18.62	0	17.70	17.73	17.90	1	17.38	17.57	17.53	2
	1	49	18.52	18.57	18.58	0	17.73	17.73	17.91	1	17.40	17.51	17.32	2
	25	0	17.68	17.75	17.81	1	16.95	16.86	17.04	2	15.64	15.49	15.57	3
	25	12	17.67	17.75	17.82	1	16.89	16.90	16.99	2	15.70	15.47	15.42	3
	25	25	17.66	17.80	17.85	1	16.90	16.86	16.96	2	15.42	15.43	15.52	3
	50	0	17.63	17.76	17.89	1	16.93	16.82	16.99	2	15.54	15.42	15.37	3

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LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)	64QAM			3GPP MPR (dB)
			Low CH	Mid CH	High CH		Low CH	Mid CH	High CH		Low CH	Mid CH	High CH	
			132047	132322	132597		132047	132322	132597		132047	132322	132597	
			1717.5 MHz	1745 MHz	1772.5 MHz		1717.5 MHz	1745 MHz	1772.5 MHz		1717.5 MHz	1745 MHz	1772.5 MHz	
66 / 15M	1	0	18.58	18.56	18.53	0	17.84	17.72	17.74	1	17.47	17.56	17.49	2
	1	37	18.58	18.61	18.57	0	17.86	17.74	17.72	1	17.41	17.61	17.55	2
	1	74	18.58	18.60	18.56	0	17.91	17.71	17.69	1	17.41	17.52	17.47	2
	36	0	17.78	17.77	17.79	1	16.93	16.74	16.86	2	15.56	15.50	15.62	3
	36	20	17.75	17.72	17.77	1	16.92	16.73	16.92	2	15.74	15.38	15.45	3
	36	39	17.79	17.76	17.82	1	16.87	16.75	16.89	2	15.52	15.48	15.56	3
	75	0	17.83	17.75	17.78	1	16.89	16.75	16.92	2	15.63	15.40	15.43	3

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)	64QAM			3GPP MPR (dB)
			Low CH	Mid CH	High CH		Low CH	Mid CH	High CH		Low CH	Mid CH	High CH	
			132072	132322	132572		132072	132322	132572		132072	132322	132572	
			1720.0 MHz	1745 MHz	1770 MHz		1720.0 MHz	1745 MHz	1770 MHz		1720.0 MHz	1745 MHz	1770 MHz	
66 / 20M	1	0	18.59	18.60	18.54	0	17.74	17.56	17.56	1	17.55	17.56	17.54	2
	1	50	18.61	18.64	18.57	0	17.79	17.59	17.52	1	17.50	17.64	17.59	2
	1	99	18.60	18.62	18.55	0	17.75	17.63	17.50	1	17.56	17.58	17.51	2
	50	0	17.80	17.69	17.64	1	16.86	16.72	16.50	2	15.70	15.51	15.64	3
	50	25	17.78	17.65	17.65	1	16.87	16.66	16.55	2	15.78	15.47	15.55	3
	50	50	17.80	17.62	17.61	1	16.92	16.69	16.55	2	15.62	15.52	15.61	3
	100	0	17.77	17.59	17.58	1	16.89	16.73	16.51	2	15.67	15.49	15.47	3

4.3.4. Conducted Power of WLAN

The measuring conducted average power is shown as below.

Test Mode	Freq. [MHz]	Corr'd Average power Result [dBm]
11B	2412	15.64
11B	2437	16.33
11B	2462	15.45
11G	2412	14.94
11G	2437	15.82
11G	2462	14.74
11N20MIMO	2412	14.94
11N20MIMO	2437	15.82
11N20MIMO	2462	14.74
11N40MIMO	2422	15.51
11N40MIMO	2437	15.69
11N40MIMO	2452	15.22

Test Mode	Freq. [MHz]	Corr'd Value (dBm)
11A	5180	16.27
11A	5200	16.28
11A	5240	16.25
11A	5260	16.34
11A	5280	16.4
11A	5320	16.36
11A	5500	11.51
11A	5600	11.98
11A	5700	12.85
11A	5745	13.55
11A	5785	13.22
11A	5825	13.13
11N20MIMO	5180	16.44
11N20MIMO	5200	16.47
11N20MIMO	5240	16.49
11N20MIMO	5260	16.65
11N20MIMO	5280	16.71
11N20MIMO	5320	16.66
11N20MIMO	5500	11.75
11N20MIMO	5600	12.39
11N20MIMO	5700	12.91
11N20MIMO	5745	13.64
11N20MIMO	5785	13.49
11N20MIMO	5825	13.56
11N40MIMO	5190	15.73
11N40MIMO	5230	16.05
11N40MIMO	5270	15.82
11N40MIMO	5310	15.85
11N40MIMO	5510	11.82
11N40MIMO	5590	11.41
11N40MIMO	5670	11.99
11N40MIMO	5755	13.34
11N40MIMO	5795	13.06
11AC20MIMO	5180	16.41
11AC20MIMO	5200	16.37
11AC20MIMO	5240	16.4
11AC20MIMO	5260	16.65

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Test Mode	Freq. [MHz]	Corr'd Value (dBm)
11AC20MIMO	5280	16.58
11AC20MIMO	5320	16.61
11AC20MIMO	5500	11.98
11AC20MIMO	5600	12.41
11AC20MIMO	5700	12.95
11AC20MIMO	5745	13.66
11AC20MIMO	5785	13.61
11AC20MIMO	5825	13.68
11AC40MIMO	5190	16.01
11AC40MIMO	5230	15.96
11AC40MIMO	5270	16.21
11AC40MIMO	5310	16.15
11AC40MIMO	5510	12.03
11AC40MIMO	5590	11.65
11AC40MIMO	5670	11.61
11AC40MIMO	5755	13.46
11AC40MIMO	5795	13.44
11AC80MIMO	5210	15.41
11AC80MIMO	5290	15.92
11AC80MIMO	5530	11.48
11AC80MIMO	5610	11.98
11AC80MIMO	5775	13.06

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4.3.5. Conducted Power of BT

Mode	Modulation	Channel	Frequency (MHz)	Average Power (dBm)
BR + EDR	GFSK	0	2402	7.89
		39	2441	8.14
		78	2480	8.52
	$\pi/4$ -DQPSK	0	2402	7.83
		39	2441	8.11
		78	2480	8.48
	8-DPSK	0	2402	7.77
		39	2441	8.12
		78	2480	8.46

Mode	Modulation	Channel	Frequency (MHz)	Average Power (dBm)
LE	GFSK	0	2402	0.38
		19	2440	0.71
		39	2480	0.15
2LE	GFSK	0	2402	0.53
		19	2440	0.61
		39	2480	0.21
LE Code(125k)	GFSK	0	2402	0.65
		19	2440	0.62
		39	2480	0.32
LE Code(500k)	GFSK	0	2402	0.67
		19	2440	0.78
		39	2480	0.36

4.4. NFC EXPOSURE REQUIREMENTS

According to the KDB 447498 D01 V06, clause 4.3, the following RF exposure evaluation shall to demonstrate RF exposure compliance.

Tx frequency: 13.56 MHz Type of Modulation: ASK
Antenna Type: Loop Antenna
Nominal rated field strength: 59.18 dB μ V/m at 3 meter

Based on the Maximum allowed field strength was 59.18 dB μ V/m at 3m in frequency 13.56MHz, thus;

The EIRP = $[(FS \cdot D)^2 \cdot 1000 / 30] = 0.000248$ mW

Thus;

Conducted power = Radiated Power (EIRP) – Antenna Gain

So;

Conducted Power = 0.000248 mW.

The SAR Exclusion Threshold Level for 13.56MHz when the minimum test separation distance is < 50mm:

= $[474 \cdot (1 + \log_{10}(f(\text{MHz}))) / 2]$

= 443mW

Since the source-based time-averaging conducted output power is well below the SAR low threshold level, so the EUT is considered to comply with SAR requirement without testing.

4.5. SAR TESTING RESULTS

4.5.1. SAR Test Reduction Considerations

KDB 447498 D01 General RF Exposure Guidance

Testing of other required channels within the operating mode of a frequency band is not required when the reported 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

KDB 941225 D01 3G SAR Procedures

a) GSM SAR Test Reduction

SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power specified for production units, including tune-up tolerance. The data mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested. The GMSK EDGE configurations are grouped with GPRS and considered with respect to time-averaged maximum output power to determine compliance. The 3G SAR test reduction procedure is applied to 8-PSK EDGE with GMSK GPRS/EDGE as the primary mode.

b) 3G SAR Test Reduction Procedure

The mode tested for SAR is referred to as the primary mode. The equivalent modes considered for SAR test reduction are denoted as secondary modes. Both primary and secondary modes must be in the same frequency band. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is $\leq 1/4$ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.

KDB 941225 D05 SAR for LTE Devices

a) QPSK with 1 RB and 50% RB allocation

Start with the largest channel bandwidth and measure SAR, using the RB offset and required test channel combination with the highest maximum output power among RB offsets at the upper edge, middle and lower edge of each required test channel. When the reported SAR is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required; otherwise, SAR is required for the remaining required test channels and only for the RB offset configuration with the highest output power for that channel. When the reported SAR of a required test channel is > 1.45 W/kg, SAR is required for all three RB offset configurations for that required test channel.

b) 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.

c) Higher order modulations

SAR is required only when the highest maximum output power for the configuration in the higher order modulation is $> 1/2$ dB higher than the same configuration in QPSK or when the reported SAR for the QPSK configuration is > 1.45 W/kg.

d) Others channel bandwidth

SAR is required when the highest maximum output power of the smaller channel bandwidth is $> 1/2$ dB higher than the equivalent channel configurations in the largest channel bandwidth configuration or the reported SAR of a configuration for the largest channel bandwidth is > 1.45 W/kg.

KDB 941225 D06 Hot Spot SAR

Hotspot mode SAR is measured for all edges and surfaces of the device with a transmitting antenna located within 25 mm from that surface or edge.

KDB 248227 D01 Wi-Fi SAR

- a) For handsets operating next to ear, hotspot mode or mini-tablet configurations, 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 the reported SAR of initial test position is ≤ 0.4 W/kg, SAR testing for remaining test positions is not 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.
- b) For WLAN 2.4 GHz, the highest measured maximum output power channel for DSSS was selected for SAR measurement. When the reported SAR is ≤ 0.8 W/kg, no further SAR testing is required. Otherwise, SAR is evaluated at the next highest measured output power channel. When any reported SAR is > 1.2 W/kg, SAR is required for the third channel. For OFDM modes (802.11g/n), 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 it is ≤ 1.2 W/kg.
- c) For WLAN 5 GHz, the initial test configuration was selected according to the transmission mode with the highest maximum output power. When the reported SAR of initial test configuration is > 0.8 W/kg, SAR is required for the subsequent highest measured output power channel until the reported SAR result is ≤ 1.2 W/kg or all required channels are measured. For other transmission modes, SAR is not required when the highest reported SAR for initial test configuration is adjusted by the ratio of subsequent test configuration to initial test configuration specified maximum output power and it is ≤ 1.2 W/kg.
- d) For WLAN MIMO mode, the power-based standalone SAR test exclusion or the sum of SAR provision in KDB 447498 to determine simultaneous transmission SAR test exclusion should be applied. Otherwise, SAR for MIMO mode will be measured with all applicable antennas transmitting simultaneously at the specified maximum output power of MIMO operation.

4.5.2. SAR Results for Head Exposure Condition

Plot No.	Band	Mode	Test Position	Ch.	RB#	RB Offset	Duty Cycle	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
	GSM850	GPRS10	Left Cheek	190	--	--	--	32.0	31.31	1.17	-0.04	0.205	0.240
	GSM850	GPRS10	Left Tilted	190	--	--	--	32.0	31.31	1.17	-0.03	0.128	0.150
	GSM850	GPRS10	Right Cheek	190	--	--	--	32.0	31.31	1.17	0.05	0.227	0.266
	GSM850	GPRS10	Right Tilted	190	--	--	--	32.0	31.31	1.17	0.04	0.152	0.178
	GSM850	GPRS10	Right Cheek	128	--	--	--	32.0	31.46	1.13	0.05	0.215	0.243
1	GSM850	GPRS10	Right Cheek	251	--	--	--	32.0	31.21	1.20	0.08	0.255	0.306
	PCS1900	GPRS10	Left Cheek	661	--	--	--	25.0	23.86	1.30	0.03	0.208	0.270
	PCS1900	GPRS10	Left Tilted	661	--	--	--	25.0	23.86	1.30	0.06	0.18	0.234
	PCS1900	GPRS10	Right Cheek	661	--	--	--	25.0	23.86	1.30	0.00	0.424	0.551
	PCS1900	GPRS10	Right Tilted	661	--	--	--	25.0	23.86	1.30	0.06	0.343	0.446
2	PCS1900	GPRS10	Right Cheek	512	--	--	--	25.0	24.30	1.17	0.01	0.51	0.599
	PCS1900	GPRS10	Right Cheek	810	--	--	--	25.0	23.44	1.43	0.06	0.251	0.359
	WCDMA Band II	RMC12.2K	Left Cheek	9400	--	--	--	17.0	16.65	1.08	0.05	0.18	0.195
	WCDMA Band II	RMC12.2K	Left Tilted	9400	--	--	--	17.0	16.65	1.08	0.17	0.156	0.169
	WCDMA Band II	RMC12.2K	Right Cheek	9400	--	--	--	17.0	16.65	1.08	0.06	0.373	0.404
	WCDMA Band II	RMC12.2K	Right Tilted	9400	--	--	--	17.0	16.65	1.08	-0.10	0.279	0.302
3	WCDMA Band II	RMC12.2K	Right Cheek	9262	--	--	--	17.0	16.73	1.06	0.05	0.401	0.427
	WCDMA Band II	RMC12.2K	Right Cheek	9538	--	--	--	17.0	16.74	1.06	-0.10	0.349	0.371
	WCDMA Band IV	RMC12.2K	Left Cheek	1412	--	--	--	20.0	19.56	1.11	0.00	0.358	0.396
	WCDMA Band IV	RMC12.2K	Left Tilted	1412	--	--	--	20.0	19.56	1.11	0.00	0.325	0.360
	WCDMA Band IV	RMC12.2K	Right Cheek	1412	--	--	--	20.0	19.56	1.11	-0.16	0.611	0.676
	WCDMA Band IV	RMC12.2K	Right Tilted	1412	--	--	--	20.0	19.56	1.11	0.00	0.405	0.448
	WCDMA Band IV	RMC12.2K	Right Cheek	1312	--	--	--	20.0	19.63	1.09	-0.16	0.619	0.674
4	WCDMA Band IV	RMC12.2K	Right Cheek	1513	--	--	--	20.0	19.49	1.12	0.05	0.635	0.714
	WCDMA Band V	RMC12.2K	Left Cheek	4183	--	--	--	23.5	23.02	1.12	-0.12	0.139	0.155
	WCDMA Band V	RMC12.2K	Left Tilted	4183	--	--	--	23.5	23.02	1.12	0.09	0.096	0.107
	WCDMA Band V	RMC12.2K	Right Cheek	4183	--	--	--	23.5	23.02	1.12	-0.05	0.176	0.197
	WCDMA Band V	RMC12.2K	Right Tilted	4183	--	--	--	23.5	23.02	1.12	0.18	0.11	0.123
	WCDMA Band V	RMC12.2K	Right Cheek	4132	--	--	--	23.5	22.97	1.13	-0.05	0.143	0.162
5	WCDMA Band V	RMC12.2K	Right Cheek	4233	--	--	--	23.5	22.99	1.12	0.14	0.203	0.228
	LTE Band 2	QPSK20M	Left Cheek	18900	1	50	--	17.0	16.72	1.07	-0.07	0.146	0.156
	LTE Band 2	QPSK20M	Left Tilted	18900	1	50	--	17.0	16.72	1.07	0.05	0.122	0.130
	LTE Band 2	QPSK20M	Right Cheek	18900	1	50	--	17.0	16.72	1.07	0.08	0.297	0.317
	LTE Band 2	QPSK20M	Right Tilted	18900	1	50	--	17.0	16.72	1.07	0.08	0.227	0.242

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Plot No.	Band	Mode	Test Position	Ch.	RB#	RB Offset	Duty Cycle	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
6	LTE Band 2	QPSK20M	Right Cheek	18700	1	50	--	17.0	16.68	1.08	0.10	0.308	0.332
	LTE Band 2	QPSK20M	Right Cheek	19100	1	50	--	17.0	16.64	1.09	-0.11	0.244	0.265
	LTE Band 4	QPSK20M	Left Cheek	20175	1	50	--	18.5	17.83	1.17	-0.05	0.249	0.291
	LTE Band 4	QPSK20M	Left Tilted	20175	1	50	--	18.5	17.83	1.17	0.07	0.233	0.272
	LTE Band 4	QPSK20M	Right Cheek	20175	1	50	--	18.5	17.83	1.17	-0.09	0.429	0.501
	LTE Band 4	QPSK20M	Right Tilted	20175	1	50	--	18.5	17.83	1.17	0.09	0.307	0.358
	LTE Band 4	QPSK20M	Right Cheek	20050	1	50	--	18.5	17.81	1.17	-0.06	0.476	0.558
	LTE Band 4	QPSK20M	Right Cheek	20300	1	50	--	18.5	17.83	1.17	0.04	0.48	0.560
7	LTE Band 5	QPSK10M	Left Cheek	20525	1	25	--	23.5	22.87	1.16	-0.05	0.165	0.191
	LTE Band 5	QPSK10M	Left Tilted	20525	1	25	--	23.5	22.87	1.16	0.04	0.098	0.113
	LTE Band 5	QPSK10M	Right Cheek	20525	1	25	--	23.5	22.87	1.16	0.06	0.187	0.216
	LTE Band 5	QPSK10M	Right Tilted	20525	1	25	--	23.5	22.87	1.16	0.05	0.118	0.136
	LTE Band 5	QPSK10M	Right Cheek	20450	1	25	--	23.5	22.83	1.17	0.06	0.155	0.181
	LTE Band 5	QPSK10M	Right Cheek	20600	1	25	--	23.5	22.82	1.17	0.15	0.223	0.261
	LTE Band 7	QPSK20M	Left Cheek	21100	1	50	--	15.0	14.54	1.11	0.02	0.18	0.200
	LTE Band 7	QPSK20M	Left Tilted	21100	1	50	--	15.0	14.54	1.11	-0.03	0.203	0.226
	LTE Band 7	QPSK20M	Right Cheek	21100	1	50	--	15.0	14.54	1.11	0.08	0.294	0.327
	LTE Band 7	QPSK20M	Right Tilted	21100	1	50	--	15.0	14.54	1.11	0.04	0.386	0.429
	LTE Band 7	QPSK20M	Right Cheek	20850	1	50	--	15.0	14.52	1.12	0.09	0.329	0.367
	LTE Band 7	QPSK20M	Right Cheek	21350	1	50	--	15.0	14.46	1.13	0.01	0.3	0.340
	LTE Band 13	QPSK10M	Left Cheek	23230	1	25	--	23.5	23.17	1.08	0.02	0.068	0.073
	LTE Band 13	QPSK10M	Left Tilted	23230	1	25	--	23.5	23.17	1.08	-0.03	0.026	0.028
	LTE Band 13	QPSK10M	Right Cheek	23230	1	25	--	23.5	23.17	1.08	0.08	0.078	0.084
	LTE Band 13	QPSK10M	Right Tilted	23230	1	25	--	23.5	23.17	1.08	-0.07	0.057	0.061
	LTE Band 26	QPSK15M	Left Cheek	26865	1	37	--	23.5	22.94	1.14	-0.05	0.147	0.167
	LTE Band 26	QPSK15M	Left Tilted	26865	1	37	--	23.5	22.94	1.14	0.16	0.097	0.110
	LTE Band 26	QPSK15M	Right Cheek	26865	1	37	--	23.5	22.94	1.14	-0.08	0.16	0.182
	LTE Band 26	QPSK15M	Right Tilted	26865	1	37	--	23.5	22.94	1.14	0.03	0.112	0.127
	LTE Band 26	QPSK15M	Right Cheek	26765	1	37	--	23.5	22.87	1.16	0.03	0.155	0.179
	LTE Band 26	QPSK15M	Right Cheek	26965	1	37	--	23.5	22.93	1.14	0.03	0.214	0.244
	LTE Band 38	QPSK20M	Left Cheek	38000	1	50	--	17.0	16.56	1.11	-0.05	0.122	0.135
	LTE Band 38	QPSK20M	Left Tilted	38000	1	50	--	17.0	16.56	1.11	0.01	0.144	0.159
	LTE Band 38	QPSK20M	Right Cheek	38000	1	50	--	17.0	16.56	1.11	-0.07	0.19	0.210
	LTE Band 38	QPSK20M	Right Tilted	38000	1	50	--	17.0	16.56	1.11	0.00	0.223	0.247
	LTE Band 38	QPSK20M	Right Cheek	37850	1	50	--	17.0	16.53	1.11	0.02	0.221	0.246

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Plot No.	Band	Mode	Test Position	Ch.	RB#	RB Offset	Duty Cycle	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
12	LTE Band 38	QPSK20M	Right Cheek	38150	1	50	--	17.0	16.52	1.12	0.09	0.282	0.315
	LTE Band 41	QPSK20M	Left Cheek	40620	1	50	--	17.0	16.52	1.12	-0.05	0.129	0.144
	LTE Band 41	QPSK20M	Left Tilted	40620	1	50	--	17.0	16.52	1.12	0.01	0.142	0.159
	LTE Band 41	QPSK20M	Right Cheek	40620	1	50	--	17.0	16.52	1.12	-0.07	0.194	0.217
	LTE Band 41	QPSK20M	Right Tilted	40620	1	50	--	17.0	16.52	1.12	0.00	0.365	0.408
13	LTE Band 41	QPSK20M	Right Cheek	39750	1	50	--	17.0	16.49	1.12	0.06	0.404	0.451
	LTE Band 41	QPSK20M	Right Cheek	41490	1	50	--	17.0	16.49	1.12	0.07	0.322	0.362
	LTE Band 66	QPSK20M	Left Cheek	132322	1	50	--	19.0	18.64	1.09	-0.06	0.316	0.343
	LTE Band 66	QPSK20M	Left Tilted	132322	1	50	--	19.0	18.64	1.09	-0.08	0.287	0.312
	LTE Band 66	QPSK20M	Right Cheek	132322	1	50	--	19.0	18.64	1.09	-0.06	0.557	0.605
	LTE Band 66	QPSK20M	Right Tilted	132322	1	50	--	19.0	18.64	1.09	-0.03	0.39	0.424
	LTE Band 66	QPSK20M	Right Cheek	132072	1	50	--	19.0	18.61	1.09	0.02	0.564	0.617
14	LTE Band 66	QPSK20M	Right Cheek	132572	1	50	--	19.0	18.57	1.10	0.05	0.566	0.625
	2.4GHz	802.11b	Left Cheek	6	--	--	99.40%	17.0	16.33	1.17	-0.08	0.15	0.176
	2.4GHz	802.11b	Left Tilted	6	--	--	99.40%	17.0	16.33	1.17	-0.05	0.117	0.137
	2.4GHz	802.11b	Right Cheek	6	--	--	99.40%	17.0	16.33	1.17	-0.06	0.07	0.082
	2.4GHz	802.11b	Right Tilted	6	--	--	99.40%	17.0	16.33	1.17	0.07	0.042	0.049
15	2.4GHz	802.11b	Left Cheek	1	--	--	99.40%	17.0	15.64	1.37	0.02	0.251	0.345
	2.4GHz	802.11b	Left Cheek	11	--	--	99.40%	17.0	15.45	1.43	-0.03	0.217	0.312
	U-NII-1	802.11a	Left Cheek	40	--	--	96.45%	17.0	16.28	1.18	-0.02	0.074	0.091
	U-NII-1	802.11a	Left Tilted	40	--	--	96.45%	17.0	16.28	1.18	0.03	0.102	0.125
	U-NII-1	802.11a	Right Cheek	40	--	--	96.45%	17.0	16.28	1.18	-0.03	0.041	0.050
	U-NII-1	802.11a	Right Tilted	40	--	--	96.45%	17.0	16.28	1.18	-0.08	0.031	0.038
	U-NII-1	802.11a	Left Cheek	36	--	--	96.45%	17.0	16.27	1.18	-0.04	0.094	0.115
16	U-NII-1	802.11a	Left Cheek	48	--	--	96.45%	17.0	16.25	1.19	0.07	0.123	0.152
	U-NII-2A	802.11a	Left Cheek	56	--	--	96.45%	17.0	16.40	1.15	-0.05	0.124	0.148
	U-NII-2A	802.11a	Left Tilted	56	--	--	96.45%	17.0	16.40	1.15	0.13	0.141	0.168
	U-NII-2A	802.11a	Right Cheek	56	--	--	96.45%	17.0	16.40	1.15	0.04	0.076	0.090
	U-NII-2A	802.11a	Right Tilted	56	--	--	96.45%	17.0	16.40	1.15	0.04	0.099	0.118
	U-NII-2A	802.11a	Left Cheek	52	--	--	96.45%	17.0	16.34	1.16	-0.05	0.134	0.162
17	U-NII-2A	802.11a	Left Cheek	64	--	--	96.45%	17.0	16.36	1.16	0.13	0.145	0.174
	U-NII-2C	802.11a	Left Cheek	120	--	--	96.45%	13.5	11.98	1.42	-0.08	0.275	0.405
	U-NII-2C	802.11a	Left Tilted	120	--	--	96.45%	13.5	11.98	1.42	0.11	0.241	0.355
	U-NII-2C	802.11a	Right Cheek	120	--	--	96.45%	13.5	11.98	1.42	0.02	0.175	0.257
	U-NII-2C	802.11a	Right Tilted	120	--	--	96.45%	13.5	11.98	1.42	0.06	0.205	0.302

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Plot No.	Band	Mode	Test Position	Ch.	RB#	RB Offset	Duty Cycle	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
	U-NII-2C	802.11a	Left Cheek	100	--	--	96.45%	13.5	11.51	1.58	0.02	0.163	0.267
18	U-NII-2C	802.11a	Left Cheek	140	--	--	96.45%	13.5	12.85	1.16	0.10	0.319	0.384
	U-NII-3	802.11a	Left Cheek	157	--	--	96.45%	14.0	13.22	1.20	-0.09	0.251	0.311
	U-NII-3	802.11a	Left Tilted	157	--	--	96.45%	14.0	13.22	1.20	0.05	0.236	0.293
	U-NII-3	802.11a	Right Cheek	157	--	--	96.45%	14.0	13.22	1.20	-0.01	0.185	0.230
	U-NII-3	802.11a	Right Tilted	157	--	--	96.45%	14.0	13.22	1.20	0.03	0.202	0.251
19	U-NII-3	802.11a	Left Cheek	149	--	--	96.45%	14.0	13.55	1.11	0.16	0.333	0.383
	U-NII-3	802.11a	Left Cheek	165	--	--	96.45%	14.0	13.13	1.22	0.00	0.231	0.293
20	2.4GHz	Bluetooth_DH5	Left Cheek	39	--	--	77.60%	9.0	8.14	1.22	0.06	0.055	0.086
	2.4GHz	Bluetooth_DH5	Left Tilted	39	--	--	77.60%	9.0	8.14	1.22	0.00	0.012	0.019
	2.4GHz	Bluetooth_DH5	Right Cheek	39	--	--	77.60%	9.0	8.14	1.22	-0.02	0.024	0.038
	2.4GHz	Bluetooth_DH5	Right Tilted	39	--	--	77.60%	9.0	8.14	1.22	-0.05	0.006	0.009
	2.4GHz	Bluetooth_DH5	Left Cheek	0	--	--	77.60%	9.0	7.89	1.29	0.00	0.048	0.080
	2.4GHz	Bluetooth_DH5	Left Cheek	78	--	--	77.60%	9.0	8.52	1.12	0.00	0.05	0.072

Note: 1). Scaled SAR-1g (W/kg) = (Measured SAR-1g (W/kg) x Scaling Factor) / Duty Cycle.

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4.5.3. SAR Results for Body-Worn Exposure Condition (Separation Distance is 0.5 cm)

Plot No.	Band	Mode	Test Position	Ch.	RB#	RB Offset	Duty Cycle	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measure d SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
21	GSM850	GPRS10	Front Face	190	--	--	--	32.0	31.31	1.17	0.00	0.463	0.543
	GSM850	GPRS10	Rear Face	190	--	--	--	32.0	31.31	1.17	-0.17	0.846	0.992
	* GSM850	GPRS10	Rear Face	190	--	--	--	32.0	31.31	1.17	-0.17	0.841	0.986
	GSM850	GPRS10	Rear Face	128	--	--	--	32.0	31.46	1.13	0.02	0.842	0.953
	GSM850	GPRS10	Rear Face	251	--	--	--	32.0	31.21	1.20	0.00	0.841	1.009
22	GSM1900	GPRS10	Front Face	661	--	--	--	25.0	23.86	1.30	0.05	0.316	0.411
	GSM1900	GPRS10	Rear Face	661	--	--	--	25.0	23.86	1.30	0.04	0.615	0.800
	GSM1900	GPRS10	Rear Face	512	--	--	--	25.0	24.30	1.17	-0.03	0.63	0.740
	GSM1900	GPRS10	Rear Face	810	--	--	--	25.0	23.44	1.43	-0.09	0.472	0.676
	WCDMA Band II	RMC12.2K	Front Face	9400	--	--	--	17.0	16.65	1.08	0.05	0.211	0.229
23	WCDMA Band II	RMC12.2K	Rear Face	9400	--	--	--	17.0	16.65	1.08	-0.09	0.325	0.352
	WCDMA Band II	RMC12.2K	Rear Face	9262	--	--	--	17.0	16.73	1.06	-0.03	0.374	0.398
	WCDMA Band IV	RMC12.2K	Front Face	1412	--	--	--	20.0	19.56	1.11	0.05	0.385	0.426
	WCDMA Band IV	RMC12.2K	Rear Face	1412	--	--	--	20.0	19.56	1.11	-0.04	0.646	0.715
	WCDMA Band IV	RMC12.2K	Rear Face	1312	--	--	--	20.0	19.63	1.09	0.02	0.625	0.681
24	WCDMA Band IV	RMC12.2K	Rear Face	1513	--	--	--	20.0	19.49	1.12	-0.12	0.618	0.695
	WCDMA Band V	RMC12.2K	Front Face	4183	--	--	--	23.5	23.02	1.12	-0.11	0.363	0.405
	WCDMA Band V	RMC12.2K	Rear Face	4183	--	--	--	23.5	23.02	1.12	0.00	0.709	0.792
	WCDMA Band V	RMC12.2K	Rear Face	4132	--	--	--	23.5	22.97	1.13	0.12	0.713	0.806
	WCDMA Band V	RMC12.2K	Rear Face	4233	--	--	--	23.5	22.99	1.12	-0.03	0.72	0.810
25	LTE Band 2	QPSK20M	Front Face	18900	1	50	--	17.0	16.72	1.07	-0.08	0.169	0.180
	LTE Band 2	QPSK20M	Rear Face	18900	1	50	--	17.0	16.72	1.07	-0.12	0.361	0.385
	LTE Band 2	QPSK20M	Rear Face	18700	1	50	--	17.0	16.68	1.08	-0.03	0.353	0.380
	LTE Band 2	QPSK20M	Rear Face	19100	1	50	--	17.0	16.64	1.09	-0.09	0.341	0.370
	LTE Band 4	QPSK20M	Front Face	20175	1	50	--	18.5	17.83	1.17	-0.06	0.231	0.270
26	LTE Band 4	QPSK20M	Rear Face	20175	1	50	--	18.5	17.83	1.17	-0.04	0.478	0.558
	LTE Band 4	QPSK20M	Rear Face	20050	1	50	--	18.5	17.81	1.17	-0.08	0.499	0.585
	LTE Band 4	QPSK20M	Rear Face	20300	1	50	--	18.5	17.83	1.17	0.08	0.481	0.561
	LTE Band 5	QPSK10M	Front Face	20525	1	25	--	23.5	22.87	1.16	-0.06	0.346	0.400
	LTE Band 5	QPSK10M	Rear Face	20525	1	25	--	23.5	22.87	1.16	-0.04	0.603	0.697
27	LTE Band 5	QPSK10M	Rear Face	20450	1	25	--	23.5	22.83	1.17	-0.02	0.615	0.718
	LTE Band 5	QPSK10M	Rear Face	20600	1	25	--	23.5	22.82	1.17	0.08	0.611	0.715
	LTE Band 7	QPSK20M	Front Face	21100	1	50	--	15.0	14.54	1.11	-0.06	0.191	0.212

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Plot No.	Band	Mode	Test Position	Ch.	RB#	RB Offset	Duty Cycle	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measure d SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
29	LTE Band 7	QPSK20M	Rear Face	21100	1	50	--	15.0	14.54	1.11	0.04	0.669	0.744
	LTE Band 7	QPSK20M	Rear Face	20850	1	50	--	15.0	14.52	1.12	0.15	0.651	0.727
	LTE Band 7	QPSK20M	Rear Face	21350	1	50	--	15.0	14.46	1.13	0.08	0.657	0.744
	LTE Band 13	QPSK10M	Front Face	23230	1	25	--	23.5	23.17	1.08	0.02	0.13	0.140
30	LTE Band 13	QPSK10M	Rear Face	23230	1	25	--	23.5	23.17	1.08	-0.05	0.252	0.272
	LTE Band 26	QPSK15M	Front Face	26865	1	37	--	23.5	22.94	1.14	-0.05	0.344	0.391
31	LTE Band 26	QPSK15M	Rear Face	26865	1	37	--	23.5	22.94	1.14	-0.06	0.611	0.695
	LTE Band 26	QPSK15M	Rear Face	26765	1	37	--	23.5	22.87	1.16	-0.01	0.599	0.693
	LTE Band 26	QPSK15M	Rear Face	26965	1	37	--	23.5	22.93	1.14	0.06	0.603	0.688
	LTE Band 38	QPSK20M	Front Face	38000	1	50	--	17.0	16.56	1.11	-0.04	0.126	0.139
	LTE Band 38	QPSK20M	Rear Face	38000	1	50	--	17.0	16.56	1.11	-0.09	0.482	0.533
	LTE Band 38	QPSK20M	Rear Face	37850	1	50	--	17.0	16.53	1.11	-0.06	0.491	0.547
32	LTE Band 38	QPSK20M	Rear Face	38150	1	50	--	17.0	16.52	1.12	0.08	0.5	0.558
	LTE Band 41	QPSK20M	Front Face	40620	1	50	--	17.0	16.52	1.12	-0.04	0.129	0.144
	LTE Band 41	QPSK20M	Rear Face	40620	1	50	--	17.0	16.52	1.12	-0.09	0.537	0.600
33	LTE Band 41	QPSK20M	Rear Face	39750	1	50	--	17.0	16.49	1.12	0.01	0.63	0.709
	LTE Band 66	QPSK20M	Front Face	132322	1	50	--	19.0	18.64	1.09	-0.02	0.296	0.322
	LTE Band 66	QPSK20M	Rear Face	132322	1	50	--	19.0	18.64	1.09	0.09	0.6	0.652
	LTE Band 66	QPSK20M	Rear Face	132072	1	50	--	19.0	18.61	1.09	-0.02	0.612	0.670
34	LTE Band 66	QPSK20M	Rear Face	132572	1	50	--	19.0	18.57	1.10	-0.16	0.632	0.698
	2.4GHz	802.11b	Front Face	6	--	--	99.40%	17.0	16.33	1.17	-0.03	0.096	0.113
	2.4GHz	802.11b	Rear Face	6	--	--	99.40%	17.0	16.33	1.17	-0.14	0.232	0.272
	2.4GHz	802.11b	Rear Face	1	--	--	99.40%	17.0	15.64	1.37	-0.08	0.314	0.432
35	2.4GHz	802.11b	Rear Face	11	--	--	99.40%	17.0	15.45	1.43	0.05	0.39	0.561
	U-NII-1	802.11a	Front Face	40	--	--	96.45%	17.0	16.28	1.18	0.02	0.057	0.070
	U-NII-1	802.11a	Rear Face	40	--	--	96.45%	17.0	16.28	1.18	0.00	0.168	0.206
	U-NII-1	802.11a	Rear Face	36	--	--	96.45%	17.0	16.27	1.18	0.01	0.202	0.248
36	U-NII-1	802.11a	Rear Face	48	--	--	96.45%	17.0	16.25	1.13	0.19	0.252	0.295
	U-NII-2A	802.11a	Front Face	56	--	--	96.45%	17.0	16.40	1.15	0.00	0.034	0.040
37	U-NII-2A	802.11a	Rear Face	56	--	--	96.45%	17.0	16.40	1.15	0.05	0.189	0.225
	U-NII-2A	802.11a	Rear Face	52	--	--	96.45%	17.0	16.34	1.16	0.09	0.168	0.203
	U-NII-2A	802.11a	Rear Face	64	--	--	96.45%	17.0	16.36	1.16	-0.06	0.179	0.215
	U-NII-2C	802.11a	Front Face	120	--	--	96.45%	13.5	11.98	1.42	0.02	0.166	0.244
	U-NII-2C	802.11a	Rear Face	120	--	--	96.45%	13.5	11.98	1.42	0.00	0.278	0.409
	U-NII-3	802.11a	Front Face	157	--	--	96.45%	14.0	13.22	1.20	0.02	0.07	0.087

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Plot No.	Band	Mode	Test Position	Ch.	RB#	RB Offset	Duty Cycle	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
	U-NII-3	802.11a	Rear Face	157	--	--	96.45%	14.0	13.22	1.20	0.00	0.2	0.248
	2.4GHz	Bluetooth DH5	Front Face	39	--	--	77.60%	9.0	8.14	1.22	0.00	0.014	0.022
38	2.4GHz	Bluetooth DH5	Rear Face	39	--	--	77.60%	9.0	8.14	1.22	0.03	0.051	0.080
	2.4GHz	Bluetooth DH5	Rear Face	0	--	--	77.60%	9.0	7.89	1.29	-0.11	0.043	0.072
	2.4GHz	Bluetooth DH5	Rear Face	78	--	--	77.60%	9.0	8.52	1.12	0	0.047	0.068

Note:

- 1). Scaled SAR-1g (W/kg) = (Measured SAR-1g (W/kg) x Scaling Factor) / Duty Cycle.
- 2). "*" indicates that the data is repeated.

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4.5.4. SAR Results for Hotspot Exposure Condition (Separation Distance is 0.5 cm)

Plot No.	Band	Mode	Test Position	Ch.	RB#	RB Offset	Duty Cycle	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measure d SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
21	GSM850	GPRS10	Front Face	190	--	--	--	32.0	31.31	1.17	0.00	0.463	0.543
	GSM850	GPRS10	Rear Face	190	--	--	--	32.0	31.31	1.17	-0.17	0.846	0.992
	GSM850	GPRS10	Rear Face	190	--	--	--	32.0	31.31	1.17	-0.17	0.841	0.986
	GSM850	GPRS10	Left Side	190	--	--	--	32.0	31.31	1.17	0.05	0.444	0.520
	GSM850	GPRS10	Right Side	190	--	--	--	32.0	31.31	1.17	-0.03	0.208	0.244
	GSM850	GPRS10	Top Side	190	--	--	--	32.0	31.31	1.17	0.05	0.019	0.022
	GSM850	GPRS10	Bottom Side	190	--	--	--	32.0	31.31	1.17	0.08	0.825	0.967
	GSM850	GPRS10	Rear Face	128	--	--	--	32.0	31.46	1.13	0.02	0.842	0.953
	GSM850	GPRS10	Rear Face	251	--	--	--	32.0	31.21	1.20	0.00	0.841	1.009
	GSM1900	GPRS10	Front Face	661	--	--	--	25.0	23.86	1.30	0.05	0.316	0.411
22	GSM1900	GPRS10	Rear Face	661	--	--	--	25.0	23.86	1.30	0.04	0.615	0.800
	GSM1900	GPRS10	Left Side	661	--	--	--	25.0	23.86	1.30	0.04	0.357	0.464
	GSM1900	GPRS10	Right Side	661	--	--	--	25.0	23.86	1.30	0.04	0.053	0.069
	GSM1900	GPRS10	Top Side	661	--	--	--	25.0	23.86	1.30	0.08	0.244	0.317
	GSM1900	GPRS10	Bottom Side	661	--	--	--	25.0	23.86	1.30	0.08	0.049	0.064
	GSM1900	GPRS10	Rear Face	512	--	--	--	25.0	24.30	1.17	-0.03	0.63	0.740
	GSM1900	GPRS10	Rear Face	810	--	--	--	25.0	23.44	1.43	-0.09	0.472	0.676
	WCDMA Band II	RMC12.2K	Front Face	9400	--	--	--	17.0	16.65	1.08	0.05	0.211	0.229
	WCDMA Band II	RMC12.2K	Rear Face	9400	--	--	--	17.0	16.65	1.08	-0.09	0.325	0.352
	WCDMA Band II	RMC12.2K	Left Side	9400	--	--	--	17.0	16.65	1.08	-0.05	0.285	0.309
23	WCDMA Band II	RMC12.2K	Right Side	9400	--	--	--	17.0	16.65	1.08	0.01	0.016	0.017
	WCDMA Band II	RMC12.2K	Top Side	9400	--	--	--	17.0	16.65	1.08	0.05	0.165	0.179
	WCDMA Band II	RMC12.2K	Bottom Side	9400	--	--	--	17.0	16.65	1.08	-0.09	0.015	0.016
	WCDMA Band II	RMC12.2K	Rear Face	9262	--	--	--	17.0	16.73	1.06	-0.03	0.374	0.398
	WCDMA Band IV	RMC12.2K	Front Face	1412	--	--	--	20.0	19.56	1.11	0.05	0.385	0.426
	WCDMA Band IV	RMC12.2K	Rear Face	1412	--	--	--	20.0	19.56	1.11	-0.04	0.646	0.715
	WCDMA Band IV	RMC12.2K	Left Side	1412	--	--	--	20.0	19.56	1.11	0.05	0.355	0.393
	WCDMA Band IV	RMC12.2K	Right Side	1412	--	--	--	20.0	19.56	1.11	0.06	0.077	0.085
	WCDMA Band IV	RMC12.2K	Top Side	1412	--	--	--	20.0	19.56	1.11	0.05	0.483	0.534
	WCDMA Band IV	RMC12.2K	Bottom Side	1412	--	--	--	20.0	19.56	1.11	-0.04	0.052	0.058
24	WCDMA Band IV	RMC12.2K	Rear Face	1312	--	--	--	20.0	19.63	1.09	0.02	0.625	0.681
	WCDMA Band IV	RMC12.2K	Rear Face	1513	--	--	--	20.0	19.49	1.12	-0.12	0.618	0.695
	WCDMA Band V	RMC12.2K	Front Face	4183	--	--	--	23.5	23.02	1.12	-0.11	0.363	0.405
	WCDMA Band V	RMC12.2K	Rear Face	4183	--	--	--	23.5	23.02	1.12	0.00	0.709	0.792

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Plot No.	Band	Mode	Test Position	Ch.	RB#	RB Offset	Duty Cycle	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measure d SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
	WCDMA Band V	RMC12.2K	Left Side	4183	--	--	--	23.5	23.02	1.12	0.07	0.163	0.182
	WCDMA Band V	RMC12.2K	Right Side	4183	--	--	--	23.5	23.02	1.12	-0.11	0.365	0.408
	WCDMA Band V	RMC12.2K	Top Side	4183	--	--	--	23.5	23.02	1.12	0.00	0.013	0.015
	WCDMA Band V	RMC12.2K	Bottom Side	4183	--	--	--	23.5	23.02	1.12	-0.11	0.615	0.687
	WCDMA Band V	RMC12.2K	Rear Face	4132	--	--	--	23.5	22.97	1.13	0.12	0.713	0.806
25	WCDMA Band V	RMC12.2K	Rear Face	4233	--	--	--	23.5	22.99	1.12	-0.03	0.72	0.810
	LTE Band 2	QPSK20M	Front Face	18900	1	50	--	17.0	16.72	1.07	-0.08	0.169	0.180
26	LTE Band 2	QPSK20M	Rear Face	18900	1	50	--	17.0	16.72	1.07	-0.12	0.361	0.385
	LTE Band 2	QPSK20M	Left Side	18900	1	50	--	17.0	16.72	1.07	-0.05	0.226	0.241
	LTE Band 2	QPSK20M	Right Side	18900	1	50	--	17.0	16.72	1.07	-0.07	0.013	0.014
	LTE Band 2	QPSK20M	Top Side	18900	1	50	--	17.0	16.72	1.07	-0.12	0.137	0.146
	LTE Band 2	QPSK20M	Bottom Side	18900	1	50	--	17.0	16.72	1.07	-0.06	0.012	0.013
	LTE Band 2	QPSK20M	Rear Face	18700	1	50	--	17.0	16.68	1.08	-0.03	0.353	0.380
	LTE Band 2	QPSK20M	Rear Face	19100	1	50	--	17.0	16.64	1.09	-0.09	0.341	0.370
	LTE Band 4	QPSK20M	Front Face	20175	1	50	--	18.5	17.83	1.17	-0.06	0.231	0.270
	LTE Band 4	QPSK20M	Rear Face	20175	1	50	--	18.5	17.83	1.17	-0.04	0.478	0.558
	LTE Band 4	QPSK20M	Left Side	20175	1	50	--	18.5	17.83	1.17	-0.04	0.212	0.247
	LTE Band 4	QPSK20M	Right Side	20175	1	50	--	18.5	17.83	1.17	0.01	0.046	0.054
	LTE Band 4	QPSK20M	Top Side	20175	1	50	--	18.5	17.83	1.17	0.12	0.273	0.319
	LTE Band 4	QPSK20M	Bottom Side	20175	1	50	--	18.5	17.83	1.17	0.06	0.017	0.020
27	LTE Band 4	QPSK20M	Rear Face	20050	1	50	--	18.5	17.81	1.17	-0.08	0.499	0.585
	LTE Band 4	QPSK20M	Rear Face	20300	1	50	--	18.5	17.83	1.17	0.08	0.481	0.561
	LTE Band 5	QPSK10M	Front Face	20525	1	25	--	23.5	22.87	1.16	-0.06	0.346	0.400
	LTE Band 5	QPSK10M	Rear Face	20525	1	25	--	23.5	22.87	1.16	-0.04	0.603	0.697
	LTE Band 5	QPSK10M	Left Side	20525	1	25	--	23.5	22.87	1.16	-0.04	0.164	0.190
	LTE Band 5	QPSK10M	Right Side	20525	1	25	--	23.5	22.87	1.16	0.01	0.354	0.409
	LTE Band 5	QPSK10M	Top Side	20525	1	25	--	23.5	22.87	1.16	0.12	0.012	0.014
	LTE Band 5	QPSK10M	Bottom Side	20525	1	25	--	23.5	22.87	1.16	0.06	0.595	0.688
28	LTE Band 5	QPSK10M	Rear Face	20450	1	25	--	23.5	22.83	1.17	-0.02	0.615	0.718
	LTE Band 5	QPSK10M	Rear Face	20600	1	25	--	23.5	22.82	1.17	0.08	0.611	0.715
	LTE Band 7	QPSK20M	Front Face	21100	1	50	--	15.0	14.54	1.11	-0.06	0.191	0.212
29	LTE Band 7	QPSK20M	Rear Face	21100	1	50	--	15.0	14.54	1.11	-0.04	0.669	0.744
	LTE Band 7	QPSK20M	Left Side	21100	1	50	--	15.0	14.54	1.11	-0.04	0.088	0.098
	LTE Band 7	QPSK20M	Right Side	21100	1	50	--	15.0	14.54	1.11	0.01	0.038	0.042
	LTE Band 7	QPSK20M	Top Side	21100	1	50	--	15.0	14.54	1.11	0.12	0.445	0.495

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	LTE Band 7	QPSK20M	Bottom Side	21100	1	50	--	15.0	14.54	1.11	0.06	0.013	0.014
	LTE Band 7	QPSK20M	Rear Face	20850	1	50	--	15.0	14.52	1.12	0.15	0.651	0.727
	LTE Band 7	QPSK20M	Rear Face	21350	1	50	--	15.0	14.46	1.13	0.08	0.657	0.744
	LTE Band 13	QPSK10M	Front Face	23230	1	25	--	23.5	23.17	1.08	0.02	0.13	0.140
30	LTE Band 13	QPSK10M	Rear Face	23230	1	25	--	23.5	23.17	1.08	-0.05	0.252	0.272
	LTE Band 13	QPSK10M	Left Side	23230	1	25	--	23.5	23.17	1.08	-0.05	0.094	0.101
	LTE Band 13	QPSK10M	Right Side	23230	1	25	--	23.5	23.17	1.08	-0.09	0.239	0.258
	LTE Band 13	QPSK10M	Top Side	23230	1	25	--	23.5	23.17	1.08	0.12	0.015	0.016
	LTE Band 13	QPSK10M	Bottom Side	23230	1	25	--	23.5	23.17	1.08	-0.09	0.244	0.263
	LTE Band 26	QPSK15M	Front Face	26865	1	37	--	23.5	22.94	1.14	-0.05	0.344	0.391
31	LTE Band 26	QPSK15M	Rear Face	26865	1	37	--	23.5	22.94	1.14	-0.06	0.611	0.695
	LTE Band 26	QPSK15M	Left Side	26865	1	37	--	23.5	22.94	1.14	0.08	0.144	0.164
	LTE Band 26	QPSK15M	Right Side	26865	1	37	--	23.5	22.94	1.14	0.08	0.344	0.391
	LTE Band 26	QPSK15M	Top Side	26865	1	37	--	23.5	22.94	1.14	-0.01	0.015	0.017
	LTE Band 26	QPSK15M	Bottom Side	26865	1	37	--	23.5	22.94	1.14	0.08	0.583	0.663
	LTE Band 26	QPSK15M	Rear Face	26765	1	37	--	23.5	22.87	1.16	-0.01	0.599	0.693
	LTE Band 26	QPSK15M	Rear Face	26965	1	37	--	23.5	22.93	1.14	0.06	0.603	0.688
	LTE Band 38	QPSK20M	Front Face	38000	1	50	--	17.0	16.56	1.11	-0.04	0.126	0.139
	LTE Band 38	QPSK20M	Rear Face	38000	1	50	--	17.0	16.56	1.11	-0.09	0.482	0.533
	LTE Band 38	QPSK20M	Left Side	38000	1	50	--	17.0	16.56	1.11	-0.17	0.03	0.033
	LTE Band 38	QPSK20M	Right Side	38000	1	50	--	17.0	16.56	1.11	-0.07	0.038	0.042
	LTE Band 38	QPSK20M	Top Side	38000	1	50	--	17.0	16.56	1.11	-0.10	0.322	0.356
	LTE Band 38	QPSK20M	Bottom Side	38000	1	50	--	17.0	16.56	1.11	-0.06	0.017	0.019
	LTE Band 38	QPSK20M	Rear Face	37850	1	50	--	17.0	16.53	1.11	-0.06	0.491	0.547
32	LTE Band 38	QPSK20M	Rear Face	38150	1	50	--	17.0	16.52	1.12	0.08	0.5	0.558
	LTE Band 41	QPSK20M	Front Face	40620	1	50	--	17.0	16.52	1.12	-0.04	0.129	0.144
	LTE Band 41	QPSK20M	Rear Face	40620	1	50	--	17.0	16.52	1.12	-0.09	0.537	0.600
	LTE Band 41	QPSK20M	Left Side	40620	1	50	--	17.0	16.52	1.12	-0.17	0.04	0.045
	LTE Band 41	QPSK20M	Right Side	40620	1	50	--	17.0	16.52	1.12	-0.07	0.017	0.019
	LTE Band 41	QPSK20M	Top Side	40620	1	50	--	17.0	16.52	1.12	-0.10	0.333	0.372
	LTE Band 41	QPSK20M	Bottom Side	40620	1	50	--	17.0	16.52	1.12	-0.06	0.016	0.018
33	LTE Band 41	QPSK20M	Rear Face	39750	1	50	--	17.0	16.49	1.12	0.01	0.63	0.709
	LTE Band 66	QPSK20M	Front Face	132322	1	50	--	19.0	18.64	1.09	-0.02	0.296	0.322
	LTE Band 66	QPSK20M	Rear Face	132322	1	50	--	19.0	18.64	1.09	0.09	0.6	0.652
	LTE Band 66	QPSK20M	Left Side	132322	1	50	--	19.0	18.64	1.09	-0.01	0.271	0.294

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	LTE Band 66	QPSK20M	Right Side	132322	1	50	--	19.0	18.64	1.09	-0.09	0.058	0.063
	LTE Band 66	QPSK20M	Top Side	132322	1	50	--	19.0	18.64	1.09	-0.16	0.338	0.367
	LTE Band 66	QPSK20M	Bottom Side	132322	1	50	--	19.0	18.64	1.09	0.03	0.047	0.051
	LTE Band 66	QPSK20M	Rear Face	132072	1	50	--	19.0	18.61	1.09	-0.02	0.612	0.670
34	LTE Band 66	QPSK20M	Rear Face	132572	1	50	--	19.0	18.57	1.10	-0.16	0.632	0.698
	2.4GHz	802.11b	Front Face	6	--	--	99.40%	17.0	16.33	1.17	-0.03	0.096	0.113
	2.4GHz	802.11b	Rear Face	6	--	--	99.40%	17.0	16.33	1.17	-0.14	0.232	0.272
	2.4GHz	802.11b	Left Side	6	--	--	99.40%	17.0	16.33	1.17	-0.03	0.044	0.052
	2.4GHz	802.11b	Right Side	6	--	--	99.40%	17.0	16.33	1.17	-0.02	0.171	0.201
	2.4GHz	802.11b	Top Side	6	--	--	99.40%	17.0	16.33	1.17	0.02	0.092	0.108
	2.4GHz	802.11b	Bottom Side	6	--	--	99.40%	17.0	16.33	1.17	-0.07	0.016	0.019
	2.4GHz	802.11b	Rear Face	1	--	--	99.40%	17.0	15.64	1.37	-0.08	0.314	0.432
35	2.4GHz	802.11b	Rear Face	11	--	--	99.40%	17.0	15.45	1.43	0.05	0.39	0.561
	U-NII-1	802.11a	Front Face	40	--	--	96.45%	17.0	16.28	1.18	0.02	0.057	0.070
	U-NII-1	802.11a	Rear Face	40	--	--	96.45%	17.0	16.28	1.18	0.00	0.168	0.206
	U-NII-1	802.11a	Left Side	40	--	--	96.45%	17.0	16.28	1.18	-0.09	0.037	0.045
	U-NII-1	802.11a	Right Side	40	--	--	96.45%	17.0	16.28	1.08	0.04	0.03	0.034
	U-NII-1	802.11a	Top Side	40	--	--	96.45%	17.0	16.28	1.18	-0.03	0.134	0.164
	U-NII-1	802.11a	Bottom Side	40	--	--	96.45%	17.0	16.28	1.18	0.00	0.02	0.024
	U-NII-1	802.11a	Rear Face	36	--	--	96.45%	17.0	16.27	1.18	0.01	0.202	0.248
36	U-NII-1	802.11a	Rear Face	48	--	--	96.45%	17.0	16.25	1.13	0.19	0.252	0.295
	U-NII-3	802.11a	Front Face	157	--	--	96.45%	14.0	13.22	1.20	0.02	0.07	0.087
	U-NII-3	802.11a	Rear Face	157	--	--	96.45%	14.0	13.22	1.20	0.00	0.2	0.248
	U-NII-3	802.11a	Left Side	157	--	--	96.45%	14.0	13.22	1.20	-0.07	0.071	0.088
	U-NII-3	802.11a	Right Side	157	--	--	96.45%	14.0	13.22	1.20	-0.02	0.252	0.313
	U-NII-3	802.11a	Top Side	157	--	--	96.45%	14.0	13.22	1.20	-0.04	0.265	0.329
	U-NII-3	802.11a	Bottom Side	157	--	--	96.45%	14.0	13.22	1.20	0.00	0.072	0.089
39	U-NII-3	802.11a	Top Side	149	--	--	96.45%	14.0	13.55	1.11	0.00	0.317	0.365
	U-NII-3	802.11a	Top Side	165	--	--	96.45%	14.0	13.13	1.22	0.03	0.256	0.324
	2.4GHz	Bluetooth_DH5	Front Face	39	--	--	77.60%	9.0	8.14	1.22	0.00	0.014	0.022
38	2.4GHz	Bluetooth_DH5	Rear Face	39	--	--	77.60%	9.0	8.14	1.22	0.03	0.051	0.080
	2.4GHz	Bluetooth_DH5	Left Side	39	--	--	77.60%	9.0	8.14	1.22	-0.06	0.01	0.016
	2.4GHz	Bluetooth_DH5	Right Side	39	--	--	77.60%	9.0	8.14	1.22	0.01	0.011	0.017
	2.4GHz	Bluetooth_DH5	Top Side	39	--	--	77.60%	9.0	8.14	1.22	0.00	0.016	0.025
	2.4GHz	Bluetooth_DH5	Bottom Side	39	--	--	77.60%	9.0	8.14	1.22	0.06	0.008	0.013

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Plot No.	Band	Mode	Test Position	Ch.	RB#	RB Offset	Duty Cycle	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
	2.4GHz	Bluetooth_DH5	Rear Face	0	--	--	77.60%	9.0	7.89	1.29	-0.11	0.043	0.072
	2.4GHz	Bluetooth_DH5	Rear Face	78	--	--	77.60%	9.0	8.52	1.12	0	0.047	0.068

Note:

- 1). Scaled SAR-1g (W/kg) = (Measured SAR-1g (W/kg) x Scaling Factor) / Duty Cycle.
- 2). “*” indicates that the data is repeated.

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4.6. SAR MEASUREMENT VARIABILITY

4.6.1. Repeated Measurement

According to KDB 865664 D01, SAR measurement variability was assessed for each frequency band, which is determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. When both head and body tissue-equivalent media are required for SAR measurements in a frequency band, the variability measurement procedures should be applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium. Alternatively, if the highest measured SAR for both head and body tissue-equivalent media are ≤ 1.45 W/kg and the ratio of these highest SAR values, i.e., largest divided by smallest value, is ≤ 1.10 , the highest SAR configuration for either head or body tissue-equivalent medium may be used to perform the repeated measurement. 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.

SAR repeated measurement procedure:

- 1) When the highest measured SAR is < 0.80 W/kg, repeated measurement is not required.
- 2) When the highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.
- 3) 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, perform a second repeated measurement.
- 4) If the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20 , and the original, first or second repeated measurement is ≥ 1.5 W/kg, perform a third repeated measurement.

Band	Mode	Test Position	Channel	Original Measured SAR-1g (W/kg)	1st Repeated SAR-1g (W/kg)	L/S Ratio	2nd Repeated SAR-1g (W/kg)	L/S Ratio	3rd Repeated SAR-1g (W/kg)	L/S Ratio
Body-worn Exposure Condition										
GSM850	GPRS10	Rear Face	190	0.846	0.841	1.006	N/A	N/A	N/A	N/A
Hotspot Exposure Condition										
GSM850	GPRS10	Rear Face	190	0.846	0.841	1.006	N/A	N/A	N/A	N/A

4.7. SIMULTANEOUS MULTI-BAND TRANSMISSION EVALUATION

4.7.1. Simultaneous Transmission SAR Test Exclusion Considerations

a) Sum of SAR

Simultaneous transmission SAR test exclusion is determined for each operating configuration and exposure condition according to the reported standalone SAR of each applicable simultaneous transmitting antenna. When the sum of SAR_{1g} of all simultaneously transmitting antennas in an operating mode and exposure condition combination is within the SAR limit (SAR_{1g} 1.6 W/kg), the simultaneous transmission SAR is not required. When the sum of SAR_{1g} is greater than the SAR limit (SAR_{1g} 1.6 W/kg), SAR test exclusion is determined by the SPLSR.

b) SAR to Peak Location Separation Ratio

The simultaneous transmitting antennas in each operating mode and exposure condition combination are considered one pair at a time to determine the SPLSR.

$$SPLSR = (SAR_1 + SAR_2)^{1.5} / R_i$$

The ratio is 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. When 10-g SAR applies, the ratio must be ≤ 0.10 .

SAR_1 and SAR_2 are the highest reported or estimated SAR values for each antenna in the pair, and R_i is the separation distance in mm between the peak SAR locations for the antenna pair

$$\text{peak location separation distance} = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2 + (z_1 - z_2)^2}$$

Where (x_1, y_1, z_1) and (x_2, y_2, z_2) are the coordinates of the extrapolated peak SAR locations in the area or zoom scans.

When standalone test exclusion applies, SAR is estimated; the peak location is assumed to be at the feed-point or geometric center of the antenna. Due to curvatures on the SAM phantom, when SAR is estimated for one of the antennas in an antenna pair, the measured peak SAR location will be translated onto the test device to determine the peak location separation for the antenna pair.

When SAR is estimated for both antennas, the peak location separation should be determined by the closest physical separation of the antennas, according to the feed-point or geometric center of the antennas.

c) Volume Scan

When the SPLSR is ≤ 0.04 for 1-g SAR and ≤ 0.10 for 10-g SAR, the simultaneous transmission SAR is not required. Otherwise, the enlarged zoom scan and volume scan post-processing procedures will be performed.

4.7.2. Simultaneous Transmission Possibilities

The simultaneous transmission possibilities for this device are listed as below.

Simultaneous Transmission Configurations	Head(Voice/VoIP)	Body-worn(Voice/VoIP)
GSM(Voice/Data)+WLAN(Data)	Yes	Yes
WCDMA(Voice/Data)+WLAN(Data)	Yes	Yes
LTE(Voice/Data)+WLAN(Data)	Yes	Yes
GSM(Voice/Data)+BT(Data)	Yes	Yes
WCDMA(Voice/Data)+BT(Data)	Yes	Yes
LTE(Data)+BT(Data)	Yes	Yes

Simultaneous Transmission Configurations	Body-worn(Data)
WCDMA(Voice/Data)+WLAN (Data)	Yes
LTE(Voice/Data) +WLAN (Data)	Yes
WCDMA(Voice/Data)+BT(Data)	Yes
LTE(Data)+BT(Data)	Yes

Note:

- 1) The 2.4G WLAN, 5G WLAN cannot transmit simultaneously.
- 2) The WLAN and Bluetooth cannot transmit simultaneously, so there is no co-location test requirement for WLAN and Bluetooth.
- 3) EUT will choose each GSM, WCDMA and LTE according to the network signal condition; therefore, they will not operate simultaneously at any moment.

4.7.3. Max. Standalone SAR

Position		GSM Band		WCDMA Band			LTE Band								
		850	1900	II	IV	V	2	4	5	7	13	26	38	41	66
Head	Left Cheek	0.240	0.270	0.195	0.396	0.155	0.156	0.291	0.191	0.200	0.073	0.167	0.135	0.144	0.343
	Left Tilted	0.150	0.234	0.169	0.360	0.107	0.130	0.272	0.113	0.226	0.028	0.110	0.159	0.159	0.312
	Right Cheek	0.306	0.599	0.427	0.714	0.228	0.332	0.560	0.261	0.327	0.084	0.244	0.315	0.451	0.625
	Right Tilted	0.178	0.446	0.302	0.448	0.123	0.242	0.358	0.136	0.429	0.061	0.127	0.247	0.408	0.424
Body-worn	Front Face	0.543	0.411	0.229	0.426	0.405	0.180	0.270	0.400	0.212	0.140	0.391	0.139	0.144	0.322
	Rear Face	1.009	0.800	0.398	0.715	0.810	0.385	0.585	0.718	0.744	0.272	0.695	0.558	0.709	0.698
Hotspot	Front Face	0.543	0.411	0.229	0.426	0.405	0.180	0.270	0.400	0.212	0.140	0.391	0.139	0.144	0.322
	Rear Face	1.009	0.800	0.398	0.715	0.810	0.385	0.585	0.718	0.744	0.272	0.695	0.558	0.709	0.698
	Left Side	0.520	0.464	0.309	0.393	0.182	0.241	0.247	0.190	0.098	0.101	0.164	0.033	0.045	0.294
	Right Side	0.244	0.069	0.017	0.085	0.408	0.014	0.054	0.409	0.042	0.258	0.391	0.042	0.019	0.063
	Top Side	0.022	0.317	0.179	0.534	0.015	0.146	0.319	0.014	0.495	0.016	0.017	0.356	0.372	0.367
	Bottom Side	0.967	0.064	0.016	0.058	0.687	0.013	0.020	0.688	0.014	0.263	0.663	0.019	0.018	0.051

Position		WLAN					BT
		2.4G	5.2G	5.3G	5.6G	5.8G	2.4G
Head	Left Cheek	0.345	0.152	0.174	0.405	0.383	0.086
	Left Tilted	0.137	0.125	0.168	0.355	0.293	0.019
	Right Cheek	0.082	0.050	0.090	0.257	0.230	0.038
	Right Tilted	0.049	0.038	0.118	0.302	0.251	0.009
Body-worn	Front Face	0.113	0.070	0.040	0.244	0.087	0.022
	Rear Face	0.561	0.295	0.225	0.409	0.248	0.080
Hotspot	Front Face	0.113	0.070	--	--	0.087	0.022
	Rear Face	0.561	0.295	--	--	0.248	0.080
	Left Side	0.052	0.045	--	--	0.088	0.016
	Right Side	0.201	0.034	--	--	0.313	0.017
	Top Side	0.108	0.164	--	--	0.365	0.025
	Bottom Side	0.019	0.024	--	--	0.089	0.013

4.7.4. Sum of SAR

WWAN + WLAN (DTS)

Position		Highest Simultaneous Transmission SAR	GSM Band		WCDMA Band			LTE Band								
			850	1900	II	IV	V	2	4	5	7	13	26	38	41	66
Head	Right Cheek	0.796	0.585	0.615	0.540	0.741	0.500	0.501	0.636	0.536	0.545	0.418	0.512	0.480	0.489	0.688
	Right Tilted		0.287	0.371	0.306	0.497	0.244	0.267	0.409	0.250	0.363	0.165	0.247	0.296	0.296	0.449
	Left Cheek		0.388	0.681	0.509	0.796	0.310	0.414	0.642	0.343	0.409	0.166	0.326	0.397	0.533	0.707
	Left Tilted		0.227	0.495	0.351	0.497	0.172	0.291	0.407	0.185	0.478	0.110	0.176	0.296	0.457	0.473
Body-worn	Front Face	1.570	0.656	0.524	0.342	0.539	0.518	0.293	0.383	0.513	0.325	0.253	0.504	0.252	0.257	0.435
	Rear Face		1.570	1.361	0.959	1.276	1.371	0.946	1.146	1.279	1.305	0.833	1.256	1.119	1.270	1.259
Hotspot	Front Face	1.570	0.656	0.524	0.342	0.539	0.518	0.293	0.383	0.513	0.325	0.253	0.504	0.252	0.257	0.435
	Rear Face		1.570	1.361	0.959	1.276	1.371	0.946	1.146	1.279	1.305	0.833	1.256	1.119	1.270	1.259
	Left Side		0.572	0.516	0.361	0.445	0.234	0.293	0.299	0.242	0.150	0.153	0.216	0.085	0.097	0.346
	Right Side		0.445	0.270	0.218	0.286	0.609	0.215	0.255	0.610	0.243	0.459	0.592	0.243	0.220	0.264
	Top Side		0.130	0.425	0.287	0.642	0.123	0.254	0.427	0.122	0.603	0.124	0.125	0.464	0.480	0.475
	Bottom Side		0.986	0.083	0.035	0.077	0.706	0.032	0.039	0.707	0.033	0.282	0.682	0.038	0.037	0.070

WWAN + WLAN (NII)

Position		Highest Simultaneous Transmission SAR	GSM Band		WCDMA Band			LTE Band								
			850	1900	II	IV	V	2	4	5	7	13	26	38	41	66
Head	Right Cheek	0.971	0.645	0.675	0.600	0.801	0.560	0.561	0.696	0.596	0.605	0.478	0.572	0.540	0.549	0.748
	Right Tilted		0.505	0.589	0.524	0.715	0.462	0.485	0.627	0.468	0.581	0.383	0.465	0.514	0.514	0.667
	Left Cheek		0.563	0.856	0.684	0.971	0.485	0.589	0.817	0.518	0.584	0.341	0.501	0.572	0.708	0.882
	Left Tilted		0.480	0.748	0.604	0.750	0.425	0.544	0.660	0.438	0.731	0.363	0.429	0.549	0.710	0.726
Body-worn	Front Face	1.418	0.787	0.655	0.473	0.670	0.649	0.424	0.514	0.644	0.456	0.384	0.635	0.383	0.388	0.566
	Rear Face		1.418	1.209	0.807	1.124	1.219	0.794	0.994	1.127	1.153	0.681	1.104	0.967	1.118	1.107
Hotspot	Front Face	1.304	0.630	0.498	0.316	0.513	0.492	0.267	0.357	0.487	0.299	0.227	0.478	0.226	0.231	0.409
	Rear Face		1.304	1.095	0.693	1.010	1.105	0.680	0.880	1.013	1.039	0.567	0.990	0.853	1.004	0.993
	Left Side		0.608	0.552	0.397	0.481	0.270	0.329	0.335	0.278	0.186	0.189	0.252	0.121	0.133	0.382
	Right Side		0.557	0.382	0.330	0.398	0.721	0.327	0.367	0.722	0.355	0.571	0.704	0.355	0.332	0.376
	Top Side		0.387	0.682	0.544	0.899	0.380	0.511	0.684	0.379	0.860	0.381	0.382	0.721	0.737	0.732
	Bottom Side		1.056	0.153	0.105	0.147	0.776	0.102	0.109	0.777	0.103	0.352	0.752	0.108	0.107	0.140

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WWAN + BT (DSS)

Position		Highest Simultaneous Transmission SAR	GSM Band		WCDMA Band			LTE Band								
			850	1900	II	IV	V	2	4	5	7	13	26	38	41	66
Head	Right Cheek	0.752	0.326	0.356	0.281	0.482	0.241	0.242	0.377	0.277	0.286	0.159	0.253	0.221	0.230	0.429
	Right Tilted		0.169	0.253	0.188	0.379	0.126	0.149	0.291	0.132	0.245	0.047	0.129	0.178	0.178	0.331
	Left Cheek		0.344	0.637	0.465	0.752	0.266	0.370	0.598	0.299	0.365	0.122	0.282	0.353	0.489	0.663
	Left Tilted		0.187	0.455	0.311	0.457	0.132	0.251	0.367	0.145	0.438	0.070	0.136	0.256	0.417	0.433
Body-worn	Front Face	1.089	0.565	0.433	0.251	0.448	0.427	0.202	0.292	0.422	0.234	0.162	0.413	0.161	0.166	0.344
	Rear Face		1.089	0.880	0.478	0.795	0.890	0.465	0.665	0.798	0.824	0.352	0.775	0.638	0.789	0.778
Hotspot	Front Face	1.089	0.565	0.433	0.251	0.448	0.427	0.202	0.292	0.422	0.234	0.162	0.413	0.161	0.166	0.344
	Rear Face		1.089	0.880	0.478	0.795	0.890	0.465	0.665	0.798	0.824	0.352	0.775	0.638	0.789	0.778
	Left Side		0.536	0.480	0.325	0.409	0.198	0.257	0.263	0.206	0.114	0.117	0.180	0.049	0.061	0.310
	Right Side		0.261	0.086	0.034	0.102	0.425	0.031	0.071	0.426	0.059	0.275	0.408	0.059	0.036	0.080
	Top Side		0.047	0.342	0.204	0.559	0.040	0.171	0.344	0.039	0.520	0.041	0.042	0.381	0.397	0.392
	Bottom Side		0.980	0.077	0.029	0.071	0.700	0.026	0.033	0.701	0.027	0.276	0.676	0.032	0.031	0.064

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APPENDIX A. SAR PLOTS OF SYSTEM VERIFICATION

The plots for system verification with largest deviation for each SAR system combination are shown as follows.



APPENDIX B. SAR PLOTS OF SAR MEASUREMENT

The SAR plots for highest measured SAR in each exposure configuration, wireless mode and frequency band combination, and measured SAR > 1.5 W/kg are shown as follows.



APPENDIX C. CALIBRATION CERTIFICATE FOR PROBE AND DIPOLE

The calibration certificates are shown as follows.



APPENDIX D. PHOTOGRAPHS OF EUT AND SETUP

The photographs of EUT and setup are shown as follows.

