



中国认可
国际互认
检测
TESTING
CNAS L0310



FCC SAR Compliance Test Report

Product Name: Smart Phone

Model: SNE-LX3

Report No.: SYBH(Z-SAR)20180813013001-2

FCC ID: QISSNE-LX3

	APPROVED (Lab Manager)	PREPARED (Test Engineer)
BY	<i>Wei Huanbin</i>	<i>Luo Hua</i>
DATE	2018-09-07	2018-09-07

Reliability Laboratory of Huawei Technologies Co., Ltd.

(Global Compliance and Testing Center of Huawei Technologies Co., Ltd)

Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District,
Shenzhen, 518129, P.R.C

Tel: +86 755 28780808 Fax: +86 755 89652518

※ ※ **Notice** ※ ※

1. The laboratory has passed the accreditation by China National Accreditation Service for Conformity Assessment (CNAS). The accreditation number is L0310.
2. The laboratory has passed the accreditation by The American Association for Laboratory Accreditation (A2LA). The accreditation number is 2174.01 & 2174.02 & 2174.03
3. The laboratory (Reliability Lab of Huawei Technologies Co., Ltd) is also named “Global Compliance and Testing Center of Huawei Technologies Co., Ltd”, the both names have coexisted since 2009.
4. The test report is invalid if not marked with the signatures of the persons responsible for preparing and approving the test report.
5. The test report is invalid if there is any evidence of erasure and/or falsification.
6. The test report is only valid for the test samples.
7. Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory

Table of Contents

1	General Information.....	6
1.1	Statement of Compliance	6
1.2	RF exposure limits	7
1.3	EUT Description.....	8
1.3.1	General Description	10
1.3.2	Dynamic antenna switching specification	11
1.4	Test specification(s).....	12
1.5	Testing laboratory	12
1.6	Applicant and Manufacturer.....	12
1.7	Application details	12
1.8	Ambient Condition.....	12
2	SAR Measurement System	13
2.1	SAR Measurement Set-up.....	13
2.2	Test environment	14
2.3	Data Acquisition Electronics description.....	14
2.4	Probe description	15
2.5	Phantom description	16
2.6	Device holder description	17
2.7	Test Equipment List	18
3	SAR Measurement Procedure	20
3.1	Scanning procedure.....	20
3.2	Spatial Peak SAR Evaluation	21
3.3	Data Storage and Evaluation.....	22
4	System Verification Procedure	24
4.1	Tissue Verification.....	24
4.2	System Check.....	27
4.3	System check Procedure.....	28
5	SAR measurement variability and uncertainty	29
5.1	SAR measurement variability	29
5.2	SAR measurement uncertainty.....	29
6	SAR Test Configuration.....	30
6.1	Test Positions Configuration	30
6.1.1	General considerations.....	30
6.1.2	Head Exposure Condition.....	30
6.1.3	Body-worn Exposure Condition	31
6.1.4	Hotspot Exposure Condition	31
6.1.5	Product Specific 10-g SAR Exposure Condition.....	32
6.2	3G SAR Test Reduction Procedure.....	32
6.3	GSM Test Configuration	32
6.4	UMTS Test Configuration	33
6.5	LTE Test Configuration	38
6.6	WiFi Test Configuration	40
6.6.1	Initial Test Position Procedure	40
6.6.2	Initial Test Configuration Procedure	40
6.6.3	Sub Test Configuration Procedure	40
6.6.4	WiFi 2.4G SAR Test Procedures	41
6.6.5	U-NII-1 and U-NII-2A Bands	42
6.6.6	U-NII-2C and U-NII-3 Bands.....	42
6.6.7	OFDM Transmission Mode SAR Test Channel Selection Requirements	43
6.6.8	LTE CA specification.....	43
6.6.9	LTE CA combinations specification	43
6.6.10	Test procedure for Intra-band downlink CA.....	46
6.7	Power Reduction Specification	47
6.7.1	Power Reduction Specification of 2G/3G/4G Second Antenna.....	47
6.7.2	Power Reduction Specification of 2G/3G/4G Main Antenna	48
6.7.3	Power Reduction Specification of WiFi Antenna	48
7	SAR Measurement Results	49
7.1	Conducted power measurements.....	49
7.1.1	Conducted power measurements of GSM850 (Second Antenna)	50

7.1.2	Conducted power measurements of GSM850 (Main Antenna).....	51
7.1.3	Conducted power measurements of GSM1900 (Second Antenna).....	52
7.1.4	Conducted power measurements of GSM1900 (Main Antenna).....	53
7.1.5	Conducted power measurements of UMTS Band II (Second Antenna).....	54
7.1.6	Conducted power measurements of UMTS Band II (Main Antenna).....	56
7.1.7	Conducted power measurements of UMTS Band IV (Second Antenna).....	58
7.1.8	Conducted power measurements of UMTS Band IV (Main Antenna).....	61
7.1.9	Conducted power measurements of UMTS Band V (Second Antenna).....	63
7.1.10	Conducted power measurements of UMTS Band V (Main Antenna).....	65
7.1.11	Conducted power measurements of LTE Band 2 (Second Antenna).....	66
7.1.12	Conducted power measurements of LTE Band 2 (Main Antenna).....	72
7.1.13	Conducted power measurements of LTE Band 4 (Second Antenna).....	78
7.1.14	Conducted power measurements of LTE Band 4 (Main Antenna).....	90
7.1.15	Conducted power measurements of LTE Band 5 (Second Antenna).....	93
7.1.16	Conducted power measurements of LTE Band 5 (Main Antenna).....	97
7.1.17	Conducted power measurements of LTE Band 7 (Second Antenna).....	99
7.1.18	Conducted power measurements of LTE Band 7 (Main Antenna).....	103
7.1.19	Conducted power measurements of LTE Band 12(Second Antenna).....	105
7.1.20	Conducted power measurements of LTE Band 12(Main Antenna).....	109
7.1.21	Conducted power measurements of LTE Band 17(Second Antenna).....	111
7.1.22	Conducted power measurements of LTE Band 17(Main Antenna).....	113
7.1.23	Conducted power measurements of Downlink LTE CA.....	114
7.1.24	Conducted power measurements of WiFi 2.4G.....	117
7.1.25	Conducted power measurements of WiFi 5G.....	119
7.1.26	Conducted power measurements of BT.....	127
7.2	SAR measurement Results.....	128
7.2.1	SAR measurement Result of GSM850.....	130
7.2.2	SAR measurement Result of GSM1900.....	132
7.2.3	SAR measurement Result of UMTS Band II.....	134
7.2.4	SAR measurement Result of UMTS Band IV.....	136
7.2.5	SAR measurement Result of UMTS Band V.....	139
7.2.6	SAR measurement Result of LTE Band 2.....	141
7.2.7	SAR measurement Result of LTE Band 4.....	145
7.2.8	SAR measurement Result of LTE Band 5.....	149
7.2.9	SAR measurement Result of LTE Band 7.....	152
7.2.10	SAR measurement Result of LTE Band 12.....	155
7.2.11	SAR measurement Result of WiFi 2.4G.....	158
7.2.12	SAR measurement Result of WiFi 5G.....	160
7.3	Multiple Transmitter Evaluation.....	164
7.3.1	Stand-alone SAR test exclusion.....	165
7.3.2	Simultaneous Transmission Possibilities.....	167
1)	WiFi 2.4G and Bluetooth can't transmit simultaneously.....	167
2)	WiFi 5G and Bluetooth can't transmit simultaneously.....	167
3)	WiFi 2.4G and 5G can't transmit simultaneously.....	167
7.3.3	SAR Summation Scenario.....	168
7.3.4	Simultaneous Transmission Conclusion.....	169
	Appendix A. System Check Plots.....	170
	Appendix B. SAR Measurement Plots.....	170
	Appendix C. Calibration Certificate.....	170
	Appendix D. Photo documentation.....	170

※ ※ **Modified History** ※ ※

REV.	DESCRIPTION	ISSUED DATE	REMARK
Rev.1.0	Initial Test Report Release	2018-09-07	Luo Hua

1 General Information

1.1 Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for SNE-LX3 are as below Table 1.

Band	Max Reported SAR(W/kg)			
	1-g Head	1-g Body-worn (15mm) *	1-g Hotspot (10mm)	Product Specific 10-g SAR (0mm)**
GSM850	0.63	0.29	0.55	/
GSM1900	0.59	0.18	0.49	/
UMTS Band II	0.78	0.31	0.70	/
UMTS Band IV	0.80	0.27	0.74	/
UMTS Band V	0.65	0.40	0.71	/
LTE Band 2	0.73	0.34	0.65	/
LTE Band 4	0.88	0.27	0.78	/
LTE Band 5	0.74	0.34	0.67	/
LTE Band 7	0.96	0.34	0.86	/
LTE Band 12	0.88	0.40	0.75	/
WiFi 2.4G	0.41	0.10	0.29	/
WiFi 5G	0.42	0.12	0.51	0.99
BT	/	/	/	/
The highest reported SAR for Head, Body Worn, Hotspot, Product Specific 10-g SAR and Simultaneous transmission exposure conditions are 0.96 W/kg, 0.40W/kg, 0.86 W/kg, 0.99 W/kg and 1.37 W/kg per KDB690783 D01.				

Table 1: Summary of test result

Note:

- 1)* For body worn operation, this device has been tested and meets 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 C95.1:1991
- 3) According to TCB workshop October,2014 RF Exposure Procedures Update(Overlapping LTE Bands):
 - a) SAR for LTE Band 17 (Frequency range:704-716 MHz) is covered by LTE Band 12 (Frequency range:699-716 MHz) due to similar frequency range,same maximum tune up limit and same channel bandwidth.

The device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits according to the FCC rule §2.1093, the 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:	SNE-LX3		
FCC ID :	QISSNE-LX3		
SN:	NWB0118721000535 NWB0118721000446 NWB0118721000509 NWB0118721000443 NWB0118721000485		
Device Type :	Portable device		
Device Phase:	Identical Prototype		
Exposure Category:	Uncontrolled environment / general population		
Hardware Version :	HL2SNEL21M		
Software Version :	SNE-LX3 8.2.0.118M(C900)		
Antenna Type :	Internal antenna		
Others Accessories	Headset		
Device Operating Configurations:			
Supporting Mode(s)	GSM850/1900, UMTS Band II/IV/V, LTE Band 2/4/5/7/12/17, WiFi 2.4G/5G;BT(Untested)		
Test Modulation	GSM(GMSK/8PSK),UMTS(QPSK), LTE(QPSK/16QAM/64QAM), 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
	LTE Band 12	699-716	729-746
	LTE Band 17	704-716	734-746
	BT	2402-2480	
	WiFi 2.4G	2412-2462	
WiFi 5G	5150-5250 5250-5350 5470-5725 5725-5850		
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)
	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)
	3, tested with power control all Max.(LTE Band 12)
	3, tested with power control all Max.(LTE Band 17)
	Test Channels (low-mid-high):
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)	
23017-23095-23173(LTE Band 12 BW=1.4MHz)	
23025-23095-23165(LTE Band 12 BW=3MHz)	
23035-23095-23155(LTE Band 12 BW=5MHz)	
23060-23095-23130(LTE Band 12 BW=10MHz)	
23755-23790-23825(LTE Band 17 BW=5MHz)	
23780-23790-23800(LTE Band 17 BW=10MHz)	
802.11b 20M:1-6-11 (WiFi 2.4G)	
802.11g/n 20M:1-2-6-10-11 (WiFi 2.4G)	
802.11n 40M:3-4-6-8-9 (WiFi 2.4G)	
802.11a/n/ac 20M: 36-40-44-48-52-56-60-64-100-104-108-112-116-120-124-128-132-136-140-144-149-153-157-161-165	
802.11 n/ac 40M: 38-46-54-62-102-110-118-126-134-142-151-159	
802.11ac 80M: 42-58-106-122-138-155(WiFi 5G)	
BT:0-39-78	

Table 3: Device information and operating configuration

1.3.1 General Description

SNE-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 B I and B II and B IV and BV and B VIII. The LTE frequency band is B2 and B4 and B5 and B7 and B12 and B17 and B28. But only GSM850 and GSM1900, UMTS frequency B2 and B4 and B5, LTE frequency B2 and B4 and B5 and B7 and B12 and B17 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 (it can also used as SIM card interface), earphone port (to provide voice service) and one SIM card interface. 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. SNE-LX3 may support single SIM or double SIM. Model SNE-LX3 is a smart phone with dual SIM or single SIM. The difference of them is only for SIM CARD. SNE-LX3 single SIM is deleted one SIM by software.

Battery information:

Name	Manufacturer/trademark	Description
Rechargeable Li-ion	HuaweiTechnologies Co., Ltd. (Manufacturer: SCUD)	Battery Model: HB386589ECW Rated capacity: 3650mAh Nominal Voltage: +3.82V Charging Voltage: +4.4V
	HuaweiTechnologies Co., Ltd. (Manufacturer: Desay)	

1.3.2 Dynamic antenna switching specification

The device has two 2G/3G/4G Tx antennas (Main Antenna and Second Antenna). It can transmit from either Main Antenna or Second Antenna, but they can not transmit simultaneously.

SAR test procedure for dynamic antenna switching is as below:

During the SAR test, the Main Antenna (Ant 1) and Second Antenna (Ant2) are set to the MAX transmit power level respectively and test the SAR respectively in all applicable RF exposure conditions. Some AT commands are supplied to fix the operation state and choose the antenna, and some test scripts are supplied to fix the modem state so that only one TX antenna and one modem is chosen and 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.

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
KDB941225 D01	3G SAR Procedures v03r01
KDB941225 D05	SAR for LTE Devices v02r05
KDB941225 D05A	LTE Rel.10 KDB Inquiry Sheet v01r02
KDB941225 D06	Hotspot SAR v02r01
KDB447498 D01	General RF Exposure Guidance v06
KDB648474 D04	Handsets SAR v01r03
KDB248227 D01	SAR Guidance for IEEE 802.11 Wi-Fi SAR v02r02
KDB865664 D01	SAR measurement 100 MHz to 6 GHz v01r04
KDB865664 D02	RF Exposure Reporting v01r02
KDB690783 D01	SAR Listings on Grants v01r03

1.5 Testing laboratory

Test Site	The Reliability Laboratory of Huawei Technologies Co., Ltd.
Test Location	Section G1, Huawei Base Bantian, Longgang District, Shenzhen 518129, P.R. China
Telephone	+86 755 28780808
Fax	+86 755 89652518
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

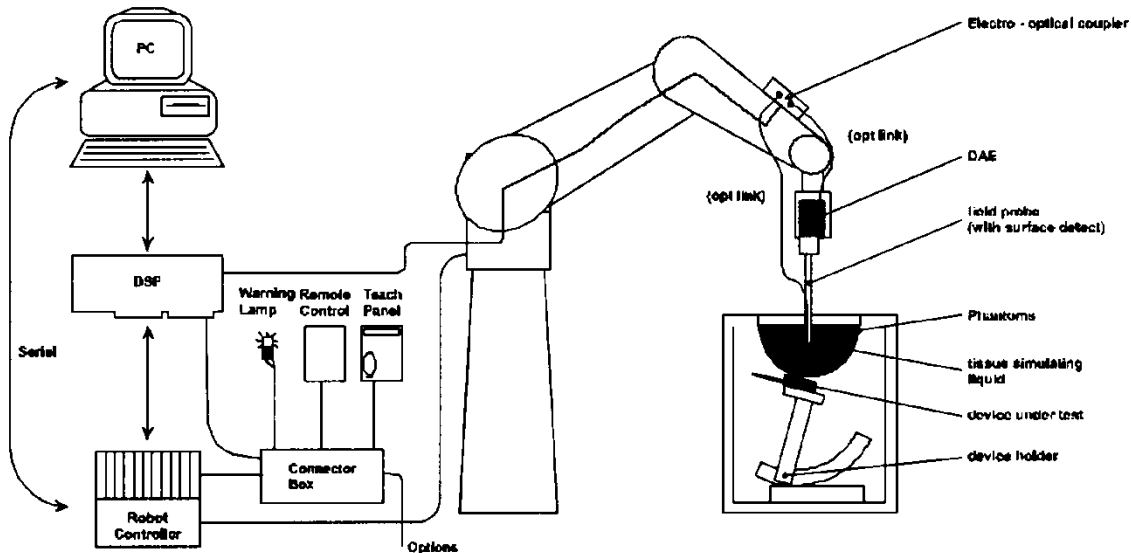
Start Date of test	2018-08-22
End Date of test	2018-09-05

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 DAS 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 DAS measurement server.
- The DAS 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.
- DAS 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-converte 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.

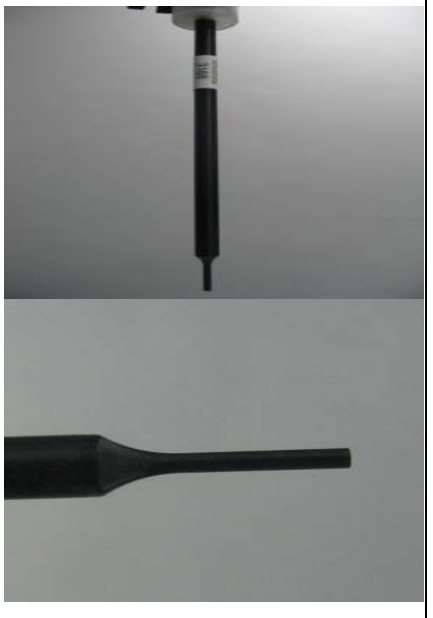
DAE4

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


2.4 Probe description

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

Isotropic E-Field Probe ES3DV3 for Dosimetric Measurements


Construction	Symmetrical design with triangular core Interleaved sensors Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)	
Calibration	ISO/IEC 17025 calibration service available.	
Frequency	10 MHz to 4 GHz; Linearity: ± 0.2 dB (30 MHz to 4 GHz)	
Directivity	± 0.2 dB in HSL (rotation around probe axis) ± 0.3 dB in tissue material (rotation normal to probe axis)	
Dynamic range	5 μ W/g to > 100 mW/g; Linearity: ± 0.2 dB	
Dimensions	Overall length: 337 mm (Tip: 20 mm) Tip diameter: 3.9 mm (Body: 12 mm) Distance from probe tip to dipole centers: 2.0 mm	
Application	General dosimetry up to 4 GHz Dosimetry in strong gradient fields Compliance tests of mobile phones	

Isotropic E-Field Probe EX3DV4 for Dosimetric Measurements

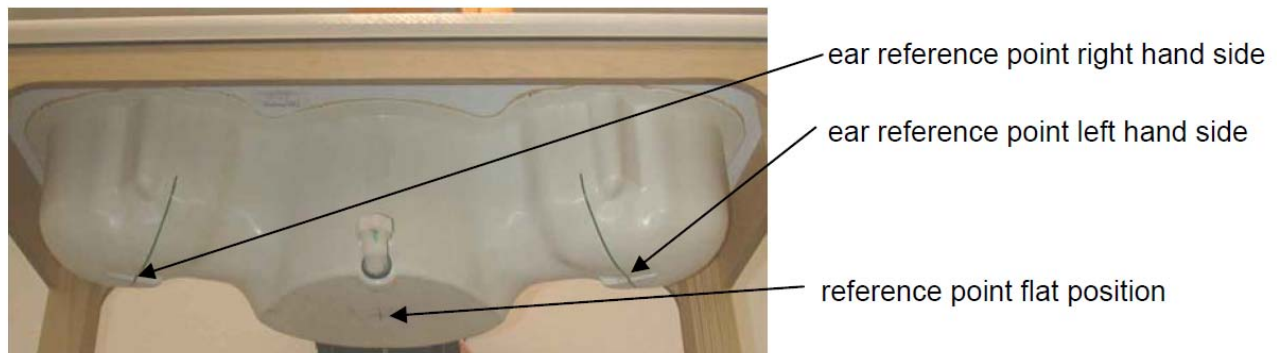
Construction	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)	
Calibration	ISO/IEC 17025 calibration service available.	
Frequency	10 MHz to >6 GHz; Linearity: ± 0.2 dB (30 MHz to 6 GHz)	
Directivity	± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)	
Dynamic range	10 μ W/g to > 100 mW/g; Linearity: ± 0.2 dB (noise: typically < 1 μ W/g)	
Dimensions	Overall length: 337 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Typical distance from probe tip to dipole centers: 1mm	
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

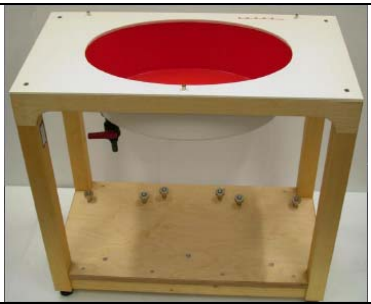
SAM Twin Phantom

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	
<p>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.</p>		

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	
<p>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.</p>		

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 .

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

<input type="checkbox"/>	Manufacturer	Device	Type	Serial number	Date of last calibration	Valid period
<input checked="" type="checkbox"/>	SPEAG	Dosimetric E-Field Probe	EX3DV4	7489	2018-01-09	One year
<input checked="" type="checkbox"/>	SPEAG	Dosimetric E-Field Probe	EX3DV4	3736	2018-04-27	One year
<input checked="" type="checkbox"/>	SPEAG	Dosimetric E-Field Probe	EX3DV4	3744	2018-07-25	One year
<input checked="" type="checkbox"/>	SPEAG	Dosimetric E-Field Probe	EX3DV4	7381	2017-10-24	One year
<input checked="" type="checkbox"/>	SPEAG	750 MHz Dipole	D750V3	1044	2017-09-21	Threeyears
<input checked="" type="checkbox"/>	SPEAG	835 MHz Dipole	D835V2	4d059	2016-04-20	Threeyears
<input checked="" type="checkbox"/>	SPEAG	835 MHz Dipole	D835V2	4d126	2018-07-24	Threeyears
<input checked="" type="checkbox"/>	SPEAG	1750 MHz Dipole	D1750V2	1123	2017-07-27	Three years
<input checked="" type="checkbox"/>	SPEAG	1900 MHz Dipole	D1900V2	5d143	2017-09-20	Three years
<input checked="" type="checkbox"/>	SPEAG	2450 MHz Dipole	D2450V2	860	2017-11-15	Three years
<input checked="" type="checkbox"/>	SPEAG	2600 MHz Dipole	D2600V2	1021	2018-07-26	Three years
<input checked="" type="checkbox"/>	SPEAG	5 GMHz Dipole	D5GHZV2	1155	2018-06-08	Three years
<input checked="" type="checkbox"/>	SPEAG	Data acquisition electronics	DAE4	852	2018-04-23	One year
<input checked="" type="checkbox"/>	SPEAG	Data acquisition electronics	DAE4	851	2018-07-18	One year
<input checked="" type="checkbox"/>	SPEAG	Data acquisition electronics	DAE4	1531	2018-01-03	One year
<input checked="" type="checkbox"/>	SPEAG	Software	DASY 5	N/A	NCR	NCR
<input checked="" type="checkbox"/>	SPEAG	Twin Phantom	SAM1	1475	NCR	NCR
<input checked="" type="checkbox"/>	SPEAG	Twin Phantom	SAM2	1474	NCR	NCR
<input checked="" type="checkbox"/>	SPEAG	Twin Phantom	SAM3	1597	NCR	NCR
<input checked="" type="checkbox"/>	SPEAG	Twin Phantom	SAM4	1620	NCR	NCR
<input checked="" type="checkbox"/>	SPEAG	Twin Phantom	SAM8	1940	NCR	NCR
<input checked="" type="checkbox"/>	R & S	Universal Radio Communication Tester	CMU 200	111379	2017-12-30	One year
<input checked="" type="checkbox"/>	R & S	Universal Radio Communication Tester	CMW 500	165424	2018-07-07	One year
<input checked="" type="checkbox"/>	R & S	Universal Radio Communication Tester	CMW 500	1158850	2018-05-08	One year
<input checked="" type="checkbox"/>	Anritsu	Radio Communication Analyser	MT8821C	6201830585	2018-05-30	One year
<input checked="" type="checkbox"/>	Anritsu	Singal Analyser	MS2690A	6261767335	2017-10-24	One year
<input checked="" type="checkbox"/>	Agilent	Network Analyser	E5071C	MY46107368	2017-10-27	One year
<input checked="" type="checkbox"/>	Agilent	Dielectric Probe Kit	85070E	2484	NCR	NCR
<input checked="" type="checkbox"/>	Keysight	Signal Generator	E8257D	MY56440071	2017-12-25	One year
<input checked="" type="checkbox"/>	MINI-CIRCUITS	Amplifier	ZHL-42W	QA1402001	NCR	NCR
<input checked="" type="checkbox"/>	MINI-CIRCUITS	Amplifier	ZVE-8G	188163	NCR	NCR
<input checked="" type="checkbox"/>	SHX	Dual Directional Coupler	DDTO-4-20	17121801	2018-01-02	One year
<input checked="" type="checkbox"/>	Agilent	Dual Directional Coupler	772D	MY52180173	2018-01-08	One year
<input checked="" type="checkbox"/>	Keysight	Power Meter	E4417A	MY57160005	2018-03-15	One year
<input checked="" type="checkbox"/>	Keysight	Power Meter	E9321A	MY57150002	2018-03-15	One year
<input checked="" type="checkbox"/>	R & S	Power Meter Sensor	NRP-Z11	106288	2018-07-17	One year
<input checked="" type="checkbox"/>	R & S	Power Meter Sensor	NRP-Z11	100740	2018-07-17	One year

Note:

- 1) Per KDB865664D01 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 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 KDB 865664D01:

Frequency	Maximun Area Scan resolution ($\Delta x_{area}, \Delta y_{area}$)	Maximun Zoom Scan spatial resolution ($\Delta x_{zoom}, \Delta y_{zoom}$)	Maximun Zoom Scan spatial resolution			Minimum zoom scan volume (x,y,z)
			Uniform Grid	Graded Grad		
			$\Delta z_{zoom}(n)$	$\Delta z_{zoom}(1)^*$	$\Delta z_{zoom}(n>1)^*$	
≤2GHz	≤15mm	≤8mm	≤5mm	≤4mm	≤1.5* $\Delta z_{zoom}(n-1)$	≥30mm
2-3GHz	≤12mm	≤5mm	≤5mm	≤4mm	≤1.5* $\Delta z_{zoom}(n-1)$	≥30mm
3-4GHz	≤12mm	≤5mm	≤4mm	≤3mm	≤1.5* $\Delta z_{zoom}(n-1)$	≥28mm
4-5GHz	≤10mm	≤4mm	≤3mm	≤2.5mm	≤1.5* $\Delta z_{zoom}(n-1)$	≥25mm
5-6GHz	≤10mm	≤4mm	≤2mm	≤2mm	≤1.5* $\Delta z_{zoom}(n-1)$	≥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 compansate 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 "DAE4". 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 ₁₀ , a ₁₁ , a ₁₂
	- Conversion factor	ConvF _i
	- Diode compression point	Dcpi
Device parameters:	- Frequency	f
	- Crest factor	cf
Media parameters:	- Conductivity	σ
	- Density	ρ

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

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

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

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

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

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

evaluated:

$$E_i = (V_i / Norm_i \cdot ConvF)^{1/2}$$

$$H_i = (V_i)^{1/2} \cdot (a_{i0} + a_{i1}f + a_{i2}f^2)/f$$

with V_i = compensated signal of channel i (i = x, y, z)
 $Norm_i$ = sensor sensitivity of channel i (i = x, y, z)
 [mV/(V/m)²] 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):

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

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

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

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.

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

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
		Permittivity	Conductivity [S/m]	Permittivity	Conductivity [S/m]	$\Delta\epsilon_r$	$\Delta\sigma$		
750MHz Head	705	42.14	0.89	41.95	0.858	-0.45%	-3.56%	21.8°C	2018/8/31
	710	42.11	0.89	41.92	0.860	-0.45%	-3.34%		
	750	41.90	0.89	41.81	0.875	-0.21%	-1.65%		
835MHz Head	825	41.60	0.90	42.31	0.902	1.71%	0.22%	22.5°C	2018/9/2
	835	41.50	0.90	42.25	0.906	1.81%	0.64%		
	850	41.50	0.92	42.19	0.912	1.66%	-0.86%		
835MHz Head	825	41.60	0.90	39.65	0.925	-4.69%	2.79%	22.5°C	2018/9/3
	835	41.50	0.90	39.61	0.927	-4.55%	2.97%		
	850	41.50	0.92	39.59	0.934	-4.60%	1.48%		
1750MHz Head	1710	40.10	1.35	38.51	1.310	-3.97%	-2.96%	21.6°C	2018/8/24
	1730	40.10	1.36	38.48	1.323	-4.04%	-2.72%		
	1750	40.10	1.37	38.43	1.335	-4.16%	-2.55%		
	1800	40.00	1.40	38.33	1.365	-4.18%	-2.50%		
1750MHz Head	1710	40.10	1.35	39.88	1.287	-0.55%	-4.67%	22.8°C	2018/8/29
	1730	40.10	1.36	39.88	1.298	-0.55%	-4.56%		
	1750	40.10	1.37	39.87	1.310	-0.57%	-4.38%		
	1800	40.00	1.40	39.87	1.344	-0.33%	-4.00%		
1900MHz Head	1850	40.00	1.40	39.09	1.338	-2.27%	-4.43%	22.4°C	2018/8/22
	1880	40.00	1.40	39.13	1.358	-2.17%	-3.00%		
	1900	40.00	1.40	39.15	1.370	-2.13%	-2.14%		
	1910	40.00	1.40	39.16	1.376	-2.10%	-1.71%		
1900MHz Head	1850	40.00	1.40	41.05	1.418	2.62%	1.29%	22.8°C	2018/8/28
	1880	40.00	1.40	41.00	1.436	2.50%	2.57%		
	1900	40.00	1.40	40.97	1.446	2.43%	3.29%		
	1910	40.00	1.40	40.95	1.451	2.38%	3.64%		
2450MHz Head	2410	39.30	1.76	38.73	1.827	-1.45%	3.81%	21.3°C	2018/9/2
	2435	39.20	1.79	38.72	1.841	-1.22%	2.85%		
	2450	39.20	1.80	38.72	1.850	-1.22%	2.78%		
	2460	39.20	1.81	38.72	1.856	-1.22%	2.54%		
2600MHz Head	2510	39.12	1.86	40.43	1.829	3.35%	-1.67%	21.5°C	2018/8/29
	2535	39.10	1.89	40.40	1.848	3.32%	-2.22%		
	2560	39.00	1.92	40.35	1.871	3.46%	-2.40%		
	2600	39.00	1.96	40.31	1.902	3.36%	-2.96%		
5G Hz Head	5250	35.90	4.71	35.91	4.531	0.03%	-3.80%	22.8°C	2018/9/3
	5600	35.50	5.07	34.54	4.874	-2.70%	-3.87%		
	5750	35.40	5.22	35.06	5.211	-0.96%	-0.17%		
750MHz Body	705	55.70	0.96	54.34	0.934	-2.44%	-2.72%	21.8°C	2018/8/31
	710	55.70	0.96	54.32	0.935	-2.48%	-2.56%		
	750	55.50	0.96	54.22	0.948	-2.31%	-1.26%		

835MHz Body	825	55.20	0.97	53.69	0.954	-2.74%	-1.61%	21.6°C	2018/8/30
	835	55.20	0.97	53.66	0.958	-2.79%	-1.22%		
	850	55.20	0.99	53.61	0.963	-2.88%	-2.78%		
835MHz Body	825	55.20	0.97	53.76	1.012	-2.61%	4.33%	22.5°C	2018/9/4
	835	55.20	0.97	53.72	1.016	-2.68%	4.74%		
	850	55.20	0.99	53.66	1.022	-2.79%	3.23%		
1750MHz Body	1710	53.50	1.46	54.24	1.459	1.38%	-0.07%	21.6°C	2018/8/24
	1730	53.50	1.48	54.20	1.474	1.31%	-0.41%		
	1750	53.40	1.49	54.16	1.489	1.42%	-0.07%		
	1800	53.30	1.52	54.04	1.526	1.39%	0.39%		
1750MHz Body	1710	53.50	1.46	53.99	1.491	0.92%	2.12%	21.8°C	2018/8/28
	1730	53.50	1.48	53.97	1.506	0.88%	1.76%		
	1750	53.40	1.49	53.95	1.520	1.03%	2.01%		
	1800	53.30	1.52	53.84	1.563	1.01%	2.83%		
1900MHz Body	1850	53.30	1.52	51.77	1.548	-2.87%	1.84%	21.9°C	2018/8/23
	1880	53.30	1.52	51.68	1.569	-3.04%	3.22%		
	1900	53.30	1.52	51.66	1.580	-3.08%	3.95%		
	1910	53.30	1.52	51.63	1.586	-3.13%	4.34%		
1900MHz Body	1850	53.30	1.52	51.24	1.541	-3.86%	1.38%	21.5°C	2018/8/26
	1880	53.30	1.52	51.18	1.560	-3.98%	2.63%		
	1900	53.30	1.52	51.14	1.573	-4.05%	3.49%		
	1910	53.30	1.52	51.13	1.578	-4.07%	3.82%		
2450MHz Body	2410	52.80	1.91	51.26	1.989	-2.92%	4.14%	21.3°C	2018/9/2
	2435	52.70	1.94	51.24	2.009	-2.77%	3.56%		
	2450	52.70	1.95	51.22	2.022	-2.81%	3.69%		
	2460	52.70	1.96	51.21	2.032	-2.83%	3.67%		
2600MHz Body	2510	52.62	2.03	51.13	2.122	-2.83%	4.53%	21.5°C	2018/8/30
	2535	52.59	2.07	51.10	2.146	-2.83%	3.67%		
	2560	52.57	2.09	51.07	2.171	-2.85%	3.88%		
	2600	52.50	2.16	51.01	2.210	-2.84%	2.31%		
5G Hz Body	5250	48.90	5.36	47.65	5.428	-2.56%	1.27%	21.5°C	2018/9/4
	5600	48.50	5.77	48.30	5.631	-0.41%	-2.41%		
	5750	48.30	5.94	47.75	6.074	-1.14%	2.26%		

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) KDB 865664 was ensured to be applied for probe calibration frequencies greater than or equal to 50MHz of the EUT frequencies.

3) The above measured tissue parameters were used in the DASY software to perform interpolation via the DASY software to determine actual dielectric parameters at the test frequencies. The SAR test plots may slightly differ from the table above since the DASY rounds to three significant digits.

4.2 System Check

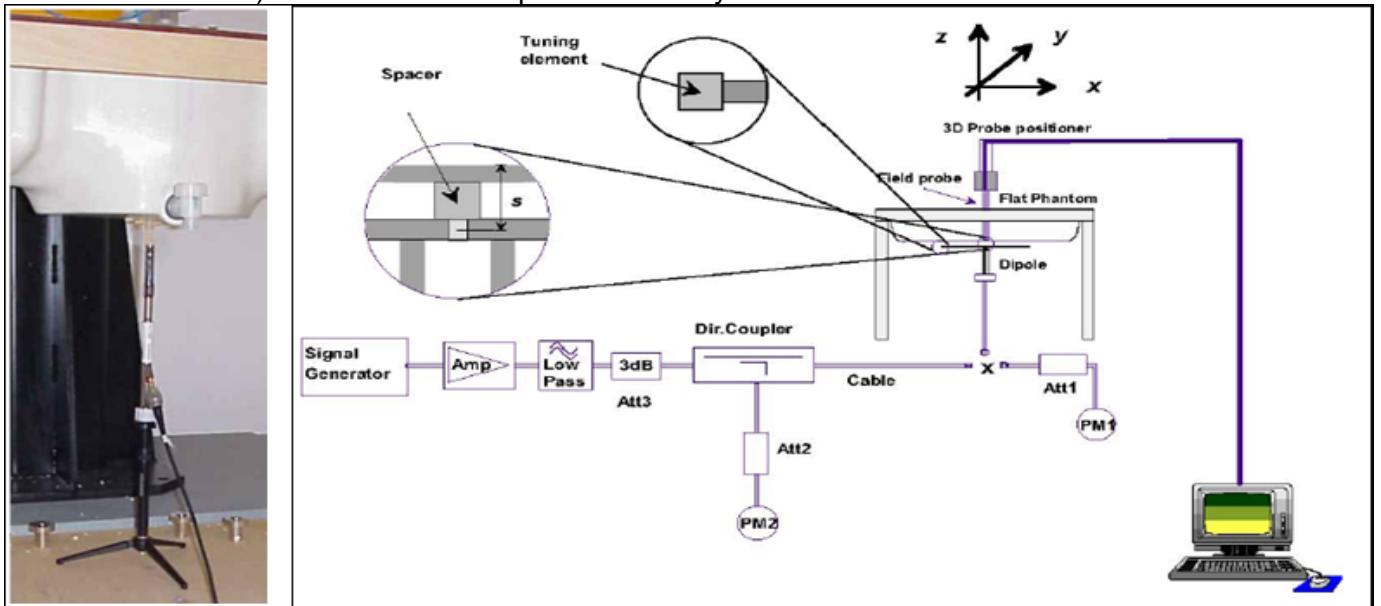
The system check is performed for verifying the accuracy of the complete measurement system and performance of the software. The system check is performed with tissue equivalent material according to IEEE 1528 (described above). The following table shows system check results for all frequency bands and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

System Check	Target SAR (Normalized to 1W)		Measured SAR (Normalized to 1W)		Deviation (Within +/-10%)		Test Date
	1-g (mW/g)	10-g (mW/g)	1-g (mW/g)	10-g (mW/g)	Δ1-g	Δ10-g	
750MHz Head	8.26	5.35	8.04	5.36	-2.66%	0.19%	2018/8/31
835MHz Head	9.30	6.05	8.68	5.76	-6.67%	-4.79%	2018/9/2
835MHz Head	9.44	6.06	8.76	5.80	-7.20%	-4.29%	2018/9/3
1750MHz Head	36.60	19.40	37.04	20.28	1.20%	4.54%	2018/8/24
1750MHz Head	36.60	19.40	36.16	19.80	-1.20%	2.06%	2018/8/29
1900MHz Head	39.10	20.50	40.80	21.12	4.35%	3.02%	2018/8/22
1900MHz Head	39.10	20.50	39.44	20.20	0.87%	-1.46%	2018/8/28
2450MHz Head	51.20	23.90	54.80	25.88	7.03%	8.28%	2018/9/2
2600MHz Head	56.60	25.50	57.20	25.64	1.06%	0.55%	2018/8/29
5250MHz Head	81.40	23.50	85.40	24.50	4.91%	4.26%	2018/9/3
5600MHz Head	85.20	24.30	79.70	22.60	-6.46%	-7.00%	2018/9/3
5750MHz Head	78.40	22.30	81.70	23.20	4.21%	4.04%	2018/9/3
750MHz Body	8.56	5.64	8.24	5.52	-3.74%	-2.13%	2018/8/31
835MHz Body	9.41	6.20	9.76	6.44	3.72%	3.87%	2018/8/30
835MHz Body	9.65	6.32	8.80	5.92	-8.81%	-6.33%	2018/9/4
1750MHz Body	36.40	19.40	35.60	19.16	-2.20%	-1.24%	2018/8/24
1750MHz Body	36.40	19.40	37.20	20.00	2.20%	3.09%	2018/8/28
1900MHz Body	39.40	20.80	42.00	21.44	6.60%	3.08%	2018/8/23
1900MHz Body	39.40	20.80	41.20	21.16	4.57%	1.73%	2018/8/26
2450MHz Body	50.10	23.50	48.00	22.56	-4.19%	-4.00%	2018/9/2
2600MHz Body	55.70	25.00	57.60	25.40	3.41%	1.60%	2018/8/30
5250MHz Head	74.70	20.90	73.70	20.70	-1.34%	-0.96%	2018/9/4
5600MHz Head	79.60	22.10	86.70	23.90	8.92%	8.14%	2018/9/4
5750MHz Head	73.30	20.40	78.10	21.50	6.55%	5.39%	2018/9/4

Table 6: System Check Results

4.3 System check Procedure

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



5 SAR measurement variability and uncertainty

5.1 SAR measurement variability

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

- 1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg; steps 2) through 4) do not apply.
- 2) When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.
- 3) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg (~ 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 Section 7.2.

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).

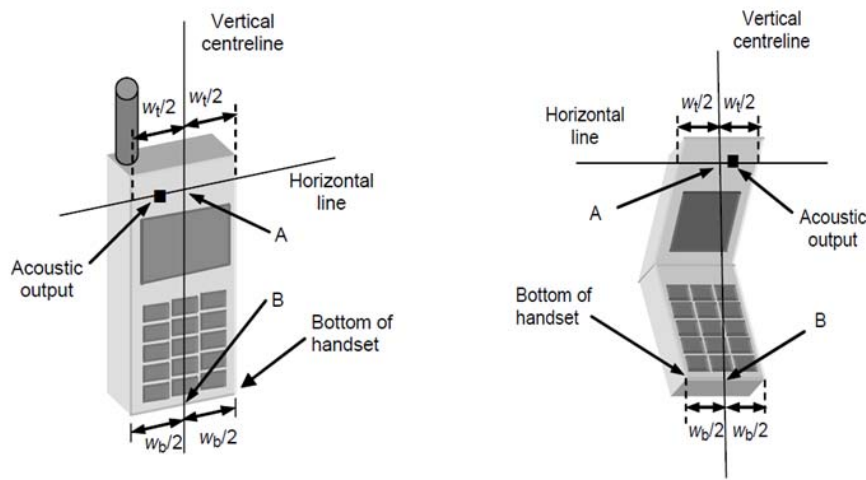


Figure 1 Hand Vertical Center & Horizontal Line Reference Points

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.

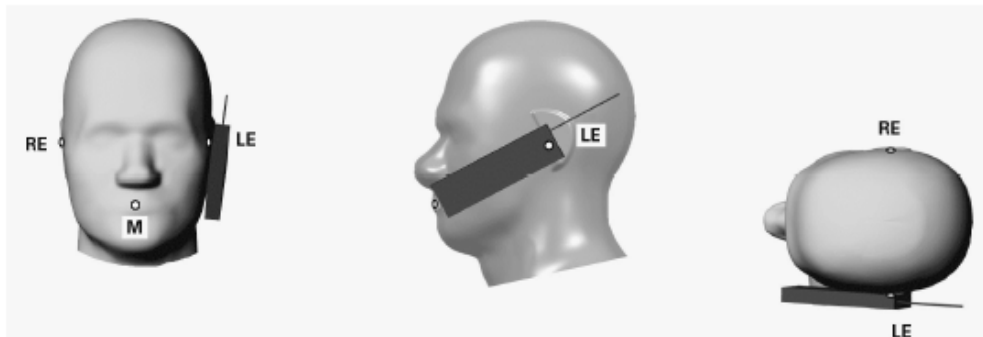


Figure 2 Front, Side and Top View of Cheek Position

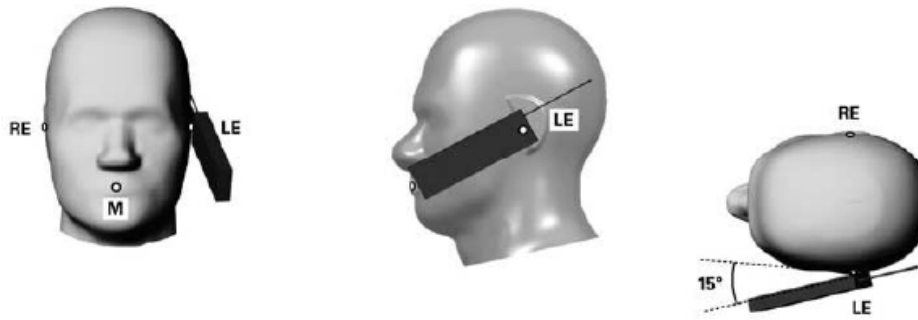


Figure 3 Front, Side and Top View of Tilt 15° Position

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 KDB 447498 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.

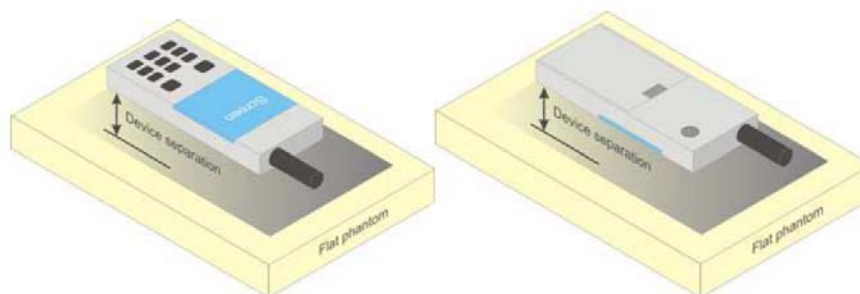


Figure 4 Test position for Body-Worn device

6.1.4 Hotspot Exposure Condition

Per FCC KDB 941225D06, 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 KDB 648474D04, 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. Using CMU200 the power level is set to “5” and “0” in SAR of GSM850 and GSM1900. 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 $\Delta ACK, \Delta NACK, \Delta CQI = 8$. The variation of the β_c / β_d ratio causes a power reduction at sub-tests 2 - 4.

Sub-test [Ⓢ]	β_c [Ⓢ]	β_d [Ⓢ]	β_d (SF) [Ⓢ]	β_c/β_d [Ⓢ]	β_{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: 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 $\beta_d = 15/15$ [Ⓢ]

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
----	----	---	-------	--------

Table 9:HSDPA UE category

4) HSUPA

SAR for body exposure configurations is measured according to the “Body SAR Measurements” procedures of 3G device. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is $\leq \frac{1}{4}$ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.

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

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

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

Note 1: Δ ACK, Δ NACK and Δ CQI = 8 $A_{hs} = \beta_{hs}/\beta_c = 30/15$ $\beta_{hs} = 30/15 * \beta_c$

Note 2: CM = 1 for $\beta_c/\beta_d = 12/15$, $\beta_{hs}/\beta_c = 24/15$. For all other combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference

Note 3 : For subtest 1 the β_c/β_d ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 10/15$ and $\beta_d = 15/15$

Note 4 : For subtest 5 the β_c/β_d ratio of 15/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 14/15$ and $\beta_d = 15/15$

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

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

Table 10:Subtests for UMTS Release 6 HSUPA

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

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

Table 11:HSUPA UE category

5) DC-HSDPA

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

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

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

Table E.5.0: Levels for HSDPA connection setup

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

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

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

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

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

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

Note:

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

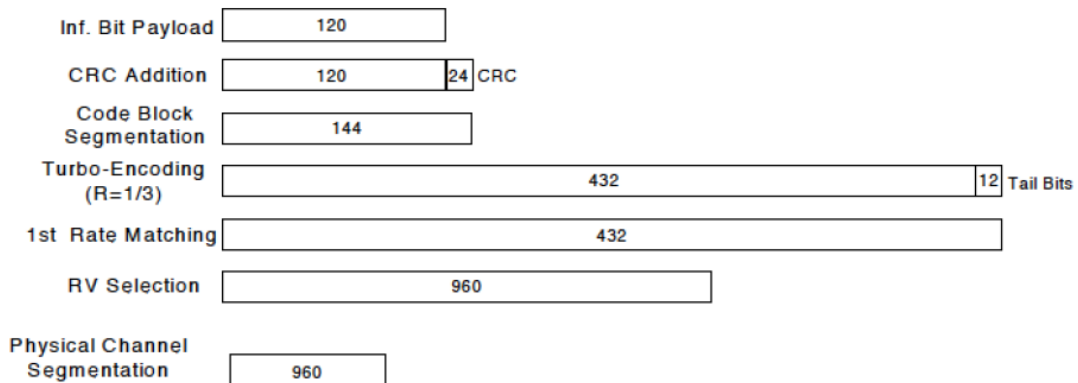


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

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

Sub-test ¹	β_c ²	β_d ²	β_d (SF) ²	β_c/β_d ²	β_{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 KDB 941225 D05 SAR for LTE Devices. The CMW500 WideBand 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.

Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3

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
64 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 2
64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 3

3) A-MPR

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

4) LTE procedures for SAR testing

A) Largest channel bandwidth standalone SAR test requirements

i) QPSK with 1 RB allocation

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

ii) QPSK with 50% RB allocation

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

iii) QPSK with 100% RB allocation

For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation in i) and ii) are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.

iv) Higher order modulations

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

B) Other channel bandwidth standalone SAR test requirements

For the other channel bandwidths used by the device in a frequency band, apply all the procedures required for the largest channel bandwidth in section A) to determine the channels and RB configurations that need SAR testing and only measure SAR when the highest maximum output power of a configuration requiring testing in the smaller channel bandwidth is $> \frac{1}{2}$ dB higher than the equivalent channel configurations in the largest channel bandwidth configuration or the reported SAR of a configuration for the largest channel bandwidth is > 1.45 W/kg.

6.6 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. The RF signal utilized in SAR measurement has 100% duty cycle and its crest factor is 1. The test procedures in KDB 248227D01v02 are applied. (Refer to KDB 248227D01 for more details)

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 KDB 248227D01). 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 $\leq 1.2\text{W/kg}$, 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 KDB 248227D01) 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 KDB 248227D01). 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.

C) SAR Test Requirements for OFDM configurations

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

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

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

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

6.6.6 U-NII-2C and U-NII-3 Bands

The frequency range covered by these bands is 380 MHz (5.47 – 5.85 GHz), which requires a minimum of at least two SAR probe calibration frequency points to support SAR measurements. when Terminal Doppler Weather Radar (TDWR) restriction applies, the channels at 5.60 – 5.65 GHz in U-NII-2C band must be disabled with acceptable mechanisms and documented in the equipment certification to avoid SAR requirements.¹⁰ TDWR restriction does not apply under the new rules; all channels that operate at 5.60 – 5.65 GHz must be included to apply the SAR test reduction and measurement procedures.

When the same transmitter and antenna(s) are used for U-NII-2C band and U-NII-3 band or 5.8 GHz band of §15.247, the bands may be aggregated to enable additional channels with 20, 40 or 80 MHz bandwidth to span across the band gap, as illustrated in Appendix B. The maximum output power for the additional band gap channels is limited to the lower of those certified for the bands. Unless band gap channels are permanently disabled, they must be considered for SAR testing. The frequency range covered by these bands is 380 MHz (5.47 – 5.85 GHz), which requires a minimum of at least two SAR probe calibration frequency points to support SAR measurements. To maintain SAR measurement accuracy and to facilitate test reduction, the channels in U-NII-2C band above 5.65 GHz may be grouped with the 5.8 GHz channels in U-NII-3 or §15.247 band to enable two SAR probe calibration frequency points to cover the bands, including the band gap channels.¹¹ When band gap channels are supported and the bands are not aggregated for SAR testing, band gap channels must be considered independently in each band according to the normally required OFDM SAR measurement and probe calibration frequency points requirements.

6.6.7 OFDM Transmission Mode SAR Test Channel Selection Requirements

For 2.4 GHz and 5 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 802.11a, 802.11n and 802.11ac, or 802.11g and 802.11n, with the same channel bandwidth, modulation, and data rate, etc), the lower order 802.11 mode (i.e., 802.11a is chosen over 802.11n then 802.11ac, or 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.

6.6.8 LTE CA specification

6.6.9 LTE CA combinations specification

The device supports downlink LTE Carrier Aggregation (CA) for Intra-band and inter-band.

a) The LTE release and version numbers of the 3GPP documents used to implement the specific device(s): Release 12, 3GPP TS 36.211 V12.3.0 (2015-09)

b) The associated 3GPP release and version numbers required for power measurements and RF test setup conditions:

Release 12, 3GPP TS 36.521-1 V12.3.0 (2015-09)

Release 12, 3GPP TS 36.101 V12.5.0 (2015-09)

1) The device supports Intra-band and inter-band downlink LTE CA (See the table below)

2) The device does not support full CA features on 3GPP Release 13 nor Release 14. All other uplink communications are identical to the release 8 specifications. Other LTE Rel.10 or higher features are not supported, including Enhanced SC-FDMA, Uplink MIMO or other antenna diversity configurations, Wi-Fi offloading using LTE-U, LAA or LWA related protocols etc.

Table : Intra-band contiguous CA operating bands

E-UTRA CA configuration / Bandwidth combination set							
E-UTRA CA configuration	Uplink CA configurations	Component carriers in order of increasing carrier frequency				Maximum aggregated bandwidth [MHz]	Bandwidth combination set
		Channel bandwidths for carrier [MHz]	Channel bandwidths for carrier [MHz]	Channel bandwidths for carrier [MHz]	Channel bandwidths for carrier [MHz]		
CA_7C	NA	15	15			40	0
		20	20				
		10	20			40	1
		15	15, 20				
		20	10, 15, 20			40	2
		15	10, 15				
20	15, 20						

Table: Test frequencies for CA_7C

Range	CC-Combo / NRB_agg [RB]	CC1 Note1					CC2 Note1				
		BW [RB]	N _{UL}	f _{UL} [MHz]	N _{DL}	f _{DL} [MHz]	BW [RB]	N _{UL}	f _{UL} [MHz]	N _{DL}	f _{DL} [MHz]
Low	50+100	50	20805	2505.5	2805	2625.5	100	20949	2519.9	2949	2639.9
		100	20850	2510	2850	2630	50	20994	2524.4	2994	2644.4
	75+75	75	20825	2507.5	2825	2627.5	75	20975	2522.5	2975	2642.5
	75+100	75	20828	2507.8	2828	2627.8	100	20999	2524.9	2999	2644.9
		100	20850	2510	2850	2630	75	21021	2527.1	3021	2647.1
100+100	100	20850	2510	2850	2630	100	21048	2529.8	3048	2649.8	
Mid	50+100	50	21006	2525.6	3006	2645.6	100	21150	2540	3150	2660
		100	21051	2530.1	3051	2650.1	50	21195	2544.5	3195	2664.5
	75+75	75	21025	2527.5	3025	2647.5	75	21175	2542.5	3175	2662.5
	75+100	75	21003	2525.3	3003	2645.3	100	21174	2542.4	3174	2662.4
		100	21026	2527.6	3026	2647.6	75	21197	2544.7	3197	2664.7
100+100	100	21001	2525.1	3001	2645.1	100	21199	2544.9	3199	2664.9	
High	50+100	50	21206	2545.6	3206	2665.6	100	21350	2560	3350	2680
		100	21251	2550.1	3251	2670.1	50	21395	2564.5	3395	2684.5
	75+75	75	21225	2547.5	3225	2667.5	75	21375	2562.5	3375	2682.5
	75+100	75	21179	2542.9	3179	2662.9	100	21350	2560	3350	2680
		100	21201	2545.1	3201	2665.1	75	21372	2562.2	3372	2682.2
100+100	100	21152	2540.2	3152	2660.2	100	21350	2560	3350	2680	

Note 1: Carriers in increasing frequency order.

Note:

- 1) The channel spacing and aggregated channel bandwidth for CA are identical to the associated specification in 3GPP TS 36.101 V13.2.0.
- 2) The reference test frequencies for CA refers to 3GPP TS 36.508 V13.1.0

Inter-band CA operating bands (two bands)

E-UTRA CA configuration / Bandwidth combination set									
E-UTRA CA Configuration	E-UTRA Bands	1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz	Maximum aggregated bandwidth [MHz]	Bandwidth combination set
CA_2A-5A	2			Yes	Yes	Yes	Yes	30	0
	5			Yes	Yes				
CA_4A-7A	4			Yes	Yes			30	0
	7			Yes	Yes	Yes	Yes		
CA_5A-7A	5	Yes	Yes	Yes	Yes			30	0
	7				Yes	Yes	Yes		
CA_2A-7A	2			Yes	Yes			30	0
	7			Yes	Yes	Yes	Yes		
CA_2A-28A	2			Yes	Yes	Yes	Yes	30	0
	28			Yes	Yes	Yes			
CA_7A-28A	7			Yes	Yes	Yes	Yes	35	0
	28			Yes	Yes	Yes			
CA_4A-28A ¹	4			Yes	Yes	Yes	Yes	30	0
	28			Yes	Yes	Yes			

Note1: In the Inter-band CA operating bands CA_4-28 case, band 28 can't support for PCC.

6.6.10 Test procedure for Intra-band downlink CA

According to 201804 FCC RF Exposure TCB workshop slides, the guidance does not consider Intra-band DL CA and inter-band DL CA separately.

In applying the power measurement procedures of KDB 941225 D05A for DL CA SAR test exclusion, only the CA configuration with the largest aggregated DL CA bandwidth in each frequency band group need consideration (independently for contiguous and non-contiguous CA). When the same frequency band is used for both contiguous and non-contiguous CA, power may be measured using the configuration with the largest aggregated bandwidth “and” maximum output power among the contiguous and non-contiguous CA configurations, otherwise, these are considered separately. In applying the existing power measurement procedures of KDB 941225 D05A for DL CA SAR test exclusion, only the subset with the largest number of combinations of frequency bands and CCs in each row need consideration. the configurations that require power measurements are in the table as below:

DL Intra-band	DL Inter-band
CA_7C	CA_2A-5A
	CA_4A-7A
	CA_5A-7A
	CA_2A-7A

Refer to section 7.1.11 of this report for detailed DL CA conducted power measurement results.

6.7 Power Reduction Specification

6.7.1 Power Reduction Specification of 2G/3G/4G Second Antenna

The following tables summarize the key power reduction information of 2G/3G/4G second antenna triggered by specific use conditions. The detailed full power and reduced conducted power measurement results are provided in Section 7 of this report:

Band	Second Antenna Power Reduction Level Amount (dB)			
	Second Antenna only		Second Antenna+WiFi Antenna simultaneous transmission/Hotspot activated	
	Receiver off (Full Power)	Receiver on	Receiver off	Receiver on
GSM850	0	2	0	2
GSM1900	0	1.5	0	1.5
UMTS Band II	0	4.5	0	4.5
UMTS Band IV	0	4.5	0.5	5
UMTS Band V	0	4.5	0	4.5
LTE Band 2	0	4.5	0	4.5
LTE Band 4	0	3.5	0.5	4
LTE Band 5	0	4	0	4
LTE Band 7	0	4	0	4
LTE Band 12	0	3	0	3
LTE Band 17	0	3	0	3

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

6.7.2 Power Reduction Specification of 2G/3G/4G Main Antenna

The following tables summarize the key power reduction information of 2G/3G/4G main antenna. The detailed full power and reduced conducted power measurement results are provided in section 7 of this report:

Band	2G/3G/4G Main Antenna Power Reduction Level Amount (dB)	
	Full power	Second Antenna+WiFi Antenna simultaneous transmission/Hotspot ON
UMTS Band II	0	0.5
UMTS Band IV	0	0.5
LTE Band 2	0	1

6.7.3 Power Reduction Specification of WiFi Antenna

The following tables summarize the key power reduction information of WiFi antennas. The detailed full power and reduced conducted power measurement results are provided in section 7 of this report:

Band	Power Reduction Level Amount (dB)	
	WiFi Antenna	
	Receiver off(Full Power)	Receiver on (VoWiFi)
WiFi 2.4G 802.11b	0	5
WiFi 2.4G 802.11g	0	4.5
WiFi 2.4G 802.11n 20M	0	2.5
WiFi 2.4G 802.11n 40M	0	2.5
WiFi 5G 802.11a	0	5
WiFi 5G 802.11n 20M	0	4.5
WiFi 5G 802.11n 40M	0	3.5
WiFi 5G 802.11ac 20M	0	4.5
WiFi 5G 802.11ac 40M	0	3.5
WiFi 5G 802.11ac 80M	0	3.5

7 SAR Measurement Results

7.1 Conducted power measurements

For the measurements a Rohde & Schwarz Radio Communication Tester CMU 200&CMW500 was used.

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

Note: CMU200 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.

7.1.1 Conducted power measurements of GSM850 (Second Antenna)

GSM850		Tune-up	Burst-Averaged output Power (dBm)			Division Factors	Tune-up	Frame-Averaged output Power (dBm)		
		Max.	128CH	190CH	251CH		Max.	128CH	190CH	251CH
GSM (CS)		32.30	31.33	31.35	31.31	-9.19	23.11	22.14	22.16	22.12
GPRS/EDGE (GMSK)	1 Tx Slot	32.30	31.32	31.35	31.30	-9.19	23.11	22.13	22.16	22.11
	2 Tx Slots	29.30	28.31	28.30	28.23	-6.13	23.17	22.18	22.17	22.10
	3 Tx Slots	27.50	26.55	26.53	26.58	-4.42	23.08	22.13	22.11	22.16
	4 Tx Slots	26.30	25.36	25.34	25.38	-3.18	23.12	22.18	22.16	22.20
EDGE (8PSK)	1 Tx Slot	29.00	26.15	26.01	25.99	-9.19	19.81	16.96	16.82	16.80
	2 Tx Slots	26.00	22.90	22.84	22.77	-6.13	19.87	16.77	16.71	16.64
	3 Tx Slots	24.20	20.96	20.89	20.82	-4.42	19.78	16.54	16.47	16.40
	4 Tx Slots	23.00	19.63	19.54	19.45	-3.18	19.82	16.45	16.36	16.27

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

GSM850		Tune-up	Burst-Averaged output Power (dBm)			Division Factors	Tune-up	Frame-Averaged output Power (dBm)		
		Max.	128CH	190CH	251CH		Max.	128CH	190CH	251CH
GSM (CS)		30.30	29.41	29.39	29.32	-9.19	21.11	20.22	20.20	20.13
GPRS/EDGE (GMSK)	1 Tx Slot	30.30	29.35	29.39	29.32	-9.19	21.11	20.16	20.20	20.13
	2 Tx Slots	27.30	26.44	26.42	26.34	-6.13	21.17	20.31	20.29	20.21
	3 Tx Slots	25.50	24.60	24.58	24.51	-4.42	21.08	20.18	20.16	20.09
	4 Tx Slots	24.30	23.44	23.42	23.35	-3.18	21.12	20.26	20.24	20.17
EDGE (8PSK)	1 Tx Slot	27.00	22.96	22.94	22.98	-9.19	17.81	13.77	13.75	13.79
	2 Tx Slots	24.00	20.02	19.96	19.86	-6.13	17.87	13.89	13.83	13.73
	3 Tx Slots	22.20	17.80	17.73	17.63	-4.42	17.78	13.38	13.31	13.21
	4 Tx Slots	21.00	16.44	16.43	16.33	-3.18	17.82	13.26	13.25	13.15

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

Note:

- 1) 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.
- 2) 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.

7.1.2 Conducted power measurements of GSM850 (Main Antenna)

GSM850	Tune-up Max.	Burst-Averaged output Power (dBm)			Division Factors	Tune-up Max.	Frame-Averaged output Power (dBm)			
		128CH	190CH	251CH			128CH	190CH	251CH	
GSM (CS)	33.80	32.94	32.95	32.89	-9.19	24.61	23.75	23.76	23.70	
GPRS /EDGE (GMSK)	1 Tx Slot	33.80	32.94	32.94	32.88	-9.19	24.61	23.75	23.75	23.69
	2 Tx Slots	30.80	29.92	29.89	29.80	-6.13	24.67	23.79	23.76	23.67
	3 Tx Slots	29.00	28.15	28.11	28.03	-4.42	24.58	23.73	23.69	23.61
	4 Tx Slots	27.80	26.96	26.92	26.84	-3.18	24.62	23.78	23.74	23.66
EDGE (8PSK)	1 Tx Slot	29.00	26.23	26.06	26.02	-9.19	19.81	17.04	16.87	16.83
	2 Tx Slots	26.00	22.96	22.88	22.80	-6.13	19.87	16.83	16.75	16.67
	3 Tx Slots	24.20	21.10	20.99	20.89	-4.42	19.78	16.68	16.57	16.47
	4 Tx Slots	23.00	19.75	19.62	19.58	-3.18	19.82	16.57	16.44	16.40

Table 15: Conducted power measurement results of GSM850

Note:

- 1) 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.
- 2) 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.

7.1.3 Conducted power measurements of GSM1900 (Second Antenna)

GSM1900		Tune-up	Burst-Averaged output Power (dBm)			Division Factors	Tune-up	Frame-Averaged output Power (dBm)		
		Max.	512CH	661CH	810CH		Max.	512CH	661CH	810CH
GSM (CS)		31.00	29.95	29.81	29.74	-9.19	21.81	20.76	20.62	20.55
GPRS/ EDGE (GMSK)	1 Tx Slot	31.00	29.94	29.79	29.71	-9.19	21.81	20.75	20.60	20.52
	2 Tx Slots	28.00	26.97	26.75	26.59	-6.13	21.87	20.84	20.62	20.46
	3 Tx Slots	26.20	25.22	24.98	24.77	-4.42	21.78	20.80	20.56	20.35
	4 Tx Slots	25.00	24.00	23.84	23.66	-3.18	21.82	20.82	20.66	20.48
EDGE (8PSK)	1 Tx Slot	26.50	25.85	25.63	25.45	-9.19	17.31	16.66	16.44	16.26
	2 Tx Slots	25.00	22.62	22.31	22.01	-6.13	18.87	16.49	16.18	15.88
	3 Tx Slots	23.20	20.59	20.30	19.96	-4.42	18.78	16.17	15.88	15.54
	4 Tx Slots	21.00	19.13	18.96	18.59	-3.18	17.82	15.95	15.78	15.41

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

GSM1900		Tune-up	Burst-Averaged output Power (dBm)			Division Factors	Tune-up	Frame-Averaged output Power (dBm)		
		Max.	512CH	661CH	810CH		Max.	512CH	661CH	810CH
GSM (CS)		29.50	28.39	28.25	28.13	-9.19	20.31	19.20	19.06	18.94
GPRS/ EDGE (GMSK)	1 Tx Slot	29.50	28.42	28.24	28.09	-9.19	20.31	19.23	19.05	18.90
	2 Tx Slots	26.50	25.59	25.34	25.16	-6.13	20.37	19.46	19.21	19.03
	3 Tx Slots	24.70	23.81	23.55	23.33	-4.42	20.28	19.39	19.13	18.91
	4 Tx Slots	23.50	22.61	22.35	22.16	-3.18	20.32	19.43	19.17	18.98
EDGE (8PSK)	1 Tx Slot	26.00	24.38	24.14	23.75	-9.19	16.81	15.19	14.95	14.56
	2 Tx Slots	23.00	21.16	20.86	20.62	-6.13	16.87	15.03	14.73	14.49
	3 Tx Slots	21.20	19.26	19.04	18.71	-4.42	16.78	14.84	14.62	14.29
	4 Tx Slots	20.00	17.94	17.73	17.40	-3.18	16.82	14.76	14.55	14.22

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

Note:

- 1) 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.
- 2) 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.

7.1.4 Conducted power measurements of GSM1900 (Main Antenna)

GSM1900		Tune-up	Burst-Averaged output Power (dBm)			Division Factors	Tune-up	Frame-Averaged output Power (dBm)		
		Max.	512CH	661CH	810CH		Max.	512CH	661CH	810CH
GSM (CS)		31.00	30.03	29.91	29.83	-9.19	21.81	20.84	20.72	20.64
GPRS/ EDGE (GMSK)	1 Tx Slot	31.00	30.04	29.89	29.81	-9.19	21.81	20.85	20.70	20.62
	2 Tx Slots	28.00	27.05	26.83	26.64	-6.13	21.87	20.92	20.70	20.51
	3 Tx Slots	26.20	25.27	25.04	24.80	-4.42	21.78	20.85	20.62	20.38
	4 Tx Slots	25.00	24.04	23.81	23.62	-3.18	21.82	20.86	20.63	20.44
EDGE (8PSK)	1 Tx Slot	27.50	25.94	25.75	25.52	-9.19	18.31	16.75	16.56	16.33
	2 Tx Slots	26.00	22.72	22.43	22.09	-6.13	19.87	16.59	16.30	15.96
	3 Tx Slots	24.20	20.65	20.35	20.10	-4.42	19.78	16.23	15.93	15.68
	4 Tx Slots	22.00	19.32	19.04	18.69	-3.18	18.82	16.14	15.86	15.51

Table 18: Conducted power measurement results of GSM1900

Note:

- 1) 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.
- 2) 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.

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	23.80	22.59	22.64	22.61
	12.2kbps AMR	23.80	22.66	22.71	22.56
HSDPA	Subtest 1	23.30	22.12	22.16	22.12
	Subtest 2	22.30	21.36	21.38	21.29
	Subtest 3	22.10	20.84	20.88	20.84
	Subtest 4	22.10	20.85	20.89	20.73
HSUPA	Subtest 1	22.30	20.60	21.10	21.00
	Subtest 2	20.30	17.82	18.55	18.52
	Subtest 3	21.30	19.49	19.26	19.21
	Subtest 4	20.30	18.56	18.72	17.84
	Subtest 5	23.80	22.63	22.69	22.65
DC-HSDPA	Subtest 1	23.30	22.05	22.10	22.06
	Subtest 2	22.30	21.29	21.30	21.26
	Subtest 3	22.10	20.78	20.84	20.77
	Subtest 4	22.10	20.80	20.82	20.67

Table 19: 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	19.30	18.18	18.13	18.20
	12.2kbps AMR	19.30	18.14	18.18	18.21
HSDPA	Subtest 1	18.80	17.56	17.62	17.67
	Subtest 2	17.80	16.83	16.88	16.93
	Subtest 3	17.60	16.35	16.35	16.39
	Subtest 4	17.60	16.33	16.37	16.38
HSUPA	Subtest 1	17.80	16.07	15.91	16.45
	Subtest 2	15.80	13.16	14.02	12.08
	Subtest 3	16.80	13.98	14.75	13.81
	Subtest 4	15.80	12.82	14.16	13.31
	Subtest 5	19.30	18.14	18.15	18.16
DC-HSDPA	Subtest 1	18.80	17.59	17.63	17.62
	Subtest 2	17.80	16.87	16.88	16.84
	Subtest 3	17.60	16.33	16.36	16.31
	Subtest 4	17.60	16.32	16.33	16.32

Table 20: Conducted power measurement results of UMTS Band II(Receiver ON)

Note:

- 1) The bolded 12.2kbps RMC mode was selected for SAR testing (the primary mode).
- 2) Per KDB941225 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.

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	23.80	22.69	22.73	22.67
	12.2kbps AMR	23.80	22.75	22.78	22.52
HSDPA	Subtest 1	23.30	22.21	22.22	22.09
	Subtest 2	22.30	21.48	21.48	21.31
	Subtest 3	22.10	20.98	20.97	20.81
	Subtest 4	22.10	20.95	20.96	20.79
HSUPA	Subtest 1	22.30	20.72	21.22	21.04
	Subtest 2	20.30	17.88	18.62	18.59
	Subtest 3	21.30	19.58	19.34	19.38
	Subtest 4	20.30	18.65	17.98	17.94
	Subtest 5	23.80	22.70	22.74	22.69
DC-HSDPA	Subtest 1	23.30	22.18	22.23	22.19
	Subtest 2	22.30	21.44	21.44	21.39
	Subtest 3	22.10	20.43	20.44	20.37
	Subtest 4	22.10	20.44	20.48	20.34

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	23.30	22.19	22.20	22.28
	12.2kbps AMR	23.30	22.24	22.29	22.20
HSDPA	Subtest 1	22.80	21.71	21.77	21.72
	Subtest 2	21.80	20.95	21.03	20.94
	Subtest 3	21.60	20.46	20.48	20.43
	Subtest 4	21.60	20.45	20.51	20.44
HSUPA	Subtest 1	21.80	20.73	20.60	20.66
	Subtest 2	19.80	17.96	18.05	18.10
	Subtest 3	20.80	18.65	18.72	18.81
	Subtest 4	19.80	17.79	18.39	18.35
	Subtest 5	23.30	22.17	22.19	22.25
DC-HSDPA	Subtest 1	22.80	21.73	21.80	21.74
	Subtest 2	21.80	20.97	21.03	20.96
	Subtest 3	21.60	20.46	20.51	20.43
	Subtest 4	21.60	20.44	20.50	20.43

Table 22: Conducted power measurement results of UMTS Band II(Main Antenna+WiFi Antenna simultaneous transmission/ Hotspot activated)

Note:

- 1) The bolded 12.2kbps RMC mode was selected for SAR testing (the primary mode).
- 2) Per KDB941225 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.

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	24.00	22.84	22.84	22.71
	12.2kbps AMR	24.00	22.90	22.87	22.74
HSDPA	Subtest 1	23.50	22.27	22.31	22.17
	Subtest 2	22.50	21.49	21.49	21.40
	Subtest 3	22.30	21.01	21.02	20.86
	Subtest 4	22.30	21.03	21.02	20.89
HSUPA	Subtest 1	22.50	20.84	21.13	20.99
	Subtest 2	20.50	18.11	18.47	18.61
	Subtest 3	21.50	19.75	19.10	19.30
	Subtest 4	20.50	18.77	18.85	18.63
	Subtest 5	24.00	22.83	22.81	22.70
DC-HSDPA	Subtest 1	23.50	22.21	22.27	22.11
	Subtest 2	22.50	21.44	21.44	21.36
	Subtest 3	22.30	20.95	20.99	20.83
	Subtest 4	22.30	20.97	20.94	20.84

Table 23: 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	19.50	18.32	18.40	18.09
	12.2kbps AMR	19.50	18.38	18.33	18.24
HSDPA	Subtest 1	19.00	17.90	17.89	17.70
	Subtest 2	18.00	17.11	17.08	16.86
	Subtest 3	17.80	16.61	16.61	16.47
	Subtest 4	17.80	16.60	16.59	16.46
HSUPA	Subtest 1	18.00	16.40	16.85	16.72
	Subtest 2	16.00	13.46	13.84	13.78
	Subtest 3	17.00	14.94	14.62	15.17
	Subtest 4	16.00	14.12	13.99	14.58
	Subtest 5	19.50	18.41	18.39	18.19
DC-HSDPA	Subtest 1	19.00	17.85	17.89	17.76
	Subtest 2	18.00	17.08	17.05	16.87
	Subtest 3	17.80	16.59	16.58	16.45
	Subtest 4	17.80	16.61	16.59	16.48

Table 24: 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	23.50	22.31	22.26	22.13
	12.2kbps AMR	23.50	22.34	22.36	22.20
HSDPA	Subtest 1	23.00	21.88	21.84	21.73
	Subtest 2	22.00	21.04	21.04	20.93
	Subtest 3	21.80	20.54	20.56	20.44
	Subtest 4	21.80	20.51	20.57	20.44
HSUPA	Subtest 1	22.00	20.84	20.74	20.44
	Subtest 2	20.00	18.08	17.87	18.09
	Subtest 3	21.00	18.82	18.72	18.71
	Subtest 4	20.00	17.85	18.36	17.51
	Subtest 5	23.50	22.33	22.37	22.16
DC-HSDPA	Subtest 1	23.00	21.88	21.78	21.68
	Subtest 2	22.00	21.06	20.99	20.86
	Subtest 3	21.80	20.57	20.46	20.33
	Subtest 4	21.80	20.58	20.57	20.34

Table 25: Conducted power measurement results of UMTS Band IV (Second Antenna+WiFi Antenna simultaneous transmission/ Hotspot activated,Receiver OFF)

UMTS Band IV		Tune-up	Average Power (dBm)		
		Max.	1312CH	1413CH	1513CH
WCDMA	12.2kbps RMC	19.00	17.81	17.76	17.64
	12.2kbps AMR	19.00	17.93	17.89	17.78
HSDPA	Subtest 1	18.50	17.36	17.36	17.22
	Subtest 2	17.50	16.59	16.56	16.45
	Subtest 3	17.30	16.06	16.06	15.94
	Subtest 4	17.30	16.08	16.04	15.95
HSUPA	Subtest 1	17.50	16.34	16.32	16.20
	Subtest 2	15.50	13.48	13.46	14.10
	Subtest 3	16.50	14.24	14.20	14.85
	Subtest 4	15.50	13.31	13.62	14.20
	Subtest 5	19.00	17.89	17.87	17.76
DC-HSDPA	Subtest 1	18.50	17.38	17.38	17.24
	Subtest 2	17.50	16.55	16.56	16.47
	Subtest 3	17.30	16.08	16.06	15.95
	Subtest 4	17.30	16.10	16.05	15.95

Table 26: Conducted power measurement results of UMTS Band IV (Second Antenna+WiFi Antenna simultaneous transmission/ Hotspot activated,Receiver ON)

Note:

- 1) The bolded 12.2kbps RMC mode was selected for SAR testing (the primary mode).
- 2) Per KDB941225 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.

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	24.00	22.92	22.89	22.79
	12.2kbps AMR	24.00	22.87	22.92	22.81
HSDPA	Subtest 1	23.50	22.30	22.38	22.28
	Subtest 2	22.50	21.54	21.60	21.47
	Subtest 3	22.30	21.04	21.09	20.99
	Subtest 4	22.30	21.07	21.13	21.00
HSUPA	Subtest 1	22.50	20.81	21.26	21.13
	Subtest 2	20.50	18.04	18.62	18.60
	Subtest 3	21.50	19.77	19.26	19.38
	Subtest 4	20.50	18.79	18.91	18.89
	Subtest 5	24.00	22.85	22.89	22.79
DC-HSDPA	Subtest 1	23.50	22.41	22.43	22.24
	Subtest 2	22.50	21.63	21.56	21.45
	Subtest 3	22.30	21.12	21.15	20.95
	Subtest 4	22.30	21.12	21.06	20.97

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	23.50	22.50	22.47	22.35
	12.2kbps AMR	23.50	22.30	22.29	22.24
HSDPA	Subtest 1	23.00	22.03	22.04	21.94
	Subtest 2	22.00	21.23	21.26	21.15
	Subtest 3	21.80	20.72	20.74	20.60
	Subtest 4	21.80	20.70	20.76	20.61
HSUPA	Subtest 1	22.00	20.97	20.82	20.65
	Subtest 2	20.00	18.20	18.18	18.35
	Subtest 3	21.00	18.93	18.97	18.89
	Subtest 4	20.00	18.06	18.62	17.80
	Subtest 5	23.50	22.54	22.58	22.44
DC-HSDPA	Subtest 1	23.00	22.03	21.99	21.82
	Subtest 2	22.00	21.24	21.17	21.04
	Subtest 3	21.80	20.74	20.62	20.55
	Subtest 4	21.80	20.72	20.66	20.49

Table 28: Conducted power measurement results of UMTS Band IV (Main Antenna+WiFi Antenna simultaneous transmission/ Hotspot activated)

Note:

- 1) The bolded 12.2kbps RMC mode was selected for SAR testing (the primary mode).
- 2) Per KDB941225 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.

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	25.00	23.93	23.75	23.87
	12.2kbps AMR	25.00	23.86	23.70	23.89
HSDPA	Subtest 1	24.50	23.38	23.23	23.37
	Subtest 2	24.00	22.89	22.78	22.90
	Subtest 3	23.30	22.41	22.29	22.51
	Subtest 4	23.30	22.48	22.31	22.51
HSUPA	Subtest 1	23.50	23.07	22.50	22.58
	Subtest 2	21.50	20.40	20.32	20.56
	Subtest 3	22.50	21.07	21.33	21.21
	Subtest 4	21.50	20.24	19.68	19.94
	Subtest 5	25.00	23.93	23.74	23.98
DC-HSDPA	Subtest 1	24.50	23.33	23.15	23.30
	Subtest 2	24.00	22.85	22.71	22.85
	Subtest 3	23.30	22.34	22.23	22.47
	Subtest 4	23.30	22.41	22.23	22.46

Table 29: 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	20.50	19.30	19.23	19.44
	12.2kbps AMR	20.50	19.34	19.18	19.44
HSDPA	Subtest 1	20.00	18.78	18.72	18.87
	Subtest 2	19.50	18.26	18.26	18.37
	Subtest 3	18.80	17.91	17.85	17.95
	Subtest 4	18.80	17.89	17.86	17.94
HSUPA	Subtest 1	19.00	18.06	17.82	18.43
	Subtest 2	17.00	15.70	14.65	14.10
	Subtest 3	18.00	16.46	16.55	16.58
	Subtest 4	17.00	15.43	14.87	14.21
	Subtest 5	20.50	19.41	19.23	19.38
DC-HSDPA	Subtest 1	20.00	18.87	18.72	18.88
	Subtest 2	19.50	18.31	18.25	18.36
	Subtest 3	18.80	17.92	17.86	17.96
	Subtest 4	18.80	17.90	17.86	17.96

Table 30: Conducted power measurement results of UMTS Band V (Receiver ON)

Note:

- 1) The bolded 12.2kbps RMC mode was selected for SAR testing (the primary mode).
- 2) Per KDB941225 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.

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	23.99	23.85	23.98
	12.2kbps AMR	25.00	24.00	23.76	24.02
HSDPA	Subtest 1	24.50	23.48	23.33	23.44
	Subtest 2	24.00	22.92	22.78	22.99
	Subtest 3	23.30	22.51	22.38	22.56
	Subtest 4	23.30	22.51	22.38	22.58
HSUPA	Subtest 1	23.50	23.13	22.45	22.64
	Subtest 2	21.50	20.43	20.41	20.73
	Subtest 3	22.50	21.20	21.23	21.56
	Subtest 4	21.50	20.27	19.78	19.93
	Subtest 5	25.00	24.02	23.82	23.95
DC-HSDPA	Subtest 1	24.50	23.52	23.27	23.54
	Subtest 2	24.00	22.96	22.81	22.99
	Subtest 3	23.30	22.54	22.41	22.60
	Subtest 4	23.30	22.56	22.42	22.58

Table 31: Conducted power measurement results of UMTS Band V

Note:

- 1) The bolded 12.2kbps RMC mode was selected for SAR testing (the primary mode).
- 2) Per KDB941225 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.

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

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	18607CH	18900CH	19193CH
1.4MHz	QPSK	1	0	23.50	21.37	21.89	21.44
		1	3	23.50	21.47	21.86	21.40
		1	5	23.50	21.36	21.95	21.60
		3	0	23.50	21.36	21.96	21.48
		3	2	23.50	21.41	22.01	21.51
		3	3	23.50	21.36	21.96	21.43
		6	0	22.50	21.19	21.40	21.00
	16QAM	1	0	22.50	21.30	21.29	20.92
		1	3	22.50	21.36	21.31	20.95
		1	5	22.50	21.13	21.49	21.10
		3	0	22.50	21.17	21.35	20.93
		3	2	22.50	21.14	21.28	20.91
		3	3	22.50	21.21	21.28	20.93
		6	0	21.50	20.17	20.13	20.05
	64QAM	1	0	21.50	20.21	20.41	20.25
		1	3	21.50	20.39	20.46	20.15
		1	5	21.50	20.22	20.41	20.32
		3	0	21.50	20.27	20.38	20.17
		3	2	21.50	20.36	20.52	20.25
		3	3	21.50	20.29	20.38	20.27
		6	0	20.50	19.14	19.27	19.18
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
3MHz	QPSK	1	0	23.50	21.26	22.02	21.24
		1	7	23.50	21.25	22.06	21.25
		1	14	23.50	21.28	22.01	21.25
		8	0	22.50	21.17	21.33	20.92
		8	4	22.50	21.16	21.28	20.95
		8	7	22.50	21.20	21.31	20.90
		15	0	22.50	21.24	21.28	20.94
	16QAM	1	0	22.50	21.37	21.52	21.06
		1	7	22.50	21.21	21.36	20.93
		1	14	22.50	21.11	21.48	20.98
		8	0	21.50	20.14	20.28	19.93
		8	4	21.50	20.07	20.21	19.97
		8	7	21.50	20.19	20.36	19.97
		15	0	21.50	20.11	20.28	19.97
	64QAM	1	0	21.50	20.34	20.40	20.03
		1	7	21.50	20.31	20.56	20.14
		1	14	21.50	20.19	20.42	20.21
		8	0	20.50	19.13	19.29	19.07
		8	4	20.50	19.09	19.26	19.11
		8	7	20.50	19.15	19.26	19.10
		15	0	20.50	19.19	19.31	19.18

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	18625CH	18900CH	19175CH
5MHz	QPSK	1	0	23.50	21.43	22.07	21.24
		1	13	23.50	21.36	22.07	21.32
		1	24	23.50	21.35	22.05	21.23
		12	0	22.50	21.21	21.36	20.87
		12	6	22.50	21.20	21.32	20.85
		12	13	22.50	21.20	21.36	20.84
		25	0	22.50	21.14	21.28	20.85
	16QAM	1	0	22.50	21.37	21.41	20.85
		1	13	22.50	21.26	21.38	20.94
		1	24	22.50	21.25	21.44	20.83
		12	0	21.50	20.26	20.31	19.87
		12	6	21.50	20.14	20.28	19.85
		12	13	21.50	20.14	20.23	19.81
		25	0	21.50	20.08	20.18	19.89
	64QAM	1	0	21.50	20.42	20.42	20.15
		1	13	21.50	20.44	20.43	20.06
		1	24	21.50	20.34	20.46	20.13
		12	0	20.50	19.23	19.33	19.09
		12	6	20.50	19.18	19.38	19.05
		12	13	20.50	19.27	19.33	19.08
		25	0	20.50	19.17	19.31	19.06
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
10MHz	QPSK	1	0	23.50	21.39	22.05	21.18
		1	25	23.50	21.29	22.04	21.12
		1	49	23.50	21.30	22.03	21.27
		25	0	22.50	21.16	21.32	20.79
		25	13	22.50	21.16	21.31	20.77
		25	25	22.50	21.16	21.29	20.78
		50	0	22.50	21.16	21.23	20.75
	16QAM	1	0	22.50	21.21	21.27	20.94
		1	25	22.50	21.34	21.50	20.87
		1	49	22.50	21.10	21.30	20.92
		25	0	21.50	20.17	20.25	19.77
		25	13	21.50	20.07	20.28	19.76
		25	25	21.50	20.09	20.22	19.75
		50	0	21.50	20.04	20.19	19.74
	64QAM	1	0	21.50	20.27	20.47	20.05
		1	25	21.50	20.16	20.31	20.07
		1	49	21.50	20.28	20.30	20.06
		25	0	20.50	19.19	19.29	19.00
		25	13	20.50	19.26	19.32	18.99
		25	25	20.50	19.16	19.28	18.98
		50	0	20.50	19.15	19.23	18.98

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	18675CH	18900CH	19125CH
15MHz	QPSK	1	0	23.50	21.34	22.03	21.17
		1	38	23.50	21.41	21.99	21.17
		1	74	23.50	21.34	22.08	21.20
		36	0	22.50	21.24	21.28	20.95
		36	18	22.50	21.25	21.29	20.94
		36	39	22.50	21.18	21.29	20.94
		75	0	22.50	21.19	21.25	20.79
	16QAM	1	0	22.50	21.16	21.46	21.00
		1	38	22.50	21.01	21.42	20.99
		1	74	22.50	21.16	21.23	20.96
		36	0	21.50	20.15	20.26	19.95
		36	18	21.50	20.13	20.29	19.93
		36	39	21.50	20.16	20.25	19.98
		75	0	21.50	20.11	20.20	19.80
	64QAM	1	0	21.50	20.19	20.32	20.12
		1	38	21.50	20.23	20.22	19.98
		1	74	21.50	20.13	20.36	20.05
		36	0	20.50	19.20	19.30	19.04
		36	18	20.50	19.17	19.30	19.10
		36	39	20.50	19.17	19.31	19.13
		75	0	20.50	19.12	19.28	18.96
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
20MHz	QPSK	1	0	23.50	21.55	22.00	21.76
		1	50	23.50	21.44	21.96	21.84
		1	99	23.50	21.44	21.98	21.79
		50	0	22.50	21.16	21.23	21.00
		50	25	22.50	21.17	21.27	20.99
		50	50	22.50	21.16	21.21	20.97
		100	0	22.50	21.13	21.19	20.85
	16QAM	1	0	22.50	21.32	21.47	21.09
		1	50	22.50	21.11	21.35	21.13
		1	99	22.50	21.20	21.32	21.22
		50	0	21.50	20.12	20.27	19.99
		50	25	21.50	20.13	20.24	19.97
		50	50	21.50	20.15	20.22	19.97
		100	0	21.50	20.09	20.18	19.87
	64QAM	1	0	21.50	20.14	20.28	19.99
		1	50	21.50	20.17	20.24	20.18
		1	99	21.50	20.15	20.29	20.20
		50	0	20.50	19.23	19.26	19.07
		50	25	20.50	19.18	19.28	19.05
		50	50	20.50	19.17	19.29	19.02
		100	0	20.50	19.16	19.28	19.02

Table 32: 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	19.00	17.72	17.90	17.65
		1	3	19.00	17.77	17.86	17.61
		1	5	19.00	17.74	17.85	17.64
		3	0	19.00	17.77	17.91	17.69
		3	2	19.00	17.75	17.89	17.55
		3	3	19.00	17.70	17.84	17.51
		6	0	19.00	17.67	17.90	17.60
	16QAM	1	0	19.00	17.81	18.01	17.72
		1	3	19.00	17.64	17.76	17.59
		1	5	19.00	17.93	17.89	17.72
		3	0	19.00	17.70	17.92	17.71
		3	2	19.00	17.73	17.85	17.62
		3	3	19.00	17.70	17.87	17.65
		6	0	19.00	17.67	17.81	17.46
	64QAM	1	0	19.00	17.79	17.95	17.93
		1	3	19.00	18.02	17.94	17.80
		1	5	19.00	17.60	17.84	17.80
		3	0	19.00	17.77	17.88	17.75
		3	2	19.00	17.70	18.01	17.70
		3	3	19.00	17.78	17.84	17.75
		6	0	19.00	17.63	17.80	17.51
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
3MHz	QPSK	1	0	19.00	17.68	17.89	17.41
		1	7	19.00	17.71	17.84	17.41
		1	14	19.00	17.70	17.85	17.41
		8	0	19.00	17.64	17.82	17.53
		8	4	19.00	17.66	17.87	17.50
		8	7	19.00	17.68	17.81	17.49
		15	0	19.00	17.68	17.81	17.52
	16QAM	1	0	19.00	17.85	18.13	17.68
		1	7	19.00	17.62	18.09	17.54
		1	14	19.00	17.88	17.95	17.45
		8	0	19.00	17.58	17.84	17.46
		8	4	19.00	17.64	17.77	17.45
		8	7	19.00	17.62	17.70	17.46
		15	0	19.00	17.56	17.66	17.52
	64QAM	1	0	19.00	17.82	17.94	17.73
		1	7	19.00	17.80	17.98	17.77
		1	14	19.00	17.80	17.93	17.71
		8	0	19.00	17.70	17.76	17.65
		8	4	19.00	17.64	17.81	17.54
		8	7	19.00	17.68	17.81	17.69
		15	0	19.00	17.67	17.82	17.72

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	18625CH	18900CH	19175CH
5MHz	QPSK	1	0	19.00	17.66	18.01	17.37
		1	13	19.00	17.69	18.02	17.36
		1	24	19.00	17.68	18.00	17.37
		12	0	19.00	17.67	17.99	17.44
		12	6	19.00	17.67	17.87	17.40
		12	13	19.00	17.67	17.99	17.43
		25	0	19.00	17.70	17.80	17.46
	16QAM	1	0	19.00	17.96	18.21	17.47
		1	13	19.00	17.88	18.08	17.42
		1	24	19.00	17.79	18.03	17.43
		12	0	19.00	17.63	17.97	17.41
		12	6	19.00	17.62	17.90	17.42
		12	13	19.00	17.66	17.81	17.36
		25	0	19.00	17.63	17.71	17.34
	64QAM	1	0	19.00	17.99	17.94	17.62
		1	13	19.00	17.80	17.90	17.60
		1	24	19.00	17.87	17.92	17.70
		12	0	19.00	17.72	17.82	17.63
		12	6	19.00	17.74	17.89	17.60
		12	13	19.00	17.74	17.87	17.57
		25	0	19.00	17.71	17.82	17.63
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
10MHz	QPSK	1	0	19.00	17.66	18.04	17.37
		1	25	19.00	17.64	18.07	17.44
		1	49	19.00	17.61	18.05	17.42
		25	0	19.00	17.65	17.89	17.36
		25	13	19.00	17.65	17.94	17.30
		25	25	19.00	17.63	17.93	17.29
		50	0	19.00	17.73	17.74	17.35
	16QAM	1	0	19.00	17.62	18.15	17.53
		1	25	19.00	17.74	18.00	17.41
		1	49	19.00	17.61	18.16	17.49
		25	0	19.00	17.55	17.84	17.33
		25	13	19.00	17.55	17.81	17.31
		25	25	19.00	17.61	17.89	17.30
		50	0	19.00	17.63	17.66	17.28
	64QAM	1	0	19.00	17.67	17.95	17.48
		1	25	19.00	17.77	17.91	17.44
		1	49	19.00	17.73	18.09	17.66
		25	0	19.00	17.71	17.84	17.59
		25	13	19.00	17.72	17.84	17.55
		25	25	19.00	17.72	17.83	17.55
		50	0	19.00	17.65	17.79	17.55
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	18650CH	18900CH	19150CH

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	18675CH	18900CH	19125CH
15MHz	QPSK	1	0	19.00	17.71	17.96	17.50
		1	38	19.00	17.70	17.95	17.50
		1	74	19.00	17.70	17.80	17.49
		36	0	19.00	17.69	17.89	17.58
		36	18	19.00	17.68	17.89	17.58
		36	39	19.00	17.68	17.85	17.56
		75	0	19.00	17.72	17.71	17.35
	16QAM	1	0	19.00	17.78	17.97	17.64
		1	38	19.00	17.68	17.91	17.53
		1	74	19.00	17.76	17.93	17.69
		36	0	19.00	17.59	17.83	17.53
		36	18	19.00	17.60	17.82	17.55
		36	39	19.00	17.61	17.86	17.53
		75	0	19.00	17.68	17.67	17.30
	64QAM	1	0	19.00	17.82	17.94	17.70
		1	38	19.00	17.80	18.01	17.66
		1	74	19.00	17.72	17.94	17.57
		36	0	19.00	17.73	17.85	17.55
		36	18	19.00	17.73	17.82	17.55
		36	39	19.00	17.73	17.84	17.51
		75	0	19.00	17.71	17.79	17.46
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
20MHz	QPSK	1	0	19.00	17.63	17.81	17.74
		1	50	19.00	17.68	17.91	17.80
		1	99	19.00	17.66	17.93	17.73
		50	0	19.00	17.75	17.93	17.56
		50	25	19.00	17.72	17.92	17.55
		50	50	19.00	17.76	17.93	17.55
		100	0	19.00	17.69	17.76	17.41
	16QAM	1	0	19.00	17.93	17.96	17.91
		1	50	19.00	17.71	18.03	17.97
		1	99	19.00	17.67	17.92	17.95
		50	0	19.00	17.68	17.81	17.53
		50	25	19.00	17.68	17.85	17.54
		50	50	19.00	17.68	17.88	17.53
		100	0	19.00	17.62	17.68	17.37
	64QAM	1	0	19.00	17.68	17.80	17.65
		1	50	19.00	17.73	17.74	17.72
		1	99	19.00	17.68	17.79	17.69
		50	0	19.00	17.75	17.82	17.63
		50	25	19.00	17.75	17.82	17.60
		50	50	19.00	17.77	17.85	17.65
		100	0	19.00	17.70	17.69	17.48
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	18700CH	18900CH	19100CH

Table 33: Conducted power measurement results of LTE Band 2 (Receiver ON)

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

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	18607CH	18900CH	19193CH
1.4MHz	QPSK	1	0	23.50	22.13	22.44	22.24
		1	3	23.50	22.23	22.42	22.29
		1	5	23.50	22.42	22.42	22.31
		3	0	23.50	22.27	22.49	22.41
		3	2	23.50	22.40	22.47	22.37
		3	3	23.50	22.37	22.24	22.36
		6	0	22.50	21.40	21.40	21.22
	16QAM	1	0	22.50	21.56	21.53	21.42
		1	3	22.50	21.57	21.47	21.40
		1	5	22.50	21.40	21.53	21.51
		3	0	22.50	21.27	21.28	21.22
		3	2	22.50	21.37	21.36	21.21
		3	3	22.50	21.39	21.34	21.17
		6	0	21.50	20.28	20.30	20.06
	64QAM	1	0	21.50	20.52	20.51	20.34
		1	3	21.50	20.50	20.46	20.35
		1	5	21.50	20.46	20.63	20.59
		3	0	21.50	20.27	20.32	20.23
		3	2	21.50	20.33	20.30	20.26
		3	3	21.50	20.29	20.44	20.21
		6	0	20.50	19.33	19.34	19.12
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
3MHz	QPSK	1	0	23.50	22.39	22.33	22.17
		1	7	23.50	22.45	22.39	22.05
		1	14	23.50	22.58	22.40	22.09
		8	0	22.50	21.39	21.35	21.15
		8	4	22.50	21.45	21.36	21.12
		8	7	22.50	21.39	21.32	21.14
		15	0	22.50	21.43	21.32	21.10
	16QAM	1	0	22.50	21.45	21.36	21.25
		1	7	22.50	21.51	21.39	21.19
		1	14	22.50	21.50	21.49	21.26
		8	0	21.50	20.45	20.36	20.15
		8	4	21.50	20.30	20.30	20.15
		8	7	21.50	20.26	20.32	20.13
		15	0	21.50	20.42	20.29	20.13
	64QAM	1	0	21.50	20.52	20.70	20.21
		1	7	21.50	20.49	20.63	20.26
		1	14	21.50	20.37	20.67	20.24
		8	0	20.50	19.32	19.34	19.25
		8	4	20.50	19.40	19.39	19.19
		8	7	20.50	19.44	19.33	19.26
		15	0	20.50	19.46	19.42	19.27
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	18615CH	18900CH	19185CH

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	18625CH	18900CH	19175CH
5MHz	QPSK	1	0	23.50	22.45	22.34	22.01
		1	13	23.50	22.39	22.31	22.08
		1	24	23.50	22.46	22.37	22.03
		12	0	22.50	21.47	21.50	21.07
		12	6	22.50	21.46	21.45	21.06
		12	13	22.50	21.46	21.45	21.05
		25	0	22.50	21.39	21.38	21.09
	16QAM	1	0	22.50	21.70	21.58	21.09
		1	13	22.50	21.54	21.51	21.15
		1	24	22.50	21.48	21.68	21.12
		12	0	21.50	20.46	20.45	20.11
		12	6	21.50	20.44	20.44	20.07
		12	13	21.50	20.47	20.45	20.10
		25	0	21.50	20.34	20.27	20.08
	64QAM	1	0	21.50	20.62	20.61	20.15
		1	13	21.50	20.57	20.50	20.51
		1	24	21.50	20.60	20.40	20.21
		12	0	20.50	19.41	19.48	19.28
		12	6	20.50	19.44	19.43	19.20
		12	13	20.50	19.40	19.53	19.25
		25	0	20.50	19.36	19.34	19.21
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
10MHz	QPSK	1	0	23.50	22.30	22.29	22.03
		1	25	23.50	22.34	22.29	22.07
		1	49	23.50	22.32	22.31	22.05
		25	0	22.50	21.42	21.45	21.00
		25	13	22.50	21.42	21.45	21.02
		25	25	22.50	21.42	21.49	20.99
		50	0	22.50	21.36	21.25	20.94
	16QAM	1	0	22.50	21.31	21.28	21.18
		1	25	22.50	21.77	21.40	21.39
		1	49	22.50	21.60	21.41	21.41
		25	0	21.50	20.38	20.33	20.07
		25	13	21.50	20.40	20.37	20.06
		25	25	21.50	20.41	20.40	20.08
		50	0	21.50	20.24	20.23	19.92
	64QAM	1	0	21.50	20.57	20.31	20.19
		1	25	21.50	20.34	20.42	20.09
		1	49	21.50	20.43	20.41	20.24
		25	0	20.50	19.46	19.38	19.21
		25	13	20.50	19.36	19.50	19.26
		25	25	20.50	19.38	19.36	19.24
		50	0	20.50	19.31	19.31	19.21

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	18675CH	18900CH	19125CH
15MHz	QPSK	1	0	23.50	22.28	22.26	22.33
		1	38	23.50	22.28	22.28	22.38
		1	74	23.50	22.36	22.23	22.33
		36	0	22.50	21.35	21.46	21.12
		36	18	22.50	21.46	21.47	21.11
		36	39	22.50	21.46	21.46	21.13
		75	0	22.50	21.33	21.27	20.98
	16QAM	1	0	22.50	21.55	21.60	21.25
		1	38	22.50	21.43	21.31	21.37
		1	74	22.50	21.37	21.38	21.19
		36	0	21.50	20.43	20.43	20.10
		36	18	21.50	20.26	20.39	20.12
		36	39	21.50	20.29	20.42	20.13
		75	0	21.50	20.25	20.15	19.92
	64QAM	1	0	21.50	20.41	20.64	20.16
		1	38	21.50	20.44	20.57	20.24
		1	74	21.50	20.43	20.36	20.24
		36	0	20.50	19.29	19.49	19.31
		36	18	20.50	19.35	19.49	19.32
		36	39	20.50	19.36	19.51	19.29
		75	0	20.50	19.28	19.27	19.21
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
20MHz	QPSK	1	0	23.50	22.26	22.22	22.05
		1	50	23.50	22.25	22.23	22.07
		1	99	23.50	22.24	22.20	22.06
		50	0	22.50	21.33	21.34	21.26
		50	25	22.50	21.31	21.35	21.27
		50	50	22.50	21.33	21.35	21.27
		100	0	22.50	21.30	21.23	21.03
	16QAM	1	0	22.50	21.49	21.37	21.15
		1	50	22.50	21.55	21.26	21.06
		1	99	22.50	21.36	21.38	21.14
		50	0	21.50	20.27	20.32	20.22
		50	25	21.50	20.24	20.33	20.25
		50	50	21.50	20.27	20.32	20.25
		100	0	21.50	20.21	20.18	19.95
	64QAM	1	0	21.50	20.39	20.26	20.20
		1	50	21.50	20.34	20.49	20.29
		1	99	21.50	20.22	20.38	20.24
		50	0	20.50	19.33	19.47	19.34
		50	25	20.50	19.35	19.43	19.32
		50	50	20.50	19.34	19.44	19.36
		100	0	20.50	19.33	19.26	19.16
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
20MHz	QPSK	1	0	23.50	22.26	22.22	22.05
		1	50	23.50	22.25	22.23	22.07
		1	99	23.50	22.24	22.20	22.06
		50	0	22.50	21.33	21.34	21.26
		50	25	22.50	21.31	21.35	21.27
		50	50	22.50	21.33	21.35	21.27
		100	0	22.50	21.30	21.23	21.03
	16QAM	1	0	22.50	21.49	21.37	21.15
		1	50	22.50	21.55	21.26	21.06
		1	99	22.50	21.36	21.38	21.14
		50	0	21.50	20.27	20.32	20.22
		50	25	21.50	20.24	20.33	20.25
		50	50	21.50	20.27	20.32	20.25
		100	0	21.50	20.21	20.18	19.95
	64QAM	1	0	21.50	20.39	20.26	20.20
		1	50	21.50	20.34	20.49	20.29
		1	99	21.50	20.22	20.38	20.24
		50	0	20.50	19.33	19.47	19.34
		50	25	20.50	19.35	19.43	19.32
		50	50	20.50	19.34	19.44	19.36
		100	0	20.50	19.33	19.26	19.16

Table 34: Conducted power measurement results of UMTS Band II (Full Power)

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	18607CH	18900CH	19193CH
1.4MHz	QPSK	1	0	22.50	21.21	21.43	21.30
		1	3	22.50	21.41	21.47	21.31
		1	5	22.50	21.48	21.44	21.21
		3	0	22.50	21.38	21.41	21.06
		3	2	22.50	21.54	21.42	21.05
		3	3	22.50	21.50	21.45	21.16
		6	0	22.50	21.40	21.42	21.04
	16QAM	1	0	22.50	21.58	21.64	21.44
		1	3	22.50	21.61	21.63	21.31
		1	5	22.50	21.69	21.66	21.37
		3	0	21.50	21.51	21.54	21.12
		3	2	21.50	21.47	21.49	21.13
		3	3	21.50	21.51	21.47	21.03
		6	0	21.50	20.43	20.28	19.90
	64QAM	1	0	21.50	20.49	20.61	20.24
		1	3	21.50	20.60	20.46	20.25
		1	5	21.50	20.56	20.62	20.15
		3	0	20.50	20.47	20.47	20.05
		3	2	20.50	20.48	20.46	20.18
		3	3	20.50	20.45	20.48	20.01
		6	0	20.50	19.44	19.46	19.11
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
3MHz	QPSK	1	0	22.50	21.46	21.35	21.00
		1	7	22.50	21.42	21.34	20.94
		1	14	22.50	21.40	21.36	20.97
		8	0	22.50	21.42	21.35	20.94
		8	4	22.50	21.39	21.34	21.06
		8	7	22.50	21.42	21.34	20.92
		15	0	22.50	21.40	21.35	20.95
	16QAM	1	0	22.50	21.52	21.61	21.05
		1	7	22.50	21.45	21.57	21.11
		1	14	22.50	21.44	21.54	21.06
		8	0	21.50	20.40	20.46	19.94
		8	4	21.50	20.36	20.37	19.93
		8	7	21.50	20.49	20.34	19.98
		15	0	21.50	20.35	20.33	19.92
	64QAM	1	0	21.50	20.48	20.58	20.07
		1	7	21.50	20.45	20.42	20.13
		1	14	21.50	20.56	20.41	20.21
		8	0	20.50	19.42	19.39	18.98
		8	4	20.50	19.46	19.33	18.97
		8	7	20.50	19.39	19.40	19.10
		15	0	20.50	19.45	19.37	19.11

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	18625CH	18900CH	19175CH
5MHz	QPSK	1	0	22.50	21.40	21.31	20.89
		1	13	22.50	21.40	21.30	20.90
		1	24	22.50	21.39	21.33	20.88
		12	0	22.50	21.43	21.42	20.95
		12	6	22.50	21.42	21.37	21.03
		12	13	22.50	21.43	21.37	21.03
		25	0	22.50	21.40	21.35	20.91
	16QAM	1	0	22.50	21.39	21.35	21.07
		1	13	22.50	21.45	21.34	20.97
		1	24	22.50	21.49	21.44	21.01
		12	0	21.50	20.40	20.47	19.92
		12	6	21.50	20.34	20.40	19.91
		12	13	21.50	20.42	20.42	19.87
		25	0	21.50	20.34	20.31	19.87
	64QAM	1	0	21.50	20.39	20.39	20.04
		1	13	21.50	20.63	20.41	20.07
		1	24	21.50	20.49	20.36	20.11
		12	0	20.50	19.51	19.38	19.01
		12	6	20.50	19.59	19.41	19.03
		12	13	20.50	19.57	19.43	19.02
		25	0	20.50	19.40	19.37	18.98
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
10MHz	QPSK	1	0	22.50	21.31	21.29	21.10
		1	25	22.50	21.36	21.28	21.01
		1	49	22.50	21.35	21.25	21.01
		25	0	22.50	21.39	21.47	20.94
		25	13	22.50	21.38	21.46	21.00
		25	25	22.50	21.41	21.48	20.99
		50	0	22.50	21.40	21.28	20.93
	16QAM	1	0	22.50	21.59	21.32	21.22
		1	25	22.50	21.44	21.42	21.11
		1	49	22.50	21.36	21.37	21.30
		25	0	21.50	20.33	20.43	19.87
		25	13	21.50	20.31	20.28	19.88
		25	25	21.50	20.36	20.42	19.91
		50	0	21.50	20.28	20.25	19.84
	64QAM	1	0	21.50	20.51	20.34	20.13
		1	25	21.50	20.48	20.33	20.20
		1	49	21.50	20.36	20.29	20.21
		25	0	20.50	19.40	19.35	18.95
		25	13	20.50	19.38	19.29	18.95
		25	25	20.50	19.41	19.48	18.96
		50	0	20.50	19.32	19.31	18.93

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	18675CH	18900CH	19125CH
15MHz	QPSK	1	0	22.50	21.38	21.24	21.17
		1	38	22.50	21.39	21.27	21.18
		1	74	22.50	21.30	21.23	21.19
		36	0	22.50	21.37	21.46	21.19
		36	18	22.50	21.37	21.46	21.18
		36	39	22.50	21.35	21.45	21.18
		75	0	22.50	21.35	21.30	20.95
	16QAM	1	0	22.50	21.36	21.27	21.26
		1	38	22.50	21.43	21.39	21.28
		1	74	22.50	21.35	21.45	21.19
		36	0	21.50	20.36	20.39	20.19
		36	18	21.50	20.33	20.44	20.12
		36	39	21.50	20.33	20.45	20.18
		75	0	21.50	20.29	20.23	19.90
	64QAM	1	0	21.50	20.36	20.28	20.33
		1	38	21.50	20.22	20.25	20.21
		1	74	21.50	20.38	20.28	20.28
		36	0	20.50	19.46	19.47	19.13
		36	18	20.50	19.46	19.47	19.25
		36	39	20.50	19.46	19.46	19.16
		75	0	20.50	19.33	19.28	19.04
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
20MHz	QPSK	1	0	22.50	21.33	21.20	21.10
		1	50	22.50	21.32	21.25	21.09
		1	99	22.50	21.30	21.25	21.11
		50	0	22.50	21.36	21.46	21.21
		50	25	22.50	21.36	21.48	21.19
		50	50	22.50	21.35	21.38	21.22
		100	0	22.50	21.33	21.32	21.06
	16QAM	1	0	22.50	21.40	21.41	21.31
		1	50	22.50	21.44	21.40	21.22
		1	99	22.50	21.46	21.30	21.19
		50	0	21.50	20.32	20.36	20.16
		50	25	21.50	20.30	20.35	20.19
		50	50	21.50	20.34	20.37	20.18
		100	0	21.50	20.30	20.23	20.01
	64QAM	1	0	21.50	20.44	20.47	20.36
		1	50	21.50	20.40	20.41	20.13
		1	99	21.50	20.32	20.35	20.30
		50	0	20.50	19.38	19.35	19.21
		50	25	20.50	19.42	19.31	19.23
		50	50	20.50	19.40	19.29	19.23
		100	0	20.50	19.48	19.32	19.11

Table 35: Conducted power measurement results of UMTS Band II (Main Antenna+WiFi Antenna simultaneous transmission/ Hotspot activated)

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

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	19957CH	20175CH	20393CH
1.4MHz	QPSK	1	0	23.80	22.06	22.24	22.23
		1	3	23.80	22.10	22.23	22.11
		1	5	23.80	21.97	22.24	22.11
		3	0	23.80	22.01	22.29	22.12
		3	2	23.80	21.98	22.29	22.10
		3	3	23.80	22.07	22.27	22.13
		6	0	22.80	21.46	21.65	21.61
	16QAM	1	0	22.80	21.58	21.85	21.77
		1	3	22.80	21.64	21.79	21.65
		1	5	22.80	21.60	21.83	21.83
		3	0	22.80	21.49	21.67	21.50
		3	2	22.80	21.44	21.45	21.59
		3	3	22.80	21.53	21.67	21.63
		6	0	21.80	20.48	20.59	20.48
	64QAM	1	0	21.80	20.83	20.78	20.67
		1	3	21.80	20.77	20.60	20.58
		1	5	21.80	20.57	20.59	20.64
		3	0	21.80	20.67	20.55	20.76
		3	2	21.80	20.63	20.62	20.67
		3	3	21.80	20.50	20.60	20.75
		6	0	20.80	19.65	19.69	19.51
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
3MHz	QPSK	1	0	23.80	21.89	22.18	22.31
		1	7	23.80	21.94	22.20	22.31
		1	14	23.80	21.93	22.19	22.28
		8	0	22.80	21.46	21.62	21.57
		8	4	22.80	21.49	21.64	21.61
		8	7	22.80	21.45	21.59	21.60
		15	0	22.80	21.52	21.64	21.57
	16QAM	1	0	22.80	21.41	21.72	21.64
		1	7	22.80	21.46	21.64	21.64
		1	14	22.80	21.54	21.71	21.78
		8	0	21.80	20.68	20.66	20.61
		8	4	21.80	20.56	20.59	20.67
		8	7	21.80	20.53	20.62	20.58
		15	0	21.80	20.63	20.58	20.62
	64QAM	1	0	21.80	20.77	20.63	20.72
		1	7	21.80	20.57	20.80	20.81
		1	14	21.80	20.79	20.49	20.67
		8	0	20.80	19.59	19.68	19.69
		8	4	20.80	19.65	19.60	19.73
		8	7	20.80	19.70	19.64	19.62
		15	0	20.80	19.69	19.69	19.68

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	19975CH	20175CH	20375CH
5MHz	QPSK	1	0	23.80	22.10	22.57	22.46
		1	13	23.80	22.06	22.45	22.50
		1	24	23.80	22.20	22.42	22.43
		12	0	22.80	21.66	21.70	21.64
		12	6	22.80	21.60	21.70	21.66
		12	13	22.80	21.60	21.70	21.67
		25	0	22.80	21.64	21.65	21.60
	16QAM	1	0	22.80	21.86	21.70	21.88
		1	13	22.80	21.97	21.72	21.76
		1	24	22.80	22.00	21.65	21.77
		12	0	21.80	20.64	20.68	20.75
		12	6	21.80	20.63	20.73	20.72
		12	13	21.80	20.63	20.65	20.74
		25	0	21.80	20.63	20.65	20.56
	64QAM	1	0	21.80	20.68	20.76	20.83
		1	13	21.80	20.74	20.64	20.76
		1	24	21.80	20.87	20.73	20.78
		12	0	20.80	19.69	19.73	19.76
		12	6	20.80	19.64	19.72	19.74
		12	13	20.80	19.65	19.70	19.77
		25	0	20.80	19.66	19.62	19.69
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
10MHz	QPSK	1	0	23.80	22.10	22.45	22.57
		1	25	23.80	22.09	22.36	22.47
		1	49	23.80	22.03	22.48	22.46
		25	0	22.80	21.63	21.70	21.65
		25	13	22.80	21.65	21.69	21.64
		25	25	22.80	21.64	21.69	21.63
		50	0	22.80	21.69	21.65	21.62
	16QAM	1	0	22.80	21.63	21.72	21.57
		1	25	22.80	21.72	21.68	21.89
		1	49	22.80	21.74	21.70	21.70
		25	0	21.80	20.64	20.64	20.62
		25	13	21.80	20.65	20.64	20.62
		25	25	21.80	20.63	20.66	20.62
		50	0	21.80	20.67	20.60	20.63
	64QAM	1	0	21.80	20.63	20.79	20.66
		1	25	21.80	20.63	20.71	20.62
		1	49	21.80	20.64	20.64	20.69
		25	0	20.80	19.67	19.76	19.67
		25	13	20.80	19.69	19.74	19.70
		25	25	20.80	19.64	19.72	19.72
		50	0	20.80	19.61	19.65	19.65

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20025CH	20175CH	20325CH
15MHz	QPSK	1	0	23.80	22.15	22.40	22.41
		1	38	23.80	22.14	22.38	22.37
		1	74	23.80	22.11	22.38	22.40
		36	0	22.80	21.68	21.68	21.71
		36	18	22.80	21.67	21.69	21.68
		36	39	22.80	21.69	21.68	21.69
		75	0	22.80	21.64	21.69	21.65
	16QAM	1	0	22.80	21.69	21.75	21.78
		1	38	22.80	21.51	21.66	21.58
		1	74	22.80	21.74	21.78	21.67
		36	0	21.80	20.61	20.64	20.61
		36	18	21.80	20.66	20.72	20.60
		36	39	21.80	20.66	20.67	20.61
		75	0	21.80	20.62	20.63	20.68
	64QAM	1	0	21.80	20.64	20.67	20.63
		1	38	21.80	20.66	20.60	20.46
		1	74	21.80	20.74	20.67	20.60
		36	0	20.80	19.58	19.79	19.77
		36	18	20.80	19.60	19.79	19.76
		36	39	20.80	19.59	19.78	19.79
		75	0	20.80	19.64	19.58	19.72
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
20MHz	QPSK	1	0	23.80	22.40	22.69	22.60
		1	50	23.80	22.40	22.68	22.57
		1	99	23.80	22.38	22.70	22.54
		50	0	22.80	21.65	21.72	21.65
		50	25	22.80	21.70	21.71	21.64
		50	50	22.80	21.71	21.71	21.66
		100	0	22.80	21.67	21.66	21.61
	16QAM	1	0	22.80	21.84	21.97	21.88
		1	50	22.80	21.88	21.93	21.84
		1	99	22.80	21.78	22.00	21.91
		50	0	21.80	20.66	20.68	20.64
		50	25	21.80	20.66	20.69	20.65
		50	50	21.80	20.67	20.66	20.66
		100	0	21.80	20.65	20.61	20.60
	64QAM	1	0	21.80	20.77	20.91	20.80
		1	50	21.80	20.66	20.88	20.90
		1	99	21.80	20.68	20.97	20.78
		50	0	20.80	19.65	19.78	19.72
		50	25	20.80	19.62	19.74	19.67
		50	50	20.80	19.62	19.73	19.72
		100	0	20.80	19.65	19.65	19.70

Table 36: 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	20.30	18.98	18.94	18.97	
		1	3	20.30	18.95	19.00	18.98	
		1	5	20.30	18.98	19.00	18.98	
		3	0	20.30	18.90	19.03	18.77	
		3	2	20.30	18.81	18.96	18.99	
		3	3	20.30	18.93	19.03	18.99	
		6	0	20.30	19.03	19.05	18.90	
	16QAM	1	0	20.30	19.10	19.13	19.01	
		1	3	20.30	19.16	18.92	19.01	
		1	5	20.30	19.13	18.96	19.14	
		3	0	20.30	18.97	19.00	18.84	
		3	2	20.30	18.91	18.97	18.97	
		3	3	20.30	18.92	19.00	19.06	
		6	0	20.30	18.85	18.96	18.85	
	64QAM	1	0	20.30	19.03	19.04	19.07	
		1	3	20.30	19.01	18.88	19.14	
		1	5	20.30	19.07	18.90	18.87	
		3	0	20.30	19.03	18.94	18.96	
		3	2	20.30	18.84	19.00	19.06	
		3	3	20.30	18.93	19.03	19.01	
		6	0	20.30	18.73	18.83	18.87	
	Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
	3MHz	QPSK	1	0	20.30	18.90	19.02	19.08
			1	7	20.30	18.95	18.98	19.07
1			14	20.30	18.91	18.96	19.04	
8			0	20.30	18.91	19.02	19.02	
8			4	20.30	18.92	18.98	18.95	
8			7	20.30	18.96	18.91	18.92	
15			0	20.30	18.94	18.98	18.96	
16QAM		1	0	20.30	18.94	19.10	19.14	
		1	7	20.30	19.09	19.01	19.02	
		1	14	20.30	18.91	19.15	19.08	
		8	0	20.30	18.94	18.88	18.84	
		8	4	20.30	18.89	18.89	19.02	
		8	7	20.30	18.84	19.00	19.01	
		15	0	20.30	18.89	18.92	18.82	
64QAM		1	0	20.30	19.11	18.94	18.92	
		1	7	20.30	18.82	19.03	18.98	
		1	14	20.30	18.96	18.97	19.05	
		8	0	20.30	18.79	18.89	18.92	
		8	4	20.30	18.89	18.94	18.92	
		8	7	20.30	18.86	18.88	18.90	
		15	0	20.30	18.96	18.92	18.89	
Bandwidth		Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					Max.	19965CH	20175CH	20385CH

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	19975CH	20175CH	20375CH
5MHz	QPSK	1	0	20.30	18.97	19.03	19.02
		1	13	20.30	18.98	18.99	19.03
		1	24	20.30	18.96	19.04	18.95
		12	0	20.30	19.00	19.09	19.04
		12	6	20.30	19.08	19.09	19.06
		12	13	20.30	18.99	19.09	19.05
		25	0	20.30	18.96	18.98	19.01
	16QAM	1	0	20.30	19.01	19.29	19.24
		1	13	20.30	18.92	19.20	19.23
		1	24	20.30	19.14	19.23	19.18
		12	0	20.30	18.97	18.93	19.01
		12	6	20.30	18.87	18.95	18.96
		12	13	20.30	18.93	18.95	18.98
		25	0	20.30	18.88	18.92	18.90
	64QAM	1	0	20.30	19.15	19.11	18.94
		1	13	20.30	18.95	19.06	19.03
		1	24	20.30	19.02	19.00	18.93
		12	0	20.30	18.98	18.99	19.06
		12	6	20.30	18.94	18.97	19.02
		12	13	20.30	18.97	18.95	19.01
		25	0	20.30	18.91	18.89	18.99
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
10MHz	QPSK	1	0	20.30	18.93	19.05	18.97
		1	25	20.30	18.93	19.08	18.92
		1	49	20.30	18.92	19.06	18.91
		25	0	20.30	18.98	19.03	18.99
		25	13	20.30	19.01	19.03	19.05
		25	25	20.30	18.96	19.07	19.02
		50	0	20.30	18.95	18.94	19.00
	16QAM	1	0	20.30	18.95	19.07	18.89
		1	25	20.30	19.02	19.13	19.11
		1	49	20.30	18.88	19.09	19.11
		25	0	20.30	18.88	18.97	18.93
		25	13	20.30	18.87	19.00	18.96
		25	25	20.30	18.88	18.98	18.90
		50	0	20.30	18.86	18.92	18.93
	64QAM	1	0	20.30	18.86	18.79	19.07
		1	25	20.30	19.04	18.93	19.07
		1	49	20.30	18.99	19.05	18.94
		25	0	20.30	18.91	19.00	18.94
		25	13	20.30	18.88	19.02	18.94
		25	25	20.30	18.89	18.98	18.96
		50	0	20.30	18.86	18.80	18.97
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
10MHz	QPSK	1	0	20.30	18.93	19.05	18.97
		1	25	20.30	18.93	19.08	18.92
		1	49	20.30	18.92	19.06	18.91
		25	0	20.30	18.98	19.03	18.99
		25	13	20.30	19.01	19.03	19.05
		25	25	20.30	18.96	19.07	19.02
		50	0	20.30	18.95	18.94	19.00
	16QAM	1	0	20.30	18.95	19.07	18.89
		1	25	20.30	19.02	19.13	19.11
		1	49	20.30	18.88	19.09	19.11
		25	0	20.30	18.88	18.97	18.93
		25	13	20.30	18.87	19.00	18.96
		25	25	20.30	18.88	18.98	18.90
		50	0	20.30	18.86	18.92	18.93
	64QAM	1	0	20.30	18.86	18.79	19.07
		1	25	20.30	19.04	18.93	19.07
		1	49	20.30	18.99	19.05	18.94
		25	0	20.30	18.91	19.00	18.94
		25	13	20.30	18.88	19.02	18.94
		25	25	20.30	18.89	18.98	18.96
		50	0	20.30	18.86	18.80	18.97

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20025CH	20175CH	20325CH
15MHz	QPSK	1	0	20.30	18.83	18.97	18.95
		1	38	20.30	18.93	18.99	18.92
		1	74	20.30	18.93	19.01	18.94
		36	0	20.30	19.00	19.10	19.02
		36	18	20.30	19.02	19.10	19.05
		36	39	20.30	19.01	19.10	19.04
		75	0	20.30	18.91	19.00	18.99
	16QAM	1	0	20.30	18.87	19.19	19.06
		1	38	20.30	19.02	19.06	19.08
		1	74	20.30	18.96	19.09	19.00
		36	0	20.30	18.96	18.99	19.03
		36	18	20.30	18.98	19.04	19.05
		36	39	20.30	18.98	19.06	19.01
		75	0	20.30	18.88	18.96	18.95
	64QAM	1	0	20.30	18.89	18.95	18.91
		1	38	20.30	18.84	19.00	19.14
		1	74	20.30	18.87	18.83	18.91
		36	0	20.30	18.92	19.03	18.94
		36	18	20.30	18.92	19.00	18.95
		36	39	20.30	18.92	19.04	19.00
		75	0	20.30	18.86	18.85	18.96
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
20MHz	QPSK	1	0	20.30	19.10	19.25	19.05
		1	50	20.30	19.09	19.22	19.11
		1	99	20.30	19.14	19.22	19.14
		50	0	20.30	18.97	19.09	19.03
		50	25	20.30	19.03	19.09	19.02
		50	50	20.30	19.02	19.08	19.03
		100	0	20.30	19.03	19.07	18.97
	16QAM	1	0	20.30	19.22	19.35	19.36
		1	50	20.30	19.33	19.16	19.16
		1	99	20.30	19.20	19.39	19.31
		50	0	20.30	18.94	19.01	18.99
		50	25	20.30	19.00	19.02	18.97
		50	50	20.30	18.99	19.02	18.98
		100	0	20.30	19.01	19.03	18.94
	64QAM	1	0	20.30	19.01	19.19	19.06
		1	50	20.30	19.25	19.22	19.12
		1	99	20.30	19.00	19.00	19.19
		50	0	20.30	18.91	19.00	18.96
		50	25	20.30	18.95	18.95	18.98
		50	50	20.30	18.97	18.97	19.00
		100	0	20.30	19.00	18.91	18.80

Table 37: 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	23.30	21.46	21.66	21.84
		1	3	23.30	21.43	21.65	21.73
		1	5	23.30	21.37	21.66	21.79
		3	0	23.30	21.56	21.66	21.76
		3	2	23.30	21.46	21.76	21.73
		3	3	23.30	21.45	21.74	21.65
		6	0	22.80	21.43	21.51	21.58
	16QAM	1	0	22.80	21.30	21.79	21.66
		1	3	22.80	21.55	21.59	21.67
		1	5	22.80	21.57	21.79	21.71
		3	0	22.80	21.45	21.67	21.51
		3	2	22.80	21.34	21.49	21.56
		3	3	22.80	21.38	21.45	21.62
		6	0	21.80	20.25	20.46	20.40
	64QAM	1	0	21.80	20.63	20.68	20.66
		1	3	21.80	20.68	20.82	20.56
		1	5	21.80	20.54	20.63	20.37
		3	0	21.80	20.58	20.69	20.70
		3	2	21.80	20.59	20.68	20.68
		3	3	21.80	20.41	20.65	20.51
		6	0	20.80	19.48	19.50	19.65
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
3MHz	QPSK	1	0	23.30	21.28	21.58	21.92
		1	7	23.30	21.28	21.52	21.89
		1	14	23.30	21.45	21.53	21.95
		8	0	22.8	21.40	21.62	21.55
		8	4	22.80	21.39	21.55	21.53
		8	7	22.80	21.24	21.59	21.52
		15	0	22.80	21.41	21.53	21.57
	16QAM	1	0	22.80	21.28	21.67	21.75
		1	7	22.80	21.53	21.77	21.68
		1	14	22.80	21.53	21.78	21.70
		8	0	21.80	20.51	20.55	20.59
		8	4	21.80	20.50	20.60	20.61
		8	7	21.80	20.52	20.57	20.60
		15	0	21.80	20.42	20.57	20.52
	64QAM	1	0	21.80	20.71	20.71	20.65
		1	7	21.80	20.64	20.68	20.83
		1	14	21.80	20.67	20.76	20.74
		8	0	20.80	19.51	19.52	19.73
		8	4	20.80	19.47	19.59	19.65
		8	7	20.80	19.44	19.61	19.75
		15	0	20.80	19.49	19.70	19.63

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	19975CH	20175CH	20375CH
5MHz	QPSK	1	0	23.30	21.43	21.79	22.07
		1	13	23.30	21.42	21.81	22.02
		1	24	23.30	21.62	21.81	22.00
		12	0	22.8	21.53	21.60	21.66
		12	6	22.80	21.62	21.60	21.64
		12	13	22.80	21.59	21.62	21.64
		25	0	22.80	21.50	21.64	21.56
	16QAM	1	0	22.80	21.53	21.72	21.79
		1	13	22.80	21.70	21.67	21.64
		1	24	22.80	21.70	21.61	21.65
		12	0	21.80	20.56	20.55	20.67
		12	6	21.80	20.53	20.59	20.68
		12	13	21.80	20.52	20.68	20.69
		25	0	21.80	20.51	20.55	20.56
	64QAM	1	0	21.80	20.55	20.70	20.72
		1	13	21.80	20.61	20.61	20.72
		1	24	21.80	20.61	20.55	20.83
		12	0	20.80	19.57	19.60	19.73
		12	6	20.80	19.63	19.68	19.73
		12	13	20.80	19.60	19.71	19.77
		25	0	20.80	19.54	19.50	19.64
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
10MHz	QPSK	1	0	23.30	21.52	21.68	21.96
		1	25	23.30	21.64	21.73	21.97
		1	49	23.30	21.49	21.82	22.02
		25	0	22.8	21.49	21.56	21.62
		25	13	22.80	21.53	21.57	21.61
		25	25	22.80	21.51	21.57	21.64
		50	0	22.80	21.52	21.54	21.59
	16QAM	1	0	22.80	21.80	21.73	21.58
		1	25	22.80	21.59	21.68	21.66
		1	49	22.80	21.40	21.64	21.65
		25	0	21.80	20.48	20.60	20.64
		25	13	21.80	20.48	20.53	20.67
		25	25	21.80	20.48	20.53	20.69
		50	0	21.80	20.44	20.48	20.64
	64QAM	1	0	21.80	20.56	20.82	20.79
		1	25	21.80	20.55	20.65	20.74
		1	49	21.80	20.43	20.82	20.68
		25	0	20.80	19.54	19.61	19.72
		25	13	20.80	19.47	19.63	19.70
		25	25	20.80	19.50	19.59	19.74
		50	0	20.80	19.49	19.63	19.70

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20025CH	20175CH	20325CH
15MHz	QPSK	1	0	23.30	21.58	21.76	21.92
		1	38	23.30	21.57	21.76	21.85
		1	74	23.30	21.58	21.74	21.95
		36	0	22.8	21.53	21.67	21.64
		36	18	22.80	21.55	21.60	21.64
		36	39	22.80	21.53	21.58	21.65
		75	0	22.80	21.51	21.55	21.62
	16QAM	1	0	22.80	21.45	21.63	21.61
		1	38	22.80	21.51	21.61	21.74
		1	74	22.80	21.55	21.80	21.68
		36	0	21.80	20.51	20.55	20.67
		36	18	21.80	20.54	20.59	20.65
		36	39	21.80	20.57	20.60	20.56
		75	0	21.80	20.49	20.50	20.66
	64QAM	1	0	21.80	20.35	20.75	20.49
		1	38	21.80	20.51	20.52	20.36
		1	74	21.80	20.49	20.51	20.51
		36	0	20.80	19.47	19.54	19.78
		36	18	20.80	19.51	19.58	19.76
		36	39	20.80	19.49	19.57	19.78
		75	0	20.80	19.56	19.54	19.69
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
20MHz	QPSK	1	0	23.30	21.74	22.06	21.92
		1	50	23.30	21.76	21.65	21.74
		1	99	23.30	21.66	21.67	21.76
		50	0	22.8	21.47	21.54	21.55
		50	25	22.80	21.50	21.51	21.52
		50	50	22.80	21.51	21.52	21.50
		100	0	22.80	21.50	21.53	21.54
	16QAM	1	0	22.80	21.65	21.69	21.86
		1	50	22.80	21.77	21.80	21.66
		1	99	22.80	21.63	21.61	21.91
		50	0	21.80	20.52	20.54	20.53
		50	25	21.80	20.54	20.54	20.54
		50	50	21.80	20.53	20.53	20.55
		100	0	21.80	20.51	20.56	20.56
	64QAM	1	0	21.80	20.61	20.76	20.81
		1	50	21.80	20.61	20.68	20.72
		1	99	21.80	20.63	21.08	20.89
		50	0	20.80	19.54	19.63	19.63
		50	25	20.80	19.51	19.64	19.63
		50	50	20.80	19.54	19.61	19.67
		100	0	20.80	19.52	19.57	19.66
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
20MHz	QPSK	1	0	23.30	21.74	22.06	21.92
		1	50	23.30	21.76	21.65	21.74
		1	99	23.30	21.66	21.67	21.76
		50	0	22.8	21.47	21.54	21.55
		50	25	22.80	21.50	21.51	21.52
		50	50	22.80	21.51	21.52	21.50
		100	0	22.80	21.50	21.53	21.54
	16QAM	1	0	22.80	21.65	21.69	21.86
		1	50	22.80	21.77	21.80	21.66
		1	99	22.80	21.63	21.61	21.91
		50	0	21.80	20.52	20.54	20.53
		50	25	21.80	20.54	20.54	20.54
		50	50	21.80	20.53	20.53	20.55
		100	0	21.80	20.51	20.56	20.56
	64QAM	1	0	21.80	20.61	20.76	20.81
		1	50	21.80	20.61	20.68	20.72
		1	99	21.80	20.63	21.08	20.89
		50	0	20.80	19.54	19.63	19.63
		50	25	20.80	19.51	19.64	19.63
		50	50	20.80	19.54	19.61	19.67
		100	0	20.80	19.52	19.57	19.66

Table 38: Conducted power measurement results of LTE Band 4 (Second Antenna+WiFi Antenna simultaneous transmission/ Hotspot activated ,Receiver OFF)

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel	
				Max.	19957CH	20175CH	20393CH	
1.4MHz	QPSK	1	0	19.80	18.08	18.08	18.27	
		1	3	19.80	18.08	18.09	18.27	
		1	5	19.80	18.06	18.14	18.34	
		3	0	19.80	18.19	18.24	18.16	
		3	2	19.80	17.99	18.18	18.19	
		3	3	19.80	17.99	18.11	18.27	
		6	0	19.80	18.02	18.12	18.20	
	16QAM	1	0	19.80	17.98	18.23	18.37	
		1	3	19.80	18.08	18.11	18.49	
		1	5	19.80	18.16	18.09	18.36	
		3	0	19.80	18.05	18.18	18.31	
		3	2	19.80	18.01	18.12	18.29	
		3	3	19.80	18.12	18.19	18.21	
		6	0	19.80	17.94	17.99	18.14	
	64QAM	1	0	19.80	18.12	18.27	18.39	
		1	3	19.80	17.98	18.01	18.19	
		1	5	19.80	18.09	18.13	18.21	
		3	0	19.80	17.80	18.08	18.27	
		3	2	19.80	17.92	18.19	18.04	
		3	3	19.80	17.92	18.10	18.34	
		6	0	19.80	18.00	17.97	18.20	
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel	
3MHz	QPSK	1	0	19.80	18.04	18.18	18.30	
		1	7	19.80	18.02	18.11	18.32	
		1	14	19.80	18.07	18.12	18.30	
		8	0	19.80	18.00	17.96	18.23	
		8	4	19.80	17.99	18.08	18.25	
		8	7	19.80	18.03	18.10	18.27	
		15	0	19.80	18.03	18.14	18.25	
	16QAM	1	0	19.80	18.51	18.34	18.52	
		1	7	19.80	18.41	18.35	18.27	
		1	14	19.80	18.17	18.29	18.36	
		8	0	19.80	18.00	18.02	18.18	
		8	4	19.80	18.21	18.12	18.29	
		8	7	19.80	18.16	18.11	18.20	
		15	0	19.80	17.95	18.08	18.22	
	64QAM	1	0	19.80	18.22	18.15	18.26	
		1	7	19.80	18.00	17.95	18.26	
		1	14	19.80	17.98	18.07	18.26	
		8	0	19.80	18.09	18.06	18.25	
		8	4	19.80	17.99	18.05	18.18	
		8	7	19.80	18.01	18.10	18.17	
		15	0	19.80	18.02	18.11	18.28	
	Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					Max.	19965CH	20175CH	20385CH

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	19975CH	20175CH	20375CH
5MHz	QPSK	1	0	19.80	18.06	18.19	18.28
		1	13	19.80	18.11	18.21	18.32
		1	24	19.80	18.08	18.21	18.31
		12	0	19.80	18.13	18.29	18.34
		12	6	19.80	18.10	18.28	18.29
		12	13	19.80	18.11	18.28	18.32
		25	0	19.80	18.08	18.18	18.24
	16QAM	1	0	19.80	18.30	18.33	18.26
		1	13	19.80	17.95	18.32	18.44
		1	24	19.80	18.15	18.37	18.31
		12	0	19.80	18.04	18.25	18.29
		12	6	19.80	18.00	18.24	18.32
		12	13	19.80	17.97	18.27	18.29
		25	0	19.80	17.97	18.15	18.18
	64QAM	1	0	19.80	18.08	18.16	18.31
		1	13	19.80	18.05	18.20	18.30
		1	24	19.80	18.31	18.34	18.24
		12	0	19.80	18.07	18.16	18.26
		12	6	19.80	18.09	18.15	18.22
		12	13	19.80	18.10	18.15	18.28
		25	0	19.80	18.07	18.12	18.18
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
10MHz	QPSK	1	0	19.80	18.06	18.19	18.24
		1	25	19.80	18.05	18.21	18.25
		1	49	19.80	18.07	18.19	18.22
		25	0	19.80	18.07	18.20	18.25
		25	13	19.80	18.08	18.24	18.23
		25	25	19.80	18.05	18.22	18.30
		50	0	19.80	18.05	18.14	18.19
	16QAM	1	0	19.80	18.03	18.38	18.24
		1	25	19.80	18.14	18.41	18.34
		1	49	19.80	18.19	18.25	18.22
		25	0	19.80	18.10	18.15	18.22
		25	13	19.80	18.07	18.17	18.20
		25	25	19.80	18.12	18.14	18.22
		50	0	19.80	17.96	18.06	18.19
	64QAM	1	0	19.80	18.21	18.13	18.18
		1	25	19.80	18.19	18.13	18.18
		1	49	19.80	18.06	18.19	18.21
		25	0	19.80	18.06	18.11	18.24
		25	13	19.80	18.02	18.18	18.24
		25	25	19.80	18.07	18.21	18.26
		50	0	19.80	18.04	18.05	18.15
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20000CH	20175CH	20350CH

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20025CH	20175CH	20325CH
15MHz	QPSK	1	0	19.80	17.99	18.17	18.18
		1	38	19.80	17.99	18.13	18.17
		1	74	19.80	17.98	18.11	18.16
		36	0	19.80	18.17	18.24	18.29
		36	18	19.80	18.16	18.24	18.29
		36	39	19.80	18.15	18.22	18.30
		75	0	19.80	18.15	18.19	18.29
	16QAM	1	0	19.80	18.10	18.25	18.42
		1	38	19.80	18.13	18.15	18.35
		1	74	19.80	18.08	18.20	18.19
		36	0	19.80	18.13	18.19	18.22
		36	18	19.80	18.10	18.21	18.21
		36	39	19.80	18.15	18.17	18.20
		75	0	19.80	18.08	18.12	18.20
	64QAM	1	0	19.80	17.99	18.15	18.19
		1	38	19.80	17.90	18.41	18.05
		1	74	19.80	17.99	18.29	18.16
		36	0	19.80	18.13	18.20	18.23
		36	18	19.80	18.12	18.25	18.19
		36	39	19.80	18.13	18.22	18.19
		75	0	19.80	18.08	18.05	18.23
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
20MHz	QPSK	1	0	19.80	18.24	18.32	18.31
		1	50	19.80	18.24	18.38	18.33
		1	99	19.80	18.20	18.30	18.31
		50	0	19.80	18.22	18.23	18.21
		50	25	19.80	18.21	18.21	18.25
		50	50	19.80	18.16	18.22	18.25
		100	0	19.80	18.25	18.25	18.25
	16QAM	1	0	19.80	18.47	18.41	18.41
		1	50	19.80	18.26	18.48	18.32
		1	99	19.80	18.39	18.43	18.34
		50	0	19.80	18.12	18.18	18.16
		50	25	19.80	18.16	18.16	18.20
		50	50	19.80	18.16	18.17	18.19
		100	0	19.80	18.12	18.18	18.11
	64QAM	1	0	19.80	18.14	18.34	18.31
		1	50	19.80	18.20	18.39	18.38
		1	99	19.80	18.28	18.41	18.37
		50	0	19.80	18.18	18.19	18.19
		50	25	19.80	18.15	18.20	18.21
		50	50	19.80	18.14	18.17	18.19
		100	0	19.80	18.19	18.15	18.20
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20050CH	20175CH	20300CH

Table 39: Conducted power measurement results of LTE Band 4 (Second Antenna+WiFi Antenna simultaneous transmission/ Hotspot activated ,Receiver ON)

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

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	19957CH	20175CH	20393CH
1.4MHz	QPSK	1	0	23.80	22.63	22.65	22.48
		1	3	23.80	22.60	22.63	22.45
		1	5	23.80	22.47	22.52	22.41
		3	0	23.80	22.43	22.58	22.45
		3	2	23.80	22.50	22.55	22.53
		3	3	23.80	22.54	22.61	22.54
		6	0	22.80	21.47	21.39	21.35
	16QAM	1	0	22.80	21.78	21.71	21.52
		1	3	22.80	21.78	21.57	21.51
		1	5	22.80	21.56	21.65	21.50
		3	0	22.80	21.37	21.52	21.51
		3	2	22.80	21.38	21.45	21.44
		3	3	22.80	21.39	21.43	21.55
		6	0	21.80	20.37	20.41	20.38
	64QAM	1	0	21.80	20.60	20.52	20.44
		1	3	21.80	20.41	20.47	20.61
		1	5	21.80	20.55	20.49	20.74
		3	0	21.80	20.60	20.45	20.51
		3	2	21.80	20.60	20.56	20.39
		3	3	21.80	20.27	20.34	20.54
		6	0	20.80	19.46	19.35	19.49
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
3MHz	QPSK	1	0	23.80	22.61	22.60	22.44
		1	7	23.80	22.58	22.58	22.43
		1	14	23.80	22.56	22.59	22.54
		8	0	22.80	21.48	21.42	21.45
		8	4	22.80	21.54	21.44	21.47
		8	7	22.80	21.51	21.41	21.51
		15	0	22.80	21.47	21.47	21.41
	16QAM	1	0	22.80	21.59	21.47	21.61
		1	7	22.80	21.41	21.55	21.44
		1	14	22.80	21.71	21.63	21.43
		8	0	21.80	20.45	20.50	20.46
		8	4	21.80	20.41	20.50	20.44
		8	7	21.80	20.38	20.48	20.48
		15	0	21.80	20.35	20.46	20.36
	64QAM	1	0	21.80	20.68	20.62	20.57
		1	7	21.80	20.52	20.60	20.45
		1	14	21.80	20.58	20.67	20.53
		8	0	20.80	19.51	19.38	19.49
		8	4	20.80	19.49	19.43	19.40
		8	7	20.80	19.44	19.49	19.42
		15	0	20.80	19.44	19.47	19.44
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	19965CH	20175CH	20385CH

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	19975CH	20175CH	20375CH
5MHz	QPSK	1	0	23.80	22.45	22.60	22.43
		1	13	23.80	22.52	22.59	22.47
		1	24	23.80	22.51	22.42	22.41
		12	0	22.80	21.53	21.47	21.47
		12	6	22.80	21.65	21.56	21.48
		12	13	22.80	21.63	21.60	21.48
		25	0	22.80	21.56	21.47	21.39
	16QAM	1	0	22.80	21.58	21.39	21.60
		1	13	22.80	21.71	21.73	21.42
		1	24	22.80	21.52	21.40	21.50
		12	0	21.80	20.53	20.58	20.53
		12	6	21.80	20.57	20.59	20.51
		12	13	21.80	20.56	20.41	20.58
		25	0	21.80	20.36	20.38	20.31
	64QAM	1	0	21.80	20.60	20.50	20.31
		1	13	21.80	20.69	20.59	20.39
		1	24	21.80	20.68	20.42	20.42
		12	0	20.80	19.60	19.60	19.53
		12	6	20.80	19.59	19.64	19.57
		12	13	20.80	19.58	19.64	19.53
		25	0	20.80	19.40	19.46	19.35
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
10MHz	QPSK	1	0	23.80	22.43	22.45	22.37
		1	25	23.80	22.47	22.41	22.38
		1	49	23.80	22.47	22.43	22.39
		25	0	22.80	21.59	21.47	21.42
		25	13	22.80	21.46	21.50	21.42
		25	25	22.80	21.44	21.50	21.41
		50	0	22.80	21.46	21.45	21.43
	16QAM	1	0	22.80	21.43	21.63	21.35
		1	25	22.80	21.63	21.57	21.47
		1	49	22.80	21.71	21.66	21.41
		25	0	21.80	20.49	20.54	20.44
		25	13	21.80	20.50	20.42	20.46
		25	25	21.80	20.50	20.42	20.49
		50	0	21.80	20.39	20.41	20.32
	64QAM	1	0	21.80	20.54	20.37	20.39
		1	25	21.80	20.43	20.40	20.46
		1	49	21.80	20.55	20.49	20.63
		25	0	20.80	19.53	19.52	19.53
		25	13	20.80	19.47	19.56	19.47
		25	25	20.80	19.50	19.54	19.54
		50	0	20.80	19.36	19.40	19.36
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20000CH	20175CH	20350CH

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20025CH	20175CH	20325CH
15MHz	QPSK	1	0	23.80	22.43	22.45	22.39
		1	38	23.80	22.39	22.49	22.52
		1	74	23.80	22.40	22.56	22.36
		36	0	22.80	21.49	21.50	21.43
		36	18	22.80	21.47	21.46	21.42
		36	39	22.80	21.52	21.48	21.42
		75	0	22.80	21.46	21.47	21.40
	16QAM	1	0	22.80	21.48	21.42	21.53
		1	38	22.80	21.38	21.34	21.56
		1	74	22.80	21.56	21.47	21.61
		36	0	21.80	20.41	20.42	20.42
		36	18	21.80	20.46	20.47	20.42
		36	39	21.80	20.43	20.42	20.42
		75	0	21.80	20.39	20.39	20.40
	64QAM	1	0	21.80	20.38	20.34	20.47
		1	38	21.80	20.44	20.32	20.51
		1	74	21.80	20.60	20.33	20.43
		36	0	20.80	19.44	19.47	19.52
		36	18	20.80	19.46	19.47	19.42
		36	39	20.80	19.47	19.47	19.50
		75	0	20.80	19.43	19.43	19.39
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
20MHz	QPSK	1	0	23.80	22.39	22.25	22.20
		1	50	23.80	22.31	22.21	22.18
		1	99	23.80	22.30	22.22	22.16
		50	0	22.80	21.18	21.15	21.13
		50	25	22.80	21.28	21.14	21.15
		50	50	22.80	21.27	21.33	21.13
		100	0	22.80	21.13	21.19	21.13
	16QAM	1	0	22.80	21.48	21.37	21.31
		1	50	22.80	21.35	21.38	21.53
		1	99	22.80	21.38	21.44	21.45
		50	0	21.80	20.06	20.22	20.11
		50	25	21.80	20.13	20.10	20.11
		50	50	21.80	20.10	20.08	20.11
		100	0	21.80	20.22	20.08	20.06
	64QAM	1	0	21.80	20.51	20.30	20.33
		1	50	21.80	20.37	20.31	20.34
		1	99	21.80	20.30	20.41	20.33
		50	0	20.80	19.25	19.24	19.29
		50	25	20.80	19.31	19.20	19.25
		50	50	20.80	19.25	19.22	19.26
		100	0	20.80	19.10	19.12	19.08

Table 40: Conducted power measurement results of LTE Band 4

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

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20407CH	20525CH	20643CH
1.4MHz	QPSK	1	0	24.50	23.22	23.18	23.05
		1	3	24.50	23.15	23.12	23.03
		1	5	24.50	23.15	23.15	23.07
		3	0	24.50	23.07	23.07	23.14
		3	2	24.50	23.02	23.09	23.19
		3	3	24.50	23.04	23.16	23.03
		6	0	23.50	22.11	22.09	22.04
	16QAM	1	0	23.50	22.24	22.32	22.29
		1	3	23.50	22.36	22.19	22.10
		1	5	23.50	22.06	22.23	22.07
		3	0	23.50	21.99	22.16	22.05
		3	2	23.50	22.09	22.07	22.15
		3	3	23.50	22.16	22.14	22.06
		6	0	22.50	20.98	21.02	20.83
	64QAM	1	0	22.50	21.40	21.22	20.98
		1	3	22.50	21.17	21.17	20.99
		1	5	22.50	21.23	21.27	21.35
		3	0	22.50	20.97	21.11	21.17
		3	2	22.50	21.10	21.09	21.17
		3	3	22.50	21.02	21.04	21.07
		6	0	21.50	20.06	20.00	19.99
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
3MHz	QPSK	1	0	24.50	23.11	23.16	23.10
		1	7	24.50	23.11	23.20	23.03
		1	14	24.50	23.13	23.16	23.15
		8	0	23.50	22.10	22.07	22.04
		8	4	23.50	22.14	22.11	22.07
		8	7	23.50	22.14	22.14	22.11
		15	0	23.50	22.16	22.13	22.11
	16QAM	1	0	23.50	22.25	22.27	22.02
		1	7	23.50	22.37	22.26	22.12
		1	14	23.50	22.21	22.39	22.21
		8	0	22.50	21.07	21.11	20.98
		8	4	22.50	20.99	21.10	20.98
		8	7	22.50	21.01	21.12	20.90
		15	0	22.50	21.03	21.08	21.04
	64QAM	1	0	22.50	21.27	21.23	21.21
		1	7	22.50	21.39	21.22	21.19
		1	14	22.50	21.19	21.24	21.23
		8	0	21.50	20.08	20.12	20.13
		8	4	21.50	20.13	20.19	20.11
		8	7	21.50	20.05	20.14	20.12
		15	0	21.50	20.08	20.13	20.18

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20425CH	20525CH	20625CH
5MHz	QPSK	1	0	24.50	23.11	23.12	23.14
		1	13	24.50	23.11	23.13	23.06
		1	24	24.50	23.12	23.17	23.11
		12	0	23.50	22.16	22.17	22.14
		12	6	23.50	22.17	22.18	22.13
		12	13	23.50	22.17	22.22	22.17
		25	0	23.50	22.10	22.13	22.12
	16QAM	1	0	23.50	22.37	22.46	22.45
		1	13	23.50	22.28	22.44	22.33
		1	24	23.50	22.38	22.32	22.27
		12	0	22.50	21.14	21.20	21.10
		12	6	22.50	21.14	21.16	21.11
		12	13	22.50	21.17	21.17	21.12
		25	0	22.50	21.03	21.10	21.02
	64QAM	1	0	22.50	21.17	21.24	21.23
		1	13	22.50	21.24	21.13	21.33
		1	24	22.50	21.27	21.07	21.24
		12	0	21.50	20.07	20.20	20.13
		12	6	21.50	20.10	20.22	20.20
		12	13	21.50	20.19	20.24	20.20
		25	0	21.50	20.06	20.15	20.10
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
10MHz	QPSK	1	0	24.50	23.15	23.08	23.09
		1	25	24.50	23.08	23.13	23.13
		1	49	24.50	23.11	23.11	23.07
		25	0	23.50	22.13	22.11	22.10
		25	13	23.50	22.13	22.12	22.11
		25	25	23.50	22.12	22.12	22.10
		50	0	23.50	22.04	22.13	22.09
	16QAM	1	0	23.50	22.19	22.34	22.15
		1	25	23.50	22.11	22.14	22.11
		1	49	23.50	22.19	22.25	22.06
		25	0	22.50	21.06	21.07	21.03
		25	13	22.50	21.04	21.03	21.04
		25	25	22.50	21.07	21.06	20.99
		50	0	22.50	21.00	21.09	21.02
	64QAM	1	0	22.50	21.21	21.22	21.18
		1	25	22.50	21.28	21.28	21.16
		1	49	22.50	21.18	21.35	21.23
		25	0	21.50	20.22	20.25	20.11
		25	13	21.50	20.22	20.26	20.12
		25	25	21.50	20.21	20.24	20.14
		50	0	21.50	20.13	20.09	20.08

Table 41: 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	20.50	19.16	19.29	19.20
		1	3	20.50	19.19	19.32	19.20
		1	5	20.50	19.27	19.28	19.19
		3	0	20.50	19.20	19.29	19.24
		3	2	20.50	19.26	19.23	19.24
		3	3	20.50	19.16	19.24	19.19
		6	0	20.50	19.20	19.16	19.04
	16QAM	1	0	20.50	19.15	19.27	19.29
		1	3	20.50	19.33	19.45	19.29
		1	5	20.50	19.35	19.41	19.28
		3	0	20.50	19.18	19.29	19.15
		3	2	20.50	19.20	19.27	19.13
		3	3	20.50	19.13	19.22	19.21
		6	0	20.50	19.10	19.20	19.12
	64QAM	1	0	20.50	19.25	19.35	19.22
		1	3	20.50	19.33	19.21	19.15
		1	5	20.50	19.25	19.34	19.11
		3	0	20.50	19.00	19.29	19.28
		3	2	20.50	19.23	19.29	19.27
		3	3	20.50	19.31	19.25	19.18
		6	0	20.50	18.96	19.14	19.21
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
3MHz	QPSK	1	0	20.50	19.20	19.31	19.23
		1	7	20.50	19.21	19.28	19.29
		1	14	20.50	19.21	19.31	19.27
		8	0	20.50	19.19	19.30	19.25
		8	4	20.50	19.16	19.27	19.20
		8	7	20.50	19.24	19.23	19.21
		15	0	20.50	19.25	19.27	19.15
	16QAM	1	0	20.50	19.45	19.38	19.55
		1	7	20.50	19.38	19.34	19.36
		1	14	20.50	19.47	19.15	19.38
		8	0	20.50	19.12	19.23	19.14
		8	4	20.50	19.18	19.13	19.14
		8	7	20.50	19.16	19.23	19.14
		15	0	20.50	19.18	19.24	19.10
	64QAM	1	0	20.50	19.18	19.35	19.30
		1	7	20.50	19.23	19.44	19.27
		1	14	20.50	19.23	19.32	19.26
		8	0	20.50	19.15	19.17	19.21
		8	4	20.50	19.17	19.09	19.16
		8	7	20.50	19.15	19.15	19.19
		15	0	20.50	19.18	19.26	19.13

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20425CH	20525CH	20625CH
5MHz	QPSK	1	0	20.50	19.29	19.26	19.28
		1	13	20.50	19.27	19.30	19.25
		1	24	20.50	19.29	19.28	19.28
		12	0	20.50	19.31	19.31	19.31
		12	6	20.50	19.27	19.36	19.30
		12	13	20.50	19.30	19.35	19.30
		25	0	20.50	19.23	19.25	19.13
	16QAM	1	0	20.50	19.36	19.38	19.38
		1	13	20.50	19.41	19.48	19.41
		1	24	20.50	19.36	19.43	19.53
		12	0	20.50	19.29	19.24	19.29
		12	6	20.50	19.30	19.28	19.25
		12	13	20.50	19.28	19.25	19.25
		25	0	20.50	19.17	19.17	19.08
	64QAM	1	0	20.50	19.31	19.38	19.39
		1	13	20.50	19.38	19.28	19.37
		1	24	20.50	19.30	19.28	19.28
		12	0	20.50	19.27	19.35	19.26
		12	6	20.50	19.31	19.32	19.29
		12	13	20.50	19.34	19.26	19.35
		25	0	20.50	19.20	19.22	19.12
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
10MHz	QPSK	1	0	20.50	19.23	19.28	19.20
		1	25	20.50	19.18	19.25	19.20
		1	49	20.50	19.15	19.25	19.17
		25	0	20.50	19.22	19.29	19.25
		25	13	20.50	19.27	19.28	19.22
		25	25	20.50	19.27	19.28	19.26
		50	0	20.50	19.22	19.22	19.22
	16QAM	1	0	20.50	19.41	19.30	19.24
		1	25	20.50	19.34	19.35	19.27
		1	49	20.50	19.29	19.27	19.29
		25	0	20.50	19.18	19.21	19.21
		25	13	20.50	19.16	19.16	19.16
		25	25	20.50	19.20	19.18	19.19
		50	0	20.50	19.13	19.15	19.17
	64QAM	1	0	20.50	19.20	19.10	19.24
		1	25	20.50	19.24	19.42	19.18
		1	49	20.50	19.44	19.29	19.25
		25	0	20.50	19.28	19.25	19.22
		25	13	20.50	19.22	19.26	19.19
		25	25	20.50	19.22	19.28	19.19
		50	0	20.50	19.18	19.22	19.21

Table 42: Conducted power measurement results of LTE Band 5 (Receiver ON)

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

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20407CH	20525CH	20643CH
1.4MHz	QPSK	1	0	24.50	23.30	23.16	23.11
		1	3	24.50	23.26	23.18	23.15
		1	5	24.50	23.24	23.18	23.19
		3	0	24.50	23.12	23.17	23.11
		3	2	24.50	23.18	23.19	23.10
		3	3	24.50	23.16	23.16	23.11
		6	0	23.50	22.16	22.15	22.09
	16QAM	1	0	23.50	22.28	22.35	22.21
		1	3	23.50	22.26	22.38	22.37
		1	5	23.50	22.34	22.26	22.17
		3	0	23.50	22.20	22.23	22.12
		3	2	23.50	22.20	22.19	22.13
		3	3	23.50	22.22	22.10	22.08
		6	0	22.50	20.99	21.15	21.11
	64QAM	1	0	22.50	21.24	21.37	21.16
		1	3	22.50	21.28	21.25	21.23
		1	5	22.50	21.31	21.19	21.16
		3	0	22.50	21.19	21.22	21.08
		3	2	22.50	21.24	21.17	21.16
		3	3	22.50	21.24	21.22	21.09
		6	0	21.50	20.05	20.11	20.11
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
3MHz	QPSK	1	0	24.50	23.16	23.11	23.18
		1	7	24.50	23.20	23.13	23.18
		1	14	24.50	23.19	23.16	23.16
		8	0	23.50	22.14	22.22	22.24
		8	4	23.50	22.06	22.11	22.28
		8	7	23.50	22.06	22.14	22.30
		15	0	23.50	22.14	22.20	22.16
	16QAM	1	0	23.50	22.45	22.24	22.37
		1	7	23.50	22.28	22.30	22.32
		1	14	23.50	22.41	22.43	22.38
		8	0	22.50	21.14	21.09	21.10
		8	4	22.50	21.21	21.09	21.13
		8	7	22.50	21.21	21.12	21.04
		15	0	22.50	21.17	21.06	21.04
	64QAM	1	0	22.50	21.06	21.29	21.13
		1	7	22.50	21.16	21.22	21.19
		1	14	22.50	21.25	21.37	21.26
		8	0	21.50	20.10	20.12	20.13
		8	4	21.50	20.09	20.12	20.11
		8	7	21.50	20.10	20.17	20.14
		15	0	21.50	20.16	20.12	20.23
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20415CH	20525CH	20635CH

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20425CH	20525CH	20625CH
5MHz	QPSK	1	0	24.50	23.14	23.11	23.08
		1	13	24.50	23.23	23.10	23.11
		1	24	24.50	23.25	23.17	23.21
		12	0	23.50	22.20	22.35	22.14
		12	6	23.50	22.19	22.30	22.17
		12	13	23.50	22.19	22.36	22.13
		25	0	23.50	22.15	22.12	22.23
	16QAM	1	0	23.50	22.35	22.19	22.17
		1	13	23.50	22.29	22.17	22.17
		1	24	23.50	22.28	22.30	22.32
		12	0	22.50	21.18	21.14	21.09
		12	6	22.50	21.13	21.17	21.12
		12	13	22.50	21.17	21.16	21.13
		25	0	22.50	21.11	21.08	21.09
	64QAM	1	0	22.50	21.28	21.16	21.13
		1	13	22.50	21.36	21.08	21.24
		1	24	22.50	21.21	21.11	21.24
		12	0	21.50	20.18	20.17	20.16
		12	6	21.50	20.22	20.18	20.15
		12	13	21.50	20.21	20.18	20.13
		25	0	21.50	20.09	20.10	20.06
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
10MHz	QPSK	1	0	24.50	23.14	23.07	23.13
		1	25	24.50	23.08	23.10	23.05
		1	49	24.50	23.10	23.09	23.06
		25	0	23.50	22.15	22.12	22.12
		25	13	23.50	22.14	22.13	22.10
		25	25	23.50	22.14	22.12	22.10
		50	0	23.50	22.11	22.12	22.22
	16QAM	1	0	23.50	22.12	22.11	22.11
		1	25	23.50	22.14	22.20	22.02
		1	49	23.50	22.11	22.19	22.13
		25	0	22.50	21.05	21.09	21.03
		25	13	22.50	21.04	21.07	21.06
		25	25	22.50	21.06	21.08	21.07
		50	0	22.50	21.05	21.05	21.01
	64QAM	1	0	22.50	21.01	21.18	21.03
		1	25	22.50	21.13	21.17	21.14
		1	49	22.50	21.21	21.19	21.24
		25	0	21.50	20.27	20.14	20.14
		25	13	21.50	20.17	20.16	20.17
		25	25	21.50	20.27	20.16	20.14
		50	0	21.50	20.02	20.13	20.08

Table 43: Conducted power measurement results of LTE Band 5

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	23.00	21.81	21.53	21.25
		1	13	23.00	21.67	21.63	21.24
		1	24	23.00	21.87	21.63	21.31
		12	0	22.00	21.35	21.31	20.76
		12	6	22.00	21.32	21.25	20.75
		12	13	22.00	21.38	21.24	20.73
		25	0	22.00	21.24	21.18	20.73
	16QAM	1	0	22.00	21.60	21.27	21.14
		1	13	22.00	21.42	21.42	20.94
		1	24	22.00	21.42	21.50	20.81
		12	0	21.00	20.48	20.24	19.76
		12	6	21.00	20.48	20.30	19.86
		12	13	21.00	20.41	20.27	19.75
		25	0	21.00	20.20	20.11	19.71
	64QAM	1	0	21.00	20.42	20.45	19.97
		1	13	21.00	20.38	20.29	20.09
		1	24	21.00	20.38	20.28	20.17
		12	0	20.00	19.68	19.48	18.95
		12	6	20.00	19.72	19.50	18.93
		12	13	20.00	19.55	19.54	18.99
		25	0	20.00	19.39	19.36	18.91
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
10MHz	QPSK	1	0	23.00	21.80	21.42	21.29
		1	25	23.00	21.78	21.41	21.37
		1	49	23.00	21.79	21.39	21.26
		25	0	22.00	21.06	21.01	20.76
		25	13	22.00	21.05	21.02	20.76
		25	25	22.00	21.04	21.01	20.81
		50	0	22.00	20.93	21.02	20.48
	16QAM	1	0	22.00	21.29	21.14	20.81
		1	25	22.00	21.24	21.08	20.79
		1	49	22.00	21.40	21.12	20.73
		25	0	21.00	20.29	20.12	19.90
		25	13	21.00	20.21	20.02	19.78
		25	25	21.00	20.28	20.02	19.77
		50	0	21.00	20.07	20.04	19.55
	64QAM	1	0	21.00	20.41	20.22	19.92
		1	25	21.00	20.49	20.19	19.83
		1	49	21.00	20.40	20.15	19.89
		25	0	20.00	19.51	19.32	19.10
		25	13	20.00	19.49	19.41	19.06
		25	25	20.00	19.55	19.32	19.09
		50	0	20.00	19.36	19.29	18.77
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20800CH	21100CH	21400CH

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20825CH	21100CH	21375CH
15MHz	QPSK	1	0	23.00	21.81	21.44	21.45
		1	38	23.00	21.76	21.44	21.45
		1	74	23.00	21.80	21.40	21.49
		36	0	22.00	21.29	20.97	20.88
		36	18	22.00	21.36	20.97	20.83
		36	39	22.00	21.23	20.97	20.95
		75	0	22.00	21.13	20.96	20.77
	16QAM	1	0	22.00	21.29	21.09	21.17
		1	38	22.00	21.44	21.18	21.07
		1	74	22.00	21.44	21.10	21.06
		36	0	21.00	20.33	20.03	19.87
		36	18	21.00	20.25	20.05	19.91
		36	39	21.00	20.32	20.15	19.86
		75	0	21.00	20.11	20.00	19.63
	64QAM	1	0	21.00	20.54	20.24	20.16
		1	38	21.00	20.35	20.20	20.23
		1	74	21.00	20.32	20.28	20.23
		36	0	20.00	19.53	19.25	19.07
		36	18	20.00	19.49	19.25	19.18
		36	39	20.00	19.51	19.23	19.29
		75	0	20.00	19.47	19.28	19.00
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
20MHz	QPSK	1	0	23.00	22.05	21.69	22.06
		1	50	23.00	22.03	21.72	22.02
		1	99	23.00	22.10	21.70	21.98
		50	0	22.00	21.47	21.17	21.16
		50	25	22.00	21.46	21.16	21.16
		50	50	22.00	21.45	21.16	21.25
		100	0	22.00	21.31	21.30	21.06
	16QAM	1	0	22.00	21.62	21.29	21.76
		1	50	22.00	21.77	21.42	21.73
		1	99	22.00	21.61	21.25	21.83
		50	0	21.00	20.47	20.22	20.21
		50	25	21.00	20.49	20.26	20.23
		50	50	21.00	20.45	20.23	20.20
		100	0	21.00	20.29	20.36	20.09
	64QAM	1	0	21.00	21.00	20.60	20.82
		1	50	21.00	20.94	20.63	20.89
		1	99	21.00	20.96	20.68	20.71
		50	0	20.00	19.75	19.58	19.49
		50	25	20.00	19.70	19.63	19.51
		50	50	20.00	19.74	19.59	19.51
		100	0	20.00	19.61	19.77	19.27
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20850CH	21100CH	21350CH

Table 44: 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	19.00	16.90	16.98	16.55
		1	13	19.00	16.88	17.04	16.61
		1	24	19.00	16.93	16.96	16.48
		12	0	19.00	16.95	17.00	16.52
		12	6	19.00	16.95	16.98	16.63
		12	13	19.00	16.94	16.99	16.50
		25	0	19.00	17.01	16.94	16.57
	16QAM	1	0	19.00	16.91	17.12	16.78
		1	13	19.00	17.02	17.21	16.68
		1	24	19.00	17.17	17.01	16.62
		12	0	19.00	16.88	16.91	16.37
		12	6	19.00	16.89	16.97	16.42
		12	13	19.00	16.94	16.86	16.37
		25	0	19.00	16.78	16.91	16.43
	64QAM	1	0	19.00	16.89	17.05	16.53
		1	13	19.00	16.89	16.97	16.69
		1	24	19.00	16.94	16.91	16.53
		12	0	19.00	16.88	16.97	16.38
		12	6	19.00	17.03	16.94	16.45
		12	13	19.00	16.90	16.87	16.38
		25	0	19.00	16.71	16.82	16.30
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
10MHz	QPSK	1	0	19.00	17.01	16.86	16.52
		1	25	19.00	17.11	16.94	16.50
		1	49	19.00	17.17	16.92	16.54
		25	0	19.00	16.87	16.88	16.62
		25	13	19.00	16.86	16.92	16.52
		25	25	19.00	16.96	16.91	16.51
		50	0	19.00	16.74	16.86	16.42
	16QAM	1	0	19.00	17.00	16.89	16.59
		1	25	19.00	17.02	16.75	16.64
		1	49	19.00	16.98	16.83	16.68
		25	0	19.00	16.93	16.81	16.45
		25	13	19.00	16.83	16.82	16.48
		25	25	19.00	16.97	16.89	16.45
		50	0	19.00	16.77	16.77	16.33
	64QAM	1	0	19.00	17.02	16.81	16.63
		1	25	19.00	17.18	16.99	16.62
		1	49	19.00	16.89	16.84	16.48
		25	0	19.00	16.88	16.86	16.53
		25	13	19.00	16.84	16.88	16.50
		25	25	19.00	16.84	16.90	16.50
		50	0	19.00	16.73	16.78	16.36
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
10MHz	QPSK	1	0	19.00	20800CH	21100CH	21400CH
		1	25	19.00	20800CH	21100CH	21400CH
		1	49	19.00	20800CH	21100CH	21400CH
		25	0	19.00	20800CH	21100CH	21400CH
		25	13	19.00	20800CH	21100CH	21400CH
		25	25	19.00	20800CH	21100CH	21400CH
		50	0	19.00	20800CH	21100CH	21400CH
	16QAM	1	0	19.00	20800CH	21100CH	21400CH
		1	25	19.00	20800CH	21100CH	21400CH
		1	49	19.00	20800CH	21100CH	21400CH
		25	0	19.00	20800CH	21100CH	21400CH
		25	13	19.00	20800CH	21100CH	21400CH
		25	25	19.00	20800CH	21100CH	21400CH
		50	0	19.00	20800CH	21100CH	21400CH
	64QAM	1	0	19.00	20800CH	21100CH	21400CH
		1	25	19.00	20800CH	21100CH	21400CH
		1	49	19.00	20800CH	21100CH	21400CH
		25	0	19.00	20800CH	21100CH	21400CH
		25	13	19.00	20800CH	21100CH	21400CH
		25	25	19.00	20800CH	21100CH	21400CH
		50	0	19.00	20800CH	21100CH	21400CH

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20825CH	21100CH	21375CH
15MHz	QPSK	1	0	19.00	17.01	16.85	16.75
		1	38	19.00	17.02	16.86	16.73
		1	74	19.00	17.12	16.89	16.77
		36	0	19.00	16.96	16.99	16.63
		36	18	19.00	16.94	16.91	16.63
		36	39	19.00	16.95	16.98	16.68
		75	0	19.00	16.84	16.82	16.49
	16QAM	1	0	19.00	16.98	16.84	16.70
		1	38	19.00	17.00	16.94	16.69
		1	74	19.00	17.16	17.01	16.90
		36	0	19.00	16.80	16.81	16.71
		36	18	19.00	16.85	16.83	16.59
		36	39	19.00	16.83	16.85	16.64
		75	0	19.00	16.78	16.77	16.44
	64QAM	1	0	19.00	17.15	17.06	16.96
		1	38	19.00	17.12	16.79	16.83
		1	74	19.00	17.03	16.89	16.70
		36	0	19.00	16.85	16.95	16.62
		36	18	19.00	16.96	16.85	16.61
		36	39	19.00	16.93	16.89	16.62
		75	0	19.00	16.74	16.85	16.31
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
20MHz	QPSK	1	0	19.00	17.30	17.14	17.07
		1	50	19.00	17.32	17.21	17.07
		1	99	19.00	17.26	17.11	17.08
		50	0	19.00	17.03	17.02	17.02
		50	25	19.00	17.03	16.91	16.85
		50	50	19.00	17.03	16.91	16.85
		100	0	19.00	16.91	17.02	16.63
	16QAM	1	0	19.00	17.38	17.30	17.33
		1	50	19.00	17.42	17.25	17.15
		1	99	19.00	17.28	17.22	17.29
		50	0	19.00	17.12	17.05	16.90
		50	25	19.00	17.04	17.00	16.92
		50	50	19.00	17.02	16.94	16.91
		100	0	19.00	16.84	17.12	16.76
	64QAM	1	0	19.00	17.29	17.12	17.08
		1	50	19.00	17.25	17.34	17.03
		1	99	19.00	17.23	16.99	17.24
		50	0	19.00	17.06	16.99	16.94
		50	25	19.00	17.05	16.98	16.97
		50	50	19.00	17.06	17.07	17.05
		100	0	19.00	16.91	17.04	16.67
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20850CH	21100CH	21350CH

Table 45: Conducted power measurement results of LTE Band 7 (Receiver ON)

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	23.23	23.00	22.73
		1	13	24.00	23.22	22.95	22.77
		1	24	24.00	23.19	22.99	22.77
		12	0	23.00	22.26	21.97	21.84
		12	6	23.00	22.24	21.97	21.93
		12	13	23.00	22.24	21.97	21.93
		25	0	23.00	22.13	22.04	21.84
	16QAM	1	0	23.00	22.45	22.07	22.00
		1	13	23.00	22.24	22.20	22.10
		1	24	23.00	22.20	22.15	21.75
		12	0	22.00	21.21	20.99	20.81
		12	6	22.00	21.10	20.94	20.80
		12	13	22.00	21.25	20.98	20.79
		25	0	22.00	21.09	20.87	20.81
	64QAM	1	0	22.00	21.31	20.98	20.79
		1	13	22.00	21.33	21.14	20.67
		1	24	22.00	21.29	20.95	20.82
		12	0	21.00	20.32	20.02	19.80
		12	6	21.00	20.28	20.02	19.78
		12	13	21.00	20.27	20.03	19.85
		25	0	21.00	20.07	19.92	19.72
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
10MHz	QPSK	1	0	24.00	23.19	23.06	22.82
		1	25	24.00	23.20	23.11	22.90
		1	49	24.00	23.19	23.08	22.85
		25	0	23.00	22.15	22.07	21.92
		25	13	23.00	22.18	21.92	21.91
		25	25	23.00	22.14	21.95	21.91
		50	0	23.00	22.16	21.87	21.87
	16QAM	1	0	23.00	22.32	22.10	22.10
		1	25	23.00	22.14	22.36	21.92
		1	49	23.00	22.30	22.25	21.77
		25	0	22.00	21.11	20.89	20.75
		25	13	22.00	21.07	20.91	20.76
		25	25	22.00	21.12	20.88	20.79
		50	0	22.00	21.03	20.82	20.65
	64QAM	1	0	22.00	20.95	20.81	20.91
		1	25	22.00	21.07	20.88	20.76
		1	49	22.00	21.28	20.97	20.75
		25	0	21.00	20.17	19.93	19.78
		25	13	21.00	20.14	19.99	19.74
		25	25	21.00	20.17	19.97	19.78
		50	0	21.00	20.12	19.93	19.73

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	20825CH	21100CH	21375CH
15MHz	QPSK	1	0	24.00	23.25	22.99	22.80
		1	38	24.00	23.17	22.97	22.76
		1	74	24.00	23.20	22.97	22.75
		36	0	23.00	22.18	21.99	21.80
		36	18	23.00	22.16	21.99	21.83
		36	39	23.00	22.15	21.99	21.82
		75	0	23.00	22.10	21.94	21.73
	16QAM	1	0	23.00	22.16	22.05	21.84
		1	38	23.00	22.17	22.11	21.85
		1	74	23.00	22.24	22.02	21.87
		36	0	22.00	21.12	21.01	20.77
		36	18	22.00	21.12	20.97	20.73
		36	39	22.00	21.15	20.95	20.75
		75	0	22.00	21.04	20.83	20.64
	64QAM	1	0	22.00	21.19	21.13	20.90
		1	38	22.00	21.08	21.05	21.01
		1	74	22.00	21.08	20.98	20.77
		36	0	21.00	20.14	20.00	19.79
		36	18	21.00	20.09	19.98	19.83
		36	39	21.00	20.09	19.99	19.81
		75	0	21.00	20.03	19.93	19.72
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
20MHz	QPSK	1	0	24.00	23.36	23.16	23.09
		1	50	24.00	23.37	23.16	23.07
		1	99	24.00	23.40	23.18	23.06
		50	0	23.00	22.40	22.21	22.10
		50	25	23.00	22.48	22.23	22.08
		50	50	23.00	22.38	22.20	22.09
		100	0	23.00	22.41	22.17	22.02
	16QAM	1	0	23.00	22.40	22.36	22.21
		1	50	23.00	22.48	22.14	22.23
		1	99	23.00	22.35	22.39	22.11
		50	0	22.00	21.32	21.29	21.05
		50	25	22.00	21.33	21.29	21.00
		50	50	22.00	21.36	21.31	20.98
		100	0	22.00	21.29	21.26	20.97
	64QAM	1	0	22.00	21.47	21.15	21.07
		1	50	22.00	21.46	21.11	21.11
		1	99	22.00	21.55	21.06	21.28
		50	0	21.00	20.34	20.20	20.04
		50	25	21.00	20.35	20.20	20.06
		50	50	21.00	20.35	20.23	20.10
		100	0	21.00	20.42	20.13	20.01

Table 46: Conducted power measurement results of LTE Band 7

7.1.19 Conducted power measurements of LTE Band 12(Second Antenna)

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	23017CH	23095CH	23173CH
1.4MHz	QPSK	1	0	24.30	22.85	22.91	22.94
		1	3	24.30	22.86	22.93	22.90
		1	5	24.30	22.91	22.91	22.89
		3	0	24.30	22.80	22.84	22.88
		3	2	24.30	22.79	22.92	22.89
		3	3	24.30	22.81	22.85	22.88
		6	0	23.30	21.78	21.80	21.84
	16QAM	1	0	23.30	21.98	22.08	22.06
		1	3	23.30	21.97	22.06	21.99
		1	5	23.30	22.06	21.99	21.94
		3	0	23.30	21.81	21.86	21.93
		3	2	23.30	21.86	21.82	21.97
		3	3	23.30	21.89	21.81	21.90
		6	0	22.30	20.78	20.85	20.93
	64QAM	1	0	22.30	21.00	21.12	21.19
		1	3	22.30	21.05	21.12	21.09
		1	5	22.30	21.03	20.96	21.09
		3	0	22.30	20.87	20.92	21.13
		3	2	22.30	20.92	20.96	21.02
		3	3	22.30	20.86	21.01	21.01
		6	0	21.30	19.85	19.94	19.93
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
3MHz	QPSK	1	0	24.30	22.84	22.93	22.88
		1	7	24.30	22.85	22.89	22.89
		1	14	24.30	22.88	22.89	22.88
		8	0	23.30	21.82	21.84	21.91
		8	4	23.30	21.90	21.84	21.88
		8	7	23.30	21.87	21.86	21.91
		15	0	23.30	21.85	21.87	21.89
	16QAM	1	0	23.30	21.90	21.96	21.92
		1	7	23.30	21.90	21.98	21.97
		1	14	23.30	21.90	22.03	22.00
		8	0	22.30	20.79	20.89	21.02
		8	4	22.30	20.77	20.92	21.01
		8	7	22.30	20.81	20.93	20.91
		15	0	22.30	20.84	20.85	20.97
	64QAM	1	0	22.30	21.05	21.04	21.04
		1	7	22.30	21.02	21.03	21.20
		1	14	22.30	21.01	20.98	21.14
		8	0	21.30	19.94	19.95	19.99
		8	4	21.30	19.92	19.91	20.01
		8	7	21.30	19.84	19.96	20.02
		15	0	21.30	19.85	19.96	19.98

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	23035CH	23095CH	23155CH
5MHz	QPSK	1	0	24.30	22.91	22.88	22.89
		1	13	24.30	22.92	22.86	22.90
		1	24	24.30	22.86	22.86	22.90
		12	0	23.30	21.93	21.96	21.94
		12	6	23.30	21.93	21.93	21.90
		12	13	23.30	21.92	21.95	21.90
		25	0	23.30	21.87	21.85	21.90
	16QAM	1	0	23.30	22.02	22.10	22.12
		1	13	23.30	22.05	22.03	22.07
		1	24	23.30	21.95	22.07	22.09
		12	0	22.30	20.92	20.98	21.02
		12	6	22.30	20.91	20.95	21.02
		12	13	22.30	20.89	20.93	21.03
		25	0	22.30	20.85	20.79	20.94
	64QAM	1	0	22.30	21.01	21.06	21.05
		1	13	22.30	20.92	21.01	21.05
		1	24	22.30	20.97	21.08	21.08
		12	0	21.30	19.88	19.90	20.00
		12	6	21.30	19.89	19.96	20.02
		12	13	21.30	19.86	19.95	20.05
		25	0	21.30	19.88	19.93	20.04
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
10MHz	QPSK	1	0	24.30	22.84	22.82	22.84
		1	25	24.30	22.85	22.81	22.89
		1	49	24.30	22.85	22.86	22.86
		25	0	23.30	21.89	21.89	21.92
		25	13	23.30	21.90	21.91	21.91
		25	25	23.30	21.89	21.91	21.89
		50	0	23.30	21.87	21.84	21.85
	16QAM	1	0	23.30	22.02	21.87	22.06
		1	25	23.30	22.01	21.94	21.94
		1	49	23.30	21.88	21.88	21.96
		25	0	22.30	20.89	20.94	20.95
		25	13	22.30	20.90	20.93	20.97
		25	25	22.30	20.90	20.97	20.95
		50	0	22.30	20.79	20.85	20.91
	64QAM	1	0	22.30	20.91	20.90	20.98
		1	25	22.30	20.97	20.92	20.95
		1	49	22.30	20.90	20.89	21.00
		25	0	21.30	20.00	20.01	20.03
		25	13	21.30	19.99	20.01	20.01
		25	25	21.30	19.99	19.99	19.98
		50	0	21.30	19.91	19.98	19.94

Table 47: Conducted power measurement results of LTE Band 12 (Full Power)

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	23017CH	23095CH	23173CH
1.4MHz	QPSK	1	0	21.30	19.35	19.43	19.43
		1	3	21.30	19.34	19.40	19.43
		1	5	21.30	19.31	19.41	19.41
		3	0	21.30	19.23	19.34	19.41
		3	2	21.30	19.25	19.32	19.44
		3	3	21.30	19.26	19.37	19.43
		6	0	21.30	19.30	19.37	19.40
	16QAM	1	0	21.30	19.44	19.46	19.46
		1	3	21.30	19.40	19.59	19.56
		1	5	21.30	19.36	19.50	19.57
		3	0	21.30	19.30	19.32	19.47
		3	2	21.30	19.30	19.31	19.46
		3	3	21.30	19.30	19.29	19.39
		6	0	21.30	19.19	19.29	19.38
	64QAM	1	0	21.30	19.38	19.44	19.51
		1	3	21.30	19.30	19.44	19.40
		1	5	21.30	19.47	19.43	19.45
		3	0	21.30	19.45	19.48	19.50
		3	2	21.30	19.37	19.43	19.36
		3	3	21.30	19.30	19.45	19.56
		6	0	21.30	19.26	19.33	19.39
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
3MHz	QPSK	1	0	21.30	19.35	19.41	19.45
		1	7	21.30	19.36	19.41	19.44
		1	14	21.30	19.36	19.43	19.44
		8	0	21.30	19.28	19.40	19.39
		8	4	21.30	19.29	19.31	19.34
		8	7	21.30	19.31	19.33	19.42
		15	0	21.30	19.29	19.36	19.39
	16QAM	1	0	21.30	19.47	19.56	19.46
		1	7	21.30	19.34	19.55	19.50
		1	14	21.30	19.52	19.41	19.47
		8	0	21.30	19.28	19.32	19.37
		8	4	21.30	19.25	19.28	19.31
		8	7	21.30	19.28	19.35	19.42
		15	0	21.30	19.26	19.33	19.31
	64QAM	1	0	21.30	19.41	19.49	19.51
		1	7	21.30	19.43	19.38	19.49
		1	14	21.30	19.41	19.53	19.50
		8	0	21.30	19.33	19.28	19.40
		8	4	21.30	19.32	19.35	19.35
		8	7	21.30	19.20	19.35	19.41
		15	0	21.30	19.30	19.36	19.39

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	23035CH	23095CH	23155CH
5MHz	QPSK	1	0	21.30	19.31	19.42	19.36
		1	13	21.30	19.29	19.42	19.43
		1	24	21.30	19.29	19.41	19.43
		12	0	21.30	19.39	19.47	19.46
		12	6	21.30	19.39	19.46	19.47
		12	13	21.30	19.39	19.46	19.43
		25	0	21.30	19.41	19.39	19.39
	16QAM	1	0	21.30	19.49	19.68	19.60
		1	13	21.30	19.46	19.63	19.50
		1	24	21.30	19.45	19.53	19.63
		12	0	21.30	19.36	19.41	19.40
		12	6	21.30	19.33	19.41	19.42
		12	13	21.30	19.34	19.40	19.41
		25	0	21.30	19.32	19.32	19.36
	64QAM	1	0	21.30	19.41	19.49	19.47
		1	13	21.30	19.45	19.44	19.49
		1	24	21.30	19.43	19.56	19.48
		12	0	21.30	19.37	19.41	19.42
		12	6	21.30	19.38	19.43	19.41
		12	13	21.30	19.35	19.44	19.40
		25	0	21.30	19.38	19.39	19.39
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
10MHz	QPSK	1	0	21.30	19.41	19.35	19.39
		1	25	21.30	19.42	19.36	19.40
		1	49	21.30	19.42	19.35	19.39
		25	0	21.30	19.43	19.43	19.44
		25	13	21.30	19.38	19.42	19.46
		25	25	21.30	19.42	19.41	19.45
		50	0	21.30	19.35	19.40	19.38
	16QAM	1	0	21.30	19.41	19.47	19.49
		1	25	21.30	19.44	19.61	19.52
		1	49	21.30	19.40	19.43	19.56
		25	0	21.30	19.32	19.38	19.38
		25	13	21.30	19.33	19.31	19.38
		25	25	21.30	19.34	19.37	19.38
		50	0	21.30	19.30	19.30	19.34
	64QAM	1	0	21.30	19.54	19.36	19.45
		1	25	21.30	19.55	19.35	19.37
		1	49	21.30	19.48	19.44	19.43
		25	0	21.30	19.38	19.38	19.36
		25	13	21.30	19.38	19.37	19.45
		25	25	21.30	19.40	19.39	19.37
		50	0	21.30	19.36	19.31	19.34
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
10MHz	QPSK	1	0	21.30	19.41	19.35	19.39
		1	25	21.30	19.42	19.36	19.40
		1	49	21.30	19.42	19.35	19.39
		25	0	21.30	19.43	19.43	19.44
		25	13	21.30	19.38	19.42	19.46
		25	25	21.30	19.42	19.41	19.45
		50	0	21.30	19.35	19.40	19.38
	16QAM	1	0	21.30	19.41	19.47	19.49
		1	25	21.30	19.44	19.61	19.52
		1	49	21.30	19.40	19.43	19.56
		25	0	21.30	19.32	19.38	19.38
		25	13	21.30	19.33	19.31	19.38
		25	25	21.30	19.34	19.37	19.38
		50	0	21.30	19.30	19.30	19.34
	64QAM	1	0	21.30	19.54	19.36	19.45
		1	25	21.30	19.55	19.35	19.37
		1	49	21.30	19.48	19.44	19.43
		25	0	21.30	19.38	19.38	19.36
		25	13	21.30	19.38	19.37	19.45
		25	25	21.30	19.40	19.39	19.37
		50	0	21.30	19.36	19.31	19.34

Table 48: Conducted power measurement results of LTE Band 12 (Receiver ON)

7.1.20 Conducted power measurements of LTE Band 12(Main Antenna)

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	23017CH	23095CH	23173CH
1.4MHz	QPSK	1	0	24.30	22.97	22.91	22.93
		1	3	24.30	23.07	22.97	22.91
		1	5	24.30	23.03	22.98	23.06
		3	0	24.30	22.92	22.91	22.92
		3	2	24.30	23.01	22.92	22.87
		3	3	24.30	23.04	22.95	22.94
		6	0	23.30	21.91	21.90	21.87
	16QAM	1	0	23.30	22.04	21.97	22.12
		1	3	23.30	22.02	22.13	21.99
		1	5	23.30	22.04	22.02	22.08
		3	0	23.30	21.93	21.97	21.90
		3	2	23.30	21.95	21.88	21.88
		3	3	23.30	21.91	21.88	21.99
		6	0	22.30	20.89	20.87	20.95
	64QAM	1	0	22.30	20.98	21.05	21.02
		1	3	22.30	21.15	21.11	21.03
		1	5	22.30	21.06	21.11	21.10
		3	0	22.30	21.00	21.10	20.85
		3	2	22.30	21.19	21.06	21.06
		3	3	22.30	21.17	20.93	20.93
		6	0	21.30	19.91	19.95	19.92
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
3MHz	QPSK	1	0	24.30	22.97	22.97	22.94
		1	7	24.30	23.08	22.96	22.95
		1	14	24.30	22.95	22.95	22.91
		8	0	23.30	21.95	22.00	21.90
		8	4	23.30	21.91	21.95	21.99
		8	7	23.30	22.04	22.05	21.95
		15	0	23.30	21.95	22.00	21.90
	16QAM	1	0	23.30	22.09	21.99	22.12
		1	7	23.30	21.99	22.03	22.08
		1	14	23.30	22.09	22.01	22.06
		8	0	22.30	21.04	20.83	21.02
		8	4	22.30	21.00	20.88	20.97
		8	7	22.30	21.03	20.93	20.98
		15	0	22.30	20.96	20.92	20.99
	64QAM	1	0	22.30	21.11	21.12	21.12
		1	7	22.30	21.08	21.15	21.18
		1	14	22.30	21.09	21.09	21.17
		8	0	21.30	19.88	19.91	20.00
		8	4	21.30	20.00	19.92	20.09
		8	7	21.30	20.01	19.89	19.97
		15	0	21.30	19.91	19.96	19.93

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	23035CH	23095CH	23155CH
5MHz	QPSK	1	0	24.30	22.97	22.91	22.96
		1	13	24.30	22.96	23.05	22.94
		1	24	24.30	22.95	23.04	22.94
		12	0	23.30	21.99	22.00	22.02
		12	6	23.30	22.01	22.01	21.97
		12	13	23.30	21.99	22.00	21.99
		25	0	23.30	22.01	21.92	21.91
	16QAM	1	0	23.30	22.14	22.11	22.05
		1	13	23.30	22.14	22.11	22.20
		1	24	23.30	22.09	22.14	22.30
		12	0	22.30	20.94	21.11	21.04
		12	6	22.30	20.94	20.94	20.97
		12	13	22.30	20.95	21.11	21.03
		25	0	22.30	20.87	20.89	20.87
	64QAM	1	0	22.30	21.11	21.04	21.18
		1	13	22.30	21.23	21.01	21.09
		1	24	22.30	21.26	20.95	21.34
		12	0	21.30	19.95	20.03	19.98
		12	6	21.30	19.97	19.99	20.06
		12	13	21.30	19.94	20.03	20.07
		25	0	21.30	19.91	19.89	19.90
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
10MHz	QPSK	1	0	24.30	23.00	22.89	22.88
		1	25	24.30	22.94	22.92	23.00
		1	49	24.30	22.91	22.93	23.01
		25	0	23.30	22.10	22.00	22.05
		25	13	23.30	22.06	22.00	22.05
		25	25	23.30	22.04	21.99	21.95
		50	0	23.30	21.92	21.88	21.93
	16QAM	1	0	23.30	21.98	22.00	21.99
		1	25	23.30	21.93	21.89	22.14
		1	49	23.30	22.03	21.94	22.14
		25	0	22.30	20.90	20.88	20.89
		25	13	22.30	20.89	20.91	20.92
		25	25	22.30	20.87	20.91	20.88
		50	0	22.30	20.88	20.81	20.86
	64QAM	1	0	22.30	21.11	21.01	21.02
		1	25	22.30	21.01	21.03	20.87
		1	49	22.30	21.05	20.94	20.92
		25	0	21.30	19.96	19.94	19.98
		25	13	21.30	19.94	19.96	19.95
		25	25	21.30	19.92	19.94	19.96
		50	0	21.30	19.90	19.88	19.86

Table 49: Conducted power measurement results of LTE Band 12

7.1.21 Conducted power measurements of LTE Band 17(Second Antenna)

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	23755CH	23790CH	23825CH
5MHz	QPSK	1	0	24.30	23.02	22.96	22.95
		1	13	24.30	22.96	22.94	22.93
		1	24	24.30	22.99	22.93	22.95
		12	0	23.30	21.94	21.95	21.96
		12	6	23.30	21.96	21.95	21.96
		12	13	23.30	21.92	21.95	21.97
		25	0	23.30	21.90	21.93	21.90
	16QAM	1	0	23.30	22.15	22.22	22.11
		1	13	23.30	22.11	22.26	22.25
		1	24	23.30	22.18	22.19	22.16
		12	0	22.30	20.97	20.99	21.04
		12	6	22.30	20.97	21.04	21.03
		12	13	22.30	20.95	21.03	21.04
		25	0	22.30	20.87	20.86	20.96
	64QAM	1	0	22.30	21.19	21.14	21.15
		1	13	22.30	21.17	21.15	21.21
		1	24	22.30	21.13	21.14	21.17
		12	0	21.30	19.94	20.03	20.03
		12	6	21.30	19.94	20.07	20.00
		12	13	21.30	19.95	20.06	20.00
		25	0	21.30	19.87	19.91	19.94
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
10MHz	QPSK	1	0	24.30	22.92	22.87	22.87
		1	25	24.30	22.90	22.86	22.90
		1	49	24.30	22.90	22.85	22.91
		25	0	23.30	21.95	21.87	21.91
		25	13	23.30	21.95	21.90	21.90
		25	25	23.30	21.94	21.94	21.90
		50	0	23.30	21.87	21.90	21.90
	16QAM	1	0	23.30	22.05	22.08	22.04
		1	25	23.30	22.07	22.04	22.02
		1	49	23.30	22.20	22.04	22.10
		25	0	22.30	20.96	20.93	20.94
		25	13	22.30	20.97	20.92	20.93
		25	25	22.30	20.98	20.94	20.94
		50	0	22.30	20.80	20.85	20.86
	64QAM	1	0	22.30	21.12	20.98	21.10
		1	25	22.30	21.06	21.12	21.14
		1	49	22.30	21.12	21.00	21.04
		25	0	21.30	20.00	19.93	19.95
		25	13	21.30	19.96	19.96	19.95
		25	25	21.30	19.98	19.95	19.96
		50	0	21.30	19.82	19.86	19.88

Table 50: Conducted power measurement results of LTE Band 17 (Full Power)

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	23755CH	23790CH	23825CH
5MHz	QPSK	1	0	21.30	19.91	19.89	19.95
		1	13	21.30	19.87	19.88	19.93
		1	24	21.30	19.92	19.91	19.94
		12	0	21.30	19.84	19.87	19.93
		12	6	21.30	19.83	19.88	19.94
		12	13	21.30	19.82	19.87	19.93
		25	0	21.30	19.80	19.77	19.81
	16QAM	1	0	21.30	20.03	20.10	20.12
		1	13	21.30	20.01	20.20	19.95
		1	24	21.30	19.95	20.07	20.06
		12	0	21.30	19.75	19.94	19.85
		12	6	21.30	19.75	19.91	19.87
		12	13	21.30	19.88	19.92	19.84
		25	0	21.30	19.73	19.77	19.81
	64QAM	1	0	21.30	19.95	19.84	19.95
		1	13	21.30	20.02	20.01	19.91
		1	24	21.30	20.06	20.01	20.00
		12	0	21.30	19.91	19.94	19.92
		12	6	21.30	19.90	19.94	19.89
		12	13	21.30	19.86	19.95	19.92
		25	0	21.30	19.75	19.77	19.86
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
10MHz	QPSK	1	0	21.30	19.88	19.85	19.92
		1	25	21.30	19.90	19.86	19.91
		1	49	21.30	19.88	19.82	19.91
		25	0	21.30	19.87	19.85	19.87
		25	13	21.30	19.86	19.88	19.86
		25	25	21.30	19.85	19.83	19.85
		50	0	21.30	19.76	19.81	19.78
	16QAM	1	0	21.30	19.88	19.87	19.90
		1	25	21.30	19.92	19.89	19.99
		1	49	21.30	19.91	19.90	19.93
		25	0	21.30	19.82	19.82	19.79
		25	13	21.30	19.80	19.82	19.80
		25	25	21.30	19.81	19.81	19.83
		50	0	21.30	19.70	19.72	19.73
	64QAM	1	0	21.30	19.97	19.85	19.94
		1	25	21.30	19.81	19.90	19.85
		1	49	21.30	20.01	19.90	19.84
		25	0	21.30	19.85	19.84	19.83
		25	13	21.30	19.83	19.82	19.85
		25	25	21.30	19.83	19.85	19.86
		50	0	21.30	19.72	19.74	19.76
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
10MHz	QPSK	1	0	21.30	19.88	19.85	19.92
		1	25	21.30	19.90	19.86	19.91
		1	49	21.30	19.88	19.82	19.91
		25	0	21.30	19.87	19.85	19.87
		25	13	21.30	19.86	19.88	19.86
		25	25	21.30	19.85	19.83	19.85
		50	0	21.30	19.76	19.81	19.78
	16QAM	1	0	21.30	19.88	19.87	19.90
		1	25	21.30	19.92	19.89	19.99
		1	49	21.30	19.91	19.90	19.93
		25	0	21.30	19.82	19.82	19.79
		25	13	21.30	19.80	19.82	19.80
		25	25	21.30	19.81	19.81	19.83
		50	0	21.30	19.70	19.72	19.73
	64QAM	1	0	21.30	19.97	19.85	19.94
		1	25	21.30	19.81	19.90	19.85
		1	49	21.30	20.01	19.90	19.84
		25	0	21.30	19.85	19.84	19.83
		25	13	21.30	19.83	19.82	19.85
		25	25	21.30	19.83	19.85	19.86
		50	0	21.30	19.72	19.74	19.76

Table 51: Conducted power measurement results of LTE Band 17 (Receiver ON)

7.1.22 Conducted power measurements of LTE Band 17(Main Antenna)

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	23755CH	23790CH	23825CH
5MHz	QPSK	1	0	24.30	23.19	23.05	22.96
		1	13	24.30	23.13	23.04	22.97
		1	24	24.30	23.19	23.02	22.99
		12	0	23.30	22.03	22.05	22.05
		12	6	23.30	22.05	22.05	22.05
		12	13	23.30	21.98	22.04	22.07
		25	0	23.30	22.00	21.95	21.93
	16QAM	1	0	23.30	22.24	22.36	22.12
		1	13	23.30	22.23	22.00	22.00
		1	24	23.30	22.10	22.12	22.11
		12	0	22.30	21.02	21.07	21.10
		12	6	22.30	21.05	20.97	20.91
		12	13	22.30	21.02	20.97	21.02
		25	0	22.30	20.91	20.95	20.91
	64QAM	1	0	22.30	21.11	21.16	21.14
		1	13	22.30	21.26	21.09	21.17
		1	24	22.30	21.15	21.07	21.10
		12	0	21.30	20.06	20.05	20.01
		12	6	21.30	20.05	20.00	20.04
		12	13	21.30	20.02	20.01	20.03
		25	0	21.30	19.95	19.96	19.93
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
10MHz	QPSK	1	0	24.30	23.08	22.88	23.03
		1	25	24.30	22.99	22.91	23.10
		1	49	24.30	22.99	22.89	22.93
		25	0	23.30	21.99	22.01	21.96
		25	13	23.30	21.99	21.97	21.97
		25	25	23.30	22.01	21.98	22.02
		50	0	23.30	21.94	21.96	21.96
	16QAM	1	0	23.30	22.16	21.95	22.00
		1	25	23.30	22.19	22.01	22.00
		1	49	23.30	22.04	21.95	22.02
		25	0	22.30	20.97	20.97	20.93
		25	13	22.30	20.92	20.90	20.90
		25	25	22.30	20.98	20.93	20.95
		50	0	22.30	20.87	20.88	20.90
	64QAM	1	0	22.30	21.02	20.87	21.10
		1	25	22.30	21.13	21.04	21.09
		1	49	22.30	21.11	21.05	21.05
		25	0	21.30	20.00	19.98	19.99
		25	13	21.30	20.00	19.94	20.00
		25	25	21.30	19.95	19.98	19.98
		50	0	21.30	19.90	19.92	19.92
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
				Max.	23780CH	23790CH	23800CH

Table 52: Conducted power measurement results of LTE Band 17

7.1.23 Conducted power measurements of Downlink LTE CA

The following conducted power measurement results of downlink LTE carrier aggregation are provided to quantify downlink only carrier aggregation SAR test exclusion per KDB 941225 D05A.

Uplink maximum output power is measured with downlink carrier aggregation active, using the channel with highest measured maximum output power when downlink carrier aggregation is inactive, to confirm that when downlink carrier aggregation is active uplink maximum output power remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output power measured when downlink carrier aggregation inactive.

Power test equipment: R&S Radio Communication Tester CMW500 and Anritsu Radio Communication Analyzer MT8821C were used.

The power measurements result are in the table as below:

DL LTE CA Class	PCC								SCC1			Power		
	PCC Band	PCC Bandwidth (MHz)	PCC UL RB size	PCC UL RB offset	PCC DL RB size	PCC DL RB offset	PCC UL Channel	PCC DL Channel	SCC Band	SCC Bandwidth (MHz)	SCC DL Channel	Rel 8 LTE Tx Power (dBm)	DL LTE CA Tx Power (dBm)	Tune-up
CA_7C	7	20	1	99	100	0	20850	2850	7	20	3048	22.10	20.81	23.00
CA_2A-5A	2	20	1	0	100	0	18900	900	5	10	2525	22.00	22.03	23.50
	5	10	1	0	50	0	20450	2450	2	20	900	23.15	22.97	24.50
CA_4A-7A	4	20	1	99	100	0	20175	2175	7	20	3100	22.70	22.15	23.80
	7	20	1	99	100	0	20850	2850	4	20	2175	22.10	20.91	23.00
CA_5A-7A	5	10	1	0	50	0	20450	2450	7	20	3100	23.15	22.87	24.50
	7	20	1	99	100	0	20850	2850	5	10	2525	22.10	20.64	23.00
CA_2A-7A	2	20	1	0	100	0	18900	900	7	20	3100	22.00	20.89	23.50
	7	20	1	99	100	0	20850	2850	2	20	900	22.10	21.16	23.00

Table 53: Conducted power measurement results of DL CA(Second Antenna, Full Power)

DL LTE CA Class	PCC								SCC1			Power		
	PCC Band	PCC Bandwidth (MHz)	PCC UL RB size	PCC UL RB offset	PCC DL RB size	PCC DL RB offset	PCC UL Channel	PCC DL Channel	SCC Band	SCC Bandwidth (MHz)	SCC DL Channel	Rel 8 LTE Tx Power (dBm)	DL LTE CA Tx Power (dBm)	Tune-up
CA_7C	7	20	1	50	100	0	20850	2850	7	20	3048	17.42	17.27	19.00
CA_2A-5A	2	20	1	50	100	0	18900	900	5	10	2525	18.03	17.92	19.00
	5	10	1	49	50	0	20450	2450	2	20	900	19.44	19.64	20.50
CA_4A-7A	4	20	1	99	100	0	20175	2175	7	20	3100	19.39	18.77	20.30
	7	20	1	50	100	0	20850	2850	4	20	2175	17.42	17.25	19.00
CA_5A-7A	5	10	1	49	50	0	20450	2450	7	20	3100	19.44	19.58	20.50
	7	20	1	50	100	0	20850	2850	5	10	2525	17.42	16.55	19.00
CA_2A-7A	2	20	1	50	100	0	18900	900	7	20	3100	18.03	18.05	19.00
	7	20	1	50	100	0	20850	2850	2	20	900	17.42	16.85	19.00

Table 54: Conducted power measurement results of DL CA(Second Antenna, Receiver ON)

DL LTE CA Class	PCC								SCC1			Power		
	PCC Band	PCC Bandwidth (MHz)	PCC UL RB size	PCC UL RB offset	PCC DL RB size	PCC DL RB offset	PCC UL Channel	PCC DL Channel	SCC Band	SCC Bandwidth (MHz)	SCC DL Channel	Rel 8 LTE Tx Power (dBm)	DL LTE CA Tx Power (dBm)	Tune-up
CA_7C	7	20	1	99	100	0	20850	2850	7	20	3048	22.10	20.81	23.00
CA_2A-5A	2	20	1	0	100	0	19100	1100	5	10	2525	22.00	22.03	23.50
	5	10	1	0	50	0	20450	2450	2	20	900	23.15	22.97	24.50
CA_4A-7A	4	20	1	0	100	0	20175	2175	7	20	3100	22.06	21.76	23.30
	7	20	1	99	100	0	20850	2850	4	20	2175	22.10	20.91	23.00
CA_5A-7A	5	10	1	0	50	0	20450	2450	7	20	3100	23.15	22.87	24.50
	7	20	1	99	100	0	20850	2850	5	10	2525	22.10	20.64	23.00
CA_2A-7A	2	20	1	0	100	0	19100	1100	7	20	3100	22.00	20.89	23.50
	7	20	1	99	100	0	20850	2850	2	20	900	22.10	21.16	23.00

Table 55: Conducted power measurement results of DL CA(Second Antenna+WiFi Antenna simultaneous transmission/ Hotspot activated, Receiver OFF)

DL LTE CA Class	PCC								SCC1			Power		
	PCC Band	PCC Bandwidth (MHz)	PCC UL RB size	PCC UL RB offset	PCC DL RB size	PCC DL RB offset	PCC UL Channel	PCC DL Channel	SCC Band	SCC Bandwidth (MHz)	SCC DL Channel	Rel 8 LTE Tx Power (dBm)	DL LTE CA Tx Power (dBm)	Tune-up
CA_7C	7	20	1	50	100	0	20850	2850	7	20	3048	17.42	17.27	19.00
CA_2A-5A	2	20	1	50	100	0	18900	900	5	10	2525	18.03	17.92	19.00
	5	10	1	49	50	0	20450	2450	2	20	900	19.44	19.64	20.50
CA_4A-7A	4	20	1	50	100	0	20175	2175	7	20	3100	18.48	18.06	19.80
	7	20	1	99	100	0	20850	2850	4	20	2175	17.42	17.25	19.00
CA_5A-7A	5	10	1	49	50	0	20450	2450	7	20	3100	19.44	19.58	20.50
	7	20	1	50	100	0	20850	2850	5	10	2525	17.42	16.55	19.00
CA_2A-7A	2	20	1	50	100	0	18900	900	7	20	3100	18.03	18.05	19.00
	7	20	1	50	100	0	20850	2850	2	20	900	17.42	16.85	19.00

Table 56: Conducted power measurement results of DL CA(Second Antenna+WiFi Antenna simultaneous transmission/ Hotspot activated, Receiver ON)

DL LTE CA Class	PCC								SCC1			Power		
	PCC Band	PCC Bandwidth (MHz)	PCC UL RB size	PCC UL RB offset	PCC DL RB size	PCC DL RB offset	PCC UL Channel	PCC DL Channel	SCC Band	SCC Bandwidth (MHz)	SCC DL Channel	Rel 8 LTE Tx Power (dBm)	DL LTE CA Tx Power (dBm)	Tune-up
CA_7C	7	20	1	99	100	0	20850	2850	7	20	3048	23.40	23.60	24.00
CA_2A-5A	2	20	1	0	100	0	18700	700	5	10	2525	22.26	22.38	23.50
	5	10	1	0	50	0	20450	2450	2	20	900	23.14	23.38	24.50
CA_4A-7A	4	20	1	0	100	0	20050	2050	7	20	3100	22.39	22.53	23.80
	7	20	1	99	100	0	20850	2850	4	20	2175	23.40	22.17	24.00
CA_5A-7A	5	10	1	0	50	0	20450	2450	7	20	3100	23.14	23.23	24.50
	7	20	1	99	100	0	20850	2850	5	10	2525	23.40	22.27	24.00
CA_2A-7A	2	20	1	0	100	0	18700	700	7	20	3100	22.26	22.77	23.50
	7	20	1	99	100	0	20850	2850	2	20	900	23.40	22.16	24.00

Table 57: Conducted power measurement results of DL CA(Main Antenna, Full Power)

DL LTE CA Class	PCC								SCC1			Power		
	PCC Band	PCC Bandwidth (MHz)	PCC UL RB size	PCC UL RB offset	PCC DL RB size	PCC DL RB offset	PCC UL Channel	PCC DL Channel	SCC Band	SCC Bandwidth (MHz)	SCC DL Channel	Rel 8 LTE Tx Power (dBm)	DL LTE CA Tx Power (dBm)	Tune-up
CA_7C	7	20	1	99	100	0	20850	2850	7	20	3048	23.40	23.60	24.00
CA_2A-5A	2	20	50	25	100	0	18900	900	5	10	2525	21.48	21.35	22.50
	5	10	1	0	50	0	20450	2450	2	20	900	23.14	23.38	24.50
CA_4A-7A	4	20	1	0	100	0	20050	2050	7	20	3100	22.39	22.53	23.80
	7	20	1	99	100	0	20850	2850	4	20	2175	23.40	22.17	24.00
CA_5A-7A	5	10	1	0	50	0	20450	2450	7	20	3100	23.14	23.23	24.50
	7	20	1	99	100	0	20850	2850	5	10	2525	23.40	22.27	24.00
CA_2A-7A	2	20	50	25	100	0	18900	900	7	20	3100	21.48	21.71	22.50
	7	20	1	99	100	0	20850	2850	2	20	900	23.40	22.16	24.00

Table 58: Conducted power measurement results of DL CA (Main Antenna+WiFi Antenna simultaneous transmission/ Hotspot activated)

7.1.24 Conducted power measurements of WiFi 2.4G

The output power of WiFi antenna is as following:

Mode	Ant	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)
802.11b	Ant1	1	2412	1Mbps	17.00	15.55	No
		6	2437		17.00	16.74	Yes
		11	2462		17.00	16.34	No
802.11g	Ant1	1	2412	6Mbps	13.00	11.44	No
		2	2417		16.00	14.02	No
		6	2437		16.00	14.56	No
		10	2457		16.00	14.03	No
		11	2462		13.00	11.28	No
802.11n SISO 20M	Ant1	1	2412	MCS0	12.00	10.34	No
		2	2417		14.00	12.03	No
		6	2437		14.00	12.53	No
		10	2457		14.00	12.05	No
		11	2462		12.00	10.36	No
802.11n SISO 40M	Ant1	3	2422	MCS0	11.00	9.48	No
		4	2427		14.00	12.51	No
		6	2437		14.00	12.65	No
		8	2447		14.00	12.48	No
		9	2452		11.00	9.53	No

Table 59: Conducted power measurement results of WiFi 2.4G.(Full power)

Mode	Ant	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)
802.11b	Ant1	1	2412	1Mbps	12.00	10.51	Yes
		6	2437		12.00	10.31	No
		11	2462		12.00	10.44	No
802.11g	Ant1	1	2412	6Mbps	8.50	6.73	No
		2	2417		11.50	9.82	No
		6	2437		11.50	10.11	No
		10	2457		11.50	9.78	No
		11	2462		8.50	7.37	No
802.11n SISO 20M	Ant1	1	2412	MCS0	9.50	8.32	No
		2	2417		11.50	10.17	No
		6	2437		11.50	10.46	No
		10	2457		11.50	10.17	No
		11	2462		9.50	8.21	No
802.11n SISO 40M	Ant1	3	2422	MCS0	8.50	7.69	No
		4	2427		11.50	10.54	No
		6	2437		11.50	10.48	No
		8	2447		11.50	10.40	No
		9	2452		8.50	7.30	No

Table 60: Conducted power measurement results of WiFi 2.4G.(Receiver ON)

Note:

- 1) The Average conducted power of WiFi is measured with RMS detector.
- 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.

7.1.25 Conducted power measurements of WiFi 5G

Mode	Antenna	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)
802.11a SISO	Ant1	CH 36	5180	6Mbps	16.00	14.93	
		CH 40	5200		16.00	14.82	
		CH 44	5220		16.00	14.89	
		CH 48	5240		16.00	14.51	
		CH 52	5260		16.00	14.63	Yes
		CH 56	5280		16.00	14.58	
		CH 60	5300		16.00	14.35	
		CH 64	5320		16.00	14.20	
		CH 100	5500		16.00	15.61	
		CH 104	5520		16.00	15.63	Yes
		CH 108	5540		16.00	15.10	
		CH 112	5560		16.00	15.48	
		CH 116	5580		16.00	15.08	
		CH 120	5600		16.00	14.84	
		CH 124	5620		16.00	14.54	
		CH 128	5640		16.00	14.28	
		CH 132	5660		16.00	15.35	
		CH 136	5680		16.00	15.25	
		CH 140	5700		16.00	15.12	
		CH 144	5720		16.00	14.41	
		CH 149	5745		16.00	14.76	Yes
		CH 153	5765		16.00	14.44	
		CH 157	5785		16.00	14.20	
CH 161	5805	16.00	13.90				
CH 165	5825	16.00	13.70				

Mode	Antenna	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)
802.11n SISO 20M (5GHz)	Ant1	CH 36	5180	MCS0	15.00	13.16	
		CH 40	5200		15.00	13.10	
		CH 44	5220		15.00	13.02	
		CH 48	5240		15.00	12.93	
		CH 52	5260		15.00	12.90	
		CH 56	5280		15.00	12.89	
		CH 60	5300		15.00	12.81	
		CH 64	5320		15.00	12.71	
		CH 100	5500		15.00	14.05	
		CH 104	5520		15.00	13.93	
		CH 108	5540		15.00	13.74	
		CH 112	5560		15.00	13.65	
		CH 116	5580		15.00	13.41	
		CH 120	5600		15.00	13.15	
		CH 124	5620		15.00	12.93	
		CH 128	5640		15.00	12.63	
		CH 132	5660		15.00	13.71	
		CH 136	5680		15.00	13.61	
		CH 140	5700		15.00	13.44	
		CH 144	5720		15.00	13.23	
CH 149	5745	15.00	13.06				
CH 153	5765	15.00	12.82				
CH 157	5785	15.00	12.58				
CH 161	5805	15.00	12.30				
CH 165	5825	15.00	12.00				
Mode	Antenna	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)
802.11n SISO 40M (5GHz)	Ant1	CH 38	5190	MCS0	14.00	11.47	
		CH 46	5230		14.00	11.22	
		CH 54	5270		14.00	11.10	
		CH 62	5310		14.00	11.05	
		CH 102	5510		14.00	11.86	
		CH 110	5550		14.00	11.94	
		CH 118	5590		14.00	11.81	
		CH 126	5630		14.00	11.37	
		CH 134	5670		14.00	12.11	
		CH 142	5710		14.00	11.95	
		CH 151	5755		14.00	12.62	
		CH 159	5795		14.00	11.82	

Mode	Antenna	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)
802.11ac SISO 20M (5GHz)	Ant1	CH 36	5180	MCS0	15.00	11.59	
		CH 40	5200		15.00	11.54	
		CH 44	5220		15.00	11.56	
		CH 48	5240		15.00	11.59	
		CH 52	5260		15.00	11.37	
		CH 56	5280		15.00	11.48	
		CH 60	5300		15.00	11.35	
		CH 64	5320		15.00	11.37	
		CH 100	5500		15.00	12.20	
		CH 104	5520		15.00	12.20	
		CH 108	5540		15.00	12.19	
		CH 112	5560		15.00	12.15	
		CH 116	5580		15.00	12.32	
		CH 120	5600		15.00	12.11	
		CH 124	5620		15.00	12.15	
		CH 128	5640		15.00	12.04	
		CH 132	5660		15.00	12.56	
		CH 136	5680		15.00	12.56	
		CH 140	5700		15.00	12.56	
		CH 144	5720		15.00	12.66	
CH 149	5745	15.00	12.89				
CH 153	5765	15.00	12.70				
CH 157	5785	15.00	12.49				
CH 161	5805	15.00	12.17				
CH 165	5825	15.00	11.76				
Mode	Antenna	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)
802.11ac SISO 40M (5GHz)	Ant1	CH 38	5190	MCS0	14.00	11.00	
		CH 46	5230		14.00	11.05	
		CH 54	5270		14.00	11.04	
		CH 62	5310		14.00	10.81	
		CH 102	5510		14.00	11.70	
		CH 110	5550		14.00	11.73	
		CH 118	5590		14.00	11.76	
		CH 126	5630		14.00	11.27	
		CH 134	5670		14.00	12.14	
		CH 142	5710		14.00	11.91	
		CH 151	5755		14.00	12.20	
		CH 159	5795		14.00	11.88	

Mode	Antenna	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)
802.11ac SISO 80M (5GHz)	Ant1	CH 42	5210	MCS0	14.00	11.12	
		CH 58	5290		14.00	10.61	
		CH 106	5530		14.00	11.70	
		CH 122	5610		14.00	11.64	
		CH 138	5690		14.00	12.00	
		CH 155	5775		14.00	12.41	

Table 61: Conducted power measurement results of WiFi 5G.(Full power)

Mode	Antenna	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)
802.11a SISO	Ant1	CH 36	5180	6Mbps	11.00	10.17	
		CH 40	5200		11.00	10.06	
		CH 44	5220		11.00	10.15	
		CH 48	5240		11.00	10.28	
		CH 52	5260		11.00	9.83	
		CH 56	5280		11.00	10.00	
		CH 60	5300		11.00	10.07	
		CH 64	5320		11.00	10.14	Yes
		CH 100	5500		11.00	10.37	
		CH 104	5520		11.00	10.46	
		CH 108	5540		11.00	10.52	
		CH 112	5560		11.00	10.56	
		CH 116	5580		11.00	10.87	Yes
		CH 120	5600		11.00	10.77	
		CH 124	5620		11.00	10.65	
		CH 128	5640		11.00	10.35	
		CH 132	5660		11.00	9.91	
		CH 136	5680		11.00	10.14	
		CH 140	5700		11.00	10.01	
		CH 144	5720		11.00	9.96	
		CH 149	5745		11.00	9.19	Yes
		CH 153	5765		11.00	9.11	
		CH 157	5785		11.00	8.97	
		CH 161	5805		11.00	8.95	
CH 165	5825	11.00	8.92				

Mode	Antenna	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)
802.11n SISO 20M (5GHz)	Ant1	CH 36	5180	MCS0	10.50	7.57	
		CH 40	5200		10.50	7.78	
		CH 44	5220		10.50	7.48	
		CH 48	5240		10.50	7.54	
		CH 52	5260		10.50	7.01	
		CH 56	5280		10.50	7.23	
		CH 60	5300		10.50	7.24	
		CH 64	5320		10.50	7.35	
		CH 100	5500		10.50	7.47	
		CH 104	5520		10.50	7.27	
		CH 108	5540		10.50	7.45	
		CH 112	5560		10.50	7.49	
		CH 116	5580		10.50	8.39	
		CH 120	5600		10.50	8.31	
		CH 124	5620		10.50	8.15	
		CH 128	5640		10.50	8.02	
		CH 132	5660		10.50	7.60	
		CH 136	5680		10.50	7.55	
		CH 140	5700		10.50	7.65	
		CH 144	5720		10.50	7.60	
CH 149	5745	10.50	8.42				
CH 153	5765	10.50	8.32				
CH 157	5785	10.50	8.18				
CH 161	5805	10.50	8.01				
CH 165	5825	10.50	7.84				
Mode	Antenna	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)
802.11n SISO 40M (5GHz)	Ant1	CH 38	5190	MCS0	10.50	7.73	
		CH 46	5230		10.50	7.90	
		CH 54	5270		10.50	7.55	
		CH 62	5310		10.50	7.83	
		CH 102	5510		10.50	7.89	
		CH 110	5550		10.50	8.00	
		CH 118	5590		10.50	8.69	
		CH 126	5630		10.50	8.40	
		CH 134	5670		10.50	8.07	
		CH 142	5710		10.50	8.05	
		CH 151	5755		10.50	8.72	
		CH 159	5795		10.50	8.35	

Mode	Antenna	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)
802.11ac SISO 20M (5GHz)	Ant1	CH 36	5180	MCSac0	10.50	7.06	
		CH 40	5200		10.50	7.04	
		CH 44	5220		10.50	7.11	
		CH 48	5240		10.50	7.53	
		CH 52	5260		10.50	6.97	
		CH 56	5280		10.50	7.03	
		CH 60	5300		10.50	7.14	
		CH 64	5320		10.50	7.14	
		CH 100	5500		10.50	7.09	
		CH 104	5520		10.50	7.27	
		CH 108	5540		10.50	7.63	
		CH 112	5560		10.50	7.56	
		CH 116	5580		10.50	8.10	
		CH 120	5600		10.50	7.60	
		CH 124	5620		10.50	7.35	
		CH 128	5640		10.50	8.42	
		CH 132	5660		10.50	7.37	
		CH 136	5680		10.50	7.40	
		CH 140	5700		10.50	7.43	
		CH 144	5720		10.50	7.41	
CH 149	5745	10.50	8.32				
CH 153	5765	10.50	8.22				
CH 157	5785	10.50	8.10				
CH 161	5805	10.50	7.94				
CH 165	5825	10.50	7.78				
Mode	Antenna	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)
802.11ac SISO 40M (5GHz)	Ant1	CH 38	5190	MCS0	10.50	7.78	
		CH 46	5230		10.50	8.03	
		CH 54	5270		10.50	7.74	
		CH 62	5310		10.50	7.87	
		CH 102	5510		10.50	8.08	
		CH 110	5550		10.50	8.03	
		CH 118	5590		10.50	8.60	
		CH 126	5630		10.50	8.42	
		CH 134	5670		10.50	8.09	
		CH 142	5710		10.50	8.09	
		CH 151	5755		10.50	8.74	
		CH 159	5795		10.50	8.45	

Mode	Antenna	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)
802.11ac SISO 80M (5GHz)	Ant1	CH 42	5210	MCS0	10.50	7.73	
		CH 58	5290		10.50	7.86	
		CH 106	5530		10.50	8.01	
		CH 122	5610		10.50	8.33	
		CH 138	5690		10.50	8.01	
		CH 155	5775		10.50	8.01	

Table 62: Conducted power measurement results of WiFi 5G.(Receiver ON)

7.1.26 Conducted power measurements of BT

The output power of BT antenna is as the following:

BT	Tune-up	Average Conducted Power (dBm)		
	Max.	0CH	39CH	78CH
DH5	9.50	6.24	7.89	6.27
2DH5	7.50	5.67	7.45	5.60
3DH5	7.50	5.75	7.46	5.68
BT	Tune-up	Average Conducted Power (dBm)		
	Max.	0CH	19CH	39CH
BLE	6.50	4.81	4.55	4.16

Table 63: Conducted power measurement results of BT.

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

7.2 SAR measurement Results

General Notes:

- 1) Per KDB447498 D01, all SAR measurement results are scaled to the maximum tune-up tolerance limit to demonstrate SAR compliance.
- 2) Per KDB447498 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 KDB865664 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 KDB941225 D06, the DUT Dimension is bigger than $9\text{ cm} \times 5\text{ cm}$, 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 KDB648474 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 KDB865664 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).

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 KDB648474 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 KDB941225 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 KDB941225 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)

3) According to KDB 941225 D05 SAR for LTE Devices, for Time-Division Duplex (TDD) systems, SAR is tested using a fixed periodic duty factor according to the highest transmission duty factor (63.33%) implemented for the device and supported by the defined 3GPP LTE TDD configurations.

WiFi Notes:

Per KDB248227D01:

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 Result of GSM850

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	190/836.6	GSM	0.464	0.267	-0.02	29.39	30.30	0.573	Battery 1#	/
Left tilt	190/836.6	GSM	0.380	0.214	-0.10	29.39	30.30	0.469	Battery 1#	/
Right cheek	190/836.6	GSM	0.512	0.315	-0.14	29.39	30.30	0.632	Battery 1#	Yes
Right tilt	190/836.6	GSM	0.423	0.232	-0.04	29.39	30.30	0.522	Battery 1#	/
Right cheek	190/836.6	GSM	0.488	0.290	-0.10	29.39	30.30	0.602	Battery 2#	/
Right cheek	190/836.6	GSM	0.485	0.288	-0.14	29.39	30.30	0.599	With SIM2	/
Main Antenna										
Left cheek	190/836.6	GSM	0.050	0.036	-0.09	32.95	33.80	0.061	Battery 1#	/
Left tilt	190/836.6	GSM	0.042	0.028	-0.17	32.95	33.80	0.052	Battery 1#	/
Right cheek	190/836.6	GSM	0.037	0.025	-0.15	32.95	33.80	0.045	Battery 1#	/
Right tilt	190/836.6	GSM	0.038	0.025	-0.06	32.95	33.80	0.047	Battery 1#	/
Left cheek	190/836.6	GSM	0.050	0.036	-0.12	32.95	33.80	0.061	Battery 2#	Yes
Left cheek	190/836.6	GSM	0.050	0.035	0.12	32.95	33.80	0.061	With SIM2	/

Table 64: Head SAR test results of GSM850

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	190/836.6	GSM	0.103	0.080	-0.12	31.35	32.30	0.128	Battery 1#	/
Back Side	15mm	190/836.6	GSM	0.116	0.089	-0.11	31.35	32.30	0.144	Battery 1#	Yes
Back Side	15mm	190/836.6	GSM	0.115	0.089	-0.17	31.35	32.30	0.143	Battery 2#	/
Back Side	15mm	190/836.6	GSM	0.113	0.087	-0.16	31.35	32.30	0.141	With SIM2	/
Main Antenna											
Front Side	15mm	190/836.6	GSM	0.160	0.112	-0.05	32.95	33.80	0.195	Battery 1#	/
Back Side	15mm	190/836.6	GSM	0.213	0.140	-0.06	32.95	33.80	0.259	Battery 1#	/
Back Side	15mm	190/836.6	GSM	0.239	0.157	-0.06	32.95	33.80	0.291	Battery 2#	Yes
Back Side	15mm	190/836.6	GSM	0.212	0.137	0.13	32.95	33.80	0.258	With SIM2	/

Table 65: Body-Worn SAR test results of GSM850

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	190/836.6	GPRS 2TS	0.271	0.164	-0.16	28.30	29.30	0.341	Battery 1#	/
Back Side	10mm	190/836.6	GPRS 2TS	0.313	0.192	-0.08	28.30	29.30	0.394	Battery 1#	/
Left Side	10mm	190/836.6	GPRS 2TS	0.344	0.240	-0.19	28.30	29.30	0.433	Battery 1#	Yes
Right Side	10mm	190/836.6	GPRS 2TS	0.068	0.046	-0.06	28.30	29.30	0.086	Battery 1#	/
Top Side	10mm	190/836.6	GPRS 2TS	0.288	0.140	-0.19	28.30	29.30	0.363	Battery 1#	/
Left Side	10mm	190/836.6	GPRS 2TS	0.337	0.235	-0.11	28.30	29.30	0.424	Battery 2#	/
Left Side	10mm	190/836.6	GPRS 2TS	0.334	0.233	0.09	28.30	29.30	0.421	With SIM2	/
Main Antenna											
Front Side	10mm	190/836.6	GPRS 2TS	0.328	0.216	-0.08	29.89	30.80	0.404	Battery 1#	/
Back Side	10mm	190/836.6	GPRS 2TS	0.449	0.271	-0.05	29.89	30.80	0.554	Battery 1#	Yes
Left Side	10mm	190/836.6	GPRS 2TS	0.234	0.127	-0.12	29.89	30.80	0.289	Battery 1#	/
Right Side	10mm	190/836.6	GPRS 2TS	0.054	0.036	-0.06	29.89	30.80	0.067	Battery 1#	/
Bottom Side	10mm	190/836.6	GPRS 2TS	0.213	0.120	0.05	29.89	30.80	0.263	Battery 1#	/
Back Side	10mm	190/836.6	GPRS 2TS	0.392	0.239	0.04	29.89	30.80	0.483	Battery 2#	/
Back Side	10mm	190/836.6	GPRS 2TS	0.416	0.253	-0.03	29.89	30.80	0.513	With SIM2	/

Table 66: Hotspot SAR test results of GSM850

Note:

Per KDB 648474 D04, Product Specific 10-g SAR test is not required for this frequency band since hotspot mode 1-g reported SAR < 1.2 W/kg.

7.2.2 SAR measurement Result 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	0.147	0.089	-0.03	28.25	29.50	0.196	Battery 1#	/
Left tilt	661/1880	GSM	0.181	0.104	-0.02	28.25	29.50	0.241	Battery 1#	/
Right cheek	661/1880	GSM	0.441	0.235	-0.19	28.25	29.50	0.588	Battery 1#	Yes
Right tilt	661/1880	GSM	0.382	0.200	-0.06	28.25	29.50	0.509	Battery 1#	/
Right cheek	661/1880	GSM	0.435	0.231	-0.19	28.25	29.50	0.580	Battery 2#	/
Right cheek	661/1880	GSM	0.422	0.225	-0.03	28.25	29.50	0.563	With SIM2	/
Main Antenna										
Left cheek	661/1880	GSM	0.062	0.037	-0.11	29.91	31.00	0.080	Battery 1#	/
Left tilt	661/1880	GSM	0.039	0.022	-0.07	29.91	31.00	0.050	Battery 1#	/
Right cheek	661/1880	GSM	0.056	0.033	-0.10	29.91	31.00	0.072	Battery 1#	/
Right tilt	661/1880	GSM	0.041	0.023	0.00	29.91	31.00	0.052	Battery 1#	/
Left cheek	661/1880	GSM	0.072	0.045	-0.19	29.91	31.00	0.092	Battery 2#	Yes
Left cheek	661/1880	GSM	0.070	0.041	0.01	29.91	31.00	0.090	With SIM2	/

Table 67: 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	0.075	0.044	-0.07	29.81	31.00	0.099	Battery 1#	/
Back Side	15mm	661/1880	GSM	0.101	0.058	-0.13	29.81	31.00	0.133	Battery 1#	/
Back Side	15mm	661/1880	GSM	0.105	0.060	-0.01	29.81	31.00	0.138	Battery 2#	Yes
Back Side	15mm	661/1880	GSM	0.098	0.056	-0.09	29.81	31.00	0.129	With SIM2	/
Main Antenna											
Front Side	15mm	661/1880	GSM	0.108	0.064	-0.16	29.91	31.00	0.139	Battery 1#	/
Back Side	15mm	661/1880	GSM	0.128	0.075	-0.06	29.91	31.00	0.165	Battery 1#	/
Back Side	15mm	661/1880	GSM	0.137	0.079	0.10	29.91	31.00	0.176	Battery 2#	Yes
Back Side	15mm	661/1880	GSM	0.131	0.076	-0.07	29.91	31.00	0.168	With SIM2	/

Table 68: 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	0.130	0.073	-0.12	26.75	28.00	0.173	Battery 1#	/
Back Side	10mm	661/1880	GPRS 2TS	0.170	0.092	0.03	26.75	28.00	0.227	Battery 1#	/
Left Side	10mm	661/1880	GPRS 2TS	0.208	0.113	-0.10	26.75	28.00	0.277	Battery 1#	/
Right Side	10mm	661/1880	GPRS 2TS	0.019	0.010	-0.15	26.75	28.00	0.025	Battery 1#	/
Top Side	10mm	661/1880	GPRS 2TS	0.191	0.105	0.17	26.75	28.00	0.255	Battery 1#	/
Left Side	10mm	661/1880	GPRS 2TS	0.225	0.122	0.18	26.75	28.00	0.300	Battery 2#	Yes
Left Side	10mm	661/1880	GPRS 2TS	0.202	0.105	0.18	26.75	28.00	0.269	With SIM2	/
Main Antenna											
Front Side	10mm	661/1880	GPRS 2TS	0.191	0.106	-0.02	26.83	28.00	0.250	Battery 1#	/
Back Side	10mm	661/1880	GPRS 2TS	0.255	0.136	-0.07	26.83	28.00	0.334	Battery 1#	/
Left Side	10mm	661/1880	GPRS 2TS	0.120	0.068	0.05	26.83	28.00	0.157	Battery 1#	/
Right Side	10mm	661/1880	GPRS 2TS	0.079	0.045	0.03	26.83	28.00	0.103	Battery 1#	/
Bottom Side	10mm	661/1880	GPRS 2TS	0.373	0.202	-0.07	26.83	28.00	0.488	Battery 1#	Yes
Bottom Side	10mm	661/1880	GPRS 2TS	0.362	0.197	0.01	26.83	28.00	0.474	Battery 2#	/
Bottom Side	10mm	661/1880	GPRS 2TS	0.331	0.179	0.01	26.83	28.00	0.433	With SIM2	/

Table 69: Hotspot SAR test results of GSM1900

Note:

Per KDB 648474 D04, Product Specific 10-g SAR test is not required for this frequency band since hotspot mode 1-g reported SAR < 1.2 W/kg.

7.2.3 SAR measurement Result 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	0.184	0.112	-0.03	18.13	19.30	0.241	Battery 1#	/
Left tilt	9400/1880	RMC	0.189	0.119	-0.01	18.13	19.30	0.247	Battery 1#	/
Right cheek	9400/1880	RMC	0.568	0.308	-0.02	18.13	19.30	0.744	Battery 1#	/
Right tilt	9400/1880	RMC	0.509	0.253	0.02	18.13	19.30	0.666	Battery 1#	/
Right cheek	9400/1880	RMC	0.592	0.320	-0.05	18.13	19.30	0.775	Battery 2#	Yes
Right cheek	9400/1880	RMC	0.545	0.294	-0.12	18.13	19.30	0.714	With SIM2	/
Main Antenna										
Left cheek	9400/1880	RMC	0.145	0.092	-0.14	22.73	23.80	0.186	Battery 1#	Yes
Left tilt	9400/1880	RMC	0.063	0.036	0.00	22.73	23.80	0.081	Battery 1#	/
Right cheek	9400/1880	RMC	0.096	0.056	-0.19	22.73	23.80	0.123	Battery 1#	/
Right tilt	9400/1880	RMC	0.048	0.026	-0.09	22.73	23.80	0.061	Battery 1#	/
Left cheek	9400/1880	RMC	0.143	0.092	0.10	22.73	23.80	0.183	Battery 2#	/
Left cheek	9400/1880	RMC	0.136	0.087	0.13	22.73	23.80	0.174	With SIM2	/

Table 70: 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	0.154	0.091	-0.16	22.64	23.80	0.201	Battery 1#	/
Back Side	15mm	9400/1880	RMC	0.230	0.131	-0.10	22.64	23.80	0.300	Battery 1#	Yes
Back Side	15mm	9400/1880	RMC	0.210	0.121	-0.12	22.64	23.80	0.274	Battery 2#	/
Back Side	15mm	9400/1880	RMC	0.228	0.132	-0.03	22.64	23.80	0.298	With SIM2	/
Main Antenna											
Front Side	15mm	9400/1880	RMC	0.167	0.099	-0.02	22.73	23.80	0.214	Battery 1#	/
Back Side	15mm	9400/1880	RMC	0.233	0.133	-0.03	22.73	23.80	0.298	Battery 1#	/
Back Side	15mm	9400/1880	RMC	0.245	0.139	-0.09	22.73	23.80	0.313	Battery 2#	Yes
Back Side	15mm	9400/1880	RMC	0.212	0.124	-0.07	22.73	23.80	0.271	With SIM2	/

Table 71: 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	0.303	0.172	-0.10	22.64	23.80	0.396	Battery 1#	/
Back Side	10mm	9400/1880	RMC	0.477	0.256	-0.08	22.64	23.80	0.623	Battery 1#	/
Left Side	10mm	9400/1880	RMC	0.488	0.266	0.05	22.64	23.80	0.637	Battery 1#	/
Right Side	10mm	9400/1880	RMC	0.052	0.029	0.02	22.64	23.80	0.068	Battery 1#	/
Top Side	10mm	9400/1880	RMC	0.466	0.257	0.06	22.64	23.80	0.609	Battery 1#	/
Left Side	10mm	9400/1880	RMC	0.520	0.282	0.13	22.64	23.80	0.679	Battery 2#	Yes
Left Side	10mm	9400/1880	RMC	0.483	0.252	0.06	22.64	23.80	0.631	With SIM2	/
Main Antenna											
Front Side	10mm	9400/1880	RMC	0.321	0.178	-0.09	22.20	23.30	0.414	Battery 1#	/
Back Side	10mm	9400/1880	RMC	0.432	0.229	-0.11	22.20	23.30	0.557	Battery 1#	/
Left Side	10mm	9400/1880	RMC	0.204	0.114	0.18	22.20	23.30	0.263	Battery 1#	/
Right Side	10mm	9400/1880	RMC	0.126	0.070	0.19	22.20	23.30	0.162	Battery 1#	/
Bottom Side	10mm	9400/1880	RMC	0.541	0.293	0.08	22.20	23.30	0.697	Battery 1#	Yes
Bottom Side	10mm	9400/1880	RMC	0.535	0.289	0.12	22.20	23.30	0.689	Battery 2#	/
Bottom Side	10mm	9400/1880	RMC	0.520	0.274	0.09	22.20	23.30	0.670	With SIM2	/

Table 72: Hotspot SAR test results of UMTS Band II

Per KDB648474D04, 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)	Tune-up Power (dBm)	Scaled-up 1-g SAR (W/kg)	Product Specific 10-g SAR Exclusion
				1-g	10-g					
Main Antenna										
Front Side	10mm	9400/1880	RMC	0.321	0.178	-0.09	22.20	23.80	0.464	Yes
Back Side	10mm	9400/1880	RMC	0.432	0.229	-0.11	22.20	23.80	0.624	Yes
Left Side	10mm	9400/1880	RMC	0.204	0.114	0.18	22.20	23.80	0.295	Yes
Right Side	10mm	9400/1880	RMC	0.126	0.070	0.19	22.20	23.80	0.182	Yes
Bottom Side	10mm	9400/1880	RMC	0.541	0.293	0.08	22.20	23.80	0.782	Yes
Bottom Side	10mm	9400/1880	RMC	0.535	0.289	0.12	22.20	23.80	0.773	Yes
Bottom Side	10mm	9400/1880	RMC	0.520	0.274	0.09	22.20	23.80	0.752	Yes

Table 73: Product Specific 10-g SAR test reduction evaluation of UMTS Band II

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

7.2.4 SAR measurement Result 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	0.186	0.108	0.01	18.40	19.50	0.240	Battery 1#	/
Left tilt	1413/1732.6	RMC	0.214	0.122	-0.11	18.40	19.50	0.276	Battery 1#	/
Right cheek	1413/1732.6	RMC	0.593	0.307	-0.02	18.40	19.50	0.764	Battery 1#	/
Right tilt	1413/1732.6	RMC	0.553	0.278	-0.04	18.40	19.50	0.712	Battery 1#	/
Right cheek	1413/1732.6	RMC	0.619	0.324	0.04	18.40	19.50	0.797	Battery 2#	Yes
Right cheek	1413/1732.6	RMC	0.583	0.302	-0.05	18.40	19.50	0.751	With SIM2	/
Main Antenna										
Left cheek	1413/1732.6	RMC	0.150	0.100	0.01	22.89	24.00	0.194	Battery 1#	/
Left tilt	1413/1732.6	RMC	0.045	0.027	-0.15	22.89	24.00	0.058	Battery 1#	/
Right cheek	1413/1732.6	RMC	0.086	0.058	-0.05	22.89	24.00	0.111	Battery 1#	/
Right tilt	1413/1732.6	RMC	0.053	0.029	0.00	22.89	24.00	0.069	Battery 1#	/
Left cheek	1413/1732.6	RMC	0.153	0.101	-0.10	22.89	24.00	0.198	Battery 2#	Yes
Left cheek	1413/1732.6	RMC	0.146	0.097	0.16	22.89	24.00	0.189	With SIM2	/

Table 74: 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	0.140	0.081	-0.17	22.84	24.00	0.183	Battery 1#	/
Back Side	15mm	1413/1732.6	RMC	0.208	0.116	-0.17	22.84	24.00	0.272	Battery 1#	Yes
Back Side	15mm	1413/1732.6	RMC	0.207	0.115	-0.15	22.84	24.00	0.270	Battery 2#	/
Back Side	15mm	1413/1732.6	RMC	0.171	0.095	-0.14	22.84	24.00	0.223	With SIM2	/
Main Antenna											
Front Side	15mm	1413/1732.6	RMC	0.163	0.101	-0.09	22.89	24.00	0.210	Battery 1#	/
Back Side	15mm	1413/1732.6	RMC	0.206	0.125	-0.07	22.89	24.00	0.266	Battery 1#	Yes
Back Side	15mm	1413/1732.6	RMC	0.195	0.118	-0.08	22.89	24.00	0.252	Battery 2#	/
Back Side	15mm	1413/1732.6	RMC	0.180	0.109	0.01	22.89	24.00	0.232	With SIM2	/

Table 75: 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	0.311	0.167	0.00	22.26	23.50	0.414	Battery 1#	/
Back Side	10mm	1413/1732.6	RMC	0.433	0.227	-0.19	22.26	23.50	0.576	Battery 1#	/
Left Side	10mm	1413/1732.6	RMC	0.328	0.175	0.03	22.26	23.50	0.436	Battery 1#	/
Right Side	10mm	1413/1732.6	RMC	0.032	0.018	-0.15	22.26	23.50	0.042	Battery 1#	/
Top Side	10mm	1413/1732.6	RMC	0.552	0.297	-0.15	22.26	23.50	0.734	Battery 1#	/
Top Side	10mm	1413/1732.6	RMC	0.556	0.299	-0.16	22.26	23.50	0.740	Battery 2#	Yes
Top Side	10mm	1413/1732.6	RMC	0.546	0.294	-0.16	22.26	23.50	0.726	With SIM2	/
Main Antenna											
Front Side	10mm	1413/1732.6	RMC	0.306	0.176	-0.16	22.47	23.50	0.388	Battery 1#	/
Back Side	10mm	1413/1732.6	RMC	0.424	0.240	-0.03	22.47	23.50	0.537	Battery 1#	/
Left Side	10mm	1413/1732.6	RMC	0.190	0.106	-0.01	22.47	23.50	0.241	Battery 1#	/
Right Side	10mm	1413/1732.6	RMC	0.139	0.075	0.01	22.47	23.50	0.176	Battery 1#	/
Bottom Side	10mm	1413/1732.6	RMC	0.511	0.291	0.09	22.47	23.50	0.648	Battery 1#	/
Bottom Side	10mm	1413/1732.6	RMC	0.522	0.298	-0.02	22.47	23.50	0.662	Battery 2#	Yes
Bottom Side	10mm	1413/1732.6	RMC	0.514	0.292	0.12	22.47	23.50	0.652	With SIM2	/

Table 76: Hotspot SAR test results of UMTS Band IV

Per KDB648474D04, 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)	Tune-up Power (dBm)	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	0.311	0.167	0.00	22.26	24.00	0.464	Yes
Back Side	10mm	1413/1732.6	RMC	0.433	0.227	-0.19	22.26	24.00	0.646	Yes
Left Side	10mm	1413/1732.6	RMC	0.328	0.175	0.03	22.26	24.00	0.490	Yes
Right Side	10mm	1413/1732.6	RMC	0.032	0.018	-0.15	22.26	24.00	0.047	Yes
Top Side	10mm	1413/1732.6	RMC	0.552	0.297	-0.15	22.26	24.00	0.824	Yes
Top Side	10mm	1413/1732.6	RMC	0.556	0.299	-0.16	22.26	24.00	0.830	Yes
Top Side	10mm	1413/1732.6	RMC	0.546	0.294	-0.16	22.26	24.00	0.815	Yes
Main Antenna										
Front Side	10mm	1413/1732.6	RMC	0.306	0.176	-0.16	22.47	24.00	0.435	Yes
Back Side	10mm	1413/1732.6	RMC	0.424	0.240	-0.03	22.47	24.00	0.603	Yes
Left Side	10mm	1413/1732.6	RMC	0.190	0.106	-0.01	22.47	24.00	0.270	Yes
Right Side	10mm	1413/1732.6	RMC	0.139	0.075	0.01	22.47	24.00	0.198	Yes
Bottom Side	10mm	1413/1732.6	RMC	0.511	0.291	0.09	22.47	24.00	0.727	Yes
Bottom Side	10mm	1413/1732.6	RMC	0.522	0.298	-0.02	22.47	23.50	0.662	Yes
Bottom Side	10mm	1413/1732.6	RMC	0.514	0.292	0.12	22.47	23.50	0.652	Yes

Table 77: 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 Result of UMTS Band V

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	4182/836.4	RMC	0.433	0.257	-0.11	19.23	20.50	0.580	Battery 1#	/
Left tilt	4182/836.4	RMC	0.365	0.203	-0.05	19.23	20.50	0.489	Battery 1#	/
Right cheek	4182/836.4	RMC	0.481	0.287	-0.14	19.23	20.50	0.644	Battery 1#	/
Right tilt	4182/836.4	RMC	0.435	0.234	-0.10	19.23	20.50	0.583	Battery 1#	/
Right cheek	4182/836.4	RMC	0.487	0.292	-0.19	19.23	20.50	0.652	Battery 2#	Yes
Right cheek	4182/836.4	RMC	0.486	0.289	-0.07	19.23	20.50	0.651	With SIM2	/
Main Antenna										
Left cheek	4182/836.4	RMC	0.061	0.044	-0.11	23.85	25.00	0.080	Battery 1#	Yes
Left tilt	4182/836.4	RMC	0.047	0.030	-0.06	23.85	25.00	0.061	Battery 1#	/
Right cheek	4182/836.4	RMC	0.040	0.027	-0.01	23.85	25.00	0.052	Battery 1#	/
Right tilt	4182/836.4	RMC	0.042	0.026	-0.01	23.85	25.00	0.054	Battery 1#	/
Left cheek	4182/836.4	RMC	0.056	0.040	-0.11	23.85	25.00	0.072	Battery 2#	/
Left cheek	4182/836.4	RMC	0.056	0.040	0.01	23.85	25.00	0.073	With SIM2	/

Table 78: Head SAR test results of UMTS Band V

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	4182/836.4	RMC	0.219	0.154	-0.15	23.75	25.00	0.292	Battery 1#	/
Back Side	15mm	4182/836.4	RMC	0.242	0.187	-0.14	23.75	25.00	0.323	Battery 1#	Yes
Back Side	15mm	4182/836.4	RMC	0.240	0.185	-0.03	23.75	25.00	0.320	Battery 2#	/
Back Side	15mm	4182/836.4	RMC	0.241	0.186	-0.14	23.75	25.00	0.321	With SIM2	/
Main Antenna											
Front Side	15mm	4182/836.4	RMC	0.216	0.149	0.02	23.85	25.00	0.281	Battery 1#	/
Back Side	15mm	4182/836.4	RMC	0.307	0.200	-0.17	23.85	25.00	0.400	Battery 1#	Yes
Back Side	15mm	4182/836.4	RMC	0.294	0.193	-0.17	23.85	25.00	0.383	Battery 2#	/
Back Side	15mm	4182/836.4	RMC	0.271	0.179	-0.19	23.85	25.00	0.353	With SIM2	/

Table 79: Body-Worn SAR test results of UMTS Band V

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	4182/836.4	RMC	0.408	0.250	0.12	23.75	25.00	0.544	Battery 1#	/
Back Side	10mm	4182/836.4	RMC	0.471	0.288	-0.19	23.75	25.00	0.628	Battery 1#	/
Left Side	10mm	4182/836.4	RMC	0.492	0.343	-0.15	23.75	25.00	0.656	Battery 1#	Yes
Right Side	10mm	4182/836.4	RMC	0.116	0.081	-0.04	23.75	25.00	0.155	Battery 1#	/
Left Side	10mm	4182/836.4	RMC	0.460	0.312	-0.14	23.75	25.00	0.613	Battery 2#	/
Left Side	10mm	4182/836.4	RMC	0.482	0.355	-0.16	23.75	25.00	0.643	With SIM2	/
Main Antenna											
Front Side	10mm	4182/836.4	RMC	0.408	0.264	0.02	23.85	25.00	0.532	Battery 1#	/
Back Side	10mm	4182/836.4	RMC	0.548	0.334	-0.17	23.85	25.00	0.714	Battery 1#	Yes
Left Side	10mm	4182/836.4	RMC	0.264	0.153	-0.11	23.85	25.00	0.344	Battery 1#	/
Right Side	10mm	4182/836.4	RMC	0.043	0.028	-0.16	23.85	25.00	0.057	Battery 1#	/
Bottom Side	10mm	4182/836.4	RMC	0.217	0.128	-0.04	23.85	25.00	0.283	Battery 1#	/
Back Side	10mm	4182/836.4	RMC	0.394	0.247	-0.14	23.85	25.00	0.513	Battery 2#	/
Back Side	10mm	4182/836.4	RMC	0.487	0.298	-0.10	23.85	25.00	0.635	With SIM2	/

Table 80: Hotspot SAR test results of UMTS Band V

Note:

Per KDB 648474 D04, Product Specific 10-g SAR test is not required for this frequency band since hotspot mode 1-g reported SAR < 1.2 W/kg.

7.2.6 SAR measurement Result 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#99	0.159	0.095	-0.10	17.93	19.00	0.203	Battery 1#	/
Left tilt	18900/1880	20M QPSK 1RB#99	0.194	0.114	-0.06	17.93	19.00	0.248	Battery 1#	/
Right cheek	18900/1880	20M QPSK 1RB#99	0.570	0.303	-0.08	17.93	19.00	0.729	Battery 1#	Yes
Right tilt	18900/1880	20M QPSK 1RB#99	0.527	0.262	-0.15	17.93	19.00	0.674	Battery 1#	/
Left cheek	18900/1880	20M QPSK 50%RB#0	0.182	0.102	0.00	17.93	19.00	0.233	Battery 1#	/
Left tilt	18900/1880	20M QPSK 50%RB#0	0.216	0.126	-0.19	17.93	19.00	0.276	Battery 1#	/
Right cheek	18900/1880	20M QPSK 50%RB#0	0.570	0.300	-0.03	17.93	19.00	0.729	Battery 1#	/
Right tilt	18900/1880	20M QPSK 50%RB#0	0.529	0.261	-0.05	17.93	19.00	0.677	Battery 1#	/
Right cheek	18900/1880	20M QPSK 1RB#99	0.525	0.274	0.05	17.93	19.00	0.672	Battery 2#	/
Right cheek	18900/1880	20M QPSK 1RB#99	0.538	0.280	-0.03	17.93	19.00	0.688	With SIM2	/
Main Antenna										
Left cheek	18700/1860	20M QPSK 1RB#0	0.120	0.075	0.05	22.26	23.50	0.160	Battery 1#	Yes
Left tilt	18700/1860	20M QPSK 1RB#0	0.049	0.028	-0.04	22.26	23.50	0.065	Battery 1#	/
Right cheek	18700/1860	20M QPSK 1RB#0	0.092	0.057	-0.04	22.26	23.50	0.123	Battery 1#	/
Right tilt	18700/1860	20M QPSK 1RB#0	0.042	0.023	0.04	22.26	23.50	0.056	Battery 1#	/
Left cheek	18900/1880	20M QPSK 50%RB#25	0.101	0.059	-0.05	21.35	22.50	0.132	Battery 1#	/
Left tilt	18900/1880	20M QPSK 50%RB#25	0.040	0.023	0.10	21.35	22.50	0.052	Battery 1#	/
Right cheek	18900/1880	20M QPSK 50%RB#25	0.078	0.044	-0.10	21.35	22.50	0.101	Battery 1#	/
Right tilt	18900/1880	20M QPSK 50%RB#25	0.036	0.020	0.17	21.35	22.50	0.047	Battery 1#	/
Left cheek	18700/1860	20M QPSK 1RB#0	0.111	0.070	-0.14	22.26	23.50	0.148	Battery 2#	/
Left cheek	18700/1860	20M QPSK 1RB#0	0.119	0.075	0.10	22.26	23.50	0.158	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#0	0.145	0.085	0.01	22.00	23.50	0.205	Battery 1#	/
Back Side	15mm	18900/1880	20M QPSK 1RB#0	0.242	0.137	-0.04	22.00	23.50	0.342	Battery 1#	Yes
Front Side	15mm	18900/1880	20M QPSK 50%RB#25	0.116	0.068	-0.10	21.27	22.50	0.154	Battery 1#	/
Back Side	15mm	18900/1880	20M QPSK 50%RB#25	0.188	0.107	-0.08	21.27	22.50	0.250	Battery 1#	/
Back Side	15mm	18900/1880	20M QPSK 1RB#0	0.228	0.130	-0.17	22.00	23.50	0.322	Battery 2#	/
Back Side	15mm	18900/1880	20M QPSK 1RB#0	0.236	0.134	-0.05	22.00	23.50	0.333	With SIM2	/
Main Antenna											
Front Side	15mm	18700/1860	20M QPSK 1RB#0	0.150	0.089	0.00	22.26	23.50	0.200	Battery 1#	/
Back Side	15mm	18700/1860	20M QPSK 1RB#0	0.194	0.111	-0.13	22.26	23.50	0.258	Battery 1#	/
Front Side	15mm	18900/1880	20M QPSK 50%RB#25	0.167	0.098	0.01	21.35	22.50	0.218	Battery 1#	/
Back Side	15mm	18900/1880	20M QPSK 50%RB#25	0.184	0.105	0.02	21.35	22.50	0.240	Battery 1#	/
Back Side	15mm	18700/1860	20M QPSK 1RB#0	0.217	0.124	-0.08	22.26	23.50	0.289	Battery 2#	Yes
Back Side	15mm	18700/1860	20M QPSK 1RB#0	0.204	0.118	-0.11	22.26	23.50	0.271	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	18900/1880	20M QPSK 1RB#0	0.357	0.196	0.02	22.00	23.50	0.504	Battery 1#	/
Back Side	10mm	18900/1880	20M QPSK 1RB#0	0.454	0.245	-0.17	22.00	23.50	0.641	Battery 1#	/
Left Side	10mm	18900/1880	20M QPSK 1RB#0	0.436	0.241	0.09	22.00	23.50	0.616	Battery 1#	/
Right Side	10mm	18900/1880	20M QPSK 1RB#0	0.044	0.025	0.00	22.00	23.50	0.062	Battery 1#	/
Top Side	10mm	18900/1880	20M QPSK 1RB#0	0.459	0.253	0.01	22.00	23.50	0.648	Battery 1#	Yes
Front Side	10mm	18900/1880	20M QPSK 50%RB#25	0.269	0.149	-0.10	21.27	22.50	0.357	Battery 1#	/
Back Side	10mm	18900/1880	20M QPSK 50%RB#25	0.390	0.207	-0.09	21.27	22.50	0.518	Battery 1#	/
Left Side	10mm	18900/1880	20M QPSK 50%RB#25	0.354	0.187	0.01	21.27	22.50	0.470	Battery 1#	/
Right Side	10mm	18900/1880	20M QPSK 50%RB#25	0.034	0.019	-0.12	21.27	22.50	0.045	Battery 1#	/
Top Side	10mm	18900/1880	20M QPSK 50%RB#25	0.337	0.186	0.00	21.27	22.50	0.447	Battery 1#	/
Top Side	10mm	18900/1880	20M QPSK 1RB#0	0.452	0.249	0.03	22.00	23.50	0.638	Battery 2#	/
Top Side	10mm	18900/1880	20M QPSK 1RB#0	0.435	0.241	0.03	22.00	23.50	0.614	With SIM2	/
Main Antenna											
Front Side	10mm	18700/1860	20M QPSK 1RB#0	0.253	0.139	0.05	21.33	22.50	0.331	Battery 1#	/
Back Side	10mm	18700/1860	20M QPSK 1RB#0	0.258	0.142	-0.13	21.33	22.50	0.338	Battery 1#	/
Left Side	10mm	18700/1860	20M QPSK 1RB#0	0.140	0.079	0.01	21.33	22.50	0.183	Battery 1#	/
Right Side	10mm	18700/1860	20M QPSK 1RB#0	0.113	0.063	0.10	21.33	22.50	0.148	Battery 1#	/
Bottom Side	10mm	18700/1860	20M QPSK 1RB#0	0.443	0.239	-0.03	21.33	22.50	0.580	Battery 1#	/
Front Side	10mm	18900/1880	20M QPSK 50%RB#25	0.254	0.146	0.02	21.48	22.50	0.321	Battery 1#	/
Back Side	10mm	18900/1880	20M QPSK 50%RB#25	0.332	0.178	-0.19	21.48	22.50	0.420	Battery 1#	/
Left Side	10mm	18900/1880	20M QPSK 50%RB#25	0.165	0.092	0.05	21.48	22.50	0.209	Battery 1#	/
Right Side	10mm	18900/1880	20M QPSK 50%RB#25	0.116	0.063	-0.02	21.48	22.50	0.147	Battery 1#	/
Bottom Side	10mm	18900/1880	20M QPSK 50%RB#25	0.462	0.248	-0.01	21.48	22.50	0.584	Battery 1#	/
Bottom Side	10mm	18900/1880	20M QPSK 50%RB#25	0.481	0.259	0.04	21.48	22.50	0.608	Battery 2#	Yes
Bottom Side	10mm	18900/1880	20M QPSK 50%RB#25	0.479	0.257	-0.03	21.48	22.50	0.606	With SIM2	/

Table 83: Hotspot SAR test results of LTE Band 2

Per KDB648474D04, 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)	Tune-up Power (dBm)	Scaled-up 1-g SAR (W/kg)	Product Specific 10-g SAR Exclusion
				1-g	10-g					
Main Antenna										
Front Side	10mm	18700/1860	20M QPSK 1RB#0	0.253	0.139	0.05	21.33	23.50	0.417	Yes
Back Side	10mm	18700/1860	20M QPSK 1RB#0	0.258	0.142	-0.13	21.33	23.50	0.425	Yes
Left Side	10mm	18700/1860	20M QPSK 1RB#0	0.140	0.079	0.01	21.33	23.50	0.231	Yes
Right Side	10mm	18700/1860	20M QPSK 1RB#0	0.113	0.063	0.10	21.33	23.50	0.186	Yes
Bottom Side	10mm	18700/1860	20M QPSK 1RB#0	0.443	0.239	-0.03	21.33	23.50	0.730	Yes
Front Side	10mm	18900/1880	20M QPSK 50%RB#25	0.254	0.146	0.02	21.48	22.50	0.321	Yes
Back Side	10mm	18900/1880	20M QPSK 50%RB#25	0.332	0.178	-0.19	21.48	22.50	0.420	Yes
Left Side	10mm	18900/1880	20M QPSK 50%RB#25	0.165	0.092	0.05	21.48	22.50	0.209	Yes
Right Side	10mm	18900/1880	20M QPSK 50%RB#25	0.116	0.063	-0.02	21.48	22.50	0.147	Yes
Bottom Side	10mm	18900/1880	20M QPSK 50%RB#25	0.462	0.248	-0.01	21.48	22.50	0.584	Yes
Bottom Side	10mm	18900/1880	20M QPSK 50%RB#25	0.481	0.259	0.04	21.48	22.50	0.608	Yes
Bottom Side	10mm	18900/1880	20M QPSK 50%RB#25	0.479	0.257	-0.03	21.48	22.50	0.606	Yes

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

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

7.2.7 SAR measurement Result 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	20175/1732.5	20M QPSK 1RB#0	0.191	0.118	-0.11	19.25	20.30	0.243	Battery 1#	/
Left tilt	20175/1732.5	20M QPSK 1RB#0	0.243	0.145	-0.04	19.25	20.30	0.309	Battery 1#	/
Right cheek	20175/1732.5	20M QPSK 1RB#0	0.601	0.310	-0.05	19.25	20.30	0.765	Battery 1#	/
Right tilt	20175/1732.5	20M QPSK 1RB#0	0.652	0.311	-0.07	19.25	20.30	0.830	Battery 1#	/
Right tilt	20050/1720	20M QPSK 1RB#99	0.608	0.329	-0.03	19.14	20.30	0.794	Battery 1#	/
Right tilt	20300/1745	20M QPSK 1RB#99	0.661	0.318	-0.04	19.14	20.30	0.863	Battery 1#	Yes
Left cheek	20175/1732.5	20M QPSK 50%RB#0	0.182	0.113	-0.05	19.09	20.30	0.240	Battery 1#	/
Left tilt	20175/1732.5	20M QPSK 50%RB#0	0.236	0.141	-0.03	19.09	20.30	0.312	Battery 1#	/
Right cheek	20175/1732.5	20M QPSK 50%RB#0	0.584	0.303	-0.12	19.09	20.30	0.772	Battery 1#	/
Right tilt	20175/1732.5	20M QPSK 50%RB#0	0.636	0.304	-0.03	19.09	20.30	0.840	Battery 1#	/
Right tilt	20050/1720	20M QPSK 50%RB#25	0.619	0.335	-0.04	19.03	20.30	0.829	Battery 1#	/
Right tilt	20300/1745	20M QPSK 50%RB#0	0.658	0.316	-0.15	19.03	20.30	0.882	Battery 1#	/
Right tilt	20175/1732.5	20M QPSK 100%RB#0	0.656	0.313	-0.04	19.07	20.30	0.871	Battery 1#	/
Right tilt	20300/1745	20M QPSK 50%RB#0	0.610	0.298	-0.11	19.03	20.30	0.817	Battery 2#	/
Right tilt	20300/1745	20M QPSK 50%RB#0	0.573	0.282	-0.07	19.03	20.30	0.768	With SIM2	/
Main Antenna										
Left cheek	20050/1720	20M QPSK 1RB#0	0.152	0.100	-0.14	22.39	23.80	0.210	Battery 1#	Yes
Left tilt	20050/1720	20M QPSK 1RB#0	0.053	0.033	-0.18	22.39	23.80	0.074	Battery 1#	/
Right cheek	20050/1720	20M QPSK 1RB#0	0.079	0.048	-0.09	22.39	23.80	0.110	Battery 1#	/
Right tilt	20050/1720	20M QPSK 1RB#0	0.048	0.030	-0.13	22.39	23.80	0.066	Battery 1#	/
Left cheek	20175/1732.5	20M QPSK 50%RB#50	0.104	0.064	-0.10	21.33	22.80	0.146	Battery 1#	/
Left tilt	20175/1732.5	20M QPSK 50%RB#50	0.037	0.023	-0.10	21.33	22.80	0.052	Battery 1#	/
Right cheek	20175/1732.5	20M QPSK 50%RB#50	0.061	0.038	-0.12	21.33	22.80	0.086	Battery 1#	/
Right tilt	20175/1732.5	20M QPSK 50%RB#50	0.039	0.023	-0.04	21.33	22.80	0.055	Battery 1#	/
Left cheek	20050/1720	20M QPSK 1RB#0	0.139	0.094	-0.16	22.39	23.80	0.192	Battery 2#	/
Left cheek	20050/1720	20M QPSK 1RB#0	0.141	0.095	0.02	22.39	23.80	0.195	With SIM2	/

Table 85: 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	20175/1732.5	20M QPSK 1RB#99	0.132	0.076	-0.14	22.70	23.80	0.170	Battery 1#	/
Back Side	15mm	20175/1732.5	20M QPSK 1RB#99	0.168	0.094	-0.14	22.70	23.80	0.216	Battery 1#	/
Front Side	15mm	20175/1732.5	20M QPSK 50%RB#0	0.101	0.058	-0.17	21.72	22.80	0.130	Battery 1#	/
Back Side	15mm	20175/1732.5	20M QPSK 50%RB#0	0.129	0.073	-0.13	21.72	22.80	0.165	Battery 1#	/
Back Side	15mm	20175/1732.5	20M QPSK 1RB#99	0.189	0.105	-0.18	22.70	23.80	0.243	Battery 2#	Yes
Back Side	15mm	20175/1732.5	20M QPSK 1RB#99	0.157	0.087	-0.02	22.70	23.80	0.202	With SIM2	/
Main Antenna											
Front Side	15mm	20050/1720	20M QPSK 1RB#0	0.169	0.107	-0.14	22.39	23.80	0.234	Battery 1#	/
Back Side	15mm	20050/1720	20M QPSK 1RB#0	0.179	0.106	-0.16	22.39	23.80	0.248	Battery 1#	/
Front Side	15mm	20175/1732.5	20M QPSK 50%RB#50	0.132	0.079	-0.13	21.33	22.80	0.185	Battery 1#	/
Back Side	15mm	20175/1732.5	20M QPSK 50%RB#50	0.150	0.087	-0.19	21.33	22.80	0.210	Battery 1#	/
Back Side	15mm	20050/1720	20M QPSK 1RB#0	0.193	0.115	-0.17	22.39	23.80	0.267	Battery 2#	Yes
Back Side	15mm	20050/1720	20M QPSK 1RB#0	0.186	0.112	-0.11	22.39	23.80	0.257	With SIM2	/

Table 86: 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	20175/1732.5	20M QPSK 1RB#0	0.254	0.135	-0.10	22.06	23.30	0.338	Battery 1#	/
Back Side	10mm	20175/1732.5	20M QPSK 1RB#0	0.387	0.200	-0.14	22.06	23.30	0.515	Battery 1#	/
Left Side	10mm	20175/1732.5	20M QPSK 1RB#0	0.337	0.180	-0.12	22.06	23.30	0.448	Battery 1#	/
Right Side	10mm	20175/1732.5	20M QPSK 1RB#0	0.025	0.014	-0.18	22.06	23.30	0.033	Battery 1#	/
Top Side	10mm	20175/1732.5	20M QPSK 1RB#0	0.463	0.247	-0.14	22.06	23.30	0.616	Battery 1#	/
Front Side	10mm	20300/1745	20M QPSK 50%RB#0	0.209	0.113	-0.12	21.55	22.80	0.279	Battery 1#	/
Back Side	10mm	20300/1745	20M QPSK 50%RB#0	0.310	0.176	-0.10	21.55	22.80	0.413	Battery 1#	/
Left Side	10mm	20300/1745	20M QPSK 50%RB#0	0.315	0.168	-0.15	21.55	22.80	0.420	Battery 1#	/
Right Side	10mm	20300/1745	20M QPSK 50%RB#0	0.021	0.012	-0.18	21.55	22.80	0.028	Battery 1#	/
Top Side	10mm	20300/1745	20M QPSK 50%RB#0	0.402	0.205	-0.16	21.55	22.80	0.536	Battery 1#	/
Top Side	10mm	20175/1732.5	20M QPSK 1RB#0	0.569	0.303	-0.17	22.06	23.30	0.757	Battery 2#	Yes
Top Side	10mm	20175/1732.5	20M QPSK 1RB#0	0.554	0.297	-0.11	22.06	23.30	0.737	With SIM2	/
Main Antenna											
Front Side	10mm	20050/1720	20M QPSK 1RB#0	0.323	0.193	-0.12	22.39	23.80	0.447	Battery 1#	/
Back Side	10mm	20050/1720	20M QPSK 1RB#0	0.459	0.254	-0.14	22.39	23.80	0.635	Battery 1#	/
Left Side	10mm	20050/1720	20M QPSK 1RB#0	0.222	0.124	-0.19	22.39	23.80	0.307	Battery 1#	/
Right Side	10mm	20050/1720	20M QPSK 1RB#0	0.111	0.063	-0.13	22.39	23.80	0.154	Battery 1#	/
Bottom Side	10mm	20050/1720	20M QPSK 1RB#0	0.562	0.324	-0.14	22.39	23.80	0.778	Battery 1#	Yes
Front Side	10mm	20175/1732.5	20M QPSK 50%RB#50	0.253	0.150	-0.01	21.33	22.80	0.355	Battery 1#	/
Back Side	10mm	20175/1732.5	20M QPSK 50%RB#50	0.359	0.199	-0.12	21.33	22.80	0.504	Battery 1#	/
Left Side	10mm	20175/1732.5	20M QPSK 50%RB#50	0.185	0.103	-0.19	21.33	22.80	0.260	Battery 1#	/
Right Side	10mm	20175/1732.5	20M QPSK 50%RB#50	0.117	0.068	-0.15	21.33	22.80	0.164	Battery 1#	/
Bottom Side	10mm	20175/1732.5	20M QPSK 50%RB#50	0.452	0.259	-0.15	21.33	22.80	0.634	Battery 1#	/
Bottom Side	10mm	20050/1720	20M QPSK 1RB#0	0.420	0.245	-0.11	22.39	23.80	0.581	Battery 2#	/
Bottom Side	10mm	20050/1720	20M QPSK 1RB#0	0.462	0.263	-0.14	22.39	23.80	0.639	With SIM2	/

Table 87: Hotspot SAR test results of LTE Band 4

Per KDB648474D04, 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)	Tune-up Power (dBm)	Scaled-up 1-g SAR (W/kg)	Product Specific 10-g SAR Exclusion
				1-g	10-g					
Second Antenna										
Front Side	10mm	20175/1732.5	20M QPSK 1RB#0	0.254	0.135	-0.10	22.06	23.80	0.379	Yes
Back Side	10mm	20175/1732.5	20M QPSK 1RB#0	0.387	0.200	-0.14	22.06	23.80	0.578	Yes
Left Side	10mm	20175/1732.5	20M QPSK 1RB#0	0.337	0.180	-0.12	22.06	23.80	0.503	Yes
Right Side	10mm	20175/1732.5	20M QPSK 1RB#0	0.025	0.014	-0.18	22.06	23.80	0.037	Yes
Top Side	10mm	20175/1732.5	20M QPSK 1RB#0	0.463	0.247	-0.14	22.06	23.80	0.691	Yes
Front Side	10mm	20300/1745	20M QPSK 50%RB#0	0.209	0.113	-0.12	21.55	22.80	0.279	Yes
Back Side	10mm	20300/1745	20M QPSK 50%RB#0	0.310	0.176	-0.10	21.55	22.80	0.413	Yes
Left Side	10mm	20300/1745	20M QPSK 50%RB#0	0.315	0.168	-0.15	21.55	22.80	0.420	Yes
Right Side	10mm	20300/1745	20M QPSK 50%RB#0	0.021	0.012	-0.18	21.55	22.80	0.028	Yes
Top Side	10mm	20300/1745	20M QPSK 50%RB#0	0.402	0.205	-0.16	21.55	22.80	0.536	Yes
Top Side	10mm	20175/1732.5	20M QPSK 1RB#0	0.569	0.303	-0.17	22.06	23.30	0.757	Yes
Top Side	10mm	20175/1732.5	20M QPSK 1RB#0	0.554	0.297	-0.11	22.06	23.30	0.737	Yes

Table 88: 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 Result of LTE Band 5

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	20525/836.5	10M QPSK 1RB#0	0.469	0.254	0.00	19.28	20.50	0.621	Battery 1#	/
Left tilt	20525/836.5	10M QPSK 1RB#0	0.415	0.256	-0.05	19.28	20.50	0.550	Battery 1#	/
Right cheek	20525/836.5	10M QPSK 1RB#0	0.511	0.298	-0.15	19.28	20.50	0.677	Battery 1#	/
Right tilt	20525/836.5	10M QPSK 1RB#0	0.474	0.250	-0.04	19.28	20.50	0.628	Battery 1#	/
Left cheek	20525/836.5	10M QPSK 50%RB#0	0.444	0.242	-0.07	19.29	20.50	0.587	Battery 1#	/
Left tilt	20525/836.5	10M QPSK 50%RB#0	0.429	0.265	-0.07	19.29	20.50	0.567	Battery 1#	/
Right cheek	20525/836.5	10M QPSK 50%RB#0	0.527	0.307	-0.08	19.29	20.50	0.696	Battery 1#	/
Right tilt	20525/836.5	10M QPSK 50%RB#0	0.494	0.261	0.14	19.29	20.50	0.653	Battery 1#	/
Right cheek	20525/836.5	10M QPSK 50%RB#0	0.562	0.326	-0.07	19.29	20.50	0.743	Battery 2#	Yes
Right cheek	20525/836.5	10M QPSK 50%RB#0	0.549	0.321	-0.05	19.29	20.50	0.725	With SIM2	/
Main Antenna										
Left cheek	20450/829	10M QPSK 1RB#0	0.041	0.027	-0.19	23.14	24.50	0.056	Battery 1#	/
Left tilt	20450/829	10M QPSK 1RB#0	0.036	0.023	-0.16	23.14	24.50	0.049	Battery 1#	/
Right cheek	20450/829	10M QPSK 1RB#0	0.038	0.029	0.05	23.14	24.50	0.051	Battery 1#	/
Right tilt	20450/829	10M QPSK 1RB#0	0.029	0.018	-0.06	23.14	24.50	0.039	Battery 1#	/
Left cheek	20450/829	10M QPSK 50%RB#0	0.043	0.030	-0.16	22.15	23.50	0.059	Battery 1#	/
Left tilt	20450/829	10M QPSK 50%RB#0	0.028	0.018	-0.07	22.15	23.50	0.038	Battery 1#	/
Right cheek	20450/829	10M QPSK 50%RB#0	0.029	0.020	0.18	22.15	23.50	0.040	Battery 1#	/
Right tilt	20450/829	10M QPSK 50%RB#0	0.022	0.014	-0.08	22.15	23.50	0.030	Battery 1#	/
Left cheek	20450/829	10M QPSK 50%RB#0	0.044	0.031	-0.15	22.15	23.50	0.060	Battery 2#	Yes
Left cheek	20450/829	10M QPSK 50%RB#0	0.043	0.030	-0.08	22.15	23.50	0.058	With SIM2	/

Table 89: Head SAR test results of LTE Band 5

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	20450/829	10M QPSK 1RB#0	0.251	0.189	-0.19	23.15	24.50	0.343	Battery 1#	Yes
Back Side	15mm	20450/829	10M QPSK 1RB#0	0.200	0.152	-0.15	23.15	24.50	0.273	Battery 1#	/
Front Side	15mm	20450/829	10M QPSK 50%RB#0	0.210	0.158	-0.14	22.13	23.50	0.288	Battery 1#	/
Back Side	15mm	20450/829	10M QPSK 50%RB#0	0.162	0.114	-0.16	22.13	23.50	0.222	Battery 1#	/
Front Side	15mm	20450/829	10M QPSK 1RB#0	0.208	0.158	-0.14	23.15	24.50	0.284	Battery 2#	/
Front Side	15mm	20450/829	10M QPSK 1RB#0	0.212	0.161	-0.13	23.15	24.50	0.289	With SIM2	/
Main Antenna											
Front Side	15mm	20450/829	10M QPSK 1RB#0	0.149	0.098	-0.16	23.14	24.50	0.204	Battery 1#	/
Back Side	15mm	20450/829	10M QPSK 1RB#0	0.174	0.109	-0.16	23.14	24.50	0.238	Battery 1#	/
Front Side	15mm	20450/829	10M QPSK 50%RB#0	0.132	0.087	-0.11	22.15	23.50	0.180	Battery 1#	/
Back Side	15mm	20450/829	10M QPSK 50%RB#0	0.158	0.104	-0.15	22.15	23.50	0.216	Battery 1#	/
Back Side	15mm	20450/829	10M QPSK 1RB#0	0.178	0.111	-0.19	23.14	24.50	0.243	Battery 2#	Yes
Back Side	15mm	20450/829	10M QPSK 1RB#0	0.177	0.110	-0.16	23.14	24.50	0.242	With SIM2	/

Table 90: Body-Worn SAR test results of LTE Band 5

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	20450/829	10M QPSK 1RB#0	0.374	0.236	-0.06	23.15	24.50	0.510	Battery 1#	/
Back Side	10mm	20450/829	10M QPSK 1RB#0	0.421	0.244	-0.10	23.15	24.50	0.574	Battery 1#	/
Left Side	10mm	20450/829	10M QPSK 1RB#0	0.493	0.338	-0.13	23.15	24.50	0.673	Battery 1#	Yes
Right Side	10mm	20450/829	10M QPSK 1RB#0	0.121	0.080	-0.15	23.15	24.50	0.165	Battery 1#	/
Top Side	10mm	20450/829	10M QPSK 1RB#0	0.335	0.169	0.11	23.15	24.50	0.457	Battery 1#	/
Front Side	10mm	20450/829	10M QPSK 50%RB#0	0.305	0.193	-0.04	22.13	23.50	0.418	Battery 1#	/
Back Side	10mm	20450/829	10M QPSK 50%RB#0	0.360	0.228	-0.14	22.13	23.50	0.494	Battery 1#	/
Left Side	10mm	20450/829	10M QPSK 50%RB#0	0.396	0.262	-0.11	22.13	23.50	0.543	Battery 1#	/
Right Side	10mm	20450/829	10M QPSK 50%RB#0	0.100	0.066	-0.19	22.13	23.50	0.137	Battery 1#	/
Top Side	10mm	20450/829	10M QPSK 50%RB#0	0.267	0.138	0.08	22.13	23.50	0.366	Battery 1#	/
Left Side	10mm	20450/829	10M QPSK 1RB#0	0.488	0.333	-0.19	23.15	24.50	0.666	Battery 2#	/
Left Side	10mm	20450/829	10M QPSK 1RB#0	0.471	0.323	-0.12	23.15	24.50	0.643	With SIM2	/
Main Antenna											
Front Side	10mm	20450/829	10M QPSK 1RB#0	0.286	0.178	-0.11	23.14	24.50	0.391	Battery 1#	/
Back Side	10mm	20450/829	10M QPSK 1RB#0	0.351	0.208	-0.13	23.14	24.50	0.480	Battery 1#	Yes
Left Side	10mm	20450/829	10M QPSK 1RB#0	0.213	0.123	-0.17	23.14	24.50	0.291	Battery 1#	/
Right Side	10mm	20450/829	10M QPSK 1RB#0	0.033	0.022	-0.16	23.14	24.50	0.046	Battery 1#	/
Bottom Side	10mm	20450/829	10M QPSK 1RB#0	0.176	0.093	-0.10	23.14	24.50	0.241	Battery 1#	/
Front Side	10mm	20450/829	10M QPSK 50%RB#0	0.246	0.158	0.01	22.15	23.50	0.336	Battery 1#	/
Back Side	10mm	20450/829	10M QPSK 50%RB#0	0.313	0.203	-0.15	22.15	23.50	0.427	Battery 1#	/
Left Side	10mm	20450/829	10M QPSK 50%RB#0	0.186	0.107	-0.15	22.15	23.50	0.254	Battery 1#	/
Right Side	10mm	20450/829	10M QPSK 50%RB#0	0.027	0.018	-0.18	22.15	23.50	0.037	Battery 1#	/
Bottom Side	10mm	20450/829	10M QPSK 50%RB#0	0.147	0.077	-0.19	22.15	23.50	0.201	Battery 1#	/
Back Side	10mm	20450/829	10M QPSK 1RB#0	0.345	0.204	-0.03	23.14	24.50	0.472	Battery 2#	/
Back Side	10mm	20450/829	10M QPSK 1RB#0	0.342	0.202	-0.07	23.14	24.50	0.468	With SIM2	/

Table 91: Hotspot SAR test results of LTE Band 5

Note:

Per KDB 648474 D04, Product Specific 10-g SAR test is not required for this frequency band since hotspot mode 1-g reported SAR < 1.2 W/kg.

7.2.9 SAR measurement Result 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#50	0.110	0.060	0.04	17.32	19.00	0.162	Battery 1#	/
Left tilt	20850/2510	20M QPSK 1RB#50	0.107	0.051	-0.10	17.32	19.00	0.158	Battery 1#	/
Right cheek	20850/2510	20M QPSK 1RB#50	0.477	0.240	0.15	17.32	19.00	0.702	Battery 1#	/
Right tilt	20850/2510	20M QPSK 1RB#50	0.489	0.228	-0.05	17.32	19.00	0.720	Battery 1#	/
Left cheek	20850/2510	20M QPSK 50%RB#0	0.134	0.074	-0.14	17.03	19.00	0.211	Battery 1#	/
Left tilt	20850/2510	20M QPSK 50%RB#0	0.119	0.057	0.04	17.03	19.00	0.187	Battery 1#	/
Right cheek	20850/2510	20M QPSK 50%RB#0	0.553	0.284	-0.04	17.03	19.00	0.870	Battery 1#	/
Right cheek	21100/2535	20M QPSK 50%RB#0	0.531	0.274	-0.14	17.02	19.00	0.838	Battery 1#	/
Right cheek	21350/2560	20M QPSK 50%RB#0	0.391	0.198	0.12	17.02	19.00	0.617	Battery 1#	/
Right tilt	20850/2510	20M QPSK 50%RB#0	0.531	0.244	-0.08	17.03	19.00	0.836	Battery 1#	/
Right tilt	21100/2535	20M QPSK 50%RB#0	0.504	0.219	0.03	17.02	19.00	0.795	Battery 1#	/
Right tilt	21350/2560	20M QPSK 50%RB#0	0.511	0.207	-0.17	17.02	19.00	0.806	Battery 1#	/
Right cheek	21100/2535	20M QPSK 100%RB#0	0.497	0.255	-0.15	17.02	19.00	0.784	Battery 1#	/
Right tilt	21100/2535	20M QPSK 100%RB#0	0.467	0.217	-0.10	17.02	19.00	0.737	Battery 1#	/
Right cheek	20850/2510	20M QPSK 50%RB#0	0.607	0.310	0.04	17.03	19.00	0.955	Battery 2#	Yes
Right cheek	20850/2510	20M QPSK 50%RB#0	0.568	0.288	-0.03	17.03	19.00	0.894	With SIM2	/
Main Antenna										
Left cheek	20850/2510	20M QPSK 1RB#99	0.255	0.137	0.07	23.40	24.00	0.293	Battery 1#	Yes
Left tilt	20850/2510	20M QPSK 1RB#99	0.063	0.032	0.03	23.40	24.00	0.072	Battery 1#	/
Right cheek	20850/2510	20M QPSK 1RB#99	0.163	0.091	-0.12	23.40	24.00	0.187	Battery 1#	/
Right tilt	20850/2510	20M QPSK 1RB#99	0.121	0.061	0.00	23.40	24.00	0.139	Battery 1#	/
Left cheek	20850/2510	20M QPSK 50%RB#25	0.191	0.097	-0.09	22.48	23.00	0.215	Battery 1#	/
Left tilt	20850/2510	20M QPSK 50%RB#25	0.051	0.026	-0.06	22.48	23.00	0.057	Battery 1#	/
Right cheek	20850/2510	20M QPSK 50%RB#25	0.116	0.063	0.01	22.48	23.00	0.131	Battery 1#	/
Right tilt	20850/2510	20M QPSK 50%RB#25	0.092	0.046	-0.04	22.48	23.00	0.103	Battery 1#	/
Left cheek	20850/2510	20M QPSK 1RB#99	0.254	0.136	0.17	23.40	24.00	0.292	Battery 2#	/
Left cheek	20850/2510	20M QPSK 1RB#99	0.249	0.133	0.16	23.40	24.00	0.286	With SIM2	/

Table 92: 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#99	0.180	0.095	-0.04	22.10	23.00	0.221	Battery 1#	/
Back Side	15mm	20850/2510	20M QPSK 1RB#99	0.193	0.103	-0.01	22.10	23.00	0.237	Battery 1#	Yes
Front Side	15mm	20850/2510	20M QPSK 50%RB#0	0.150	0.082	0.04	21.47	22.00	0.169	Battery 1#	/
Back Side	15mm	20850/2510	20M QPSK 50%RB#0	0.188	0.098	-0.10	21.47	22.00	0.212	Battery 1#	/
Back Side	15mm	20850/2510	20M QPSK 1RB#99	0.115	0.061	-0.15	22.10	23.00	0.141	Battery 2#	/
Back Side	15mm	20850/2510	20M QPSK 1RB#99	0.110	0.058	-0.04	22.10	23.00	0.135	With SIM2	/
Main Antenna											
Front Side	15mm	20850/2510	20M QPSK 1RB#99	0.222	0.121	-0.14	23.40	24.00	0.255	Battery 1#	/
Back Side	15mm	20850/2510	20M QPSK 1RB#99	0.237	0.128	-0.19	23.40	24.00	0.272	Battery 1#	/
Front Side	15mm	20850/2510	20M QPSK 50%RB#25	0.181	0.098	0.05	22.48	23.00	0.204	Battery 1#	/
Back Side	15mm	20850/2510	20M QPSK 50%RB#25	0.201	0.108	-0.16	22.48	23.00	0.227	Battery 1#	/
Back Side	15mm	20850/2510	20M QPSK 1RB#99	0.292	0.155	0.18	23.40	24.00	0.335	Battery 2#	Yes
Back Side	15mm	20850/2510	20M QPSK 1RB#99	0.282	0.151	0.08	23.40	24.00	0.324	With SIM2	/

Table 93: 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#99	0.256	0.135	0.02	22.10	23.00	0.315	Battery 1#	/
Back Side	10mm	20850/2510	20M QPSK 1RB#99	0.475	0.243	-0.01	22.10	23.00	0.584	Battery 1#	Yes
Left Side	10mm	20850/2510	20M QPSK 1RB#99	0.334	0.165	0.10	22.10	23.00	0.411	Battery 1#	/
Right Side	10mm	20850/2510	20M QPSK 1RB#99	0.006	0.002	-0.12	22.10	23.00	0.007	Battery 1#	/
Top Side	10mm	20850/2510	20M QPSK 1RB#99	0.104	0.040	-0.09	22.10	23.00	0.128	Battery 1#	/
Front Side	10mm	20850/2510	20M QPSK 50%RB#0	0.225	0.119	-0.19	21.47	22.00	0.254	Battery 1#	/
Back Side	10mm	20850/2510	20M QPSK 50%RB#0	0.421	0.215	-0.05	21.47	22.00	0.476	Battery 1#	/
Left Side	10mm	20850/2510	20M QPSK 50%RB#0	0.190	0.094	0.12	21.47	22.00	0.215	Battery 1#	/
Right Side	10mm	20850/2510	20M QPSK 50%RB#0	0.007	0.004	0.00	21.47	22.00	0.008	Battery 1#	/
Top Side	10mm	20850/2510	20M QPSK 50%RB#0	0.154	0.060	0.03	21.47	22.00	0.174	Battery 1#	/
Back Side	10mm	20850/2510	20M QPSK 1RB#99	0.312	0.159	-0.09	22.10	23.00	0.384	Battery 2#	/
Back Side	10mm	20850/2510	20M QPSK 1RB#99	0.333	0.169	-0.12	22.10	23.00	0.410	With SIM2	/
Main Antenna											
Front Side	10mm	20850/2510	20M QPSK 1RB#99	0.461	0.246	-0.06	23.40	24.00	0.529	Battery 1#	/
Back Side	10mm	20850/2510	20M QPSK 1RB#99	0.552	0.283	-0.11	23.40	24.00	0.634	Battery 1#	/
Left Side	10mm	20850/2510	20M QPSK 1RB#99	0.217	0.109	0.04	23.40	24.00	0.249	Battery 1#	/
Right Side	10mm	20850/2510	20M QPSK 1RB#99	0.100	0.052	-0.01	23.40	24.00	0.115	Battery 1#	/
Bottom Side	10mm	20850/2510	20M QPSK 1RB#99	0.636	0.322	-0.13	23.40	24.00	0.730	Battery 1#	/
Front Side	10mm	20850/2510	20M QPSK 50%RB#25	0.369	0.198	-0.12	22.48	23.00	0.416	Battery 1#	/
Back Side	10mm	20850/2510	20M QPSK 50%RB#25	0.440	0.226	0.03	22.48	23.00	0.496	Battery 1#	/
Left Side	10mm	20850/2510	20M QPSK 50%RB#25	0.216	0.107	0.04	22.48	23.00	0.243	Battery 1#	/
Right Side	10mm	20850/2510	20M QPSK 50%RB#25	0.172	0.086	0.04	22.48	23.00	0.194	Battery 1#	/
Bottom Side	10mm	20850/2510	20M QPSK 50%RB#25	0.541	0.274	-0.01	22.48	23.00	0.610	Battery 1#	/
Bottom Side	10mm	20850/2510	20M QPSK 1RB#99	0.740	0.371	-0.03	23.40	24.00	0.850	Battery 2#	Yes
Bottom Side	10mm	21100/2535	20M QPSK 1RB#99	0.698	0.349	0.07	23.18	24.00	0.843	Battery 2#	/
Bottom Side	10mm	21350/2560	20M QPSK 1RB#0	0.700	0.351	0.07	23.09	24.00	0.863	Battery 2#	/
Bottom Side	10mm	21350/2560	20M QPSK 1RB#0	0.662	0.334	0.08	23.09	24.00	0.816	With SIM2	/
Bottom Side	10mm	20850/2510	20M QPSK 100%RB#0	0.559	0.280	0.05	22.41	23.00	0.640	Battery 2#	/

Table 94: Hotspot SAR test results of LTE Band 7

Note:

Per KDB 648474 D04, Product Specific 10-g SAR test is not required for this frequency band since hotspot mode 1-g reported SAR < 1.2 W/kg.

7.2.10 SAR measurement Result of LTE Band 12

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	23060/704	10M QPSK 1RB#25	0.453	0.274	-0.02	19.42	21.30	0.698	Battery 1#	/
Left tilt	23060/704	10M QPSK 1RB#25	0.351	0.210	-0.12	19.42	21.30	0.541	Battery 1#	/
Right cheek	23060/704	10M QPSK 1RB#25	0.500	0.288	-0.11	19.42	21.30	0.771	Battery 1#	/
Right tilt	23060/704	10M QPSK 1RB#25	0.451	0.267	-0.04	19.42	21.30	0.695	Battery 1#	/
Left cheek	23130/711	10M QPSK 50%RB#13	0.389	0.233	-0.17	19.46	21.30	0.594	Battery 1#	/
Left tilt	23130/711	10M QPSK 50%RB#13	0.502	0.303	-0.05	19.46	21.30	0.767	Battery 1#	/
Right cheek	23130/711	10M QPSK 50%RB#13	0.529	0.307	-0.09	19.46	21.30	0.808	Battery 1#	/
Right cheek	23060/704	10M QPSK 50%RB#0	0.477	0.274	0.05	19.43	21.30	0.734	Battery 1#	/
Right cheek	23095/707.5	10M QPSK 50%RB#0	0.489	0.283	-0.06	19.43	21.30	0.752	Battery 1#	/
Right tilt	23130/711	10M QPSK 50%RB#13	0.499	0.294	-0.11	19.46	21.30	0.762	Battery 1#	/
Right cheek	23130/711	10M QPSK 50%RB#13	0.578	0.329	-0.16	19.46	21.30	0.883	Battery 2#	Yes
Right cheek	23130/711	10M QPSK 50%RB#13	0.555	0.317	0.04	19.46	21.30	0.848	With SIM2	/
Right cheek	23095/707.5	10M QPSK 50%RB#0	0.497	0.287	-0.10	19.43	21.30	0.764	Battery 2#	/
Main Antenna										
Left cheek	23130/711	10M QPSK 1RB#49	0.045	0.030	-0.02	23.01	24.30	0.061	Battery 1#	/
Left tilt	23130/711	10M QPSK 1RB#49	0.040	0.027	-0.09	23.01	24.30	0.053	Battery 1#	/
Right cheek	23130/711	10M QPSK 1RB#49	0.056	0.044	-0.06	23.01	24.30	0.075	Battery 1#	/
Right tilt	23130/711	10M QPSK 1RB#49	0.031	0.021	-0.18	23.01	24.30	0.041	Battery 1#	/
Left cheek	23060/704	10M QPSK 50%RB#0	0.029	0.021	-0.03	22.10	23.30	0.039	Battery 1#	/
Left tilt	23060/704	10M QPSK 50%RB#0	0.025	0.017	-0.11	22.10	23.30	0.032	Battery 1#	/
Right cheek	23060/704	10M QPSK 50%RB#0	0.036	0.025	0.06	22.10	23.30	0.047	Battery 1#	/
Right tilt	23060/704	10M QPSK 50%RB#0	0.021	0.015	-0.13	22.10	23.30	0.027	Battery 1#	/
Right cheek	23130/711	10M QPSK 1RB#49	0.065	0.052	-0.19	23.01	24.30	0.087	Battery 2#	Yes
Right cheek	23130/711	10M QPSK 1RB#49	0.058	0.046	-0.13	23.01	24.30	0.078	With SIM2	/

Table 95: Head SAR test results of LTE Band 12

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	23130/711	10M QPSK 1RB#25	0.233	0.176	-0.13	22.89	24.30	0.322	Battery 1#	/
Back Side	15mm	23130/711	10M QPSK 1RB#25	0.213	0.133	-0.14	22.89	24.30	0.295	Battery 1#	/
Front Side	15mm	23130/711	10M QPSK 50%RB#0	0.184	0.130	-0.04	21.92	23.30	0.253	Battery 1#	/
Back Side	15mm	23130/711	10M QPSK 50%RB#0	0.185	0.133	-0.12	21.92	23.30	0.254	Battery 1#	/
Front Side	15mm	23130/711	10M QPSK 1RB#25	0.249	0.189	-0.11	22.89	24.30	0.345	Battery 2#	Yes
Front Side	15mm	23130/711	10M QPSK 1RB#25	0.248	0.189	-0.11	22.89	24.30	0.343	With SIM2	/
Main Antenna											
Front Side	15mm	23130/711	10M QPSK 1RB#49	0.254	0.167	-0.17	23.01	24.30	0.342	Battery 1#	/
Back Side	15mm	23130/711	10M QPSK 1RB#49	0.292	0.182	-0.10	23.01	24.30	0.393	Battery 1#	/
Front Side	15mm	23060/704	10M QPSK 50%RB#0	0.175	0.116	-0.17	22.10	23.30	0.231	Battery 1#	/
Back Side	15mm	23060/704	10M QPSK 50%RB#0	0.222	0.146	-0.16	22.10	23.30	0.293	Battery 1#	/
Back Side	15mm	23130/711	10M QPSK 1RB#49	0.296	0.186	-0.15	23.01	24.30	0.398	Battery 2#	Yes
Back Side	15mm	23130/711	10M QPSK 1RB#49	0.273	0.169	-0.13	23.01	24.30	0.367	With SIM2	/

Table 96: Body-Worn SAR test results of LTE Band 12

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	23130/711	10M QPSK 1RB#25	0.381	0.238	-0.19	22.89	24.30	0.527	Battery 1#	/
Back Side	10mm	23130/711	10M QPSK 1RB#25	0.405	0.237	-0.13	22.89	24.30	0.560	Battery 1#	/
Left Side	10mm	23130/711	10M QPSK 1RB#25	0.146	0.103	-0.14	22.89	24.30	0.202	Battery 1#	/
Right Side	10mm	23130/711	10M QPSK 1RB#25	0.146	0.099	-0.04	22.89	24.30	0.202	Battery 1#	/
Top Side	10mm	23130/711	10M QPSK 1RB#25	0.363	0.195	0.06	22.89	24.30	0.502	Battery 1#	/
Front Side	10mm	23130/711	10M QPSK 50%RB#0	0.311	0.195	-0.06	21.92	23.30	0.427	Battery 1#	/
Back Side	10mm	23130/711	10M QPSK 50%RB#0	0.349	0.219	-0.11	21.92	23.30	0.480	Battery 1#	/
Left Side	10mm	23130/711	10M QPSK 50%RB#0	0.120	0.085	-0.17	21.92	23.30	0.165	Battery 1#	/
Right Side	10mm	23130/711	10M QPSK 50%RB#0	0.119	0.080	-0.10	21.92	23.30	0.164	Battery 1#	/
Top Side	10mm	23130/711	10M QPSK 50%RB#0	0.300	0.160	0.11	21.92	23.30	0.412	Battery 1#	/
Back Side	10mm	23130/711	10M QPSK 1RB#25	0.484	0.278	-0.14	22.89	24.30	0.670	Battery 2#	Yes
Back Side	10mm	23130/711	10M QPSK 1RB#25	0.394	0.232	-0.10	22.89	24.30	0.545	With SIM2	/
Main Antenna											
Front Side	10mm	23130/711	10M QPSK 1RB#49	0.502	0.324	-0.16	23.01	24.30	0.676	Battery 1#	/
Back Side	10mm	23130/711	10M QPSK 1RB#49	0.559	0.320	-0.11	23.01	24.30	0.752	Battery 1#	Yes
Left Side	10mm	23130/711	10M QPSK 1RB#49	0.280	0.153	-0.11	23.01	24.30	0.377	Battery 1#	/
Right Side	10mm	23130/711	10M QPSK 1RB#49	0.096	0.065	-0.14	23.01	24.30	0.129	Battery 1#	/
Bottom Side	10mm	23130/711	10M QPSK 1RB#49	0.268	0.141	-0.12	23.01	24.30	0.361	Battery 1#	/
Front Side	10mm	23060/704	10M QPSK 50%RB#0	0.366	0.234	-0.14	22.10	23.30	0.482	Battery 1#	/
Back Side	10mm	23060/704	10M QPSK 50%RB#0	0.438	0.286	-0.17	22.10	23.30	0.577	Battery 1#	/
Left Side	10mm	23060/704	10M QPSK 50%RB#0	0.171	0.092	-0.18	22.10	23.30	0.225	Battery 1#	/
Right Side	10mm	23060/704	10M QPSK 50%RB#0	0.071	0.048	-0.11	22.10	23.30	0.093	Battery 1#	/
Bottom Side	10mm	23060/704	10M QPSK 50%RB#0	0.176	0.098	-0.11	22.10	23.30	0.232	Battery 1#	/
Back Side	10mm	23130/711	10M QPSK 1RB#49	0.531	0.305	-0.14	23.01	24.30	0.715	Battery 2#	/
Back Side	10mm	23130/711	10M QPSK 1RB#49	0.528	0.305	-0.17	23.01	24.30	0.711	With SIM2	/

Table 97: Hotspot SAR test results of LTE Band 12

Note:

Per KDB 648474 D04, Product Specific 10-g SAR test is not required for this frequency band since hotspot mode 1-g reported SAR < 1.2 W/kg.

7.2.11 SAR measurement Result 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								
Left cheek	1/2412	802.11b	0.254	0.282	0.121	-0.12	98%	0.288	10.51	12.00	0.406	Battery 1#	/
Left tilt	1/2412	802.11 b	0.172	0.190	0.082	-0.16	98%	0.194	10.51	12.00	0.273	Battery 1#	/
Right cheek	1/2412	802.11 b	0.086	0.094	0.043	-0.11	98%	0.096	10.51	12.00	0.135	Battery 1#	/
Right tilt	1/2412	802.11 b	0.069	0.074	0.035	-0.10	98%	0.075	10.51	12.00	0.106	Battery 1#	/
Left cheek	1/2412	802.11 b	0.304	0.287	0.122	-0.18	98%	0.293	10.51	12.00	0.413	Battery 2#	Yes

Table 98: Head SAR test results of WiFi 2.4G

WiFi 2.4G	Tune-upLimit (dBm)	Tune-upLimit (mW)	Highest Reported SAR(W/kg)	Adjusted SAR (W/kg)	SAR test
802.11b	12.00	15.85	0.413	/	Yes
802.11g	11.50	14.13	/	0.368	No
802.11n 20M	11.50	14.13	/	0.368	No
802.11n 40M	11.50	14.13	/	0.368	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								
Front Side	15mm	6/2437	802.11 b	0.046	/	/	-0.13	98%	/	16.74	17.00	/	Battery 1#	/
Back Side	15mm	6/2437	802.11 b	0.071	0.071	0.036	-0.16	98%	0.073	16.74	17.00	0.077	Battery 1#	/
Back Side	15mm	6/2437	802.11 b	0.088	0.089	0.046	-0.13	98%	0.091	16.74	17.00	0.096	Battery 2#	Yes

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

WiFi 2.4G	Tune-upLimit (dBm)	Tune-upLimit (mW)	Highest Reported SAR(W/kg)	Adjusted SAR (W/kg)	SAR test
802.11b	17.00	50.12	0.096	/	Yes
802.11g	16.00	39.81	/	0.076	No
802.11n 20M	14.00	25.12	/	0.048	No
802.11n 40M	14.00	25.12	/	0.048	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								
Front Side	10mm	6/2437	802.11 b	0.091	/	/	-0.11	98%	/	16.74	17.00	/	Battery 1#	/
Back Side	10mm	6/2437	802.11 b	0.151	0.157	0.075	-0.16	98%	0.160	16.74	17.00	0.170	Battery 1#	/
Right Side	10mm	6/2437	802.11 b	0.103	/	/	-0.06	98%	/	16.74	17.00	/	Battery 1#	/
Top Side	10mm	6/2437	802.11 b	0.248	0.263	0.104	-0.11	98%	0.268	16.74	17.00	0.285	Battery 1#	Yes
Top Side	10mm	6/2437	802.11 b	0.208	0.213	0.093	0.04	98%	0.217	16.74	17.00	0.231	Battery 2#	/

Table 100: Hotspot SAR test results of WiFi 2.4G

WiFi 2.4G	Tune-upLimit (dBm)	Tune-upLimit (mW)	Highest Reported SAR(W/kg)	Adjusted SAR (W/kg)	SAR test
802.11b	17.00	50.12	0.285	/	Yes
802.11g	16.00	39.81	/	0.226	No
802.11n 20M	14.00	25.12	/	0.143	No
802.11n 40M	14.00	25.12	/	0.143	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.
- 2) According to the table above,Product Specific 10-g SAR test is not required for this frequency band.

7.2.12 SAR measurement Result of WiFi 5G

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								
Test data of U-NII-1&U-NII-2A band													
Left cheek	64/5320	802.11a	0.202	0.200	0.073	0.18	98%	0.204	10.14	11.00	0.249	Battery 1#	/
Left tilt	64/5320	802.11a	0.162	/	/	0.08	98%	/	10.14	11.00	/	Battery 1#	/
Right cheek	64/5320	802.11a	0.072	0.078	0.022	-0.17	98%	0.079	10.14	11.00	0.096	Battery 1#	/
Right tilt	64/5320	802.11a	0.069	/	/	0.10	98%	/	10.14	11.00	/	Battery 1#	/
Left cheek	64/5320	802.11a	0.227	0.217	0.079	0.14	98%	0.221	10.14	11.00	0.270	Battery 2#	/
Test data of U-NII-2C band													
Left cheek	116/5580	802.11a	0.186	0.183	0.065	0.10	98%	0.187	10.87	11.00	0.192	Battery 1#	/
Left tilt	116/5580	802.11a	0.132	/	/	-0.17	98%	/	10.87	11.00	/	Battery 1#	/
Right cheek	116/5580	802.11a	0.058	0.056	0.018	-0.18	98%	0.057	10.87	11.00	0.059	Battery 1#	/
Right tilt	116/5580	802.11a	0.052	/	/	0.19	98%	/	10.87	11.00	/	Battery 1#	/
Left cheek	116/5580	802.11a	0.174	0.174	0.063	-0.16	98%	0.178	10.87	11.00	0.183	Battery 2#	/
Test data of U-NII-3 band													
Left cheek	149/5745	802.11a	0.288	0.269	0.096	-0.18	98%	0.274	9.19	11.00	0.416	Battery 1#	Yes
Left tilt	149/5745	802.11a	0.231	/	/	0.16	98%	/	9.19	11.00	/	Battery 1#	/
Right cheek	149/5745	802.11a	0.109	/	/	0.16	98%	/	9.19	11.00	/	Battery 1#	/
Right tilt	149/5745	802.11a	0.077	/	/	-0.11	98%	/	9.19	11.00	/	Battery 1#	/
Left cheek	149/5745	802.11a	0.268	0.267	0.095	0.15	98%	0.272	9.19	11.00	0.413	Battery 2#	/

Table 101: Head SAR test results of WiFi 5G

WiFi 5G	Tune-upLimit (mW)	Highest Reported SAR(W/kg)	Adjusted SAR (W/kg)	SAR test
802.11a	11.00	0.416	/	Yes
802.11n 20M	10.50	/	0.397	No
802.11ac 20M	10.50	/	0.397	No
802.11n 40M	10.50	/	0.397	No
802.11ac 40M	10.50	/	0.397	No
802.11ac 80M	10.50	/	0.397	No

Note:

- 1) Per KDB248227D01, for Head SAR test of WiFi 5G, SAR is measured for 5 GHz 802.11a OFDM using the initial test position procedure. The highest *reported* SAR is adjusted by the ratio of 802.11a to other WiFi 5G mode specified maximum output power and the adjusted SAR is < 1.2 W/kg, so SAR for other WiFi 5G mode is not required.
- 2) When the same maximum output power is specified for both bands, begin SAR measurement in U-NII-2A band by applying the OFDM SAR requirements. As the highest *reported* SAR for a test configuration is ≤ 1.2 W/kg, SAR is not required for U-NII-1 band for that configuration (802.11 mode and exposure condition);

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								
Test data of U-NII-1&U-NII-2A band														
Front Side	15mm	52/5260	802.11a	0.060	0.050	0.020	-0.18	98%	0.051	14.63	16.00	0.070	Battery 1#	/
Back Side	15mm	52/5260	802.11a	0.052	0.037	0.013	-0.14	98%	0.037	14.63	16.00	0.051	Battery 1#	/
Front Side	15mm	52/5260	802.11a	0.080	0.070	0.028	0.16	98%	0.071	14.63	16.00	0.098	Battery 2#	/
Test data of U-NII-2C band														
Front Side	15mm	104/5520	802.11a	0.043	0.037	0.015	0.14	98%	0.038	15.63	16.00	0.041	Battery 1#	/
Back Side	15mm	104/5520	802.11a	0.036	0.025	0.009	0.15	98%	0.026	15.63	16.00	0.028	Battery 1#	/
Front Side	15mm	104/5520	802.11a	0.086	0.082	0.032	-0.16	98%	0.084	15.63	16.00	0.092	Battery 2#	/
Test data of U-NII-3 band														
Front Side	15mm	149/5745	802.11a	0.069	0.056	0.023	-0.13	98%	0.057	14.76	16.00	0.076	Battery 1#	/
Back Side	15mm	149/5745	802.11a	0.062	0.050	0.018	0.16	98%	0.051	14.76	16.00	0.068	Battery 1#	/
Front Side	15mm	149/5745	802.11a	0.093	0.085	0.034	-0.15	98%	0.087	14.76	16.00	0.115	Battery 2#	Yes

Table 102: Body-Worn SAR test results of WiFi 5G

WiFi 5G	Tune-upLimit (mW)	Highest Reported SAR(W/kg)	Adjusted SAR (W/kg)	SAR test
802.11a	16.00	0.115	/	Yes
802.11n 20M	15.00	/	0.108	No
802.11ac 20M	15.00	/	0.108	No
802.11n 40M	14.00	/	0.101	No
802.11ac 40M	14.00	/	0.101	No
802.11ac 80M	14.00	/	0.101	No

Note:

1) Per KDB248227D01, for Body-Worn SAR test of WiFi 5G , SAR is measured for 5GHz 802.11a using the initial test position procedure.The highest reported SAR is adjusted by the ratio of 802.11a to other WiFi 5G mode specified maximum output power and the adjusted SAR is < 1.2 W/kg, so SAR for other WiFi 5G mode is not required.

2) When the same maximum output power is specified for both bands, begin SAR measurement in U-NII-2A band by applying the OFDM SAR requirements. As the highest *reported* SAR for a test configuration is ≤ 1.2 W/kg, SAR is not required for U-NII-1 band for that configuration (802.11 mode and exposure condition);

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								
Test data of U-NII-1														
Front Side	10mm	36/5180	802.11a	0.162	0.131	0.047	0.10	98%	0.134	14.93	16.00	0.172	Battery 1#	/
Back Side	10mm	36/5180	802.11a	0.380	0.389	0.135	-0.08	98%	0.398	14.93	16.00	0.509	Battery 1#	Yes
Right Side	10mm	36/5180	802.11a	0.214	/	/	0.18	98%	/	14.93	16.00	/	Battery 1#	/
Top Side	10mm	36/5180	802.11a	0.071	/	/	0.17	98%	/	14.93	16.00	/	Battery 1#	/
Back Side	10mm	36/5180	802.11a	0.217	0.234	0.081	0.01	98%	0.240	14.93	16.00	0.306	Battery 2#	/
Test data of U-NII-3 band														
Front Side	10mm	149/5745	802.11a	0.158	0.144	0.058	0.16	98%	0.147	14.76	16.00	0.196	Battery 1#	/
Back Side	10mm	149/5745	802.11a	0.147	0.150	0.051	0.10	98%	0.154	14.76	16.00	0.204	Battery 1#	/
Right Side	10mm	149/5745	802.11a	0.212	0.223	0.076	-0.11	98%	0.228	14.76	16.00	0.304	Battery 1#	/
Top Side	10mm	149/5745	802.11a	0.082	/	/	-0.04	98%	/	14.76	16.00	/	Battery 1#	/
Right Side	10mm	149/5745	802.11a	0.165	0.169	0.060	-0.10	98%	0.173	14.76	16.00	0.230	Battery 2#	/

Table 103: Hotspot SAR test results of WiFi 5G

WiFi 5G	Tune-upLimit (mW)	Highest Reported SAR(W/kg)	Adjusted SAR (W/kg)	SAR test
802.11a	16.00	0.509	/	Yes
802.11n 20M	15.00	/	0.477	No
802.11ac 20M	15.00	/	0.477	No
802.11n 40M	14.00	/	0.445	No
802.11ac 40M	14.00	/	0.445	No
802.11ac 80M	14.00	/	0.445	No

Note:

- 1) Per KDB248227D01, for Hotspot SAR test of WiFi 5G , SAR is measured for 5GHz 802.11a using the initial test position procedure.The highest reported SAR is adjusted by the ratio of 802.11a to other WiFi 5G mode specified maximum output power and the adjusted SAR is < 1.2 W/kg, so SAR for other WiFi 5G mode is not required.
- 2) The device do not support hotspot function at U-NII-2A & U-NII-2C band.
- 3) According to the table above,Product Specific 10-g SAR test is not required for U-NII-1 and U-NII-3.

Product Specific 10-g SAR	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 10-g SAR (W/kg)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported 10-g SAR (W/kg)	Accessory Information	SAR Plot.
					1-g	10-g								
Test data of U-NII-2A band														
Front Side	0mm	52/5260	802.11a	2.200	1.930	0.706	-0.12	98%	0.723	14.63	16.00	0.991	Battery 1#	Yes
Back Side	0mm	52/5260	802.11a	1.860	/	/	-0.19	98%	/	14.63	16.00	/	Battery 1#	/
Right Side	0mm	52/5260	802.11a	2.630	3.020	0.701	-0.19	98%	0.718	14.63	16.00	0.984	Battery 1#	/
Top Side	0mm	52/5260	802.11a	0.380	0.825	0.167	0.18	98%	0.171	14.63	16.00	0.234	Battery 1#	/
Front Side	0mm	52/5260	802.11a	1.900	1.520	0.547	0.19	98%	0.560	14.63	16.00	0.768	Battery 2#	/
Test data of U-NII-2C band														
Front Side	0mm	104/5520	802.11a	1.640	1.340	0.472	0.00	98%	0.483	15.63	16.00	0.526	Battery 1#	/
Back Side	0mm	104/5520	802.11a	0.949	1.030	0.324	-0.12	98%	0.332	15.63	16.00	0.361	Battery 1#	/
Right Side	0mm	104/5520	802.11a	0.797	0.911	0.213	0.12	98%	0.218	15.63	16.00	0.237	Battery 1#	/
Top Side	0mm	104/5520	802.11a	0.281	/	/	0.18	98%	/	15.63	16.00	/	Battery 1#	/
Front Side	0mm	104/5520	802.11a	1.430	1.320	0.455	0.10	98%	0.466	15.63	16.00	0.507	Battery 2#	/

Table 104: Product Specific 10-g SAR test results of WiFi 5G

WiFi 5G	Tune-up Limit (mW)	Highest Reported SAR(W/kg)	Adjusted SAR (W/kg)	SAR test
802.11a	16.00	0.991	/	Yes
802.11n 20M	15.00	/	0.929	No
802.11ac 20M	15.00	/	0.929	No
802.11n 40M	14.00	/	0.867	No
802.11ac 40M	14.00	/	0.867	No
802.11ac 80M	14.00	/	0.867	No

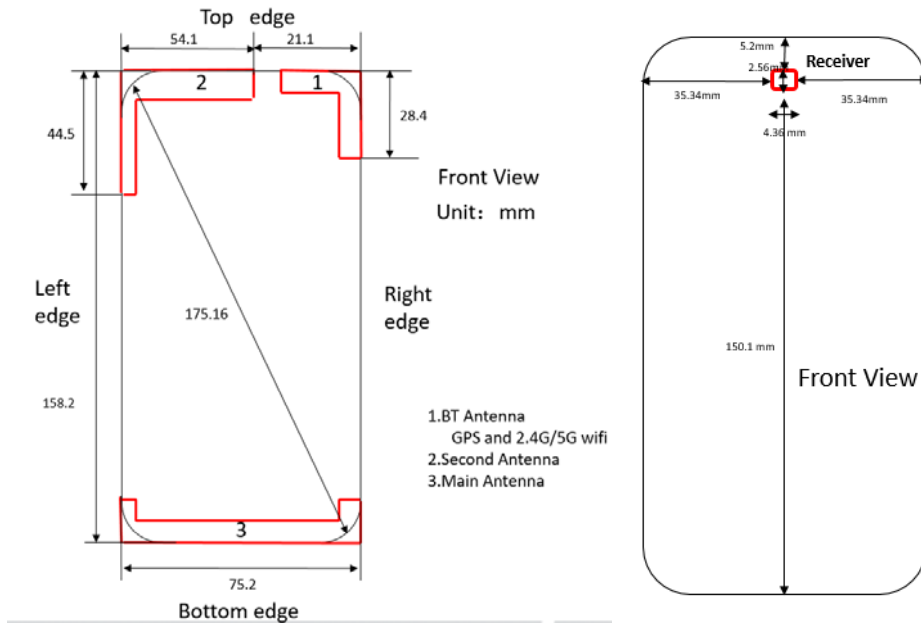
Note:

- 1) Per KDB248227D01, for Product Specific 10-g SAR test of WiFi 5G , SAR is measured for 5GHz 802.11a using the initial test position procedure. The highest reported SAR is adjusted by the ratio of 802.11a to other WiFi 5G mode specified maximum output power and the adjusted SAR is < 1.2 W/kg, so SAR for other WiFi 5G mode is not required.
- 2) When the same maximum output power is specified for both bands, begin SAR measurement in U-NII-2A band by applying the OFDM SAR requirements. As the highest reported SAR for a test configuration is ≤ 1.2 W/kg, SAR is not required for U-NII-1 band for that configuration (802.11 mode and exposure condition);
- 3) As U-NII-2A and U-NII-2C do not support hotspot function, so full Product Specific 10-g SAR tests are evaluated for U-NII-2A and U-NII-2C bands.

7.3 Multiple Transmitter Evaluation

The following tables list information which is relevant for the decision if a simultaneous transmit evaluation is necessary according to FCC KDB 447498D01 General RF Exposure Guidance v06.

The location of the antennas inside the device is shown as below picture:



Note:

- 1) Per KDB 648474 D04, because the diagonal distance of this device is >160mm and the diagonal dimension of display is >150mm, it is considered a "Phablet" device.
- 2) The device has two 2G/3G/4G Tx antennas (Main Antenna and Second Antenna). It can transmit from either Main Antenna or Second Antenna, but they can not transmit simultaneously.

Mode	Exposure Condition	Front Side	Back Side	Left Side	Right Side	Top Side	Bottom Side
Main ant	Hotspot/ Product specific 10g SAR	Yes	Yes	Yes	Yes	No	Yes
Second ant	Hotspot/ Product specific 10g SAR	Yes	Yes	Yes	Yes	Yes	No
WiFi Ant/BT	Hotspot/ Product specific 10g SAR	Yes	Yes	No	Yes	Yes	No

Table 105: Sides for Hotspot testing

Note:

- 1) 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;
- 2) WiFi 5G U-NII-2A and U-NII-2C band does not support hotspot function, therefore U-NII-2A and U-NII-2C were not evaluated for hotspot SAR .

7.3.1 Stand-alone SAR test exclusion

Per FCC KDB 447498D01v06, the 1-g SAR and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 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 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	9.50	8.91	5	2.480	2.81	3.00	NO
BT	Body-Worn	9.50	8.91	15	2.480	0.94	3.00	NO
BT	Hotspot	9.50	8.91	10	2.480	1.40	3.00	NO
BT	Product Specific 10-g SAR	9.50	8.91	5	2.480	2.81	7.50	No

Table 106: 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	9.50	8.91	5	2.480	7.50	0.374
BT	Body-worn	9.50	8.91	15	2.480	7.50	0.125
BT	Hotspot	9.50	8.91	10	2.450	7.50	0.186
BT	Product Specific 10-g SAR	9.50	8.91	5	2.480	18.75	0.150

Table 107: 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	Product Specific 10-g SAR
1	GSM Voice(Ant 1) + BT	Yes	Yes	N/A	Yes
2	GSM DATA(Ant 1) + BT	N/A	Yes	N/A	Yes
3	GSM Voice(Ant 2) + BT	Yes	Yes	N/A	Yes
4	GSM DATA (Ant 2)+ BT	N/A	Yes	N/A	Yes
5	GSM Voice(Ant 1) + WiFi 2.4G	Yes	Yes	N/A	Yes
6	GSM DATA(Ant 1) + WiFi 2.4G	N/A	Yes	Yes	Yes
7	GSM Voice(Ant 2) + WiFi 2.4G	Yes	Yes	N/A	Yes
8	GSM DATA(Ant 2) + WiFi 2.4G	N/A	Yes	Yes	Yes
9	UMTS (Ant 1) + BT	Yes	Yes	N/A	Yes
10	UMTS (Ant 2) + BT	Yes	Yes	N/A	Yes
11	UMTS (Ant 1) + WiFi 2.4G	Yes	Yes	Yes	Yes
12	UMTS (Ant 2) + WiFi 2.4G	Yes	Yes	Yes	Yes
13	LTE (Ant 1) + WiFi 2.4G	Yes	Yes	Yes	Yes
14	LTE(Ant 1) + BT	Yes	Yes	N/A	Yes
15	LTE (Ant 2) + WiFi 2.4G	Yes	Yes	Yes	Yes
16	LTE (Ant 2) + BT	Yes	Yes	N/A	Yes
17	GSM Voice(Ant 1) + WiFi 5G	Yes	Yes	N/A	Yes
18	GSM DATA(Ant 1) + WiFi 5G	N/A	Yes	Yes	Yes
19	GSM Voice(Ant 2) + WiFi 5G	Yes	Yes	N/A	Yes
20	GSM DATA(Ant 2) + WiFi 5G	N/A	Yes	Yes	Yes
21	UMTS (Ant 1) + WiFi 5G	Yes	Yes	Yes	Yes
22	UMTS (Ant 2) + WiFi 5G	Yes	Yes	Yes	Yes
23	LTE (Ant 1) + WiFi 5G	Yes	Yes	Yes	Yes
24	LTE (Ant 2) + WiFi 5G	Yes	Yes	Yes	Yes

Table 108: Simultaneous Transmission Possibilities

Note:

- 1) WiFi 2.4G and Bluetooth can't transmit simultaneously.
- 2) WiFi 5G and Bluetooth can't transmit simultaneously.
- 3) WiFi 2.4G and 5G can't transmit simultaneously.
- 4) The device does not support DTM function.
- 5) * VOIP 3rd party applications may possibly be installed and used by the user.
- 6) The Main Antenna and Second Antenna can't transmit simultaneously.
- 7) The device supports VoWIFI function.
- 8) U-NII-2A: 5250-5350 MHz, U-NII-2C: 5470-5725 MHz does not support hotspot function

7.3.3 SAR Summation Scenario

Test Position		Second antenna SARMax										WiFi/BT antenna SARMax			ΣSAR
		GSM850	GSM1900	UMTS B2	UMTS B4	UMTS B5	LTE B2	LTE B4	LTE B5	LTE B7	LTE B12	WiFi 2.4G	WiFi 5G	BT	
Head	Left cheek	0.573	0.196	0.241	0.240	0.580	0.233	0.243	0.621	0.211	0.698	0.413	0.416	0.374	1.114
	Left tilt	0.469	0.241	0.247	0.276	0.489	0.276	0.312	0.567	0.187	0.767	0.273	0.416	0.374	1.183
	Right cheek	0.632	0.588	0.775	0.797	0.652	0.729	0.772	0.743	0.955	0.883	0.135	0.416	0.374	1.371
	Right tilt	0.522	0.509	0.666	0.712	0.583	0.677	0.882	0.653	0.836	0.762	0.106	0.416	0.374	1.298
Body Worn	Front Side	0.128	0.099	0.201	0.183	0.292	0.205	0.170	0.343	0.221	0.345	0.096	0.115	0.125	0.470
	Back Side	0.144	0.138	0.300	0.272	0.323	0.342	0.243	0.273	0.237	0.295	0.096	0.068	0.125	0.467
Hotspot	Front Side	0.341	0.173	0.396	0.414	0.544	0.504	0.338	0.510	0.315	0.527	0.285	0.196	0.186	0.829
	Back Side	0.394	0.227	0.623	0.576	0.628	0.641	0.515	0.574	0.584	0.670	0.170	0.509	0.186	1.179
	Left Side	0.433	0.300	0.679	0.436	0.656	0.616	0.448	0.673	0.411	0.202	/	/	/	0.679
	Right Side	0.086	0.025	0.068	0.042	0.155	0.062	0.033	0.165	0.008	0.202	0.285	0.509	0.186	0.711
	Top Side	0.363	0.255	0.609	0.740	0.543	0.648	0.757	0.457	0.174	0.502	0.285	0.509	0.186	1.266
	Bottom Side	/	/	/	/	/	/	/	/	/	/	/	/	/	/
Product Specific 10-g	Front Side	/	/	/	/	/	/	/	/	/	/	/	0.991	0.150	0.991
	Back Side	/	/	/	/	/	/	/	/	/	/	/	0.991	0.150	0.991
	Left Side	/	/	/	/	/	/	/	/	/	/	/	/	/	0.000
	Right Side	/	/	/	/	/	/	/	/	/	/	/	0.984	0.150	0.984
	Top Side	/	/	/	/	/	/	/	/	/	/	/	0.991	0.150	0.991
	Bottom Side	/	/	/	/	/	/	/	/	/	/	/	/	/	0.000

Table 109: SAR Simultaneous Tx Combination of Second antenna and WiFi/BT antenna.

Test Position		Main antenna SARMax										WiFi/BT antenna SARMax			ΣSAR
		GSM850	GSM1900	UMTS B2	UMTS B4	UMTS B5	LTE B2	LTE B4	LTE B5	LTE B7	LTE B12	WiFi 2.4G	WiFi 5G	BT	
Head	Left cheek	0.061	0.092	0.186	0.198	0.080	0.160	0.210	0.060	0.293	0.061	0.413	0.416	0.374	0.709
	Left tilt	0.052	0.050	0.081	0.058	0.061	0.065	0.074	0.049	0.072	0.053	0.273	0.416	0.374	0.497
	Right cheek	0.045	0.072	0.123	0.111	0.052	0.123	0.110	0.051	0.187	0.087	0.135	0.416	0.374	0.603
	Right tilt	0.047	0.052	0.061	0.069	0.054	0.056	0.066	0.039	0.139	0.041	0.106	0.416	0.374	0.555
Body Worn	Front Side	0.195	0.139	0.214	0.210	0.281	0.218	0.234	0.204	0.255	0.342	0.096	0.115	0.125	0.467
	Back Side	0.291	0.176	0.313	0.266	0.400	0.289	0.267	0.243	0.335	0.398	0.096	0.068	0.125	0.525
Hotspot	Front Side	0.404	0.250	0.414	0.388	0.532	0.331	0.447	0.391	0.529	0.676	0.285	0.196	0.186	0.961
	Back Side	0.554	0.334	0.557	0.537	0.714	0.420	0.635	0.480	0.634	0.752	0.170	0.509	0.186	1.261
	Left Side	0.289	0.157	0.263	0.241	0.344	0.209	0.307	0.291	0.249	0.377	/	/	/	0.377
	Right Side	0.067	0.103	0.162	0.176	0.057	0.148	0.164	0.046	0.194	0.129	0.285	0.509	0.186	0.703
	Top Side	/	/	/	/	/	/	/	/	/	/	0.285	0.509	0.186	0.509
	Bottom Side	0.263	0.488	0.697	0.662	0.283	0.608	0.778	0.241	0.863	0.361	/	/	/	0.863
Product Specific 10-g	Front Side	/	/	/	/	/	/	/	/	/	/	/	0.991	0.150	0.991
	Back Side	/	/	/	/	/	/	/	/	/	/	/	0.991	0.150	0.991
	Left Side	/	/	/	/	/	/	/	/	/	/	/	/		0.000
	Right Side	/	/	/	/	/	/	/	/	/	/	/	0.984	0.150	0.984
	Top Side	/	/	/	/	/	/	/	/	/	/	/	0.991	0.150	0.991
	Bottom Side	/	/	/	/	/	/	/	/	/	/	/	/	/	0.000

Table 110: 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)20180813013001-2A, total: 31 pages)

Appendix B. SAR Measurement Plots

(Please See Appendix No.: SYBH(Z-SAR) 20180813013001-2B, total: 68 pages)

Appendix C. Calibration Certificate

(Please See Appendix No.: SYBH(Z-SAR) 20180813013001-2C, total: 191 pages)

Appendix D. Photo documentation

(Please See Appendix No.: SYBH(Z-SAR) 20180813013001-2D, total: 6 pages)

End