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FCC SAR Compliance Test Report

Product Name: Smart Phone

Model: HUAWEI NXT-L09

Report No.: SYBH(Z-SAR)002112015-2

FCC ID: QISNXT-L09

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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	11
1.3.2	TDD LTE specification	12
1.3.3	Power reduction specification	12
1.3.4	Downlink LTE CA specification	14
1.3.5	Dynamic antenna switching specification	16
1.4	Test specification(s)	17
1.5	Testing laboratory	17
1.6	Applicant and Manufacturer	17
1.7	Application details	17
1.8	Ambient Condition.....	17
2	SAR Measurement System	18
2.1	SAR Measurement Set-up	18
2.2	Test environment	19
2.3	Data Acquisition Electronics description	19
2.4	Probe description	20
2.5	Phantom description	21
2.6	Device holder description	22
2.7	Test Equipment List	23
3	SAR Measurement Procedure	24
3.1	Scanning procedure.....	24
3.2	Spatial Peak SAR Evaluation	25
3.3	Data Storage and Evaluation.....	26
4	System Verification Procedure	28
4.1	Tissue Verification.....	28
4.2	System Check.....	33
4.3	System check Procedure	35
5	SAR measurement variability and uncertainty	36
5.1	SAR measurement variability	36
5.2	SAR measurement uncertainty	36
6	SAR Test Configuration.....	37
6.1	Test Positions Configuration	37
6.1.1	General considerations	37
6.1.2	Head Exposure Condition	37
6.1.3	Body-worn Exposure Condition	38
6.1.4	Hotspot Exposure Condition	39
6.1.5	10g Extremity Exposure Condition	39
6.2	3G SAR Test Reduction Procedure	39
6.3	GSM Test Configuration	40
6.4	UMTS Test Configuration	40
6.5	LTE Test Configuration	46
6.6	WiFi Test Configuration	49
6.6.1	Initial Test Position Procedure	49
6.6.2	Initial Test Configuration Procedure	49
6.6.3	Sub Test Configuration Procedure	49
6.6.4	WiFi 2.4G SAR Test Procedures	50
6.6.5	WiFi 5G SAR Test Procedures	51
7	SAR Measurement Results	53
7.1	Conducted power measurements.....	53
7.1.1	Conducted power measurements of GSM850(Second Antenna)	54
7.1.2	Conducted power measurements of GSM1900(Second Antenna)	56
7.1.3	Conducted power measurements of UMTS Band II(Second Antenna)	58
7.1.4	Conducted power measurements of UMTS Band IV(Second Antenna)	59
7.1.5	Conducted power measurements of UMTS Band V(Second Antenna)	60
7.1.6	Conducted power measurements of LTE Band II(Second Antenna)	62
7.1.7	Conducted power measurements of LTE Band IV(Second Antenna)	65
7.1.8	Conducted power measurements of LTE Band V(Second Antenna)	71

7.1.9	Conducted power measurements of LTE Band VII(Second Antenna)	75
7.1.10	Conducted power measurements of LTE Band XII(Second Antenna)	77
7.1.11	Conducted power measurements of LTE Band XVII(Second Antenna)	79
7.1.12	Conducted power measurements of LTE Band XXVI(Second Antenna)	80
7.1.13	Conducted power measurements of LTE Band XXXVIII(Second Antenna)	83
7.1.14	Conducted power measurements of LTE Band XLI(Second Antenna)	85
7.1.15	Conducted power measurements of GSM850(Main Antenna)	89
7.1.16	Conducted power measurements of GSM1900(Main Antenna)	90
7.1.17	Conducted power measurements of UMTS Band II(Main Antenna)	91
7.1.18	Conducted power measurements of UMTS Band IV(Main Antenna)	92
7.1.19	Conducted power measurements of UMTS Band V(Main Antenna)	93
7.1.20	Conducted power measurements of LTE Band II(Main Antenna)	94
7.1.21	Conducted power measurements of LTE Band IV(Main Antenna)	97
7.1.22	Conducted power measurements of LTE Band V(Main Antenna)	100
7.1.23	Conducted power measurements of LTE Band VII(Main Antenna)	102
7.1.24	Conducted power measurements of LTE Band XII(Main Antenna)	104
7.1.25	Conducted power measurements of LTE Band XVII(Main Antenna)	106
7.1.26	Conducted power measurements of LTE Band XXVI(Main Antenna)	107
7.1.27	Conducted power measurements of LTE Band XXXVIII(Main Antenna)	110
7.1.28	Conducted power measurements of LTE Band XLI(Main Antenna)	112
7.1.29	Conducted power measurements of Downlink LTE CA	114
7.1.30	Conducted power measurements of WiFi 2.4G	116
7.1.31	Conducted power measurements of WiFi 5G	117
7.1.32	Conducted power measurements of BT	123
7.2	SAR measurement Results	124
7.2.1	SAR measurement Result of GSM850(Second Antenna)	126
7.2.2	SAR measurement Result of GSM1900(Second Antenna)	128
7.2.3	SAR measurement Result of UMTS Band II(Second Antenna)	130
7.2.4	SAR measurement Result of UMTS Band IV(Second Antenna)	132
7.2.5	SAR measurement Result of UMTS Band V(Second Antenna)	134
7.2.6	SAR measurement Result of LTE Band II(Second Antenna)	136
7.2.7	SAR measurement Result of LTE Band IV(Second Antenna)	139
7.2.8	SAR measurement Result of LTE Band V(Second Antenna)	143
7.2.9	SAR measurement Result of LTE Band VII(Second Antenna)	146
7.2.10	SAR measurement Result of LTE Band XII(Second Antenna)	149
7.2.11	SAR measurement Result of LTE Band XVII(Second Antenna)	152
7.2.12	SAR measurement Result of LTE Band XXVI(Second Antenna)	155
7.2.13	SAR measurement Result of LTE Band XXXVIII(Second Antenna)	158
7.2.14	SAR measurement Result of LTE Band XLI(Second Antenna)	161
7.2.15	SAR measurement Result of GSM850(Main Antenna)	165
7.2.16	SAR measurement Result of GSM1900(Main Antenna)	167
7.2.17	SAR measurement Result of UMTS Band II(Main Antenna)	169
7.2.18	SAR measurement Result of UMTS Band IV(Main Antenna)	171
7.2.19	SAR measurement Result of UMTS Band V(Main Antenna)	173
7.2.20	SAR measurement Result of LTE Band II(Main Antenna)	175
7.2.21	SAR measurement Result of LTE Band IV(Main Antenna)	178
7.2.22	SAR measurement Result of LTE Band V(Main Antenna)	181
7.2.23	SAR measurement Result of LTE Band VII(Main Antenna)	184
7.2.24	SAR measurement Result of LTE Band XII(Main Antenna)	187
7.2.25	SAR measurement Result of LTE Band XVII(Main Antenna)	190
7.2.26	SAR measurement Result of LTE Band XXVI(Main Antenna)	193
7.2.27	SAR measurement Result of LTE Band XXXVIII(Main Antenna)	196
7.2.28	SAR measurement Result of LTE Band XLI(Main Antenna)	199
7.2.29	SAR measurement Result of WiFi 2.4G	202
7.2.30	SAR measurement Result of WiFi 5G	205
7.3	Multiple Transmitter Evaluation	210
7.3.1	Stand-alone SAR test exclusion	211
7.3.2	Simultaneous Transmission Possibilities	212
7.3.3	SAR Summation Scenario	213
7.3.4	Simultaneous Transmission Conclusion	214
	Appendix A. System Check Plots	215
	Appendix B. SAR Measurement Plots	215
	Appendix C. Calibration Certificate	215



Appendix D. Photo documentation.....	215
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※ ※ **Modified History** ※ ※

REV.	DESCRIPTION	ISSUED DATE	REMARK
Rev.1.0	Initial Test Report Release	2015-12-14	Li Wei

1 General Information

1.1 Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for HUAWEI NXT-L09 is as below Table 1.

Band	Max Reported SAR(W/kg)			
	1-g Head	1-g Body-worn (15mm) *	1-g Hotspot (10mm)	10-g Extremity (0mm)**
GSM850	1.36	0.25	0.69	/
GSM1900	1.49	0.27	0.61	/
UMTS Band II	1.30	0.24	0.66	/
UMTS Band IV	1.17	0.19	0.92	/
UMTS Band V	1.39	0.30	0.44	/
LTE Band II	1.16	0.13	0.43	/
LTE Band IV	1.41	0.24	1.18	/
LTE Band V	1.44	0.23	0.41	/
LTE Band VII	1.12	0.32	0.92	/
LTE Band XII	0.77	0.10	0.21	/
LTE Band XVII	0.74	0.09	0.13	/
LTE Band XXVI	1.15	0.13	0.29	/
LTE Band XXXVIII	1.13	0.17	0.45	/
LTE Band XLI	1.43	0.16	0.43	/
WiFi 2.4G	1.45	0.10	0.27	/
WiFi 5G	1.17	0.12	0.25	0.75
The highest simultaneous SAR value is 1.59 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 10-g Extremity 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 and Industry Canada Radio Standards Specification RSS-102.

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, according to the Industry Canada Radio Standards Specification RSS-102 for General Population/Uncontrolled exposure, 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:	HUAWEI NXT-L09		
FCC ID :	QISNXT-L09		
SN.:	1#:AXS0115A12000519 2#:AXS0115A12000313 3#:AXS0115A12000386		
Device Type :	Portable device		
Device Phase:	Identical Prototype		
Exposure Category:	Uncontrolled environment / general population		
Hardware Version :	HL1UNEXTM		
Software Version :	NXT-L09C900B071		
Antenna Type :	Internal antenna		
Others Accessories	Headset		
Device Operating Configurations:			
Supporting Mode(s)	GSM850/1900, UMTS Band II/IV/V, LTE Band II/IV/V/VII/XII/XVII/XXVI/XXXVIII/XLI, WiFi 2.4G/5G, BT,NFC		
Test Modulation	GSM(GMSK/8PSK),UMTS(QPSK),LTE(QPSK/16QAM), WiFi(DSSS/OFDM),BT(GFSK)		
Device Class	B		
Operating Frequency Range(s)	Band	Tx (MHz)	Rx (MHz)
	GSM850	824-849	869-894
	GSM1900	1850-1910	1930-1990
	UMTS Band II	1850-1910	1930-1990
	UMTS Band IV	1710-1755	2110-2155
	UMTS Band V	824-849	869-894
	LTE Band II	1850-1910	1930-1990
	LTE Band IV	1710-1755	2110-2155
	LTE Band V	824-849	869-894
	LTE Band VII	2500-2570	2620-2690
	LTE Band XII	699-716	729-746
	LTE Band XVII	704-716	734-746
	LTE Band XXVI	814-849	859-894
	LTE Band XXXVIII	2570-2620	2570-2620
	LTE Band XLI	2555-2655	2555-2655
	BT	2400-2483.5	
	WiFi 2.4G	2400-2483.5	
	WiFi 5G	5160-5260 5260-5360 5500-5700 5745-5825	
	NFC	13.56	
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 II)
	3, tested with power control all Max.(LTE Band IV)
	3, tested with power control all Max.(LTE Band V)
	3, tested with power control all Max.(LTE Band VII)
	3, tested with power control all Max.(LTE Band XII)
	3, tested with power control all Max.(LTE Band XVII)
	3, tested with power control all Max.(LTE Band XXVI)
	3, tested with power control all Max.(LTE Band XXXVIII)
	3, tested with power control all Max.(LTE Band XLI)
Test Channels (low-mid-high):	128-190-251(GSM850)
	512-661-810(GSM1900)
	9262-9400-9538(UMTS Band II)
	1312-1413-1513(UMTS Band IV)
	4132-4182-4233(UMTS Band V)
	18607-18900-19193(LTE Band II BW=1.4MHz)
	18615-18900-19185(LTE Band II BW=3MHz)
	18625-18900-19175(LTE Band II BW=5MHz)
	18650-18900-19150(LTE Band II BW=10MHz)
	18675-18900-19125(LTE Band II BW=15MHz)
	18700-18900-19100(LTE Band II BW=20MHz)
	19957-20175-20393(LTE Band IV BW=1.4MHz)
	19965-20175-20385(LTE Band IV BW=3MHz)
	19975-20175-20375(LTE Band IV BW=5MHz)
	20000-20175-20350(LTE Band IV BW=10MHz)
	20025-20175-20325(LTE Band IV BW=15MHz)
	20050-20175-20300(LTE Band IV BW=20MHz)
	20407-20525-20643(LTE Band V BW=1.4MHz)
	20415-20525-20635(LTE Band V BW=3MHz)
	20425-20525-20625(LTE Band V BW=5MHz)
	20450-20525-20600(LTE Band V BW=10MHz)
	20775-21100-21425(LTE Band VII BW=5MHz)
	20800-21100-21400(LTE Band VII BW=10MHz)
	20825-21100-21375(LTE Band VII BW=15MHz)
	20850-21100-21350(LTE Band VII BW=20MHz)
	23017-23095-23173(LTE Band XII BW=1.4MHz)
	23025-23095-23165(LTE Band XII BW=3MHz)
	23035-23095-23155(LTE Band XII BW=5MHz)
	23060-23095-23130(LTE Band XII BW=10MHz)
	23755-23790-23825(LTE Band XVII BW=5MHz)
	23780-23790-23800(LTE Band XVII BW=10MHz)
	26697-26865-27033(LTE Band XXVI BW=1.4MHz)
	26705-26865-27025(LTE Band XXVI BW=3MHz)
	26715-26865-27015(LTE Band XXVI BW=5MHz)
	26750-26865-26990(LTE Band XXVI BW=10MHz)
	26775-26865-26965(LTE Band XXVI BW=15MHz)
	37775-38000-38225(LTE Band XXXVIII BW=5MHz)
	37800-38000-38200(LTE Band XXXVIII BW=10MHz)
	37825-38000-38175(LTE Band XXXVIII BW=15MHz)
	37850-38000-38150(LTE Band XXXVIII BW=20MHz)

Test Channels (low-mid-high):	40265-40740-41215(LTE Band XLI BW=5MHz)
	40290-40740-41190(LTE Band XLI BW=10MHz)
	40315-40740-41165(LTE Band XLI BW=15MHz)
	40340-40740-41140(LTE Band XLI BW=20MHz)
	802.11b/g/n 20M:1-6-11
	802.11n 40M:3-6-9 (WiFi 2.4G)
	802.11a/n/ac 20M: 36-40-44-48-52-56-60-64-100-104-108-112-116-120-124-128-132-136-140-149-153-157-161-165 802.11 n/ac 40M: 38-46-54-62-102-110-118-126-134-151-159 802.11ac 80M: 42-58-106-122-138-155(WiFi 5G)

Table 3:Device information and operating configuration

1.3.1 General Description

HUAWEI NXT-L09 is subscriber equipment in the LTE/UMTS/GSM system. The LTE frequency band is Band I,Band II,Band III,Band IV,Band V, Band VI ,Band VII,Band VIII, Band XII,BandXVII, Band XVIII ,Band XIX, Band XX, Band XXVI, Band XXVIII ,Band XXXVIII,BandXXXIX, Band XL and Band XLI. But only Band II,Band IV, Band V ,Band VII,BandXII,Band XVII, Band XXVI, Band XXXVIII and Band XLI test data included in this report. The HSUPA/HSDPA/UMTS frequency band is Band I, Band II, Band IV,Band V, Band VI, Band VIII and Band XIX, But only Band II, Band IV and Band V test data can be used in this report. The GSM/GPRS/EDGE frequency band includes GSM850 and GSM900 and DCS1800 and PCS1900, but only GSM850 and DCS1900 bands test data included in this report. The Mobile Phone implements such functions as RF signal receiving/transmitting, LTE/UMTS/GSM protocol processing, voice, video, MMS service, GPS, AGPS,NFC and WIFI etc. Externally it provides earphone port (to provide voice service) and USIM 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.

Battery information:

Name	Manufacture	Serials number	Description
Rechargeable Li-ion	Sunwoda Electronic Co., LTD	NA	Battery Model: HB396693ECW Rated capacity: 3900mAh
	Sunwoda Electronic Co., LTD	NA	Nominal Voltage:  +3.8V
	SCUD (FUJIAN) Electronics Co., Ltd	NA	Charging Voltage:  +4.35V

1.3.2 TDD LTE specification

The device supports TDD LTE bands. According to KDB 941225 D05 SAR for LTE Devices v02r04, for Time-Division Duplex (TDD) systems, SAR must be tested using a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by the defined 3GPP LTE TDD configurations.

For this device, TDD LTE SAR should be tested with the highest transmission duty factor (63.33%) , which using Uplink-downlink configuration 0. The detailed TDD LTE test configuration description are provided in Section 6 of this report.

1.3.3 Power reduction specification

The device uses a single fixed level of power reduction through static table look-up for SAR compliance and it is triggered by a single event or operation. A fixed level power reduction is applied for some frequency bands when simultaneously transmitting with the WiFi antennas in certain simultaneous transmission conditions. The standalone SAR compliance still uses the standalone SAR results tested at the maximum output power level without any power reduction. The PAG requirements can be excluded per KDB 388624D02.

The following tables summarize the key power reduction information. The detailed full power and reduced tune-up specifications and conducted power measurement results are provided in Section 7 of this report.

2G&3G&4G Second antenna + WiFi antenna simultaneous transmission		
Band	Full Power	Power Reduction Amount(dB)
GSM850	/	0.50
GSM1900	/	1.00
UMTS Band V	/	0.50
LTE Band IV	/	0.50
LTE Band V	/	1.00
LTE Band XLI	/	0.50
WIFI 2.4G 802.11b	/	3.85
WIFI 2.4G 802.11g	/	4.00
WIFI 2.4G 802.11n 20M	/	2.70
WIFI 2.4G 802.11n 40M	/	0.70
WIFI 5G U-NII-1 band 802.11a/n/ac 20M&40M	/	1.20
WIFI 5G U-NII-2A band 802.11a/n/ac 20M&40M	/	0.90
WIFI 5G U-NII-2C band 802.11a/n/ac 20M&40M	/	1.20
WIFI 5G U-NII-3 band 802.11a/n/ac 20M&40M	/	0.70
WIFI 5G U-NII-1 band 802.11ac 80M	/	0.00
WIFI 5G U-NII-2A band 802.11ac 80M	/	0.00
WIFI 5G U-NII-2C band 802.11ac 80M	/	0.00
WIFI 5G U-NII-3 band 802.11ac 80M	/	0.00

2G&3G&4G Main antenna + WiFi antenna simultaneous transmission		
Band	Full Power	Power Reduction Amount (dB)
WIFI 2.4G 802.11b	/	3.85
WIFI 2.4G 802.11g	/	4.00
WIFI 2.4G 802.11n 20M	/	2.70
WIFI 2.4G 802.11n 40M	/	0.70
WIFI 5G U-NII-1 band 802.11a/n/ac 20M&40M	/	1.20
WIFI 5G U-NII-2A band 802.11a/n/ac 20M&40M	/	0.90
WIFI 5G U-NII-2C band 802.11a/n/ac 20M&40M	/	1.20
WIFI 5G U-NII-3 band 802.11a/n/ac 20M&40M	/	0.70
WIFI 5G U-NII-1 band 802.11ac 80M	/	0.00
WIFI 5G U-NII-2A band 802.11ac 80M	/	0.00
WIFI 5G U-NII-2C band 802.11ac 80M	/	0.00
WIFI 5G U-NII-3 band 802.11ac 80M	/	0.00

1.3.4 Downlink LTE CA specification

The device supports downlink Release 10 LTE Carrier Aggregation (CA) only. It supports a maximum of 2 carriers in the downlink. Other Release 10 features are not supported, including Uplink Carrier Aggregation, Enhanced SC-FDMA and Uplink MIMO or other antenna diversity configurations etc. All uplink communications are identical to the Release 8 Specifications.

The possible downlink LTE CA combinations supported by this device are as below tables per 3GPP TS 36.101 V12.8.0. The conducted power measurement results of downlink LTE CA are provided in Section 7 of this report per 3GPP TS 36.521-1 V12.6.0. According to KDB 941225 D05A, the downlink LTE CA SAR test is not required and PAG requirements can be excluded.

intra-band contiguous CA (per 3GPP TS 36.101 V12.8.0 Table 5.6A.1-1)

E-UTRA CA configuration	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]		
CA_7C	15	15	40	0
	20	20		
CA_38C	15	15	40	0
	20	20		
CA_41C	10	20	40	0
	15	15, 20		
	20	10, 15, 20		

Table: Test frequencies for CA_7C

Range	CC-Combo / N _{RB_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	75+75	75	20825	2507.5	2825	2627.5	75	20975	2522.5	2975	2642.5
	100+100	100	20850	2510	2850	2630	100	21048	2529.8	3048	2649.8
Mid	75+75	75	21025	2527.5	3025	2647.5	75	21175	2542.5	3175	2662.5
	100+100	100	21000	2525	3000	2645	100	21198	2544.8	3198	2664.8
High	75+75	75	21225	2547.5	3225	2667.5	75	21375	2562.5	3375	2682.5
	100+100	100	21152	2540.2	3152	2660.2	100	21350	2560	3350	2680

Note 1: Carriers in increasing frequency order.

Table: Test frequencies for CA_38C

Range	CC-Combo / N _{RB_agg} [RB]	CC1 Note1			CC2 Note1		
		BW [RB]	N _{UL/DL}	f _{UL/DL} [MHz]	BW [RB]	N _{UL/DL}	f _{UL/DL} [MHz]
Low	75+75	75	37825	2577.5	75	37975	2592.5
	100+100	100	37850	2580	100	38048	2599.8
Mid	75+75	75	37925	2587.5	75	38075	2602.5
	100+100	100	37900	2585	100	38098	2604.8
High	75+75	75	38025	2597.5	75	38175	2612.5
	100+100	100	37952	2590.2	100	38150	2610

Note 1: Carriers in increasing frequency order.

Table: Test frequencies for CA_41C(2555-2655MHz)

Range	CC-Combo / N _{RB_agg} [RB]	CC1 Note1			CC2 Note1		
		BW [RB]	N _{UL/DL}	f _{UL/DL} [MHz]	BW [RB]	N _{UL/DL}	f _{UL/DL} [MHz]
Low	50+100	50	40290	2560	100	40434	2574.4
		100	40340	2565	50	40484	2579.4
	75+75	75	41015	2632.5	75	41165	2647.5
		75	40315	2562.5	100	40486	2579.6
	100+100	100	40340	2565	75	40511	2582.1
		100	40340	2565	100	40538	2584.8
Mid	50+100	50	40640	2595	100	40784	2609.4
		100	40690	2600	50	40834	2614.4
	75+75	75	40665	2597.5	75	40815	2612.5
		75	40640	2595	100	40811	2612.1
	100+100	100	40665	2597.5	75	40836	2614.6
		100	40640	2595	100	40838	2614.8
High	50+100	50	40996	2630.6	100	41140	2645
		100	41046	2635.6	50	41190	2650
	75+75	75	40315	2562.5	75	40465	2577.5
		75	40969	2627.9	100	41140	2645
	100+100	100	40994	2630.4	75	41165	2647.5
		100	40942	2625.2	100	41140	2645

Note 1: Carriers in increasing frequency order.

inter-band CA (per 3GPP TS 36.101 V12.8.0 Table 5.6A.1-2)

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_7A-28A	7			Yes	Yes	Yes	Yes	35	0
	28			Yes	Yes	Yes			
CA_3A-7A	3			Yes	Yes	Yes	Yes	40	0
	7				Yes	Yes	Yes		
CA_7A-20A	7				Yes	Yes	Yes	30	0
	20			Yes	Yes				
CA_3A-5A	3				Yes	Yes	Yes	30	0
	5			Yes	Yes				
	3				Yes			20	1
	5			Yes	Yes				
CA_4A-17A	4			Yes	Yes			20	0
	17			Yes	Yes				
CA_2A-17A	2			Yes	Yes			20	0
	17			Yes	Yes				

Note:

- 1) All the listed bands above can be used as PCC or SCC.
- 2) The channel spacing and aggregated channel bandwidth for CA are identical to the associated specification in 3GPP TS 36.101 V12.8.0.
- 3) The reference test frequencies for CA refers to 3GPP TS 36.508 V12.5.0.

1.3.5 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. For 2G&3G&4G SAR test, the Main Antenna and Second Antenna are set to the MAX transmit power level respectively and test the SAR respectively in all applicable RF exposure conditions. Some AT commands are supplied to fix the operation state and choose the antenna so that only one TX antenna is chosen and tested at a time. All independent antennas will be completely covered by the appropriate SAR measurements and all simultaneous transmission possibilities will be fully considered to ensure SAR compliance. (Refer to Section 7 for details)

1.4 Test specification(s)

ANSI C95.1:1992	Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz – 300 GHz.(IEEE Std C95.1-1991)
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
RSS-102	Radio Frequency Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands (Issue 5 of March 2015)
KDB941225 D01	3G SAR Procedures v03r01
KDB941225 D05	SAR for LTE Devices v02r04
KDB941225 D05A	LTE Rel.10 KDB Inquiry Sheet v01r02
KDB941225 D06	Hotspot SAR v02r01
KDB447498 D01	General RF Exposure Guidance v06
KDB616217 D04	SAR for laptop and tablets v01r02
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	SAR 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

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

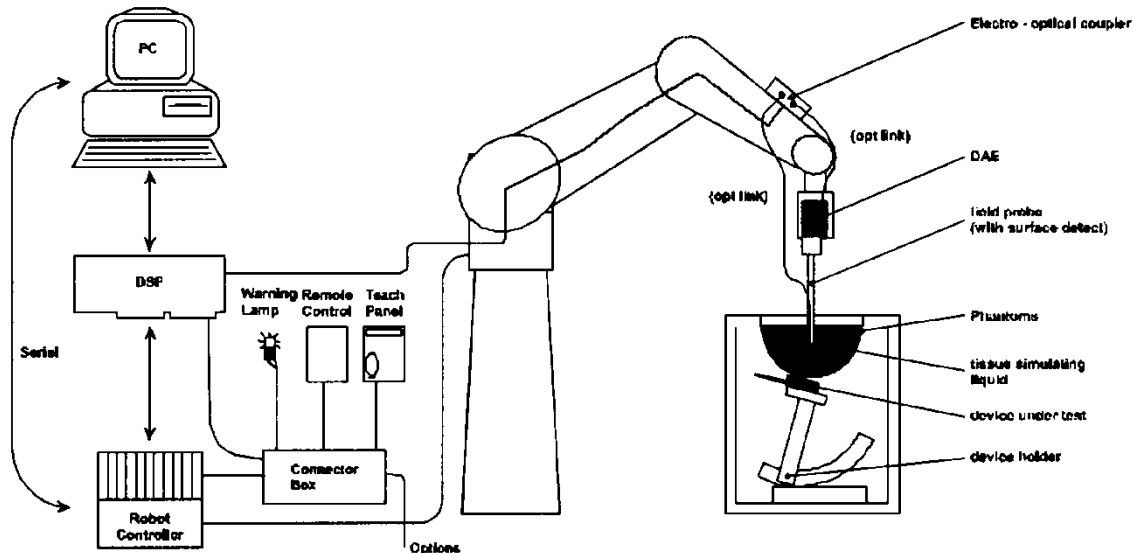
Start Date of test	2015-11-08
End Date of test	2015-12-04

1.8 Ambient Condition

Ambient temperature	20°C – 24°C
Relative Humidity	30% – 70%

2 SAR Measurement System

2.1 SAR Measurement Set-up



The DASY5 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 DASY5 measurement server.
- The DASY5 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.
- DASY5 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 DASY5 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.

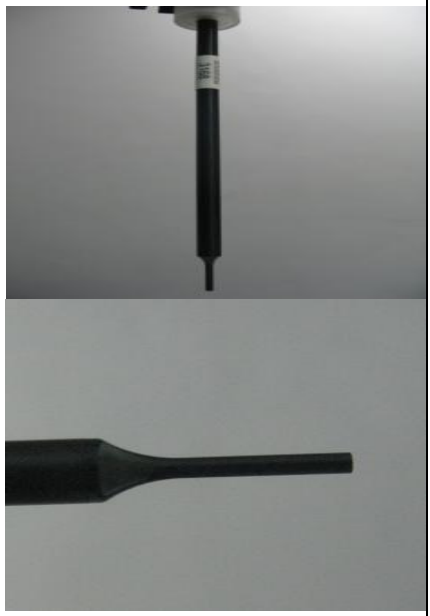
DAE4

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: 1 mm	
Application	High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields). Only probe which enables compliance testing for frequencies up to 6 GHz with precision of better 30%	

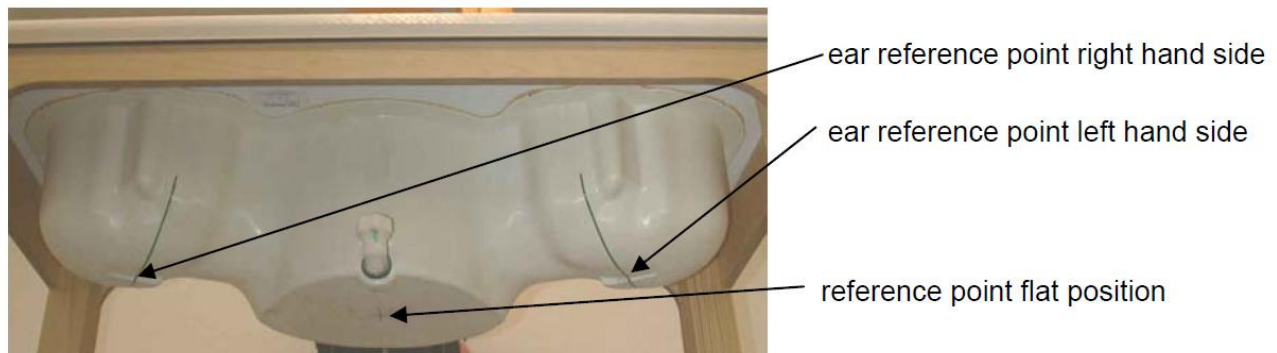
2.5 Phantom description

SAM Twin Phantom

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

The bottom plate contains three pairs of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections.
A white cover is provided to cover the phantom during off-periods to prevent water evaporation and changes in the liquid parameters. Free space scans of devices on top of this phantom cover are possible. Three reference marks are provided on the phantom counter. These reference marks are used to teach the absolute phantom position relative to the robot.

The following figure shows the definition of reference point:



ELI4 Phantom

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

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

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

2.6 Device holder description

The DASY5 device holder has two scales for device rotation (with respect to the body axis) and the device inclination (with respect to the line between the ear openings). The plane between the ear openings and the mouth tip has a rotation angle of 65° . The bottom plate contains three pair of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections. This device holder is used for standard mobile phones or PDA's only. If necessary an additional support of polystyrene material is used.



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

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

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

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

2.7 Test Equipment List

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

Devices used during the test described are marked ☒

	Manufacturer	Device	Type	Serial number	Date of last calibration	Valid period
☒	SPEAG	Dosimetric E-Field Probe	EX3DV4	3736	2015-04-30	One year
☒	SPEAG	Dosimetric E-Field Probe	ES3DV3	3168	2015-09-28	One year
☒	SPEAG	Dosimetric E-Field Probe	EX3DV4	3744	2015-07-24	One year
☒	SPEAG	750MHz Dipole	D750V3	1044	2015-09-14	Three years
☒	SPEAG	835MHz Dipole	D835V2	4d059	2013-05-02	Three years
☒	SPEAG	1750MHz Dipole	D1750V2	1123	2014-07-08	Three years
☒	SPEAG	1900MHz Dipole	D1900V2	5d143	2014-09-23	Three years
☐	SPEAG	2300MHz Dipole	D2300V2	1016	2014-11-19	Three years
☒	SPEAG	2450MHz Dipole	D2450V2	869	2015-06-19	Three years
☒	SPEAG	2600MHz Dipole	D2600V2	1021	2015-07-24	Three years
☒	SPEAG	5GHz Dipole	D5GHzV2	1155	2015-04-27	Three years
☒	SPEAG	Data acquisition electronics	DAE4	852	2015-04-27	One year
☒	SPEAG	Data acquisition electronics	DAE4	914	2014-12-15	One year
☒	SPEAG	Software	DASY 5	N/A	NCR	NCR
☒	SPEAG	Twin Phantom	SAM1	TP-1475	NCR	NCR
☒	SPEAG	Twin Phantom	SAM2	TP-1474	NCR	NCR
☒	SPEAG	Twin Phantom	SAM3	TP-1597	NCR	NCR
☒	SPEAG	Twin Phantom	SAM4	TP-1620	NCR	NCR
☐	SPEAG	Flat Phantom	ELI 4.0	TP-1038	NCR	NCR
☐	SPEAG	Flat Phantom	ELI 4.0	TP-1111	NCR	NCR
☒	R & S	Universal Radio Communication Tester	CMU 200	113989	2015-05-18	One year
☒	R & S	Universal Radio Communication Tester	CMW 500	126855	2015-07-02	One year
☒	Agilent	Network Analyser	E5071C	MY46213349	2015-02-13	One year
☒	Agilent	Dielectric Probe Kit	85070E	2484	NCR	NCR
☒	Agilent	Signal Generator	N5181A	MY47420989	2015-01-07	One year
☒	MINI-CIRCUITS	Amplifier	ZHL-42W	QA1402001	NCR	NCR
☒	MINI-CIRCUITS	Amplifier	ZVE-8G+	N523101139	NCR	NCR
☒	AR	Directional Coupler	DC7144M1	0423264	2015-03-31	One year
☒	Agilent	Dual Directional Coupler	772D	MY52180173	2015-01-08	One year
☒	R & S	Power Meter	NRP	100740	2015-07-02	One year
☒	R & S	Power Meter Sensor	NRP-Z11	106288	2015-07-02	One year
☒	Agilent	Power Meter	E4417A	MY45101339	2015-01-07	One year
☒	Agilent	Power Meter Sensor	E9321A	MY44420359	2015-01-07	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.

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

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

3 SAR Measurement Procedure

3.1 Scanning procedure

The DASY5 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 %.
- The “surface check” measurement tests the optical surface detection system of the DASY5 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 ($\Delta x_{\text{area}}, \Delta y_{\text{area}}$)	Maximun Zoom Scan spatial resolution ($\Delta x_{\text{Zoom}}, \Delta y_{\text{Zoom}}$)	Maximun Zoom Scan spatial resolution			Minimum zoom scan volume (x,y,z)
			Uniform Grid	Graded Grad		
			$\Delta z_{\text{Zoom}}(n)$	$\Delta z_{\text{Zoom}}(1)^*$	$\Delta z_{\text{Zoom}}(n>1)^*$	
≤2GHz	≤15mm	≤8mm	≤5mm	≤4mm	≤1.5* $\Delta z_{\text{Zoom}}(n-1)$	≥30mm
2-3GHz	≤12mm	≤5mm	≤5mm	≤4mm	≤1.5* $\Delta z_{\text{Zoom}}(n-1)$	≥30mm
3-4GHz	≤12mm	≤5mm	≤4mm	≤3mm	≤1.5* $\Delta z_{\text{Zoom}}(n-1)$	≥28mm
4-5GHz	≤10mm	≤4mm	≤3mm	≤2.5mm	≤1.5* $\Delta z_{\text{Zoom}}(n-1)$	≥25mm
5-6GHz	≤10mm	≤4mm	≤2mm	≤2mm	≤1.5* $\Delta z_{\text{Zoom}}(n-1)$	≥22mm

3.2 Spatial Peak SAR Evaluation

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

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

Extrapolation

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

Interpolation

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

Volume Averaging

At First the size of the cube is calculated. Then the volume is integrated with the trapezoidal algorithm. 8000 points (20x20x20) are interpolated to calculate the average.

Advanced Extrapolation

DASY5 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 DASY5 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	$\text{Norm}_i, a_{i0}, a_{i1}, a_{i2}$
	- Conversion factor	ConvF_i
	- Diode compression point	Dcpi
Device parameters:	- Frequency	f
	- Crest factor	cf
Media parameters:	- Conductivity	σ
	- Density	ρ

These parameters must be set correctly in the software. They can be found in the component documents or they can be imported into the software from the configuration files issued for the DASY5 components. In the direct measuring mode of the multimeter option, the parameters of the actual system setup are used. In the scan visualization and export modes, the parameters stored in the corresponding document files are used.

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

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

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

with	V_i	= compensated signal of channel i	(i = x, y, z)
	U_i	= input signal of channel i	(i = x, y, z)
	cf	= crest factor of exciting field (DASY parameter)	
	dcp_i	= diode compression point	(DASY parameter)

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

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

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

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

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

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

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

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

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

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

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

4 System Verification Procedure

4.1 Tissue Verification

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

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

Ingredients (% of weight)	Head Tissue						
Frequency Band (MHz)	750	835	1750	1900	2300	2450	2600
Water	39.2	41.45	52.64	55.242	62.82	62.7	55.242
Salt (NaCl)	2.7	1.45	0.36	0.306	0.51	0.5	0.306
Sugar	57.0	56.0	0.0	0.0	0.0	0.0	0.0
HEC	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Bactericide	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Triton X-100	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DGBE	0.0	0.0	47.0	44.542	36.67	36.8	44.452
Ingredients (% of weight)	Body Tissue						
Frequency Band (MHz)	750	835	1750	1900	2300	2450	2600
Water	50.3	52.4	69.91	69.91	73.32	73.2	64.493
Salt (NaCl)	1.60	1.40	0.13	0.13	0.06	0.04	0.024
Sugar	47.0	45.0	0.0	0.0	0.0	0.0	0.0
HEC	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Bactericide	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Triton X-100	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DGBE	0.0	0.0	29.96	29.96	26.62	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 for 5G(HBBL3500-5800MHz), Manufactured by SPEAG:

Ingredients	(% by weight)
Water	50-65%
Mineral oil	10-30%
Emulsifiers	8-25%
Sodium salt	0-1.5%

☒ Simulating Body Liquid for 5G(MBBL3500-5800MHz), Manufactured by SPEAG:

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

Tissue Type	Measured Frequency (MHz)	Target Tissue		Measured Tissue		Liquid Temp.	Test Date
		ϵ_r (+/-5%)	σ (S/m) (+/-5%)	ϵ_r	σ (S/m)		
750H	705	42.14 (40.03~44.24)	0.89 (0.85~0.93)	43.18	0.863	21.6°C	2015-11-13
	710	42.11 (40.00~44.21)	0.89 (0.85~0.93)	43.12	0.867		
	750	41.90 (39.81~43.99)	0.89 (0.85~0.93)	42.52	0.884		
750B	705	55.70 (52.92~58.48)	0.96 (0.92~1.008)	53.96	0.923	21.6°C	2015-11-14
	710	55.70 (52.92~58.48)	0.96 (0.92~1.008)	53.91	0.929		
	750	55.50 (52.73~58.27)	0.96 (0.92~1.008)	53.50	0.947		
835H	825	41.60 (39.52~43.68)	0.90 (0.86~0.95)	40.81	0.895	21.6°C	2015-11-10
	835	41.50 (39.43~43.58)	0.90 (0.86~0.95)	40.67	0.905		
	850	41.50 (39.43~43.58)	0.92 (0.87~0.96)	40.47	0.919		
835H	825	41.60 (39.52~43.68)	0.90 (0.86~0.95)	40.74	0.910	21.6°C	2015-11-11
	835	41.50 (39.43~43.58)	0.90 (0.86~0.95)	40.67	0.921		
	850	41.50 (39.43~43.58)	0.92 (0.87~0.96)	40.40	0.939		
835H	825	41.60 (39.52~43.68)	0.90 (0.86~0.95)	42.65	0.888	21.6°C	2015-12-01
	835	41.50 (39.43~43.58)	0.90 (0.86~0.95)	42.51	0.897		
	850	41.50 (39.43~43.58)	0.92 (0.87~0.96)	42.30	0.912		
835H	825	41.60 (39.52~43.68)	0.90 (0.86~0.95)	42.65	0.886	21.6°C	2015-12-01
	835	41.50 (39.43~43.58)	0.90 (0.86~0.95)	42.57	0.893		
	850	41.50 (39.43~43.58)	0.92 (0.87~0.96)	42.45	0.904		
835B	825	55.20 (52.44~57.96)	0.97 (0.92~1.02)	54.04	0.982	21.6°C	2015-11-13
	835	55.20 (52.44~57.96)	0.97 (0.92~1.02)	53.90	0.991		
	850	55.20 (52.44~57.96)	0.99 (0.94~1.04)	53.69	1.006		
835B	825	55.20 (52.44~57.96)	0.97 (0.92~1.02)	53.89	0.981	21.6°C	2015-12-01
	835	55.20 (52.44~57.96)	0.97 (0.92~1.02)	53.78	0.990		
	850	55.20 (52.44~57.96)	0.99 (0.94~1.04)	53.63	1.008		

1750H	1710	40.1 (38.10~42.11)	1.35 (1.28~1.42)	40.83	1.390	21.6°C	2015-11-08
	1730	40.1 (38.10~42.11)	1.36 (1.29~1.43)	40.72	1.401		
	1750	40.1 (38.10~42.11)	1.37 (1.30~1.44)	40.62	1.414		
	1800	40 (38.00~42.00)	1.4 (1.33~1.47)	40.35	1.451		
1750H	1710	40.1 (38.10~42.11)	1.35 (1.28~1.42)	39.91	1.328	21.6°C	2015-11-28
	1730	40.1 (38.10~42.11)	1.36 (1.29~1.43)	39.89	1.345		
	1750	40.1 (38.10~42.11)	1.37 (1.30~1.44)	39.82	1.361		
	1800	40 (38.00~42.00)	1.4 (1.33~1.47)	39.71	1.410		
1750B	1710	53.5 (50.83~56.18)	1.46 (1.39~1.53)	52.79	1.496	21.6°C	2015-11-18
	1730	53.5 (50.83~56.18)	1.48 (1.41~1.55)	52.76	1.520		
	1750	53.4 (50.73~56.07)	1.49 (1.42~1.56)	52.69	1.537		
	1800	53.3 (50.64~55.97)	1.52 (1.44~1.60)	52.47	1.580		
1900H	1850	40.00 (38.00~42.00)	1.40 (1.33~1.47)	40.57	1.388	21.6°C	2015-11-10
	1880	40.00 (38.00~42.00)	1.40 (1.33~1.47)	40.43	1.417		
	1900	40.00 (38.00~42.00)	1.40 (1.33~1.47)	40.33	1.437		
	1910	40.00 (38.00~42.00)	1.40 (1.33~1.47)	40.36	1.447		
1900H	1850	40.00 (38.00~42.00)	1.40 (1.33~1.47)	39.25	1.386	21.6°C	2015-11-13
	1880	40.00 (38.00~42.00)	1.40 (1.33~1.47)	39.12	1.413		
	1900	40.00 (38.00~42.00)	1.40 (1.33~1.47)	39.05	1.431		
	1910	40.00 (38.00~42.00)	1.40 (1.33~1.47)	39.01	1.440		
1900H	1850	40.00 (38.00~42.00)	1.40 (1.33~1.47)	38.78	1.360	21.6°C	2015-11-29
	1880	40.00 (38.00~42.00)	1.40 (1.33~1.47)	38.65	1.388		
	1900	40.00 (38.00~42.00)	1.40 (1.33~1.47)	38.57	1.404		
	1910	40.00 (38.00~42.00)	1.40 (1.33~1.47)	38.53	1.414		

1900B	1850	53.30 (50.64~55.97)	1.52 (1.44~1.60)	52.02	1.467	21.6°C	2015-11-15
	1880	53.30 (50.64~55.97)	1.52 (1.44~1.60)	51.91	1.495		
	1900	53.30 (50.64~55.97)	1.52 (1.44~1.60)	51.85	1.512		
	1910	53.30 (50.64~55.97)	1.52 (1.44~1.60)	51.82	1.521		
2450H	2410	39.30 (37.34~41.26)	1.76 (1.67~1.85)	39.54	1.827	21.6°C	2015-11-26
	2435	39.20 (37.24~41.16)	1.79 (1.70~1.88)	39.46	1.853		
	2450	39.20 (37.24~41.16)	1.80 (1.71~1.89)	39.45	1.868		
	2460	39.20 (37.24~41.16)	1.81 (1.72~1.90)	39.43	1.879		
2450B	2410	52.80 (50.16~55.44)	1.91 (1.81~2.00)	51.10	1.947	21.6°C	2015-11-27
	2435	52.70 (50.07~55.34)	1.94 (1.84~2.04)	50.94	1.977		
	2450	52.70 (50.07~55.34)	1.95 (1.85~2.05)	50.95	1.994		
	2460	52.70 (50.07~55.34)	1.96 (1.86~2.06)	50.89	2.008		
2600H	2510	39.12 (37.16~41.01)	1.86 (1.77~1.96)	39.78	1.898	21.6°C	2015-11-20
	2535	39.1 (37.13~41.04)	1.89 (1.80~1.98)	39.71	1.927		
	2560	39 (37.05~40.95)	1.917 (1.82~2.01)	39.59	1.958		
	2600	39 (37.05~40.95)	1.96 (1.86~2.05)	39.47	1.998		
2600H	2510	39.12 (37.16~41.01)	1.86 (1.77~1.96)	39.34	1.899	21.6°C	2015-11-24
	2535	39.1 (37.13~41.04)	1.89 (1.80~1.98)	39.37	1.927		
	2560	39 (37.05~40.95)	1.917 (1.82~2.01)	39.15	1.960		
	2600	39 (37.05~40.95)	1.96 (1.86~2.05)	38.98	2.002		
2600H	2510	39.12 (37.16~41.01)	1.86 (1.77~1.96)	39.74	1.916	21.6°C	2015-11-27
	2535	39.1 (37.13~41.04)	1.89 (1.80~1.98)	39.65	1.945		
	2560	39 (37.05~40.95)	1.917 (1.82~2.01)	39.56	1.978		
	2600	39 (37.05~40.95)	1.96 (1.86~2.05)	39.41	2.024		

2600B	2510	52.62 (49.99~55.25)	2.03 (1.93~2.13)	51.35	2.059	21.6°C	2015-11-21
	2535	52.59 (49.96~55.22)	2.07 (1.97~2.17)	51.26	2.095		
	2560	52.57 (49.94~55.20)	2.09 (1.99~2.19)	51.16	2.131		
	2600	52.5 (49.88~55.13)	2.16 (2.05~2.27)	51.00	2.186		
5G H	5200	36.0 (34.20~37.80)	4.66 (4.43~4.89)	36.49	4.673	21.6°C	2015-12-02
	5600	35.5 (33.73~37.28)	5.07 (4.82~5.32)	35.90	5.053		2015-12-02
	5800	35.3 (33.54~37.07)	5.27 (5.01~5.53)	36.10	5.307		2015-12-02
5G B	5200	49.0 (46.55~51.45)	5.30 (5.03~5.56)	48.24	5.428	21.6°C	2015-12-03
	5600	48.50 (46.08~50.92)	5.77 (5.48~6.05)	47.82	5.924		2015-12-03
	5800	48.20 (45.79~50.61)	6.00 (5.70~6.30)	48.26	6.193		2015-12-03

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 P1528 (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 (1W) (+/-10%)		Measured SAR (Normalized to 1W)		Liquid Temp.	Test Date
	1-g (mW/g)	10-g (mW/g)	1-g (mW/g)	10-g (mW/g)		
750MHz Head	8.22 (7.40~9.04)	5.41 (4.87~5.95)	8.04	5.28	21.6°C	2015-11-13
835MHz Head	9.49 (8.54~10.44)	6.18 (5.56~6.80)	9.68	6.28	21.6°C	2015-11-10
835MHz Head	9.49 (8.54~10.44)	6.18 (5.56~6.80)	9.72	6.36	21.6°C	2015-11-11
835MHz Head	9.49 (8.54~10.44)	6.18 (5.56~6.80)	9.32	6.04	21.6°C	2015-12-01
835MHz Head	9.49 (8.54~10.44)	6.18 (5.56~6.80)	9.04	5.88	21.6°C	2015-12-01
1750MHz Head	35.1 (31.59~38.61)	18.6 (16.74~20.46)	37.56	19.88	21.6°C	2015-11-08
1750MHz Head	35.1 (31.59~38.61)	18.6 (16.74~20.46)	36.16	19.12	21.6°C	2015-11-28
1900MHz Head	40.80 (36.72~44.88)	21.40 (19.26~23.54)	42.80	22.04	21.6°C	2015-11-10
1900MHz Head	40.80 (36.72~44.88)	21.40 (19.26~23.54)	43.60	22.44	21.6°C	2015-11-13
1900MHz Head	40.80 (36.72~44.88)	21.40 (19.26~23.54)	41.60	21.64	21.6°C	2015-11-29
2450MHz Head	53.80 (48.42~59.18)	25.20 (22.68~27.72)	56.40	26.12	21.6°C	2015-11-26
2600MHz Head	57.8 (52.02~63.58)	26.3 (23.67~28.93)	58.40	26.40	21.6°C	2015-11-20
2600MHz Head	57.8 (52.02~63.58)	26.3 (23.67~28.93)	57.60	25.88	21.6°C	2015-11-24
2600MHz Head	57.8 (52.02~63.58)	26.3 (23.67~28.93)	60.40	27.04	21.6°C	2015-11-27
5200MHz Head	78.5 (70.65~86.35)	22.5 (20.25~24.75)	77.70	21.70	21.6°C	2015-12-02
5600MHz Head	81.9 (73.71~90.09)	23.3 (20.97~25.63)	78.50	21.80	21.6°C	2015-12-02
5800MHz Head	78.8 (70.92~80.68)	22.4 (20.16~24.64)	76.20	21.20	21.6°C	2015-12-02
750MHz Body	8.69 (7.82~9.56)	5.76 (4.19~6.33)	8.20	5.44	21.6°C	2015-11-14
835MHz Body	9.42 (8.48~10.36)	6.19 (5.57~6.80)	9.56	6.24	21.6°C	2015-11-13
835MHz Body	9.42 (8.48~10.36)	6.19 (5.57~6.80)	9.36	6.16	21.6°C	2015-12-01
1750MHz Body	36.3 (32.67~39.93)	19.5 (17.55~21.45)	37.64	19.84	21.6°C	2015-11-18
1900MHz Body	40.20 (36.18~44.22)	21.30 (19.17~23.43)	42.40	21.92	21.6°C	2015-11-15

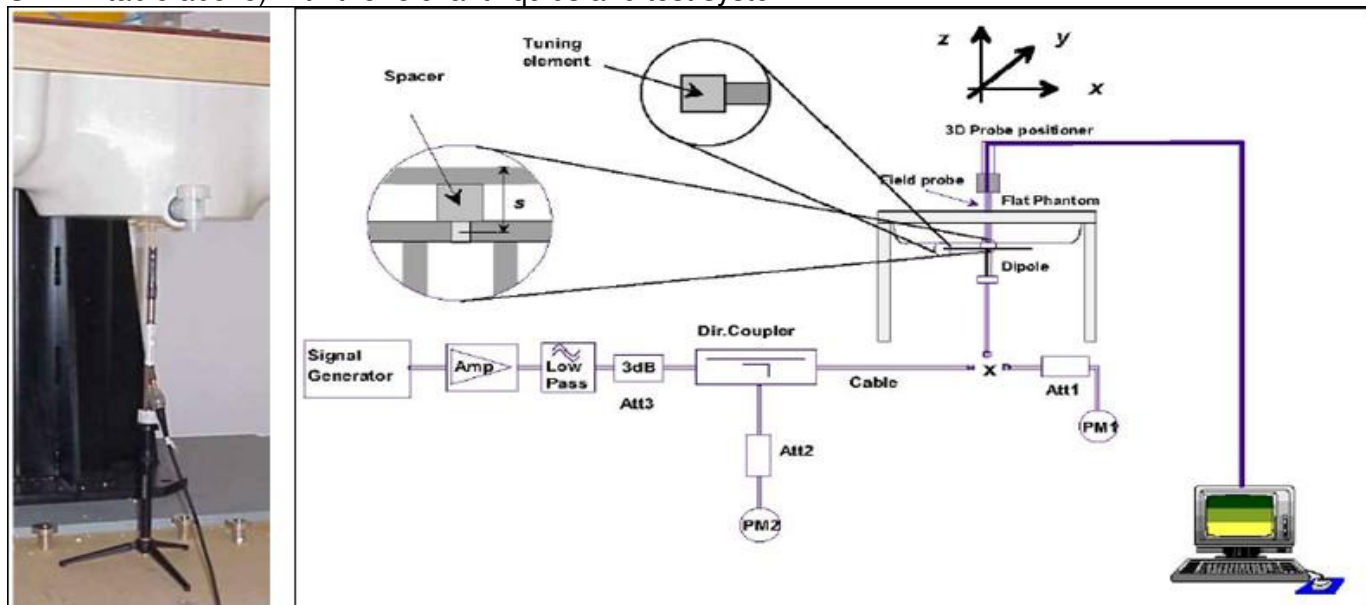
2450MHz Body	52.4 (47.16~57.64)	24.7 (22.23~27.17)	51.20	23.48	21.6°C	2015-11-27
2600MHz Body	57.5 (51.75~63.25)	25.9 (23.31~28.49)	56.80	25.16	21.6°C	2015-11-21
5200MHz Body	74.7 (67.23~82.17)	20.9 (18.81~22.99)	78.70	21.80	21.6°C	2015-12-04
5600MHz Body	77.8 (70.02~85.58)	21.6 (19.44~23.76)	82.80	22.90	21.6°C	2015-12-03
5800MHz Body	76.2 (68.58~83.82)	21.0 (18.9~23.10)	75.40	20.70	21.6°C	2015-12-03

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 SMA. It is fed with a power of 250 mW(below 5GHz) or 100mW(above 5GHz). 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 v01r04, 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 v01r04, 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).

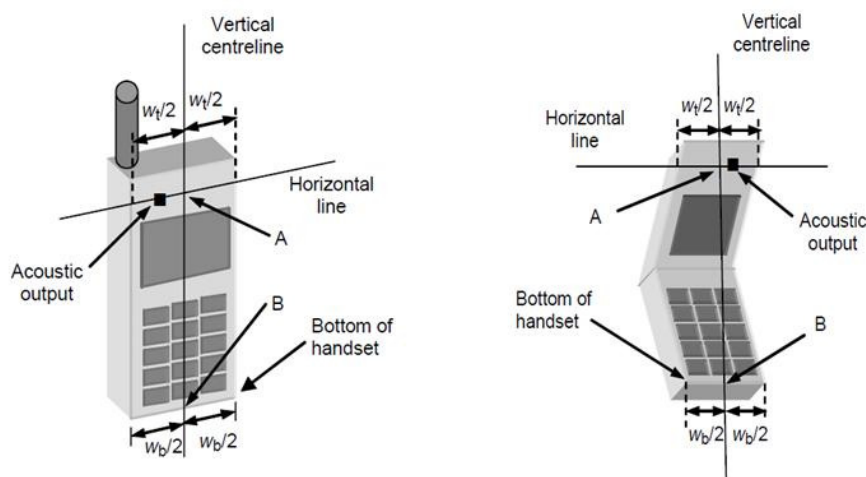


Figure 1 Hand Vertical Center & Horizontal Line Reference Points

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.

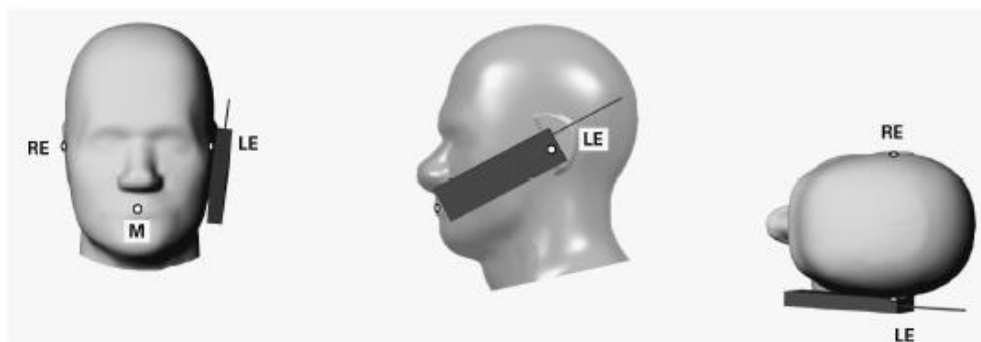


Figure 2 Front, Side and Top View of Cheek Position



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.

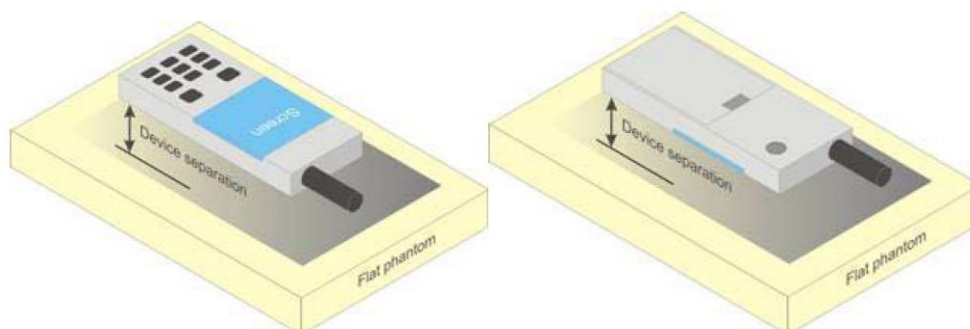


Figure 4 Test position for Body-Worn device

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 10g Extremity Exposure Condition

Per FCC KDB 648474D04, for smart phones with a display diagonal dimension $> 15.0 \text{ cm}$ or an overall diagonal dimension $> 16.0 \text{ cm}$ that provide similar mobile web access and multimedia support found in mini-tablets or UMPC mini-tablets that support voice calls next to the ear, the device is marketed as “Phablet”.

The UMPC mini-tablet procedures must also be applied to test the SAR of all surfaces and edges with an antenna located at $\leq 25 \text{ mm}$ from that surface or edge, in direct contact with a flat phantom, for 10-g extremity 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, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR $> 1.2 \text{ W/kg}$; however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold.

6.2 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 $\leq \frac{1}{4} \text{ dB}$ 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 $\leq 1.2 \text{ W/kg}$, 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. Otherwise, SAR is measured for 12.2 kbps AMR in 3.4 kbps SRB (signaling radio bearer) using the highest reported SAR configuration in 12.2 kbps RMC for head exposure.

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, HARQ processes, minimum inter-TTI interval, transport block sizes and RV coding sequence are defined by the H-set. To maintain a consistent test configuration and stable transmission condition, QPSK is used in the H-set for SAR testing. HS-DPCCH should be configured with a CQI feedback cycle of 4ms with a CQI repetition factor of 2 to maintain a constant rate of active CQI slots. The β_c and β_d gain factors for DPCCH and DPDCH were set according to the values in the below table, β_{hs} for HS-DPCCH is set automatically to the correct value when ΔACK , $\Delta NACK$, $\Delta CQI = 8$. The variation of the β_c / β_d ratio causes a power reduction at sub-tests 2 - 4.

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

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 D01v03, 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⁾ [⌘] Inde x [⌘]	E-TFC I [⌘]
1 [⌘]	11/15 ⁽³⁾ [⌘]	15/15 ⁽³⁾ [⌘]	64 [⌘]	11/15 ⁽³⁾ [⌘]	22/15 [⌘]	209/225 [⌘]	1039/225 [⌘]	4 [⌘]	1 [⌘]	1.0 [⌘]	0.0 [⌘]	20 [⌘]	75 [⌘]
2 [⌘]	6/15 [⌘]	15/15 [⌘]	64 [⌘]	6/15 [⌘]	12/15 [⌘]	12/15 [⌘]	94/75 [⌘]	4 [⌘]	1 [⌘]	3.0 [⌘]	2.0 [⌘]	12 [⌘]	67 [⌘]
3 [⌘]	15/15 [⌘]	9/15 [⌘]	64 [⌘]	15/9 [⌘]	30/15 [⌘]	30/15 [⌘]	$\beta_{ed1}:47/15$ [⌘] $\beta_{ed2}:47/15$ [⌘]	4 [⌘]	2 [⌘]	2.0 [⌘]	1.0 [⌘]	15 [⌘]	92 [⌘]
4 [⌘]	2/15 [⌘]	15/15 [⌘]	64 [⌘]	2/15 [⌘]	4/15 [⌘]	2/15 [⌘]	56/75 [⌘]	4 [⌘]	1 [⌘]	3.0 [⌘]	2.0 [⌘]	17 [⌘]	71 [⌘]
5 [⌘]	15/15 ⁽⁴⁾ [⌘]	15/15 ⁽⁴⁾ [⌘]	64 [⌘]	15/15 ⁽⁴⁾ [⌘]	30/15 [⌘]	24/15 [⌘]	134/15 [⌘]	4 [⌘]	1 [⌘]	1.0 [⌘]	0.0 [⌘]	21 [⌘]	81 [⌘]
Note 1: ΔACK, $\Delta NACK$ and $\Delta CQI = 8$ $A_{hs} = \beta_{hs}/\beta_c = 30/15$ $\beta_{hs} = 30/15 * \beta_c$[⌘] Note 2: CM = 1 for $\beta_c/\beta_d = 12/15$, $\beta_{hs}/\beta_c = 24/15$. For all other combinations of DPDCH, DPCCH, 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/Ior	dB	-10
P-CCPCH and SCH_Ec/Ior	dB	-12
PICH_Ec/Ior	dB	-15
HS-PDSCH	dB	off
HS-SCCH_1	dB	off
DPCH_Ec/Ior	dB	-5
OCNS_Ec/Ior	dB	-3.1

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

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

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.

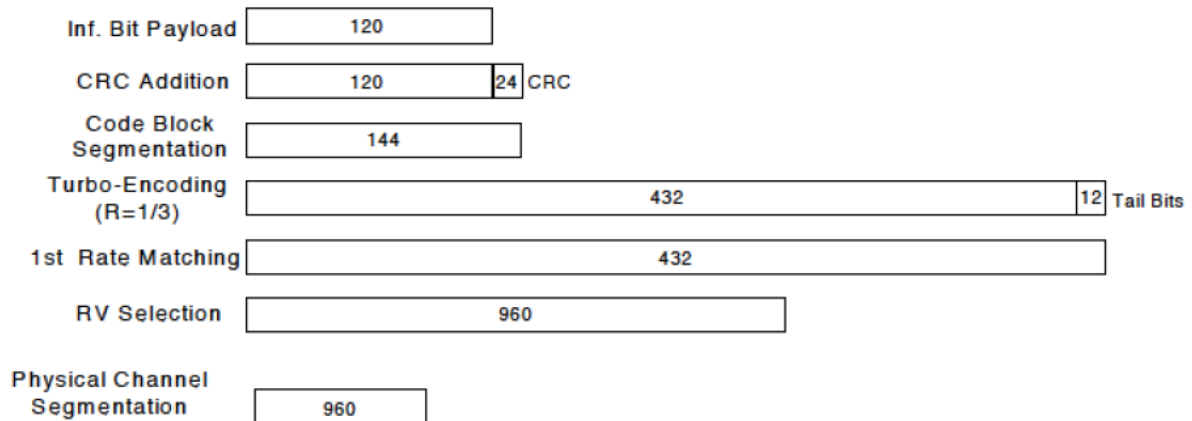


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

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

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

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 3

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

3) A-MPR

A-MPR (Additional MPR) has been disabled for all SAR tests by using Network 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.

5) TDD LTE test configuration

According to KDB 941225 D05 SAR for LTE Devices v02r03, for Time-Division Duplex (TDD) systems, SAR must be tested using a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by the defined 3GPP LTE TDD configurations.

TDD LTE Band 41 supports 3GPP TS 36.211 section 4.2 for Type 2 Frame Structure and Table 4.2-2 for uplink-downlink configurations and Table 4.2-1 for Special subframe configurations.

Figure 4.2-1: Frame structure type 2

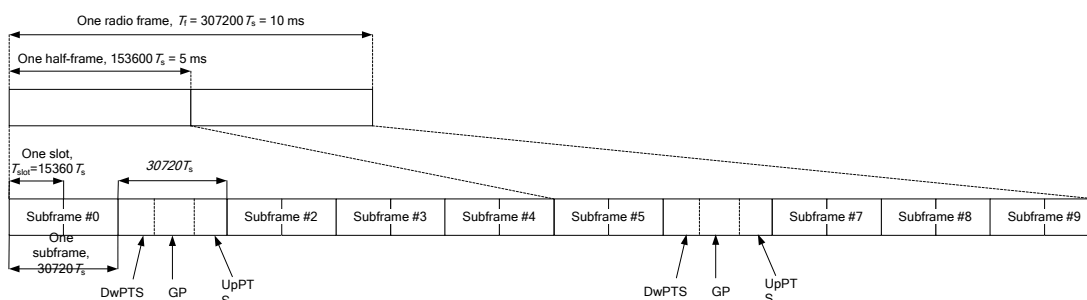


Table 4.2-1: Configuration of special subframe (lengths of DwPTS/GP/UpPTS)

Special subframe configuration	Normal cyclic prefix in downlink			Extended cyclic prefix in downlink		
	DwPTS	UpPTS		DwPTS	UpPTS	
		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink
0	$6592 \cdot T_s$	$2192 \cdot T_s$	$2560 \cdot T_s$	$7680 \cdot T_s$	$2192 \cdot T_s$	$2560 \cdot T_s$
1	$19760 \cdot T_s$			$20480 \cdot T_s$		
2	$21952 \cdot T_s$			$23040 \cdot T_s$		
3	$24144 \cdot T_s$			$25600 \cdot T_s$		
4	$26336 \cdot T_s$			$7680 \cdot T_s$		
5	$6592 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$	$20480 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$
6	$19760 \cdot T_s$			$23040 \cdot T_s$		
7	$21952 \cdot T_s$			$12800 \cdot T_s$		
8	$24144 \cdot T_s$			-	-	-
9	$13168 \cdot T_s$			-	-	-

Table 4.2-2: Uplink-downlink configurations

Uplink-downlink configuration	Downlink-to-Uplink Switch-point periodicity	Subframe number											
		0	1	2	3	4	5	6	7	8	9		
0	5 ms	D	S	U	U	U	D	S	U	U	U		
1	5 ms	D	S	U	U	D	D	S	U	U	D		
2	5 ms	D	S	U	D	D	D	S	U	D	D		
3	10 ms	D	S	U	U	U	D	D	D	D	D		
4	10 ms	D	S	U	U	D	D	D	D	D	D		
5	10 ms	D	S	U	D	D	D	D	D	D	D		
6	5 ms	D	S	U	U	U	D	S	U	U	D		

According to Figure 4.2-1, one radio frame is configured by 10 subframes, which consist of Uplink-subframe, Downlink-subframe and Special subframe. For TDD-LTE, the Duty Cycle should be calculated on Uplink-subframes and Special subframes, due to Special subframe containing both Uplink transmissions. So for one radio frame, Duty Cycle can be calculated with formula as below. The count of Uplink subframes are according to Table 4.2-2:

$$\text{Duty cycle} = (30720T_s \cdot \text{Ups} + \text{Uplink Component} \cdot \text{Specials}) / (307200T_s)$$

About the uplink component of Special subframes, we can figure out by Table 4.2-1:

$$\text{Uplink Component} = \text{UpPTS}$$

In conclusion, for the TDD LTE Band, Duty Cycle can be calculated with formula as below .all these sets are ok when we test, or we can set as below.

$$\text{Duty cycle} = [(30720T_s \cdot \text{Ups}) + \text{UpPTS} \cdot \text{Specials}] / (307200T_s)$$

And we can get different Duty cycles under different configurations:

Uplink-downlink configuration	Subframe number			Configuration of special subframe							
				Normal cyclic prefix in downlink				Extended cyclic prefix in downlink			
				Normal cyclic prefix in uplink		Extended cyclic prefix in uplink		Normal cyclic prefix in uplink		Extended cyclic prefix in uplink	
	D	S	U	configuration 0~4	configuration 5~9	configuration 0~4	configuration 5~9	configuration 0~3	configuration 4~7	configuration 0~3	configuration 4~7
0	2	2	6	61.43%	62.85%	61.67%	63.33%	61.43%	62.85%	61.67%	63.33%
1	4	2	4	41.43%	42.85%	41.67%	43.33%	41.43%	42.85%	41.67%	43.33%
2	6	2	2	21.43%	22.85%	21.67%	23.33%	21.43%	22.85%	21.67%	23.33%
3	6	1	3	30.71%	31.43%	30.83%	31.67%	30.71%	31.43%	30.83%	31.67%
4	7	1	2	20.71%	21.43%	20.83%	21.67%	20.71%	21.43%	20.83%	21.67%
5	8	1	1	10.71%	11.43%	10.83%	11.67%	10.71%	11.43%	10.83%	11.67%
6	3	2	5	51.43%	52.85%	51.67%	53.33%	51.43%	52.85%	51.67%	53.33%

For TDD LTE, SAR should be tested with the highest transmission duty factor (63.33%) using Uplink-downlink configuration 0 and Special subframe configuration 7 for Frame structure type 2.

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 248227D01v02r02 are applied.

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 248227D01v02) 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 248227D01v02r01). 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 g/n OFDM configurations, each standalone and frequency aggregated band is considered separately for SAR test reduction. 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 WiFi 5G SAR Test Procedures

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

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

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

B) U-NII-2C and U-NII-3 Bands

The frequency range covered by these bands is 380 MHz (5.47 – 5.85 GHz), which requires a minimum of at least two SAR probe calibration frequency points to support SAR measurements. When Terminal Doppler Weather Radar (TDWR) restriction applies, all channels that operate at 5.60 – 5.65 GHz must be included to apply the SAR test reduction and measurement procedures.

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

C) OFDM Transmission Mode SAR Test Configuration and Channel Selection Requirements

The initial test configuration for 5 GHz OFDM transmission modes is determined by the 802.11 configuration with the highest maximum output power specified for production units, including tune-up tolerance, in each standalone and aggregated frequency band. SAR for the initial test configuration is measured using the highest maximum output power channel determined by the default power measurement procedures. When multiple configurations in a frequency band have the same specified maximum output power, the initial test configuration is determined according to the following steps applied sequentially.

- 1) The largest channel bandwidth configuration is selected among the multiple configurations with the same specified maximum output power.
 - 2) If multiple configurations have the same specified maximum output power and largest channel bandwidth, the lowest order modulation among the largest channel bandwidth configurations is selected.
 - 3) If multiple configurations have the same specified maximum output power, largest channel bandwidth and lowest order modulation, the lowest data rate configuration among these configurations is selected.
 - 4) When multiple transmission modes (802.11a/g/n/ac) have the same specified maximum output power, largest channel bandwidth, lowest order modulation and lowest data rate, the lowest order 802.11 mode is selected; i.e., 802.11a is chosen over 802.11n then 802.11ac or 802.11g is chosen over 802.11n.
- After an initial test configuration is determined, if multiple test channels have the same measured maximum output power, the channel chosen for SAR measurement is determined according to the following. These channel selection procedures apply to both the initial test configuration and subsequent test configuration(s), with respect to the default power measurement procedures or additional power measurements required for further SAR test reduction. The same procedures also apply to subsequent highest output power channel(s) selection.

- 1) The channel closest to mid-band frequency is selected for SAR measurement.
- 2) For channels with equal separation from mid-band frequency; for example, high and low channels or two mid-band channels, the higher frequency (number) channel is selected for SAR measurement.

D) SAR Test Requirements for OFDM configurations

When SAR measurement is required for 802.11 a/n/ac OFDM configurations, each standalone and frequency aggregated band is considered separately for SAR test reduction. When the 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.

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		Burst-Averaged output Power (dBm)				Division Factors	Frame-Averaged output Power (dBm)			
		Tune-up	128CH	190CH	251CH		Tune-up	128CH	190CH	251CH
GSM (CS)		33.5	32.21	32.62	32.59	-9.19	24.31	23.02	23.43	23.40
GPRS/EDGE (GMSK)	1 Tx Slot	33.5	32.19	32.65	32.59	-9.19	24.31	23.00	23.46	23.40
	2 Tx Slots	31.5	29.95	30.25	30.31	-6.13	25.37	23.82	24.12	24.18
	3 Tx Slots	29.5	27.92	28.33	28.36	-4.42	25.08	23.50	23.91	23.94
	4 Tx Slots	27.5	25.89	26.25	26.22	-3.18	24.32	22.71	23.07	23.04
EDGE (8PSK)	1 Tx Slot	26.5	25.22	25.55	25.64	-9.19	17.31	16.03	16.36	16.45
	2 Tx Slots	25.5	23.85	24.23	24.12	-6.13	19.37	17.72	18.10	17.99
	3 Tx Slots	23.5	22.26	22.62	22.59	-4.42	19.08	17.84	18.20	18.17
	4 Tx Slots	21.5	20.87	21.22	21.17	-3.18	18.32	17.69	18.04	17.99

Table 13:Conducted power measurement results of GSM850(Second Antenna)

Note:

- 1) The conducted power of GSM850 is measured with RMS detector.
- 2) Frame-averaged output power was calculated from the measured burst-averaged output power by converting the slot powers into linear units and calculating the energy over 8 timeslots.
- 3) Per KDB941225 D01v03, 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.

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GSM850		Burst-Averaged output Power (dBm)				Division Factors	Frame-Averaged output Power (dBm)			
		Tune-up	128CH	190CH	251CH		Tune-up	128CH	190CH	251CH
GSM (CS)		33.0	32.02	32.32	32.31	-9.19	23.81	22.83	23.13	23.12
GPRS/EDGE (GMSK)	1 Tx Slot	33.0	32.01	32.37	32.31	-9.19	23.81	22.82	23.18	23.12
	2 Tx Slots	31.0	29.88	30.37	30.33	-6.13	24.87	23.75	24.24	24.20
	3 Tx Slots	29.0	28.00	28.36	28.29	-4.42	24.58	23.58	23.94	23.87
	4 Tx Slots	27.0	26.00	26.36	26.28	-3.18	23.82	22.82	23.18	23.10
EDGE (8PSK)	1 Tx Slot	26.5	25.41	25.72	25.82	-9.19	17.31	16.22	16.53	16.63
	2 Tx Slots	25.5	23.70	24.11	24.10	-6.13	19.37	17.57	17.98	17.97
	3 Tx Slots	23.5	22.10	22.45	22.45	-4.42	19.08	17.68	18.03	18.03
	4 Tx Slots	21.5	20.65	21.02	21.04	-3.18	18.32	17.47	17.84	17.86

Table 14:Conducted power measurement results of GSM850(Second Antenna)

Note:

- 1) The conducted power of GSM850 is measured with RMS detector.
- 2) Frame-averaged output power was calculated from the measured burst-averaged output power by converting the slot powers into linear units and calculating the energy over 8 timeslots.
- 3) Per KDB941225 D01v03, 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 GSM1900(Second Antenna)

GSM1900		Burst-Averaged output Power (dBm)				Division Factors	Frame-Averaged output Power (dBm)			
		Tune-up	512CH	661CH	810CH		Tune-up	512CH	661CH	810CH
GSM (CS)		30.3	29.50	29.29	29.35	-9.19	21.11	20.31	20.10	20.16
GPRS/EDGE (GMSK)	1 Tx Slot	30.3	29.46	29.31	29.34	-9.19	21.11	20.27	20.12	20.15
	2 Tx Slots	28.5	27.16	27.08	27.15	-6.13	22.37	21.03	20.95	21.02
	3 Tx Slots	26.5	25.35	25.22	25.38	-4.42	22.08	20.93	20.80	20.96
	4 Tx Slots	25.5	23.82	23.71	23.94	-3.18	22.32	20.64	20.53	20.76
EDGE (8PSK)	1 Tx Slot	26.5	24.98	24.83	24.89	-9.19	17.31	15.79	15.64	15.70
	2 Tx Slots	24.5	23.45	23.31	23.46	-6.13	18.37	17.32	17.18	17.33
	3 Tx Slots	22.5	21.77	21.66	21.74	-4.42	18.08	17.35	17.24	17.32
	4 Tx Slots	21.5	20.34	20.23	20.27	-3.18	18.32	17.16	17.05	17.09

Table 15: Conducted power measurement results of GSM1900(Second Antenna)

Note:

- 1) The conducted power of GSM1900 is measured with RMS detector.
- 2) Frame-averaged output power was calculated from the measured burst-averaged output power by converting the slot powers into linear units and calculating the energy over 8 timeslots.
- 3) Per KDB941225 D01v03, 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.

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GSM1900		Burst-Averaged output Power (dBm)				Division Factors	Frame-Averaged output Power (dBm)			
		Tune-up	512CH	661CH	810CH		Tune-up	512CH	661CH	810CH
GSM (CS)		29.3	28.41	28.37	28.50	-9.19	20.11	19.22	19.18	19.31
GPRS/EDGE (GMSK)	1 Tx Slot	29.3	28.42	28.42	28.53	-9.19	20.11	19.23	19.23	19.34
	2 Tx Slots	27.5	26.85	26.95	27.11	-6.13	21.37	20.72	20.82	20.98
	3 Tx Slots	25.5	25.03	25.05	25.26	-4.42	21.08	20.61	20.63	20.84
	4 Tx Slots	24.5	23.54	23.59	23.84	-3.18	21.32	20.36	20.41	20.66
EDGE (8PSK)	1 Tx Slot	26.5	24.82	24.78	24.92	-9.19	17.31	15.63	15.59	15.73
	2 Tx Slots	24.5	23.15	23.28	23.35	-6.13	18.37	17.02	17.15	17.22
	3 Tx Slots	22.5	21.66	21.67	21.70	-4.42	18.08	17.24	17.25	17.28
	4 Tx Slots	21.5	20.14	20.19	20.26	-3.18	18.32	16.96	17.01	17.08

Table 16: Conducted power measurement results of GSM1900(Second Antenna)

Note:

- 1) The conducted power of GSM1900 is measured with RMS detector.
- 2) Frame-averaged output power was calculated from the measured burst-averaged output power by converting the slot powers into linear units and calculating the energy over 8 timeslots.
- 3) Per KDB941225 D01v03r01, 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 UMTS Band II(Second Antenna)

UMTS Band II		Tune-up	Conducted Power (dBm)		
			9262CH	9400CH	9538CH
WCDMA	12.2kbps RMC	24.5	23.53	23.31	23.52
	12.2kbps AMR	24.5	23.51	23.24	23.46
HSDPA	Subtest 1	24.5	23.00	22.76	23.13
	Subtest 2	23.0	22.79	22.52	22.92
	Subtest 3	22.5	21.96	21.75	22.08
	Subtest 4	22.5	21.95	21.69	22.08
HSUPA	Subtest 1	21.0	20.37	19.90	20.15
	Subtest 2	21.0	20.11	19.80	20.29
	Subtest 3	21.0	19.53	20.01	19.34
	Subtest 4	21.0	20.56	19.49	20.41
	Subtest 5	21.0	20.47	20.34	20.46
DC-HSDPA	Subtest 1	24.5	22.73	22.63	23.07
	Subtest 2	23.0	22.70	22.30	22.74
	Subtest 3	22.5	21.90	21.50	21.88
	Subtest 4	22.5	21.86	21.42	21.92

Table 17: Conducted power measurement results of UMTS Band II(Second Antenna)

Note:

- 1) The conducted power of UMTS Band II is measured with RMS detector.
- 2) The bolded 12.2kbps RMC mode was selected for SAR testing(the primary mode).
- 3) Per KDB941225 D01v03, 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.

7.1.4 Conducted power measurements of UMTS Band IV(Second Antenna)

UMTS Band IV		Tune-up	Conducted Power (dBm)		
			1312CH	1413CH	1513CH
WCDMA	12.2kbps RMC	24.0	23.53	23.49	23.52
	12.2kbps AMR	24.0	23.55	23.44	23.47
HSDPA	Subtest 1	23.5	22.96	22.93	23.05
	Subtest 2	23.0	22.71	22.68	22.71
	Subtest 3	22.5	21.90	21.89	22.01
	Subtest 4	22.5	21.92	21.87	22.00
HSUPA	Subtest 1	21.5	20.49	20.41	20.33
	Subtest 2	21.0	19.96	20.03	20.12
	Subtest 3	21.0	19.50	19.49	19.53
	Subtest 4	21.5	20.67	20.52	20.35
	Subtest 5	21.5	20.78	20.60	20.53
DC-HSDPA	Subtest 1	23.5	22.79	22.80	22.93
	Subtest 2	23.0	22.65	22.72	22.76
	Subtest 3	22.5	21.73	21.89	22.05
	Subtest 4	22.5	21.73	21.71	21.97

Table 18: Conducted power measurement results of UMTS Band IV(Second Antenna)

Note:

- 1) The conducted power of UMTS Band IV is measured with RMS detector.
- 2) The bolded 12.2kbps RMC mode was selected for SAR testing(the primary mode).
- 3) Per KDB941225 D01v03, 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.

7.1.5 Conducted power measurements of UMTS Band V(Second Antenna)

UMTS Band V		Tune-up	Conducted Power (dBm)		
			4132CH	4182CH	4233CH
WCDMA	12.2kbps RMC	24.5	23.97	23.88	23.90
	12.2kbps AMR	24.5	23.90	23.81	23.79
HSDPA	Subtest 1	24.0	23.42	23.29	23.34
	Subtest 2	23.5	23.15	23.04	23.11
	Subtest 3	23.0	22.38	22.27	22.31
	Subtest 4	23.0	22.37	22.26	22.30
HSUPA	Subtest 1	22.0	20.84	20.62	20.82
	Subtest 2	21.0	20.53	20.32	20.29
	Subtest 3	21.0	20.71	20.62	19.88
	Subtest 4	21.0	20.81	20.80	20.93
	Subtest 5	21.5	20.94	20.95	21.07
DC-HSDPA	Subtest 1	24.0	23.36	23.07	23.06
	Subtest 2	23.5	23.04	22.96	23.00
	Subtest 3	23.0	22.33	22.13	22.09
	Subtest 4	23.0	22.27	22.01	22.08

Table 19: Conducted power measurement results of UMTS Band V(Second Antenna)

Note:

- 1) The conducted power of UMTS Band V is measured with RMS detector.
- 2) The bolded 12.2kbps RMC mode was selected for SAR testing(the primary mode).
- 3) Per KDB941225 D01v03, 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.

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UMTS Band V		Tune-up	Conducted Power (dBm)		
			4132CH	4182CH	4233CH
WCDMA	12.2kbps RMC	24.0	23.08	22.98	23.03
	12.2kbps AMR	24.0	23.11	23.04	23.00
HSDPA	Subtest 1	23.5	22.90	22.78	22.86
	Subtest 2	23.0	22.73	22.66	22.54
	Subtest 3	22.5	21.94	21.70	21.86
	Subtest 4	22.5	21.72	21.88	21.86
HSUPA	Subtest 1	21.5	20.52	20.01	20.23
	Subtest 2	20.5	19.96	19.76	19.88
	Subtest 3	20.5	20.39	20.13	20.08
	Subtest 4	20.5	20.36	20.18	20.44
	Subtest 5	20.7	20.54	20.46	20.52
DC-HSDPA	Subtest 1	23.5	22.88	22.72	22.76
	Subtest 2	23.0	22.37	22.64	22.33
	Subtest 3	22.5	21.78	21.79	21.42
	Subtest 4	22.5	21.77	21.57	21.69

Table 20: Conducted power measurement results of UMTS Band V(Second Antenna)

Note:

- 1) The conducted power of UMTS Band V is measured with RMS detector.
- 2) The bolded 12.2kbps RMC mode was selected for SAR testing(the primary mode).
- 3) Per KDB941225 D01v03, 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 LTE Band II(Second Antenna)

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18607CH	18900CH	19193CH
1.4MHz	QPSK	1	0	22.7	21.94	22.34	22.27
		1	3	22.7	21.98	22.43	22.12
		1	5	22.7	21.85	22.21	21.89
		3	0	22.7	22.00	22.35	22.21
		3	2	22.7	21.98	22.37	22.06
		3	3	22.7	22.06	22.23	21.96
		6	0	22.5	21.11	21.36	21.19
	16QAM	1	0	22.5	21.07	21.71	21.46
		1	3	22.5	21.12	21.66	21.33
		1	5	22.5	21.06	21.33	21.11
		3	0	22.5	21.01	21.28	21.28
		3	2	22.5	21.10	21.30	21.26
		3	3	22.5	21.06	21.21	21.18
		6	0	21.5	19.96	20.22	20.15
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18615CH	18900CH	19185CH
3MHz	QPSK	1	0	22.7	21.88	22.17	22.07
		1	7	22.7	22.04	22.49	22.39
		1	14	22.7	21.80	22.13	21.77
		8	0	22.5	21.07	21.36	21.36
		8	4	22.5	21.07	21.40	21.34
		8	7	22.5	20.99	21.27	21.16
		15	0	22.5	21.01	21.33	21.26
	16QAM	1	0	22.5	21.18	21.10	21.01
		1	7	22.5	21.37	21.52	21.67
		1	14	22.5	20.93	21.22	20.77
		8	0	21.5	19.96	20.23	20.31
		8	4	21.5	19.97	20.25	20.33
		8	7	21.5	19.93	20.15	20.17
		15	0	21.5	19.87	20.07	20.08

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18625CH	18900CH	19175CH
5MHz	QPSK	1	0	22.7	21.94	22.00	21.92
		1	13	22.7	22.14	22.44	22.42
		1	24	22.7	21.67	21.98	21.74
		12	0	22.5	21.13	21.32	21.18
		12	6	22.5	21.16	21.47	21.33
		12	13	22.5	20.93	21.24	21.22
		25	0	22.5	21.01	21.28	21.09
	16QAM	1	0	22.5	21.10	20.97	21.00
		1	13	22.5	21.25	21.55	21.49
		1	24	22.5	20.84	21.06	20.91
		12	0	21.5	20.03	20.22	20.05
		12	6	21.5	20.08	20.36	20.22
		12	13	21.5	19.87	20.19	20.14
		25	0	21.5	19.92	20.06	19.96
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18650CH	18900CH	19150CH
10MHz	QPSK	1	0	22.7	21.79	21.94	21.57
		1	25	22.7	22.00	22.55	22.09
		1	49	22.7	21.34	21.91	21.84
		25	0	22.5	21.01	21.21	20.99
		25	13	22.5	20.94	21.33	21.05
		25	25	22.5	20.75	21.15	20.97
		50	0	22.5	20.92	21.03	20.77
	16QAM	1	0	22.5	21.12	21.08	20.92
		1	25	22.5	21.30	21.69	21.40
		1	49	22.5	20.59	21.08	21.17
		25	0	21.5	19.94	20.12	19.89
		25	13	21.5	19.88	20.21	19.92
		25	25	21.5	19.66	20.07	19.82
		50	0	21.5	19.78	19.84	19.59

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18675CH	18900CH	19125CH
15MHz	QPSK	1	0	22.7	21.68	21.67	21.53
		1	38	22.7	21.85	22.44	21.96
		1	74	22.7	21.15	21.43	21.68
		36	0	22.5	20.91	21.00	20.95
		36	18	22.5	20.89	21.14	20.98
		36	39	22.5	20.66	20.95	20.85
		75	0	22.5	20.75	21.13	20.64
	16QAM	1	0	22.5	20.98	20.81	20.84
		1	38	22.5	21.08	21.53	21.26
		1	74	22.5	20.54	20.59	20.92
		36	0	21.5	19.79	19.86	19.94
		36	18	21.5	19.75	20.01	19.96
		36	39	21.5	19.53	19.84	19.76
		75	0	21.5	19.62	19.96	19.56
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18700CH	18900CH	19100CH
20MHz	QPSK	1	0	22.7	21.63	21.38	21.50
		1	50	22.7	21.65	22.44	21.82
		1	99	22.7	21.05	21.30	21.60
		50	0	22.5	20.76	20.91	20.66
		50	25	22.5	20.65	21.17	20.89
		50	50	22.5	20.56	20.85	20.53
		100	0	22.5	20.54	20.92	20.54
	16QAM	1	0	22.5	20.91	20.68	20.94
		1	50	22.5	21.05	21.85	21.30
		1	99	22.5	20.52	20.67	21.06
		50	0	21.5	19.70	19.84	19.59
		50	25	21.5	19.51	19.89	19.87
		50	50	21.5	19.52	19.69	19.54
		100	0	21.5	19.58	19.80	19.58

Table 21: Conducted power measurement results of LTE Band II(Second Antenna)

7.1.7 Conducted power measurements of LTE Band IV(Second Antenna)

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					19957CH	20175CH	20393CH
1.4MHz	QPSK	1	0	22.8	21.90	21.99	22.08
		1	3	22.8	21.99	21.95	22.13
		1	5	22.8	21.90	21.80	22.01
		3	0	22.8	21.92	22.03	22.12
		3	2	22.8	21.98	21.98	22.10
		3	3	22.8	21.96	21.93	22.09
		6	0	22.5	20.93	20.97	21.24
	16QAM	1	0	22.5	21.16	21.11	21.38
		1	3	22.5	21.23	21.33	21.60
		1	5	22.5	21.08	21.18	21.51
		3	0	22.5	21.05	21.08	21.26
		3	2	22.5	21.08	21.13	21.31
		3	3	22.5	21.05	20.97	21.23
		6	0	21.5	19.90	19.95	20.41
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					19965CH	20175CH	20385CH
3MHz	QPSK	1	0	22.8	21.79	21.89	22.14
		1	7	22.8	22.13	22.04	22.24
		1	14	22.8	21.89	21.73	21.92
		8	0	22.5	20.98	20.96	21.25
		8	4	22.5	21.07	20.97	21.25
		8	7	22.5	20.99	20.91	21.20
		15	0	22.5	21.01	20.93	21.24
	16QAM	1	0	22.5	20.90	21.20	21.55
		1	7	22.5	21.26	21.38	21.32
		1	14	22.5	21.08	21.03	21.40
		8	0	21.5	19.90	19.97	20.29
		8	4	21.5	20.01	20.00	20.31
		8	7	21.5	19.94	19.95	20.23
		15	0	21.5	19.94	19.85	20.25

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					19975CH	20175CH	20375CH
5MHz	QPSK	1	0	22.8	20.96	21.01	21.30
		1	13	22.8	21.37	21.19	21.56
		1	24	22.8	20.89	20.81	21.18
		12	0	22.5	21.15	21.09	21.35
		12	6	22.5	21.25	21.12	21.39
		12	13	22.5	21.09	20.90	21.15
		25	0	22.5	21.03	20.98	21.46
	16QAM	1	0	22.5	21.04	21.19	21.43
		1	13	22.5	21.45	21.34	21.67
		1	24	22.5	21.04	20.87	21.27
		12	0	21.5	20.04	19.98	20.38
		12	6	21.5	20.15	20.05	20.45
		12	13	21.5	20.00	19.80	20.25
		25	0	21.5	19.90	19.90	20.45
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20000CH	20175CH	20350CH
10MHz	QPSK	1	0	22.8	20.82	20.98	21.04
		1	25	22.8	21.35	21.18	21.49
		1	49	22.8	20.94	20.86	21.13
		25	0	22.5	21.05	21.10	21.22
		25	13	22.5	21.15	21.02	21.26
		25	25	22.5	21.08	20.91	21.27
		50	0	22.5	21.09	20.93	21.28
	16QAM	1	0	22.5	21.55	21.42	21.37
		1	25	22.5	21.70	21.71	21.70
		1	49	22.5	21.65	21.29	21.39
		25	0	21.5	20.09	20.14	20.25
		25	13	21.5	20.12	20.06	20.30
		25	25	21.5	20.19	19.94	20.37
		50	0	21.5	20.16	19.93	20.33

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20025CH	20175CH	20325CH
15MHz	QPSK	1	0	22.8	20.95	21.12	20.96
		1	38	22.8	21.49	21.19	21.49
		1	74	22.8	21.11	20.84	21.30
		36	0	22.5	21.23	21.21	21.13
		36	18	22.5	21.32	21.17	21.32
		36	39	22.5	21.24	21.01	21.54
		75	0	22.5	21.24	21.06	21.29
	16QAM	1	0	22.5	21.34	21.41	21.12
		1	38	22.5	21.75	21.48	21.58
		1	74	22.5	21.48	21.06	21.33
		36	0	21.5	20.11	20.13	20.06
		36	18	21.5	20.21	20.12	20.30
		36	39	21.5	20.14	19.96	20.56
		75	0	21.5	20.15	19.96	20.23
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20050CH	20175CH	20300CH
20MHz	QPSK	1	0	22.8	20.92	21.14	21.09
		1	50	22.8	21.40	21.22	21.41
		1	99	22.8	20.91	20.87	21.22
		50	0	22.5	21.28	21.22	21.04
		50	25	22.5	21.35	21.09	21.15
		50	50	22.5	21.22	21.01	21.36
		100	0	22.5	21.22	21.04	21.23
	16QAM	1	0	22.5	21.60	21.60	21.45
		1	50	22.5	21.71	21.68	21.79
		1	99	22.5	21.32	21.26	21.60
		50	0	21.5	20.17	20.12	19.94
		50	25	21.5	20.06	20.00	20.07
		50	50	21.5	19.98	19.94	20.33
		100	0	21.5	20.00	19.97	20.15

Table 22: Conducted power measurement results of LTE Band IV(Second Antenna)

After Wi-Fi on function work, Second antenna Synchronous transmission with WiFi antenna

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					19957CH	20175CH	20393CH
1.4MHz	QPSK	1	0	22.30	20.82	21.07	21.37
		1	3	22.30	20.83	21.05	21.32
		1	5	22.30	20.77	20.88	21.22
		3	0	22.30	20.83	21.03	21.34
		3	2	22.30	20.89	21.00	21.28
		3	3	22.30	20.84	20.99	21.30
		6	0	22.00	20.75	21.04	21.29
	16QAM	1	0	22.00	21.26	21.26	21.30
		1	3	22.00	21.16	21.25	21.29
		1	5	22.00	21.00	21.10	21.26
		3	0	22.00	21.10	21.12	21.19
		3	2	22.00	21.06	21.10	21.14
		3	3	22.00	21.06	21.02	21.16
		6	0	21.50	19.91	19.88	20.22
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					19965CH	20175CH	20385CH
3MHz	QPSK	1	0	22.30	20.72	20.90	21.25
		1	7	22.30	21.02	21.10	21.44
		1	14	22.30	20.76	20.76	21.05
		8	0	22.00	20.79	21.00	21.25
		8	4	22.00	20.93	21.01	21.26
		8	7	22.00	20.84	20.93	21.17
		15	0	22.00	20.86	21.03	21.23
	16QAM	1	0	22.00	20.69	21.03	21.14
		1	7	22.00	21.01	21.22	21.30
		1	14	22.00	20.81	20.86	21.03
		8	0	21.50	19.76	19.92	20.23
		8	4	21.50	19.80	19.93	20.27
		8	7	21.50	19.76	19.80	20.19
		15	0	21.50	19.68	19.79	20.15

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					19975CH	20175CH	20375CH
5MHz	QPSK	1	0	22.30	21.00	20.86	21.17
		1	13	22.30	21.12	21.07	21.50
		1	24	22.30	21.08	20.54	21.02
		12	0	22.00	21.19	21.09	21.35
		12	6	22.00	21.20	21.13	21.36
		12	13	22.00	21.16	20.88	21.14
		25	0	22.00	21.13	20.96	21.41
	16QAM	1	0	22.00	20.67	21.10	21.36
		1	13	22.00	21.11	21.26	21.56
		1	24	22.00	20.68	20.76	21.21
		12	0	21.50	19.81	20.01	20.28
		12	6	21.50	19.91	20.06	20.32
		12	13	21.50	19.83	19.77	20.11
		25	0	21.50	19.71	19.83	20.34
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20000CH	20175CH	20350CH
10MHz	QPSK	1	0	22.30	20.89	20.89	20.78
		1	25	22.30	21.03	21.10	21.38
		1	49	22.30	20.59	20.61	21.01
		25	0	22.00	21.15	21.16	21.10
		25	13	22.00	21.04	21.06	21.18
		25	25	22.00	20.82	20.85	21.20
		50	0	22.00	21.00	20.97	21.22
	16QAM	1	0	22.00	20.82	21.24	21.28
		1	25	22.00	21.41	21.40	21.77
		1	49	22.00	21.11	20.92	21.33
		25	0	21.50	19.81	20.01	19.97
		25	13	21.50	19.91	19.92	20.07
		25	25	21.50	19.83	19.71	20.13
		50	0	21.50	19.81	19.80	20.09

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20025CH	20175CH	20325CH
15MHz	QPSK	1	0	22.30	21.04	21.02	20.70
		1	38	22.30	21.05	21.04	21.19
		1	74	22.30	20.50	20.50	21.06
		36	0	22.00	21.19	21.21	20.92
		36	18	22.00	21.13	21.09	21.15
		36	39	22.00	20.84	20.87	21.38
		75	0	22.00	21.06	21.02	21.15
	16QAM	1	0	22.00	20.96	21.30	20.91
		1	38	22.00	21.49	21.35	21.36
		1	74	22.00	21.15	20.74	21.15
		36	0	21.50	19.92	20.04	19.75
		36	18	21.50	20.02	19.96	20.01
		36	39	21.50	19.97	19.74	20.28
		75	0	21.50	19.94	19.86	20.02
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20050CH	20175CH	20300CH
20MHz	QPSK	1	0	22.30	20.70	20.96	20.83
		1	50	22.30	21.23	21.02	21.10
		1	99	22.30	20.69	20.51	21.09
		50	0	22.00	21.13	21.17	20.83
		50	25	22.00	21.17	21.01	20.90
		50	50	22.00	21.10	20.81	21.18
		100	0	22.00	21.03	20.96	21.04
	16QAM	1	0	22.00	21.14	21.51	21.22
		1	50	22.00	21.75	21.58	21.44
		1	99	22.00	21.23	20.98	21.31
		50	0	21.50	19.89	20.02	19.68
		50	25	21.50	19.98	19.88	19.76
		50	50	21.50	19.89	19.69	20.07
		100	0	21.50	19.89	19.82	19.92

Table 23: Conducted power measurement results of LTE Band IV(Second Antenna)

7.1.8 Conducted power measurements of LTE Band V(Second Antenna)

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20407CH	20525CH	20643CH
1.4MHz	QPSK	1	0	23.5	21.72	22.27	22.39
		1	3	23.5	22.28	22.30	22.15
		1	5	23.5	22.10	22.09	21.72
		3	0	23.5	22.39	22.41	22.39
		3	2	23.5	22.27	22.31	22.10
		3	3	23.5	22.22	22.27	21.93
		6	0	22.5	21.77	21.80	21.68
	16QAM	1	0	22.5	21.45	21.97	22.00
		1	3	22.5	21.45	21.89	21.73
		1	5	22.5	21.32	21.71	21.26
		3	0	22.5	21.32	21.82	21.88
		3	2	22.5	21.19	21.86	21.62
		3	3	22.5	21.14	21.69	21.47
		6	0	21.5	20.18	20.75	20.70
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20415CH	20525CH	20635CH
3MHz	QPSK	1	0	23.5	21.52	22.17	22.31
		1	7	23.5	21.90	22.42	22.48
		1	14	23.5	21.69	21.88	21.59
		8	0	22.5	21.17	21.86	21.94
		8	4	22.5	21.33	21.76	21.97
		8	7	22.5	21.35	21.58	21.71
		15	0	22.5	21.28	21.73	21.81
	16QAM	1	0	22.5	21.83	21.61	21.99
		1	7	22.5	21.76	21.80	22.28
		1	14	22.5	21.49	21.53	21.28
		8	0	21.5	20.78	20.82	20.90
		8	4	21.5	20.67	20.72	20.95
		8	7	21.5	20.54	20.54	20.71
		15	0	21.5	20.59	20.64	20.76

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20425CH	20525CH	20625CH
5MHz	QPSK	1	0	23.5	21.52	22.32	21.88
		1	13	23.5	22.08	22.37	22.50
		1	24	23.5	21.85	21.70	21.53
		12	0	22.5	21.25	21.76	21.70
		12	6	22.5	21.52	21.82	21.86
		12	13	22.5	21.51	21.40	21.73
		25	0	22.5	21.37	21.66	21.69
	16QAM	1	0	22.5	21.38	22.00	21.70
		1	13	22.5	21.93	22.01	22.28
		1	24	22.5	21.76	21.43	21.30
		12	0	21.5	20.22	20.67	20.68
		12	6	21.5	20.46	20.74	20.85
		12	13	21.5	20.49	20.33	20.72
		25	0	21.5	20.27	20.53	20.63
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20450CH	20525CH	20600CH
10MHz	QPSK	1	0	23.5	21.63	22.16	21.72
		1	25	23.5	22.45	22.46	22.19
		1	49	23.5	21.47	21.47	21.61
		25	0	22.5	21.85	21.81	21.56
		25	13	22.5	21.76	21.72	21.47
		25	25	22.5	21.45	21.42	21.52
		50	0	22.5	21.78	21.75	21.42
	16QAM	1	0	22.5	21.18	22.02	21.34
		1	25	22.5	22.25	22.18	21.89
		1	49	22.5	21.68	21.39	21.27
		25	0	21.5	20.28	20.75	20.50
		25	13	21.5	20.65	20.66	20.41
		25	25	21.5	20.65	20.38	20.45
		50	0	21.5	20.50	20.69	20.35

Table 24: Conducted power measurement results of LTE Band V(Second Antenna)

After Wi-Fi on function work, Second antenna Synchronous transmission with WiFi antenna

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20407CH	20525CH	20643CH
1.4MHz	QPSK	1	0	22.5	20.76	21.54	21.73
		1	3	22.5	20.85	21.58	21.47
		1	5	22.5	20.78	21.34	21.06
		3	0	22.5	20.85	21.63	21.70
		3	2	22.5	20.89	21.51	21.45
		3	3	22.5	20.84	21.49	21.31
		6	0	21.5	20.35	20.98	20.99
	16QAM	1	0	21.5	20.43	21.29	21.29
		1	3	21.5	20.53	21.08	21.08
		1	5	21.5	20.31	21.02	20.67
		3	0	21.5	19.88	20.77	20.78
		3	2	21.5	19.95	20.68	20.67
		3	3	21.5	19.90	20.68	20.53
		6	0	20.5	19.59	20.11	20.20
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20415CH	20525CH	20635CH
3MHz	QPSK	1	0	22.5	20.66	21.34	21.45
		1	7	22.5	21.04	21.53	21.93
		1	14	22.5	20.86	21.04	20.95
		8	0	21.5	20.36	21.02	21.19
		8	4	21.5	20.45	20.92	21.23
		8	7	21.5	20.47	20.78	21.01
		15	0	21.5	20.41	20.86	21.07
	16QAM	1	0	21.5	20.11	20.78	21.10
		1	7	21.5	20.68	21.02	21.28
		1	14	21.5	20.52	20.55	20.56
		8	0	20.5	19.27	19.92	20.15
		8	4	20.5	19.44	19.82	20.19
		8	7	20.5	19.45	19.69	19.96
		15	0	20.5	19.30	19.77	19.96

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20425CH	20525CH	20625CH
5MHz	QPSK	1	0	22.5	20.62	21.56	21.12
		1	13	22.5	21.22	21.61	21.81
		1	24	22.5	21.01	20.90	20.88
		12	0	21.5	20.40	20.99	20.84
		12	6	21.5	20.62	21.05	21.07
		12	13	21.5	20.65	20.69	20.96
		25	0	21.5	20.48	20.95	20.93
	16QAM	1	0	21.5	20.34	21.14	20.84
		1	13	21.5	20.89	21.18	21.47
		1	24	21.5	20.70	20.51	20.65
		12	0	20.5	19.36	19.83	19.83
		12	6	20.5	19.64	19.88	20.01
		12	13	20.5	19.68	19.54	19.89
		25	0	20.5	19.43	19.75	19.78
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20450CH	20525CH	20600CH
10MHz	QPSK	1	0	22.5	20.50	21.35	20.84
		1	25	22.5	21.64	21.51	21.28
		1	49	22.5	21.10	20.58	20.77
		25	0	21.5	20.45	20.93	20.61
		25	13	21.5	20.82	20.89	20.53
		25	25	21.5	20.89	20.51	20.63
		50	0	21.5	20.69	20.68	20.48
	16QAM	1	0	21.5	20.18	21.06	20.62
		1	25	21.5	21.20	21.25	21.03
		1	49	21.5	20.81	20.33	20.56
		25	0	20.5	19.32	19.77	19.60
		25	13	20.5	19.68	19.75	19.49
		25	25	20.5	19.68	19.41	19.50
		50	0	20.5	19.52	19.68	19.38

Table 25: Conducted power measurement results of LTE Band V(Second Antenna)

7.1.9 Conducted power measurements of LTE Band VII(Second Antenna)

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20775CH	21100CH	21425CH
5MHz	QPSK	1	0	23.0	22.08	22.26	22.30
		1	13	23.0	22.20	22.23	22.51
		1	24	23.0	21.81	21.82	22.09
		12	0	22.0	21.47	21.58	21.65
		12	6	22.0	21.48	21.49	21.67
		12	13	22.0	21.29	21.31	21.49
		25	0	22.0	21.36	21.45	21.60
	16QAM	1	0	22.0	21.61	21.71	21.70
		1	13	22.0	21.78	21.68	21.78
		1	24	22.0	21.35	21.28	21.37
		12	0	21.0	20.64	20.75	20.83
		12	6	21.0	20.63	20.70	20.83
		12	13	21.0	20.47	20.49	20.70
		25	0	21.0	20.46	20.65	20.75
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20800CH	21100CH	21400CH
10MHz	QPSK	1	0	23.0	21.76	21.90	21.72
		1	25	23.0	21.92	21.96	22.07
		1	49	23.0	21.58	21.48	21.73
		25	0	22.0	21.37	21.58	21.43
		25	13	22.0	21.38	21.51	21.61
		25	25	22.0	21.27	21.28	21.55
		50	0	22.0	21.30	21.45	21.54
	16QAM	1	0	22.0	21.36	21.64	21.47
		1	25	22.0	21.56	21.71	21.89
		1	49	22.0	21.25	21.28	21.50
		25	0	21.0	20.46	20.75	20.64
		25	13	21.0	20.48	20.70	20.70
		25	25	21.0	20.38	20.47	20.68
		50	0	21.0	20.38	20.63	20.64

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20825CH	21100CH	21375CH
15MHz	QPSK	1	0	23.0	21.87	21.80	21.43
		1	38	23.0	22.05	21.97	22.00
		1	74	23.0	21.41	21.32	21.61
		36	0	22.0	21.56	21.51	21.37
		36	18	22.0	21.57	21.52	21.46
		36	39	22.0	21.35	21.31	21.45
		75	0	22.0	21.43	21.43	21.42
	16QAM	1	0	22.0	21.32	21.56	21.38
		1	38	22.0	21.68	21.75	21.80
		1	74	22.0	21.36	21.14	21.55
		36	0	21.0	20.41	20.62	20.55
		36	18	21.0	20.47	20.71	20.70
		36	39	21.0	20.40	20.45	20.65
		75	0	21.0	20.40	20.55	20.55
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20850CH	21100CH	21350CH
20MHz	QPSK	1	0	23.0	21.94	22.21	21.85
		1	50	23.0	22.13	22.28	22.23
		1	99	23.0	22.07	21.77	22.10
		50	0	22.0	21.36	21.67	21.26
		50	25	22.0	21.42	21.60	21.41
		50	50	22.0	21.43	21.29	21.48
		100	0	22.0	21.38	21.48	21.40
	16QAM	1	0	22.0	21.53	21.87	21.36
		1	50	22.0	21.71	21.97	21.70
		1	99	22.0	21.55	21.44	21.59
		50	0	21.0	20.49	20.75	20.37
		50	25	21.0	20.54	20.71	20.52
		50	50	21.0	20.54	20.41	20.59
		100	0	21.0	20.47	20.59	20.50

Table 26: Conducted power measurement results of LTE Band VII(Second Antenna)

7.1.10 Conducted power measurements of LTE Band XII(Second Antenna)

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					23107CH	23095CH	23173CH
1.4MHz	QPSK	1	0	23.5	22.22	22.58	22.39
		1	3	23.5	22.27	22.68	22.24
		1	5	23.5	22.31	22.60	21.90
		3	0	23.5	22.24	22.63	22.43
		3	2	23.5	22.30	22.71	22.21
		3	3	23.5	22.26	22.66	22.07
		6	0	22.5	21.71	22.20	21.77
	16QAM	1	0	22.5	21.57	22.23	22.06
		1	3	22.5	21.84	22.35	21.78
		1	5	22.5	21.79	22.19	21.40
		3	0	22.5	21.71	22.16	22.02
		3	2	22.5	21.82	22.23	21.91
		3	3	22.5	21.78	22.22	21.78
		6	0	21.5	20.67	21.24	20.88
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					23025CH	23095CH	23165CH
3MHz	QPSK	1	0	23.5	22.31	22.33	22.53
		1	7	23.5	22.74	22.77	22.78
		1	14	23.5	22.38	22.41	21.70
		8	0	22.5	22.08	22.12	22.21
		8	4	22.5	22.18	22.22	22.13
		8	7	22.5	22.08	22.12	21.84
		15	0	22.5	22.10	22.15	22.08
	16QAM	1	0	22.5	21.50	22.05	22.13
		1	7	22.5	22.07	22.48	22.35
		1	14	22.5	21.69	22.15	21.37
		8	0	21.5	20.61	21.16	21.22
		8	4	21.5	20.88	21.25	21.20
		8	7	21.5	20.71	21.15	20.96
		15	0	21.5	20.58	21.09	21.02

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					23035CH	23095CH	23155CH
5MHz	QPSK	1	0	23.5	22.39	22.36	22.52
		1	13	23.5	22.79	22.74	22.75
		1	24	23.5	22.38	22.34	21.66
		12	0	22.5	22.08	22.06	22.23
		12	6	22.5	22.19	22.17	22.28
		12	13	22.5	22.06	22.04	21.93
		25	0	22.5	22.13	22.11	22.01
	16QAM	1	0	22.5	21.48	21.97	22.19
		1	13	22.5	22.04	22.38	22.44
		1	24	22.5	21.61	21.98	21.38
		12	0	21.5	20.73	21.06	21.23
		12	6	21.5	20.88	21.19	21.29
		12	13	21.5	20.82	21.06	20.96
		25	0	21.5	20.67	21.10	20.96
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					23060CH	23095CH	23130CH
10MHz	QPSK	1	0	23.5	21.77	22.06	22.26
		1	25	23.5	22.52	22.81	22.83
		1	49	23.5	21.97	22.06	21.59
		25	0	22.5	21.68	21.94	21.97
		25	13	22.5	21.92	22.13	22.21
		25	25	22.5	21.81	21.87	21.79
		50	0	22.5	21.81	21.93	22.00
	16QAM	1	0	22.5	21.49	21.80	21.96
		1	25	22.5	22.24	22.49	22.47
		1	49	22.5	21.70	21.87	21.33
		25	0	21.5	20.56	20.87	20.90
		25	13	21.5	20.80	21.06	21.16
		25	25	21.5	20.69	20.82	20.75
		50	0	21.5	20.64	20.85	20.93

Table 27: Conducted power measurement results of LTE Band XII(Second Antenna)

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

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					23755CH	23790CH	23825CH
5MHz	QPSK	1	0	23.5	22.32	22.60	22.74
		1	13	23.5	22.82	22.97	23.06
		1	24	23.5	22.56	22.51	22.21
		12	0	22.5	22.22	22.45	22.40
		12	6	22.5	22.38	22.44	22.49
		12	13	22.5	22.35	22.21	22.31
		25	0	22.5	22.25	22.37	22.23
	16QAM	1	0	22.5	21.82	22.24	22.41
		1	13	22.5	22.34	22.43	22.47
		1	24	22.5	21.93	22.16	21.93
		12	0	21.5	21.12	21.47	21.40
		12	6	21.5	21.29	21.47	21.45
		12	13	21.5	21.20	21.22	21.34
		25	0	21.5	21.11	21.33	21.18
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					23780CH	23790CH	23800CH
10MHz	QPSK	1	0	23.5	22.27	22.28	22.44
		1	25	23.5	23.08	22.98	23.00
		1	49	23.5	22.31	22.25	22.09
		25	0	22.5	22.17	22.16	22.20
		25	13	22.5	22.43	22.37	22.41
		25	25	22.5	22.10	22.09	22.02
		50	0	22.5	22.13	22.15	22.17
	16QAM	1	0	22.5	21.99	22.08	22.22
		1	25	22.5	22.44	22.46	22.42
		1	49	22.5	22.02	22.12	21.95
		25	0	21.5	21.08	21.09	21.16
		25	13	21.5	21.28	21.36	21.40
		25	25	21.5	21.02	21.09	20.99
		50	0	21.5	21.03	21.09	21.11

Table 28: Conducted power measurement results of LTE Band XVII(Second Antenna)

7.1.12 Conducted power measurements of LTE Band XXVI(Second Antenna)

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					26697CH	26865CH	27033CH
1.4MHz	QPSK	1	0	23.5	22.46	22.91	22.87
		1	3	23.5	22.79	23.05	22.45
		1	5	23.5	22.77	22.90	21.96
		3	0	23.5	22.58	22.92	22.74
		3	2	23.5	22.74	22.98	22.37
		3	3	23.5	22.79	22.93	22.22
		6	0	23.5	22.66	22.97	22.47
	16QAM	1	0	23.0	21.95	22.47	22.28
		1	3	23.0	22.20	22.54	21.73
		1	5	23.0	22.37	22.42	21.28
		3	0	23.0	22.09	22.49	22.24
		3	2	23.0	22.30	22.56	21.92
		3	3	23.0	22.35	22.50	21.71
		6	0	22.0	21.16	21.37	21.05
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					26705CH	26865CH	27025CH
3MHz	QPSK	1	0	23.5	22.44	22.64	23.08
		1	7	23.5	23.00	22.99	23.06
		1	14	23.5	22.67	22.75	21.76
		8	0	23.5	22.73	22.83	23.13
		8	4	23.5	22.91	22.93	22.97
		8	7	23.5	22.86	22.83	22.53
		15	0	23.5	22.84	22.85	22.84
	16QAM	1	0	23.0	22.01	22.42	22.57
		1	7	23.0	22.50	22.62	22.71
		1	14	23.0	22.23	22.50	21.49
		8	0	22.0	21.15	21.29	21.06
		8	4	22.0	21.37	21.41	21.52
		8	7	22.0	21.37	21.30	21.11
		15	0	22.0	21.23	21.30	21.35

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					26715CH	26865CH	27015CH
5MHz	QPSK	1	0	23.5	22.42	22.42	22.36
		1	13	23.5	23.03	22.88	23.13
		1	24	23.5	22.22	22.59	21.75
		12	0	23.5	22.84	22.74	22.74
		12	6	23.5	22.93	22.85	23.00
		12	13	23.5	22.53	22.73	22.63
		25	0	23.5	22.68	22.61	22.79
	16QAM	1	0	23.0	22.10	21.93	21.83
		1	13	23.0	22.75	22.35	22.65
		1	24	23.0	21.84	22.16	21.30
		12	0	22.0	21.25	21.19	21.34
		12	6	22.0	21.44	21.36	21.57
		12	13	22.0	21.00	21.26	21.28
		25	0	22.0	21.12	21.06	21.27
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					26750CH	26865CH	26990CH
10MHz	QPSK	1	0	23.5	22.57	22.05	22.15
		1	25	23.5	22.35	22.87	22.47
		1	49	23.5	21.66	22.47	21.79
		25	0	23.5	22.58	22.49	22.41
		25	13	23.5	22.19	22.66	22.54
		25	25	23.5	21.70	22.64	22.56
		50	0	23.5	22.19	22.68	22.48
	16QAM	1	0	23.0	21.98	21.65	21.83
		1	25	23.0	21.75	22.46	22.15
		1	49	23.0	20.95	22.09	21.50
		25	0	22.0	21.06	20.93	20.79
		25	13	22.0	20.67	21.08	20.98
		25	25	22.0	20.22	21.11	21.05
		50	0	22.0	20.59	21.12	20.90

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					26775CH	26865CH	26965CH
15MHz	QPSK	1	0	23.5	22.39	21.56	22.50
		1	38	23.5	22.28	22.70	22.53
		1	74	23.5	21.70	21.73	21.75
		36	0	23.5	22.27	22.10	22.60
		36	18	23.5	22.19	22.63	22.45
		36	39	23.5	21.88	22.47	22.32
		75	0	23.5	22.23	22.45	22.41
	16QAM	1	0	23.0	21.96	20.86	21.33
		1	38	23.0	21.79	22.34	22.09
		1	74	23.0	21.36	21.39	21.38
		36	0	22.0	20.66	20.54	21.10
		36	18	22.0	20.63	21.05	20.93
		36	39	22.0	20.28	20.92	20.81
		75	0	22.0	20.61	20.86	20.88

Table 29: Conducted power measurement results of LTE Band XXVI(Second Antenna)

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

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					37775CH	38000CH	38225CH
5MHz	QPSK	1	0	23.5	22.37	22.79	23.09
		1	13	23.5	22.69	22.95	23.24
		1	24	23.5	22.39	22.51	22.76
		12	0	23.5	22.61	22.89	23.28
		12	6	23.5	22.69	22.97	23.17
		12	13	23.5	22.58	22.79	23.04
		25	0	23.5	22.59	22.89	23.12
	16QAM	1	0	23.0	22.49	22.74	22.88
		1	13	23.0	22.79	22.88	22.91
		1	24	23.0	22.52	22.85	22.84
		12	0	22.0	21.66	21.88	21.98
		12	6	22.0	21.75	21.85	21.94
		12	13	22.0	21.65	21.80	21.92
		25	0	22.0	21.60	21.88	21.93
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					37800CH	38000CH	38200CH
10MHz	QPSK	1	0	23.5	22.25	22.65	22.75
		1	25	23.5	22.91	23.01	23.20
		1	49	23.5	22.48	22.61	22.62
		25	0	23.5	22.72	22.88	23.04
		25	13	23.5	22.92	22.97	23.11
		25	25	23.5	22.86	22.84	22.99
		50	0	23.5	22.78	22.72	22.86
	16QAM	1	0	23.0	22.53	22.42	22.85
		1	25	23.0	22.89	22.77	22.95
		1	49	23.0	22.75	22.38	22.71
		25	0	22.0	21.58	21.81	21.89
		25	13	22.0	21.78	21.90	21.97
		25	25	22.0	21.72	21.77	21.87
		50	0	22.0	21.67	21.60	21.80

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					37825CH	38000CH	38175CH
15MHz	QPSK	1	0	23.5	21.90	22.28	22.28
		1	38	23.5	22.91	23.02	22.99
		1	74	23.5	22.25	22.29	22.22
		36	0	23.5	22.69	22.84	22.90
		36	18	23.5	22.98	22.99	23.06
		36	39	23.5	22.81	22.80	22.84
		75	0	23.5	22.74	22.77	22.90
	16QAM	1	0	23.0	22.10	22.40	22.53
		1	38	23.0	22.81	22.66	22.85
		1	74	23.0	22.46	22.39	22.46
		36	0	22.0	21.66	21.80	21.92
		36	18	22.0	21.96	21.96	21.98
		36	39	22.0	21.80	21.78	21.86
		75	0	22.0	21.65	21.71	21.84
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					37850CH	38000CH	38150CH
20MHz	QPSK	1	0	23.5	22.15	22.51	22.61
		1	50	23.5	23.27	22.82	23.25
		1	99	23.5	22.20	22.31	22.45
		50	0	23.5	22.83	22.91	23.12
		50	25	23.5	23.07	22.90	23.31
		50	50	23.5	22.91	22.96	22.79
		100	0	23.5	22.84	22.92	22.97
	16QAM	1	0	23.0	22.55	22.69	22.81
		1	50	23.0	22.92	22.98	22.95
		1	99	23.0	22.13	22.54	22.68
		50	0	22.0	21.76	21.85	21.88
		50	25	22.0	21.91	21.86	21.97
		50	50	22.0	21.84	21.92	21.70
		100	0	22.0	21.76	21.84	21.92

Table 30: Conducted power measurement results of LTE Band XXXVIII(Second Antenna)

7.1.14 Conducted power measurements of LTE Band XLI(Second Antenna)

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					40265CH	40740CH	41215CH
5MHz	QPSK	1	0	23.0	21.72	21.66	21.20
		1	13	23.0	21.84	21.80	21.32
		1	24	23.0	21.57	21.34	21.09
		12	0	22.5	21.94	21.80	21.33
		12	6	22.5	21.96	21.81	21.31
		12	13	22.5	21.85	21.60	21.14
		25	0	22.5	21.82	21.69	21.23
	16QAM	1	0	22.5	21.87	21.71	21.45
		1	13	22.5	21.94	21.83	21.64
		1	24	22.5	21.62	21.38	21.21
		12	0	21.5	20.84	20.79	20.24
		12	6	21.5	20.87	20.70	20.26
		12	13	21.5	20.73	20.78	20.05
		25	0	21.5	20.81	20.66	20.15
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					40290CH	40740CH	41190CH
10MHz	QPSK	1	0	23.0	21.76	21.58	21.27
		1	25	23.0	22.11	21.77	21.55
		1	49	23.0	21.71	21.24	21.10
		25	0	22.5	21.97	21.79	21.38
		25	13	22.5	22.04	21.77	21.45
		25	25	22.5	21.93	21.59	21.33
		50	0	22.5	21.88	21.64	21.39
	16QAM	1	0	22.5	21.74	21.57	21.29
		1	25	22.5	22.08	21.79	21.53
		1	49	22.5	21.70	21.35	21.11
		25	0	21.5	20.97	20.75	20.36
		25	13	21.5	21.05	20.73	20.42
		25	25	21.5	20.92	20.62	20.26
		50	0	21.5	20.88	20.67	20.35

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					40315CH	40740CH	41165CH
15MHz	QPSK	1	0	23.0	21.59	21.43	21.14
		1	38	23.0	22.09	21.86	21.49
		1	74	23.0	21.57	21.17	21.12
		36	0	22.5	21.88	21.82	21.33
		36	18	22.5	22.13	21.85	21.40
		36	39	22.5	21.99	21.62	21.34
		75	0	22.5	21.87	21.73	21.27
	16QAM	1	0	22.5	21.61	21.42	21.30
		1	38	22.5	22.10	21.84	21.56
		1	74	22.5	21.63	21.16	21.16
		36	0	21.5	20.90	20.68	20.26
		36	18	21.5	21.12	20.73	20.32
		36	39	21.5	21.01	20.59	20.29
		75	0	21.5	20.84	20.75	20.18
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					40340CH	40740CH	41140CH
20MHz	QPSK	1	0	23.0	21.79	21.73	21.36
		1	50	23.0	22.17	22.01	21.54
		1	99	23.0	21.88	21.28	21.17
		50	0	22.5	22.00	21.83	21.42
		50	25	22.5	22.08	21.87	21.49
		50	50	22.5	22.01	21.56	21.19
		100	0	22.5	21.97	21.74	21.34
	16QAM	1	0	22.5	22.03	21.45	21.27
		1	50	22.5	22.36	21.61	21.48
		1	99	22.5	22.12	21.08	21.12
		50	0	21.5	21.06	20.77	20.42
		50	25	21.5	21.10	20.75	20.33
		50	50	21.5	21.25	20.52	20.18
		100	0	21.5	20.98	20.80	20.32

Table 31: Conducted power measurement results of LTE Band XLI(Second Antenna)

After Wi-Fi on function work, Second antenna Synchronous transmission with WiFi antenna

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					40265CH	40740CH	41215CH
5MHz	QPSK	1	0	22.5	21.30	21.16	20.63
		1	13	22.5	21.46	21.29	20.76
		1	24	22.5	21.06	20.80	20.36
		12	0	22.0	21.33	21.32	20.78
		12	6	22.0	21.43	21.31	20.78
		12	13	22.0	21.36	21.10	20.58
		25	0	22.0	20.92	20.80	20.25
	16QAM	1	0	22.0	20.90	20.92	20.48
		1	13	22.0	21.09	20.95	20.63
		1	24	22.0	20.75	20.46	20.16
		12	0	21.0	20.96	20.82	20.37
		12	6	21.0	20.98	20.81	20.35
		12	13	21.0	20.89	20.59	20.15
		25	0	21.0	20.89	20.71	20.25
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					40290CH	40740CH	41190CH
10MHz	QPSK	1	0	22.5	21.35	21.13	20.68
		1	25	22.5	21.62	21.34	20.91
		1	49	22.5	21.17	20.83	20.60
		25	0	22.0	21.51	21.30	20.70
		25	13	22.0	21.52	21.28	20.74
		25	25	22.0	21.44	21.09	20.65
		50	0	22.0	21.08	20.75	20.30
	16QAM	1	0	22.0	20.96	20.93	20.21
		1	25	22.0	21.16	21.01	20.43
		1	49	22.0	20.82	20.52	20.14
		25	0	21.0	20.99	20.77	20.36
		25	13	21.0	20.98	20.76	20.37
		25	25	21.0	20.93	20.57	20.19
		50	0	21.0	20.99	20.69	20.21

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					40315CH	40740CH	41165CH
15MHz	QPSK	1	0	22.5	21.09	20.98	20.68
		1	38	22.5	21.63	21.29	20.89
		1	74	22.5	21.00	20.60	20.58
		36	0	22.0	21.40	21.23	20.67
		36	18	22.0	21.47	21.28	20.75
		36	39	22.0	21.42	21.04	20.64
		75	0	22.0	20.97	20.78	20.23
	16QAM	1	0	22.0	20.62	20.86	20.18
		1	38	22.0	20.75	21.14	20.47
		1	74	22.0	20.59	20.42	20.12
		36	0	21.0	20.92	20.73	20.22
		36	18	21.0	20.98	20.75	20.24
		36	39	21.0	20.97	20.50	20.11
		75	0	21.0	20.90	20.73	20.24
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					40340CH	40740CH	41140CH
20MHz	QPSK	1	0	22.5	21.21	20.77	20.85
		1	50	22.5	21.22	20.73	20.93
		1	99	22.5	21.20	20.81	20.51
		50	0	22.0	21.09	20.97	20.49
		50	25	22.0	21.20	20.88	20.39
		50	50	22.0	21.08	20.77	20.38
		100	0	22.0	21.09	20.85	20.44
	16QAM	1	0	22.0	21.00	20.99	20.81
		1	50	22.0	21.13	21.09	20.91
		1	99	22.0	20.91	20.47	20.40
		50	0	21.0	20.82	20.89	20.45
		50	25	21.0	20.98	20.78	20.43
		50	50	21.0	20.97	20.58	20.31
		100	0	21.0	20.88	20.67	20.43

Table 32: Conducted power measurement results of LTE Band XLI(Second Antenna)

7.1.15 Conducted power measurements of GSM850(Main Antenna)

GSM850		Burst-Averaged output Power (dBm)				Division Factors	Frame-Averaged output Power (dBm)			
		Tune-up	128CH	190CH	251CH		Tune-up	128CH	190CH	251CH
GSM (CS)		33.5	32.19	32.63	32.57	-9.19	24.31	23.00	23.44	23.38
GPRS/EDGE (GMSK)	1 Tx Slot	33.5	32.19	32.62	32.55	-9.19	24.31	23.00	23.43	23.36
	2 Tx Slots	31.5	29.85	30.30	30.33	-6.13	25.37	23.72	24.17	24.20
	3 Tx Slots	29.5	27.95	28.29	28.22	-4.42	25.08	23.53	23.87	23.80
	4 Tx Slots	27.5	25.94	26.27	26.28	-3.18	24.32	22.76	23.09	23.10
EDGE (8PSK)	1 Tx Slot	26.5	25.19	25.54	25.59	-9.19	17.31	16.00	16.35	16.40
	2 Tx Slots	25.5	23.86	24.21	24.28	-6.13	19.37	17.73	18.08	18.15
	3 Tx Slots	23.5	22.06	22.39	22.43	-4.42	19.08	17.64	17.97	18.01
	4 Tx Slots	21.5	20.75	20.99	20.96	-3.18	18.32	17.57	17.81	17.78

Table 33: Conducted power measurement results of GSM850(Main Antenna)

Note:

- 1) The conducted power of GSM850 is measured with RMS detector.
- 2) Frame-averaged output power was calculated from the measured burst-averaged output power by converting the slot powers into linear units and calculating the energy over 8 timeslots.
- 3) Per KDB941225 D01v03, 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.

7.1.16 Conducted power measurements of GSM1900(Main Antenna)

GSM1900		Burst-Averaged output Power (dBm)				Division Factors	Frame-Averaged output Power (dBm)			
		Tune-up	512CH	661CH	810CH		Tune-up	512CH	661CH	810CH
GSM (CS)		30.3	29.46	29.29	29.38	-9.19	21.11	20.27	20.10	20.19
GPRS/ EDGE (GMSK)	1 Tx Slot	30.3	29.45	29.29	29.36	-9.19	21.11	20.26	20.10	20.17
	2 Tx Slots	28.5	27.34	27.15	27.17	-6.13	22.37	21.21	21.02	21.04
	3 Tx Slots	26.5	25.57	25.43	25.39	-4.42	22.08	21.15	21.01	20.97
	4 Tx Slots	25.5	24.12	24.12	24.38	-3.18	22.32	20.94	20.94	21.20
EDGE (8PSK)	1 Tx Slot	26.5	24.96	24.84	24.91	-9.19	17.31	15.77	15.65	15.72
	2 Tx Slots	24.5	23.62	23.48	23.54	-6.13	18.37	17.49	17.35	17.41
	3 Tx Slots	22.5	21.68	21.59	21.69	-4.42	18.08	17.26	17.17	17.27
	4 Tx Slots	21.5	20.12	19.91	19.98	-3.18	18.32	16.94	16.73	16.80

Table 34: Conducted power measurement results of GSM1900(Main Antenna)

Note:

- 1) The conducted power of GSM1900 is measured with RMS detector.
- 2) Frame-averaged output power was calculated from the measured burst-averaged output power by converting the slot powers into linear units and calculating the energy over 8 timeslots.
- 3) Per KDB941225 D01v03, 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.

7.1.17 Conducted power measurements of UMTS Band II(Main Antenna)

UMTS Band II		Tune-up	Conducted Power (dBm)		
			9262CH	9400CH	9538CH
WCDMA	12.2kbps RMC	24.5	23.52	23.31	23.57
	12.2kbps AMR	24.5	23.50	23.22	23.48
HSDPA	Subtest 1	24.5	23.00	22.77	23.13
	Subtest 2	23.0	22.80	22.54	22.94
	Subtest 3	22.5	21.96	21.71	22.11
	Subtest 4	22.5	21.98	21.70	22.10
HSUPA	Subtest 1	21.0	20.41	20.08	20.19
	Subtest 2	21.0	20.06	19.86	20.13
	Subtest 3	21.0	19.47	19.96	20.38
	Subtest 4	21.0	20.57	20.19	20.35
	Subtest 5	21.0	20.69	20.39	20.41
DC-HSDPA	Subtest 1	24.5	22.91	22.67	22.98
	Subtest 2	23.0	22.51	22.44	22.71
	Subtest 3	22.5	21.78	21.44	22.02
	Subtest 4	22.5	21.81	21.61	21.90

Table 35: Conducted power measurement results of UMTS Band II(Main Antenna)

Note:

- 1) The conducted power of UMTS Band II is measured with RMS detector.
- 2) The bolded 12.2kbps RMC mode was selected for SAR testing(the primary mode).
- 3) Per KDB941225 D01v03r01, 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.

7.1.18 Conducted power measurements of UMTS Band IV(Main Antenna)

UMTS Band IV		Tune-up	Conducted Power (dBm)		
			1312CH	1413CH	1513CH
WCDMA	12.2kbps RMC	24.0	23.52	23.53	23.50
	12.2kbps AMR	24.0	23.59	23.44	23.57
HSDPA	Subtest 1	23.5	22.94	22.95	23.08
	Subtest 2	23.0	22.70	22.69	22.81
	Subtest 3	22.5	21.94	21.87	22.01
	Subtest 4	22.5	21.91	21.88	21.99
HSUPA	Subtest 1	21.5	20.40	20.41	20.51
	Subtest 2	21.0	20.02	20.03	20.20
	Subtest 3	21.0	19.49	19.48	19.44
	Subtest 4	21.5	20.18	20.51	20.33
	Subtest 5	21.5	20.66	20.80	20.50
DC-HSDPA	Subtest 1	23.5	22.70	22.73	22.87
	Subtest 2	23.0	22.44	22.44	22.64
	Subtest 3	22.5	21.69	21.73	21.94
	Subtest 4	22.5	21.69	21.79	21.91

Table 36: Conducted power measurement results of UMTS Band IV(Main Antenna)

Note:

- 1) The conducted power of UMTS Band IV is measured with RMS detector.
- 2) The bolded 12.2kbps RMC mode was selected for SAR testing(the primary mode).
- 3) Per KDB941225 D01v03r01, 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.

7.1.19 Conducted power measurements of UMTS Band V(Main Antenna)

UMTS Band V		Tune-up	Conducted Power (dBm)		
			4132CH	4182CH	4233CH
WCDMA	12.2kbps RMC	24.5	23.99	23.90	23.88
	12.2kbps AMR	24.5	23.91	23.98	23.78
HSDPA	Subtest 1	24.0	23.45	23.31	23.45
	Subtest 2	23.5	23.17	23.05	23.21
	Subtest 3	23.0	22.37	22.26	22.39
	Subtest 4	23.0	22.36	22.25	22.40
HSUPA	Subtest 1	22.0	20.66	20.56	20.84
	Subtest 2	21.0	20.47	20.25	20.40
	Subtest 3	22.5	20.74	20.55	20.71
	Subtest 4	21.0	20.83	20.84	20.95
	Subtest 5	22.9	21.04	20.97	21.02
DC-HSDPA	Subtest 1	24.0	23.20	23.14	23.26
	Subtest 2	23.5	22.99	22.90	23.02
	Subtest 3	23.0	22.20	22.17	22.17
	Subtest 4	23.0	22.18	22.02	22.16

Table 37: Conducted power measurement results of UMTS Band V(Main Antenna)

Note:

- 1) The conducted power of UMTS Band V is measured with RMS detector.
- 2) The bolded 12.2kbps RMC mode was selected for SAR testing(the primary mode).
- 3) Per KDB941225 D01v03, 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.

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

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18607CH	18900CH	19193CH
1.4MHz	QPSK	1	0	22.7	21.95	22.32	22.25
		1	3	22.7	21.98	22.32	22.10
		1	5	22.7	21.86	22.19	21.89
		3	0	22.7	21.99	22.25	22.18
		3	2	22.7	21.95	22.27	22.07
		3	3	22.7	21.96	22.23	21.97
		6	0	22.5	21.03	21.30	21.16
	16QAM	1	0	22.5	21.09	21.34	21.51
		1	3	22.5	21.12	21.36	21.30
		1	5	22.5	21.05	21.22	21.16
		3	0	22.5	21.05	21.33	21.13
		3	2	22.5	21.11	21.23	21.04
		3	3	22.5	21.06	21.15	20.96
		6	0	21.5	19.94	20.29	20.12
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18615CH	18900CH	19185CH
3MHz	QPSK	1	0	22.7	21.87	22.12	22.05
		1	7	22.7	22.05	22.39	22.29
		1	14	22.7	21.76	22.04	21.71
		8	0	22.5	21.02	21.23	21.29
		8	4	22.5	21.02	21.29	21.29
		8	7	22.5	21.00	21.21	21.11
		15	0	22.5	21.04	21.20	21.21
	16QAM	1	0	22.5	21.01	21.25	21.17
		1	7	22.5	21.20	21.57	21.44
		1	14	22.5	20.78	21.27	20.90
		8	0	21.5	20.00	20.14	20.26
		8	4	21.5	20.01	20.22	20.29
		8	7	21.5	19.93	20.18	20.17
		15	0	21.5	19.81	20.10	20.15

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18625CH	18900CH	19175CH
5MHz	QPSK	1	0	22.7	21.94	21.97	21.81
		1	13	22.7	22.12	22.41	22.40
		1	24	22.7	21.62	21.95	21.72
		12	0	22.5	21.07	21.16	21.15
		12	6	22.5	21.17	21.40	21.31
		12	13	22.5	20.93	21.23	21.22
		25	0	22.5	21.01	21.22	21.06
	16QAM	1	0	22.5	21.04	21.14	21.03
		1	13	22.5	21.25	21.55	21.54
		1	24	22.5	20.74	21.10	20.97
		12	0	21.5	19.97	20.09	20.05
		12	6	21.5	20.02	20.26	20.22
		12	13	21.5	19.79	20.10	20.15
		25	0	21.5	19.88	20.04	19.90
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18650CH	18900CH	19150CH
10MHz	QPSK	1	0	22.7	21.83	21.91	21.55
		1	25	22.7	22.00	22.43	22.01
		1	49	22.7	21.30	21.91	21.87
		25	0	22.5	21.02	21.19	20.92
		25	13	22.5	20.96	21.28	21.04
		25	25	22.5	20.72	21.15	20.97
		50	0	22.5	20.89	21.02	20.70
	16QAM	1	0	22.5	21.13	21.17	20.81
		1	25	22.5	21.31	21.72	21.29
		1	49	22.5	20.58	21.14	21.13
		25	0	21.5	19.89	20.02	19.86
		25	13	21.5	19.84	20.12	19.89
		25	25	21.5	19.61	19.99	19.79
		50	0	21.5	19.74	19.86	19.56

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18675CH	18900CH	19125CH
15MHz	QPSK	1	0	22.7	21.68	21.57	21.50
		1	38	22.7	21.78	22.41	21.87
		1	74	22.7	21.08	21.43	21.68
		36	0	22.5	20.91	20.96	20.88
		36	18	22.5	20.84	21.10	20.96
		36	39	22.5	20.58	20.93	20.83
		75	0	22.5	20.64	21.07	20.66
	16QAM	1	0	22.5	20.99	20.76	20.82
		1	38	22.5	21.09	21.53	21.19
		1	74	22.5	20.54	20.57	20.96
		36	0	21.5	19.78	19.79	19.90
		36	18	21.5	19.70	19.95	19.92
		36	39	21.5	19.54	19.78	19.71
		75	0	21.5	19.59	19.93	19.55
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18700CH	18900CH	19100CH
20MHz	QPSK	1	0	22.7	21.66	21.42	21.48
		1	50	22.7	21.68	22.45	21.75
		1	99	22.7	21.04	21.37	21.65
		50	0	22.5	20.74	20.89	20.67
		50	25	22.5	20.58	21.12	20.89
		50	50	22.5	20.53	20.80	20.51
		100	0	22.5	20.53	20.88	20.59
	16QAM	1	0	22.5	20.99	20.87	20.94
		1	50	22.5	20.99	21.90	21.26
		1	99	22.5	20.54	20.84	21.06
		50	0	21.5	19.60	19.73	19.64
		50	25	21.5	19.56	19.84	19.84
		50	50	21.5	19.54	19.65	19.52
		100	0	21.5	19.53	19.73	19.57

Table 38: Conducted power measurement results of LTE Band II(Main Antenna)

7.1.21 Conducted power measurements of LTE Band IV(Main Antenna)

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					19957CH	20175CH	20393CH
1.4MHz	QPSK	1	0	22.8	21.92	22.15	22.33
		1	3	22.8	21.98	22.13	22.37
		1	5	22.8	21.91	21.98	22.21
		3	0	22.8	21.99	22.16	22.27
		3	2	22.8	22.00	22.16	22.29
		3	3	22.8	21.98	22.11	22.26
		6	0	22.5	20.94	21.16	21.41
	16QAM	1	0	22.5	21.42	21.16	21.27
		1	3	22.5	21.45	21.32	21.39
		1	5	22.5	21.45	20.99	21.20
		3	0	22.5	21.04	21.34	21.53
		3	2	22.5	21.10	21.33	21.44
		3	3	22.5	21.09	21.26	21.40
		6	0	21.5	21.09	20.02	20.49
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					19965CH	20175CH	20385CH
3MHz	QPSK	1	0	22.8	21.85	22.02	22.27
		1	7	22.8	22.16	22.17	22.39
		1	14	22.8	21.93	21.88	22.11
		8	0	22.5	21.02	21.16	21.39
		8	4	22.5	21.10	21.18	21.41
		8	7	22.5	21.01	21.11	21.31
		15	0	22.5	21.04	21.13	21.40
	16QAM	1	0	22.5	20.89	21.40	21.42
		1	7	22.5	21.23	21.57	21.57
		1	14	22.5	20.98	21.05	21.30
		8	0	21.5	19.97	20.04	20.30
		8	4	21.5	20.07	20.05	20.36
		8	7	21.5	19.98	19.99	20.27
		15	0	21.5	19.94	19.94	20.34

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					19975CH	20175CH	20375CH
5MHz	QPSK	1	0	22.8	20.94	21.14	21.35
		1	13	22.8	21.37	21.29	21.69
		1	24	22.8	20.89	20.83	21.34
		12	0	22.5	21.14	21.19	21.47
		12	6	22.5	21.24	21.22	21.53
		12	13	22.5	21.08	21.05	21.33
		25	0	22.5	21.02	21.15	21.60
	16QAM	1	0	22.5	21.39	21.28	21.44
		1	13	22.5	21.42	21.42	21.75
		1	24	22.5	21.41	20.97	21.33
		12	0	21.5	21.04	20.05	20.39
		12	6	21.5	20.95	20.10	20.47
		12	13	21.5	20.89	19.88	20.30
		25	0	21.5	19.80	19.95	20.49
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20000CH	20175CH	20350CH
10MHz	QPSK	1	0	22.8	20.83	21.12	21.06
		1	25	22.8	21.37	21.32	21.58
		1	49	22.8	20.97	20.89	21.33
		25	0	22.5	21.09	21.29	21.25
		25	13	22.5	21.17	21.19	21.33
		25	25	22.5	21.10	21.06	21.39
		50	0	22.5	21.11	21.10	21.35
	16QAM	1	0	22.5	21.26	21.33	21.15
		1	25	22.5	21.28	21.53	21.61
		1	49	22.5	21.55	21.11	21.28
		25	0	21.5	19.81	20.08	20.04
		25	13	21.5	19.87	20.00	20.16
		25	25	21.5	19.95	19.87	20.24
		50	0	21.5	19.88	19.88	20.12

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20025CH	20175CH	20325CH
15MHz	QPSK	1	0	22.8	20.95	21.20	20.95
		1	38	22.8	21.40	21.30	21.45
		1	74	22.8	21.09	20.82	21.40
		36	0	22.5	21.17	21.34	21.11
		36	18	22.5	21.26	21.29	21.32
		36	39	22.5	21.21	21.09	21.59
		75	0	22.5	21.20	21.17	21.31
	16QAM	1	0	22.5	21.28	21.34	21.44
		1	38	22.5	21.47	21.51	21.62
		1	74	22.5	21.52	21.58	21.68
		36	0	21.5	19.76	19.88	19.89
		36	18	21.5	19.82	19.95	19.94
		36	39	21.5	19.92	20.03	20.04
		75	0	21.5	19.85	19.94	19.91
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20050CH	20175CH	20300CH
20MHz	QPSK	1	0	22.8	20.93	21.20	21.07
		1	50	22.8	21.43	21.30	21.45
		1	99	22.8	21.01	20.83	21.27
		50	0	22.5	21.23	21.30	21.02
		50	25	22.5	21.32	21.16	21.10
		50	50	22.5	21.24	21.04	21.39
		100	0	22.5	21.24	21.10	21.25
	16QAM	1	0	22.5	21.32	21.50	21.41
		1	50	22.5	21.67	21.67	21.61
		1	99	22.5	21.36	21.15	21.53
		50	0	21.5	20.00	20.13	19.86
		50	25	21.5	20.12	20.01	19.95
		50	50	21.5	20.05	19.91	20.24
		100	0	21.5	20.01	19.97	20.11

Table 39: Conducted power measurement results of LTE Band IV(Main Antenna)

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

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20407CH	20525CH	20643CH
1.4MHz	QPSK	1	0	23.5	21.66	22.27	22.29
		1	3	23.5	21.75	22.26	22.12
		1	5	23.5	21.62	22.09	21.71
		3	0	22.5	21.68	22.28	22.30
		3	2	22.5	21.72	22.28	22.06
		3	3	22.5	21.67	22.24	21.90
		6	0	22.5	21.18	21.76	21.66
	16QAM	1	0	22.5	21.93	21.92	22.10
		1	3	22.5	22.04	21.89	21.90
		1	5	22.5	22.13	21.70	21.47
		3	0	22.5	21.64	21.80	21.98
		3	2	22.5	21.67	21.71	21.63
		3	3	22.5	21.70	21.85	21.48
		6	0	21.5	21.48	20.79	20.76
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20415CH	20525CH	20635CH
3MHz	QPSK	1	0	23.5	21.52	22.13	22.20
		1	7	23.5	21.89	22.29	22.30
		1	14	23.5	21.72	21.78	21.54
		8	0	22.5	21.17	21.82	21.94
		8	4	22.5	21.32	21.73	21.97
		8	7	22.5	21.35	21.60	21.71
		15	0	22.5	21.27	21.68	21.82
	16QAM	1	0	22.5	21.11	21.86	21.85
		1	7	22.5	21.48	22.07	22.20
		1	14	22.5	21.43	21.53	21.19
		8	0	21.5	20.17	20.79	20.86
		8	4	21.5	20.28	20.71	20.93
		8	7	21.5	20.26	20.59	20.71
		15	0	21.5	20.11	20.64	20.70

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20425CH	20525CH	20625CH
5MHz	QPSK	1	0	23.5	21.55	22.30	21.89
		1	13	23.5	22.13	22.30	22.30
		1	24	23.5	21.90	21.73	21.58
		12	0	22.5	21.26	21.76	21.63
		12	6	22.5	21.46	21.82	21.85
		12	13	22.5	21.48	21.41	21.75
		25	0	22.5	21.34	21.73	21.72
	16QAM	1	0	22.5	21.01	22.00	21.58
		1	13	22.5	21.60	22.07	22.21
		1	24	22.5	21.40	21.43	21.29
		12	0	21.5	20.27	20.71	20.63
		12	6	21.5	20.49	20.78	20.82
		12	13	21.5	20.51	20.36	20.71
		25	0	21.5	20.24	20.64	20.61
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20450CH	20525CH	20600CH
10MHz	QPSK	1	0	23.5	21.57	22.10	21.64
		1	25	23.5	22.26	22.31	22.15
		1	49	23.5	21.89	21.44	21.59
		25	0	22.5	21.77	21.73	21.49
		25	13	22.5	21.64	21.71	21.39
		25	25	22.5	21.66	21.35	21.43
		50	0	22.5	21.49	21.68	21.33
	16QAM	1	0	22.5	21.16	21.95	21.39
		1	25	22.5	22.21	22.14	21.86
		1	49	22.5	21.76	21.30	21.28
		25	0	21.5	20.20	20.63	20.42
		25	13	21.5	20.56	20.62	20.30
		25	25	21.5	20.58	20.25	20.34
		50	0	21.5	20.39	20.58	20.23

Table 40: Conducted power measurement results of LTE Band V(Main Antenna)

7.1.23 Conducted power measurements of LTE Band VII(Main Antenna)

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20775CH	21100CH	21425CH
5MHz	QPSK	1	0	23.0	22.29	22.35	22.26
		1	13	23.0	22.35	22.34	22.34
		1	24	23.0	21.94	21.94	22.11
		12	0	22.0	21.68	21.67	21.65
		12	6	22.0	21.59	21.59	21.76
		12	13	22.0	21.37	21.38	21.59
		25	0	22.0	21.53	21.54	21.68
	16QAM	1	0	22.0	21.56	21.67	21.57
		1	13	22.0	21.69	21.65	21.84
		1	24	22.0	21.27	21.19	21.38
		12	0	21.0	20.66	20.84	20.88
		12	6	21.0	20.69	20.76	20.93
		12	13	21.0	20.53	20.62	20.79
		25	0	21.0	20.54	20.74	20.81
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20800CH	21100CH	21400CH
10MHz	QPSK	1	0	23.0	21.90	21.95	21.81
		1	25	23.0	22.04	22.03	22.16
		1	49	23.0	21.52	21.53	21.80
		25	0	22.0	21.69	21.65	21.52
		25	13	22.0	21.61	21.58	21.59
		25	25	22.0	21.37	21.34	21.61
		50	0	22.0	21.54	21.52	21.58
	16QAM	1	0	22.0	21.48	21.69	21.56
		1	25	22.0	21.69	21.78	21.95
		1	49	22.0	21.38	21.33	21.63
		25	0	21.0	20.48	20.80	20.66
		25	13	21.0	20.50	20.74	20.73
		25	25	21.0	20.40	20.52	20.70
		50	0	21.0	20.40	20.66	20.63

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20825CH	21100CH	21375CH
15MHz	QPSK	1	0	23.0	21.51	21.78	21.46
		1	38	23.0	21.79	21.96	22.06
		1	74	23.0	21.47	21.28	21.69
		36	0	22.0	21.25	21.54	21.43
		36	18	22.0	21.30	21.54	21.53
		36	39	22.0	21.27	21.39	21.53
		75	0	22.0	21.34	21.48	21.47
	16QAM	1	0	22.0	21.30	21.70	21.31
		1	38	22.0	21.60	21.92	21.77
		1	74	22.0	21.39	21.37	21.48
		36	0	21.0	20.42	20.67	20.57
		36	18	21.0	20.48	20.75	20.71
		36	39	21.0	20.40	20.50	20.67
		75	0	21.0	20.43	20.65	20.57
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20850CH	21100CH	21350CH
20MHz	QPSK	1	0	23.0	21.99	22.24	21.89
		1	50	23.0	22.17	22.36	22.28
		1	99	23.0	22.16	21.84	22.20
		50	0	22.0	21.40	21.70	21.24
		50	25	22.0	21.39	21.63	21.40
		50	50	22.0	21.38	21.37	21.54
		100	0	22.0	21.35	21.50	21.44
	16QAM	1	0	22.0	21.81	21.80	21.46
		1	50	22.0	21.90	21.87	21.88
		1	99	22.0	21.38	21.37	21.78
		50	0	21.0	20.75	20.75	20.45
		50	25	21.0	20.70	20.77	20.60
		50	50	21.0	20.50	20.46	20.69
		100	0	21.0	20.66	20.63	20.61

Table 41: Conducted power measurement results of LTE Band VII(Main Antenna)

7.1.24 Conducted power measurements of LTE Band XII(Main Antenna)

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					23107CH	23095CH	23173CH
1.4MHz	QPSK	1	0	23.5	22.17	22.65	22.44
		1	3	23.5	22.32	22.78	22.30
		1	5	23.5	22.27	22.66	21.91
		3	0	23.5	22.23	22.67	22.50
		3	2	23.5	22.35	22.74	22.29
		3	3	23.5	22.31	22.69	22.15
		6	0	22.5	21.77	22.24	21.83
	16QAM	1	0	22.5	21.84	22.29	22.08
		1	3	22.5	21.90	22.42	21.96
		1	5	22.5	21.99	22.36	21.58
		3	0	22.5	21.75	22.25	22.04
		3	2	22.5	21.86	22.31	21.80
		3	3	22.5	21.80	22.23	21.73
		6	0	21.5	20.75	21.28	20.97
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					23025CH	23095CH	23165CH
3MHz	QPSK	1	0	23.5	21.96	22.43	22.53
		1	7	23.5	22.48	22.81	22.74
		1	14	23.5	22.12	22.44	21.72
		8	0	22.5	21.75	22.17	22.19
		8	4	22.5	21.97	22.26	22.17
		8	7	22.5	21.82	22.16	21.89
		15	0	22.5	21.79	22.19	22.09
	16QAM	1	0	22.5	21.41	21.93	22.11
		1	7	22.5	22.12	22.44	22.38
		1	14	22.5	21.62	22.02	21.22
		8	0	21.5	20.69	21.16	21.15
		8	4	21.5	20.94	21.27	21.18
		8	7	21.5	20.75	21.15	20.88
		15	0	21.5	20.58	21.14	21.09

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					23035CH	23095CH	23155CH
5MHz	QPSK	1	0	23.5	21.92	22.43	22.57
		1	13	23.5	22.49	22.81	22.79
		1	24	23.5	22.06	22.42	21.71
		12	0	22.5	21.77	22.11	22.27
		12	6	22.5	22.00	22.22	22.31
		12	13	22.5	21.95	22.10	21.96
		25	0	22.5	21.83	22.15	22.05
	16QAM	1	0	22.5	21.77	21.89	22.22
		1	13	22.5	22.28	22.36	22.42
		1	24	22.5	21.94	21.96	21.54
		12	0	21.5	20.69	21.00	21.28
		12	6	21.5	20.94	21.20	21.35
		12	13	21.5	20.91	21.08	21.02
		25	0	21.5	20.71	21.07	21.03
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					23060CH	23095CH	23130CH
10MHz	QPSK	1	0	23.5	21.82	22.05	22.25
		1	25	23.5	22.57	22.80	22.86
		1	49	23.5	22.01	22.05	21.59
		25	0	22.5	21.73	21.98	22.01
		25	13	22.5	21.96	22.16	22.25
		25	25	22.5	21.86	21.91	21.83
		50	0	22.5	21.86	21.97	22.04
	16QAM	1	0	22.5	21.62	21.78	21.97
		1	25	22.5	22.38	22.48	22.45
		1	49	22.5	21.84	21.79	21.40
		25	0	21.5	20.64	20.88	20.93
		25	13	21.5	20.89	21.07	21.18
		25	25	21.5	20.77	20.81	20.77
		50	0	21.5	20.75	20.86	20.95

Table 42: Conducted power measurement results of LTE Band XII(Main Antenna)

7.1.25 Conducted power measurements of LTE Band XVII(Main Antenna)

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					23755CH	23790CH	23825CH
5MHz	QPSK	1	0	23.5	22.18	22.42	22.50
		1	13	23.5	22.74	22.80	22.84
		1	24	23.5	22.35	22.35	22.01
		12	0	22.5	22.03	22.23	22.24
		12	6	22.5	22.24	22.37	22.35
		12	13	22.5	22.15	22.06	22.11
		25	0	22.5	22.10	22.21	22.08
	16QAM	1	0	22.5	21.78	22.09	22.06
		1	13	22.5	22.27	22.44	22.37
		1	24	22.5	21.95	22.02	21.56
		12	0	21.5	20.97	21.23	21.20
		12	6	21.5	21.13	21.38	21.32
		12	13	21.5	21.11	21.00	21.14
		25	0	21.5	20.96	21.15	21.01
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					23780CH	23790CH	23800CH
10MHz	QPSK	1	0	23.5	22.10	22.14	22.24
		1	25	23.5	22.84	22.83	22.81
		1	49	23.5	22.12	22.11	21.89
		25	0	22.5	21.98	21.98	22.01
		25	13	22.5	22.30	22.20	22.28
		25	25	22.5	21.98	21.92	21.82
		50	0	22.5	22.00	21.97	21.99
	16QAM	1	0	22.5	21.69	22.00	21.94
		1	25	22.5	22.43	22.46	22.48
		1	49	22.5	21.79	21.98	21.59
		25	0	21.5	20.96	20.95	20.98
		25	13	21.5	21.23	21.18	21.22
		25	25	21.5	20.90	20.89	20.81
		50	0	21.5	20.86	20.89	20.92

Table 43: Conducted power measurement results of LTE Band XVII(Main Antenna)

7.1.26 Conducted power measurements of LTE Band XXVI(Main Antenna)

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					26697CH	26865CH	27033CH
1.4MHz	QPSK	1	0	23.5	22.49	22.94	22.94
		1	3	23.5	22.96	22.96	22.30
		1	5	23.5	22.84	22.71	21.83
		3	0	23.5	22.66	22.95	22.78
		3	2	23.5	22.61	22.82	22.56
		3	3	23.5	22.59	23.01	22.10
		6	0	23.5	22.54	23.02	22.41
	16QAM	1	0	23.0	21.94	22.36	22.21
		1	3	23.0	22.18	22.71	21.54
		1	5	23.0	22.22	22.35	21.39
		3	0	23.0	21.99	22.57	22.14
		3	2	23.0	22.40	22.50	21.93
		3	3	23.0	22.30	22.34	21.53
		6	0	22.0	21.14	21.23	21.24
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					26705CH	26865CH	27025CH
3MHz	QPSK	1	0	23.5	22.60	22.60	22.94
		1	7	23.5	22.90	22.92	23.04
		1	14	23.5	22.60	22.89	21.67
		8	0	23.5	22.90	22.94	22.98
		8	4	23.5	22.83	22.80	23.02
		8	7	23.5	22.94	22.96	22.42
		15	0	23.5	22.96	22.84	22.89
	16QAM	1	0	23.0	22.10	22.35	22.43
		1	7	23.0	22.34	22.63	22.66
		1	14	23.0	22.38	22.53	21.60
		8	0	22.0	20.98	21.36	21.05
		8	4	22.0	21.57	21.50	21.41
		8	7	22.0	21.50	21.37	21.20
		15	0	22.0	21.18	21.33	21.44

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					26715CH	26865CH	27015CH
5MHz	QPSK	1	0	23.5	22.55	22.33	22.38
		1	13	23.5	23.03	22.69	23.01
		1	24	23.5	22.14	22.63	21.63
		12	0	23.5	22.70	22.75	22.60
		12	6	23.5	22.78	22.66	22.93
		12	13	23.5	22.51	22.85	22.53
		25	0	23.5	22.55	22.52	22.88
	16QAM	1	0	23.0	22.28	21.92	21.77
		1	13	23.0	22.58	22.20	22.84
		1	24	23.0	21.76	22.30	21.35
		12	0	22.0	21.34	21.28	21.19
		12	6	22.0	21.55	21.22	21.38
		12	13	22.0	21.10	21.15	21.28
		25	0	22.0	21.25	21.12	21.23
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					26750CH	26865CH	26990CH
10MHz	QPSK	1	0	23.5	22.39	22.02	22.06
		1	25	23.5	22.54	22.69	22.60
		1	49	23.5	21.64	22.37	21.61
		25	0	23.5	22.53	22.63	22.49
		25	13	23.5	22.01	22.73	22.52
		25	25	23.5	21.71	22.64	22.46
		50	0	23.5	22.14	22.67	22.34
	16QAM	1	0	23.0	21.91	21.48	21.91
		1	25	23.0	21.80	22.47	22.15
		1	49	23.0	20.99	22.21	21.46
		25	0	22.0	20.92	20.94	20.83
		25	13	22.0	20.61	20.94	21.12
		25	25	22.0	20.15	21.20	21.06
		50	0	22.0	20.58	21.29	20.87

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					26775CH	26865CH	26965CH
15MHz	QPSK	1	0	23.5	22.28	21.50	22.49
		1	38	23.5	22.09	22.81	22.66
		1	74	23.5	21.69	21.82	21.86
		36	0	23.5	22.42	21.93	22.58
		36	18	23.5	22.26	22.66	22.39
		36	39	23.5	21.77	22.63	22.28
		75	0	23.5	22.04	22.25	22.50
	16QAM	1	0	23.0	21.76	20.97	21.14
		1	38	23.0	21.78	22.51	22.04
		1	74	23.0	21.24	21.31	21.19
		36	0	22.0	20.77	20.56	21.16
		36	18	22.0	20.80	21.08	20.94
		36	39	22.0	20.27	20.85	20.70
		75	0	22.0	20.54	20.99	20.86

Table 44: Conducted power measurement results of LTE Band XXVI(Main Antenna)

7.1.27 Conducted power measurements of LTE Band XXXVIII(Main Antenna)

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					37775CH	38000CH	38225CH
5MHz	QPSK	1	0	23.5	22.19	22.53	22.88
		1	13	23.5	22.56	22.66	22.88
		1	24	23.5	22.29	22.26	22.45
		12	0	23.5	22.45	22.58	23.00
		12	6	23.5	22.55	22.65	22.85
		12	13	23.5	22.45	22.51	22.68
		25	0	23.5	22.48	22.56	22.80
	16QAM	1	0	23.0	22.24	22.41	22.75
		1	13	23.0	22.55	22.68	22.75
		1	24	23.0	22.29	22.69	22.55
		12	0	22.0	21.55	21.67	21.96
		12	6	22.0	21.65	21.74	21.81
		12	13	22.0	21.56	21.57	21.68
		25	0	22.0	21.52	21.64	21.83
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					37800CH	38000CH	38200CH
10MHz	QPSK	1	0	23.5	22.29	22.48	22.67
		1	25	23.5	22.92	22.64	23.01
		1	49	23.5	22.47	22.26	22.39
		25	0	23.5	22.55	22.58	22.81
		25	13	23.5	22.74	22.73	22.91
		25	25	23.5	22.66	22.52	22.68
		50	0	23.5	22.58	22.45	22.63
	16QAM	1	0	23.0	22.09	22.41	22.63
		1	25	23.0	22.77	22.49	22.88
		1	49	23.0	22.35	22.11	22.12
		25	0	22.0	21.64	21.61	21.90
		25	13	22.0	21.81	21.72	21.88
		25	25	22.0	21.73	21.53	21.70
		50	0	22.0	21.64	21.50	21.66

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					37825CH	38000CH	38175CH
15MHz	QPSK	1	0	23.5	22.01	22.29	22.29
		1	38	23.5	22.81	22.70	22.95
		1	74	23.5	22.32	22.00	22.19
		36	0	23.5	22.55	22.60	22.95
		36	18	23.5	22.76	22.75	22.95
		36	39	23.5	22.71	22.51	22.64
		75	0	23.5	22.66	22.59	22.74
	16QAM	1	0	23.0	21.90	22.17	22.28
		1	38	23.0	22.68	22.44	22.80
		1	74	23.0	22.16	21.91	22.00
		36	0	22.0	21.65	21.62	21.92
		36	18	22.0	21.85	21.73	21.91
		36	39	22.0	21.69	21.49	21.61
		75	0	22.0	21.67	21.60	21.76
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					37850CH	38000CH	38150CH
20MHz	QPSK	1	0	23.5	22.44	22.72	22.66
		1	50	23.5	23.09	22.89	23.04
		1	99	23.5	22.49	22.49	22.51
		50	0	23.5	22.82	22.76	23.02
		50	25	23.5	22.91	22.67	23.22
		50	50	23.5	22.80	22.68	22.65
		100	0	23.5	22.81	22.82	22.85
	16QAM	1	0	23.0	22.64	22.77	22.65
		1	50	23.0	22.88	22.96	22.88
		1	99	23.0	22.67	22.56	22.46
		50	0	22.0	21.81	20.84	21.91
		50	25	22.0	21.93	21.69	21.99
		50	50	22.0	21.84	21.71	21.62
		100	0	22.0	21.78	21.75	21.86

Table 45: Conducted power measurement results of LTE Band XXXVIII(Main Antenna)

7.1.28 Conducted power measurements of LTE Band XLI(Main Antenna)

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					40265CH	40740CH	41215CH
5MHz	QPSK	1	0	23.0	21.56	21.62	21.17
		1	13	23.0	21.94	21.63	21.17
		1	24	23.0	21.54	21.29	21.13
		12	0	22.5	21.75	21.92	21.36
		12	6	22.5	21.82	21.95	21.16
		12	13	22.5	21.72	21.42	21.28
		25	0	22.5	21.89	21.50	21.25
	16QAM	1	0	22.5	22.01	21.82	21.46
		1	13	22.5	21.95	21.79	21.82
		1	24	22.5	21.51	21.21	21.32
		12	0	21.5	20.88	20.72	20.35
		12	6	21.5	20.92	20.89	20.39
		12	13	21.5	20.92	20.81	19.99
		25	0	21.5	20.96	20.57	20.15
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					40290CH	40740CH	41190CH
10MHz	QPSK	1	0	23.0	21.75	21.65	21.26
		1	25	23.0	22.01	21.70	21.61
		1	49	23.0	21.89	21.19	21.14
		25	0	22.5	21.87	21.64	21.29
		25	13	22.5	21.91	21.85	21.33
		25	25	22.5	22.10	21.42	21.49
		50	0	22.5	21.70	21.55	21.45
	16QAM	1	0	22.5	21.64	21.43	21.20
		1	25	22.5	21.88	21.70	21.55
		1	49	22.5	21.84	21.29	21.13
		25	0	21.5	20.82	20.58	20.37
		25	13	21.5	21.19	20.59	20.44
		25	25	21.5	20.80	20.68	20.38
		50	0	21.5	21.07	20.55	20.21

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					40315CH	40740CH	41165CH
15MHz	QPSK	1	0	23.0	21.55	21.56	21.16
		1	38	23.0	22.08	21.84	21.47
		1	74	23.0	21.54	21.34	21.14
		36	0	22.5	21.76	21.82	21.38
		36	18	22.5	22.07	21.88	21.43
		36	39	22.5	22.06	21.69	21.19
		75	0	22.5	21.99	21.79	21.38
	16QAM	1	0	22.5	21.65	21.34	21.22
		1	38	22.5	22.15	21.76	21.69
		1	74	22.5	21.77	21.03	21.36
		36	0	21.5	20.82	20.48	20.45
		36	18	21.5	21.13	20.75	20.29
		36	39	21.5	21.19	20.54	20.26
		75	0	21.5	20.78	20.61	20.10
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					40340CH	40740CH	41140CH
20MHz	QPSK	1	0	23.0	21.85	21.81	21.30
		1	50	23.0	22.15	21.83	21.34
		1	99	23.0	21.71	21.31	21.06
		50	0	22.5	21.91	21.73	21.42
		50	25	22.5	22.07	21.84	21.46
		50	50	22.5	22.03	21.50	21.13
		100	0	22.5	21.94	21.64	21.47
	16QAM	1	0	22.5	22.02	21.38	21.22
		1	50	22.5	22.34	21.73	21.59
		1	99	22.5	22.07	21.22	21.07
		50	0	21.5	20.88	20.73	20.23
		50	25	21.5	20.96	20.61	20.35
		50	50	21.5	21.12	20.60	19.99
		100	0	21.5	20.95	20.76	20.31

Table 46: Conducted power measurement results of LTE Band XLI(Main Antenna)

7.1.29 Conducted power measurements of Downlink LTE CA

In this section, 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: a R&S Radio Communication Tester CMW500 was used.

Initial Conditions						
Test Environment as specified in TS 36.508[7] subclause 4.1				NC[, TL/VL, TL/VH, TH/VL, TH/VH]		
Test Frequencies as specified in TS36.508 [7] subclause 4.3.1 for different CA bandwidth classes.				A: Mid range for PCC and SCC		
Test CC Combination setting (N_{RB_agg}) as specified in subclause 5.4.2A.1 for the CA Configuration				Lowest N_{RB_agg} Highest N_{RB_agg}		
Test Parameters for CA Configurations						
CA Configuration / N_{RB_agg}		DL Allocation	CC MOD	UL Allocation		
PCC N_{RB}	SCCs N_{RB}	PCC & SCC RB allocation		N_{RB_alloc}	PCC RB allocations (L_{CRB} @ RB_{start})	
6	25	N/A for this test	QPSK	5	P_5@0	-
15	25		QPSK	4	P_4@0	-
25	50		QPSK	8	P_8@0	-
50	75		QPSK	12	P_12@0	-
75	100		QPSK	16	P_16@0	-
100	75		QPSK	18	P_18@0	-
Note 1: CA Configuration Test CC Combination settings are checked separately for each CA Configuration, which applicable aggregated channel bandwidths are specified in Table 5.4.2A.1-1						



Table 47: Conducted power measurement setup of LTE CA per 3GPP TS 36.521-1 V12.6.0

A) The conducted power measurement results of downlink LTE CA Conduted Power are as below(Main antenna):

DL LTE CA Class	PCC								SCC			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)	Rel 10 DL LTE CA Tx Power(dBm)
CA_7C	7	20	1	50	100	0	21350	3350	7	20	3152	22.28	22.31
CA_38C	38	20	50	0	100	0	38150	2610	38	20	37952	23.22	23.20
CA_41C	41	20	1	50	100	0	40340	40340	41	20	40538	22.15	22.18
CA_7A-28A	7	10	1	25	50	0	21400	3400	28	10	9410	22.16	22.20
CA_3A-7A	7	10	1	25	50	0	21400	3400	3	10	1900	22.16	22.19
CA_7A-20A	7	10	1	25	50	0	21400	3400	20	10	6400	22.16	22.12
CA_3A-5A	5	10	1	25	50	0	20450	2450	3	10	1575	22.26	22.25
CA_4A-17A	4	10	1	25	50	0	20350	2350	17	10	5790	21.61	21.55
	17	10	1	25	50	0	23790	5790	4	10	2175	22.83	22.88
CA_2A-17A	2	10	1	25	50	0	18900	900	17	10	5790	22.43	22.44
	17	10	1	25	50	0	23790	5790	2	10	900	22.83	22.80

Note: Testing is not required in bands or modes not intended/allowed for US operation.

B) The conducted power measurement results of downlink LTE CA Conduted Power are as below (Second antenna):

DL LTE CA Class	PCC								SCC			Power	
	PCC Band	PCC Bandwidth	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	SCC DL Channel	Rel 8 LTE Tx Power(dBm)	Rel 10 DL LTE CA
CA_7C	7	20	1	50	100	0	21350	3350	7	20	3152	22.23	22.25
CA_38C	38	20	1	50	100	0	38150	2610	38	20	37952	23.47	23.50
CA_41C	41	20	1	50	100	0	40340	40340	41	20	40538	22.36	22.41
CA_7A-28A	7	10	1	25	50	0	21400	3400	28	10	9410	22.07	22.03
CA_3A-7A	7	10	1	25	50	0	21400	3400	3	10	1900	22.07	22.08
CA_7A-20A	7	10	1	25	50	0	21400	3400	20	10	6400	22.07	22.10
CA_3A-5A	5	10	1	25	50	0	20450	2450	3	10	1575	22.45	22.41
CA_4A-17A	4	10	1	25	50	0	20175	2175	17	10	5790	21.71	21.75
	17	10	1	25	50	0	23790	5790	4	10	2175	22.98	22.94
CA_2A-17A	2	10	1	25	50	0	18900	900	17	10	5790	22.55	22.62
	17	10	1	25	50	0	23790	5790	2	10	900	22.98	23.01

Note: Testing is not required in bands or modes not intended/allowed for US operation.

7.1.30 Conducted power measurements of WiFi 2.4G

Mode	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)
802.11b	1	2412	1	17.15	15.16	Yes
	6	2437		17.15	15.66	Yes
	11	2462		17.15	15.54	Yes
802.11g	1	2412	6	17.30	15.42	Yes
	6	2437		17.30	16.37	Yes
	11	2462		17.30	16.28	Yes
802.11n 20M	1	2412	6.5	16.00	Not Required	No
	6	2437		16.00	Not Required	No
	11	2462		16.00	Not Required	No
802.11n 40M	3	2422	13.5	14.00	Not Required	No
	6	2437		14.00	Not Required	No
	9	2452		14.00	Not Required	No

Table 48: Conducted power measurement results of WiFi 2.4G(Full power level).

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

Mode	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)
802.11b	1	2412	1	13.30	11.85	Yes
	6	2437		13.30	12.52	Yes
	11	2462		13.30	12.20	Yes
802.11g	1	2412	6	13.30	Not Required	No
	6	2437		13.30	Not Required	No
	11	2462		13.30	Not Required	No
802.11n 20M	1	2412	6.5	13.30	Not Required	No
	6	2437		13.30	Not Required	No
	11	2462		13.30	Not Required	No
802.11n 40M	3	2422	13.5	13.30	Not Required	No
	6	2437		13.30	Not Required	No
	9	2452		13.30	Not Required	No

Table 49: Conducted power measurement results of WiFi 2.4G(2G&3G&4G antenna + WiFi antenna simultaneous transmission)

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

7.1.31 Conducted power measurements of WiFi 5G

Band (GHz)	Mode	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)
5.2G	802.11a	CH 36	5180	6M	14.5	Not Required	No
		CH 40	5200		14.5	Not Required	No
		CH 44	5220		14.5	Not Required	No
		CH 48	5240		14.5	Not Required	No
	802.11n 20M	CH 36	5180	6.5M	14.5	Not Required	No
		CH 40	5200		14.5	Not Required	No
		CH 44	5220		14.5	Not Required	No
		CH 48	5240		14.5	Not Required	No
	802.11n 40M	CH 38	5190	13.5M	14.5	13.16	Yes
		CH 46	5230		14.5	13.07	Yes
	802.11ac 20M	CH 36	5180	6.5M	14.5	Not Required	No
		CH 40	5200		14.5	Not Required	No
		CH 44	5220		14.5	Not Required	No
		CH 48	5240		14.5	Not Required	No
	802.11ac 40M	CH 38	5190	13.5M	14.5	Not Required	No
		CH 46	5230		14.5	Not Required	No
	802.11ac 80M	CH 42	5210	29.3M	13.3	Not Required	No
Band (GHz)	Mode	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)
5.3	802.11a	CH 52	5260	6M	14.2	Not Required	No
		CH 56	5280		14.2	Not Required	No
		CH 60	5300		14.2	Not Required	No
		CH 64	5320		14.2	Not Required	No
	802.11n 20M	CH 52	5260	6.5M	14.2	Not Required	No
		CH 56	5280		14.2	Not Required	No
		CH 60	5300		14.2	Not Required	No
		CH 64	5320		14.2	Not Required	No
	802.11n 40M	CH 54	5270	13.5M	14.2	13.00	Yes
		CH 62	5310		14.2	12.59	No
	802.11ac 20M	CH 52	5260	6.5M	14.2	Not Required	No
		CH 56	5280		14.2	Not Required	No
		CH 60	5300		14.2	Not Required	No
		CH 64	5320		14.2	Not Required	No
	802.11ac 40M	CH 54	5270	13.5M	14.2	Not Required	No
		CH 62	5310		14.2	Not Required	No
	802.11ac 80M	CH 58	5290	29.3M	13.3	Not Required	No

Band (GHz)	Mode	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)
5.5	802.11a	CH 100	5500	6M	14.5	Not Required	No
		CH 104	5520		14.5	Not Required	No
		CH 108	5540		14.5	Not Required	No
		CH 112	5560		14.5	Not Required	No
		CH 116	5580		14.5	Not Required	No
		CH 120	5600		14.5	Not Required	No
		CH 124	5620		14.5	Not Required	No
		CH 128	5640		14.5	Not Required	No
		CH 132	5660		14.5	Not Required	No
		CH 136	5680		14.5	Not Required	No
		CH 140	5700		14.5	Not Required	No
	802.11n 20M	CH 100	5500	6.5M	14.5	Not Required	No
		CH 104	5520		14.5	Not Required	No
		CH 108	5540		14.5	Not Required	No
		CH 112	5560		14.5	Not Required	No
		CH 116	5580		14.5	Not Required	No
		CH 120	5600		14.5	Not Required	No
		CH 124	5620		14.5	Not Required	No
		CH 128	5640		14.5	Not Required	No
		CH 132	5660		14.5	Not Required	No
		CH 136	5680		14.5	Not Required	No
		CH 140	5700		14.5	Not Required	No
	802.11n 40M	CH 102	5510	13.5M	14.5	13.05	Yes
		CH 110	5550		14.5	12.86	Yes
		CH 118	5590		14.5	12.80	No
		CH 126	5630		14.5	12.76	No
		CH 134	5670		14.5	12.59	No
	802.11ac 20M	CH 100	5500	6.5M	14.5	Not Required	No
		CH 104	5520		14.5	Not Required	No
		CH 108	5540		14.5	Not Required	No
		CH 112	5560		14.5	Not Required	No
		CH 116	5580		14.5	Not Required	No
		CH 120	5600		14.5	Not Required	No
		CH 124	5620		14.5	Not Required	No
		CH 128	5640		14.5	Not Required	No
		CH 132	5660		14.5	Not Required	No
		CH 136	5680		14.5	Not Required	No
		CH 140	5700		14.5	Not Required	No

Band (GHz)	Mode	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)
5.5	802.11ac 40M	CH 102	5510	13.5M	14.5	Not Required	No
		CH 110	5550		14.5	Not Required	No
		CH 118	5590		14.5	Not Required	No
		CH 126	5630		14.5	Not Required	No
		CH 134	5670		14.5	Not Required	No
	802.11ac 80M	CH 106	5530	29.3M	13.3	Not Required	No
		CH 122	5610		13.3	Not Required	No
		CH 138	5690		13.3	Not Required	No
Band (GHz)	Mode	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)
5.8	802.11a	CH 149	5745	6M	14.0	Not Required	No
		CH 153	5765		14.0	Not Required	No
		CH 157	5785		14.0	Not Required	No
		CH 161	5805		14.0	Not Required	No
		CH 165	5825		14.0	Not Required	No
	802.11n 20M	CH 149	5745	6.5M	14.0	Not Required	No
		CH 153	5765		14.0	Not Required	No
		CH 157	5785		14.0	Not Required	No
		CH 161	5805		14.0	Not Required	No
		CH 165	5825		14.0	Not Required	No
	802.11n 40M	CH 151	5755	13.5M	14.0	13.29	Yes
		CH 159	5795		14.0	13.14	No
	802.11ac 20M	CH 149	5745	6.5M	14.0	Not Required	No
		CH 153	5765		14.0	Not Required	No
		CH 157	5785		14.0	Not Required	No
		CH 161	5805		14.0	Not Required	No
		CH 165	5825		14.0	Not Required	No
	802.11ac 40M	CH 151	5755	13.5M	14.0	Not Required	No
		CH 159	5795		14.0	Not Required	No
	802.11ac 80M	CH 155	5775	29.3M	13.3	Not Required	No

Table 50: Conducted power measurement results of WiFi 5G(Full power level).

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

Band (GHz)	Mode	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)
5.2	802.11a	CH 36	5180	6M	13.3	Not Required	No
		CH 40	5200		13.3	Not Required	No
		CH 44	5220		13.3	Not Required	No
		CH 48	5240		13.3	Not Required	No
	802.11n 20M	CH 36	5180	6.5M	13.3	Not Required	No
		CH 40	5200		13.3	Not Required	No
		CH 44	5220		13.3	Not Required	No
		CH 48	5240		13.3	Not Required	No
	802.11n 40M	CH 38	5190	13.5M	13.3	Not Required	No
		CH 46	5230		13.3	Not Required	No
	802.11ac 20M	CH 36	5180	6.5M	13.3	Not Required	No
		CH 40	5200		13.3	Not Required	No
		CH 44	5220		13.3	Not Required	No
		CH 48	5240		13.3	Not Required	No
	802.11ac 40M	CH 38	5190	13.5M	13.3	Not Required	No
		CH 46	5230		13.3	Not Required	No
	802.11ac 80M	CH 42	5210	29.3M	13.3	Not Required	No
Band (GHz)	Mode	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)
5.3	802.11a	CH 52	5260	6M	13.3	Not Required	No
		CH 56	5280		13.3	Not Required	No
		CH 60	5300		13.3	Not Required	No
		CH 64	5320		13.3	Not Required	No
	802.11n 20M	CH 52	5260	6.5M	13.3	Not Required	No
		CH 56	5280		13.3	Not Required	No
		CH 60	5300		13.3	Not Required	No
		CH 64	5320		13.3	Not Required	No
	802.11n 40M	CH 54	5270	13.5M	13.3	Not Required	No
		CH 62	5310		13.3	Not Required	No
	802.11ac 20M	CH 52	5260	6.5M	13.3	Not Required	No
		CH 56	5280		13.3	Not Required	No
		CH 60	5300		13.3	Not Required	No
		CH 64	5320		13.3	Not Required	No
	802.11ac 40M	CH 54	5270	13.5M	13.3	Not Required	No
		CH 62	5310		13.3	Not Required	No
	802.11ac 80M	CH 58	5290	29.3M	13.3	12.24	Yes

Band (GHz)	Mode	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)
5.5	802.11a	CH 100	5500	6M	13.3	Not Required	No
		CH 104	5520		13.3	Not Required	No
		CH 108	5540		13.3	Not Required	No
		CH 112	5560		13.3	Not Required	No
		CH 116	5580		13.3	Not Required	No
		CH 120	5600		13.3	Not Required	No
		CH 124	5620		13.3	Not Required	No
		CH 128	5640		13.3	Not Required	No
		CH 132	5660		13.3	Not Required	No
		CH 136	5680		13.3	Not Required	No
		CH 140	5700		13.3	Not Required	No
	802.11n 20M	CH 100	5500	6.5M	13.3	Not Required	No
		CH 104	5520		13.3	Not Required	No
		CH 108	5540		13.3	Not Required	No
		CH 112	5560		13.3	Not Required	No
		CH 116	5580		13.3	Not Required	No
		CH 120	5600		13.3	Not Required	No
		CH 124	5620		13.3	Not Required	No
		CH 128	5640		13.3	Not Required	No
		CH 132	5660		13.3	Not Required	No
		CH 136	5680		13.3	Not Required	No
		CH 140	5700		13.3	Not Required	No
	802.11n 40M	CH 102	5510	13.5M	13.3	Not Required	No
		CH 110	5550		13.3	Not Required	No
		CH 118	5590		13.3	Not Required	No
		CH 126	5630		13.3	Not Required	No
		CH 134	5670		13.3	Not Required	No
	802.11ac 20M	CH 100	5500	6.5M	13.3	Not Required	No
		CH 104	5520		13.3	Not Required	No
		CH 108	5540		13.3	Not Required	No
		CH 112	5560		13.3	Not Required	No
		CH 116	5580		13.3	Not Required	No
		CH 120	5600		13.3	Not Required	No
		CH 124	5620		13.3	Not Required	No
		CH 128	5640		13.3	Not Required	No
		CH 132	5660		13.3	Not Required	No
		CH 136	5680		13.3	Not Required	No
		CH 140	5700		13.3	Not Required	No

Band (GHz)	Mode	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)
5.5	802.11ac 40M	CH 102	5510	13.5M	13.3	Not Required	No
		CH 110	5550		13.3	Not Required	No
		CH 118	5590		13.3	Not Required	No
		CH 126	5630		13.3	Not Required	No
		CH 134	5670		13.3	Not Required	No
	802.11ac 80M	CH 106	5530	29.3M	13.3	12.08	No
		CH 122	5610		13.3	12.11	Yes
		CH 138	5690		13.3	11.66	No
Band (GHz)	Mode	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)
5.8	802.11a	CH 149	5745	6M	13.3	Not Required	No
		CH 153	5765		13.3	Not Required	No
		CH 157	5785		13.3	Not Required	No
		CH 161	5805		13.3	Not Required	No
		CH 165	5825		13.3	Not Required	No
	802.11n 20M	CH 149	5745	6.5M	13.3	Not Required	No
		CH 153	5765		13.3	Not Required	No
		CH 157	5785		13.3	Not Required	No
		CH 161	5805		13.3	Not Required	No
		CH 165	5825		13.3	Not Required	No
	802.11n 40M	CH 151	5755	13.5M	13.3	Not Required	No
		CH 159	5795		13.3	Not Required	No
	802.11ac 20M	CH 149	5745	6.5M	13.3	Not Required	No
		CH 153	5765		13.3	Not Required	No
		CH 157	5785		13.3	Not Required	No
		CH 161	5805		13.3	Not Required	No
		CH 165	5825		13.3	Not Required	No
	802.11ac 40M	CH 151	5755	13.5M	13.3	Not Required	No
		CH 159	5795		13.3	Not Required	No
	802.11ac 80M	CH 155	5775	29.3M	13.3	12.18	Yes

Table 51: Conducted power measurement results of WiFi 5G(2G&3G&4G antenna + WiFi antenna simultaneous transmission)

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

7.1.32 Conducted power measurements of BT

The output power of BT antenna is as following:

BT 2450	Tune-up	Average Conducted Power (dBm)		
		0CH	39CH	78CH
DH5	11.0	9.31	9.68	8.98
2DH5	11.0	4.62	5.15	4.43
3DH5	11.0	4.45	5.10	4.37

BT 2450	Tune-up	Average Conducted Power (dBm)		
		0CH	19CH	39CH
BT 4.0	11.0	8.80	8.70	8.34

Table 52: 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 D01v06, all SAR measurement results are scaled to the maximum tune-up tolerance limit to demonstrate SAR compliance.
- 2) Per KDB447498 D01v06, 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 D01v01r04, 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 D06v02, 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 D04v01r02, 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 D02v01r01, 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 detailed SAR plots).
- 7) Additional SAR tests in simultaneous transmission fixed power reduction scenario are also tested in some frequency bands and test positions, which are only used to ensure simultaneous transmission SAR test exclusion. The standalone SAR compliance still uses the SAR results tested at the maximum output power level.

GSM Notes:

- 1) Per KDB941225 D01v03r01, 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 D04v01r03, 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 D01v03r01, 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 v02r03. 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 v02r03, 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 KDB248227D01v02r02:

- 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) 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.
- 3) WiFi 5G hotspot is only supported for U-NII-1 and U-NII-3, therefore U-NII-2A and U-NII-2C were not evaluated for hotspot condition.
- 4) For WiFi 5G U-NII-1 and U-NII-2A bands, as the 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. As the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for the band with lower maximum output power in that test configuration.

7.2.1 SAR measurement Result of GSM850(Second Antenna)

Test Position of Head	Test channel /Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
Left Hand Touched	190/836.6	GSM	0.528	0.286	0.050	32.62	33.50	0.647	21.6°C
Left Hand Tilted 15°	190/836.6	GSM	0.486	0.254	-0.060	32.62	33.50	0.595	21.6°C
Right Hand Touched	190/836.6	GSM	0.998	0.493	0.040	32.62	33.50	1.222	21.6°C
Right Hand Touched	128/824.2	GSM	0.855	0.422	-0.040	32.21	33.50	1.151	21.6°C
Right Hand Touched	251/848.8	GSM	0.980	0.483	-0.010	32.59	33.50	1.208	21.6°C
Right Hand Tilted 15°	190/836.6	GSM	0.889	0.419	-0.010	32.62	33.50	1.089	21.6°C
Right Hand Tilted 15°	128/824.2	GSM	0.760	0.356	0.020	32.21	33.50	1.023	21.6°C
Right Hand Tilted 15°	251/848.8	GSM	0.869	0.413	-0.040	32.59	33.50	1.072	21.6°C
Tested at the worst position with battery 2#									
Right Hand Touched	190/836.6	GSM	1.090	0.550	-0.180	32.62	33.50	1.335	21.6°C
Tested at the worst position with battery 3#									
Right Hand Touched	190/836.6	GSM	1.090	0.539	-0.170	32.62	33.50	1.335	21.6°C
Right Hand Touched-Repeated	190/836.6	GSM	1.110	0.544	-0.020	32.62	33.50	1.359	21.6°C
Additional SAR test at the worst position (Second antenna simultaneous transmission with WIFI antenna)									
Right Hand Touched	190/836.6	GSM	0.962	0.477	-0.170	32.32	33.00	1.125	21.6°C
Right Hand Touched	128/824.2	GSM	0.695	0.344	-0.030	32.02	33.00	0.871	21.6°C
Right Hand Touched	251/848.8	GSM	1.000	0.495	-0.090	32.31	33.00	1.172	21.6°C

Table 53: Head SAR test results of GSM850

Test Position of Body-Worn with 15mm	Test channel /Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune- up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
Front Side	190/836.6	GSM	0.147	0.088	-0.010	32.62	33.50	0.180	21.6°C
Back Side	190/836.6	GSM	0.205	0.120	0.000	32.62	33.50	0.251	21.6°C
Tested at the worst position with battery 2#									
Back Side	190/836.6	GSM	0.134	0.082	-0.060	32.62	33.50	0.164	21.6°C
Tested at the worst position with battery 3#									
Back Side	190/836.6	GSM	0.148	0.091	-0.100	32.62	33.50	0.181	21.6°C

Table 54: Body-Worn SAR test results of GSM850

Test Position of Hotspot with 10mm	Test channel /Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
Front Side	190/836.6	GPRS 2TS	0.471	0.257	0.040	30.25	31.50	0.628	21.6°C
Back Side	190/836.6	GPRS 2TS	0.520	0.283	-0.070	30.25	31.50	0.693	21.6°C
Left Side	190/836.6	GPRS 2TS	0.271	0.184	0.000	30.25	31.50	0.361	21.6°C
Right Side	190/836.6	GPRS 2TS	0.053	0.036	-0.090	30.25	31.50	0.071	21.6°C
Top Side	190/836.6	GPRS 2TS	0.510	0.240	-0.090	30.25	31.50	0.680	21.6°C
Tested at the worst position with battery 2#									
Back Side	190/836.6	GPRS 2TS	0.417	0.228	-0.150	30.25	31.50	0.556	21.6°C
Tested at the worst position with battery 3#									
Back Side	190/836.6	GPRS 2TS	0.502	0.270	-0.110	30.25	31.50	0.669	21.6°C

Table 55: Hotspot SAR test results of GSM850

Note: Per KDB 648474 D04, 10-g Extremity 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(Second Antenna)

Test Position of Head	Test channel /Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
Left Hand Touched	661/1880	GSM	0.429	0.266	-0.110	29.29	30.30	0.541	21.6°C
Left Hand Tilted 15°	661/1880	GSM	0.383	0.221	-0.040	29.29	30.30	0.483	21.6°C
Right Hand Touched	661/1880	GSM	1.140	0.655	0.080	29.29	30.30	1.438	21.6°C
Right Hand Touched	512/1850.2	GSM	1.220	0.710	-0.030	29.50	30.30	1.467	21.6°C
Right Hand Touched	810/1909.8	GSM	1.010	0.575	-0.040	29.35	30.30	1.257	21.6°C
Right Hand Tilted 15°	661/1880	GSM	1.000	0.523	0.010	29.29	30.30	1.262	21.6°C
Right Hand Tilted 15°	512/1850.2	GSM	1.100	0.570	0.070	29.50	30.30	1.322	21.6°C
Right Hand Tilted 15°	810/1909.8	GSM	0.880	0.461	-0.020	29.35	30.30	1.095	21.6°C
Tested at the worst position with battery 2#									
Right Hand Touched	512/1850.2	GSM	1.010	0.577	0.040	29.46	30.30	1.226	21.6°C
Tested at the worst position with battery 3#									
Right Hand Touched	512/1850.2	GSM	1.240	0.709	-0.040	29.50	30.30	1.491	21.6°C
Right Hand Touched-Repeated	512/1850.2	GSM	1.220	0.696	-0.010	29.50	30.30	1.467	21.6°C
Additional SAR test (Second antenna simultaneous transmission with WIFI antenna)									
Right Hand Touched	661/1880	GSM	0.931	0.549	0.080	28.37	29.30	1.153	21.6°C
Right Hand Touched	512/1850.2	GSM	1.020	0.607	-0.010	28.41	29.30	1.252	21.6°C
Right Hand Touched	810/1909.8	GSM	0.825	0.483	0.050	28.50	29.30	0.992	21.6°C
Right Hand Tilted 15°	661/1880	GSM	0.687	0.369	0.110	28.37	29.30	0.851	21.6°C
Right Hand Tilted 15°	512/1850.2	GSM	0.899	0.472	0.080	28.41	29.30	1.103	21.6°C
Right Hand Tilted 15°	810/1909.8	GSM	0.713	0.381	0.090	28.50	29.30	0.857	21.6°C

Table 56: Head SAR test results of GSM1900

Test Position of Body-Worn with 15mm	Test channel /Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune- up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
Front Side	661/1880	GSM	0.100	0.058	0.180	29.29	30.30	0.126	21.6°C
Back Side	661/1880	GSM	0.117	0.065	0.110	29.29	30.30	0.148	21.6°C
Tested at the worst position with battery 2#									
Back Side	661/1880	GSM	0.091	0.052	0.060	29.29	30.30	0.115	21.6°C
Tested at the worst position with battery 3#									
Back Side	661/1880	GSM	0.089	0.050	-0.030	29.29	30.30	0.112	21.6°C

Table 57: Body-Worn SAR test results of GSM1900

Test Position of Hotspot with 10mm	Test channel /Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
Front Side	661/1880	GPRS 2TS	0.203	0.114	0.150	27.08	28.50	0.282	21.6°C
Back Side	661/1880	GPRS 2TS	0.247	0.132	0.020	27.08	28.50	0.343	21.6°C
Left Side	661/1880	GPRS 2TS	0.244	0.140	-0.190	27.08	28.50	0.338	21.6°C
Right Side	661/1880	GPRS 2TS	0.018	0.010	-0.020	27.08	28.50	0.025	21.6°C
Top Side	661/1880	GPRS 2TS	0.286	0.154	-0.100	27.08	28.50	0.397	21.6°C
Tested at the worst position with battery 2#									
Top Side	661/1880	GPRS 2TS	0.250	0.130	-0.120	27.08	28.50	0.347	21.6°C
Tested at the worst position with battery 3#									
Top Side	661/1880	GPRS 2TS	0.305	0.162	0.140	27.08	28.50	0.423	21.6°C

Table 58: Hotspot SAR test results of GSM1900

Note: Per KDB 648474 D04, 10-g Extremity 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(Second Antenna)

Test Position of Head	Test channel /Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
Left Hand Touched	9400/1880	RMC	0.348	0.213	-0.060	23.31	24.50	0.458	21.6°C
Left Hand Tilted 15°	9400/1880	RMC	0.313	0.178	0.030	23.31	24.50	0.412	21.6°C
Right Hand Touched	9400/1880	RMC	0.993	0.575	0.150	23.31	24.50	1.306	21.6°C
Right Hand Touched	9262/1852.4	RMC	0.969	0.566	0.190	23.53	24.50	1.212	21.6°C
Right Hand Touched	9538/1907.6	RMC	1.040	0.600	0.140	23.52	24.50	1.303	21.6°C
Right Hand Touched-Repeated	9538/1907.6	RMC	0.992	0.569	0.180	23.52	24.50	1.243	21.6°C
Right Hand Tilted 15°	9400/1880	RMC	0.894	0.472	0.070	23.31	24.50	1.176	21.6°C
Right Hand Tilted 15°	9262/1852.4	RMC	0.890	0.460	0.130	23.53	24.50	1.113	21.6°C
Right Hand Tilted 15°	9538/1907.6	RMC	0.934	0.495	-0.010	23.52	24.50	1.170	21.6°C
Tested at the worst position with battery 2#									
Right Hand Touched	9538/1907.6	RMC	0.858	0.499	0.100	23.52	24.50	1.075	21.6°C
Tested at the worst position with battery 3#									
Right Hand Touched	9538/1907.6	RMC	0.967	0.561	0.150	23.52	24.50	1.212	21.6°C

Table 59: Head SAR test results of UMTS Band II

Test Position of Body-Worn with 15mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune- up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
Front Side	9400/1880	RMC	0.077	0.045	0.150	23.31	24.50	0.101	21.6°C
Back Side	9400/1880	RMC	0.072	0.041	-0.100	23.31	24.50	0.094	21.6°C
Tested at the worst position with battery 2#									
Front Side	9400/1880	RMC	0.087	0.051	-0.130	23.31	24.50	0.115	21.6°C
Tested at the worst position with battery 3#									
Front Side	9400/1880	RMC	0.061	0.037	0.030	23.31	24.50	0.080	21.6°C

Table 60: Body-Worn SAR test results of UMTS Band II

Test Position of Hotspot with 10mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune- up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
Front Side	9400/1880	RMC	0.181	0.103	0.100	23.31	24.50	0.238	21.6°C
Back Side	9400/1880	RMC	0.173	0.100	-0.020	23.31	24.50	0.228	21.6°C
Left Side	9400/1880	RMC	0.181	0.102	0.110	23.31	24.50	0.238	21.6°C
Right Side	9400/1880	RMC	0.021	0.011	0.000	23.31	24.50	0.027	21.6°C
Top Side	9400/1880	RMC	0.227	0.121	-0.190	23.31	24.50	0.299	21.6°C
Tested at the worst position with battery 2#									
Top Side	9400/1880	RMC	0.206	0.110	0.100	23.31	24.50	0.271	21.6°C
Tested at the worst position with battery 3#									
Top Side	9400/1880	RMC	0.186	0.102	0.020	23.31	24.50	0.245	21.6°C

Table 61: Hotspot SAR test results of UMTS Band II

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

7.2.4 SAR measurement Result of UMTS Band IV(Second Antenna)

Test Position of Head	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
Left Hand Touched	1413/1732.6	RMC	0.397	0.248	0.030	23.49	24.00	0.446	21.6°C
Left Hand Tilted 15°	1413/1732.6	RMC	0.408	0.214	-0.090	23.49	24.00	0.459	21.6°C
Right Hand Touched	1413/1732.6	RMC	1.010	0.561	0.090	23.49	24.00	1.136	21.6°C
Right Hand Touched	1312/1712.4	RMC	0.977	0.529	-0.010	23.53	24.00	1.089	21.6°C
Right Hand Touched	1513/1752.6	RMC	1.020	0.574	0.050	23.50	24.00	1.144	21.6°C
Right Hand Touched-Repeated	1513/1752.6	RMC	1.050	0.602	0.070	23.52	24.00	1.173	21.6°C
Right Hand Tilted 15°	1413/1732.6	RMC	1.010	0.481	0.000	23.49	24.00	1.136	21.6°C
Right Hand Tilted 15°	1312/1712.4	RMC	0.949	0.451	-0.110	23.53	24.00	1.057	21.6°C
Right Hand Tilted 15°	1513/1752.6	RMC	0.992	0.476	0.020	23.52	24.00	1.108	21.6°C
Tested at the worst position with battery 2#									
Right Hand Touched	1513/1752.6	RMC	0.777	0.418	-0.050	23.52	24.00	0.868	21.6°C
Tested at the worst position with battery 3#									
Right Hand Touched	1513/1752.6	RMC	0.888	0.485	-0.020	23.52	24.00	0.992	21.6°C

Table 62: Head SAR test results of UMTS Band IV

Test Position of Body-Worn with 15mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune- up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
Front Side	1413/1732.6	RMC	0.085	0.046	0.030	23.49	24.00	0.095	21.6°C
Back Side	1413/1732.6	RMC	0.073	0.004	0.180	23.49	24.00	0.082	21.6°C
Tested at the worst position with battery 2#									
Front Side	1413/1732.6	RMC	0.101	0.056	0.110	23.49	24.00	0.114	21.6°C
Tested at the worst position with battery 3#									
Front Side	1413/1732.6	RMC	0.100	0.056	0.030	23.49	24.00	0.112	21.6°C

Table 63: Body-Worn SAR test results of UMTS Band IV

Test Position of Hotspot with 10mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
Front Side	1413/1732.6	RMC	0.197	0.101	0.000	23.49	24.00	0.222	21.6°C
Back Side	1413/1732.6	RMC	0.155	0.081	-0.010	23.49	24.00	0.174	21.6°C
Left Side	1413/1732.6	RMC	0.114	0.066	0.080	23.49	24.00	0.128	21.6°C
Right Side	1413/1732.6	RMC	0.032	0.019	0.120	23.49	24.00	0.036	21.6°C
Top Side	1413/1732.6	RMC	0.329	0.168	0.060	23.49	24.00	0.370	21.6°C
Tested at the worst position with battery 2#									
Top Side	1413/1732.6	RMC	0.334	0.171	0.010	23.49	24.00	0.376	21.6°C
Tested at the worst position with battery 3#									
Top Side	1413/1732.6	RMC	0.381	0.199	0.090	23.49	24.00	0.428	21.6°C

Table 64: Hotspot SAR test results of UMTS Band IV

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

7.2.5 SAR measurement Result of UMTS Band V(Second Antenna)

Test Position of Head	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
Left Hand Touched	4182/836.4	RMC	0.488	0.263	-0.030	23.88	24.50	0.563	21.6°C
Left Hand Tilted 15°	4182/836.4	RMC	0.460	0.238	0.050	23.88	24.50	0.531	21.6°C
Right Hand Touched	4182/836.4	RMC	0.926	0.459	0.040	23.88	24.50	1.068	21.6°C
Right Hand Touched	4132/826.4	RMC	0.842	0.417	0.020	23.97	24.50	0.951	21.6°C
Right Hand Touched	4233/846.6	RMC	1.000	0.495	-0.020	23.90	24.50	1.148	21.6°C
Right Hand Tilted 15°	4182/836.4	RMC	0.829	0.392	-0.010	23.88	24.50	0.956	21.6°C
Right Hand Tilted 15°	4132/826.4	RMC	0.749	0.353	-0.030	23.97	24.50	0.846	21.6°C
Right Hand Tilted 15°	4233/846.6	RMC	0.887	0.418	0.050	23.90	24.50	1.018	21.6°C
Tested at the worst position with battery 2#									
Right Hand Touched	4233/846.6	RMC	0.964	0.493	0.000	23.90	24.50	1.107	21.6°C
Tested at the worst position with battery 3#									
Right Hand Touched	4233/846.6	RMC	1.130	0.560	0.030	23.90	24.50	1.297	21.6°C
Right Hand Touched-Repeated	4233/846.6	RMC	1.210	0.602	0.130	23.90	24.50	1.389	21.6°C
Additional SAR test at the worst position (Second antenna simultaneous transmission with WIFI antenna)									
Right Hand Touched	4182/836.4	RMC	0.744	0.368	0.030	22.98	24.00	0.941	21.6°C
Right Hand Touched	4132/826.4	RMC	0.656	0.325	0.020	23.08	24.00	0.811	21.6°C
Right Hand Touched	4233/846.6	RMC	0.816	0.404	0.060	23.03	24.00	1.020	21.6°C

Table 65: Head SAR test results of UMTS Band V

Test Position of Body-Worn with 15mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune- up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
Front Side	4182/836.4	RMC	0.112	0.068	-0.030	23.88	24.50	0.129	21.6°C
Back Side	4182/836.4	RMC	0.154	0.089	-0.120	23.88	24.50	0.178	21.6°C
Tested at the worst position with battery 2#									
Back Side	4182/836.4	RMC	0.101	0.059	0.020	23.88	24.50	0.116	21.6°C
Tested at the worst position with battery 3#									
Back Side	4182/836.4	RMC	0.102	0.060	0.010	23.88	24.50	0.118	21.6°C

Table 66: Body-Worn SAR test results of UMTS Band V

Test Position of Hotspot with 10mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
Front Side	4182/836.4	RMC	0.248	0.145	-0.020	23.88	24.50	0.286	21.6°C
Back Side	4182/836.4	RMC	0.340	0.186	-0.020	23.88	24.50	0.392	21.6°C
Left Side	4182/836.4	RMC	0.151	0.101	-0.080	23.88	24.50	0.174	21.6°C
Right Side	4182/836.4	RMC	0.029	0.019	0.190	23.88	24.50	0.033	21.6°C
Top Side	4182/836.4	RMC	0.233	0.115	-0.150	23.88	24.50	0.269	21.6°C
Tested at the worst position with battery 2#									
Back Side	4182/836.4	RMC	0.223	0.123	-0.060	23.88	24.50	0.257	21.6°C
Tested at the worst position with battery 3#									
Back Side	4182/836.4	RMC	0.256	0.140	-0.040	23.88	24.50	0.295	21.6°C

Table 67: Hotspot SAR test results of UMTS Band V

Note: Per KDB 648474 D04, 10-g Extremity 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 II(Second Antenna)

Test Position of Head	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Left Hand Touched	18900/1880	20M QPSK 1RB#50	0.401	0.247	0.020	22.44	22.70	0.426	21.6°C
Left Hand Tilted 15°	18900/1880	20M QPSK 1RB#50	0.388	0.226	0.130	22.44	22.70	0.412	21.6°C
Right Hand Touched	18900/1880	20M QPSK 1RB#50	1.090	0.628	0.120	22.44	22.70	1.157	21.6°C
Right Hand Touched-Repeated	18900/1880	20M QPSK 1RB#50	0.946	0.546	0.030	22.44	22.70	1.004	21.6°C
Right Hand Touched	18700/1860	20M QPSK 1RB#50	0.674	0.389	0.090	21.65	22.70	0.858	21.6°C
Right Hand Touched	19100/1900	20M QPSK 1RB#50	0.833	0.478	0.170	21.82	22.70	1.020	21.6°C
Right Hand Tilted 15°	18900/1880	20M QPSK 1RB#50	0.922	0.487	0.120	22.44	22.70	0.979	21.6°C
Right Hand Tilted 15°	18700/1860	20M QPSK 1RB#50	0.557	0.289	0.090	21.65	22.70	0.709	21.6°C
Right Hand Tilted 15°	19100/1900	20M QPSK 1RB#50	0.706	0.374	0.150	21.82	22.70	0.865	21.6°C
50%RB									
Left Hand Touched	18900/1880	20M QPSK 50%RB#25	0.261	0.161	-0.050	21.17	22.50	0.355	21.6°C
Left Hand Tilted 15°	18900/1880	20M QPSK 50%RB#25	0.238	0.134	0.060	21.17	22.50	0.323	21.6°C
Right Hand Touched	18900/1880	20M QPSK 50%RB#25	0.830	0.482	-0.050	21.17	22.50	1.127	21.6°C
Right Hand Touched	18700/1860	20M QPSK 50%RB#0	0.509	0.296	0.100	20.76	22.50	0.760	21.6°C
Right Hand Touched	19100/1900	20M QPSK 50%RB#25	0.794	0.457	0.090	20.89	22.50	1.150	21.6°C
Right Hand Tilted 15°	18900/1880	20M QPSK 50%RB#25	0.724	0.375	-0.030	21.17	22.50	0.983	21.6°C
Right Hand Tilted 15°	18700/1860	20M QPSK 50%RB#0	0.540	0.283	0.090	20.76	22.50	0.806	21.6°C
Right Hand Tilted 15°	19100/1900	20M QPSK 50%RB#25	0.688	0.357	0.030	20.89	22.50	0.997	21.6°C
100%RB									
Right Hand Touched	18900/1880	20M QPSK 100%RB#0	0.760	0.440	0.060	20.92	22.50	1.093	21.6°C
Right Hand Tilted 15°	18900/1880	20M QPSK 100%RB#0	0.675	0.349	0.110	20.92	22.50	0.971	21.6°C
Tested at the worst position with battery 2#									
Right Hand Touched	18900/1880	20M QPSK 1RB#50	0.665	0.384	0.140	22.44	22.70	0.706	21.6°C
Tested at the worst position with battery 3#									
Right Hand Touched	18900/1880	20M QPSK 1RB#50	0.932	0.541	0.020	22.44	22.70	0.990	21.6°C

Table 68: Head SAR test results of LTE Band II

Test Position of Body-Worn with 15mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Front Side	18900/1880	20M QPSK 1RB#50	0.069	0.040	-0.100	22.44	22.70	0.073	21.6°C
Back Side	18900/1880	20M QPSK 1RB#50	0.091	0.053	0.180	22.44	22.70	0.097	21.6°C
50%RB									
Front Side	18900/1880	20M QPSK 50%RB#25	0.056	0.033	0.180	21.17	22.50	0.076	21.6°C
Back Side	18900/1880	20M QPSK 50%RB#25	0.067	0.037	0.190	21.17	22.50	0.091	21.6°C
Tested at the worst position with battery 2#									
Back Side	18900/1880	20M QPSK 1RB#50	0.105	0.060	-0.020	22.44	22.70	0.111	21.6°C
Tested at the worst position with battery 3#									
Back Side	18900/1880	20M QPSK 1RB#50	0.074	0.042 1	0.100	22.44	22.70	0.079	21.6°C

Table 69: Body-Worn SAR test results of LTE Band II

Test Position of Hotspot with 10mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Front Side	18900/1880	20M QPSK 1RB#50	0.127	0.076	0.120	22.44	22.70	0.135	21.6°C
Back Side	18900/1880	20M QPSK 1RB#50	0.159	0.086	-0.020	22.44	22.70	0.169	21.6°C
Left Side	18900/1880	20M QPSK 1RB#50	0.131	0.076	-0.040	22.44	22.70	0.139	21.6°C
Right Side	18900/1880	20M QPSK 1RB#50	0.017	0.009	0.190	22.44	22.70	0.018	21.6°C
Top Side	18900/1880	20M QPSK 1RB#50	0.211	0.115	0.150	22.44	22.70	0.224	21.6°C
50%RB									
Front Side	18900/1880	20M QPSK 50%RB#25	0.114	0.068	0.050	21.17	22.50	0.155	21.6°C
Back Side	18900/1880	20M QPSK 50%RB#25	0.137	0.079	0.140	21.17	22.50	0.186	21.6°C
Left Side	18900/1880	20M QPSK 50%RB#25	0.122	0.071	-0.080	21.17	22.50	0.166	21.6°C
Right Side	18900/1880	20M QPSK 50%RB#25	0.015	0.008	0.150	21.17	22.50	0.020	21.6°C
Top Side	18900/1880	20M QPSK 50%RB#25	0.164	0.084	0.130	21.17	22.50	0.223	21.6°C
Tested at the worst position with battery 2#									
Top Side	18900/1880	20M QPSK 1RB#50	0.244	0.130	-0.030	22.44	22.70	0.259	21.6°C
Tested at the worst position with battery 3#									
Top Side	18900/1880	20M QPSK 1RB#50	0.182	0.098	0.170	22.44	22.70	0.193	21.6°C

Table 70: Hotspot SAR test results of LTE Band II

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

**7.2.7 SAR measurement Result of LTE Band IV(Second Antenna)**

Test Position of Head	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducte d Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Left Hand Touched	20300/1745	20M QPSK 1RB#50	0.319	0.192	-0.020	21.41	22.80	0.439	21.6°C
Left Hand Tilted 15°	20300/1745	20M QPSK 1RB#50	0.351	0.184	-0.020	21.41	22.80	0.483	21.6°C
Right Hand Touched	20300/1745	20M QPSK 1RB#50	0.896	0.511	-0.080	21.41	22.80	1.234	21.6°C
Right Hand Touched	20050/1720	20M QPSK 1RB#50	0.955	0.518	-0.010	21.40	22.80	1.318	21.6°C
Right Hand Touched	20175/1732.5	20M QPSK 1RB#50	0.981	0.550	0.000	21.22	22.80	1.411	21.6°C
Right Hand Touched-Repeated	20175/1732.5	20M QPSK 1RB#50	0.950	0.535	0.060	21.22	22.80	1.367	21.6°C
Right Hand Tilted 15°	20300/1745	20M QPSK 1RB#50	0.886	0.428	0.000	21.41	22.80	1.220	21.6°C
Right Hand Tilted 15°	20050/1720	20M QPSK 1RB#50	0.929	0.447	-0.010	21.40	22.80	1.282	21.6°C
Right Hand Tilted 15°	20175/1732.5	20M QPSK 1RB#50	0.954	0.461	-0.010	21.22	22.80	1.373	21.6°C
50%RB									
Left Hand Touched	20300/1745	20M QPSK 50%RB#50	0.342	0.205	0.010	21.36	22.50	0.445	21.6°C
Left Hand Tilted 15°	20300/1745	20M QPSK 50%RB#50	0.379	0.199	0.000	21.36	22.50	0.493	21.6°C
Right Hand Touched	20300/1745	20M QPSK 50%RB#50	0.863	0.365	0.120	21.36	22.50	1.122	21.6°C
Right Hand Touched	20050/1720	20M QPSK 50%RB#25	0.917	0.498	0.030	21.35	22.50	1.195	21.6°C
Right Hand Touched	20175/1732.5	20M QPSK 50%RB#0	0.959	0.532	0.020	21.22	22.50	1.288	21.6°C
Right Hand Tilted 15°	20300/1745	20M QPSK 50%RB#50	0.950	0.458	-0.010	21.36	22.50	1.235	21.6°C
Right Hand Tilted 15°	20050/1720	20M QPSK 50%RB#25	0.893	0.429	-0.010	21.35	22.50	1.164	21.6°C
Right Hand Tilted 15°	20175/1732.5	20M QPSK 50%RB#0	0.947	0.455	0.066	21.22	22.50	1.272	21.6°C
100%RB									
Right Hand Touched	20300/1745	20M QPSK 100%RB#0	0.920	0.521	0.050	21.23	22.50	1.233	21.6°C
Right Hand Tilted 15°	20300/1745	20M QPSK 100%RB#0	0.773	0.421	0.040	21.23	22.50	1.036	21.6°C
Tested at the worst position with battery 2#									
Right Hand Touched	20175/1732.5	20M QPSK 1RB#50	0.653	0.363	0.000	21.22	22.80	0.940	21.6°C
Tested at the worst position with battery 3#									
Right Hand Touched	20175/1732.5	20M QPSK 1RB#50	0.941	0.520	-0.100	21.22	22.80	1.354	21.6°C

Additional SAR test(Second antenna transmission with WIFI antenna)									
1RB									
Right Hand Touched	20050/1720	20M QPSK 1RB#50	0.816	0.446	0.050	21.23	22.30	1.044	21.6°C
Right Hand Touched	20175/1732.5	20M QPSK 1RB#50	0.837	0.463	-0.020	21.02	22.30	1.124	21.6°C
Right Hand Touched	20300/1745	20M QPSK 1RB#50	0.759	0.425	-0.060	21.10	22.30	1.001	21.6°C
Right Hand Tilted 15°	20050/1720	20M QPSK 1RB#50	0.798	0.381	-0.050	21.23	22.30	1.021	21.6°C
Right Hand Tilted 15°	20175/1732.5	20M QPSK 1RB#50	0.760	0.370	0.000	21.02	22.30	1.021	21.6°C
Right Hand Tilted 15°	20300/1745	20M QPSK 1RB#50	0.710	0.346	0.010	21.10	22.30	0.936	21.6°C
50%RB									
Right Hand Touched	20300/1745	20M QPSK 50%RB#50	0.803	0.451	-0.050	21.18	22.00	0.970	21.6°C
Right Hand Touched	20050/1720	20M QPSK 50%RB#25	0.788	0.446	-0.020	21.17	22.00	0.954	21.6°C
Right Hand Touched	20175/1732.5	20M QPSK 50%RB#0	0.838	0.476	0.010	21.17	22.00	1.014	21.6°C
Right Hand Tilted 15°	20300/1745	20M QPSK 50%RB#50	0.729	0.355	-0.070	21.18	22.00	0.880	21.6°C
Right Hand Tilted 15°	20050/1720	20M QPSK 50%RB#25	0.673	0.325	-0.140	21.17	22.00	0.815	21.6°C
Right Hand Tilted 15°	20175/1732.5	20M QPSK 50%RB#0	0.694	0.335	-0.160	21.17	22.00	0.840	21.6°C
100%RB									
Right Hand Touched	20300/1745	20M QPSK 100%RB#0	0.788	0.454	-0.030	21.04	21.00	0.781	21.6°C
Right Hand Tilted 15°	20300/1745	20M QPSK 100%RB#0	0.661	0.321	0.020	21.04	21.00	0.655	21.6°C

Table 71: Head SAR test results of LTE Band IV

Test Position of Body-Worn with 15mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducte d Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Front Side	20300/1745	20M QPSK 1RB#50	0.073	0.040	0.160	21.41	22.80	0.101	21.6°C
Back Side	20300/1745	20M QPSK 1RB#50	0.061	0.035	-0.140	21.41	22.80	0.084	21.6°C
50%RB									
Front Side	20300/1745	20M QPSK 50%RB#50	0.066	0.038	0.110	21.36	22.50	0.086	21.6°C
Back Side	20300/1745	20M QPSK 50%RB#50	0.063	0.034	0.080	21.36	22.50	0.081	21.6°C
Tested at the worst position with battery 2#									
Front Side	20300/1745	20M QPSK 1RB#50	0.086	0.047	0.120	21.41	22.80	0.118	21.6°C
Tested at the worst position with battery 3#									
Front Side	20300/1745	20M QPSK 1RB#50	0.068	0.037	0.030	21.41	22.80	0.093	21.6°C

Table 72: Body-Worn SAR test results of LTE Band IV

Test Position of Hotspot with 10mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Front Side	20300/1745	20M QPSK 1RB#50	0.150	0.078	0.120	21.41	22.80	0.207	21.6°C
Back Side	20300/1745	20M QPSK 1RB#50	0.169	0.085	0.100	21.41	22.80	0.233	21.6°C
Left Side	20300/1745	20M QPSK 1RB#50	0.102	0.059	-0.080	21.41	22.80	0.140	21.6°C
Right Side	20300/1745	20M QPSK 1RB#50	0.023	0.013	0.100	21.41	22.80	0.031	21.6°C
Top Side	20300/1745	20M QPSK 1RB#50	0.208	0.105	0.050	21.41	22.80	0.286	21.6°C
50%RB									
Front Side	20300/1745	20M QPSK 50%RB#50	0.150	0.077	0.110	21.36	22.50	0.195	21.6°C
Back Side	20300/1745	20M QPSK 50%RB#50	0.168	0.085	0.070	21.36	22.50	0.218	21.6°C
Left Side	20300/1745	20M QPSK 50%RB#50	0.106	0.062	0.030	21.36	22.50	0.138	21.6°C
Right Side	20300/1745	20M QPSK 50%RB#50	0.024	0.014	0.110	21.36	22.50	0.031	21.6°C
Top Side	20300/1745	20M QPSK 50%RB#50	0.215	0.109	-0.140	21.36	22.50	0.280	21.6°C
Tested at the worst position with battery 2#									
Top Side	20300/1745	20M QPSK 1RB#50	0.288	0.147	0.160	21.41	22.80	0.397	21.6°C
Tested at the worst position with battery 3#									
Top Side	20300/1745	20M QPSK 1RB#50	0.296	0.153	-0.140	21.41	22.80	0.408	21.6°C

Table 73: Hotspot SAR test results of LTE Band IV

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

7.2.8 SAR measurement Result of LTE Band V(Second Antenna)

Test Position of Head	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Left Hand Touched	20525/836.5	10M QPSK 1RB#25	0.490	0.269	0.180	22.46	23.50	0.623	21.6°C
Left Hand Tilted 15°	20525/836.5	10M QPSK 1RB#25	0.448	0.235	-0.130	22.46	23.50	0.569	21.6°C
Right Hand Touched	20525/836.5	10M QPSK 1RB#25	1.050	0.525	0.100	22.46	23.50	1.334	21.6°C
Right Hand Touched	20450/829	10M QPSK 1RB#25	1.070	0.534	0.030	22.45	23.50	1.363	21.6°C
Right Hand Touched	20600/844	10M QPSK 1RB#25	0.969	0.486	0.070	22.19	23.50	1.310	21.6°C
Right Hand Tilted 15°	20525/836.5	10M QPSK 1RB#25	0.888	0.429	0.030	22.46	23.50	1.128	21.6°C
Right Hand Tilted 15°	20450/829	10M QPSK 1RB#25	0.922	0.445	-0.010	22.45	23.50	1.174	21.6°C
Right Hand Tilted 15°	20600/844	10M QPSK 1RB#25	0.854	0.411	-0.170	22.19	23.50	1.155	21.6°C
50%RB									
Left Hand Touched	20450/829	10M QPSK 50%RB#0	0.524	0.288	0.000	21.85	22.50	0.609	21.6°C
Left Hand Tilted 15°	20450/829	10M QPSK 50%RB#0	0.487	0.256	0.000	21.85	22.50	0.566	21.6°C
Right Hand Touched	20450/829	10M QPSK 50%RB#0	0.933	0.465	-0.070	21.85	22.50	1.084	21.6°C
Right Hand Touched	20525/836.5	10M QPSK 50%RB#0	0.844	0.419	-0.010	21.81	22.50	0.989	21.6°C
Right Hand Touched	20600/844	10M QPSK 50%RB#0	0.979	0.486	-0.060	21.56	22.50	1.216	21.6°C
Right Hand Tilted 15°	20450/829	10M QPSK 50%RB#0	0.828	0.392	0.060	21.85	22.50	0.962	21.6°C
Right Hand Tilted 15°	20525/836.5	10M QPSK 50%RB#0	0.734	0.348	0.030	21.81	22.50	0.860	21.6°C
Right Hand Tilted 15°	20600/844	10M QPSK 50%RB#0	0.875	0.416	0.160	21.56	22.50	1.086	21.6°C
100%RB									
Right Hand Touched	20450/829	10M QPSK 100%RB#0	0.758	0.380	0.190	21.78	22.50	0.895	21.6°C
Right Hand Tilted 15°	20450/829	10M QPSK 100%RB#0	0.711	0.413	0.030	21.78	22.50	0.839	21.6°C
Tested at the worst position with battery 2#									
Right Hand Touched	20450/829	10M QPSK 1RB#25	0.935	0.468	-0.040	22.45	23.50	1.191	21.6°C
Tested at the worst position with battery 3#									
Right Hand Touched	20450/829	10M QPSK 1RB#25	1.130	0.559	-0.040	22.45	23.50	1.439	21.6°C
Right Hand Touched-Repeated	20450/829	10M QPSK 1RB#25	1.120	0.555	-0.040	22.45	23.50	1.426	21.6°C

Additional SAR test(Second antenna transmission with WIFI antenna)									
1RB									
Right Hand Touched	20450/829	10M QPSK 1RB#25	1.060	0.544	0.040	21.64	22.50	1.292	21.6°C
Right Hand Touched	20525/836.5	10M QPSK 1RB#25	0.791	0.404	-0.020	21.51	22.50	0.994	21.6°C
Right Hand Touched	20600/844	10M QPSK 1RB#25	0.911	0.456	-0.080	21.28	22.50	1.206	21.6°C
50%RB									
Right Hand Touched	20525/836.5	10M QPSK 50%RB#0	0.756	0.384	-0.040	20.93	21.50	0.862	21.6°C
Right Hand Touched	20450/829	10M QPSK 50%RB#0	0.934	0.474	-0.020	20.45	21.50	1.189	21.6°C
Right Hand Touched	20600/844	10M QPSK 50%RB#0	1.030	0.508	-0.010	20.61	21.50	1.264	21.6°C
100%RB									
Right Hand Touched	20450/829	10M QPSK 100%RB#0	0.685	0.340	-0.170	20.69	21.50	0.825	21.6°C

Table 74: Head SAR test results of LTE Band V

Test Position of Body-Worn with 15mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Front Side	20525/836.5	10M QPSK 1RB#25	0.133	0.083	0.110	22.46	23.50	0.169	21.6°C
Back Side	20525/836.5	10M QPSK 1RB#25	0.147	0.086	-0.040	22.46	23.50	0.187	21.6°C
50%RB									
Front Side	20450/829	10M QPSK 50%RB#0	0.146	0.091	0.160	21.85	22.50	0.170	21.6°C
Back Side	20450/829	10M QPSK 50%RB#0	0.161	0.094	0.010	21.85	22.50	0.187	21.6°C
Tested at the worst position with battery 2#									
Back Side	20450/829	10M QPSK 50%RB#0	0.130	0.075 8	-0.030	21.85	22.50	0.151	21.6°C
Tested at the worst position with battery 3#									
Back Side	20450/829	10M QPSK 50%RB#0	0.129	0.076	-0.020	21.85	22.50	0.150	21.6°C

Table 75: Body-Worn SAR test results of LTE Band V

Test Position of Hotspot with 10mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Front Side	20525/836.5	10M QPSK 1RB#25	0.265	0.171	0.150	22.46	23.50	0.337	21.6°C
Back Side	20525/836.5	10M QPSK 1RB#25	0.318	0.188	-0.060	22.46	23.50	0.404	21.6°C
Left Side	20525/836.5	10M QPSK 1RB#25	0.173	0.116	0.080	22.46	23.50	0.220	21.6°C
Right Side	20525/836.5	10M QPSK 1RB#25	0.031	0.021	-0.100	22.46	23.50	0.039	21.6°C
Top Side	20525/836.5	10M QPSK 1RB#25	0.274	0.137	0.140	22.46	23.50	0.348	21.6°C
50%RB									
Front Side	20450/829	10M QPSK 50%RB#0	0.274	0.177	0.030	21.85	22.50	0.318	21.6°C
Back Side	20450/829	10M QPSK 50%RB#0	0.349	0.192	-0.080	21.85	22.50	0.405	21.6°C
Left Side	20450/829	10M QPSK 50%RB#0	0.194	0.130	0.100	21.85	22.50	0.225	21.6°C
Right Side	20450/829	10M QPSK 50%RB#0	0.037	0.024	0.120	21.85	22.50	0.042	21.6°C
Top Side	20450/829	10M QPSK 50%RB#0	0.285	0.142	0.100	21.85	22.50	0.331	21.6°C
Tested at the worst position with battery 2#									
Back Side	20450/829	10M QPSK 50%RB#0	0.295	0.161	-0.110	21.85	22.50	0.343	21.6°C
Tested at the worst position with battery 3#									
Back Side	20450/829	10M QPSK 50%RB#0	0.283	0.156	-0.050	21.85	22.50	0.329	21.6°C

Table 76: Hotspot SAR test results of LTE Band V

Note: Per KDB 648474 D04, 10-g Extremity 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 VII(Second Antenna)

Test Position of Head	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Left Hand Touched	21100/2535	20M QPSK 1RB#50	0.247	0.137	-0.120	22.28	23.00	0.292	21.6°C
Left Hand Tilted 15°	21100/2535	20M QPSK 1RB#50	0.278	0.143	0.060	22.28	23.00	0.328	21.6°C
Right Hand Touched	21100/2535	20M QPSK 1RB#50	0.819	0.410	0.160	22.28	23.00	0.967	21.6°C
Right Hand Touched	20850/2510	20M QPSK 1RB#50	0.523	0.257	0.100	22.13	23.00	0.639	21.6°C
Right Hand Touched	21350/2560	20M QPSK 1RB#50	0.929	0.470	0.130	22.23	23.00	1.109	21.6°C
Right Hand Tilted 15°	21100/2535	20M QPSK 1RB#50	0.770	0.351	0.090	22.28	23.00	0.909	21.6°C
Right Hand Tilted 15°	20850/2510	20M QPSK 1RB#50	0.480	0.221	0.130	22.13	23.00	0.586	21.6°C
Right Hand Tilted 15°	21350/2560	20M QPSK 1RB#50	0.936	0.424	0.070	22.23	23.00	1.118	21.6°C
Right Hand Tilted 15°-Repeated	21350/2560	20M QPSK 1RB#50	0.896	0.409	0.110	22.23	23.00	1.070	21.6°C
50%RB									
Left Hand Touched	21100/2535	20M QPSK 50%RB#0	0.254	0.140	-0.060	21.67	22.00	0.274	21.6°C
Left Hand Tilted 15°	21100/2535	20M QPSK 50%RB#0	0.262	0.135	0.040	21.67	22.00	0.283	21.6°C
Right Hand Touched	21100/2535	20M QPSK 50%RB#0	0.746	0.381	-0.150	21.67	22.00	0.805	21.6°C
Right Hand Touched	20850/2510	20M QPSK 50%RB#50	0.513	0.268	0.050	21.43	22.00	0.585	21.6°C
Right Hand Touched	21350/2560	20M QPSK 50%RB#50	0.865	0.437	0.120	21.48	22.00	0.975	21.6°C
Right Hand Tilted 15°	21100/2535	20M QPSK 50%RB#0	0.737	0.341	0.120	21.67	22.00	0.795	21.6°C
100%RB									
Right Hand Touched	21100/2535	20M QPSK 100%RB#0	0.737	0.374	0.140	21.48	22.00	0.831	21.6°C
Right Hand Tilted 15°	21100/2535	20M QPSK 100%RB#0	0.615	0.316	0.160	21.48	22.00	0.693	21.6°C
Tested at the worst position with battery 2#									
Right Hand Tilted 15°	21350/2560	20M QPSK 1RB#50	0.792	0.352	-0.080	22.23	23.00	0.946	21.6°C
Tested at the worst position with battery 3#									
Right Hand Tilted 15°	21350/2560	20M QPSK 1RB#50	0.932	0.422	0.110	22.23	23.00	1.113	21.6°C

Table 77: Head SAR test results of LTE Band VII

Test Position of Body-Worn with 15mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Front Side	21100/2535	20M QPSK 1RB#50	0.076	0.042	0.030	22.28	23.00	0.090	21.6°C
Back Side	21100/2535	20M QPSK 1RB#50	0.057	0.032	0.080	22.28	23.00	0.067	21.6°C
50%RB									
Front Side	21100/2535	20M QPSK 50%RB#0	0.063	0.037	0.050	21.67	22.00	0.068	21.6°C
Back Side	21100/2535	20M QPSK 50%RB#0	0.058	0.032	0.060	21.67	22.00	0.063	21.6°C
Tested at the worst position with battery 2#									
Front Side	21100/2535	20M QPSK 1RB#50	0.064	0.037	-0.050	22.28	23.00	0.075	21.6°C
Tested at the worst position with battery 3#									
Front Side	21100/2535	20M QPSK 1RB#50	0.066	0.038	-0.040	22.28	23.00	0.078	21.6°C

Table 78: Body-Worn SAR test results of LTE Band VII

Test Position of Hotspot with 10mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Front Side	21100/2535	20M QPSK 1RB#50	0.143	0.077	0.080	22.28	23.00	0.169	21.6°C
Back Side	21100/2535	20M QPSK 1RB#50	0.116	0.062	0.050	22.28	23.00	0.137	21.6°C
Left Side	21100/2535	20M QPSK 1RB#50	0.152	0.078	0.020	22.28	23.00	0.179	21.6°C
Right Side	21100/2535	20M QPSK 1RB#50	0.009	0.005	-0.120	22.28	23.00	0.010	21.6°C
Top Side	21100/2535	20M QPSK 1RB#50	0.124	0.055	0.070	22.28	23.00	0.146	21.6°C
50%RB									
Front Side	21100/2535	20M QPSK 50%RB#0	0.143	0.077	0.110	21.67	22.00	0.154	21.6°C
Back Side	21100/2535	20M QPSK 50%RB#0	0.115	0.062	0.150	21.67	22.00	0.124	21.6°C
Left Side	21100/2535	20M QPSK 50%RB#0	0.154	0.079	-0.020	21.67	22.00	0.166	21.6°C
Right Side	21100/2535	20M QPSK 50%RB#0	0.009	0.005	0.100	21.67	22.00	0.009	21.6°C
Top Side	21100/2535	20M QPSK 50%RB#0	0.124	0.055	0.080	21.67	22.00	0.134	21.6°C
Tested at the worst position with battery 2#									
Left Side	21100/2535	20M QPSK 1RB#50	0.152	0.075	-0.030	22.28	23.00	0.179	21.6°C
Tested at the worst position with battery 3#									
Left Side	21100/2535	20M QPSK 1RB#50	0.166	0.081	0.040	22.28	23.00	0.196	21.6°C

Table 79: Hotspot SAR test results of LTE Band VII

Note: Per KDB 648474 D04, 10-g Extremity 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 XII(Second Antenna)

Test Position of Head	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Left Hand Touched	23130/711	10M QPSK 1RB#25	0.211	0.142	0.120	22.83	23.50	0.246	21.6°C
Left Hand Tilted 15°	23130/711	10M QPSK 1RB#25	0.178	0.122	-0.130	22.83	23.50	0.208	21.6°C
Right Hand Touched	23130/711	10M QPSK 1RB#25	0.519	0.250	-0.100	22.83	23.50	0.606	21.6°C
Right Hand Tilted 15°	23130/711	10M QPSK 1RB#25	0.447	0.265	-0.130	22.83	23.50	0.522	21.6°C
Right Hand Touched	23060/704	10M QPSK 1RB#25	0.307	0.146	0.100	22.52	23.50	0.385	21.6°C
Right Hand Touched	23095/707.5	10M QPSK 1RB#25	0.287	0.175	-0.040	22.81	23.50	0.336	21.6°C
50%RB									
Left Hand Touched	23130/711	10M QPSK 50%RB#13	0.172	0.117	-0.130	22.21	22.50	0.184	21.6°C
Left Hand Tilted 15°	23130/711	10M QPSK 50%RB#13	0.149	0.102	-0.060	22.21	22.50	0.159	21.6°C
Right Hand Touched	23130/711	10M QPSK 50%RB#13	0.400	0.246	-0.070	22.21	22.50	0.428	21.6°C
Right Hand Tilted 15°	23130/711	10M QPSK 50%RB#13	0.359	0.213	-0.060	22.21	22.50	0.384	21.6°C
Tested at the worst position with battery 2#									
Right Hand Touched	23130/711	10M QPSK 1RB#25	0.556	0.264	0.190	22.83	23.50	0.649	21.6°C
Tested at the worst position with battery 3#									
Right Hand Touched	23130/711	10M QPSK 1RB#25	0.663	0.322	-0.010	22.83	23.50	0.774	21.6°C

Table 80: Head SAR test results of LTE Band XII

Test Position of Body-Worn with 15mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Front Side	23130/711	10M QPSK 1RB#25	0.052	0.034	-0.01	22.83	23.50	0.060	21.6°C
Back Side	23130/711	10M QPSK 1RB#25	0.055	0.033	-0.110	22.83	23.50	0.064	21.6°C
50%RB									
Front Side	23130/711	10M QPSK 50%RB#13	0.044	0.029	0.010	22.21	22.50	0.047	21.6°C
Back Side	23130/711	10M QPSK 50%RB#13	0.047	0.030	0.020	22.21	22.50	0.050	21.6°C
Tested at the worst position with battery 2#									
Back Side	23130/711	10M QPSK 1RB#25	0.083	0.049	-0.060	22.83	23.50	0.097	21.6°C
Tested at the worst position with battery 3#									
Back Side	23130/711	10M QPSK 1RB#25	0.053	0.032	0.090	22.83	23.50	0.062	21.6°C

Table 81: Body-Worn SAR test results of LTE Band XII

Test Position of Hotspot with 10mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Front Side	23130/711	10M QPSK 1RB#25	0.107	0.068	0.170	22.83	23.50	0.125	21.6°C
Back Side	23130/711	10M QPSK 1RB#25	0.140	0.076	-0.010	22.83	23.50	0.163	21.6°C
Left Side	23130/711	10M QPSK 1RB#25	0.070	0.048	-0.010	22.83	23.50	0.081	21.6°C
Right Side	23130/711	10M QPSK 1RB#25	0.015	0.010	0.120	22.83	23.50	0.018	21.6°C
Top Side	23130/711	10M QPSK 1RB#25	0.120	0.058	0.190	22.83	23.50	0.140	21.6°C
50%RB									
Front Side	23130/711	10M QPSK 50%RB#13	0.107	0.066	0.020	22.21	22.50	0.114	21.6°C
Back Side	23130/711	10M QPSK 50%RB#13	0.091	0.058	0.040	22.21	22.50	0.098	21.6°C
Left Side	23130/711	10M QPSK 50%RB#13	0.059	0.041	0.110	22.21	22.50	0.063	21.6°C
Right Side	23130/711	10M QPSK 50%RB#13	0.013	0.009	0.070	22.21	22.50	0.014	21.6°C
Top Side	23130/711	10M QPSK 50%RB#13	0.094	0.049	0.060	22.21	22.50	0.100	21.6°C
Tested at the worst position with battery 2#									
Back Side	23130/711	10M QPSK 1RB#25	0.125	0.070	-0.030	22.83	23.50	0.146	21.6°C
Tested at the worst position with battery 3#									
Back Side	23130/711	10M QPSK 1RB#25	0.181	0.100	0.080	22.83	23.50	0.211	21.6°C

Table 82: Hotspot SAR test results of LTE Band XII

Note: Per KDB 648474 D04, 10-g Extremity 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 LTE Band XVII(Second Antenna)

Test Position of Head	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Left Hand Touched	23780/709	10M QPSK 1RB#25	0.177	0.095	-0.120	23.08	23.50	0.195	21.6°C
Left Hand Tilted 15°	23780/709	10M QPSK 1RB#25	0.144	0.093	-0.120	23.08	23.50	0.159	21.6°C
Right Hand Touched	23780/709	10M QPSK 1RB#25	0.341	0.208	0.040	23.08	23.50	0.376	21.6°C
Right Hand Tilted 15°	23780/709	10M QPSK 1RB#25	0.318	0.187	-0.130	23.08	23.50	0.350	21.6°C
Right Hand Touched	23790/710	10M QPSK 1RB#25	0.420	0.254	-0.020	22.98	23.50	0.473	21.6°C
Right Hand Touched	23800/711	10M QPSK 1RB#25	0.488	0.233	0.060	23.00	23.50	0.548	21.6°C
50%RB									
Left Hand Touched	23780/709	10M QPSK 50%RB#13	0.127	0.085	-0.130	22.43	22.50	0.129	21.6°C
Left Hand Tilted 15°	23780/709	10M QPSK 50%RB#13	0.116	0.078	-0.090	22.43	22.50	0.118	21.6°C
Right Hand Touched	23780/709	10M QPSK 50%RB#13	0.301	0.185	-0.130	22.43	22.50	0.306	21.6°C
Right Hand Tilted 15°	23780/709	10M QPSK 50%RB#13	0.281	0.166	-0.080	22.43	22.50	0.286	21.6°C
Tested at the worst position with battery 2#									
Right Hand Touched	23800/711	10M QPSK 1RB#25	0.567	0.269	0.010	23.00	23.50	0.636	21.6°C
Tested at the worst position with battery 3#									
Right Hand Touched	23800/711	10M QPSK 1RB#25	0.659	0.319	0.020	23.00	23.50	0.739	21.6°C

Table 83: Head SAR test results of LTE Band XVII

Test Position of Body-Worn with 15mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Front Side	23780/709	10M QPSK 1RB#25	0.033	0.022	0.12	23.08	23.50	0.037	21.6°C
Back Side	23780/709	10M QPSK 1RB#25	0.040	0.024	-0.090	23.08	23.50	0.044	21.6°C
50%RB									
Front Side	23780/709	10M QPSK 50%RB#13	0.030	0.020	0.010	22.43	22.50	0.031	21.6°C
Back Side	23780/709	10M QPSK 50%RB#13	0.034	0.023	-0.020	22.43	22.50	0.034	21.6°C
Tested at the worst position with battery 2#									
Back Side	23780/709	10M QPSK 1RB#25	0.057	0.033	0.040	23.08	23.50	0.062	21.6°C
Tested at the worst position with battery 3#									
Back Side	23780/709	10M QPSK 1RB#25	0.037	0.022	0.060	23.08	23.50	0.041	21.6°C

Table 84: Body-Worn SAR test results of LTE Band XVII

Test Position of Hotspot with 10mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Front Side	23780/709	10M QPSK 1RB#25	0.078	0.044	0.070	23.08	23.50	0.086	21.6°C
Back Side	23780/709	10M QPSK 1RB#25	0.081	0.045	0.060	23.08	23.50	0.090	21.6°C
Left Side	23780/709	10M QPSK 1RB#25	0.048	0.033	-0.100	23.08	23.50	0.053	21.6°C
Right Side	23780/709	10M QPSK 1RB#25	0.013	0.009	0.100	23.08	23.50	0.014	21.6°C
Top Side	23780/709	10M QPSK 1RB#25	0.073	0.040	0.140	23.08	23.50	0.080	21.6°C
50%RB									
Front Side	23780/709	10M QPSK 50%RB#13	0.067	0.040	0.060	22.43	22.50	0.068	21.6°C
Back Side	23780/709	10M QPSK 50%RB#13	0.070	0.042	0.040	22.43	22.50	0.071	21.6°C
Left Side	23780/709	10M QPSK 50%RB#13	0.044	0.030	-0.040	22.43	22.50	0.045	21.6°C
Right Side	23780/709	10M QPSK 50%RB#13	0.012	0.008	0.030	22.43	22.50	0.012	21.6°C
Top Side	23780/709	10M QPSK 50%RB#13	0.067	0.037	0.150	22.43	22.50	0.068	21.6°C
Tested at the worst position with battery 2#									
Back Side	23780/709	10M QPSK 1RB#25	0.084	0.054	0.150	23.08	23.50	0.093	21.6°C
Tested at the worst position with battery 3#									
Back Side	23780/709	10M QPSK 1RB#25	0.108	0.060	0.010	23.08	23.50	0.119	21.6°C

Table 85: Hotspot SAR test results of LTE Band XVII

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

7.2.12 SAR measurement Result of LTE Band XXVI(Second Antenna)

Test Position of Head	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Left Hand Touched	26865/831.5	15M QPSK 1RB#38	0.452	0.238	-0.010	22.70	23.50	0.543	21.6°C
Left Hand Tilted 15°	26865/831.5	15M QPSK 1RB#38	0.408	0.207	0.010	22.70	23.50	0.491	21.6°C
Right Hand Touched	26865/831.5	15M QPSK 1RB#38	0.861	0.440	-0.030	22.70	23.50	1.035	21.6°C
Right Hand Touched	26775/822.5	15M QPSK 1RB#0	0.428	0.250	-0.040	22.39	23.50	0.553	21.6°C
Right Hand Touched	26965/841.5	15M QPSK 1RB#38	0.575	0.292	-0.030	22.53	23.50	0.719	21.6°C
Right Hand Tilted 15°	26865/831.5	15M QPSK 1RB#38	0.754	0.335	-0.010	22.70	23.50	0.907	21.6°C
Right Hand Tilted 15°	26775/822.5	15M QPSK 1RB#0	0.379	0.214	0.060	22.39	23.50	0.489	21.6°C
Right Hand Tilted 15°	26965/841.5	15M QPSK 1RB#38	0.561	0.314	0.100	22.53	23.50	0.701	21.6°C
50%RB									
Left Hand Touched	26865/831.5	15M QPSK 50%RB#18	0.367	0.195	-0.070	22.63	23.50	0.448	21.6°C
Left Hand Tilted 15°	26865/831.5	15M QPSK 50%RB#18	0.351	0.211	-0.050	22.63	23.50	0.429	21.6°C
Right Hand Touched	26865/831.5	15M QPSK 50%RB#18	0.762	0.389	-0.050	22.63	23.50	0.931	21.6°C
Right Hand Touched	26775/822.5	15M QPSK 50%RB#0	0.316	0.183	0.020	22.27	23.50	0.419	21.6°C
Right Hand Touched	26965/841.5	15M QPSK 50%RB#0	0.564	0.326	-0.010	22.60	23.50	0.694	21.6°C
Right Hand Tilted 15°	26865/831.5	15M QPSK 50%RB#18	0.685	0.324	-0.110	22.63	23.50	0.837	21.6°C
Right Hand Tilted 15°	26775/822.5	15M QPSK 50%RB#0	0.282	0.158	0.030	22.27	23.50	0.374	21.6°C
Right Hand Tilted 15°	26965/841.5	15M QPSK 50%RB#0	0.505	0.283	0.010	22.60	23.50	0.621	21.6°C
100%RB									
Right Hand Touched	26865/831.5	15M QPSK 100%RB#0	0.609	0.311	-0.070	22.45	23.50	0.776	21.6°C
Right Hand Tilted 15°	26865/831.5	15M QPSK 100%RB#0	0.553	0.261	-0.100	22.45	23.50	0.704	21.6°C
Tested at the worst position with battery 2#									
Right Hand Touched	26865/831.5	15M QPSK 1RB#38	0.957	0.478	-0.080	22.70	23.50	1.151	21.6°C
Right Hand Touched-Repeated	26865/831.5	15M QPSK 1RB#38	0.892	0.464	-0.130	22.70	23.50	1.072	21.6°C

Tested at the worst position with battery 3#									
Right Hand Touched	26865/831.5	15M QPSK 1RB#38	0.926	0.469	-0.070	22.70	23.50	1.113	21.6°C

Table 86: Head SAR test results of LTE Band XXVI

Test Position of Body-Worn with 15mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Front Side	26865/831.5	15M QPSK 1RB#38	0.107	0.063	0.110	22.70	23.50	0.129	21.6°C
Back Side	26865/831.5	15M QPSK 1RB#38	0.107	0.062	-0.070	22.70	23.50	0.129	21.6°C
50%RB									
Front Side	26865/831.5	15M QPSK 50%RB#18	0.089	0.056	0.080	22.63	23.50	0.109	21.6°C
Back Side	26865/831.5	15M QPSK 50%RB#18	0.090	0.058	-0.040	22.63	23.50	0.110	21.6°C
Tested at the worst position with battery 2#									
Back Side	26865/831.5	15M QPSK 1RB#38	0.100	0.058	0.000	22.70	23.50	0.120	21.6°C
Tested at the worst position with battery 3#									
Back Side	26865/831.5	15M QPSK 1RB#38	0.095	0.056	-0.170	22.70	23.50	0.114	21.6°C

Table 87: Body-Worn SAR test results of LTE Band XXVI

Test Position of Hotspot with 10mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Front Side	26865/831.5	15M QPSK 1RB#38	0.220	0.120	0.040	22.70	23.50	0.264	21.6°C
Back Side	26865/831.5	15M QPSK 1RB#38	0.234	0.128	-0.040	22.70	23.50	0.281	21.6°C
Left Side	26865/831.5	15M QPSK 1RB#38	0.118	0.080	0.110	22.70	23.50	0.142	21.6°C
Right Side	26865/831.5	15M QPSK 1RB#38	0.019	0.013	0.100	22.70	23.50	0.023	21.6°C
Top Side	26865/831.5	15M QPSK 1RB#38	0.214	0.121	0.130	22.70	23.50	0.257	21.6°C
50%RB									
Front Side	26865/831.5	15M QPSK 50%RB#18	0.157	0.094	0.030	22.63	23.50	0.192	21.6°C
Back Side	26865/831.5	15M QPSK 50%RB#18	0.180	0.113	-0.040	22.63	23.50	0.220	21.6°C
Left Side	26865/831.5	15M QPSK 50%RB#18	0.073	0.049	0.050	22.63	23.50	0.089	21.6°C
Right Side	26865/831.5	15M QPSK 50%RB#18	0.012	0.008	0.120	22.63	23.50	0.014	21.6°C
Top Side	26865/831.5	15M QPSK 50%RB#18	0.146	0.083	0.120	22.63	23.50	0.178	21.6°C
Tested at the worst position with battery 2#									
Back Side	26865/831.5	15M QPSK 1RB#38	0.244	0.132	-0.150	22.70	23.50	0.293	21.6°C
Tested at the worst position with battery 3#									
Back Side	26865/831.5	15M QPSK 1RB#38	0.233	0.128	-0.020	22.70	23.50	0.280	21.6°C

Table 88: Hotspot SAR test results of LTE Band XXVI

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

7.2.13 SAR measurement Result of LTE Band XXXVIII(Second Antenna)

Test Position of Head	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Left Hand Touched	37850/2580	20M QPSK 1RB#50	0.282	0.150	0.000	23.27	23.50	0.297	21.6°C
Left Hand Tilted 15°	37850/2580	20M QPSK 1RB#50	0.307	0.155	-0.070	23.27	23.50	0.324	21.6°C
Right Hand Touched	37850/2580	20M QPSK 1RB#50	0.960	0.489	0.060	23.27	23.50	1.012	21.6°C
Right Hand Touched	38000/2595	20M QPSK 1RB#50	0.823	0.421	0.090	22.82	23.50	0.962	21.6°C
Right Hand Touched	38150/2610	20M QPSK 1RB#50	1.050	0.532	0.070	23.25	23.50	1.112	21.6°C
Right Hand Touched-Repeated	38150/2610	20M QPSK 1RB#50	1.070	0.536	0.050	23.25	23.50	1.133	21.6°C
Right Hand Tilted 15°	37850/2580	20M QPSK 1RB#50	0.944	0.420	0.000	23.27	23.00	0.887	21.6°C
Right Hand Tilted 15°	38000/2595	20M QPSK 1RB#50	0.828	0.365	0.130	22.82	23.50	0.968	21.6°C
Right Hand Tilted 15°	38150/2610	20M QPSK 1RB#50	1.040	0.456	-0.190	23.25	23.50	1.102	21.6°C
50%RB									
Left Hand Touched	38150/2610	20M QPSK 50%RB#25	0.269	0.133	0.130	23.31	23.50	0.281	21.6°C
Left Hand Tilted 15°	38150/2610	20M QPSK 50%RB#25	0.324	0.151	0.060	23.31	23.50	0.338	21.6°C
Right Hand Touched	38150/2610	20M QPSK 50%RB#25	1.040	0.523	0.060	23.31	23.50	1.087	21.6°C
Right Hand Touched	37850/2580	20M QPSK 50%RB#25	0.915	0.466	0.060	23.07	23.50	1.010	21.6°C
Right Hand Touched	38000/2595	20M QPSK 50%RB#50	0.792	0.404	0.190	22.96	23.50	0.897	21.6°C
Right Hand Tilted 15°	38150/2610	20M QPSK 50%RB#25	1.020	0.448	0.140	23.31	23.50	1.066	21.6°C
Right Hand Tilted 15°	37850/2580	20M QPSK 50%RB#25	0.890	0.395	0.050	23.07	23.50	0.983	21.6°C
Right Hand Tilted 15°	38000/2595	20M QPSK 50%RB#50	0.787	0.347	0.000	22.96	23.50	0.891	21.6°C
100%RB									
Right Hand Touched	38150/2610	20M QPSK 100%RB#0	0.950	0.477	-0.010	22.97	23.50	1.073	21.6°C
Right Hand Tilted 15°	38150/2610	20M QPSK 100%RB#0	0.916	0.402	0.130	22.97	23.50	1.035	21.6°C
Tested at the worst position with battery 2#									
Right Hand Touched	38150/2610	20M QPSK 1RB#50	0.908	0.432	-0.040	23.25	23.50	0.962	21.6°C

Tested at the worst position with battery 3#									
Right Hand Touched	38150/2610	20M QPSK 1RB#50	1.010	0.516	0.050	23.25	23.50	1.070	21.6°C

Table 89: Head SAR test results of LTE Band XXXVIII

Test Position of Body-Worn with 15mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Front Side	37850/2580	20M QPSK 1RB#50	0.133	0.074	0.140	23.27	23.50	0.140	21.6°C
Back Side	37850/2580	20M QPSK 1RB#50	0.119	0.064	0.110	23.27	23.50	0.125	21.6°C
50%RB									
Front Side	38150/2610	20M QPSK 50%RB#25	0.158	0.087	0.160	23.31	23.50	0.165	21.6°C
Back Side	38150/2610	20M QPSK 50%RB#25	0.139	0.074	-0.050	23.31	23.50	0.145	21.6°C
Tested at the worst position with battery 2#									
Front Side	38150/2610	20M QPSK 50%RB#25	0.124	0.067	0.120	23.31	23.50	0.130	21.6°C
Tested at the worst position with battery 3#									
Front Side	38150/2610	20M QPSK 50%RB#25	0.160	0.087	0.110	23.31	23.50	0.167	21.6°C

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

Test Position of Hotspot with 10mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Front Side	37850/2580	20M QPSK 1RB#50	0.268	0.145	0.050	23.27	23.50	0.283	21.6°C
Back Side	37850/2580	20M QPSK 1RB#50	0.278	0.146	0.120	23.27	23.50	0.293	21.6°C
Left Side	37850/2580	20M QPSK 1RB#50	0.347	0.170	0.010	23.27	23.50	0.366	21.6°C
Right Side	37850/2580	20M QPSK 1RB#50	0.018	0.009	0.140	23.27	23.50	0.019	21.6°C
Top Side	37850/2580	20M QPSK 1RB#50	0.254	0.107	0.020	23.27	23.50	0.268	21.6°C
50%RB									
Front Side	38150/2610	20M QPSK 50%RB#25	0.286	0.154	0.100	23.31	23.50	0.299	21.6°C
Back Side	38150/2610	20M QPSK 50%RB#25	0.317	0.168	-0.030	23.31	23.50	0.331	21.6°C
Left Side	38150/2610	20M QPSK 50%RB#25	0.421	0.205	-0.020	23.31	23.50	0.440	21.6°C
Right Side	38150/2610	20M QPSK 50%RB#25	0.017	0.007	0.130	23.31	23.50	0.017	21.6°C
Top Side	38150/2610	20M QPSK 50%RB#25	0.266	0.114	-0.030	23.31	23.50	0.278	21.6°C
Tested at the worst position with battery 2#									
Left Side	38150/2610	20M QPSK 50%RB#25	0.331	0.162	-0.080	23.31	23.50	0.346	21.6°C
Tested at the worst position with battery 3#									
Left Side	38150/2610	20M QPSK 50%RB#25	0.426	0.207	0.000	23.31	23.50	0.445	21.6°C

Table 91: Hotspot SAR test results of LTE Band XXXVIII

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

7.2.14 SAR measurement Result of LTE Band XLI(Second Antenna)

Test Position of Head	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Left Hand Touched	40340/2565	20M QPSK 1RB#50	0.345	0.177	0.100	22.17	23.00	0.418	21.6°C
Left Hand Tilted 15°	40340/2565	20M QPSK 1RB#50	0.414	0.193	0.090	22.17	23.00	0.501	21.6°C
Right Hand Touched	40340/2565	20M QPSK 1RB#50	1.120	0.538	-0.030	22.17	23.00	1.356	21.6°C
Right Hand Touched	40740/2605	20M QPSK 1RB#50	1.120	0.511	0.050	22.01	23.00	1.407	21.6°C
Right Hand Touched	41140/2645	20M QPSK 1RB#50	0.982	0.441	0.120	21.54	23.00	1.374	21.6°C
Right Hand Tilted 15°	40340/2565	20M QPSK 1RB#50	1.180	0.503	-0.070	22.17	23.00	1.429	21.6°C
Right Hand Tilted 15°-Repeated	40340/2565	20M QPSK 1RB#50	1.160	0.497	0.130	22.17	23.00	1.404	21.6°C
Right Hand Tilted 15°	40740/2605	20M QPSK 1RB#50	1.130	0.475	0.150	22.01	23.00	1.419	21.6°C
Right Hand Tilted 15°	41140/2645	20M QPSK 1RB#50	1.000	0.409	0.040	21.54	23.00	1.400	21.6°C
50%RB									
Left Hand Touched	40340/2565	20M QPSK 50%RB#25	0.347	0.183	0.170	22.08	22.50	0.382	21.6°C
Left Hand Tilted 15°	40340/2565	20M QPSK 50%RB#25	0.407	0.201	0.060	22.08	22.50	0.448	21.6°C
Right Hand Touched	40340/2565	20M QPSK 50%RB#25	1.010	0.492	0.160	22.08	22.50	1.113	21.6°C
Right Hand Touched	40740/2605	20M QPSK 50%RB#25	0.973	0.453	0.030	21.87	23.00	1.262	21.6°C
Right Hand Touched	41140/2645	20M QPSK 50%RB#25	0.952	0.425	0.100	21.49	23.00	1.348	21.6°C
Right Hand Tilted 15°	40340/2565	20M QPSK 50%RB#25	1.150	0.494	0.060	22.08	22.50	1.267	21.6°C
Right Hand Tilted 15°	40740/2605	20M QPSK 50%RB#25	1.110	0.468	0.100	21.87	22.50	1.283	21.6°C
Right Hand Tilted 15°	41140/2645	20M QPSK 50%RB#25	0.996	0.411	0.050	21.49	22.50	1.257	21.6°C
100%RB									
Right Hand Touched	40340/2565	20M QPSK 100%RB#0	1.000	0.476	0.100	21.97	22.50	1.130	21.6°C
Right Hand Tilted 15°	40340/2565	20M QPSK 100%RB#0	1.130	0.487	0.050	21.97	22.50	1.277	21.6°C
Tested at the worst position with battery 2#									
Right Hand Tilted 15°	40340/2565	20M QPSK 1RB#50	1.040	0.453	0.030	22.17	23.00	1.259	21.6°C

Tested at the worst position with battery 3#									
Right Hand Tilted 15°	40340/2565	20M QPSK 1RB#50	1.120	0.496	-0.020	22.17	23.00	1.356	21.6°C
Additional SAR test(Second antenna transmission with WIFI antenna)									
1RB									
Right Hand Touched	40340/2565	20M QPSK 1RB#50	0.886	0.445	0.160	21.22	22.50	1.190	21.6°C
Right Hand Touched	40740/2605	20M QPSK 1RB#99	0.665	0.320	0.130	20.81	22.50	0.981	21.6°C
Right Hand Touched	41140/2645	20M QPSK 1RB#50	0.693	0.325	0.170	20.93	22.50	0.995	21.6°C
Right Hand Tilted 15°	40340/2565	20M QPSK 1RB#50	0.869	0.378	0.130	21.22	22.50	1.167	21.6°C
Right Hand Tilted 15°	40740/2605	20M QPSK 1RB#99	0.767	0.341	0.140	20.81	22.50	1.132	21.6°C
Right Hand Tilted 15°	41140/2645	20M QPSK 1RB#50	0.751	0.310	0.060	20.93	22.50	1.078	21.6°C
50%RB									
Right Hand Touched	40340/2565	20M QPSK 50%RB#25	0.805	0.404	-0.030	21.20	22.00	0.968	21.6°C
Right Hand Touched	40740/2605	20M QPSK 50%RB#25	0.746	0.363	0.110	20.88	22.00	0.965	21.6°C
Right Hand Touched	41140/2645	20M QPSK 50%RB#25	0.678	0.317	0.110	20.39	22.00	0.982	21.6°C
Right Hand Tilted 15°	40340/2565	20M QPSK 50%RB#25	0.842	0.366	-0.180	21.20	22.00	1.012	21.6°C
Right Hand Tilted 15°	40740/2605	20M QPSK 50%RB#25	0.793	0.335	0.050	20.88	22.00	1.026	21.6°C
Right Hand Tilted 15°	41140/2645	20M QPSK 50%RB#25	0.737	0.304	0.050	20.39	22.00	1.068	21.6°C
100%RB									
Right Hand Touched	40340/2565	20M QPSK 100%RB#0	0.766	0.388	0.020	21.09	22.00	0.945	21.6°C
Right Hand Tilted 15°	40340/2565	20M QPSK 100%RB#0	0.817	0.354	0.120	21.09	22.00	1.007	21.6°C

Table 92: Head SAR test results of LTE Band XLI

Test Position of Body-Worn with 15mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Front Side	40340/2565	20M QPSK 1RB#50	0.115	0.063	0.070	22.17	23.00	0.139	21.6°C
Back Side	40340/2565	20M QPSK 1RB#50	0.096	0.052	0.110	22.17	23.00	0.116	21.6°C
50%RB									
Front Side	40340/2565	20M QPSK 50%RB#25	0.113	0.062	0.190	22.08	22.50	0.124	21.6°C
Back Side	40340/2565	20M QPSK 50%RB#25	0.095	0.052	0.110	22.08	22.50	0.105	21.6°C
Tested at the worst position with battery 2#									
Front Side	40340/2565	20M QPSK 1RB#50	0.102	0.058	-0.020	22.17	23.00	0.123	21.6°C
Tested at the worst position with battery 3#									
Front Side	40340/2565	20M QPSK 1RB#50	0.131	0.073	0.120	22.17	23.00	0.159	21.6°C

Table 93: Body-Worn SAR test results of LTE Band XLI

Test Position of Hotspot with 10mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Front Side	40340/2565	20M QPSK 1RB#50	0.261	0.141	0.190	22.17	23.00	0.316	21.6°C
Back Side	40340/2565	20M QPSK 1RB#50	0.241	0.126	0.040	22.17	23.00	0.292	21.6°C
Left Side	40340/2565	20M QPSK 1RB#50	0.272	0.134	-0.070	22.17	23.00	0.329	21.6°C
Right Side	40340/2565	20M QPSK 1RB#50	0.021	0.010	-0.140	22.17	23.00	0.025	21.6°C
Top Side	40340/2565	20M QPSK 1RB#50	0.244	0.103	0.100	22.17	23.00	0.295	21.6°C
50%RB									
Front Side	40340/2565	20M QPSK 50%RB#25	0.254	0.137	0.120	22.08	22.50	0.280	21.6°C
Back Side	40340/2565	20M QPSK 50%RB#25	0.236	0.124	0.150	22.08	22.50	0.260	21.6°C
Left Side	40340/2565	20M QPSK 50%RB#25	0.267	0.133	-0.080	22.08	22.50	0.294	21.6°C
Right Side	40340/2565	20M QPSK 50%RB#25	0.016	0.008	0.100	22.08	22.50	0.017	21.6°C
Top Side	40340/2565	20M QPSK 50%RB#25	0.221	0.095	0.110	22.08	22.50	0.243	21.6°C
Tested at the worst position with battery 2#									
Left Side	40340/2565	20M QPSK 1RB#50	0.233	0.117	-0.170	22.17	23.00	0.282	21.6°C
Tested at the worst position with battery 3#									
Left Side	40340/2565	20M QPSK 1RB#50	0.304	0.149	-0.100	22.17	23.00	0.368	21.6°C

Table 94: Hotspot SAR test results of LTE Band XLI

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

7.2.15 SAR measurement Result of GSM850(Main Antenna)

Test Position of Head	Test channel /Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
Left Hand Touched	190/836.6	GSM	0.123	0.093	0.140	32.63	33.50	0.150	21.6°C
Left Hand Tilted 15°	190/836.6	GSM	0.097	0.074	0.070	32.63	33.50	0.119	21.6°C
Right Hand Touched	190/836.6	GSM	0.147	0.110	0.100	32.63	33.50	0.180	21.6°C
Right Hand Tilted 15°	190/836.6	GSM	0.097	0.074	-0.060	32.63	33.50	0.119	21.6°C
Right Hand Touched	128/824.2	GSM	0.134	0.101	0.070	32.19	33.50	0.181	21.6°C
Right Hand Touched	251/848.8	GSM	0.151	0.112	-0.040	32.57	33.50	0.187	21.6°C
Tested at the worst position with battery 2#									
Right Hand Touched	251/848.8	GSM	0.178	0.134	-0.180	32.57	33.50	0.221	21.6°C
Tested at the worst position with battery 3#									
Right Hand Touched	251/848.8	GSM	0.175	0.132	0.030	32.57	33.50	0.217	21.6°C

Table 95: Head SAR test results of GSM850

Test Position of Body-Worn with 15mm	Test channel /Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune- up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
Front Side	190/836.6	GSM	0.118	0.089	-0.010	32.63	33.50	0.144	21.6°C
Back Side	190/836.6	GSM	0.143	0.087	0.090	32.63	33.50	0.175	21.6°C
Tested at the worst position with battery 2#									
Back Side	190/836.6	GSM	0.134	0.094	-0.010	32.63	33.50	0.164	21.6°C
Tested at the worst position with battery 3#									
Back Side	190/836.6	GSM	0.159	0.120	0.050	32.63	33.50	0.194	21.6°C

Table 96: Body-Worn SAR test results of GSM850

Test Position of Hotspot with 10mm	Test channel /Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
Front Side	190/836.6	GPRS 2TS	0.349	0.208	-0.070	30.30	31.50	0.460	21.6°C
Back Side	190/836.6	GPRS 2TS	0.469	0.275	0.070	30.30	31.50	0.618	21.6°C
Left Side	190/836.6	GPRS 2TS	0.098	0.066	0.000	30.30	31.50	0.129	21.6°C
Right Side	190/836.6	GPRS 2TS	0.381	0.260	-0.020	30.30	31.50	0.502	21.6°C
Bottom Side	190/836.6	GPRS 2TS	0.390	0.195	-0.090	30.30	31.50	0.514	21.6°C
Tested at the worst position with battery 2#									
Back Side	190/836.6	GPRS 2TS	0.418	0.246	-0.110	30.30	31.50	0.551	21.6°C
Tested at the worst position with battery 3#									
Back Side	190/836.6	GPRS 2TS	0.485	0.281	0.080	30.30	31.50	0.639	21.6°C

Table 97: Hotspot SAR test results of GSM850

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

7.2.16 SAR measurement Result of GSM1900(Main Antenna)

Test Position of Head	Test channel /Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
Left Hand Touched	661/1880	GSM	0.089	0.057	0.060	29.29	30.30	0.112	21.6°C
Left Hand Tilted 15°	661/1880	GSM	0.038	0.022	0.150	29.29	30.30	0.048	21.6°C
Right Hand Touched	661/1880	GSM	0.055	0.035	0.150	29.29	30.30	0.070	21.6°C
Right Hand Tilted 15°	661/1880	GSM	0.029	0.017	0.170	29.29	30.30	0.037	21.6°C
Left Hand Touched	512/1850.2	GSM	0.102	0.065	0.140	29.46	30.30	0.124	21.6°C
Left Hand Touched	810/1909.8	GSM	0.116	0.073	0.180	29.38	30.30	0.143	21.6°C
Tested at the worst position with battery 2#									
Left Hand Touched	810/1909.8	GSM	0.140	0.088	0.120	29.38	30.30	0.173	21.6°C
Tested at the worst position with battery 3#									
Left Hand Touched	810/1909.8	GSM	0.272	0.172	0.180	29.38	30.30	0.336	21.6°C

Table 98: Head SAR test results of GSM1900

Test Position of Body-Worn with 15mm	Test channel /Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune- up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
Front Side	661/1880	GSM	0.204	0.119	-0.110	29.29	30.30	0.257	21.6°C
Back Side	661/1880	GSM	0.215	0.118	-0.140	29.29	30.30	0.271	21.6°C
Tested at the worst position with battery 2#									
Back Side	661/1880	GSM	0.089	0.050	0.020	29.29	30.30	0.112	21.6°C
Tested at the worst position with battery 3#									
Back Side	661/1880	GSM	0.081	0.045	0.050	29.29	30.30	0.102	21.6°C

Table 99: Body-Worn SAR test results of GSM1900

Test Position of Hotspot with 10mm	Test channel /Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
Front Side	661/1880	GPRS 2TS	0.340	0.184	-0.040	27.15	28.50	0.464	21.6°C
Back Side	661/1880	GPRS 2TS	0.400	0.212	0.190	27.15	28.50	0.546	21.6°C
Left Side	661/1880	GPRS 2TS	0.222	0.129	-0.150	27.15	28.50	0.303	21.6°C
Right Side	661/1880	GPRS 2TS	0.046	0.025	0.050	27.15	28.50	0.062	21.6°C
Bottom Side	661/1880	GPRS 2TS	0.444	0.216	0.030	27.15	28.50	0.606	21.6°C
Tested at the worst position with battery 2#									
Bottom Side	661/1880	GPRS 2TS	0.221	0.116	0.110	27.15	28.50	0.302	21.6°C
Tested at the worst position with battery 3#									
Bottom Side	661/1880	GPRS 2TS	0.201	0.107	0.170	27.15	28.50	0.274	21.6°C

Table 100: Hotspot SAR test results of GSM1900

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

7.2.17 SAR measurement Result of UMTS Band II(Main Antenna)

Test Position of Head	Test channel /Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
Left Hand Touched	9400/1880	RMC	0.215	0.138	0.130	23.31	24.50	0.283	21.6°C
Left Hand Tilted 15°	9400/1880	RMC	0.072	0.043	0.190	23.31	24.50	0.095	21.6°C
Right Hand Touched	9400/1880	RMC	0.113	0.073	0.170	23.31	24.50	0.149	21.6°C
Right Hand Tilted 15°	9400/1880	RMC	0.067	0.035	0.040	23.31	24.50	0.088	21.6°C
Left Hand Touched	9262/1852.4	RMC	0.184	0.118	0.190	23.52	24.50	0.231	21.6°C
Left Hand Touched	9538/1907.6	RMC	0.249	0.157	0.150	23.57	24.50	0.308	21.6°C
Tested at the worst position with battery 2#									
Left Hand Touched	9538/1907.6	RMC	0.247	0.157	0.160	23.57	24.50	0.306	21.6°C
Tested at the worst position with battery 3#									
Left Hand Touched	9538/1907.6	RMC	0.432	0.274	0.150	23.57	24.50	0.535	21.6°C

Table 101: Head SAR test results of UMTS Band II

Test Position of Body-Worn with 15mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
Front Side	9400/1880	RMC	0.173	0.100	0.020	23.31	24.50	0.228	21.6°C
Back Side	9400/1880	RMC	0.181	0.102	-0.140	23.31	24.50	0.238	21.6°C
Tested at the worst position with battery 2#									
Back Side	9400/1880	RMC	0.157	0.088	-0.030	23.31	24.50	0.206	21.6°C
Tested at the worst position with battery 3#									
Back Side	9400/1880	RMC	0.169	0.096	-0.120	23.31	24.50	0.222	21.6°C

Table 102: Body-Worn SAR test results of UMTS Band II

Test Position of Hotspot with 10mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
Front Side	9400/1880	RMC	0.354	0.194	0.010	23.31	24.50	0.466	21.6°C
Back Side	9400/1880	RMC	0.372	0.198	-0.010	23.31	24.50	0.489	21.6°C
Left Side	9400/1880	RMC	0.328	0.188	-0.060	23.31	24.50	0.431	21.6°C
Right Side	9400/1880	RMC	0.039	0.022	0.110	23.31	24.50	0.051	21.6°C
Bottom Side	9400/1880	RMC	0.484	0.261	0.120	23.31	24.50	0.637	21.6°C
Tested at the worst position with battery 2#									
Bottom Side	9400/1880	RMC	0.477	0.258	0.100	23.31	24.50	0.627	21.6°C
Tested at the worst position with battery 3#									
Bottom Side	9400/1880	RMC	0.503	0.270	0.100	23.31	24.50	0.662	21.6°C

Table 103: Hotspot SAR test results of UMTS Band II

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

7.2.18 SAR measurement Result of UMTS Band IV(Main Antenna)

Test Position of Head	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
Left Hand Touched	1413/1732.6	RMC	0.183	0.121	0.040	23.53	24.00	0.204	21.6°C
Left Hand Tilted 15°	1413/1732.6	RMC	0.053	0.033	0.180	23.53	24.00	0.059	21.6°C
Right Hand Touched	1413/1732.6	RMC	0.088	0.059	0.190	23.53	24.00	0.099	21.6°C
Right Hand Tilted 15°	1413/1732.6	RMC	0.059	0.035	0.160	23.53	24.00	0.065	21.6°C
Left Hand Touched	1312/1712.4	RMC	0.191	0.127	0.140	23.52	24.00	0.213	21.6°C
Left Hand Touched	1513/1752.6	RMC	0.172	0.113	0.180	23.50	24.00	0.193	21.6°C
Tested at the worst position with battery 2#									
Left Hand Touched	1312/1712.4	RMC	0.183	0.119	0.140	23.52	24.00	0.204	21.6°C
Tested at the worst position with battery 3#									
Left Hand Touched	1312/1712.4	RMC	0.186	0.121	0.120	23.52	24.00	0.208	21.6°C

Table 104: Head SAR test results of UMTS Band IV

Test Position of Body-Worn with 15mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune- up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
Front Side	1413/1732.6	RMC	0.134	0.081	0.050	23.53	24.00	0.149	21.6°C
Back Side	1413/1732.6	RMC	0.160	0.095	0.150	23.53	24.00	0.178	21.6°C
Tested at the worst position with battery 2#									
Back Side	1413/1732.6	RMC	0.171	0.100	0.010	23.53	24.00	0.191	21.6°C
Tested at the worst position with battery 3#									
Back Side	1413/1732.6	RMC	0.149	0.088	-0.130	23.53	24.00	0.166	21.6°C

Table 105: Body-Worn SAR test results of UMTS Band IV

Test Position of Hotspot with 10mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
Front Side	1413/1732.6	RMC	0.278	0.162	0.080	23.53	24.00	0.310	21.6°C
Back Side	1413/1732.6	RMC	0.332	0.190	0.050	23.53	24.00	0.370	21.6°C
Left Side	1413/1732.6	RMC	0.268	0.156	0.030	23.53	24.00	0.299	21.6°C
Right Side	1413/1732.6	RMC	0.036	0.021	0.060	23.53	24.00	0.040	21.6°C
Bottom Side	1413/1732.6	RMC	0.726	0.389	-0.190	23.53	24.00	0.809	21.6°C
Bottom Side	1312/1712.4	RMC	0.806	0.430	-0.150	23.52	24.00	0.900	21.6°C
Bottom Side	1513/1752.6	RMC	0.612	0.329	-0.120	23.50	24.00	0.687	21.6°C
Tested at the worst position with battery 2#									
Bottom Side	1312/1712.4	RMC	0.826	0.440	0.110	23.52	24.00	0.923	21.6°C
Bottom Side-Repeated	1312/1712.4	RMC	0.798	0.427	-0.120	23.52	24.00	0.891	21.6°C
Tested at the worst position with battery 3#									
Bottom Side	1312/1712.4	RMC	0.746	0.401	-0.110	23.52	24.00	0.833	21.6°C

Table 106: Hotspot SAR test results of UMTS Band IV

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

7.2.19 SAR measurement Result of UMTS Band V(Main Antenna)

Test Position of Head	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
Left Hand Touched	4182/836.4	RMC	0.100	0.076	0.190	23.90	24.50	0.115	21.6°C
Left Hand Tilted 15°	4182/836.4	RMC	0.084	0.064	0.080	23.90	24.50	0.096	21.6°C
Right Hand Touched	4182/836.4	RMC	0.127	0.096	0.130	23.90	24.50	0.146	21.6°C
Right Hand Tilted 15°	4182/836.4	RMC	0.084	0.063	0.130	23.90	24.50	0.097	21.6°C
Right Hand Touched	4132/826.4	RMC	0.117	0.089	0.060	23.99	24.50	0.132	21.6°C
Right Hand Touched	4233/846.6	RMC	0.127	0.095	0.180	23.88	24.50	0.146	21.6°C
Tested at the worst position with battery 2#									
Right Hand Touched	4233/846.6	RMC	0.164	0.124	-0.100	23.88	24.50	0.189	21.6°C
Tested at the worst position with battery 3#									
Right Hand Touched	4233/846.6	RMC	0.160	0.121	0.160	23.88	24.50	0.185	21.6°C

Table 107: Head SAR test results of UMTS Band V

Test Position of Body-Worn with 15mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune- up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
Front Side	4182/836.4	RMC	0.177	0.134	0.040	23.90	24.50	0.203	21.6°C
Back Side	4182/836.4	RMC	0.264	0.201	-0.050	23.90	24.50	0.303	21.6°C
Tested at the worst position with battery 2#									
Back Side	4182/836.4	RMC	0.145	0.111	-0.070	23.90	24.50	0.166	21.6°C
Tested at the worst position with battery 3#									
Back Side	4182/836.4	RMC	0.142	0.109	0.030	23.90	24.50	0.163	21.6°C

Table 108: Body-Worn SAR test results of UMTS Band V

Test Position of Hotspot with 10mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
Front Side	4182/836.4	RMC	0.267	0.157	-0.010	23.90	24.50	0.307	21.6°C
Back Side	4182/836.4	RMC	0.347	0.201	0.110	23.90	24.50	0.398	21.6°C
Left Side	4182/836.4	RMC	0.149	0.101	-0.010	23.90	24.50	0.171	21.6°C
Right Side	4182/836.4	RMC	0.380	0.259	0.060	23.90	24.50	0.436	21.6°C
Bottom Side	4182/836.4	RMC	0.325	0.159	-0.050	23.90	24.50	0.373	21.6°C
Tested at the worst position with battery 2#									
Right Side	4182/836.4	RMC	0.245	0.165	-0.070	23.90	24.50	0.281	21.6°C
Tested at the worst position with battery 3#									
Right Side	4182/836.4	RMC	0.228	0.155	-0.100	23.90	24.50	0.262	21.6°C

Table 109: Hotspot SAR test results of UMTS Band V

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

7.2.20 SAR measurement Result of LTE Band II(Main Antenna)

Test Position of Head	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Left Hand Touched	18900/1880	20M QPSK 1RB#50	0.145	0.091	0.190	22.45	22.70	0.154	21.6°C
Left Hand Tilted 15°	18900/1880	20M QPSK 1RB#50	0.049	0.028	0.030	22.45	22.70	0.051	21.6°C
Right Hand Touched	18900/1880	20M QPSK 1RB#50	0.076	0.045	0.040	22.45	22.70	0.081	21.6°C
Right Hand Touched	18900/1880	20M QPSK 1RB#50	0.045	0.022	0.080	22.45	22.70	0.047	21.6°C
50%RB									
Left Hand Touched	18900/1880	20M QPSK 50%RB#25	0.115	0.067	0.080	21.12	22.50	0.158	21.6°C
Left Hand Tilted 15°	18900/1880	20M QPSK 50%RB#25	0.038	0.022	0.130	21.12	22.50	0.052	21.6°C
Right Hand Touched	18900/1880	20M QPSK 50%RB#25	0.059	0.035	0.060	21.12	22.50	0.081	21.6°C
Right Hand Touched	18900/1880	20M QPSK 50%RB#25	0.035	0.017	0.090	21.12	22.50	0.048	21.6°C
Left Hand Touched	18700/1860	20M QPSK 50%RB#0	0.189	0.118	0.180	20.74	22.50	0.283	21.6°C
Left Hand Touched	19100/1900	20M QPSK 50%RB#25	0.305	0.193	0.160	20.89	22.50	0.442	21.6°C
Tested at the worst position with battery 2#									
Left Hand Touched	19100/1900	20M QPSK 50%RB#25	0.237	0.151	0.130	20.89	22.70	0.360	21.6°C
Tested at the worst position with battery 3#									
Left Hand Touched	19100/1900	20M QPSK 50%RB#25	0.283	0.179	0.110	20.89	22.70	0.429	21.6°C

Table 110: Head SAR test results of LTE Band II

Test Position of Body-Worn with 15mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Front Side	18900/1880	20M QPSK 1RB#50	0.126	0.072	0.100	22.45	22.70	0.133	21.6°C
Back Side	18900/1880	20M QPSK 1RB#50	0.108	0.060	0.090	22.45	22.70	0.114	21.6°C
50%RB									
Front Side	18900/1880	20M QPSK 50%RB#25	0.097	0.055	-0.040	21.12	22.50	0.133	21.6°C
Back Side	18900/1880	20M QPSK 50%RB#25	0.083	0.046	0.040	21.12	22.50	0.115	21.6°C
Tested at the worst position with battery 2#									
Front Side	18900/1880	20M QPSK 1RB#50	0.125	0.073	0.120	22.45	22.70	0.132	21.6°C
Tested at the worst position with battery 3#									
Front Side	18900/1880	20M QPSK 1RB#50	0.110	0.064	-0.040	22.45	22.70	0.117	21.6°C

Table 111: Body-Worn SAR test results of LTE Band II

Test Position of Hotspot with 10mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Front Side	18900/1880	20M QPSK 1RB#50	0.227	0.130	0.010	22.45	22.70	0.240	21.6°C
Back Side	18900/1880	20M QPSK 1RB#50	0.223	0.125	0.110	22.45	22.70	0.236	21.6°C
Left Side	18900/1880	20M QPSK 1RB#50	0.213	0.121	-0.110	22.45	22.70	0.226	21.6°C
Right Side	18900/1880	20M QPSK 1RB#50	0.027	0.015	0.160	22.45	22.70	0.028	21.6°C
Bottom Side	18900/1880	20M QPSK 1RB#50	0.343	0.184	0.100	22.45	22.70	0.363	21.6°C
50%RB									
Front Side	18900/1880	20M QPSK 50%RB#25	0.177	0.101	0.100	21.12	22.50	0.243	21.6°C
Back Side	18900/1880	20M QPSK 50%RB#25	0.175	0.098	0.050	21.12	22.50	0.240	21.6°C
Left Side	18900/1880	20M QPSK 50%RB#25	0.168	0.096	-0.050	21.12	22.50	0.231	21.6°C
Right Side	18900/1880	20M QPSK 50%RB#25	0.021	0.011	-0.160	21.12	22.50	0.029	21.6°C
Bottom Side	18900/1880	20M QPSK 50%RB#25	0.257	0.134	0.050	21.12	22.50	0.353	21.6°C
Tested at the worst position with battery 2#									
Bottom Side	18900/1880	20M QPSK 1RB#50	0.406	0.217	-0.100	22.45	22.70	0.430	21.6°C
Tested at the worst position with battery 3#									
Bottom Side	18900/1880	20M QPSK 1RB#50	0.358	0.194	0.050	22.45	22.70	0.379	21.6°C

Table 112: Hotspot SAR test results of LTE Band II

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

7.2.21 SAR measurement Result of LTE Band IV(Main Antenna)

Test Position of Head	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducte d Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Left Hand Touched	20300/1745	20M QPSK 1RB#50	0.161	0.103	0.060	21.45	22.80	0.220	21.6°C
Left Hand Tilted 15°	20300/1745	20M QPSK 1RB#50	0.045	0.028	0.170	21.45	22.80	0.062	21.6°C
Right Hand Touched	20300/1745	20M QPSK 1RB#50	0.069	0.046	0.140	21.45	22.80	0.095	21.6°C
Right Hand Tilted 15°	20300/1745	20M QPSK 1RB#50	0.050	0.028	0.180	21.45	22.80	0.068	21.6°C
Left Hand Touched	20050/1720	20M QPSK 1RB#50	0.184	0.119	0.180	21.43	22.80	0.252	21.6°C
Left Hand Touched	20175/1732.5	20M QPSK 1RB#50	0.133	0.086	0.180	21.30	22.80	0.188	21.6°C
50%RB									
Left Hand Touched	20300/1745	20M QPSK 50%RB#50	0.135	0.079	0.170	21.39	22.50	0.174	21.6°C
Left Hand Tilted 15°	20300/1745	20M QPSK 50%RB#50	0.040	0.018	0.130	21.39	22.50	0.052	21.6°C
Right Hand Touched	20300/1745	20M QPSK 50%RB#50	0.057	0.035	-0.180	21.39	22.50	0.073	21.6°C
Right Hand Tilted 15°	20300/1745	20M QPSK 50%RB#50	0.040	0.023	0.190	21.39	22.50	0.052	21.6°C
Tested at the worst position with battery 2#									
Left Hand Touched	20050/1720	20M QPSK 1RB#50	0.190	0.124	0.160	21.43	22.80	0.260	21.6°C
Tested at the worst position with battery 3#									
Left Hand Touched	20050/1720	20M QPSK 1RB#50	0.188	0.123	0.150	21.43	22.80	0.258	21.6°C

Table 113: Head SAR test results of LTE Band IV

Test Position of Body-Worn with 15mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducte d Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Front Side	20300/1745	20M QPSK 1RB#50	0.141	0.083	0.190	21.45	22.80	0.192	21.6°C
Back Side	20300/1745	20M QPSK 1RB#50	0.176	0.104	0.060	21.45	22.80	0.240	21.6°C
50%RB									
Front Side	20300/1745	20M QPSK 50%RB#50	0.114	0.067	0.080	21.39	22.50	0.147	21.6°C
Back Side	20300/1745	20M QPSK 50%RB#50	0.137	0.081	0.110	21.39	22.50	0.177	21.6°C
Tested at the worst position with battery 2#									
Back Side	20300/1745	20M QPSK 1RB#50	0.179	0.105	-0.110	21.45	22.80	0.244	21.6°C
Tested at the worst position with battery 3#									
Back Side	20300/1745	20M QPSK 1RB#50	0.139	0.082	-0.040	21.45	22.80	0.190	21.6°C

Table 114: Body-Worn SAR test results of LTE Band IV

Test Position of Hotspot with 10mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Front Side	20300/1745	20M QPSK 1RB#50	0.294	0.165	-0.030	21.45	22.80	0.401	21.6°C
Back Side	20300/1745	20M QPSK 1RB#50	0.300	0.169	0.050	21.45	22.80	0.409	21.6°C
Left Side	20300/1745	20M QPSK 1RB#50	0.237	0.141	-0.120	21.45	22.80	0.323	21.6°C
Right Side	20300/1745	20M QPSK 1RB#50	0.034	0.021	0.010	21.45	22.80	0.047	21.6°C
Bottom Side	20300/1745	20M QPSK 1RB#50	0.649	0.348	-0.100	21.45	22.80	0.886	21.6°C
Bottom Side	20175/1732.5	20M QPSK 1RB#50	0.551	0.295	-0.090	21.30	22.80	0.778	21.6°C
Bottom Side	20050/1720	20M QPSK 1RB#50	0.782	0.418	-0.080	21.43	22.80	1.072	21.6°C
50%RB									
Front Side	20300/1745	20M QPSK 50%RB#50	0.233	0.132	0.100	21.39	22.50	0.301	21.6°C
Back Side	20300/1745	20M QPSK 50%RB#50	0.238	0.133	-0.030	21.39	22.50	0.307	21.6°C
Left Side	20300/1745	20M QPSK 50%RB#50	0.190	0.110	0.070	21.39	22.50	0.245	21.6°C
Right Side	20300/1745	20M QPSK 50%RB#50	0.028	0.016	0.030	21.39	22.50	0.036	21.6°C
Bottom Side	20300/1745	20M QPSK 50%RB#50	0.496	0.265	-0.120	21.39	22.50	0.640	21.6°C
100%RB									
Bottom Side	20300/1745	20M QPSK 100%RB#0	0.484	0.257	-0.020	21.25	22.80	0.692	21.6°C
Tested at the worst position with battery 2#									
Bottom Side	20050/1720	20M QPSK 1RB#50	0.860	0.459	-0.150	21.43	22.80	1.179	21.6°C
Bottom Side -Repeated	20050/1720	20M QPSK 1RB#50	0.845	0.452	-0.100	21.43	22.80	1.158	21.6°C
Tested at the worst position with battery 3#									
Bottom Side	20050/1720	20M QPSK 1RB#50	0.768	0.415	-0.070	21.43	22.80	1.053	21.6°C

Table 115: Hotspot SAR test results of LTE Band IV

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

7.2.22 SAR measurement Result of LTE Band V(Main Antenna)

Test Position of Head	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Left Hand Touched	20525/836.5	10M QPSK 1RB#25	0.112	0.086	0.080	22.31	23.50	0.147	21.6°C
Left Hand Tilted 15°	20525/836.5	10M QPSK 1RB#25	0.067	0.046	0.150	22.31	23.50	0.088	21.6°C
Right Hand Touched	20525/836.5	10M QPSK 1RB#25	0.158	0.119	-0.150	22.31	23.50	0.208	21.6°C
Right Hand Tilted 15°	20525/836.5	10M QPSK 1RB#25	0.067	0.044	0.070	22.31	23.50	0.089	21.6°C
Right Hand Touched	20450/829	10M QPSK 1RB#25	0.092	0.069	0.050	22.26	23.50	0.122	21.6°C
Right Hand Touched	20600/844	10M QPSK 1RB#25	0.096	0.066	0.090	22.15	23.50	0.131	21.6°C
50%RB									
Left Hand Touched	20450/829	10M QPSK 50%RB#0	0.057	0.044	0.070	21.77	22.50	0.068	21.6°C
Left Hand Tilted 15°	20450/829	10M QPSK 50%RB#0	0.042	0.032	0.150	21.77	22.50	0.050	21.6°C
Right Hand Touched	20450/829	10M QPSK 50%RB#0	0.082	0.062	0.060	21.77	22.50	0.097	21.6°C
Right Hand Tilted 15°	20450/829	10M QPSK 50%RB#0	0.045	0.029	0.020	21.77	22.50	0.053	21.6°C
Tested at the worst position with battery 2#									
Right Hand Touched	20525/836.5	10M QPSK 1RB#25	0.142	0.107	0.160	22.31	23.50	0.187	21.6°C
Tested at the worst position with battery 3#									
Right Hand Touched	20525/836.5	10M QPSK 1RB#25	0.164	0.124	-0.150	22.31	23.50	0.216	21.6°C

Table 116: Head SAR test results of LTE Band V

Test Position of Body-Worn with 15mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Front Side	20525/836.5	10M QPSK 1RB#25	0.135	0.949	0.030	22.31	23.50	0.178	21.6°C
Back Side	20525/836.5	10M QPSK 1RB#25	0.176	0.134	0.020	22.31	23.50	0.231	21.6°C
50%RB									
Front Side	20450/829	10M QPSK 50%RB#0	0.060	0.042	0.030	21.77	22.50	0.071	21.6°C
Back Side	20450/829	10M QPSK 50%RB#0	0.088	0.062	0.010	21.77	22.50	0.104	21.6°C
Tested at the worst position with battery 2#									
Back Side	20525/836.5	10M QPSK 1RB#25	0.122	0.083	0.010	22.31	23.50	0.160	21.6°C
Tested at the worst position with battery 3#									
Back Side	20525/836.5	10M QPSK 1RB#25	0.136	0.104	0.110	22.31	23.50	0.179	21.6°C

Table 117: Body-Worn SAR test results of LTE Band V

Test Position of Hotspot with 10mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Front Side	20525/836.5	10M QPSK 1RB#25	0.210	0.124	0.110	22.31	23.50	0.276	21.6°C
Back Side	20525/836.5	10M QPSK 1RB#25	0.301	0.176	-0.100	22.31	23.50	0.396	21.6°C
Left Side	20525/836.5	10M QPSK 1RB#25	0.091	0.061	0.030	22.31	23.50	0.119	21.6°C
Right Side	20525/836.5	10M QPSK 1RB#25	0.295	0.204	0.140	22.31	23.50	0.388	21.6°C
Bottom Side	20525/836.5	10M QPSK 1RB#25	0.289	0.144	0.140	22.31	23.50	0.380	21.6°C
50%RB									
Front Side	20450/829	10M QPSK 50%RB#0	0.100	0.059	-0.140	21.77	22.50	0.118	21.6°C
Back Side	20450/829	10M QPSK 50%RB#0	0.148	0.091	-0.010	21.77	22.50	0.175	21.6°C
Left Side	20450/829	10M QPSK 50%RB#0	0.041	0.027	0.010	21.77	22.50	0.048	21.6°C
Right Side	20450/829	10M QPSK 50%RB#0	0.150	0.101	0.030	21.77	22.50	0.177	21.6°C
Bottom Side	20450/829	10M QPSK 50%RB#0	0.117	0.062	0.160	21.77	22.50	0.138	21.6°C
Tested at the worst position with battery 2#									
Back Side	20525/836.5	10M QPSK 1RB#25	0.222	0.130	0.020	22.31	23.50	0.292	21.6°C
Tested at the worst position with battery 3#									
Back Side	20525/836.5	10M QPSK 1RB#25	0.225	0.132	0.000	22.31	23.50	0.296	21.6°C

Table 118: Hotspot SAR test results of LTE Band V

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

7.2.23 SAR measurement Result of LTE Band VII(Main Antenna)

Test Position of Head	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Left Hand Touched	21100/2535	20M QPSK 1RB#50	0.283	0.159	0.180	22.36	23.00	0.328	21.6°C
Left Hand Tilted 15°	21100/2535	20M QPSK 1RB#50	0.099	0.051	0.110	22.36	23.00	0.115	21.6°C
Right Hand Touched	21100/2535	20M QPSK 1RB#50	0.102	0.057	0.140	22.36	23.00	0.118	21.6°C
Right Hand Tilted 15°	21100/2535	20M QPSK 1RB#50	0.058	0.031	0.030	22.36	23.00	0.067	21.6°C
Left Hand Touched	20850/2510	20M QPSK 1RB#50	0.244	0.141	0.010	22.17	23.00	0.295	21.6°C
Left Hand Touched	21350/2560	20M QPSK 1RB#50	0.114	0.062	0.070	22.28	23.00	0.135	21.6°C
50%RB									
Left Hand Touched	21100/2535	20M QPSK 50%RB#0	0.137	0.071	0.040	21.70	22.00	0.147	21.6°C
Left Hand Tilted 15°	21100/2535	20M QPSK 50%RB#0	0.052	0.022	0.020	21.70	22.00	0.056	21.6°C
Right Hand Touched	21100/2535	20M QPSK 50%RB#0	0.066	0.037	-0.110	21.70	22.00	0.071	21.6°C
Right Hand Tilted 15°	21100/2535	20M QPSK 50%RB#0	0.034	0.018	0.140	21.70	22.00	0.036	21.6°C
Tested at the worst position with battery 2#									
Left Hand Touched	21100/2535	20M QPSK 1RB#50	0.284	0.157	-0.100	22.36	23.00	0.329	21.6°C
Tested at the worst position with battery 3#									
Left Hand Touched	21100/2535	20M QPSK 1RB#50	0.290	0.160	-0.040	22.36	23.00	0.336	21.6°C

Table 119: Head SAR test results of LTE Band VII

Test Position of Body-Worn with 15mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Front Side	21100/2535	20M QPSK 1RB#50	0.213	0.107	0.130	22.36	23.00	0.247	21.6°C
Back Side	21100/2535	20M QPSK 1RB#50	0.226	0.108	0.120	22.36	23.00	0.262	21.6°C
50%RB									
Front Side	21100/2535	20M QPSK 50%RB#0	0.169	0.085	0.060	21.70	22.00	0.181	21.6°C
Back Side	21100/2535	20M QPSK 50%RB#0	0.172	0.082	0.180	21.70	22.00	0.184	21.6°C
Tested at the worst position with battery 2#									
Back Side	21100/2535	20M QPSK 1RB#50	0.273	0.130	0.020	22.36	23.00	0.316	21.6°C
Tested at the worst position with battery 3#									
Back Side	21100/2535	20M QPSK 1RB#50	0.239	0.120	0.110	22.36	23.00	0.277	21.6°C

Table 120: Body-Worn SAR test results of LTE Band VII

Test Position of Hotspot with 10mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Front Side	21100/2535	20M QPSK 1RB#50	0.713	0.317	-0.160	22.36	23.00	0.826	21.6°C
Front Side	20850/2510	20M QPSK 1RB#50	0.690	0.312	0.140	22.17	23.00	0.835	21.6°C
Front Side	21350/2560	20M QPSK 1RB#50	0.457	0.202	0.130	22.28	23.00	0.539	21.6°C
Back Side	21100/2535	20M QPSK 1RB#50	0.651	0.281	0.100	22.36	23.00	0.754	21.6°C
Left Side	21100/2535	20M QPSK 1RB#50	0.297	0.152	0.050	22.36	23.00	0.344	21.6°C
Right Side	21100/2535	20M QPSK 1RB#50	0.205	0.106	-0.110	22.36	23.00	0.238	21.6°C
Bottom Side	21100/2535	20M QPSK 1RB#50	0.790	0.332	0.070	22.36	23.00	0.915	21.6°C
Bottom Side	20850/2510	20M QPSK 1RB#50	0.677	0.286	-0.020	22.17	23.00	0.820	21.6°C
Bottom Side	21350/2560	20M QPSK 1RB#50	0.554	0.232	-0.100	22.28	23.00	0.654	21.6°C
50%RB									
Front Side	21100/2535	20M QPSK 50%RB#0	0.515	0.230	0.140	21.70	22.00	0.552	21.6°C
Back Side	21100/2535	20M QPSK 50%RB#0	0.620	0.261	0.040	21.70	22.00	0.664	21.6°C
Left Side	21100/2535	20M QPSK 50%RB#0	0.218	0.111	0.190	21.70	22.00	0.234	21.6°C
Right Side	21100/2535	20M QPSK 50%RB#0	0.172	0.089	0.120	21.70	22.00	0.184	21.6°C
Bottom Side	21100/2535	20M QPSK 50%RB#0	0.650	0.276	-0.130	21.70	22.00	0.696	21.6°C
Front Side	21100/2535	20M QPSK 100%RB#0	0.401	0.187	0.110	21.50	22.00	0.450	21.6°C
Bottom Side	21100/2535	20M QPSK 100%RB#0	0.618	0.264	-0.180	21.50	22.00	0.693	21.6°C
Tested at the worst position with battery 2#									
Bottom Side	21100/2535	20M QPSK 1RB#50	0.775	0.315	-0.140	22.36	23.00	0.898	21.6°C
Tested at the worst position with battery 3#									
Bottom Side	21100/2535	20M QPSK 1RB#50	0.720	0.297	-0.100	22.36	23.00	0.834	21.6°C

Table 121: Hotspot SAR test results of LTE Band VII

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

7.2.24 SAR measurement Result of LTE Band XII(Main Antenna)

Test Position of Head	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Left Hand Touched	23130/711	10M QPSK 1RB#25	0.030	0.024	0.180	22.86	23.50	0.035	21.6°C
Left Hand Tilted 15°	23130/711	10M QPSK 1RB#25	0.020	0.014	0.130	22.86	23.50	0.023	21.6°C
Right Hand Touched	23130/711	10M QPSK 1RB#25	0.039	0.031	0.130	22.86	23.50	0.045	21.6°C
Right Hand Tilted 15°	23130/711	10M QPSK 1RB#25	0.019	0.014	0.190	22.86	23.50	0.022	21.6°C
Right Hand Touched	23060/704	10M QPSK 1RB#25	0.088	0.069	0.170	22.57	23.50	0.109	21.6°C
Right Hand Touched	23095/707.5	10M QPSK 1RB#25	0.054	0.038	0.190	22.80	23.50	0.064	21.6°C
50%RB									
Left Hand Touched	23130/711	10M QPSK 50%RB#13	0.026	0.018	0.190	22.25	22.50	0.027	21.6°C
Left Hand Tilted 15°	23130/711	10M QPSK 50%RB#13	0.017	0.012	0.120	22.25	22.50	0.018	21.6°C
Right Hand Touched	23130/711	10M QPSK 50%RB#13	0.033	0.023	0.130	22.25	22.50	0.035	21.6°C
Right Hand Tilted 15°	23130/711	10M QPSK 50%RB#13	0.017	0.012	0.170	22.25	22.50	0.017	21.6°C
Tested at the worst position with battery 2#									
Right Hand Touched	23060/704	10M QPSK 1RB#25	0.092	0.072	-0.070	22.57	23.50	0.114	21.6°C
Tested at the worst position with battery 3#									
Right Hand Touched	23060/704	10M QPSK 1RB#25	0.074	0.058	0.150	22.57	23.50	0.092	21.6°C

Table 122: Head SAR test results of LTE Band XII

Test Position of Body-Worn with 15mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Front Side	23130/711	10M QPSK 1RB#25	0.049	0.035	-0.03	22.86	23.50	0.057	21.6°C
Back Side	23130/711	10M QPSK 1RB#25	0.061	0.047	0.030	22.86	23.50	0.071	21.6°C
50%RB									
Front Side	23130/711	10M QPSK 50%RB#13	0.046	0.032 9	-0.010	22.25	22.50	0.049	21.6°C
Back Side	23130/711	10M QPSK 50%RB#13	0.056	0.040	0.040	22.25	22.50	0.059	21.6°C
Tested at the worst position with battery 2#									
Back Side	23130/711	10M QPSK 1RB#25	0.047	0.035	0.000	22.86	23.50	0.054	21.6°C
Tested at the worst position with battery 3#									
Back Side	23130/711	10M QPSK 1RB#25	0.064	0.049	0.040	22.86	23.50	0.075	21.6°C

Table 123: Body-Worn SAR test results of LTE Band XII

Test Position of Hotspot with 10mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Front Side	23130/711	10M QPSK 1RB#25	0.054	0.038	0.000	22.86	23.50	0.063	21.6°C
Back Side	23130/711	10M QPSK 1RB#25	0.090	0.055	-0.060	22.86	23.50	0.104	21.6°C
Left Side	23130/711	10M QPSK 1RB#25	0.031	0.021	0.160	22.86	23.50	0.036	21.6°C
Right Side	23130/711	10M QPSK 1RB#25	0.086	0.059	0.020	22.86	23.50	0.100	21.6°C
Bottom Side	23130/711	10M QPSK 1RB#25	0.061	0.033	0.160	22.86	23.50	0.070	21.6°C
50%RB									
Front Side	23130/711	10M QPSK 50%RB#13	0.051	0.036	0.050	22.25	22.50	0.054	21.6°C
Back Side	23130/711	10M QPSK 50%RB#13	0.086	0.053	0.160	22.25	22.50	0.091	21.6°C
Left Side	23130/711	10M QPSK 50%RB#13	0.029	0.198	0.050	22.25	22.50	0.031	21.6°C
Right Side	23130/711	10M QPSK 50%RB#13	0.079	0.054	0.020	22.25	22.50	0.084	21.6°C
Bottom Side	23130/711	10M QPSK 50%RB#13	0.057	0.031	0.060	22.25	22.50	0.060	21.6°C
Tested at the worst position with battery 2#									
Back Side	23130/711	10M QPSK 1RB#25	0.095	0.055	-0.100	22.86	23.50	0.110	21.6°C
Tested at the worst position with battery 3#									
Back Side	23130/711	10M QPSK 1RB#25	0.068	0.040	0.090	22.86	23.50	0.079	21.6°C

Table 124: Hotspot SAR test results of LTE Band XII

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

7.2.25 SAR measurement Result of LTE Band XVII(Main Antenna)

Test Position of Head	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Left Hand Touched	23780/709	10M QPSK 1RB#25	0.034	0.024	0.130	22.84	23.50	0.039	21.6°C
Left Hand Tilted 15°	23780/709	10M QPSK 1RB#25	0.025	0.018	0.110	22.84	23.50	0.030	21.6°C
Right Hand Touched	23780/709	10M QPSK 1RB#25	0.047	0.037	0.180	22.84	23.50	0.054	21.6°C
Right Hand Tilted 15°	23780/709	10M QPSK 1RB#25	0.024	0.017	0.020	22.84	23.50	0.027	21.6°C
Right Hand Touched	23790/710	10M QPSK 1RB#25	0.043	0.034	0.070	22.83	23.50	0.051	21.6°C
Right Hand Touched	23800/711	10M QPSK 1RB#25	0.040	0.031	0.060	22.81	23.50	0.047	21.6°C
50%RB									
Left Hand Touched	23780/709	10M QPSK 50%RB#13	0.029	0.021	0.140	22.30	22.50	0.031	21.6°C
Left Hand Tilted 15°	23780/709	10M QPSK 50%RB#13	0.020	0.015	0.130	22.30	22.50	0.021	21.6°C
Right Hand Touched	23780/709	10M QPSK 50%RB#13	0.039	0.027	0.070	22.30	22.50	0.041	21.6°C
Right Hand Tilted 15°	23780/709	10M QPSK 50%RB#13	0.020	0.014	0.140	22.30	22.50	0.020	21.6°C
Tested at the worst position with battery 2#									
Right Hand Touched	23780/709	10M QPSK 1RB#25	0.052	0.040	0.170	22.84	23.50	0.060	21.6°C
Tested at the worst position with battery 3#									
Right Hand Touched	23780/709	10M QPSK 1RB#25	0.034	0.026	0.180	22.84	23.50	0.039	21.6°C

Table 125: Head SAR test results of LTE Band XVII

Test Position of Body-Worn with 15mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Front Side	23780/709	10M QPSK 1RB#25	0.057	0.041	-0.01	22.84	23.50	0.066	21.6°C
Back Side	23780/709	10M QPSK 1RB#25	0.072	0.056	0.070	22.84	23.50	0.084	21.6°C
50%RB									
Front Side	23780/709	10M QPSK 50%RB#13	0.052	0.037	0.01	22.30	22.50	0.055	21.6°C
Back Side	23780/709	10M QPSK 50%RB#13	0.063	0.045	0.000	22.30	22.50	0.066	21.6°C
Tested at the worst position with battery 2#									
Back Side	23780/709	10M QPSK 1RB#25	0.052	0.039	0.010	22.84	23.50	0.060	21.6°C
Tested at the worst position with battery 3#									
Back Side	23780/709	10M QPSK 1RB#25	0.077	0.059	0.020	22.84	23.50	0.090	21.6°C

Table 126: Body-Worn SAR test results of LTE Band XVII

Test Position of Hotspot with 10mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Front Side	23780/709	10M QPSK 1RB#25	0.063	0.045	-0.010	22.84	23.50	0.074	21.6°C
Back Side	23780/709	10M QPSK 1RB#25	0.100	0.059	0.120	22.84	23.50	0.116	21.6°C
Left Side	23780/709	10M QPSK 1RB#25	0.043	0.030	-0.050	22.84	23.50	0.050	21.6°C
Right Side	23780/709	10M QPSK 1RB#25	0.110	0.076	-0.010	22.84	23.50	0.128	21.6°C
Bottom Side	23780/709	10M QPSK 1RB#25	0.071	0.038	0.100	22.84	23.50	0.082	21.6°C
50%RB									
Front Side	23780/709	10M QPSK 50%RB#13	0.059	0.041	0.020	22.30	22.50	0.061	21.6°C
Back Side	23780/709	10M QPSK 50%RB#13	0.086	0.059	0.030	22.30	22.50	0.090	21.6°C
Left Side	23780/709	10M QPSK 50%RB#13	0.035	0.024	-0.040	22.30	22.50	0.037	21.6°C
Right Side	23780/709	10M QPSK 50%RB#13	0.102	0.070	0.000	22.30	22.50	0.107	21.6°C
Bottom Side	23780/709	10M QPSK 50%RB#13	0.065	0.035	0.060	22.30	22.50	0.068	21.6°C
Tested at the worst position with battery 2#									
Right Side	23780/709	10M QPSK 1RB#25	0.111	0.077	0.000	22.84	23.50	0.129	21.6°C
Tested at the worst position with battery 3#									
Right Side	23780/709	10M QPSK 1RB#25	0.080	0.056	-0.040	22.84	23.50	0.093	21.6°C

Table 127: Hotspot SAR test results of LTE Band XVII

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

7.2.26 SAR measurement Result of LTE Band XXVI(Main Antenna)

Test Position of Head	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducte d Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Left Hand Touched	26865/831.5	15M QPSK 1RB#50	0.050	0.035	0.050	22.81	23.50	0.059	21.6°C
Left Hand Tilted 15°	26865/831.5	15M QPSK 1RB#50	0.043	0.030	0.150	22.81	23.50	0.050	21.6°C
Right Hand Touched	26865/831.5	15M QPSK 1RB#50	0.080	0.060	0.190	22.81	23.50	0.093	21.6°C
Right Hand Tilted 15°	26865/831.5	15M QPSK 1RB#50	0.046	0.032	0.030	22.81	23.50	0.054	21.6°C
50%RB									
Left Hand Touched	26865/831.5	15M QPSK 50%RB#18	0.050	0.035	0.040	22.66	23.50	0.061	21.6°C
Left Hand Tilted 15°	26865/831.5	15M QPSK 50%RB#18	0.043	0.030	0.180	22.66	23.50	0.052	21.6°C
Right Hand Touched	26865/831.5	15M QPSK 50%RB#18	0.080	0.054	0.020	22.66	23.50	0.097	21.6°C
Right Hand Tilted 15°	26865/831.5	15M QPSK 50%RB#18	0.047	0.032	0.150	22.66	23.50	0.057	21.6°C
Right Hand Touched	26775/822.5	15M QPSK 50%RB#0	0.107	0.080	0.120	22.42	23.50	0.137	21.6°C
Right Hand Touched	26965/841.5	15M QPSK 50%RB#0	0.124	0.092	0.080	22.58	23.50	0.153	21.6°C
Tested at the worst position with battery 2#									
Right Hand Touched	26965/841.5	15M QPSK 50%RB#0	0.132	0.099	0.190	22.58	23.50	0.163	21.6°C
Tested at the worst position with battery 3#									
Right Hand Touched	26965/841.5	15M QPSK 50%RB#0	0.136	0.101	0.160	22.58	23.50	0.168	21.6°C

Table 128: Head SAR test results of LTE Band XXVI

Test Position of Body-Worn with 15mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Front Side	26865/831.5	15M QPSK 1RB#38	0.075	0.057	0.000	22.81	23.50	0.088	21.6°C
Back Side	26865/831.5	15M QPSK 1RB#38	0.093	0.071	0.030	22.81	23.50	0.109	21.6°C
50%RB									
Front Side	26865/831.5	15M QPSK 50%RB#18	0.075	0.053	-0.130	22.66	23.50	0.091	21.6°C
Back Side	26865/831.5	15M QPSK 50%RB#18	0.095	0.073	0.010	22.66	23.50	0.115	21.6°C
Tested at the worst position with battery 2#									
Back Side	26865/831.5	15M QPSK 50%RB#18	0.099	0.075	-0.010	22.66	23.50	0.120	21.6°C
Tested at the worst position with battery 3#									
Back Side	26865/831.5	15M QPSK 50%RB#18	0.093	0.072	-0.040	22.66	23.50	0.113	21.6°C

Table 129: Body-Worn SAR test results of LTE Band XXVI

Test Position of Hotspot with 10mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducte d Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Front Side	26865/831.5	15M QPSK 1RB#38	0.107	0.068	-0.010	22.81	23.50	0.125	21.6°C
Back Side	26865/831.5	15M QPSK 1RB#38	0.132	0.077	0.030	22.81	23.50	0.155	21.6°C
Left Side	26865/831.5	15M QPSK 1RB#38	0.043	0.029	0.090	22.81	23.50	0.051	21.6°C
Right Side	26865/831.5	15M QPSK 1RB#38	0.132	0.088	-0.060	22.81	23.50	0.155	21.6°C
Top Side	26865/831.5	15M QPSK 1RB#38	0.117	0.057	-0.010	22.81	23.50	0.137	21.6°C
50%RB									
Front Side	26865/831.5	15M QPSK 50%RB#18	0.109	0.069	-0.020	22.66	23.50	0.132	21.6°C
Back Side	26865/831.5	15M QPSK 50%RB#18	0.133	0.077	0.050	22.66	23.50	0.161	21.6°C
Left Side	26865/831.5	15M QPSK 50%RB#18	0.044	0.029	-0.060	22.66	23.50	0.053	21.6°C
Right Side	26865/831.5	15M QPSK 50%RB#18	0.133	0.091	-0.050	22.66	23.50	0.161	21.6°C
Top Side	26865/831.5	15M QPSK 50%RB#18	0.118	0.057	0.010	22.66	23.50	0.143	21.6°C
Tested at the worst position with battery 2#									
Right Side	26865/831.5	15M QPSK 50%RB#18	0.170	0.116	0.120	22.66	23.50	0.206	21.6°C
Tested at the worst position with battery 3#									
Right Side	26865/831.5	15M QPSK 50%RB#18	0.182	0.124	0.050	22.66	23.50	0.221	21.6°C

Table 130: Hotspot SAR test results of LTE Band XXVI

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

7.2.27 SAR measurement Result of LTE Band XXXVIII(Main Antenna)

Test Position of Head	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Left Hand Touched	37850/2580	20M QPSK 1RB#50	0.052	0.027	0.100	23.09	23.50	0.057	21.6°C
Left Hand Tilted 15°	37850/2580	20M QPSK 1RB#50	0.026	0.011	0.010	23.09	23.50	0.028	21.6°C
Right Hand Touched	37850/2580	20M QPSK 1RB#50	0.064	0.032	0.120	23.09	23.50	0.070	21.6°C
Right Hand Tilted 15°	37850/2580	20M QPSK 1RB#50	0.018	0.007	0.120	23.09	23.50	0.020	21.6°C
Right Hand Touched	38000/2595	20M QPSK 1RB#50	0.082	0.042	0.180	22.89	23.50	0.095	21.6°C
Right Hand Tilted 15°	38150/2610	20M QPSK 1RB#50	0.056	0.028	0.140	23.04	23.50	0.063	21.6°C
50%RB									
Left Hand Touched	38150/2610	20M QPSK 50%RB#25	0.041	0.021	0.000	23.22	23.50	0.044	21.6°C
Left Hand Tilted 15°	38150/2610	20M QPSK 50%RB#25	0.020	0.008	0.000	23.22	23.50	0.021	21.6°C
Right Hand Touched	38150/2610	20M QPSK 50%RB#25	0.055	0.027	0.180	23.22	23.50	0.058	21.6°C
Right Hand Tilted 15°	38150/2610	20M QPSK 50%RB#25	0.019	0.006	0.170	23.22	23.50	0.020	21.6°C
Tested at the worst position with battery 2#									
Right Hand Touched	38000/2595	20M QPSK 1RB#50	0.066	0.035	0.080	22.89	23.50	0.076	21.6°C
Tested at the worst position with battery 3#									
Right Hand Touched	38000/2595	20M QPSK 1RB#50	0.078	0.040	0.020	22.89	23.50	0.090	21.6°C

Table 131: Head SAR test results of LTE Band XXXVIII

Test Position of Body-Worn with 15mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Front Side	37850/2580	20M QPSK 1RB#50	0.101	0.048	0.180	23.09	23.50	0.111	21.6°C
Back Side	37850/2580	20M QPSK 1RB#50	0.095	0.045	0.160	23.09	23.50	0.104	21.6°C
50%RB									
Front Side	38150/2610	20M QPSK 50%RB#25	0.095	0.047	0.040	23.22	23.50	0.102	21.6°C
Back Side	38150/2610	20M QPSK 50%RB#25	0.091	0.044	0.160	23.22	23.50	0.097	21.6°C
Tested at the worst position with battery 2#									
Front Side	37850/2580	20M QPSK 1RB#50	0.088	0.043 7	0.100	23.09	23.50	0.096	21.6°C
Tested at the worst position with battery 3#									
Front Side	37850/2580	20M QPSK 1RB#50	0.093	0.046	0.010	23.09	23.50	0.103	21.6°C

Table 132: Body-Worn SAR test results of LTE Band XXXVIII

Test Position of Hotspot with 10mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Front Side	37850/2580	20M QPSK 1RB#50	0.211	0.103	0.130	23.09	23.50	0.232	21.6°C
Back Side	37850/2580	20M QPSK 1RB#50	0.219	0.093	0.130	23.09	23.50	0.241	21.6°C
Left Side	37850/2580	20M QPSK 1RB#50	0.057	0.029	0.100	23.09	23.50	0.062	21.6°C
Right Side	37850/2580	20M QPSK 1RB#50	0.121	0.063	0.190	23.09	23.50	0.133	21.6°C
Bottom Side	37850/2580	20M QPSK 1RB#50	0.352	0.152	-0.110	23.09	23.50	0.387	21.6°C
50%RB									
Front Side	38150/2610	20M QPSK 50%RB#25	0.205	0.100	0.110	23.22	23.50	0.219	21.6°C
Back Side	38150/2610	20M QPSK 50%RB#25	0.213	0.090	0.160	23.22	23.50	0.227	21.6°C
Left Side	38150/2610	20M QPSK 50%RB#25	0.057	0.029	-0.010	23.22	23.50	0.060	21.6°C
Right Side	38150/2610	20M QPSK 50%RB#25	0.120	0.062	0.120	23.22	23.50	0.128	21.6°C
Bottom Side	38150/2610	20M QPSK 50%RB#25	0.330	0.131	0.050	23.22	23.50	0.352	21.6°C
Tested at the worst position with battery 2#									
Bottom Side	37850/2580	20M QPSK 1RB#50	0.294	0.127	-0.030	23.09	23.50	0.323	21.6°C
Tested at the worst position with battery 3#									
Bottom Side	37850/2580	20M QPSK 1RB#50	0.342	0.144	0.170	23.09	23.50	0.376	21.6°C

Table 133: Hotspot SAR test results of LTE Band XXXVIII

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

7.2.28 SAR measurement Result of LTE Band XLI(Main Antenna)

Test Position of Head	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Left Hand Touched	40340/2565	20M QPSK 1RB#50	0.081	0.043	0.120	22.15	23.00	0.099	21.6°C
Left Hand Tilted 15°	40340/2565	20M QPSK 1RB#50	0.027	0.012	0.120	22.15	23.00	0.032	21.6°C
Right Hand Touched	40340/2565	20M QPSK 1RB#50	0.053	0.027	0.010	22.15	23.00	0.064	21.6°C
Right Hand Tilted 15°	40340/2565	20M QPSK 1RB#50	0.018	0.009	0.140	22.15	23.00	0.022	21.6°C
Left Hand Touched	40740/2605	20M QPSK 1RB#50	0.042	0.022	0.000	21.83	23.00	0.055	21.6°C
Left Hand Touched	41140/2645	20M QPSK 1RB#50	0.033	0.017	0.100	21.34	23.00	0.049	21.6°C
50%RB									
Left Hand Touched	40340/2565	20M QPSK 50%RB#25	0.079	0.040	0.170	22.07	22.50	0.088	21.6°C
Left Hand Tilted 15°	40340/2565	20M QPSK 50%RB#25	0.026	0.012	0.170	22.07	22.50	0.029	21.6°C
Right Hand Touched	40340/2565	20M QPSK 50%RB#25	0.049	0.025	0.140	22.07	22.50	0.054	21.6°C
Right Hand Tilted 15°	40340/2565	20M QPSK 50%RB#25	0.018	0.009	0.020	22.07	22.50	0.020	21.6°C
Tested at the worst position with battery 2#									
Left Hand Touched	40340/2565	20M QPSK 1RB#50	0.050	0.027	0.160	22.15	23.00	0.060	21.6°C
Tested at the worst position with battery 3#									
Left Hand Touched	40340/2565	20M QPSK 1RB#50	0.068	0.036	0.090	22.15	23.00	0.083	21.6°C

Table 134: Head SAR test results of LTE Band XLI

Test Position of Body-Worn with 15mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Front Side	40340/2565	20M QPSK 1RB#50	0.100	0.049	-0.150	22.15	23.00	0.122	21.6°C
Back Side	40340/2565	20M QPSK 1RB#50	0.111	0.052	-0.100	22.15	23.00	0.135	21.6°C
50%RB									
Front Side	40340/2565	20M QPSK 50%RB#25	0.094	0.046	0.050	22.07	22.50	0.104	21.6°C
Back Side	40340/2565	20M QPSK 50%RB#25	0.105	0.049	0.180	22.07	22.50	0.116	21.6°C
Tested at the worst position with battery 2#									
Back Side	40340/2565	20M QPSK 1RB#50	0.093	0.046	0.030	22.15	23.00	0.113	21.6°C
Tested at the worst position with battery 3#									
Back Side	40340/2565	20M QPSK 1RB#50	0.104	0.051	0.030	22.15	23.00	0.126	21.6°C

Table 135: Body-Worn SAR test results of LTE Band XLI

Test Position of Hotspot with 10mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
Test data with battery 1#									
1RB									
Front Side	40340/2565	20M QPSK 1RB#50	0.227	0.102	0.120	22.15	23.00	0.276	21.6°C
Back Side	40340/2565	20M QPSK 1RB#50	0.278	0.118	0.180	22.15	23.00	0.338	21.6°C
Left Side	40340/2565	20M QPSK 1RB#50	0.077	0.039	0.010	22.15	23.00	0.094	21.6°C
Right Side	40340/2565	20M QPSK 1RB#50	0.131	0.068	0.060	22.15	23.00	0.159	21.6°C
Bottom Side	40340/2565	20M QPSK 1RB#50	0.314	0.134	0.190	22.15	23.00	0.382	21.6°C
50%RB									
Front Side	40340/2565	20M QPSK 50%RB#25	0.224	0.101	0.170	22.07	22.50	0.247	21.6°C
Back Side	40340/2565	20M QPSK 50%RB#25	0.249	0.109	0.180	22.07	22.50	0.275	21.6°C
Left Side	40340/2565	20M QPSK 50%RB#25	0.075	0.038	0.040	22.07	22.50	0.083	21.6°C
Right Side	40340/2565	20M QPSK 50%RB#25	0.127	0.065	0.050	22.07	22.50	0.140	21.6°C
Bottom Side	40340/2565	20M QPSK 50%RB#25	0.309	0.131	0.040	22.07	22.50	0.341	21.6°C
Tested at the worst position with battery 2#									
Bottom Side	40340/2565	20M QPSK 1RB#50	0.246	0.101	-0.070	22.15	23.00	0.299	21.6°C
Tested at the worst position with battery 3#									
Bottom Side	40340/2565	20M QPSK 1RB#50	0.350	0.150	-0.080	22.15	23.00	0.426	21.6°C

Table 136: Hotspot SAR test results of LTE Band XLI

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

7.2.29 SAR measurement Result of WiFi 2.4G

Test Position of Head	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g Area Scan	1-g Zoom Scan					
Test data with battery 1#									
Left Hand Touched	6/2437	802.11 b	0.556	0.663	0.040	15.66	17.15	0.934	21.6°C
Left Hand Touched	11/2462	802.11 b	0.686	0.840	0.180	15.54	17.15	1.217	21.6°C
Left Hand Tilted 15°	6/2437	802.11 b	0.591	0.787	0.160	15.66	17.15	1.109	21.6°C
Left Hand Tilted 15°	11/2462	802.11 b	0.818	0.954	0.130	15.54	17.15	1.382	21.6°C
Left Hand Tilted 15°	1/2412	802.11 b	0.578	0.762	0.170	15.16	17.15	1.205	21.6°C
Right Hand Touched	6/2437	802.11 b	0.162	0.182	0.190	15.66	17.15	0.256	21.6°C
Right Hand Tilted 15°	6/2437	802.11 b	0.197	0.231	0.170	15.66	17.15	0.326	21.6°C
Left Hand Touched	6/2437	802.11 g	0.859	0.788	0.070	16.37	17.30	0.976	21.6°C
Left Hand Touched	11/2462	802.11 g	0.954	0.828	0.090	16.28	17.30	1.047	21.6°C
Left Hand Tilted 15°	6/2437	802.11 g	0.802	0.897	-0.160	16.37	17.30	1.111	21.6°C
Left Hand Tilted 15°	11/2462	802.11 g	1.270	1.150	0.010	16.28	17.30	1.454	21.6°C
Left Hand Tilted 15°- Reteaped	11/2462	802.11 g	1.120	1.070	0.150	16.28	17.30	1.353	21.6°C
Left Hand Tilted 15°	1/2412	802.11 g	0.932	0.846	0.130	15.42	17.30	1.304	21.6°C
Right Hand Touched	6/2437	802.11 g	0.184	0.205	0.140	16.37	17.30	0.254	21.6°C
Right Hand Tilted 15°	6/2437	802.11 g	0.180	/	-0.030	16.37	17.30	/	21.6°C
Tested at the worst position with battery 2#									
Left Hand Tilted 15°	11/2462	802.11 g	0.813	0.730	0.140	16.28	17.30	0.923	21.6°C
Tested at the worst position with battery 3#									
Left Hand Tilted 15°	11/2462	802.11 g	0.960	0.888	0.100	16.28	17.30	1.123	21.6°C
Additional SAR test(simultaneous transmission with 2G&3G&4G antenna)									
Left Hand Touched	6/2437	802.11 b	0.361	0.444	0.070	12.52	13.30	0.531	21.6°C
Left Hand Tilted 15°	6/2437	802.11 b	0.348	0.420	0.120	12.52	13.30	0.503	21.6°C
Right Hand Touched	6/2437	802.11 b	0.099	0.105	-0.190	12.52	13.30	0.126	21.6°C
Right Hand Tilted 15°	6/2437	802.11 b	0.107	0.124	0.050	12.52	13.30	0.148	21.6°C

Table 137: Head SAR test results of WiFi 2.4G

Mode	Tune-up (dBm)	Tune-up (mW)	Highest Reported SAR(W/kg)	Adjusted SAR (W/kg)	SAR test
802.11b	17.15	51.88	1.382	/	Yes
802.11g	17.30	53.70	/	1.431	Yes
802.11n 20M	16.00	39.81	/	1.060	No
802.11n 40M	14.00	25.12	/	0.669	No

Note: Per KDB248227D01, for Head SAR test of WiFi 2.4G,

- 1) SAR is measured for 2.4 GHz 802.11b DSSS using the initial test position procedure.
- 2) As the highest *reported* SAR for DSSS is adjusted by the ratio of OFDM 802.11g to DSSS specified maximum output power and the adjusted SAR is > 1.2 W/kg, so SAR for 802.11g is not required.
- 3) As the highest *reported* SAR for DSSS is adjusted by the ratio of OFDM 802.11n to DSSS specified maximum output power and the adjusted SAR is < 1.2 W/kg, so SAR for 802.11n is not required.

Test Position of Body-Worn with 15mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g Area Scan	1-g Zoom Scan					
Test data with battery 1#									
Front Side	6/2437	802.11 b	0.070	0.073	-0.030	15.66	17.15	0.103	21.6°C
Back Side	6/2437	802.11 b	0.071	0.074	0.180	15.66	17.15	0.104	21.6°C
Tested at the worst position with battery 2#									
Back Side	6/2437	802.11 b	0.043	0.042	0.190	15.66	17.15	0.060	21.6°C
Tested at the worst position with battery 3#									
Back Side	6/2437	802.11 b	0.047	0.050	0.050	15.66	17.15	0.070	21.6°C

Table 138: Body-Worn SAR test results of WiFi 2.4G

Mode	Tune-up (dBm)	Tune-up (mW)	Highest Reported SAR(W/kg)	Adjusted SAR (W/kg)	SAR test
802.11b	17.15	51.88	0.104	/	Yes
802.11g	17.30	53.70	/	0.108	No
802.11n 20M	16.00	39.81	/	0.080	No
802.11n 40M	14.00	25.12	/	0.050	No

Note: Per KDB248227D01, for Body-worn SAR test of WiFi 2.4G:

- 1) SAR is measured for 2.4 GHz 802.11b DSSS using the initial test position procedure.
- 2) As 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 802.11n is not required.

Test Position of Hotspot with 10mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g Area Scan	1-g Zoom Scan					
Test data with battery 1#									
Front Side	6/2437	802.11 b	0.136	0.139	0.130	15.66	17.15	0.196	21.6°C
Back Side	6/2437	802.11 b	0.144	0.150	0.150	15.66	17.15	0.211	21.6°C
Left Side	6/2437	802.11 b	0.006	/	0.160	15.66	17.15	/	21.6°C
Right Side	6/2437	802.11 b	0.189	0.192	0.130	15.66	17.15	0.271	21.6°C
Top Side	6/2437	802.11 b	0.114	0.132	0.030	15.66	17.15	0.186	21.6°C
Tested at the worst position with battery 2#									
Right Side	6/2437	802.11 b	0.123	0.123	-0.140	15.66	17.15	0.173	21.6°C
Tested at the worst position with battery 3#									
Right Side	6/2437	802.11 b	0.115	0.118	0.030	15.66	17.15	0.166	21.6°C

Table 139: Hotspot SAR test results of WiFi 2.4G

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

Mode	Tune-up (dBm)	Tune-up (mW)	Highest Reported SAR(W/kg)	Adjusted SAR (W/kg)	SAR test
802.11b	17.15	51.88	0.271	/	Yes
802.11g	17.30	53.70	/	0.281	No
802.11n 20M	16.00	39.81	/	0.208	No
802.11n 40M	14.00	25.12	/	0.131	No

Note: Per KDB248227D01, for Hotspot SAR test of WiFi 2.4G:

- 1) SAR is measured for 2.4 GHz 802.11b DSSS using the initial test position procedure.
- 2) As 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 802.11n is not required.

7.2.30 SAR measurement Result of WiFi 5G

Test Position of Head	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g Area Scan	1-g Zoom Scan					
Test data with battery 1#									
5.2G U-NII-1 Band (802.11n 40M)									
Left Hand Touched	38/5190	802.11n	0.701	0.727	0.140	13.16	14.50	0.990	21.6°C
Left Hand Touched	46/5230	802.11n	0.679	0.716	0.190	13.07	14.50	0.995	21.6°C
Left Hand Tilted 15°	38/5190	802.11n	0.613	0.635	0.120	13.16	14.50	0.865	21.6°C
Right Hand Touched	38/5190	802.11n	0.229	0.251	0.140	13.16	14.50	0.342	21.6°C
Right Hand Tilted 15°	38/5190	802.11n	0.220	0.241	0.110	13.16	14.50	0.328	21.6°C
5.5G U-NII-2C Band (802.11n 40M)									
Left Hand Touched	102/5510	802.11n	0.624	0.702	0.120	13.05	14.00	0.874	21.6°C
Left Hand Touched	110/5550	802.11n	0.568	0.604	0.160	12.86	14.00	0.785	21.6°C
Left Hand Tilted 15°	102/5510	802.11n	0.525	0.579	0.170	13.05	14.00	0.721	21.6°C
Right Hand Touched	102/5510	802.11n	0.213	/	0.170	13.05	14.00	/	21.6°C
Right Hand Tilted 15°	102/5510	802.11n	0.192	/	0.020	13.05	14.00	/	21.6°C
5.8G U-NII-3 Band (802.11n 40M)									
Left Hand Touched	151/5755	802.11n	0.559	0.525	0.160	13.29	14.00	0.618	21.6°C
Left Hand Tilted 15°	151/5755	802.11n	0.450	0.424	0.090	13.29	14.00	0.499	21.6°C
Right Hand Touched	151/5755	802.11n	0.184	/	0.000	13.29	14.00	/	21.6°C
Right Hand Tilted 15°	151/5755	802.11n	0.197	/	0.100	13.29	14.00	/	21.6°C
Tested at the worst position with battery 2#									
Left Hand Touched	46/5230	802.11n	0.795	0.839	0.070	13.07	14.50	1.166	21.6°C
Left Hand Touched-Repeated	46/5230	802.11n	0.702	0.736	0.030	13.07	14.50	1.023	21.6°C
Tested at the worst position with battery 3#									
Left Hand Touched	46/5230	802.11n	0.687	0.733	0.130	13.07	14.50	1.019	21.6°C
Additional SAR test(simultaneous transmission with 2G&3G&4G antenna)									
5.3G U-NII-2A Band (802.11ac 80M)									
Left Hand Touched	58/5290	802.11ac	0.606	0.612	0.040	12.24	13.30	0.781	21.6°C
Left Hand Tilted 15°	58/5290	802.11ac	0.644	0.667	0.080	12.24	13.30	0.851	21.6°C

Right Hand Touched	58/5290	802.11ac	0.210	0.226	0.000	12.24	13.30	0.288	21.6°C
Right Hand Tilted 15°	58/5290	802.11ac	0.207	0.221	0.090	12.24	13.30	0.282	21.6°C
5.5G U-NII-2C Band (802.11ac 80M)									
Left Hand Touched	122/5610	802.11ac	0.446	0.449	0.160	12.11	13.30	0.591	21.6°C
Left Hand Tilted 15°	122/5610	802.11ac	0.419	0.386	0.070	12.11	13.30	0.508	21.6°C
Right Hand Touched	122/5610	802.11ac	0.240	0.202	-0.160	12.11	13.30	0.266	21.6°C
Right Hand Tilted 15°	122/5610	802.11ac	0.248	0.196	0.040	12.11	13.30	0.258	21.6°C
5.8G U-NII-3 Band (802.11ac 80M)									
Left Hand Touched	155/5775	802.11ac	0.408	0.374	0.030	12.47	13.30	0.453	21.6°C
Left Hand Tilted 15°	155/5775	802.11ac	0.406	0.343	0.050	12.47	13.30	0.415	21.6°C
Right Hand Touched	155/5775	802.11ac	0.194	0.159	0.080	12.47	13.30	0.192	21.6°C
Right Hand Tilted 15°	155/5775	802.11ac	0.235	0.164	0.080	12.47	13.30	0.199	21.6°C

Table 140: Head SAR test results of WiFi 5G

Note: Per KDB248227D01, for Head SAR test of WiFi 5G:

1) For the full power level scenario,

a) The 802.11n 40M mode is selected as Initial Test Configuration for SAR test according to the specified maximum output power and largest channel bandwidth. As the highest reported SAR for the initial test configuration is adjusted by the ratio of the subsequent test configuration to initial test configuration specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg, SAR test for the other 802.11 mode is not required.

b) For WiFi 5G U-NII-1 and U-NII-2A bands, as the different maximum output power is specified for the bands, begin SAR measurement in the U-NII-1 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. As the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for the U-NII-2A band with lower maximum output power in that test configuration.

2) For additional simultaneous transmission power reduction scenario,

a) The 802.11ac 80M mode is selected as Initial Test Configuration for SAR test according to the specified maximum output power and largest channel bandwidth. As the highest reported SAR for the initial test configuration is adjusted by the ratio of the subsequent test configuration to initial test configuration specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg, SAR test for the other 802.11 mode is not required.

b) For WiFi 5G U-NII-1 and U-NII-2A bands, as 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 with 15mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g Area Scan	1-g Zoom Scan					
Test data with battery 1#									
5.2G U-NII-1 band (802.11n 40M)									
Front Side	38/5190	802.11n	0.082	0.082	0.010	13.16	14.50	0.111	21.6°C
Back Side	38/5190	802.11n	0.017	/	0.000	13.16	14.50	/	21.6°C
5.5G U-NII-2C band (802.11n 40M)									
Front Side	102/5510	802.11n	0.083	0.091	0.160	13.05	14.00	0.113	21.6°C
Back Side	102/5510	802.11n	0.048	/	0.020	13.05	14.00	/	21.6°C
5.8G U-NII-3 band (802.11n 40M)									
Front Side	151/5755	802.11n	0.036	0.027	0.000	13.29	14.00	0.031	21.6°C
Back Side	151/5755	802.11n	0.002	/	0.100	13.29	14.00	/	21.6°C
Tested at the worst position with battery 2#									
Front Side	38/5190	802.11n	0.084	0.087	0.020	13.16	14.50	0.119	21.6°C
Tested at the worst position with battery 3#									
Front Side	38/5190	802.11n	0.068	/	-0.080	13.16	14.50	/	21.6°C

Table 141: Body-Worn SAR test results of WiFi 5G

Note: Per KDB248227D01, for Body-Worn SAR test of WiFi 5G:

- 1) The 802.11n 40M mode is selected as Initial Test Configuration for SAR test according to the specified maximum output power and largest channel bandwidth. As the highest reported SAR for the initial test configuration is adjusted by the ratio of the subsequent test configuration to initial test configuration specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg, SAR test for the other 802.11 mode is not required.
- 2) For WiFi 5G U-NII-1 and U-NII-2A bands, as the different maximum output power is specified for the bands, begin SAR measurement in the U-NII-1 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. As the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for the U-NII-2A band with lower maximum output power in that test configuration.

Test Position of Hotspot with 10mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g Area Scan	1-g Zoom Scan					
Test data with battery 1#									
5.2G U-NII-1 band (802.11n 40M)									
Front Side	38/5190	802.11n	0.131	/	0.060	13.16	14.00	/	21.6°C
Back Side	38/5190	802.11n	0.050	/	0.020	13.16	14.00	/	21.6°C
Left Side	38/5190	802.11n	0.001	/	0.050	13.16	14.00	/	21.6°C
Right Side	38/5190	802.11n	0.161	0.167	-0.050	13.16	14.00	0.203	21.6°C
Top Side	38/5190	802.11n	0.100	/	-0.140	13.16	14.00	/	21.6°C
5.8G U-NII-3 band (802.11n 40M)									
Front Side	151/5755	802.11n	0.060	/	0.020	13.29	14.00	/	21.6°C
Back Side	151/5755	802.11n	0.012	/	0.090	13.29	14.00	/	21.6°C
Left Side	151/5755	802.11n	0.002	/	0.000	13.29	14.00	/	21.6°C
Right Side	151/5755	802.11n	0.094	0.089	0.120	13.29	14.00	0.104	21.6°C
Top Side	151/5755	802.11n	0.046	/	0.180	13.29	14.00	/	21.6°C
Tested at the worst position with battery 2#									
Right Side	38/5190	802.11n	0.199	0.208	0.170	13.16	14.00	0.252	21.6°C
Tested at the worst position with battery 3#									
Right Side	38/5190	802.11n	0.182	/	0.070	13.16	14.00	/	21.6°C

Table 142: Hotspot SAR test results of WiFi 5G(5.2G&5.8G)

Note : For Hotspot SAR test of WiFi 5G:

- 1) As WiFi 5G hotspot is only supported for U-NII-1(5.2G) and U-NII-3 (5.8G) bands, therefore U-NII-2A (5.3G) and U-NII-2C(5.5G) were not evaluated for hotspot condition.
- 2) Per KDB248227D01, the 802.11n 40M mode is selected as Initial Test Configuration for SAR test according to the specified maximum output power and largest channel bandwidth. As the highest reported SAR for the initial test configuration is adjusted by the ratio of the subsequent test configuration to initial test configuration specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg, SAR test for the other 802.11 mode is not required.
- 3) Per KDB 648474 D04, 10-g Extremity SAR test is not required for U-NII-1(5.2G) and U-NII-3 (5.8G) bands since hotspot mode 1-g reported SAR < 1.2 W/kg.

Test Position of 10-g extremity 0mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{10-g} (W/kg)	Liquid Temp.
			10-g Area Scan	10-g Zoom Scan					
Test data with battery 1#									
5.3G U-NII-2A band(802.11n 40M)									
Front Side	54/5270	802.11n	0.481	0.542	0.000	13.00	13.50	0.608	21.6°C
Back Side	54/5270	802.11n	0.259	0.268	0.100	13.00	13.50	0.301	21.6°C
Left Side	54/5270	802.11n	0.003	/	0.190	13.00	13.50	/	21.6°C
Right Side	54/5270	802.11n	0.452	0.548	0.060	13.00	13.50	0.615	21.6°C
Top Side	54/5270	802.11n	0.209	0.237	0.160	13.00	13.50	0.266	21.6°C
5.5G U-NII-2C Band(802.11n 40M)									
Front Side	102/5510	802.11n	0.475	0.510	0.000	13.05	14.00	0.635	21.6°C
Back Side	102/5510	802.11n	0.214	0.238	0.000	13.05	14.00	0.296	21.6°C
Left Side	102/5510	802.11n	0.003	/	0.100	13.05	14.00	/	21.6°C
Right Side	102/5510	802.11n	0.470	0.523	0.180	13.05	14.00	0.651	21.6°C
Top Side	102/5510	802.11n	0.270	0.280	0.070	13.05	14.00	0.348	21.6°C
Tested at the worst position with battery 2#									
Right Side	102/5510	802.11n	0.484	0.601	0.030	13.05	14.00	0.748	21.6°C
Tested at the worst position with battery 3#									
Right Side	102/5510	802.11n	0.443	/	0.050	13.05	14.00	/	21.6°C

Table 143: 10-g extremity SAR test results of WiFi 5G

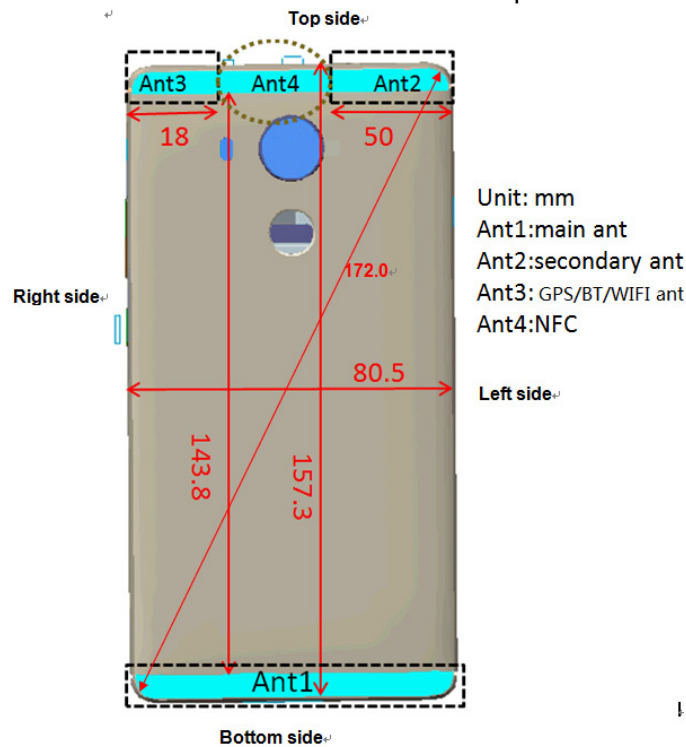
Note:

- 1) For 10-g extremity SAR test of WiFi 5G, as U-NII-2A (5.3G) and U-NII-2C(5.5G) do not support hotspot function, so full 10-g extremity SAR tests were evaluated for U-NII-2A (5.3G) and U-NII-2C(5.5G) bands per KDB 648474D04 . Particular DUT edges were not required to be evaluated for 10g Extremity SAR if the antenna-to-edge distance is greater than 2.5cm.
- 2) Per KDB248227D01, the 802.11n 40M mode is selected as Initial Test Configuration for SAR test according to the specified maximum output power and largest channel bandwidth. As the highest reported SAR for the initial test configuration is adjusted by the ratio of the subsequent test configuration to initial test configuration specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg, SAR test for the other 802.11 mode is not required.

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) 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.
- 2) The NFC antenna is integrated onto the Back cover. The SAR tests were performed with the Battery cover. Per KDB 648474 D04 Phones with built-in NFC functions do not require separate SAR testing and can generally be tested according to the SAR measurement procedures normally required for the phone. Influences of the hardware introduced by the built-in NFC functions are inherently considered through testing of the other transmitters that require SAR.
- 3) Per KDB 648474 D04, because the diagonal distance of this device is about 172.0mm > 160mm, it is considered a “Phablet” device. Per KDB 941225 D06 and KDB 648474 D04, particular DUT edges were not required to be evaluated for Hotspot and/or Extremity SAR if the antenna-to-edge distance is greater than 2.5cm.
- 4) Per KDB 648474 D04, when hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg;

Mode	Exposure Condition	Front Side	Back Side	Left Side	Right Side	Top Side	Bottom Side
Main antenna	Hotspot/ Extremity	Yes	Yes	Yes	Yes	No	Yes
Second antenna	Hotspot/ Extremity	Yes	Yes	Yes	Yes	Yes	No
WiFi/BT antenna	Hotspot/ Extremity	Yes	Yes	No	Yes	Yes	No

Table 144: Sides for Hotspot and 10-g extremity SAR testing

7.3.1 Stand-alone SAR test exclusion

Per FCC KDB 447498D01v06:

1) 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	Body-Worn	11.00	12.59	15	2.450	1.31	3.00	Yes
BT	10-g Extremity	11.00	12.59	5	2.450	3.94	7.50	Yes

Table 145: Standalone SAR test exclusion for BT

Note:

- 1)* - maximum possible output power declared by manufacturer
- 2) Held to ear configurations are not applicable to Bluetooth for this device.

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:

$(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm}) \cdot [\sqrt{f(\text{GHz})/x}] \text{ W/kg}$ 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	Body-worn	11.00	12.59	15	2.450	7.50	0.175
BT	10-g Extremity	11.00	12.59	5	2.450	18.75	0.210

Table 146: Estimated SAR calculation for BT

Note:

- 1) * - maximum possible output power declared by manufacturer
- 2) Held to ear configurations are not applicable to Bluetooth and therefore were not considered for simultaneous transmission.

7.3.2 Simultaneous Transmission Possibilities

The Simultaneous Transmission Possibilities of this device are as below:

No.	Configuration	Head	Body-worn	Hotspot	10-g extremity
1	GSM (Voice) + WiFi 2.4G	Yes	Yes	N/A	Yes
2	GPRS/EDGE (DATA) + WiFi 2.4G	N/A	N/A	Yes	Yes
3	GSM (Voice) + WiFi 5G	Yes	Yes	N/A	Yes
4	GPRS/EDGE (DATA) + WiFi 5G	N/A	N/A	N/A	Yes
5	GSM (Voice) +BT	N/A	Yes	N/A	Yes
6	GPRS/EDGE (DATA) + BT	N/A	N/A	N/A	Yes
7	UMTS (Voice) + WiFi 2.4G	Yes	Yes	N/A	Yes
8	UMTS (DATA) + WiFi 2.4G	N/A	Yes	Yes	Yes
9	UMTS (Voice) + WiFi 5G	Yes	Yes	N/A	Yes
10	UMTS (DATA) + WiFi 5G	N/A	Yes	N/A	Yes
11	UMTS (Voice)+BT	N/A	Yes	N/A	Yes
12	UMTS (DATA) +BT	N/A	Yes	N/A	Yes
13	LTE (DATA)* + WiFi 2.4G	Yes	Yes	Yes	Yes
14	LTE (DATA)* + WiFi 5G	Yes	Yes	N/A	Yes
15	LTE (DATA)* + BT	N/A	Yes	N/A	Yes

Table 147: Simultaneous Transmission Possibilities

Note:

- 1) The device can transmit from either 2G&3G&4G Main antenna or 2G&3G&4G Second antenna, but Main antenna and Second antenna can't transmit simutanously,
- 2) WiFi 2.4G and WiFi 5G can't transmit simutanously.
- 3) WiFi 2.4G/5G and BT can't transmit simutanously.
- 4) WiFi 5G hotspot is only supported for U-NII-1 and U-NII-3 bands, therefore U-NII-2A and U-NII-2C were not evaluated for hotspot condition.
- 5) The device does not support GSM DTM function. Body-worn accessory testing is typically associated with voice operations. Therefore, GSM voice was evaluated for body-worn SAR.
- 6) Held to ear configurations are not applicable to Bluetooth for this device.
- 7)* VOIP 3rd party applications may possibly be installed and used by the user.

7.3.3 SAR Summation Scenario

The yellow color SAR test data in the following summed SAR tables represent that the additional SAR test results in simultaneous transmission fixed power reduction scenario are used to ensure simultaneous transmission SAR test exclusion. For the other SAR test data in the summed SAR tables, the more conservative SAR test results at the maximum output power level without any simultaneous transmission power reduction are used.

Test Position		Second antenna SAR _{Max}														WiFi/BT antenna SAR _{Max}	BT	ΣSAR (1.6W/kg Limit for 1g and	SPLSR
		GSM850	GSM1900	UMTS Band II	UMTS Band IV	UMTS Band V	LTE Band II	LTE Band IV	LTE Band V	LTE Band VII	LTE Band XII	LTE Band XVII	LTE Band XXVI	LTE Band XXXVIII	LTE Band XLI	WiFi 2.4G			
Head	Left Hand Touched	0.647	0.541	0.458	0.446	0.563	0.426	0.445	0.623	0.292	0.246	0.195	0.543	0.297	0.418	0.531	/	1.178	N/A
	Left Hand Tilted 15°	0.595	0.483	0.412	0.459	0.531	0.412	0.493	0.569	0.328	0.208	0.159	0.491	0.338	0.501	0.503	/	1.098	N/A
	Right Hand Touched	1.172	1.252	1.303	1.173	1.020	1.157	1.124	1.292	1.109	0.774	0.739	1.115	1.133	1.190	0.126	/	1.429	N/A
	Right Hand Tilted 15°	1.089	1.103	1.176	1.136	1.018	0.997	1.021	1.086	1.118	0.522	0.350	0.907	1.102	1.167	0.148	/	1.324	N/A
Body-worn	Front side	0.180	0.126	0.115	0.114	0.129	0.073	0.118	0.169	0.090	0.060	0.037	0.129	0.167	0.159	0.103	0.175	0.355	N/A
	Back side	0.251	0.148	0.094	0.082	0.178	0.111	0.084	0.187	0.067	0.097	0.062	0.129	0.145	0.116	0.104	0.175	0.426	N/A
Hotspot 10mm	Front side	0.628	0.282	0.238	0.222	0.286	0.155	0.207	0.337	0.169	0.125	0.086	0.264	0.299	0.316	0.196	/	0.824	N/A
	Back side	0.693	0.343	0.228	0.174	0.392	0.186	0.233	0.405	0.137	0.211	0.119	0.293	0.331	0.292	0.211	/	0.904	N/A
	Left side	0.361	0.338	0.238	0.128	0.174	0.166	0.140	0.225	0.196	0.081	0.053	0.142	0.445	0.368	0.271	/	0.716	N/A
	Right side	0.071	0.025	0.027	0.036	0.033	0.020	0.031	0.042	0.010	0.018	0.014	0.023	0.019	0.025	0.271	/	0.342	N/A
10-g Extremity 0mm	Top side	0.680	0.423	0.299	0.428	0.269	0.259	0.408	0.348	0.146	0.140	0.080	0.257	0.278	0.295	0.186	/	0.866	N/A
	Bottom side	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0.000	N/A
	Front side	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0.210	0.210	N/A
	Back side	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0.210	0.210	N/A
	Left side	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0.210	0.210	N/A
	Right side	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0.210	0.210	N/A
	Top side	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0.210	0.210	N/A
	Bottom side	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0.000	N/A	N/A

Table 148: SAR Simultaneous Tx Combination of Second antenna and 2.4G WiFi/BT.

Test Position		Second antenna SAR _{Max}														WiFi/BT antenna SAR _{Max}	BT	ΣSAR (1.6W/kg Limit for 1g and	SPLSR
		GSM850	GSM1900	UMTS Band II	UMTS Band IV	UMTS Band V	LTE Band II	LTE Band IV	LTE Band V	LTE Band VII	LTE Band XII	LTE Band XVII	LTE Band XXVI	LTE Band XXXVIII	LTE Band XLI	WiFi 5G			
Head	Left Hand Touched	0.647	0.541	0.458	0.446	0.563	0.426	0.445	0.623	0.292	0.246	0.195	0.543	0.297	0.418	0.781	/	1.428	N/A
	Left Hand Tilted 15°	0.595	0.483	0.412	0.459	0.531	0.412	0.493	0.569	0.328	0.208	0.159	0.491	0.338	0.501	0.851	/	1.446	N/A
	Right Hand Touched	1.172	1.252	1.303	1.173	1.020	1.157	1.124	1.292	1.109	0.774	0.739	1.115	1.133	1.190	0.288	/	1.591	N/A
	Right Hand Tilted 15°	1.089	1.103	1.176	1.136	1.018	0.997	1.021	1.086	1.118	0.522	0.350	0.907	1.102	1.167	0.282	/	1.458	N/A
Body-worn 15mm	Front side	0.180	0.126	0.115	0.114	0.129	0.073	0.118	0.169	0.090	0.060	0.037	0.129	0.167	0.159	0.119	/	0.299	N/A
	Back side	0.251	0.148	0.094	0.082	0.178	0.111	0.084	0.187	0.067	0.097	0.062	0.129	0.145	0.116	0.119	/	0.370	N/A
Hotspot 10mm	Front side	0.628	0.282	0.238	0.222	0.286	0.155	0.207	0.337	0.169	0.125	0.086	0.264	0.299	0.316	0.252	/	0.880	N/A
	Back side	0.693	0.343	0.228	0.174	0.392	0.186	0.233	0.405	0.137	0.211	0.119	0.293	0.331	0.292	0.252	/	0.945	N/A
	Left side	0.361	0.338	0.238	0.128	0.174	0.166	0.140	0.225	0.196	0.081	0.053	0.142	0.445	0.368	0.252	/	0.697	N/A
	Right side	0.071	0.025	0.027	0.036	0.033	0.020	0.031	0.042	0.010	0.018	0.014	0.023	0.019	0.025	0.252	/	0.323	N/A
10-g Extremity 0mm	Top side	0.680	0.423	0.299	0.428	0.269	0.259	0.408	0.348	0.146	0.140	0.080	0.257	0.278	0.295	0.252	/	0.932	N/A
	Bottom side	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0.000	N/A
	Front side	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0.635	0.635	N/A
	Back side	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0.301	0.301	N/A
	Left side	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0.748	0.748	N/A
	Right side	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0.748	0.748	N/A
	Top side	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0.348	0.348	N/A
	Bottom side	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0.000	N/A	N/A

Table 149: SAR Simultaneous Tx Combination of Second antenna and 5G WiFi.

Test Position		Main antenna SAR _{Max}														WiFi/BT antenna SAR _{Max}	BT	ΣSAR (1.6W/kg Limit for 1g and	SPLSR
		GSM850	GSM1900	UMTS Band II	UMTS Band IV	UMTS Band V	LTE Band II	LTE Band IV	LTE Band V	LTE Band VII	LTE Band XII	LTE Band XVII	LTE Band XXVI	LTE Band XXXVIII	LTE Band XLI	WiFi 2.4G			
Head	Left Hand Touched	0.150	0.336	0.535	0.213	0.115	0.442	0.260	0.216	0.336	0.035	0.039	0.061	0.057	0.099	0.531	/	1.066	N/A
	Left Hand Tilted 15°	0.119	0.048	0.095	0.059	0.096	0.052	0.062	0.088	0.115	0.023	0.030	0.052	0.028	0.032	0.503	/	0.622	N/A
	Right Hand Touched	0.221	0.070	0.149	0.099	0.189	0.081	0.095	0.208	0.118	0.114	0.060	0.168	0.095	0.064	0.126	/	0.347	N/A
	Right Hand Tilted 15°	0.119	0.037	0.088	0.065	0.097	0.048	0.068	0.089	0.067	0.022	0.027	0.057	0.020	0.022	0.148	/	0.267	N/A
Body-worn 15mm	Front side	0.144	0.257	0.228	0.149	0.203	0.133	0.192	0.178	0.247	0.057	0.066	0.088	0.111	0.122	0.103	0.175	0.432	N/A
	Back side	0.194	0.271	0.238	0.191	0.303	0.115	0.244	0.231	0.316	0.075	0.090	0.120	0.104	0.135	0.104	0.175	0.491	N/A
Hotspot 10mm	Front side	0.460	0.464	0.466	0.310	0.307	0.243	0.401	0.276	0.835	0.063	0.074	0.132	0.232	0.276	0.196	/	1.031	N/A
	Back side	0.639	0.546	0.489	0.370	0.398	0.240	0.409	0.396	0.754	0.110	0.129	0.161	0.241	0.338	0.211	/	0.965	N/A
	Left side	0.129	0.303	0.431	0.299	0.171	0.231	0.323	0.119	0.344	0.036	0.050	0.053	0.062	0.094	0.271	/	0.702	N/A
	Right side	0.502	0.062	0.051	0.040	0.436	0.029	0.047	0.388	0.238	0.100	0.128	0.221	0.133	0.159	0.271	/	0.773	N/A
10-g Extremity 0mm	Top side	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0.186	/	0.186	N/A
	Bottom side	0.514	0.606	0.662	0.923	0.373	0.430	1.179	0.380	0.915	0.070	0.082	0.143	0.387	0.426	/	/	1.179	N/A
	Front side	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0.210	0.210	N/A
	Back side	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0.210	0.210	N/A
	Left side	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0.210	0.210	N/A
	Right side	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0.210	0.210	N/A
	Top side	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0.210	0.210	N/A
	Bottom side	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0.000	N/A	N/A
	Front side	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0.210	0.210	N/A
	Back side	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0.210	0.210	N/A

Table 150: SAR Simultaneous Tx Combination of Main antenna and 2.4G WiFi/BT.

Test Position		Main antenna SAR _{Max}														WiFi/BT antenna SAR _{Max}	ΣSAR (1.6W/kg Limit for 1g and	SPLSR
		GSM850	GSM1900	UMTS Band II	UMTS Band IV	UMTS Band V	LTE Band II	LTE Band IV	LTE Band V	LTE Band VII	LTE Band XII	LTE Band XVII	LTE Band XXVI	LTE Band XXXVIII	LTE Band XLI	WiFi 5G		
Head	Left Hand Touched	0.150	0.336	0.535	0.213	0.115	0.442	0.260	0.216	0.336	0.035	0.039	0.061	0.057	0.099	0.781	1.316	N/A
	Left Hand Tilted 15°	0.119	0.048	0.095	0.059	0.096	0.052	0.062	0.088	0.115	0.023	0.030	0.052	0.028	0.032	0.851	0.970	N/A
	Right Hand Touched	0.221	0.070	0.149	0.099	0.189	0.081	0.095	0.208	0.118	0.114	0.060	0.168	0.095	0.064	0.288	0.509	N/A
	Right Hand Tilted 15°	0.119	0.037	0.088	0.065	0.097	0.048	0.068	0.089	0.067	0.022	0.027	0.057	0.020	0.022	0.282	0.401	N/A
Body-worn 15mm	Front side	0.144	0.257	0.228	0.149	0.203	0.133	0.192	0.178	0.247	0.057	0.066	0.088	0.111	0.122	0.119	0.376	N/A
	Back side	0.194	0.271	0.238	0.191	0.303	0.115	0.244	0.231	0.316	0.075	0.090	0.120	0.104	0.135	0.119	0.435	N/A
Hotspot 10mm	Front side	0.460	0.464	0.466	0.310	0.307	0.243	0.401	0.276	0.835	0.063	0.074	0.132	0.232	0.276	0.252	1.087	N/A
	Back side	0.639	0.546	0.489	0.370	0.398	0.240	0.409	0.396	0.754	0.110	0.129	0.161	0.241	0.338	0.252	1.006	N/A
	Left side	0.129	0.303	0.431	0.299	0.171	0.231	0.323	0.119	0.344	0.036	0.050	0.053	0.062	0.094	0.252	0.683	N/A
	Right side	0.502	0.062	0.051	0.040	0.436	0.029	0.047	0.388	0.238	0.100	0.128	0.221	0.133	0.159	0.252	0.754	N/A
10-g Extremity 0mm	Top side	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0.252	0.252	N/A
	Bottom side	0.514	0.606	0.662	0.923	0.373	0.430	1.179	0.380	0.915	0.070	0.082	0.143	0.387	0.426	/	0.000	N/A
	Front side	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0.635	0.635	N/A
	Back side	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0.301	0.301	N/A
	Left side	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0.748	0.748	N/A
	Right side	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0.748	0.748	N/A
	Top side	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0.348	0.348	N/A
	Bottom side	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0.000	N/A

Table 151: SAR Simultaneous Tx Combination of Main antenna and 5G WiFi.

Note: Per KDB 648474 D04, simultaneous transmission SAR consideration for 10-g extremity SAR requires consideration only when standalone 10-g SAR is required.

7.3.4 Simultaneous Transmission Conclusion

The above numeral summed SAR results and/or SPLSR analysis 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 D01v06.

Appendix A. System Check Plots
(Pls See Appendix A.)

Appendix B. SAR Measurement Plots
(Pls See Appendix B.)

Appendix C. Calibration Certificate
(Pls See Appendix C.)

Appendix D. Photo documentation
(Pls See Appendix D.)

End