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FCC SAR Compliance Test Report

Product Name: Smart Phone

Model: STK-LX3

Report No.: SYBH(Z-SAR)20190309001001-2

FCC ID: QISSTK-LX3

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DATE	2019-03-28	2019-03-28

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※ ※ Modified History ※ ※

REV.	DESCRIPTION	ISSUED DATE	REMARK
Rev.1.0	Initial Test Report Release	2019-03-28	Zhang Zufu

1 General Information

1.1 Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing are 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	0.62	0.28	0.60	/
GSM1900	0.52	0.20	0.54	/
UMTS Band II	0.63	0.31	0.44	1.73
UMTS Band IV	0.49	0.27	0.32	/
UMTS Band V	0.58	0.31	0.78	/
LTE Band 2	0.78	0.39	0.57	1.86
LTE Band 4	0.45	0.27	0.37	/
LTE Band 5	0.59	0.34	0.69	/
LTE Band 7	0.58	0.28	0.56	/
WiFi 2.4G	0.18	0.07	0.29	/
The highest reported SAR for Head, Body Worn, Hotspot, Product Specific 10-g SAR and Simultaneous transmission exposure conditions are 0.78 W/kg, 0.39 W/kg, 0.78 W/kg, 1.86 W/kg and 0.82 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 ANSI C95.1:1992/IEEE C95.1:199.

The device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits according to the FCC rule §2.1093, the ANSI C95.1:1992/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:	STK-LX3		
FCC ID :	QISSTK-LX3		
SN:	1#: 85L0119226000205 2#: 85L0119226000293 3#: 85L0119226000162 4#: 85L0119226000049 5#: 85L0119226000114 6#: 85L0119226000301 7#: 85L0119226000109		
Device Type :	Portable device		
Device Phase:	Identical Prototype		
Exposure Category:	Uncontrolled environment / general population		
Hardware Version :	HL1STKM		
Software Version :	9.0.1.6(C900E6R1P2)		
Antenna Type :	Internal antenna		
Other Accessories	Headset		
Device Operating Configurations:			
Supporting Mode(s)	GSM850/1900, UMTS Band II/IV/V, LTE Band 2/4/5/7, WiFi 2.4G, BT		
Test Modulation	GSM(GMSK/8PSK),UMTS(QPSK), LTE(QPSK/16QAM), WiFi(DSSS/OFDM),BT(GFSK)		
Device Class	B		
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
	BT	2400-2483.5	
	WiFi 2.4G	2412-2462	
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	6		
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 Band II)		
	3, tested with power control “all 1”(UMTS Band IV)		

Test Channels (low-mid-high):	3, tested with power control "all 1"(UMTS Band V)
	3, tested with power control all Max.(LTE Band 2)
	3, tested with power control all Max.(LTE Band 4)
	3, tested with power control all Max.(LTE Band 5)
	3, tested with power control all Max.(LTE Band 7)
	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)
	802.11b/g/n 20M:1-2-6-10-11(WiFi 2.4G)
	802.11n 40M:3-4-6-8-9 (WiFi 2.4G)
	BT: 0-19-39-78

Table 3: Device information and operating configuration

1.3.1 General Description

STK-LX3 is subscriber equipment in the GSM/WCDMA/LTE system.

The GSM frequency band includes GSM850 and GSM900 and DCS1800 and PCS1900.

The UMTS frequency band is B1 and B2 and B4 and B5 and B8.

The LTE frequency band is B1 and B2 and B3 and B4 and B5 and B7 and B8 and B28.

But only GSM850 and GSM1900, UMTS frequency B2 and B4 and B5, LTE frequency B2 and B4 and B5 and B7 bands test data included in this report.

The Mobile Phone implements such functions as RF signal receiving/transmitting, LTE/HSPA/UMTS and GSM/GPRS/EDGE protocol processing, voice, video MMS service, GPS, AGPS and WIFI etc. Externally it provides one micro SD card interface, earphone port and different versions of the software, the phone may support single SIM card or double SIM card. 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 24022915	Huawei Technologies Co., Ltd. (Manufacturer: Sunwoda)	Battery Model: HB446486ECW Rated capacity: 3900mAh Nominal Voltage: +3.82V Charging Voltage: +4.4V
	Huawei Technologies Co., Ltd. (Manufacturer: SCUD)	
	Huawei Technologies Co., Ltd. (Manufacturer: Desay)	

1.4 Test specification(s)

ANSI C95.1:1992 /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. CNAS Registration number: L0310 A2LA TESTING CERT # 2174.01 & 2174.02 & 2174.03

1.6 Applicant and Manufacturer

Company Name	HUAWEI TECHNOLOGIES CO., LTD
Address	Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.C

1.7 Application details

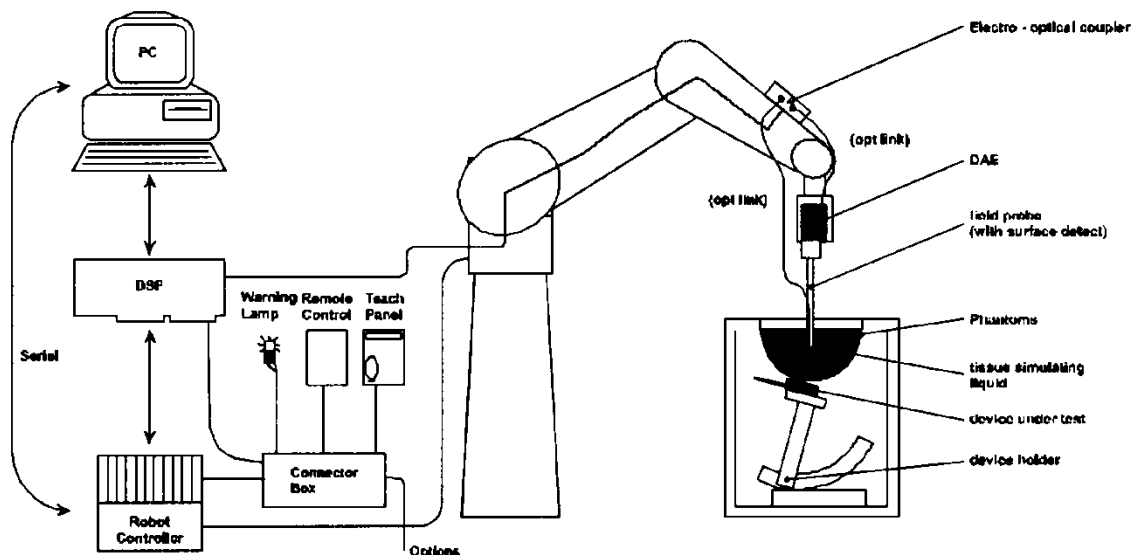
Start Date of test	2019-03-20
End Date of test	2019-03-25

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.

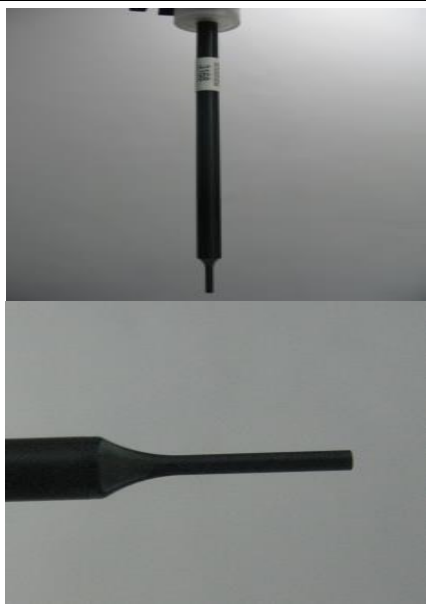
DAE

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

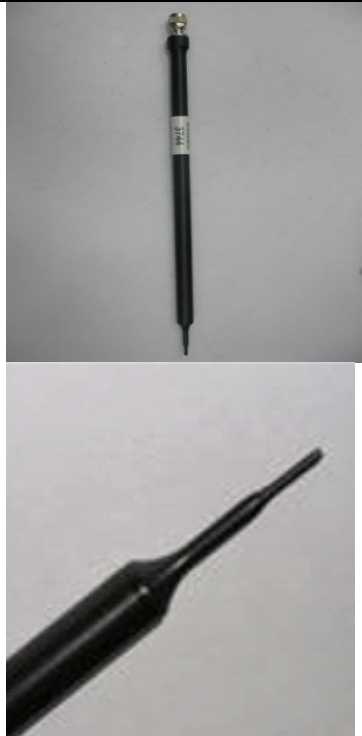
2.4 Probe description

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

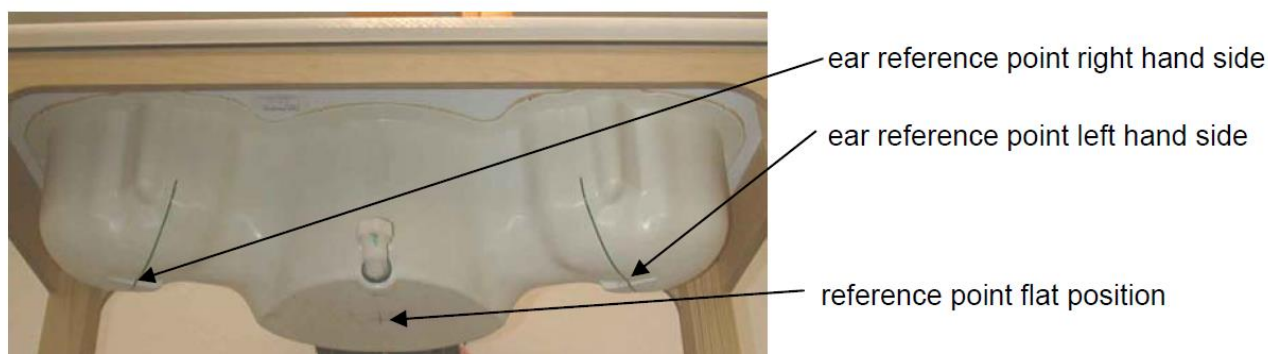
SAM Twin Phantom

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	3744	2018-07-25	One year
☒	SPEAG	Dosimetric E-Field Probe	EX3DV4	3168	2018-09-27	One year
☒	SPEAG	Dosimetric E-Field Probe	EX3DV4	7505	2018-06-12	One year
☒	SPEAG	Dosimetric E-Field Probe	EX3DV4	7381	2018-09-28	One year
☒	SPEAG	Dosimetric E-Field Probe	EX3DV4	7375	2018-12-13	One year
☒	SPEAG	835 MHz Dipole	D835V2	4d126	2018-07-24	Three years
☒	SPEAG	1750 MHz Dipole	D1750V2	1123	2017-07-27	Three years
☒	SPEAG	1900 MHz Dipole	D1900V2	5d143	2017-09-20	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	851	2018-07-18	One year
☒	SPEAG	Data acquisition electronics	DAE4	1492	2018-11-14	One year
☒	SPEAG	Data acquisition electronics	DAE4	1554	2018-06-05	One year
☒	SPEAG	Data acquisition electronics	DAE4	1236	2018-07-18	One year
☒	SPEAG	Data acquisition electronics	DAE4	1235	2018-11-14	One year
☒	SPEAG	Software	DASY52	N/A	NCR	NCR
☒	SPEAG	Twin Phantom	SAM	1475	NCR	NCR
☒	SPEAG	Twin Phantom	SAM	1620	NCR	NCR
☒	SPEAG	Twin Phantom	SAM	1892	NCR	NCR
☒	SPEAG	Twin Phantom	SAM	1958	NCR	NCR
☒	SPEAG	Triple Flat Phantom	Triple Flat Phantom 5.1C	1176/2	NCR	NCR
☒	R & S	Universal Radio Communication Tester	CMU 200	123202	2018-12-18	One year
☒	R & S	Universal Radio Communication Tester	CMW 500	116265	2019-03-11	One year
☒	R & S	Universal Radio Communication Tester	CMW 500	166456	2018-10-31	One year
☒	R & S	Universal Radio Communication Tester	CMW 500	165424	2018-07-07	One year
☒	Anritsu	Singal Analyzer	MS2690A	6261767335	2019-03-14	One year
☒	Anritsu	Radio Communication Analyser	MT8821C	6201735100	2019-03-14	One year
☒	Agilent	Network Analyser	E5071C	MY46107368	2018-10-15	One year
☒	Agilent	Dielectric Probe Kit	85070E	2484	NCR	NCR
☒	Keysight	Signal Generator	E8257D	MY56440071	2018-12-18	One year
☒	MINI-CIRCUITS	Amplifier	ZHL-42W	QA1402001	NCR	NCR
☒	AR	Directional Coupler	DC7144A M1	0423264	2018-04-28	One year
☒	Keysight	Power Meter	E4417A	MY57160005	2019-03-14	One year
☒	Keysight	Power Meter Sensor	E9321A	MY57150002	2019-03-14	One year
☒	R & S	Power Meter	NRP	100740	2018-07-17	One year
☒	R & S	Power Meter Sensor	NRP-Z11	106288	2018-07-17	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 C.
 - a) There is no physical damage on the dipole;
 - b) System check with specific dipole is within 10% of calibrated value;
 - c) The most recent return-loss result, measured at least annually, deviates by no more than 20% from the previous measurement.
 - d) 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		
			$\Delta z_{\text{Zoom}}(n)$	$\Delta z_{\text{Zoom}}(1)^*$	$\Delta z_{\text{Zoom}}(n>1)^*$	
≤2GHz	≤15mm	≤8mm	≤5mm	≤4mm	≤1.5* $\Delta z_{\text{Zoom}}(n-1)$	≥30mm
2-3GHz	≤12mm	≤5mm	≤5mm	≤4mm	≤1.5* $\Delta z_{\text{Zoom}}(n-1)$	≥30mm
3-4GHz	≤12mm	≤5mm	≤4mm	≤3mm	≤1.5* $\Delta z_{\text{Zoom}}(n-1)$	≥28mm
4-5GHz	≤10mm	≤4mm	≤3mm	≤2.5mm	≤1.5* $\Delta z_{\text{Zoom}}(n-1)$	≥25mm
5-6GHz	≤10mm	≤4mm	≤2mm	≤2mm	≤1.5* $\Delta z_{\text{Zoom}}(n-1)$	≥22mm

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 x 5 x 7 points (with 8mm horizontal resolution) or 7 x 7 x 7 points (with 5mm horizontal resolution) or 8 x 8 x 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 (20x20x20) 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 _{i0} , a _{i1} , a _{i2}
	- Conversion factor	ConvF _i
	- Diode compression point	Dcp _i
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	1750	1900	2450	2600
Water	39.2	41.45	52.64	55.242	62.7	55.242
Salt (NaCl)	2.7	1.45	0.36	0.306	0.5	0.306
Sugar	57.0	56.0	0.0	0.0	0.0	0.0
HEC	0.0	1.0	0.0	0.0	0.0	0.0
Bactericide	0.0	0.1	0.0	0.0	0.0	0.0
Triton X-100	0.0	0.0	0.0	0.0	0.0	0.0
DGBE	0.0	0.0	47.0	44.542	36.8	44.452
Ingredients (% of weight)	Body Tissue					
Frequency Band (MHz)	750	835	1750	1900	2450	2600
Water	50.3	52.4	69.91	69.91	73.2	64.493
Salt (NaCl)	1.60	1.40	0.13	0.13	0.04	0.024
Sugar	47.0	45.0	0.0	0.0	0.0	0.0
HEC	0.0	1.0	0.0	0.0	0.0	0.0
Bactericide	0.0	0.1	0.0	0.0	0.0	0.0
Triton X-100	0.0	0.0	0.0	0.0	0.0	0.0
DGBE	0.0	0.0	29.96	29.96	26.7	32.252

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%

☒ Simulating Body Liquid (MBBL600-6000MHz), Manufactured by SPEAG:

Ingredients	(% by weight)
Water	60-80%
Esters, Emulsifiers, Inhibitors	20-40%
Sodium salt	0-1.5%

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	41.77	0.933	0.41%	3.69%	22.0°C	2019-03-20
	835	41.5	0.90	41.72	0.936	0.53%	4.04%		
	850	41.5	0.92	41.69	0.942	0.46%	2.39%		
1750MHz Head	1710	40.1	1.35	38.83	1.358	-3.17%	0.59%	22.0°C	2019-03-21
	1730	40.1	1.36	38.79	1.369	-3.27%	0.66%		
	1750	40.1	1.37	38.75	1.380	-3.37%	0.73%		
	1800	40.0	1.40	38.67	1.408	-3.33%	0.57%		
1900MHz Head	1850	40.0	1.40	40.41	1.413	1.02%	0.93%	21.0°C	2019-03-20
	1880	40.0	1.40	40.37	1.432	0.92%	2.29%		
	1900	40.0	1.40	40.32	1.445	0.80%	3.21%		
	1910	40.0	1.40	40.31	1.451	0.78%	3.64%		
2450MHz Head	2410	39.3	1.76	39.03	1.844	-0.69%	4.77%	22.1°C	2019-03-22
	2435	39.2	1.79	38.96	1.865	-0.61%	4.19%		
	2450	39.2	1.80	38.94	1.875	-0.66%	4.17%		
	2460	39.2	1.81	38.93	1.883	-0.69%	4.03%		
2600MHz Head	2510	39.1	1.87	38.84	1.922	-0.66%	2.78%	21.7°C	2019-03-20
	2535	39.1	1.89	38.81	1.944	-0.74%	2.86%		
	2560	39.1	1.92	38.76	1.963	-0.87%	2.24%		
	2600	39.0	1.96	38.68	1.998	-0.82%	1.94%		
	2610	39.0	1.97	38.67	2.007	-0.85%	1.88%		
	2645	39.0	2.01	38.59	2.035	-1.05%	1.24%		
835MHz Body	825	55.20	0.97	54.16	0.994	-1.88%	2.52%	22.0°C	2019-03-23
	835	55.20	0.97	54.11	0.998	-1.97%	2.91%		
	850	55.20	0.99	54.05	1.004	-2.08%	1.41%		
835MHz Body	825	55.2	0.97	56.93	0.950	3.13%	-2.07%	22°C	2019-03-25
	835	55.2	0.97	56.90	0.954	3.08%	-1.70%		
	850	55.2	0.99	56.88	0.960	3.04%	-3.07%		
1750MHz Body	1710	53.5	1.46	51.58	1.460	-3.59%	0.00%	22.0°C	2019-03-22
	1730	53.5	1.48	51.58	1.474	-3.59%	-0.41%		
	1750	53.4	1.49	51.57	1.484	-3.43%	-0.40%		
	1800	53.3	1.52	51.55	1.522	-3.28%	0.13%		
1900MHz Body	1850	53.3	1.52	55.09	1.490	3.36%	-1.97%	22.0°C	2019-03-20
	1880	53.3	1.52	55.03	1.511	3.25%	-0.59%		
	1900	53.3	1.52	54.97	1.525	3.13%	0.33%		
	1910	53.3	1.52	54.96	1.532	3.11%	0.79%		
2450MHz Body	2410	52.8	1.91	54.12	1.933	2.50%	1.20%	22.3°C	2019-03-22
	2435	52.7	1.94	54.04	1.956	2.54%	0.82%		
	2450	52.7	1.95	53.98	1.973	2.43%	1.18%		
	2460	52.7	1.96	54.03	1.979	2.52%	0.97%		

2600MHz Body	2510	52.6	2.04	53.53	2.039	1.77%	-0.05%	22.5°C	2019-03-23
	2535	52.6	2.07	53.51	2.062	1.73%	-0.39%		
	2560	52.6	2.11	53.46	2.085	1.63%	-1.18%		
	2600	52.5	2.16	53.40	2.125	1.71%	-1.62%		
	2610	52.5	2.18	53.40	2.135	1.71%	-2.06%		
	2645	52.5	2.23	53.32	2.169	1.56%	-2.74%		

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).

Dipole Information	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)	Δ1-g	Δ10-g	
4d126	835MHz Head	9.44	6.06	9.92	6.40	5.08%	5.61%	2019-03-20
1123	1750MHz Head	36.60	19.40	35.68	19.08	-2.51%	-1.65%	2019-03-21
5d143	1900MHz Head	39.10	20.50	40.40	21.08	3.32%	2.83%	2019-03-20
860	2450MHz Head	53.10	24.70	53.60	24.84	0.94%	0.57%	2019-03-22
1032	2600MHz Head	56.40	25.20	58.80	26.64	4.26%	5.71%	2019-03-20
4d126	835MHz Body	9.65	6.32	9.24	6.00	-4.25%	-5.06%	2019-03-23
4d126	835MHz Body	9.65	6.32	9.44	6.32	-2.18%	0.00%	2019-03-25
1123	1750MHz Body	36.40	19.40	39.20	20.84	7.69%	7.42%	2019-03-22
5d143	1900MHz Body	39.40	20.80	40.00	21.20	1.52%	1.92%	2019-03-20
860	2450MHz Body	51.60	24.20	49.20	23.16	-4.65%	-4.30%	2019-03-22
1032	2600MHz Body	55.10	24.50	55.60	25.20	0.91%	2.86%	2019-03-23

Table 6: System Check Results

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 (~ 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 repeated 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 Positions Configuration

6.1.1 General considerations

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

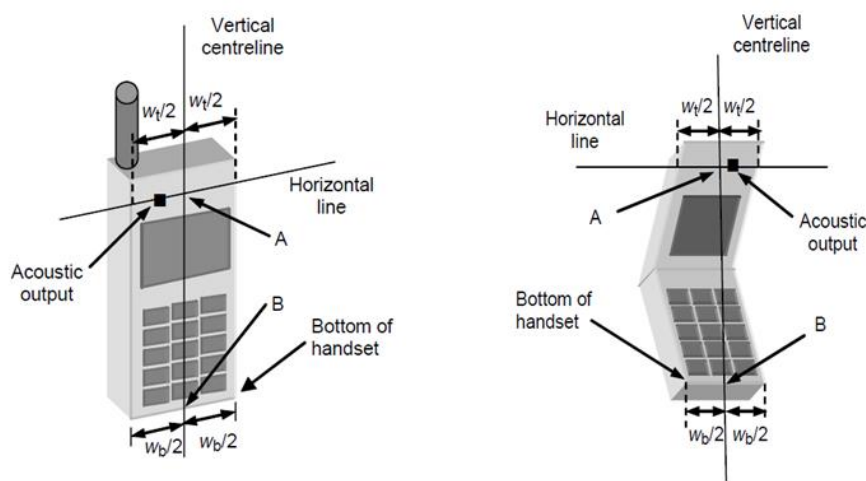


Figure 1 Hand Vertical Center & Horizontal Line Reference Points

6.1.2 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.

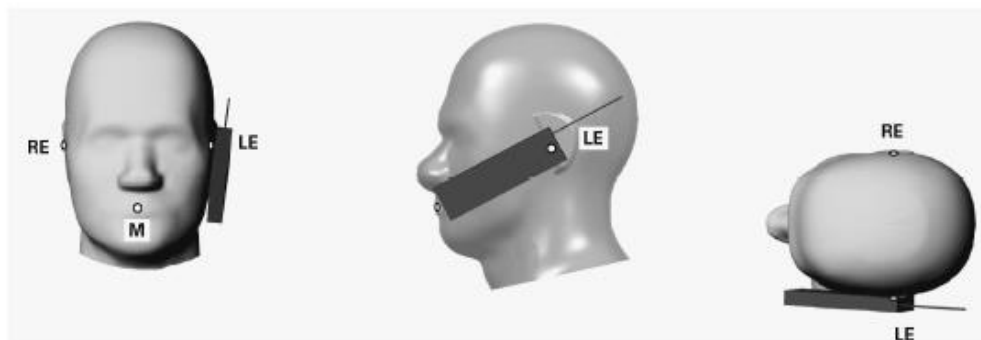


Figure 2 Front, Side and Top View of Cheek Position



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)

6.1.3 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.

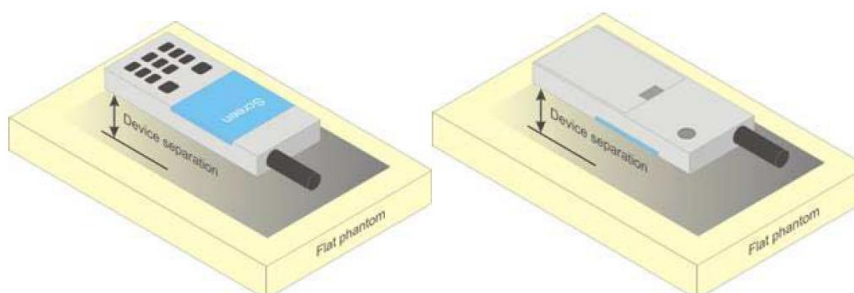


Figure 4 Test position for Body-Worn device

6.1.4 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.

6.1.5 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 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 ≤ 25 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 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.

6.2 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.

6.3 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.

6.4 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 ΔACK , $\Delta NACK$, $\Delta CQI = 8$. The variation of the β_c / β_d ratio causes a power reduction at sub-tests 2 - 4.

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

Note 1: 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.[⌘]
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 $\beta_d = 15/15$ [⌘]

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 ¹	β_c ²	β_d ²	β_d (SF) ³	β_c/β_d ²	β_{hs} ¹	β_{ec} ²	β_{ed} ²	β_{ec} (SF) ²	β_{ed} (code) ²	CM ² (dB) ²	MP R ² (dB) ²	AG ⁴ Index ²	E-TFC I ²
1 ²	11/15 ⁽³⁾	15/15 ⁽³⁾	64 ²	11/15 ⁽³⁾	22/15 ²	209/225 ²	1039/225 ²	4 ²	1 ²	1.0 ²	0.0 ²	20 ²	75 ²
2 ²	6/15 ²	15/15 ²	64 ²	6/15 ²	12/15 ²	12/15 ²	94/75 ²	4 ²	1 ²	3.0 ²	2.0 ²	12 ²	67 ²
3 ²	15/15 ²	9/15 ²	64 ²	15/9 ²	30/15 ²	30/15 ²	$\beta_{ed1}:47/15$ $\beta_{ed2}:47/15$	4 ²	2 ²	2.0 ²	1.0 ²	15 ²	92 ²
4 ²	2/15 ²	15/15 ²	64 ²	2/15 ²	4/15 ²	2/15 ²	56/75 ²	4 ²	1 ²	3.0 ²	2.0 ²	17 ²	71 ²
5 ²	15/15 ⁽⁴⁾	15/15 ⁽⁴⁾	64 ²	15/15 ⁽⁴⁾	30/15 ²	24/15 ²	134/15 ²	4 ²	1 ²	1.0 ²	0.0 ²	21 ²	81 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, HS-DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference²

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 $\beta_d = 15/15$ ²

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 $\beta_d = 15/15$ ²

Note 5 : Testing UE using E-DPDCH Physical Layer category 1 Sub-test 3 is not required according to TS 25.306 Table 5.1g²

Note 6: β_{ed} can not be set directly; it is set by Absolute Grant Value.²

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.

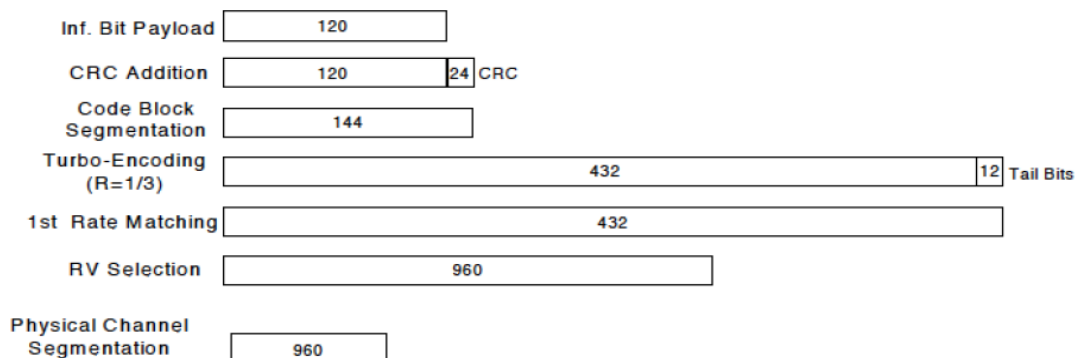


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

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.

6.5 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.

ii) 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, 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.

6.6 WiFi Test Configuration

For WiFi SAR testing, a communication link is set up with the testing software for WiFi 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.

6.6.1 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.

6.6.2 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.

6.6.3 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.

6.6.4 WiFi 2.4G 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.

6.6.5 OFDM Transmission Mode SAR Test Channel Selection Requirements

For 2.4 GHz bands, 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.

6.7 Dynamic antenna switching specification Dynamic antenna switching specification

The device supports dynamic Tx antenna switching function for 2G/3G/4G bands. It can transmit from either Main Antenna or Second Antenna, but they cannot transmit simultaneously (Refer to the Antenna location picture in the appendix for details).

SAR test procedure for dynamic antenna switching is as below:

During the SAR test, the Main Antenna and Second Antenna are set to the MAX transmit power level respectively and test the SAR respectively in all applicable RF exposure conditions. Some command are supplied to fix the operation state and choose the antenna so that only one TX antenna tested at a time. We can ensure that all independent antennas and modem are completely covered by the appropriate SAR measurements and all simultaneous transmission possibilities are fully considered.

6.8 Dynamic antenna tuning specification

The device supports the dynamic antenna tuning function to optimize transmission efficiency for 703MHz~960MHz frequency operations, especially in any hand usage scenario. The dynamic antenna tuning function is only applicable for the 2G/3G/4G second TX antenna: GSM850, UMTS Band V, and LTE Band 5; which is located in the top part of the device. The 2G/3G/4G second 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 second TX antenna based on the RSSI comparison and switch algorithm.

The antenna tuning and operating parameters are implemented using a fixed table look-up mechanism that is fully contained within the approved transmitter; therefore, antenna tuning is static and remains unchanged for the same device operating configurations.

SAR test procedure for dynamic antenna tuning is as below:

- a) Firstly, some commands are used to fix the tuning state at state1 or state 2, so that only one antenna tuning state is chosen at a time for SAR test. The antenna is set to the MAX transmit output power level.
- b) Secondly, per KDB648474D04 section 5, in order to reduce the number of SAR tests required to demonstrate compliance for the numerous tuning states, we plan to perform one single point zoom scan SAR measurement between state1 and state 2 for each antenna tuning band and applicable RF exposure condition to identify the higher SAR tuning state that need the full set of normally required SAR measurements and allow SAR test reduction for the lower SAR conditions.
- c) Thirdly, full normally required SAR measurements are performed for the higher SAR tuning state. Moreover, the SAR worst case check will also be tested for the other tuning state in each antenna tuning band and applicable RF exposure condition. We think it is conservative enough to ensure the SAR compliance.

6.9 Power Reduction Specification

6.9.1 Power reduction triggered by specific use conditions

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) 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.

The following tables summarize the key power reduction information triggered by specific use conditions. The detailed full power and reduced conducted power measurement results are provided in Section 7 of this report:

Band	Power Reduction Level (dBm)		
	Second Antenna		
	Receiver on(Head)	Receiver off(Body)	
		Hotspot on	Hotspot off (Full power)
GSM850	30.20	33.70	33.70
GSM1900	26.70	28.70	31.00
UMTS Band II	18.60	19.50	24.40
UMTS Band IV	18.60	19.50	24.10
UMTS Band V	21.20	24.80	24.80
LTE Band 2	18.90	19.90	24.50
LTE Band 4	18.90	19.90	24.50
LTE Band 5	21.20	24.80	24.80
LTE Band 7	16.90	22.40	24.00

Band	Power Reduction Level (dBm)		
	Main Antenna		
	Receiver off(Body)		Receiver on(Head)
	Hotspot on	Hotspot off	Full power
GSM850	33.70	33.70	33.70
GSM1900	29.00	31.00	31.00
UMTS Band II	20.40	22.90	24.50
UMTS Band IV	20.40	22.90	24.50
UMTS Band V	25.00	25.00	25.00
LTE Band 2	20.60	23.20	24.50
LTE Band 4	20.60	23.10	24.50
LTE Band 5	25.00	25.00	25.00
LTE Band 7	20.80	22.90	24.00

Mode	Power Reduction Level (dBm)	
	WiFi Antenna	
	Receiver off(Body)	Receiver on(Head)
802.11b	19.00	12.00
802.11g	19.00	12.00
802.11n 20M	19.00	12.00
802.11n 40M	15.00	12.00

The SAR test plan is as below:

- 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 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.
- For WiFi Antenna, standalone Head SAR should be evaluated with reduced power levels according to the real usage scenarios. Body SAR is tested at the maximum output power level.

7 SAR Measurement Results

7.1 Conducted power measurements

For the measurements, Radio Communication Tester was used.

SAR drift measured at the same position in liquid before and after each SAR test as below 7.2 chapter.

Note: The Radio Communication Tester measures GSM peak and average output power for active timeslots. For SAR the timebased average power is relevant. The difference in between depends on the duty cycle of the TDMA signal:

No. of timeslots	1	2	3	4
Duty Cycle	1:8.3	1:4.1	1:2.77	1:2.08
timebased avg. power compared to slotted avg. power	-9.19dB	-6.13dB	-4.42dB	-3.18dB

The signalling modes differ as follows:

mode	coding scheme	modulation
GPRS	CS1 to CS4	GMSK
EDGE	MCS1 to MCS4	GMSK
EDGE	MCS5 to MCS9	8PSK

Apart from modulation change (GMSK/8PSK) coding schemes differ in code rate without influence on the RF signal. Therefore, one coding scheme per mode was selected for conducted power measurements.

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.

7.1.1 Conducted power measurements of GSM850 (Second antenna)

GSM850		Burst-Averaged output Power (dBm)				Division Factors	Frame-Averaged output Power (dBm)			
		Tune-up	128CH	190CH	251CH		Tune-up	128CH	190CH	251CH
		Max.					Max.			
GSM (CS)		33.70	33.12	33.02	33.15	-9.19	24.51	23.93	23.83	23.96
GPRS (GMSK)	1 Tx Slot	33.70	33.18	33.01	33.16	-9.19	24.51	23.99	23.82	23.97
	2 Tx Slots	30.70	30.01	29.82	29.84	-6.13	24.57	23.88	23.69	23.71
	3 Tx Slots	28.90	28.00	27.79	27.79	-4.42	24.48	23.58	23.37	23.37
	4 Tx Slots	27.70	26.55	26.32	26.38	-3.18	24.52	23.37	23.14	23.20
EDGE (GMSK)	1 Tx Slot	33.70	33.23	33.13	33.22	-9.19	24.51	24.04	23.94	24.03
	2 Tx Slots	30.70	29.99	29.88	29.92	-6.13	24.57	23.86	23.75	23.79
	3 Tx Slots	28.90	28.00	27.78	27.78	-4.42	24.48	23.58	23.36	23.36
	4 Tx Slots	27.70	26.53	26.35	26.35	-3.18	24.52	23.35	23.17	23.17
EDGE (8PSK)	1 Tx Slot	27.30	26.70	26.85	26.76	-9.19	18.11	17.51	17.66	17.57
	2 Tx Slots	24.40	23.72	23.90	23.85	-6.13	18.27	17.59	17.77	17.72
	3 Tx Slots	22.50	21.74	21.84	21.75	-4.42	18.08	17.32	17.42	17.33
	4 Tx Slots	21.30	20.11	20.28	20.25	-3.18	18.12	16.93	17.10	17.07

Table 13: Conducted power measurement results of GSM850 (Full Power)

GSM850		Burst-Averaged output Power (dBm)				Division Factors	Frame-Averaged output Power (dBm)			
		Tune-up	128CH	190CH	251CH		Tune-up	128CH	190CH	251CH
		Max.					Max.			
GSM (CS)		30.20	29.76	29.63	29.65	-9.19	21.01	20.57	20.44	20.46
GPRS (GMSK)	1 Tx Slot	30.20	29.76	29.63	29.69	-9.19	21.01	20.57	20.44	20.50
	2 Tx Slots	27.20	26.58	26.35	26.46	-6.13	21.07	20.45	20.22	20.33
	3 Tx Slots	25.40	24.69	24.46	24.50	-4.42	20.98	20.27	20.04	20.08
	4 Tx Slots	24.20	23.40	23.18	23.15	-3.18	21.02	20.22	20.00	19.97
EDGE (GMSK)	1 Tx Slot	30.20	29.87	29.67	29.75	-9.19	21.01	20.68	20.48	20.56
	2 Tx Slots	27.20	26.66	26.42	26.45	-6.13	21.07	20.53	20.29	20.32
	3 Tx Slots	25.40	24.70	24.48	24.47	-4.42	20.98	20.28	20.06	20.05
	4 Tx Slots	24.20	23.39	23.15	23.17	-3.18	21.02	20.21	19.97	19.99
EDGE (8PSK)	1 Tx Slot	24.00	23.63	23.75	23.73	-9.19	14.81	14.44	14.56	14.54
	2 Tx Slots	21.00	20.42	20.60	20.56	-6.13	14.87	14.29	14.47	14.43
	3 Tx Slots	19.20	18.44	18.50	18.41	-4.42	14.78	14.02	14.08	13.99
	4 Tx Slots	18.00	16.34	16.48	16.38	-3.18	14.82	13.16	13.30	13.20

Table 14: Conducted power measurement results of GSM850 (Receiver ON)

Note:

- 1) The Conducted power measurements of GSM850 is measured with RMS detector.
- 2) Frame-averaged output power was calculated from the measured burst-averaged output power by converting the slot powers into linear units and calculating the energy over 8 timeslots.
- 3) The bolded GPRS 2 Tx Slots mode was selected for SAR testing according to the highest frame-averaged output power.

7.1.2 Conducted power measurements of GSM850 (Main antenna)

GSM850		Burst-Averaged output Power (dBm)				Division Factors	Frame-Averaged output Power (dBm)			
		Tune-up Max.	128CH	190CH	251CH		Tune-up Max.	128CH	190CH	251CH
GSM (CS)		33.70	32.91	32.62	32.86	-9.19	24.51	23.72	23.43	23.67
GPRS (GMSK)	1 Tx Slot	33.20	32.94	32.81	32.92	-9.19	24.01	23.75	23.62	23.73
	2 Tx Slots	30.20	29.63	29.42	29.56	-6.13	24.07	23.50	23.29	23.43
	3 Tx Slots	28.40	27.55	27.42	27.56	-4.42	23.98	23.13	23.00	23.14
	4 Tx Slots	27.20	26.22	25.99	26.14	-3.18	24.02	23.04	22.81	22.96
EDGE (GMSK)	1 Tx Slot	33.20	32.84	32.78	32.91	-9.19	24.01	23.65	23.59	23.72
	2 Tx Slots	30.20	29.64	29.41	29.56	-6.13	24.07	23.51	23.28	23.43
	3 Tx Slots	28.40	27.55	27.43	27.55	-4.42	23.98	23.13	23.01	23.13
	4 Tx Slots	27.20	26.23	25.98	26.12	-3.18	24.02	23.05	22.80	22.94
EDGE (8PSK)	1 Tx Slot	26.90	26.29	26.40	26.51	-9.19	17.71	17.10	17.21	17.32
	2 Tx Slots	24.10	23.47	23.56	23.60	-6.13	17.97	17.34	17.43	17.47
	3 Tx Slots	22.20	21.52	21.56	21.68	-4.42	17.78	17.10	17.14	17.26
	4 Tx Slots	20.90	20.04	20.11	20.12	-3.18	17.72	16.86	16.93	16.94

Table 15: Conducted power measurement results of GSM850

Note:

- 1) The Conducted power measurements of GSM850 is measured with RMS detector.
- 2) Frame-averaged output power was calculated from the measured burst-averaged output power by converting the slot powers into linear units and calculating the energy over 8 timeslots.
- 3) The bolded GPRS 2 Tx Slots mode was selected for SAR testing according to the highest frame-averaged output power.

7.1.3 Conducted power measurements of GSM1900 (Second antenna)

GSM1900		Burst-Averaged output Power (dBm)				Division Factors	Frame-Averaged output Power (dBm)			
		Tune-up Max.	512CH	661CH	810CH		Tune-up Max.	512CH	661CH	810CH
GSM (CS)		31.00	30.04	30.04	30.17	-9.19	21.81	20.85	20.85	20.98
GPRS (GMSK)	1 Tx Slot	30.70	30.12	30.04	30.09	-9.19	21.51	20.93	20.85	20.90
	2 Tx Slots	27.70	26.61	26.69	26.75	-6.13	21.57	20.48	20.56	20.62
	3 Tx Slots	25.90	24.77	24.82	24.86	-4.42	21.48	20.35	20.40	20.44
	4 Tx Slots	24.70	23.49	23.55	23.57	-3.18	21.52	20.31	20.37	20.39
EDGE (GMSK)	1 Tx Slot	30.70	30.08	30.04	30.10	-9.19	21.51	20.89	20.85	20.91
	2 Tx Slots	27.70	26.63	26.69	26.77	-6.13	21.57	20.50	20.56	20.64
	3 Tx Slots	25.90	24.69	24.84	24.87	-4.42	21.48	20.27	20.42	20.45
	4 Tx Slots	24.70	23.51	23.56	23.59	-3.18	21.52	20.33	20.38	20.41
EDGE (8PSK)	1 Tx Slot	26.40	25.57	25.57	25.63	-9.19	17.21	16.38	16.38	16.44
	2 Tx Slots	23.40	22.46	22.47	22.58	-6.13	17.27	16.33	16.34	16.45
	3 Tx Slots	21.60	20.53	20.51	20.51	-4.42	17.18	16.11	16.09	16.09
	4 Tx Slots	20.40	19.03	19.08	19.08	-3.18	17.22	15.85	15.90	15.90

Table 16: Conducted power measurement results of GSM1900 (Full Power)

GSM1900		Burst-Averaged output Power (dBm)				Division Factors	Frame-Averaged output Power (dBm)			
		Tune-up Max.	512CH	661CH	810CH		Tune-up Max.	512CH	661CH	810CH
GSM (CS)		26.70	25.79	25.81	25.96	-9.19	17.51	16.60	16.62	16.77
GPRS (GMSK)	1 Tx Slot	26.70	25.84	25.94	26.01	-9.19	17.51	16.65	16.75	16.82
	2 Tx Slots	23.70	22.70	22.83	22.86	-6.13	17.57	16.57	16.70	16.73
	3 Tx Slots	21.90	20.91	20.93	20.97	-4.42	17.48	16.49	16.51	16.55
	4 Tx Slots	20.70	19.71	19.70	19.73	-3.18	17.52	16.53	16.52	16.55
EDGE (GMSK)	1 Tx Slot	26.70	25.78	25.93	25.91	-9.19	17.51	16.59	16.74	16.72
	2 Tx Slots	23.70	22.72	22.74	22.79	-6.13	17.57	16.59	16.61	16.66
	3 Tx Slots	21.90	20.83	20.95	20.98	-4.42	17.48	16.41	16.53	16.56
	4 Tx Slots	20.70	19.71	19.72	19.75	-3.18	17.52	16.53	16.54	16.57
EDGE (8PSK)	1 Tx Slot	22.60	21.70	21.81	21.79	-9.19	13.41	12.51	12.62	12.60
	2 Tx Slots	19.60	18.64	18.71	18.72	-6.13	13.47	12.51	12.58	12.59
	3 Tx Slots	17.80	16.72	16.68	16.69	-4.42	13.38	12.30	12.26	12.27
	4 Tx Slots	16.60	15.24	15.27	15.26	-3.18	13.42	12.06	12.09	12.08

Table 17: Conducted power measurement results of GSM1900 (Receiver ON)

GSM1900		Burst-Averaged output Power (dBm)				Division Factors	Frame-Averaged output Power (dBm)			
		Tune-up	512CH	661CH	810CH		Tune-up	512CH	661CH	810CH
		Max.					Max.			
GSM (CS)		28.70	27.76	27.85	27.91	-9.19	19.51	18.57	18.66	18.72
GPRS (GMSK)	1 Tx Slot	28.70	27.86	27.86	27.83	-9.19	19.51	18.67	18.67	18.64
	2 Tx Slots	25.70	24.34	24.60	24.58	-6.13	19.57	18.21	18.47	18.45
	3 Tx Slots	23.90	22.50	22.63	22.59	-4.42	19.48	18.08	18.21	18.17
	4 Tx Slots	22.70	21.22	21.35	21.30	-3.18	19.52	18.04	18.17	18.12
EDGE (GMSK)	1 Tx Slot	28.70	27.84	27.87	27.84	-9.19	19.51	18.65	18.68	18.65
	2 Tx Slots	25.70	24.36	24.51	24.50	-6.13	19.57	18.23	18.38	18.37
	3 Tx Slots	23.90	22.51	22.65	22.60	-4.42	19.48	18.09	18.23	18.18
	4 Tx Slots	22.70	21.23	21.38	21.32	-3.18	19.52	18.05	18.20	18.14
EDGE (8PSK)	1 Tx Slot	24.30	23.34	23.40	23.38	-9.19	15.11	14.15	14.21	14.19
	2 Tx Slots	21.30	20.18	20.38	20.32	-6.13	15.17	14.05	14.25	14.19
	3 Tx Slots	19.50	18.26	18.34	18.26	-4.42	15.08	13.84	13.92	13.84
	4 Tx Slots	18.30	16.85	18.14	16.82	-3.18	15.12	13.67	14.96	13.64

Table 18: Conducted power measurement results of GSM1900 (Receiver OFF+Hotspot ON)

Note:

- 1) The Conducted power measurements of GSM1900 is measured with RMS detector.
- 2) Frame-averaged output power was calculated from the measured burst-averaged output power by converting the slot powers into linear units and calculating the energy over 8 timeslots.
- 3) The bolded GPRS 2 Tx Slots mode was selected for SAR testing according to the highest frame-averaged output power.

7.1.4 Conducted power measurements of GSM1900 (Main antenna)

GSM1900		Burst-Averaged output Power (dBm)				Division Factors	Frame-Averaged output Power (dBm)			
		Tune-up Max.	512CH	661CH	810CH		Tune-up Max.	512CH	661CH	810CH
GSM (CS)		31.00	30.20	30.33	30.35	-9.19	21.81	21.01	21.14	21.16
GPRS (GMSK)	1 Tx Slot	31.00	30.24	30.37	30.40	-9.19	21.81	21.05	21.18	21.21
	2 Tx Slots	28.00	26.96	27.16	27.22	-6.13	21.87	20.83	21.03	21.09
	3 Tx Slots	26.20	25.04	25.21	25.27	-4.42	21.78	20.62	20.79	20.85
	4 Tx Slots	25.00	23.80	23.97	24.01	-3.18	21.82	20.62	20.79	20.83
EDGE (GMSK)	1 Tx Slot	31.00	30.19	30.36	30.41	-9.19	21.81	21.00	21.17	21.22
	2 Tx Slots	28.00	26.98	27.17	27.24	-6.13	21.87	20.85	21.04	21.11
	3 Tx Slots	26.20	25.05	25.23	25.28	-4.42	21.78	20.63	20.81	20.86
	4 Tx Slots	25.00	23.81	23.97	24.02	-3.18	21.82	20.63	20.79	20.84
EDGE (8PSK)	1 Tx Slot	26.80	25.80	26.03	26.11	-9.19	17.61	16.61	16.84	16.92
	2 Tx Slots	23.80	22.86	23.01	23.04	-6.13	17.67	16.73	16.88	16.91
	3 Tx Slots	22.00	20.92	21.03	21.04	-4.42	17.58	16.50	16.61	16.62
	4 Tx Slots	20.80	19.48	19.68	19.69	-3.18	17.62	16.30	16.50	16.51

Table 19: Conducted power measurement results of GSM1900 (Full Power)

GSM1900		Burst-Averaged output Power (dBm)				Division Factors	Frame-Averaged output Power (dBm)			
		Tune-up Max.	512CH	661CH	810CH		Tune-up Max.	512CH	661CH	810CH
GSM (CS)		29.00	28.12	28.21	28.24	-9.19	19.81	18.93	19.02	19.05
GPRS (GMSK)	1 Tx Slot	29.00	28.12	28.25	28.28	-9.19	19.81	18.93	19.06	19.09
	2 Tx Slots	26.00	24.82	25.02	25.08	-6.13	19.87	18.69	18.89	18.95
	3 Tx Slots	24.20	22.88	23.06	23.11	-4.42	19.78	18.46	18.64	18.69
	4 Tx Slots	23.00	21.62	21.80	21.84	-3.18	19.82	18.44	18.62	18.66
EDGE (GMSK)	1 Tx Slot	29.00	28.09	28.24	28.29	-9.19	19.81	18.90	19.05	19.10
	2 Tx Slots	26.00	24.83	25.03	25.09	-6.13	19.87	18.70	18.90	18.96
	3 Tx Slots	24.20	22.90	23.08	23.13	-4.42	19.78	18.48	18.66	18.71
	4 Tx Slots	23.00	21.64	21.80	21.85	-3.18	19.82	18.46	18.62	18.67
EDGE (8PSK)	1 Tx Slot	24.90	23.70	23.91	23.98	-9.19	15.71	14.51	14.72	14.79
	2 Tx Slots	21.90	20.70	20.84	20.88	-6.13	15.77	14.57	14.71	14.75
	3 Tx Slots	20.10	18.72	18.84	18.86	-4.42	15.68	14.30	14.42	14.44
	4 Tx Slots	18.90	17.25	17.45	17.46	-3.18	15.72	14.07	14.27	14.28

Table 20: Conducted power measurement results of GSM1900 (Hotspot ON)

Note:

- 1) The Conducted power measurements of GSM1900 is measured with RMS detector.
- 2) Frame-averaged output power was calculated from the measured burst-averaged output power by converting the slot powers into linear units and calculating the energy over 8 timeslots.
- 3) The bolded GPRS 2 Tx Slots mode was selected for SAR testing according to the highest frame-averaged output power.

7.1.5 Conducted power measurements of UMTS Band II (Second antenna)

UMTS Band II		Tune-up	Average Power (dBm)		
		Max.	9262CH	9400CH	9538CH
WCDMA	12.2kbps RMC	24.40	23.41	23.48	23.41
	12.2kbps AMR	24.40	23.42	23.42	23.42
HSDPA	Subtest 1	23.90	22.91	22.92	22.89
	Subtest 2	23.10	22.16	22.16	22.14
	Subtest 3	22.60	21.63	21.63	21.62
	Subtest 4	22.60	21.62	21.65	21.63
HSUPA	Subtest 1	22.50	21.76	21.84	21.60
	Subtest 2	20.30	20.14	20.17	20.19
	Subtest 3	20.70	20.26	20.59	20.30
	Subtest 4	20.20	20.02	19.96	19.72
	Subtest 5	23.20	22.24	22.25	22.24
DC-HSDPA	Subtest 1	23.90	22.92	22.92	22.91
	Subtest 2	23.10	22.14	22.17	22.14
	Subtest 3	22.60	21.61	21.66	21.63
	Subtest 4	22.60	21.60	21.62	21.64

Table 21: Conducted power measurement results of UMTS Band II (Full Power)

UMTS Band II		Tune-up	Average Power (dBm)		
		Max.	9262CH	9400CH	9538CH
WCDMA	12.2kbps RMC	18.60	17.94	17.93	17.96
	12.2kbps AMR	18.60	17.91	17.93	17.87
HSDPA	Subtest 1	18.40	17.50	17.40	17.39
	Subtest 2	17.60	16.60	16.63	16.58
	Subtest 3	16.80	16.11	16.11	16.08
	Subtest 4	17.10	16.11	16.16	16.09
HSUPA	Subtest 1	17.20	15.77	16.06	16.15
	Subtest 2	16.00	14.54	14.75	14.74
	Subtest 3	16.50	15.49	14.80	14.68
	Subtest 4	15.60	14.78	14.97	14.96
	Subtest 5	17.80	16.74	16.73	16.71
DC-HSDPA	Subtest 1	18.60	17.42	17.43	17.39
	Subtest 2	17.60	16.63	16.65	16.60
	Subtest 3	17.10	16.07	16.14	16.08
	Subtest 4	17.20	16.14	16.10	16.09

Table 22: Conducted power measurement results of UMTS Band II (Receiver ON)

UMTS Band II		Tune-up	Average Power (dBm)		
		Max.	9262CH	9400CH	9538CH
WCDMA	12.2kbps RMC	19.50	18.91	18.89	18.87
	12.2kbps AMR	19.50	18.88	18.90	18.84
HSDPA	Subtest 1	19.00	18.44	18.38	18.40
	Subtest 2	18.20	17.66	17.56	17.53
	Subtest 3	17.70	17.20	17.11	17.09
	Subtest 4	17.70	17.09	17.15	17.05
HSUPA	Subtest 1	18.10	17.18	17.05	17.21
	Subtest 2	16.40	15.51	15.54	15.67
	Subtest 3	16.80	15.72	16.37	16.24
	Subtest 4	15.80	15.69	15.64	15.62
	Subtest 5	18.40	17.55	17.77	17.69
DC-HSDPA	Subtest 1	19.00	18.46	18.33	18.41
	Subtest 2	18.20	17.62	17.58	17.59
	Subtest 3	17.70	17.26	17.22	17.19
	Subtest 4	17.70	17.18	17.19	17.13

Table 23: Conducted power measurement results of UMTS Band II (Receiver OFF+Hotspot ON)

Note:

- 1) The bolded 12.2kbps RMC mode was selected for SAR testing.
- 2) When maximum output of each RF channel with HSDPA/HSUPA/DC-HSDPA active is $\leq \frac{1}{4}$ dB higher than without HSDPA/HSUPA/DC-HSDPA using 12.2 kbps RMC or maximum SAR for 12.2 kbps RMC is $\leq 75\%$ of SAR limit, SAR evaluation for HSDPA/HSUPA/DC-HSDPA is not required.

7.1.6 Conducted power measurements of UMTS Band II (Main antenna)

UMTS Band II		Tune-up	Average Power (dBm)		
		Max.	9262CH	9400CH	9538CH
WCDMA	12.2kbps RMC	24.50	23.63	23.49	23.45
	12.2kbps AMR	24.50	23.53	23.51	23.44
HSDPA	Subtest 1	23.90	23.03	23.00	22.97
	Subtest 2	23.10	22.26	22.21	22.14
	Subtest 3	22.60	21.72	21.72	21.65
	Subtest 4	22.60	21.74	21.69	21.65
HSUPA	Subtest 1	22.50	21.57	21.08	21.34
	Subtest 2	20.10	19.55	19.41	19.35
	Subtest 3	20.40	19.53	19.49	19.61
	Subtest 4	20.00	19.44	19.40	19.37
	Subtest 5	23.20	21.96	21.92	21.86
DC-HSDPA	Subtest 1	23.90	23.03	23.01	22.95
	Subtest 2	23.10	22.22	22.19	22.16
	Subtest 3	22.60	21.76	21.70	21.66
	Subtest 4	22.60	21.72	21.71	21.64

Table 24: Conducted power measurement results of UMTS Band II (Full Power)

UMTS Band II		Tune-up	Average Power (dBm)		
		Max.	9262CH	9400CH	9538CH
WCDMA	12.2kbps RMC	22.90	22.06	22.00	21.94
	12.2kbps AMR	22.90	22.08	22.01	21.94
HSDPA	Subtest 1	22.40	21.54	21.47	21.47
	Subtest 2	21.60	20.77	20.69	20.65
	Subtest 3	21.10	20.25	20.22	20.16
	Subtest 4	21.10	20.28	20.21	20.16
HSUPA	Subtest 1	20.80	20.19	20.47	20.28
	Subtest 2	19.10	18.93	18.67	18.87
	Subtest 3	19.30	18.72	18.73	18.66
	Subtest 4	18.80	18.76	18.79	17.97
	Subtest 5	21.70	20.87	20.79	20.72
DC-HSDPA	Subtest 1	22.40	21.54	21.50	21.46
	Subtest 2	21.60	20.76	20.71	20.65
	Subtest 3	21.10	20.26	20.21	20.15
	Subtest 4	21.10	20.25	20.22	20.18

Table 25: Conducted power measurement results of UMTS Band II (Receiver OFF)

UMTS Band II		Tune-up	Average Power (dBm)		
		Max.	9262CH	9400CH	9538CH
WCDMA	12.2kbps RMC	20.40	19.53	19.48	19.47
	12.2kbps AMR	20.40	19.57	19.51	19.42
HSDPA	Subtest 1	19.90	18.22	18.21	18.10
	Subtest 2	19.10	17.42	17.36	17.29
	Subtest 3	18.60	16.93	16.91	16.79
	Subtest 4	18.60	16.92	16.89	16.81
HSUPA	Subtest 1	18.60	16.94	17.00	17.07
	Subtest 2	17.30	16.00	15.45	15.25
	Subtest 3	17.00	15.86	16.17	15.99
	Subtest 4	17.30	14.83	15.58	15.40
	Subtest 5	19.20	17.55	17.47	17.41
DC-HSDPA	Subtest 1	19.90	18.24	18.19	18.08
	Subtest 2	19.10	17.45	17.37	17.29
	Subtest 3	18.60	16.95	16.88	16.78
	Subtest 4	18.60	16.93	16.87	16.80

Table 26: Conducted power measurement results of UMTS Band II (Receiver OFF+Hotspot ON)

Note:

- 1) The bolded 12.2kbps RMC mode was selected for SAR testing.
- 2) When maximum output of each RF channel with HSDPA/HSUPA/DC-HSDPA active is $\leq \frac{1}{4}$ dB higher than without HSDPA/HSUPA/DC-HSDPA using 12.2 kbps RMC or maximum SAR for 12.2 kbps RMC is $\leq 75\%$ of SAR limit, SAR evaluation for HSDPA/HSUPA/DC-HSDPA is not required.

7.1.7 Conducted power measurements of UMTS Band IV (Second antenna)

UMTS Band IV		Tune-up	Average Power (dBm)		
		Max.	1312CH	1413CH	1513CH
WCDMA	12.2kbps RMC	24.10	23.09	23.19	23.22
	12.2kbps AMR	24.10	23.20	23.19	23.32
HSDPA	Subtest 1	23.60	22.65	22.66	22.77
	Subtest 2	22.80	21.85	21.83	22.01
	Subtest 3	22.30	21.38	21.34	21.50
	Subtest 4	22.30	21.35	21.33	21.50
HSUPA	Subtest 1	22.20	21.18	21.31	21.62
	Subtest 2	20.00	19.91	19.90	19.66
	Subtest 3	20.10	20.09	19.87	19.84
	Subtest 4	19.80	19.49	19.38	19.59
	Subtest 5	22.90	21.99	21.93	22.10
DC-HSDPA	Subtest 1	23.60	22.66	22.63	22.77
	Subtest 2	22.80	21.88	21.86	21.98
	Subtest 3	22.30	21.34	21.32	21.48
	Subtest 4	22.30	21.35	21.32	21.50

Table 27: Conducted power measurement results of UMTS Band IV (Full Power)

UMTS Band IV		Tune-up	Average Power (dBm)		
		Max.	1312CH	1413CH	1513CH
WCDMA	12.2kbps RMC	18.60	17.74	17.67	17.79
	12.2kbps AMR	18.60	17.71	17.66	17.80
HSDPA	Subtest 1	18.40	17.16	17.12	17.29
	Subtest 2	17.60	16.37	16.33	16.48
	Subtest 3	16.80	15.85	15.85	15.98
	Subtest 4	17.10	15.86	15.86	15.97
HSUPA	Subtest 1	17.20	15.38	15.60	15.71
	Subtest 2	16.00	15.35	14.38	15.35
	Subtest 3	16.50	15.10	14.76	15.91
	Subtest 4	15.60	14.60	14.45	15.47
	Subtest 5	17.80	16.44	16.45	16.58
DC-HSDPA	Subtest 1	18.60	17.18	17.14	17.25
	Subtest 2	17.60	16.35	16.33	16.45
	Subtest 3	17.10	15.84	15.81	15.96
	Subtest 4	16.80	15.82	15.82	15.96

Table 28: Conducted power measurement results of UMTS Band IV (Receiver ON)

UMTS Band IV		Tune-up	Average Power (dBm)		
		Max.	1312CH	1413CH	1513CH
WCDMA	12.2kbps RMC	19.50	18.59	18.65	18.78
	12.2kbps AMR	19.50	18.68	18.62	18.75
HSDPA	Subtest 1	19.00	18.19	18.15	18.30
	Subtest 2	18.20	17.15	17.32	17.42
	Subtest 3	17.70	16.85	16.84	16.89
	Subtest 4	17.70	17.00	16.83	16.94
HSUPA	Subtest 1	17.60	16.62	16.77	16.57
	Subtest 2	16.40	15.16	15.19	15.11
	Subtest 3	16.80	15.86	16.09	16.01
	Subtest 4	15.40	15.31	15.03	15.32
	Subtest 5	18.40	17.50	17.54	17.58
DC-HSDPA	Subtest 1	19.00	18.11	18.18	18.26
	Subtest 2	18.20	17.17	17.12	17.46
	Subtest 3	17.70	16.89	16.80	16.81
	Subtest 4	17.70	17.01	16.86	16.91

Table 29: Conducted power measurement results of UMTS Band IV (Receiver OFF+Hotspot ON)

Note:

- 1) The bolded 12.2kbps RMC mode was selected for SAR testing.
- 2) When maximum output of each RF channel with HSDPA/HSUPA/DC-HSDPA active is $\leq \frac{1}{4}$ dB higher than without HSDPA/HSUPA/DC-HSDPA using 12.2 kbps RMC or maximum SAR for 12.2 kbps RMC is $\leq 75\%$ of SAR limit, SAR evaluation for HSDPA/HSUPA/DC-HSDPA is not required.

7.1.8 Conducted power measurements of UMTS Band IV (Main antenna)

UMTS Band IV		Tune-up	Average Power (dBm)		
		Max.	1312CH	1413CH	1513CH
WCDMA	12.2kbps RMC	24.50	23.45	23.48	23.53
	12.2kbps AMR	24.50	23.42	23.48	23.57
HSDPA	Subtest 1	23.90	22.95	22.97	23.03
	Subtest 2	23.10	22.13	22.17	22.21
	Subtest 3	22.60	21.62	21.67	21.69
	Subtest 4	22.60	21.63	21.65	21.68
HSUPA	Subtest 1	22.50	21.32	21.44	21.66
	Subtest 2	20.10	19.85	19.53	19.56
	Subtest 3	20.40	19.56	19.61	19.90
	Subtest 4	20.00	19.68	19.78	19.88
	Subtest 5	23.20	22.25	22.26	22.34
DC-HSDPA	Subtest 1	23.90	22.91	22.96	23.02
	Subtest 2	23.10	22.14	22.17	22.19
	Subtest 3	22.60	21.62	21.65	21.70
	Subtest 4	22.60	21.62	21.67	21.72

Table 30: Conducted power measurement results of UMTS Band IV (Full Power)

UMTS Band IV		Tune-up	Average Power (dBm)		
		Max.	1312CH	1413CH	1513CH
WCDMA	12.2kbps RMC	22.90	21.87	21.98	22.05
	12.2kbps AMR	22.90	21.89	22.04	22.04
HSDPA	Subtest 1	22.40	21.28	21.47	21.51
	Subtest 2	21.60	20.54	20.67	20.69
	Subtest 3	21.10	20.03	20.19	20.21
	Subtest 4	21.10	20.07	20.17	20.22
HSUPA	Subtest 1	21.00	20.29	20.33	20.39
	Subtest 2	18.80	18.32	18.35	18.40
	Subtest 3	19.60	19.04	19.10	19.17
	Subtest 4	18.80	18.16	18.28	18.32
	Subtest 5	21.90	20.65	20.76	20.82
DC-HSDPA	Subtest 1	22.40	21.34	21.46	21.52
	Subtest 2	21.60	20.54	20.63	20.71
	Subtest 3	21.10	20.03	20.19	20.20
	Subtest 4	21.10	20.06	20.18	20.22

Table 31: Conducted power measurement results of UMTS Band IV (Receiver OFF)

UMTS Band IV		Tune-up	Average Power (dBm)		
		Max.	1312CH	1413CH	1513CH
WCDMA	12.2kbps RMC	20.40	19.36	19.53	19.52
	12.2kbps AMR	20.40	19.36	19.32	19.49
HSDPA	Subtest 1	19.90	18.13	18.13	18.26
	Subtest 2	19.10	17.35	17.37	17.50
	Subtest 3	18.60	16.80	16.87	17.00
	Subtest 4	18.60	16.80	16.85	17.00
HSUPA	Subtest 1	18.20	16.68	17.07	17.23
	Subtest 2	16.80	15.59	15.39	15.44
	Subtest 3	17.00	15.34	15.66	16.10
	Subtest 4	16.70	15.38	15.49	15.65
	Subtest 5	19.20	17.46	17.44	17.59
DC-HSDPA	Subtest 1	19.90	18.11	18.13	18.24
	Subtest 2	19.10	17.33	17.36	17.49
	Subtest 3	18.60	16.84	16.87	16.97
	Subtest 4	18.60	16.83	16.87	17.00

Table 32: Conducted power measurement results of UMTS Band IV (Receiver OFF+Hotspot ON)

Note:

- 1) The bolded 12.2kbps RMC mode was selected for SAR testing.
- 2) When maximum output of each RF channel with HSDPA/HSUPA/DC-HSDPA active is $\leq \frac{1}{4}$ dB higher than without HSDPA/HSUPA/DC-HSDPA using 12.2 kbps RMC or maximum SAR for 12.2 kbps RMC is $\leq 75\%$ of SAR limit, SAR evaluation for HSDPA/HSUPA/DC-HSDPA is not required.

7.1.9 Conducted power measurements of UMTS Band V (Second antenna)

UMTS Band V		Tune-up	Average Power (dBm)		
		Max.	4132CH	4182CH	4233CH
WCDMA	12.2kbps RMC	24.80	23.90	23.87	23.90
	12.2kbps AMR	24.80	23.90	23.88	23.96
HSDPA	Subtest 1	24.20	23.36	23.36	23.39
	Subtest 2	23.70	22.88	22.88	22.92
	Subtest 3	23.30	22.47	22.47	22.50
	Subtest 4	23.30	22.49	22.47	22.50
HSUPA	Subtest 1	23.50	22.98	22.61	22.62
	Subtest 2	21.40	21.27	20.96	20.95
	Subtest 3	21.80	21.44	21.58	21.54
	Subtest 4	21.00	20.81	20.86	20.89
	Subtest 5	23.60	22.68	22.67	22.70
DC-HSDPA	Subtest 1	24.20	23.36	23.34	23.40
	Subtest 2	23.70	22.88	22.86	22.92
	Subtest 3	23.30	22.48	22.46	22.50
	Subtest 4	23.30	22.48	22.47	22.52

Table 33: Conducted power measurement results of UMTS Band V (Full Power)

UMTS Band V		Tune-up	Average Power (dBm)		
		Max.	4132CH	4182CH	4233CH
WCDMA	12.2kbps RMC	21.20	20.36	20.33	20.38
	12.2kbps AMR	21.20	20.41	20.39	20.41
HSDPA	Subtest 1	20.70	19.86	19.79	19.88
	Subtest 2	20.20	19.38	19.37	19.38
	Subtest 3	19.80	18.96	18.93	19.00
	Subtest 4	19.80	18.98	18.95	18.99
HSUPA	Subtest 1	20.10	19.39	19.13	19.24
	Subtest 2	17.90	17.80	17.71	17.74
	Subtest 3	19.00	18.15	17.99	17.83
	Subtest 4	17.50	17.14	17.28	17.32
	Subtest 5	20.30	19.15	19.12	19.19
DC-HSDPA	Subtest 1	20.70	19.86	19.82	19.90
	Subtest 2	20.20	19.38	19.34	19.37
	Subtest 3	19.80	18.97	18.93	18.99
	Subtest 4	19.80	18.99	18.96	18.97

Table 34: Conducted power measurement results of UMTS Band V (Receiver ON)

Note:

- 1) The bolded 12.2kbps RMC mode was selected for SAR testing.
- 2) When maximum output of each RF channel with HSDPA/HSUPA/DC-HSDPA active is $\leq \frac{1}{4}$ dB higher than without HSDPA/HSUPA/DC-HSDPA using 12.2 kbps RMC or maximum SAR for 12.2 kbps RMC is $\leq 75\%$ of SAR limit, SAR evaluation for HSDPA/HSUPA/DC-HSDPA is not required.

7.1.10 Conducted power measurements of UMTS Band V (Main antenna)

UMTS Band V		Tune-up	Average Power (dBm)		
		Max.	4132CH	4182CH	4233CH
WCDMA	12.2kbps RMC	25.00	23.97	24.00	24.03
	12.2kbps AMR	25.00	24.01	24.02	24.11
HSDPA	Subtest 1	24.30	23.45	23.51	23.52
	Subtest 2	23.80	22.95	22.99	23.05
	Subtest 3	23.40	22.59	22.59	22.66
	Subtest 4	23.30	22.57	22.60	22.69
HSUPA	Subtest 1	23.80	23.16	22.81	22.84
	Subtest 2	21.40	21.19	21.12	21.15
	Subtest 3	21.70	21.06	21.32	21.38
	Subtest 4	21.10	20.73	20.69	20.68
	Subtest 5	23.70	22.79	22.77	22.85
DC-HSDPA	Subtest 1	24.40	23.44	23.49	23.53
	Subtest 2	23.90	22.96	23.00	23.07
	Subtest 3	23.50	22.56	22.60	22.66
	Subtest 4	23.50	22.58	22.60	22.66

Table 35: Conducted power measurement results of UMTS Band V

Note:

- 1) The bolded 12.2kbps RMC mode was selected for SAR testing.
- 2) When maximum output of each RF channel with HSDPA/HSUPA/DC-HSDPA active is $\leq \frac{1}{4}$ dB higher than without HSDPA/HSUPA/DC-HSDPA using 12.2 kbps RMC or maximum SAR for 12.2 kbps RMC is $\leq 75\%$ of SAR limit, SAR evaluation for HSDPA/HSUPA/DC-HSDPA is not required.

7.1.11 Conducted power measurements of LTE Band 2(Second antenna)

Bandwidth	Modulation	RB size	RB offset	Tune-up Max.	Channel 18607CH	Channel 18900CH	Channel 19193CH
1.4MHz	QPSK	1	0	24.50	23.42	23.45	23.56
		1	3	24.50	23.37	23.52	23.60
		1	5	24.50	23.38	23.47	23.59
		3	0	24.50	23.27	23.38	23.49
		3	2	24.50	23.27	23.39	23.48
		3	3	24.50	23.23	23.42	23.50
		6	0	23.50	22.20	22.32	22.43
	16QAM	1	0	23.50	22.46	22.37	22.50
		1	3	23.50	22.39	22.52	22.63
		1	5	23.50	22.49	22.37	22.60
		3	0	23.50	22.30	22.48	22.36
		3	2	23.50	22.31	22.44	22.49
		3	3	23.50	22.35	22.62	22.59
		6	0	22.50	21.20	21.42	21.27
Bandwidth	Modulation	RB size	RB offset	Tune-up Max.	Channel 18615CH	Channel 18900CH	Channel 19185CH
3MHz	QPSK	1	0	24.50	23.44	23.50	23.46
		1	7	24.50	23.36	23.46	23.49
		1	14	24.50	23.41	23.47	23.54
		8	0	23.50	22.22	22.41	22.33
		8	4	23.50	22.27	22.33	22.36
		8	7	23.50	22.25	22.34	22.35
		15	0	23.50	22.33	22.43	22.38
	16QAM	1	0	23.50	22.53	22.63	22.60
		1	7	23.50	22.48	22.72	22.60
		1	14	23.50	22.38	22.54	22.69
		8	0	22.50	21.27	21.31	21.47
		8	4	22.50	21.27	21.32	21.35
		8	7	22.50	21.16	21.42	21.49
		15	0	22.50	21.29	21.39	21.33

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	18625CH	18900CH	19175CH
5MHz	QPSK	1	0	24.50	23.30	23.41	23.42
		1	13	24.50	23.25	23.43	23.43
		1	24	24.50	23.36	23.45	23.41
		12	0	23.50	22.38	22.51	22.53
		12	6	23.50	22.38	22.51	22.52
		12	13	23.50	22.38	22.51	22.51
		25	0	23.50	22.31	22.40	22.49
	16QAM	1	0	23.50	22.44	22.63	22.66
		1	13	23.50	22.53	22.61	22.60
		1	24	23.50	22.46	22.50	22.73
		12	0	22.50	21.27	21.38	21.50
		12	6	22.50	21.29	21.47	21.49
		12	13	22.50	21.34	21.39	21.54
		25	0	22.50	21.27	21.38	21.36
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	18650CH	18900CH	19150CH
10MHz	QPSK	1	0	24.50	23.36	23.41	23.44
		1	25	24.50	23.33	23.41	23.42
		1	49	24.50	23.36	23.42	23.45
		25	0	23.50	22.35	22.43	22.42
		25	13	23.50	22.34	22.43	22.42
		25	25	23.50	22.35	22.44	22.42
		50	0	23.50	22.39	22.37	22.42
	16QAM	1	0	23.50	22.47	22.40	22.62
		1	25	23.50	22.39	22.46	22.38
		1	49	23.50	22.35	22.40	22.42
		25	0	22.50	21.24	21.46	21.31
		25	13	22.50	21.23	21.40	21.36
		25	25	22.50	21.27	21.40	21.36
		50	0	22.50	21.29	21.35	21.37

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	18675CH	18900CH	19125CH
15MHz	QPSK	1	0	24.50	23.41	23.40	23.46
		1	38	24.50	23.42	23.43	23.41
		1	74	24.50	23.40	23.42	23.41
		36	0	23.50	22.40	22.42	22.42
		36	18	23.50	22.40	22.42	22.42
		36	39	23.50	22.40	22.43	22.43
		75	0	23.50	22.40	22.43	22.44
	16QAM	1	0	23.50	22.36	22.52	22.42
		1	38	23.50	22.44	22.55	22.26
		1	74	23.50	22.36	22.43	22.46
		36	0	22.50	21.35	21.41	21.38
		36	18	22.50	21.33	21.38	21.32
		36	39	22.50	21.36	21.41	21.35
		75	0	22.50	21.31	21.34	21.37
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	18700CH	18900CH	19100CH
20MHz	QPSK	1	0	24.50	23.43	23.53	23.53
		1	50	24.50	23.40	23.51	23.54
		1	99	24.50	23.45	23.57	23.52
		50	0	23.50	22.36	22.45	22.50
		50	25	23.50	22.37	22.44	22.50
		50	50	23.50	22.37	22.41	22.50
		100	0	23.50	22.36	22.43	22.51
	16QAM	1	0	23.50	22.61	22.83	22.75
		1	50	23.50	22.50	22.69	22.80
		1	99	23.50	22.66	22.74	22.76
		50	0	22.50	21.35	21.36	21.44
		50	25	22.50	21.33	21.35	21.41
		50	50	22.50	21.29	21.38	21.39
		100	0	22.50	21.36	21.34	21.37

Table 36: Conducted power measurement results of LTE Band 2 (Full Power)

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	18607CH	18900CH	19193CH
1.4MHz	QPSK	1	0	18.90	17.81	17.99	18.02
		1	3	18.90	17.87	18.00	17.99
		1	5	18.90	17.82	17.98	17.99
		3	0	18.90	17.81	17.92	17.91
		3	2	18.90	17.76	17.87	18.03
		3	3	18.90	17.78	17.91	17.95
		6	0	18.90	17.72	17.86	17.91
	16QAM	1	0	18.90	18.02	17.98	18.21
		1	3	18.90	17.87	18.00	18.10
		1	5	18.90	17.83	17.87	18.09
		3	0	18.90	17.81	17.83	17.99
		3	2	18.90	17.86	17.83	17.90
		3	3	18.90	17.80	17.96	18.03
		6	0	18.80	17.68	17.79	17.90
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	18615CH	18900CH	19185CH
3MHz	QPSK	1	0	18.90	17.89	17.91	18.01
		1	7	18.90	17.86	17.90	17.96
		1	14	18.90	17.82	17.87	17.99
		8	0	18.90	17.76	17.89	17.94
		8	4	18.90	17.78	17.88	17.93
		8	7	18.90	17.73	17.97	17.89
		15	0	18.90	17.80	17.95	17.93
	16QAM	1	0	18.90	17.91	18.08	18.10
		1	7	18.90	17.93	18.10	18.09
		1	14	18.90	18.00	18.02	18.22
		8	0	18.80	17.73	17.93	18.00
		8	4	18.80	17.73	17.88	17.91
		8	7	18.80	17.67	17.94	17.86
		15	0	18.80	17.73	17.83	17.90

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	18625CH	18900CH	19175CH
5MHz	QPSK	1	0	18.90	17.78	17.91	17.91
		1	13	18.90	17.86	17.90	17.93
		1	24	18.90	17.84	17.88	17.91
		12	0	18.90	17.82	18.04	18.05
		12	6	18.90	17.80	17.97	18.04
		12	13	18.90	17.85	17.95	18.04
		25	0	18.90	17.79	17.98	17.95
	16QAM	1	0	18.90	17.98	18.16	18.19
		1	13	18.90	18.15	18.20	18.32
		1	24	18.90	18.03	18.10	18.26
		12	0	18.80	17.79	17.95	18.06
		12	6	18.80	17.81	17.93	18.03
		12	13	18.80	17.76	17.99	18.03
		25	0	18.80	17.77	17.89	17.91
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	18650CH	18900CH	19150CH
10MHz	QPSK	1	0	18.90	17.81	17.95	17.90
		1	25	18.90	17.86	17.99	17.90
		1	49	18.90	17.83	17.95	17.92
		25	0	18.90	17.84	17.93	17.96
		25	13	18.90	17.83	17.94	17.96
		25	25	18.90	17.84	17.94	17.95
		50	0	18.90	17.89	17.94	17.91
	16QAM	1	0	18.90	18.06	18.07	17.93
		1	25	18.90	17.81	18.00	17.86
		1	49	18.90	17.93	18.01	17.97
		25	0	18.80	17.78	17.85	17.93
		25	13	18.80	17.81	17.81	17.96
		25	25	18.80	17.83	17.85	17.91
		50	0	18.80	17.83	17.80	17.87

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	18675CH	18900CH	19125CH
15MHz	QPSK	1	0	18.90	17.86	17.84	17.81
		1	38	18.90	17.83	17.85	17.87
		1	74	18.90	17.84	17.85	17.88
		36	0	18.90	17.91	17.92	17.98
		36	18	18.90	17.91	17.91	17.98
		36	39	18.90	17.92	17.92	17.98
		75	0	18.90	17.92	17.90	17.98
	16QAM	1	0	18.90	17.90	18.05	17.91
		1	38	18.90	17.91	17.85	18.05
		1	74	18.90	18.02	18.04	18.11
		36	0	18.80	17.88	17.92	17.95
		36	18	18.80	17.89	18.01	17.94
		36	39	18.80	17.90	17.90	17.93
		75	0	18.80	17.84	17.87	17.84
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	18700CH	18900CH	19100CH
20MHz	QPSK	1	0	18.90	17.95	18.06	18.03
		1	50	18.90	17.95	18.07	18.00
		1	99	18.90	17.93	18.05	18.04
		50	0	18.90	17.96	17.89	17.98
		50	25	18.90	17.96	17.92	17.98
		50	50	18.90	17.96	17.90	17.98
		100	0	18.90	17.97	17.98	17.99
	16QAM	1	0	18.90	18.08	18.30	18.10
		1	50	18.90	18.25	18.25	18.16
		1	99	18.90	18.25	18.07	18.21
		50	0	18.80	17.83	17.84	17.94
		50	25	18.80	17.87	17.89	17.95
		50	50	18.80	17.85	17.82	17.92
		100	0	18.80	17.84	17.85	17.95

Table 37: Conducted power measurement results of LTE Band 2 (Receiver ON)

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	18607CH	18900CH	19193CH
1.4MHz	QPSK	1	0	19.90	18.88	18.98	18.95
		1	3	19.90	18.79	18.99	19.00
		1	5	19.90	18.85	18.96	18.99
		3	0	19.90	18.89	18.90	18.89
		3	2	19.90	18.89	18.86	18.95
		3	3	19.90	18.76	18.95	18.91
		6	0	19.90	18.86	18.92	18.81
	16QAM	1	0	19.90	19.04	19.04	18.95
		1	3	19.90	18.80	18.99	18.95
		1	5	19.90	18.98	19.01	19.06
		3	0	19.90	18.71	18.91	18.88
		3	2	19.90	18.67	18.93	19.02
		3	3	19.90	18.77	18.94	19.09
		6	0	19.80	18.71	18.86	18.96
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	18615CH	18900CH	19185CH
3MHz	QPSK	1	0	19.90	18.79	18.94	18.99
		1	7	19.90	18.80	18.96	18.99
		1	14	19.90	18.81	18.92	19.03
		8	0	19.90	18.77	18.86	18.90
		8	4	19.90	18.80	18.83	18.91
		8	7	19.90	18.84	18.87	18.95
		15	0	19.90	18.81	18.96	18.92
	16QAM	1	0	19.90	18.91	19.01	18.99
		1	7	19.90	18.79	19.10	19.02
		1	14	19.90	18.90	19.01	19.23
		8	0	19.80	18.73	18.83	18.88
		8	4	19.80	18.78	18.82	18.80
		8	7	19.80	18.72	18.84	18.85
		15	0	19.80	18.72	18.90	18.86

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	18625CH	18900CH	19175CH
5MHz	QPSK	1	0	19.90	18.82	18.92	18.99
		1	13	19.90	18.80	18.97	19.00
		1	24	19.90	18.84	18.95	18.96
		12	0	19.90	18.87	19.03	19.01
		12	6	19.90	18.88	19.01	19.00
		12	13	19.90	18.86	19.02	19.01
		25	0	19.90	18.82	18.93	18.95
	16QAM	1	0	19.90	19.06	19.10	19.13
		1	13	19.90	19.11	19.16	19.10
		1	24	19.90	19.04	19.10	19.13
		12	0	19.80	18.85	18.99	18.94
		12	6	19.80	18.90	18.95	18.95
		12	13	19.80	18.81	18.92	18.92
		25	0	19.80	18.81	18.87	18.92
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	18650CH	18900CH	19150CH
10MHz	QPSK	1	0	19.90	18.83	18.93	18.90
		1	25	19.90	18.80	18.90	18.89
		1	49	19.90	18.80	18.95	18.87
		25	0	19.90	18.78	18.93	18.98
		25	13	19.90	18.81	18.93	18.98
		25	25	19.90	18.89	18.95	18.98
		50	0	19.90	18.83	18.96	18.97
	16QAM	1	0	19.90	18.82	18.96	18.73
		1	25	19.90	18.83	18.99	19.05
		1	49	19.90	19.00	18.94	18.97
		25	0	19.80	18.76	18.91	18.91
		25	13	19.80	18.75	18.90	18.91
		25	25	19.80	18.69	18.89	18.90
		50	0	19.80	18.77	18.86	18.94

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	18675CH	18900CH	19125CH
15MHz	QPSK	1	0	19.90	18.85	18.90	18.84
		1	38	19.90	18.83	18.92	18.88
		1	74	19.90	18.85	18.92	18.83
		36	0	19.90	18.87	18.92	18.95
		36	18	19.90	18.86	18.92	18.96
		36	39	19.90	18.85	18.94	18.95
		75	0	19.90	18.86	18.93	18.97
	16QAM	1	0	19.90	18.80	19.04	18.85
		1	38	19.90	18.76	19.02	18.85
		1	74	19.90	18.84	19.03	18.80
		36	0	19.80	18.81	18.88	18.87
		36	18	19.80	18.82	18.88	18.85
		36	39	19.80	18.76	18.88	18.84
		75	0	19.80	18.78	18.87	18.89
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	18700CH	18900CH	19100CH
20MHz	QPSK	1	0	19.90	18.91	18.95	19.00
		1	50	19.90	18.93	18.96	18.99
		1	99	19.90	18.94	18.99	18.98
		50	0	19.90	18.89	18.91	18.93
		50	25	19.90	18.90	18.92	18.94
		50	50	19.90	18.90	18.92	18.94
		100	0	19.90	18.91	18.92	18.91
	16QAM	1	0	19.90	19.04	19.25	19.21
		1	50	19.90	19.15	19.24	19.08
		1	99	19.90	19.00	19.20	19.18
		50	0	19.80	18.83	18.89	18.97
		50	25	19.80	18.83	18.87	18.97
		50	50	19.80	18.82	18.87	18.85
		100	0	19.80	18.84	18.84	18.90

Table 38: Conducted power measurement results of LTE Band 2 (Receiver OFF+Hotspot ON)

Note: The Conducted power measurements of LTE Band 2 is measured with RMS detector.

7.1.12 Conducted power measurements of LTE Band 2(Main antenna)

Bandwidth	Modulation	RB size	RB offset	Tune-up Max.	Channel 18607CH	Channel 18900CH	Channel 19193CH
1.4MHz	QPSK	1	0	24.50	23.59	23.73	23.67
		1	3	24.50	23.55	23.68	23.73
		1	5	24.50	23.56	23.72	23.70
		3	0	24.50	23.45	23.64	23.65
		3	2	24.50	23.41	23.68	23.52
		3	3	24.50	23.54	23.62	23.59
		6	0	23.50	22.38	22.53	22.53
	16QAM	1	0	23.50	22.66	22.87	22.73
		1	3	23.50	22.63	22.60	22.55
		1	5	23.50	22.48	22.68	22.83
		3	0	23.50	22.59	22.58	22.61
		3	2	23.50	22.52	22.60	22.48
		3	3	23.50	22.46	22.59	22.58
		6	0	22.50	21.31	21.36	21.50
Bandwidth	Modulation	RB size	RB offset	Tune-up Max.	Channel 18615CH	Channel 18900CH	Channel 19185CH
3MHz	QPSK	1	0	24.50	23.55	23.65	23.65
		1	7	24.50	23.58	23.73	23.67
		1	14	24.50	23.55	23.66	23.57
		8	0	23.50	22.50	22.59	22.61
		8	4	23.50	22.51	22.61	22.51
		8	7	23.50	22.41	22.58	22.52
		15	0	23.50	22.48	22.69	22.59
	16QAM	1	0	23.50	22.62	22.69	22.69
		1	7	23.50	22.65	22.70	22.51
		1	14	23.50	22.65	22.85	22.46
		8	0	22.50	21.51	21.58	21.63
		8	4	22.50	21.51	21.57	21.54
		8	7	22.50	21.48	21.67	21.56
		15	0	22.50	21.49	21.60	21.53

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	18625CH	18900CH	19175CH
5MHz	QPSK	1	0	24.50	23.51	23.66	23.59
		1	13	24.50	23.53	23.58	23.67
		1	24	24.50	23.49	23.64	23.65
		12	0	23.50	22.61	22.74	22.62
		12	6	23.50	22.61	22.72	22.61
		12	13	23.50	22.61	22.74	22.65
		25	0	23.50	22.57	22.65	22.55
	16QAM	1	0	23.50	22.61	22.79	22.73
		1	13	23.50	22.61	22.74	22.81
		1	24	23.50	22.66	22.81	22.60
		12	0	22.50	21.54	21.68	21.65
		12	6	22.50	21.53	21.57	21.65
		12	13	22.50	21.55	21.73	21.61
		25	0	22.50	21.50	21.61	21.53
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	18650CH	18900CH	19150CH
10MHz	QPSK	1	0	24.50	23.53	23.64	23.59
		1	25	24.50	23.53	23.63	23.58
		1	49	24.50	23.56	23.63	23.59
		25	0	23.50	22.55	22.65	22.58
		25	13	23.50	22.58	22.65	22.57
		25	25	23.50	22.55	22.65	22.57
		50	0	23.50	22.54	22.62	22.61
	16QAM	1	0	23.50	22.55	22.73	22.60
		1	25	23.50	22.60	22.64	22.62
		1	49	23.50	22.59	22.70	22.61
		25	0	22.50	21.52	21.58	21.52
		25	13	22.50	21.50	21.57	21.53
		25	25	22.50	21.47	21.62	21.52
		50	0	22.50	21.49	21.61	21.54

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	18675CH	18900CH	19125CH
15MHz	QPSK	1	0	24.50	23.62	23.65	23.59
		1	38	24.50	23.62	23.65	23.63
		1	74	24.50	23.59	23.66	23.66
		36	0	23.50	22.64	22.68	22.61
		36	18	23.50	22.67	22.68	22.61
		36	39	23.50	22.58	22.68	22.61
		75	0	23.50	22.61	22.60	22.63
	16QAM	1	0	23.50	22.61	22.59	22.59
		1	38	23.50	22.51	22.68	22.58
		1	74	23.50	22.62	22.68	22.57
		36	0	22.50	21.58	21.62	21.56
		36	18	22.50	21.55	21.60	21.56
		36	39	22.50	21.60	21.61	21.54
		75	0	22.50	21.50	21.58	21.59
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	18700CH	18900CH	19100CH
20MHz	QPSK	1	0	24.50	23.58	23.77	23.68
		1	50	24.50	23.65	23.74	23.68
		1	99	24.50	23.65	23.74	23.70
		50	0	23.50	22.55	22.62	22.68
		50	25	23.50	22.60	22.62	22.67
		50	50	23.50	22.58	22.62	22.68
		100	0	23.50	22.57	22.68	22.65
	16QAM	1	0	23.50	22.80	22.92	22.89
		1	50	23.50	22.72	22.93	22.68
		1	99	23.50	22.76	22.98	22.84
		50	0	22.50	21.51	21.57	21.58
		50	25	22.50	21.58	21.57	21.59
		50	50	22.50	21.51	21.60	21.56
		100	0	22.50	21.51	21.54	21.52

Table 39: Conducted power measurement results of LTE Band 2 (Full Power)

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	18607CH	18900CH	19193CH
1.4MHz	QPSK	1	0	23.20	22.07	22.21	22.18
		1	3	23.20	22.05	22.17	22.19
		1	5	23.20	22.05	22.21	22.17
		3	0	23.20	21.95	22.12	22.15
		3	2	23.20	21.94	22.15	22.06
		3	3	23.20	21.93	22.01	22.09
		6	0	23.20	21.98	22.16	22.06
	16QAM	1	0	23.20	22.14	22.19	22.47
		1	3	23.20	22.17	22.30	22.26
		1	5	23.20	22.04	22.43	22.27
		3	0	23.20	21.98	22.02	22.16
		3	2	23.20	21.97	21.99	22.08
		3	3	23.20	21.96	22.09	22.07
		6	0	22.50	21.38	21.54	21.50
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	18615CH	18900CH	19185CH
3MHz	QPSK	1	0	23.20	22.02	22.22	22.14
		1	7	23.20	22.05	22.17	22.09
		1	14	23.20	22.02	22.20	22.14
		8	0	23.20	22.06	22.18	22.14
		8	4	23.20	22.05	22.15	22.03
		8	7	23.20	21.89	22.14	21.99
		15	0	23.20	22.01	22.14	22.05
	16QAM	1	0	23.20	22.12	22.26	22.30
		1	7	23.20	22.07	22.39	22.12
		1	14	23.20	22.10	22.21	22.45
		8	0	22.50	21.42	21.69	21.60
		8	4	22.50	21.50	21.69	21.56
		8	7	22.50	21.39	21.60	21.58
		15	0	22.50	21.50	21.60	21.52

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	18625CH	18900CH	19175CH
5MHz	QPSK	1	0	23.20	22.03	22.18	22.06
		1	13	23.20	22.00	22.14	22.10
		1	24	23.20	22.03	22.17	22.11
		12	0	23.20	22.01	22.17	22.21
		12	6	23.20	22.01	22.17	22.19
		12	13	23.20	22.01	22.17	22.19
		25	0	23.20	22.04	22.18	22.11
	16QAM	1	0	23.20	22.30	22.32	22.43
		1	13	23.20	22.18	22.44	22.31
		1	24	23.20	22.21	22.41	22.13
		12	0	22.50	21.56	21.58	21.62
		12	6	22.50	21.57	21.69	21.67
		12	13	22.50	21.55	21.62	21.64
		25	0	22.50	21.56	21.63	21.51
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	18650CH	18900CH	19150CH
10MHz	QPSK	1	0	23.20	21.98	22.14	22.05
		1	25	23.20	21.97	22.11	22.08
		1	49	23.20	22.02	22.12	22.10
		25	0	23.20	22.09	22.12	22.07
		25	13	23.20	22.09	22.13	22.12
		25	25	23.20	22.09	22.13	22.13
		50	0	23.20	22.07	22.17	22.12
	16QAM	1	0	23.20	21.82	22.26	22.14
		1	25	23.20	22.30	22.25	22.18
		1	49	23.20	22.13	22.16	22.20
		25	0	22.50	21.52	21.56	21.52
		25	13	22.50	21.47	21.58	21.54
		25	25	22.50	21.50	21.57	21.56
		50	0	22.50	21.46	21.58	21.53

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	18675CH	18900CH	19125CH
15MHz	QPSK	1	0	23.20	22.07	22.14	22.11
		1	38	23.20	21.97	22.12	22.10
		1	74	23.20	22.00	22.15	22.11
		36	0	23.20	22.06	22.15	22.18
		36	18	23.20	22.06	22.16	22.17
		36	39	23.20	22.07	22.16	22.17
		75	0	23.20	22.12	22.15	22.08
	16QAM	1	0	23.20	22.12	22.20	22.18
		1	38	23.20	22.17	22.24	22.20
		1	74	23.20	21.99	22.18	22.10
		36	0	22.50	21.61	21.61	21.58
		36	18	22.50	21.56	21.62	21.56
		36	39	22.50	21.58	21.65	21.56
		75	0	22.50	21.52	21.60	21.58
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	18700CH	18900CH	19100CH
20MHz	QPSK	1	0	23.20	22.15	22.28	22.20
		1	50	23.20	22.13	22.25	22.18
		1	99	23.20	22.15	22.25	22.21
		50	0	23.20	22.13	22.17	22.16
		50	25	23.20	22.13	22.17	22.12
		50	50	23.20	22.13	22.17	22.11
		100	0	23.20	22.13	22.19	22.16
	16QAM	1	0	23.20	22.36	22.44	22.28
		1	50	23.20	22.34	22.44	22.37
		1	99	23.20	22.20	22.44	22.53
		50	0	22.50	21.56	21.58	21.57
		50	25	22.50	21.61	21.59	21.57
		50	50	22.50	21.48	21.60	21.60
		100	0	22.50	21.50	21.58	21.51

Table 40: Conducted power measurement results of LTE Band 2 (Receiver OFF)

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	18607CH	18900CH	19193CH
1.4MHz	QPSK	1	0	20.60	19.47	19.65	19.66
		1	3	20.60	19.50	19.65	19.63
		1	5	20.60	19.47	19.61	19.63
		3	0	20.60	19.42	19.63	19.65
		3	2	20.60	19.46	19.54	19.61
		3	3	20.60	19.51	19.60	19.52
		6	0	20.60	19.43	19.64	19.57
	16QAM	1	0	20.60	19.65	19.78	19.74
		1	3	20.60	19.49	19.84	19.72
		1	5	20.60	19.55	19.78	19.66
		3	0	20.60	19.55	19.65	19.59
		3	2	20.60	19.41	19.66	19.57
		3	3	20.60	19.47	19.51	19.63
		6	0	20.50	19.36	19.62	19.51
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	18615CH	18900CH	19185CH
3MHz	QPSK	1	0	20.60	19.46	19.64	19.63
		1	7	20.60	19.46	19.65	19.59
		1	14	20.60	19.46	19.66	19.63
		8	0	20.60	19.48	19.51	19.55
		8	4	20.60	19.43	19.63	19.51
		8	7	20.60	19.48	19.58	19.58
		15	0	20.60	19.51	19.64	19.55
	16QAM	1	0	20.60	19.79	19.79	19.64
		1	7	20.60	19.45	19.83	19.78
		1	14	20.60	19.53	19.72	19.72
		8	0	20.50	19.45	19.58	19.53
		8	4	20.50	19.42	19.54	19.55
		8	7	20.50	19.34	19.61	19.52
		15	0	20.50	19.48	19.63	19.54

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	18625CH	18900CH	19175CH
5MHz	QPSK	1	0	20.60	19.50	19.68	19.65
		1	13	20.60	19.50	19.68	19.70
		1	24	20.60	19.53	19.65	19.62
		12	0	20.60	19.51	19.65	19.65
		12	6	20.60	19.51	19.65	19.64
		12	13	20.60	19.56	19.65	19.63
		25	0	20.60	19.52	19.66	19.55
	16QAM	1	0	20.60	19.63	19.84	19.69
		1	13	20.60	19.80	19.84	19.93
		1	24	20.60	19.64	19.89	19.88
		12	0	20.50	19.59	19.57	19.58
		12	6	20.50	19.62	19.63	19.52
		12	13	20.50	19.55	19.60	19.59
		25	0	20.50	19.43	19.61	19.51
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	18650CH	18900CH	19150CH
10MHz	QPSK	1	0	20.60	19.51	19.56	19.63
		1	25	20.60	19.51	19.60	19.62
		1	49	20.60	19.52	19.61	19.58
		25	0	20.60	19.53	19.66	19.63
		25	13	20.60	19.53	19.60	19.62
		25	25	20.60	19.54	19.60	19.61
		50	0	20.60	19.51	19.66	19.56
	16QAM	1	0	20.60	19.44	19.67	19.58
		1	25	20.60	19.72	19.64	19.76
		1	49	20.60	19.62	19.61	19.68
		25	0	20.50	19.45	19.54	19.60
		25	13	20.50	19.46	19.65	19.61
		25	25	20.50	19.48	19.57	19.62
		50	0	20.50	19.46	19.57	19.54

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	18675CH	18900CH	19125CH
15MHz	QPSK	1	0	20.60	19.50	19.53	19.56
		1	38	20.60	19.52	19.56	19.52
		1	74	20.60	19.52	19.55	19.64
		36	0	20.60	19.63	19.68	19.61
		36	18	20.60	19.65	19.66	19.61
		36	39	20.60	19.64	19.70	19.60
		75	0	20.60	19.59	19.66	19.64
	16QAM	1	0	20.60	19.63	19.58	19.78
		1	38	20.60	19.57	19.73	19.79
		1	74	20.60	19.61	19.65	19.71
		36	0	20.50	19.56	19.60	19.58
		36	18	20.50	19.56	19.71	19.58
		36	39	20.50	19.58	19.65	19.57
		75	0	20.50	19.49	19.56	19.54
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	18700CH	18900CH	19100CH
20MHz	QPSK	1	0	20.60	19.63	19.72	19.71
		1	50	20.60	19.60	19.73	19.74
		1	99	20.60	19.61	19.73	19.73
		50	0	20.60	19.60	19.66	19.68
		50	25	20.60	19.60	19.66	19.67
		50	50	20.60	19.59	19.66	19.67
		100	0	20.60	19.63	19.67	19.59
	16QAM	1	0	20.60	19.77	19.72	19.89
		1	50	20.60	19.89	19.87	19.66
		1	99	20.60	19.81	19.84	19.90
		50	0	20.50	19.48	19.59	19.60
		50	25	20.50	19.49	19.57	19.58
		50	50	20.50	19.52	19.59	19.58
		100	0	20.50	19.55	19.58	19.55

Table 41: Conducted power measurement results of LTE Band 2 (Receiver OFF+Hotspot ON)

Note: The Conducted power measurements of LTE Band 2 is measured with RMS detector.

7.1.13 Conducted power measurements of LTE Band 4(Second antenna)

Bandwidth	Modulation	RB size	RB offset	Tune-up Max.	Channel 19957CH	Channel 20175CH	Channel 20393CH
1.4MHz	QPSK	1	0	24.50	23.52	23.50	23.63
		1	3	24.50	23.43	23.39	23.55
		1	5	24.50	23.46	23.43	23.58
		3	0	24.50	23.41	23.37	23.54
		3	2	24.50	23.46	23.48	23.47
		3	3	24.50	23.38	23.35	23.58
		6	0	23.50	22.29	22.44	22.37
	16QAM	1	0	23.50	22.52	22.56	22.67
		1	3	23.50	22.47	22.64	22.51
		1	5	23.50	22.59	22.48	22.67
		3	0	23.50	22.33	22.45	22.57
		3	2	23.50	22.43	22.36	22.56
		3	3	23.50	22.36	22.47	22.43
		6	0	22.50	21.22	21.32	21.39
Bandwidth	Modulation	RB size	RB offset	Tune-up Max.	Channel 19965CH	Channel 20175CH	Channel 20385CH
3MHz	QPSK	1	0	24.50	23.44	23.45	23.55
		1	7	24.50	23.50	23.42	23.56
		1	14	24.50	23.44	23.42	23.57
		8	0	23.50	22.39	22.41	22.45
		8	4	23.50	22.34	22.38	22.50
		8	7	23.50	22.29	22.39	22.53
		15	0	23.50	22.47	22.41	22.52
	16QAM	1	0	23.50	22.52	22.64	22.53
		1	7	23.50	22.47	22.62	22.72
		1	14	23.50	22.59	22.51	22.74
		8	0	22.50	21.31	21.29	21.36
		8	4	22.50	21.48	21.46	21.34
		8	7	22.50	21.38	21.44	21.57
		15	0	22.50	21.47	21.41	21.50

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	19975CH	20175CH	20375CH
5MHz	QPSK	1	0	24.50	23.44	23.42	23.56
		1	13	24.50	23.40	23.44	23.53
		1	24	24.50	23.43	23.44	23.55
		12	0	23.50	22.52	22.42	22.55
		12	6	23.50	22.51	22.52	22.55
		12	13	23.50	22.51	22.47	22.55
		25	0	23.50	22.43	22.46	22.53
	16QAM	1	0	23.50	22.66	22.55	22.74
		1	13	23.50	22.59	22.57	22.80
		1	24	23.50	22.54	22.54	22.65
		12	0	22.50	21.45	21.42	21.51
		12	6	22.50	21.49	21.39	21.54
		12	13	22.50	21.50	21.45	21.51
		25	0	22.50	21.34	21.33	21.46
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20000CH	20175CH	20350CH
10MHz	QPSK	1	0	24.50	23.44	23.39	23.52
		1	25	24.50	23.45	23.43	23.45
		1	49	24.50	23.42	23.50	23.49
		25	0	23.50	22.42	22.46	22.53
		25	13	23.50	22.42	22.47	22.53
		25	25	23.50	22.42	22.47	22.53
		50	0	23.50	22.44	22.40	22.47
	16QAM	1	0	23.50	22.63	22.40	22.66
		1	25	23.50	22.53	22.56	22.59
		1	49	23.50	22.60	22.39	22.54
		25	0	22.50	21.42	21.38	21.51
		25	13	22.50	21.42	21.37	21.49
		25	25	22.50	21.41	21.33	21.50
		50	0	22.50	21.34	21.41	21.43

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20025CH	20175CH	20325CH
15MHz	QPSK	1	0	24.50	23.48	23.42	23.47
		1	38	24.50	23.50	23.46	23.49
		1	74	24.50	23.44	23.45	23.57
		36	0	23.50	22.46	22.52	22.61
		36	18	23.50	22.45	22.53	22.59
		36	39	23.50	22.46	22.51	22.59
		75	0	23.50	22.46	22.47	22.53
	16QAM	1	0	23.50	22.54	22.60	22.68
		1	38	23.50	22.45	22.53	22.55
		1	74	23.50	22.65	22.54	22.40
		36	0	22.50	21.38	21.35	21.47
		36	18	22.50	21.41	21.39	21.44
		36	39	22.50	21.41	21.40	21.46
		75	0	22.50	21.38	21.34	21.48
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20050CH	20175CH	20300CH
20MHz	QPSK	1	0	24.50	23.54	23.54	23.51
		1	50	24.50	23.54	23.55	23.54
		1	99	24.50	23.58	23.52	23.61
		50	0	23.50	22.53	22.47	22.51
		50	25	23.50	22.53	22.47	22.56
		50	50	23.50	22.51	22.48	22.56
		100	0	23.50	22.43	22.47	22.53
	16QAM	1	0	23.50	22.76	22.86	22.74
		1	50	23.50	22.78	22.61	22.69
		1	99	23.50	22.76	22.79	22.72
		50	0	22.50	21.46	21.46	21.42
		50	25	22.50	21.43	21.45	21.43
		50	50	22.50	21.40	21.45	21.43
		100	0	22.50	21.34	21.33	21.38

Table 42: Conducted power measurement results of LTE Band 4 (Full Power)

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	19957CH	20175CH	20393CH
1.4MHz	QPSK	1	0	18.90	17.94	17.95	18.10
		1	3	18.90	17.95	18.01	18.08
		1	5	18.90	17.94	18.02	18.06
		3	0	18.90	17.96	18.00	18.07
		3	2	18.90	17.94	17.91	18.12
		3	3	18.90	18.01	17.83	18.08
		6	0	18.90	17.91	17.93	17.93
	16QAM	1	0	18.90	18.07	17.87	18.15
		1	3	18.90	18.00	18.05	18.21
		1	5	18.90	18.14	17.90	18.13
		3	0	18.90	17.90	18.02	18.11
		3	2	18.90	17.85	17.77	18.00
		3	3	18.90	17.85	17.93	18.20
		6	0	18.80	17.78	17.81	17.98
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	19965CH	20175CH	20385CH
3MHz	QPSK	1	0	18.90	18.00	17.94	18.05
		1	7	18.90	18.02	17.96	18.05
		1	14	18.90	18.00	17.94	18.03
		8	0	18.90	17.93	17.85	18.02
		8	4	18.90	17.89	17.87	17.97
		8	7	18.90	17.92	17.89	18.06
		15	0	18.90	17.94	17.85	17.97
	16QAM	1	0	18.90	18.20	18.05	17.94
		1	7	18.90	18.12	18.00	18.33
		1	14	18.90	18.19	18.25	18.11
		8	0	18.80	17.91	17.92	17.95
		8	4	18.80	17.95	17.82	17.97
		8	7	18.80	17.85	17.86	18.04
		15	0	18.80	17.92	17.93	18.01

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	19975CH	20175CH	20375CH
5MHz	QPSK	1	0	18.90	17.93	18.02	18.08
		1	13	18.90	17.93	18.00	18.04
		1	24	18.90	17.90	17.97	18.13
		12	0	18.90	18.03	18.01	18.16
		12	6	18.90	18.03	18.01	18.05
		12	13	18.90	18.02	18.01	18.16
		25	0	18.90	17.97	17.99	18.00
	16QAM	1	0	18.90	18.07	18.13	18.36
		1	13	18.90	18.16	18.17	18.17
		1	24	18.90	18.12	18.14	18.41
		12	0	18.80	17.97	17.82	18.02
		12	6	18.80	17.98	17.88	18.05
		12	13	18.80	18.00	17.88	18.04
		25	0	18.80	17.93	17.83	17.98
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20000CH	20175CH	20350CH
10MHz	QPSK	1	0	18.90	17.94	18.00	18.04
		1	25	18.90	17.92	17.91	18.02
		1	49	18.90	17.92	17.85	18.00
		25	0	18.90	17.90	17.98	18.03
		25	13	18.90	17.93	17.98	18.03
		25	25	18.90	18.00	17.92	18.04
		50	0	18.90	17.98	17.94	18.06
	16QAM	1	0	18.90	17.86	17.94	18.06
		1	25	18.90	17.94	18.18	18.12
		1	49	18.90	17.93	18.05	18.10
		25	0	18.80	17.89	17.88	18.02
		25	13	18.80	17.85	17.85	18.01
		25	25	18.80	17.86	17.86	18.02
		50	0	18.80	17.90	17.85	17.92

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20025CH	20175CH	20325CH
15MHz	QPSK	1	0	18.90	17.92	17.89	18.01
		1	38	18.90	17.89	17.90	17.97
		1	74	18.90	17.91	17.89	17.99
		36	0	18.90	18.00	18.03	18.02
		36	18	18.90	18.01	18.04	18.02
		36	39	18.90	18.00	18.05	18.02
		75	0	18.90	17.89	17.94	18.08
	16QAM	1	0	18.90	17.95	17.85	18.01
		1	38	18.90	17.92	17.94	18.00
		1	74	18.90	18.07	18.06	18.19
		36	0	18.80	17.96	17.89	17.99
		36	18	18.80	17.95	17.91	17.97
		36	39	18.80	17.95	17.89	17.98
		75	0	18.80	17.91	17.89	17.93
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20050CH	20175CH	20300CH
20MHz	QPSK	1	0	18.90	18.16	18.07	18.04
		1	50	18.90	18.14	18.06	18.05
		1	99	18.90	18.15	18.07	18.03
		50	0	18.90	17.95	17.92	18.02
		50	25	18.90	17.94	17.92	18.01
		50	50	18.90	17.95	17.93	18.00
		100	0	18.90	17.99	17.93	18.01
	16QAM	1	0	18.90	18.27	18.41	18.20
		1	50	18.90	18.21	18.24	18.29
		1	99	18.90	18.39	18.19	18.36
		50	0	18.80	17.87	17.90	17.97
		50	25	18.80	17.87	17.88	17.96
		50	50	18.80	17.92	17.89	17.95
		100	0	18.80	17.86	17.89	17.95

Table 43: Conducted power measurement results of LTE Band 4 (Receiver ON)

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	19957CH	20175CH	20393CH
1.4MHz	QPSK	1	0	19.90	18.88	18.87	19.00
		1	3	19.90	18.91	18.92	19.00
		1	5	19.90	18.86	18.90	19.04
		3	0	19.90	18.90	18.83	18.91
		3	2	19.90	18.86	18.91	18.98
		3	3	19.90	18.84	18.78	18.90
		6	0	19.90	18.89	18.94	18.96
	16QAM	1	0	19.90	19.08	18.92	19.02
		1	3	19.90	19.02	18.90	18.98
		1	5	19.90	19.06	18.93	19.08
		3	0	19.90	18.83	19.01	18.88
		3	2	19.90	18.95	18.74	18.97
		3	3	19.90	18.91	18.86	18.92
		6	0	19.80	18.88	18.84	18.82
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	19965CH	20175CH	20385CH
3MHz	QPSK	1	0	19.90	18.89	18.90	18.98
		1	7	19.90	18.87	18.86	19.00
		1	14	19.90	18.86	18.90	18.99
		8	0	19.90	18.82	18.90	19.03
		8	4	19.90	18.86	18.80	18.97
		8	7	19.90	18.84	18.82	18.97
		15	0	19.90	18.92	18.88	19.04
	16QAM	1	0	19.90	18.93	18.99	19.21
		1	7	19.90	19.04	19.06	19.09
		1	14	19.90	19.13	18.84	19.15
		8	0	19.80	18.93	18.88	18.92
		8	4	19.80	18.76	18.85	18.96
		8	7	19.80	18.76	18.83	18.96
		15	0	19.80	18.85	18.82	18.94

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	19975CH	20175CH	20375CH
5MHz	QPSK	1	0	19.90	18.93	18.91	18.96
		1	13	19.90	18.94	18.90	18.99
		1	24	19.90	18.94	18.89	18.99
		12	0	19.90	18.93	18.92	19.08
		12	6	19.90	19.00	18.90	19.09
		12	13	19.90	18.95	18.91	19.06
		25	0	19.90	18.95	18.94	19.02
	16QAM	1	0	19.90	19.12	19.15	18.94
		1	13	19.90	19.15	19.22	19.14
		1	24	19.90	19.08	19.31	19.05
		12	0	19.80	18.93	18.84	19.00
		12	6	19.80	18.88	18.93	19.03
		12	13	19.80	18.93	18.90	19.06
		25	0	19.80	18.88	18.84	18.89
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20000CH	20175CH	20350CH
10MHz	QPSK	1	0	19.90	18.90	18.94	19.00
		1	25	19.90	18.86	18.93	18.99
		1	49	19.90	18.85	18.92	19.01
		25	0	19.90	18.90	18.91	19.07
		25	13	19.90	18.90	18.91	19.02
		25	25	19.90	18.88	18.95	18.99
		50	0	19.90	18.90	18.92	19.01
	16QAM	1	0	19.90	19.03	18.92	19.08
		1	25	19.90	18.98	18.92	18.99
		1	49	19.90	18.79	19.17	19.12
		25	0	19.80	18.78	18.89	18.99
		25	13	19.80	18.84	18.87	18.94
		25	25	19.80	18.88	18.87	18.94
		50	0	19.80	18.85	18.82	18.93

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20025CH	20175CH	20325CH
15MHz	QPSK	1	0	19.90	18.84	18.86	18.86
		1	38	19.90	18.86	18.86	18.90
		1	74	19.90	18.90	18.86	18.86
		36	0	19.90	18.98	18.99	18.97
		36	18	19.90	18.98	19.00	19.01
		36	39	19.90	18.98	19.00	19.01
		75	0	19.90	18.88	18.88	18.96
	16QAM	1	0	19.90	18.98	18.97	19.02
		1	38	19.90	19.06	18.85	19.02
		1	74	19.90	18.87	18.98	19.07
		36	0	19.80	18.88	18.90	18.97
		36	18	19.80	18.93	18.95	18.94
		36	39	19.80	18.92	18.93	18.93
		75	0	19.80	18.83	18.84	18.89
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20050CH	20175CH	20300CH
20MHz	QPSK	1	0	19.90	19.06	19.01	19.00
		1	50	19.90	19.05	18.99	19.00
		1	99	19.90	19.05	19.04	19.01
		50	0	19.90	18.94	18.90	18.94
		50	25	19.90	18.95	18.92	18.96
		50	50	19.90	18.95	18.91	18.98
		100	0	19.90	18.89	18.96	18.98
	16QAM	1	0	19.90	19.37	19.03	19.22
		1	50	19.90	19.38	19.24	19.21
		1	99	19.90	19.19	19.07	19.07
		50	0	19.80	18.89	18.83	18.90
		50	25	19.80	18.86	18.82	18.84
		50	50	19.80	18.87	18.84	18.84
		100	0	19.80	18.82	18.87	18.92

Table 44: Conducted power measurement results of LTE Band 4 (Receiver OFF+Hotspot ON)

Note: The Conducted power measurements of LTE Band 4 is measured with RMS detector.

7.1.14 Conducted power measurements of LTE Band 4(Main antenna)

Bandwidth	Modulation	RB size	RB offset	Tune-up Max.	Channel 19957CH	Channel 20175CH	Channel 20393CH
1.4MHz	QPSK	1	0	24.50	23.62	23.59	23.85
		1	3	24.50	23.61	23.65	23.81
		1	5	24.50	23.59	23.66	23.82
		3	0	24.50	23.64	23.49	23.76
		3	2	24.50	23.54	23.58	23.76
		3	3	24.50	23.51	23.56	23.77
		6	0	23.50	22.56	22.46	22.53
	16QAM	1	0	23.50	22.57	22.77	22.76
		1	3	23.50	22.78	22.71	22.91
		1	5	23.50	22.78	22.63	22.80
		3	0	23.50	22.55	22.57	22.64
		3	2	23.50	22.43	22.62	22.83
		3	3	23.50	22.48	22.58	22.60
		6	0	22.50	21.44	21.53	21.61
Bandwidth	Modulation	RB size	RB offset	Tune-up Max.	Channel 19965CH	Channel 20175CH	Channel 20385CH
3MHz	QPSK	1	0	24.50	23.55	23.64	23.80
		1	7	24.50	23.60	23.62	23.80
		1	14	24.50	23.55	23.61	23.82
		8	0	23.50	22.56	22.57	22.66
		8	4	23.50	22.53	22.59	22.73
		8	7	23.50	22.53	22.62	22.74
		15	0	23.50	22.54	22.60	22.73
	16QAM	1	0	23.50	22.71	22.73	22.85
		1	7	23.50	22.75	22.55	22.76
		1	14	23.50	22.73	22.70	23.02
		8	0	22.50	21.46	21.56	21.71
		8	4	22.50	21.36	21.62	21.63
		8	7	22.50	21.50	21.42	21.64
		15	0	22.50	21.46	21.52	21.68

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	19975CH	20175CH	20375CH
5MHz	QPSK	1	0	24.50	23.60	23.63	23.76
		1	13	24.50	23.61	23.57	23.75
		1	24	24.50	23.56	23.62	23.75
		12	0	23.50	22.62	22.59	22.74
		12	6	23.50	22.62	22.59	22.76
		12	13	23.50	22.62	22.60	22.75
		25	0	23.50	22.53	22.64	22.72
	16QAM	1	0	23.50	22.77	22.63	22.86
		1	13	23.50	22.82	22.62	22.79
		1	24	23.50	22.82	22.79	22.90
		12	0	22.50	21.59	21.60	21.77
		12	6	22.50	21.55	21.62	21.73
		12	13	22.50	21.61	21.59	21.75
		25	0	22.50	21.56	21.50	21.68
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20000CH	20175CH	20350CH
10MHz	QPSK	1	0	24.50	23.59	23.63	23.72
		1	25	24.50	23.64	23.55	23.66
		1	49	24.50	23.55	23.55	23.68
		25	0	23.50	22.59	22.63	22.77
		25	13	23.50	22.59	22.64	22.74
		25	25	23.50	22.59	22.64	22.74
		50	0	23.50	22.58	22.58	22.74
	16QAM	1	0	23.50	22.59	22.72	22.55
		1	25	23.50	22.55	22.46	22.78
		1	49	23.50	22.61	22.76	22.73
		25	0	22.50	21.54	21.50	21.75
		25	13	22.50	21.51	21.52	21.72
		25	25	22.50	21.50	21.52	21.72
		50	0	22.50	21.48	21.59	21.72

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20025CH	20175CH	20325CH
15MHz	QPSK	1	0	24.50	23.58	23.60	23.69
		1	38	24.50	23.58	23.62	23.71
		1	74	24.50	23.58	23.66	23.69
		36	0	23.50	22.58	22.68	22.74
		36	18	23.50	22.58	22.68	22.74
		36	39	23.50	22.58	22.68	22.73
		75	0	23.50	22.52	22.64	22.77
	16QAM	1	0	23.50	22.84	22.68	22.77
		1	38	23.50	22.73	22.72	22.67
		1	74	23.50	22.52	22.57	22.84
		36	0	22.50	21.55	21.56	21.69
		36	18	22.50	21.51	21.55	21.73
		36	39	22.50	21.52	21.55	21.73
		75	0	22.50	21.54	21.53	21.64
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20050CH	20175CH	20300CH
20MHz	QPSK	1	0	24.50	23.70	23.69	23.74
		1	50	24.50	23.71	23.68	23.72
		1	99	24.50	23.68	23.70	23.70
		50	0	23.50	22.57	22.65	22.71
		50	25	23.50	22.57	22.61	22.70
		50	50	23.50	22.58	22.60	22.70
		100	0	23.50	22.55	22.63	22.75
	16QAM	1	0	23.50	22.84	22.80	22.79
		1	50	23.50	22.90	22.81	22.83
		1	99	23.50	22.74	22.67	22.74
		50	0	22.50	21.49	21.56	21.58
		50	25	22.50	21.50	21.60	21.58
		50	50	22.50	21.51	21.61	21.61
		100	0	22.50	21.46	21.61	21.61

Table 45: Conducted power measurement results of LTE Band 4 (Full Power)

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	19957CH	20175CH	20393CH
1.4MHz	QPSK	1	0	23.10	22.12	22.17	22.33
		1	3	23.10	22.07	22.14	22.34
		1	5	23.10	22.10	22.15	22.24
		3	0	23.10	21.96	22.13	22.25
		3	2	23.10	21.98	22.02	22.19
		3	3	23.10	22.04	22.16	22.23
		6	0	23.10	21.90	22.04	22.05
	16QAM	1	0	23.10	22.05	22.05	22.35
		1	3	23.10	22.17	22.04	22.47
		1	5	23.10	22.20	22.05	22.38
		3	0	23.10	21.92	22.03	22.11
		3	2	23.10	22.02	21.89	22.21
		3	3	23.10	22.04	22.07	22.19
		6	0	22.50	21.43	21.44	21.68
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	19965CH	20175CH	20385CH
3MHz	QPSK	1	0	23.10	22.08	22.09	22.30
		1	7	23.10	22.13	22.07	22.26
		1	14	23.10	22.13	22.12	22.28
		8	0	23.10	21.99	22.06	22.27
		8	4	23.10	21.95	22.09	22.27
		8	7	23.10	22.09	22.10	22.24
		15	0	23.10	22.01	22.08	22.25
	16QAM	1	0	23.10	22.18	22.34	22.42
		1	7	23.10	22.35	22.30	22.32
		1	14	23.10	22.02	22.30	22.24
		8	0	22.50	21.54	21.52	21.75
		8	4	22.50	21.54	21.54	21.75
		8	7	22.50	21.38	21.51	21.74
		15	0	22.50	21.49	21.61	21.74

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	19975CH	20175CH	20375CH
5MHz	QPSK	1	0	23.10	22.08	22.10	22.23
		1	13	23.10	22.07	22.08	22.27
		1	24	23.10	22.05	22.07	22.28
		12	0	23.10	22.12	22.12	22.26
		12	6	23.10	22.13	22.18	22.27
		12	13	23.10	22.12	22.12	22.26
		25	0	23.10	22.05	22.15	22.23
	16QAM	1	0	23.10	22.31	22.26	22.45
		1	13	23.10	22.35	22.27	22.44
		1	24	23.10	22.24	22.33	22.38
		12	0	22.50	21.59	21.61	21.75
		12	6	22.50	21.53	21.62	21.72
		12	13	22.50	21.58	21.60	21.76
		25	0	22.50	21.56	21.52	21.70
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20000CH	20175CH	20350CH
10MHz	QPSK	1	0	23.10	22.06	22.09	22.27
		1	25	23.10	22.07	22.09	22.24
		1	49	23.10	22.09	22.06	22.25
		25	0	23.10	22.11	22.16	22.27
		25	13	23.10	22.10	22.17	22.26
		25	25	23.10	22.10	22.17	22.26
		50	0	23.10	22.09	22.10	22.25
	16QAM	1	0	23.10	22.13	22.06	22.31
		1	25	23.10	21.92	22.11	22.21
		1	49	23.10	22.17	22.05	22.22
		25	0	22.50	21.51	21.53	21.71
		25	13	22.50	21.49	21.53	21.72
		25	25	22.50	21.51	21.50	21.74
		50	0	22.50	21.48	21.57	21.71

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20025CH	20175CH	20325CH
15MHz	QPSK	1	0	23.10	22.04	22.10	22.24
		1	38	23.10	22.05	22.09	22.22
		1	74	23.10	22.08	22.13	22.23
		36	0	23.10	22.10	22.20	22.26
		36	18	23.10	22.10	22.13	22.26
		36	39	23.10	22.10	22.21	22.25
		75	0	23.10	22.03	22.11	22.29
	16QAM	1	0	23.10	22.21	22.12	22.38
		1	38	23.10	22.39	22.20	22.37
		1	74	23.10	21.95	22.13	22.28
		36	0	22.50	21.54	21.54	21.76
		36	18	22.50	21.54	21.54	21.73
		36	39	22.50	21.53	21.57	21.74
		75	0	22.50	21.55	21.50	21.66
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20050CH	20175CH	20300CH
20MHz	QPSK	1	0	23.10	22.15	22.23	22.24
		1	50	23.10	22.22	22.22	22.23
		1	99	23.10	22.20	22.22	22.22
		50	0	23.10	22.08	22.11	22.23
		50	25	23.10	22.08	22.12	22.22
		50	50	23.10	22.09	22.13	22.22
		100	0	23.10	22.06	22.16	22.19
	16QAM	1	0	23.10	22.34	22.48	22.46
		1	50	23.10	22.42	22.33	22.33
		1	99	23.10	22.35	22.29	22.49
		50	0	22.50	21.48	21.57	21.59
		50	25	22.50	21.53	21.59	21.64
		50	50	22.50	21.51	21.59	21.59
		100	0	22.50	21.48	21.60	21.60

Table 46: Conducted power measurement results of LTE Band 4 (Receiver OFF)

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	19957CH	20175CH	20393CH
1.4MHz	QPSK	1	0	20.60	19.55	19.66	19.80
		1	3	20.60	19.58	19.68	19.82
		1	5	20.60	19.61	19.69	19.85
		3	0	20.60	19.49	19.66	19.78
		3	2	20.60	19.54	19.60	19.77
		3	3	20.60	19.52	19.68	19.70
		6	0	20.60	19.40	19.49	19.69
	16QAM	1	0	20.60	19.66	19.75	19.84
		1	3	20.60	19.62	19.73	19.89
		1	5	20.60	19.61	19.76	19.79
		3	0	20.60	19.55	19.75	19.63
		3	2	20.60	19.64	19.57	19.73
		3	3	20.60	19.57	19.39	19.72
		6	0	20.50	19.45	19.63	19.69
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	19965CH	20175CH	20385CH
3MHz	QPSK	1	0	20.60	19.52	19.65	19.78
		1	7	20.60	19.57	19.64	19.75
		1	14	20.60	19.56	19.69	19.78
		8	0	20.60	19.55	19.61	19.76
		8	4	20.60	19.49	19.50	19.78
		8	7	20.60	19.57	19.52	19.73
		15	0	20.60	19.63	19.62	19.79
	16QAM	1	0	20.60	19.62	19.60	19.86
		1	7	20.60	19.58	19.84	19.69
		1	14	20.60	19.73	19.75	19.80
		8	0	20.50	19.53	19.65	19.77
		8	4	20.50	19.48	19.67	19.77
		8	7	20.50	19.49	19.53	19.74
		15	0	20.50	19.42	19.65	19.73

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	19975CH	20175CH	20375CH
5MHz	QPSK	1	0	20.60	19.57	19.66	19.75
		1	13	20.60	19.55	19.66	19.78
		1	24	20.60	19.57	19.68	19.75
		12	0	20.60	19.58	19.64	19.81
		12	6	20.60	19.64	19.65	19.81
		12	13	20.60	19.59	19.65	19.80
		25	0	20.60	19.59	19.65	19.77
	16QAM	1	0	20.60	19.84	19.93	19.98
		1	13	20.60	19.64	19.80	19.92
		1	24	20.60	19.70	19.85	19.99
		12	0	20.50	19.59	19.62	19.81
		12	6	20.50	19.58	19.64	19.81
		12	13	20.50	19.62	19.66	19.81
		25	0	20.50	19.56	19.55	19.68
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20000CH	20175CH	20350CH
10MHz	QPSK	1	0	20.60	19.63	19.62	19.69
		1	25	20.60	19.60	19.62	19.73
		1	49	20.60	19.59	19.62	19.72
		25	0	20.60	19.56	19.59	19.76
		25	13	20.60	19.54	19.58	19.81
		25	25	20.60	19.55	19.57	19.83
		50	0	20.60	19.61	19.63	19.79
	16QAM	1	0	20.60	19.72	19.61	19.87
		1	25	20.60	19.70	19.68	19.89
		1	49	20.60	19.69	19.79	19.71
		25	0	20.50	19.54	19.64	19.65
		25	13	20.50	19.55	19.55	19.64
		25	25	20.50	19.51	19.50	19.64
		50	0	20.50	19.51	19.60	19.67

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20025CH	20175CH	20325CH
15MHz	QPSK	1	0	20.60	19.49	19.56	19.69
		1	38	20.60	19.51	19.56	19.69
		1	74	20.60	19.51	19.60	19.65
		36	0	20.60	19.61	19.70	19.72
		36	18	20.60	19.61	19.71	19.70
		36	39	20.60	19.61	19.71	19.81
		75	0	20.60	19.56	19.68	19.73
	16QAM	1	0	20.60	19.72	19.87	19.84
		1	38	20.60	19.55	19.66	19.68
		1	74	20.60	19.58	19.57	19.84
		36	0	20.50	19.53	19.66	19.68
		36	18	20.50	19.56	19.62	19.68
		36	39	20.50	19.58	19.69	19.66
		75	0	20.50	19.53	19.52	19.67
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20050CH	20175CH	20300CH
20MHz	QPSK	1	0	20.60	19.73	19.71	19.78
		1	50	20.60	19.71	19.65	19.73
		1	99	20.60	19.72	19.69	19.77
		50	0	20.60	19.59	19.59	19.68
		50	25	20.60	19.57	19.60	19.66
		50	50	20.60	19.59	19.61	19.75
		100	0	20.60	19.60	19.64	19.69
	16QAM	1	0	20.60	19.86	19.87	19.95
		1	50	20.60	19.84	19.79	19.86
		1	99	20.60	19.78	19.81	19.81
		50	0	20.50	19.57	19.56	19.66
		50	25	20.50	19.56	19.59	19.62
		50	50	20.50	19.50	19.57	19.63
		100	0	20.50	19.51	19.62	19.66

Table 47: Conducted power measurement results of LTE Band 4 (Receiver OFF+Hotspot ON)

Note: The Conducted power measurements of LTE Band 4 is measured with RMS detector.

7.1.15 Conducted power measurements of LTE Band 5(Second antenna)

Bandwidth	Modulation	RB size	RB offset	Tune-up Max.	Channel 20407CH	Channel 20525CH	Channel 20643CH
1.4MHz	QPSK	1	0	24.80	23.88	23.88	23.81
		1	3	24.80	23.92	23.85	23.84
		1	5	24.80	23.92	23.84	23.77
		3	0	24.80	23.82	23.82	23.76
		3	2	24.80	23.86	23.75	23.75
		3	3	24.80	23.89	23.85	23.74
		6	0	23.80	22.76	22.79	22.79
	16QAM	1	0	23.80	23.02	22.91	22.82
		1	3	23.80	22.95	22.90	22.89
		1	5	23.80	23.06	22.76	22.91
		3	0	23.80	22.96	22.83	22.85
		3	2	23.80	22.94	22.66	22.72
		3	3	23.80	22.89	22.87	22.73
		6	0	22.80	21.79	21.84	21.73
Bandwidth	Modulation	RB size	RB offset	Tune-up Max.	Channel 20415CH	Channel 20525CH	Channel 20635CH
3MHz	QPSK	1	0	24.80	23.86	23.91	23.79
		1	7	24.80	23.90	23.91	23.81
		1	14	24.80	23.91	23.89	23.83
		8	0	23.80	22.92	22.75	22.70
		8	4	23.80	22.80	22.77	22.75
		8	7	23.80	22.85	22.80	22.76
		15	0	23.80	22.84	22.82	22.78
	16QAM	1	0	23.80	22.91	22.95	22.75
		1	7	23.80	22.88	22.88	22.80
		1	14	23.80	22.82	22.82	22.73
		8	0	22.80	21.82	21.81	21.72
		8	4	22.80	21.73	21.80	21.70
		8	7	22.80	21.82	21.79	21.75
		15	0	22.80	21.85	21.78	21.76

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20425CH	20525CH	20625CH
5MHz	QPSK	1	0	24.80	23.85	23.86	23.82
		1	13	24.80	23.85	23.76	23.83
		1	24	24.80	23.90	23.83	23.80
		12	0	23.80	22.98	22.87	22.86
		12	6	23.80	22.97	22.88	22.84
		12	13	23.80	22.98	22.89	22.85
		25	0	23.80	22.91	22.86	22.88
	16QAM	1	0	23.80	23.01	23.02	22.96
		1	13	23.80	22.96	22.81	23.02
		1	24	23.80	23.01	22.96	23.09
		12	0	22.80	21.89	21.81	21.75
		12	6	22.80	21.91	21.84	21.77
		12	13	22.80	21.91	21.84	21.76
		25	0	22.80	21.77	21.77	21.70
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20450CH	20525CH	20600CH
10MHz	QPSK	1	0	24.80	23.88	23.92	23.85
		1	25	24.80	23.89	23.84	23.92
		1	49	24.80	23.92	23.91	23.83
		25	0	23.80	22.94	22.86	22.80
		25	13	23.80	22.93	22.86	22.86
		25	25	23.80	22.93	22.87	22.83
		50	0	23.80	22.80	22.80	22.83
	16QAM	1	0	23.80	23.01	22.87	23.05
		1	25	23.80	22.99	23.01	22.84
		1	49	23.80	22.91	22.97	22.85
		25	0	22.80	21.86	21.77	21.82
		25	13	22.80	21.82	21.78	21.80
		25	25	22.80	21.81	21.82	21.71
		50	0	22.80	21.78	21.82	21.78

Table 48: Conducted power measurement results of LTE Band 5 (Full Power)

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20407CH	20525CH	20643CH
1.4MHz	QPSK	1	0	21.20	20.43	20.38	20.29
		1	3	21.20	20.44	20.36	20.28
		1	5	21.20	20.44	20.39	20.41
		3	0	21.20	20.32	20.26	20.25
		3	2	21.20	20.38	20.34	20.30
		3	3	21.20	20.27	20.30	20.32
		6	0	21.20	20.35	20.29	20.17
	16QAM	1	0	21.20	20.30	20.37	20.55
		1	3	21.20	20.37	20.41	20.36
		1	5	21.20	20.45	20.30	20.34
		3	0	21.20	20.37	20.42	20.18
		3	2	21.20	20.39	20.44	20.18
		3	3	21.20	20.37	20.22	20.13
		6	0	21.20	20.31	20.21	20.20
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20415CH	20525CH	20635CH
3MHz	QPSK	1	0	21.20	20.35	20.34	20.35
		1	7	21.20	20.36	20.40	20.30
		1	14	21.20	20.42	20.36	20.33
		8	0	21.20	20.33	20.34	20.22
		8	4	21.20	20.29	20.31	20.23
		8	7	21.20	20.33	20.28	20.28
		15	0	21.20	20.40	20.33	20.28
	16QAM	1	0	21.20	20.43	20.50	20.23
		1	7	21.20	20.38	20.50	20.41
		1	14	21.20	20.54	20.48	20.35
		8	0	21.20	20.31	20.38	20.25
		8	4	21.20	20.29	20.29	20.21
		8	7	21.20	20.33	20.17	20.16
		15	0	21.20	20.31	20.20	20.27

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20425CH	20525CH	20625CH
5MHz	QPSK	1	0	21.20	20.41	20.33	20.33
		1	13	21.20	20.39	20.30	20.32
		1	24	21.20	20.41	20.31	20.32
		12	0	21.20	20.48	20.44	20.31
		12	6	21.20	20.48	20.46	20.32
		12	13	21.20	20.47	20.37	20.33
		25	0	21.20	20.41	20.31	20.27
	16QAM	1	0	21.20	20.59	20.51	20.38
		1	13	21.20	20.62	20.45	20.49
		1	24	21.20	20.58	20.42	20.52
		12	0	21.20	20.33	20.43	20.39
		12	6	21.20	20.37	20.35	20.36
		12	13	21.20	20.46	20.35	20.31
		25	0	21.20	20.34	20.25	20.21
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20450CH	20525CH	20600CH
10MHz	QPSK	1	0	21.20	20.36	20.31	20.37
		1	25	21.20	20.35	20.34	20.36
		1	49	21.20	20.32	20.35	20.34
		25	0	21.20	20.44	20.30	20.32
		25	13	21.20	20.41	20.30	20.31
		25	25	21.20	20.43	20.31	20.33
		50	0	21.20	20.37	20.34	20.30
	16QAM	1	0	21.20	20.37	20.29	20.47
		1	25	21.20	20.47	20.46	20.53
		1	49	21.20	20.20	20.40	20.44
		25	0	21.20	20.30	20.23	20.24
		25	13	21.20	20.27	20.28	20.26
		25	25	21.20	20.30	20.26	20.24
		50	0	21.20	20.33	20.24	20.27

Table 49: Conducted power measurement results of LTE Band 5 (Receiver ON)

Note: The Conducted power measurements of LTE Band 5 is measured with RMS detector.

7.1.16 Conducted power measurements of LTE Band 5(Main antenna)

Bandwidth	Modulation	RB size	RB offset	Tune-up Max.	Channel 20407CH	Channel 20525CH	Channel 20643CH
1.4MHz	QPSK	1	0	25.00	23.92	24.00	24.09
		1	3	25.00	23.91	23.93	24.05
		1	5	25.00	23.99	24.03	24.13
		3	0	25.00	23.81	23.92	23.94
		3	2	25.00	23.82	23.80	23.90
		3	3	25.00	23.84	23.87	23.97
		6	0	24.00	22.80	22.95	22.86
	16QAM	1	0	24.00	23.06	23.06	23.17
		1	3	24.00	23.02	23.08	23.18
		1	5	24.00	22.97	23.01	23.02
		3	0	24.00	22.78	22.92	23.01
		3	2	24.00	22.77	22.95	22.92
		3	3	24.00	22.77	22.90	22.99
		6	0	23.00	21.86	21.81	21.95
Bandwidth	Modulation	RB size	RB offset	Tune-up Max.	Channel 20415CH	Channel 20525CH	Channel 20635CH
3MHz	QPSK	1	0	25.00	24.00	23.96	24.05
		1	7	25.00	23.88	23.94	24.03
		1	14	25.00	23.98	24.02	24.01
		8	0	24.00	22.86	22.93	22.96
		8	4	24.00	22.87	22.88	22.93
		8	7	24.00	22.85	22.89	22.89
		15	0	24.00	22.87	22.91	22.93
	16QAM	1	0	24.00	23.08	23.06	23.00
		1	7	24.00	23.08	23.05	23.08
		1	14	24.00	23.10	23.19	23.15
		8	0	23.00	21.91	21.94	21.83
		8	4	23.00	21.84	21.87	21.84
		8	7	23.00	21.90	21.90	21.92
		15	0	23.00	21.85	21.91	21.88

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20425CH	20525CH	20625CH
5MHz	QPSK	1	0	25.00	23.90	23.89	23.98
		1	13	25.00	23.85	23.96	23.99
		1	24	25.00	23.89	23.93	23.94
		12	0	24.00	22.92	23.03	22.98
		12	6	24.00	22.92	23.03	22.97
		12	13	24.00	22.92	22.94	22.96
		25	0	24.00	22.93	22.90	23.00
	16QAM	1	0	24.00	22.98	23.15	23.21
		1	13	24.00	22.94	23.00	23.17
		1	24	24.00	22.94	23.01	23.01
		12	0	23.00	21.93	21.96	21.90
		12	6	23.00	21.97	21.93	21.94
		12	13	23.00	21.98	21.98	21.88
		25	0	23.00	21.88	21.86	21.89
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20450CH	20525CH	20600CH
10MHz	QPSK	1	0	25.00	24.00	24.00	24.04
		1	25	25.00	23.90	24.01	24.00
		1	49	25.00	23.92	24.02	24.09
		25	0	24.00	22.91	22.95	23.01
		25	13	24.00	22.88	22.90	22.98
		25	25	24.00	22.92	22.91	22.99
		50	0	24.00	22.84	22.98	23.00
	16QAM	1	0	24.00	22.89	22.91	23.01
		1	25	24.00	23.14	22.93	23.07
		1	49	24.00	22.77	23.04	23.03
		25	0	23.00	21.87	21.86	21.94
		25	13	23.00	21.85	21.86	21.92
		25	25	23.00	21.83	21.88	21.91
		50	0	23.00	21.83	21.93	21.92

Table 50: Conducted power measurement results of LTE Band 5

Note: The Conducted power measurements of LTE Band 5 is measured with RMS detector.

7.1.17 Conducted power measurements of LTE Band 7(Second antenna)

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20775CH	21100CH	21425CH
5MHz	QPSK	1	0	24.00	23.09	22.87	23.09
		1	13	24.00	23.09	22.86	23.15
		1	24	24.00	23.09	22.88	23.08
		12	0	23.40	22.14	22.03	22.21
		12	6	23.40	22.13	22.03	22.18
		12	13	23.40	22.12	22.02	22.23
		25	0	23.40	22.13	21.94	22.19
	16QAM	1	0	23.40	22.27	22.20	22.32
		1	13	23.40	22.36	22.12	22.31
		1	24	23.40	22.44	22.05	22.31
		12	0	22.40	21.16	21.02	21.27
		12	6	22.40	21.16	21.00	21.26
		12	13	22.40	21.13	21.03	21.25
		25	0	22.40	21.02	21.02	21.19
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20800CH	21100CH	21400CH
10MHz	QPSK	1	0	24.00	23.20	22.95	23.13
		1	25	24.00	23.12	22.93	23.21
		1	49	24.00	23.12	22.91	23.18
		25	0	23.40	22.10	21.93	22.11
		25	13	23.40	22.11	21.93	22.11
		25	25	23.40	22.11	21.94	22.12
		50	0	23.40	22.13	22.05	22.28
	16QAM	1	0	23.40	22.65	22.18	22.33
		1	25	23.40	22.30	22.10	22.61
		1	49	23.40	22.41	22.05	22.50
		25	0	22.40	21.34	21.22	21.45
		25	13	22.40	21.41	21.20	21.42
		25	25	22.40	21.45	21.26	21.40
		50	0	22.40	21.40	21.28	21.52

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20825CH	21100CH	21375CH
15MHz	QPSK	1	0	24.00	23.15	23.02	23.10
		1	38	24.00	23.17	23.01	23.12
		1	74	24.00	23.14	22.96	23.12
		36	0	23.40	22.08	21.94	22.12
		36	18	23.40	22.08	21.94	22.12
		36	39	23.40	22.08	21.95	22.13
		75	0	23.40	22.20	22.09	22.29
	16QAM	1	0	23.40	22.33	22.03	22.26
		1	38	23.40	22.30	22.06	22.26
		1	74	23.40	22.29	22.00	22.16
		36	0	22.40	21.14	20.92	21.13
		36	18	22.40	21.13	20.95	21.11
		36	39	22.40	21.11	20.94	21.17
		75	0	22.40	21.18	21.03	21.21
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20850CH	21100CH	21350CH
20MHz	QPSK	1	0	24.00	23.12	23.05	23.06
		1	50	24.00	23.18	23.05	23.06
		1	99	24.00	23.14	23.03	23.06
		50	0	23.40	22.14	22.09	22.21
		50	25	23.40	22.13	22.04	22.22
		50	50	23.40	22.13	22.06	22.22
		100	0	23.40	22.20	22.19	22.24
	16QAM	1	0	23.40	22.50	22.17	22.19
		1	50	23.40	22.41	22.13	22.26
		1	99	23.40	22.37	22.38	22.22
		50	0	22.40	21.15	21.06	21.15
		50	25	22.40	21.15	21.08	21.13
		50	50	22.40	21.08	21.07	21.15
		100	0	22.40	21.15	21.16	21.32

Table 51: Conducted power measurement results of LTE Band 7 (Full Power)

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20775CH	21100CH	21425CH
5MHz	QPSK	1	0	16.90	15.75	15.63	15.81
		1	13	16.90	15.71	15.61	15.84
		1	24	16.90	15.73	15.55	15.83
		12	0	16.90	15.75	15.57	15.84
		12	6	16.90	15.74	15.65	15.84
		12	13	16.90	15.73	15.57	15.82
		25	0	16.90	15.71	15.58	15.81
	16QAM	1	0	16.90	15.96	15.79	16.02
		1	13	16.90	15.93	15.82	16.00
		1	24	16.90	15.81	15.83	15.84
		12	0	16.80	15.69	15.66	15.78
		12	6	16.80	15.68	15.65	15.75
		12	13	16.80	15.70	15.61	15.77
		25	0	16.80	15.66	15.51	15.75
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20800CH	21100CH	21400CH
10MHz	QPSK	1	0	16.90	15.80	15.61	15.73
		1	25	16.90	15.76	15.55	15.75
		1	49	16.90	15.73	15.59	15.77
		25	0	16.90	15.68	15.63	15.79
		25	13	16.90	15.70	15.64	15.78
		25	25	16.90	15.69	15.65	15.81
		50	0	16.90	15.67	15.59	15.76
	16QAM	1	0	16.90	15.82	15.57	15.79
		1	25	16.90	15.85	15.61	15.67
		1	49	16.90	15.93	15.71	15.87
		25	0	16.80	15.69	15.57	15.72
		25	13	16.80	15.67	15.51	15.65
		25	25	16.80	15.69	15.63	15.65
		50	0	16.80	15.66	15.53	15.73

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20825CH	21100CH	21375CH
15MHz	QPSK	1	0	16.90	15.74	15.58	15.75
		1	38	16.90	15.73	15.63	15.69
		1	74	16.90	15.76	15.60	15.67
		36	0	16.90	15.72	15.57	15.75
		36	18	16.90	15.72	15.57	15.77
		36	39	16.90	15.72	15.56	15.78
		75	0	16.90	15.68	15.63	15.71
	16QAM	1	0	16.90	15.89	15.64	15.77
		1	38	16.90	15.70	15.65	15.79
		1	74	16.90	15.90	15.58	15.70
		36	0	16.80	15.73	15.55	15.71
		36	18	16.80	15.65	15.52	15.74
		36	39	16.80	15.73	15.54	15.73
		75	0	16.80	15.56	15.51	15.64
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20850CH	21100CH	21350CH
20MHz	QPSK	1	0	16.90	15.89	15.73	15.78
		1	50	16.90	15.85	15.80	15.78
		1	99	16.90	15.86	15.69	15.75
		50	0	16.90	15.71	15.63	15.76
		50	25	16.90	15.71	15.64	15.69
		50	50	16.90	15.71	15.64	15.68
		100	0	16.90	15.62	15.58	15.74
	16QAM	1	0	16.90	16.02	15.91	15.98
		1	50	16.90	15.99	15.95	15.93
		1	99	16.90	15.95	15.83	16.04
		50	0	16.80	15.58	15.58	15.64
		50	25	16.80	15.59	15.54	15.62
		50	50	16.80	15.60	15.58	15.58
		100	0	16.80	15.53	15.53	15.67

Table 52: Conducted power measurement results of LTE Band 7 (Receiver ON)

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20775CH	21100CH	21425CH
5MHz	QPSK	1	0	22.40	21.01	20.83	21.06
		1	13	22.40	21.01	20.89	21.10
		1	24	22.40	21.05	20.87	21.09
		12	0	22.40	21.09	20.97	21.18
		12	6	22.40	21.08	20.97	21.17
		12	13	22.40	21.14	20.96	21.18
		25	0	22.40	21.07	20.91	21.16
	16QAM	1	0	22.40	21.31	21.12	21.16
		1	13	22.40	21.11	21.05	21.26
		1	24	22.40	21.16	21.26	21.34
		12	0	22.40	21.11	20.98	21.22
		12	6	22.40	21.16	21.01	21.24
		12	13	22.40	21.16	21.04	21.31
		25	0	22.40	21.15	20.98	21.21
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20800CH	21100CH	21400CH
10MHz	QPSK	1	0	22.40	21.05	20.92	21.20
		1	25	22.40	21.33	21.02	21.12
		1	49	22.40	21.15	20.86	21.29
		25	0	22.40	21.04	20.92	21.04
		25	13	22.40	21.04	20.93	21.01
		25	25	22.40	21.07	20.93	21.10
		50	0	22.40	21.09	21.02	21.24
	16QAM	1	0	22.40	21.66	21.21	21.57
		1	25	22.40	21.28	21.33	21.63
		1	49	22.40	21.52	21.21	21.33
		25	0	22.40	21.32	21.23	21.32
		25	13	22.40	21.32	21.20	21.28
		25	25	22.40	21.32	21.28	21.33
		50	0	22.40	21.39	21.24	21.48

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20825CH	21100CH	21375CH
15MHz	QPSK	1	0	22.40	21.09	20.96	21.09
		1	38	22.40	21.11	20.98	21.08
		1	74	22.40	21.08	20.95	21.11
		36	0	22.40	21.07	20.93	21.15
		36	18	22.40	21.08	20.94	21.05
		36	39	22.40	21.07	20.93	21.05
		75	0	22.40	21.13	21.07	21.21
	16QAM	1	0	22.40	21.09	20.95	21.20
		1	38	22.40	21.22	21.16	21.20
		1	74	22.40	21.06	20.92	21.12
		36	0	22.40	21.08	20.97	21.07
		36	18	22.40	21.05	20.99	21.11
		36	39	22.40	21.02	20.93	21.09
		75	0	22.40	21.20	21.03	21.21
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20850CH	21100CH	21350CH
20MHz	QPSK	1	0	22.40	21.16	21.04	21.08
		1	50	22.40	21.12	21.02	21.06
		1	99	22.40	21.12	21.00	21.05
		50	0	22.40	21.19	21.01	21.12
		50	25	22.40	21.19	21.05	21.13
		50	50	22.40	21.12	21.03	21.14
		100	0	22.40	21.18	21.13	21.27
	16QAM	1	0	22.40	21.31	21.24	21.26
		1	50	22.40	21.25	21.16	21.18
		1	99	22.40	21.30	21.21	21.34
		50	0	22.40	21.17	21.05	21.14
		50	25	22.40	21.15	21.03	21.10
		50	50	22.40	21.13	21.07	21.17
		100	0	22.40	21.14	21.15	21.24

Table 53: Conducted power measurement results of LTE Band 7 (Receiver OFF+Hotspot ON)

Note: The Conducted power measurements of LTE Band 7 is measured with RMS detector.

7.1.18 Conducted power measurements of LTE Band 7(Main antenna)

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20775CH	21100CH	21425CH
5MHz	QPSK	1	0	24.00	23.05	22.68	22.75
		1	13	24.00	22.99	22.72	22.77
		1	24	24.00	23.06	22.71	22.76
		12	0	23.10	22.03	21.75	21.85
		12	6	23.10	22.04	21.82	21.84
		12	13	23.10	22.01	21.74	21.87
		25	0	23.10	22.02	21.76	21.83
	16QAM	1	0	23.10	22.14	21.94	21.90
		1	13	23.10	22.10	21.77	21.85
		1	24	23.10	22.14	21.73	21.89
		12	0	22.20	21.14	20.81	20.86
		12	6	22.20	21.11	20.81	20.87
		12	13	22.20	21.00	20.82	20.87
		25	0	22.20	21.09	20.71	20.89
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20800CH	21100CH	21400CH
10MHz	QPSK	1	0	24.00	23.22	22.81	22.88
		1	25	24.00	23.14	22.94	22.85
		1	49	24.00	23.20	22.77	22.89
		25	0	23.10	21.96	21.73	21.73
		25	13	23.10	21.98	21.73	21.73
		25	25	23.10	21.96	21.73	21.74
		50	0	23.10	22.12	21.81	21.89
	16QAM	1	0	23.10	22.44	21.98	22.01
		1	25	23.10	22.39	21.90	22.08
		1	49	23.10	22.27	22.04	22.07
		25	0	22.20	21.26	20.96	21.00
		25	13	22.20	21.27	20.95	21.02
		25	25	22.20	21.20	20.95	21.01
		50	0	22.20	21.30	21.04	21.12

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20825CH	21100CH	21375CH
15MHz	QPSK	1	0	24.00	23.03	22.76	22.72
		1	38	24.00	23.02	22.78	22.75
		1	74	24.00	23.02	22.82	22.72
		36	0	23.10	22.10	21.77	21.77
		36	18	23.10	22.07	21.80	21.77
		36	39	23.10	22.07	21.81	21.78
		75	0	23.10	22.14	21.88	21.87
	16QAM	1	0	23.10	22.21	21.82	21.84
		1	38	23.10	22.14	21.80	21.73
		1	74	23.10	22.07	21.94	21.86
		36	0	22.20	21.04	20.74	20.74
		36	18	22.20	21.06	20.73	20.71
		36	39	22.20	21.02	20.73	20.73
		75	0	22.20	21.12	20.91	20.85
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20850CH	21100CH	21350CH
20MHz	QPSK	1	0	24.00	23.07	23.11	22.76
		1	50	24.00	23.09	22.94	22.77
		1	99	24.00	23.10	22.89	22.71
		50	0	23.10	22.14	22.15	21.88
		50	25	23.10	22.13	21.84	21.86
		50	50	23.10	22.13	21.84	21.88
		100	0	23.10	22.10	21.93	21.91
	16QAM	1	0	23.10	22.30	22.10	21.92
		1	50	23.10	22.33	22.12	21.91
		1	99	23.10	22.11	22.04	21.87
		50	0	22.20	21.12	20.86	20.77
		50	25	22.20	21.12	20.87	20.83
		50	50	22.20	21.05	20.88	20.81
		100	0	22.20	21.10	20.88	20.90

Table 54: Conducted power measurement results of LTE Band 7 (Full Power)

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20775CH	21100CH	21425CH
5MHz	QPSK	1	0	22.90	21.76	21.50	21.56
		1	13	22.90	21.71	21.46	21.50
		1	24	22.90	21.79	21.43	21.50
		12	0	22.90	21.80	21.55	21.60
		12	6	22.90	21.79	21.52	21.57
		12	13	22.90	21.83	21.54	21.60
		25	0	22.90	21.73	21.46	21.57
	16QAM	1	0	22.90	21.94	21.68	21.68
		1	13	22.90	22.04	21.57	21.68
		1	24	22.90	22.07	21.53	21.65
		12	0	22.20	21.14	20.82	20.88
		12	6	22.20	21.03	20.84	20.91
		12	13	22.20	21.15	20.83	20.83
		25	0	22.20	21.00	20.71	20.91
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20800CH	21100CH	21400CH
10MHz	QPSK	1	0	22.90	21.79	21.55	21.81
		1	25	22.90	21.93	21.57	21.53
		1	49	22.90	22.03	21.52	21.62
		25	0	22.90	21.73	21.48	21.50
		25	13	22.90	21.73	21.47	21.49
		25	25	22.90	21.81	21.47	21.49
		50	0	22.90	21.82	21.56	21.60
	16QAM	1	0	22.90	21.98	21.94	21.81
		1	25	22.90	22.08	21.68	21.89
		1	49	22.90	21.93	21.86	22.02
		25	0	22.20	21.27	20.96	21.01
		25	13	22.20	21.29	20.98	21.01
		25	25	22.20	21.24	20.92	20.93
		50	0	22.20	21.30	21.04	21.11

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20825CH	21100CH	21375CH
15MHz	QPSK	1	0	22.90	21.80	21.57	21.46
		1	38	22.90	21.80	21.55	21.50
		1	74	22.90	21.80	21.55	21.47
		36	0	22.90	21.81	21.47	21.47
		36	18	22.90	21.81	21.48	21.47
		36	39	22.90	21.82	21.48	21.54
		75	0	22.90	21.90	21.64	21.62
	16QAM	1	0	22.90	21.75	21.53	21.50
		1	38	22.90	21.81	21.57	21.50
		1	74	22.90	21.72	21.54	21.33
		36	0	22.20	20.99	20.73	20.70
		36	18	22.20	21.04	20.71	20.72
		36	39	22.20	21.06	20.73	20.73
		75	0	22.20	21.07	20.85	20.83
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20850CH	21100CH	21350CH
20MHz	QPSK	1	0	22.90	21.81	21.62	21.55
		1	50	22.90	21.77	21.64	21.44
		1	99	22.90	21.80	21.63	21.50
		50	0	22.90	21.84	21.59	21.63
		50	25	22.90	21.80	21.59	21.65
		50	50	22.90	21.83	21.60	21.65
		100	0	22.90	21.86	21.67	21.71
	16QAM	1	0	22.90	21.80	21.75	21.66
		1	50	22.90	21.90	21.75	21.60
		1	99	22.90	22.03	21.78	21.79
		50	0	22.20	21.10	20.89	20.79
		50	25	22.20	21.11	20.89	20.80
		50	50	22.20	21.06	20.86	20.86
		100	0	22.20	21.09	20.91	20.91

Table 55: Conducted power measurement results of LTE Band 7 (Receiver OFF)

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20775CH	21100CH	21425CH
5MHz	QPSK	1	0	20.80	19.67	19.45	19.52
		1	13	20.80	19.73	19.41	19.55
		1	24	20.80	19.73	19.40	19.52
		12	0	20.80	19.81	19.50	19.59
		12	6	20.80	19.80	19.56	19.64
		12	13	20.80	19.80	19.52	19.63
		25	0	20.80	19.80	19.50	19.55
	16QAM	1	0	20.80	19.79	19.56	19.80
		1	13	20.80	20.00	19.53	19.77
		1	24	20.80	19.87	19.61	19.76
		12	0	20.80	19.86	19.52	19.59
		12	6	20.80	19.91	19.53	19.59
		12	13	20.80	19.82	19.54	19.58
		25	0	20.80	19.73	19.45	19.65
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20800CH	21100CH	21400CH
10MHz	QPSK	1	0	20.80	19.81	19.56	19.57
		1	25	20.80	19.83	19.49	19.57
		1	49	20.80	19.88	19.60	19.62
		25	0	20.80	19.79	19.47	19.51
		25	13	20.80	19.79	19.46	19.52
		25	25	20.80	19.77	19.48	19.51
		50	0	20.80	19.89	19.58	19.66
	16QAM	1	0	20.80	20.05	19.63	19.93
		1	25	20.80	20.10	19.92	19.96
		1	49	20.80	20.06	19.84	19.53
		25	0	20.80	20.04	19.76	19.66
		25	13	20.80	20.02	19.82	19.80
		25	25	20.80	20.00	19.79	19.80
		50	0	20.80	20.06	19.80	20.00

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20825CH	21100CH	21375CH
15MHz	QPSK	1	0	20.80	19.80	19.55	19.49
		1	38	20.80	19.82	19.55	19.49
		1	74	20.80	19.80	19.62	19.51
		36	0	20.80	19.75	19.46	19.52
		36	18	20.80	19.76	19.45	19.52
		36	39	20.80	19.76	19.49	19.52
		75	0	20.80	19.89	19.67	19.64
	16QAM	1	0	20.80	19.62	19.73	19.60
		1	38	20.80	19.79	19.67	19.54
		1	74	20.80	19.90	19.56	19.62
		36	0	20.80	19.78	19.54	19.52
		36	18	20.80	19.75	19.50	19.50
		36	39	20.80	19.74	19.50	19.51
		75	0	20.80	19.84	19.60	19.64
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20850CH	21100CH	21350CH
20MHz	QPSK	1	0	20.80	19.84	19.61	19.50
		1	50	20.80	19.80	19.59	19.49
		1	99	20.80	19.84	19.59	19.47
		50	0	20.80	19.88	19.61	19.58
		50	25	20.80	19.90	19.62	19.56
		50	50	20.80	19.90	19.61	19.56
		100	0	20.80	19.83	19.69	19.71
	16QAM	1	0	20.80	20.09	19.83	19.59
		1	50	20.80	19.96	19.79	19.77
		1	99	20.80	19.87	19.72	19.67
		50	0	20.80	19.90	19.60	19.57
		50	25	20.80	19.86	19.57	19.58
		50	50	20.80	19.88	19.59	19.58
		100	0	20.80	19.85	19.65	19.69

Table 56: Conducted power measurement results of LTE Band 7 (Receiver OFF+Hotspot ON)

Note: The Conducted power measurements of LTE Band 7 is measured with RMS detector.

7.1.19 Conducted power measurements of WiFi 2.4G

Mode	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)
				Max.		
802.11b	1	2412	1Mbps	19.00	17.01	No
	6	2437		19.00	17.20	No
	11	2462		19.00	17.24	Yes
802.11g	1	2412	6Mbps	14.00	12.20	No
	2	2417		19.00	16.61	No
	6	2437		19.00	17.83	No
	10	2457		19.00	17.33	No
	11	2462		14.00	12.38	No
802.11n SISO 20M	1	2412	MCS0	12.00	10.27	No
	2	2417		19.00	16.17	No
	6	2437		19.00	17.41	No
	10	2457		19.00	16.32	No
	11	2462		12.00	10.57	No
802.11n SISO 40M	3	2422	MCS0	12.00	10.30	No
	4	2427		15.00	12.65	No
	6	2437		15.00	12.98	No
	8	2447		15.00	12.26	No
	9	2452		12.00	10.89	No

Table 57: Conducted power measurement results of WiFi 2.4G (Receiver OFF)

Mode	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)
				Max.		
802.11b	1	2412	1Mbps	12.00	10.16	No
	6	2437		12.00	10.50	Yes
	11	2462		12.00	10.48	No
802.11g	1	2412	6Mbps	12.00	10.83	No
	6	2437		12.00	10.65	No
	11	2462		12.00	11.13	No
802.11n SISO 20M	1	2412	MCS0	12.00	10.27	No
	6	2437		12.00	10.17	No
	11	2462		12.00	10.57	No
802.11n SISO 40M	3	2422	MCS0	12.00	10.30	No
	6	2437		12.00	11.17	No
	9	2452		12.00	10.89	No

Table 58: Conducted power measurement results of WiFi 2.4G (Receiver ON)

Note:

- 1) The bolded mode was selected for SAR testing.
- 2) As different maximum tune-up output power is specified across the different channels range. So the additional conducted power measurement for the adjacent channel of each power level stage is also performed in this report to ensure compliance.

7.1.20 Conducted power measurements of BT

The output power of BT antenna is as the following:

BT	Tune-up	Average Power (dBm)		
	Max.	0CH	39CH	78CH
DH5	9.70	7.10	6.91	9.07
2DH5	9.00	5.02	4.91	7.19
3DH5	9.00	5.03	4.90	7.17
BT	Tune-up	Average Power (dBm)		
	Max.	0CH	19CH	39CH
BLE	8.00	2.48	3.05	6.00

Table 59: Conducted power measurement results of BT

Note: The Conducted power measurements of BT is measured with RMS detector.

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.

CDMA 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)

WiFi 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

Test Position of Head	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured SAR(W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	SAR Plot.
				1-g	10-g						
Second Antenna											
Left cheek	Tuning State1	190/836.6	GSM	0.224	0.148	0.04	29.63	30.20	0.256	Battery 1#	/
Left tilt	Tuning State1	190/836.6	GSM	0.122	0.080	0.07	29.63	30.20	0.139	Battery 1#	/
Right cheek	Tuning State1	190/836.6	GSM	0.491	0.275	-0.07	29.63	30.20	0.560	Battery 1#	/
Right cheek	Tuning State2	190/836.6	GSM	0.393	0.222	-0.07	29.63	30.20	0.448	Battery 1#	/
Right tilt	Tuning State1	190/836.6	GSM	0.239	0.146	-0.03	29.63	30.20	0.273	Battery 1#	/
Right cheek	Tuning State1	190/836.6	GSM	0.543	0.296	0.02	29.63	30.20	0.620	Battery 2#	Yes
Right cheek	Tuning State2	190/836.6	GSM	0.513	0.281	-0.04	29.63	30.20	0.585	Battery 2#	/
Right cheek	Tuning State1	190/836.6	GSM	0.498	0.273	-0.17	29.63	30.20	0.568	Battery 3#	/
Right cheek	Tuning State1	190/836.6	GSM	0.496	0.273	-0.05	29.63	30.20	0.566	With SIM2	/
Main Antenna											
Left cheek	/	190/836.6	GSM	0.024	0.017	0.14	32.62	33.70	0.031	Battery 1#	/
Left tilt	/	190/836.6	GSM	0.011	0.008	0.15	32.62	33.70	0.014	Battery 1#	/
Right cheek	/	190/836.6	GSM	0.028	0.021	-0.12	32.62	33.70	0.036	Battery 1#	Yes
Right tilt	/	190/836.6	GSM	0.011	0.007	0.13	32.62	33.70	0.014	Battery 1#	/
Right cheek	/	190/836.6	GSM	0.023	0.018	-0.17	32.62	33.70	0.030	Battery 2#	/
Right cheek	/	190/836.6	GSM	0.027	0.021	-0.13	32.62	33.70	0.034	Battery 3#	/
Right cheek	/	190/836.6	GSM	0.028	0.022	0.00	32.62	33.70	0.036	With SIM2	/

Table 60: Head SAR test results of GSM850

Test Position of Body-Worn	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured SAR(W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	SAR Plot.
					1-g	10-g						
Second Antenna												
Front Side	15mm	Tuning State1	190/836.6	GSM	0.175	0.120	-0.07	33.02	33.70	0.205	Battery 1#	/
Back Side	15mm	Tuning State1	190/836.6	GSM	0.212	0.142	-0.05	33.02	33.70	0.248	Battery 1#	/
Back Side	15mm	Tuning State2	190/836.6	GSM	0.188	0.127	0.04	33.02	33.70	0.220	Battery 1#	/
Back Side	15mm	Tuning State1	190/836.6	GSM	0.240	0.160	-0.06	33.02	33.70	0.281	Battery 2#	Yes
Back Side	15mm	Tuning State2	190/836.6	GSM	0.206	0.138	-0.05	33.02	33.70	0.241	Battery 2#	/
Back Side	15mm	Tuning State1	190/836.6	GSM	0.208	0.139	-0.08	33.02	33.70	0.243	Battery 3#	/
Back Side	15mm	Tuning State1	190/836.6	GSM	0.210	0.141	-0.04	33.02	33.70	0.246	With SIM2	/
Main Antenna												
Front Side	15mm	/	190/836.6	GSM	0.112	0.075	-0.08	32.62	33.70	0.144	Battery 1#	/
Back Side	15mm	/	190/836.6	GSM	0.157	0.110	-0.03	32.62	33.70	0.201	Battery 1#	Yes
Back Side	15mm	/	190/836.6	GSM	0.146	0.104	0.04	32.62	33.70	0.187	Battery 2#	/
Back Side	15mm	/	190/836.6	GSM	0.155	0.110	-0.03	32.62	33.70	0.199	Battery 3#	/
Back Side	15mm	/	190/836.6	GSM	0.139	0.098	0.10	32.62	33.70	0.178	With SIM2	/

Table 61: Body Worn SAR test results of GSM850

Test Position of Hotspot	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured SAR(W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	SAR Plot.
					1-g	10-g						
Second Antenna												
Front Side	10mm	Tuning State1	190/836.6	GPRS 2TS	0.298	0.188	0.07	29.82	30.70	0.365	Battery 1#	/
Back Side	10mm	Tuning State1	190/836.6	GPRS 2TS	0.359	0.226	0.03	29.82	30.70	0.440	Battery 1#	/
Back Side	10mm	Tuning State2	190/836.6	GPRS 2TS	0.308	0.194	-0.14	29.82	30.70	0.377	Battery 1#	/
Left Side	10mm	Tuning State1	190/836.6	GPRS 2TS	0.445	0.252	-0.07	29.82	30.70	0.545	Battery 1#	/
Top Side	10mm	Tuning State1	190/836.6	GPRS 2TS	0.097	0.062	0.05	29.82	30.70	0.118	Battery 1#	/
Left Side	10mm	Tuning State2	190/836.6	GPRS 2TS	0.481	0.269	0.00	29.82	30.70	0.589	Battery 2#	/
Left Side	10mm	Tuning State1	190/836.6	GPRS 2TS	0.431	0.243	-0.06	29.82	30.70	0.528	Battery 3#	/
Left Side	10mm	Tuning State1	190/836.6	GPRS 2TS	0.490	0.272	-0.09	29.82	30.70	0.600	With SIM2	Yes
Left Side	10mm	Tuning State2	190/836.6	GPRS 2TS	0.402	0.227	-0.16	29.82	30.70	0.492	With SIM2	/
Main Antenna												
Front Side	10mm	/	190/836.6	GPRS 2TS	0.192	0.130	-0.03	29.42	30.20	0.230	Battery 1#	/
Back Side	10mm	/	190/836.6	GPRS 2TS	0.218	0.142	-0.18	29.42	30.20	0.261	Battery 1#	/
Left Side	10mm	/	190/836.6	GPRS 2TS	0.121	0.067	0.00	29.42	30.20	0.145	Battery 1#	/
Right Side	10mm	/	190/836.6	GPRS 2TS	0.056	0.035	-0.04	29.42	30.20	0.067	Battery 1#	/
Bottom Side	10mm	/	190/836.6	GPRS 2TS	0.131	0.076	-0.12	29.42	30.20	0.157	Battery 1#	/
Back Side	10mm	/	190/836.6	GPRS 2TS	0.235	0.148	0.09	29.42	30.20	0.281	Battery 2#	Yes
Back Side	10mm	/	190/836.6	GPRS 2TS	0.224	0.143	0.08	29.42	30.20	0.268	Battery 3#	/
Back Side	10mm	/	190/836.6	GPRS 2TS	0.223	0.143	0.08	29.42	30.20	0.267	With SIM2	/

Table 62: 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:

Test Position of Hotspot	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured SAR(W/kg)		Power Drift (dB)	Conducted Power (dBm)	Max Power Without Reduction	Scaled-up 1-g SAR (W/kg)	Product Specific 10-g SAR Exclusion
					1-g	10-g					
Second Antenna											
Front Side	10mm	/	190/836.6	GPRS 2TS	0.298	0.188	0.07	29.82	30.70	0.365	Yes
Back Side	10mm	/	190/836.6	GPRS 2TS	0.359	0.226	0.03	29.82	30.70	0.440	Yes
Left Side	10mm	/	190/836.6	GPRS 2TS	0.445	0.252	-0.07	29.82	30.70	0.545	Yes
Top Side	10mm	/	190/836.6	GPRS 2TS	0.097	0.062	0.05	29.82	30.70	0.118	Yes
Left Side	10mm	/	190/836.6	GPRS 2TS	0.481	0.269	0.00	29.82	30.70	0.589	Yes
Left Side	10mm	/	190/836.6	GPRS 2TS	0.431	0.243	-0.06	29.82	30.70	0.528	Yes
Left Side	10mm	/	190/836.6	GPRS 2TS	0.490	0.272	-0.09	29.82	30.70	0.600	Yes
Main Antenna											
Front Side	10mm	/	190/836.6	GPRS 2TS	0.192	0.130	-0.03	29.42	30.20	0.230	Yes
Back Side	10mm	/	190/836.6	GPRS 2TS	0.218	0.142	-0.18	29.42	30.20	0.261	Yes
Left Side	10mm	/	190/836.6	GPRS 2TS	0.121	0.067	0.00	29.42	30.20	0.145	Yes
Right Side	10mm	/	190/836.6	GPRS 2TS	0.056	0.035	-0.04	29.42	30.20	0.067	Yes
Bottom Side	10mm	/	190/836.6	GPRS 2TS	0.131	0.076	-0.12	29.42	30.20	0.157	Yes
Back Side	10mm	/	190/836.6	GPRS 2TS	0.235	0.148	0.09	29.42	30.20	0.281	Yes
Back Side	10mm	/	190/836.6	GPRS 2TS	0.224	0.143	0.08	29.42	30.20	0.268	Yes
Back Side	10mm	/	190/836.6	GPRS 2TS	0.223	0.143	0.08	29.42	30.20	0.267	Yes

Table 63: 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

Test Position of Head	Test Channel /Freq.(MHz)	Test Mode	Measured SAR(W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	SAR Plot.
			1-g	10-g						
Second Antenna										
Left cheek	661/1880	GSM	0.164	0.084	-0.02	25.81	26.70	0.201	Battery 1#	/
Left tilt	661/1880	GSM	0.094	0.054	0.07	25.81	26.70	0.115	Battery 1#	/
Right cheek	661/1880	GSM	0.424	0.222	0.04	25.81	26.70	0.520	Battery 1#	Yes
Right tilt	661/1880	GSM	0.218	0.112	-0.02	25.81	26.70	0.268	Battery 1#	/
Right cheek	661/1880	GSM	0.421	0.220	-0.05	25.81	26.70	0.517	Battery 2#	/
Right cheek	661/1880	GSM	0.419	0.220	0.09	25.81	26.70	0.514	Battery 3#	/
Right cheek	661/1880	GSM	0.422	0.219	0.18	25.81	26.70	0.518	With SIM2	/
Main Antenna										
Left cheek	661/1880	GSM	0.076	0.049	0.15	30.33	31.00	0.089	Battery 1#	Yes
Left tilt	661/1880	GSM	0.045	0.025	-0.12	30.33	31.00	0.053	Battery 1#	/
Right cheek	661/1880	GSM	0.059	0.038	0.09	30.33	31.00	0.069	Battery 1#	/
Right tilt	661/1880	GSM	0.043	0.022	0.19	30.33	31.00	0.050	Battery 1#	/
Left cheek	661/1880	GSM	0.075	0.048	0.17	30.33	31.00	0.088	Battery 2#	/
Left cheek	661/1880	GSM	0.075	0.048	0.14	30.33	31.00	0.088	Battery 3#	/
Left cheek	661/1880	GSM	0.075	0.048	-0.17	30.33	31.00	0.087	With SIM2	/

Table 64: Head SAR test results of GSM1900

Test Position of Body-Worn	Dist.	Test Channel /Freq.(MHz)	Test Mode	Measured SAR(W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	SAR Plot.
				1-g	10-g						
Second Antenna											
Front Side	15mm	661/1880	GSM	0.041	0.023	0.01	30.04	31.00	0.051	Battery 1#	/
Back Side	15mm	661/1880	GSM	0.124	0.073	-0.15	30.04	31.00	0.155	Battery 1#	/
Back Side	15mm	661/1880	GSM	0.137	0.081	0.08	30.04	31.00	0.171	Battery 2#	/
Back Side	15mm	661/1880	GSM	0.130	0.076	0.12	30.04	31.00	0.162	Battery 3#	/
Back Side	15mm	661/1880	GSM	0.140	0.083	0.13	30.04	31.00	0.175	With SIM2	Yes
Main Antenna											
Front Side	15mm	661/1880	GSM	0.122	0.080	0.13	30.33	31.00	0.142	Battery 1#	/
Back Side	15mm	661/1880	GSM	0.170	0.107	0.11	30.33	31.00	0.198	Battery 1#	Yes
Back Side	15mm	661/1880	GSM	0.152	0.097	0.05	30.33	31.00	0.177	Battery 2#	/
Back Side	15mm	661/1880	GSM	0.163	0.103	0.03	30.33	31.00	0.190	Battery 3#	/
Back Side	15mm	661/1880	GSM	0.167	0.105	0.07	30.33	31.00	0.195	With SIM2	/

Table 65: Body Worn SAR test results of GSM1900

Test Position of Hotspot	Dist.	Test Channel /Freq.(MHz)	Test Mode	Measured SAR(W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	SAR Plot.
				1-g	10-g						
Second Antenna											
Front Side	10mm	661/1880	GPRS 2TS	0.149	0.076	-0.16	24.60	25.70	0.192	Battery 1#	/
Back Side	10mm	661/1880	GPRS 2TS	0.188	0.108	-0.04	24.60	25.70	0.242	Battery 1#	/
Left Side	10mm	661/1880	GPRS 2TS	0.402	0.205	-0.01	24.60	25.70	0.518	Battery 1#	/
Top Side	10mm	661/1880	GPRS 2TS	0.088	0.049	-0.15	24.60	25.70	0.113	Battery 1#	/
Left Side	10mm	661/1880	GPRS 2TS	0.415	0.212	-0.14	24.60	25.70	0.535	Battery 2#	Yes
Left Side	10mm	661/1880	GPRS 2TS	0.398	0.203	-0.17	24.60	25.70	0.513	Battery 3#	/
Left Side	10mm	661/1880	GPRS 2TS	0.400	0.205	0.14	24.60	25.70	0.515	With SIM2	/
Main Antenna											
Front Side	10mm	661/1880	GPRS 2TS	0.130	0.075	-0.08	25.02	26.00	0.163	Battery 1#	/
Back Side	10mm	661/1880	GPRS 2TS	0.177	0.106	-0.02	25.02	26.00	0.222	Battery 1#	/
Left Side	10mm	661/1880	GPRS 2TS	0.071	0.040	0.12	25.02	26.00	0.089	Battery 1#	/
Right Side	10mm	661/1880	GPRS 2TS	0.056	0.032	-0.03	25.02	26.00	0.071	Battery 1#	/
Bottom Side	10mm	661/1880	GPRS 2TS	0.256	0.146	-0.07	25.02	26.00	0.321	Battery 1#	Yes
Bottom Side	10mm	661/1880	GPRS 2TS	0.243	0.140	-0.08	25.02	26.00	0.305	Battery 2#	/
Bottom Side	10mm	661/1880	GPRS 2TS	0.245	0.141	-0.08	25.02	26.00	0.307	Battery 3#	/
Bottom Side	10mm	661/1880	GPRS 2TS	0.228	0.132	-0.02	25.02	26.00	0.286	With SIM2	/

Table 66: 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:

Test Position of Hotspot	Dist.	Test Channel /Freq.(MHz)	Test Mode	Measured SAR(W/kg)		Power Drift (dB)	Conducted Power (dBm)	Max Power Without Reduction	Scaled-up 1-g SAR (W/kg)	Product Specific 10-g SAR Exclusion
				1-g	10-g					
Second Antenna										
Front Side	10mm	661/1880	GPRS 2TS	0.149	0.076	-0.16	24.60	27.70	0.304	Yes
Back Side	10mm	661/1880	GPRS 2TS	0.188	0.108	-0.04	24.60	27.70	0.384	Yes
Left Side	10mm	661/1880	GPRS 2TS	0.402	0.205	-0.01	24.60	27.70	0.821	Yes
Top Side	10mm	661/1880	GPRS 2TS	0.088	0.049	-0.15	24.60	27.70	0.179	Yes
Left Side	10mm	661/1880	GPRS 2TS	0.415	0.212	-0.14	24.60	27.70	0.847	Yes
Left Side	10mm	661/1880	GPRS 2TS	0.398	0.203	-0.17	24.60	27.70	0.813	Yes
Left Side	10mm	661/1880	GPRS 2TS	0.400	0.205	0.14	24.60	27.70	0.817	Yes
Main Antenna										
Front Side	10mm	661/1880	GPRS 2TS	0.130	0.075	-0.08	25.02	28.00	0.258	Yes
Back Side	10mm	661/1880	GPRS 2TS	0.177	0.106	-0.02	25.02	28.00	0.352	Yes
Left Side	10mm	661/1880	GPRS 2TS	0.071	0.040	0.12	25.02	28.00	0.142	Yes
Right Side	10mm	661/1880	GPRS 2TS	0.056	0.032	-0.03	25.02	28.00	0.112	Yes
Bottom Side	10mm	661/1880	GPRS 2TS	0.256	0.146	-0.07	25.02	28.00	0.508	Yes
Bottom Side	10mm	661/1880	GPRS 2TS	0.243	0.140	-0.08	25.02	28.00	0.483	Yes
Bottom Side	10mm	661/1880	GPRS 2TS	0.245	0.141	-0.08	25.02	28.00	0.487	Yes
Bottom Side	10mm	661/1880	GPRS 2TS	0.228	0.132	-0.02	25.02	28.00	0.453	Yes

Table 67: 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

Test Position of Head	Test Channel /Freq.(MHz)	Test Mode	Measured SAR(W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	SAR Plot.
			1-g	10-g						
Second Antenna										
Left cheek	9400/1880	RMC	0.162	0.083	0.15	17.93	18.60	0.189	Battery 1#	/
Left tilt	9400/1880	RMC	0.111	0.058	0.12	17.93	18.60	0.130	Battery 1#	/
Right cheek	9400/1880	RMC	0.485	0.250	-0.03	17.93	18.60	0.566	Battery 1#	/
Right tilt	9400/1880	RMC	0.228	0.118	-0.18	17.93	18.60	0.266	Battery 1#	/
Right cheek	9400/1880	RMC	0.537	0.277	-0.03	17.93	18.60	0.627	Battery 2#	Yes
Right cheek	9400/1880	RMC	0.480	0.248	-0.09	17.93	18.60	0.560	Battery 3#	/
Right cheek	9400/1880	RMC	0.530	0.273	-0.13	17.93	18.60	0.618	With SIM2	/
Main Antenna										
Left cheek	9400/1880	RMC	0.085	0.055	-0.04	23.49	24.50	0.107	Battery 1#	Yes
Left tilt	9400/1880	RMC	0.045	0.025	0.12	23.49	24.50	0.057	Battery 1#	/
Right cheek	9400/1880	RMC	0.073	0.049	-0.14	23.49	24.50	0.092	Battery 1#	/
Right tilt	9400/1880	RMC	0.037	0.021	0.15	23.49	24.50	0.046	Battery 1#	/
Left cheek	9400/1880	RMC	0.083	0.054	-0.09	23.49	24.50	0.105	Battery 2#	/
Left cheek	9400/1880	RMC	0.083	0.054	0.04	23.49	24.50	0.105	Battery 3#	/
Left cheek	9400/1880	RMC	0.084	0.055	0.08	23.49	24.50	0.106	With SIM2	/

Table 68: Head SAR test results of UMTS Band II

Test Position of Body-Worn	Dist.	Test Channel /Freq.(MHz)	Test Mode	Measured SAR(W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	SAR Plot.
				1-g	10-g						
Second Antenna											
Front Side	15mm	9400/1880	RMC	0.210	0.122	-0.08	23.48	24.40	0.260	Battery 1#	/
Back Side	15mm	9400/1880	RMC	0.197	0.117	-0.09	23.48	24.40	0.243	Battery 1#	/
Front Side	15mm	9400/1880	RMC	0.249	0.141	-0.17	23.48	24.40	0.308	Battery 2#	Yes
Front Side	15mm	9400/1880	RMC	0.215	0.123	-0.03	23.48	24.40	0.266	Battery 3#	/
Front Side	15mm	9400/1880	RMC	0.221	0.127	-0.01	23.48	24.40	0.273	With SIM2	/
Main Antenna											
Front Side	15mm	9400/1880	RMC	0.129	0.083	-0.05	22.00	22.90	0.159	Battery 1#	/
Back Side	15mm	9400/1880	RMC	0.168	0.106	0.10	22.00	22.90	0.207	Battery 1#	/
Back Side	15mm	9400/1880	RMC	0.182	0.113	-0.01	22.00	22.90	0.224	Battery 2#	Yes
Back Side	15mm	9400/1880	RMC	0.171	0.107	0.17	22.00	22.90	0.210	Battery 3#	/
Back Side	15mm	9400/1880	RMC	0.171	0.108	0.15	22.00	22.90	0.210	With SIM2	/

Table 69: Body Worn SAR test results of UMTS Band II

Test Position of Hotspot	Dist.	Test Channel /Freq.(MHz)	Test Mode	Measured SAR(W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	SAR Plot.
				1-g	10-g						
Second Antenna											
Front Side	10mm	9400/1880	RMC	0.139	0.073	-0.11	18.89	19.50	0.160	Battery 1#	/
Back Side	10mm	9400/1880	RMC	0.172	0.091	-0.16	18.89	19.50	0.198	Battery 1#	/
Left Side	10mm	9400/1880	RMC	0.359	0.183	-0.09	18.89	19.50	0.413	Battery 1#	/
Top Side	10mm	9400/1880	RMC	0.085	0.051	0.03	18.89	19.50	0.098	Battery 1#	/
Left Side	10mm	9400/1880	RMC	0.379	0.192	0.08	18.89	19.50	0.436	Battery 2#	/
Left Side	10mm	9400/1880	RMC	0.326	0.168	-0.02	18.89	19.50	0.375	Battery 3#	/
Left Side	10mm	9400/1880	RMC	0.385	0.195	-0.15	18.89	19.50	0.443	With SIM2	Yes
Main Antenna											
Front Side	10mm	9400/1880	RMC	0.142	0.083	0.11	19.48	20.40	0.176	Battery 1#	/
Back Side	10mm	9400/1880	RMC	0.194	0.109	-0.10	19.48	20.40	0.240	Battery 1#	/
Left Side	10mm	9400/1880	RMC	0.067	0.038	-0.05	19.48	20.40	0.083	Battery 1#	/
Right Side	10mm	9400/1880	RMC	0.047	0.028	-0.11	19.48	20.40	0.058	Battery 1#	/
Bottom Side	10mm	9400/1880	RMC	0.280	0.160	0.00	19.48	20.40	0.346	Battery 1#	/
Bottom Side	10mm	9400/1880	RMC	0.283	0.162	-0.02	19.48	20.40	0.350	Battery 2#	Yes
Bottom Side	10mm	9400/1880	RMC	0.274	0.156	-0.06	19.48	20.40	0.339	Battery 3#	/
Bottom Side	10mm	9400/1880	RMC	0.262	0.152	-0.03	19.48	20.40	0.324	With SIM2	/

Table 70: 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:

Test Position of Hotspot	Dist.	Test Channel /Freq.(MHz)	Test Mode	Measured SAR(W/kg)		Power Drift (dB)	Conducted Power (dBm)	Max Power Without Reduction	Scaled-up 1-g SAR (W/kg)	Product Specific 10-g SAR Exclusion
				1-g	10-g					
Second Antenna										
Front Side	10mm	9400/1880	RMC	0.139	0.073	-0.11	18.89	24.40	0.494	Yes
Back Side	10mm	9400/1880	RMC	0.172	0.091	-0.16	18.89	24.40	0.612	Yes
Left Side	10mm	9400/1880	RMC	0.359	0.183	-0.09	18.89	24.40	1.277	No
Top Side	10mm	9400/1880	RMC	0.085	0.051	0.03	18.89	24.40	0.303	Yes
Left Side	10mm	9400/1880	RMC	0.379	0.192	0.08	18.89	24.40	1.348	No
Left Side	10mm	9400/1880	RMC	0.326	0.168	-0.02	18.89	24.40	1.159	Yes
Left Side	10mm	9400/1880	RMC	0.385	0.195	-0.15	18.89	24.40	1.369	No
Main Antenna										
Front Side	10mm	9400/1880	RMC	0.142	0.083	0.11	19.48	24.50	0.451	Yes
Back Side	10mm	9400/1880	RMC	0.194	0.109	-0.10	19.48	24.50	0.616	Yes
Left Side	10mm	9400/1880	RMC	0.067	0.038	-0.05	19.48	24.50	0.213	Yes
Right Side	10mm	9400/1880	RMC	0.047	0.028	-0.11	19.48	24.50	0.149	Yes
Bottom Side	10mm	9400/1880	RMC	0.280	0.160	0.00	19.48	24.50	0.890	Yes
Bottom Side	10mm	9400/1880	RMC	0.283	0.162	-0.02	19.48	24.50	0.899	Yes
Bottom Side	10mm	9400/1880	RMC	0.274	0.156	-0.06	19.48	24.50	0.870	Yes
Bottom Side	10mm	9400/1880	RMC	0.262	0.152	-0.03	19.48	24.50	0.832	Yes

Table 71: Product Specific 10-g SAR test reduction evaluation of UMTS Band II

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

Product Specific 10-g SAR	Dist.	Test Channel /Freq.(MHz)	Test Mode	Measured SAR(W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 10-g SAR (W/kg)	Accessory Information	SAR Plot.
				1-g	10-g						
Second Antenna											
Left Side	0mm	9400/1880	RMC	3.590	1.390	-0.19	23.48	24.40	1.718	Battery 1#	/
Left Side	0mm	9400/1880	RMC	3.290	1.350	-0.09	23.48	24.40	1.669	Battery 2#	/
Left Side	0mm	9400/1880	RMC	3.260	1.330	-0.11	23.48	24.40	1.644	Battery 3#	/
Left Side	0mm	9400/1880	RMC	3.670	1.400	-0.16	23.48	24.40	1.730	With SIM2	Yes

Table 72: Product Specific 10-g SAR test results of UMTS Band II

7.2.4 SAR measurement Results of UMTS Band IV

Test Position of Head	Test Channel /Freq.(MHz)	Test Mode	Measured SAR(W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	SAR Plot.
			1-g	10-g						
Second Antenna										
Left cheek	1413/1732.6	RMC	0.159	0.105	0.17	17.67	18.60	0.197	Battery 1#	/
Left tilt	1413/1732.6	RMC	0.219	0.131	-0.01	17.67	18.60	0.271	Battery 1#	/
Right cheek	1413/1732.6	RMC	0.394	0.218	-0.12	17.67	18.60	0.488	Battery 1#	Yes
Right tilt	1413/1732.6	RMC	0.215	0.135	-0.11	17.67	18.60	0.266	Battery 1#	/
Right cheek	1413/1732.6	RMC	0.307	0.179	0.02	17.67	18.60	0.380	Battery 2#	/
Right cheek	1413/1732.6	RMC	0.312	0.181	0.12	17.67	18.60	0.387	Battery 3#	/
Right cheek	1413/1732.6	RMC	0.347	0.190	-0.14	17.67	18.60	0.430	With SIM2	/
Main Antenna										
Left cheek	1413/1732.6	RMC	0.109	0.071	-0.03	23.48	24.50	0.138	Battery 1#	/
Left tilt	1413/1732.6	RMC	0.058	0.035	0.13	23.48	24.50	0.074	Battery 1#	/
Right cheek	1413/1732.6	RMC	0.099	0.059	0.08	23.48	24.50	0.126	Battery 1#	/
Right tilt	1413/1732.6	RMC	0.065	0.036	0.03	23.48	24.50	0.082	Battery 1#	/
Left cheek	1413/1732.6	RMC	0.132	0.085	0.12	23.48	24.50	0.167	Battery 2#	Yes
Left cheek	1413/1732.6	RMC	0.130	0.082	0.15	23.48	24.50	0.164	Battery 3#	/
Left cheek	1413/1732.6	RMC	0.120	0.077	0.18	23.48	24.50	0.152	With SIM2	/

Table 73: Head SAR test results of UMTS Band IV

Test Position of Body-Worn	Dist.	Test Channel /Freq.(MHz)	Test Mode	Measured SAR(W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	SAR Plot.
				1-g	10-g						
Second Antenna											
Front Side	15mm	1413/1732.6	RMC	0.193	0.128	0.06	23.19	24.10	0.238	Battery 1#	/
Back Side	15mm	1413/1732.6	RMC	0.218	0.145	0.10	23.19	24.10	0.269	Battery 1#	Yes
Back Side	15mm	1413/1732.6	RMC	0.204	0.137	0.14	23.19	24.10	0.252	Battery 2#	/
Back Side	15mm	1413/1732.6	RMC	0.203	0.135	0.15	23.19	24.10	0.250	Battery 3#	/
Back Side	15mm	1413/1732.6	RMC	0.216	0.143	0.08	23.19	24.10	0.266	With SIM2	/
Main Antenna											
Front Side	15mm	1413/1732.6	RMC	0.132	0.086	-0.13	21.98	22.90	0.163	Battery 1#	/
Back Side	15mm	1413/1732.6	RMC	0.180	0.110	-0.09	21.98	22.90	0.222	Battery 1#	Yes
Back Side	15mm	1413/1732.6	RMC	0.168	0.102	-0.04	21.98	22.90	0.208	Battery 2#	/
Back Side	15mm	1413/1732.6	RMC	0.159	0.097	-0.05	21.98	22.90	0.197	Battery 3#	/
Back Side	15mm	1413/1732.6	RMC	0.170	0.103	-0.05	21.98	22.90	0.210	With SIM2	/

Table 74: Body Worn SAR test results of UMTS Band IV

Test Position of Hotspot	Dist.	Test Channel /Freq.(MHz)	Test Mode	Measured SAR(W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	SAR Plot.
				1-g	10-g						
Second Antenna											
Front Side	10mm	1413/1732.6	RMC	0.104	0.065	-0.13	18.65	19.50	0.126	Battery 1#	/
Back Side	10mm	1413/1732.6	RMC	0.118	0.079	0.09	18.65	19.50	0.144	Battery 1#	/
Left Side	10mm	1413/1732.6	RMC	0.046	0.022	-0.19	18.65	19.50	0.055	Battery 1#	/
Top Side	10mm	1413/1732.6	RMC	0.126	0.076	0.06	18.65	19.50	0.153	Battery 1#	/
Top Side	10mm	1413/1732.6	RMC	0.134	0.080	0.05	18.65	19.50	0.163	Battery 2#	Yes
Top Side	10mm	1413/1732.6	RMC	0.125	0.074	0.02	18.65	19.50	0.152	Battery 3#	/
Top Side	10mm	1413/1732.6	RMC	0.125	0.074	0.02	18.65	19.50	0.152	With SIM2	/
Main Antenna											
Front Side	10mm	1413/1732.6	RMC	0.121	0.075	-0.17	19.53	20.40	0.148	Battery 1#	/
Back Side	10mm	1413/1732.6	RMC	0.177	0.105	-0.10	19.53	20.40	0.216	Battery 1#	/
Left Side	10mm	1413/1732.6	RMC	0.081	0.047	0.01	19.53	20.40	0.099	Battery 1#	/
Right Side	10mm	1413/1732.6	RMC	0.058	0.033	-0.04	19.53	20.40	0.070	Battery 1#	/
Bottom Side	10mm	1413/1732.6	RMC	0.252	0.144	0.02	19.53	20.40	0.308	Battery 1#	/
Bottom Side	10mm	1413/1732.6	RMC	0.259	0.146	0.04	19.53	20.40	0.316	Battery 2#	Yes
Bottom Side	10mm	1413/1732.6	RMC	0.221	0.126	0.02	19.53	20.40	0.270	Battery 3#	/
Bottom Side	10mm	1413/1732.6	RMC	0.247	0.141	0.06	19.53	20.40	0.302	With SIM2	/

Table 75: 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:

Test Position of Hotspot	Dist.	Test Channel /Freq.(MHz)	Test Mode	Measured SAR(W/kg)		Power Drift (dB)	Conducted Power (dBm)	Max Power Without Reduction	Scaled-up 1-g SAR (W/kg)	Product Specific 10-g SAR Exclusion
				1-g	10-g					
Second Antenna										
Front Side	10mm	1413/1732.6	RMC	0.104	0.065	-0.13	18.65	24.10	0.365	Yes
Back Side	10mm	1413/1732.6	RMC	0.118	0.079	0.09	18.65	24.10	0.414	Yes
Left Side	10mm	1413/1732.6	RMC	0.046	0.022	-0.19	18.65	24.10	0.160	Yes
Top Side	10mm	1413/1732.6	RMC	0.126	0.076	0.06	18.65	24.10	0.442	Yes
Top Side	10mm	1413/1732.6	RMC	0.134	0.080	0.05	18.65	24.10	0.470	Yes
Top Side	10mm	1413/1732.6	RMC	0.125	0.074	0.02	18.65	24.10	0.438	Yes
Top Side	10mm	1413/1732.6	RMC	0.125	0.074	0.02	18.65	24.10	0.438	Yes
Main Antenna										
Front Side	10mm	1413/1732.6	RMC	0.121	0.075	-0.17	19.53	24.50	0.380	Yes
Back Side	10mm	1413/1732.6	RMC	0.177	0.105	-0.10	19.53	24.50	0.556	Yes
Left Side	10mm	1413/1732.6	RMC	0.081	0.047	0.01	19.53	24.50	0.254	Yes
Right Side	10mm	1413/1732.6	RMC	0.058	0.033	-0.04	19.53	24.50	0.181	Yes
Bottom Side	10mm	1413/1732.6	RMC	0.252	0.144	0.02	19.53	24.50	0.791	Yes
Bottom Side	10mm	1413/1732.6	RMC	0.259	0.146	0.04	19.53	24.50	0.813	Yes
Bottom Side	10mm	1413/1732.6	RMC	0.221	0.126	0.02	19.53	24.50	0.694	Yes
Bottom Side	10mm	1413/1732.6	RMC	0.247	0.141	0.06	19.53	24.50	0.776	Yes

Table 76: 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

Test Position of Head	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured SAR(W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	SAR Plot.
				1-g	10-g						
Second Antenna											
Left cheek	Tuning State1	4182/836.4	RMC	0.199	0.129	0.04	20.33	21.20	0.243	Battery 1#	/
Left tilt	Tuning State1	4182/836.4	RMC	0.134	0.088	0.03	20.33	21.20	0.164	Battery 1#	/
Right cheek	Tuning State1	4182/836.4	RMC	0.475	0.258	0.00	20.33	21.20	0.580	Battery 1#	Yes
Right cheek	Tuning State2	4182/836.4	RMC	0.434	0.240	0.08	20.33	21.20	0.530	Battery 1#	/
Right tilt	Tuning State1	4182/836.4	RMC	0.223	0.131	-0.02	20.33	21.20	0.272	Battery 1#	/
Right cheek	Tuning State1	4182/836.4	RMC	0.431	0.235	-0.08	20.33	21.20	0.527	Battery 2#	/
Right cheek	Tuning State1	4182/836.4	RMC	0.443	0.241	0.05	20.33	21.20	0.541	Battery 3#	/
Right cheek	Tuning State1	4182/836.4	RMC	0.447	0.244	0.07	20.33	21.20	0.546	With SIM2	/
Main Antenna											
Left cheek	/	4182/836.4	RMC	0.032	0.023	0.10	24.00	25.00	0.040	Battery 1#	/
Left tilt	/	4182/836.4	RMC	0.014	0.010	-0.10	24.00	25.00	0.018	Battery 1#	/
Right cheek	/	4182/836.4	RMC	0.034	0.027	-0.19	24.00	25.00	0.043	Battery 1#	/
Right tilt	/	4182/836.4	RMC	0.015	0.012	-0.18	24.00	25.00	0.018	Battery 1#	/
Right cheek	/	4182/836.4	RMC	0.035	0.027	0.10	24.00	25.00	0.044	Battery 2#	Yes
Right cheek	/	4182/836.4	RMC	0.033	0.026	-0.19	24.00	25.00	0.042	Battery 3#	/
Right cheek	/	4182/836.4	RMC	0.033	0.026	-0.15	24.00	25.00	0.042	With SIM2	/

Table 77: Head SAR test results of UMTS Band V

Test Position of Body-Worn	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured SAR(W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	SAR Plot.
					1-g	10-g						
Second Antenna												
Front Side	15mm	Tuning State1	4182/836.4	RMC	0.198	0.129	-0.04	23.87	24.80	0.245	Battery 1#	/
Back Side	15mm	Tuning State1	4182/836.4	RMC	0.248	0.157	-0.03	23.87	24.80	0.307	Battery 1#	Yes
Back Side	15mm	Tuning State2	4182/836.4	RMC	0.240	0.157	-0.07	23.87	24.80	0.297	Battery 1#	/
Back Side	15mm	Tuning State1	4182/836.4	RMC	0.247	0.157	-0.02	23.87	24.80	0.306	Battery 2#	/
Back Side	15mm	Tuning State1	4182/836.4	RMC	0.231	0.148	-0.01	23.87	24.80	0.286	Battery 3#	/
Back Side	15mm	Tuning State1	4182/836.4	RMC	0.239	0.152	-0.01	23.87	24.80	0.296	With SIM2	/
Main Antenna												
Front Side	15mm	/	4182/836.4	RMC	0.181	0.124	-0.03	24.00	25.00	0.228	Battery 1#	/
Back Side	15mm	/	4182/836.4	RMC	0.203	0.140	-0.08	24.00	25.00	0.256	Battery 1#	Yes
Back Side	15mm	/	4182/836.4	RMC	0.198	0.136	-0.03	24.00	25.00	0.249	Battery 2#	/
Back Side	15mm	/	4182/836.4	RMC	0.197	0.135	-0.10	24.00	25.00	0.248	Battery 3#	/
Back Side	15mm	/	4182/836.4	RMC	0.202	0.138	-0.08	24.00	25.00	0.254	With SIM2	/

Table 78: Body Worn SAR test results of UMTS Band V

Test Position of Hotspot	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured SAR(W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	SAR Plot.
					1-g	10-g						
Second Antenna												
Front Side	10mm	Tuning State1	4182/836.4	RMC	0.355	0.218	-0.15	23.87	24.80	0.440	Battery 1#	/
Back Side	10mm	Tuning State1	4182/836.4	RMC	0.481	0.291	-0.02	23.87	24.80	0.596	Battery 1#	/
Back Side	10mm	Tuning State2	4182/836.4	RMC	0.443	0.270	-0.07	23.87	24.80	0.549	Battery 3#	/
Left Side	10mm	Tuning State1	4182/836.4	RMC	0.583	0.319	-0.10	23.87	24.80	0.722	Battery 1#	/
Top Side	10mm	Tuning State1	4182/836.4	RMC	0.127	0.081	-0.05	23.87	24.80	0.157	Battery 1#	/
Left Side	10mm	Tuning State1	4182/836.4	RMC	0.628	0.340	-0.11	23.87	24.80	0.778	Battery 2#	Yes
Left Side	10mm	Tuning State2	4182/836.4	RMC	0.583	0.319	-0.11	23.87	24.80	0.722	Battery 2#	/
Left Side	10mm	Tuning State1	4182/836.4	RMC	0.615	0.331	-0.18	23.87	24.80	0.762	Battery 3#	/
Left Side	10mm	Tuning State1	4182/836.4	RMC	0.602	0.327	-0.03	23.87	24.80	0.746	With SIM2	/
Main Antenna												
Front Side	10mm	/	4182/836.4	RMC	0.300	0.190	-0.05	24.00	25.00	0.378	Battery 1#	/
Back Side	10mm	/	4182/836.4	RMC	0.391	0.232	-0.06	24.00	25.00	0.492	Battery 1#	/
Left Side	10mm	/	4182/836.4	RMC	0.174	0.092	-0.04	24.00	25.00	0.219	Battery 1#	/
Right Side	10mm	/	4182/836.4	RMC	0.083	0.052	-0.01	24.00	25.00	0.105	Battery 1#	/
Bottom Side	10mm	/	4182/836.4	RMC	0.300	0.167	0.04	24.00	25.00	0.378	Battery 1#	/
Back Side	10mm	/	4182/836.4	RMC	0.406	0.240	-0.09	24.00	25.00	0.511	Battery 2#	Yes
Back Side	10mm	/	4182/836.4	RMC	0.402	0.237	-0.09	24.00	25.00	0.506	Battery 3#	/
Back Side	10mm	/	4182/836.4	RMC	0.388	0.230	-0.06	24.00	25.00	0.488	With SIM2	/

Table 79: 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:

Test Position of Hotspot	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured SAR(W/kg)		Power Drift (dB)	Conducted Power (dBm)	Max Power Without Reduction	Scaled-up 1-g SAR (W/kg)	Product Specific 10-g SAR Exclusion
					1-g	10-g					
Second Antenna											
Front Side	10mm	Tuning State1	4182/836.4	RMC	0.355	0.218	-0.15	23.87	24.80	0.440	Yes
Back Side	10mm	Tuning State1	4182/836.4	RMC	0.481	0.291	-0.02	23.87	24.80	0.596	Yes
Back Side	10mm	Tuning State2	4182/836.4	RMC	0.443	0.270	-0.07	23.87	24.80	0.549	Yes
Left Side	10mm	Tuning State1	4182/836.4	RMC	0.583	0.319	-0.10	23.87	24.80	0.722	Yes
Top Side	10mm	Tuning State1	4182/836.4	RMC	0.127	0.081	-0.05	23.87	24.80	0.157	Yes
Left Side	10mm	Tuning State1	4182/836.4	RMC	0.628	0.340	-0.11	23.87	24.80	0.778	Yes
Left Side	10mm	Tuning State2	4182/836.4	RMC	0.583	0.319	-0.11	23.87	24.80	0.722	Yes
Left Side	10mm	Tuning State1	4182/836.4	RMC	0.615	0.331	-0.18	23.87	24.80	0.762	Yes
Left Side	10mm	Tuning State1	4182/836.4	RMC	0.602	0.327	-0.03	23.87	24.80	0.746	Yes
Main Antenna											
Front Side	10mm	/	4182/836.4	RMC	0.300	0.190	-0.05	24.00	25.00	0.378	Yes
Back Side	10mm	/	4182/836.4	RMC	0.391	0.232	-0.06	24.00	25.00	0.492	Yes
Left Side	10mm	/	4182/836.4	RMC	0.174	0.092	-0.04	24.00	25.00	0.219	Yes
Right Side	10mm	/	4182/836.4	RMC	0.083	0.052	-0.01	24.00	25.00	0.105	Yes
Bottom Side	10mm	/	4182/836.4	RMC	0.300	0.167	0.04	24.00	25.00	0.378	Yes
Back Side	10mm	/	4182/836.4	RMC	0.406	0.240	-0.09	24.00	25.00	0.511	Yes
Back Side	10mm	/	4182/836.4	RMC	0.402	0.237	-0.09	24.00	25.00	0.506	Yes
Back Side	10mm	/	4182/836.4	RMC	0.388	0.230	-0.06	24.00	25.00	0.488	Yes

Table 80: 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

Test Position of Head	Test Channel /Freq.(MHz)	Test Mode	Measured SAR(W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	SAR Plot.
			1-g	10-g						
Second Antenna										
Left cheek	18900/1880	20M QPSK 1RB#50	0.172	0.085	0.12	18.07	18.90	0.208	Battery 1#	/
Left tilt	18900/1880	20M QPSK 1RB#50	0.104	0.057	0.09	18.07	18.90	0.126	Battery 1#	/
Right cheek	18900/1880	20M QPSK 1RB#50	0.519	0.266	0.00	18.07	18.90	0.628	Battery 1#	/
Right tilt	18900/1880	20M QPSK 1RB#50	0.227	0.112	-0.11	18.07	18.90	0.275	Battery 1#	/
Left cheek	19100/1900	20M QPSK 50%RB#0	0.183	0.090	0.04	17.98	18.90	0.226	Battery 1#	/
Left tilt	19100/1900	20M QPSK 50%RB#0	0.139	0.076	0.05	17.98	18.90	0.172	Battery 1#	/
Right cheek	19100/1900	20M QPSK 50%RB#0	0.585	0.297	-0.02	17.98	18.90	0.723	Battery 1#	/
Right tilt	19100/1900	20M QPSK 50%RB#0	0.280	0.137	-0.13	17.98	18.90	0.346	Battery 1#	/
Right cheek	19100/1900	20M QPSK 50%RB#0	0.632	0.319	-0.10	17.98	18.90	0.781	Battery 2#	Yes
Right cheek	19100/1900	20M QPSK 50%RB#0	0.547	0.277	-0.09	17.98	18.90	0.676	Battery 3#	/
Right cheek	19100/1900	20M QPSK 50%RB#0	0.577	0.295	-0.14	17.98	18.90	0.713	With SIM2	/
Main Antenna										
Left cheek	18900/1880	20M QPSK 1RB#0	0.095	0.061	0.16	23.77	24.50	0.113	Battery 1#	/
Left tilt	18900/1880	20M QPSK 1RB#0	0.056	0.028	0.11	23.77	24.50	0.066	Battery 1#	/
Right cheek	18900/1880	20M QPSK 1RB#0	0.078	0.042	0.01	23.77	24.50	0.092	Battery 1#	/
Right tilt	18900/1880	20M QPSK 1RB#0	0.039	0.021	0.15	23.77	24.50	0.046	Battery 1#	/
Left cheek	19100/1900	20M QPSK 50%RB#0	0.092	0.059	0.02	22.68	23.50	0.111	Battery 1#	/
Left tilt	19100/1900	20M QPSK 50%RB#0	0.047	0.026	0.14	22.68	23.50	0.057	Battery 1#	/
Right cheek	19100/1900	20M QPSK 50%RB#0	0.072	0.040	0.10	22.68	23.50	0.087	Battery 1#	/
Right tilt	19100/1900	20M QPSK 50%RB#0	0.042	0.023	0.12	22.68	23.50	0.050	Battery 1#	/
Left cheek	18900/1880	20M QPSK 1RB#0	0.104	0.067	0.06	23.77	24.50	0.123	Battery 2#	Yes
Left cheek	18900/1880	20M QPSK 1RB#0	0.089	0.059	-0.10	23.77	24.50	0.105	Battery 3#	/
Left cheek	18900/1880	20M QPSK 1RB#0	0.096	0.062	0.09	23.77	24.50	0.113	With SIM2	/

Table 81: Head SAR test results of LTE Band 2

Test Position of Body-Worn	Dist.	Test Channel /Freq.(MHz)	Test Mode	Measured SAR(W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	SAR Plot.
				1-g	10-g						
Second Antenna											
Front Side	15mm	18900/1880	20M QPSK 1RB#99	0.207	0.114	-0.15	23.57	24.50	0.256	Battery 1#	/
Back Side	15mm	18900/1880	20M QPSK 1RB#99	0.270	0.154	0.04	23.57	24.50	0.334	Battery 1#	/
Front Side	15mm	19100/1900	20M QPSK 50%RB#0	0.163	0.090	-0.07	22.50	23.50	0.205	Battery 1#	/
Back Side	15mm	19100/1900	20M QPSK 50%RB#0	0.193	0.107	-0.18	22.50	23.50	0.243	Battery 1#	/
Back Side	15mm	18900/1880	20M QPSK 1RB#99	0.311	0.178	-0.02	23.57	24.50	0.385	Battery 2#	Yes
Back Side	15mm	18900/1880	20M QPSK 1RB#99	0.232	0.136	-0.17	23.57	24.50	0.287	Battery 3#	/
Back Side	15mm	18900/1880	20M QPSK 1RB#99	0.249	0.145	-0.13	23.57	24.50	0.308	With SIM2	/
Main Antenna											
Front Side	15mm	18900/1880	20M QPSK 1RB#0	0.146	0.091	0.09	22.28	23.20	0.180	Battery 1#	/
Back Side	15mm	18900/1880	20M QPSK 1RB#0	0.199	0.124	-0.02	22.28	23.20	0.246	Battery 1#	Yes
Front Side	15mm	18900/1880	20M QPSK 50%RB#0	0.139	0.087	0.06	22.17	23.20	0.176	Battery 1#	/
Back Side	15mm	18900/1880	20M QPSK 50%RB#0	0.178	0.109	0.04	22.17	23.20	0.226	Battery 1#	/
Back Side	15mm	18900/1880	20M QPSK 1RB#0	0.171	0.107	-0.02	22.28	23.20	0.211	Battery 2#	/
Back Side	15mm	18900/1880	20M QPSK 1RB#0	0.186	0.116	0.02	22.28	23.20	0.230	Battery 3#	/
Back Side	15mm	18900/1880	20M QPSK 1RB#0	0.172	0.107	0.06	22.28	23.20	0.213	With SIM2	/

Table 82: Body Worn SAR test results of LTE Band 2

Test Position of Hotspot	Dist.	Test Channel /Freq.(MHz)	Test Mode	Measured SAR(W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	SAR Plot.
				1-g	10-g						
Second Antenna											
Front Side	10mm	19100/1900	20M QPSK 1RB#0	0.220	0.117	-0.06	19.00	19.90	0.271	Battery 1#	/
Back Side	10mm	19100/1900	20M QPSK 1RB#0	0.193	0.107	-0.18	19.00	19.90	0.237	Battery 1#	/
Left Side	10mm	19100/1900	20M QPSK 1RB#0	0.426	0.217	0.02	19.00	19.90	0.524	Battery 1#	/
Top Side	10mm	19100/1900	20M QPSK 1RB#0	0.144	0.062	-0.07	19.00	19.90	0.177	Battery 1#	/
Front Side	10mm	19100/1900	20M QPSK 50%RB#50	0.202	0.108	-0.17	18.94	19.90	0.252	Battery 1#	/
Back Side	10mm	19100/1900	20M QPSK 50%RB#50	0.188	0.101	-0.15	18.94	19.90	0.235	Battery 1#	/
Left Side	10mm	19100/1900	20M QPSK 50%RB#50	0.411	0.191	-0.19	18.94	19.90	0.513	Battery 1#	/
Top Side	10mm	19100/1900	20M QPSK 50%RB#50	0.136	0.074	-0.09	18.94	19.90	0.170	Battery 1#	/
Left Side	10mm	19100/1900	20M QPSK 1RB#0	0.466	0.235	-0.01	19.00	19.90	0.573	Battery 2#	Yes
Left Side	10mm	19100/1900	20M QPSK 1RB#0	0.387	0.196	-0.08	19.00	19.90	0.476	Battery 3#	/
Left Side	10mm	19100/1900	20M QPSK 1RB#0	0.437	0.223	0.06	19.00	19.90	0.538	With SIM2	/
Main Antenna											
Front Side	10mm	19100/1900	20M QPSK 1RB#50	0.119	0.070	-0.14	19.74	20.60	0.145	Battery 1#	/
Back Side	10mm	19100/1900	20M QPSK 1RB#50	0.161	0.095	0.03	19.74	20.60	0.196	Battery 1#	/
Left Side	10mm	19100/1900	20M QPSK 1RB#50	0.055	0.031	-0.10	19.74	20.60	0.067	Battery 1#	/
Right Side	10mm	19100/1900	20M QPSK 1RB#50	0.035	0.021	-0.17	19.74	20.60	0.043	Battery 1#	/
Bottom Side	10mm	19100/1900	20M QPSK 1RB#50	0.298	0.170	-0.11	19.74	20.60	0.363	Battery 1#	/
Front Side	10mm	19100/1900	20M QPSK 50%RB#0	0.130	0.076	0.05	19.68	20.60	0.161	Battery 1#	/
Back Side	10mm	19100/1900	20M QPSK 50%RB#0	0.176	0.104	0.01	19.68	20.60	0.218	Battery 1#	/
Left Side	10mm	19100/1900	20M QPSK 50%RB#0	0.062	0.035	0.06	19.68	20.60	0.076	Battery 1#	/
Right Side	10mm	19100/1900	20M QPSK 50%RB#0	0.040	0.023	-0.15	19.68	20.60	0.049	Battery 1#	/
Bottom Side	10mm	19100/1900	20M QPSK 50%RB#0	0.270	0.155	-0.05	19.68	20.60	0.334	Battery 1#	/
Bottom Side	10mm	19100/1900	20M QPSK 1RB#50	0.306	0.176	-0.03	19.74	20.60	0.373	Battery 2#	Yes
Bottom Side	10mm	19100/1900	20M QPSK 1RB#50	0.269	0.154	0.01	19.74	20.60	0.328	Battery 3#	/
Bottom Side	10mm	19100/1900	20M QPSK 1RB#50	0.274	0.156	0.01	19.74	20.60	0.334	With SIM2	/

Table 83: 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:

Test Position of Hotspot	Dist.	Test Channel /Freq.(MHz)	Test Mode	Measured SAR(W/kg)		Power Drift (dB)	Conducted Power (dBm)	Max Power Without Reduction	Scaled-up 1-g SAR (W/kg)	Product Specific 10-g SAR Exclusion
				1-g	10-g					
Second Antenna										
Front Side	10mm	19100/1900	20M QPSK 1RB#0	0.220	0.117	-0.06	19.00	24.50	0.781	Yes
Back Side	10mm	19100/1900	20M QPSK 1RB#0	0.193	0.107	-0.18	19.00	24.50	0.685	Yes
Left Side	10mm	19100/1900	20M QPSK 1RB#0	0.426	0.217	0.02	19.00	24.50	1.512	No
Top Side	10mm	19100/1900	20M QPSK 1RB#0	0.144	0.062	-0.07	19.00	24.50	0.511	Yes
Front Side	10mm	19100/1900	20M QPSK 50%RB#50	0.202	0.108	-0.17	18.94	23.50	0.577	Yes
Back Side	10mm	19100/1900	20M QPSK 50%RB#50	0.188	0.101	-0.15	18.94	23.50	0.537	Yes
Left Side	10mm	19100/1900	20M QPSK 50%RB#50	0.411	0.191	-0.19	18.94	23.50	1.174	Yes
Top Side	10mm	19100/1900	20M QPSK 50%RB#50	0.136	0.074	-0.09	18.94	23.50	0.389	Yes
Left Side	10mm	19100/1900	20M QPSK 1RB#0	0.466	0.235	-0.01	19.00	24.50	1.653	No
Left Side	10mm	19100/1900	20M QPSK 1RB#0	0.387	0.196	-0.08	19.00	24.50	1.373	No
Left Side	10mm	19100/1900	20M QPSK 1RB#0	0.437	0.223	0.06	19.00	24.50	1.551	No
Main Antenna										
Front Side	10mm	19100/1900	20M QPSK 1RB#50	0.119	0.070	-0.14	19.74	24.50	0.356	Yes
Back Side	10mm	19100/1900	20M QPSK 1RB#50	0.161	0.095	0.03	19.74	24.50	0.482	Yes
Left Side	10mm	19100/1900	20M QPSK 1RB#50	0.055	0.031	-0.10	19.74	24.50	0.163	Yes
Right Side	10mm	19100/1900	20M QPSK 1RB#50	0.035	0.021	-0.17	19.74	24.50	0.105	Yes
Bottom Side	10mm	19100/1900	20M QPSK 1RB#50	0.298	0.170	-0.11	19.74	24.50	0.892	Yes
Front Side	10mm	19100/1900	20M QPSK 50%RB#0	0.130	0.076	0.05	19.68	23.50	0.313	Yes
Back Side	10mm	19100/1900	20M QPSK 50%RB#0	0.176	0.104	0.01	19.68	23.50	0.424	Yes
Left Side	10mm	19100/1900	20M QPSK 50%RB#0	0.062	0.035	0.06	19.68	23.50	0.149	Yes
Right Side	10mm	19100/1900	20M QPSK 50%RB#0	0.040	0.023	-0.15	19.68	23.50	0.096	Yes
Bottom Side	10mm	19100/1900	20M QPSK 50%RB#0	0.270	0.155	-0.05	19.68	23.50	0.651	Yes
Bottom Side	10mm	19100/1900	20M QPSK 1RB#50	0.306	0.176	-0.03	19.74	24.50	0.916	Yes
Bottom Side	10mm	19100/1900	20M QPSK 1RB#50	0.269	0.154	0.01	19.74	24.50	0.805	Yes
Bottom Side	10mm	19100/1900	20M QPSK 1RB#50	0.274	0.156	0.01	19.74	24.50	0.820	Yes

Table 84: Product Specific 10-g SAR test reduction evaluation of LTE Band 2

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

Product Specific 10-g SAR	Dist.	Test Channel /Freq.(MHz)	Test Mode	Measured SAR(W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 10-g SAR (W/kg)	Accessory Information	SAR Plot.
				1-g	10-g						
Second Antenna											
Left Side	0mm	18900/1880	20M QPSK 1RB#99	3.920	1.500	-0.11	23.57	24.50	1.858	Battery 1#	Yes
Left Side	0mm	19100/1900	20M QPSK 50%RB#0	3.150	1.200	0.02	22.50	23.50	1.511	Battery 1#	/
Left Side	0mm	18900/1880	20M QPSK 1RB#99	3.850	1.490	-0.05	23.57	24.50	1.846	Battery 2#	/
Left Side	0mm	18900/1880	20M QPSK 1RB#99	3.350	1.280	-0.19	23.57	24.50	1.586	Battery 3#	/
Left Side	0mm	18900/1880	20M QPSK 1RB#99	3.850	1.490	-0.06	23.57	24.50	1.846	With SIM2	/

Table 85: Product Specific 10-g SAR test results of LTE Band 2

7.2.7 SAR measurement Results of LTE Band 4

Test Position of Head	Test Channel /Freq.(MHz)	Test Mode	Measured SAR(W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	SAR Plot.
			1-g	10-g						
Second Antenna										
Left cheek	20050/1720	20M QPSK 1RB#0	0.141	0.086	-0.03	18.16	18.90	0.167	Battery 1#	/
Left tilt	20050/1720	20M QPSK 1RB#0	0.183	0.109	-0.01	18.16	18.90	0.217	Battery 1#	/
Right cheek	20050/1720	20M QPSK 1RB#0	0.314	0.176	0.00	18.16	18.90	0.372	Battery 1#	/
Right tilt	20050/1720	20M QPSK 1RB#0	0.189	0.112	0.04	18.16	18.90	0.224	Battery 1#	/
Left cheek	20300/1745	20M QPSK 50%RB#0	0.150	0.091	0.00	18.02	18.90	0.184	Battery 1#	/
Left tilt	20300/1745	20M QPSK 50%RB#0	0.189	0.113	0.00	18.02	18.90	0.231	Battery 1#	/
Right cheek	20300/1745	20M QPSK 50%RB#0	0.354	0.192	0.08	18.02	18.90	0.434	Battery 1#	/
Right tilt	20300/1745	20M QPSK 50%RB#0	0.190	0.113	0.06	18.02	18.90	0.233	Battery 1#	/
Right cheek	20300/1745	20M QPSK 50%RB#0	0.367	0.203	0.10	18.02	18.90	0.449	Battery 2#	Yes
Right cheek	20300/1745	20M QPSK 50%RB#0	0.342	0.187	-0.16	18.02	18.90	0.419	Battery 3#	/
Right cheek	20300/1745	20M QPSK 50%RB#0	0.352	0.199	0.08	18.02	18.90	0.431	With SIM2	/
Main Antenna										
Left cheek	20300/1745	20M QPSK 1RB#0	0.150	0.097	0.11	23.74	24.50	0.179	Battery 1#	Yes
Left tilt	20300/1745	20M QPSK 1RB#0	0.062	0.038	0.18	23.74	24.50	0.074	Battery 1#	/
Right cheek	20300/1745	20M QPSK 1RB#0	0.120	0.070	0.19	23.74	24.50	0.143	Battery 1#	/
Right tilt	20300/1745	20M QPSK 1RB#0	0.083	0.048	0.06	23.74	24.50	0.099	Battery 1#	/
Left cheek	20300/1745	20M QPSK 50%RB#0	0.108	0.064	0.14	22.71	23.50	0.130	Battery 1#	/
Left tilt	20300/1745	20M QPSK 50%RB#0	0.050	0.030	0.06	22.71	23.50	0.060	Battery 1#	/
Right cheek	20300/1745	20M QPSK 50%RB#0	0.093	0.054	0.18	22.71	23.50	0.111	Battery 1#	/
Right tilt	20300/1745	20M QPSK 50%RB#0	0.065	0.037	0.14	22.71	23.50	0.077	Battery 1#	/
Left cheek	20300/1745	20M QPSK 1RB#0	0.135	0.087	0.02	23.74	24.50	0.161	Battery 2#	/
Left cheek	20300/1745	20M QPSK 1RB#0	0.137	0.087	0.11	23.74	24.50	0.163	Battery 3#	/
Left cheek	20300/1745	20M QPSK 1RB#0	0.139	0.089	0.12	23.74	24.50	0.166	With SIM2	/

Table 86: Head SAR test results of LTE Band 4

Test Position of Body-Worn	Dist.	Test Channel /Freq.(MHz)	Test Mode	Measured SAR(W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	SAR Plot.
				1-g	10-g						
Second Antenna											
Front Side	15mm	20300/1745	20M QPSK 1RB#99	0.201	0.132	-0.01	23.61	24.50	0.247	Battery 1#	/
Back Side	15mm	20300/1745	20M QPSK 1RB#99	0.209	0.138	-0.07	23.61	24.50	0.257	Battery 1#	/
Front Side	15mm	20300/1745	20M QPSK 50%RB#25	0.167	0.105	-0.18	22.56	23.50	0.207	Battery 1#	/
Back Side	15mm	20300/1745	20M QPSK 50%RB#25	0.161	0.102	-0.18	22.56	23.50	0.200	Battery 1#	/
Back Side	15mm	20300/1745	20M QPSK 1RB#99	0.221	0.146	-0.07	23.61	24.50	0.271	Battery 2#	Yes
Back Side	15mm	20300/1745	20M QPSK 1RB#99	0.192	0.127	-0.11	23.61	24.50	0.236	Battery 3#	/
Back Side	15mm	20300/1745	20M QPSK 1RB#99	0.196	0.129	0.00	23.61	24.50	0.241	With SIM2	/
Main Antenna											
Front Side	15mm	20300/1745	20M QPSK 1RB#0	0.130	0.082	-0.06	22.24	23.10	0.158	Battery 1#	/
Back Side	15mm	20300/1745	20M QPSK 1RB#0	0.171	0.105	-0.15	22.24	23.10	0.208	Battery 1#	/
Front Side	15mm	20300/1745	20M QPSK 50%RB#0	0.129	0.082	-0.09	22.23	23.10	0.158	Battery 1#	/
Back Side	15mm	20300/1745	20M QPSK 50%RB#0	0.170	0.104	-0.13	22.23	23.10	0.208	Battery 1#	/
Back Side	15mm	20300/1745	20M QPSK 1RB#0	0.187	0.115	-0.14	22.24	23.10	0.228	Battery 2#	Yes
Back Side	15mm	20300/1745	20M QPSK 1RB#0	0.164	0.101	-0.11	22.24	23.10	0.200	Battery 3#	/
Back Side	15mm	20300/1745	20M QPSK 1RB#0	0.164	0.099	-0.16	22.24	23.10	0.200	With SIM2	/

Table 87: Body Worn SAR test results of LTE Band 4

Test Position of Hotspot	Dist.	Test Channel /Freq.(MHz)	Test Mode	Measured SAR(W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	SAR Plot.
				1-g	10-g						
Second Antenna											
Front Side	10mm	20050/1720	20M QPSK 1RB#0	0.103	0.064	0.04	19.06	19.90	0.125	Battery 1#	/
Back Side	10mm	20050/1720	20M QPSK 1RB#0	0.118	0.074	-0.05	19.06	19.90	0.143	Battery 1#	/
Left Side	10mm	20050/1720	20M QPSK 1RB#0	0.042	0.020	-0.10	19.06	19.90	0.051	Battery 1#	/
Top Side	10mm	20050/1720	20M QPSK 1RB#0	0.123	0.073	-0.03	19.06	19.90	0.149	Battery 1#	/
Front Side	10mm	20300/1745	20M QPSK 50%RB#50	0.097	0.063	-0.19	18.98	19.90	0.120	Battery 1#	/
Back Side	10mm	20300/1745	20M QPSK 50%RB#50	0.114	0.075	-0.09	18.98	19.90	0.141	Battery 1#	/
Left Side	10mm	20300/1745	20M QPSK 50%RB#50	0.047	0.024	-0.03	18.98	19.90	0.059	Battery 1#	/
Top Side	10mm	20300/1745	20M QPSK 50%RB#50	0.136	0.081	-0.02	18.98	19.90	0.168	Battery 1#	/
Top Side	10mm	20300/1745	20M QPSK 50%RB#50	0.164	0.096	0.03	18.98	19.90	0.203	Battery 2#	Yes
Top Side	10mm	20300/1745	20M QPSK 50%RB#50	0.159	0.093	0.01	18.98	19.90	0.197	Battery 3#	/
Top Side	10mm	20300/1745	20M QPSK 50%RB#50	0.155	0.092	0.03	18.98	19.90	0.192	With SIM2	/
Main Antenna											
Front Side	10mm	20300/1745	20M QPSK 1RB#0	0.132	0.081	-0.13	19.78	20.60	0.159	Battery 1#	/
Back Side	10mm	20300/1745	20M QPSK 1RB#0	0.189	0.113	-0.11	19.78	20.60	0.228	Battery 1#	/
Left Side	10mm	20300/1745	20M QPSK 1RB#0	0.097	0.055	-0.11	19.78	20.60	0.118	Battery 1#	/
Right Side	10mm	20300/1745	20M QPSK 1RB#0	0.065	0.037	-0.13	19.78	20.60	0.078	Battery 1#	/
Bottom Side	10mm	20300/1745	20M QPSK 1RB#0	0.309	0.175	-0.04	19.78	20.60	0.373	Battery 1#	Yes
Front Side	10mm	20300/1745	20M QPSK 50%RB#50	0.131	0.080	-0.08	19.75	20.60	0.159	Battery 1#	/
Back Side	10mm	20300/1745	20M QPSK 50%RB#50	0.200	0.117	-0.19	19.75	20.60	0.243	Battery 1#	/
Left Side	10mm	20300/1745	20M QPSK 50%RB#50	0.102	0.058	-0.12	19.75	20.60	0.124	Battery 1#	/
Right Side	10mm	20300/1745	20M QPSK 50%RB#50	0.067	0.038	-0.10	19.75	20.60	0.081	Battery 1#	/
Bottom Side	10mm	20300/1745	20M QPSK 50%RB#50	0.306	0.173	-0.08	19.75	20.60	0.372	Battery 1#	/
Bottom Side	10mm	20300/1745	20M QPSK 1RB#0	0.269	0.152	0.04	19.78	20.60	0.325	Battery 2#	/
Bottom Side	10mm	20300/1745	20M QPSK 1RB#0	0.260	0.148	0.07	19.78	20.60	0.314	Battery 3#	/
Bottom Side	10mm	20300/1745	20M QPSK 1RB#0	0.285	0.158	-0.03	19.78	20.60	0.344	With SIM2	/

Table 88: 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:

Test Position of Hotspot	Dist.	Test Channel /Freq.(MHz)	Test Mode	Measured SAR(W/kg)		Power Drift (dB)	Conducted Power (dBm)	Max Power Without Reduction	Scaled-up 1-g SAR (W/kg)	Product Specific 10-g SAR Exclusion
				1-g	10-g					
Second Antenna										
Front Side	10mm	20050/1720	20M QPSK 1RB#0	0.103	0.064	0.04	19.06	24.50	0.360	Yes
Back Side	10mm	20050/1720	20M QPSK 1RB#0	0.118	0.074	-0.05	19.06	24.50	0.413	Yes
Left Side	10mm	20050/1720	20M QPSK 1RB#0	0.042	0.020	-0.10	19.06	24.50	0.148	Yes
Top Side	10mm	20050/1720	20M QPSK 1RB#0	0.123	0.073	-0.03	19.06	24.50	0.430	Yes
Front Side	10mm	20300/1745	20M QPSK 50%RB#50	0.097	0.063	-0.19	18.98	23.50	0.275	Yes
Back Side	10mm	20300/1745	20M QPSK 50%RB#50	0.114	0.075	-0.09	18.98	23.50	0.323	Yes
Left Side	10mm	20300/1745	20M QPSK 50%RB#50	0.047	0.024	-0.03	18.98	23.50	0.134	Yes
Top Side	10mm	20300/1745	20M QPSK 50%RB#50	0.136	0.081	-0.02	18.98	23.50	0.385	Yes
Top Side	10mm	20300/1745	20M QPSK 50%RB#50	0.164	0.096	0.03	18.98	23.50	0.464	Yes
Top Side	10mm	20300/1745	20M QPSK 50%RB#50	0.159	0.093	0.01	18.98	23.50	0.450	Yes
Top Side	10mm	20300/1745	20M QPSK 50%RB#50	0.155	0.092	0.03	18.98	23.50	0.439	Yes
Main Antenna										
Front Side	10mm	20300/1745	20M QPSK 1RB#0	0.132	0.081	-0.13	19.78	24.50	0.391	Yes
Back Side	10mm	20300/1745	20M QPSK 1RB#0	0.189	0.113	-0.11	19.78	24.50	0.560	Yes
Left Side	10mm	20300/1745	20M QPSK 1RB#0	0.097	0.055	-0.11	19.78	24.50	0.289	Yes
Right Side	10mm	20300/1745	20M QPSK 1RB#0	0.065	0.037	-0.13	19.78	24.50	0.192	Yes
Bottom Side	10mm	20300/1745	20M QPSK 1RB#0	0.309	0.175	-0.04	19.78	24.50	0.916	Yes
Front Side	10mm	20300/1745	20M QPSK 50%RB#50	0.131	0.080	-0.08	19.75	23.50	0.311	Yes
Back Side	10mm	20300/1745	20M QPSK 50%RB#50	0.200	0.117	-0.19	19.75	23.50	0.474	Yes
Left Side	10mm	20300/1745	20M QPSK 50%RB#50	0.102	0.058	-0.12	19.75	23.50	0.242	Yes
Right Side	10mm	20300/1745	20M QPSK 50%RB#50	0.067	0.038	-0.10	19.75	23.50	0.159	Yes
Bottom Side	10mm	20300/1745	20M QPSK 50%RB#50	0.306	0.173	-0.08	19.75	23.50	0.726	Yes
Bottom Side	10mm	20300/1745	20M QPSK 1RB#0	0.269	0.152	0.04	19.78	24.50	0.798	Yes
Bottom Side	10mm	20300/1745	20M QPSK 1RB#0	0.260	0.148	0.07	19.78	24.50	0.771	Yes
Bottom Side	10mm	20300/1745	20M QPSK 1RB#0	0.285	0.158	-0.03	19.78	24.50	0.845	Yes

Table 89: 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 5

Test Position of Head	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured SAR(W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	SAR Plot.
				1-g	10-g						
Second Antenna											
Left cheek	Tuning State1	20600/844	10M QPSK 1RB#0	0.154	0.103	0.00	20.37	21.20	0.186	Battery 1#	/
Left tilt	Tuning State1	20600/844	10M QPSK 1RB#0	0.102	0.067	0.00	20.37	21.20	0.123	Battery 1#	/
Right cheek	Tuning State1	20600/844	10M QPSK 1RB#0	0.489	0.274	-0.01	20.37	21.20	0.592	Battery 1#	/
Right tilt	Tuning State1	20600/844	10M QPSK 1RB#0	0.197	0.113	0.01	20.37	21.20	0.238	Battery 1#	/
Left cheek	Tuning State1	20450/829	10M QPSK 50%RB#0	0.226	0.152	-0.01	20.44	21.20	0.269	Battery 1#	/
Left tilt	Tuning State1	20450/829	10M QPSK 50%RB#0	0.152	0.100	0.01	20.44	21.20	0.181	Battery 1#	/
Right cheek	Tuning State1	20450/829	10M QPSK 50%RB#0	0.496	0.272	-0.06	20.44	21.20	0.591	Battery 1#	Yes
Right cheek	Tuning State2	20450/829	10M QPSK 50%RB#0	0.450	0.249	-0.04	20.44	21.20	0.536	Battery 1#	/
Right tilt	Tuning State1	20450/829	10M QPSK 50%RB#0	0.295	0.185	0.11	20.44	21.20	0.351	Battery 1#	/
Right cheek	Tuning State1	20600/844	10M QPSK 1RB#0	0.488	0.268	-0.07	20.37	21.20	0.591	Battery 2#	/
Right cheek	Tuning State1	20600/844	10M QPSK 1RB#0	0.477	0.268	-0.08	20.37	21.20	0.577	Battery 3#	/
Right cheek	Tuning State1	20600/844	10M QPSK 1RB#0	0.464	0.261	0.00	20.37	21.20	0.562	With SIM2	/
Main Antenna											
Left cheek	/	20600/844	10M QPSK 1RB#49	0.032	0.023	0.17	24.09	25.00	0.039	Battery 1#	/
Left tilt	/	20600/844	10M QPSK 1RB#49	0.013	0.010	0.19	24.09	25.00	0.017	Battery 1#	/
Right cheek	/	20600/844	10M QPSK 1RB#49	0.028	0.022	-0.06	24.09	25.00	0.035	Battery 1#	/
Right tilt	/	20600/844	10M QPSK 1RB#49	0.012	0.008	-0.05	24.09	25.00	0.014	Battery 1#	/
Left cheek	/	20600/844	10M QPSK 50%RB#0	0.025	0.018	0.13	23.01	24.00	0.032	Battery 1#	/
Left tilt	/	20600/844	10M QPSK 50%RB#0	0.012	0.008	0.11	23.01	24.00	0.015	Battery 1#	/
Right cheek	/	20600/844	10M QPSK 50%RB#0	0.024	0.017	-0.12	23.01	24.00	0.030	Battery 1#	/
Right tilt	/	20600/844	10M QPSK 50%RB#0	0.014	0.009	0.11	23.01	24.00	0.017	Battery 1#	/
Left cheek	/	20600/844	10M QPSK 1RB#49	0.041	0.031	-0.03	24.09	25.00	0.051	Battery 2#	Yes
Left cheek	/	20600/844	10M QPSK 1RB#49	0.038	0.028	-0.07	24.09	25.00	0.047	Battery 3#	/
Left cheek	/	20600/844	10M QPSK 1RB#49	0.040	0.030	-0.03	24.09	25.00	0.050	With SIM2	/

Table 90: Head SAR test results of LTE Band 5

Test Position of Body-Worn	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured SAR(W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	SAR Plot.
					1-g	10-g						
Second Antenna												
Front Side	15mm	Tuning State1	20450/829	10M QPSK 1RB#49	0.238	0.156	-0.09	23.92	24.80	0.291	Battery 1#	/
Back Side	15mm	Tuning State1	20450/829	10M QPSK 1RB#49	0.274	0.178	-0.06	23.92	24.80	0.336	Battery 1#	Yes
Back Side	15mm	Tuning State2	20450/829	10M QPSK 1RB#49	0.233	0.151	-0.07	23.92	24.80	0.285	Battery 1#	/
Front Side	15mm	Tuning State1	20450/829	10M QPSK 50%RB#0	0.171	0.112	-0.11	22.94	23.80	0.208	Battery 1#	/
Back Side	15mm	Tuning State1	20450/829	10M QPSK 50%RB#0	0.216	0.140	0.01	22.94	23.80	0.263	Battery 1#	/
Back Side	15mm	Tuning State1	20450/829	10M QPSK 1RB#49	0.264	0.171	-0.02	23.92	24.80	0.323	Battery 2#	/
Back Side	15mm	Tuning State1	20450/829	10M QPSK 1RB#49	0.228	0.149	-0.15	23.92	24.80	0.279	Battery 3#	/
Back Side	15mm	Tuning State1	20450/829	10M QPSK 1RB#49	0.270	0.176	0.01	23.92	24.80	0.331	With SIM2	/
Main Antenna												
Front Side	15mm	/	20600/844	10M QPSK 1RB#49	0.193	0.129	-0.07	24.09	25.00	0.238	Battery 1#	/
Back Side	15mm	/	20600/844	10M QPSK 1RB#49	0.204	0.142	-0.06	24.09	25.00	0.252	Battery 1#	Yes
Front Side	15mm	/	20600/844	10M QPSK 50%RB#0	0.154	0.102	-0.07	23.01	24.00	0.193	Battery 1#	/
Back Side	15mm	/	20600/844	10M QPSK 50%RB#0	0.170	0.113	-0.11	23.01	24.00	0.214	Battery 1#	/
Back Side	15mm	/	20600/844	10M QPSK 1RB#49	0.194	0.135	-0.08	24.09	25.00	0.239	Battery 2#	/
Back Side	15mm	/	20600/844	10M QPSK 1RB#49	0.192	0.133	0.01	24.09	25.00	0.237	Battery 3#	/
Back Side	15mm	/	20600/844	10M QPSK 1RB#49	0.203	0.142	-0.08	24.09	25.00	0.250	With SIM2	/

Table 91: Body Worn SAR test results of LTE Band 5

Test Position of Hotspot	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured SAR(W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	SAR Plot.
					1-g	10-g						
Second Antenna												
Front Side	10mm	Tuning State1	20450/829	10M QPSK 1RB#49	0.416	0.263	-0.07	23.92	24.80	0.509	Battery 1#	/
Back Side	10mm	Tuning State1	20450/829	10M QPSK 1RB#49	0.444	0.274	-0.02	23.92	24.80	0.544	Battery 1#	/
Back Side	10mm	Tuning State2	20450/829	10M QPSK 1RB#49	0.373	0.230	-0.04	23.92	24.80	0.457	Battery 1#	/
Left Side	10mm	Tuning State1	20450/829	10M QPSK 1RB#49	0.567	0.313	-0.04	23.92	24.80	0.694	Battery 1#	Yes
Left Side	10mm	Tuning State2	20450/829	10M QPSK 1RB#49	0.465	0.260	0.00	23.92	24.80	0.569	Battery 1#	/
Top Side	10mm	Tuning State1	20450/829	10M QPSK 1RB#49	0.157	0.101	-0.05	23.92	24.80	0.192	Battery 1#	/
Front Side	10mm	Tuning State1	20450/829	10M QPSK 50%RB#0	0.317	0.201	-0.08	22.94	23.80	0.386	Battery 1#	/
Back Side	10mm	Tuning State1	20450/829	10M QPSK 50%RB#0	0.351	0.223	-0.05	22.94	23.80	0.428	Battery 1#	/
Left Side	10mm	Tuning State1	20450/829	10M QPSK 50%RB#0	0.415	0.232	-0.02	22.94	23.80	0.506	Battery 1#	/
Top Side	10mm	Tuning State1	20450/829	10M QPSK 50%RB#0	0.113	0.072	-0.02	22.94	23.80	0.138	Battery 1#	/
Left Side	10mm	Tuning State1	20450/829	10M QPSK 1RB#49	0.563	0.313	-0.03	23.92	24.80	0.689	Battery 2#	/
Left Side	10mm	Tuning State1	20450/829	10M QPSK 1RB#49	0.547	0.304	-0.02	23.92	24.80	0.670	Battery 3#	/
Left Side	10mm	Tuning State1	20450/829	10M QPSK 1RB#49	0.524	0.294	-0.02	23.92	24.80	0.642	With SIM2	/
Main Antenna												
Front Side	10mm	/	20600/844	10M QPSK 1RB#49	0.306	0.197	-0.02	24.09	25.00	0.377	Battery 1#	/
Back Side	10mm	/	20600/844	10M QPSK 1RB#49	0.344	0.222	-0.07	24.09	25.00	0.424	Battery 1#	Yes
Left Side	10mm	/	20600/844	10M QPSK 1RB#49	0.183	0.099	0.01	24.09	25.00	0.226	Battery 1#	/
Right Side	10mm	/	20600/844	10M QPSK 1RB#49	0.081	0.049	0.00	24.09	25.00	0.100	Battery 1#	/
Bottom Side	10mm	/	20600/844	10M QPSK 1RB#49	0.280	0.154	-0.02	24.09	25.00	0.345	Battery 1#	/
Front Side	10mm	/	20600/844	10M QPSK 50%RB#0	0.284	0.180	-0.01	23.01	24.00	0.357	Battery 1#	/
Back Side	10mm	/	20600/844	10M QPSK 50%RB#0	0.295	0.182	-0.04	23.01	24.00	0.371	Battery 1#	/
Left Side	10mm	/	20600/844	10M QPSK 50%RB#0	0.143	0.076	0.01	23.01	24.00	0.180	Battery 1#	/
Right Side	10mm	/	20600/844	10M QPSK 50%RB#0	0.070	0.043	0.01	23.01	24.00	0.088	Battery 1#	/
Bottom Side	10mm	/	20600/844	10M QPSK 50%RB#0	0.225	0.122	0.00	23.01	24.00	0.283	Battery 1#	/
Back Side	10mm	/	20600/844	10M QPSK 1RB#49	0.306	0.201	-0.13	24.09	25.00	0.377	Battery 2#	/
Back Side	10mm	/	20600/844	10M QPSK 1RB#49	0.343	0.215	-0.08	24.09	25.00	0.423	Battery 3#	/
Back Side	10mm	/	20600/844	10M QPSK 1RB#49	0.313	0.198	0.04	24.09	25.00	0.386	With SIM2	/

Table 92: Hotspot SAR test results of LTE Band 5

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:

Test Position of Hotspot	Dist.	ANT State	Test Channel /Freq.(MHz)	Test Mode	Measured SAR(W/kg)		Power Drift (dB)	Conducted Power (dBm)	Max Power Without Reduction	Scaled-up 1-g SAR (W/kg)	Product Specific 10-g SAR Exclusion
					1-g	10-g					
Second Antenna											
Front Side	10mm	Tuning State1	20450/829	10M QPSK 1RB#49	0.416	0.263	-0.07	23.92	24.80	0.509	Yes
Back Side	10mm	Tuning State1	20450/829	10M QPSK 1RB#49	0.444	0.274	-0.02	23.92	24.80	0.544	Yes
Back Side	10mm	Tuning State2	20450/829	10M QPSK 1RB#49	0.373	0.230	-0.04	23.92	24.80	0.457	Yes
Left Side	10mm	Tuning State1	20450/829	10M QPSK 1RB#49	0.567	0.313	-0.04	23.92	24.80	0.694	Yes
Left Side	10mm	Tuning State2	20450/829	10M QPSK 1RB#49	0.465	0.260	0.00	23.92	24.80	0.569	Yes
Top Side	10mm	Tuning State1	20450/829	10M QPSK 1RB#49	0.157	0.101	-0.05	23.92	24.80	0.192	Yes
Front Side	10mm	Tuning State1	20450/829	10M QPSK 50%RB#0	0.317	0.201	-0.08	22.94	23.80	0.386	Yes
Back Side	10mm	Tuning State1	20450/829	10M QPSK 50%RB#0	0.351	0.223	-0.05	22.94	23.80	0.428	Yes
Left Side	10mm	Tuning State1	20450/829	10M QPSK 50%RB#0	0.415	0.232	-0.02	22.94	23.80	0.506	Yes
Top Side	10mm	Tuning State1	20450/829	10M QPSK 50%RB#0	0.113	0.072	-0.02	22.94	23.80	0.138	Yes
Left Side	10mm	Tuning State1	20450/829	10M QPSK 1RB#49	0.563	0.313	-0.03	23.92	24.80	0.689	Yes
Left Side	10mm	Tuning State1	20450/829	10M QPSK 1RB#49	0.547	0.304	-0.02	23.92	24.80	0.670	Yes
Left Side	10mm	Tuning State1	20450/829	10M QPSK 1RB#49	0.524	0.294	-0.02	23.92	24.80	0.642	Yes
Main Antenna											
Front Side	10mm	/	20600/844	10M QPSK 1RB#49	0.306	0.197	-0.02	24.09	25.00	0.377	Yes
Back Side	10mm	/	20600/844	10M QPSK 1RB#49	0.344	0.222	-0.07	24.09	25.00	0.424	Yes
Left Side	10mm	/	20600/844	10M QPSK 1RB#49	0.183	0.099	0.01	24.09	25.00	0.226	Yes
Right Side	10mm	/	20600/844	10M QPSK 1RB#49	0.081	0.049	0.00	24.09	25.00	0.100	Yes
Bottom Side	10mm	/	20600/844	10M QPSK 1RB#49	0.280	0.154	-0.02	24.09	25.00	0.345	Yes
Front Side	10mm	/	20600/844	10M QPSK 50%RB#0	0.284	0.180	-0.01	23.01	24.00	0.357	Yes
Back Side	10mm	/	20600/844	10M QPSK 50%RB#0	0.295	0.182	-0.04	23.01	24.00	0.371	Yes
Left Side	10mm	/	20600/844	10M QPSK 50%RB#0	0.143	0.076	0.01	23.01	24.00	0.180	Yes
Right Side	10mm	/	20600/844	10M QPSK 50%RB#0	0.070	0.043	0.01	23.01	24.00	0.088	Yes
Bottom Side	10mm	/	20600/844	10M QPSK 50%RB#0	0.225	0.122	0.00	23.01	24.00	0.283	Yes
Back Side	10mm	/	20600/844	10M QPSK 1RB#49	0.306	0.201	-0.13	24.09	25.00	0.377	Yes
Back Side	10mm	/	20600/844	10M QPSK 1RB#49	0.343	0.215	-0.08	24.09	25.00	0.423	Yes
Back Side	10mm	/	20600/844	10M QPSK 1RB#49	0.313	0.198	0.04	24.09	25.00	0.386	Yes

Table 93: Product Specific 10-g SAR test reduction evaluation of LTE Band 5

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 7

Test Position of Head	Test Channel /Freq.(MHz)	Test Mode	Measured SAR(W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	SAR Plot.
			1-g	10-g						
Second Antenna										
Left cheek	20850/2510	20M QPSK 1RB#0	0.221	0.102	0.17	15.89	16.90	0.279	Battery 1#	/
Left tilt	20850/2510	20M QPSK 1RB#0	0.087	0.042	0.13	15.89	16.90	0.109	Battery 1#	/
Right cheek	20850/2510	20M QPSK 1RB#0	0.328	0.127	0.18	15.89	16.90	0.414	Battery 1#	/
Right tilt	20850/2510	20M QPSK 1RB#0	0.185	0.089	0.07	15.89	16.90	0.233	Battery 1#	/
Left cheek	21350/2560	20M QPSK 50%RB#0	0.270	0.127	0.16	15.76	16.90	0.351	Battery 1#	/
Left tilt	21350/2560	20M QPSK 50%RB#0	0.218	0.189	0.11	15.76	16.90	0.283	Battery 1#	/
Right cheek	21350/2560	20M QPSK 50%RB#0	0.432	0.178	0.17	15.76	16.90	0.562	Battery 1#	/
Right tilt	21350/2560	20M QPSK 50%RB#0	0.192	0.081	0.02	15.76	16.90	0.250	Battery 1#	/
Right cheek	21350/2560	20M QPSK 50%RB#0	0.443	0.162	0.17	15.76	16.90	0.576	Battery 2#	Yes
Right cheek	21350/2560	20M QPSK 50%RB#0	0.317	0.120	-0.10	15.76	16.90	0.412	Battery 3#	/
Right cheek	21350/2560	20M QPSK 50%RB#0	0.329	0.125	0.13	15.76	16.90	0.428	With SIM2	/
Main Antenna										
Left cheek	21100/2535	20M QPSK 1RB#0	0.175	0.092	0.10	23.11	24.00	0.215	Battery 1#	/
Left tilt	21100/2535	20M QPSK 1RB#0	0.056	0.028	0.15	23.11	24.00	0.068	Battery 1#	/
Right cheek	21100/2535	20M QPSK 1RB#0	0.120	0.066	0.17	23.11	24.00	0.147	Battery 1#	/
Right tilt	21100/2535	20M QPSK 1RB#0	0.095	0.047	0.12	23.11	24.00	0.116	Battery 1#	
Left cheek	21100/2535	20M QPSK 50%RB#0	0.184	0.097	-0.01	22.15	23.10	0.229	Battery 1#	/
Left tilt	21100/2535	20M QPSK 50%RB#0	0.057	0.028	0.05	22.15	23.10	0.071	Battery 1#	/
Right cheek	21100/2535	20M QPSK 50%RB#0	0.109	0.057	0.09	22.15	23.10	0.136	Battery 1#	/
Right tilt	21100/2535	20M QPSK 50%RB#0	0.098	0.048	0.01	22.15	23.10	0.121	Battery 1#	/
Left cheek	21100/2535	20M QPSK 50%RB#0	0.192	0.101	0.19	22.15	23.10	0.239	Battery 2#	Yes
Left cheek	21100/2535	20M QPSK 50%RB#0	0.185	0.092	0.12	22.15	23.10	0.230	Battery 3#	/
Left cheek	21100/2535	20M QPSK 50%RB#0	0.183	0.091	0.12	22.15	23.10	0.228	With SIM2	/

Table 94: Head SAR test results of LTE Band 7

Test Position of Body-Worn	Dist.	Test Channel /Freq.(MHz)	Test Mode	Measured SAR(W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	SAR Plot.
				1-g	10-g						
Second Antenna											
Front Side	15mm	20850/2510	20M QPSK 1RB#50	0.146	0.079	-0.13	23.18	24.00	0.176	Battery 1#	/
Back Side	15mm	20850/2510	20M QPSK 1RB#50	0.231	0.126	-0.15	23.18	24.00	0.279	Battery 1#	Yes
Front Side	15mm	21350/2560	20M QPSK 50%RB#50	0.160	0.085	-0.18	22.22	23.40	0.210	Battery 1#	/
Back Side	15mm	21350/2560	20M QPSK 50%RB#50	0.207	0.113	-0.13	22.22	23.40	0.272	Battery 1#	/
Back Side	15mm	20850/2510	20M QPSK 1RB#50	0.177	0.096	-0.13	23.18	24.00	0.214	Battery 2#	/
Back Side	15mm	20850/2510	20M QPSK 1RB#50	0.191	0.103	-0.18	23.18	24.00	0.231	Battery 3#	/
Back Side	15mm	20850/2510	20M QPSK 1RB#50	0.198	0.107	-0.18	23.18	24.00	0.239	With SIM2	/
Main Antenna											
Front Side	15mm	20850/2510	20M QPSK 1RB#0	0.136	0.077	-0.02	21.81	22.90	0.175	Battery 1#	/
Back Side	15mm	20850/2510	20M QPSK 1RB#0	0.137	0.074	-0.15	21.81	22.90	0.176	Battery 1#	/
Front Side	15mm	20850/2510	20M QPSK 50%RB#0	0.138	0.079	-0.05	21.84	22.90	0.176	Battery 1#	/
Back Side	15mm	20850/2510	20M QPSK 50%RB#0	0.191	0.104	-0.13	21.84	22.90	0.244	Battery 1#	Yes
Back Side	15mm	20850/2510	20M QPSK 50%RB#0	0.135	0.073	0.08	21.84	22.90	0.172	Battery 2#	/
Back Side	15mm	20850/2510	20M QPSK 50%RB#0	0.141	0.077	-0.19	21.84	22.90	0.180	Battery 3#	/
Back Side	15mm	20850/2510	20M QPSK 50%RB#0	0.150	0.080	0.00	21.84	22.90	0.191	With SIM2	/

Table 95: Body Worn SAR test results of LTE Band 7

Test Position of Hotspot	Dist.	Test Channel /Freq.(MHz)	Test Mode	Measured SAR(W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	SAR Plot.
				1-g	10-g						
Second Antenna											
Front Side	10mm	20850/2510	20M QPSK 1RB#0	0.170	0.090	-0.12	21.16	22.40	0.226	Battery 1#	/
Back Side	10mm	20850/2510	20M QPSK 1RB#0	0.216	0.116	-0.19	21.16	22.40	0.287	Battery 1#	/
Left Side	10mm	20850/2510	20M QPSK 1RB#0	0.389	0.159	-0.13	21.16	22.40	0.518	Battery 1#	/
Top Side	10mm	20850/2510	20M QPSK 1RB#0	0.146	0.079	-0.04	21.16	22.40	0.194	Battery 1#	/
Front Side	10mm	20850/2510	20M QPSK 50%RB#0	0.177	0.094	-0.12	21.19	22.40	0.234	Battery 1#	/
Back Side	10mm	20850/2510	20M QPSK 50%RB#0	0.220	0.118	-0.12	21.19	22.40	0.291	Battery 1#	/
Left Side	10mm	20850/2510	20M QPSK 50%RB#0	0.422	0.171	-0.04	21.19	22.40	0.558	Battery 1#	Yes
Top Side	10mm	20850/2510	20M QPSK 50%RB#0	0.143	0.072	-0.14	21.19	22.40	0.189	Battery 1#	/
Left Side	10mm	20850/2510	20M QPSK 50%RB#0	0.396	0.161	-0.10	21.19	22.40	0.523	Battery 2#	/
Left Side	10mm	20850/2510	20M QPSK 50%RB#0	0.369	0.154	-0.02	21.19	22.40	0.488	Battery 3#	/
Left Side	10mm	20850/2510	20M QPSK 50%RB#0	0.394	0.164	-0.04	21.19	22.40	0.521	With SIM2	/
Main Antenna											
Front Side	10mm	20850/2510	20M QPSK 1RB#0	0.152	0.084	-0.12	19.84	20.80	0.190	Battery 1#	/
Back Side	10mm	20850/2510	20M QPSK 1RB#0	0.168	0.093	-0.19	19.84	20.80	0.210	Battery 1#	/
Left Side	10mm	20850/2510	20M QPSK 1RB#0	0.056	0.030	0.02	19.84	20.80	0.070	Battery 1#	/
Right Side	10mm	20850/2510	20M QPSK 1RB#0	0.036	0.020	-0.09	19.84	20.80	0.045	Battery 1#	/
Bottom Side	10mm	20850/2510	20M QPSK 1RB#0	0.271	0.137	-0.10	19.84	20.80	0.338	Battery 1#	/
Front Side	10mm	20850/2510	20M QPSK 50%RB#50	0.160	0.088	-0.19	19.90	20.80	0.197	Battery 1#	/
Back Side	10mm	20850/2510	20M QPSK 50%RB#50	0.177	0.096	0.01	19.90	20.80	0.218	Battery 1#	/
Left Side	10mm	20850/2510	20M QPSK 50%RB#50	0.060	0.032	-0.08	19.90	20.80	0.073	Battery 1#	/
Right Side	10mm	20850/2510	20M QPSK 50%RB#50	0.044	0.023	-0.08	19.90	20.80	0.054	Battery 1#	/
Bottom Side	10mm	20850/2510	20M QPSK 50%RB#50	0.280	0.141	0.01	19.90	20.80	0.344	Battery 1#	Yes
Bottom Side	10mm	20850/2510	20M QPSK 50%RB#50	0.238	0.123	-0.08	19.90	20.80	0.293	Battery 2#	/
Bottom Side	10mm	20850/2510	20M QPSK 50%RB#50	0.276	0.140	-0.10	19.90	20.80	0.340	Battery 3#	/
Bottom Side	10mm	20850/2510	20M QPSK 50%RB#50	0.246	0.126	0.09	19.90	20.80	0.303	With SIM2	/

Table 96: 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:

Test Position of Hotspot	Dist.	Test Channel /Freq.(MHz)	Test Mode	Measured SAR(W/kg)		Power Drift (dB)	Conducted Power (dBm)	Max Power Without Reduction	Scaled-up 1-g SAR (W/kg)	Product Specific 10-g SAR Exclusion
				1-g	10-g					
Second Antenna										
Front Side	10mm	20850/2510	20M QPSK 1RB#0	0.170	0.090	-0.12	21.16	24.00	0.327	Yes
Back Side	10mm	20850/2510	20M QPSK 1RB#0	0.216	0.116	-0.19	21.16	24.00	0.415	Yes
Left Side	10mm	20850/2510	20M QPSK 1RB#0	0.389	0.159	-0.13	21.16	24.00	0.748	Yes
Top Side	10mm	20850/2510	20M QPSK 1RB#0	0.146	0.079	-0.04	21.16	24.00	0.281	Yes
Front Side	10mm	20850/2510	20M QPSK 50%RB#0	0.177	0.094	-0.12	21.19	23.40	0.294	Yes
Back Side	10mm	20850/2510	20M QPSK 50%RB#0	0.220	0.118	-0.12	21.19	23.40	0.366	Yes
Left Side	10mm	20850/2510	20M QPSK 50%RB#0	0.422	0.171	-0.04	21.19	23.40	0.702	Yes
Top Side	10mm	20850/2510	20M QPSK 50%RB#0	0.143	0.072	-0.14	21.19	23.40	0.238	Yes
Left Side	10mm	20850/2510	20M QPSK 50%RB#0	0.396	0.161	-0.10	21.19	23.40	0.659	Yes
Left Side	10mm	20850/2510	20M QPSK 50%RB#0	0.369	0.154	-0.02	21.19	23.40	0.614	Yes
Left Side	10mm	20850/2510	20M QPSK 50%RB#0	0.394	0.164	-0.04	21.19	23.40	0.655	Yes
Main Antenna										
Front Side	10mm	20850/2510	20M QPSK 1RB#0	0.152	0.084	-0.12	19.84	24.00	0.396	Yes
Back Side	10mm	20850/2510	20M QPSK 1RB#0	0.168	0.093	-0.19	19.84	24.00	0.438	Yes
Left Side	10mm	20850/2510	20M QPSK 1RB#0	0.056	0.030	0.02	19.84	24.00	0.146	Yes
Right Side	10mm	20850/2510	20M QPSK 1RB#0	0.036	0.020	-0.09	19.84	24.00	0.095	Yes
Bottom Side	10mm	20850/2510	20M QPSK 1RB#0	0.271	0.137	-0.10	19.84	24.00	0.706	Yes
Front Side	10mm	20850/2510	20M QPSK 50%RB#50	0.160	0.088	-0.19	19.90	23.10	0.334	Yes
Back Side	10mm	20850/2510	20M QPSK 50%RB#50	0.177	0.096	0.01	19.90	23.10	0.370	Yes
Left Side	10mm	20850/2510	20M QPSK 50%RB#50	0.060	0.032	-0.08	19.90	23.10	0.125	Yes
Right Side	10mm	20850/2510	20M QPSK 50%RB#50	0.044	0.023	-0.08	19.90	23.10	0.091	Yes
Bottom Side	10mm	20850/2510	20M QPSK 50%RB#50	0.280	0.141	0.01	19.90	23.10	0.585	Yes
Bottom Side	10mm	20850/2510	20M QPSK 50%RB#50	0.238	0.123	-0.08	19.90	23.10	0.497	Yes
Bottom Side	10mm	20850/2510	20M QPSK 50%RB#50	0.276	0.140	-0.10	19.90	23.10	0.577	Yes
Bottom Side	10mm	20850/2510	20M QPSK 50%RB#50	0.246	0.126	0.09	19.90	23.10	0.514	Yes

Table 97: 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.

7.2.10 SAR measurement Results of WiFi 2.4G

Test Position of Head	Test Channel /Freq.(MHz)	Test Mode	Area Scan 1-g SAR (W/kg)	Measured SAR(W/kg)		Power Drift (dB)	Actual duty cycle	Scaled 1-g SAR (W/kg)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	SAR Plot
				1-g	10-g								
Ant1													
Left cheek	6/2437	802.11b	0.107	0.126	0.055	0.14	99%	0.127	10.50	12.00	0.180	Battery 1#	/
Left tilt	6/2437	802.11b	0.057	0.057	0.029	0.14	99%	0.058	10.50	12.00	0.082	Battery 1#	/
Right cheek	6/2437	802.11b	0.027	0.027	0.015	0.10	99%	0.027	10.50	12.00	0.039	Battery 1#	/
Right tilt	6/2437	802.11b	0.027	0.027	0.014	0.12	99%	0.027	10.50	12.00	0.038	Battery 1#	/
Left cheek	6/2437	802.11b	0.111	0.128	0.054	0.15	99%	0.129	10.50	12.00	0.183	Battery 2#	Yes
Left cheek	6/2437	802.11b	0.103	0.118	0.050	-0.19	99%	0.119	10.50	12.00	0.168	Battery 3#	/

Table 98: Head SAR test results of WiFi 2.4G

Mode	Tune-up (dBm)	Tune-up (mW)	Highest Reported SAR(W/kg)	Adjusted SAR (W/kg)	SAR test
802.11b	12.00	15.85	0.183	/	Yes
802.11g	12.00	15.85	/	0.183	No
802.11n 20M	12.00	15.85	/	0.183	No
802.11n 40M	12.00	15.85	/	0.183	No

Note: Per KDB248227D01, for Head SAR test of WiFi 2.4G, SAR is measured for 2.4 GHz 802.11b DSSS using the initial test position 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.

Test Position of Body-Worn	Dist.	Test Channel /Freq.(MHz)	Test Mode	Area Scan 1-g SAR (W/kg)	Measured SAR(W/kg)		Power Drift (dB)	Actual duty cycle	Scaled 1-g SAR (W/kg)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	SAR Plot
					1-g	10-g								
Ant1														
Front Side	15mm	11/2462	802.11b	0.034	0.036	0.019	-0.10	99%	0.036	17.24	19.00	0.055	Battery 1#	/
Back Side	15mm	11/2462	802.11b	0.043	0.043	0.024	-0.02	99%	0.043	17.24	19.00	0.065	Battery 1#	/
Back Side	15mm	11/2462	802.11b	0.048	0.049	0.027	0.07	99%	0.049	17.24	19.00	0.073	Battery 2#	Yes
Back Side	15mm	11/2462	802.11b	0.044	0.045	0.025	0.10	99%	0.045	17.24	19.00	0.068	Battery 3#	/

Table 99: Body Worn SAR test results of WiFi 2.4G

Mode	Tune-up (dBm)	Tune-up (mW)	Highest Reported SAR(W/kg)	Adjusted SAR (W/kg)	SAR test
802.11b	19.00	79.43	0.073	/	Yes
802.11g	19.00	79.43	/	0.073	No
802.11n 20M	19.00	79.43	/	0.073	No
802.11n 40M	15.00	31.62	/	0.029	No

Note: Per KDB248227D01, for Body-worn SAR test of WiFi 2.4G, SAR is measured for 2.4 GHz 802.11b DSSS using the initial test position 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.

Test Position of Hotspot	Dist.	Test Channel /Freq.(MHz)	Test Mode	Area Scan 1-g SAR (W/kg)	Measured SAR(W/kg)		Power Drift (dB)	Actual duty cycle	Scaled 1-g SAR (W/kg)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 1-g SAR (W/kg)	Accessory Information	SAR Plot.
					1-g	10-g								
Ant1														
Front Side	10mm	11/2462	802.11b	0.082	0.088	0.045	0.00	99%	0.088	17.24	19.00	0.133	Battery 1#	/
Back Side	10mm	11/2462	802.11b	0.083	0.092	0.047	0.08	99%	0.093	17.24	19.00	0.139	Battery 1#	/
Right Side	10mm	11/2462	802.11b	0.139	0.154	0.067	-0.10	99%	0.156	17.24	19.00	0.233	Battery 1#	/
Top Side	10mm	11/2462	802.11b	0.043	/	/	/	99%	/	17.24	19.00	/	Battery 1#	/
Right Side	10mm	11/2462	802.11b	0.165	0.185	0.082	0.15	99%	0.187	17.24	19.00	0.280	Battery 2#	/
Right Side	10mm	11/2462	802.11b	0.176	0.190	0.084	0.15	99%	0.192	17.24	19.00	0.288	Battery 3#	Yes

Table 100: Hotspot SAR test results of WiFi 2.4G

Mode	Tune-up (dBm)	Tune-up (mW)	Highest Reported SAR(W/kg)	Adjusted SAR (W/kg)	SAR test
802.11b	19.00	79.43	0.288	/	Yes
802.11g	19.00	79.43	/	0.288	No
802.11n 20M	19.00	79.43	/	0.288	No
802.11n 40M	15.00	31.62	/	0.115	No

Note:

1) Per KDB248227D01, for Hotspot SAR test of WiFi 2.4G, SAR is measured for 2.4 GHz 802.11b DSSS using the initial test position 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:

Test Position of Hotspot	Dist.	Test Channel /Freq.(MHz)	Test Mode	Area Scan 1-g SAR (W/kg)	Measured SAR(W/kg)		Power Drift (dB)	Actual duty cycle	Scaled 1-g SAR (W/kg)	Conducted Power (dBm)	Max Power Without Reduction	Scaled-up 1-g SAR (W/kg)	Product Specific 10-g SAR Exclusion
					1-g	10-g							
Ant1													
Front Side	10mm	11/2462	802.11b	0.082	0.088	0.045	0.00	99%	0.088	17.24	19.00	0.131	Yes
Back Side	10mm	11/2462	802.11b	0.083	0.092	0.047	0.08	99%	0.093	17.24	19.00	0.138	Yes
Right Side	10mm	11/2462	802.11b	0.139	0.154	0.067	-0.10	99%	0.156	17.24	19.00	0.231	Yes
Top Side	10mm	11/2462	802.11b	0.043	/	/	/	99%	/	17.24	19.00	/	Yes
Right Side	10mm	11/2462	802.11b	0.165	0.185	0.082	0.15	99%	0.187	17.24	19.00	0.277	Yes
Right Side	10mm	11/2462	802.11b	0.176	0.190	0.084	0.15	99%	0.192	17.24	19.00	0.285	Yes

Table 101: Product Specific 10-g SAR test reduction evaluation of WiFi 2.4G

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

7.3 Multiple Transmitter Evaluation

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

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
Main Antenna	Hotspot/ Product specific 10g SAR	Yes	Yes	Yes	Yes	No	Yes
Second Antenna	Hotspot/ Product specific 10g SAR	Yes	Yes	Yes	No	Yes	No
WiFi/BT Antenna	Hotspot/ Product specific 10g SAR	Yes	Yes	No	Yes	Yes	No

Table 102: 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 SAR if the antenna-to-edge distance is greater than 2.5cm;

7.3.1 Stand-alone SAR test exclusion

Per FCC KDB 447498 D01, the 1-g SAR and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances $\leq 50\text{ mm}$ are determined by:

$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$ for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where:

- $f(\text{GHz})$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison

When the minimum test separation distance is $< 5\text{ mm}$, a distance of 5 mm is applied to determine SAR test exclusion.

Mode	Position	P_{max} (dBm)*	P_{max} (mW)	Distance (mm)	f (GHz)	Calculation Result	SAR Exclusion threshold	SAR test exclusion
BT	Head	9.70	9.33	5	2.480	2.94	3.00	Yes
BT	Body-Worn	9.70	9.33	15	2.480	0.98	3.00	Yes
BT	Product specific 10g SAR	9.70	9.33	5	2.480	2.94	7.50	Yes

Table 103: Standalone SAR test exclusion for BT

Note:

- 1)* - maximum possible output power declared by manufacturer

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

$(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm}) \cdot$

$[\sqrt{f(\text{GHz})}/x]$ W/kg for test separation distances ≤ 50 mm, where $x = 7.5$ for 1-g SAR and $x = 18.75$ for 10-g SAR.

When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

Mode	Position	P_{max} (dBm)*	P_{max} (mW)	Distance (mm)	f (GHz)	X	Estimated SAR (W/kg)*
BT	Head	9.70	9.33	5	2.480	7.50	0.392
BT	Body-worn	9.70	9.33	15	2.480	7.50	0.131
BT	Product specific 10g SAR	9.70	9.33	5	2.480	18.75	0.157

Table 104: Estimated SAR calculation for BT

Note:

1) * - maximum possible output power declared by manufacturer

7.3.2 Simultaneous Transmission Possibilities

The Simultaneous Transmission Possibilities of this device are as below:

NO.	Simultaneous TX Combination	Head	Body-worn	Hotspot (10mm)	Product Specific 10-g (0mm)
1	GSM Voice(Ant 1) + BT	Yes	Yes	NA	Yes
2	GSM DATA(Ant 1) + BT	N/A	Yes	NA	Yes
3	GSM Voice(Ant 2) + BT	Yes	Yes	NA	Yes
4	GSM DATA (Ant 2)+ BT	N/A	Yes	NA	Yes
5	GSM Voice(Ant 1) + WiFi2.4G	Yes	Yes	NA	Yes
6	GSM DATA(Ant 1) + WiFi2.4G	N/A	Yes	Yes	Yes
7	GSM Voice(Ant 2) + WiFi2.4G	Yes	Yes	NA	Yes
8	GSM DATA(Ant 2) + WiFi2.4G	N/A	Yes	Yes	Yes
9	UMTS (Ant 1) + BT	Yes	Yes	NA	Yes
10	UMTS (Ant 2) + BT	Yes	Yes	NA	Yes
11	UMTS (Ant 1) + WiFi2.4G	Yes	Yes	Yes	Yes
12	UMTS (Ant 2) + WiFi2.4G	Yes	Yes	Yes	Yes
13	LTE (Ant 1) + WiFi2.4G	Yes*	Yes*	Yes	Yes*
14	LTE (Ant 1) + BT	Yes	Yes*	NA	Yes*
15	LTE (Ant 2) + WiFi2.4G	Yes*	Yes*	Yes*	Yes*
16	LTE (Ant 2) + BT	Yes	Yes*	NA	Yes*

Table 105: 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 (Ant1) and Second Antenna (Ant 2) can't transmit simultaneously.
- 5) The device supports VoWiFi function.

7.3.3 SAR Summation Scenario

Test Position		Second Antenna									WiFi/BT Antenna SARMax		ΣSAR
		GSM850	GSM1900	UMTS Band II	UMTS Band IV	UMTS Band V	LTE B2	LTE B4	LTE B5	LTE B7	WiFi 2.4G	BT	
Head	Left cheek	0.256	0.201	0.189	0.197	0.243	0.226	0.184	0.269	0.351	0.183	0.392	0.743
	Left tilt	0.139	0.115	0.130	0.271	0.164	0.172	0.231	0.181	0.283	0.082	0.392	0.675
	Right cheek	0.620	0.520	0.627	0.488	0.580	0.781	0.449	0.592	0.576	0.039	0.392	1.173
	Right tilt	0.273	0.268	0.266	0.266	0.272	0.346	0.233	0.351	0.250	0.038	0.392	0.743
Body Worn	Front side	0.205	0.051	0.308	0.238	0.245	0.256	0.247	0.291	0.210	0.055	0.131	0.439
	Back side	0.281	0.175	0.243	0.269	0.307	0.385	0.271	0.336	0.279	0.073	0.131	0.516
Hotspot	Front side	0.365	0.192	0.160	0.126	0.440	0.271	0.125	0.509	0.234	0.133	/	0.642
	Back side	0.440	0.242	0.198	0.144	0.596	0.237	0.143	0.544	0.291	0.139	/	0.735
	Left side	0.600	0.535	0.443	0.055	0.778	0.573	0.059	0.694	0.558	/	/	0.778
	Right side	/	/	/	/	/	/	/	/	/	0.233	/	0.233
	Top side	0.118	0.113	0.098	0.163	0.157	0.177	0.203	0.192	0.194	0.288	/	0.491
	Bottom side	/	/	/	/	/	/	/	/	/	/	/	/
Product Specific 10-g	Front side	/	/	/	/	/	/	/	/	/	/	/	/
	Back side	/	/	/	/	/	/	/	/	/	/	/	/
	Left side	/	/	1.730	/	/	1.858	/	/	/	/	0.157	2.015
	Right side	/	/	/	/	/	/	/	/	/	/	/	/
	Top side	/	/	/	/	/	/	/	/	/	/	/	/
	Bottom side	/	/	/	/	/	/	/	/	/	/	/	/

Table 106: SAR Simultaneous Tx Combination of Second antenna and WiFi/BT antenna.

Test Position		Main Antenna									WiFi/BT Antenna SARMax		ΣSAR
		GSM850	GSM1900	UMTS Band II	UMTS Band IV	UMTS Band V	LTE B2	LTE B4	LTE B5	LTE B7	WiFi 2.4G	BT	
Head	Left cheek	0.031	0.089	0.107	0.167	0.040	0.123	0.179	0.051	0.239	0.183	0.392	0.631
	Left tilt	0.014	0.053	0.057	0.074	0.018	0.066	0.074	0.017	0.071	0.082	0.392	0.466
	Right cheek	0.036	0.069	0.092	0.126	0.044	0.092	0.143	0.035	0.147	0.039	0.392	0.539
	Right tilt	0.014	0.050	0.046	0.082	0.018	0.050	0.099	0.017	0.121	0.038	0.392	0.513
Body Worn	Front side	0.144	0.142	0.159	0.163	0.228	0.180	0.158	0.238	0.176	0.055	0.131	0.369
	Back side	0.201	0.198	0.224	0.222	0.256	0.246	0.228	0.252	0.244	0.073	0.131	0.387
Hotspot	Front side	0.230	0.163	0.176	0.148	0.378	0.161	0.159	0.377	0.197	0.133	/	0.511
	Back side	0.281	0.222	0.240	0.216	0.511	0.218	0.243	0.424	0.218	0.139	/	0.650
	Left side	0.145	0.089	0.083	0.099	0.219	0.076	0.124	0.226	0.073	/	/	0.226
	Right side	0.067	0.071	0.058	0.070	0.105	0.049	0.081	0.100	0.054	0.288	/	0.393
	Top side	/	/	/	/	/	/	/	/	/	0.288	/	0.288
	Bottom side	0.157	0.321	0.350	0.316	0.378	0.373	0.373	0.345	0.344	/	/	0.378
Product Specific 10-g	Front side	/	/	/	/	/	/	/	/	/	/	/	/
	Back side	/	/	/	/	/	/	/	/	/	/	/	/
	Left side	/	/	/	/	/	/	/	/	/	/	/	/
	Right side	/	/	/	/	/	/	/	/	/	/	/	/
	Top side	/	/	/	/	/	/	/	/	/	/	/	/
	Bottom side	/	/	/	/	/	/	/	/	/	/	/	/

Table 107: SAR Simultaneous Tx Combination of Main antenna and WiFi/BT antenna.

7.3.4 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) 20190309001001-2A, total: 19 pages)

Appendix B. SAR Measurement Plots

(Please See Appendix No.: SYBH (Z-SAR) 20190309001001-2B, total: 60 pages)

Appendix C. Calibration Certificate

(Please See Appendix No.: SYBH (Z-SAR) 20190309001001-2C, total: 181 pages)

Appendix D. Photo documentation

(Please See Appendix No.: SYBH (Z-SAR) 20190309001001-2D, total: 7 pages)

Appendix E. Antenna Location

(Please See Appendix No.: SYBH (Z-SAR) 20190309001001-2E, total: 1 page)

End