

FCC SAR Compliance Test Report

Product Name: Smart Phone

Model: WKG-LX9

Report No.: SYBH(Z-SAR)20210525030001

FCC ID: 2ATEYWKG-LX9

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※ ※ Modified History ※ ※

REV.	DESCRIPTION	ISSUED DATE	REMARK
Rev.1.0	Initial Test Report Release	2021-07-06	Shan Xiaofeng

1 General Information

1.1 Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during test are as below Table 1.

Band	Max Reported SAR(W/kg)			
	1-g Head	1-g Body-worn (15mm) *	1-g Hotspot (10mm)	Product Specific 10-g SAR (0mm)**
GSM850	0.52	0.29	0.29	/
GSM1900	0.58	0.43	0.47	/
UMTS Band II	0.97	0.41	0.77	1.89
UMTS Band IV	0.57	0.38	0.27	/
UMTS Band V	0.59	0.30	0.35	/
LTE Band 2	0.72	0.55	0.84	2.06
LTE Band 4***	0.88	0.47	0.49	/
LTE Band 5***	0.47	0.25	0.41	/
LTE Band 7	0.68	0.39	0.48	/
LTE Band 26	0.47	0.25	0.41	/
LTE Band 38***	0.49	0.31	0.57	/
LTE Band 41	0.49	0.31	0.57	/
LTE Band 66	0.88	0.47	0.49	/
2.4G Wi-Fi	0.33	0.16	0.33	/
BT	0.19	0.04	/	0.18
The highest reported SAR for Head, Body Worn, Hotspot, Product Specific 10-g SAR and Simultaneous transmission exposure conditions are 0.97 W/kg, 0.55 W/kg, 0.84 W/kg, 2.06 W/kg and 1.10 W/kg per KDB690783 D01.				

Table 1: Summary of test result

Note:

1)* For body worn operation, this device has been tested and met FCC RF exposure guidelines when used with any accessory that contains no metal and that positions the handset a minimum of 15mm from the body. Use of other accessories may not ensure compliance with FCC RF exposure guidelines.

2)** For Product Specific 10-g SAR operation, this device has been tested and meets the 10-g SAR limits of 4.0 W/kg for general population/ uncontrolled exposure according to IEEE C95.1-1991.

3)*** According to TCB workshop October, 2014 RF Exposure Procedures Update(Overlapping LTE Bands):

i. SAR for LTE Band 5 (Frequency range:824-849 MHz) is covered by LTE Band 26 (Frequency range:814-849 MHz).

ii.LTE Band 4 Main Antenna (Frequency range:1710-1755 MHz) is covered by LTE Band 66 Main Antenna(Frequency range:1710-1780 MHz).

iii. LTE Band 38 (Frequency range:2570-2620 MHz) is covered by LTE Band 41 (Frequency range:2535-2675 MHz).

due to similar frequency range, same maximum tune up limit and same channel bandwidth.

The device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits according to the FCC rule §2.1093, the IEEE C95.1-1991, the NCRP Report Number 86 for uncontrolled environment, and had been tested in accordance with the measurement methods and procedures specified in IEEE Std 1528-2013.

1.2 RF exposure limits

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

Table 2: RF exposure limits

The limit applied in this test report is shown in **bold** letters

Notes:

- * The Spatial Peak value of the SAR averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.
- ** The Spatial Average value of the SAR averaged over the whole body.
- *** The Spatial Peak value of the SAR averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.

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

Controlled Environments are defined as locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, (i.e. as a result of employment or occupation)

1.3 EUT Description

Device Information:			
Product Name:	Smart Phone		
Model:	WKG-LX9		
SN:	TJH0121513000434 TJH0121513000400 TJH0121513000634 TJH0121514000040 TJH0121513000361 TJH0121513000376		
Device Type :	Portable device		
Device Phase:	Identical Prototype		
Exposure Category:	Uncontrolled environment / general population		
Hardware Version :	HL1WKGM		
Software Version :	11.0.1.109(SP2C900E43R1P1)		
Antenna Type :	Internal antenna		
Other Accessories	Headset		
Device Operating Configurations:			
Test Modulation	GSM(GMSK/8PSK), UMTS(QPSK/16QAM), LTE(QPSK/16QAM), Wi-Fi(DSSS/OFDM), BT(GFSK/ π /4-DQPSK/8DPSK)		
Device Class	B(GSM Bands)		
Supporting Mode(s) and Operating Frequency Range(s)	Band	Tx (MHz)	Rx (MHz)
	GSM850	824-849	869 - 894
	GSM1900	1850-1910	1930-1990
	UMTS Band II	1850-1910	1930-1990
	UMTS Band IV	1710-1755	2110-2155
	UMTS Band V	824-849	869 - 894
	LTE Band 2	1850-1910	1930-1990
	LTE Band 4	1710-1755	2110-2155
	LTE Band 5	824-849	869-894
	LTE Band 7	2500-2570	2620 -2690
	LTE Band 26	814-849	859-894
	LTE Band 38	2570-2620	2570-2620
	LTE Band 41	2535-2675	2535-2675
	LTE Band 66	1710-1780	1710-1780
	BT	2400-2483.5	
2.4G Wi-Fi	2400-2483.5		
GPRS Multislot Class(12)	Max Number of Timeslots in Uplink:	4	
	Max Number of Timeslots in Downlink:	4	
	Max Total Timeslot:	5	
EGPRS Multislot Class(12)	Max Number of Timeslots in Uplink:	4	
	Max Number of Timeslots in Downlink:	4	
	Max Total Timeslot:	5	
HSDPA UE Category	14		
HSUPA UE Category	7		
DC-HSDPA UE Category	24		
Power Class:	4,tested with power level 5(GSM850)		
	1,tested with power level 0(GSM1900)		
	3, tested with power control “all 1”(UMTS Bands)		
	3. tested with power control all Max.(LTE Bands)		

Test Channels (low-mid-high):	128-190-251(GSM850)
	512-661-810(GSM1900)
	9262-9400-9538(UMTS Band II)
	1312-1413-1513(UMTS Band IV)
	4132-4182-4233(UMTS Band V)
	18607-18900-19193(LTE Band 2 BW=1.4MHz)
	18615-18900-19185(LTE Band 2 BW=3MHz)
	18625-18900-19175(LTE Band 2 BW=5MHz)
	18650-18900-19150(LTE Band 2 BW=10MHz)
	18675-18900-19125(LTE Band 2 BW=15MHz)
	18700-18900-19100(LTE Band 2 BW=20MHz)
	19957-20175-20393(LTE Band 4 BW=1.4MHz)
	19965-20175-20385(LTE Band 4 BW=3MHz)
	19975-20175-20375(LTE Band 4 BW=5MHz)
	20000-20175-20350(LTE Band 4 BW=10MHz)
	20025-20175-20325(LTE Band 4 BW=15MHz)
	20050-20175-20300(LTE Band 4 BW=20MHz)
	20407-20525-20643(LTE Band 5 BW=1.4MHz)
	20415-20525-20635(LTE Band 5 BW=3MHz)
	20425-20525-20625(LTE Band 5 BW=5MHz)
	20450-20525-20600(LTE Band 5 BW=10MHz)
	20775-21100-21425(LTE Band 7 BW=5MHz)
	20800-21100-21400(LTE Band 7 BW=10MHz)
	20825-21100-21375(LTE Band 7 BW=15MHz)
	20850-21100-21350(LTE Band 7 BW=20MHz)
	26697-26865-27033(LTE Band 26 BW=1.4MHz)
	26705-26865-27025(LTE Band 26 BW=3MHz)
	26715-26865-27015(LTE Band 26 BW=5MHz)
	26740-26865-26990(LTE Band 26 BW=10MHz)
	26765-26865-26965(LTE Band 26 BW=15MHz)
	37775-38000-38225(LTE Band 38 BW=5MHz)
	37800-38000-38200(LTE Band 38 BW=10MHz)
	37825-38000-38175(LTE Band 38 BW=15MHz)
	37850-38000-38150(LTE Band 38 BW=20MHz)
	40065-40515-40965-41415(LTE Band 41 BW=5MHz)
	40090-40523-40957-41390(LTE Band 41 BW=10MHz)
	40115-40532-40948-41365(LTE Band 41 BW=15MHz)
	40140-40540-40940-41340(LTE Band 41 BW=20MHz)
	131979-132322-132665(LTE Band 66 BW=1.4MHz)
	131987-132322-132657(LTE Band 66 BW=3MHz)
	131997-132322-132647(LTE Band 66 BW=5MHz)
	132022-132322-132622(LTE Band 66 BW=10MHz)
	132047-132322-132597(LTE Band 66 BW=15MHz)
	132072-132322-132572(LTE Band 66 BW=20MHz)
	802.11b/g/n 20M:1-2-6-10-11 (2.4G Wi-Fi)
	40M:3-4-5-6-7-8-9 (2.4G Wi-Fi)
	BT: 0-19-39-78

Table 3: Device information and operating configuration

1.3.1 General Description

WKG-LX9 is subscriber equipment in the GSM/WCDMA/LTE system. The GSM frequency bands include GSM850, GSM900, DCS1800 and PCS1900. The UMTS frequency band includes band I, band II, band IV, band V and band VIII. The LTE frequency bands include band 1, band 2, band 3, band 4, band 5, band 7, band 8, band 20, band 28, band 38, band 40, band 41, band 66 and band 26. But only GSM850 and PCS1900, UMTS frequency band II, band IV and band V, LTE frequency band 2, band 4, band 5, band 7, band 26, band 38, band 41 and band 66 bands test data included in this report. The Mobile Phone implements such functions as RF signal receiving/transmitting, LTE/UMTS and GSM/GPRS/EDGE protocol processing, voice, video MMS service, GPS, AGPS, Wi-Fi etc. Externally it provides earphone port (to provide voice service), one micro SD card interface, and dual SIM/single SIM card interface. WKG-LX9 is dual/single SIM smart phone. It also provides Bluetooth module to synchronize data between a PC and the phone, or to use the built-in modem of the phone to access the Internet with a PC, or to exchange data with other Bluetooth devices.

Battery information:

Name	Manufacturer/trademark	Description
Rechargeable Li-ion	Huawei Technologies Co., Ltd. (Manufacturer: ATL)	Model: HB526489EEW Rated capacity: 4900mAh Nominal Voltage: +3.85V Charging Voltage: +4.43V
	Huawei Technologies Co., Ltd. (Manufacturer: SCUD)	
	Huawei Technologies Co., Ltd. (Manufacturer: Desay)	

1.4 Test specification(s)

IEEE C95.1-1991	Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz – 300 GHz.
IEEE Std 1528-2013	Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques
KDB 941225 D01	3G SAR Procedures v03r01
KDB 941225 D05	SAR for LTE Devices v02r05
KDB 941225 D06	Hotspot SAR v02r01
KDB 447498 D01	General RF Exposure Guidance v06
KDB 648474 D04	Handsets SAR v01r03
KDB 248227 D01	SAR Guidance for IEEE 802.11 Wi-Fi SAR v02r02
KDB 865664 D01	SAR measurement 100 MHz to 6 GHz v01r04
KDB 865664 D02	RF Exposure Reporting v01r02
KDB 690783 D01	SAR Listings on Grants v01r03

1.5 Testing laboratory

Test Site	Reliability Laboratory of Huawei Technologies Co., Ltd.
Test Location	NO.2 New City Avenue Songshan Lake Sci. & Tech. Industry Park, Dongguan, Guangdong, P.R.C
Telephone	+86 769 23830808
Fax	+86 769 23837628
State of accreditation	The Test laboratory (area of testing) is accredited according to ISO/IEC 17025.

1.6 Applicant and Manufacturer

Company Name	Huawei Device Co., Ltd
Address	No.2 of Xincheng Road, Songshan Lake Zone, Dongguan, Guangdong 523808, People's Republic of China.

1.7 Application details

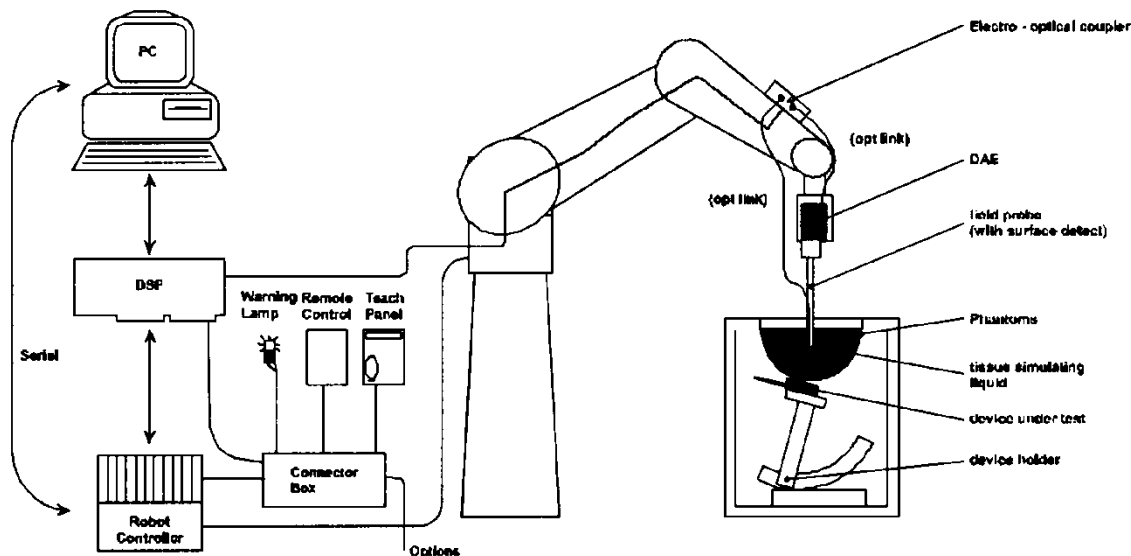
Start Date of test	2021-06-28
End Date of test	2021-07-04

1.8 Ambient Condition

Ambient temperature	18°C – 25°C
Relative Humidity	30% – 70%

2 SAR Measurement System

2.1 SAR Measurement Set-up



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

- A standard high precision 6-axis robot (Stäubli RX family) with controller and software. An arm extension for accommodating the data acquisition electronics (DAE).
- A dosimetric probe, i.e. an isotropic E-field probe optimized and calibrated for usage in tissue simulating liquid. The probe is equipped with an optical surface detector system.
- A data acquisition electronic (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- A unit to operate the optical surface detector which is connected to the EOC.
- The Electro-Optical Coupler (EOC) performs the conversion from the optical into a digital electric signal of the DAE. The EOC is connected to the DASY measurement server.
- The DASY measurement server, which performs all real-time data evaluation for field measurements and surface detection, controls robot movements and handles safety operation. A computer operating Windows 7.
- DASY software and SEMCAD data evaluation software.
- Remote control with teach panel and additional circuitry for robot safety such as warning lamps, etc.
- The generic twin phantom enabling the testing of left-hand and right-hand usage.
- The device holder for handheld mobile phones.
- Tissue simulating liquid mixed according to the given recipes.
- System check dipoles allowing to validate the proper functioning of the system.

2.2 Test environment

The DASY measurement system is placed at the head end of a room with dimensions: 5 x 2.5 x 3 m³, the SAM phantom is placed in a distance of 75 cm from the side walls and 1.1m from the rear wall. Above the test system a 1.5 x 1.5 m² array of pyramid absorbers is installed to reduce reflections from the ceiling.

Picture 1 of the photo documentation shows a complete view of the test environment.

The system allows the measurement of SAR values larger than 0.005 mW/g.

2.3 Data Acquisition Electronics description

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

The mechanical probe mounting device includes two different sensor systems for frontal and sideways Probe contacts. They are used for mechanical surface detection and probe collision detection.

DAE

Input Impedance	200MOhm	
The Inputs	symmetrical and floating	
Common mode rejection	above 80 dB	

2.4 Probe description

These probes are specially designed and calibrated for use in liquids with high permittivities. They should not be used in air, since the spherical isotropy in air is poor (± 2 dB). The dosimetric probes have special calibrations in various liquids at different frequencies.

Isotropic E-Field Probe ES3DV3 for Dosimetric Measurements

Construction	Symmetrical design with triangular core Interleaved sensors Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)	
Calibration	ISO/IEC 17025 calibration service available.	
Frequency	10 MHz to 4 GHz; Linearity: ± 0.2 dB (30 MHz to 4 GHz)	
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	
Application	General dosimetry up to 4 GHz Dosimetry in strong gradient fields Compliance tests of mobile phones	

Isotropic E-Field Probe EX3DV4 for Dosimetric Measurements

Construction	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)	
Calibration	ISO/IEC 17025 calibration service available.	
Frequency	10 MHz to >6 GHz; Linearity: ± 0.2 dB (30 MHz to 6 GHz)	
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	
Application	High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields). Only probe which enables compliance testing for frequencies up to 6 GHz with precision of better 30%	

2.5 Phantom description

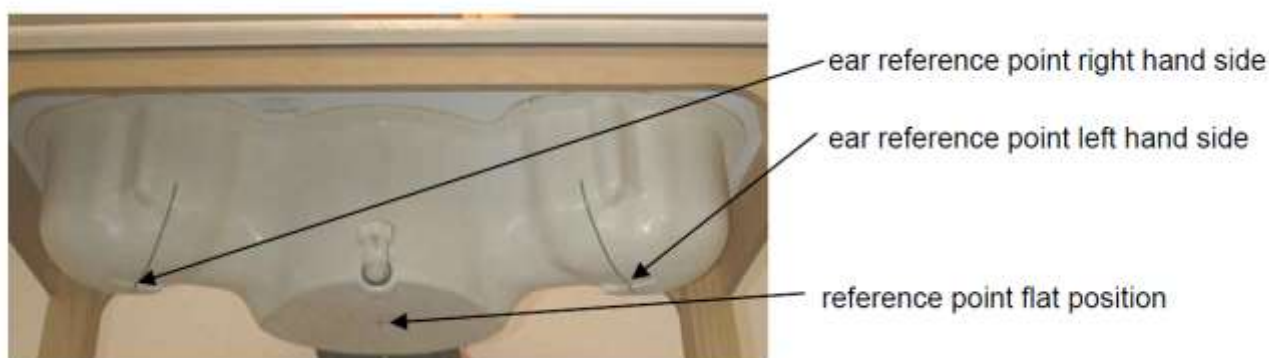
SAM Twin Phantom

Shell Thickness	2mm±0.2mm;The ear region:6.0±0.2mm	
Filling Volume	Approximately 25 liters	
Dimensions	Length:1000mm; Width:500mm; Height: adjustable feet	
Measurement Areas	Left hand Right hand Flat phantom	

The bottom plate contains three pairs of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections.

A white cover is provided to cover the phantom during off-periods to prevent water evaporation and changes in the liquid parameters. Free space scans of devices on top of this phantom cover are possible. Three reference marks are provided on the phantom counter. These reference marks are used to teach the absolute phantom position relative to the robot.

The following figure shows the definition of reference point:



ELI4 Phantom

Shell Thickness	2mm±0.2mm	
Filling Volume	Approximately 30 liters	
Dimensions	Major axis:600mm; Minor axis:400mm;	
Measurement Areas	Flat phantom	

The ELI4 phantom is intended for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30MHz to 6GHz. ELI4 is fully compatible with the latest draft of the standard IEC 62209-2 and all known tissue simulating liquids.

The phantom shell material is resistant to all ingredients used in the tissue-equivalent liquid recipes. The shell of the phantom including ear spacers is constructed from low permittivity and low loss material, with a relative permittivity $2 \leq \epsilon_r \leq 5$ at ≤ 3 GHz, $3 \leq \epsilon_r \leq 4$ at > 3 GHz and a loss tangent ≤ 0.05 .

Modular Triple Flat Phantom

Shell Thickness (bottom plate)	2mm±0.2mm	
Filling Volume (Module)	approx. 8.1 liters (filling height: 155 mm)	
Dimensions	Length: 292 mm Width: 178 mm Height: 178 mm Useable area: 280 × 175 mm	
Measurement Areas	Flat phantom	

The Modular Flat Phantom consists of three identical modules that can be installed and removed separately without emptying the liquid. It is used for compliance testing of small wireless devices in body-worn configurations according to IEC 62209-2, etc.

2.6 Device holder description

The DASY device holder has two scales for device rotation (with respect to the body axis) and the device inclination (with respect to the line between the ear openings). The plane between the ear openings and the mouth tip has a rotation angle of 65°. The bottom plate contains three pair of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections. This device holder is used for standard mobile phones or PDA's only. If necessary an additional support of polystyrene material is used.



The DASY device holder is constructed of low-loss POM material having the following dielectric parameters: relative permittivity $\epsilon = 3$ and loss tangent $\sigma = 0.02$. The amount of dielectric material has been reduced in the closest vicinity of the device, since measurements have suggested that the influence of the clamp on the test results could thus be lowered.

The device holder permits the device to be positioned with a tolerance of $\pm 1^\circ$ in the tilt angle.

Larger DUT's (e.g. notebooks) cannot be tested using this device holder. Instead a support of bigger polystyrene cubes and thin polystyrene plates is used to position the DUT in all relevant positions to find and measure spots with maximum SAR values.

Therefore those devices are normally only tested at the flat part of the SAM.

2.7 Test Equipment List

This table gives a complete overview of the SAR measurement equipment.

Devices used during the test described are marked ☒

	Manufacturer	Device	Type	Serial number	Date of last calibration	Valid period*
☒	SPEAG	Dosimetric E-Field Probe	EX3DV4	3736	2021-03-03	One year
☒	SPEAG	Dosimetric E-Field Probe	EX3DV4	7381	2020-11-30	One year
☒	SPEAG	835 MHz Dipole	D835V2	4d126	2018-07-24	Three years
☒	SPEAG	1750 MHz Dipole	D1750V2	1123	2020-07-28	Three years
☒	SPEAG	1900 MHz Dipole	D1900V2	5d091	2018-09-19	Three years
☒	SPEAG	2450 MHz Dipole	D2450V2	860	2018-11-17	Three years
☒	SPEAG	2600 MHz Dipole	D2600V2	1032	2018-09-17	Three years
☒	SPEAG	Data acquisition electronics	DAE4	1531	2021-02-24	One year
☒	SPEAG	Data acquisition electronics	DAE4	1235	2020-11-27	One year
☒	SPEAG	Software	DASY52	N/A	NCR	NCR
☒	SPEAG	Twin Phantom	SAM	1594	NCR	NCR
☒	SPEAG	Twin Phantom	SAM	1475	NCR	NCR
☒	R & S	Universal Radio Communication Tester	CMW 500	116855	2021-03-13	One year
☒	Anritsu	Signal Analyzer	MS2690A	6261767335	2021-03-14	One year
☒	Anritsu	Radio Communication Analyser	MT8821C	6201830585	2021-03-14	One year
☒	Agilent	Network Analyser	E5071C	MY46629448	2020-07-02	One year
☒	Agilent	Network Analyser	E5071C	MY46629448	2021-07-02	One year
☒	SPEAG	Dielectric Probe Kit	DAK3.5	1143	NCR	NCR
☒	Keysight	Signal Generator	E8257D	MY56440071	2020-11-09	One year
☒	MINI-CIRCUITS	Amplifier	HBTE-PAF-0.6-6-SF	19113001	NCR	NCR
☒	SHHX	Dual Directional Coupler	DDTO-4-20	17121801	2020-11-09	One year
☒	Keysight	Dual Directional Coupler	772D	MY52180295	2021-03-13	One year
☒	Agilent	Power Meter Sensor	E9321A	MY44420359	2020-11-09	One year
☒	Agilent	Power Meter	E4417A	MY54100027	2021-03-14	One year
☒	Keysight	Power Meter	E4417A	MY57160005	2021-03-14	One year
☒	Keysight	Power Meter Sensor	E9321A	MY57150002	2021-03-14	One year

Note:

1) Per KDB865664 D01 requirements for dipole calibration, the test laboratory has adopted three-year extended calibration interval. Each measured dipole is expected to evaluate with the following criteria at least on annual interval in Appendix.

- There is no physical damage on the dipole;
- System check with specific dipole is within 10% of calibrated value;
- The most recent return-loss result, measured at least annually, deviates by no more than 20% from the previous measurement.
- The most recent measurement of the real or imaginary parts of the impedance, measured at least annually is within 5Ω from the previous measurement.

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

3) *All the equipment are within the valid period when the tests are performed.

3 SAR Measurement Procedure

3.1 Scanning procedure

The DASY installation includes predefined files with recommended procedures for measurements and system check. They are read-only document files and destined as fully defined but unmeasured masks.

All Test

Positions (head or body-worn) are tested with the same configuration of test steps differing only in the grid definition for the different Test

Positions.

- The “reference” and “drift” measurements are located at the beginning and end of the batch process. They measure the field drift at one single point in the liquid over the complete procedure. The indicated drift is mainly the variation of the DUT’s output power and should vary max. +/- 5 %.
- For power drift measurement, DASY software supports that the reference position can be either the selected section's grid reference point or a user point. If the E-field of power reference measurement in the default grid reference point is very small, the test lab may set the reference position to the user point near the hotspot location to avoid large measurement uncertainty.
- The “surface check” measurement tests the optical surface detection system of the DASY system by repeatedly detecting the surface with the optical and mechanical surface detector and comparing the results. The output gives the detecting heights of both systems, the difference between the two systems and the standard deviation of the detection repeatability. Air bubbles or refraction in the liquid due to separation of the sugar-water mixture gives poor repeatability (above $\pm 0.1\text{mm}$). To prevent wrong results tests are only executed when the liquid is free of air bubbles. The difference between the optical surface detection and the actual surface depends on the probe and is specified with each probe. (It does not depend on the surface reflectivity or the probe angle to the surface within $\pm 30^\circ$.)
- The “area scan” measures the SAR above the DUT or verification dipole on a parallel plane to the surface. It is used to locate the approximate location of the peak SAR with 2D spline interpolation. The robot performs a stepped movement along one grid axis while the local electrical field strength is measured by the probe. The probe is touching the surface of the SAM during acquisition of measurement values. The standard scan uses large grid spacing for faster measurement. Standard grid spacing for head measurements is 15 mm in x- and y- dimension ($\leq 2\text{GHz}$), 12 mm in x- and y- dimension (2-4 GHz) and 10mm in x- and y- dimension (4-6GHz). If a finer resolution is needed, the grid spacing can be reduced. Grid spacing and orientation have no influence on the SAR result. For special applications where the standard scan method does not find the peak SAR within the grid, e.g. mobile phones with flip cover, the grid can be adapted in orientation. Results of this coarse scan are shown in Appendix B.
- A “zoom scan” measures the field in a volume around the 2D peak SAR value acquired in the previous “coarse” scan. This is a fine grid with maximum scan spatial resolution: $\Delta x_{\text{zoom}}, \Delta y_{\text{zoom}} \leq 2\text{GHz} - \leq 8\text{mm}$, 2-4GHz - $\leq 5\text{ mm}$ and 4-6 GHz- $\leq 4\text{mm}$; $\Delta z_{\text{zoom}} \leq 3\text{GHz} - \leq 5\text{ mm}$, 3-4 GHz- $\leq 4\text{mm}$ and 4-6GHz- $\leq 2\text{mm}$ where the robot additionally moves the probe along the z-axis away from the bottom of the Phantom. DASY is also able to perform repeated zoom scans if more than 1 peak is found during area scan. In this document, the evaluated peak 1g and 10g averaged SAR values are shown in the 2D-graphics in Appendix B. Test results relevant for the specified standard (see chapter 1.4.) are shown in table form in chapter 7.2.
- A Z-axis scan measures the total SAR value at the x-and y-position of the maximum SAR value found during the cube scan. The probe is moved away in z-direction from the bottom of the SAM phantom in 2 mm steps. This measurement shows the continuity of the liquid and can - depending in

the field strength – also show the liquid depth. A z-axis scan of the measurement with maximum SAR value is shown in Appendix B.

The following table summarizes the area scan and zoom scan resolutions per FCC KDB865664 D01:

Frequency	Maximum Area Scan resolution ($\Delta x_{\text{area}}, \Delta y_{\text{area}}$)	Maximum Zoom Scan spatial resolution ($\Delta x_{\text{Zoom}}, \Delta y_{\text{Zoom}}$)	Maximum Zoom Scan spatial resolution			Minimum zoom scan volume (x,y,z)
			Uniform Grid	Graded Grad		
			$\Delta z_{\text{Zoom}}(n)$	$\Delta z_{\text{Zoom}}(1)^*$	$\Delta z_{\text{Zoom}}(n>1)^*$	
$\leq 2\text{GHz}$	$\leq 15\text{mm}$	$\leq 8\text{mm}$	$\leq 5\text{mm}$	$\leq 4\text{mm}$	$\leq 1.5^* \Delta z_{\text{Zoom}}(n-1)$	$\geq 30\text{mm}$
2-3GHz	$\leq 12\text{mm}$	$\leq 5\text{mm}$	$\leq 5\text{mm}$	$\leq 4\text{mm}$	$\leq 1.5^* \Delta z_{\text{Zoom}}(n-1)$	$\geq 30\text{mm}$
3-4GHz	$\leq 12\text{mm}$	$\leq 5\text{mm}$	$\leq 4\text{mm}$	$\leq 3\text{mm}$	$\leq 1.5^* \Delta z_{\text{Zoom}}(n-1)$	$\geq 28\text{mm}$
4-5GHz	$\leq 10\text{mm}$	$\leq 4\text{mm}$	$\leq 3\text{mm}$	$\leq 2.5\text{mm}$	$\leq 1.5^* \Delta z_{\text{Zoom}}(n-1)$	$\geq 25\text{mm}$
5-6GHz	$\leq 10\text{mm}$	$\leq 4\text{mm}$	$\leq 2\text{mm}$	$\leq 2\text{mm}$	$\leq 1.5^* \Delta z_{\text{Zoom}}(n-1)$	$\geq 22\text{mm}$

3.2 Spatial Peak SAR Evaluation

The spatial peak SAR - value for 1 and 10 g is evaluated after the Cube measurements have been done. The basis of the evaluation are the SAR values measured at the points of the fine cube grid consisting of $5 \times 5 \times 7$ points (with 8mm horizontal resolution) or $7 \times 7 \times 7$ points (with 5mm horizontal resolution) or $8 \times 8 \times 7$ points (with 4mm horizontal resolution). The algorithm that finds the maximal averaged volume is separated into three different stages.

- The data between the dipole center of the probe and the surface of the phantom are extrapolated. This data cannot be measured since the center of the dipole is 2.7 mm away from the tip of the probe and the distance between the surface and the lowest measuring point is about 1 mm (see probe calibration sheet). The extrapolated data from a cube measurement can be visualized by selecting 'Graph Evaluated'.
- The maximum interpolated value is searched with a straight-forward algorithm. Around this maximum the SAR - values averaged over the spatial volumes (1g or 10 g) are computed using the 3d-spline interpolation algorithm. If the volume cannot be evaluated (i.e., if a part of the grid was cut off by the boundary of the measurement area) the evaluation will be started on the corners of the bottom plane of the cube.
- All neighboring volumes are evaluated until no neighboring volume with a higher average value is found.

Extrapolation

The extrapolation is based on a least square algorithm [W. Gander, Computermathematik, p.168-180]. Through the points in the first 3 cm along the z-axis, polynomials of order four are calculated. These polynomials are then used to evaluate the points between the surface and the probe tip. The points, calculated from the surface, have a distance of 1 mm from each other.

Interpolation

The interpolation of the points is done with a 3d-Spline. The 3d-Spline is composed of three one-dimensional splines with the "Not a knot"-condition [W. Gander, Computermathematik, p.141-150] (x, y and z -direction) [Numerical Recipes in C, Second Edition, p.123ff].

Volume Averaging

At First the size of the cube is calculated. Then the volume is integrated with the trapezoidal algorithm. 8000 points ($20 \times 20 \times 20$) are interpolated to calculate the average.

Advanced Extrapolation

DASY uses the advanced extrapolation option which is able to compensate boundary effects on E-field probes.

3.3 Data Storage and Evaluation

Data Storage

The DASY software stores the acquired data from the data acquisition electronics as raw data (in microvolt readings from the probe sensors), together with all necessary software parameters for the data evaluation (probe calibration data, liquid parameters and device frequency and modulation data) in measurement files with the extension "DAE". The software evaluates the desired unit and format for output each time the data is visualized or exported. This allows verification of the complete software setup even after the measurement and allows correction of incorrect parameter settings. For example, if a measurement has been performed with a wrong crest factor parameter in the device setup, the parameter can be corrected afterwards and the data can be re-evaluated.

The measured data can be visualized or exported in different units or formats, depending on the selected probe type ([V/m], [A/m], [°C], [mW/g], [mW/cm²], [dBrel], etc.). Some of these units are not available in certain situations or show meaningless results, e.g., a SAR output in a lossless media will always be zero. Raw data can also be exported to perform the evaluation with other software packages.

Data Evaluation by SEMCAD

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

Probe parameters:	- Sensitivity	Norm _i , a ₀ , a ₁ , a ₂
	- Conversion factor	ConvF _i
	- Diode compression point	Dcpi
Device parameters:	- Frequency	f
	- Crest factor	cf
Media parameters:	- Conductivity	σ
	- Density	ρ

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

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

If the exciting field is pulsed, the crest factor of the signal must be known to correctly compensate for peak power. The formula for each channel can be given as:

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

with	V _i	= compensated signal of channel i	(i = x, y, z)
	U _i	= input signal of channel i	(i = x, y, z)
	cf	= crest factor of exciting field (DASY parameter)	
	dcp _i	= diode compression point	(DASY parameter)

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

$$\begin{aligned} \text{E-field probes:} \quad E_i &= (V_i / \text{Norm}_i \cdot \text{ConvF})^{1/2} \\ \text{H-field probes:} \quad H_i &= (V_i)^{1/2} \cdot (a_{i0} + a_{i1}f + a_{i2}f^2)/f \end{aligned}$$

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

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

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

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

$$\text{SAR} = (E_{\text{tot}}^2 \cdot \sigma) / (\rho \cdot 1000)$$

with SAR = local specific absorption rate in mW/g
 E_{tot} = total field strength in V/m
 σ = conductivity in [mho/m] or [Siemens/m]
 ρ = equivalent tissue density in g/cm³

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

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

with P_{pwe} = equivalent power density of a plane wave in mW/cm²
 E_{tot} = total electric field strength in V/m
 H_{tot} = total magnetic field strength in A/m

4 System Verification Procedure

4.1 Tissue Verification

The simulating liquids should be checked at the beginning of a series of SAR measurements to determine if the dielectric parameters are within the tolerances of the specified target values. The measured conductivity and relative permittivity should be within $\pm 5\%$ of the target values.

The following materials are used for producing the tissue-equivalent materials.

Ingredients (% of weight)	Head Tissue							
Frequency Band (MHz)	750	835	900	1800	2000	2300	2450	2600
Water	39.2	41.45	40.92	52.64	55.242	62.82	62.7	55.242
Salt (NaCl)	2.7	1.45	1.48	0.36	0.306	0.51	0.5	0.306
Sugar	57.0	56.0	56.5	0.0	0.0	0.0	0.0	0.0
HEC	0.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0
Bactericide	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Triton X-100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DGBE	0.0	0.0	0.0	47.0	44.542	36.67	36.8	44.452

Table 4: Tissue Dielectric Properties

Salt: 99+% Pure Sodium Chloride; Sugar: 98+% Pure Sucrose; Water: De-ionized, 16M Ω + resistivity
 HEC: Hydroxyethyl Cellulose; DGBE: 99+% Di(ethylene glycol) butyl ether, [2-(2-butoxyethoxy)ethanol]
 Triton X-100(ultra pure): Polyethylene glycol mono [4-(1,1,3,3-tetramethylbutyl)phenyl]ether

☒ Simulating Head Liquid (HBBL600-6000MHz), Manufactured by SPEAG:

Ingredients	(% by weight)
Water	50-65%
Esters, Emulsifiers, Inhibitors	10-30%
Sodium salt	8-25%

Tissue Type	Target Frequency	Target Tissue		Measured Tissue		Deviation (Within +/-5%)		Liquid Temp.	Test Date
		ϵ_r	σ (S/m)	ϵ_r	σ (S/m)	$\Delta\epsilon_r$	$\Delta\sigma$		
835MHz Head	825	41.6	0.90	40.67	0.929	-2.24%	3.20%	22.5°C	2021/6/28
	835	41.5	0.90	40.64	0.933	-2.07%	3.70%		
	850	41.5	0.92	40.60	0.939	-2.17%	2.10%		
835MHz Head	825	41.6	0.90	41.17	0.920	-1.03%	2.20%	22.5°C	2021/7/2
	835	41.5	0.90	41.14	0.923	-0.87%	2.60%		
	850	41.5	0.92	41.10	0.929	-0.96%	0.97%		
1750MHz Head	1710	40.1	1.35	38.88	1.297	-3.04%	-3.93%	21.5°C	2021/7/2
	1730	40.1	1.36	38.87	1.307	-3.07%	-3.90%		
	1750	40.1	1.37	38.85	1.319	-3.12%	-3.72%		
	1800	40.0	1.40	38.80	1.349	-3.00%	-3.64%		
1900MHz Head	1850	40.0	1.40	38.35	1.406	-4.13%	0.43%	22.5°C	2021/6/29
	1880	40.0	1.40	38.28	1.423	-4.30%	1.64%		
	1900	40.0	1.40	38.25	1.434	-4.38%	2.43%		
	1910	40.0	1.40	38.23	1.440	-4.43%	2.86%		
1900MHz Head	1850	40.0	1.40	39.22	1.413	-1.95%	0.93%	22.5°C	2021/7/3
	1880	40.0	1.40	39.16	1.430	-2.10%	2.14%		
	1900	40.0	1.40	39.13	1.441	-2.17%	2.93%		
	1910	40.0	1.40	39.12	1.447	-2.20%	3.36%		
2450MHz Head	2410	39.3	1.76	38.94	1.831	-0.92%	4.03%	21.5°C	2021/7/1
	2435	39.2	1.79	38.90	1.852	-0.77%	3.46%		
	2450	39.2	1.80	38.87	1.863	-0.84%	3.50%		
	2460	39.2	1.81	38.85	1.872	-0.89%	3.43%		
2600MHz Head	2510	39.1	1.87	37.71	1.850	-3.55%	-1.07%	21.6°C	2021/6/29
	2535	39.1	1.89	37.66	1.871	-3.68%	-1.01%		
	2560	39.1	1.92	37.62	1.891	-3.79%	-1.51%		
	2600	39.0	1.96	37.55	1.923	-3.72%	-1.89%		
	2610	39.0	1.97	37.53	1.932	-3.77%	-1.93%		
	2645	39.0	2.01	37.47	1.961	-3.92%	-2.44%		

Table 5: Measured Tissue Parameter

Note:

- 1) The dielectric parameters of the tissue-equivalent liquid should be measured under similar ambient conditions and within 2 °C of the conditions expected during the SAR evaluation to satisfy protocol requirements.
- 2) KDB865664 was ensured to be applied for probe calibration frequencies greater than or equal to 50MHz of the EUT frequencies.
- 3) The above measured tissue parameters were used in the DASY software to perform interpolation via the DASY software to determine actual dielectric parameters at the test frequencies. The SAR test plots may slightly differ from the table above since the DASY rounds to three significant digits.

4.2 System Check

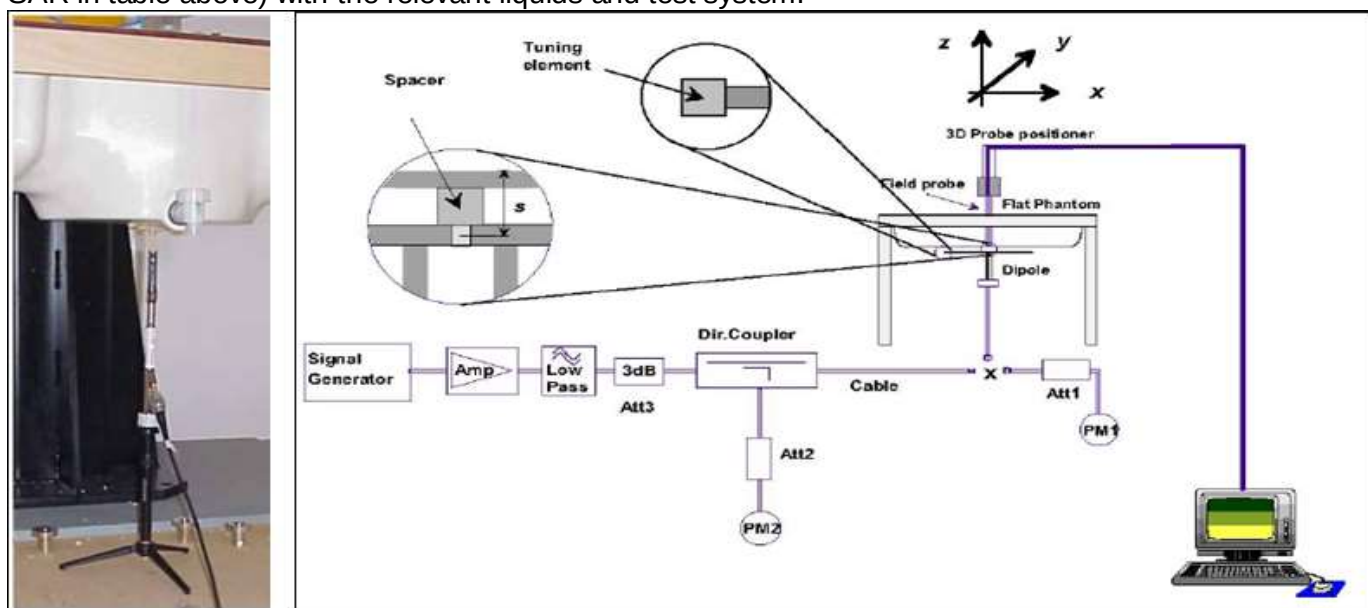
The system check is performed for verifying the accuracy of the complete measurement system and performance of the software. The system check is performed with tissue equivalent material according to IEEE 1528 (described above). The following table shows system check results for all frequency bands and tissue liquids used during the tests (Graphic Plot(s) see Appendix A).

System Check	Target SAR (Normalized to 1W)		Measured SAR (Normalized to 1W)		Deviation (Within +/-10%)		Test Date
	1-g (mW/g)	10-g (mW/g)	1-g (mW/g)	10-g (mW/g)	Δ 1-g	Δ 10-g	
835MHz	9.44	6.06	9.40	6.28	-0.42%	3.63%	2021/6/28
835MHz	9.44	6.06	9.28	6.20	-1.69%	2.31%	2021/7/2
1750MHz	36.20	19.00	35.56	19.76	-1.77%	4.00%	2021/7/2
1900MHz	40.40	21.30	42.00	21.96	3.96%	3.10%	2021/6/29
1900MHz	40.40	21.30	43.20	22.20	6.93%	4.23%	2021/7/3
2450MHz	53.10	24.70	54.00	26.44	1.69%	7.04%	2021/7/1
2600MHz	56.40	25.20	52.40	24.80	-7.09%	-1.59%	2021/6/29

Table 6: System Check Results

4.3 System check Procedure

The system check is performed by using a system check dipole which is positioned parallel to the planar part of the SAM phantom at the reference point. The distance of the dipole to the SAM phantom is determined by a plexiglass spacer. The dipole is connected to the signal source consisting of signal generator and amplifier via a directional coupler, N-connector cable and adaption to SAM. It is fed with a power of 250 mW (below 3GHz) or 100mW (3-6GHz). To adjust this power, a power meter is used. The power sensor is connected to the cable before the system check to measure the power at this point and do adjustments at the signal generator. At the outputs of the directional coupler both return loss as well as forward power are controlled during the system check to make sure that emitted power at the dipole is kept constant. This can also be checked by the power drift measurement after the test (result on plot). System check results have to be equal or near the values determined during dipole calibration (target SAR in table above) with the relevant liquids and test system.



5 SAR measurement variability and uncertainty

5.1 SAR measurement variability

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

- 1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg; steps 2) through 4) do not apply.
- 2) When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.
- 3) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg ($\sim 10\%$ from the 1-g SAR limit).
- 4) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20 .

The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds.

The detailed measurement results are shown in the following section.

5.2 SAR measurement uncertainty

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

6 SAR Test Configuration

6.1 Test

6.2 Positions Configuration

6.2.1 General considerations

Per IEEE 1528-2013, two imaginary lines on the handset were established: the vertical centerline and the horizontal line (See Figure 1).

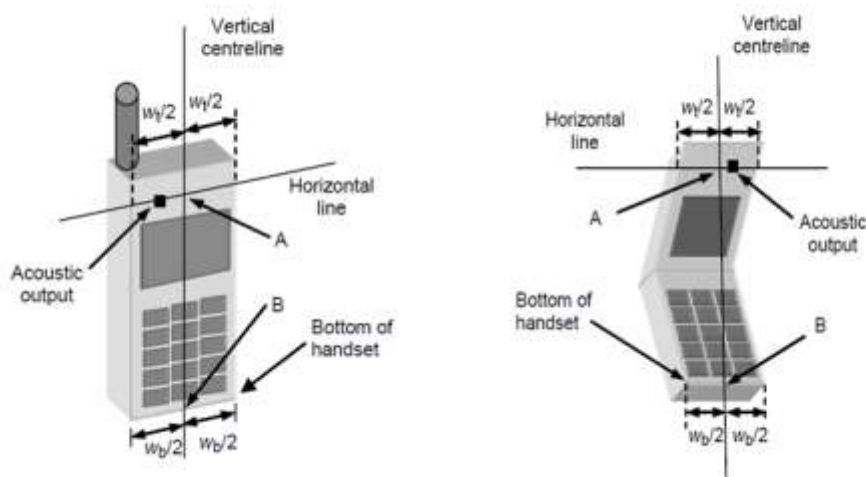


Figure 1 Hand Vertical Center & Horizontal Line Reference Points

6.2.2 Head Exposure Condition

Per IEEE 1528-2013, Head SAR measurements were made in the “cheek” position (See Figure 2) and the “tilt” position (See Figure 3). The device should be tested in both positions on left and right sides of the SAM phantom.

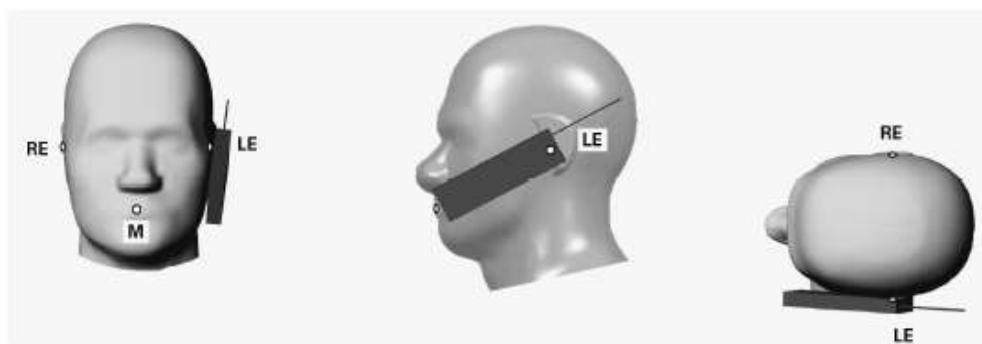


Figure 2 Front, Side and Top View of Cheek Position

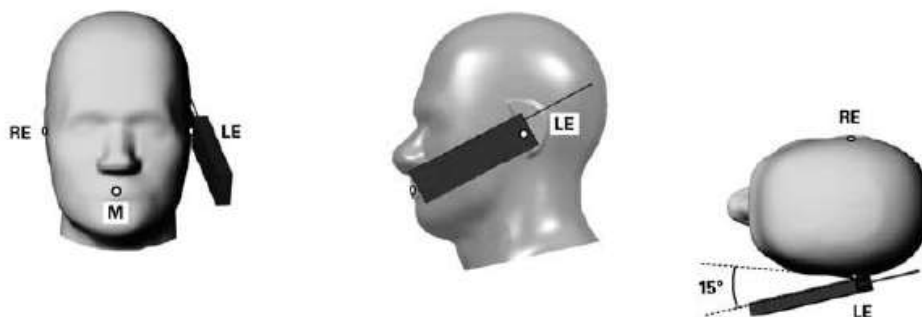


Figure 3 Front, Side and Top View of Tilt 15° Position

Note:

M Mouth reference point

LE Left ear reference point (ERP)

RE Right ear reference point(ERP)

6.2.3 Body-worn Exposure Condition

Body-worn operating configurations are tested with the holder attached to the device and positioned against a flat phantom with test separation distance of 15mm in a normal use configuration (See Figure 4). Per FCC KDB648474 D04, Body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in FCC KDB447498 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. When the reported SAR for a body-worn accessory, measured without a headset connected to the handset, is $> 1.2 \text{ W/kg}$, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset.

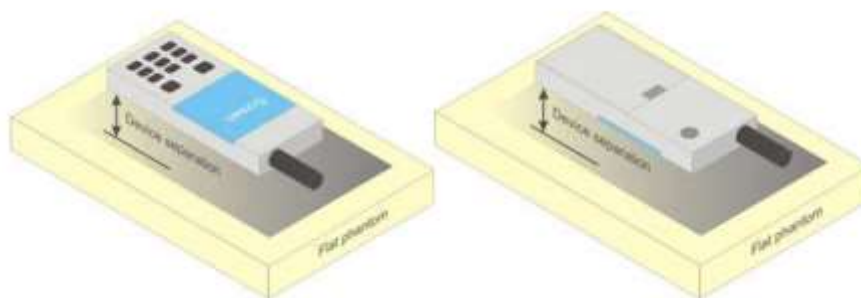


Figure 4 Test
Position for Body-Worn device

6.2.4 Hotspot Exposure Condition

Per FCC KDB941225 D06, 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 $> 9 \text{ cm} \times 5 \text{ cm}$, 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. 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; for the data modes, wireless technologies and frequency bands supporting hotspot mode. The SAR results are used to determine simultaneous transmission SAR test exclusion for hotspot mode; otherwise, simultaneous transmission SAR measurement is required.

6.2.5 Product Specific 10-g SAR Exposure Condition

Per FCC KDB648474 D04, for smart phones with a display diagonal dimension 15.0 cm or an overall diagonal dimension $> 16.0 \text{ cm}$ that provide similar mobile web access and multimedia support found in mini-tablets or UMPC mini-tablets that support voice calls next to the ear, the device is marketed as “Phablet”.

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

6.3 3G SAR Test Reduction Procedure

Per KDB941225 D01, in the following procedures, the mode tested for SAR is referred to as the primary mode. The equivalent modes considered for SAR test reduction are denoted as secondary modes. Both primary and secondary modes must be in the same frequency band. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is $\leq \frac{1}{4}$ 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. This is referred to as the 3G SAR test reduction procedure in the following SAR test guidance, where the primary mode is identified in the applicable wireless mode test procedures and the secondary mode is wireless mode being considered for SAR test reduction by that procedure. When the 3G SAR test reduction procedure is not satisfied, it is identified as “otherwise” in the applicable procedures; SAR measurement is required for the secondary mode.

6.4 GSM Test Configuration

SAR tests for GSM850 and GSM1900, a communication link is set up with a base station by air link. The power lever is set to “5” and “0” in SAR of GSM850 and GSM1900 using a Radio Communication Tester. The tests in the band of GSM850 and GSM1900 are performed in the mode of GPRS/EGPRS function. Since the GPRS class is 12 for this EUT, it has at most 4 timeslots in uplink and at most 4 timeslots in downlink, the maximum total timeslot is 5. The EGPRS class is 12 for this EUT, it has at most 4 timeslots in uplink, and at most 4 timeslots in downlink, the maximum total timeslot is 5.

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

6.5 UMTS Test Configuration

1) Output Power Verification

Maximum output power is verified on the high, middle and low channels according to procedures described in section 5.2 of 3GPP TS 34.121, using the appropriate RMC or AMR with TPC (transmit power control) set to all “1’s” for WCDMA/HSDPA or by applying the required inner loop power control procedures to maintain maximum output power while HSUPA is active. Results for all applicable physical channel configurations (DPCCH, DPDCHn and spreading codes, HSDPA, HSPA) are required in the SAR report. All configurations that are not supported by the handset or cannot be measured due to technical or equipment limitations must be clearly identified.

2) WCDMA

a. Head SAR Measurements

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.

b. Body SAR Measurements

SAR for body-worn accessory 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

3) HSDPA

SAR for body exposure configurations is measured according to the “Body SAR Measurements” procedures of 3G device. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is $\leq \frac{1}{4}$ dB higher than the primary mode or when the highest *reported* SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode. This is referred to as the 3G SAR test reduction procedure in the following SAR test guidance, where the primary mode is identified in the applicable wireless mode test procedures and the secondary mode is wireless mode being considered for SAR test reduction by that procedure. When the 3G SAR test reduction procedure is not satisfied, it is identified as “otherwise” in the applicable procedures; SAR measurement is required for the secondary mode.

Per KDB941225 D01, the 3G SAR test reduction procedure is applied to HSDPA body configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for HSDPA using the HSDPA body SAR procedures for the highest reported SAR body exposure configuration in 12.2 kbps RMC.

HSDPA should be configured according to UE category of a test device. The number of HS-DSCH/HS-PDSCHs, HAPRQ 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 condition, QPSK is used in the H-set for SAR testing. HS-DPCCH should be configured with a CQI feedback cycle of 4ms with a CQI repetition factor of 2 to maintain a constant rate of active CQI slots. The β_c and β_d gain factors for DPCCH and DPDCH were set according to the values in the below table, β_{hs} for HS-DPCCH is set automatically to the correct value when $\Delta ACK, \Delta NACK, \Delta CQI = 8$. The variation of the β_c / β_d ratio causes a power reduction at sub-tests 2 - 4.

Sub-test ^c	β_c ^c	β_d ^c	β_d (SF) ^c	β_c/β_d ^c	$\beta_{hs}(1)$ ^c	CM(dB)(2) ^c	MPR (dB) ^c
1 ^c	2/15 ^c	15/15 ^c	64 ^c	2/15 ^c	4/15 ^c	0.0 ^c	0 ^c
2 ^c	12/15(3) ^c	15/15(3) ^c	64 ^c	12/15(3) ^c	24/15 ^c	1.0 ^c	0 ^c
3 ^c	15/15 ^c	8/15 ^c	64 ^c	15/8 ^c	30/15 ^c	1.5 ^c	0.5 ^c
4 ^c	15/15 ^c	4/15 ^c	64 ^c	15/4 ^c	30/15 ^c	1.5 ^c	0.5 ^c

Note 1: ΔACK , $\Delta NACK$ and $\Delta CQI = 8$ $A_{hs} = \beta_{hs}/\beta_c = 30/15$ $\beta_{hs} = 30/15 * \beta_c$
Note 2 : CM=1 for $\beta_c/\beta_d = 12/15$, $\beta_{hs}/\beta_c = 24/15$. For all other combinations of DPDCH,DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.^c
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 signalled gain factors for the reference TFC (TF1,TF1) to $\beta_c = 11/15$ and $\beta_d = 15/15$ ^c

Table 7: Sub-tests for UMTS Release 5 HSDPA

The measurements were performed with a Fixed Reference Channel (FRC) and H-Set 1 QPSK.

Parameter	Value
Nominal average inf. bit rate	534 kbit/s
Inter-TTI Distance	3 TTI's
Number of HARQ Processes	2 Processes
Information Bit Payload	3202 Bits
MAC-d PDU size	336 Bits
Number Code Blocks	1 Block
Binary Channel Bits Per TTI	4800 Bits
Total Available SMLs in UE	19200 SMLs
Number of SMLs per HARQ Process	9600 SMLs
Coding Rate	0.67
Number of Physical Channel Codes	5

Table 8: settings of required H-Set 1 QPSK acc. to 3GPP 34.121

HS-DSCH Category	Maximum HS-DSCH Codes Received	Minimum Inter-TTI Interval	Maximum HS-DSCH Transport Block Bits/HS-DSCH TTI	Total Soft Channel Bits
1	5	3	7298	19200
2	5	3	7298	28800
3	5	2	7298	28800
4	5	2	7298	38400
5	5	1	7298	57600
6	5	1	7298	67200
7	10	1	14411	115200
8	10	1	14411	134400
9	15	1	25251	172800
10	15	1	27952	172800
11	5	2	3630	14400
12	5	1	3630	28800
13	15	1	34800	259200
14	15	1	42196	259200
15	15	1	23370	345600

16	15	1	27952	345600
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Table 9: HSDPA UE category

4) HSUPA

SAR for body exposure configurations is measured according to the “Body SAR Measurements” procedures of 3G device. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is $\leq \frac{1}{4}$ dB higher than the primary mode 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.

Per KDB941225 D01, the 3G SAR test reduction procedure is applied to HSPA (HSUPA/HSDPA with RMC) body configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for HSPA using the HSPA body SAR procedures for the highest reported body exposure SAR configuration in 12.2 kbps RMC.

Due to inner loop power control requirements in HSDPA, a commercial communication test set should be used for the output power and SAR tests. The 12.2 kbps RMC, FRC H-set 1 and E-DCH configurations for HSDPA should be configured according to the values indicated below as well as other applicable procedures described in the ‘WCDMA Handset’ and ‘Release 5 HSDPA Data Device’ sections of 3G device.

Sub-test [⌚]	β_c [⌚]	β_d [⌚]	β_d (SF) [⌚]	β_c/β_d [⌚]	$\beta_{hs}^{(1)}$ [⌚]	β_{ec} [⌚]	β_{ed} [⌚]	β_c (SF) [⌚]	β_{ed} (code) [⌚]	CM ⁽²⁾ [⌚]	MP R [⌚]	AG ⁽⁴⁾ Inde ^x [⌚]	E-TFC I [⌚]
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 Δ CQI = 8 $A_{hs} = \beta_{hs}/\beta_c = 30/15$ $\beta_{hs} = 30/15 * \beta_c$

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 signalled 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 signalled 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} can not be set directly; it is set by Absolute Grant Value.[⌚]

Table 10: Subtests for UMTS Release 6 HSUPA

UE E-DCH Category	Maximum E-DCH Codes Transmitted	Number of HARQ Processes	E-DCH TTI(ms)	Minimum Spreading Factor	Maximum E-DCH Transport Block Bits	Max Rate (Mbps)
1	1	4	10	4	7110	0.7296
2	2	8	2	4	2798	1.4592
	2	4	10	4	14484	
3	2	4	10	4	14484	1.4592
4	2	8	2	2	5772	2.9185
	2	4	10	2	20000	2.00
5	2	4	10	2	20000	2.00
6 (No DPDCH)	4	8	10	2SF2&2SF	11484	5.76
	4	4	2	4	20000	2.00
7 (No DPDCH)	4	8	2	2SF2&2SF	22996	?
	4	4	10	4	20000	?

NOTE: When 4 codes are transmitted in parallel, two codes shall be transmitted with SF2 and two with SF4. UE categories 1 to 6 support QPSK only. UE category 7 supports QPSK and 16QAM. (TS25.306-7.3.0).

Table 11: HSUPA UE category

5) DC-HSDPA

SAR is required for Rel. 8 DC-HSDPA when SAR is required for Rel. 5 HSDPA; otherwise, the 3G SAR test reduction procedure is applied to DC-HSDPA with 12.2 kbps RMC as the primary mode. Power is measured for DC-HSDPA according to the H-Set 12, FRC configuration in Table C.8.1.12 of 3GPP TS 34.121-1 to determine SAR test reduction. A primary and a Second serving HS-DSCH Cell are required to perform the power measurement and for the results to be acceptable.

The following tests were completed according to procedures in section 7.3.13 of 3GPP TS 34.108 v9.5.0. A summary of these settings are illustrated below:

Downlink Physical Channels are set as per 3GPP TS34.121-1 v9.0.0 E.5.0

Table E.5.0: Levels for HSDPA connection setup

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

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

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

The measurements were performed with a Fixed Reference Channel (FRC) H-Set 12 with QPSK

Parameter	Value
Nominal average inf. bit rate	60 kbit/s
Inter-TTI Distance	1 TTI's
Number of HARQ Processes	6 Processes
Information Bit Payload	120 Bits
Number Code Blocks	1 Block
Binary Channel Bits Per TTI	960 Bits
Total Available SMLs in UE	19200 SMLs
Number of SMLs per HARQ Process	3200 SMLs
Coding Rate	0.15
Number of Physical Channel Codes	1

Table 12: settings of required H-Set 12 QPSK acc. to 3GPP 34.121

Note:

1. The RMC is intended to be used for DC-HSDPA mode and both cells shall transmit with identical parameters as listed in the table above.
2. Maximum number of transmission is limited to 1, i.e., retransmission is not allowed. The redundancy and constellation version 0 shall be used.

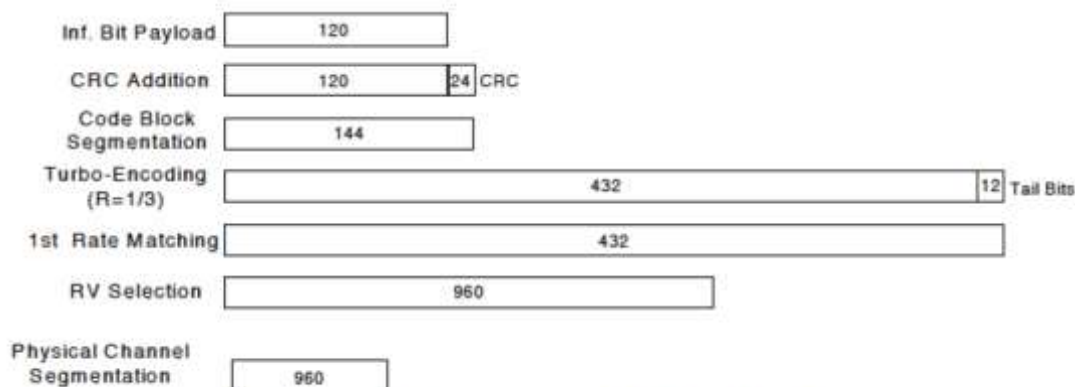


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

The following 4 Sub-tests for HSDPA were completed according to Release 5 procedures. A summary of subtest settings are illustrated below:

Sub-test ¹	β_c ²	β_d ²	β_d (SF) ²	β_c/β_d ²	$\beta_{hs}(1)$ ²	CM(dB)(2) ²	MPR (dB) ²
1 ²	2/15 ²	15/15 ²	64 ²	2/15 ²	4/15 ²	0.0 ²	0 ²
2 ²	12/15(3) ²	15/15(3) ²	64 ²	12/15(3) ²	24/15 ²	1.0 ²	0 ²
3 ²	15/15 ²	8/15 ²	64 ²	15/8 ²	30/15 ²	1.5 ²	0.5 ²
4 ²	15/15 ²	4/15 ²	64 ²	15/4 ²	30/15 ²	1.5 ²	0.5 ²

Note 1: Δ ACK, Δ NACK and Δ CQI = 8 $A_{hs} = \beta_{hs}/\beta_c = 30/15$ $\beta_{hs} = 30/15 * \beta_c$
Note 2: CM=1 for $\beta_c/\beta_d = 12/15$, $\beta_{hs}/\beta_c = 24/15$. For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.
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 signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 11/15$ and $\beta_d = 15/15$

Up commands are set continuously to set the UE to Max power.

Note:

1. The Dual Carriers transmission only applies to HSDPA physical channels
2. The Dual Carriers belong to the same Node and are on adjacent carriers.
3. The Dual Carriers do not support MIMO to serve UEs configured for dual cell operation
4. The Dual Carriers operate in the same frequency band.
5. The device doesn't support the modulation of 16QAM in uplink but 64QAM in downlink for DC-HSDPA mode.

6. The device doesn't support carrier aggregation for it just can operate in Release 8.

6) HSPA+

Per KDB941225 D01, SAR is required for Rel. 7 HSPA+ when SAR is required for Rel. 6 HSPA; otherwise, the 3G SAR test reduction procedure is applied to (uplink) HSPA+ with 12.2 kbps RMC as the primary mode. Power is measured for HSPA+ that supports uplink 16 QAM according to configurations in Table C.11.1.4 of 3GPP TS 34.121-1 to determine SAR test reduction.

■ Table C.11.1.4: β values for transmitter characteristics tests with HS-DPCCH and E-DCH with 16QAM¹⁾

Sub-test ²⁾	β_c ³⁾ (Note 3) ⁴⁾	β_d ⁴⁾	β_{HS} ⁴⁾ (Note 1) ⁴⁾	β_{ec} ⁴⁾	β_{ed} ⁴⁾ (2xSF2) ⁴⁾ (Note 4) ⁴⁾	β_{ed} ⁴⁾ (2xSF4) ⁴⁾ (Note 4) ⁴⁾	CM ⁴⁾ (dB) ⁴⁾ (Note 2) ⁴⁾	MPR ⁴⁾ (dB) ⁴⁾ (Note 2) ⁴⁾	AG ⁴⁾ Index ⁴⁾ (Note 4) ⁴⁾	E-TFCI ⁴⁾ (Note 5) ⁴⁾	E-TFCI ⁴⁾ (boost) ⁴⁾
1 ⁴⁾	1 ⁴⁾	0 ⁴⁾	30/15 ⁴⁾	30/15 ⁴⁾	β_{ed1} : 30/15 ⁴⁾ β_{ed2} : 30/15 ⁴⁾	β_{ed3} : 24/15 ⁴⁾ β_{ed4} : 24/15 ⁴⁾	3.5 ⁴⁾	2.5 ⁴⁾	14 ⁴⁾	105 ⁴⁾	105 ⁴⁾
Note 1: Δ_{ACK}, Δ_{NACK} and $\Delta_{CQI} = 30/15$ with $\beta_{ds} = 30/15 * \beta_c$.⁴⁾ Note 2: CM = 3.5 and the MPR is based on the relative CM difference, MPR = MAX(CM-1,0).⁴⁾ Note 3: DPDCH is not configured, therefore the β_c is set to 1 and $\beta_d = 0$ by default.⁴⁾ Note 4: β_{ed} can not be set directly; it is set by Absolute Grant Value.⁴⁾ Note 5: All the sub-tests require the UE to transmit 2SF2+2SF4 16QAM EDCH and they apply for UE using E-DPDCH category 7. E-DCH TTI is set to 2ms TTI and E-DCH table index = 2. To support these E-DCH configurations DPDCH is not allocated. The UE is signalled to use the extrapolation algorithm.⁴⁾											

6.6 LTE Test Configuration

SAR for LTE band exposure configurations is measured according to the procedures of KDB941225 D05 SAR for LTE Devices. The Radio Communication Tester was used for LTE output power measurements and SAR testing. Closed loop power control was used so the UE transmits with maximum output power during SAR testing. SAR test were performed with the same number of RB and RB offsets transmitting on all TTI frames (Maximum TTI)

1) Spectrum Plots for RB configurations

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

2) MPR

When MPR is implemented permanently within the UE, regardless of network requirements, only those RB configurations allowed by 3GPP for the channel bandwidth and modulation combinations may be tested with MPR active. Configurations with RB allocations less than the RB thresholds required by 3GPP must be tested without MPR.

The allowed Maximum Power Reduction (MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS36.101.

Modulation	Channel bandwidth / Transmission bandwidth (N_{RB})						MPR (dB)
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2

3) A-MPR

A-MPR (Additional MPR) has been disabled for all SAR tests by using Network Signaling Value of "NS_01" on the base station simulator.

4) LTE procedures for SAR testing

A) Largest channel bandwidth standalone SAR test requirements

i) QPSK with 1 RB allocation

Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel. When the reported SAR is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required for 1 RB allocation; otherwise, SAR is required for the remaining required test channels and only for the RB offset configuration with the highest output power for that channel. When the reported SAR of a required test channel is > 1.45 W/kg, SAR is required for all three RB offset configurations for that required test channel.

ii) QPSK with 50% RB allocation

The procedures required for 1 RB allocation in i) are applied to measure the SAR for QPSK with 50% RB allocation.

iii) QPSK with 100% RB allocation

For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and

the highest reported SAR for 1 RB and 50% RB allocation in i) and ii) 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.

iv) Higher order modulations

For each modulation besides QPSK; e.g., 16-QAM, 64-QAM, apply the QPSK procedures in above sections to determine the QAM configurations that may need SAR measurement. For each configuration identified as required for testing, SAR is required only when the highest maximum output power for the configuration in the higher order modulation is $> \frac{1}{2}$ dB higher than the same configuration in QPSK or when the reported SAR for the QPSK configuration is > 1.45 W/kg.

B) Other channel bandwidth standalone SAR test requirements

For the other channel bandwidths used by the device in a frequency band, apply all the procedures required for the largest channel bandwidth in section A) to determine the channels and RB configurations that need SAR testing and only measure SAR when the highest maximum output power of a configuration requiring testing in the smaller channel bandwidth is $> \frac{1}{2}$ 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.

6.7 Wi-Fi Test Configuration

For Wi-Fi SAR testing, a communication link is set up with the testing software for Wi-Fi mode test. During the test, at the each test frequency channel, the EUT is operated at the RF continuous emission mode. Per KDB248227 D01, a minimum transmission duty factor of 85% is required to avoid certain hardware and device implementation issues related to wide range SAR scaling. The reported SAR must be scaled to 100% transmission duty factor to determine compliance at the maximum tune-up tolerance limit.

6.7.1 Initial Test Position Procedure

For exposure condition with multiple Test

Position, such as handsets operating next to the ear, devices with hotspot mode or UMPC mini-tablet, procedures for initial Test

Position can be applied. Using the transmission mode determined by the DSSS procedure or initial test configuration, area scans are measured for all position in an exposure condition. The Test

Position with the highest extrapolated(peak) SAR is used as the initial Test

Position. When reported SAR for the initial Test

Position is $\leq 0.4\text{W/kg}$, no additional testing for the remaining Test

Position is required. Otherwise, SAR is evaluated at the subsequent highest peak SAR position until the reported SAR result is $\leq 0.8\text{W/kg}$ or all Test

Position are measured. For all positions/configurations tested using the initial Test

Position and subsequent Test

Positions, when the *reported* SAR is $> 0.8\text{ W/kg}$, SAR is measured for these Test

Positions/configurations on the subsequent next highest measured output power channel(s) until the *reported* SAR is $\leq 1.2\text{ W/kg}$ or all required channels are tested.

6.7.2 Initial Test Configuration Procedure

An initial test configuration is determined for OFDM transmission modes according to the channel bandwidth, modulation and data rate combination(s) with the highest maximum output power specified for production units in each standalone and aggregated frequency band. SAR is measured using the highest measured maximum output power channel. For configurations with the same specified or measured maximum output power, additional transmission mode and test channel selection procedures are required (see section 5.3.2 of KDB248227 D01). SAR test reduction of subsequent highest output test channels is based on the *reported* SAR of the initial test configuration.

For next to the ear, hotspot mode and UMC mini-tablet exposure configurations where multiple Test

Positions are required, the initial Test

Position procedure is applied to minimize the number of Test

Positions required for SAR measurement using the initial test configuration transmission mode. For fixed exposure conditions that do not have multiple SAR Test

Positions, SAR is measured in the transmission mode determined by the initial test configuration.

When the *reported* SAR of the initial test configuration is $> 0.8\text{ W/kg}$, SAR measurement is required for the subsequent next highest measured output power channel(s) in the initial test configuration until the *reported* SAR is $\leq 1.2\text{ W/kg}$ or all required channels are tested.

6.7.3 Sub Test Configuration Procedure

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.

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.

6.7.4 2.4G Wi-Fi SAR Test Procedures

Separate SAR procedures are applied to DSSS and OFDM configurations in the 2.4 GHz band to simplify DSSS test requirements. For 802.11b DSSS SAR measurements, DSSS SAR procedure applies to fixed exposure Test

Position and initial Test

Position procedure applies to multiple exposure Test

Positions.

A) 802.11b DSSS SAR Test Requirements

SAR is measured for 2.4 GHz 802.11b DSSS using either a fixed Test

Position or, when applicable, the initial Test

Position procedure. SAR test reduction is determined according to the following:

1) When the *reported* SAR of the highest measured maximum output power channel (section 3.1 of of KDB248227 D01) for the exposure configuration is ≤ 0.8 W/kg, no further SAR testing is required for 802.11b DSSS in that exposure configuration.

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

B) 2.4GHz 802.11g/n OFDM SAR Test Exclusion Requirements

When SAR measurement is required for 2.4 GHz 802.11g/n OFDM configurations, the measurement and test reduction procedures for OFDM are applied (section 5.3 of of KDB248227 D01). SAR is not required for the following 2.4 GHz OFDM conditions.

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

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

6.7.5 OFDM Transmission Mode SAR Test Channel Selection Requirements

For 2.4G Wi-Fi, When the same maximum output power was specified for multiple OFDM transmission mode configurations in a frequency band or aggregated band, SAR is measured using the configuration with the largest channel bandwidth, lowest order modulation and lowest data rate. When the maximum output power of a channel is the same for equivalent OFDM configurations (for example 802.11g and 802.11n, with the same channel bandwidth, modulation, and data rate, etc), the lower order 802.11 mode (i.e., 802.11g is chosen over 802.11n) is used for SAR measurement. When the maximum output power are the same for multiple test channel, either according to the default or additional power measurement requirement, SAR is measured using the channel closest to the middle of the frequency band or aggregated band. When there are multiple channels with the same maximum output power, SAR is measured using the higher number channel.

6.8 Dynamic antenna switching specification

The device supports the dynamic antenna switching function to optimize transmission efficiency for wide range frequency operations.

- 1) For 2G/3G/4G, the device has two Tx antennas (Main Antenna and Secondary Antenna). It can transmit from either Main Antenna or Secondary Antenna. The Main Antenna and Second Antenna cannot transmit simultaneously (Refer to the antenna location picture appendix for details).

Note:

- a) The main and second antenna support all 2G/3G/4G bands

SAR test procedure for dynamic antenna switching is as below:

Each antenna is set to the MAX transmit power level respectively and test the SAR respectively in all applicable RF exposure conditions. Some commands or test scripts are supplied to fix the operation state so that only one TX antenna is chosen and tested at a time. All independent antennas are completely covered by the appropriate SAR measurements. The simultaneous transmission scenarios are also evaluated independently.

6.9 Dynamic antenna tuning specification

The device supports the dynamic antenna tuning function to optimize transmission efficiency for 791MHz~960MHz frequency operations, especially in any hand usage scenario. The device has two GSM/UMTS/LTE TX antennas: Ant 1 and Ant 2. The antennas inside the device. The dynamic antenna tuning function is only applicable for the 3G/4G Main TX antenna, which is located in the bottom part of the device. The 3G/4G Main antenna has two fixed states for some bands: the state 1 and state 2. Two states shares the same antenna, RF path, test channel and conductive power. The software will choose better RSSI as the working state of the main TX antenna based on the RSSI comparison and switch algorithm.

SAR test procedure for dynamic antenna tuning is as below:

Full normally required SAR measurements are performed for the state 1. The SAR worst case will be checked for the other state(state 2) in each antenna tuning band and applicable RF exposure condition to ensure the SAR compliance.

6.10 Power Reduction Specification

This device uses the following power reduction features to reduce the transmit power and ensure SAR compliance. These power reduction features are implemented using a single fixed level of reduction through static table look-up for some wireless operating modes or frequency bands and triggered by a single event or operation. The published RF exposure KDB procedures are applicable to the specific implementation and applied for testing. So PAG is not required for these features.

- 1) A fixed level power reduction is applied for some frequency bands when hotspot mode becomes active. When the hotspot is disabled, the power value will be recovered.
- 2) A fixed level power reduction is applied for some frequency bands when 2G/3G/4G and Wi-Fi transmit simultaneously.
- 3) This device uses the receiver to indicate whether the user is making a voice call in head scenario or not. The selection between head and body power levels is based on the receiver detection mechanism. A fixed level power reduction is applied for some frequency bands when the audio receiver is on.
- 4) This device uses the mobile country code (MCC) to indicate whether the users in CE countries or FCC countries. The selection between CE countries and FCC countries power levels is based on the country code detection mechanism. It can determine the countries where users are and set the relevant power level for each antennas accordingly.

Antenna	MCC OF CE COUNTRY (CE standard)	MCC OF FCC COUNTRY (FCC standard)
UMTS Band V (Main ant.)	Power Level A1	Power Level B1
LTE Band 7 (Main ant.)	Power Level A2	Power Level B2
LTE Band 38 (Main ant.)	Power Level A3	Power Level B3
LTE Band 41 (Main ant.)	Power Level A4	Power Level B4
2.4G Wi-Fi	Power Level A5	Power Level B5

6.10.1 Power Reduction Specification of 2G&3G&4G Second Antenna

The following tables summarize the key power reduction information of 2G/3G/4G second antenna triggered by specific use conditions. The detailed full power and reduced conducted power measurement results are provided in the following section of this report:

Band	2G/3G/4G Second Antenna Max Power Level (dBm)			
	Hotspot OFF			Hotspot ON
	Receiver OFF		Receiver ON	/
	/	Simultaneous Transmission with Wi-Fi/P2P	/	/
	Power Level D1	Power Level D2	Power Level D3	Power Level D4
GSM1900	30.80	30.80	30.80	26.80
UMTS Band II	22.20	21.00	24.20	19.70
UMTS Band IV	21.80	21.80	24.30	19.30
LTE Band 2	21.80	21.80	23.30	19.60
LTE Band 4	21.50	21.50	24.00	21.00
LTE Band 7	23.00	23.00	24.00	23.00
LTE Band 66	21.20	21.20	23.70	20.70

Note: For Head SAR test of 2G/3G/4G Second Antenna, standalone Head SAR should be evaluated with audio receiver on. The audio receiver only works in voice mode when the user is making a call in head scenario, lacking of the third-party VoIP server and the unstandardized VOIP operating characteristic, therefore, a test script tool is used to trigger the receiver on during the test. The test script is only used to trigger audio receiver on and simulate voice and VOIP usage scene. It can be ensured that the unmodified settings in production units, including maximum output power, amplifier gain and other RF performance or tuning parameters, are used for SAR measurement.

6.10.2 Power Reduction Specification of 2G&3G&4G Main Antenna

The following tables summarize the key power reduction information of 2G/3G/4G main antenna. The detailed full power and reduced conducted power measurement results are provided in the following section of this report:

Band	2G/3G/4G Main Antenna Max Power Level (dBm)			
	Hotspot OFF			Hotspot ON
	Receiver OFF		Receiver ON	/
	/	Simultaneous Transmission with Wi-Fi /P2P	/	/
	Power Level D1	Power Level D2	Power Level D3	Power Level D4
GSM1900	30.90	30.90	25.60	25.60
UMTS Band II	23.10	23.10	19.60	19.60
UMTS Band IV	22.80	22.80	19.30	19.30
UMTS Band V	24.90	24.90	23.40	23.40
LTE Band 2	23.40	23.40	19.40	19.40
LTE Band 4	23.40	23.40	20.40	20.40
LTE Band 7	23.40	23.40	19.90	19.90
LTE Band 38	24.40	24.40	21.90	21.90
LTE Band 41	24.40	24.40	21.40	21.40
LTE Band 66	23.40	23.40	20.40	20.40

Note: For Head SAR test of 2G/3G/4G Main Antenna, standalone Head SAR should be evaluated with audio receiver on. The audio receiver only works in voice mode when the user is making a call in head scenario, lacking of the third-party VoIP server and the unstandardized VOIP operating characteristic, therefore, a test script tool is used to trigger the receiver on during the test. The test script is only used to trigger audio receiver on and simulate voice and VOIP usage scene. It can be ensured that the unmodified settings in production units, including maximum output power, amplifier gain and other RF performance or tuning parameters, are used for SAR measurement.

6.10.3 Power Reduction Specification of Wi-Fi Antenna

The following tables summarize the key power reduction information of Wi-Fi antennas. For FCC SAR test, Wi-Fi SAR test should be evaluated at the power level of FCC mobile country code for each exposure conditions of Wi-Fi. The detailed full power and reduced conducted power measurement results are provided in the following section of this report:

Configuration		Tune-up(dBm)			
Band	Mode	MCC of CE Countries		MCC of FCC Countries	
		Receiver ON	Receiver OFF	Receiver ON	Receiver OFF
2.4G Wi-Fi	802.11b	16.00	19.50	14.00	19.50
	802.11g	16.00	19.00	14.00	19.00
	802.11n(20M)	16.00	19.00	14.00	19.00
	802.11n(40M)	16.00	18.00	14.00	14.00

6.10.4 Conducted power validation of Mobile Country Code (MCC)

- 1) The following tables summarize the key power reduction information triggered by specific use conditions.

3G/4G Main Antenna country code (MCC) Validation Results (dBm)				
Band	MCC of CE Countries		MCC of FCC Countries	
	Receiver on		Receiver on	
	Tune up	Power Validation Results	Tune up	Power Validation Results
UMTS Band V	24.90	24.08	23.40	22.49
LTE Band 7	23.40	21.87	19.90	18.32
LTE Band 38	24.40	22.53	21.90	20.11
LTE Band 41	24.40	23.07	21.40	20.34

- 2) The following tables summarize the key Wi-Fi power reduction information and Wi-Fi conducted power validation results of MCC:

Wi-Fi conducted power validation results(dBm)									
Configuration		MCC of CE Countries				MCC of FCC Countries			
Band	Mode	Tune-up		Power Validation Results		Tune-up		Power Validation Results	
		Receiver ON	Receiver OFF	Receiver ON	Receiver OFF	Receiver ON	Receiver OFF	Receiver ON	Receiver OFF
2.4G Wi-Fi	802.11b	16.00	19.50	14.60	17.86	14.00	19.50	12.64	17.90
	802.11g	16.00	19.00	14.43	17.60	14.00	19.00	12.49	17.33
	802.11n(20M)	16.00	19.00	14.41	17.62	14.00	19.00	12.57	17.39
	802.11n(40M)	16.00	18.00	14.63	16.36	14.00	14.00	11.42	11.54

6.10.5 BT Test Configuration

For BT SAR testing, there is set to the DUT continuous transmitting with maximum output power using the WideBand Radio Communication Tester CMW500. Per TCB Worksop Notes, the BT SAR was scaled to the 100% transmission Duty

Cycle to determine compliance. Refer to the following section for the time-domain plot and calculation for the duty cylce of the device.

7 SAR Measurement Results

7.1 Conducted power measurements

The conducted power measurement results are provided in the report appendixs.

7.2 SAR measurement Results

General Notes:

- 1) Per KDB 447498 D01, all SAR measurement results are scaled to the maximum tune-up tolerance limit to demonstrate SAR compliance.
- 2) Per KDB 447498 D01, testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is:
 - $\leq 0.8\text{W/kg}$ for 1-g or 2.0W/kg for 10-g respectively, when the transmission band is $\leq 100\text{MHz}$.
 - $\leq 0.6\text{ W/kg}$ or 1.5 W/kg , for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz.
 - $\leq 0.4\text{ W/kg}$ or 1.0 W/kg , for 1-g or 10-g respectively, when the transmission band is $\geq 200\text{ MHz}$.When the maximum output power variation across the required test channels is $> \frac{1}{2}\text{ dB}$, instead of the middle channel, the highest output power channel must be used.
- 3) Per KDB 865664 D01, for each frequency band, repeated SAR measurement is required only when the measured SAR is $\geq 0.8\text{W/kg}$; if the deviation among the repeated measurement is $\leq 20\%$, and the measured SAR $< 1.45\text{W/kg}$, only one repeated measurement is required.
- 4) Per KDB 941225 D06, the DUT Dimension is bigger than 9 cm x 5 cm, so 10mm is chosen as the test separation distance for Hotspot mode. When the antenna-to-edge distance is greater than 2.5cm, such position does not need to be tested.
- 5) Per KDB 648474 D04, SAR is evaluated without a headset connected to the device. When the standalone reported body-worn SAR is $\leq 1.2\text{ W/kg}$, no additional SAR evaluations using a headset are required.
- 6) Per KDB 865664 D02, SAR plot is only required for the highest measured SAR in each exposure configuration, wireless mode and frequency band combination; Plots are also required when the measured SAR is $> 1.5\text{ W/kg}$, or $> 7.0\text{ W/kg}$ for occupational exposure. The published RF exposure KDB procedures may require additional plots; for example, to support SAR to peak location separation ratio test exclusion and/or volume scan post-processing (Refer to appendix B for details).
- 7) Per KDB 648474 D04, Body-worn accessories that do not contain metallic or conductive components is 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.

GSM Notes:

- 1) Per KDB941225 D01, 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.
- 2) Per KDB 648474 D04, the device does not support DTM function. Body-worn accessory testing is typically associated with voice operations. Therefore, GSM voice was evaluated for body-worn SAR.

UMTS Notes:

1) Per KDB 941225 D01, When the maximum output power and tune-up tolerance specified for production units in a Second mode is $\leq \frac{1}{4}$ 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 Second to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the Second mode.

LTE Notes:

1) The LTE test configurations are determined according to KDB 941225 D05 SAR for LTE Devices. The general test procedures used for SAR testing can be found in Section 6.5.

2) A-MPR was disabled for all SAR test by setting NS_01 on the base station simulator. SAR tests were performed with the same number of RB and RB offsets transmitting on all TTI frames (maximum TTI)

Wi-Fi Notes:

Per KDB 248227D01:

1) When reported SAR for the initial Test

Position is ≤ 0.4 W/kg, no additional testing for the remaining Test

Position is required. Otherwise, SAR is evaluated at the subsequent highest peak SAR position until the reported SAR result is ≤ 0.8 W/kg or all Test

Position are measured. For all positions/configurations tested using the initial Test

Position and subsequent Test

Positions, when the *reported* SAR is > 0.8 W/kg, SAR is measured for these Test

Positions/configurations on the subsequent next highest measured output power channel(s) until the *reported* SAR is ≤ 1.2 W/kg or all required channels are tested..

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

3) When the highest *reported* SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is required for 2.4 GHz 802.11g/n OFDM configurations

4) The highest SAR measured for the initial Test

Position or initial test configuration should be used to determine SAR test exclusion according to the sum of 1-g SAR and SAR peak to location ratio provisions in KDB 447498. In addition, a test lab may also choose to perform standalone SAR measurements for Test

Positions and 802.11 configurations that are not required by the initial Test

Position or initial test configuration procedures and apply the results to determine simultaneous transmission SAR test exclusion, according to sum of 1-g and SAR peak to location ratio requirements to reduce the number of simultaneous transmission SAR measurements.

7.2.1 SAR measurement Results of GSM850

Antenna	Test Position	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	Note
Second	Left cheek	/	/	190/836.6	GSM	0.301	0.207	32.47	33.70	0.400	Battery 1#	/
Second	Left tilt	/	/	190/836.6	GSM	0.218	0.143	32.47	33.70	0.289	Battery 1#	/
Second	Right cheek	/	/	190/836.6	GSM	0.326	0.214	32.47	33.70	0.433	Battery 1#	/
Second	Right tilt	/	/	190/836.6	GSM	0.279	0.163	32.47	33.70	0.370	Battery 1#	/
Second	Right cheek	/	/	190/836.6	GSM	0.329	0.217	32.47	33.70	0.437	Battery 2#	/
Second	Right cheek	/	/	190/836.6	GSM	0.388	0.238	32.47	33.70	0.515	Battery 3#	Plot
Second	Right cheek	/	/	190/836.6	GSM	0.345	0.224	32.47	33.70	0.458	With SIM2	/
Main	Left cheek	/	/	190/836.6	GSM	0.125	0.096	32.72	33.70	0.157	Battery 1#	Plot
Main	Left tilt	/	/	190/836.6	GSM	0.075	0.055	32.72	33.70	0.094	Battery 1#	/
Main	Right cheek	/	/	190/836.6	GSM	0.113	0.082	32.72	33.70	0.142	Battery 1#	/
Main	Right tilt	/	/	190/836.6	GSM	0.075	0.056	32.72	33.70	0.094	Battery 1#	/
Main	Left cheek	/	/	190/836.6	GSM	0.112	0.079	32.72	33.70	0.140	Battery 2#	/
Main	Left cheek	/	/	190/836.6	GSM	0.096	0.069	32.72	33.70	0.120	Battery 3#	/
Main	Left cheek	/	/	190/836.6	GSM	0.112	0.079	32.72	33.70	0.140	With SIM2	/

Table 13: Head SAR test results of GSM850

Antenna	Test Position	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	Note
Second	Front side	15mm	/	190/836.6	GSM	0.074	0.053	32.47	33.70	0.098	Battery 1#	/
Second	Back side	15mm	/	190/836.6	GSM	0.115	0.072	32.47	33.70	0.153	Battery 1#	/
Second	Back side	15mm	/	190/836.6	GSM	0.155	0.100	32.47	33.70	0.206	Battery 1#	Plot
Second	Back side	15mm	/	190/836.6	GSM	0.102	0.066	32.47	33.70	0.135	Battery 2#	/
Second	Back side	15mm	/	190/836.6	GSM	0.105	0.068	32.47	33.70	0.139	Battery 3#	/
Second	Back side	15mm	/	190/836.6	GSM	0.114	0.073	32.47	33.70	0.151	With SIM2	/
Main	Front side	15mm	/	190/836.6	GSM	0.108	0.079	32.72	33.70	0.135	Battery 1#	/
Main	Back side	15mm	/	190/836.6	GSM	0.176	0.126	32.72	33.70	0.221	Battery 1#	/
Main	Back side	15mm	/	190/836.6	GSM	0.232	0.174	32.72	33.70	0.291	Battery 2#	Plot
Main	Back side	15mm	/	190/836.6	GSM	0.165	0.117	32.72	33.70	0.207	Battery 3#	/
Main	Back side	15mm	/	190/836.6	GSM	0.193	0.137	32.72	33.70	0.242	With SIM2	/

Table 14: Body Worn SAR test results of GSM850

Antenna	Test Position	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	Note
Second	Front side	10mm	/	190/836.6	GPRS 2TS	0.102	0.063	29.73	31.10	0.140	Battery 1#	/
Second	Back side	10mm	/	190/836.6	GPRS 2TS	0.213	0.140	29.73	31.10	0.292	Battery 1#	Plot
Second	Left side	10mm	/	190/836.6	GPRS 2TS	0.139	0.083	29.73	31.10	0.191	Battery 1#	/
Second	Right side	10mm	/	190/836.6	GPRS 2TS	0.001	0.001	29.73	31.10	0.001	Battery 1#	/
Second	Top side	10mm	/	190/836.6	GPRS 2TS	0.096	0.057	29.73	31.10	0.132	Battery 1#	/
Second	Back side	10mm	/	190/836.6	GPRS 2TS	0.176	0.111	29.73	31.10	0.241	Battery 2#	/
Second	Back side	10mm	/	190/836.6	GPRS 2TS	0.186	0.119	29.73	31.10	0.255	Battery 3#	/
Second	Back side	10mm	/	190/836.6	GPRS 2TS	0.201	0.130	29.73	31.10	0.276	With SIM2	/
Main	Front side	10mm	/	190/836.6	GPRS 3TS	0.111	0.079	28.24	29.30	0.142	Battery 1#	/
Main	Back side	10mm	/	190/836.6	GPRS 3TS	0.207	0.143	28.24	29.30	0.264	Battery 1#	Plot
Main	Left side	10mm	/	190/836.6	GPRS 3TS	0.063	0.041	28.24	29.30	0.080	Battery 1#	/
Main	Right side	10mm	/	190/836.6	GPRS 3TS	0.121	0.078	28.24	29.30	0.154	Battery 1#	/
Main	Bottom side	10mm	/	190/836.6	GPRS 3TS	0.100	0.047	28.24	29.30	0.128	Battery 1#	/
Main	Back side	10mm	/	190/836.6	GPRS 3TS	0.197	0.120	28.24	29.30	0.251	Battery 2#	/
Main	Back side	10mm	/	190/836.6	GPRS 3TS	0.202	0.144	28.24	29.30	0.258	Battery 3#	/
Main	Back side	10mm	/	190/836.6	GPRS 3TS	0.205	0.129	28.24	29.30	0.262	With SIM2	/

Table 15: Hotspot SAR test results of GSM850

Per KDB648474 D04, when hotspot mode applies, Product Specific 10-g 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:

Antenna	Test Position	Dist.	ANT State	Test Channel / Freq. (MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Conducted Power (dBm)	Max Power Without Reduction	Scaled-up 1-g SAR (W/kg)	Product Specific 10-g SAR Exclusion
Second	Front side	10mm	/	190/836.6	GPRS 2TS	0.102	0.063	29.73	31.10	0.140	Yes
Second	Back side	10mm	/	190/836.6	GPRS 2TS	0.213	0.140	29.73	31.10	0.292	Yes
Second	Left side	10mm	/	190/836.6	GPRS 2TS	0.139	0.083	29.73	31.10	0.191	Yes
Second	Right side	10mm	/	190/836.6	GPRS 2TS	0.001	0.001	29.73	31.10	0.001	Yes
Second	Top side	10mm	/	190/836.6	GPRS 2TS	0.096	0.057	29.73	31.10	0.132	Yes
Second	Back side	10mm	/	190/836.6	GPRS 2TS	0.176	0.111	29.73	31.10	0.241	Yes
Second	Back side	10mm	/	190/836.6	GPRS 2TS	0.186	0.119	29.73	31.10	0.255	Yes
Second	Back side	10mm	/	190/836.6	GPRS 2TS	0.201	0.130	29.73	31.10	0.276	Yes
Main	Front side	10mm	/	190/836.6	GPRS 3TS	0.111	0.079	28.24	29.30	0.142	Yes
Main	Back side	10mm	/	190/836.6	GPRS 3TS	0.207	0.143	28.24	29.30	0.264	Yes
Main	Left side	10mm	/	190/836.6	GPRS 3TS	0.063	0.041	28.24	29.30	0.080	Yes
Main	Right side	10mm	/	190/836.6	GPRS 3TS	0.121	0.078	28.24	29.30	0.154	Yes
Main	Bottom side	10mm	/	190/836.6	GPRS 3TS	0.100	0.047	28.24	29.30	0.128	Yes
Main	Back side	10mm	/	190/836.6	GPRS 3TS	0.197	0.120	28.24	29.30	0.251	Yes
Main	Back side	10mm	/	190/836.6	GPRS 3TS	0.202	0.144	28.24	29.30	0.258	Yes
Main	Back side	10mm	/	190/836.6	GPRS 3TS	0.205	0.129	28.24	29.30	0.262	Yes

Table 16: Product Specific 10-g SAR test reduction evaluation of GSM850

Note: According to the table above, Product Specific 10-g SAR test is not required for this frequency band.

7.2.2 SAR measurement Results of GSM1900

Antenna	Test Position	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	Note
Second	Left cheek	/	/	661/1880	GSM	0.001	0.001	29.71	30.80	0.001	Battery 1#	/
Second	Left tilt	/	/	661/1880	GSM	0.001	0.001	29.71	30.80	0.001	Battery 1#	/
Second	Right cheek	/	/	661/1880	GSM	0.009	0.005	29.71	30.80	0.012	Battery 1#	Plot
Second	Right tilt	/	/	661/1880	GSM	0.001	0.001	29.71	30.80	0.001	Battery 1#	/
Second	Right cheek	/	/	661/1880	GSM	0.001	0.001	29.71	30.80	0.001	Battery 2#	/
Second	Right cheek	/	/	661/1880	GSM	0.001	0.001	29.71	30.80	0.001	Battery 3#	/
Second	Right cheek	/	/	661/1880	GSM	0.001	0.001	29.71	30.80	0.001	With SIM2	/
Main	Left cheek	/	/	661/1880	GSM	0.224	0.146	24.69	25.60	0.276	Battery 1#	/
Main	Left tilt	/	/	661/1880	GSM	0.205	0.128	24.69	25.60	0.253	Battery 1#	/
Main	Right cheek	/	/	661/1880	GSM	0.351	0.200	24.69	25.60	0.433	Battery 1#	/
Main	Right tilt	/	/	661/1880	GSM	0.314	0.167	24.69	25.60	0.387	Battery 1#	/
Main	Right cheek	/	/	661/1880	GSM	0.466	0.252	24.69	25.60	0.575	Battery 2#	Plot
Main	Right cheek	/	/	661/1880	GSM	0.296	0.172	24.69	25.60	0.365	Battery 3#	/
Main	Right cheek	/	/	661/1880	GSM	0.353	0.202	24.69	25.60	0.435	With SIM2	/

Table 17: Head SAR test results of GSM1900

Antenna	Test Position	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	Note
Second	Front side	15mm	/	661/1880	GSM	0.119	0.062	29.71	30.80	0.153	Battery 1#	/
Second	Back side	15mm	/	661/1880	GSM	0.226	0.120	29.71	30.80	0.290	Battery 1#	Plot
Second	Back side	15mm	/	661/1880	GSM	0.189	0.098	29.71	30.80	0.243	Battery 2#	/
Second	Back side	15mm	/	661/1880	GSM	0.191	0.100	29.71	30.80	0.245	Battery 3#	/
Second	Back side	15mm	/	661/1880	GSM	0.203	0.107	29.71	30.80	0.261	With SIM2	/
Main	Front side	15mm	/	661/1880	GSM	0.160	0.098	29.80	30.90	0.206	Battery 1#	/
Main	Back side	15mm	/	661/1880	GSM	0.330	0.187	29.80	30.90	0.425	Battery 1#	Plot
Main	Back side	15mm	/	661/1880	GSM	0.263	0.153	29.80	30.90	0.339	Battery 2#	/
Main	Back side	15mm	/	661/1880	GSM	0.223	0.127	29.80	30.90	0.287	Battery 3#	/
Main	Back side	15mm	/	661/1880	GSM	0.288	0.163	29.80	30.90	0.371	With SIM2	/

Table 18: Body Worn SAR test results of GSM1900

Antenna	Test Position	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	Note
Second	Front side	10mm	/	661/1880	GPRS 3TS	0.107	0.051	21.10	22.40	0.144	Battery 1#	/
Second	Back side	10mm	/	661/1880	GPRS 3TS	0.120	0.058	21.10	22.40	0.162	Battery 1#	/
Second	Left side	10mm	/	661/1880	GPRS 3TS	0.001	0.001	21.10	22.40	0.001	Battery 1#	/
Second	Right side	10mm	/	661/1880	GPRS 3TS	0.001	0.001	21.10	22.40	0.001	Battery 1#	/
Second	Bottom side	10mm	/	661/1880	GPRS 3TS	0.292	0.124	21.10	22.40	0.394	Battery 1#	/
Second	Bottom side	10mm	/	661/1880	GPRS 3TS	0.351	0.162	21.10	22.40	0.473	Battery 2#	Plot
Second	Bottom side	10mm	/	661/1880	GPRS 3TS	0.290	0.133	21.10	22.40	0.391	Battery 3#	/
Second	Bottom side	10mm	/	661/1880	GPRS 3TS	0.342	0.154	21.10	22.40	0.461	With SIM2	/
Main	Front side	10mm	/	661/1880	GPRS 2TS	0.084	0.047	21.71	23.00	0.113	Battery 1#	/
Main	Back side	10mm	/	661/1880	GPRS 2TS	0.190	0.103	21.71	23.00	0.256	Battery 1#	Plot
Main	Left side	10mm	/	661/1880	GPRS 2TS	0.071	0.041	21.71	23.00	0.096	Battery 1#	/
Main	Right side	10mm	/	661/1880	GPRS 2TS	0.001	0.001	21.71	23.00	0.001	Battery 1#	/
Main	Top side	10mm	/	661/1880	GPRS 2TS	0.073	0.040	21.71	23.00	0.098	Battery 1#	/
Main	Back side	10mm	/	661/1880	GPRS 2TS	0.158	0.088	21.71	23.00	0.213	Battery 2#	/
Main	Back side	10mm	/	661/1880	GPRS 2TS	0.136	0.073	21.71	23.00	0.183	Battery 3#	/
Main	Back side	10mm	/	661/1880	GPRS 2TS	0.168	0.093	21.71	23.00	0.226	With SIM2	/

Table 19: Hotspot SAR test results of GSM1900

Per KDB648474 D04, when hotspot mode applies, Product Specific 10-g 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:

Antenna	Test Position	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Conducted Power (dBm)	Max Power Without Reduction	Scaled-up 1-g SAR (W/kg)	Product Specific 10-g SAR Exclusion
Second	Front side	10mm	/	661/1880	GPRS 3TS	0.107	0.051	21.10	26.4	0.363	Yes
Second	Back side	10mm	/	661/1880	GPRS 3TS	0.120	0.058	21.10	26.4	0.407	Yes
Second	Left side	10mm	/	661/1880	GPRS 3TS	0.001	0.001	21.10	26.4	0.003	Yes
Second	Right side	10mm	/	661/1880	GPRS 3TS	0.001	0.001	21.10	26.4	0.003	Yes
Second	Bottom side	10mm	/	661/1880	GPRS 3TS	0.292	0.124	21.10	26.4	0.989	Yes
Second	Bottom side	10mm	/	661/1880	GPRS 3TS	0.351	0.162	21.10	26.4	1.189	Yes
Second	Bottom side	10mm	/	661/1880	GPRS 3TS	0.290	0.133	21.10	26.4	0.983	Yes
Second	Bottom side	10mm	/	661/1880	GPRS 3TS	0.342	0.154	21.10	26.4	1.159	Yes
Main	Front side	10mm	/	661/1880	GPRS 2TS	0.084	0.047	21.71	28.2	0.374	Yes
Main	Back side	10mm	/	661/1880	GPRS 2TS	0.190	0.103	21.71	28.2	0.847	Yes
Main	Left side	10mm	/	661/1880	GPRS 2TS	0.071	0.041	21.71	28.2	0.316	Yes
Main	Right side	10mm	/	661/1880	GPRS 2TS	0.001	0.001	21.71	28.2	0.004	Yes
Main	Top side	10mm	/	661/1880	GPRS 2TS	0.073	0.040	21.71	28.2	0.325	Yes
Main	Back side	10mm	/	661/1880	GPRS 2TS	0.158	0.088	21.71	28.2	0.704	Yes
Main	Back side	10mm	/	661/1880	GPRS 2TS	0.136	0.073	21.71	28.2	0.606	Yes
Main	Back side	10mm	/	661/1880	GPRS 2TS	0.168	0.093	21.71	28.2	0.749	Yes

Table 20: Product Specific 10-g SAR test reduction evaluation of GSM1900

Note: According to the table above, Product Specific 10-g SAR test is not required for this frequency band.

7.2.3 SAR measurement Results of UMTS Band II

Antenna	Test Position	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	Note
Second	Left cheek	/	/	9400/1880	RMC	0.001	0.001	23.02	24.20	0.001	Battery 1#	/
Second	Left tilt	/	/	9400/1880	RMC	0.001	0.001	23.02	24.20	0.001	Battery 1#	/
Second	Right cheek	/	/	9400/1880	RMC	0.001	0.001	23.02	24.20	0.001	Battery 1#	/
Second	Right tilt	/	/	9400/1880	RMC	0.001	0.001	23.02	24.20	0.001	Battery 1#	/
Second	Right cheek	/	/	9400/1880	RMC	0.001	0.001	23.02	24.20	0.001	Battery 2#	/
Second	Right cheek	/	/	9400/1880	RMC	0.020	0.013	23.02	24.20	0.027	Battery 3#	Plot
Second	Right cheek	/	/	9400/1880	RMC	0.001	0.001	23.02	24.20	0.001	With SIM2	/
Main	Left cheek	/	/	9400/1880	RMC	0.338	0.222	18.35	19.60	0.451	Battery 1#	/
Main	Left tilt	/	/	9400/1880	RMC	0.400	0.242	18.35	19.60	0.533	Battery 1#	/
Main	Right cheek	/	/	9400/1880	RMC	0.500	0.300	18.35	19.60	0.667	Battery 1#	/
Main	Right tilt	/	/	9400/1880	RMC	0.496	0.264	18.35	19.60	0.661	Battery 1#	/
Main	Right cheek	/	/	9400/1880	RMC	0.725	0.395	18.35	19.60	0.967	Battery 2#	Plot
Main	Right cheek	/	/	9262/1852.4	RMC	0.599	0.351	18.39	19.60	0.791	Battery 2#	/
Main	Right cheek	/	/	9538/1907.6	RMC	0.601	0.355	18.24	19.60	0.822	Battery 2#	/
Main	Right cheek	/	/	9400/1880	RMC	0.599	0.336	18.35	19.60	0.799	Battery 3#	/
Main	Right cheek	/	/	9400/1880	RMC	0.609	0.359	18.35	19.60	0.812	With SIM2	/

Table 21: Head SAR test results of UMTS Band II

Antenna	Test Position	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	Note
Second	Front side	15mm	/	9400/1880	RMC	0.177	0.093	20.78	22.20	0.245	Battery 1#	/
Second	Back side	15mm	/	9400/1880	RMC	0.256	0.136	20.78	22.20	0.355	Battery 1#	/
Second	Back side	15mm	/	9400/1880	RMC	0.271	0.145	20.78	22.20	0.376	Battery 2#	Plot
Second	Back side	15mm	/	9400/1880	RMC	0.263	0.142	20.78	22.20	0.365	Battery 3#	/
Second	Back side	15mm	/	9400/1880	RMC	0.248	0.130	20.78	22.20	0.344	With SIM2	/
Main	Front side	15mm	/	9400/1880	RMC	0.198	0.122	21.60	23.10	0.280	Battery 1#	/
Main	Back side	15mm	/	9400/1880	RMC	0.290	0.170	21.60	23.10	0.410	Battery 1#	Plot
Main	Back side	15mm	/	9400/1880	RMC	0.283	0.163	21.60	23.10	0.400	Battery 2#	/
Main	Back side	15mm	/	9400/1880	RMC	0.281	0.162	21.60	23.10	0.397	Battery 3#	/
Main	Back side	15mm	/	9400/1880	RMC	0.284	0.165	21.60	23.10	0.401	With SIM2	/

Table 22: Body Worn SAR test results of UMTS Band II

Antenna	Test Position	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	Note
Second	Front side	10mm	/	9400/1880	RMC	0.197	0.093	18.49	19.70	0.260	Battery 1#	/
Second	Back side	10mm	/	9400/1880	RMC	0.340	0.168	18.49	19.70	0.449	Battery 1#	/
Second	Left side	10mm	/	9400/1880	RMC	0.001	0.001	18.49	19.70	0.001	Battery 1#	/
Second	Right side	10mm	/	9400/1880	RMC	0.001	0.001	18.49	19.70	0.001	Battery 1#	/
Second	Bottom side	10mm	/	9400/1880	RMC	0.578	0.273	18.49	19.70	0.764	Battery 1#	/
Second	Bottom side	10mm	/	9400/1880	RMC	0.554	0.254	18.49	19.70	0.732	Battery 2#	/
Second	Bottom side	10mm	/	9400/1880	RMC	0.583	0.275	18.49	19.70	0.770	Battery 3#	Plot
Second	Bottom side	10mm	/	9400/1880	RMC	0.582	0.274	18.49	19.70	0.769	With SIM2	/
Main	Front side	10mm	/	9400/1880	RMC	0.149	0.090	18.35	19.60	0.199	Battery 1#	/
Main	Back side	10mm	/	9400/1880	RMC	0.256	0.145	18.35	19.60	0.341	Battery 1#	/
Main	Left side	10mm	/	9400/1880	RMC	0.116	0.066	18.35	19.60	0.155	Battery 1#	/
Main	Right side	10mm	/	9400/1880	RMC	0.052	0.030	18.35	19.60	0.069	Battery 1#	/
Main	Top side	10mm	/	9400/1880	RMC	0.309	0.148	18.35	19.60	0.412	Battery 1#	Plot
Main	Top side	10mm	/	9400/1880	RMC	0.249	0.140	18.35	19.60	0.332	Battery 2#	/
Main	Top side	10mm	/	9400/1880	RMC	0.255	0.143	18.35	19.60	0.340	Battery 3#	/
Main	Top side	10mm	/	9400/1880	RMC	0.250	0.139	18.35	19.60	0.333	With SIM2	/

Table 23: Hotspot SAR test results of UMTS Band II

Per KDB648474 D04, when hotspot mode applies, Product Specific 10-g 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:

Antenna	Test Position	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Conducted Power (dBm)	Max Power Without Reduction	Scaled-up 1-g SAR (W/kg)	Product Specific 10-g SAR Exclusion
Second	Front side	10mm	/	9400/1880	RMC	0.197	0.093	18.49	22.2	0.463	Yes
Second	Back side	10mm	/	9400/1880	RMC	0.340	0.168	18.49	22.2	0.799	Yes
Second	Left side	10mm	/	9400/1880	RMC	0.001	0.001	18.49	22.2	0.002	Yes
Second	Right side	10mm	/	9400/1880	RMC	0.001	0.001	18.49	22.2	0.002	Yes
Second	Bottom side	10mm	/	9400/1880	RMC	0.578	0.273	18.49	22.2	1.358	No
Second	Bottom side	10mm	/	9400/1880	RMC	0.554	0.254	18.49	22.2	1.302	No
Second	Bottom side	10mm	/	9400/1880	RMC	0.583	0.275	18.49	22.2	1.370	No
Second	Bottom side	10mm	/	9400/1880	RMC	0.582	0.274	18.49	22.2	1.367	No
Main	Front side	10mm	/	9400/1880	RMC	0.149	0.090	18.35	23.1	0.445	Yes
Main	Back side	10mm	/	9400/1880	RMC	0.256	0.145	18.35	23.1	0.764	Yes
Main	Left side	10mm	/	9400/1880	RMC	0.116	0.066	18.35	23.1	0.346	Yes
Main	Right side	10mm	/	9400/1880	RMC	0.052	0.030	18.35	23.1	0.155	Yes
Main	Top side	10mm	/	9400/1880	RMC	0.309	0.148	18.35	23.1	0.922	Yes
Main	Top side	10mm	/	9400/1880	RMC	0.249	0.140	18.35	23.1	0.743	Yes
Main	Top side	10mm	/	9400/1880	RMC	0.255	0.143	18.35	23.1	0.761	Yes
Main	Top side	10mm	/	9400/1880	RMC	0.250	0.139	18.35	23.1	0.746	Yes

Table 24: Product Specific 10-g SAR test reduction evaluation of UMTS Band II

Note: According to the table above, only Bottom side is required for Product Specific 10-g SAR test in this frequency band.

Antenna	Test Position	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 10-g SAR (W/kg)	Accessory Information	Note
Second	Bottom side	0mm	/	9400/1880	RMC	3.520	1.360	20.78	22.20	1.886	Battery 1#	Plot
Second	Bottom side	0mm	/	9400/1880	RMC	2.890	1.240	20.78	22.20	1.720	Battery 2#	/
Second	Bottom side	0mm	/	9400/1880	RMC	3.200	1.330	20.78	22.20	1.844	Battery 3#	/
Second	Bottom side	0mm	/	9400/1880	RMC	3.000	1.260	20.78	22.20	1.747	With SIM2	/

Table 25: Product Specific 10-g SAR test results of UMTS Band II

7.2.4 SAR measurement Results of UMTS Band IV

Antenna	Test Position	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	Note
Second	Left cheek	/	/	1413/1732.6	RMC	0.015	0.012	23.55	24.30	0.017	Battery 1#	Plot
Second	Left tilt	/	/	1413/1732.6	RMC	0.001	0.001	23.55	24.30	0.001	Battery 1#	/
Second	Right cheek	/	/	1413/1732.6	RMC	0.001	0.001	23.55	24.30	0.001	Battery 1#	/
Second	Right tilt	/	/	1413/1732.6	RMC	0.001	0.001	23.55	24.30	0.001	Battery 1#	/
Second	Left cheek	/	/	1413/1732.6	RMC	0.001	0.001	23.55	24.30	0.001	Battery 2#	/
Second	Left cheek	/	/	1413/1732.6	RMC	0.001	0.001	23.55	24.30	0.001	Battery 3#	/
Second	Left cheek	/	/	1413/1732.6	RMC	0.001	0.001	23.55	24.30	0.001	With SIM2	/
Main	Left cheek	/	/	1413/1732.6	RMC	0.231	0.154	18.38	19.30	0.286	Battery 1#	/
Main	Left tilt	/	/	1413/1732.6	RMC	0.287	0.180	18.38	19.30	0.355	Battery 1#	/
Main	Right cheek	/	/	1413/1732.6	RMC	0.376	0.219	18.38	19.30	0.465	Battery 1#	/
Main	Right tilt	/	/	1413/1732.6	RMC	0.463	0.253	18.38	19.30	0.572	Battery 1#	Plot
Main	Right tilt	/	/	1413/1732.6	RMC	0.394	0.209	18.38	19.30	0.487	Battery 2#	/
Main	Right tilt	/	/	1413/1732.6	RMC	0.427	0.233	18.38	19.30	0.528	Battery 3#	/
Main	Right tilt	/	/	1413/1732.6	RMC	0.453	0.243	18.38	19.30	0.560	With SIM2	/

Table 26: Head SAR test results of UMTS Band IV

Antenna	Test Position	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	Note
Second	Front side	15mm	/	1413/1732.6	RMC	0.001	0.001	20.88	21.80	0.001	Battery 1#	/
Second	Back side	15mm	/	1413/1732.6	RMC	0.043	0.025	20.88	21.80	0.054	Battery 1#	Plot
Second	Back side	15mm	/	1413/1732.6	RMC	0.001	0.001	20.88	21.80	0.001	Battery 2#	/
Second	Back side	15mm	/	1413/1732.6	RMC	0.001	0.001	20.88	21.80	0.001	Battery 3#	/
Second	Back side	15mm	/	1413/1732.6	RMC	0.001	0.001	20.88	21.80	0.001	With SIM2	/
Main	Front side	15mm	/	1413/1732.6	RMC	0.141	0.084	21.87	22.80	0.175	Battery 1#	/
Main	Back side	15mm	/	1413/1732.6	RMC	0.273	0.157	21.87	22.80	0.338	Battery 1#	/
Main	Back side	15mm	/	1413/1732.6	RMC	0.273	0.156	21.87	22.80	0.338	Battery 2#	/
Main	Back side	15mm	/	1413/1732.6	RMC	0.310	0.189	21.87	22.80	0.384	Battery 3#	Plot
Main	Back side	15mm	/	1413/1732.6	RMC	0.275	0.156	21.87	22.80	0.341	With SIM2	/

Table 27: Body Worn SAR test results of UMTS Band IV

Antenna	Test Position	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	Note
Second	Front side	10mm	/	1413/1732.6	RMC	0.001	0.001	18.57	19.30	0.001	Battery 1#	/
Second	Back side	10mm	/	1413/1732.6	RMC	0.046	0.023	18.57	19.30	0.054	Battery 1#	/
Second	Left side	10mm	/	1413/1732.6	RMC	0.001	0.001	18.57	19.30	0.001	Battery 1#	/
Second	Right side	10mm	/	1413/1732.6	RMC	0.001	0.001	18.57	19.30	0.001	Battery 1#	/
Second	Bottom side	10mm	/	1413/1732.6	RMC	0.069	0.032	18.57	19.30	0.082	Battery 1#	/
Second	Bottom side	10mm	/	1413/1732.6	RMC	0.101	0.053	18.57	19.30	0.119	Battery 2#	Plot
Second	Bottom side	10mm	/	1413/1732.6	RMC	0.079	0.036	18.57	19.30	0.093	Battery 3#	/
Second	Bottom side	10mm	/	1413/1732.6	RMC	0.076	0.036	18.57	19.30	0.090	With SIM2	/
Main	Front side	10mm	/	1413/1732.6	RMC	0.119	0.071	18.38	19.30	0.147	Battery 1#	/
Main	Back side	10mm	/	1413/1732.6	RMC	0.222	0.136	18.38	19.30	0.274	Battery 1#	Plot
Main	Left side	10mm	/	1413/1732.6	RMC	0.096	0.052	18.38	19.30	0.119	Battery 1#	/
Main	Right side	10mm	/	1413/1732.6	RMC	0.001	0.001	18.38	19.30	0.001	Battery 1#	/
Main	Top side	10mm	/	1413/1732.6	RMC	0.202	0.111	18.38	19.30	0.250	Battery 1#	/
Main	Back side	10mm	/	1413/1732.6	RMC	0.218	0.126	18.38	19.30	0.269	Battery 2#	/
Main	Back side	10mm	/	1413/1732.6	RMC	0.212	0.124	18.38	19.30	0.262	Battery 3#	/
Main	Back side	10mm	/	1413/1732.6	RMC	0.218	0.124	18.38	19.30	0.269	With SIM2	/

Table 28: Hotspot SAR test results of UMTS Band IV

Per KDB648474 D04, when hotspot mode applies, Product Specific 10-g 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:

Antenna	Test Position	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Conducted Power (dBm)	Max Power Without Reduction	Scaled-up 1-g SAR (W/kg)	Product Specific 10-g SAR Exclusion
Second	Front side	10mm	/	1413/1732.6	RMC	0.001	0.001	18.57	21.80	0.002	Yes
Second	Back side	10mm	/	1413/1732.6	RMC	0.046	0.023	18.57	21.80	0.097	Yes
Second	Left side	10mm	/	1413/1732.6	RMC	0.001	0.001	18.57	21.80	0.002	Yes
Second	Right side	10mm	/	1413/1732.6	RMC	0.001	0.001	18.57	21.80	0.002	Yes
Second	Bottom side	10mm	/	1413/1732.6	RMC	0.069	0.032	18.57	21.80	0.145	Yes
Second	Bottom side	10mm	/	1413/1732.6	RMC	0.101	0.053	18.57	21.80	0.212	Yes
Second	Bottom side	10mm	/	1413/1732.6	RMC	0.079	0.036	18.57	21.80	0.166	Yes
Second	Bottom side	10mm	/	1413/1732.6	RMC	0.076	0.036	18.57	21.80	0.160	Yes
Main	Front side	10mm	/	1413/1732.6	RMC	0.119	0.071	18.38	22.80	0.329	Yes
Main	Back side	10mm	/	1413/1732.6	RMC	0.222	0.136	18.38	22.80	0.614	Yes
Main	Left side	10mm	/	1413/1732.6	RMC	0.096	0.052	18.38	22.80	0.266	Yes
Main	Right side	10mm	/	1413/1732.6	RMC	0.001	0.001	18.38	22.80	0.003	Yes
Main	Top side	10mm	/	1413/1732.6	RMC	0.202	0.111	18.38	22.80	0.559	Yes
Main	Back side	10mm	/	1413/1732.6	RMC	0.218	0.126	18.38	22.80	0.603	Yes
Main	Back side	10mm	/	1413/1732.6	RMC	0.212	0.124	18.38	22.80	0.587	Yes
Main	Back side	10mm	/	1413/1732.6	RMC	0.218	0.124	18.38	22.80	0.603	Yes

Table 29: Product Specific 10-g SAR test reduction evaluation of UMTS Band IV

Note: According to the table above, Product Specific 10-g SAR test is not required for this frequency band.

7.2.5 SAR measurement Results of UMTS Band V

Antenna	Test Position	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	Note
Second	Left cheek	/	/	4182/836.4	RMC	0.249	0.170	24.26	25.50	0.331	Battery 1#	/
Second	Left tilt	/	/	4182/836.4	RMC	0.197	0.129	24.26	25.50	0.262	Battery 1#	/
Second	Right cheek	/	/	4182/836.4	RMC	0.442	0.270	24.26	25.50	0.588	Battery 1#	Plot
Second	Right tilt	/	/	4182/836.4	RMC	0.264	0.156	24.26	25.50	0.351	Battery 1#	/
Second	Right cheek	/	/	4182/836.4	RMC	0.380	0.247	24.26	25.50	0.506	Battery 2#	/
Second	Right cheek	/	/	4182/836.4	RMC	0.407	0.262	24.26	25.50	0.541	Battery 3#	/
Second	Right cheek	/	/	4182/836.4	RMC	0.405	0.256	24.26	25.50	0.539	With SIM2	/
Main	Left cheek	/	Tuning State1	4182/836.4	RMC	0.109	0.085	22.52	23.40	0.133	Battery 1#	/
Main	Left cheek	/	Tuning State2	4182/836.4	RMC	0.102	0.087	22.52	23.40	0.125	Battery 1#	/
Main	Left tilt	/	Tuning State1	4182/836.4	RMC	0.060	0.045	22.52	23.40	0.073	Battery 1#	/
Main	Right cheek	/	Tuning State1	4182/836.4	RMC	0.118	0.093	22.52	23.40	0.145	Battery 1#	Plot
Main	Right tilt	/	Tuning State1	4182/836.4	RMC	0.065	0.049	22.52	23.40	0.080	Battery 1#	/
Main	Right cheek	/	Tuning State1	4182/836.4	RMC	0.102	0.087	22.52	23.40	0.125	Battery 2#	/
Main	Right cheek	/	Tuning State1	4182/836.4	RMC	0.098	0.073	22.52	23.40	0.120	Battery 3#	/
Main	Right cheek	/	Tuning State1	4182/836.4	RMC	0.106	0.087	22.52	23.40	0.130	With SIM2	/
Main	Right cheek	/	Tuning State2	4182/836.4	RMC	0.102	0.097	22.52	23.40	0.125	Battery 1#	/

Table 30: Head SAR test results of UMTS Band V

Antenna	Test Position	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	Note
Second	Front side	15mm	/	4182/836.4	RMC	0.075	0.054	24.26	25.50	0.100	Battery 1#	/
Second	Back side	15mm	/	4182/836.4	RMC	0.143	0.096	24.26	25.50	0.190	Battery 1#	Plot
Second	Back side	15mm	/	4182/836.4	RMC	0.106	0.069	24.26	25.50	0.141	Battery 2#	/
Second	Back side	15mm	/	4182/836.4	RMC	0.108	0.070	24.26	25.50	0.144	Battery 3#	/
Second	Back side	15mm	/	4182/836.4	RMC	0.097	0.063	24.26	25.50	0.129	With SIM2	/
Main	Front side	15mm	Tuning State1	4182/836.4	RMC	0.138	0.101	23.96	24.90	0.171	Battery 1#	/
Main	Front side	15mm	Tuning State2	4182/836.4	RMC	0.112	0.082	23.96	24.90	0.139	Battery 1#	/
Main	Back side	15mm	Tuning State1	4182/836.4	RMC	0.243	0.179	23.96	24.90	0.302	Battery 1#	Plot
Main	Back side	15mm	Tuning State1	4182/836.4	RMC	0.240	0.174	23.96	24.90	0.298	Battery 2#	/
Main	Back side	15mm	Tuning State1	4182/836.4	RMC	0.230	0.165	23.96	24.90	0.286	Battery 3#	/
Main	Back side	15mm	Tuning State1	4182/836.4	RMC	0.211	0.150	23.96	24.90	0.262	With SIM2	/
Main	Back side	15mm	Tuning State2	4182/836.4	RMC	0.206	0.148	23.96	24.90	0.256	Battery 1#	/

Table 31: Body Worn SAR test results of UMTS Band V

Antenna	Test Position	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	Note
Second	Front side	10mm	/	4182/836.4	RMC	0.117	0.076	24.26	25.50	0.156	Battery 1#	/
Second	Back side	10mm	/	4182/836.4	RMC	0.257	0.169	24.26	25.50	0.342	Battery 1#	Plot
Second	Left side	10mm	/	4182/836.4	RMC	0.132	0.077	24.26	25.50	0.176	Battery 1#	/
Second	Right side	10mm	/	4182/836.4	RMC	0.073	0.049	24.26	25.50	0.097	Battery 1#	/
Second	Top side	10mm	/	4182/836.4	RMC	0.110	0.065	24.26	25.50	0.146	Battery 1#	/
Second	Back side	10mm	/	4182/836.4	RMC	0.205	0.130	24.26	25.50	0.273	Battery 2#	/
Second	Back side	10mm	/	4182/836.4	RMC	0.208	0.132	24.26	25.50	0.277	Battery 3#	/
Second	Back side	10mm	/	4182/836.4	RMC	0.187	0.119	24.26	25.50	0.249	With SIM2	/
Main	Front side	10mm	Tuning State1	4182/836.4	RMC	0.115	0.072	22.52	23.40	0.141	Battery 1#	/
Main	Front side	10mm	Tuning State2	4182/836.4	RMC	0.113	0.070	22.52	23.40	0.138	Battery 1#	/
Main	Back side	10mm	Tuning State1	4182/836.4	RMC	0.282	0.169	22.52	23.40	0.345	Battery 1#	Plot
Main	Left side	10mm	Tuning State1	4182/836.4	RMC	0.097	0.063	22.52	23.40	0.119	Battery 1#	/
Main	Right side	10mm	Tuning State1	4182/836.4	RMC	0.139	0.091	22.52	23.40	0.170	Battery 1#	/
Main	Bottom side	10mm	Tuning State1	4182/836.4	RMC	0.097	0.051	22.52	23.40	0.119	Battery 1#	/
Main	Back side	10mm	Tuning State1	4182/836.4	RMC	0.218	0.156	22.52	23.40	0.267	Battery 2#	/
Main	Back side	10mm	Tuning State1	4182/836.4	RMC	0.198	0.142	22.52	23.40	0.242	Battery 3#	/
Main	Back side	10mm	Tuning State1	4182/836.4	RMC	0.174	0.125	22.52	23.40	0.213	With SIM2	/
Main	Back side	10mm	Tuning State2	4182/836.4	RMC	0.250	0.155	22.52	23.40	0.306	Battery 1#	/

Table 32: Hotspot SAR test results of UMTS Band V

Per KDB648474 D04, when hotspot mode applies, Product Specific 10-g 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:

Antenna	Test Position	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Conducted Power (dBm)	Max Power Without Reduction	Scaled-up 1-g SAR (W/kg)	Product Specific 10-g SAR Exclusion
Second	Front side	10mm	/	4182/836.4	RMC	0.117	0.076	24.26	25.5	0.156	Yes
Second	Back side	10mm	/	4182/836.4	RMC	0.257	0.169	24.26	25.5	0.342	Yes
Second	Left side	10mm	/	4182/836.4	RMC	0.132	0.077	24.26	25.5	0.176	Yes
Second	Right side	10mm	/	4182/836.4	RMC	0.073	0.049	24.26	25.5	0.097	Yes
Second	Top side	10mm	/	4182/836.4	RMC	0.110	0.065	24.26	25.5	0.146	Yes
Second	Back side	10mm	/	4182/836.4	RMC	0.205	0.130	24.26	25.5	0.273	Yes
Second	Back side	10mm	/	4182/836.4	RMC	0.208	0.132	24.26	25.5	0.277	Yes
Second	Back side	10mm	/	4182/836.4	RMC	0.187	0.119	24.26	25.5	0.249	Yes
Main	Front side	10mm	Tuning State1	4182/836.4	RMC	0.115	0.072	22.52	24.9	0.199	Yes
Main	Front side	10mm	Tuning State2	4182/836.4	RMC	0.113	0.070	22.52	24.9	0.195	Yes
Main	Back side	10mm	Tuning State1	4182/836.4	RMC	0.282	0.169	22.52	24.9	0.488	Yes
Main	Left side	10mm	Tuning State1	4182/836.4	RMC	0.097	0.063	22.52	24.9	0.168	Yes
Main	Right side	10mm	Tuning State1	4182/836.4	RMC	0.139	0.091	22.52	24.9	0.240	Yes
Main	Bottom side	10mm	Tuning State1	4182/836.4	RMC	0.097	0.051	22.52	24.9	0.168	Yes
Main	Back side	10mm	Tuning State1	4182/836.4	RMC	0.218	0.156	22.52	24.9	0.377	Yes
Main	Back side	10mm	Tuning State1	4182/836.4	RMC	0.198	0.142	22.52	24.9	0.343	Yes
Main	Back side	10mm	Tuning State1	4182/836.4	RMC	0.174	0.125	22.52	24.9	0.301	Yes
Main	Back side	10mm	Tuning State2	4182/836.4	RMC	0.250	0.155	22.52	24.9	0.432	Yes

Table 33: Product Specific 10-g SAR test reduction evaluation of UMTS Band V

Note: According to the table above, Product Specific 10-g SAR test is not required for this frequency band.

7.2.6 SAR measurement Results of LTE Band 2

Antenna	Test Position	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	Note
Second	Left cheek	/	/	18900/1880	20M QPSK 1RB@50	0.001	0.001	22.18	23.30	0.001	Battery 1#	/
Second	Left tilt	/	/	18900/1880	20M QPSK 1RB@50	0.001	0.001	22.18	23.30	0.001	Battery 1#	/
Second	Right cheek	/	/	18900/1880	20M QPSK 1RB@50	0.001	0.001	22.18	23.30	0.001	Battery 1#	/
Second	Right tilt	/	/	18900/1880	20M QPSK 1RB@50	0.001	0.001	22.18	23.30	0.001	Battery 1#	/
Second	Left cheek	/	/	19100/1900	20M QPSK 50%RB@0	0.001	0.001	21.27	22.30	0.001	Battery 1#	/
Second	Left tilt	/	/	19100/1900	20M QPSK 50%RB@0	0.001	0.001	21.27	22.30	0.001	Battery 1#	/
Second	Right cheek	/	/	19100/1900	20M QPSK 50%RB@0	0.013	0.008	21.27	22.30	0.016	Battery 1#	Plot
Second	Right tilt	/	/	19100/1900	20M QPSK 50%RB@0	0.001	0.001	21.27	22.30	0.001	Battery 1#	/
Second	Right cheek	/	/	19100/1900	20M QPSK 50%RB@0	0.001	0.001	21.27	22.30	0.001	Battery 2#	/
Second	Right cheek	/	/	19100/1900	20M QPSK 50%RB@0	0.001	0.001	21.27	22.30	0.001	Battery 3#	/
Second	Right cheek	/	/	19100/1900	20M QPSK 50%RB@0	0.001	0.001	21.27	22.30	0.001	With SIM2	/
Main	Left cheek	/	/	18900/1880	20M QPSK 1RB@50	0.269	0.178	18.18	19.40	0.356	Battery 1#	/
Main	Left tilt	/	/	18900/1880	20M QPSK 1RB@50	0.341	0.207	18.18	19.40	0.452	Battery 1#	/
Main	Right cheek	/	/	18900/1880	20M QPSK 1RB@50	0.402	0.242	18.18	19.40	0.532	Battery 1#	/
Main	Right tilt	/	/	18900/1880	20M QPSK 1RB@50	0.436	0.231	18.18	19.40	0.577	Battery 1#	/
Main	Left cheek	/	/	19100/1900	20M QPSK 50%RB@0	0.288	0.192	18.23	19.40	0.377	Battery 1#	/
Main	Left tilt	/	/	19100/1900	20M QPSK 50%RB@0	0.382	0.231	18.23	19.40	0.500	Battery 1#	/
Main	Right cheek	/	/	19100/1900	20M QPSK 50%RB@0	0.548	0.312	18.23	19.40	0.717	Battery 1#	Plot
Main	Right tilt	/	/	19100/1900	20M QPSK 50%RB@0	0.466	0.246	18.23	19.40	0.610	Battery 1#	/
Main	Right cheek	/	/	19100/1900	20M QPSK 50%RB@0	0.454	0.273	18.23	19.40	0.594	Battery 2#	/
Main	Right cheek	/	/	19100/1900	20M QPSK 50%RB@0	0.403	0.240	18.23	19.40	0.528	Battery 3#	/
Main	Right cheek	/	/	19100/1900	20M QPSK 50%RB@0	0.477	0.287	18.23	19.40	0.624	With SIM2	/

Table 34: Head SAR test results of LTE Band 2

Antenna	Test Position	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	Note
Second	Front side	15mm	/	18900/1880	20M QPSK 1RB@50	0.123	0.063	20.76	21.80	0.156	Battery 1#	/
Second	Back side	15mm	/	18900/1880	20M QPSK 1RB@50	0.220	0.114	20.76	21.80	0.280	Battery 1#	/
Second	Front side	15mm	/	19100/1900	20M QPSK 50%RB@0	0.154	0.080	20.79	21.80	0.194	Battery 1#	/
Second	Back side	15mm	/	19100/1900	20M QPSK 50%RB@0	0.313	0.165	20.79	21.80	0.395	Battery 1#	Plot
Second	Back side	15mm	/	19100/1900	20M QPSK 50%RB@0	0.291	0.172	20.79	21.80	0.367	Battery 2#	/
Second	Back side	15mm	/	19100/1900	20M QPSK 50%RB@0	0.292	0.151	20.79	21.80	0.368	Battery 3#	/
Second	Back side	15mm	/	19100/1900	20M QPSK 50%RB@0	0.274	0.142	20.79	21.80	0.346	With SIM2	/
Main	Front side	15mm	/	18900/1880	20M QPSK 1RB@50	0.178	0.109	22.08	23.40	0.241	Battery 1#	/
Main	Back side	15mm	/	18900/1880	20M QPSK 1RB@50	0.408	0.234	22.08	23.40	0.553	Battery 1#	Plot
Main	Front side	15mm	/	19100/1900	20M QPSK 50%RB@0	0.177	0.110	21.68	22.90	0.234	Battery 1#	/
Main	Back side	15mm	/	19100/1900	20M QPSK 50%RB@0	0.290	0.171	21.68	22.90	0.384	Battery 1#	/
Main	Back side	15mm	/	18900/1880	20M QPSK 1RB@50	0.307	0.181	22.08	23.40	0.416	Battery 2#	/
Main	Back side	15mm	/	18900/1880	20M QPSK 1RB@50	0.332	0.189	22.08	23.40	0.450	Battery 3#	/
Main	Back side	15mm	/	18900/1880	20M QPSK 1RB@50	0.367	0.213	22.08	23.40	0.497	With SIM2	/

Table 35: Body Worn SAR test results of LTE Band 2

Antenna	Test Position	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	Note
Second	Front side	10mm	/	18700/1860	20M QPSK 1RB@50	0.147	0.070	18.24	19.60	0.201	Battery 1#	/
Second	Back side	10mm	/	18700/1860	20M QPSK 1RB@50	0.238	0.114	18.24	19.60	0.326	Battery 1#	/
Second	Left side	10mm	/	18700/1860	20M QPSK 1RB@50	0.001	0.001	18.24	19.60	0.001	Battery 1#	/
Second	Right side	10mm	/	18700/1860	20M QPSK 1RB@50	0.001	0.001	18.24	19.60	0.001	Battery 1#	/
Second	Bottom side	10mm	/	18700/1860	20M QPSK 1RB@50	0.532	0.248	18.24	19.60	0.728	Battery 1#	/
Second	Front side	10mm	/	19100/1900	20M QPSK 50%RB@0	0.214	0.102	18.27	19.60	0.291	Battery 1#	/
Second	Back side	10mm	/	19100/1900	20M QPSK 50%RB@0	0.356	0.171	18.27	19.60	0.484	Battery 1#	/
Second	Left side	10mm	/	19100/1900	20M QPSK 50%RB@0	0.001	0.001	18.27	19.60	0.001	Battery 1#	/
Second	Right side	10mm	/	19100/1900	20M QPSK 50%RB@0	0.001	0.001	18.27	19.60	0.001	Battery 1#	/
Second	Bottom side	10mm	/	19100/1900	20M QPSK 50%RB@0	0.615	0.294	18.27	19.60	0.835	Battery 1#	Plot
Second	Bottom side	10mm	/	18700/1860	20M QPSK 50%RB@0	0.481	0.220	18.20	19.60	0.664	Battery 1#	/
Second	Bottom side	10mm	/	18900/1880	20M QPSK 50%RB@0	0.505	0.236	18.24	19.60	0.691	Battery 1#	/
Second	Bottom side	10mm	/	19100/1900	20M QPSK 50%RB@0	0.541	0.255	18.27	19.60	0.735	Battery 2#	/
Second	Bottom side	10mm	/	19100/1900	20M QPSK 50%RB@0	0.560	0.264	18.27	19.60	0.761	Battery 3#	/
Second	Bottom side	10mm	/	19100/1900	20M QPSK 50%RB@0	0.561	0.263	18.27	19.60	0.762	With SIM2	/
Second	Bottom side	10mm	/	18900/1880	20M QPSK 100%RB@0	0.533	0.243	18.21	19.60	0.734	Battery 1#	/
Main	Front side	10mm	/	18900/1880	20M QPSK 1RB@50	0.123	0.075	18.18	19.40	0.163	Battery 1#	/
Main	Back side	10mm	/	18900/1880	20M QPSK 1RB@50	0.215	0.124	18.18	19.40	0.285	Battery 1#	/
Main	Left side	10mm	/	18900/1880	20M QPSK 1RB@50	0.100	0.057	18.18	19.40	0.132	Battery 1#	/
Main	Right side	10mm	/	18900/1880	20M QPSK 1RB@50	0.055	0.031	18.18	19.40	0.073	Battery 1#	/
Main	Top side	10mm	/	18900/1880	20M QPSK 1RB@50	0.242	0.133	18.18	19.40	0.320	Battery 1#	/
Main	Front side	10mm	/	19100/1900	20M QPSK 50%RB@0	0.138	0.084	18.23	19.40	0.181	Battery 1#	/
Main	Back side	10mm	/	19100/1900	20M QPSK 50%RB@0	0.237	0.136	18.23	19.40	0.310	Battery 1#	/
Main	Left side	10mm	/	19100/1900	20M QPSK 50%RB@0	0.105	0.060	18.23	19.40	0.137	Battery 1#	/
Main	Right side	10mm	/	19100/1900	20M QPSK 50%RB@0	0.057	0.033	18.23	19.40	0.075	Battery 1#	/
Main	Top side	10mm	/	19100/1900	20M QPSK 50%RB@0	0.252	0.135	18.23	19.40	0.330	Battery 1#	Plot
Main	Top side	10mm	/	19100/1900	20M QPSK 50%RB@0	0.246	0.137	18.23	19.40	0.322	Battery 2#	/
Main	Top side	10mm	/	19100/1900	20M QPSK 50%RB@0	0.237	0.133	18.23	19.40	0.310	Battery 3#	/
Main	Top side	10mm	/	19100/1900	20M QPSK 50%RB@0	0.247	0.138	18.23	19.40	0.323	With SIM2	/

Table 36: Hotspot SAR test results of LTE Band 2

Per KDB648474 D04, when hotspot mode applies, Product Specific 10-g 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:

Antenna	Test Position	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Conducted Power (dBm)	Max Power Without Reduction	Scaled-up 1-g SAR (W/kg)	Product Specific 10-g SAR Exclusion
Second	Front side	10mm	/	18700/1860	20M QPSK 1RB@50	0.147	0.070	18.24	21.80	0.334	Yes
Second	Back side	10mm	/	18700/1860	20M QPSK 1RB@50	0.238	0.114	18.24	21.80	0.540	Yes
Second	Left side	10mm	/	18700/1860	20M QPSK 1RB@50	0.001	0.001	18.24	21.80	0.002	Yes
Second	Right side	10mm	/	18700/1860	20M QPSK 1RB@50	0.001	0.001	18.24	21.80	0.002	Yes
Second	Bottom side	10mm	/	18700/1860	20M QPSK 1RB@50	0.532	0.248	18.24	21.80	1.208	No
Second	Front side	10mm	/	19100/1900	20M QPSK 50%RB@0	0.214	0.102	18.27	21.80	0.482	Yes
Second	Back side	10mm	/	19100/1900	20M QPSK 50%RB@0	0.356	0.171	18.27	21.80	0.803	Yes
Second	Left side	10mm	/	19100/1900	20M QPSK 50%RB@0	0.001	0.001	18.27	21.80	0.002	Yes
Second	Right side	10mm	/	19100/1900	20M QPSK 50%RB@0	0.001	0.001	18.27	21.80	0.002	Yes
Second	Bottom side	10mm	/	19100/1900	20M QPSK 50%RB@0	0.615	0.294	18.27	21.80	1.386	No
Second	Bottom side	10mm	/	18700/1860	20M QPSK 50%RB@0	0.481	0.220	18.20	21.80	1.102	Yes
Second	Bottom side	10mm	/	18900/1880	20M QPSK 50%RB@0	0.505	0.236	18.24	21.80	1.146	Yes
Second	Bottom side	10mm	/	19100/1900	20M QPSK 50%RB@0	0.541	0.255	18.27	21.80	1.220	No
Second	Bottom side	10mm	/	19100/1900	20M QPSK 50%RB@0	0.560	0.264	18.27	21.80	1.262	No
Second	Bottom side	10mm	/	19100/1900	20M QPSK 50%RB@0	0.561	0.263	18.27	21.80	1.265	No
Second	Bottom side	10mm	/	18900/1880	20M QPSK 100%RB@0	0.533	0.243	18.21	21.80	1.218	No
Main	Front side	10mm	/	18900/1880	20M QPSK 1RB@50	0.123	0.075	18.18	23.40	0.409	Yes
Main	Back side	10mm	/	18900/1880	20M QPSK 1RB@50	0.215	0.124	18.18	23.40	0.715	Yes
Main	Left side	10mm	/	18900/1880	20M QPSK 1RB@50	0.100	0.057	18.18	23.40	0.333	Yes
Main	Right side	10mm	/	18900/1880	20M QPSK 1RB@50	0.055	0.031	18.18	23.40	0.183	Yes
Main	Top side	10mm	/	18900/1880	20M QPSK 1RB@50	0.242	0.133	18.18	23.40	0.805	Yes
Main	Front side	10mm	/	19100/1900	20M QPSK 50%RB@0	0.138	0.084	18.23	22.90	0.404	Yes
Main	Back side	10mm	/	19100/1900	20M QPSK 50%RB@0	0.237	0.136	18.23	22.90	0.695	Yes
Main	Left side	10mm	/	19100/1900	20M QPSK 50%RB@0	0.105	0.060	18.23	22.90	0.308	Yes
Main	Right side	10mm	/	19100/1900	20M QPSK 50%RB@0	0.057	0.033	18.23	22.90	0.167	Yes
Main	Top side	10mm	/	19100/1900	20M QPSK 50%RB@0	0.252	0.135	18.23	22.90	0.739	Yes
Main	Top side	10mm	/	19100/1900	20M QPSK 50%RB@0	0.246	0.137	18.23	22.90	0.721	Yes
Main	Top side	10mm	/	19100/1900	20M QPSK 50%RB@0	0.237	0.133	18.23	22.90	0.695	Yes
Main	Top side	10mm	/	19100/1900	20M QPSK 50%RB@0	0.247	0.138	18.23	22.90	0.724	Yes

Table 37: Product Specific 10-g SAR test reduction evaluation of LTE Band 2

Note: According to the table above, only Bottom side is required for Product Specific 10-g SAR test in this frequency band.

Antenna	Test Position	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 10-g SAR (W/kg)	Accessory Information	Note
Second	Bottom side	0mm	/	18900/1880	20M QPSK 1RB@50	3.280	1.240	20.76	21.80	1.576	Battery 1#	/
Second	Bottom side	0mm	/	19100/1900	20M QPSK 50%RB@0	3.100	1.160	20.79	21.80	1.464	Battery 1#	/
Second	Bottom side	0mm	/	18900/1880	20M QPSK 1RB@50	2.960	1.230	20.76	21.80	1.563	Battery 2#	/
Second	Bottom side	0mm	/	18900/1880	20M QPSK 1RB@50	4.320	1.620	20.76	21.80	2.058	Battery 3#	Plot
Second	Bottom side	0mm	/	18700/1860	20M QPSK 1RB@50	3.500	1.310	20.71	21.80	1.684	Battery 3#	/
Second	Bottom side	0mm	/	19100/1900	20M QPSK 1RB@50	2.760	1.050	20.75	21.80	1.337	Battery 3#	/
Second	Bottom side	0mm	/	18900/1880	20M QPSK 1RB@50	3.590	1.390	20.76	21.80	1.766	With SIM2	/
Second	Bottom side	0mm	/	18900/1880	20M QPSK 100%RB@0	3.250	1.270	20.72	21.80	1.629	Battery 3#	/

Table 38: Product Specific 10-g SAR test results of LTE Band 2

7.2.7 SAR measurement Results of LTE Band 4

Antenna	Test Position	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	Note
Second	Left cheek	/	/	20175/1732.5	20M QPSK 1RB@50	0.001	0.001	22.73	24.00	0.001	Battery 1#	/
Second	Left tilt	/	/	20175/1732.5	20M QPSK 1RB@50	0.001	0.001	22.73	24.00	0.001	Battery 1#	/
Second	Right cheek	/	/	20175/1732.5	20M QPSK 1RB@50	0.009	0.007	22.73	24.00	0.012	Battery 1#	Plot
Second	Right tilt	/	/	20175/1732.5	20M QPSK 1RB@50	0.001	0.001	22.73	24.00	0.001	Battery 1#	/
Second	Left cheek	/	/	20050/1720	20M QPSK 50%RB@50	0.001	0.001	21.82	23.00	0.001	Battery 1#	/
Second	Left tilt	/	/	20050/1720	20M QPSK 50%RB@50	0.001	0.001	21.82	23.00	0.001	Battery 1#	/
Second	Right cheek	/	/	20050/1720	20M QPSK 50%RB@50	0.001	0.001	21.82	23.00	0.001	Battery 1#	/
Second	Right tilt	/	/	20050/1720	20M QPSK 50%RB@50	0.001	0.001	21.82	23.00	0.001	Battery 1#	/
Second	Right cheek	/	/	20175/1732.5	20M QPSK 1RB@50	0.001	0.001	22.73	24.00	0.001	Battery 2#	/
Second	Right cheek	/	/	20175/1732.5	20M QPSK 1RB@50	0.001	0.001	22.73	24.00	0.001	Battery 3#	/
Second	Right cheek	/	/	20175/1732.5	20M QPSK 1RB@50	0.001	0.001	22.73	24.00	0.001	With SIM2	/

Table 39: Head SAR test results of LTE Band 4

Antenna	Test Position	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	Note
Second	Front side	15mm	/	20175/1732.5	20M QPSK 1RB@50	0.001	0.001	20.36	21.50	0.001	Battery 1#	/
Second	Back side	15mm	/	20175/1732.5	20M QPSK 1RB@50	0.035	0.021	20.36	21.50	0.045	Battery 1#	Plot
Second	Front side	15mm	/	20050/1720	20M QPSK 50%RB@50	0.001	0.001	20.39	21.50	0.001	Battery 1#	/
Second	Back side	15mm	/	20050/1720	20M QPSK 50%RB@50	0.001	0.001	20.39	21.50	0.001	Battery 1#	/
Second	Back side	15mm	/	20175/1732.5	20M QPSK 1RB@50	0.001	0.001	20.36	21.50	0.001	Battery 2#	/
Second	Back side	15mm	/	20175/1732.5	20M QPSK 1RB@50	0.001	0.001	20.36	21.50	0.001	Battery 3#	/
Second	Back side	15mm	/	20175/1732.5	20M QPSK 1RB@50	0.001	0.001	20.36	21.50	0.001	With SIM2	/

Table 40: Body Worn SAR test results of LTE Band 4

Antenna	Test Position	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	Note
Second	Front side	10mm	/	20175/1732.5	20M QPSK 1RB@50	0.001	0.001	19.81	21.00	0.001	Battery 1#	/
Second	Back side	10mm	/	20175/1732.5	20M QPSK 1RB@50	0.053	0.025	19.81	21.00	0.070	Battery 1#	/
Second	Left side	10mm	/	20175/1732.5	20M QPSK 1RB@50	0.001	0.001	19.81	21.00	0.001	Battery 1#	/
Second	Right side	10mm	/	20175/1732.5	20M QPSK 1RB@50	0.001	0.001	19.81	21.00	0.001	Battery 1#	/
Second	Bottom side	10mm	/	20175/1732.5	20M QPSK 1RB@50	0.075	0.035	19.81	21.00	0.099	Battery 1#	/
Second	Front side	10mm	/	20050/1720	20M QPSK 50%RB@50	0.001	0.001	19.82	21.00	0.001	Battery 1#	/
Second	Back side	10mm	/	20050/1720	20M QPSK 50%RB@50	0.051	0.025	19.82	21.00	0.067	Battery 1#	/
Second	Left side	10mm	/	20050/1720	20M QPSK 50%RB@50	0.001	0.001	19.82	21.00	0.001	Battery 1#	/
Second	Right side	10mm	/	20050/1720	20M QPSK 50%RB@50	0.001	0.001	19.82	21.00	0.001	Battery 1#	/
Second	Bottom side	10mm	/	20050/1720	20M QPSK 50%RB@50	0.065	0.031	19.82	21.00	0.085	Battery 1#	/
Second	Bottom side	10mm	/	20175/1732.5	20M QPSK 1RB@50	0.120	0.061	19.81	21.00	0.158	Battery 2#	Plot
Second	Bottom side	10mm	/	20175/1732.5	20M QPSK 1RB@50	0.075	0.035	19.81	21.00	0.099	Battery 3#	/
Second	Bottom side	10mm	/	20175/1732.5	20M QPSK 1RB@50	0.080	0.037	19.81	21.00	0.105	With SIM2	/

Table 41: Hotspot SAR test results of LTE Band 4

Per KDB648474 D04, when hotspot mode applies, Product Specific 10-g 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:

Antenna	Test Position	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Conducted Power (dBm)	Max Power Without Reduction	Scaled-up 1-g SAR (W/kg)	Product Specific 10-g SAR Exclusion
Second	Front side	10mm	/	20175/1732.5	20M QPSK 1RB@50	0.001	0.001	19.81	21.5	0.001	Yes
Second	Back side	10mm	/	20175/1732.5	20M QPSK 1RB@50	0.053	0.025	19.81	21.5	0.078	Yes
Second	Left side	10mm	/	20175/1732.5	20M QPSK 1RB@50	0.001	0.001	19.81	21.5	0.001	Yes
Second	Right side	10mm	/	20175/1732.5	20M QPSK 1RB@50	0.001	0.001	19.81	21.5	0.001	Yes
Second	Bottom side	10mm	/	20175/1732.5	20M QPSK 1RB@50	0.075	0.035	19.81	21.5	0.111	Yes
Second	Front side	10mm	/	20050/1720	20M QPSK 50%RB@50	0.001	0.001	19.82	21.5	0.001	Yes
Second	Back side	10mm	/	20050/1720	20M QPSK 50%RB@50	0.051	0.025	19.82	21.5	0.075	Yes
Second	Left side	10mm	/	20050/1720	20M QPSK 50%RB@50	0.001	0.001	19.82	21.5	0.001	Yes
Second	Right side	10mm	/	20050/1720	20M QPSK 50%RB@50	0.001	0.001	19.82	21.5	0.001	Yes
Second	Bottom side	10mm	/	20050/1720	20M QPSK 50%RB@50	0.065	0.031	19.82	21.5	0.096	Yes
Second	Bottom side	10mm	/	20175/1732.5	20M QPSK 1RB@50	0.120	0.061	19.81	21.5	0.177	Yes
Second	Bottom side	10mm	/	20175/1732.5	20M QPSK 1RB@50	0.075	0.035	19.81	21.5	0.111	Yes
Second	Bottom side	10mm	/	20175/1732.5	20M QPSK 1RB@50	0.080	0.037	19.81	21.5	0.118	Yes

Table 42: Product Specific 10-g SAR test reduction evaluation of LTE Band 4

Note: According to the table above, Product Specific 10-g SAR test is not required for this frequency band.

7.2.8 SAR measurement Results of LTE Band 7

Antenna	Test Position	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	Note
Second	Left cheek	/	/	21350/2560	20M QPSK 1RB@50	0.049	0.028	22.71	24.00	0.066	Battery 1#	/
Second	Left tilt	/	/	21350/2560	20M QPSK 1RB@50	0.001	0.001	22.71	24.00	0.001	Battery 1#	/
Second	Right cheek	/	/	21350/2560	20M QPSK 1RB@50	0.048	0.027	22.71	24.00	0.065	Battery 1#	/
Second	Right tilt	/	/	21350/2560	20M QPSK 1RB@50	0.042	0.023	22.71	24.00	0.057	Battery 1#	/
Second	Left cheek	/	/	20850/2510	20M QPSK 50%RB@50	0.046	0.024	21.75	23.00	0.061	Battery 1#	/
Second	Left tilt	/	/	20850/2510	20M QPSK 50%RB@50	0.001	0.001	21.75	23.00	0.001	Battery 1#	/
Second	Right cheek	/	/	20850/2510	20M QPSK 50%RB@50	0.001	0.001	21.75	23.00	0.001	Battery 1#	/
Second	Right tilt	/	/	20850/2510	20M QPSK 50%RB@50	0.042	0.022	21.75	23.00	0.056	Battery 1#	/
Second	Left cheek	/	/	21350/2560	20M QPSK 1RB@50	0.051	0.033	22.71	24.00	0.068	Battery 2#	Plot
Second	Left cheek	/	/	21350/2560	20M QPSK 1RB@50	0.050	0.032	22.71	24.00	0.067	Battery 3#	/
Second	Left cheek	/	/	21350/2560	20M QPSK 1RB@50	0.048	0.027	22.71	24.00	0.065	With SIM2	/
Main	Left cheek	/	/	21100/2535	20M QPSK 1RB@50	0.198	0.112	18.51	19.90	0.273	Battery 1#	/
Main	Left tilt	/	/	21100/2535	20M QPSK 1RB@50	0.238	0.125	18.51	19.90	0.328	Battery 1#	/
Main	Right cheek	/	/	21100/2535	20M QPSK 1RB@50	0.303	0.165	18.51	19.90	0.417	Battery 1#	/
Main	Right tilt	/	/	21100/2535	20M QPSK 1RB@50	0.353	0.164	18.51	19.90	0.486	Battery 1#	/
Main	Left cheek	/	/	21350/2560	20M QPSK 50%RB@0	0.197	0.110	18.44	19.90	0.276	Battery 1#	/
Main	Left tilt	/	/	21350/2560	20M QPSK 50%RB@0	0.242	0.129	18.44	19.90	0.339	Battery 1#	/
Main	Right cheek	/	/	21350/2560	20M QPSK 50%RB@0	0.287	0.158	18.44	19.90	0.402	Battery 1#	/
Main	Right tilt	/	/	21350/2560	20M QPSK 50%RB@0	0.351	0.162	18.44	19.90	0.491	Battery 1#	/
Main	Right tilt	/	/	21350/2560	20M QPSK 50%RB@0	0.486	0.239	18.44	19.90	0.680	Battery 2#	Plot
Main	Right tilt	/	/	21350/2560	20M QPSK 50%RB@0	0.321	0.149	18.44	19.90	0.449	Battery 3#	/
Main	Right tilt	/	/	21350/2560	20M QPSK 50%RB@0	0.359	0.167	18.44	19.90	0.502	With SIM2	/

Table 43: Head SAR test results of LTE Band 7

Antenna	Test Position	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	Note
Second	Front side	15mm	/	20850/2510	20M QPSK 1RB@50	0.099	0.053	21.76	23.00	0.132	Battery 1#	/
Second	Back side	15mm	/	20850/2510	20M QPSK 1RB@50	0.127	0.071	21.76	23.00	0.169	Battery 1#	/
Second	Front side	15mm	/	21100/2535	20M QPSK 50%RB@0	0.100	0.054	21.79	23.00	0.132	Battery 1#	/
Second	Back side	15mm	/	21100/2535	20M QPSK 50%RB@0	0.129	0.076	21.79	23.00	0.170	Battery 1#	/
Second	Back side	15mm	/	21100/2535	20M QPSK 50%RB@0	0.136	0.072	21.79	23.00	0.180	Battery 2#	/
Second	Back side	15mm	/	21100/2535	20M QPSK 50%RB@0	0.138	0.076	21.79	23.00	0.182	Battery 3#	Plot
Second	Back side	15mm	/	21100/2535	20M QPSK 50%RB@0	0.126	0.078	21.79	23.00	0.166	With SIM2	/
Main	Front side	15mm	/	21350/2560	20M QPSK 1RB@50	0.104	0.057	22.13	23.40	0.139	Battery 1#	/
Main	Back side	15mm	/	21350/2560	20M QPSK 1RB@50	0.209	0.108	22.13	23.40	0.280	Battery 1#	/
Main	Front side	15mm	/	20850/2510	20M QPSK 50%RB@25	0.124	0.068	22.06	23.40	0.169	Battery 1#	/
Main	Back side	15mm	/	20850/2510	20M QPSK 50%RB@25	0.253	0.132	22.06	23.40	0.344	Battery 1#	/
Main	Back side	15mm	/	20850/2510	20M QPSK 50%RB@25	0.265	0.137	22.06	23.40	0.361	Battery 2#	/
Main	Back side	15mm	/	20850/2510	20M QPSK 50%RB@25	0.287	0.156	22.06	23.40	0.391	Battery 3#	Plot
Main	Back side	15mm	/	20850/2510	20M QPSK 50%RB@25	0.251	0.130	22.06	23.40	0.342	With SIM2	/

Table 44: Body Worn SAR test results of LTE Band 7

Antenna	Test Position	Dist.	ANT State	Test Channel /Freq. (MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	Note
Second	Front side	10mm	/	20850/2510	20M QPSK 1RB@50	0.216	0.110	21.76	23.00	0.287	Battery 1#	/
Second	Back side	10mm	/	20850/2510	20M QPSK 1RB@50	0.325	0.156	21.76	23.00	0.432	Battery 1#	/
Second	Left side	10mm	/	20850/2510	20M QPSK 1RB@50	0.145	0.075	21.76	23.00	0.193	Battery 1#	/
Second	Right side	10mm	/	20850/2510	20M QPSK 1RB@50	0.072	0.039	21.76	23.00	0.096	Battery 1#	/
Second	Bottom side	10mm	/	20850/2510	20M QPSK 1RB@50	0.284	0.135	21.76	23.00	0.378	Battery 1#	/
Second	Front side	10mm	/	21100/2535	20M QPSK 50%RB@0	0.234	0.123	21.79	23.00	0.309	Battery 1#	/
Second	Back side	10mm	/	21100/2535	20M QPSK 50%RB@0	0.335	0.164	21.79	23.00	0.443	Battery 1#	/
Second	Left side	10mm	/	21100/2535	20M QPSK 50%RB@0	0.150	0.075	21.79	23.00	0.198	Battery 1#	/
Second	Right side	10mm	/	21100/2535	20M QPSK 50%RB@0	0.072	0.039	21.79	23.00	0.095	Battery 1#	/
Second	Bottom side	10mm	/	21100/2535	20M QPSK 50%RB@0	0.313	0.148	21.79	23.00	0.414	Battery 1#	/
Second	Back side	10mm	/	21100/2535	20M QPSK 50%RB@0	0.338	0.170	21.79	23.00	0.447	Battery 2#	Plot
Second	Back side	10mm	/	21100/2535	20M QPSK 50%RB@0	0.318	0.154	21.79	23.00	0.420	Battery 3#	/
Second	Back side	10mm	/	21100/2535	20M QPSK 50%RB@0	0.330	0.158	21.79	23.00	0.436	With SIM2	/
Main	Front side	10mm	/	21100/2535	20M QPSK 1RB@50	0.106	0.058	18.51	19.90	0.146	Battery 1#	/
Main	Back side	10mm	/	21100/2535	20M QPSK 1RB@50	0.345	0.169	18.51	19.90	0.475	Battery 1#	Plot
Main	Left side	10mm	/	21100/2535	20M QPSK 1RB@50	0.072	0.038	18.51	19.90	0.099	Battery 1#	/
Main	Right side	10mm	/	21100/2535	20M QPSK 1RB@50	0.001	0.001	18.51	19.90	0.001	Battery 1#	/
Main	Top side	10mm	/	21100/2535	20M QPSK 1RB@50	0.192	0.095	18.51	19.90	0.264	Battery 1#	/
Main	Front side	10mm	/	21350/2560	20M QPSK 50%RB@0	0.094	0.051	18.44	19.90	0.132	Battery 1#	/
Main	Back side	10mm	/	21350/2560	20M QPSK 50%RB@0	0.233	0.108	18.44	19.90	0.326	Battery 1#	/
Main	Left side	10mm	/	21350/2560	20M QPSK 50%RB@0	0.069	0.036	18.44	19.90	0.097	Battery 1#	/
Main	Right side	10mm	/	21350/2560	20M QPSK 50%RB@0	0.001	0.001	18.44	19.90	0.001	Battery 1#	/
Main	Top side	10mm	/	21350/2560	20M QPSK 50%RB@0	0.177	0.088	18.44	19.90	0.248	Battery 1#	/
Main	Back side	10mm	/	21100/2535	20M QPSK 1RB@50	0.231	0.110	18.51	19.90	0.318	Battery 2#	/
Main	Back side	10mm	/	21100/2535	20M QPSK 1RB@50	0.209	0.099	18.51	19.90	0.288	Battery 3#	/
Main	Back side	10mm	/	21100/2535	20M QPSK 1RB@50	0.228	0.106	18.51	19.90	0.314	With SIM2	/

Table 45: Hotspot SAR test results of LTE Band 7

Per KDB648474 D04, when hotspot mode applies, Product Specific 10-g 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:

Antenna	Test Position	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Conducted Power (dBm)	Max Power Without Reduction	Scaled-up 1-g SAR (W/kg)	Product Specific 10-g SAR Exclusion
Second	Front side	10mm	/	20850/2510	20M QPSK 1RB@50	0.216	0.110	21.76	23.00	0.287	Yes
Second	Back side	10mm	/	20850/2510	20M QPSK 1RB@50	0.325	0.156	21.76	23.00	0.432	Yes
Second	Left side	10mm	/	20850/2510	20M QPSK 1RB@50	0.145	0.075	21.76	23.00	0.193	Yes
Second	Right side	10mm	/	20850/2510	20M QPSK 1RB@50	0.072	0.039	21.76	23.00	0.096	Yes
Second	Bottom side	10mm	/	20850/2510	20M QPSK 1RB@50	0.284	0.135	21.76	23.00	0.378	Yes
Second	Front side	10mm	/	21100/2535	20M QPSK 50%RB@0	0.234	0.123	21.79	23.00	0.309	Yes
Second	Back side	10mm	/	21100/2535	20M QPSK 50%RB@0	0.335	0.164	21.79	23.00	0.443	Yes
Second	Left side	10mm	/	21100/2535	20M QPSK 50%RB@0	0.150	0.075	21.79	23.00	0.198	Yes
Second	Right side	10mm	/	21100/2535	20M QPSK 50%RB@0	0.072	0.039	21.79	23.00	0.095	Yes
Second	Bottom side	10mm	/	21100/2535	20M QPSK 50%RB@0	0.313	0.148	21.79	23.00	0.414	Yes
Second	Back side	10mm	/	21100/2535	20M QPSK 50%RB@0	0.338	0.170	21.79	23.00	0.447	Yes
Second	Back side	10mm	/	21100/2535	20M QPSK 50%RB@0	0.318	0.154	21.79	23.00	0.420	Yes
Second	Back side	10mm	/	21100/2535	20M QPSK 50%RB@0	0.330	0.158	21.79	23.00	0.436	Yes
Main	Front side	10mm	/	21100/2535	20M QPSK 1RB@50	0.106	0.058	18.51	23.40	0.327	Yes
Main	Back side	10mm	/	21100/2535	20M QPSK 1RB@50	0.345	0.169	18.51	23.40	1.064	Yes
Main	Left side	10mm	/	21100/2535	20M QPSK 1RB@50	0.072	0.038	18.51	23.40	0.222	Yes
Main	Right side	10mm	/	21100/2535	20M QPSK 1RB@50	0.001	0.001	18.51	23.40	0.003	Yes
Main	Top side	10mm	/	21100/2535	20M QPSK 1RB@50	0.192	0.095	18.51	23.40	0.592	Yes
Main	Front side	10mm	/	21350/2560	20M QPSK 50%RB@0	0.094	0.051	18.44	23.40	0.295	Yes
Main	Back side	10mm	/	21350/2560	20M QPSK 50%RB@0	0.233	0.108	18.44	23.40	0.730	Yes
Main	Left side	10mm	/	21350/2560	20M QPSK 50%RB@0	0.069	0.036	18.44	23.40	0.216	Yes
Main	Right side	10mm	/	21350/2560	20M QPSK 50%RB@0	0.001	0.001	18.44	23.40	0.003	Yes
Main	Top side	10mm	/	21350/2560	20M QPSK 50%RB@0	0.177	0.088	18.44	23.40	0.555	Yes
Main	Back side	10mm	/	21100/2535	20M QPSK 1RB@50	0.231	0.110	18.51	23.40	0.712	Yes
Main	Back side	10mm	/	21100/2535	20M QPSK 1RB@50	0.209	0.099	18.51	23.40	0.644	Yes
Main	Back side	10mm	/	21100/2535	20M QPSK 1RB@50	0.228	0.106	18.51	23.40	0.703	Yes

Table 46: Product Specific 10-g SAR test reduction evaluation of LTE Band 7

Note: According to the table above, Product Specific 10-g SAR test is not required for this frequency band.

7.2.9 SAR measurement Results of LTE Band 26

Antenna	Test Position	Dist.	ANT State	Test Channel /Freq. (MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	Note
Second	Left cheek	/	/	26765/821.5	15M QPSK 1RB@38	0.186	0.127	23.85	25.20	0.254	Battery 1#	/
Second	Left tilt	/	/	26765/821.5	15M QPSK 1RB@38	0.144	0.095	23.85	25.20	0.196	Battery 1#	/
Second	Right cheek	/	/	26765/821.5	15M QPSK 1RB@38	0.242	0.161	23.85	25.20	0.330	Battery 1#	/
Second	Right tilt	/	/	26765/821.5	15M QPSK 1RB@38	0.211	0.123	23.85	25.20	0.288	Battery 1#	/
Second	Left cheek	/	/	26965/841.5	15M QPSK 50%RB@0	0.208	0.141	22.96	24.20	0.277	Battery 1#	/
Second	Left tilt	/	/	26965/841.5	15M QPSK 50%RB@0	0.159	0.104	22.96	24.20	0.212	Battery 1#	/
Second	Right cheek	/	/	26965/841.5	15M QPSK 50%RB@0	0.350	0.215	22.96	24.20	0.466	Battery 1#	Plot
Second	Right tilt	/	/	26965/841.5	15M QPSK 50%RB@0	0.216	0.128	22.96	24.20	0.287	Battery 1#	/
Second	Right cheek	/	/	26965/841.5	15M QPSK 50%RB@0	0.234	0.155	22.96	24.20	0.311	Battery 2#	/
Second	Right cheek	/	/	26965/841.5	15M QPSK 50%RB@0	0.257	0.168	22.96	24.20	0.342	Battery 3#	/
Second	Right cheek	/	/	26965/841.5	15M QPSK 50%RB@0	0.257	0.169	22.96	24.20	0.342	With SIM2	/
Main	Left cheek	/	Tuning State1	26765/821.5	15M QPSK 1RB@38	0.073	0.052	24.16	25.10	0.091	Battery 1#	/
Main	Left cheek	/	Tuning State2	26765/821.5	15M QPSK 1RB@38	0.070	0.047	24.16	25.10	0.087	Battery 1#	/
Main	Right cheek	/	Tuning State1	26765/821.5	15M QPSK 1RB@38	0.077	0.055	24.16	25.10	0.096	Battery 1#	/
Main	Right tilt	/	Tuning State1	26765/821.5	15M QPSK 1RB@38	0.048	0.036	24.16	25.10	0.060	Battery 1#	/
Main	Left cheek	/	Tuning State1	26965/841.5	15M QPSK 50%RB@0	0.112	0.080	23.26	24.10	0.136	Battery 1#	/
Main	Left tilt	/	Tuning State1	26965/841.5	15M QPSK 50%RB@0	0.073	0.054	23.26	24.10	0.089	Battery 1#	/
Main	Right cheek	/	Tuning State1	26965/841.5	15M QPSK 50%RB@0	0.140	0.107	23.26	24.10	0.170	Battery 1#	Plot
Main	Right tilt	/	Tuning State1	26965/841.5	15M QPSK 50%RB@0	0.078	0.059	23.26	24.10	0.095	Battery 1#	/
Main	Right cheek	/	Tuning State1	26965/841.5	15M QPSK 50%RB@0	0.123	0.088	23.26	24.10	0.149	Battery 2#	/
Main	Right cheek	/	Tuning State1	26965/841.5	15M QPSK 50%RB@0	0.107	0.076	23.26	24.10	0.130	Battery 3#	/
Main	Right cheek	/	Tuning State1	26965/841.5	15M QPSK 50%RB@0	0.130	0.092	23.26	24.10	0.158	With SIM2	/
Main	Right cheek	/	Tuning State2	26965/841.5	15M QPSK 50%RB@0	0.104	0.076	23.26	24.10	0.126	Battery 1#	/

Table 47: Head SAR test results of LTE Band 26

Antenna	Test Position	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	Note
Second	Front side	15mm	/	26765/821.5	15M QPSK 1RB@38	0.056	0.040	23.85	25.20	0.076	Battery 1#	/
Second	Back side	15mm	/	26765/821.5	15M QPSK 1RB@38	0.083	0.054	23.85	25.20	0.113	Battery 1#	/
Second	Front side	15mm	/	26965/841.5	15M QPSK 50%RB@0	0.070	0.051	22.96	24.20	0.093	Battery 1#	/
Second	Back side	15mm	/	26965/841.5	15M QPSK 50%RB@0	0.114	0.077	22.96	24.20	0.152	Battery 1#	Plot
Second	Back side	15mm	/	26965/841.5	15M QPSK 50%RB@0	0.096	0.061	22.96	24.20	0.128	Battery 2#	/
Second	Back side	15mm	/	26965/841.5	15M QPSK 50%RB@0	0.092	0.059	22.96	24.20	0.122	Battery 3#	/
Second	Back side	15mm	/	26965/841.5	15M QPSK 50%RB@0	0.094	0.060	22.96	24.20	0.125	With SIM2	/
Main	Front side	15mm	Tuning State1	26765/821.5	15M QPSK 1RB@38	0.117	0.085	24.16	25.10	0.145	Battery 1#	/
Main	Front side	15mm	Tuning State2	26765/821.5	15M QPSK 1RB@38	0.083	0.061	24.16	25.10	0.103	Battery 1#	/
Main	Back side	15mm	Tuning State1	26765/821.5	15M QPSK 1RB@38	0.160	0.115	24.16	25.10	0.199	Battery 1#	/
Main	Front side	15mm	Tuning State1	26965/841.5	15M QPSK 50%RB@0	0.139	0.100	23.26	24.10	0.169	Battery 1#	/
Main	Back side	15mm	Tuning State1	26965/841.5	15M QPSK 50%RB@0	0.204	0.150	23.26	24.10	0.248	Battery 1#	Plot
Main	Back side	15mm	Tuning State1	26965/841.5	15M QPSK 50%RB@0	0.200	0.144	23.26	24.10	0.243	Battery 2#	/
Main	Back side	15mm	Tuning State1	26965/841.5	15M QPSK 50%RB@0	0.191	0.137	23.26	24.10	0.232	Battery 3#	/
Main	Back side	15mm	Tuning State1	26965/841.5	15M QPSK 50%RB@0	0.158	0.113	23.26	24.10	0.192	With SIM2	/
Main	Back side	15mm	Tuning State2	26965/841.5	15M QPSK 50%RB@0	0.146	0.106	23.26	24.10	0.177	Battery 1#	/

Table 48: Body Worn SAR test results of LTE Band 26

Antenna	Test Position	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	Note
Second	Front side	10mm	/	26765/821.5	15M QPSK 1RB@38	0.091	0.059	23.85	25.20	0.124	Battery 1#	/
Second	Back side	10mm	/	26765/821.5	15M QPSK 1RB@38	0.155	0.099	23.85	25.20	0.212	Battery 1#	/
Second	Left side	10mm	/	26765/821.5	15M QPSK 1RB@38	0.085	0.056	23.85	25.20	0.116	Battery 1#	/
Second	Right side	10mm	/	26765/821.5	15M QPSK 1RB@38	0.047	0.031	23.85	25.20	0.064	Battery 1#	/
Second	Top side	10mm	/	26765/821.5	15M QPSK 1RB@38	0.079	0.047	23.85	25.20	0.108	Battery 1#	/
Second	Front side	10mm	/	26965/841.5	15M QPSK 50%RB@0	0.096	0.061	22.96	24.20	0.128	Battery 1#	/
Second	Back side	10mm	/	26965/841.5	15M QPSK 50%RB@0	0.212	0.139	22.96	24.20	0.282	Battery 1#	Plot
Second	Left side	10mm	/	26965/841.5	15M QPSK 50%RB@0	0.110	0.061	22.96	24.20	0.146	Battery 1#	/
Second	Right side	10mm	/	26965/841.5	15M QPSK 50%RB@0	0.057	0.038	22.96	24.20	0.076	Battery 1#	/
Second	Top side	10mm	/	26965/841.5	15M QPSK 50%RB@0	0.091	0.053	22.96	24.20	0.121	Battery 1#	/
Second	Back side	10mm	/	26965/841.5	15M QPSK 50%RB@0	0.183	0.114	22.96	24.20	0.243	Battery 2#	/
Second	Back side	10mm	/	26965/841.5	15M QPSK 50%RB@0	0.180	0.112	22.96	24.20	0.239	Battery 3#	/
Second	Back side	10mm	/	26965/841.5	15M QPSK 50%RB@0	0.180	0.112	22.96	24.20	0.239	With SIM2	/
Main	Front side	10mm	Tuning State1	26765/821.5	15M QPSK 1RB@38	0.092	0.067	24.16	25.10	0.114	Battery 1#	/
Main	Front side	10mm	Tuning State2	26765/821.5	15M QPSK 1RB@38	0.083	0.060	24.16	25.10	0.103	Battery 1#	/
Main	Back side	10mm	Tuning State1	26765/821.5	15M QPSK 1RB@38	0.162	0.112	24.16	25.10	0.201	Battery 1#	/
Main	Left side	10mm	Tuning State1	26765/821.5	15M QPSK 1RB@38	0.092	0.059	24.16	25.10	0.114	Battery 1#	/
Main	Right side	10mm	Tuning State1	26765/821.5	15M QPSK 1RB@38	0.131	0.086	24.16	25.10	0.163	Battery 1#	/
Main	Bottom side	10mm	Tuning State1	26765/821.5	15M QPSK 1RB@38	0.064	0.031	24.16	25.10	0.079	Battery 1#	/
Main	Front side	10mm	Tuning State1	26965/841.5	15M QPSK 50%RB@0	0.122	0.087	23.26	24.10	0.148	Battery 1#	/
Main	Back side	10mm	Tuning State1	26965/841.5	15M QPSK 50%RB@0	0.341	0.204	23.26	24.10	0.414	Battery 1#	Plot
Main	Left side	10mm	Tuning State1	26965/841.5	15M QPSK 50%RB@0	0.123	0.079	23.26	24.10	0.149	Battery 1#	/
Main	Right side	10mm	Tuning State1	26965/841.5	15M QPSK 50%RB@0	0.171	0.113	23.26	24.10	0.207	Battery 1#	/
Main	Bottom side	10mm	Tuning State1	26965/841.5	15M QPSK 50%RB@0	0.094	0.049	23.26	24.10	0.114	Battery 1#	/
Main	Back side	10mm	Tuning State1	26965/841.5	15M QPSK 50%RB@0	0.237	0.170	23.26	24.10	0.288	Battery 2#	/
Main	Back side	10mm	Tuning State1	26965/841.5	15M QPSK 50%RB@0	0.226	0.162	23.26	24.10	0.274	Battery 3#	/
Main	Back side	10mm	Tuning State1	26965/841.5	15M QPSK 50%RB@0	0.215	0.152	23.26	24.10	0.261	With SIM2	/
Main	Back side	10mm	Tuning State2	26965/841.5	15M QPSK 50%RB@0	0.173	0.124	23.26	24.10	0.210	Battery 1#	/

Table 49: Hotspot SAR test results of LTE Band 26

Per KDB648474 D04, when hotspot mode applies, Product Specific 10-g 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:

Antenna	Test Position	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Conducted Power (dBm)	Max Power Without Reduction	Scaled-up 1-g SAR (W/kg)	Product Specific 10-g SAR Exclusion
Second	Front side	10mm	/	26765/821.5	15M QPSK 1RB@38	0.091	0.059	23.85	25.20	0.124	Yes
Second	Back side	10mm	/	26765/821.5	15M QPSK 1RB@38	0.155	0.099	23.85	25.20	0.212	Yes
Second	Left side	10mm	/	26765/821.5	15M QPSK 1RB@38	0.085	0.056	23.85	25.20	0.116	Yes
Second	Right side	10mm	/	26765/821.5	15M QPSK 1RB@38	0.047	0.031	23.85	25.20	0.064	Yes
Second	Top side	10mm	/	26765/821.5	15M QPSK 1RB@38	0.079	0.047	23.85	25.20	0.108	Yes
Second	Front side	10mm	/	26965/841.5	15M QPSK 50%RB@0	0.096	0.061	22.96	24.20	0.128	Yes
Second	Back side	10mm	/	26965/841.5	15M QPSK 50%RB@0	0.212	0.139	22.96	24.20	0.282	Yes
Second	Left side	10mm	/	26965/841.5	15M QPSK 50%RB@0	0.110	0.061	22.96	24.20	0.146	Yes
Second	Right side	10mm	/	26965/841.5	15M QPSK 50%RB@0	0.057	0.038	22.96	24.20	0.076	Yes
Second	Top side	10mm	/	26965/841.5	15M QPSK 50%RB@0	0.091	0.053	22.96	24.20	0.121	Yes
Second	Back side	10mm	/	26965/841.5	15M QPSK 50%RB@0	0.183	0.114	22.96	24.20	0.243	Yes
Second	Back side	10mm	/	26965/841.5	15M QPSK 50%RB@0	0.180	0.112	22.96	24.20	0.239	Yes
Second	Back side	10mm	/	26965/841.5	15M QPSK 50%RB@0	0.180	0.112	22.96	24.20	0.239	Yes
Main	Front side	10mm	Tuning State1	26765/821.5	15M QPSK 1RB@38	0.092	0.067	24.16	25.10	0.114	Yes
Main	Front side	10mm	Tuning State2	26765/821.5	15M QPSK 1RB@38	0.083	0.060	24.16	25.10	0.103	Yes
Main	Back side	10mm	Tuning State1	26765/821.5	15M QPSK 1RB@38	0.162	0.112	24.16	25.10	0.201	Yes
Main	Left side	10mm	Tuning State1	26765/821.5	15M QPSK 1RB@38	0.092	0.059	24.16	25.10	0.114	Yes
Main	Right side	10mm	Tuning State1	26765/821.5	15M QPSK 1RB@38	0.131	0.086	24.16	25.10	0.163	Yes
Main	Bottom side	10mm	Tuning State1	26765/821.5	15M QPSK 1RB@38	0.064	0.031	24.16	25.10	0.079	Yes
Main	Front side	10mm	Tuning State1	26965/841.5	15M QPSK 50%RB@0	0.122	0.087	23.26	24.10	0.148	Yes
Main	Back side	10mm	Tuning State1	26965/841.5	15M QPSK 50%RB@0	0.341	0.204	23.26	24.10	0.414	Yes
Main	Left side	10mm	Tuning State1	26965/841.5	15M QPSK 50%RB@0	0.123	0.079	23.26	24.10	0.149	Yes
Main	Right side	10mm	Tuning State1	26965/841.5	15M QPSK 50%RB@0	0.171	0.113	23.26	24.10	0.207	Yes
Main	Bottom side	10mm	Tuning State1	26965/841.5	15M QPSK 50%RB@0	0.094	0.049	23.26	24.10	0.114	Yes
Main	Back side	10mm	Tuning State1	26965/841.5	15M QPSK 50%RB@0	0.237	0.170	23.26	24.10	0.288	Yes
Main	Back side	10mm	Tuning State1	26965/841.5	15M QPSK 50%RB@0	0.226	0.162	23.26	24.10	0.274	Yes
Main	Back side	10mm	Tuning State1	26965/841.5	15M QPSK 50%RB@0	0.215	0.152	23.26	24.10	0.261	Yes
Main	Back side	10mm	Tuning State2	26965/841.5	15M QPSK 50%RB@0	0.173	0.124	23.26	24.10	0.210	Yes

Table 50: Product Specific 10-g SAR test reduction evaluation of LTE Band 26

Note: According to the table above, Product Specific 10-g SAR test is not required for this frequency band.

7.2.10 SAR measurement Results of LTE Band 41

Antenna	Test Position	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	Note
Second	Left cheek	/	/	40940/2625	20M QPSK 1RB@50	0.061	0.037	23.12	23.90	0.073	Battery 1#	Plot
Second	Left tilt	/	/	40940/2625	20M QPSK 1RB@50	0.001	0.001	23.12	23.90	0.001	Battery 1#	/
Second	Right cheek	/	/	40940/2625	20M QPSK 1RB@50	0.001	0.001	23.12	23.90	0.001	Battery 1#	/
Second	Right tilt	/	/	40940/2625	20M QPSK 1RB@50	0.001	0.001	23.12	23.90	0.001	Battery 1#	/
Second	Left cheek	/	/	40940/2625	20M QPSK 50%RB@0	0.050	0.026	22.01	22.90	0.061	Battery 1#	/
Second	Left tilt	/	/	40940/2625	20M QPSK 50%RB@0	0.001	0.001	22.01	22.90	0.001	Battery 1#	/
Second	Right cheek	/	/	40940/2625	20M QPSK 50%RB@0	0.001	0.001	22.01	22.90	0.001	Battery 1#	/
Second	Right tilt	/	/	40940/2625	20M QPSK 50%RB@0	0.001	0.001	22.01	22.90	0.001	Battery 1#	/
Second	Left cheek	/	/	40940/2625	20M QPSK 1RB@50	0.058	0.029	23.12	23.90	0.069	Battery 2#	/
Second	Left cheek	/	/	40940/2625	20M QPSK 1RB@50	0.049	0.020	23.12	23.90	0.059	Battery 3#	/
Second	Left cheek	/	/	40940/2625	20M QPSK 1RB@50	0.052	0.027	23.12	23.90	0.062	With SIM2	/
Main	Left cheek	/	/	40940/2625	20M QPSK 1RB@50	0.117	0.064	20.50	21.40	0.144	Battery 1#	/
Main	Left tilt	/	/	40940/2625	20M QPSK 1RB@50	0.134	0.070	20.50	21.40	0.165	Battery 1#	/
Main	Right cheek	/	/	40940/2625	20M QPSK 1RB@50	0.164	0.088	20.50	21.40	0.202	Battery 1#	/
Main	Right tilt	/	/	40940/2625	20M QPSK 1RB@50	0.188	0.088	20.50	21.40	0.231	Battery 1#	/
Main	Left cheek	/	/	41340/2665	20M QPSK 50%RB@0	0.114	0.061	20.47	21.40	0.141	Battery 1#	/
Main	Left tilt	/	/	41340/2665	20M QPSK 50%RB@0	0.126	0.066	20.47	21.40	0.156	Battery 1#	/
Main	Right cheek	/	/	41340/2665	20M QPSK 50%RB@0	0.167	0.089	20.47	21.40	0.207	Battery 1#	/
Main	Right tilt	/	/	41340/2665	20M QPSK 50%RB@0	0.192	0.090	20.47	21.40	0.238	Battery 1#	/
Main	Right tilt	/	/	41340/2665	20M QPSK 50%RB@0	0.392	0.194	20.47	21.40	0.486	Battery 2#	Plot
Main	Right tilt	/	/	41340/2665	20M QPSK 50%RB@0	0.184	0.086	20.47	21.40	0.228	Battery 3#	/
Main	Right tilt	/	/	41340/2665	20M QPSK 50%RB@0	0.184	0.085	20.47	21.40	0.228	With SIM2	/

Table 51: Head SAR test results of LTE Band 41

Antenna	Test Position	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	Note
Second	Front side	15mm	/	40940/2625	20M QPSK 1RB@50	0.045	0.024	23.12	23.90	0.054	Battery 1#	/
Second	Back side	15mm	/	40940/2625	20M QPSK 1RB@50	0.200	0.102	23.12	23.90	0.239	Battery 1#	/
Second	Front side	15mm	/	40940/2625	20M QPSK 50%RB@0	0.039	0.020	22.01	22.90	0.048	Battery 1#	/
Second	Back side	15mm	/	40940/2625	20M QPSK 50%RB@0	0.094	0.048	22.01	22.90	0.115	Battery 1#	/
Second	Back side	15mm	/	40940/2625	20M QPSK 1RB@50	0.241	0.128	23.12	23.90	0.288	Battery 2#	Plot
Second	Back side	15mm	/	40940/2625	20M QPSK 1RB@50	0.238	0.124	23.12	23.90	0.285	Battery 3#	/
Second	Back side	15mm	/	40940/2625	20M QPSK 1RB@50	0.240	0.123	23.12	23.90	0.287	With SIM2	/
Main	Front side	15mm	/	40940/2625	20M QPSK 1RB@50	0.061	0.034	23.51	24.40	0.075	Battery 1#	/
Main	Back side	15mm	/	40940/2625	20M QPSK 1RB@50	0.121	0.061	23.51	24.40	0.149	Battery 1#	/
Main	Front side	15mm	/	41340/2665	20M QPSK 50%RB@0	0.056	0.030	22.38	23.40	0.071	Battery 1#	/
Main	Back side	15mm	/	41340/2665	20M QPSK 50%RB@0	0.104	0.052	22.38	23.40	0.132	Battery 1#	/
Main	Back side	15mm	/	40940/2625	20M QPSK 1RB@50	0.122	0.062	23.51	24.40	0.150	Battery 2#	/
Main	Back side	15mm	/	40940/2625	20M QPSK 1RB@50	0.256	0.136	23.51	24.40	0.314	Battery 3#	Plot
Main	Back side	15mm	/	40940/2625	20M QPSK 1RB@50	0.178	0.090	23.51	24.40	0.218	With SIM2	/

Table 52: Body Worn SAR test results of LTE Band 41

Antenna	Test Position	Dist.	ANT State	Test Channel /Freq. (MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	Note
Second	Front side	10mm	/	40940/2625	20M QPSK 1RB@50	0.183	0.092	23.12	23.90	0.219	Battery 1#	/
Second	Back side	10mm	/	40940/2625	20M QPSK 1RB@50	0.479	0.236	23.12	23.90	0.573	Battery 1#	Plot
Second	Left side	10mm	/	40940/2625	20M QPSK 1RB@50	0.102	0.053	23.12	23.90	0.122	Battery 1#	/
Second	Right side	10mm	/	40940/2625	20M QPSK 1RB@50	0.076	0.040	23.12	23.90	0.091	Battery 1#	/
Second	Bottom side	10mm	/	40940/2625	20M QPSK 1RB@50	0.316	0.153	23.12	23.90	0.378	Battery 1#	/
Second	Front side	10mm	/	40940/2625	20M QPSK 50%RB@0	0.144	0.071	22.01	22.90	0.177	Battery 1#	/
Second	Back side	10mm	/	40940/2625	20M QPSK 50%RB@0	0.382	0.191	22.01	22.90	0.469	Battery 1#	/
Second	Left side	10mm	/	40940/2625	20M QPSK 50%RB@0	0.076	0.041	22.01	22.90	0.093	Battery 1#	/
Second	Right side	10mm	/	40940/2625	20M QPSK 50%RB@0	0.060	0.032	22.01	22.90	0.074	Battery 1#	/
Second	Bottom side	10mm	/	40940/2625	20M QPSK 50%RB@0	0.249	0.120	22.01	22.90	0.306	Battery 1#	/
Second	Back side	10mm	/	40940/2625	20M QPSK 1RB@50	0.222	0.107	23.12	23.90	0.266	Battery 2#	/
Second	Back side	10mm	/	40940/2625	20M QPSK 1RB@50	0.468	0.231	23.12	23.90	0.560	Battery 3#	/
Second	Back side	10mm	/	40940/2625	20M QPSK 1RB@50	0.476	0.239	23.12	23.90	0.570	With SIM2	/
Main	Front side	10mm	/	40940/2625	20M QPSK 1RB@50	0.075	0.040	20.50	21.40	0.092	Battery 1#	/
Main	Back side	10mm	/	40940/2625	20M QPSK 1RB@50	0.186	0.088	20.50	21.40	0.229	Battery 1#	/
Main	Left side	10mm	/	40940/2625	20M QPSK 1RB@50	0.043	0.022	20.50	21.40	0.053	Battery 1#	/
Main	Right side	10mm	/	40940/2625	20M QPSK 1RB@50	0.047	0.018	20.50	21.40	0.058	Battery 1#	/
Main	Top side	10mm	/	40940/2625	20M QPSK 1RB@50	0.150	0.075	20.50	21.40	0.185	Battery 1#	/
Main	Front side	10mm	/	41340/2665	20M QPSK 50%RB@0	0.075	0.041	20.47	21.40	0.093	Battery 1#	/
Main	Back side	10mm	/	41340/2665	20M QPSK 50%RB@0	0.184	0.086	20.47	21.40	0.228	Battery 1#	/
Main	Left side	10mm	/	41340/2665	20M QPSK 50%RB@0	0.032	0.009	20.47	21.40	0.040	Battery 1#	/
Main	Right side	10mm	/	41340/2665	20M QPSK 50%RB@0	0.001	0.001	20.47	21.40	0.001	Battery 1#	/
Main	Top side	10mm	/	41340/2665	20M QPSK 50%RB@0	0.147	0.072	20.47	21.40	0.182	Battery 1#	/
Main	Back side	10mm	/	40940/2625	20M QPSK 1RB@50	0.186	0.088	20.50	21.40	0.229	Battery 2#	/
Main	Back side	10mm	/	40940/2625	20M QPSK 1RB@50	0.256	0.126	20.50	21.40	0.315	Battery 3#	Plot
Main	Back side	10mm	/	40940/2625	20M QPSK 1RB@50	0.187	0.086	20.50	21.40	0.230	With SIM2	/

Table 53: Hotspot SAR test results of LTE Band 41

Per KDB648474 D04, when hotspot mode applies, Product Specific 10-g 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:

Antenna	Test Position	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Conducted Power (dBm)	Max Power Without Reduction	Scaled-up 1-g SAR (W/kg)	Product Specific 10-g SAR Exclusion
Second	Front side	10mm	/	40940/2625	20M QPSK 1RB@50	0.183	0.092	23.12	23.90	0.219	Yes
Second	Back side	10mm	/	40940/2625	20M QPSK 1RB@50	0.479	0.236	23.12	23.90	0.573	Yes
Second	Left side	10mm	/	40940/2625	20M QPSK 1RB@50	0.102	0.053	23.12	23.90	0.122	Yes
Second	Right side	10mm	/	40940/2625	20M QPSK 1RB@50	0.076	0.040	23.12	23.90	0.091	Yes
Second	Bottom side	10mm	/	40940/2625	20M QPSK 1RB@50	0.316	0.153	23.12	23.90	0.378	Yes
Second	Front side	10mm	/	40940/2625	20M QPSK 50%RB@0	0.144	0.071	22.01	22.90	0.177	Yes
Second	Back side	10mm	/	40940/2625	20M QPSK 50%RB@0	0.382	0.191	22.01	22.90	0.469	Yes
Second	Left side	10mm	/	40940/2625	20M QPSK 50%RB@0	0.076	0.041	22.01	22.90	0.093	Yes
Second	Right side	10mm	/	40940/2625	20M QPSK 50%RB@0	0.060	0.032	22.01	22.90	0.074	Yes
Second	Bottom side	10mm	/	40940/2625	20M QPSK 50%RB@0	0.249	0.120	22.01	22.90	0.306	Yes
Second	Back side	10mm	/	40940/2625	20M QPSK 1RB@50	0.222	0.107	23.12	23.90	0.266	Yes
Second	Back side	10mm	/	40940/2625	20M QPSK 1RB@50	0.468	0.231	23.12	23.90	0.560	Yes
Second	Back side	10mm	/	40940/2625	20M QPSK 1RB@50	0.476	0.239	23.12	23.90	0.570	Yes
Main	Front side	10mm	/	40940/2625	20M QPSK 1RB@50	0.075	0.040	20.50	24.40	0.184	Yes
Main	Back side	10mm	/	40940/2625	20M QPSK 1RB@50	0.186	0.088	20.50	24.40	0.457	Yes
Main	Left side	10mm	/	40940/2625	20M QPSK 1RB@50	0.043	0.022	20.50	24.40	0.106	Yes
Main	Right side	10mm	/	40940/2625	20M QPSK 1RB@50	0.047	0.018	20.50	24.40	0.115	Yes
Main	Top side	10mm	/	40940/2625	20M QPSK 1RB@50	0.150	0.075	20.50	24.40	0.368	Yes
Main	Front side	10mm	/	41340/2665	20M QPSK 50%RB@0	0.075	0.041	20.47	23.40	0.147	Yes
Main	Back side	10mm	/	41340/2665	20M QPSK 50%RB@0	0.184	0.086	20.47	23.40	0.361	Yes
Main	Left side	10mm	/	41340/2665	20M QPSK 50%RB@0	0.032	0.009	20.47	23.40	0.063	Yes
Main	Right side	10mm	/	41340/2665	20M QPSK 50%RB@0	0.001	0.001	20.47	23.40	0.002	Yes
Main	Top side	10mm	/	41340/2665	20M QPSK 50%RB@0	0.147	0.072	20.47	23.40	0.289	Yes
Main	Back side	10mm	/	40940/2625	20M QPSK 1RB@50	0.186	0.088	20.50	24.40	0.457	Yes
Main	Back side	10mm	/	40940/2625	20M QPSK 1RB@50	0.256	0.126	20.50	24.40	0.628	Yes
Main	Back side	10mm	/	40940/2625	20M QPSK 1RB@50	0.187	0.086	20.50	24.40	0.459	Yes

Table 54: Product Specific 10-g SAR test reduction evaluation of LTE Band 41

Note: According to the table above, Product Specific 10-g SAR test is not required for this frequency band.

7.2.11 SAR measurement Results of LTE Band 66

Antenna	Test Position	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	Note
Second	Left cheek	/	/	132322/1745	20M QPSK 1RB@50	0.014	0.011	22.82	24.00	0.019	Battery 1#	Plot
Second	Left tilt	/	/	132322/1745	20M QPSK 1RB@50	0.001	0.001	22.82	24.00	0.001	Battery 1#	/
Second	Right cheek	/	/	132322/1745	20M QPSK 1RB@50	0.001	0.001	22.82	24.00	0.001	Battery 1#	/
Second	Right tilt	/	/	132322/1745	20M QPSK 1RB@50	0.001	0.001	22.82	24.00	0.001	Battery 1#	/
Second	Left cheek	/	/	132072/1720	20M QPSK 50%RB@50	0.001	0.001	21.89	23.00	0.001	Battery 1#	/
Second	Left tilt	/	/	132072/1720	20M QPSK 50%RB@50	0.001	0.001	21.89	23.00	0.001	Battery 1#	/
Second	Right cheek	/	/	132072/1720	20M QPSK 50%RB@50	0.001	0.001	21.89	23.00	0.001	Battery 1#	/
Second	Right tilt	/	/	132072/1720	20M QPSK 50%RB@50	0.001	0.001	21.89	23.00	0.001	Battery 1#	/
Second	Left cheek	/	/	132322/1745	20M QPSK 1RB@50	0.001	0.001	22.82	24.00	0.001	Battery 2#	/
Second	Left cheek	/	/	132322/1745	20M QPSK 1RB@50	0.001	0.001	22.82	24.00	0.001	Battery 3#	/
Second	Left cheek	/	/	132322/1745	20M QPSK 1RB@50	0.001	0.001	22.82	24.00	0.001	With SIM2	/
Main	Left cheek	/	/	132072/1720	20M QPSK 1RB@50	0.235	0.158	19.28	20.40	0.304	Battery 1#	/
Main	Left tilt	/	/	132072/1720	20M QPSK 1RB@50	0.312	0.196	19.28	20.40	0.404	Battery 1#	/
Main	Right cheek	/	/	132072/1720	20M QPSK 1RB@50	0.381	0.224	19.28	20.40	0.493	Battery 1#	/
Main	Right tilt	/	/	132072/1720	20M QPSK 1RB@50	0.436	0.229	19.28	20.40	0.564	Battery 1#	/
Main	Left cheek	/	/	132322/1745	20M QPSK 50%RB@0	0.293	0.196	19.21	20.40	0.385	Battery 1#	/
Main	Left tilt	/	/	132322/1745	20M QPSK 50%RB@0	0.381	0.238	19.21	20.40	0.501	Battery 1#	/
Main	Right cheek	/	/	132322/1745	20M QPSK 50%RB@0	0.471	0.275	19.21	20.40	0.619	Battery 1#	/
Main	Right tilt	/	/	132322/1745	20M QPSK 50%RB@0	0.508	0.268	19.21	20.40	0.668	Battery 1#	/
Main	Right tilt	/	/	132322/1745	20M QPSK 50%RB@0	0.669	0.363	19.21	20.40	0.880	Battery 2#	Plot
Main	Right tilt	/	/	132072/1720	20M QPSK 50%RB@50	0.604	0.335	19.20	20.40	0.796	Battery 2#	/
Main	Right tilt	/	/	132572/1770	20M QPSK 50%RB@0	0.632	0.351	19.15	20.40	0.843	Battery 2#	/
Main	Right tilt	/	/	132322/1745	20M QPSK 50%RB@0	0.544	0.300	19.21	20.40	0.715	Battery 3#	/
Main	Right tilt	/	/	132322/1745	20M QPSK 50%RB@0	0.519	0.273	19.21	20.40	0.683	With SIM2	/
Main	Right tilt	/	/	132072/1720	20M QPSK 100%RB@0	0.580	0.321	19.18	20.40	0.768	Battery 2#	/

Table 55: Head SAR test results of LTE Band 66



Antenna	Test Position	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information
Second	Front side	15mm	/	132072/1720	20M QPSK 1RB@50	0.001	0.001	20.47	21.50	0.001	Battery 1#
Second	Back side	15mm	/	132072/1720	20M QPSK 1RB@50	0.042	0.022	20.47	21.50	0.053	Battery 1#
Second	Front side	15mm	/	132072/1720	20M QPSK 50%RB@50	0.001	0.001	20.49	21.50	0.001	Battery 1#
Second	Back side	15mm	/	132072/1720	20M QPSK 50%RB@50	0.053	0.030	20.49	21.50	0.067	Battery 1#
Second	Back side	15mm	/	132072/1720	20M QPSK 1RB@50	0.041	0.021	20.47	21.50	0.052	Battery 2#
Second	Back side	15mm	/	132072/1720	20M QPSK 1RB@50	0.040	0.020	20.47	21.50	0.051	Battery 3#
Second	Back side	15mm	/	132072/1720	20M QPSK 1RB@50	0.039	0.019	20.47	21.50	0.049	With SIM2
Main	Front side	15mm	/	132072/1720	20M QPSK 1RB@50	0.118	0.072	22.25	23.40	0.154	Battery 1#
Main	Back side	15mm	/	132072/1720	20M QPSK 1RB@50	0.243	0.144	22.25	23.40	0.317	Battery 1#
Main	Front side	15mm	/	132072/1720	20M QPSK 50%RB@50	0.125	0.076	22.31	23.40	0.161	Battery 1#
Main	Back side	15mm	/	132072/1720	20M QPSK 50%RB@50	0.261	0.154	22.31	23.40	0.335	Battery 1#
Main	Back side	15mm	/	132072/1720	20M QPSK 50%RB@50	0.274	0.161	22.31	23.40	0.352	Battery 2#
Main	Back side	15mm	/	132072/1720	20M QPSK 50%RB@50	0.364	0.221	22.31	23.40	0.468	Battery 3#
Main	Back side	15mm	/	132072/1720	20M QPSK 50%RB@50	0.265	0.156	22.31	23.40	0.341	With SIM2

Table 56: Body Worn SAR test results of LTE Band 66



Antenna	Test Position	Dist.	NT Stat	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information
Second	Front side	10mm	/	132322/1745	20M QPSK 1RB@50	0.057	0.029	19.76	21.00	0.076	Battery 1#
Second	Back side	10mm	/	132322/1745	20M QPSK 1RB@50	0.065	0.030	19.76	21.00	0.086	Battery 1#
Second	Left side	10mm	/	132322/1745	20M QPSK 1RB@50	0.001	0.001	19.76	21.00	0.001	Battery 1#
Second	Right side	10mm	/	132322/1745	20M QPSK 1RB@50	0.001	0.001	19.76	21.00	0.001	Battery 1#
Second	Bottom side	10mm	/	132322/1745	20M QPSK 1RB@50	0.139	0.067	19.76	21.00	0.185	Battery 1#
Second	Front side	10mm	/	132072/1720	20M QPSK 50%RB@50	0.001	0.001	19.81	21.00	0.001	Battery 1#
Second	Back side	10mm	/	132072/1720	20M QPSK 50%RB@50	0.051	0.024	19.81	21.00	0.067	Battery 1#
Second	Left side	10mm	/	132072/1720	20M QPSK 50%RB@50	0.001	0.001	19.81	21.00	0.001	Battery 1#
Second	Right side	10mm	/	132072/1720	20M QPSK 50%RB@50	0.001	0.001	19.81	21.00	0.001	Battery 1#
Second	Bottom side	10mm	/	132072/1720	20M QPSK 50%RB@50	0.133	0.064	19.81	21.00	0.175	Battery 1#
Second	Bottom side	10mm	/	132322/1745	20M QPSK 1RB@50	0.143	0.069	19.76	21.00	0.190	Battery 2#
Second	Bottom side	10mm	/	132322/1745	20M QPSK 1RB@50	0.161	0.081	19.76	21.00	0.214	Battery 3#
Second	Bottom side	10mm	/	132322/1745	20M QPSK 1RB@50	0.120	0.058	19.76	21.00	0.160	With SIM2
Main	Front side	10mm	/	132072/1720	20M QPSK 1RB@50	0.130	0.078	19.28	20.40	0.168	Battery 1#
Main	Back side	10mm	/	132072/1720	20M QPSK 1RB@50	0.272	0.152	19.28	20.40	0.352	Battery 1#
Main	Left side	10mm	/	132072/1720	20M QPSK 1RB@50	0.104	0.057	19.28	20.40	0.135	Battery 1#
Main	Right side	10mm		132072/1720	20M QPSK 1RB@50	0.000	0.000	19.28	20.40	0.000	Battery 1#
Main	Top side	10mm		132072/1720	20M QPSK 1RB@50	0.188	0.104	19.28	20.40	0.243	Battery 1#
Main	Front side	10mm		132322/1745	20M QPSK 50%RB@0	0.132	0.078	19.21	20.40	0.174	Battery 1#
Main	Back side	10mm		132322/1745	20M QPSK 50%RB@0	0.277	0.157	19.21	20.40	0.364	Battery 1#
Main	Left side	10mm		132322/1745	20M QPSK 50%RB@0	0.126	0.070	19.21	20.40	0.166	Battery 1#
Main	Right side	10mm		132322/1745	20M QPSK 50%RB@0	0.047	0.028	19.21	20.40	0.062	Battery 1#
Main	Top side	10mm		132322/1745	20M QPSK 50%RB@0	0.231	0.128	19.21	20.40	0.304	Battery 1#
Main	Back side	10mm		132322/1745	20M QPSK 50%RB@0	0.299	0.170	19.21	20.40	0.393	Battery 2#
Main	Back side	10mm		132322/1745	20M QPSK 50%RB@0	0.374	0.219	19.21	20.40	0.492	Battery 3#
Main	Back side	10mm		132322/1745	20M QPSK 50%RB@0	0.304	0.170	19.21	20.40	0.400	With SIM2

Table 57: Hotspot SAR test results of LTE Band 66

Per KDB648474 D04, when hotspot mode applies, Product Specific 10-g 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:

Antenna	Test Position	Dist.	ANT Stat	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Conducted Power (dBm)	Max Power Without Reduction	Scaled-up 1-g SAR (W/kg)	Product Specific 10-g SAR (W/kg)
Second	Front side	10mm	/	132322/1745	20M QPSK 1RB@50	0.057	0.029	19.76	21.5	0.085	0.085
Second	Back side	10mm	/	132322/1745	20M QPSK 1RB@50	0.065	0.030	19.76	21.5	0.097	0.097
Second	Left side	10mm	/	132322/1745	20M QPSK 1RB@50	0.001	0.001	19.76	21.5	0.001	0.001
Second	Right side	10mm	/	132322/1745	20M QPSK 1RB@50	0.001	0.001	19.76	21.5	0.001	0.001
Second	Bottom side	10mm	/	132322/1745	20M QPSK 1RB@50	0.139	0.067	19.76	21.5	0.207	0.207
Second	Front side	10mm	/	132072/1720	20M QPSK 50%RB@50	0.001	0.001	19.81	21.5	0.001	0.001
Second	Back side	10mm	/	132072/1720	20M QPSK 50%RB@50	0.051	0.024	19.81	21.5	0.075	0.075
Second	Left side	10mm	/	132072/1720	20M QPSK 50%RB@50	0.001	0.001	19.81	21.5	0.001	0.001
Second	Right side	10mm	/	132072/1720	20M QPSK 50%RB@50	0.001	0.001	19.81	21.5	0.001	0.001
Second	Bottom side	10mm	/	132072/1720	20M QPSK 50%RB@50	0.133	0.064	19.81	21.5	0.196	0.196
Second	Bottom side	10mm	/	132322/1745	20M QPSK 1RB@50	0.143	0.069	19.76	21.5	0.213	0.213
Second	Bottom side	10mm	/	132322/1745	20M QPSK 1RB@50	0.161	0.081	19.76	21.5	0.240	0.240
Second	Bottom side	10mm	/	132322/1745	20M QPSK 1RB@50	0.120	0.058	19.76	21.5	0.179	0.179
Main	Front side	10mm	/	132072/1720	20M QPSK 1RB@50	0.130	0.078	19.28	23.4	0.336	0.336
Main	Back side	10mm	/	132072/1720	20M QPSK 1RB@50	0.272	0.152	19.28	23.4	0.702	0.702
Main	Left side	10mm	/	132072/1720	20M QPSK 1RB@50	0.104	0.057	19.28	23.4	0.269	0.269
Main	Right side	10mm		132072/1720	20M QPSK 1RB@50	0.000	0.000	19.28	23.4	0.000	0.000
Main	Top side	10mm		132072/1720	20M QPSK 1RB@50	0.188	0.104	19.28	23.4	0.485	0.485
Main	Front side	10mm		132322/1745	20M QPSK 50%RB@0	0.132	0.078	19.21	23.4	0.346	0.346
Main	Back side	10mm		132322/1745	20M QPSK 50%RB@0	0.277	0.157	19.21	23.4	0.727	0.727
Main	Left side	10mm		132322/1745	20M QPSK 50%RB@0	0.126	0.070	19.21	23.4	0.331	0.331
Main	Right side	10mm		132322/1745	20M QPSK 50%RB@0	0.047	0.028	19.21	23.4	0.123	0.123
Main	Top side	10mm		132322/1745	20M QPSK 50%RB@0	0.231	0.128	19.21	23.4	0.606	0.606
Main	Back side	10mm		132322/1745	20M QPSK 50%RB@0	0.299	0.170	19.21	23.4	0.785	0.785
Main	Back side	10mm		132322/1745	20M QPSK 50%RB@0	0.374	0.219	19.21	23.4	0.981	0.981
Main	Back side	10mm		132322/1745	20M QPSK 50%RB@0	0.304	0.170	19.21	23.4	0.798	0.798

Table 58: Product Specific 10-g SAR test reduction evaluation of LTE Band 66

Note: According to the table above, Product Specific 10-g SAR test is not required for this frequency band.

7.2.12 SAR measurement Results of 2.4G Wi-Fi

Antenna	Test Position	Dist.	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Duty Cycle	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	Note
Ant4	Left cheek	/	6/2437	802.11b	0.244	0.125	99%	13.01	14.00	0.310	Battery 1#	/
Ant4	Left tilt	/	6/2437	802.11b	0.135	0.071	99%	13.01	14.00	0.171	Battery 1#	/
Ant4	Right cheek	/	6/2437	802.11b	0.106	0.063	99%	13.01	14.00	0.134	Battery 1#	/
Ant4	Right tilt	/	6/2437	802.11b	0.001	0.001	99%	13.01	14.00	0.001	Battery 1#	/
Ant4	Left cheek	/	6/2437	802.11b	0.247	0.124	99%	13.01	14.00	0.313	Battery 2#	/
Ant4	Left cheek	/	6/2437	802.11b	0.256	0.137	99%	13.01	14.00	0.325	Battery 3#	Plot

Table 59: Head SAR test results of 2.4G Wi-Fi

Antenna	Test Position	Dist.	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Duty Cycle	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	Note
Ant4	Front side	15mm	6/2437	802.11b	0.099	0.056	99%	18.45	19.50	0.127	Battery 1#	/
Ant4	Back side	15mm	6/2437	802.11b	0.104	0.058	99%	18.45	19.50	0.134	Battery 1#	/
Ant4	Back side	15mm	6/2437	802.11b	0.108	0.060	99%	18.45	19.50	0.139	Battery 2#	/
Ant4	Back side	15mm	6/2437	802.11b	0.126	0.073	99%	18.45	19.50	0.162	Battery 3#	Plot

Table 60: Body Worn SAR test results of 2.4G Wi-Fi

Antenna	Test Position	Dist.	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Duty Cycle	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	Note
Ant4	Front side	10mm	6/2437	802.11b	0.177	0.093	99%	18.45	19.50	0.228	Battery 1#	/
Ant4	Back side	10mm	6/2437	802.11b	0.223	0.106	99%	18.45	19.50	0.287	Battery 1#	/
Ant4	Right side	10mm	6/2437	802.11b	0.170	0.082	99%	18.45	19.50	0.219	Battery 1#	/
Ant4	Top side	10mm	6/2437	802.11b	0.142	0.072	99%	18.45	19.50	0.183	Battery 1#	/
Ant4	Back side	10mm	6/2437	802.11b	0.225	0.111	99%	18.45	19.50	0.289	Battery 2#	/
Ant4	Back side	10mm	6/2437	802.11b	0.256	0.135	99%	18.45	19.50	0.329	Battery 3#	Plot

Table 61: Hotspot SAR test results of 2.4G Wi-Fi

Note: Per KDB248227D01, For SAR test of 2.4G Wi-Fi, SAR is measured for 2.4 GHz 802.11b DSSS using the initial Test Configuration procedure. The highest reported SAR for DSSS is adjusted by the ratio of OFDM 802.11g/n to DSSS specified maximum output power and the adjusted SAR is < 1.2 W/kg, so SAR for 802.11g/n is not required.

Per KDB648474 D04, when hotspot mode applies, Product Specific 10-g 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:

Antenna	Test Position	Dist.	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Duty Cycle	Conducted Power (dBm)	Max Power Without Reduction	Scaled-up 1-g SAR (W/kg)	Product Specific 10-g SAR Exclusion
Ant4	Front side	10mm	6/2437	802.11b	0.177	0.093	99%	18.45	19.50	0.225	Yes
Ant4	Back side	10mm	6/2437	802.11b	0.223	0.106	99%	18.45	19.50	0.284	Yes
Ant4	Right side	10mm	6/2437	802.11b	0.170	0.082	99%	18.45	19.50	0.216	Yes
Ant4	Top side	10mm	6/2437	802.11b	0.142	0.072	99%	18.45	19.50	0.181	Yes
Ant4	Back side	10mm	6/2437	802.11b	0.225	0.111	99%	18.45	19.50	0.287	Yes
Ant4	Back side	10mm	6/2437	802.11b	0.256	0.135	99%	18.45	19.50	0.326	Yes

Table 62: Product Specific 10-g SAR test reduction evaluation of 2.4G Wi-Fi

Note: According to the table above, Product Specific 10-g SAR test is not required for this frequency band.

7.2.13 SAR measurement Results of BT

Antenna	Test Position	Dist.	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Duty Cycle	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	Note
Ant4	Left cheek	/	78/2480	DH5	0.100	0.049	76%	11.64	13.00	0.180	Battery 1#	/
Ant4	Left tilt	/	78/2480	DH5	0.042	0.022	76%	11.64	13.00	0.076	Battery 1#	/
Ant4	Right cheek	/	78/2480	DH5	0.043	0.023	76%	11.64	13.00	0.077	Battery 1#	/
Ant4	Right tilt	/	78/2480	DH5	0.048	0.028	76%	11.64	13.00	0.086	Battery 1#	/
Ant4	Left cheek	/	78/2480	DH5	0.100	0.051	76%	11.64	13.00	0.180	Battery 2#	/
Ant4	Left cheek	/	78/2480	DH5	0.104	0.058	76%	11.64	13.00	0.187	Battery 3#	Plot

Table 63: Head SAR test results of BT

Antenna	Test Position	Dist.	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Duty Cycle	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	Note
Ant4	Front side	15mm	78/2480	DH5	0.001	0.001	76%	11.64	13.00	0.002	Battery 1#	/
Ant4	Back side	15mm	78/2480	DH5	0.022	0.015	76%	11.64	13.00	0.040	Battery 1#	Plot
Ant4	Back side	15mm	78/2480	DH5	0.001	0.001	76%	11.64	13.00	0.002	Battery 2#	/
Ant4	Back side	15mm	78/2480	DH5	0.001	0.001	76%	11.64	13.00	0.002	Battery 3#	/

Table 64: Body Worn SAR test results of BT

Antenna	Test Position	Dist.	Test Channel /Freq.(MHz)	Test Mode	Measured 1-g SAR (W/kg)	Measured 10-g SAR (W/kg)	Duty Cycle	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 10-g SAR (W/kg)	Accessory Information	Note
Ant4	Front side	0mm	78/2480	DH5	0.162	0.068	76%	11.64	13.00	0.122	Battery 1#	/
Ant4	Back side	0mm	78/2480	DH5	0.190	0.076	76%	11.64	13.00	0.137	Battery 1#	/
Ant4	Right side	0mm	78/2480	DH5	0.117	0.049	76%	11.64	13.00	0.088	Battery 1#	/
Ant4	Top side	0mm	78/2480	DH5	0.142	0.058	76%	11.64	13.00	0.104	Battery 1#	/
Ant4	Back side	0mm	78/2480	DH5	0.194	0.086	76%	11.64	13.00	0.155	Battery 2#	/
Ant4	Back side	0mm	78/2480	DH5	0.217	0.101	76%	11.64	13.00	0.182	Battery 3#	Plot

Table 65: Product Specific 10-g SAR test results of BT

7.3 Multiple Transmitter Evaluation

The detailed location of the Tx antennas inside the device refers to Appendix.

The list information of following tables which is relevant for the decision if a simultaneous transmit evaluation is necessary according to FCC KDB 447498 D01 General RF Exposure Guidance.

Mode	Exposure Condition	Front Side	Back Side	Left Side	Right Side	Top Side	Bottom Side
Ant1	Hotspot/ Product specific 10g SAR	Yes	Yes	Yes	Yes	Yes	No
Ant2	Hotspot/ Product specific 10g SAR	Yes	Yes	Yes	Yes	No	Yes
Ant3	Hotspot/ Product specific 10g SAR	No	No	No	No	No	No
Ant4	Hotspot/ Product specific 10g SAR	Yes	Yes	No	Yes	Yes	No

Table 66: Sides for Hotspot/ Product specific 10g SAR testing

Note:

- 1) Per KDB 648474 D04, because the diagonal distance of this device is $\geq 160\text{mm}$, so it is a phablet.
- 2) Per KDB 941225 D06 and KDB 648474 D04, particular DUT edges were not required to be evaluated for Hotspot/ Product specific 10g SAR SAR if the antenna-to-edge distance is greater than 2.5cm.
- 3) Ant3 only has Rx capability.

7.3.1 Simultaneous Transmission Possibilities

The Simultaneous Transmission Possibilities of this device are as below:

NO.	Simultaneous TX Combination	Head	Body	Hotspot	Product Specific 10g SAR(0mm)
1	GSM Voice(Main Antenna) + BT	Yes	Yes	N/A	Yes
2	GSM DATA(Main Antenna) + BT	N/A	Yes	N/A	Yes
3	GSM Voice(Second Antenna) + BT	Yes	Yes	N/A	Yes
4	GSM DATA (Second Antenna)+ BT	N/A	Yes	N/A	Yes
5	GSM Voice(Main Antenna) + 2.4G Wi-Fi	Yes	Yes	N/A	Yes
6	GSM DATA(Main Antenna) + 2.4G Wi-Fi	N/A	Yes	Yes	Yes
7	GSM Voice(Second Antenna) + 2.4G Wi-Fi	Yes	Yes	N/A	Yes
8	GSM DATA(Second Antenna) + 2.4G Wi-Fi	N/A	Yes	Yes	Yes
9	UMTS (Main Antenna) + BT	Yes	Yes	N/A	Yes
10	UMTS (Second Antenna) + BT	Yes	Yes	N/A	Yes
11	UMTS (Main Antenna) + 2.4G Wi-Fi	Yes	Yes	Yes	Yes
12	UMTS (Second Antenna) + 2.4G Wi-Fi	Yes	Yes	Yes	Yes
13	LTE (Main Antenna) + 2.4G Wi-Fi	Yes*	Yes*	Yes	Yes
14	LTE (Main Antenna) + BT	Yes	Yes*	N/A	Yes
15	LTE (Second Antenna) + 2.4G Wi-Fi	Yes*	Yes*	Yes	Yes
16	LTE (Second Antenna) + BT	Yes	Yes*	N/A	Yes

Table 67: Simultaneous Transmission Possibilities

Note:

- 1) WiFi 2.4G and Bluetooth share the same TX antenna and can't transmit simultaneously.
- 2) The device does not support DTM function.
- 3) * Volte or pre-installed VOIP applications are considered.
- 4) The Main Antenna and Second Antenna can't transmit simultaneously.

7.3.2 SAR Summation Scenario

Band	Head				Body-worn		Hotspot						Product Specific 10-g					
	Left cheek	Left tilt	Right cheek	Right tilt	Front side	Back side	Front side	Back side	Left side	Right side	Top side	Bottom side	Front side	Back side	Left side	Right side	Top side	Bottom side
GSM 850	0.400	0.289	0.515	0.370	0.098	0.206	0.140	0.292	0.191	0.001	0.132	/	/	/	/	/	/	/
GSM 1900	0.001	0.001	0.012	0.001	0.153	0.290	0.144	0.162	0.001	0.001	/	0.473	/	/	/	/	/	/
UMTS Band II	0.001	0.001	0.027	0.001	0.245	0.376	0.260	0.449	0.001	0.001	/	0.770	/	/	/	/	/	1.886
UMTS Band IV	0.017	0.001	0.001	0.001	0.001	0.054	0.001	0.054	0.001	0.001	/	0.119	/	/	/	/	/	/
UMTS Band V	0.331	0.262	0.588	0.351	0.100	0.190	0.156	0.342	0.176	0.097	0.146	/	/	/	/	/	/	/
LTE Band 2	0.001	0.001	0.016	0.001	0.194	0.395	0.291	0.484	0.001	0.001	/	0.835	/	/	/	/	/	2.058
LTE Band 4	0.001	0.001	0.012	0.001	0.001	0.045	0.001	0.070	0.001	0.001	/	0.158	/	/	/	/	/	/
LTE Band 5	0.277	0.212	0.466	0.288	0.093	0.152	0.128	0.282	0.146	0.076	0.121	/	/	/	/	/	/	/
LTE Band 7	0.068	0.001	0.065	0.057	0.132	0.182	0.309	0.447	0.198	0.096	/	0.414	/	/	/	/	/	/
LTE Band 26	0.277	0.212	0.466	0.288	0.093	0.152	0.128	0.282	0.146	0.076	0.121	/	/	/	/	/	/	/
LTE Band 38	0.073	0.001	0.001	0.001	0.054	0.288	0.219	0.573	0.122	0.091	/	0.378	/	/	/	/	/	/
LTE Band 41	0.073	0.001	0.001	0.001	0.054	0.288	0.219	0.573	0.122	0.091	/	0.378	/	/	/	/	/	/
LTE Band 66	0.019	0.001	0.001	0.001	0.001	0.067	0.076	0.086	0.001	0.001	/	0.214	/	/	/	/	/	/
WiFi 2.4G	0.325	0.171	0.134	0.001	0.127	0.162	0.228	0.329	/	0.219	0.183	/	/	/	/	/	/	/
BT	0.187	0.076	0.077	0.086	0.002	0.040	/	/	/	/	/	/	0.122	0.182	/	0.088	0.104	/
Simultaneous Transmission SAR	0.725	0.460	0.722	0.456	0.372	0.557	0.537	0.902	0.198	0.316	0.329	0.835	0.122	0.182	/	0.088	0.104	2.058

Table 68: SAR Simultaneous Tx Combination of Second antenna and Wi-Fi /BT antenna.

Band	Head				Body-worn		Hotspot ON						Product Specific 10-g					
	Left cheek	Left tilt	Right cheek	Right tilt	Front side	Back side	Front side	Back side	Left side	Right side	Top side	Bottom side	Front side	Back side	Left side	Right side	Top side	Bottom side
GSM850	0.157	0.094	0.142	0.094	0.135	0.291	0.142	0.264	0.080	0.154	/	0.128	/	/	/	/	/	/
GSM 1900	0.276	0.253	0.575	0.387	0.206	0.425	0.113	0.256	0.096	0.001	0.098	/	/	/	/	/	/	/
UMTS Band II	0.451	0.533	0.967	0.661	0.280	0.410	0.199	0.341	0.155	0.069	0.412	/	/	/	/	/	/	/
UMTS Band IV	0.286	0.355	0.465	0.572	0.175	0.384	0.147	0.274	0.119	0.001	0.250	/	/	/	/	/	/	/
UMTS Band V	0.133	0.073	0.145	0.080	0.171	0.302	0.141	0.345	0.119	0.170	/	0.119	/	/	/	/	/	/
LTE Band 2	0.377	0.500	0.717	0.610	0.241	0.553	0.181	0.310	0.137	0.075	0.330	/	/	/	/	/	/	/
LTE Band 4	0.385	0.501	0.619	0.880	0.161	0.468	0.174	0.492	0.166	0.062	0.304	/	/	/	/	/	/	/
LTE Band 5	0.136	0.089	0.170	0.095	0.169	0.248	0.148	0.414	0.149	0.207	/	0.114	/	/	/	/	/	/
LTE Band 7	0.276	0.339	0.417	0.680	0.169	0.391	0.146	0.475	0.099	0.001	0.264	/	/	/	/	/	/	/
LTE Band 26	0.136	0.089	0.170	0.095	0.169	0.248	0.148	0.414	0.149	0.207	/	0.114	/	/	/	/	/	/
LTE Band 38	0.144	0.165	0.207	0.486	0.075	0.314	0.093	0.315	0.053	0.058	0.185	/	/	/	/	/	/	/
LTE Band 41	0.144	0.165	0.207	0.486	0.075	0.314	0.093	0.315	0.053	0.058	0.185	/	/	/	/	/	/	/
LTE Band 66	0.385	0.501	0.619	0.880	0.161	0.468	0.174	0.492	0.166	0.062	0.304	/	/	/	/	/	/	/
WiFi 2.4G	0.325	0.171	0.134	0.001	0.127	0.162	0.228	0.329	/	0.219	0.183	/	/	/	/	/	/	/
BT	0.187	0.076	0.077	0.086	0.002	0.040	/	/	/	/	/	/	0.122	0.182	/	0.088	0.104	/
Simultaneous Transmission SAR	0.776	0.704	1.101	0.966	0.407	0.715	0.427	0.821	0.166	0.426	0.595	0.128	0.122	0.182	/	0.088	0.104	/

Table 69: SAR Simultaneous Tx Combination of Main antenna and Wi-Fi /BT antenna.

7.3.3 Simultaneous Transmission Conclusion

The above numeral summed SAR results is sufficient to determine that simultaneous transmission cases will not exceed the SAR limit and therefore simultaneous transmission SAR with Volume Scans is not required per KDB 447498 D01.

Appendix A. System Check Plots

(Please See Appendix No.: SYBH(Z-SAR)20210525030001-A, total: 12 pages)

Appendix B. SAR Measurement Plots

(Please See Appendix No.: SYBH(Z-SAR)20210525030001-B, total: 83 pages)

Appendix C. Conducted Power Test Results

(Please See Appendix No.: SYBH(Z-SAR)20210525030001-C, total: 96 pages)

Appendix D. Calibration Certificate

(Please See Appendix No.: SYBH(Z-SAR)20210525030001-D, total: 87 pages)

Appendix E. Photo documentation

(Please See Appendix No.: SYBH(Z-SAR)20210525030001-E, total: 8 pages)

Appendix F. Antenna Location

(Please See Appendix No.: SYBH(Z-SAR)20210525030001-F, total: 1 page)

End