FCC SAR Compliance Test Report

Product Name:	Smart Phone
Model:	BAC-L23, BAC-L03
Report No.:	SYBH(Z-SAR)019042017-2
FCC ID:	QISBAC-LX3

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DATE	2017-07-10	2017-07-10

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※ ※ Modified History ※ ※

REV.	DESCRIPTION	ISSUED DATE	REMARK
Rev.1.0	Initial Test Report Release.	2017-07-01	Li Wei
Rev.1.1	Page 11: Correct the battery capacity information.	2017-07-10	Li Wei

1 General Information

1.1 Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for BAC-L23, BAC-L03 are as below Table 1.

Band	Max Reported SAR(W/kg)			
	1-g Head SAR	1-g Body-worn SAR(15mm) *	1-g Hotspot SAR(10mm)	Product Specific 10-g SAR (0mm)**
GSM850	**1.30**	0.43	0.84	/
GSM1900	1.01	0.37	0.96	1.52
UMTS Band II	1.08	**0.79**	0.91	2.93
UMTS Band IV	1.05	0.59	**1.30**	**3.11**
UMTS Band V	1.25	0.44	0.92	/
LTE Band II	1.22	0.54	1.11	2.98
LTE Band IV	1.23	0.66	0.86	2.43
LTE Band V	0.96	0.30	0.65	/
LTE Band VII	0.99	0.58	0.94	1.99
LTE Band XII	0.94	0.24	0.48	/
LTE Band XVII	/	/	/	/
WiFi 2.4G	0.52	0.26	0.54	/
BT	0.45	/	/	/
The highest reported SAR for head, body-worn, hotspot, simultaneous transmission and product specific 10-g SAR exposure conditions are 1.30W/kg, 0.79W/kg, 1.30W/kg, 1.43W/kg and 3.11 W/kg respectively 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) According to TCB workshop October,2014 RF Exposure Prcedures Update(Overlapping LTE Bands):

a) Main and Second Antenna SAR for LTE Band 17 (Frequency range:704-716 MHz) is covered by LTE Band 12 (Frequency range:699-716 MHz) due to similar frequency range,same maximum tune up limit and same channel bandwidth.

The device is in compliance with Specific Absorption Rate（SAR）for general population/uncontraolled 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:	BAC-L23, BAC-L03		
FCC ID :	QISBAC-LX3		
SN.:	1#: AUYDU17411000161 2#: AUYDU17411000141 3#: AUYDU17411000225 4#: AUYDU17411000002		
Device Type :	Portable device		
Device Phase:	Identical Prototype		
Exposure Category:	Uncontrolled environment / general population		
Hardware Version :	HL0BACLMT1		
Software Version :	BAC-L23C900B121 BAC-L03C900B121		
Antenna Type :	Internal antenna		
Others Accessories	Headset		
Device Operating Configurations:			
Supporting Mode(s)	GSM 850/1900, UMTS Band II/IV/V, LTE Band II/IV/V/VII/XII/XVII, WiFi 2.4G; BT		
Test Modulation	GSM(GMSK/8PSK), UMTS(QPSK), LTE(QPSK/16QAM), WiFi(DSSS/OFDM), BT(GFSK)		
Device Class	B		
Operating Frequency Range(s)	Band	Tx (MHz)	Rx (MHz)
	GSM850	824-849	869-894
	PCS1900	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
	BT	2402-2480	
	WiFi 2.4G	2412-2462	
GPRS Multislot Class(12)	Max Number of Timeslots in Uplink:		4
	Max Number of Timeslots in Downlink:		4
	Max Total Timeslot:		5
EGPRS Multislot Class(12)	Max Number of Timeslots in Uplink:		4
	Max Number of Timeslots in Downlink:		4
	Max Total Timeslot:		5
HSDPA UE Category	14		
HSUPA UE Category	6		
DC-HSDPA UE Category	24		
Power Class:	4,tested with power level 5(GSM850)		
	1,tested with power level 0(GSM1900)		
	3, tested with power control “all 1”(UMTS Band II)		

	3, tested with power control “all 1”(UMTS Band IV)
	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)
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)
	802.11b/g/n 20M:1-6-11 802.11n 40M:3-6-9 (WiFi 2.4G)
	BT: 0-19-39-78

Table 3:Device information and operating configuration

1.3.1 General Description

BAC-L23, BAC-L03 is subscriber equipment in the GSM/WCDMA/LTE system. The GSM frequency band includes GSM850 and GSM900 and DCS1800 and PCS1900. The UMTS frequency band is B1 and B2 and B4 and B5 and B8. The LTE frequency band is B2 and B4 and B5 and B7 and B12 and B17 and B28.
But only GSM850 and GSM1900MHz, UMTS frequency B2 and B4 and B5, LTE frequency B2 and B4 and B5 and B7 and B12 and B17 bands test data included in this report. The Mobile Phone implements such functions as RF signal receiving/transmitting, LTE/HSPA/UMTS and GSM/GPRS/EDGE protocol processing, voice, video MMS service, GPS, AGPS and WIFI etc. Externally it provides one micro SD card interface (it can also used as SIM card interface), earphone port (to provide voice service) and one SIM card interface. BAC-L23 is dual SIM smart phone. BAC-L03 is single SIM smart phone. It also provides Bluetooth module to synchronize data between a PC and the phone, or to use the built-in modem of the phone to access the Internet with a PC, or to exchange data with other Bluetooth devices.

Battery information：

Name	Manufacture	Description
Rechargeable Li-ion	Desay Battery Co., Ltd.	Battery Model: HB356687ECW Rated capacity: 3240mAh Nominal Voltage: ⎓ +3.82V Charging Voltage: ⎓ +4.4V
	Sunwoda Electronic Co., LTD	
	SCUD (FUJIAN) Electronics Co., Ltd	

Difference descripiton:

The mobile phone BAC-L03 and BAC-L23 are LTE/UMTS/GSM mobile phone with Bluetooth.The differences between BAC-L03 and BAC-L23 are showed in the following table. BAC-L03 delete one SIM by software. Other parts of the mobile phone are the same, including the appearance, the antenna, Chipset, Bluetooth mode, Wifi mode, Adapter, Battery, Mainboard and so on.

	BAC-L03	BAC-L23
GSM four bands	B2/B3/B5/B8	B2/B3/B5/B8
WCDMA bands	B1/B2/B4/B5/B8	B1/B2/B4/B5/B8
LTE bands	B2/B4/B5/B7/B12/B17/B28	B2/B4/B5/B7/B12/B17/B28
FCC bands	GSM850/1900 W850/W1700/W1900 LTE B2/B4/B5/B7/B12/B17	GSM850/1900 W850/W1700/W1900 LTE B2/B4/B5/B7/B12/B17
SIM card	One	Two
External camera	the same	the same
internal camera	the same	the same
FLASH	the same	the same
Mainboard	the same	the same
PCB layout	the same	the same
Appearance	the same	the same

Bluetooth mode	the same	the same
WLAN mode	the same	the same
BT/ WLAN antenna	the same	the same
GSM/ WCDMA /LTE antenna	the same	the same
Adapter	the same	the same
Battery	the same	the same
Chipset	the same	the same
Memory	the same	the same
RF Parameter	The same RF Parameter in the same band	The same RF Parameter in the same band
Dimension	the same	the same
Main Frequency NV	The same NV in the same band	The same NV in the same band

According to the difference description above, full SAR test is performed on BAC-L23. BAC-L03 shares the same test data of BAC-L23 for the same bands(2G&3G&4G(with SIM1) and WiFi/BT bands).

1.3.2 Dynamic antenna switching specification

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

SAR test procedure for dynamic antenna switching is as below:
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 commands or test scripts 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.

1.3.3 Power reduction specification

1) Power reduction triggered by specific use conditions(2G&3G&4G Second antenna)

This device uses the receiver to indicate whether the user is making a voice call in head scenario or not. The selection between head and body power levels is based on the receiver detection mechanism.

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

Band	Power Reduction Level Amount (dB)	
	Second Antenna	
	Receiver on(Head)	Receiver off(Body)
GSM850	2.0	0
GSM1900	3.5	0
UMTS Band II	6.5	0
UMTS Band IV	5.5	0
UMTS Band V	3.0	0
LTE Band II	5.0	0
LTE Band IV	3.7	0
LTE Band V	3.0	0
LTE Band VII	5.2	0
LTE Band XII	3.6	0
LTE Band XVII	3.6	0

Per FCC guidance of KDB inquiry, the SAR test plan is as below:

a) For Head SAR test of 2G/3G/4G Second Antenna, Standalone Head SAR should be evaluated at power level A(Audio Receiver on). In the LTE and UMTS VOIP test mode, as the test lab can not simulate the actual user scenarios to trigger the receiver on. A test script is usdeto trigger the receiver on during the test. The TX power and SAR value during the test is the same as the actual user scenarios.

b) For Body /Hotspot Product Specific 10-g SAR test of 2G/3G/4G Second Antenna, Standalone Body SAR should be evaluated at power level B（Audio Receiver off）;

2) **Power reduction triggered by hotspot(2G&3G&4G Main antenna)**
A fixed level power reduction is applied for some frequency bands when hotspot mode becomes active. When the hotspot is disabled, the power value will be recovered.
The following tables summerize 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.

Band	**Power Reduction Level Amount (dB)**	
	Main Antenna	
	Hotspot is active	Hotspot is disabled
GSM1900	1.5	0.0
UMTS Band II	4.0	0.0
UMTS Band IV	2.0	0.0
LTE Band II	3.0	0.0
LTE Band IV	3.5	0.0
LTE Band VII	4.3	0.0

3) Power reduction triggered by infrared proximity sensor(WiFI antenna)
The device uses an infrared proximity sensor to reduce the output power of WiFi antenna when WiFi VOIP or WiFi and 2G&3G&4G antenna voice mode transmit simultaneously in held-to-ear scenario or body front side scenario. 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 6.1.6 and Section 7 of this report.

Band	Power Reduction Level Amount (dB)			
	WiFi Antenna only		WiFi Antenna and 2G&3G&4G antenna simultaneous transmission	
	Sensor on (Voice mode)	Sensor off	Sensor on (Voice mode)	Sensor off
WiFi 2.4G 802.11b	8.0	0	8.0	0
WiFi 2.4G 802.11g	6.0	0	6.0	0
WiFi 2.4G 802.11n	4.0	0	4.0	0

1.3.4 Downlink LTE CA specification

The device supports downlink LTE Carrier Aggregation (CA) only. Other Release 10 or higer 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 V13.2.0. The conducted power measurement results of downlink LTE CA are provided in Section 7 of this report per 3GPP TS 36.521-1 V13.3.0. According to KDB 941225 D05A, the downlink LTE CA SAR test is not required and PAG requirements can be excluded.

Table: non-contiguous intra-band CA (with two sub-blocks)

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]	Channel bandwidths for carrier [MHz]		
CA_4A-4A	5, 10, 15, 20	5, 10, 15, 20		40	0

Table: Test frequencies for CA_4A-4A

Range	CC-Combo / N_{RB_agg} [RB]	CC1 Note1					Wgap [MHz]	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]
N/A	25+25	25	19975	1712.5	1975	2112.5	35	25	20375	1752.5	2375	2152.5
	25+50	25	19975	1712.5	1975	2112.5	30	50	20350	1750	2350	2150
		50	20000	1715	2000	2115	30	25	20375	1752.5	2375	2152.5
	25+75	25	19975	1712.5	1975	2112.5	25	75	20325	1747.5	2325	2147.5
		75	20025	1717.5	2025	2117.5	25	25	20375	1752.5	2375	2152.5
	50+50	50	20000	1715	2000	2115	25	50	20350	1750	2350	2150
	25+100	25	19975	1712.5	1975	2112.5	20	100	20300	1745	2300	2145
		100	20050	1720	2050	2120	20	25	20375	1752.5	2375	2152.5
	50+75	50	20000	1715	2000	2115	20	75	20325	1747.5	2325	2147.5
		75	20025	1717.5	2025	2117.5	20	50	20350	1750	2350	2150
	50+100	50	20000	1715	2000	2115	15	100	20300	1745	2300	2145
		100	20050	1720	2050	2120	15	50	20350	1750	2350	2150
	75+75	75	20025	1717.5	2025	2117.5	15	75	20325	1747.5	2325	2147.5
	75+100	75	20025	1717.5	2025	2117.5	10	100	20300	1745	2300	2145
		100	20050	1720	2050	2120	10	75	20325	1747.5	2325	2147.5
	100+100	100	20050	1720	2050	2120	5	100	20300	1745	2300	2145
Note 1: Carriers in increasing frequency order.												

Table: contiguous intra-band CA

E-UTRA CA configuration / Bandwidth combination set						
E-UTRA CA configuration	Uplink CA configurations (NOTE 3)	Component carriers in order of increasing carrier frequency			Maximum aggregated bandwidth [MHz]	Bandwidth combination set
		Channel bandwidths for carrier [MHz]	Channel bandwidths for carrier [MHz]	Channel bandwidths for carrier [MHz]		
CA_2C	NA	5	20		40	0
		10	15, 20			
		15	10, 15, 20			
		20	5, 10, 15, 20			
CA_7C	NA	15	15		40	0
		20	20			
		10	20		40	1
		15	15, 20			
		20	10, 15, 20			

Table: Test frequencies for CA_2C

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	25+100	25	18633	1853.3	633	1933.3	100	18750	1865	750	1945
		100	18700	1860	700	1940	25	18817	1871.7	817	1951.7
	50+75	50	18653	1855.3	653	1935.3	75	18773	1867.3	773	1947.3
		75	18675	1857.5	675	1937.5	50	18795	1869.5	795	1949.5
	50+100	50	18655	1855.5	655	1935.5	100	18799	1869.9	799	1949.9
		100	18700	1860	700	1940	50	18844	1874.4	844	1954.4
	75+75	75	18675	1857.5	675	1937.5	75	18825	1872.5	825	1952.5
	75+100	75	18678	1857.8	678	1937.8	100	18849	1874.9	849	1954.9
		100	18700	1860	700	1940	75	18871	1877.1	871	1957.1
	100+100	100	18700	1860	700	1940	100	18898	1879.8	898	1959.8
Mid	25+100	25	18808	1870.8	808	1950.8	100	18925	1882.5	925	1962.5
		100	18875	1877.5	875	1957.5	25	18992	1889.2	992	1969.2
	50+75	50	18829	1872.9	829	1952.9	75	18949	1884.9	949	1964.9
		75	18851	1875.1	851	1955.1	50	18971	1887.1	971	1967.1
	50+100	50	18806	1870.6	806	1950.6	100	18950	1885	950	1965
		100	18851	1875.1	851	1955.1	50	18995	1889.5	995	1969.5
	75+75	75	18825	1872.5	825	1952.5	75	18975	1887.5	975	1967.5
	75+100	75	18803	1870.3	803	1950.3	100	18974	1887.4	974	1967.4
		100	18826	1872.6	826	1952.6	75	18997	1889.7	997	1969.7
	100+100	100	18801	1870.1	801	1950.1	100	18999	1889.9	999	1969.9
High	25+100	25	18983	1888.3	983	1968.3	100	19100	1900	1100	1980
		100	19050	1895	1050	1975	25	19167	1906.7	1167	1986.7
	50+75	50	19005	1890.5	1005	1970.5	75	19125	1902.5	1125	1982.5
		75	19027	1892.7	1027	1972.7	50	19147	1904.7	1147	1984.7
	50+100	50	18956	1885.6	956	1965.6	100	19100	1900	1100	1980
		100	19001	1890.1	1001	1970.1	50	19145	1904.5	1145	1984.5
	75+75	75	18975	1887.5	975	1967.5	75	19125	1902.5	1125	1982.5
	75+100	75	18929	1882.9	929	1962.9	100	19100	1900	1100	1980
		100	18951	1885.1	951	1965.1	75	19122	1902.2	1122	1982.2
	100+100	100	18902	1880.2	902	1960.2	100	19100	1900	1100	1980

Note 1: Carriers in increasing frequency order.

Table: Test frequencies for CA_7C

Range	CC-Combo / NRB_agg [RB]	CC1 Note1					CC2 Note1				
		BW [RB]	N_{UL}	f_{UL} [MHz]	N_{DL}	f_{DL} [MHz]	BW [RB]	N_{UL}	f_{UL} [MHz]	N_{DL}	f_{DL} [MHz]
Low	50+100	50	20805	2505.5	2805	2625.5	100	20949	2519.9	2949	2639.9
		100	20850	2510	2850	2630	50	20994	2524.4	2994	2644.4
	75+75	75	20825	2507.5	2825	2627.5	75	20975	2522.5	2975	2642.5
	75+100	75	20828	2507.8	2828	2627.8	100	20999	2524.9	2999	2644.9
		100	20850	2510	2850	2630	75	21021	2527.1	3021	2647.1
	100+100	100	20850	2510	2850	2630	100	21048	2529.8	3048	2649.8
Mid	50+100	50	21006	2525.6	3006	2645.6	100	21150	2540	3150	2660
		100	21051	2530.1	3051	2650.1	50	21195	2544.5	3195	2664.5
	75+75	75	21025	2527.5	3025	2647.5	75	21175	2542.5	3175	2662.5
	75+100	75	21003	2525.3	3003	2645.3	100	21174	2542.4	3174	2662.4
		100	21026	2527.6	3026	2647.6	75	21197	2544.7	3197	2664.7
	100+100	100	21001	2525.1	3001	2645.1	100	21199	2544.9	3199	2664.9
High	50+100	50	21206	2545.6	3206	2665.6	100	21350	2560	3350	2680
		100	21251	2550.1	3251	2670.1	50	21395	2564.5	3395	2684.5
	75+75	75	21225	2547.5	3225	2667.5	75	21375	2562.5	3375	2682.5
	75+100	75	21179	2542.9	3179	2662.9	100	21350	2560	3350	2680
		100	21201	2545.1	3201	2665.1	75	21372	2562.2	3372	2682.2
	100+100	100	21152	2540.2	3152	2660.2	100	21350	2560	3350	2680
Note 1: Carriers in increasing frequency order.											

Table: Inter-band CA(two bands)

E-UTRA CA configuration / Bandwidth combination set									
E-UTRA CA Configuration	**E-UTRA Bands**	**1.4 MHz**	**3 MHz**	**5 MHz**	**10 MHz**	**15 MHz**	**20 MHz**	**Maximum aggregated bandwidth [MHz]**	**Bandwidth combination set**
CA_2A-5A	2			Yes	Yes	Yes	Yes	30	0
	5			Yes	Yes				
CA_2A-28A	2			Yes	Yes	Yes	Yes	40	0
	28			Yes	Yes	Yes	Yes		
CA_4A-5A	4			Yes	Yes			20	0
	5			Yes	Yes				
	4			Yes	Yes	Yes	Yes	30	1
	5			Yes	Yes				
CA_4A-12A	4	Yes	Yes	Yes	Yes			20	0
	12			Yes	Yes				
	4	Yes	Yes	Yes	Yes	Yes	Yes	30	1
	12			Yes	Yes				
	4			Yes	Yes	Yes	Yes	30	2
	12		Yes	Yes	Yes				
	4			Yes	Yes			20	3
	12			Yes	Yes				
	4			Yes	Yes	Yes	Yes	30	4
	12			Yes	Yes				
CA_4A-28A	4			Yes	Yes	Yes	Yes	40	0
	28			Yes	Yes	Yes	Yes		
CA_4A-17A	4			Yes	Yes			20	0
	17			Yes	Yes				
CA_4A-7A	4			Yes	Yes			30	0
	7			Yes	Yes	Yes	Yes		
CA_5A-7A	5	Yes	Yes	Yes	Yes			30	0
	7				Yes	Yes	Yes		
CA_7A-28A	7			Yes	Yes	Yes	Yes	35	0
	28			Yes	Yes	Yes			
NOTE 1: The CA Configuration refers to a combination of an operating band and a CA bandwidth class specified in Table 5.4.2A-1 (the indexing letter). Absence of a CA bandwidth class for an operating band implies support of all classes. NOTE 2: For each band combination, all combinations of indicated bandwidths belong to the set NOTE 3: For the supported CC bandwidth combinations, the CC downlink and uplink bandwidths are equal									

Note:

1）For the inter-band CA combinations, Except CA_4A-12A, CA_4A-17A, , B12/B17 can not be PCC, other 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 V13.2.0.

3) The reference test frequencies for CA refers to 3GPP TS 36.508 V13.1.0

1.4 Test specification(s)

ANSI C95.1:1992 /IEEE C95.1:1991	Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz – 300 GHz.(IEEE Std 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 v02r05
KDB941225 D05A	LTE Rel.10 KDB Inquiry Sheet v01r02
KDB941225 D06	Hotspot SAR v02r01
KDB447498 D01	General RF Exposure Guidance v06
KDB648474 D04	Handsets SAR v01r03
KDB248227 D01	SAR Guidance for IEEE 802 11 Wi-Fi SAR v02
KDB865664 D01	SAR measurement 100 MHz to 6 GHz v01r04
KDB865664 D02	SAR Reporting v01r02
KDB690783 D01	SAR Listings on Grants v01r03
KDB616217 D04	SAR for laptop and tablets v01r02

1.5 Testing laboratory

Test Site	The Reliability Laboratory of Huawei Technologies Co., Ltd.
Test Location	Section G1,Huawei Base Bantian, Longgang District, Shenzhen 518129, P.R. China
Telephone	+86 755 28780808
Fax	+86 755 89652518
State of accreditation	The Test laboratory (area of testing) is accredited according to ISO/IEC 17025. CNAS Registration number: L0310 A2LA TESTING CERT #2174.01 & 2174.02 & 2174.03

1.6 Applicant and Manufacturer

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

1.7 Application details

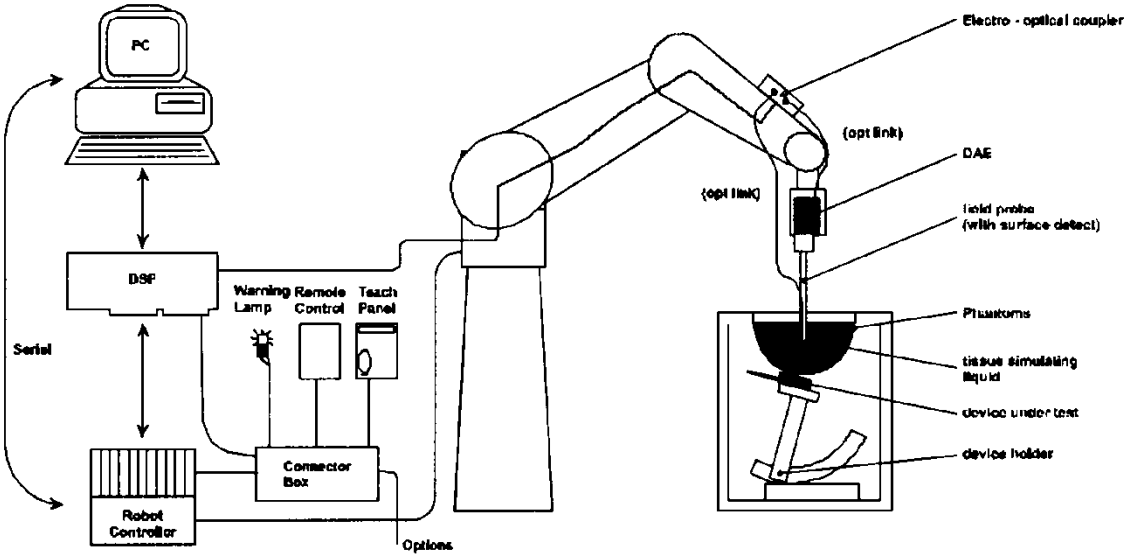
Start Date of test	2017-05-04
End Date of test	2017-07-01

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

- A standard high precision 6-axis robot (Stäubli RX family) with controller and software. An arm extension for accommodating the data acquisition electronics (DAE).

- A dosimetric probe, i.e. an isotropic E-field probe optimized and calibrated for usage in tissue simulating liquid. The probe is equipped with an optical surface detector system.

- A data acquisition electronic (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- A unit to operate the optical surface detector which is connected to the EOC.
- The Electro-Optical Coupler (EOC) performs the conversion from the optical into a digital electric signal of the DAE. The EOC is connected to the DASY5/6 measurement server.
- The DASY measurement server, which performs all real-time data evaluation for field measurements and surface detection, controls robot movements and handles safety operation. A computer operating Windows 7.
- DASY software and SEMCAD data evaluation software.
- Remote control with teach panel and additional circuitry for robot safety such as warning lamps, etc.
- The generic twin phantom enabling the testing of left-hand and right-hand usage.
- The device holder for handheld mobile phones.
- Tissue simulating liquid mixed according to the given recipes.
- System check dipoles allowing to validate the proper functioning of the system.

2.2 Test environment

The DASY measurement system is placed at the head end of a room with dimensions:
5 x 2.5 x 3 m³, the SAM phantom is placed in a distance of 75 cm from the side walls and 1.1m from the rear wall. Above the test system a 1.5 x 1.5 m² array of pyramid absorbers is installed to reduce reflections from the ceiling.
Picture 1 of the photo documentation shows a complete view of the test environment.
The system allows the measurement of SAR values larger than 0.005 mW/g.

2.3 Data Acquisition Electronics description

The data acquisition electronics (DAE) consist of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-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

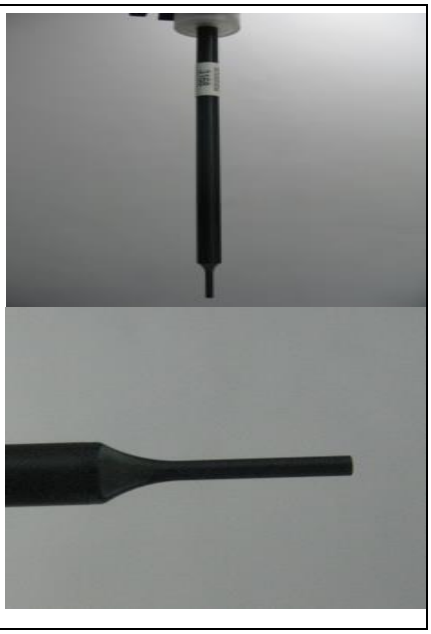
Input Impedance	200MOhm	
The Inputs	symmetrical and floating	
Common mode rejection	above 80 dB	

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.

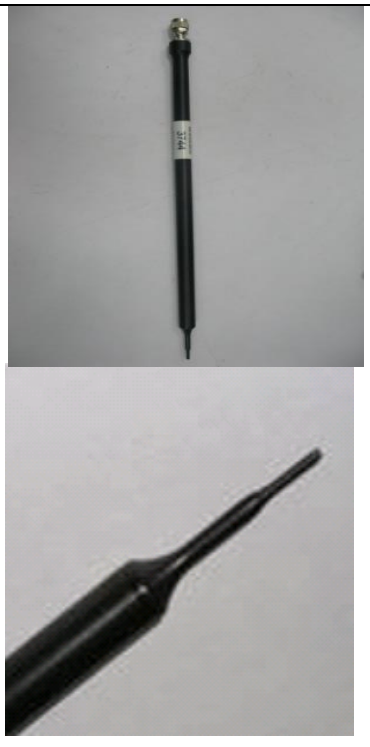
Isotropic E-Field Probe ES3DV3 for Dosimetric Measurements

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 µW/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 µW/g to > 100 mW/g; Linearity: ± 0.2 dB(noise:typically<1µW/g)
Dimensions	Overall length: 337 mm (Tip:20 mm) Tip diameter:2.5 mm (Body:12 mm) Typical distance from probe tip to dipole centers: 1mm
Application	High precision dosimetric measurements in any exposure scenario(e.g.,very strong gradient fields). Only probe which enables compliance testing for frequencies up to 6 GHz with precision of better 30%

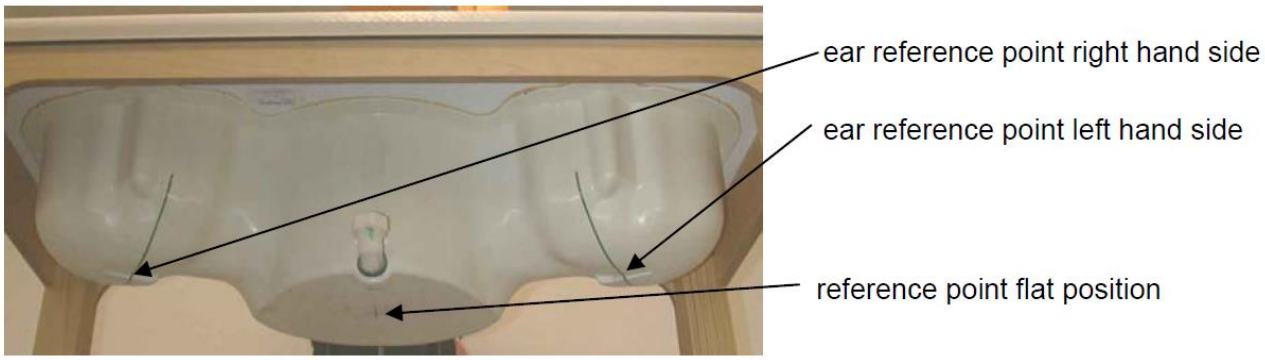


2.5 Phantom description

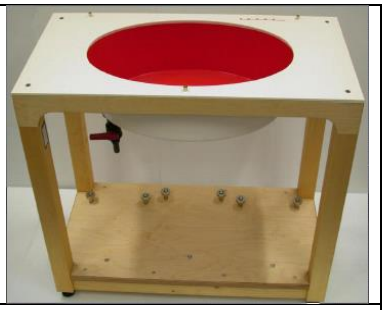
SAM Twin Phantom

Shell Thickness	2mm±0.2mm;The ear region:6.0±0.2mm	
Filling Volume	Approximately 25 liters	
Dimensions	Length:1000mm; Width:500mm; Height: adjustable feet	
Measurement Areas	Left hand Right hand Flat phantom	
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 $2 \leq \varepsilon r \leq 5$ at ≤3 GHz, $3 \leq \varepsilon r \leq 4$ at >3 GHz and and a loss tangent ⩽0.05.

2.6 Device holder description

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

The DASY device holder is constructed of low-loss POM material having the following dielectric parameters: relative permittivity ε =3 and loss tangent σ =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 ±1° in the tilt angle.

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

2.7 Test Equipment List

This table gives a complete overview of the SAR measurement equipment.
Devices used during the test described are marked ☒

	Manufacturer	Device	Type	Serial number	Date of last calibration*	Valid period
☒	SPEAG	Dosimetric E-Field Probe	EX3DV4	3744	2016-07-26	One year
☒	SPEAG	Dosimetric E-Field Probe	ES3DV3	3168	2016-09-27	One year
☒	SPEAG	750MHz Dipole	D750V3	1044	2016-09-28	Three years
☒	SPEAG	835MHz Dipole	D835V2	4d059	2016-04-20	Three years
☒	SPEAG	1750MHz Dipole	D1750V2	1123	2014-07-08	Three years
☒	SPEAG	1900MHz Dipole	D1900V2	5d091	2015-09-21	Three years
☒	SPEAG	2450MHz Dipole	D2450V2	860	2016-11-23	Three years
☒	SPEAG	2600MHz Dipole	D2600V2	1021	2016-07-25	Three years
☐	SPEAG	5GHz Dipole	D5GHzV2	1155	2016-04-26	Three years
☒	SPEAG	Data acquisition electronics	DAE4	851	2016-07-22	One year
☒	SPEAG	Data acquisition electronics	DAE4	852	2017-04-27	One year
☒	SPEAG	Data acquisition electronics	DAE4	1236	2016-11-22	One year
☒	SPEAG	Software	DASY5	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	Twin Phantom	SAM5	TP-1894	NCR	NCR
☐	SPEAG	Twin Phantom	SAM6	TP-1892	NCR	NCR
☒	R & S	Universal Radio Communication Tester	CMU 200	111379	2016-12-29	One year
☒	R & S	WideBand Radio Communication Tester	CMW 500	126855	2016-07-07	One year
☒	Agilent	Wireless Connectivity Test Set	N4010A	MY49081592	2016-08-05	One year
☒	R & S	Signal Analyzer	FSV30	101195	2016-08-31	One year
☒	Agilent	Network Analyser	E5071C	MY46213349	2016-12-30	One year
☒	Agilent	Dielectric Probe Kit	85070E	2484	NCR	NCR
☒	Agilent	Signal Generator	E8257D	MY49281095	2016-08-05	One year
☒	MINI-CIRCUITS	Amplifier	ZHL-42W	QA1402001	NCR	NCR
☒	AR	Directional Coupler	DC7144A M1	0423264	2017-04-12	NCR
☒	R & S	Power Meter	NRP	100740	2016-07-20	One year
☒	R & S	Power Meter Sensor	NRP-Z11	106288	2016-07-07	One year
☒	Agilent	Power Meter	E4417A	MY45101339	2016-12-30	One year
☒	Agilent	Power Meter Sensor	E9321A	MY44420359	2016-12-30	One year

Note: 1) Per KDB865664D01 requirements for dipole calibration, the test laboratory has adopted three-year extended calibration interval. Each measured dipole is expected to evaluate with the following criteria at least on annual interval in Appendix C.

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

2) Network analyzer probe calibration against air, distilled water and a shorting block performed before measuring liquid parameters.
3) *All the equipments are within the valid period when the tests are performed.

3 SAR Measurement Procedure

3.1 Scanning procedure

The DASY installation includes predefined files with recommended procedures for measurements and system check. They are read-only document files and destined as fully defined but unmeasured masks. All test positions (head or body-worn) are tested with the same configuration of test steps differing only in the grid definition for the different test positions.

- The “reference” and “drift” measurements are located at the beginning and end of the batch process. They measure the field drift at one single point in the liquid over the complete procedure. The indicated drift is mainly the variation of the DUT’s output power and should vary max. +/- 5 %.

- The “surface check” measurement tests the optical surface detection system of the DASY5/6 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 ± 0.1mm). 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 ± 30°.)

- 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(≤2GHz)，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: Δx_{zoom}, Δy_{zoom}≤ 2GHz - ≤8mm, 2-4GHz - ≤5 mm and 4-6 GHz-≤4mm; Δz_{zoom} ≤3GHz - ≤5 mm, 3-4 GHz- ≤4mm and 4-6GHz-≤2mm 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 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 (Δx_{area}, Δy_{area})	Maximun Zoom Scan spatial resolution (Δx_{Zoom}, Δy_{Zoom})	Maximun Zoom Scan spatial resolution			Minimum zoom scan volume (x,y,z)
			Uniform Grid	Graded Grad		
			$\Delta z_{Zoom}(n)$	$\Delta z_{Zoom}(1)$*	$\Delta z_{Zoom}(n>1)$*	
≤2GHz	≤15mm	≤8mm	≤5mm	≤4mm	≤1.5*$\Delta z_{Zoom}(n-1)$	≥30mm
2-3GHz	≤12mm	≤5mm	≤5mm	≤4mm	≤1.5*$\Delta z_{Zoom}(n-1)$	≥30mm
3-4GHz	≤12mm	≤5mm	≤4mm	≤3mm	≤1.5*$\Delta z_{Zoom}(n-1)$	≥28mm
4-5GHz	≤10mm	≤4mm	≤3mm	≤2.5mm	≤1.5*$\Delta z_{Zoom}(n-1)$	≥25mm
5-6GHz	≤10mm	≤4mm	≤2mm	≤2mm	≤1.5*$\Delta z_{Zoom}(n-1)$	≥22mm

3.2 Spatial Peak SAR Evaluation

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

- The data between the dipole center of the probe and the surface of the phantom are extrapolated. This data cannot be measured since the center of the dipole is 2.7 mm away from the tip of the probe and the distance between the surface and the lowest measuring point is about 1 mm (see probe calibration sheet). The extrapolated data from a cube measurement can be visualized by selecting 'Graph Evaluated'.

- The maximum interpolated value is searched with a straight-forward algorithm. Around this maximum the SAR - values averaged over the spatial volumes (1g or 10 g) are computed using the 3d-spline interpolation algorithm. If the volume cannot be evaluated (i.e., if a part of the grid was cut off by the boundary of the measurement area) the evaluation will be started on the corners of the bottom plane of the cube.

- All neighboring volumes are evaluated until no neighboring volume with a higher average value is found.

Extrapolation

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

Interpolation

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

Volume Averaging

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

Advanced Extrapolation

DASY5/6 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	$Norm_i$, 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:

$Vi = Ui + Ui2 \bullet cf/dcpi$

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

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

evaluated:

E-field probes: $E_i = (V_i / Norm_i \cdot ConvF)^{1/2}$
H-field probes: $H_i = (V_i)^{1/2} \cdot (a_{i0} + a_{i1}f + a_{i2}f^2)/f$

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

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

Etot = (Ex2 + EY2 + Ez2)1/2

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

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

with SAR = local specific absorption rate in mW/g
E_{tot} = total field strength in V/m
σ = conductivity in [mho/m] or [Siemens/m]
ρ = equivalent tissue density in g/cm^3

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

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

with P_{pwe} = equivalent power density of a plane wave in mW/cm^2
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 of the dielectic parameter are within the tolerances of the specified target values. The measured conductivity and relative permittivity should be within ± 5% of the target values.

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

Ingredients (% of weight)	**Head Tissue**					
Frequency Band (MHz)	750	835	1750	1900	2450	2600
Water	39.2	41.45	52.64	55.242	62.7	55.242
Salt (NaCl)	2.7	1.45	0.36	0.306	0.5	0.306
Sugar	57.0	56.0	0.0	0.0	0.0	0.0
HEC	0.0	1.0	0.0	0.0	0.0	0.0
Bactericide	0.0	0.1	0.0	0.0	0.0	0.0
Triton X-100	0.0	0.0	0.0	0.0	0.0	0.0
DGBE	0.0	0.0	47.0	44.542	36.8	44.452
Ingredients (% of weight)	**Body Tissue**					
Frequency Band (MHz)	750	835	1750	1900	2450	2600
Water	50.3	52.4	69.91	69.91	73.2	64.493
Salt (NaCl)	1.60	1.40	0.13	0.13	0.04	0.024
Sugar	47.0	45.0	0.0	0.0	0.0	0.0
HEC	0.0	1.0	0.0	0.0	0.0	0.0
Bactericide	0.0	0.1	0.0	0.0	0.0	0.0
Triton X-100	0.0	0.0	0.0	0.0	0.0	0.0
DGBE	0.0	0.0	29.96	29.96	26.7	32.252

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

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

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

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

Table 4: Tissue Dielectric Properties

Salt: 99+% Pure Sodium Chloride; Sugar: 98+% Pure Sucrose; Water: De-ionized, 16MΩ+ 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

Tissue Type	Measured Frequency (MHz)	Target Tissue		Measured Tissue		Deviation (Within +/-5%)		Liquid Temp.	Test Date
		ε_r	σ[S/m]	ε_r	σ[S/m]	$\Delta\varepsilon_r$	Δσ		
750MHz Head	705	42.14	0.89	42.55	0.875	0.97%	-1.67%	21.4°C	2017/5/10
	710	42.11	0.89	42.55	0.876	1.04%	-1.54%		
	750	41.90	0.89	42.49	0.894	1.41%	0.47%		
835MHz Head	825	41.60	0.90	40.32	0.913	-3.08%	1.39%	21.7°C	2017/5/4
	835	41.50	0.90	40.28	0.916	-2.94%	1.73%		
	850	41.50	0.92	40.22	0.921	-3.08%	0.13%		
835MHz Head	825	41.60	0.90	40.05	0.915	-3.73%	1.70%	21.6°C	2017/5/11
	835	41.50	0.90	40.01	0.918	-3.59%	2.04%		
	850	41.50	0.92	39.96	0.924	-3.71%	0.43%		
835MHz Head	825	41.60	0.90	42.19	0.919	1.42%	2.13%	21.4°C	2017/5/13
	835	41.50	0.90	42.16	0.922	1.59%	2.44%		
	850	41.50	0.92	42.11	0.928	1.47%	0.89%		
1750MHz Head	1710	40.10	1.35	39.33	1.339	-1.92%	-0.81%	21.9°C	2017/5/9
	1730	40.10	1.36	39.34	1.349	-1.90%	-0.81%		
	1750	40.10	1.37	39.33	1.360	-1.92%	-0.73%		
	1800	40.00	1.40	39.28	1.395	-1.80%	-0.36%		
1750MHz Head	1710	40.10	1.35	38.98	1.344	-2.79%	-0.44%	21.8°C	2017/5/13
	1730	40.10	1.36	38.95	1.354	-2.87%	-0.44%		
	1750	40.10	1.37	38.93	1.365	-2.92%	-0.36%		
	1800	40.00	1.40	38.87	1.395	-2.83%	-0.36%		
1750MHz Head	1710	40.10	1.35	39.54	1.330	-1.40%	-1.48%	21.6°C	2017/5/22
	1730	40.10	1.36	39.53	1.341	-1.42%	-1.40%		
	1750	40.10	1.37	39.51	1.352	-1.47%	-1.31%		
	1800	40.00	1.40	39.44	1.383	-1.40%	-1.21%		
1900MHz Head	1850	40.00	1.40	39.17	1.380	-2.08%	-1.43%	21.8°C	2017/5/4
	1880	40.00	1.40	39.02	1.395	-2.45%	-0.36%		
	1900	40.00	1.40	39.03	1.409	-2.43%	0.64%		
	1910	40.00	1.40	39.06	1.417	-2.35%	1.21%		
1900MHz Head	1850	40.00	1.40	38.65	1.405	-3.38%	0.36%	21.9°C	2017/5/12
	1880	40.00	1.40	38.59	1.425	-3.52%	1.79%		
	1900	40.00	1.40	38.56	1.436	-3.60%	2.57%		
	1910	40.00	1.40	38.54	1.441	-3.65%	2.93%		
1900MHz Head	1850	40.00	1.40	39.27	1.382	-1.82%	-1.29%	21.8°C	2017/5/18
	1880	40.00	1.40	39.22	1.401	-1.95%	0.07%		
	1900	40.00	1.40	39.20	1.411	-2.00%	0.79%		
	1910	40.00	1.40	39.19	1.416	-2.03%	1.14%		
2450MHz Head	2410	39.30	1.76	38.27	1.801	-2.62%	2.33%	21.6°C	2017/5/26
	2435	39.20	1.79	38.23	1.819	-2.47%	1.62%		
	2450	39.20	1.80	38.22	1.830	-2.50%	1.67%		
	2460	39.20	1.81	38.20	1.836	-2.55%	1.44%		

2450MHz Head	2410	39.30	1.76	39.40	1.775	0.25%	0.85%	21.9°C	2017/6/30
	2435	39.20	1.79	39.35	1.803	0.38%	0.73%		
	2450	39.20	1.80	39.33	1.809	0.33%	0.50%		
	2460	39.20	1.81	39.30	1.834	0.26%	1.33%		
2600MHz Head	2510	39.12	1.86	40.65	1.909	3.91%	2.63%	21.8°C	2017/5/14
	2535	39.10	1.89	40.62	1.931	3.89%	2.17%		
	2560	39.00	1.92	40.59	1.954	4.08%	1.93%		
	2600	39.00	1.96	40.54	1.989	3.92%	1.48%		
	2610	38.98	1.97	40.52	1.997	3.95%	1.37%		
	2645	38.93	2.01	40.46	2.029	3.93%	0.95%		
750MHz Body	705	55.70	0.96	54.77	0.942	-1.67%	-1.92%	21.4°C	2017/5/9
	710	55.70	0.96	54.77	0.943	-1.67%	-1.82%		
	750	55.50	0.96	54.75	0.962	-1.35%	0.20%		
835MHz Body	825	55.20	0.97	54.91	0.991	-0.53%	2.18%	21.5°C	2017/5/5
	835	55.20	0.97	54.87	0.995	-0.60%	2.53%		
	850	55.20	0.99	54.81	1.001	-0.71%	1.11%		
835MHz Body	825	55.20	0.97	54.05	0.986	-2.08%	1.66%	21.8°C	2017/5/7
	835	55.20	0.97	54.04	0.989	-2.10%	1.96%		
	850	55.20	0.99	54.01	0.995	-2.16%	0.47%		
835MHz Body	825	55.20	0.97	54.68	1.007	-0.94%	3.81%	21.6°C	2017/5/10
	835	55.20	0.97	54.65	1.010	-1.00%	4.12%		
	850	55.20	0.99	54.60	1.017	-1.09%	2.73%		
1750MHz Body	1710	53.50	1.46	52.94	1.474	-1.05%	0.96%	21.8°C	2017/5/5
	1730	53.50	1.48	52.91	1.484	-1.10%	0.27%		
	1750	53.40	1.49	52.86	1.497	-1.01%	0.47%		
	1800	53.30	1.52	52.84	1.529	-0.86%	0.59%		
1750MHz Body	1710	53.50	1.46	52.51	1.467	-1.85%	0.48%	21.6°C	2017/5/9
	1730	53.50	1.48	52.53	1.478	-1.81%	-0.14%		
	1750	53.40	1.49	52.54	1.490	-1.61%	0.00%		
	1800	53.30	1.52	52.51	1.534	-1.48%	0.92%		
1750MHz Body	1710	53.50	1.46	53.33	1.491	-0.32%	2.12%	21.7°C	2017/5/22
	1730	53.50	1.48	53.33	1.504	-0.32%	1.62%		
	1750	53.40	1.49	53.33	1.519	-0.13%	1.95%		
	1800	53.30	1.52	53.28	1.561	-0.04%	2.70%		
1750MHz Body	1710	53.50	1.46	52.07	1.490	-2.67%	2.05%	21.6°C	2017/5/24
	1730	53.50	1.48	52.07	1.501	-2.67%	1.42%		
	1750	53.40	1.49	52.03	1.509	-2.57%	1.28%		
	1800	53.30	1.52	52.07	1.550	-2.31%	1.97%		
1900MHz Body	1850	53.30	1.52	52.12	1.544	-2.21%	1.58%	21.8°C	2017/5/7
	1880	53.30	1.52	52.06	1.567	-2.33%	3.09%		
	1900	53.30	1.52	52.03	1.580	-2.38%	3.95%		
	1910	53.30	1.52	52.02	1.586	-2.40%	4.34%		
1900MHz Body	1850	53.30	1.52	52.13	1.529	-2.20%	0.59%	21.6°C	2017/5/19
	1880	53.30	1.52	52.09	1.553	-2.27%	2.17%		
	1900	53.30	1.52	52.04	1.566	-2.36%	3.03%		
	1910	53.30	1.52	52.02	1.574	-2.40%	3.55%		

1900MHz Body	1850	53.30	1.52	53.78	1.503	0.90%	-1.12%	21.4°C	2017/5/21
	1880	53.30	1.52	53.65	1.524	0.66%	0.26%		
	1900	53.30	1.52	53.61	1.543	0.58%	1.51%		
	1910	53.30	1.52	53.63	1.551	0.62%	2.04%		
2450MHz Body	2410	52.80	1.91	52.48	1.975	-0.61%	3.40%	21.4°C	2017/5/27
	2435	52.70	1.94	52.38	2.005	-0.61%	3.35%		
	2450	52.70	1.95	52.33	2.023	-0.70%	3.74%		
	2460	52.70	1.96	52.29	2.037	-0.78%	3.93%		
2600MHz Body	2510	52.62	2.03	51.43	2.126	-2.26%	4.73%	21.3°C	2017/5/16
	2535	52.59	2.07	51.38	2.150	-2.30%	3.86%		
	2560	52.57	2.09	51.35	2.190	-2.32%	4.78%		
	2600	52.50	2.16	51.28	2.228	-2.32%	3.15%		
	2610	52.36	2.18	51.26	2.238	-2.10%	2.66%		
	2645	52.26	2.24	51.20	2.274	-2.03%	1.52%		
2600MHz Body	2510	52.62	2.03	51.73	2.129	-1.69%	4.88%	21.5°C	2017/5/23
	2535	52.59	2.07	51.70	2.152	-1.69%	3.96%		
	2560	52.57	2.09	51.67	2.177	-1.71%	4.16%		
	2600	52.50	2.16	51.59	2.217	-1.73%	2.64%		
	2610	52.36	2.18	51.58	2.227	-1.49%	2.16%		
	2645	52.26	2.24	51.51	2.262	-1.44%	0.98%		
2600MHz Body	2510	52.62	2.03	50.80	2.118	-3.46%	4.33%	21.7°C	2017/5/26
	2535	52.59	2.07	50.77	2.141	-3.46%	3.43%		
	2560	52.57	2.09	50.73	2.167	-3.50%	3.68%		
	2600	52.50	2.16	50.67	2.205	-3.49%	2.08%		
	2610	52.36	2.18	50.65	2.214	-3.27%	1.56%		
	2645	52.26	2.24	50.59	2.249	-3.20%	0.40%		
2600MHz Body	2510	52.62	2.03	51.29	2.127	-2.53%	4.78%	22.0°C	2017/6/28
	2535	52.59	2.07	51.89	2.152	-1.33%	3.96%		
	2560	52.57	2.09	51.85	2.182	-1.37%	4.40%		
	2600	52.50	2.16	51.78	2.224	-1.37%	2.96%		
	2610	52.36	2.18	51.75	2.234	-1.17%	2.48%		
	2645	52.26	2.24	51.68	2.272	-1.11%	1.43%		

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

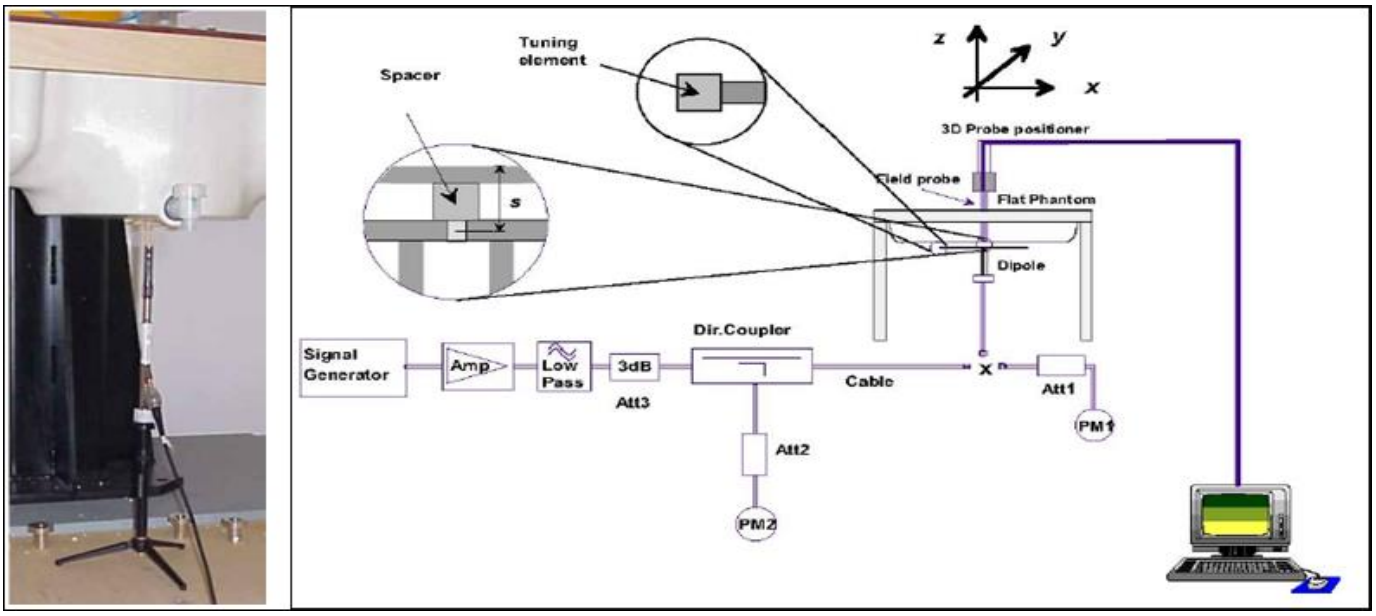
The system check is performed for verifying the accuracy of the complete measurement system and performance of the software. The system check is performed with tissue equivalent material according to IEEE P1528 (described above). The following table shows system check results for all frequency bands and tissue liquids used during the tests(Graphic Plot(s) see Appendix A).

System Check	Target SAR (1W)		Measured SAR (Normalized to 1W)		Deviation (Within +/-10%)		Liquid Temp.	Test Date
	1-g (W/kg)	10-g (W/kg)	1-g (W/kg)	10-g (W/kg)	Δ1-g	Δ10-g		
750MHz Head	8.22	5.39	8.60	5.64	4.62%	4.64%	21.4°C	2017/5/10
835MHz Head	9.30	6.05	9.52	6.16	2.37%	1.82%	21.7°C	2017/5/4
835MHz Head	9.30	6.05	9.44	6.08	1.51%	0.50%	21.6°C	2017/5/11
835MHz Head	9.30	6.05	9.40	6.12	1.08%	1.16%	21.4°C	2017/5/13
1750MHz Head	35.10	18.60	36.32	19.16	3.48%	3.01%	21.9°C	2017/5/9
1750MHz Head	35.10	18.60	35.12	18.52	0.06%	-0.43%	21.8°C	2017/5/13
1750MHz Head	35.10	18.60	34.28	18.08	-2.34%	-2.80%	21.6°C	2017/5/22
1900MHz Head	40.20	21.10	41.60	21.48	3.48%	1.80%	21.8°C	2017/5/4
1900MHz Head	40.20	21.10	42.00	21.80	4.48%	3.32%	21.9°C	2017/5/12
1900MHz Head	40.20	21.10	42.00	21.64	4.48%	2.56%	21.8°C	2017/5/18
2450MHz Head	51.90	24.40	55.20	25.52	6.36%	4.59%	21.6°C	2017/5/26
2450MHz Head	51.90	24.40	52.40	24.56	0.96%	0.66%	21.9°C	2017/6/30
2600MHz Head	57.10	25.60	59.20	26.36	3.68%	2.97%	21.8°C	2017/5/14
750MHz Body	8.64	5.72	8.88	5.84	2.78%	2.10%	21.4°C	2017/5/9
835MHz Body	9.41	6.20	10.24	6.72	8.82%	8.39%	21.5°C	2017/5/5
835MHz Body	9.41	6.20	9.92	6.48	5.42%	4.52%	21.8°C	2017/5/7
835MHz Body	9.41	6.20	10.08	6.64	7.12%	7.10%	21.6°C	2017/5/10
1750MHz Body	36.30	19.50	35.48	18.84	-2.26%	-3.38%	21.8°C	2017/5/5
1750MHz Body	36.30	19.50	36.40	19.44	0.28%	-0.31%	21.6°C	2017/5/9
1750MHz Body	36.30	19.50	38.28	20.24	5.45%	3.79%	21.7°C	2017/5/22
1750MHz Body	36.30	19.50	38.64	20.28	6.45%	4.00%	21.6°C	2017/5/24
1900MHz Body	39.90	21.00	42.80	22.20	7.27%	5.71%	21.8°C	2017/5/7
1900MHz Body	39.90	21.00	41.60	21.44	4.26%	2.10%	21.6°C	2017/5/19
1900MHz Body	39.90	21.00	43.60	22.40	9.27%	6.67%	21.4°C	2017/5/21
2450MHz Body	50.60	23.80	54.80	25.08	8.30%	5.38%	21.4°C	2017/5/27
2600MHz Body	54.90	24.60	59.60	26.44	8.56%	7.48%	21.3°C	2017/5/16
2600MHz Body	54.90	24.60	54.00	23.68	-1.64%	-3.74%	21.5°C	2017/5/23
2600MHz Body	54.90	24.60	53.60	23.56	-2.37%	-4.23%	21.7°C	2017/5/26
2600MHz Body	54.90	24.60	54.80	24.76	-0.18%	0.65%	22.0°C	2017/6/28

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 3GHz) or 100mW(3-6GHz). To adjust this power a power meter is used. The power sensor is connected to the cable before the system check to measure the power at this point and do adjustments at the signal generator. At the outputs of the directional coupler both return loss as well as forward power are controlled during the system check to make sure that emitted power at the dipole is kept constant. This can also be checked by the power drift measurement after the test (result on plot).
System check results have to be equal or near the values determined during dipole calibration (target SAR in table above) with the relevant liquids and test system.



5 SAR measurement variability and uncertainty

5.1 SAR measurement variability

Per KDB865664 D01 SAR measurement 100 MHz to 6 GHz 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).

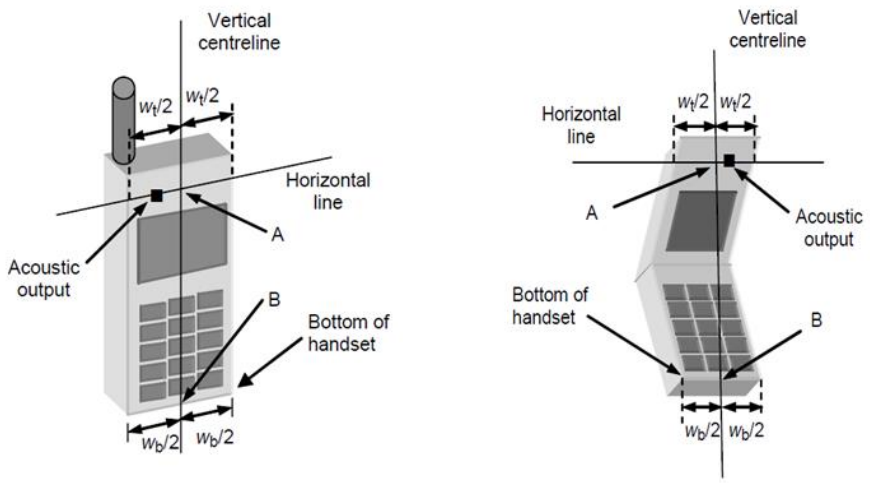


Figure 1 Hand Vertical Center & Horizontal Line Reference Points

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.

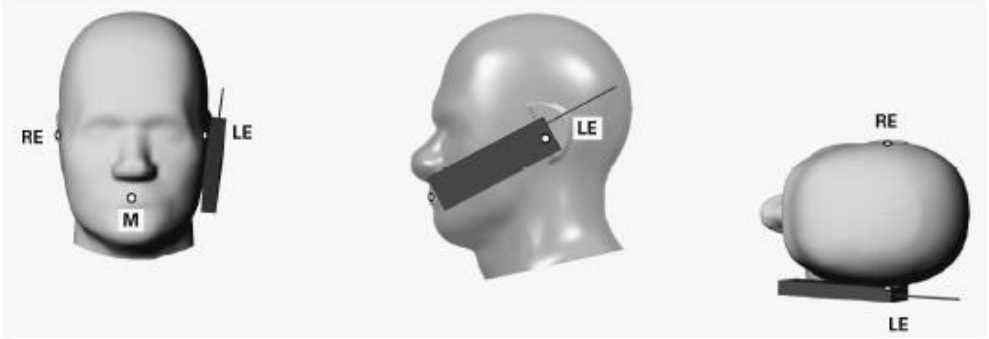


Figure 2 Front, Side and Top View of Cheek Position

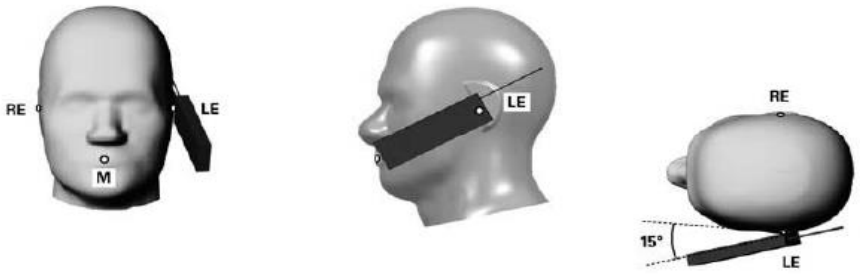


Figure 3 Front, Side and Top View of Tilt 15° Position

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 D04v01, 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 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.

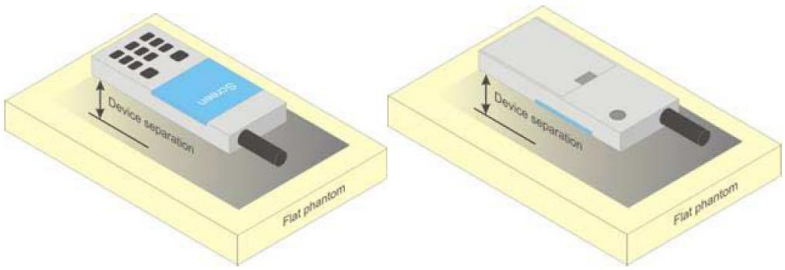


Figure 4 Test position for Body-Worn device

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 cm x 5 cm, a test separation distance of 10 mm is required for hotspot mode SAR measurements. A test separation distance of 5 mm or less is required for smaller devices. Hotspot mode SAR is measured for all edges and surfaces of the device with a transmitting antenna located within 25 mm from that surface or edge; for the data modes, wireless technologies and frequency bands supporting hotspot mode. The SAR results are used to determine simultaneous transmission SAR test exclusion for hotspot mode; otherwise, simultaneous transmission SAR measurement is required.

6.1.5 Product specific 10-g Exposure Condition

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

The UMPC mini-tablet procedures must also be applied to test the SAR of all surfaces and edges with an antenna located at ≤ 25 mm from that surface or edge, in direct contact with a flat phantom, for product specific 10-g SAR according to the body-equivalent tissue dielectric parameters in KDB 865664 to address interactive hand use exposure conditions. The UMPC mini-tablet 1-g SAR at 5 mm is not required. When hotspot mode applies, product specific 10-g SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg; however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold.

6.1.6 Proximity sensor Test Configuration

The device uses an infrared proximity sensor to reduce the output power of WiFi antenna when WiFi VOIP or WiFi and 2G&3G&4G antenna voice mode transmit simultaneously in held-to-ear scenario or body front side scenario. The following tables summarize the key power reduction information.

Band	Power Reduction Level Amount (dB)			
	WiFi Antenna only		WiFi Antenna and 2G&3G&4G antenna simultaneous transmission	
	Sensor on (Voice mode)	Sensor off	Sensor on (Voice mode)	Sensor off
WiFi 2.4G 802.11b	8.0	0	8.0	0
WiFi 2.4G 802.11g	6.0	0	6.0	0
WiFi 2.4G 802.11n	4.0	0	4.0	0

A specific external test software and chipset based internal test modes are used in sensor triggering power measurement validation tests. It can be ensured that the unmodified settings in production units, including maximum output power, amplifier gain and other RF performance or tuning parameters, are used for SAR measurement.

In this section, the following procedure is used to determine the triggering distances, coverage and tilt angle influences per FCC KDB 616217 D04 §6.

1) Procedures for determining proximity sensor triggering distances

The procedure per FCC KDB 616217 D04 §6.2 is used to determine the triggering distances. As the proximity sensor locates on the front face of the device and detects objects approaching only from the front side, so triggering distance only need to be checked for the front side when device is under voice mode(WiFi VOIP or WiFi and 2G&3G&4G antenna voice mode transmit simultaneously in held-to-ear scenario or body front side scenario).

FCC KDB 616217 D04v01§6.2, the proximity sensor triggering distance measurement results are as below:

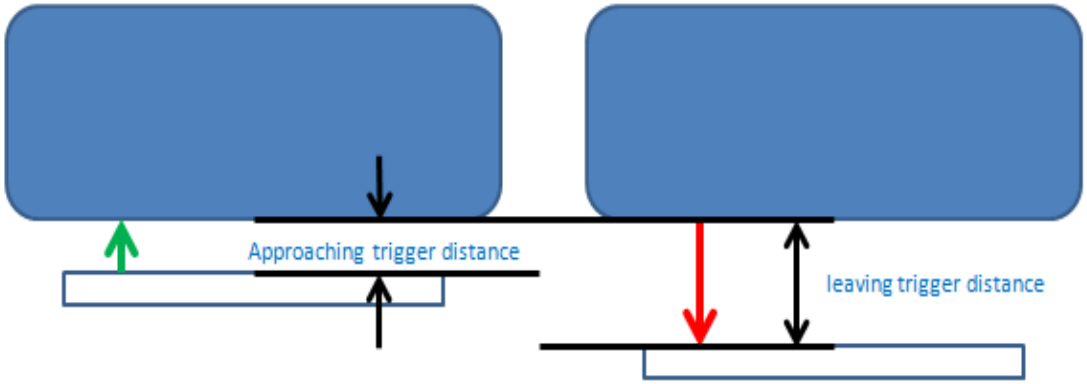
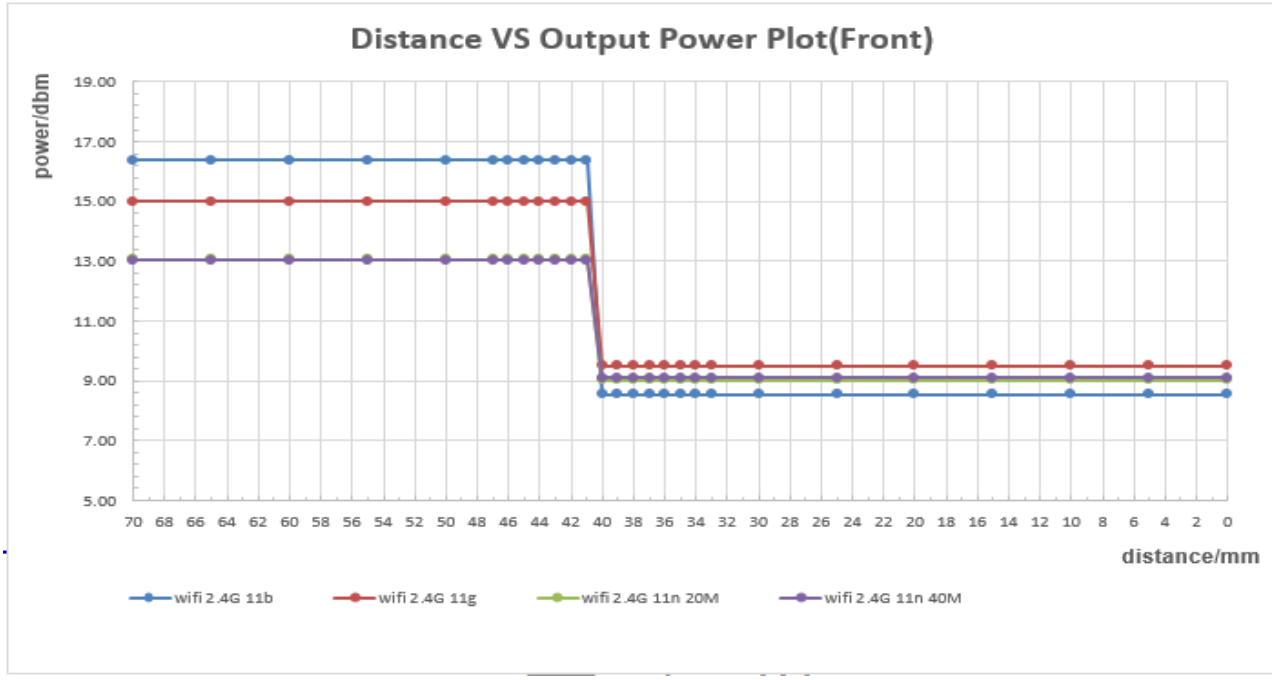
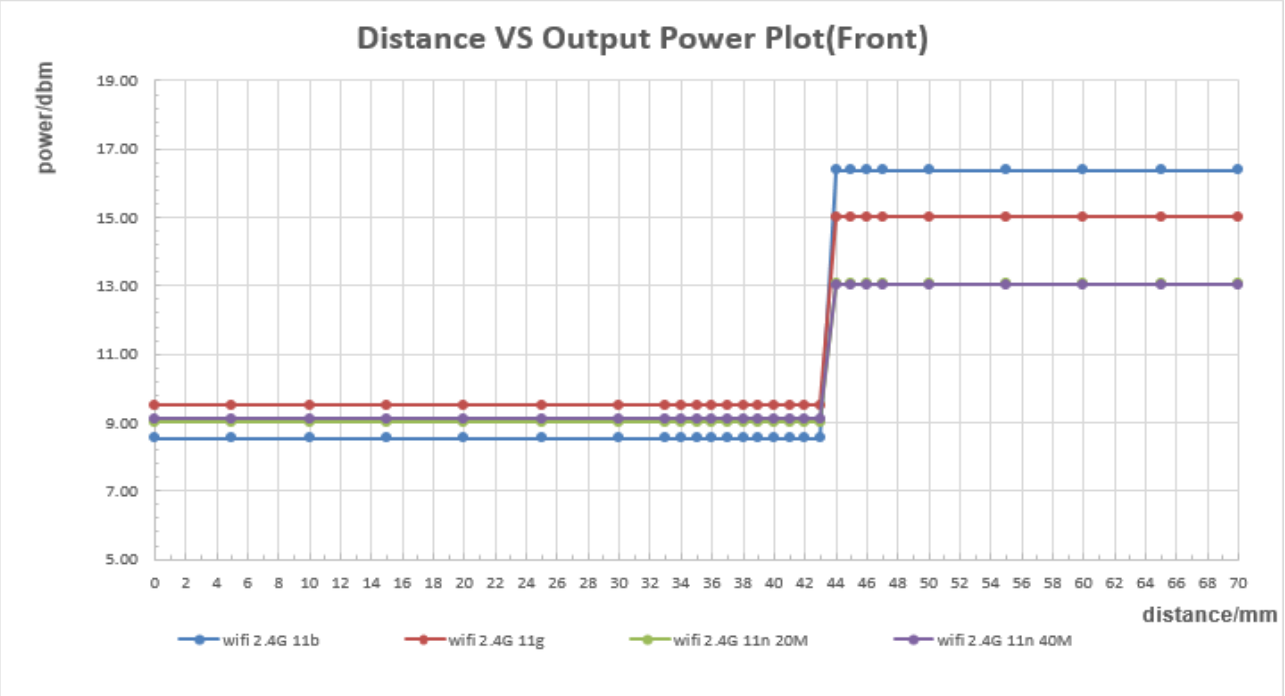


Figure : Proximity sensor triggering distances assessment (Front side only)

The DUT is moved towards from the flat phantom (VoWIFI or WiFi + 2G&3G&4G antenna voice mode simultaneous transmission):



The DUT is moved away from the flat phantom(VoWIFI or WiFi + 2G&3G&4G antenna voice mode simultaneous transmission):



2) Procedures for determining antenna and proximity sensor coverage

The IR proximity sensor triggering power reduction is only applicable for the front side, not including the edges. For front side view, there is no spatial offset between the WiFi antenna and the proximity sensor element. The scene does not exist when the antenna is next to the user but the sensor is laterally further away, so procedures for determining the proximity sensor coverage per FCC KDB 616217§6.3 does not need to be assessed.

3）Procedures for determining device tilt angle influences to proximity sensor triggering

The following procedure is used to determine the triggering angle. Distance need to be check when device under voice mode so that sensor is working.

For Head exposure condition, device tilt angle influences to proximity sensor triggering is determined as below:

Firstly, the DUT was positioned directly touch the Head SAM phantom (Left&Right hand touch cheek position). Rotate the DUT around the ear reference point of the phantom in 5° increments until the DUT is 15° tilted or more away from the touch cheek position at 0° .

Secondly, the DUT is positioned at 15° or more away from the touch cheek position and moved towards the SAM phantom in 5°increments until the DUT directly touch the SAM phantom at 0°(Left & Right hand touch cheek position).

The DUT is moved towards and away from SAM phantom:

Angle between phantom to DUT in degree	0°	5°	10°	15°	20°	25°	30°
Condition of Sensor power reduction (WiFi VOIP only or Wi-Fi + 2G&3G&4G antenna voice)	on	on	on	on	on	on	on

Conclusion: Based on the validation results above, angle tilt coverage can ensure that the proximity sensor is valid triggered for all required Head test positions(Left/Right Hand Touched cheek and Left/Right Hand tiled 15 °).

4) Summary SAR test Plan for Proximity sensor power reduction scenarios

a) For Head SAR compliance: Head SAR for Wi-Fi antenna is evaluated at reduced power levels according to the real usage scenarios.

b) For Body SAR compliance: Standalone SAR compliance for Wi-Fi antenna is still tested at the maximum output power level without any power reduction. The more conservative SAR results are used to ensure Body SAR compliance for both standalone and simultaneous transmission scenarios. So additional SAR test at the sensor triggering distance minus 1mm with the maximum output power level per KDB 616217D04 is not required.

6.2 3G SAR Test Reduction Procedure

Per KDB941225 D01v03, 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 ≤ ¼ dB higher than the primary mode or when the highest *reported* SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode. This is referred to as the 3G SAR test reduction procedure in the following SAR test guidance, where the primary mode is identified in the applicable wireless mode test procedures and the secondary mode is wireless mode being considered for SAR test reduction by that procedure. When the 3G SAR test reduction procedure is not satisfied, it is identified as “otherwise” in the applicable procedures; SAR measurement is required for the secondary mode.

6.3 GSM Test Configuration

SAR tests for GSM850 and GSM1900, a communication link is set up with a base station by air link. Using CMU200 the power lever 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 requied in the SAR report. All configurations that are not supported by the handset or cannot be measured due to technical or equipment limitations must be clearly identified.

2) WCDMA

a. Head SAR Measurements

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

b. Body SAR Measurements-

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

3) HSDPA

SAR for body exposure configurations is measured according to the “Body SAR Measurements’’ procedures of 3G device. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ 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 D01v03, the 3G SAR test reduction procedure is applied to HSDPA body configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for HSDPA using the HSDPA body SAR procedures for the highest reported SAR body exposure configuration in 12.2 kbps RMC.

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

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

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

Note 2 : CM=1 for β_c/β_d= 12/15, β_{hs}/β_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 β_c = 11/15 and β_d = 15/15

Table 7: Sub-tests for UMTS Release 5 HSDPA

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

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

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

HS-DSCH Category	Maximum HS-DSCH Codes Received	Minimum Inter-TTI Interval	Maximum HS-DSCH Transport Block Bits/HS-DSCH TTI	Total Soft Channel Bits
1	5	3	7298	19200
2	5	3	7298	28800
3	5	2	7298	28800
4	5	2	7298	38400
5	5	1	7298	57600
6	5	1	7298	67200
7	10	1	14411	115200
8	10	1	14411	134400
9	15	1	25251	172800
10	15	1	27952	172800
11	5	2	3630	14400
12	5	1	3630	28800
13	15	1	34800	259200
14	15	1	42196	259200
15	15	1	23370	345600
16	15	1	27952	345600

Table 9:HSDPA UE category

4) HSUPA

SAR for body exposure configurations is measured according to the “Body SAR Measurements’’ procedures of 3G device. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ 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	β_{hs}(1)	β_{ec}	β_{ed}	β_{ec} (SF)	β_{ed} (code)	CM(2) (dB)	MPR (dB)	AG(4) Index	E-TFCI
1	11/15(3)	15/15(3)	64	11/15(3)	22/15	209/225	1039/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	β_{ed1}:47/15 β_{ed2}:47/15	4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15(4)	15/15(4)	64	15/15(4)	30/15	24/15	134/15	4	1	1.0	0.0	21	81

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

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

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

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

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

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

Table 10:Subtests for UMTS Release 6 HSUPA

UE E-DCH Category	Maximum E-DCH Codes Transmitted	Number of HARQ Processes	E-DCH TTI(ms)	Minimum Speading 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&2SF4	11484	5.76
	4	4	2		20000	2.00
7 (No DPDCH)	4	8	2	2SF2&2SF4	22996	?
	4	4	10		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.

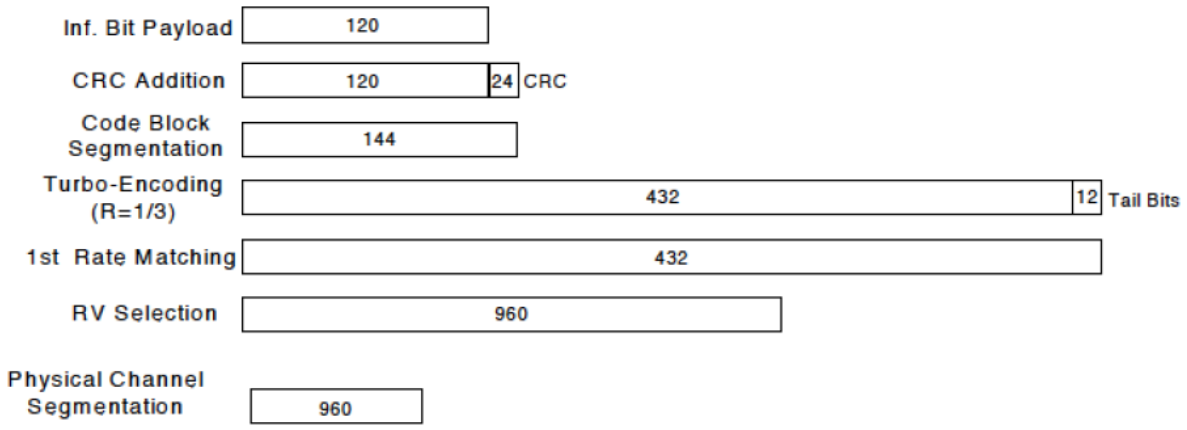


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

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

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

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

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

Note 3: For subtest 2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 11/15$ and $\beta_d = 15/15$

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. 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 > ½ 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 > ½ dB higher than the equivalent channel configurations in the largest channel bandwidth configuration or the reported SAR of a configuration for the largest channel bandwidth is > 1.45 W/kg.

6.6 WiFi Test Configuration

For WiFi SAR testing, a communication link is set up with the testing software for WiFi mode test. During the test,at the each test frequency channel, the EUT is operated at the RF continuous emission mode. The test procedures in KDB 248227D01 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 ≤ 0.4W/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 ≤ 0.8W/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.

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 248227D01v02). 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 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 ≤ 1.2 W/kg or all required channels are tested.

6.6.3 Sub Test Configuration Procedure

SAR measurement requirements for the remaining 802.11 transmission mode configurations that have not been tested in the initial test configuration are determined separately for each standalone and aggregated frequency band, in each exposure condition, according to the maximum output power specified for production units.

When the highest reported SAR for the initial test configuration, according to the initial test position or fixed exposure position requirements, is adjusted by the ratio of the subsequent test configuration to initial test configuration specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for that subsequent test configuration.

6.6.4 WiFi 2.4G SAR Test Procedures

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

A) 802.11b DSSS SAR Test Requirements

SAR is measured for 2.4 GHz 802.11b DSSS using either a fixed test position or, when applicable, the initial test position procedure. SAR test reduction is determined according to the following:

1) When the *reported* SAR of the highest measured maximum output power channel (section 3.1 of of 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 248227D01v02). SAR is not required for the following 2.4 GHz OFDM conditions.

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

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

6.7 BT Test Configuration

For BT SAR testing, the is set to the DUT continuous transmitting with maximum output power using the Wireless Connectivity Test Set N4010A. Per October 2016 TCB Worksop Notes, the BT SAR was scaled to the 100% transmission duty cycle to determine compliance. Refer to section 7.1 for the time-domain plot and calculation for the duty cylce of the device.

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)	31.0	29.42	29.56	29.61	-9.19	21.81	20.23	20.37	20.42

Table 13:Conducted power measurement results of GSM850 (Receiver on)

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	31.08	31.21	31.31	-9.19	23.81	21.89	22.02	22.12
GPRS/ EDGE (GMSK)	1 Tx Slot	33.0	31.07	31.22	31.29	-9.19	23.81	21.88	22.03	22.10
	2 Tx Slots	30.0	28.31	28.45	28.49	-6.13	23.87	22.18	22.32	22.36
	3 Tx Slots	29.0	**27.66**	**27.65**	**27.64**	-4.42	**24.58**	**23.24**	**23.23**	**23.22**
	4 Tx Slots	27.0	25.38	25.52	25.54	-3.18	23.82	22.20	22.34	22.36
EDGE (8PSK)	1 Tx Slot	27.5	26.93	26.87	26.82	-9.19	18.31	17.74	17.68	17.63
	2 Tx Slots	25.5	24.62	24.72	24.69	-6.13	19.37	18.49	18.59	18.56
	3 Tx Slots	23.5	22.52	22.55	22.47	-4.42	19.08	18.10	18.13	18.05
	4 Tx Slots	21.5	20.17	20.17	20.16	-3.18	18.32	16.99	16.99	16.98

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

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 timesolts.

3) Per KDB941225 D01, SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power specified for production units, including tune-up tolerance. The data mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested.

7.1.2 Conducted power measurements of 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)	27.0	25.52	25.43	25.47	-9.19	17.81	16.33	16.24	16.28

Table 15: Conducted power measurement results of GSM1900 (Receiver on)

GSM1900		Burst-Averaged output Power (dBm)				Division Factors	Frame-Averaged output Power (dBm)			
		Tune-up	512CH	661CH	810CH		Tune-up	512CH	661CH	810CH
GSM (CS)		30.5	28.85	28.74	28.63	-9.19	21.31	19.66	19.55	19.44
GPRS/ EDGE (GMSK)	1 Tx Slot	30.5	28.84	28.77	28.64	-9.19	21.31	19.65	19.58	19.45
	2 Tx Slots	27.5	26.14	26.05	25.93	-6.13	21.37	20.01	19.92	19.80
	3 Tx Slots	**26.5**	**24.55**	**24.52**	**24.54**	**-4.42**	**22.08**	**20.13**	**20.10**	**20.12**
	4 Tx Slots	24.5	23.19	23.08	23.05	-3.18	21.32	20.01	19.90	19.87
EDGE (8PSK)	1 Tx Slot	26.5	25.83	25.62	25.48	-9.19	17.31	16.64	16.43	16.29
	2 Tx Slots	24.5	23.48	23.29	23.28	-6.13	18.37	17.35	17.16	17.15
	3 Tx Slots	22.5	21.14	21.46	21.42	-4.42	18.08	16.72	17.04	17.00
	4 Tx Slots	20.5	19.71	19.54	19.48	-3.18	17.32	16.53	16.36	16.30

Table 16:Conducted power measurement results of GSM1900 (Receiver off)

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 timesolts.

3) Per KDB941225 D01, SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power specified for production units, including tune-up tolerance. The data mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested.

7.1.3 Conducted power measurements of UMTS Band II (Second Antenna)

UMTS Band II		Tune-up	Conducted Power (dBm)		
			9262CH	9400CH	9538CH
WCDMA	12.2kbps RMC	**17.5**	**16.29**	**16.32**	**16.27**
	12.2kbps AMR	17.5	16.26	16.30	16.24
HSDPA	Subtest 1	17.0	16.16	16.22	16.22
	Subtest 2	17.0	15.91	15.94	15.97
	Subtest 3	16.5	14.52	14.64	14.83
	Subtest 4	16.5	14.56	14.67	14.86
HSUPA	Subtest 1	15.0	13.03	13.32	13.46
	Subtest 2	13.5	11.57	12.03	12.15
	Subtest 3	14.5	14.07	14.03	14.10
	Subtest 4	13.5	13.43	12.13	12.29
	Subtest 5	15.0	14.46	14.98	14.99
DC-HSDPA	Subtest 1	17.0	16.10	16.14	16.23
	Subtest 2	17.0	15.90	15.98	15.90
	Subtest 3	16.5	14.55	14.57	14.88
	Subtest 4	16.5	14.52	14.60	14.81

Table 17: Conducted power measurement results of UMTS Band II (Receiver on)

UMTS Band II		Tune-up	Conducted Power (dBm)		
			9262CH	9400CH	9538CH
WCDMA	12.2kbps RMC	**24.0**	**22.71**	**22.63**	**22.62**
	12.2kbps AMR	24.0	22.69	22.56	22.55
HSDPA	Subtest 1	23.5	22.76	22.54	22.53
	Subtest 2	23.5	22.40	22.36	22.31
	Subtest 3	23.0	21.65	21.59	21.52
	Subtest 4	23.0	21.65	21.58	21.47
HSUPA	Subtest 1	21.5	20.63	20.89	21.17
	Subtest 2	20.0	19.66	19.44	19.35
	Subtest 3	21.5	20.41	20.43	20.35
	Subtest 4	20.5	19.96	19.29	19.23
	Subtest 5	21.5	21.49	21.50	21.48
DC-HSDPA	Subtest 1	23.5	22.71	22.56	22.44
	Subtest 2	23.5	22.29	22.30	22.30
	Subtest 3	23.0	21.60	21.51	21.39
	Subtest 4	23.0	21.61	21.50	21.41

Table 18: Conducted power measurement results of UMTS Band II (Receiver off)

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 D01, When the maximum output power and tune-up tolerance specified for production units in a Second mode is ≤ ¼ 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	**18.5**	**16.98**	**17.04**	**17.08**
	12.2kbps AMR	18.5	16.96	17.01	17.06
HSDPA	Subtest 1	17.0	16.23	16.23	16.21
	Subtest 2	17.0	16.01	16.03	16.05
	Subtest 3	16.5	15.18	14.52	14.75
	Subtest 4	16.0	14.35	14.51	14.77
HSUPA	Subtest 1	16.0	14.75	14.28	14.33
	Subtest 2	14.5	13.00	12.85	12.83
	Subtest 3	16.0	14.22	14.31	14.14
	Subtest 4	15.0	13.58	13.59	13.64
	Subtest 5	16.5	16.04	16.09	15.96
DC-HSDPA	Subtest 1	17.0	16.18	16.17	16.16
	Subtest 2	17.0	16.06	16.00	16.01
	Subtest 3	16.5	15.11	14.47	14.70
	Subtest 4	16.0	14.30	14.54	14.71

Table 19: Conducted power measurement results of UMTS Band IV (Receiver on)

UMTS Band IV		Tune-up	Conducted Power (dBm)		
			1312CH	1413CH	1513CH
WCDMA	12.2kbps RMC	24.0	22.41	**22.43**	22.41
	12.2kbps AMR	24.0	22.44	23.37	22.45
HSDPA	Subtest 1	23.5	22.39	22.43	22.42
	Subtest 2	23.5	22.13	22.15	22.14
	Subtest 3	23.0	21.46	21.44	21.40
	Subtest 4	23.0	21.47	21.40	21.39
HSUPA	Subtest 1	21.5	20.92	21.12	21.28
	Subtest 2	20.0	19.52	19.37	19.31
	Subtest 3	21.0	20.64	20.64	20.66
	Subtest 4	20.0	19.87	19.86	19.71
	Subtest 5	21.5	21.43	21.45	21.31
DC-HSDPA	Subtest 1	23.5	22.31	22.37	22.40
	Subtest 2	23.5	22.10	22.04	22.11
	Subtest 3	23.0	21.42	21.41	21.27
	Subtest 4	23.0	21.41	21.24	21.29

Table 20: Conducted power measurement results of UMTS Band IV (Receiver off)

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 D01, When the maximum output power and tune-up tolerance specified for production units in a Second mode is ≤ ¼ 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	**21.5**	**20.22**	**20.23**	**20.26**
	12.2kbps AMR	21.5	20.20	20.19	20.21
HSDPA	Subtest 1	20.5	19.31	19.20	19.23
	Subtest 2	20.5	19.05	19.04	19.05
	Subtest 3	19.5	18.16	18.16	18.19
	Subtest 4	19.5	18.14	18.14	18.18
HSUPA	Subtest 1	18.0	17.47	17.33	17.43
	Subtest 2	17.0	16.25	16.09	16.09
	Subtest 3	18.0	17.21	17.34	17.86
	Subtest 4	17.5	15.85	16.51	16.67
	Subtest 5	18.5	18.47	18.49	18.48
DC-HSDPA	Subtest 1	20.5	19.17	19.11	19.09
	Subtest 2	20.5	19.05	19.01	19.11
	Subtest 3	19.5	18.11	18.12	18.10
	Subtest 4	19.5	18.12	18.17	18.11

Table 21: Conducted power measurement results of UMTS Band V (Receiver on)

UMTS Band V		Tune-up	Conducted Power (dBm)		
			4132CH	4182CH	4233CH
WCDMA	12.2kbps RMC	**24.5**	**23.15**	**23.20**	**23.18**
	12.2kbps AMR	24.5	23.14	23.22	23.21
HSDPA	Subtest 1	23.5	22.64	22.64	22.62
	Subtest 2	23.5	22.32	22.26	22.30
	Subtest 3	22.5	21.38	21.43	21.49
	Subtest 4	22.5	21.40	21.46	21.51
HSUPA	Subtest 1	21.0	20.62	20.99	20.71
	Subtest 2	20.0	19.43	19.47	19.53
	Subtest 3	21.0	20.60	20.57	20.44
	Subtest 4	20.5	19.90	19.95	19.92
	Subtest 5	21.5	21.49	21.47	21.49
DC-HSDPA	Subtest 1	23.5	22.55	22.51	22.66
	Subtest 2	23.5	22.27	22.09	22.24
	Subtest 3	22.5	21.31	21.40	21.40
	Subtest 4	22.5	21.44	21.41	21.42

Table 22: Conducted power measurement results of UMTS Band V (Receiver off)

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 D01, When the maximum output power and tune-up tolerance specified for production units in a Second mode is ≤ ¼ 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	18.5	17.42	17.59	17.46
		1	3	18.5	17.38	17.61	17.51
		1	5	18.5	17.29	17.45	17.33
		3	0	18.5	17.34	17.60	17.47
		3	2	18.5	17.35	17.57	17.41
		3	3	18.5	17.31	17.49	17.33
		6	0	18.5	17.31	17.55	17.40
	16QAM	1	0	18.5	17.52	17.70	17.43
		1	3	18.5	17.51	17.72	17.45
		1	5	18.5	17.39	17.68	17.43
		3	0	18.5	17.44	17.55	17.55
		3	2	18.5	17.44	17.52	17.49
		3	3	18.5	17.41	17.52	17.41
		6	0	18.5	17.32	17.59	17.47
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18615CH	18900CH	19185CH
3MHz	QPSK	1	0	18.5	17.32	17.46	17.43
		1	7	18.5	17.50	17.65	17.56
		1	14	18.5	17.12	17.18	17.14
		8	0	18.5	17.39	17.56	17.48
		8	4	18.5	17.36	17.54	17.41
		8	7	18.5	17.33	17.41	17.33
		15	0	18.5	17.38	17.48	17.39
	16QAM	1	0	18.5	17.39	17.78	17.49
		1	7	18.5	17.35	17.99	17.57
		1	14	18.5	17.21	17.55	17.19
		8	0	18.5	17.35	17.56	17.46
		8	4	18.5	17.34	17.53	17.41
		8	7	18.5	17.30	17.41	17.32
		15	0	18.5	17.25	17.47	17.32

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18625CH	18900CH	19175CH
5MHz	QPSK	1	0	18.5	17.72	17.81	17.76
		1	13	18.5	17.88	17.91	17.87
		1	24	18.5	17.69	17.62	17.59
		12	0	18.5	17.69	17.89	17.83
		12	6	18.5	17.75	17.90	17.88
		12	13	18.5	17.54	17.64	17.59
		25	0	18.5	17.63	17.76	17.73
	16QAM	1	0	18.5	17.77	18.30	17.99
		1	13	18.5	17.94	18.35	18.09
		1	24	18.5	17.75	18.08	17.83
		12	0	18.5	17.58	17.86	17.82
		12	6	18.5	17.65	17.88	17.87
		12	13	18.5	17.49	17.63	17.60
		25	0	18.5	17.56	17.73	17.67
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18650CH	18900CH	19150CH
10MHz	QPSK	1	0	18.5	17.69	17.95	17.95
		1	25	18.5	17.99	18.09	18.14
		1	49	18.5	18.12	17.62	17.74
		25	0	18.5	17.77	18.02	17.95
		25	13	18.5	17.90	17.99	18.01
		25	25	18.5	17.92	17.77	17.89
		50	0	18.5	17.88	17.89	17.98
	16QAM	1	0	18.5	17.69	18.15	17.87
		1	25	18.5	18.05	18.26	18.08
		1	49	18.5	18.10	17.82	17.71
		25	0	18.5	17.72	17.99	17.88
		25	13	18.5	17.86	17.94	17.92
		25	25	18.5	17.86	17.73	17.81
		50	0	18.5	17.77	17.83	17.94

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18675CH	18900CH	19125CH
15MHz	QPSK	1	0	18.5	17.34	17.70	17.67
		1	38	18.5	17.99	17.96	17.90
		1	74	18.5	17.85	17.54	17.42
		36	0	18.5	17.70	17.87	17.82
		36	18	18.5	17.92	17.87	17.83
		36	39	18.5	17.84	17.52	17.62
		75	0	18.5	17.78	17.70	17.75
	16QAM	1	0	18.5	17.39	17.97	18.00
		1	38	18.5	18.00	18.26	18.22
		1	74	18.5	17.91	17.83	17.75
		36	0	18.5	17.66	17.87	17.79
		36	18	18.5	17.89	17.87	17.79
		36	39	18.5	17.82	17.52	17.58
		75	0	18.5	17.74	17.67	17.71
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18700CH	18900CH	19100CH
20MHz	QPSK	1	0	18.5	17.36	17.65	17.48
		1	50	18.5	17.28	**17.84**	**17.71**
		1	99	18.5	**17.61**	17.17	17.01
		50	0	18.5	17.32	**17.54**	17.39
		50	25	18.5	**17.49**	17.40	**17.41**
		50	50	18.5	17.26	17.11	17.29
		100	0	18.5	17.20	**17.38**	17.35
	16QAM	1	0	18.5	17.91	18.01	18.06
		1	50	18.5	18.49	18.11	18.01
		1	99	18.5	17.87	17.70	17.41
		50	0	18.5	17.55	17.67	17.62
		50	25	18.5	17.73	17.67	17.72
		50	50	18.5	17.44	17.33	17.48
		100	0	18.5	17.66	17.51	17.54

Table 23: Conducted power measurement results of LTE Band II (Receiver on)

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18607CH	18900CH	19193CH
1.4MHz	QPSK	1	0	23.5	22.27	22.11	22.02
		1	3	23.5	22.22	22.10	21.94
		1	5	23.5	22.15	21.98	21.77
		3	0	23.5	22.24	22.13	21.93
		3	2	23.5	22.22	22.09	21.86
		3	3	23.5	22.19	22.05	21.78
		6	0	22.5	21.18	21.11	21.01
	16QAM	1	0	22.5	21.21	21.12	20.96
		1	3	22.5	21.19	21.06	20.93
		1	5	22.5	21.10	20.94	21.01
		3	0	22.5	21.32	21.14	21.14
		3	2	22.5	21.35	21.10	21.06
		3	3	22.5	21.32	21.07	20.83
		6	0	21.5	20.31	20.18	20.03
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18615CH	18900CH	19185CH
3MHz	QPSK	1	0	23.5	22.17	22.06	21.99
		1	7	23.5	22.38	22.13	22.06
		1	14	23.5	21.98	21.90	21.68
		8	0	22.5	21.25	21.16	21.15
		8	4	22.5	21.23	21.11	21.07
		8	7	22.5	21.20	21.02	20.99
		15	0	22.5	21.25	21.11	21.06
	16QAM	1	0	22.5	21.19	21.20	21.21
		1	7	22.5	21.39	21.27	21.20
		1	14	22.5	21.02	20.97	20.93
		8	0	21.5	20.25	20.30	20.11
		8	4	21.5	20.24	20.19	20.03
		8	7	21.5	20.21	20.10	19.96
		15	0	21.5	20.21	20.14	20.07

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18625CH	18900CH	19175CH
5MHz	QPSK	1	0	23.5	22.65	22.43	22.31
		1	13	23.5	22.65	22.44	22.31
		1	24	23.5	22.64	22.34	22.10
		12	0	22.5	21.68	21.48	21.50
		12	6	22.5	21.62	21.48	21.52
		12	13	22.5	21.43	21.26	21.23
		25	0	22.5	21.51	21.37	21.40
	16QAM	1	0	22.5	21.67	21.74	21.64
		1	13	22.5	21.72	21.74	21.62
		1	24	22.5	21.71	21.72	21.38
		12	0	21.5	20.57	20.56	20.43
		12	6	21.5	20.57	20.58	20.47
		12	13	21.5	20.38	20.34	20.19
		25	0	21.5	20.47	20.38	20.30
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18650CH	18900CH	19150CH
10MHz	QPSK	1	0	23.5	22.59	22.63	22.53
		1	25	23.5	22.88	22.70	22.59
		1	49	23.5	22.99	22.41	22.23
		25	0	22.5	21.70	21.69	21.68
		25	13	22.5	21.80	21.65	21.69
		25	25	22.5	21.85	21.45	21.55
		50	0	22.5	21.75	21.57	21.68
	16QAM	1	0	22.5	21.53	21.74	21.56
		1	25	22.5	21.80	21.97	21.71
		1	49	22.5	21.92	21.68	21.21
		25	0	21.5	20.55	20.72	20.57
		25	13	21.5	20.71	20.68	20.60
		25	25	21.5	20.77	20.49	20.47
		50	0	21.5	20.66	20.56	20.62

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18675CH	18900CH	19125CH
15MHz	QPSK	1	0	23.5	22.34	22.41	22.39
		1	38	23.5	22.83	22.51	22.47
		1	74	23.5	22.68	22.32	22.06
		36	0	22.5	21.57	21.49	21.61
		36	18	22.5	21.86	21.48	21.52
		36	39	22.5	21.70	21.18	21.29
		75	0	22.5	21.72	21.35	21.46
	16QAM	1	0	22.5	21.30	21.56	21.62
		1	38	22.5	21.80	21.65	21.69
		1	74	22.5	21.64	21.55	21.23
		36	0	21.5	20.51	20.52	20.55
		36	18	21.5	20.66	20.49	20.53
		36	39	21.5	20.55	20.14	20.25
		75	0	21.5	20.58	20.33	20.37
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18700CH	18900CH	19100CH
20MHz	QPSK	1	0	23.5	22.17	**22.53**	22.24
		1	50	23.5	22.27	22.10	22.20
		1	99	23.5	22.03	21.92	21.53
		50	0	22.5	21.11	**21.23**	21.05
		50	25	22.5	21.05	20.99	21.11
		50	50	22.5	20.93	20.77	20.85
		100	0	22.5	21.18	20.84	20.97
	16QAM	1	0	22.5	21.84	21.78	21.72
		1	50	22.5	21.98	21.56	21.68
		1	99	22.5	21.71	21.48	21.06
		50	0	21.5	20.44	20.40	20.43
		50	25	21.5	20.51	20.32	20.50
		50	50	21.5	20.32	20.10	20.19
		100	0	21.5	20.44	20.19	20.34

Table 24: Conducted power measurement results of LTE Band II (Receiver off)

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

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel 19957CH	Channel 20175CH	Channel 20393CH
1.4MHz	QPSK	1	0	19.3	17.31	18.17	18.34
		1	3	19.3	17.32	18.12	18.43
		1	5	19.3	17.32	18.00	18.33
		3	0	19.3	17.33	18.15	18.34
		3	2	19.3	17.34	18.08	18.37
		3	3	19.3	17.31	18.08	18.36
		6	0	19.0	17.21	18.11	18.41
	16QAM	1	0	19.3	17.86	18.38	18.54
		1	3	19.3	17.95	18.31	18.53
		1	5	19.3	17.88	18.19	18.46
		3	0	19.0	17.70	18.27	18.63
		3	2	19.0	17.72	18.27	18.61
		3	3	19.0	17.70	18.21	18.57
		6	0	19.0	17.73	18.17	18.49
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel 19965CH	Channel 20175CH	Channel 20385CH
3MHz	QPSK	1	0	19.3	17.32	18.10	18.15
		1	7	19.3	17.46	18.23	18.51
		1	14	19.3	17.48	17.85	18.33
		8	0	19.0	17.39	18.22	18.33
		8	4	19.0	17.48	18.12	18.43
		8	7	19.0	17.55	18.00	18.35
		15	0	19.0	17.50	18.11	18.44
	16QAM	1	0	19.3	17.48	18.31	18.31
		1	7	19.3	17.83	18.40	18.52
		1	14	19.3	17.76	18.08	18.43
		8	0	19.0	17.67	18.19	18.41
		8	4	19.0	17.78	18.21	18.49
		8	7	19.0	17.84	18.10	18.41
		15	0	19.0	17.76	18.18	18.47

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					19975CH	20175CH	20375CH
5MHz	QPSK	1	0	19.3	17.73	18.39	18.24
		1	13	19.3	18.27	18.36	18.59
		1	24	19.3	17.94	17.83	18.37
		12	0	19.0	17.94	18.37	18.37
		12	6	19.0	18.17	18.41	18.53
		12	13	19.0	18.05	18.13	18.55
		25	0	19.0	17.93	18.30	18.49
	16QAM	1	0	19.3	17.92	18.84	18.55
		1	13	19.3	18.38	18.79	18.83
		1	24	19.3	18.19	18.29	18.58
		12	0	19.0	17.98	18.33	18.44
		12	6	19.0	18.20	18.37	18.57
		12	13	19.0	18.14	18.09	18.57
		25	0	19.0	18.00	18.28	18.49
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20000CH	20175CH	20350CH
10MHz	QPSK	1	0	19.3	17.76	18.64	18.24
		1	25	19.3	18.60	18.59	18.48
		1	49	19.3	18.28	17.99	18.52
		25	0	19.0	18.19	18.61	18.13
		25	13	19.0	18.53	18.51	18.41
		25	25	19.0	18.52	18.27	18.63
		50	0	19.0	18.35	18.47	18.40
	16QAM	1	0	19.3	17.94	18.91	18.42
		1	25	19.3	18.61	18.82	18.67
		1	49	19.3	18.38	18.33	18.68
		25	0	19.0	18.21	18.61	18.19
		25	13	19.0	18.46	18.50	18.40
		25	25	19.0	18.46	18.23	18.61
		50	0	19.0	18.38	18.41	18.40

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20025CH	20175CH	20325CH
15MHz	QPSK	1	0	19.3	17.75	18.62	17.85
		1	38	19.3	18.51	18.43	18.04
		1	74	19.3	18.34	17.89	18.43
		36	0	19.0	18.31	18.57	18.15
		36	18	19.0	18.46	18.49	18.15
		36	39	19.0	18.46	18.19	18.36
		75	0	19.0	18.39	18.33	18.24
	16QAM	1	0	19.3	17.91	18.73	18.15
		1	38	19.3	18.70	18.55	18.32
		1	74	19.3	18.47	18.11	18.69
		36	0	19.0	18.29	18.51	18.09
		36	18	19.0	18.50	18.42	18.16
		36	39	19.0	18.50	18.14	18.30
		75	0	19.0	18.38	18.27	18.17
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20050CH	20175CH	20300CH
20MHz	QPSK	1	0	19.3	18.18	**19.05**	18.44
		1	50	19.3	**19.11**	18.82	18.48
		1	99	19.3	18.23	17.63	**18.53**
		50	0	19.0	18.38	18.68	18.04
		50	25	19.0	18.82	18.75	18.43
		50	50	19.0	**18.89**	18.09	18.21
		100	0	19.0	**18.61**	18.40	18.14
	16QAM	1	0	19.3	18.27	19.29	18.69
		1	50	19.3	19.26	19.11	18.78
		1	99	19.3	18.45	17.95	18.73
		50	0	19.0	18.17	18.62	17.91
		50	25	19.0	18.78	18.64	18.29
		50	50	19.0	18.63	17.98	18.07
		100	0	19.0	18.45	18.37	18.03

Table 25: Conducted power measurement results of LTE Band IV (Receiver on)

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel 19957CH	Channel 20175CH	Channel 20393CH
1.4MHz	QPSK	1	0	23.0	21.91	22.63	22.81
		1	3	23.0	22.12	22.54	22.84
		1	5	23.0	22.09	22.43	22.76
		3	0	23.0	22.10	22.56	22.79
		3	2	23.0	22.12	22.49	22.83
		3	3	23.0	22.15	22.42	22.76
		6	0	22.5	21.19	21.67	22.01
	16QAM	1	0	22.5	20.97	21.58	21.60
		1	3	22.5	21.07	21.52	21.63
		1	5	22.5	21.00	21.40	21.50
		3	0	22.5	21.11	21.46	21.62
		3	2	22.5	21.14	21.41	21.62
		3	3	22.5	21.14	21.37	21.57
		6	0	21.5	20.27	20.53	20.81
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel 19965CH	Channel 20175CH	Channel 20385CH
3MHz	QPSK	1	0	23.0	22.04	22.40	22.49
		1	7	23.0	22.39	22.42	22.68
		1	14	23.0	22.34	22.13	22.47
		8	0	22.5	21.34	21.56	21.77
		8	4	22.5	21.44	21.54	21.84
		8	7	22.5	21.52	21.42	21.75
		15	0	22.5	21.48	21.53	21.81
	16QAM	1	0	22.5	21.02	21.55	21.51
		1	7	22.5	21.35	21.66	21.67
		1	14	22.5	21.32	21.32	21.51
		8	0	21.5	20.31	20.57	20.78
		8	4	21.5	20.40	20.54	20.83
		8	7	21.5	20.49	20.44	20.76
		15	0	21.5	20.36	20.50	20.82

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					19975CH	20175CH	20393CH
5MHz	QPSK	1	0	23.0	22.33	22.47	22.42
		1	13	23.0	22.78	22.45	22.63
		1	24	23.0	22.45	21.94	22.34
		12	0	22.5	21.62	21.60	21.68
		12	6	22.5	21.83	21.64	21.80
		12	13	22.5	21.76	21.38	21.77
		25	0	22.5	21.66	21.54	21.76
	16QAM	1	0	22.5	21.52	21.86	21.75
		1	13	22.5	21.98	21.83	21.96
		1	24	22.5	21.71	21.32	21.71
		12	0	21.5	20.64	20.73	20.77
		12	6	21.5	20.87	20.77	20.89
		12	13	21.5	20.80	20.50	20.88
		25	0	21.5	20.66	20.64	20.88
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20000CH	20175CH	20350CH
10MHz	QPSK	1	0	23.0	22.42	22.66	22.41
		1	25	23.0	22.91	22.57	22.51
		1	49	23.0	22.60	22.12	22.50
		25	0	22.5	21.83	21.75	21.43
		25	13	22.5	22.05	21.67	21.63
		25	25	22.5	21.99	21.42	21.80
		50	0	22.5	21.94	21.58	21.60
	16QAM	1	0	22.5	21.49	22.09	21.57
		1	25	22.5	21.93	21.97	21.67
		1	49	22.5	21.74	21.52	21.67
		25	0	21.5	20.88	20.87	20.52
		25	13	21.5	21.08	20.80	20.72
		25	25	21.5	21.03	20.55	20.91
		50	0	21.5	21.00	20.72	20.70

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20025CH	20175CH	20325CH
15MHz	QPSK	1	0	23.0	22.34	22.46	21.93
		1	38	23.0	22.80	22.40	22.16
		1	74	23.0	22.48	21.92	22.33
		36	0	22.5	21.82	21.65	21.37
		36	18	22.5	21.91	21.57	21.34
		36	39	22.5	21.83	21.33	21.51
		75	0	22.5	21.85	21.45	21.40
	16QAM	1	0	23.0	21.37	21.80	21.21
		1	38	23.0	21.88	21.76	21.49
		1	74	23.0	21.61	21.20	21.75
		36	0	21.5	20.86	20.81	20.51
		36	18	21.5	20.98	20.72	20.51
		36	39	21.5	20.95	20.48	20.70
		75	0	21.5	20.93	20.61	20.57
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20050CH	20175CH	20300CH
20MHz	QPSK	1	0	23.0	22.40	22.56	22.71
		1	50	23.0	**22.81**	22.45	22.69
		1	99	23.0	21.97	21.74	22.47
		50	0	22.5	21.80	21.82	21.32
		50	25	22.5	21.98	21.86	21.71
		50	50	22.5	**22.22**	21.26	21.40
		100	0	22.5	21.89	21.55	21.36
	16QAM	1	0	22.5	22.01	22.44	22.09
		1	50	22.5	22.49	22.40	22.11
		1	99	22.5	21.79	21.30	21.97
		50	0	21.5	21.05	21.17	20.56
		50	25	21.5	21.49	21.23	20.94
		50	50	21.5	21.31	20.61	20.65
		100	0	21.5	21.17	20.91	20.61

Table 26: Conducted power measurement results of LTE Band IV (Receiver off)

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	20.0	18.37	18.77	18.57
		1	3	20.0	18.42	18.81	18.79
		1	5	20.0	18.31	18.67	18.57
		3	0	20.0	18.38	18.75	18.63
		3	2	20.0	18.38	18.75	18.71
		3	3	20.0	18.34	18.74	18.65
		6	0	20.0	18.34	18.76	18.72
	16QAM	1	0	20.0	18.35	18.91	18.66
		1	3	20.0	18.44	18.94	18.79
		1	5	20.0	18.32	18.72	18.66
		3	0	20.0	18.44	18.83	18.75
		3	2	20.0	18.46	18.81	18.79
		3	3	20.0	18.41	18.73	18.76
		6	0	20.0	18.39	18.76	18.65
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20415CH	20525CH	20635CH
3MHz	QPSK	1	0	20.0	18.23	18.74	18.17
		1	7	20.0	18.44	18.86	18.76
		1	14	20.0	18.05	18.53	18.34
		8	0	20.0	18.34	18.78	18.52
		8	4	20.0	18.33	18.74	18.63
		8	7	20.0	18.22	18.67	18.50
		15	0	20.0	18.29	18.71	18.53
	16QAM	1	0	20.0	18.20	19.04	18.26
		1	7	20.0	18.35	19.21	18.71
		1	14	20.0	18.01	18.87	18.37
		8	0	20.0	18.32	18.83	18.47
		8	4	20.0	18.35	18.78	18.58
		8	7	20.0	18.23	18.77	18.46
		15	0	20.0	18.27	18.72	18.49

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20425CH	20525CH	20625CH
5MHz	QPSK	1	0	20.0	18.70	19.12	18.58
		1	13	20.0	18.67	19.23	18.92
		1	24	20.0	18.51	18.77	18.71
		12	0	20.0	18.70	19.17	18.64
		12	6	20.0	18.67	19.19	18.88
		12	13	20.0	18.52	18.97	18.75
		25	0	20.0	18.65	19.07	18.77
	16QAM	1	0	20.0	18.93	19.58	18.73
		1	13	20.0	18.85	19.68	19.11
		1	24	20.0	18.70	19.25	18.94
		12	0	20.0	18.66	19.12	18.62
		12	6	20.0	18.66	19.12	18.86
		12	13	20.0	18.45	18.86	18.70
		25	0	20.0	18.60	18.97	18.74
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20450CH	20525CH	20600CH
10MHz	QPSK	1	0	20.0	18.65	18.95	18.85
		1	25	20.0	**18.98**	**19.46**	**18.87**
		1	49	20.0	18.71	18.46	18.59
		25	0	20.0	18.74	19.21	18.81
		25	13	20.0	18.84	**19.25**	18.85
		25	25	20.0	18.80	18.94	18.78
		50	0	20.0	18.79	**19.04**	18.88
	16QAM	1	0	20.0	18.58	19.03	18.91
		1	25	20.0	18.86	19.52	18.84
		1	49	20.0	18.59	18.50	18.55
		25	0	20.0	18.64	19.10	18.76
		25	13	20.0	18.73	19.16	18.75
		25	25	20.0	18.70	18.85	18.75
		50	0	20.0	18.72	18.98	18.83

Table 27: Conducted power measurement results of LTE Band V (Receiver on)

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20407CH	20525CH	20643CH
1.4MHz	QPSK	1	0	23.0	21.39	21.74	21.87
		1	3	23.0	21.53	21.81	21.81
		1	5	23.0	21.36	21.64	21.67
		3	0	23.0	21.37	21.81	21.76
		3	2	23.0	21.42	21.79	21.76
		3	3	23.0	21.38	21.72	21.73
		6	0	22.0	20.38	20.82	20.88
	16QAM	1	0	22.0	20.22	20.87	20.84
		1	3	22.0	20.71	21.09	20.87
		1	5	22.0	20.58	20.77	20.73
		3	0	22.0	20.34	20.82	20.73
		3	2	22.0	20.39	20.82	20.75
		3	3	22.0	20.35	20.76	20.71
		6	0	21.5	20.40	20.81	20.73
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20415CH	20525CH	20635CH
3MHz	QPSK	1	0	23.0	21.10	21.62	21.37
		1	7	23.0	21.53	21.94	21.85
		1	14	23.0	21.02	21.55	21.41
		8	0	22.0	20.34	20.79	20.55
		8	4	22.0	20.44	20.79	20.68
		8	7	22.0	20.34	20.70	20.65
		15	0	22.0	21.51	20.72	20.58
	16QAM	1	0	22.0	20.01	20.90	20.61
		1	7	22.0	20.50	21.06	21.09
		1	14	22.0	20.17	20.73	20.79
		8	0	21.5	20.34	20.87	20.52
		8	4	21.5	20.43	20.87	20.65
		8	7	21.5	20.33	20.73	20.63
		15	0	21.5	20.31	20.62	20.53

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20425CH	20525CH	20625CH
5MHz	QPSK	1	0	23.0	21.64	22.04	21.69
		1	13	23.0	21.82	22.12	21.94
		1	24	23.0	21.51	21.74	21.77
		12	0	22.0	20.67	21.09	20.69
		12	6	22.0	20.75	21.12	21.00
		12	13	22.0	20.45	20.91	20.86
		25	0	22.0	20.59	21.00	20.90
	16QAM	1	0	22.0	20.57	21.32	21.11
		1	13	22.0	20.70	21.43	21.36
		1	24	22.0	20.41	21.05	21.10
		12	0	21.5	20.61	21.06	20.70
		12	6	21.5	20.67	21.06	21.00
		12	13	21.5	20.45	20.86	20.87
		25	0	21.5	20.55	20.90	20.85
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20450CH	20525CH	20600CH
10MHz	QPSK	1	0	23.0	21.69	22.04	21.87
		1	25	23.0	21.99	**22.37**	22.00
		1	49	23.0	21.68	21.44	21.60
		25	0	22.0	20.67	21.07	20.78
		25	13	22.0	20.79	**21.17**	20.95
		25	25	22.0	20.74	20.81	20.90
		50	0	22.0	20.73	21.01	20.95
	16QAM	1	0	22.0	20.71	21.16	20.87
		1	25	22.0	20.80	21.56	21.09
		1	49	22.0	20.60	20.58	20.64
		25	0	21.5	20.56	21.03	20.76
		25	13	21.5	20.68	21.13	20.91
		25	25	21.5	20.63	20.69	20.88
		50	0	21.5	20.65	20.92	20.91

Table 28: Conducted power measurement results of LTE Band V (Receiver off)

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	16.6	15.65	15.07	14.77
		1	13	16.6	15.51	14.93	14.76
		1	24	16.6	14.83	14.94	14.61
		12	0	16.6	15.69	15.07	14.95
		12	6	16.6	15.49	14.94	14.86
		12	13	16.6	15.10	14.63	14.62
		25	0	16.6	15.33	14.80	14.74
	16QAM	1	0	16.6	15.76	15.48	15.03
		1	13	16.6	15.56	15.33	15.03
		1	24	16.6	14.93	14.76	14.77
		12	0	16.6	15.68	15.04	14.86
		12	6	16.6	15.47	14.91	14.78
		12	13	16.6	15.06	14.61	14.63
		25	0	16.6	15.33	14.82	14.63
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20800CH	21100CH	21400CH
10MHz	QPSK	1	0	16.6	15.69	15.46	15.83
		1	25	16.6	15.12	14.93	15.08
		1	49	16.6	14.63	14.71	14.61
		25	0	16.6	15.36	15.17	15.49
		25	13	16.6	15.00	14.87	15.04
		25	25	16.6	14.72	14.61	14.66
		50	0	16.6	15.09	14.81	15.12
	16QAM	1	0	16.6	15.75	15.77	15.89
		1	25	16.6	15.18	15.26	15.19
		1	49	16.6	14.65	14.62	14.61
		25	0	16.6	15.33	15.13	15.39
		25	13	16.6	14.98	14.84	14.93
		25	25	16.6	14.71	14.63	14.62
		50	0	16.6	15.07	14.80	15.04

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20825CH	21100CH	21375CH
15MHz	QPSK	1	0	16.6	15.25	15.46	15.72
		1	38	16.6	14.93	14.99	15.55
		1	74	16.6	14.87	14.62	14.63
		36	0	16.6	15.15	15.29	15.93
		36	18	16.6	14.90	14.96	15.55
		36	39	16.6	14.71	14.78	14.77
		75	0	16.6	14.92	14.82	15.42
	16QAM	1	0	16.6	15.42	15.76	15.97
		1	38	16.6	15.02	15.27	15.85
		1	74	16.6	15.01	14.66	14.61
		36	0	16.6	15.17	15.27	15.95
		36	18	16.6	14.91	14.94	15.56
		36	39	16.6	14.72	14.75	14.77
		75	0	16.6	14.91	14.78	15.33
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20850CH	21100CH	21350CH
20MHz	QPSK	1	0	16.6	15.61	**16.05**	15.45
		1	50	16.6	15.23	15.25	**16.36**
		1	99	16.6	**15.73**	14.82	14.90
		50	0	16.6	15.41	15.83	16.26
		50	25	16.6	15.31	15.20	**16.50**
		50	50	16.6	15.59	14.66	15.46
		100	0	16.6	15.36	15.30	**16.03**
	16QAM	1	0	16.6	15.97	16.38	15.73
		1	50	16.6	15.60	15.55	16.59
		1	99	16.6	16.12	14.72	14.83
		50	0	16.6	15.38	15.74	16.31
		50	25	16.6	15.28	15.18	16.17
		50	50	16.6	15.53	14.61	15.37
		100	0	16.6	15.31	15.21	15.92

Table 29: Conducted power measurement results of LTE Band VII (Receiver on)

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20775CH	21100CH	21425CH
5MHz	QPSK	1	0	21.5	21.25	20.48	19.96
		1	13	21.5	20.97	20.05	19.63
		1	24	21.5	20.33	19.55	19.56
		12	0	21.5	21.25	20.43	19.89
		12	6	21.5	21.05	20.20	19.72
		12	13	21.5	20.55	19.73	19.69
		25	0	21.5	20.85	20.03	19.68
	16QAM	1	0	21.5	21.30	20.72	20.13
		1	13	21.5	20.98	20.36	19.78
		1	24	21.5	20.39	19.84	19.59
		12	0	21.5	21.03	20.35	19.85
		12	6	21.5	20.84	20.16	19.70
		12	13	21.5	20.37	19.69	19.60
		25	0	21.5	20.69	19.97	19.62
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20800CH	21100CH	21400CH
10MHz	QPSK	1	0	21.5	21.24	20.96	21.13
		1	25	21.5	20.53	20.12	20.25
		1	49	21.5	19.77	19.57	19.68
		25	0	21.5	20.87	20.57	20.68
		25	13	21.5	20.40	20.05	20.18
		25	25	21.5	20.01	19.64	19.64
		50	0	21.5	20.52	20.00	20.15
	16QAM	1	0	21.5	21.00	21.13	21.21
		1	25	21.5	20.31	20.25	20.41
		1	49	21.5	19.62	19.67	19.63
		25	0	21.5	20.66	20.52	20.68
		25	13	21.5	20.21	20.04	20.18
		25	25	21.5	19.85	19.64	19.63
		50	0	21.5	20.35	19.94	20.13

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20825CH	21100CH	21375CH
15MHz	QPSK	1	0	21.5	20.87	20.93	21.18
		1	38	21.5	20.13	20.06	20.78
		1	74	21.5	19.94	19.51	19.51
		36	0	21.5	20.57	20.75	21.33
		36	18	21.5	20.14	20.17	20.87
		36	39	21.5	19.89	19.61	19.81
		75	0	21.5	20.24	20.11	20.54
	16QAM	1	0	21.5	20.79	21.01	21.34
		1	38	21.5	20.09	20.19	21.00
		1	74	21.5	20.03	19.56	19.53
		36	0	21.5	20.42	20.67	21.29
		36	18	21.5	20.02	20.13	20.85
		36	39	21.5	19.81	19.57	19.81
		75	0	21.5	20.11	20.05	20.51
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20850CH	21100CH	21350CH
20MHz	QPSK	1	0	21.8	20.26	**21.44**	20.83
		1	50	21.8	**21.05**	20.37	**21.67**
		1	99	21.8	20.93	19.81	19.82
		50	0	21.8	**20.66**	**21.07**	**21.78**
		50	25	21.8	20.42	20.39	21.48
		50	50	21.8	20.64	19.87	20.46
		100	0	21.8	20.62	20.49	**20.90**
	16QAM	1	0	21.8	21.10	21.62	21.11
		1	50	21.8	20.36	20.60	21.63
		1	99	21.8	21.07	19.91	19.81
		50	0	21.8	20.50	20.97	21.73
		50	25	21.8	20.28	20.29	21.43
		50	50	21.8	20.52	19.81	20.45
		100	0	21.8	20.47	20.37	20.84

Table 30: Conducted power measurement results of LTE Band VII (Receiver off)

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

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					23017CH	23095CH	23173CH
1.4MHz	QPSK	1	0	19.9	18.32	18.66	18.35
		1	3	19.9	18.34	18.73	18.49
		1	5	19.9	18.23	18.80	18.41
		3	0	19.9	18.42	18.77	18.34
		3	2	19.9	18.36	18.79	18.43
		3	3	19.9	18.30	18.81	18.40
		6	0	19.9	18.34	18.75	18.40
	16QAM	1	0	19.9	18.36	19.00	18.42
		1	3	19.9	18.37	19.02	18.65
		1	5	19.9	18.27	19.07	18.56
		3	0	19.9	18.44	18.90	18.45
		3	2	19.9	18.38	18.84	18.51
		3	3	19.9	18.31	18.87	18.47
		6	0	19.9	18.35	18.71	18.46
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					23025CH	23095CH	23165CH
3MHz	QPSK	1	0	19.9	18.22	18.34	18.54
		1	7	19.9	18.43	18.83	18.48
		1	14	19.9	17.95	18.77	18.12
		8	0	19.9	18.38	18.68	18.48
		8	4	19.9	18.32	18.78	18.44
		8	7	19.9	18.15	18.80	18.27
		15	0	19.9	18.31	18.72	18.41
	16QAM	1	0	19.9	18.32	18.60	18.55
		1	7	19.9	18.47	19.04	18.44
		1	14	19.9	17.93	19.01	18.13
		8	0	19.9	18.36	18.70	18.39
		8	4	19.9	18.29	18.77	18.45
		8	7	19.9	18.12	18.79	18.19
		15	0	19.9	18.22	18.68	18.36

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					23035CH	23095CH	23155CH
5MHz	QPSK	1	0	19.9	18.66	18.65	19.20
		1	13	19.9	18.65	19.28	18.91
		1	24	19.9	18.35	19.15	18.51
		12	0	19.9	18.82	18.91	19.21
		12	6	19.9	18.79	19.26	19.02
		12	13	19.9	18.53	19.31	18.75
		25	0	19.9	18.63	19.16	19.04
	16QAM	1	0	19.9	18.86	18.97	19.33
		1	13	19.9	18.88	19.61	19.00
		1	24	19.9	18.61	19.48	18.69
		12	0	19.9	18.81	18.98	19.18
		12	6	19.9	18.81	19.21	19.02
		12	13	19.9	18.56	19.23	18.76
		25	0	19.9	18.60	19.08	19.03
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					23060CH	23095CH	23130CH
10MHz	QPSK	1	0	19.9	18.60	18.52	18.90
		1	25	19.9	**18.89**	**19.13**	**19.14**
		1	49	19.9	18.72	18.68	18.21
		25	0	19.9	18.69	18.81	19.30
		25	13	19.9	18.90	19.23	**19.24**
		25	25	19.9	18.80	19.15	18.95
		50	0	19.9	18.70	18.99	**19.13**
	16QAM	1	0	19.9	18.65	18.71	18.98
		1	25	19.9	18.97	19.69	19.67
		1	49	19.9	18.79	18.85	18.24
		25	0	19.9	18.61	18.80	19.22
		25	13	19.9	18.83	19.28	19.36
		25	25	19.9	18.73	19.11	18.88
		50	0	19.9	18.64	18.93	19.03

Table 31: Conducted power measurement results of LTE Band XII (Receiver on)

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					23017CH	23095CH	23173CH
1.4MHz	QPSK	1	0	23.5	22.16	22.45	22.11
		1	3	23.5	22.22	22.64	22.09
		1	5	23.5	22.08	22.66	22.01
		3	0	23.5	22.15	22.52	22.07
		3	2	23.5	22.16	22.56	22.08
		3	3	23.5	22.10	22.56	22.06
		6	0	22.5	21.16	21.49	21.12
	16QAM	1	0	22.5	20.96	21.62	21.15
		1	3	22.5	21.01	21.69	21.12
		1	5	22.5	20.90	21.72	21.02
		3	0	22.5	21.15	21.44	21.03
		3	2	22.5	21.16	21.47	21.01
		3	3	22.5	21.11	21.47	20.99
		6	0	22.0	20.19	20.48	20.16
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					23025CH	23095CH	23165CH
3MHz	QPSK	1	0	23.5	21.96	22.26	21.99
		1	7	23.5	22.18	22.66	22.16
		1	14	23.5	21.66	22.43	21.80
		8	0	22.5	21.10	21.44	21.21
		8	4	22.5	21.10	21.53	21.18
		8	7	22.5	20.94	21.52	20.95
		15	0	22.5	21.07	21.46	21.03
	16QAM	1	0	22.5	20.95	21.33	21.03
		1	7	22.5	21.22	21.77	21.20
		1	14	22.5	20.78	21.52	20.77
		8	0	22.0	20.11	20.39	20.17
		8	4	22.0	20.11	20.48	20.21
		8	7	22.0	20.02	20.45	20.03
		15	0	22.0	20.07	20.36	20.11

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					23035CH	23095CH	23155CH
5MHz	QPSK	1	0	23.5	22.43	22.62	22.80
		1	13	23.5	22.40	23.08	22.56
		1	24	23.5	22.12	22.88	22.21
		12	0	22.5	21.65	21.90	21.72
		12	6	22.5	21.58	22.15	21.62
		12	13	22.5	21.32	22.15	21.55
		25	0	22.5	21.47	22.05	21.75
	16QAM	1	0	22.5	21.78	22.01	22.11
		1	13	22.5	21.80	22.47	21.85
		1	24	22.5	21.49	22.30	21.61
		12	0	22.0	20.53	20.76	20.75
		12	6	22.0	20.50	20.99	20.68
		12	13	22.0	20.25	20.99	20.53
		25	0	22.0	20.39	20.82	20.66
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					23060CH	23095CH	23130CH
10MHz	QPSK	1	0	23.5	22.45	22.24	22.80
		1	25	23.5	22.56	22.86	**22.89**
		1	49	23.5	22.55	22.35	21.94
		25	0	22.5	21.52	21.68	22.06
		25	13	22.5	21.72	22.11	**22.12**
		25	25	22.5	21.65	21.90	21.64
		50	0	22.5	21.60	21.79	21.84
	16QAM	1	0	22.5	21.48	21.40	22.01
		1	25	22.5	21.68	22.30	22.46
		1	49	22.5	21.49	21.29	21.17
		25	0	22.0	20.38	20.52	20.89
		25	13	22.0	20.59	20.95	21.00
		25	25	22.0	20.50	20.75	20.58
		50	0	22.0	20.48	20.65	20.74

Table 32: Conducted power measurement results of LTE Band XII (Receiver off)

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	19.9	18.20	18.95	19.17
		1	13	19.9	19.01	19.40	18.89
		1	24	19.9	18.87	18.68	18.33
		12	0	19.9	18.62	19.15	19.11
		12	6	19.9	18.86	19.37	18.94
		12	13	19.9	18.96	19.12	18.60
		25	0	19.9	18.77	19.16	18.83
	16QAM	1	0	19.9	18.30	19.47	19.45
		1	13	19.9	19.18	19.84	19.10
		1	24	19.9	19.05	19.11	18.67
		12	0	19.9	18.53	19.08	19.04
		12	6	19.9	18.80	19.29	18.87
		12	13	19.9	18.88	19.04	18.55
		25	0	19.9	18.72	19.09	18.78
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					23780CH	23790CH	23800CH
10MHz	QPSK	1	0	19.9	18.29	18.46	18.78
		1	25	19.9	19.62	19.67	19.58
		1	49	19.9	18.21	18.03	17.98
		25	0	19.9	18.83	18.96	19.13
		25	13	19.9	19.31	19.38	19.33
		25	25	19.9	19.05	18.97	18.80
		50	0	19.9	18.92	18.95	18.97
	16QAM	1	0	19.9	18.26	18.52	18.86
		1	25	19.9	19.59	19.80	19.68
		1	49	19.9	18.18	18.07	18.02
		25	0	19.9	18.78	18.99	19.05
		25	13	19.9	19.26	19.37	19.30
		25	25	19.9	18.98	18.96	18.73
		50	0	19.9	18.84	18.89	18.89

Table 33: Conducted power measurement results of LTE Band XVII (Receiver on)

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					23755CH	23790CH	23825CH
5MHz	QPSK	1	0	23.5	22.06	22.75	22.67
		1	13	23.5	22.83	23.05	22.49
		1	24	23.5	22.65	22.32	22.00
		12	0	22.5	21.46	22.05	21.76
		12	6	22.5	21.75	22.13	21.64
		12	13	22.5	21.80	21.82	21.44
		25	0	22.5	21.62	21.89	21.65
	16QAM	1	0	22.5	21.28	22.20	21.88
		1	13	22.5	22.08	22.46	21.81
		1	24	22.5	21.93	21.70	21.30
		12	0	22.0	20.41	20.98	20.79
		12	6	22.0	20.72	21.15	20.65
		12	13	22.0	20.77	20.84	20.38
		25	0	22.0	20.58	20.83	20.56
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					23780CH	23790CH	23800CH
10MHz	QPSK	1	0	23.5	22.17	22.41	22.70
		1	25	23.5	23.24	23.20	23.09
		1	49	23.5	21.86	21.74	21.75
		25	0	22.5	21.71	21.82	21.91
		25	13	22.5	22.06	22.09	22.08
		25	25	22.5	21.67	21.73	21.54
		50	0	22.5	21.71	21.73	21.80
	16QAM	1	0	22.5	21.46	21.67	21.79
		1	25	22.5	22.39	22.43	22.13
		1	49	22.5	21.00	21.05	20.91
		25	0	22.0	20.62	20.73	20.79
		25	13	22.0	20.99	21.02	21.02
		25	25	22.0	20.67	20.67	20.47
		50	0	22.0	20.59	20.63	20.70

Table 34: Conducted power measurement results of LTE Band XVII (Receiver off)

7.1.12 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)		33.0	31.37	31.48	31.57	-9.19	23.81	22.18	22.29	22.38
GPRS/ EDGE (GMSK)	1 Tx Slot	33.0	31.36	31.49	31.59	-9.19	23.81	22.17	22.30	22.40
	2 Tx Slots	30.0	28.56	28.64	28.71	-6.13	23.87	22.43	22.51	22.58
	3 Tx Slots	**29.0**	**27.52**	**27.49**	**27.45**	**-4.42**	**24.58**	**23.10**	**23.07**	**23.03**
	4 Tx Slots	27.0	25.61	25.73	25.74	-3.18	23.82	22.43	22.55	22.56
EDGE (8PSK)	1 Tx Slot	27.5	26.04	25.90	25.84	-9.19	18.31	16.85	16.71	16.65
	2 Tx Slots	25.5	23.89	23.82	23.73	-6.13	19.37	17.76	17.69	17.60
	3 Tx Slots	23.5	21.95	21.74	21.71	-4.42	19.08	17.53	17.32	17.29
	4 Tx Slots	21.5	19.75	19.72	19.67	-3.18	18.32	16.57	16.54	16.49

Table 35: Conducted power measurement results of GSM850

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 timesolts.

3) Per KDB941225 D01, SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power specified for production units, including tune-up tolerance. The data mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested.

7.1.13 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)		30.0	28.41	28.14	28.03	-9.19	20.81	19.22	18.95	18.84
GPRS/ EDGE (GMSK)	1 Tx Slot	30.0	28.40	28.12	28.04	-9.19	20.81	19.21	18.93	18.85
	2 Tx Slots	27.0	25.54	25.29	25.04	-6.13	20.87	19.41	19.16	18.91
	3 Tx Slots	**26.0**	**24.57**	**24.32**	**24.01**	**-4.42**	**21.58**	**20.15**	**19.90**	**19.59**
	4 Tx Slots	24.0	22.62	22.34	22.01	-3.18	20.82	19.44	19.16	18.83
EDGE (8PSK)	1 Tx Slot	26.2	24.82	24.45	24.23	-9.19	17.01	15.63	15.26	15.04
	2 Tx Slots	24.1	22.66	22.42	22.18	-6.13	17.97	16.53	16.29	16.05
	3 Tx Slots	21.8	20.37	20.08	19.82	-4.42	17.38	15.95	15.66	15.40
	4 Tx Slots	20.3	18.89	18.57	18.33	-3.18	17.12	15.71	15.39	15.15

Table 36: Conducted power measurement results of GSM1900 (Hotspot disable)

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)		28.5	27.05	26.83	26.51	-9.19	19.31	17.86	17.64	17.32
GPRS/ EDGE (GMSK)	1 Tx Slot	28.5	27.01	26.82	26.52	-9.19	19.31	17.82	17.63	17.33
	2 Tx Slots	25.5	24.06	23.80	23.55	-6.13	19.37	17.93	17.67	17.42
	3 Tx Slots	**24.5**	**22.87**	**22.57**	**22.51**	**-4.42**	**20.08**	**18.45**	**18.15**	**18.09**
	4 Tx Slots	22.5	21.10	20.82	20.53	-3.18	19.32	17.92	17.64	17.35
EDGE (8PSK)	1 Tx Slot	26.2	24.82	24.45	24.23	-9.19	17.01	15.63	15.26	15.04
	2 Tx Slots	24.1	22.66	22.42	22.18	-6.13	17.97	16.53	16.29	16.05
	3 Tx Slots	21.8	20.37	20.08	19.82	-4.42	17.38	15.95	15.66	15.40
	4 Tx Slots	20.3	18.89	18.57	18.33	-3.18	17.12	15.71	15.39	15.15

Table 37: Conducted power measurement results of GSM1900 (Hotspot activated)

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 timesolts.

3) Per KDB941225 D01, SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power specified for production units, including tune-up tolerance. The data mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested.

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

UMTS Band II		Tune-up	Conducted Power (dBm)		
			9262CH	9400CH	9538CH
WCDMA	12.2kbps RMC	**23.0**	**21.24**	**21.17**	**21.24**
	12.2kbps AMR	23.0	21.20	21.09	21.17
HSDPA	Subtest 1	21.5	20.45	20.29	20.33
	Subtest 2	21.5	20.16	20.10	20.13
	Subtest 3	21.0	19.36	19.31	19.34
	Subtest 4	21.0	19.35	19.29	19.35
HSUPA	Subtest 1	20.5	18.64	18.78	18.71
	Subtest 2	19.5	17.56	17.52	17.53
	Subtest 3	20.0	18.48	18.46	18.32
	Subtest 4	19.5	17.55	17.79	17.02
	Subtest 5	21.0	19.46	19.35	19.25
DC-HSDPA	Subtest 1	21.5	20.41	20.21	20.31
	Subtest 2	21.5	20.01	20.06	20.06
	Subtest 3	21.0	19.30	19.25	19.33
	Subtest 4	21.0	19.31	19.21	19.24

Table 38: Conducted power measurement results of UMTS Band II (Hotspot disable)

UMTS Band II		Tune-up	Conducted Power (dBm)		
			9262CH	9400CH	9538CH
WCDMA	12.2kbps RMC	**19.0**	**18.23**	**18.19**	**18.23**
	12.2kbps AMR	19.0	18.17	18.14	18.26
HSDPA	Subtest 1	17.5	17.47	17.37	17.46
	Subtest 2	17.5	17.21	17.13	17.21
	Subtest 3	17.0	16.46	16.39	16.44
	Subtest 4	17.0	16.38	16.35	16.41
HSUPA	Subtest 1	17.0	15.76	15.56	15.76
	Subtest 2	15.5	14.26	14.11	14.17
	Subtest 3	17.0	15.80	15.33	15.81
	Subtest 4	16.0	14.78	14.48	14.51
	Subtest 5	17.0	16.41	16.31	16.37
DC-HSDPA	Subtest 1	17.5	17.42	17.31	17.40
	Subtest 2	17.5	17.14	17.06	17.22
	Subtest 3	17.0	16.40	16.31	16.41
	Subtest 4	17.0	16.31	16.32	16.32

Table 39: Conducted power measurement results of UMTS Band II (Hotspot activated)

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 D01, When the maximum output power and tune-up tolerance specified for production units in a Second mode is ≤ ¼ 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.

7.1.15 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**	**22.02**	**22.05**	**22.04**
	12.2kbps AMR	24.0	22.04	22.01	22.06
HSDPA	Subtest 1	22.5	21.34	21.30	21.26
	Subtest 2	22.5	21.13	21.11	21.09
	Subtest 3	22.0	20.33	20.37	20.33
	Subtest 4	22.0	20.32	20.36	20.32
HSUPA	Subtest 1	21.0	20.09	19.80	19.73
	Subtest 2	19.5	18.02	18.19	18.03
	Subtest 3	20.0	19.47	19.50	19.33
	Subtest 4	20.0	18.60	18.69	18.57
	Subtest 5	22.0	20.68	20.88	21.07
DC-HSDPA	Subtest 1	22.5	21.30	21.30	21.26
	Subtest 2	22.5	21.01	21.04	21.02
	Subtest 3	22.0	20.29	20.32	20.31
	Subtest 4	22.0	20.19	20.31	20.24

Table 40: Conducted power measurement results of UMTS Band IV (Hotspot disable)

UMTS Band IV		Tune-up	Conducted Power (dBm)		
			1312CH	1413CH	1513CH
WCDMA	12.2kbps RMC	**22.0**	**20.01**	**20.02**	**20.57**
	12.2kbps AMR	22.0	20.04	20.05	20.60
HSDPA	Subtest 1	20.5	19.34	19.40	19.31
	Subtest 2	20.5	19.15	19.11	19.20
	Subtest 3	20.0	18.36	18.32	18.37
	Subtest 4	20.0	18.35	18.29	18.35
HSUPA	Subtest 1	19.0	17.37	17.64	17.39
	Subtest 2	17.5	15.73	16.13	15.77
	Subtest 3	18.0	16.28	17.93	16.18
	Subtest 4	18.0	16.46	16.69	16.55
	Subtest 5	20.0	18.39	18.47	18.40
DC-HSDPA	Subtest 1	20.5	19.31	19.44	19.25
	Subtest 2	20.5	19.04	19.02	19.23
	Subtest 3	20.0	18.31	18.27	18.32
	Subtest 4	20.0	18.30	18.22	18.30

Table 41: Conducted power measurement results of UMTS Band IV (Hotspot activated)

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 D01, When the maximum output power and tune-up tolerance specified for production units in a Second mode is ≤ ¼ 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.

7.1.16 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**	**22.78**	**22.87**	**22.84**
	12.2kbps AMR	24.5	22.74	22.90	22.88
HSDPA	Subtest 1	23.5	21.99	21.86	21.94
	Subtest 2	23.5	21.64	21.63	21.67
	Subtest 3	22.5	20.81	20.82	20.85
	Subtest 4	22.5	20.82	20.83	20.84
HSUPA	Subtest 1	21.0	20.10	20.23	20.12
	Subtest 2	20.0	18.66	18.72	18.83
	Subtest 3	21.0	20.76	19.94	19.95
	Subtest 4	20.0	19.26	19.22	19.32
	Subtest 5	21.5	21.16	20.99	21.01
DC-HSDPA	Subtest 1	23.5	21.91	21.81	21.82
	Subtest 2	23.5	21.60	21.58	21.60
	Subtest 3	22.5	20.77	20.84	20.77
	Subtest 4	22.5	20.72	20.71	20.80

Table 42: Conducted power measurement results of UMTS Band V

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 D01, When the maximum output power and tune-up tolerance specified for production units in a Second mode is ≤ ¼ 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.

7.1.17 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	23.2	22.31	21.45	21.31
		1	3	23.2	22.28	21.54	21.40
		1	5	23.2	22.19	21.44	21.24
		3	0	23.2	22.26	21.52	21.36
		3	2	23.2	22.26	21.49	21.32
		3	3	23.2	22.23	21.43	21.25
		6	0	22.2	21.25	20.57	20.33
	16QAM	1	0	22.2	21.30	20.83	20.22
		1	3	22.2	21.33	20.81	20.30
		1	5	22.2	21.26	20.71	20.28
		3	0	22.1	21.22	20.61	20.38
		3	2	22.1	21.28	20.57	20.29
		3	3	22.1	21.25	20.53	20.27
		6	0	21.7	21.21	20.44	20.27
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18615CH	18900CH	19185CH
3MHz	QPSK	1	0	23.2	22.28	21.49	21.34
		1	7	23.2	22.37	21.57	21.45
		1	14	23.2	22.09	21.30	21.23
		8	0	22.2	21.33	20.61	20.45
		8	4	22.2	21.29	20.57	20.33
		8	7	22.2	21.25	20.50	20.27
		15	0	22.2	21.32	20.58	20.31
	16QAM	1	0	22.2	21.08	20.49	20.41
		1	7	22.2	21.44	20.58	20.36
		1	14	22.2	21.07	20.27	20.23
		8	0	21.7	21.27	20.52	20.26
		8	4	21.7	21.22	20.49	20.18
		8	7	21.7	21.17	20.42	20.13
		15	0	21.7	21.17	20.45	20.23

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18625CH	18900CH	19175CH
5MHz	QPSK	1	0	23.2	22.67	21.79	21.77
		1	13	23.2	22.67	21.86	21.76
		1	24	23.2	22.59	21.82	21.61
		12	0	22.2	21.72	20.94	20.85
		12	6	22.2	21.69	20.97	20.84
		12	13	22.2	21.42	20.80	20.56
		25	0	22.2	21.58	20.85	20.73
	16QAM	1	0	22.2	21.73	21.00	21.07
		1	13	22.2	21.81	21.12	21.00
		1	24	22.2	21.61	21.07	20.92
		12	0	21.7	21.63	20.83	20.71
		12	6	21.7	21.60	20.89	20.72
		12	13	21.7	21.32	20.69	20.42
		25	0	21.7	21.44	20.88	20.58
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18650CH	18900CH	19150CH
10MHz	QPSK	1	0	23.2	22.65	21.97	22.42
		1	25	23.2	22.75	22.16	22.17
		1	49	23.2	22.70	22.08	21.67
		25	0	22.2	21.66	21.06	21.24
		25	13	22.2	21.69	21.10	21.08
		25	25	22.2	21.65	20.94	20.86
		50	0	22.2	21.64	20.97	21.12
	16QAM	1	0	22.2	21.72	21.20	21.44
		1	25	22.2	21.93	21.49	21.15
		1	49	22.2	21.79	21.35	20.77
		25	0	21.7	21.59	21.01	21.13
		25	13	21.7	21.59	20.99	20.99
		25	25	21.7	21.57	20.90	20.76
		50	0	21.7	21.54	20.86	21.01

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18675CH	18900CH	19125CH
15MHz	QPSK	1	0	23.2	22.34	21.70	22.42
		1	38	23.2	22.66	21.97	22.15
		1	74	23.2	22.17	22.12	21.43
		36	0	22.2	21.53	20.90	21.45
		36	18	22.2	21.62	20.95	21.17
		36	39	22.2	21.26	20.78	20.70
		75	0	22.2	21.47	20.81	21.13
	16QAM	1	0	22.2	21.68	20.98	21.59
		1	38	22.2	22.05	21.26	21.29
		1	74	22.2	21.50	21.31	20.76
		36	0	21.7	21.52	20.82	21.30
		36	18	21.7	21.60	20.89	21.04
		36	39	21.7	21.23	20.76	20.57
		75	0	21.7	21.38	20.72	20.95
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18700CH	18900CH	19100CH
20MHz	QPSK	1	0	23.2	22.53	21.88	22.51
		1	50	23.2	**22.57**	**22.20**	**22.59**
		1	99	23.2	21.61	21.93	21.29
		50	0	22.2	21.25	20.74	21.30
		50	25	22.2	21.38	20.83	**21.42**
		50	50	22.2	20.78	20.82	20.72
		100	0	22.2	21.11	20.71	21.24
	16QAM	1	0	22.2	21.94	21.11	21.87
		1	50	22.2	22.04	21.20	21.69
		1	99	22.2	21.01	21.36	20.69
		50	0	21.7	21.25	20.59	21.28
		50	25	21.7	21.18	20.69	21.16
		50	50	21.7	20.66	20.66	20.60
		100	0	21.7	21.04	20.59	20.98

Table 43: Conducted power measurement results of LTE Band II (Hotspot disable)

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18607CH	18900CH	19193CH
1.4MHz	QPSK	1	0	20.2	19.41	18.77	18.53
		1	3	20.2	19.37	18.79	18.55
		1	5	20.2	19.27	18.58	18.41
		3	0	20.2	19.33	18.76	18.52
		3	2	20.2	19.34	18.74	18.50
		3	3	20.2	19.30	18.68	18.41
		6	0	20.2	19.31	18.72	18.55
	16QAM	1	0	20.2	19.43	19.09	18.65
		1	3	20.2	19.38	19.02	18.53
		1	5	20.2	19.31	18.91	18.52
		3	0	20.2	19.37	18.84	18.68
		3	2	20.2	19.45	18.82	18.61
		3	3	20.2	19.33	18.84	18.56
		6	0	20.2	19.41	18.64	18.49
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18615CH	18900CH	19185CH
3MHz	QPSK	1	0	20.2	19.30	18.63	18.60
		1	7	20.2	19.45	18.86	18.63
		1	14	20.2	19.05	18.54	18.31
		8	0	20.2	19.40	18.79	18.61
		8	4	20.2	19.35	18.76	18.53
		8	7	20.2	19.31	18.68	18.47
		15	0	20.2	19.38	18.74	18.51
	16QAM	1	0	20.2	19.58	18.68	18.66
		1	7	20.2	19.69	18.76	18.67
		1	14	20.2	19.32	18.47	18.43
		8	0	20.2	19.41	18.76	18.50
		8	4	20.2	19.34	18.73	18.41
		8	7	20.2	19.29	18.66	18.37
		15	0	20.2	19.29	18.69	18.51

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18625CH	18900CH	19175CH
5MHz	QPSK	1	0	20.2	19.67	19.05	19.05
		1	13	20.2	19.76	19.12	19.00
		1	24	20.2	19.57	19.02	18.78
		12	0	20.2	19.77	19.11	19.01
		12	6	20.2	19.71	19.13	19.00
		12	13	20.2	19.46	18.94	18.70
		25	0	20.2	19.58	19.01	18.88
	16QAM	1	0	20.2	19.86	19.44	19.31
		1	13	20.2	19.89	19.53	19.25
		1	24	20.2	19.77	19.41	19.06
		12	0	20.2	19.80	19.18	18.97
		12	6	20.2	19.75	19.15	18.95
		12	13	20.2	19.50	18.97	18.65
		25	0	20.2	19.56	18.98	18.84
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18650CH	18900CH	19150CH
10MHz	QPSK	1	0	20.2	19.66	19.16	19.62
		1	25	20.2	19.81	19.41	19.34
		1	49	20.2	19.70	19.13	18.85
		25	0	20.2	19.67	19.24	19.41
		25	13	20.2	19.72	19.27	19.25
		25	25	20.2	19.66	19.16	18.96
		50	0	20.2	19.66	19.19	19.23
	16QAM	1	0	20.2	19.91	19.44	19.85
		1	25	20.2	20.09	19.70	19.56
		1	49	20.2	20.03	19.51	19.13
		25	0	20.2	19.74	19.24	19.41
		25	13	20.2	19.75	19.27	19.22
		25	25	20.2	19.72	19.16	18.98
		50	0	20.2	19.65	19.17	19.22

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18675CH	18900CH	19125CH
15MHz	QPSK	1	0	20.2	19.38	18.90	19.66
		1	38	20.2	19.76	19.19	19.38
		1	74	20.2	19.21	19.22	18.59
		36	0	20.2	19.58	18.99	19.60
		36	18	20.2	19.66	19.07	19.32
		36	39	20.2	19.34	18.91	18.84
		75	0	20.2	19.50	18.95	19.27
	16QAM	1	0	20.2	19.70	19.11	19.91
		1	38	20.2	20.05	19.35	19.61
		1	74	20.2	19.56	19.44	18.85
		36	0	20.2	19.63	18.97	19.57
		36	18	20.2	19.72	19.04	19.29
		36	39	20.2	19.42	18.89	18.81
		75	0	20.2	19.45	18.87	19.21
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18700CH	18900CH	19100CH
20MHz	QPSK	1	0	20.2	19.37	19.10	19.40
		1	50	20.2	**19.42**	**19.33**	**19.43**
		1	99	20.2	18.71	19.14	18.39
		50	0	20.2	**19.34**	18.86	19.35
		50	25	20.2	19.32	**18.95**	**19.38**
		50	50	20.2	18.94	18.92	18.88
		100	0	20.2	19.24	18.83	**19.25**
	16QAM	1	0	20.2	19.86	19.31	20.15
		1	50	20.2	20.05	19.31	20.11
		1	99	20.2	19.12	19.56	18.93
		50	0	20.2	19.37	18.80	19.53
		50	25	20.2	19.31	18.88	19.42
		50	50	20.2	18.88	18.84	18.86
		100	0	20.2	19.22	18.78	19.22

Table 44: Conducted power measurement results of LTE Band II (Hotspot activated)

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

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel 19957CH	Channel 20175CH	Channel 20393CH
1.4MHz	QPSK	1	0	22.6	20.82	20.91	20.97
		1	3	22.6	20.86	20.98	21.01
		1	5	22.6	20.79	20.89	20.80
		3	0	22.6	20.87	20.97	20.98
		3	2	22.6	20.84	20.97	20.91
		3	3	22.6	20.81	20.93	20.84
		6	0	21.6	19.92	20.11	20.00
	16QAM	1	0	21.7	19.99	20.42	20.05
		1	3	21.7	20.03	20.46	20.04
		1	5	21.7	19.93	20.41	19.88
		3	0	21.7	20.02	20.29	20.07
		3	2	21.7	19.93	20.28	20.05
		3	3	21.7	19.98	20.20	19.98
		6	0	21.5	19.88	20.04	20.02
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel 19965CH	Channel 20175CH	Channel 20385CH
3MHz	QPSK	1	0	22.6	20.74	20.77	20.98
		1	7	22.6	20.92	21.04	21.07
		1	14	22.6	20.74	20.78	20.69
		8	0	21.6	19.93	20.06	20.02
		8	4	21.6	19.95	20.13	20.03
		8	7	21.6	19.97	20.07	19.89
		15	0	21.6	20.00	20.10	20.02
	16QAM	1	0	21.7	19.98	19.88	19.99
		1	7	21.7	20.17	20.12	20.27
		1	14	21.7	20.08	19.84	19.96
		8	0	21.5	19.89	19.99	19.95
		8	4	21.5	19.91	20.07	19.96
		8	7	21.5	19.93	20.06	19.81
		15	0	21.5	19.91	20.07	19.97

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					19975CH	20175CH	20375CH
5MHz	QPSK	1	0	22.6	21.00	20.99	21.18
		1	13	22.6	21.21	21.14	21.13
		1	24	22.6	20.73	20.71	20.62
		12	0	21.6	20.14	20.17	20.22
		12	6	21.6	20.25	20.30	20.16
		12	13	21.6	20.13	20.12	20.01
		25	0	21.6	20.12	20.19	20.14
	16QAM	1	0	21.7	20.07	20.33	20.49
		1	13	21.7	20.39	20.50	20.42
		1	24	21.7	19.89	20.10	19.95
		12	0	21.5	20.09	20.20	20.05
		12	6	21.5	20.21	20.32	20.09
		12	13	21.5	20.09	20.13	19.90
		25	0	21.5	20.09	20.20	20.11
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20000CH	20175CH	20350CH
10MHz	QPSK	1	0	22.6	21.16	21.18	21.61
		1	25	22.6	21.41	21.40	21.46
		1	49	22.6	20.91	21.01	20.92
		25	0	21.6	20.34	20.30	20.43
		25	13	21.6	20.39	20.36	20.40
		25	25	21.6	20.24	20.29	20.31
		50	0	21.6	20.29	20.29	20.40
	16QAM	1	0	21.7	20.34	20.68	20.76
		1	25	21.7	20.71	20.77	20.53
		1	49	21.7	20.11	20.53	20.05
		25	0	21.5	20.31	20.30	20.32
		25	13	21.5	20.36	20.36	20.29
		25	25	21.5	20.19	20.29	20.21
		50	0	21.5	20.19	20.24	20.30

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20025CH	20175CH	20325CH
15MHz	QPSK	1	0	22.6	20.94	21.01	21.24
		1	38	22.6	21.13	21.21	21.36
		1	74	22.6	20.72	21.14	20.80
		36	0	21.6	20.18	20.19	20.46
		36	18	21.6	20.15	20.24	20.34
		36	39	21.6	19.98	20.26	20.19
		75	0	21.6	20.09	20.22	20.30
	16QAM	1	0	21.7	20.32	20.32	20.49
		1	38	21.7	20.44	20.57	20.53
		1	74	21.7	20.11	20.43	19.99
		36	0	21.5	20.15	20.21	20.35
		36	18	21.5	20.11	20.25	20.22
		36	39	21.5	19.96	20.27	20.08
		75	0	21.5	20.04	20.17	20.18
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20050CH	20175CH	20300CH
20MHz	QPSK	1	0	22.6	21.25	21.29	21.31
		1	50	22.6	**21.45**	**21.63**	**21.74**
		1	99	22.6	20.62	20.87	20.72
		50	0	21.6	20.15	20.24	20.26
		50	25	21.6	20.51	20.52	**20.71**
		50	50	21.6	20.19	20.15	20.17
		100	0	21.6	20.17	20.22	**20.23**
	16QAM	1	0	21.7	20.70	20.53	20.66
		1	50	21.7	20.80	20.79	21.07
		1	99	21.7	20.09	20.15	20.08
		50	0	21.5	20.06	20.12	20.18
		50	25	21.5	20.46	20.45	20.63
		50	50	21.5	20.10	20.10	20.09
		100	0	21.5	20.08	20.17	20.14

Table 45: Conducted power measurement results of LTE Band IV(Hotspot disable)

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel 19957CH	Channel 20175CH	Channel 20393CH
1.4MHz	QPSK	1	0	19.1	17.42	17.69	17.94
		1	3	19.1	17.49	17.71	17.92
		1	5	19.1	17.44	17.61	17.76
		3	0	19.1	17.53	17.70	17.82
		3	2	19.1	17.56	17.70	17.81
		3	3	19.1	17.52	17.66	17.74
		6	0	18.6	17.51	17.66	17.89
	16QAM	1	0	19.1	17.50	17.82	18.07
		1	3	19.1	17.63	18.03	17.91
		1	5	19.1	17.52	17.74	17.97
		3	0	19.1	17.54	17.76	17.92
		3	2	19.1	17.56	17.80	17.96
		3	3	19.1	17.41	17.76	17.90
		6	0	18.6	17.49	17.62	17.90
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel 19965CH	Channel 20175CH	Channel 20385CH
3MHz	QPSK	1	0	19.1	17.33	17.50	17.75
		1	7	19.1	17.60	17.82	17.90
		1	14	19.1	17.49	17.42	17.68
		8	0	18.6	17.54	17.61	17.88
		8	4	18.6	17.57	17.66	17.89
		8	7	18.6	17.55	17.61	17.75
		15	0	18.6	17.56	17.64	17.87
	16QAM	1	0	19.1	17.53	17.66	17.79
		1	7	19.1	17.76	17.87	17.90
		1	14	19.1	17.52	17.60	17.66
		8	0	18.6	17.48	17.52	17.72
		8	4	18.6	17.55	17.58	17.72
		8	7	18.6	17.56	17.52	17.58
		15	0	18.6	17.53	17.55	17.73

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					19975CH	20175CH	20375CH
5MHz	QPSK	1	0	19.1	17.63	17.67	18.03
		1	13	19.1	17.88	17.81	18.09
		1	24	19.1	17.43	17.41	17.59
		12	0	18.6	17.72	17.71	17.98
		12	6	18.6	17.82	17.81	18.00
		12	13	18.6	17.71	17.68	17.86
		25	0	18.6	17.69	17.77	17.98
	16QAM	1	0	19.1	17.82	18.06	18.28
		1	13	19.1	18.08	18.21	18.32
		1	24	19.1	17.66	17.89	17.82
		12	0	18.6	17.77	17.81	17.92
		12	6	18.6	17.86	17.92	17.89
		12	13	18.6	17.73	17.73	17.76
		25	0	18.6	17.68	17.80	17.89
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20000CH	20175CH	20350CH
10MHz	QPSK	1	0	19.1	17.85	17.94	18.36
		1	25	19.1	18.18	18.14	18.19
		1	49	19.1	17.67	17.65	17.78
		25	0	18.6	17.98	17.93	18.15
		25	13	18.6	18.06	18.03	18.14
		25	25	18.6	17.94	17.89	18.08
		50	0	18.6	17.95	17.90	18.15
	16QAM	1	0	19.1	18.11	18.29	18.52
		1	25	19.1	18.54	18.44	18.30
		1	49	19.1	17.93	18.06	17.93
		25	0	18.6	17.94	17.91	18.07
		25	13	18.6	18.04	18.01	18.07
		25	25	18.6	17.88	17.87	18.00
		50	0	18.6	17.87	17.85	18.09

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20025CH	20175CH	20325CH
15MHz	QPSK	1	0	19.1	17.61	17.79	18.01
		1	38	19.1	17.91	17.91	18.15
		1	74	19.1	17.51	17.82	17.72
		36	0	18.6	17.83	17.77	18.16
		36	18	18.6	17.84	17.82	18.07
		36	39	18.6	17.63	17.79	17.98
		75	0	18.6	17.76	17.76	18.02
	16QAM	1	0	19.1	18.13	17.85	18.10
		1	38	19.1	18.33	18.01	18.17
		1	74	19.1	18.00	17.97	17.77
		36	0	18.6	17.81	17.80	18.05
		36	18	18.6	17.81	17.85	17.98
		36	39	18.6	17.60	17.83	17.88
		75	0	18.6	17.68	17.71	17.98
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20050CH	20175CH	20300CH
20MHz	QPSK	1	0	19.1	17.96	18.17	18.06
		1	50	19.1	**18.19**	**18.31**	**18.69**
		1	99	19.1	17.46	17.73	17.71
		50	0	18.6	17.74	17.81	17.92
		50	25	18.6	18.17	18.15	**18.44**
		50	50	18.6	17.83	17.77	17.93
		100	0	18.6	17.77	17.76	**17.93**
	16QAM	1	0	19.1	18.38	18.30	18.38
		1	50	19.1	18.56	18.45	19.02
		1	99	19.1	17.83	17.89	18.03
		50	0	18.6	17.70	17.77	17.86
		50	25	18.6	18.16	18.10	18.38
		50	50	18.6	17.79	17.68	17.83
		100	0	18.6	17.73	17.71	17.90

Table 46: Conducted power measurement results of LTE Band IV (Hotspot activated)

7.1.19 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	21.72	22.16	22.15
		1	3	23.5	21.92	22.20	22.21
		1	5	23.5	21.80	22.04	22.01
		3	0	23.5	21.79	22.14	22.14
		3	2	23.5	21.84	22.14	22.15
		3	3	23.5	21.80	22.07	22.06
		6	0	22.5	20.79	21.10	21.16
	16QAM	1	0	22.5	20.85	21.37	21.20
		1	3	22.5	20.95	21.42	21.21
		1	5	22.5	20.85	21.28	21.05
		3	0	22.5	20.87	21.12	21.12
		3	2	22.5	20.91	21.14	21.08
		3	3	22.5	20.87	21.05	21.02
		6	0	22.0	20.85	21.18	21.08
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20415CH	20525CH	20635CH
3MHz	QPSK	1	0	23.5	21.51	22.00	21.82
		1	7	23.5	21.98	22.20	22.10
		1	14	23.5	21.55	21.81	21.81
		8	0	22.5	20.77	21.09	21.15
		8	4	22.5	20.85	21.07	21.16
		8	7	22.5	20.76	20.97	20.99
		15	0	22.5	20.76	20.99	21.07
	16QAM	1	0	22.5	20.64	21.05	20.97
		1	7	22.5	21.10	21.32	21.30
		1	14	22.5	20.69	20.96	20.91
		8	0	22.0	20.79	21.13	21.11
		8	4	22.0	20.85	21.11	21.12
		8	7	22.0	20.75	21.09	20.96
		15	0	22.0	20.75	21.00	20.98

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20425CH	20525CH	20625CH
5MHz	QPSK	1	0	23.5	21.98	22.36	22.13
		1	13	23.5	22.12	22.41	22.44
		1	24	23.5	22.01	21.99	22.12
		12	0	22.5	21.20	21.51	21.28
		12	6	22.5	21.25	21.51	21.49
		12	13	22.5	21.10	21.27	21.29
		25	0	22.5	21.17	21.39	21.38
	16QAM	1	0	22.5	21.27	21.87	21.50
		1	13	22.5	21.41	21.92	21.76
		1	24	22.5	21.38	21.48	21.41
		12	0	22.0	21.18	21.47	21.17
		12	6	22.0	21.21	21.47	21.45
		12	13	22.0	21.07	21.19	21.23
		25	0	22.0	21.12	21.35	21.27
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20450CH	20525CH	20600CH
10MHz	QPSK	1	0	23.5	22.07	22.42	22.28
		1	25	23.5	**22.57**	**22.61**	**22.42**
		1	49	23.5	22.05	21.83	21.98
		25	0	22.5	21.25	21.58	21.30
		25	13	22.5	21.44	**21.59**	21.40
		25	25	22.5	21.34	21.30	21.35
		50	0	22.5	21.32	21.45	21.40
	16QAM	1	0	22.5	21.12	21.65	21.31
		1	25	22.5	21.62	21.83	21.52
		1	49	22.5	20.99	21.04	21.18
		25	0	22.0	21.21	21.49	21.24
		25	13	22.0	21.40	21.51	21.34
		25	25	22.0	21.29	21.22	21.35
		50	0	22.0	21.29	21.34	21.36

Table 47: Conducted power measurement results of LTE Band V

7.1.20 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	22.8	21.55	21.72	21.67
		1	13	22.8	21.92	21.85	21.65
		1	24	22.8	21.64	21.64	21.26
		12	0	22.0	20.87	21.03	20.87
		12	6	22.0	20.95	21.01	20.79
		12	13	22.0	20.79	20.76	20.45
		25	0	22.0	20.81	20.83	20.65
	16QAM	1	0	22.0	20.66	20.99	21.00
		1	13	22.0	21.02	21.12	21.03
		1	24	22.0	20.73	20.86	20.60
		12	0	22.0	20.77	20.89	20.77
		12	6	22.0	20.85	20.94	20.67
		12	13	22.0	20.67	20.69	20.33
		25	0	22.0	20.66	20.79	20.54
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20800CH	21100CH	21400CH
10MHz	QPSK	1	0	22.8	21.66	21.66	21.67
		1	25	22.8	21.89	21.89	21.86
		1	49	22.8	21.49	21.51	21.40
		25	0	22.0	20.88	20.89	20.83
		25	13	22.0	20.84	20.91	20.83
		25	25	22.0	20.72	20.77	20.68
		50	0	22.0	20.82	20.79	20.80
	16QAM	1	0	22.0	20.75	20.88	20.72
		1	25	22.0	20.98	21.13	20.78
		1	49	22.0	20.60	20.86	20.34
		25	0	22.0	20.81	20.80	20.69
		25	13	22.0	20.75	20.82	20.68
		25	25	22.0	20.64	20.68	20.55
		50	0	22.0	20.67	20.65	20.67

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20825CH	21100CH	21375CH
15MHz	QPSK	1	0	22.8	21.33	21.20	20.86
		1	38	22.8	21.71	21.84	21.80
		1	74	22.8	21.14	21.25	21.16
		36	0	22.0	20.82	20.71	20.51
		36	18	22.0	20.81	20.93	20.74
		36	39	22.0	20.51	20.63	20.67
		75	0	22.0	20.64	20.64	20.52
	16QAM	1	0	22.0	20.58	20.44	20.01
		1	38	22.0	20.94	21.10	20.86
		1	74	22.0	20.38	20.58	20.23
		36	0	22.0	20.76	20.64	20.41
		36	18	22.0	20.73	20.85	20.69
		36	39	22.0	20.43	20.57	20.61
		75	0	22.0	20.53	20.54	20.44
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20850CH	21100CH	21350CH
20MHz	QPSK	1	0	22.8	21.60	21.32	20.93
		1	50	22.8	**21.90**	**22.15**	**21.87**
		1	99	22.8	21.09	21.36	21.42
		50	0	22.0	21.13	20.97	20.60
		50	25	22.0	21.00	**21.28**	20.95
		50	50	22.0	20.64	20.91	21.02
		100	0	22.0	20.79	20.90	20.87
	16QAM	1	0	22.0	20.86	20.55	20.29
		1	50	22.0	21.13	21.37	21.21
		1	99	22.0	20.32	20.50	20.67
		50	0	22.0	21.02	20.83	20.49
		50	25	22.0	20.89	21.03	20.84
		50	50	22.0	20.55	20.80	20.88
		100	0	22.0	20.68	20.83	20.72

Table 48: Conducted power measurement results of LTE Band VII (Hotspot disable)

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20775CH	21100CH	21425CH
5MHz	QPSK	1	0	18.5	17.07	17.46	17.53
		1	13	18.5	17.59	17.67	17.69
		1	24	18.5	17.38	17.39	17.19
		12	0	18.2	17.44	17.70	17.76
		12	6	18.2	17.53	17.75	17.71
		12	13	18.2	17.38	17.48	17.38
		25	0	18.2	17.40	17.55	17.54
	16QAM	1	0	18.5	17.35	17.82	17.83
		1	13	18.5	17.72	18.00	17.91
		1	24	18.5	17.53	17.75	17.43
		12	0	18.2	17.49	17.74	17.63
		12	6	18.2	17.53	17.81	17.57
		12	13	18.2	17.38	17.50	17.22
		25	0	18.2	17.37	17.46	17.48
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20800CH	21100CH	21400CH
10MHz	QPSK	1	0	18.5	17.24	17.42	17.48
		1	25	18.5	17.66	17.74	17.80
		1	49	18.5	17.29	17.38	17.31
		25	0	18.2	17.49	17.56	17.63
		25	13	18.2	17.57	17.61	17.66
		25	25	18.2	17.41	17.47	17.49
		50	0	18.2	17.47	17.47	17.58
	16QAM	1	0	18.5	17.58	17.72	17.38
		1	25	18.5	17.87	17.92	17.81
		1	49	18.5	17.63	17.70	17.22
		25	0	18.2	17.49	17.58	17.56
		25	13	18.2	17.46	17.62	17.57
		25	25	18.2	17.40	17.48	17.40
		50	0	18.2	17.42	17.43	17.54

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20825CH	21100CH	21375CH
15MHz	QPSK	1	0	18.5	16.93	16.88	16.59
		1	38	18.5	17.60	17.71	17.74
		1	74	18.5	16.93	17.10	17.06
		36	0	18.2	17.43	17.37	17.22
		36	18	18.2	17.49	17.65	17.55
		36	39	18.2	17.19	17.35	17.49
		75	0	18.2	17.27	17.33	17.32
	16QAM	1	0	18.5	17.22	17.18	16.83
		1	38	18.5	17.82	17.94	17.93
		1	74	18.5	17.24	17.37	17.25
		36	0	18.2	17.45	17.40	17.18
		36	18	18.2	17.50	17.67	17.51
		36	39	18.2	17.19	17.38	17.43
		75	0	18.2	17.22	17.29	17.26
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20850CH	21100CH	21350CH
20MHz	QPSK	1	0	18.5	17.31	17.07	16.75
		1	50	18.5	17.79	**18.02**	17.72
		1	99	18.5	16.91	17.17	17.29
		50	0	18.2	17.85	17.64	17.30
		50	25	18.2	**17.92**	17.88	17.62
		50	50	18.2	17.50	17.67	17.73
		100	0	18.2	17.57	17.65	17.56
	16QAM	1	0	18.5	17.63	17.35	17.20
		1	50	18.5	18.10	18.34	18.13
		1	99	18.5	17.22	17.53	17.67
		50	0	18.2	17.91	17.60	17.27
		50	25	18.2	17.83	17.83	17.58
		50	50	18.2	17.48	17.62	17.67
		100	0	18.2	17.54	17.61	17.49

Table 49: Conducted power measurement results of LTE Band VII (Hotspot activated)

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

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					23017CH	23095CH	23173CH
1.4MHz	QPSK	1	0	23.5	21.69	21.93	22.05
		1	3	23.5	21.82	22.01	22.00
		1	5	23.5	21.69	21.96	21.90
		3	0	23.5	21.67	21.95	21.95
		3	2	23.5	21.78	21.95	21.94
		3	3	23.5	21.76	21.92	21.88
		6	0	22.5	20.81	20.88	21.01
	16QAM	1	0	22.8	20.83	21.15	20.91
		1	3	22.8	20.85	21.13	20.88
		1	5	22.8	20.82	21.18	20.85
		3	0	22.8	20.81	20.93	21.06
		3	2	22.8	20.86	20.93	21.05
		3	3	22.8	20.83	20.81	21.00
		6	0	22.3	20.81	20.85	21.02
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					23025CH	23095CH	23165CH
3MHz	QPSK	1	0	23.5	21.52	21.76	21.93
		1	7	23.5	21.98	22.03	22.11
		1	14	23.5	21.68	21.64	21.64
		8	0	22.5	20.76	20.88	21.11
		8	4	22.5	20.88	20.88	21.14
		8	7	22.5	20.79	20.84	20.89
		15	0	22.5	20.82	20.83	20.98
	16QAM	1	0	22.8	20.81	20.83	20.93
		1	7	22.8	20.93	21.20	21.28
		1	14	22.8	20.81	20.81	20.81
		8	0	22.3	20.71	20.90	21.03
		8	4	22.3	20.82	20.91	21.07
		8	7	22.3	20.74	20.88	20.82
		15	0	22.3	20.70	20.83	20.87

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					23035CH	23095CH	23155CH
5MHz	QPSK	1	0	23.5	22.12	22.19	22.45
		1	13	23.5	22.44	22.45	22.49
		1	24	23.5	22.10	22.27	22.05
		12	0	22.5	21.27	21.28	21.47
		12	6	22.5	21.36	21.40	21.53
		12	13	22.5	21.15	21.29	21.39
		25	0	22.5	21.21	21.26	21.53
	16QAM	1	0	22.8	21.09	21.43	21.56
		1	13	22.8	21.43	21.66	21.71
		1	24	22.8	21.09	21.51	21.26
		12	0	22.3	21.21	21.16	21.43
		12	6	22.3	21.30	21.34	21.47
		12	13	22.3	21.10	21.28	21.36
		25	0	22.3	21.14	21.27	21.38
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					23060CH	23095CH	23130CH
10MHz	QPSK	1	0	23.5	22.02	22.29	22.15
		1	25	23.5	**22.46**	**22.64**	**22.71**
		1	49	23.5	21.85	22.19	21.65
		25	0	22.5	21.13	21.38	21.20
		25	13	22.5	21.31	21.46	**21.56**
		25	25	22.5	20.98	21.35	21.26
		50	0	22.5	21.11	21.34	21.28
	16QAM	1	0	22.8	21.05	21.38	21.35
		1	25	22.8	21.57	21.94	21.89
		1	49	22.8	20.88	21.30	20.90
		25	0	22.3	21.10	21.19	21.36
		25	13	22.3	21.30	21.44	21.61
		25	25	22.3	21.00	21.17	21.37
		50	0	22.3	21.08	21.14	21.37

Table 50: Conducted power measurement results of LTE Band XII

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

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					23755CH	23790CH	23825 CH
5MHz	QPSK	1	0	23.5	22.35	22.60	22.75
		1	13	23.5	22.76	22.97	22.90
		1	24	23.5	22.40	22.53	22.29
		12	0	22.5	21.46	21.69	21.93
		12	6	22.5	21.61	21.98	21.92
		12	13	22.5	21.50	21.82	21.69
		25	0	22.5	21.46	21.72	21.82
	16QAM	1	0	22.8	21.17	21.89	21.89
		1	13	22.8	21.62	22.33	22.08
		1	24	22.8	21.26	21.87	21.42
		12	0	22.3	21.41	21.68	21.81
		12	6	22.3	21.59	21.94	21.81
		12	13	22.3	21.50	21.79	21.58
		25	0	22.3	21.44	21.67	21.70
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					23780CH	23790CH	23800CH
10MHz	QPSK	1	0	23.5	22.41	22.54	22.62
		1	25	23.5	23.09	23.17	23.20
		1	49	23.5	22.16	22.10	22.05
		25	0	22.5	21.49	21.59	21.64
		25	13	22.5	21.82	21.92	22.02
		25	25	22.5	21.63	21.80	21.69
		50	0	22.5	21.53	21.64	21.73
	16QAM	1	0	22.8	21.42	21.76	21.80
		1	25	22.8	22.13	22.35	22.29
		1	49	22.8	21.00	21.25	20.99
		25	0	22.3	21.41	21.56	21.56
		25	13	22.3	21.74	21.85	21.93
		25	25	22.3	21.54	21.74	21.58
		50	0	22.3	21.48	21.56	21.58

Table 51: Conducted power measurement results of LTE Band XVII

7.1.23 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: R&S Radio Communication Tester CMW500 and Anritsu Radio Communication Analyzer MT8821C were used.

A) The conducted power measurement results of downlink LTE CA are as below(Second 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)	DL LTE CA Tx Power (dBm)	Tune-up
CA_2C	2	10	1	49	50	0	18655	655	2	20	799	22.87	22.81	23.50
CA_7C	7	20	50	0	100	0	21350	3350	7	20	3152	21.78	21.72	21.80
CA_2A-5A	2	10	1	49	50	0	18650	650	5	10	2525	22.91	22.86	23.50
	5	10	1	25	50	0	20525	2525	2	20	900	22.37	22.28	23.00
CA_2A-28A	2	10	1	49	50	0	18650	650	28	20	9460	22.96	22.89	23.50
CA_4A-4A	4	10	1	25	50	0	20000	2000	4	20	2300	22.91	21.89	23.00
CA_4A-5A	4	10	1	25	50	0	20000	2000	5	10	2525	22.91	22.87	23.00
	5	10	1	25	50	0	20525	2525	4	20	2175	22.37	22.31	23.00
CA_4A-12A	4	10	1	25	50	0	20000	2000	12	10	5095	22.91	22.88	23.00
CA_4A-7A	4	10	1	25	50	0	20000	2000	7	20	3100	22.91	22.86	23.00
	7	20	50	0	100	0	21350	3350	4	10	2175	21.78	21.75	21.80
CA_4A-17A	4	10	1	25	50	0	20000	2000	17	10	5790	22.91	22.84	23.00
CA_4A-28A	4	10	1	25	50	0	20000	2000	28	20	9460	22.91	22.84	23.00
CA_5A-7A	5	10	1	25	50	0	20525	2525	7	20	3100	22.37	22.29	23.00
	7	20	50	0	100	0	21350	3350	5	10	2525	21.78	21.76	21.80
CA_7A-28A	7	20	50	0	100	0	21350	3350	28	20	9460	21.78	21.73	21.80

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

According to KDB 941225 D05A, the downlink LTE CA SAR test is not required and PAG requirements can be excluded.

B) The conducted power measurement results of downlink LTE CA 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)	DL LTE CA Tx Power (dBm)	Tune-up
CA_2C	2	10	1	25	50	0	18655	655	2	20	799	22.71	22.70	23.20
CA_7C	7	20	1	50	100	0	21051	3051	7	10	3195	22.15	22.12	22.80
CA_2A-5A	2	10	1	25	50	0	18650	650	5	10	2525	22.75	22.68	23.20
	5	10	1	25	50	0	20525	2525	2	20	900	22.61	22.56	23.50
CA_2A-28A	2	10	1	25	50	0	18650	650	28	20	9460	22.75	22.69	23.20
CA_4A-4A	4	20	1	50	100	0	20300	2300	4	20	2050	21.78	21.73	22.60
CA_4A-5A	4	20	1	50	100	0	20300	2300	5	10	2525	21.78	21.72	22.60
	5	10	1	25	50	0	20525	2525	4	20	2175	22.61	22.59	23.50
CA_4A-12A	4	20	1	50	100	0	20300	2300	12	10	5095	21.78	21.69	22.60
CA_4A-7A	4	10	1	0	50	0	20350	2350	7	20	3100	21.61	21.58	22.60
	7	20	1	50	100	0	21100	3100	4	10	2175	22.15	22.11	22.80
CA_4A-17A	4	10	1	0	50	0	20350	2350	17	10	5790	21.61	21.53	22.60
CA_4A-28A	4	20	1	50	100	0	20300	2300	28	20	9460	21.78	21.73	22.60
CA_5A-7A	5	10	1	25	50	0	20525	2525	7	20	3100	22.61	22.58	23.50
	7	20	1	50	100	0	21100	3100	5	10	2525	22.15	22.13	22.80
CA_7A-28A	7	20	1	50	100	0	21100	3100	28	20	9460	22.15	22.09	22.50

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

According to KDB 941225 D05A, the downlink LTE CA SAR test is not required and PAG requirements can be excluded.

7.1.24 Conducted power measurements of WiFi 2.4G

The output power of WiFi antenna is as following:

Mode	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)
802.11b	1	2412	1	18.3	**16.38**	Yes
	6	2437		18.3	**16.54**	Yes
	11	2462		18.3	**16.43**	Yes
802.11g	1	2412	6	17.0	Not Required	No
	6	2437		17.0	Not Required	No
	11	2462		17.0	Not Required	No
802.11n-20M	1	2412	6.5	15.0	Not Required	No
	6	2437		15.0	Not Required	No
	11	2462		15.0	Not Required	No
802.11n-40M	3	2422	13.5	15.0	Not Required	No
	6	2437		15.0	Not Required	No
	9	2452		15.0	Not Required	No

Table 52: 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	10.3	**8.54**	Yes
	6	2437		10.3	**9.06**	Yes
	11	2462		10.3	**8.49**	Yes
802.11g	1	2412	6	11.0	9.02	No
	6	2437		11.0	9.51	No
	11	2462		11.0	9.05	No
802.11n-20M	1	2412	6.5	11.0	9.03	No
	6	2437		11.0	9.05	No
	11	2462		11.0	9.02	No
802.11n-40M	3	2422	13.5	11.0	9.10	No
	6	2437		11.0	9.06	No
	9	2452		11.0	9.07	No

Table 53: Conducted power measurement results of WiFi 2.4G (Sensor on, reduced power level).

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

7.1.25 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	12.0	**10.05**	**10.09**	**10.97**
2DH5	12.0	5.19	6.06	8.20
3DH5	12.0	5.20	5.81	8.19

BT 2450	Tune-up	Average Conducted Power (dBm)		
		0CH	19CH	39CH
BT BLE	12.0	3.82	5.11	6.56

Table 54: Conducted power measurement results of BT.

Note:

1) The conducted power of BT is measured with RMS detector.

2) The bolded mode was selected for SAR testing.

Figure: Bluetooth Transmission Plot

So the actural bluetooth duty cycle is calculated as below:

$$Dutycycle = pulse\frac{width}{period}*100\% = \frac{2.887ms}{3.7565ms}*100\% = 76.9\%$$

7.2 SAR measurement Results

General Notes:

1) Per KDB447498 D01, all SAR measurement results are scaled to the maximum tune-up tolerance limit to demonstrate SAR compliance.

2) Per KDB447498 D01, testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is:

● ≤ 0.8W/kg for 1-g or 2.0W/kg for 10-g respectively, when the transmission band is ≤ 100MHz.

● ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz.

● ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz.

When the maximum output power variation across the required test channels is > ½ dB, instead of the middle channel, the highest output power channel must be used.

3) Per KDB865664 D01,for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥0.8W/kg; if the deviation among the repeated measurement is ≤20%, and the measured SAR <1.45W/Kg, only one repeated measurement is required.

4) Per KDB941225 D06, the DUT Dimension is bigger than 9 cm x 5 cm, so 10mm is chosen as the test separation distance for Hotspot mode. When the antenna-to-edge distance is greater than 2.5cm, such position does not need to be tested.

5) Per KDB648474 D04, SAR is evaluated without a headset connected to the device. When the standalone reported body-worn SAR is ≤1.2 W/kg, no additional SAR evaluations using a headset are required.

6) Per KDB865664 D02, SAR plot is only required for the highest measured SAR in each exposure configuration, wireless mode and frequency band combination; Plots are also required when the measured SAR is > 1.5 W/kg, or > 7.0 W/kg for occupational exposure. The published RF exposure KDB procedures may require additional plots; for example, to support SAR to peak location separation ratio test exclusion and/or volume scan post-processing(Refer to appendix B for details).

7) Per KDB 648474D04, for handsets with additional batteries, the highest reported SAR for each wireless technology, frequency band, operating mode and applicable exposure condition (head, body-worn accessory, hotspot mode, etc.) must be repeated with the specific accessory attached. In addition, for test cases where the measured SAR for a handset is greater than 1.2 W/kg, these tests should also be repeated with the additional batteries.

GSM Notes:

1) Per KDB941225 D01, SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power specified for production units, including tune-up tolerance. The data mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested.

2) Per KDB648474 D04, the device does not support DTM function. Body-worn accessory testing is typically associated with voice operations. Therefore, GSM voice was evaluated for body-worn SAR.

UMTS Notes:

1) Per KDB941225 D01, When the maximum output power and tune-up tolerance specified for production units in a Second mode is ≤ ¼ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of Second to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the Second mode.

LTE Notes:

1) The LTE test configurations are determined according to KDB941225 D05 SAR for LTE Devices.The general test procedures used for SAR testing can be found in Section 6.5.

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

WiFi Notes:

Per KDB248227D01:

1) When reported SAR for the initial test position is ≤ 0.4W/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 ≤ 0.8W/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) For Head SAR compliance: Head SAR for Wi-Fi antenna is evaluated at reduced power levels according to the real usage scenarios.

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)	Accessory Information	SAR Plot
			1-g	10-g						
Left touch	190/836.6	GSM	0.640	0.342	0.07	29.56	31.00	0.892	Battery1#	/
Left touch	128/824.2	GSM	0.646	0.345	0.00	29.42	31.00	0.929	Battery1#	/
Left touch	251/848.8	GSM	0.589	0.358	-0.02	29.61	31.00	0.811	Battery1#	/
Left tilt	190/836.6	GSM	0.635	0.319	0.06	29.56	31.00	0.885	Battery1#	/
Left tilt	128/824.2	GSM	0.634	0.370	0.02	29.42	31.00	0.912	Battery1#	/
Left tilt	251/848.8	GSM	0.582	0.339	0.04	29.61	31.00	0.802	Battery1#	/
Right touch	190/836.6	GSM	0.760	0.413	-0.09	29.56	31.00	1.059	Battery1#	/
Right touch	128/824.2	GSM	**0.900**	0.497	0.03	29.42	31.00	**1.295**	Battery1#	Yes
Right touch-holder perturbation verification	128/824.2	GSM	0.877	0.481	0.04	29.42	31.00	1.262	Battery1#	/
Right touch-repeated	128/824.2	GSM	0.843	0.462	0.04	29.42	31.00	1.213	Battery 3#	/
Right touch	251/848.8	GSM	0.690	0.378	0.00	29.61	31.00	0.950	Battery1#	/
Right tilt	190/836.6	GSM	0.720	0.342	0.03	29.56	31.00	1.003	Battery1#	/
Right tilt	128/824.2	GSM	0.753	0.358	0.00	29.42	31.00	1.083	Battery1#	/
Right tilt	251/848.8	GSM	0.598	0.358	0.01	29.61	31.00	0.824	Battery1#	/
Right touch	128/824.2	GSM	0.815	0.442	0.00	29.42	31.00	1.173	SIM2	/
Right touch	128/824.2	GSM	0.781	0.425	0.00	29.42	31.00	1.124	Battery 2#	/
Right touch	128/824.2	GSM	0.761	0.416	0.01	29.42	31.00	1.095	Battery 3#	/

Table 55: Head SAR test results of GSM850

Note: According to 201610 FCC TCB workshop RF exposure slides, when the highest reported SAR of an antenna is > 1.2 W/kg, holder perturbation verification is required for each antenna, using the highest SAR configuration among all applicable frequency bands.

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)	Accessory Information	SAR Plot
			1-g	10-g						
Front Side	190/836.6	GSM	0.239	0.143	0.02	31.21	33.00	0.361	Battery1#	/
Back Side	190/836.6	GSM	0.235	0.178	-0.03	31.21	33.00	0.355	Battery1#	/
Front Side	190/836.6	GSM	0.243	0.145	0.02	31.21	33.00	0.367	With SIM2	/
Front Side	190/836.6	GSM	0.272	0.207	0.02	31.21	33.00	0.411	Battery 2#	/
Front Side	190/836.6	GSM	**0.279**	0.211	-0.01	31.21	33.00	**0.421**	Battery 3#	Yes

Table 56: 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)	Accessory Information	SAR Plot
			1-g	10-g						
Front Side	190/836.6	GPRS 3TS	**0.614**	0.343	0.00	27.65	29.00	**0.838**	Battery1#	Yes
Front Side	128/824.2	GPRS 3TS	0.583	0.377	0.01	27.66	29.00	0.794	Battery1#	/
Front Side	251/848.8	GPRS 3TS	0.568	0.363	0.01	27.64	29.00	0.777	Battery1#	/
Back Side	190/836.6	GPRS 3TS	0.581	0.324	-0.02	27.65	29.00	0.793	Battery1#	/
Left Side	190/836.6	GPRS 3TS	0.538	0.365	-0.05	27.65	29.00	0.734	Battery1#	/
Right Side	190/836.6	GPRS 3TS	0.178	0.119	-0.01	27.65	29.00	0.243	Battery1#	/
Top Side	190/836.6	GPRS 3TS	0.604	0.292	0.05	27.65	29.00	0.824	Battery1#	/
Top Side	128/824.2	GPRS 3TS	0.597	0.295	0.01	27.66	29.00	0.813	Battery1#	/
Top Side	251/848.8	GPRS 3TS	0.572	0.280	-0.14	27.64	29.00	0.782	Battery1#	/
Front Side	190/836.6	GPRS 3TS	0.613	0.343	0.10	27.65	29.00	0.836	With SIM2	/
Front Side	190/836.6	GPRS 3TS	0.592	0.331	0.02	27.65	29.00	0.808	Battery 2#	/
Front Side	190/836.6	GPRS 3TS	0.563	0.316	-0.04	27.65	29.00	0.768	Battery 3#	/

Table 57: Hotspot SAR test results of GSM850

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

7.2.2 SAR measurement Result of GSM1900 (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)	Accessory Information	SAR Plot
			1-g	10-g						
Left touch	661/1880	GSM	0.188	0.116	0.03	25.43	27.00	0.270	Battery1#	/
Left tilt	661/1880	GSM	0.163	0.094	-0.03	25.43	27.00	0.234	Battery1#	/
Right touch	661/1880	GSM	0.624	0.344	-0.01	25.43	27.00	0.896	Battery1#	/
Right touch	512/1850.2	GSM	**0.716**	0.392	-0.17	25.52	27.00	**1.007**	Battery1#	Yes
Right touch	810/1909.8	GSM	0.613	0.337	0.02	25.47	27.00	0.872	Battery1#	/
Right tilt	661/1880	GSM	0.473	0.240	0.01	25.43	27.00	0.679	Battery1#	/
Right touch	512/1850.2	GSM	0.671	0.368	0.05	25.52	27.00	0.943	With SIM2	/
Right touch	512/1850.2	GSM	0.626	0.349	-0.01	25.52	27.00	0.880	Battery 2#	/
Right touch	512/1850.2	GSM	0.672	0.371	0.02	25.52	27.00	0.945	Battery 3#	/

Table 58: 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)	Accessory Information	SAR Plot
			1-g	10-g						
Front Side	661/1880	GSM	0.097	0.055	0.07	28.74	30.50	0.145	Battery1#	/
Back Side	661/1880	GSM	0.102	0.067	-0.01	28.74	30.50	0.153	Battery1#	/
Back Side	661/1880	GSM	0.098	0.064	-0.06	28.74	30.50	0.147	SIM2	/
Back Side	661/1880	GSM	**0.111**	0.072	0.01	28.74	30.50	**0.166**	Battery 2#	Yes
Back Side	661/1880	GSM	0.096	0.055	0.02	28.74	30.50	0.144	Battery 3#	/

Table 59: 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)	Accessory Information	SAR Plot
			1-g	10-g						
Front Side	661/1880	GPRS 3TS	0.219	0.118	0.10	24.52	26.50	0.345	Battery1#	/
Back Side	661/1880	GPRS 3TS	0.204	0.113	-0.05	24.52	26.50	0.322	Battery1#	/
Left Side	661/1880	GPRS 3TS	0.273	0.161	0.01	24.52	26.50	0.431	Battery1#	/
Right Side	661/1880	GPRS 3TS	0.016	0.009	0.14	24.52	26.50	0.026	Battery1#	/
Top Side	661/1880	GPRS 3TS	0.214	0.106	0.09	24.52	26.50	0.338	Battery1#	/
Left Side	661/1880	GPRS 3TS	0.275	0.162	0.08	24.52	26.50	0.434	With SIM2	/
Left Side	661/1880	GPRS 3TS	0.268	0.158	0.10	24.52	26.50	0.423	Battery 2#	/
Left Side	661/1880	GPRS 3TS	**0.282**	0.166	0.09	24.52	26.50	**0.445**	Battery 3#	Yes

Table 60: Hotspot SAR test results of GSM1900

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

7.2.3 SAR measurement Result of UMTS Band II(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)	Accessory Information	SAR Plot
			1-g	10-g						
Left touch	9400/1880	RMC	0.240	0.148	-0.12	16.32	17.50	0.315	Battery1#	/
Left tilt	9400/1880	RMC	0.229	0.136	0.01	16.32	17.50	0.300	Battery1#	/
Right touch	9400/1880	RMC	0.728	0.401	-0.01	16.32	17.50	0.955	Battery1#	/
Right touch	9262/1852.4	RMC	0.735	0.407	0.03	16.29	17.50	0.971	Battery1#	/
Right touch	9538/1907.6	RMC	0.714	0.391	0.02	16.27	17.50	0.948	Battery1#	/
Right tilt	9400/1880	RMC	0.626	0.339	0.06	16.32	17.50	0.821	Battery1#	/
Right touch	9262/1852.4	RMC	0.706	0.386	-0.13	16.29	17.50	0.933	With SIM2	/
Right touch	9262/1852.4	RMC	0.692	0.379	0.02	16.29	17.50	0.914	Battery 2#	/
Right touch	9262/1852.4	RMC	**0.815**	0.440	0.03	16.29	17.50	**1.077**	Battery 3#	Yes
Right touch-repeated	9262/1852.4	RMC	0.806	0.436	0.00	16.29	17.50	1.065	Battery 3#	/

Table 61: 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)	Accessory Information	SAR Plot
			1-g	10-g						
Front Side	9400/1880	RMC	0.231	0.150	0.04	22.63	24.00	0.317	Battery1#	/
Back Side	9400/1880	RMC	0.242	0.158	-0.07	22.63	24.00	0.332	Battery1#	/
Back Side	9400/1880	RMC	0.239	0.155	-0.04	22.63	24.00	0.328	With SIM2	/
Back Side	9400/1880	RMC	**0.248**	0.161	0.01	22.63	24.00	**0.340**	Battery 2#	Yes
Back Side	9400/1880	RMC	0.240	0.156	-0.03	22.63	24.00	0.329	Battery 3#	/

Table 62: 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)	Accessory Information	SAR Plot
			1-g	10-g						
Front Side	9400/1880	RMC	0.413	0.228	0.08	22.63	24.00	0.566	Battery1#	/
Back Side	9400/1880	RMC	0.441	0.273	-0.10	22.63	24.00	0.605	Battery1#	/
Left Side	9400/1880	RMC	0.642	0.378	-0.05	22.63	24.00	0.880	Battery1#	/
Left Side	9262/1852.4	RMC	**0.676**	0.399	-0.02	22.71	24.00	**0.910**	Battery1#	Yes
Left Side	9538/1907.6	RMC	0.599	0.339	-0.04	22.62	24.00	0.823	Battery1#	/
Right Side	9400/1880	RMC	0.044	0.024	-0.17	22.63	24.00	0.060	Battery1#	/
Top Side	9400/1880	RMC	0.382	0.187	0.00	22.63	24.00	0.524	Battery1#	/
Left Side	9262/1852.4	RMC	0.617	0.362	-0.09	22.71	24.00	0.830	With SIM2	/
Left Side	9262/1852.4	RMC	0.620	0.364	0.01	22.71	24.00	0.834	Battery 2#	/
Left Side	9262/1852.4	RMC	0.603	0.354	0.00	22.71	24.00	0.812	Battery 3#	/

Table 63: Hotspot SAR test results of UMTS Band II

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

7.2.4 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)	Accessory Information	SAR Plot
			1-g	10-g						
Left touch	1413/1732.6	RMC	0.199	0.123	0.01	17.04	18.50	0.279	Battery1#	/
Left tilt	1413/1732.6	RMC	0.184	0.110	0.02	17.04	18.50	0.258	Battery1#	/
Right touch	1413/1732.6	RMC	0.705	0.385	0.02	17.04	18.50	0.987	Battery1#	/
Right touch	1312/1712.4	RMC	0.615	0.337	0.03	16.98	18.50	0.873	Battery1#	/
Right touch	1513/1752.6	RMC	**0.754**	0.412	0.02	17.08	18.50	**1.046**	Battery1#	Yes
Right tilt	1413/1732.6	RMC	0.525	0.253	0.02	17.04	18.50	0.735	Battery1#	/
Right touch	1513/1752.6	RMC	0.667	0.373	-0.04	17.08	18.50	0.925	With SIM2	/
Right touch	1513/1752.6	RMC	0.702	0.391	0.00	17.08	18.50	0.974	Battery 2#	/
Right touch	1513/1752.6	RMC	0.664	0.382	0.06	17.08	18.50	0.921	Battery 3#	/

Table 64: 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)	Accessory Information	SAR Plot
			1-g	10-g						
Front Side	1413/1732.6	RMC	0.147	0.097	0.05	22.43	24.00	0.211	Battery1#	/
Back Side	1413/1732.6	RMC	0.159	0.105	0.14	22.43	24.00	0.228	Battery1#	/
Back Side	1413/1732.6	RMC	0.157	0.104	0.05	22.43	24.00	0.225	With SIM2	/
Back Side	1413/1732.6	RMC	**0.164**	0.108	-0.08	22.43	24.00	**0.235**	Battery 2#	Yes
Back Side	1413/1732.6	RMC	0.158	0.104	-0.10	22.43	24.00	0.227	Battery 3#	/

Table 65: 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)	Accessory Information	SAR Plot
			1-g	10-g						
Front Side	1413/1732.6	RMC	0.319	0.170	-0.08	22.43	24.00	0.458	Battery1#	/
Back Side	1413/1732.6	RMC	0.291	0.183	-0.05	22.43	24.00	0.418	Battery1#	/
Left Side	1413/1732.6	RMC	0.329	0.197	-0.03	22.43	24.00	0.472	Battery1#	/
Right Side	1413/1732.6	RMC	0.024	0.014	-0.11	22.43	24.00	0.034	Battery1#	/
Top Side	1413/1732.6	RMC	**0.390**	0.193	0.12	22.43	24.00	**0.560**	Battery1#	Yes
Top Side	1413/1732.6	RMC	0.372	0.186	0.12	22.43	24.00	0.534	With SIM2	/
Top Side	1413/1732.6	RMC	0.355	0.179	0.00	22.43	24.00	0.510	Battery 2#	/
Top Side	1413/1732.6	RMC	0.343	0.174	0.03	22.43	24.00	0.492	Battery 3#	/

Table 66: Hotspot SAR test results of UMTS Band IV

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

7.2.5 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)	Accessory Information	SAR Plot
			1-g	10-g						
Left touch	4182/836.4	RMC	0.715	0.387	-0.03	20.23	21.50	0.958	Battery1#	/
Left touch	4132/826.4	RMC	0.705	0.381	0.00	20.22	21.50	0.947	Battery1#	/
Left touch	4233/846.6	RMC	0.670	0.363	0.01	20.26	21.50	0.891	Battery1#	/
Left tilt	4182/836.4	RMC	0.671	0.337	-0.01	20.23	21.50	0.899	Battery1#	/
Left tilt	4132/826.4	RMC	0.666	0.334	-0.01	20.22	21.50	0.894	Battery1#	/
Left tilt	4233/846.6	RMC	0.676	0.339	-0.11	20.26	21.50	0.899	Battery1#	/
Right touch	4182/836.4	RMC	0.872	0.476	-0.11	20.23	21.50	1.168	Battery1#	/
Right touch	4132/826.4	RMC	**0.928**	0.505	0.01	20.22	21.50	**1.246**	Battery1#	Yes
Right touch-repeated	4132/826.4	RMC	0.878	0.486	-0.01	20.22	21.50	1.179	Battery1#	/
Right touch	4233/846.6	RMC	0.783	0.428	-0.14	20.26	21.50	1.042	Battery1#	/
Right tilt	4182/836.4	RMC	0.826	0.390	-0.02	20.23	21.50	1.107	Battery1#	/
Right tilt	4132/826.4	RMC	0.839	0.397	0.00	20.22	21.50	1.127	Battery1#	/
Right tilt	4233/846.6	RMC	0.754	0.357	0.01	20.26	21.50	1.003	Battery1#	/
Right touch	4132/826.4	RMC	0.874	0.484	-0.05	20.22	21.50	1.174	With SIM2	/
Right touch	4132/826.4	RMC	0.878	0.484	0.00	20.22	21.50	1.179	Battery 2#	/
Right touch	4132/826.4	RMC	0.897	0.494	-0.01	20.22	21.50	1.204	Battery 3#	/

Table 67: Head SAR test results of UMTS Band V

Note: According to 201610 FCC TCB workshop RF exposure slides, when the highest reported SAR of an antenna is > 1.2 W/kg, holder perturbation verification is required for each antenna, using the highest SAR configuration among all applicable frequency bands.

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)	Accessory Information	SAR Plot
			1-g	10-g						
Front Side	4182/836.4	RMC	0.299	0.179	0.03	23.20	24.50	0.403	Battery1#	/
Back Side	4182/836.4	RMC	0.278	0.165	-0.18	23.20	24.50	0.375	Battery1#	/
Front Side	4182/836.4	RMC	0.295	0.177	0.01	23.20	24.50	0.398	With SIM2	/
Front Side	4182/836.4	RMC	0.305	0.182	0.01	23.20	24.50	0.411	Battery 2#	/
Front Side	4182/836.4	RMC	**0.312**	0.186	0.03	23.20	24.50	**0.421**	Battery 3#	Yes

Table 68: 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)	Accessory Information	SAR Plot
			1-g	10-g						
Front Side	4182/836.4	RMC	0.669	0.373	-0.15	23.20	24.50	0.902	Battery1#	/
Front Side	4132/826.4	RMC	0.587	0.349	0.08	23.15	24.50	0.801	Battery1#	/
Front Side	4233/846.6	RMC	**0.682**	0.380	0.04	23.18	24.50	**0.924**	Battery1#	Yes
Back Side	4182/836.4	RMC	0.570	0.347	-0.12	23.20	24.50	0.769	Battery1#	/
Left Side	4182/836.4	RMC	0.506	0.344	-0.05	23.20	24.50	0.683	Battery1#	/
Right Side	4182/836.4	RMC	0.138	0.093	-0.08	23.20	24.50	0.186	Battery1#	/
Top Side	4182/836.4	RMC	0.627	0.305	-0.13	23.20	24.50	0.846	Battery1#	/
Top Side	4132/826.4	RMC	0.597	0.290	-0.10	23.15	24.50	0.815	Battery1#	/
Top Side	4233/846.6	RMC	0.639	0.310	-0.10	23.18	24.50	0.866	Battery1#	/
Front Side	4233/846.6	RMC	0.654	0.365	0.03	23.18	24.50	0.886	With SIM2	/
Front Side	4233/846.6	RMC	0.649	0.362	0.04	23.18	24.50	0.880	Battery 2#	/
Front Side	4233/846.6	RMC	0.640	0.359	0.03	23.18	24.50	0.867	Battery 3#	/

Table 69: Hotspot SAR test results of UMTS Band V

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

7.2.6 SAR measurement Result of LTE Band 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)	Accessory Information	SAR Plot
			1-g	10-g						
Left touch	18900/1880	20M QPSK 1RB#50	0.270	0.168	0.02	17.84	18.50	0.314	Battery1#	/
Left tilt	18900/1880	20M QPSK 1RB#50	0.204	0.122	-0.02	17.84	18.50	0.237	Battery1#	/
Right touch	18900/1880	20M QPSK 1RB#50	0.930	0.510	-0.06	17.84	18.50	1.083	Battery1#	/
Right touch	18700/1860	20M QPSK 1RB#99	0.785	0.431	0.04	17.61	18.50	0.964	Battery1#	/
Right touch	19100/1900	20M QPSK 1RB#50	0.987	0.540	0.02	17.71	18.50	1.184	Battery1#	/
Right touch-repeated	19100/1900	20M QPSK 1RB#50	**1.020**	0.556	-0.02	17.71	18.50	**1.223**	Battery1#	Yes
Right tilt	18900/1880	20M QPSK 1RB#50	0.652	0.330	0.02	17.84	18.50	0.759	Battery1#	/
Left touch	18900/1880	20M QPSK 50%RB#0	0.201	0.124	0.03	17.54	18.50	0.251	Battery1#	/
Left tilt	18900/1880	20M QPSK 50%RB#0	0.164	0.098	0.03	17.54	18.50	0.205	Battery1#	/
Right touch	18900/1880	20M QPSK 50%RB#0	0.696	0.383	0.01	17.54	18.50	0.868	Battery1#	/
Right touch	18700/1860	20M QPSK 50%RB#25	0.685	0.377	0.01	17.49	18.50	0.864	Battery1#	/
Right touch	19100/1900	20M QPSK 50%RB#25	0.706	0.389	0.11	17.41	18.50	0.907	Battery1#	/
Right tilt	18900/1880	20M QPSK 50%RB#0	0.520	0.290	0.03	17.54	18.50	0.649	Battery1#	/
Right touch	18900/1880	20M QPSK 100%RB#0	0.817	0.446	0.00	17.38	18.50	1.057	Battery1#	/
Right touch	19100/1900	20M QPSK 1RB#50	0.905	0.502	-0.05	17.71	18.50	1.086	With SIM2	/
Right touch	19100/1900	20M QPSK 1RB#50	0.820	0.452	0.01	17.71	18.50	0.984	Battery 2#	/
Right touch	19100/1900	20M QPSK 1RB#50	0.848	0.454	0.00	17.71	18.50	1.017	Battery 3#	/

Table 70: 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)	Accessory Information	SAR Plot
			1-g	10-g						
Front Side	18900/1880	20M QPSK 1RB#0	0.169	0.109	-0.15	22.53	23.50	0.211	Battery1#	/
Back Side	18900/1880	20M QPSK 1RB#0	0.162	0.105	0.05	22.53	23.50	0.203	Battery1#	/
Front Side	18900/1880	20M QPSK 50%RB#0	0.124	0.076	-0.11	21.23	22.50	0.166	Battery1#	/
Back Side	18900/1880	20M QPSK 50%RB#0	0.120	0.078	0.10	21.23	22.50	0.161	Battery1#	/
Front Side	18900/1880	20M QPSK 1RB#0	0.165	0.102	0.03	22.53	23.50	0.206	With SIM2	/
Front Side	18900/1880	20M QPSK 1RB#0	**0.171**	0.111	-0.12	22.53	23.50	**0.214**	Battery 2#	Yes
Front Side	18900/1880	20M QPSK 1RB#0	0.166	0.107	0.12	22.53	23.50	0.208	Battery 3#	/

Table 71: 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)	Accessory Information	SAR Plot
			1-g	10-g						
Front Side	18900/1880	20M QPSK 1RB#0	0.278	0.177	0.07	22.53	23.50	0.348	Battery1#	/
Back Side	18900/1880	20M QPSK 1RB#0	0.282	0.180	-0.01	22.53	23.50	0.353	Battery1#	/
Left Side	18900/1880	20M QPSK 1RB#0	0.465	0.273	-0.11	22.53	23.50	0.581	Battery1#	/
Right Side	18900/1880	20M QPSK 1RB#0	0.033	0.018	0.19	22.53	23.50	0.042	Battery1#	/
Top Side	18900/1880	20M QPSK 1RB#0	0.289	0.140	0.04	22.53	23.50	0.361	Battery1#	/
Front Side	18900/1880	20M QPSK 50%RB#0	0.224	0.125	-0.03	21.23	22.50	0.300	Battery1#	/
Back Side	18900/1880	20M QPSK 50%RB#0	0.211	0.129	0.11	21.23	22.50	0.283	Battery1#	/
Left Side	18900/1880	20M QPSK 50%RB#0	0.349	0.193	0.02	21.23	22.50	0.468	Battery1#	/
Right Side	18900/1880	20M QPSK 50%RB#0	0.029	0.016	-0.14	21.23	22.50	0.038	Battery1#	/
Top Side	18900/1880	20M QPSK 50%RB#0	0.208	0.099	0.03	21.23	22.50	0.279	Battery1#	/
Left Side	18900/1880	20M QPSK 1RB#0	0.451	0.264	-0.18	22.53	23.50	0.564	With SIM2	/
Left Side	18900/1880	20M QPSK 1RB#0	**0.480**	0.280	-0.09	22.53	23.50	**0.600**	Battery 2#	Yes
Left Side	18900/1880	20M QPSK 1RB#0	0.470	0.275	-0.08	22.53	23.50	0.588	Battery 3#	/

Table 72: Hotspot SAR test results of LTE Band II

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

7.2.7 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)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR_{1-g} (W/kg)	Accessory Information	SAR Plot
			1-g	10-g						
Left touch	20050/1720	20M QPSK 1RB#50	0.320	0.201	-0.01	19.11	19.30	0.334	Battery1#	/
Left tilt	20050/1720	20M QPSK 1RB#50	0.310	0.171	0.02	19.11	19.30	0.324	Battery1#	/
Right touch	20050/1720	20M QPSK 1RB#50	0.927	0.505	0.01	19.11	19.30	0.968	Battery1#	/
Right touch	20175/1732.5	20M QPSK 1RB#0	0.731	0.397	0.08	19.05	19.30	0.774	Battery1#	/
Right touch	20300/1745	20M QPSK 1RB#99	**1.030**	0.561	-0.03	18.53	19.30	**1.230**	Battery1#	Yes
Right touch-repeated	20300/1745	20M QPSK 1RB#99	0.956	0.529	0.02	18.53	19.30	1.141	Battery1#	/
Right tilt	20050/1720	20M QPSK 1RB#50	0.831	0.410	0.06	19.11	19.30	0.868	Battery1#	/
Right tilt	20175/1732.5	20M QPSK 1RB#0	0.677	0.375	0.06	19.05	19.30	0.717	Battery1#	/
Right tilt	20300/1745	20M QPSK 1RB#99	0.906	0.449	-0.02	18.53	19.30	1.082	Battery1#	/
Left touch	20050/1720	20M QPSK 50%RB#50	0.242	0.149	0.09	18.89	19.00	0.248	Battery1#	/
Left tilt	20050/1720	20M QPSK 50%RB#50	0.216	0.136	0.06	18.89	19.00	0.222	Battery1#	/
Right touch	20050/1720	20M QPSK 50%RB#50	0.732	0.398	-0.01	18.89	19.00	0.751	Battery1#	/
Right tilt	20050/1720	20M QPSK 50%RB#50	0.609	0.300	0.01	18.89	19.00	0.625	Battery1#	/
Right touch	20050/1720	20M QPSK 100%RB#0	0.777	0.434	0.02	18.61	19.00	0.850	Battery1#	/
Right tilt	20050/1720	20M QPSK 100%RB#0	0.674	0.374	0.09	18.61	19.00	0.737	Battery1#	/
Right touch	20300/1745	20M QPSK 1RB#99	1.000	0.547	0.06	18.53	19.30	1.194	With SIM2	/
Right touch	20300/1745	20M QPSK 1RB#99	0.957	0.523	0.00	18.53	19.30	1.143	Battery 2#	/
Right touch	20300/1745	20M QPSK 1RB#99	0.894	0.495	0.01	18.53	19.30	1.067	Battery 3#	/

Table 73: 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)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR_{1-g} (W/kg)	Accessory Information	SAR Plot
			1-g	10-g						
Front Side	20050/1720	20M QPSK 1RB#50	0.148	0.097	0.08	22.81	23.00	0.149	Battery1#	/
Back Side	20050/1720	20M QPSK 1RB#50	0.158	0.104	0.14	22.81	23.00	0.159	Battery1#	/
Front Side	20050/1720	20M QPSK 50%RB#50	0.103	0.067	0.16	22.22	22.50	0.111	Battery1#	/
Back Side	20050/1720	20M QPSK 50%RB#50	0.109	0.068	0.06	22.22	22.50	0.117	Battery1#	/
Back Side	20050/1720	20M QPSK 1RB#50	0.153	0.101	0.11	22.81	23.00	0.154	With SIM2	/
Back Side	20050/1720	20M QPSK 1RB#50	0.155	0.102	0.07	22.81	23.00	0.156	Battery 2#	/
Back Side	20050/1720	20M QPSK 1RB#50	**0.165**	0.109	0.08	22.81	23.00	**0.166**	Battery 3#	Yes

Table 74: 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)	Accessory Information	SAR Plot
			1-g	10-g						
Front Side	20050/1720	20M QPSK 1RB#50	0.285	0.157	0.01	22.81	23.00	0.298	Battery1#	/
Back Side	20050/1720	20M QPSK 1RB#50	0.301	0.190	-0.11	22.81	23.00	0.314	Battery1#	/
Left Side	20050/1720	20M QPSK 1RB#50	0.330	0.198	-0.02	22.81	23.00	0.345	Battery1#	/
Right Side	20050/1720	20M QPSK 1RB#50	0.021	0.012	-0.15	22.81	23.00	0.022	Battery1#	/
Top Side	20050/1720	20M QPSK 1RB#50	**0.359**	0.182	-0.06	22.81	23.00	**0.375**	Battery1#	Yes
Front Side	20050/1720	20M QPSK 50%RB#50	0.214	0.127	0.10	22.22	22.50	0.228	Battery1#	/
Back Side	20050/1720	20M QPSK 50%RB#50	0.215	0.135	-0.06	22.22	22.50	0.229	Battery1#	/
Left Side	20050/1720	20M QPSK 50%RB#50	0.241	0.140	0.07	22.22	22.50	0.257	Battery1#	/
Right Side	20050/1720	20M QPSK 50%RB#50	0.015	0.008	-0.05	22.22	22.50	0.016	Battery1#	/
Top Side	20050/1720	20M QPSK 50%RB#50	0.244	0.124	-0.10	22.22	22.50	0.260	Battery1#	/
Top Side	20050/1720	20M QPSK 1RB#50	0.351	0.178	0.11	22.81	23.00	0.367	With SIM2	/
Top Side	20050/1720	20M QPSK 1RB#50	0.351	0.177	-0.11	22.81	23.00	0.367	Battery 2#	/
Top Side	20050/1720	20M QPSK 1RB#50	0.338	0.170	-0.18	22.81	23.00	0.353	Battery 3#	/

Table 75: Hotspot SAR test results of LTE Band IV

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

7.2.8 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)	Accessory Information	SAR Plot
			1-g	10-g						
Left touch	20525/836.5	10M QPSK 1RB#25	0.541	0.300	0.10	19.46	20.00	0.613	Battery1#	/
Left tilt	20525/836.5	10M QPSK 1RB#25	0.543	0.279	-0.01	19.46	20.00	0.615	Battery1#	/
Right touch	20525/836.5	10M QPSK 1RB#25	**0.844**	0.442	-0.14	19.46	20.00	**0.956**	Battery1#	Yes
Right touch-Repeated	20525/836.5	10M QPSK 1RB#25	0.834	0.438	0.02	19.46	20.00	0.944	Battery1#	/
Right touch	20450/829	10M QPSK 1RB#25	0.594	0.311	-0.01	18.98	20.00	0.751	Battery1#	/
Right touch	20600/844	10M QPSK 1RB#25	0.521	0.275	0.01	18.87	20.00	0.676	Battery1#	/
Right tilt	20525/836.5	10M QPSK 1RB#25	0.690	0.327	0.01	19.46	20.00	0.781	Battery1#	/
Left touch	20525/836.5	10M QPSK 50%RB#13	0.458	0.253	-0.01	19.25	20.00	0.544	Battery1#	/
Left tilt	20525/836.5	10M QPSK 50%RB#13	0.466	0.238	0.09	19.25	20.00	0.554	Battery1#	/
Right touch	20525/836.5	10M QPSK 50%RB#13	0.697	0.365	0.03	19.25	20.00	0.828	Battery1#	/
Right tilt	20525/836.5	10M QPSK 50%RB#13	0.593	0.280	0.05	19.25	20.00	0.705	Battery1#	/
Right touch	20525/836.5	10M QPSK 100%RB#0	0.628	0.330	0.02	19.04	20.00	0.783	Battery1#	/
Right touch	20525/836.5	10M QPSK 1RB#25	0.827	0.432	-0.01	19.46	20.00	0.936	With SIM2	/
Right touch	20525/836.5	10M QPSK 1RB#25	0.794	0.420	0.03	19.46	20.00	0.899	Battery 2#	/
Right touch	20525/836.5	10M QPSK 1RB#25	0.783	0.416	0.04	19.46	20.00	0.887	Battery 3#	/

Table 76: 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)	Accessory Information	SAR Plot
			1-g	10-g						
Front Side	20525/836.5	10M QPSK 1RB#25	0.234	0.140	-0.01	22.37	23.00	0.271	Battery1#	/
Back Side	20525/836.5	10M QPSK 1RB#25	0.229	0.174	-0.04	22.37	23.00	0.265	Battery1#	/
Front Side	20525/836.5	10M QPSK 50%RB#13	0.181	0.124	0.03	21.17	22.00	0.219	Battery1#	/
Back Side	20525/836.5	10M QPSK 50%RB#13	0.183	0.129	-0.02	21.17	22.00	0.222	Battery1#	/
Front Side	20525/836.5	10M QPSK 1RB#25	0.237	0.142	-0.05	22.37	23.00	0.274	With SIM2	/
Front Side	20525/836.5	10M QPSK 1RB#25	0.233	0.140	0.02	22.37	23.00	0.269	Battery 2#	/
Front Side	20525/836.5	10M QPSK 1RB#25	**0.258**	0.154	0.02	22.37	23.00	**0.298**	Battery 3#	Yes

Table 77: 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)	Accessory Information	SAR Plot
			1-g	10-g						
Front Side	20525/836.5	10M QPSK 1RB#25	0.522	0.292	0.00	22.37	23.00	0.603	Battery1#	/
Back Side	20525/836.5	10M QPSK 1RB#25	0.454	0.254	-0.04	22.37	23.00	0.525	Battery1#	/
Left Side	20525/836.5	10M QPSK 1RB#25	0.404	0.275	-0.01	22.37	23.00	0.467	Battery1#	/
Right Side	20525/836.5	10M QPSK 1RB#25	0.113	0.076	0.02	22.37	23.00	0.131	Battery1#	/
Top Side	20525/836.5	10M QPSK 1RB#25	0.500	0.242	0.11	22.37	23.00	0.578	Battery1#	/
Front Side	20525/836.5	10M QPSK 50%RB#13	0.421	0.261	0.05	21.17	22.00	0.510	Battery1#	/
Back Side	20525/836.5	10M QPSK 50%RB#13	0.367	0.224	0.01	21.17	22.00	0.444	Battery1#	/
Left Side	20525/836.5	10M QPSK 50%RB#13	0.325	0.218	0.04	21.17	22.00	0.393	Battery1#	/
Right Side	20525/836.5	10M QPSK 50%RB#13	0.092	0.062	0.00	21.17	22.00	0.111	Battery1#	/
Top Side	20525/836.5	10M QPSK 50%RB#13	0.370	0.208	0.11	21.17	22.00	0.448	Battery1#	/
Front Side	20525/836.5	10M QPSK 1RB#25	0.520	0.291	-0.03	22.37	23.00	0.601	With SIM2	/
Front Side	20525/836.5	10M QPSK 1RB#25	0.555	0.310	0.00	22.37	23.00	0.642	Battery 2#	/
Front Side	20525/836.5	10M QPSK 1RB#25	**0.562**	0.313	0.03	22.37	23.00	**0.650**	Battery 3#	Yes

Table 78: Hotspot SAR test results of LTE Band V

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

7.2.9 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)	Accessory Information	SAR Plot
			1-g	10-g						
Left touch	21350/2560	20M QPSK 1RB#50	0.237	0.129	0.04	16.36	16.60	0.250	Battery1#	/
Left tilt	21350/2560	20M QPSK 1RB#50	0.249	0.133	0.03	16.36	16.60	0.263	Battery1#	/
Right touch	21350/2560	20M QPSK 1RB#50	0.847	0.427	0.01	16.36	16.60	0.895	Battery1#	/
Right touch	20850/2510	20M QPSK 1RB#99	0.800	0.412	0.06	15.73	16.60	0.977	Battery1#	/
Right touch	21100/2535	20M QPSK 1RB#0	0.764	0.392	0.15	16.05	16.60	0.867	Battery1#	/
Right tilt	21350/2560	20M QPSK 1RB#50	**0.851**	0.372	-0.02	16.36	16.60	0.899	Battery1#	Yes
Right tilt-repeated	21350/2560	20M QPSK 1RB#50	0.826	0.359	0.05	16.36	16.60	0.873	Battery1#	/
Right tilt	20850/2510	20M QPSK 1RB#99	0.813	0.358	0.06	15.73	16.60	**0.993**	Battery1#	/
Right tilt	21100/2535	20M QPSK 1RB#0	0.760	0.335	-0.01	16.05	16.50	0.843	Battery1#	/
Left touch	21350/2560	20M QPSK 50%RB#25	0.199	0.108	0.11	16.50	16.60	0.204	Battery1#	/
Left tilt	21350/2560	20M QPSK 50%RB#25	0.213	0.114	0.01	16.50	16.60	0.218	Battery1#	/
Right touch	21350/2560	20M QPSK 50%RB#25	0.728	0.365	0.05	16.50	16.60	0.745	Battery1#	/
Right tilt	21350/2560	20M QPSK 50%RB#25	0.780	0.341	0.11	16.50	16.60	0.798	Battery1#	/
Right touch	21350/2560	20M QPSK 100%RB#0	0.727	0.365	0.16	16.03	16.60	0.829	Battery1#	/
Right tilt	21350/2560	20M QPSK 100%RB#0	0.768	0.338	-0.10	16.03	16.60	0.876	Battery1#	/
Right tilt	20850/2510	20M QPSK 1RB#99	0.798	0.354	0.10	15.73	16.60	0.975	With SIM2	/
Right tilt	20850/2510	20M QPSK 1RB#99	0.783	0.349	0.06	15.73	16.60	0.957	Battery 2#	/
Right tilt	20850/2510	20M QPSK 1RB#99	0.806	0.353	0.11	15.73	16.60	0.985	Battery 3#	/

Table 79: 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)	Accessory Information	SAR Plot
			1-g	10-g						
Front Side	21350/2560	20M QPSK 1RB#50	0.232	0.129	0.10	21.67	21.80	0.239	Battery1#	/
Back Side	21350/2560	20M QPSK 1RB#50	0.242	0.134	-0.07	21.67	21.80	0.249	Battery1#	/
Front Side	21350/2560	20M QPSK 50%RB#0	**0.280**	0.155	0.04	21.78	21.80	**0.281**	Battery1#	Yes
Back Side	21350/2560	20M QPSK 50%RB#0	0.243	0.134	-0.15	21.78	21.80	0.244	Battery1#	/
Front Side	21350/2560	20M QPSK 50%RB#0	0.265	0.148	0.07	21.78	21.80	0.266	SIM2	/
Front Side	21350/2560	20M QPSK 50%RB#0	0.267	0.148	0.12	21.78	21.80	0.268	Battery 2#	/
Front Side	21350/2560	20M QPSK 50%RB#0	0.265	0.147	0.19	21.78	21.80	0.266	Battery 3#	/

Table 80: 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)	Accessory Information	SAR Plot
			1-g	10-g						
Front Side	21350/2560	20M QPSK 1RB#50	0.467	0.254	0.07	21.67	21.80	0.481	Battery1#	/
Back Side	21350/2560	20M QPSK 1RB#50	0.475	0.258	-0.07	21.67	21.80	0.489	Battery1#	/
Left Side	21100/2535	20M QPSK 1RB#0	0.760	0.384	-0.11	21.44	21.80	0.826	Battery1#	/
Left Side	21350/2560	20M QPSK 1RB#50	**0.798**	0.405	-0.16	21.67	21.80	0.822	Battery1#	Yes
Left Side	20850/2510	20M QPSK 1RB#50	0.782	0.394	-0.16	21.05	21.80	0.929	Battery1#	/
Right Side	21350/2560	20M QPSK 1RB#50	0.016	0.010	-0.13	21.67	21.80	0.017	Battery1#	/
Top Side	21350/2560	20M QPSK 1RB#50	0.448	0.191	-0.02	21.67	21.80	0.462	Battery1#	/
Front Side	21350/2560	20M QPSK 50%RB#0	0.474	0.260	0.10	21.78	21.80	0.476	Battery1#	/
Back Side	21350/2560	20M QPSK 50%RB#0	0.473	0.256	-0.11	21.78	21.80	0.475	Battery1#	/
Left Side	21350/2560	20M QPSK 50%RB#0	0.745	0.378	-0.07	21.78	21.80	0.748	Battery1#	/
Left Side	20850/2510	20M QPSK 50%RB#0	0.703	0.355	-0.05	20.66	21.80	0.914	Battery1#	/
Left Side	21100/2535	20M QPSK 50%RB#0	0.689	0.348	-0.10	21.07	21.80	0.815	Battery1#	/
Right Side	21350/2560	20M QPSK 50%RB#0	0.020	0.010	-0.07	21.78	21.80	0.020	Battery1#	/
Top Side	21350/2560	20M QPSK 50%RB#0	0.362	0.154	-0.02	21.78	21.80	0.364	Battery1#	/
Left Side	21350/2560	20M QPSK 100%RB#0	0.689	0.349	0.00	20.90	21.80	0.848	Battery1#	/
Left Side	20850/2510	20M QPSK 1RB#50	0.786	0.400	0.07	21.05	21.80	0.934	SIM2	/
Left Side	20850/2510	20M QPSK 1RB#50	0.790	0.401	-0.01	21.05	21.80	**0.939**	Battery 2#	/
Left Side	20850/2510	20M QPSK 1RB#50	0.758	0.383	0.06	21.05	21.80	0.901	Battery 3#	/

Table 81: Hotspot SAR test results of LTE Band VII

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

7.2.1 SAR measurement Result of LTE Band XVII(Second Antenna)

SAR for LTE Band 17 (Frequency range:704-716 MHz) is covered by LTE Band 12 (Frequency range:699-716 MHz) due to similar frequency range,same maximum tune up limit and same channel bandwidth.

7.2.2 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)	Accessory Information	SAR Plot
			1-g	10-g						
Left touch	23130/711	10M QPSK 1RB#25	0.395	0.219	0.11	19.14	19.90	0.471	Battery1#	/
Left tilt	23130/711	10M QPSK 1RB#25	0.441	0.256	0.15	19.14	19.90	0.525	Battery1#	/
Right touch	23130/711	10M QPSK 1RB#25	0.673	0.345	0.13	19.14	19.90	0.802	Battery1#	/
Right touch	23060/704	10M QPSK 1RB#25	0.564	0.286	-0.01	18.89	19.90	0.712	Battery1#	/
Right touch	23095/707.5	10M QPSK 1RB#25	0.692	0.353	-0.02	19.13	19.90	0.826	Battery1#	/
Right tilt	23130/711	10M QPSK 1RB#25	0.623	0.287	0.00	19.14	19.90	0.742	Battery1#	/
Left touch	23130/711	10M QPSK 50%RB#13	0.424	0.254	-0.16	19.24	19.90	0.494	Battery1#	/
Left tilt	23130/711	10M QPSK 50%RB#13	0.388	0.225	-0.16	19.24	19.90	0.452	Battery1#	/
Right touch	23130/711	10M QPSK 50%RB#13	0.650	0.400	-0.12	19.24	19.90	0.757	Battery1#	/
Right tilt	23130/711	10M QPSK 50%RB#13	0.654	0.378	-0.08	19.24	19.90	0.761	Battery1#	/
Right touch	23130/711	10M QPSK 100%RB#0	0.605	0.373	-0.08	19.13	19.90	0.722	Battery1#	/
Right tilt	23130/711	10M QPSK 100%RB#0	0.481	0.284	-0.19	19.13	19.90	0.574	Battery1#	/
Right touch	23095/707.5	10M QPSK 1RB#25	0.765	0.380	-0.12	19.13	19.90	0.913	With SIM2	/
Right touch	23095/707.5	10M QPSK 1RB#25	0.770	0.384	-0.09	19.13	19.90	0.919	Battery 2#	/
Right touch	23095/707.5	10M QPSK 1RB#25	**0.790**	0.393	0.00	19.13	19.90	**0.943**	Battery 3#	Yes

Table 82: 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)	Accessory Information	SAR Plot
			1-g	10-g						
Front Side	23130/711	10M QPSK 1RB#25	0.202	0.123	-0.13	22.89	23.50	0.232	Battery1#	/
Back Side	23130/711	10M QPSK 1RB#25	0.189	0.132	-0.14	22.89	23.50	0.218	Battery1#	/
Front Side	23130/711	10M QPSK 50%RB#13	0.164	0.099	0.02	22.12	22.50	0.179	Battery1#	/
Back Side	23130/711	10M QPSK 50%RB#13	0.154	0.106	-0.04	22.12	22.50	0.168	Battery1#	/
Front Side	23130/711	10M QPSK 1RB#25	0.198	0.120	0.00	22.89	23.50	0.228	With SIM2	/
Front Side	23130/711	10M QPSK 1RB#25	0.209	0.127	-0.12	22.89	23.50	0.241	Battery 2#	/
Front Side	23130/711	10M QPSK 1RB#25	**0.210**	0.128	-0.04	22.89	23.50	**0.242**	Battery 3#	Yes

Table 83: Body-Worn SAR test results of LTE Band XII

Test Position of Hotspot	Test channel /	Test Mode	SAR Value (W/kg)	Power Drift	Conducted Power	Tune-up	Scaled SAR_{1-g}	Accessory Information	SAR Plot

with 10mm	Freq.(MHz)		1-g	10-g	(dB)	(dBm)	Power (dBm)	(W/kg)		
Front Side	23130/711	10M QPSK 1RB#25	0.397	0.226	-0.19	22.89	23.50	0.457	Battery1#	/
Back Side	23130/711	10M QPSK 1RB#25	**0.417**	0.233	-0.03	22.89	23.50	**0.480**	Battery1#	Yes
Left Side	23130/711	10M QPSK 1RB#25	0.302	0.208	0.01	22.89	23.50	0.348	Battery1#	/
Right Side	23130/711	10M QPSK 1RB#25	0.083	0.056	-0.07	22.89	23.50	0.095	Battery1#	/
Top Side	23130/711	10M QPSK 1RB#25	0.340	0.169	-0.16	22.89	23.50	0.391	Battery1#	/
Front Side	23130/711	10M QPSK 50%RB#13	0.323	0.205	0.05	22.12	22.50	0.353	Battery1#	/
Back Side	23130/711	10M QPSK 50%RB#13	0.352	0.224	0.06	22.12	22.50	0.384	Battery1#	/
Left Side	23130/711	10M QPSK 50%RB#13	0.252	0.170	0.03	22.12	22.50	0.275	Battery1#	/
Right Side	23130/711	10M QPSK 50%RB#13	0.070	0.047	-0.02	22.12	22.50	0.077	Battery1#	/
Top Side	23130/711	10M QPSK 50%RB#13	0.282	0.139	-0.08	22.12	22.50	0.308	Battery1#	/
Back Side	23130/711	10M QPSK 1RB#25	0.398	0.223	-0.07	22.89	23.50	0.458	With SIM2	/
Back Side	23130/711	10M QPSK 1RB#25	0.370	0.243	-0.19	22.89	23.50	0.426	Battery 2#	/
Back Side	23130/711	10M QPSK 1RB#25	0.391	0.222	-0.07	22.89	23.50	0.450	Battery 3#	/

Table 84: Hotspot SAR test results of LTE Band XII

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

7.2.3 SAR measurement Result of 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)	Accessory Information	SAR Plot
			1-g	10-g						
Left touch	190/836.6	GSM	0.197	0.150	0.17	31.48	33.00	0.280	Battery1#	/
Left tilt	190/836.6	GSM	0.125	0.087	-0.01	31.48	33.00	0.177	Battery1#	/
Right touch	190/836.6	GSM	0.253	0.191	0.06	31.48	33.00	0.359	Battery1#	/
Right tilt	190/836.6	GSM	0.134	0.094	0.03	31.48	33.00	0.190	Battery1#	/
Right touch	128/824.2	GSM	0.200	0.153	-0.01	31.37	33.00	0.291	Battery1#	/
Right touch	251/848.8	GSM	0.292	0.222	0.03	31.57	33.00	0.406	Battery1#	/
Right touch	251/848.8	GSM	0.293	0.223	-0.04	31.57	33.00	0.407	With SIM2	/
Right touch	251/848.8	GSM	**0.326**	0.246	-0.05	31.57	33.00	**0.453**	Battery 2#	Yes
Right touch	251/848.8	GSM	0.305	0.228	0.00	31.57	33.00	0.424	Battery 3#	/

Table 85: 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)	Accessory Information	SAR Plot
			1-g	10-g						

Front Side	190/836.6	GSM	0.286	0.219	0.02	31.48	33.00	0.406	Battery1#	/
Back Side	190/836.6	GSM	0.296	0.227	0.05	31.48	33.00	0.420	Battery1#	/
Back Side	190/836.6	GSM	0.291	0.224	0.04	31.48	33.00	0.413	With SIM2	/
Back Side	190/836.6	GSM	0.280	0.215	0.00	31.48	33.00	0.397	Battery 2#	/
Back Side	190/836.6	GSM	**0.301**	0.231	0.00	31.48	33.00	**0.427**	Battery 3#	Yes

Table 86: 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)	Accessory Information	SAR Plot
			1-g	10-g						
Front Side	190/836.6	GPRS 3TS	0.315	0.243	-0.16	27.49	29.00	0.446	Battery1#	/
Back Side	190/836.6	GPRS 3TS	0.291	0.169	0.00	27.49	29.00	0.412	Battery1#	/
Left Side	190/836.6	GPRS 3TS	0.248	0.167	-0.01	27.49	29.00	0.351	Battery1#	/
Right Side	190/836.6	GPRS 3TS	**0.509**	0.344	0.02	27.49	29.00	**0.721**	Battery1#	Yes
Bottom Side	190/836.6	GPRS 3TS	0.254	0.132	-0.06	27.49	29.00	0.360	Battery1#	/
Right Side	190/836.6	GPRS 3TS	0.439	0.298	0.00	27.49	29.00	0.622	With SIM2	/
Right Side	190/836.6	GPRS 3TS	0.452	0.305	-0.10	27.49	29.00	0.640	Battery 2#	/
Right Side	190/836.6	GPRS 3TS	0.475	0.321	0.01	27.49	29.00	0.673	Battery 3#	/

Table 87: Hotspot SAR test results of GSM850

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

7.2.4 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)	Accessory Information	SAR Plot
			1-g	10-g						
Left touch	661/1880	GSM	0.060	0.039	0.15	28.14	30.00	0.093	Battery1#	/
Left tilt	661/1880	GSM	0.061	0.032	-0.10	28.14	30.00	0.094	Battery1#	/
Right touch	661/1880	GSM	0.113	0.071	0.07	28.14	30.00	0.173	Battery1#	/
Right tilt	661/1880	GSM	0.089	0.048	0.02	28.14	30.00	0.136	Battery1#	/
Right touch	512/1850.2	GSM	0.119	0.075	0.08	28.41	30.00	0.172	Battery1#	/
Right touch	810/1909.8	GSM	**0.122**	0.076	0.18	28.03	30.00	**0.192**	Battery1#	Yes
Right touch	810/1909.8	GSM	0.118	0.073	0.13	28.03	30.00	0.186	With SIM2	/
Right touch	810/1909.8	GSM	0.120	0.075	0.17	28.03	30.00	0.189	Battery 2#	/
Right touch	810/1909.8	GSM	0.110	0.069	0.05	28.03	30.00	0.173	Battery 3#	/

Table 88: Head SAR test results of GSM1900

Test Position of Body-	Test channel /Freq.(MHz)	Test Mode	SAR Value (W/kg)	Power Drift	Conducted Power	Tune-up	Scaled SAR1-g	Accessory Information	SAR Plot

Worn with 15mm			1-g	10-g	(dB)	(dBm)	Power (dBm)	(W/kg)		
Front Side	661/1880	GSM	**0.238**	0.141	0.12	28.14	30.00	**0.365**	Battery1#	Yes
Back Side	661/1880	GSM	0.218	0.129	0.14	28.14	30.00	0.335	Battery1#	/
Front Side	661/1880	GSM	0.234	0.139	-0.03	28.14	30.00	0.359	With SIM2	/
Front Side	661/1880	GSM	0.217	0.130	-0.04	28.14	30.00	0.333	Battery 2#	/
Front Side	661/1880	GSM	0.217	0.129	0.02	28.14	30.00	0.333	Battery 3#	/

Table 89: 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)	Accessory Information	SAR Plot
			1-g	10-g						
Front Side	661/1880	GPRS 3TS	0.390	0.219	-0.04	22.57	24.50	0.608	Battery1#	/
Back Side	661/1880	GPRS 3TS	0.383	0.209	0.06	22.57	24.50	0.597	Battery1#	/
Left Side	661/1880	GPRS 3TS	0.052	0.028	-0.15	22.57	24.50	0.080	Battery1#	/
Right Side	661/1880	GPRS 3TS	0.091	0.051	0.04	22.57	24.50	0.142	Battery1#	/
Bottom Side	661/1880	GPRS 3TS	**0.608**	0.320	-0.13	22.57	24.50	0.948	Battery1#	Yes
Bottom Side	512/1850.2	GPRS 3TS	0.396	0.205	0.06	22.87	24.50	0.576	Battery1#	/
Bottom Side	810/1909.8	GPRS 3TS	0.601	0.314	-0.02	22.51	24.50	0.950	Battery1#	/
Bottom Side	810/1909.8	GPRS 3TS	0.597	0.316	0.14	22.51	24.50	0.944	With SIM2	/
Bottom Side	810/1909.8	GPRS 3TS	0.601	0.317	0.14	22.51	24.50	0.950	Battery 2#	/
Bottom Side	810/1909.8	GPRS 3TS	0.607	0.321	-0.06	22.51	24.50	**0.960**	Battery 3#	/

Table 90: Hotspot SAR test results of GSM1900

Per KDB648474D04, when hotspot mode applies, Product Specific 10-g SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg; however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold:

Test Position of Hotspot 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)	Accessory Information	Product Specific 10-g SAR Exclusion
			1-g	10-g						
Front Side	661/1880	GPRS 3TS	0.390	0.219	-0.04	22.57	26.00	0.859	Battery1#	Yes
Back Side	661/1880	GPRS 3TS	0.383	0.209	0.06	22.57	26.00	0.844	Battery1#	Yes
Left Side	661/1880	GPRS 3TS	0.052	0.028	-0.15	22.57	26.00	0.113	Battery1#	Yes
Right Side	661/1880	GPRS 3TS	0.091	0.051	0.04	22.57	26.00	0.201	Battery1#	Yes
Bottom Side	661/1880	GPRS 3TS	**0.608**	0.320	-0.13	22.57	26.00	1.339	Battery1#	No
Bottom Side	512/1850.2	GPRS 3TS	0.396	0.205	0.06	22.87	26.00	0.814	Battery1#	/

Bottom Side	810/1909.8	GPRS 3TS	0.601	0.314	-0.02	22.51	26.00	1.342	Battery1#	No
Bottom Side	810/1909.8	GPRS 3TS	0.597	0.316	0.14	22.51	26.00	1.333	With SIM2	No
Bottom Side	810/1909.8	GPRS 3TS	0.601	0.317	0.14	22.51	26.00	1.342	Battery 2#	No
Bottom Side	810/1909.8	GPRS 3TS	0.607	0.321	-0.06	22.51	26.00	**1.356**	Battery 3#	No

Table 91: Product Specific 10-g SAR test reduction evaluation of GSM1900

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

Test Position of Product Specific 10-g SAR with 0mm	Test channel /Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR10-g (W/kg)	Accessory Information	SAR Plot
			1-g	10-g						
Bottom Side	661/1880	GPRS 3TS	2.140	0.873	0.13	24.32	26.00	1.285	Battery 1#	/
Bottom Side	661/1880	GPRS 3TS	1.980	0.855	0.14	24.32	26.00	1.259	With SIM2	/
Bottom Side	661/1880	GPRS 3TS	2.480	0.997	0.12	24.32	26.00	1.468	Battery 2#	/
Bottom Side	661/1880	GPRS 3TS	2.590	**1.030**	-0.01	24.32	26.00	**1.516**	Battery 3#	Yes

Table 92: Product Specific 10-g SAR results of GSM1900

7.2.5 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)	Accessory Information	SAR Plot
			1-g	10-g						
Left touch	9400/1880	RMC	0.125	0.080	0.02	21.17	23.00	0.191	Battery1#	/
Left tilt	9400/1880	RMC	0.138	0.076	0.03	21.17	23.00	0.210	Battery1#	/
Right touch	9400/1880	RMC	0.254	0.162	-0.02	21.17	23.00	0.387	Battery1#	/
Right tilt	9400/1880	RMC	0.182	0.097	0.05	21.17	23.00	0.277	Battery1#	/
Right touch	9262/1852.4	RMC	**0.264**	0.169	0.03	21.24	23.00	**0.396**	Battery1#	Yes
Right touch	9538/1907.6	RMC	0.211	0.134	0.09	21.24	23.00	0.316	Battery1#	/
Right touch	9262/1852.4	RMC	0.246	0.156	0.02	21.17	23.00	0.375	With SIM2	/
Right touch	9262/1852.4	RMC	0.241	0.153	0.01	21.17	23.00	0.367	Battery 2#	/
Right touch	9262/1852.4	RMC	0.229	0.144	0.09	21.17	23.00	0.349	Battery 3#	/

Table 93: 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)	Accessory Information	SAR Plot
			1-g	10-g						
Front Side	9400/1880	RMC	0.504	0.301	-0.15	21.17	23.00	0.768	Battery1#	/
Back Side	9400/1880	RMC	0.470	0.279	0.10	21.17	23.00	0.716	Battery1#	/
Front Side	9400/1880	RMC	0.503	0.300	0.00	21.17	23.00	0.767	With SIM2	/
Front Side	9400/1880	RMC	0.487	0.289	-0.14	21.17	23.00	0.742	Battery 2#	/
Front Side	9400/1880	RMC	**0.519**	0.306	-0.09	21.17	23.00	**0.791**	Battery 3#	Yes

Table 94: 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)	Accessory Information	SAR Plot
			1-g	10-g						
Front Side	9400/1880	RMC	0.342	0.192	-0.15	18.19	19.00	0.412	Battery1#	/
Back Side	9400/1880	RMC	0.316	0.175	0.06	18.19	19.00	0.381	Battery1#	/
Left Side	9400/1880	RMC	0.051	0.028	-0.08	18.19	19.00	0.061	Battery1#	/
Right Side	9400/1880	RMC	0.088	0.050	-0.06	18.19	19.00	0.106	Battery1#	/
Bottom Side	9400/1880	RMC	**0.692**	0.364	0.02	18.19	19.00	**0.834**	Battery1#	Yes
Bottom Side	9262/1852.4	RMC	0.555	0.287	-0.03	18.23	19.00	0.663	Battery1#	/
Bottom Side	9538/1907.6	RMC	0.682	0.358	-0.03	18.23	19.00	0.814	Battery1#	/
Bottom Side	9400/1880	RMC	0.547	0.287	-0.05	18.19	19.00	0.659	With SIM2	/
Bottom Side	9400/1880	RMC	0.530	0.278	-0.03	18.19	19.00	0.639	Battery 2#	/
Bottom Side	9400/1880	RMC	0.524	0.275	-0.06	18.19	19.00	0.631	Battery 3#	/

Table 95: Hotspot SAR test results of UMTS Band II

Per KDB648474D04, when hotspot mode applies, Product Specific 10-g SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg; however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold:

Test Position of Hotspot 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)	Accessory Information	Product Specific 10-g SA Exclusio
			1-g	10-g						
Front Side	9400/1880	RMC	0.342	0.192	-0.15	18.19	23.00	1.035	Battery1#	Yes
Back Side	9400/1880	RMC	0.316	0.175	0.06	18.19	23.00	0.957	Battery1#	Yes
Left Side	9400/1880	RMC	0.051	0.028	-0.08	18.19	23.00	0.153	Battery1#	Yes
Right Side	9400/1880	RMC	0.088	0.050	-0.06	18.19	23.00	0.266	Battery1#	Yes
Bottom Side	9400/1880	RMC	**0.692**	0.364	0.02	18.19	23.00	**2.095**	Battery1#	No
Bottom Side	9262/1852.4	RMC	0.555	0.287	-0.03	18.23	23.00	1.665	Battery1#	No
Bottom Side	9538/1907.6	RMC	0.682	0.358	-0.03	18.23	23.00	2.045	Battery1#	No
Bottom Side	9400/1880	RMC	0.547	0.287	-0.05	18.19	23.00	1.656	With SIM2	No
Bottom Side	9400/1880	RMC	0.530	0.278	-0.03	18.19	23.00	1.604	Battery 2#	No
Bottom Side	9400/1880	RMC	0.524	0.275	-0.06	18.19	23.00	1.586	Battery 3#	No

Table 96: Product Specific 10-g SAR test reduction evaluation of UMTS Band II

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

Test Position of Product Specific 10-g SAR with 0mm	Test channel /Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR10-g (W/kg)	Accessory Information	SAR Plot
			1-g	10-g						
Bottom Side	9400/1880	RMC	4.470	1.920	-0.11	21.17	23.00	2.926	Battery1#	/
Bottom Side	9262/1852.4	RMC	4.490	1.890	-0.12	21.24	23.00	2.834	Battery1#	/
Bottom Side	9538/1907.6	RMC	4.320	1.860	-0.10	21.24	23.00	2.789	Battery1#	/
Bottom Side	9400/1880	RMC	4.460	1.890	-0.03	21.17	23.00	2.880	With SIM2	/
Bottom Side	9400/1880	RMC	4.600	1.910	-0.05	21.17	23.00	2.911	Battery 2#	/
Bottom Side	9400/1880	RMC	4.630	**1.920**	-0.14	21.17	23.00	**2.926**	Battery 3#	Yes

Table 97: Product Specific 10-g SAR results of UMTS Band II

7.2.6 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)	Accessory Information	SAR Plot
			1-g	10-g						
Left touch	1413/1732.6	RMC	0.075	0.048	0.13	22.05	24.00	0.117	Battery1#	/
Left tilt	1413/1732.6	RMC	0.048	0.030	0.03	22.05	24.00	0.074	Battery1#	/
Right touch	1413/1732.6	RMC	0.146	0.095	0.19	22.05	24.00	0.229	Battery1#	/
Right tilt	1413/1732.6	RMC	0.064	0.034	0.04	22.05	24.00	0.100	Battery1#	/
Right touch	1312/1712.4	RMC	0.139	0.089	0.19	22.02	24.00	0.219	Battery1#	/
Right touch	1513/1752.6	RMC	0.166	0.106	0.18	22.04	24.00	0.261	Battery1#	/
Right touch	1513/1752.6	RMC	0.154	0.098	0.11	22.04	24.00	0.242	With SIM2	/
Right touch	1513/1752.6	RMC	0.142	0.089	-0.09	22.04	24.00	0.223	Battery 2#	/
Right touch	1513/1752.6	RMC	**0.176**	0.113	0.11	22.04	24.00	**0.276**	Battery 3#	Yes

Table 98: 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)	Accessory Information	SAR Plot
			1-g	10-g						
Front Side	1413/1732.6	RMC	**0.379**	0.225	0.12	22.05	24.00	**0.594**	Battery1#	Yes
Back Side	1413/1732.6	RMC	0.329	0.196	0.10	22.05	24.00	0.515	Battery1#	/
Front Side	1413/1732.6	RMC	0.373	0.222	-0.09	22.05	24.00	0.584	With SIM2	/
Front Side	1413/1732.6	RMC	0.349	0.205	-0.09	22.05	24.00	0.547	Battery 2#	/
Front Side	1413/1732.6	RMC	0.371	0.220	-0.11	22.05	24.00	0.581	Battery 3#	/

Table 99: 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)	Accessory Information	SAR Plot
			1-g	10-g						
Front Side	1413/1732.6	RMC	0.475	0.262	0.16	20.02	22.00	0.749	Battery1#	/
Back Side	1413/1732.6	RMC	0.409	0.226	0.06	20.02	22.00	0.645	Battery1#	/
Left Side	1413/1732.6	RMC	0.038	0.021	-0.19	20.02	22.00	0.059	Battery1#	/
Right Side	1413/1732.6	RMC	0.064	0.038	-0.11	20.02	22.00	0.101	Battery1#	/
Bottom Side	1413/1732.6	RMC	0.751	0.396	-0.10	20.02	22.00	1.185	Battery1#	/
Bottom Side	1312/1712.4	RMC	0.664	0.350	-0.13	20.01	22.00	1.050	Battery1#	/
Bottom Side	1513/1752.6	RMC	**0.934**	0.495	-0.04	20.57	22.00	**1.298**	Battery1#	Yes
Bottom Side-repeated	1513/1752.6	RMC	0.877	0.464	0.07	20.57	22.00	1.219	Battery1#	/
Bottom Side-holder perturbation verification	1513/1752.6	RMC	0.912	0.480	-0.01	20.57	22.00	1.268	Battery1#	/
Bottom Side	1513/1752.6	RMC	0.844	0.448	-0.10	20.57	22.00	1.173	With SIM2	/
Bottom Side	1513/1752.6	RMC	0.882	0.466	0.01	20.57	22.00	1.226	Battery 2#	/
Bottom Side	1513/1752.6	RMC	0.791	0.417	0.04	20.57	22.00	1.099	Battery 3#	/

Table 100: Hotspot SAR test results of UMTS Band IV

Note: According to 201610 FCC TCB workshop RF exposure slides, when the highest reported SAR of an antenna is > 1.2 W/kg, holder perturbation verification is required for each antenna, using the highest SAR configuration among all applicable frequency bands.

Per KDB648474D04, when hotspot mode applies, Product Specific 10-g SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg; however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold:

Test Position of Hotspot 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)	Accessory Information	Product Specific 10-g SAR Exclusion
			1-g	10-g						
Front Side	1413/1732.6	RMC	0.475	0.262	0.16	20.02	24.00	1.188	Battery1#	Yes
Back Side	1413/1732.6	RMC	0.409	0.226	0.06	20.02	24.00	1.023	Battery1#	Yes
Left Side	1413/1732.6	RMC	0.038	0.021	-0.19	20.02	24.00	0.094	Battery1#	Yes
Right Side	1413/1732.6	RMC	0.064	0.038	-0.11	20.02	24.00	0.160	Battery1#	Yes
Bottom Side	1413/1732.6	RMC	0.751	0.396	-0.10	20.02	24.00	1.878	Battery1#	No
Bottom Side	1312/1712.4	RMC	0.664	0.350	-0.13	20.01	24.00	1.664	Battery1#	No
Bottom Side	1513/1752.6	RMC	**0.934**	0.495	-0.04	20.08	24.00	**2.303**	Battery1#	No
Bottom Side-repeated	1513/1752.6	RMC	0.877	0.464	0.07	20.08	24.00	2.163	Battery1#	No
Bottom Side	1513/1752.6	RMC	0.844	0.448	-0.10	20.08	24.00	2.081	With SIM2	No
Bottom Side	1513/1752.6	RMC	0.882	0.466	0.01	20.08	24.00	2.175	Battery 2#	No
Bottom Side	1513/1752.6	RMC	0.791	0.417	0.04	20.08	24.00	1.951	Battery 3#	No

Table 101: Product Specific 10-g SAR test reduction evaluation of UMTS Band IV

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

Test Position of Product Specific 10-g SAR with 0mm	Test channel /Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR10-g (W/kg)	Accessory Information	SAR Plot
			1-g	10-g						
Bottom Side	1413/1732.6	RMC	3.800	1.730	-0.13	22.05	24.00	2.710	Battery1#	/
Bottom Side	1312/1712.4	RMC	3.930	1.780	-0.13	22.02	24.00	2.808	Battery1#	/
Bottom Side	1513/1752.6	RMC	3.780	1.720	-0.11	22.04	24.00	2.701	Battery1#	/
Bottom Side	1312/1712.4	RMC	4.120	1.820	0.19	22.02	24.00	2.871	With SIM2	/
Bottom Side	1312/1712.4	RMC	4.140	1.850	-0.18	22.02	24.00	2.919	Battery 2#	/
Bottom Side	1312/1712.4	RMC	4.530	**1.970**	-0.19	22.02	24.00	**3.108**	Battery 3#	Yes

Table 102: Product Specific 10-g SAR results of UMTS Band IV

7.2.7 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)	Accessory Information	SAR Plot
			1-g	10-g						
Left touch	4182/836.4	RMC	0.269	0.206	0.06	22.87	24.50	0.392	Battery1#	/
Left tilt	4182/836.4	RMC	0.129	0.085	0.00	22.87	24.50	0.188	Battery1#	/
Right touch	4182/836.4	RMC	0.332	0.252	-0.02	22.87	24.50	0.483	Battery1#	/
Right tilt	4182/836.4	RMC	0.135	0.087	0.05	22.87	24.50	0.196	Battery1#	/
Right touch	4132/826.4	RMC	0.304	0.231	0.05	22.78	24.50	0.452	Battery1#	/
Right touch	4233/846.6	RMC	0.328	0.249	0.08	22.84	24.50	0.481	Battery1#	/
Right touch	4182/836.4	RMC	0.335	0.255	-0.10	22.87	24.50	0.488	SIM2	/
Right touch	4182/836.4	RMC	0.333	0.254	0.07	22.87	24.50	0.485	Battery 2#	/
Right touch	4182/836.4	RMC	**0.362**	0.275	-0.01	22.87	24.50	**0.527**	Battery 3#	Yes

Table 103: 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)	Accessory Information	SAR Plot
			1-g	10-g						
Front Side	4182/836.4	RMC	0.250	0.194	-0.02	22.87	24.50	0.364	Battery1#	/
Back Side	4182/836.4	RMC	0.261	0.202	-0.01	22.87	24.50	0.380	Battery1#	/
Back Side	4182/836.4	RMC	0.266	0.205	0.03	22.87	24.50	0.387	With SIM2	/
Back Side	4182/836.4	RMC	0.281	0.217	-0.06	22.87	24.50	0.409	Battery 2#	/
Back Side	4182/836.4	RMC	**0.300**	0.231	-0.06	22.87	24.50	**0.437**	Battery 3#	Yes

Table 104: 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)	Accessory Information	SAR Plot
			1-g	10-g						
Front Side	4182/836.4	RMC	0.337	0.200	0.00	22.87	24.50	0.490	Battery1#	/
Back Side	4182/836.4	RMC	0.346	0.208	-0.02	22.87	24.50	0.504	Battery1#	/
Left Side	4182/836.4	RMC	0.222	0.150	-0.04	22.87	24.50	0.323	Battery1#	/
Right Side	4182/836.4	RMC	0.470	0.320	-0.05	22.87	24.50	0.684	Battery1#	/
Bottom Side	4182/836.4	RMC	0.275	0.142	-0.08	22.87	24.50	0.400	Battery1#	/
Right Side	4182/836.4	RMC	0.484	0.329	-0.07	22.87	24.50	0.704	With SIM2	/
Right Side	4182/836.4	RMC	0.486	0.330	-0.16	22.87	24.50	0.707	Battery 2#	/
Right Side	4182/836.4	RMC	**0.518**	0.352	-0.17	22.87	24.50	**0.754**	Battery 3#	Yes

Table 105: Hotspot SAR test results of UMTS Band V

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

7.2.8 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)	Accessory Information	SAR Plot
			1-g	10-g						
Left touch	19100/1900	20M QPSK 1RB#50	0.113	0.071	-0.02	22.59	23.20	0.130	Battery1#	/
Left tilt	19100/1900	20M QPSK 1RB#50	0.107	0.058	0.11	22.59	23.20	0.123	Battery1#	/
Right touch	19100/1900	20M QPSK 1RB#50	0.203	0.126	-0.14	22.59	23.20	0.234	Battery1#	/
Right tilt	19100/1900	20M QPSK 1RB#50	0.129	0.067	0.06	22.59	23.20	0.148	Battery1#	/
Left touch	19100/1900	20M QPSK 50%RB#25	0.088	0.051	0.14	21.42	22.20	0.106	Battery1#	/
Left tilt	19100/1900	20M QPSK 50%RB#25	0.086	0.044	0.16	21.42	22.20	0.103	Battery1#	/
Right touch	19100/1900	20M QPSK 50%RB#25	0.159	0.089	0.13	21.42	22.20	0.190	Battery1#	/
Right tilt	19100/1900	20M QPSK 50%RB#25	0.103	0.054	0.05	21.42	22.20	0.123	Battery1#	/
Right touch	18700/1860	20M QPSK 1RB#50	**0.224**	0.140	-0.02	22.57	23.20	**0.259**	Battery1#	Yes
Right touch	18900/1880	20M QPSK 1RB#50	0.199	0.124	0.13	22.20	23.20	0.251	Battery1#	/
Right touch	18700/1860	20M QPSK 1RB#50	0.217	0.135	-0.14	22.57	23.20	0.251	With SIM2	/
Right touch	18700/1860	20M QPSK 1RB#50	0.200	0.126	0.15	22.57	23.20	0.231	Battery 2#	/
Right touch	18700/1860	20M QPSK 1RB#50	0.198	0.124	0.11	22.57	23.20	0.229	Battery 3#	/

Table 106: 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)	Accessory Information	SAR Plot
			1-g	10-g						
Front Side	19100/1900	20M QPSK 1RB#50	**0.473**	0.281	-0.13	22.59	23.20	**0.544**	Battery1#	Yes
Back Side	19100/1900	20M QPSK 1RB#50	0.407	0.236	0.07	22.59	23.20	0.468	Battery1#	/
Front Side	19100/1900	20M QPSK 50%RB#25	0.293	0.167	0.02	21.42	22.20	0.351	Battery1#	/
Back Side	19100/1900	20M QPSK 50%RB#25	0.260	0.151	0.08	21.42	22.20	0.311	Battery1#	/
Front Side	19100/1900	20M QPSK 1RB#50	0.444	0.265	-0.03	22.59	23.20	0.511	With SIM2	/
Front Side	19100/1900	20M QPSK 1RB#50	0.442	0.262	-0.02	22.59	23.20	0.509	Battery 2#	/
Front Side	19100/1900	20M QPSK 1RB#50	0.408	0.242	-0.07	22.59	23.20	0.470	Battery 3#	/

Table 107: 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)	Accessory Information	SAR Plot
			1-g	10-g						
Front Side	19100/1900	20M QPSK 1RB#50	0.501	0.281	-0.14	19.43	20.20	0.598	Battery1#	/
Back Side	19100/1900	20M QPSK 1RB#50	0.452	0.252	0.08	19.43	20.20	0.540	Battery1#	/
Left Side	19100/1900	20M QPSK 1RB#50	0.109	0.059	-0.08	19.43	20.20	0.130	Battery1#	/
Right Side	19100/1900	20M QPSK 1RB#50	0.206	0.116	-0.11	19.43	20.20	0.246	Battery1#	/
Bottom Side	19100/1900	20M QPSK 1RB#50	**0.929**	0.495	0.06	19.43	20.20	**1.109**	Battery1#	Yes
Bottom Side-Repeated	19100/1900	20M QPSK 1RB#50	0.865	0.455	-0.07	19.43	20.20	1.033	Battery1#	/
Bottom Side	18700/1860	20M QPSK 1RB#50	0.582	0.308	0.06	19.42	20.20	0.697	Battery1#	/
Bottom Side	18900/1880	20M QPSK 1RB#50	0.641	0.339	-0.01	19.33	20.20	0.783	Battery1#	/
Front Side	19100/1900	20M QPSK 50%RB#25	0.443	0.233	-0.02	19.38	20.20	0.535	Battery1#	/
Back Side	19100/1900	20M QPSK 50%RB#25	0.314	0.165	-0.15	19.38	20.20	0.379	Battery1#	/
Left Side	19100/1900	20M QPSK 50%RB#25	0.087	0.047	-0.11	19.38	20.20	0.105	Battery1#	/
Right Side	19100/1900	20M QPSK 50%RB#25	0.161	0.091	-0.08	19.38	20.20	0.194	Battery1#	/
Bottom Side	19100/1900	20M QPSK 50%RB#25	0.727	0.383	0.03	19.38	20.20	0.878	Battery1#	/
Bottom Side	18700/1860	20M QPSK 50%RB#0	0.705	0.371	0.03	19.34	20.20	0.859	Battery1#	/
Bottom Side	18900/1880	20M QPSK 50%RB#25	0.717	0.377	0.13	18.95	20.20	0.956	Battery1#	/
Bottom Side	19100/1900	20M QPSK 100%RB#0	0.630	0.324	0.05	19.25	20.20	0.784	Battery1#	/
Bottom Side	19100/1900	20M QPSK 1RB#50	0.755	0.395	-0.10	19.43	20.20	0.901	With SIM2	/
Bottom Side	19100/1900	20M QPSK 1RB#50	0.721	0.378	0.07	19.43	20.20	0.861	Battery 2#	/
Bottom Side	19100/1900	20M QPSK 1RB#50	0.831	0.437	0.04	19.43	20.20	0.992	Battery 3#	/

Table 108: Hotspot SAR test results of LTE Band II

Per KDB648474D04, when hotspot mode applies, Product Specific 10-g SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg; however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold:

Test Position of Hotspot 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)	Accessory Information	Product Specific 10-g SAR Exclusion
			1-g	10-g						
Front Side	19100/1900	20M QPSK 1RB#50	0.501	0.281	-0.14	19.43	23.20	1.194	Battery1#	Yes
Back Side	19100/1900	20M QPSK 1RB#50	0.452	0.252	0.08	19.43	23.20	1.077	Battery1#	Yes
Left Side	19100/1900	20M QPSK 1RB#50	0.109	0.059	-0.08	19.43	23.20	0.260	Battery1#	Yes
Right Side	19100/1900	20M QPSK 1RB#50	0.206	0.116	-0.11	19.43	23.20	0.491	Battery1#	Yes
Bottom Side	19100/1900	20M QPSK 1RB#50	**0.929**	0.495	0.05	19.43	23.20	**2.213**	Battery1#	No
Bottom Side-Repeated	19100/1900	20M QPSK 1RB#50	0.865	0.455	-0.07	19.43	23.20	2.061	Battery1#	No
Bottom Side	18700/1860	20M QPSK 1RB#50	0.582	0.308	0.06	19.42	23.20	1.390	Battery1#	No
Bottom Side	18900/1880	20M QPSK 1RB#50	0.641	0.339	-0.01	19.33	23.20	1.563	Battery1#	No
Front Side	19100/1900	20M QPSK 50%RB#25	0.443	0.233	-0.02	19.38	22.20	0.848	Battery1#	Yes
Back Side	19100/1900	20M QPSK 50%RB#25	0.314	0.165	-0.15	19.38	22.20	0.601	Battery1#	Yes
Left Side	19100/1900	20M QPSK 50%RB#25	0.087	0.047	-0.11	19.38	22.20	0.166	Battery1#	Yes
Right Side	19100/1900	20M QPSK 50%RB#25	0.161	0.091	-0.08	19.38	22.20	0.308	Battery1#	Yes
Bottom Side	19100/1900	20M QPSK 50%RB#25	0.727	0.383	0.03	19.38	22.20	1.392	Battery1#	No
Bottom Side	18700/1860	20M QPSK 50%RB#0	0.705	0.371	0.03	19.34	22.20	1.362	Battery1#	No
Bottom Side	18900/1880	20M QPSK 50%RB#25	0.717	0.377	0.13	18.95	22.20	1.515	Battery1#	No
Bottom Side	19100/1900	20M QPSK 100%RB#0	0.630	0.324	0.05	19.25	22.20	1.243	Battery1#	No
Bottom Side	19100/1900	20M QPSK 1RB#50	0.755	0.395	-0.10	19.43	23.20	1.799	With SIM2	No
Bottom Side	19100/1900	20M QPSK 1RB#50	0.721	0.378	0.07	19.43	23.20	1.718	Battery 2#	No
Bottom Side	19100/1900	20M QPSK 1RB#50	0.831	0.437	0.04	19.43	23.20	1.980	Battery 3#	No

Table 109: Product Specific 10-g SAR test reduction evaluation of LTE Band II

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

Test Position of Product Specific 10-g SAR with 0mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR10-g (W/kg)	Accessory Information	SAR Plot
			1-g	10-g						
Bottom Side	19100/1900	20M QPSK 1RB#50	4.660	1.990	-0.04	22.59	23.20	2.290	Battery1#	/
Bottom Side	18700/1860	20M QPSK 1RB#50	6.230	**2.580**	-0.05	22.57	23.20	**2.983**	Battery1#	Yes
Bottom Side-Repeated	18700/1860	20M QPSK 1RB#50	5.460	2.240	-0.07	22.57	23.20	2.590	Battery1#	/
Bottom Side	18900/1880	20M QPSK 1RB#50	3.130	1.340	-0.04	22.20	23.20	1.687	Battery1#	/
Bottom Side	19100/1900	20M QPSK 50%RB#25	3.830	1.610	-0.15	21.42	22.20	1.927	Battery1#	/
Bottom Side	19100/1900	20M QPSK 100%RB#0	3.590	1.510	-0.14	21.24	22.20	1.884	Battery1#	/
Bottom Side	18700/1860	20M QPSK 1RB#50	5.400	2.260	-0.15	22.57	23.20	2.613	With SIM2	/
Bottom Side	18700/1860	20M QPSK 1RB#50	5.220	2.140	-0.07	22.57	23.20	2.474	Battery 2#	/
Bottom Side	18700/1860	20M QPSK 1RB#50	6.240	2.570	-0.08	22.57	23.20	2.971	Battery 3#	/

Table 110: Product Specific 10-g SAR results of LTE Band II

7.2.9 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)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR_{1-g} (W/kg)	Accessory Information	SAR Plot
			1-g	10-g						
Left touch	20300/1745	20M QPSK 1RB#50	0.096	0.061	0.15	21.74	22.60	0.117	Battery1#	/
Left tilt	20300/1745	20M QPSK 1RB#50	0.055	0.032	-0.02	21.74	22.60	0.066	Battery1#	/
Right touch	20300/1745	20M QPSK 1RB#50	**0.180**	0.114	-0.05	21.74	22.60	**0.219**	Battery1#	Yes
Right tilt	20300/1745	20M QPSK 1RB#50	0.075	0.037	0.16	21.74	22.60	0.091	Battery1#	/
Left touch	20300/1745	20M QPSK 50%RB#25	0.069	0.041	-0.10	20.71	21.60	0.085	Battery1#	/
Left tilt	20300/1745	20M QPSK 50%RB#25	0.041	0.024	-0.14	20.71	21.60	0.050	Battery1#	/
Right touch	20300/1745	20M QPSK 50%RB#25	0.135	0.086	0.18	20.71	21.60	0.166	Battery1#	/
Right tilt	20300/1745	20M QPSK 50%RB#25	0.058	0.028	0.08	20.71	21.60	0.071	Battery1#	/
Right touch	20050/1720	20M QPSK 1RB#50	0.108	0.068	0.11	21.45	22.60	0.141	Battery1#	/
Right touch	20175/1732.5	20M QPSK 1RB#50	0.070	0.044	0.12	21.63	22.60	0.088	Battery1#	/
Right touch	20300/1745	20M QPSK 1RB#50	0.110	0.070	0.11	21.74	22.60	0.134	With SIM2	/
Right touch	20300/1745	20M QPSK 1RB#50	0.104	0.066	0.10	21.74	22.60	0.127	Battery 2#	/
Right touch	20300/1745	20M QPSK 1RB#50	0.099	0.062	0.19	21.74	22.60	0.120	Battery 3#	/

Table 111: 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)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR_{1-g} (W/kg)	Accessory Information	SAR Plot
			1-g	10-g						
Front Side	20300/1745	20M QPSK 1RB#50	**0.540**	0.320	-0.13	21.74	22.60	**0.658**	Battery1#	Yes
Back Side	20300/1745	20M QPSK 1RB#50	0.468	0.277	0.08	21.74	22.60	0.570	Battery1#	/
Front Side	20300/1745	20M QPSK 50%RB#25	0.417	0.246	-0.07	20.71	21.60	0.512	Battery1#	/
Back Side	20300/1745	20M QPSK 50%RB#25	0.351	0.204	-0.05	20.71	21.60	0.431	Battery1#	/
Front Side	20300/1745	20M QPSK 1RB#50	0.530	0.313	-0.17	21.74	22.60	0.646	With SIM2	/
Front Side	20300/1745	20M QPSK 1RB#50	0.484	0.283	0.17	21.74	22.60	0.590	Battery 2#	/
Front Side	20300/1745	20M QPSK 1RB#50	0.517	0.305	-0.17	21.74	22.60	0.630	Battery 3#	/

Table 112: 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)	Accessory Information	SAR Plot
			1-g	10-g						
Front Side	20300/1745	20M QPSK 1RB#50	0.472	0.261	0.06	18.69	19.10	0.519	Battery1#	/
Back Side	20300/1745	20M QPSK 1RB#50	0.399	0.220	0.06	18.69	19.10	0.439	Battery1#	/
Left Side	20300/1745	20M QPSK 1RB#50	0.029	0.017	0.12	18.69	19.10	0.031	Battery1#	/
Right Side	20300/1745	20M QPSK 1RB#50	0.066	0.040	-0.17	18.69	19.10	0.072	Battery1#	/
Bottom Side	20300/1745	20M QPSK 1RB#50	**0.780**	0.410	-0.12	18.69	19.10	**0.857**	Battery1#	Yes
Bottom Side	20050/1720	20M QPSK 1RB#50	0.473	0.247	0.09	18.19	19.10	0.583	Battery1#	/
Bottom Side	20175/1732.5	20M QPSK 1RB#50	0.374	0.198	-0.04	18.31	19.10	0.449	Battery1#	/
Front Side	20300/1745	20M QPSK 50%RB#25	0.394	0.212	0.08	18.44	18.60	0.409	Battery1#	/
Back Side	20300/1745	20M QPSK 50%RB#25	0.321	0.179	0.16	18.44	18.60	0.333	Battery1#	/
Left Side	20300/1745	20M QPSK 50%RB#25	0.025	0.015	-0.07	18.44	18.60	0.026	Battery1#	/
Right Side	20300/1745	20M QPSK 50%RB#25	0.059	0.036	0.09	18.44	18.60	0.061	Battery1#	/
Bottom Side	20300/1745	20M QPSK 50%RB#25	0.713	0.375	-0.07	18.44	18.60	0.740	Battery1#	/
Bottom Side	20300/1745	20M QPSK 100%RB#0	0.644	0.316	-0.10	17.93	18.60	0.751	Battery1#	/
Bottom Side	20300/1745	20M QPSK 1RB#50	0.771	0.406	-0.09	18.69	19.10	0.847	With SIM2	/
Bottom Side	20300/1745	20M QPSK 1RB#50	0.718	0.375	-0.11	18.69	19.10	0.789	Battery 2#	/
Bottom Side	20300/1745	20M QPSK 1RB#50	0.729	0.382	-0.09	18.69	19.10	0.801	Battery 3#	/

Table 113: Hotspot SAR test results of LTE Band IV

Per KDB648474D04, when hotspot mode applies, Product Specific 10-g SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg; however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold:

Test Position of Hotspot 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)	Accessory Information	Product Specific 10-g SAR Exclusion
			1-g	10-g						
Front Side	20300/1745	20M QPSK 1RB#50	0.472	0.261	0.06	18.69	22.60	1.161	Battery1#	Yes
Back Side	20300/1745	20M QPSK 1RB#50	0.399	0.220	0.06	18.69	22.60	0.982	Battery1#	Yes
Left Side	20300/1745	20M QPSK 1RB#50	0.029	0.017	0.12	18.69	22.60	0.070	Battery1#	Yes
Right Side	20300/1745	20M QPSK 1RB#50	0.066	0.040	-0.17	18.69	22.60	0.162	Battery1#	Yes
Bottom Side	20300/1745	20M QPSK 1RB#50	**0.780**	0.410	-0.12	18.69	22.60	**1.919**	Battery1#	No

Bottom Side	20050/1720	20M QPSK 1RB#50	0.473	0.247	0.09	18.19	22.60	1.306	Battery1#	No
Bottom Side	20175/1732.5	20M QPSK 1RB#50	0.374	0.198	-0.04	18.31	22.60	1.004	Battery1#	Yes
Front Side	20300/1745	20M QPSK 50%RB#25	0.394	0.212	0.08	18.44	21.60	0.816	Battery1#	Yes
Back Side	20300/1745	20M QPSK 50%RB#25	0.321	0.179	0.16	18.44	21.60	0.665	Battery1#	Yes
Left Side	20300/1745	20M QPSK 50%RB#25	0.025	0.015	-0.07	18.44	21.60	0.052	Battery1#	Yes
Right Side	20300/1745	20M QPSK 50%RB#25	0.059	0.036	0.09	18.44	21.60	0.122	Battery1#	Yes
Bottom Side	20300/1745	20M QPSK 50%RB#25	0.713	0.375	-0.07	18.44	21.60	1.476	Battery1#	No
Bottom Side	20300/1745	20M QPSK 100%RB#0	0.644	0.316	-0.10	17.93	21.60	1.499	Battery1#	No
Bottom Side	20300/1745	20M QPSK 1RB#50	0.771	0.406	-0.09	18.69	22.60	1.897	With SIM2	No
Bottom Side	20300/1745	20M QPSK 1RB#50	0.718	0.375	-0.11	18.69	22.60	1.767	Battery 2#	No
Bottom Side	20300/1745	20M QPSK 1RB#50	0.729	0.382	-0.09	18.69	22.60	1.794	Battery 3#	No

Table 114: Product Specific 10-g SAR test reduction evaluation of LTE Band IV

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

Test Position of Product Specific 10-g SAR with 0mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR10-g (W/kg)	Accessory Information	SAR Plot
			1-g	10-g						
Bottom Side	20300/1745	20M QPSK 1RB#50	4.560	**1.990**	0.00	21.74	22.60	**2.426**	Battery1#	Yes
Bottom Side	20050/1720	20M QPSK 1RB#50	4.060	1.860	0.04	21.45	22.60	2.424	Battery1#	/
Bottom Side	20175/1732.5	20M QPSK 1RB#50	2.780	1.380	0.13	21.63	22.60	1.725	Battery1#	/
Bottom Side	20300/1745	20M QPSK 50%RB#25	3.500	1.550	0.16	20.71	21.60	1.903	Battery1#	/
Bottom Side	20300/1745	20M QPSK 100%RB#0	2.960	1.470	0.09	20.23	21.60	2.015	Battery1#	/
Bottom Side	20300/1745	20M QPSK 1RB#50	4.300	1.980	0.03	21.74	22.60	2.414	With SIM2	/
Bottom Side	20300/1745	20M QPSK 1RB#50	4.030	1.830	0.02	21.74	22.60	2.231	Battery 2#	/
Bottom Side	20300/1745	20M QPSK 1RB#50	4.140	1.900	0.04	21.74	22.60	2.316	Battery 3#	/

Table 115: Product Specific 10-g SAR results of LTE Band IV

7.2.10 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)	Accessory Information	SAR Plot
			1-g	10-g						
Left touch	20525/836.5	10M QPSK 1RB#25	0.238	0.184	-0.15	22.61	23.50	0.292	Battery1#	/
Left tilt	20525/836.5	10M QPSK 1RB#25	0.124	0.080	-0.02	22.61	23.50	0.152	Battery1#	/
Right touch	20525/836.5	10M QPSK 1RB#25	**0.290**	0.226	0.03	22.61	23.50	**0.356**	Battery1#	Yes
Right tilt	20525/836.5	10M QPSK 1RB#25	0.129	0.084	-0.10	22.61	23.50	0.158	Battery1#	/
Left touch	20525/836.5	10M QPSK 50%RB#13	0.179	0.124	-0.16	21.59	22.50	0.221	Battery1#	/
Left tilt	20525/836.5	10M QPSK 50%RB#13	0.099	0.063	-0.03	21.59	22.50	0.122	Battery1#	/
Right touch	20525/836.5	10M QPSK 50%RB#13	0.246	0.190	0.17	21.59	22.50	0.303	Battery1#	/
Right tilt	20525/836.5	10M QPSK 50%RB#13	0.107	0.065	-0.05	21.59	22.50	0.132	Battery1#	/
Right touch	20450/829	10M QPSK 1RB#25	0.250	0.195	0.12	22.57	23.50	0.310	Battery1#	/
Right touch	20600/844	10M QPSK 1RB#25	0.257	0.201	0.04	22.42	23.50	0.330	Battery1#	/
Right touch	20525/836.5	10M QPSK 1RB#25	0.287	0.224	0.12	22.61	23.50	0.352	With SIM2	/
Right touch	20525/836.5	10M QPSK 1RB#25	0.198	0.154	-0.12	22.61	23.50	0.243	Battery 2#	/
Right touch	20525/836.5	10M QPSK 1RB#25	0.202	0.158	0.15	22.61	23.50	0.248	Battery 3#	Yes

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)	Accessory Information	SAR Plot
			1-g	10-g						
Front Side	20525/836.5	10M QPSK 1RB#25	0.221	0.172	-0.04	22.61	23.50	0.271	Battery1#	/
Back Side	20525/836.5	10M QPSK 1RB#25	**0.230**	0.178	-0.04	22.61	23.50	**0.282**	Battery1#	Yes
Front Side	20525/836.5	10M QPSK 50%RB#13	0.172	0.122	0.00	21.59	22.50	0.212	Battery1#	/
Back Side	20525/836.5	10M QPSK 50%RB#13	0.181	0.129	-0.03	21.59	22.50	0.223	Battery1#	/
Back Side	20525/836.5	10M QPSK 1RB#25	0.218	0.169	-0.08	22.61	23.50	0.268	With SIM2	/
Back Side	20525/836.5	10M QPSK 1RB#25	0.212	0.151	-0.02	22.61	23.50	0.260	Battery 2#	/
Back Side	20525/836.5	10M QPSK 1RB#25	0.210	0.150	-0.04	22.61	23.50	0.258	Battery 3#	/

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)	Accessory Information	SAR Plot
			1-g	10-g						
Front Side	20525/836.5	10M QPSK 1RB#25	0.285	0.169	-0.12	22.61	23.50	0.350	Battery1#	/
Back Side	20525/836.5	10M QPSK 1RB#25	0.295	0.174	0.00	22.61	23.50	0.362	Battery1#	/
Left Side	20525/836.5	10M QPSK 1RB#25	0.232	0.156	0.04	22.61	23.50	0.285	Battery1#	/
Right Side	20525/836.5	10M QPSK 1RB#25	**0.483**	0.327	0.03	22.61	23.50	**0.593**	Battery1#	Yes
Bottom Side	20525/836.5	10M QPSK 1RB#25	0.229	0.120	0.16	22.61	23.50	0.281	Battery1#	/
Front Side	20525/836.5	10M QPSK 50%RB#13	0.216	0.128	-0.02	21.59	22.50	0.266	Battery1#	/
Back Side	20525/836.5	10M QPSK 50%RB#13	0.226	0.134	-0.01	21.59	22.50	0.279	Battery1#	/
Left Side	20525/836.5	10M QPSK 50%RB#13	0.181	0.121	0.00	21.59	22.50	0.223	Battery1#	/
Right Side	20525/836.5	10M QPSK 50%RB#13	0.392	0.261	0.05	21.59	22.50	0.483	Battery1#	/
Bottom Side	20525/836.5	10M QPSK 50%RB#13	0.186	0.097	0.18	21.59	22.50	0.229	Battery1#	/
Right Side	20525/836.5	10M QPSK 1RB#25	0.435	0.297	-0.07	22.61	23.50	0.534	With SIM2	/
Right Side	20525/836.5	10M QPSK 1RB#25	0.478	0.323	-0.12	22.61	23.50	0.587	Battery 2#	/
Right Side	20525/836.5	10M QPSK 1RB#25	0.463	0.314	-0.08	22.61	23.50	0.568	Battery 3#	/

Table 118: Hotspot SAR test results of LTE Band V

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

7.2.11 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)	Accessory Information	SAR Plot
			1-g	10-g						
Left touch	21100/2535	20M QPSK 1RB#50	0.143	0.076	-0.05	22.15	22.80	0.166	Battery1#	/
Left tilt	21100/2535	20M QPSK 1RB#50	0.102	0.049	0.11	22.15	22.80	0.118	Battery1#	/
Right touch	21100/2535	20M QPSK 1RB#50	0.197	0.097	0.11	22.15	22.80	0.229	Battery1#	/
Right tilt	21100/2535	20M QPSK 1RB#50	0.205	0.083	0.13	22.15	22.80	0.238	Battery1#	/
Left touch	21100/2535	20M QPSK 50%RB#25	0.096	0.051	0.12	21.28	22.00	0.113	Battery1#	/
Left tilt	21100/2535	20M QPSK 50%RB#25	0.064	0.031	0.06	21.28	22.00	0.076	Battery1#	/
Right touch	21100/2535	20M QPSK 50%RB#25	0.189	0.100	0.13	21.28	22.00	0.223	Battery1#	/
Right tilt	21100/2535	20M QPSK 50%RB#25	0.109	0.046	-0.11	21.28	22.00	0.129	Battery1#	/
Right tilt	20850/2510	20M QPSK 1RB#50	0.112	0.048	-0.17	21.90	22.80	0.138	Battery1#	/
Right tilt	21350/2560	20M QPSK 1RB#50	0.191	0.079	0.02	21.87	22.80	0.237	Battery1#	/
Right tilt	21100/2535	20M QPSK 1RB#50	0.191	0.095	0.17	22.15	22.80	0.222	With SIM2	/
Right tilt	21100/2535	20M QPSK 1RB#50	0.194	0.103	0.11	22.15	22.80	0.225	Battery 2#	/
Right tilt	21100/2535	20M QPSK 1RB#50	**0.215**	0.113	0.19	22.15	22.80	**0.250**	Battery 3#	Yes

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)	Accessory Information	SAR Plot
			1-g	10-g						
Front Side	21100/2535	20M QPSK 1RB#50	**0.502**	0.287	-0.18	22.15	22.80	**0.583**	Battery1#	Yes
Back Side	21100/2535	20M QPSK 1RB#50	0.424	0.243	0.19	22.15	22.80	0.492	Battery1#	/
Front Side	20850/2510	20M QPSK 50%RB#25	0.393	0.220	-0.16	21.28	22.00	0.464	Battery1#	/
Back Side	20850/2510	20M QPSK 50%RB#25	0.347	0.195	0.12	21.28	22.00	0.410	Battery1#	/
Front Side	21100/2535	20M QPSK 1RB#50	0.496	0.284	-0.14	22.15	22.80	0.576	With SIM2	/
Front Side	21100/2535	20M QPSK 1RB#50	0.451	0.258	-0.15	22.15	22.80	0.524	Battery 2#	/
Front Side	21100/2535	20M QPSK 1RB#50	0.462	0.264	0.02	22.15	22.80	0.537	Battery 3#	/

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)	Accessory Information	SAR Plot
			1-g	10-g						
Front Side	21100/2535	20M QPSK 1RB#50	0.344	0.192	-0.13	18.02	18.50	0.384	Battery1#	/
Back Side	21100/2535	20M QPSK 1RB#50	0.307	0.170	0.18	18.02	18.50	0.343	Battery1#	/
Left Side	21100/2535	20M QPSK 1RB#50	0.064	0.032	-0.19	18.02	18.50	0.072	Battery1#	/
Right Side	21100/2535	20M QPSK 1RB#50	0.071	0.039	-0.15	18.02	18.50	0.079	Battery1#	/
Bottom Side	21100/2535	20M QPSK 1RB#50	0.620	0.310	0.01	18.02	18.50	0.692	Battery1#	/
Front Side	20850/2510	20M QPSK 50%RB#25	0.358	0.199	-0.12	17.92	18.20	0.382	Battery1#	/
Back Side	20850/2510	20M QPSK 50%RB#25	0.356	0.192	0.16	17.92	18.20	0.380	Battery1#	/
Left Side	20850/2510	20M QPSK 50%RB#25	0.062	0.032	-0.11	17.92	18.20	0.066	Battery1#	/
Right Side	20850/2510	20M QPSK 50%RB#25	0.074	0.043	-0.05	17.92	18.20	0.079	Battery1#	/
Bottom Side	20850/2510	20M QPSK 50%RB#25	0.593	0.296	-0.03	17.92	18.20	0.632	Battery1#	/
Bottom Side	21100/2535	20M QPSK 1RB#50	0.606	0.303	-0.01	18.02	18.50	0.677	With SIM2	/
Bottom Side	21100/2535	20M QPSK 1RB#50	**0.639**	0.321	0.12	18.02	18.50	**0.714**	Battery 2#	Yes
Bottom Side	21100/2535	20M QPSK 1RB#50	0.617	0.312	0.02	18.02	18.50	0.689	Battery 3#	/

Table 121: Hotspot SAR test results of LTE Band VII

Per KDB648474D04, when hotspot mode applies, Product Specific 10-g SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg; however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold:

Test Position of Hotspot 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)	Accessory Information	Product Specific 10-g SAR Exclusion
			1-g	10-g						
Front Side	21100/2535	20M QPSK 1RB#50	0.344	0.192	-0.13	18.02	22.80	1.034	Battery1#	Yes
Back Side	21100/2535	20M QPSK 1RB#50	0.307	0.170	0.18	18.02	22.80	0.923	Battery1#	Yes
Left Side	21100/2535	20M QPSK 1RB#50	0.064	0.032	-0.19	18.02	22.80	0.193	Battery1#	Yes
Right Side	21100/2535	20M QPSK 1RB#50	0.071	0.039	-0.15	18.02	22.80	0.213	Battery1#	Yes
Bottom Side	21100/2535	20M QPSK 1RB#50	0.620	0.310	0.01	18.02	22.80	1.864	Battery1#	No
Front Side	20850/2510	20M QPSK 50%RB#25	0.358	0.199	-0.12	17.92	22.00	0.916	Battery1#	Yes
Back Side	20850/2510	20M QPSK 50%RB#25	0.356	0.192	0.16	17.92	22.00	0.911	Battery1#	Yes

Left Side	20850/2510	20M QPSK 50%RB#25	0.062	0.032	-0.11	17.92	22.00	0.159	Battery1#	Yes
Right Side	20850/2510	20M QPSK 50%RB#25	0.074	0.043	-0.05	17.92	22.00	0.189	Battery1#	Yes
Bottom Side	20850/2510	20M QPSK 50%RB#25	0.593	0.296	-0.03	17.92	22.00	1.517	Battery1#	No
Bottom Side	21100/2535	20M QPSK 1RB#50	0.606	0.303	-0.01	18.02	22.80	1.822	With SIM2	No
Bottom Side	21100/2535	20M QPSK 1RB#50	**0.639**	0.321	0.12	18.02	22.80	**1.921**	Battery 2#	No
Bottom Side	21100/2535	20M QPSK 1RB#50	0.617	0.312	0.02	18.02	22.80	1.855	Battery 3#	No

Table 122: Product Specific 10-g SAR test reduction evaluation LTE Band VII

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

Test Position of Product Specific 10-g SAR with 0mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR10-g (W/kg)	Accessory Information	SAR Plot
			1-g	10-g						
Bottom Side	21100/2535	20M QPSK 1RB#50	4.480	1.660	0.09	22.15	22.80	1.928	Battery1#	/
Bottom Side	20850/2510	20M QPSK 50%RB#25	2.820	1.020	-0.11	21.28	22.00	1.204	Battery1#	/
Bottom Side	21100/2535	20M QPSK 1RB#50	4.470	1.660	-0.09	22.15	22.80	1.928	With SIM2	/
Bottom Side	21100/2535	20M QPSK 1RB#50	4.690	**1.710**	0.01	22.15	22.80	**1.986**	Battery 2#	Yes
Bottom Side	21100/2535	20M QPSK 1RB#50	4.350	1.600	0.07	22.15	22.80	1.858	Battery 3#	/

Table 123: Product Specific 10-g SAR results LTE Band VII

7.2.12 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)	Accessory Information	SAR Plot
			1-g	10-g						
Left touch	23130/711	10M QPSK 1RB#25	0.133	0.103	-0.15	22.71	23.50	0.160	Battery1#	/
Left tilt	23130/711	10M QPSK 1RB#25	0.120	0.078	-0.03	22.71	23.50	0.144	Battery1#	/
Right touch	23130/711	10M QPSK 1RB#25	0.158	0.122	0.11	22.71	23.50	0.190	Battery1#	/
Right tilt	23130/711	10M QPSK 1RB#25	0.126	0.075	-0.10	22.71	23.50	0.151	Battery1#	/
Left touch	23130/711	10M QPSK 50%RB#13	0.099	0.070	0.19	21.56	22.50	0.123	Battery1#	/
Left tilt	23130/711	10M QPSK 50%RB#13	0.093	0.061	-0.09	21.56	22.50	0.116	Battery1#	/
Right touch	23130/711	10M QPSK 50%RB#13	0.116	0.081	-0.10	21.56	22.50	0.144	Battery1#	/
Right tilt	23130/711	10M QPSK 50%RB#13	0.098	0.059	-0.08	21.56	22.50	0.122	Battery1#	/
Right touch	23060/704	10M QPSK 1RB#25	0.140	0.110	-0.19	22.46	23.50	0.178	Battery1#	/
Right touch	23095/707.5	10M QPSK 1RB#25	0.117	0.092	-0.13	22.64	23.50	0.143	Battery1#	/
Right touch	23130/711	10M QPSK 1RB#25	0.159	0.123	0.16	22.71	23.50	0.191	With SIM2	/
Right touch	23130/711	10M QPSK 1RB#25	**0.161**	0.125	0.12	22.71	23.50	**0.193**	Battery 2#	Yes
Right touch	23130/711	10M QPSK 1RB#25	0.151	0.106	0.16	22.71	23.50	0.181	Battery 3#	/

Table 124: 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)	Accessory Information	SAR Plot
			1-g	10-g						
Front Side	23130/711	10M QPSK 1RB#25	**0.178**	0.139	-0.05	22.71	23.50	**0.214**	Battery1#	Yes
Back Side	23130/711	10M QPSK 1RB#25	0.176	0.139	-0.01	22.71	23.50	0.211	Battery1#	/
Front Side	23130/711	10M QPSK 50%RB#13	0.133	0.096	-0.01	21.56	22.50	0.165	Battery1#	/
Back Side	23130/711	10M QPSK 50%RB#13	0.133	0.096	0.05	21.56	22.50	0.165	Battery1#	/
Front Side	23130/711	10M QPSK 1RB#25	0.177	0.138	-0.03	22.71	23.50	0.212	With SIM2	/
Front Side	23130/711	10M QPSK 1RB#25	0.171	0.123	-0.02	22.71	23.50	0.205	Battery 2#	/
Front Side	23130/711	10M QPSK 1RB#25	0.173	0.124	-0.03	22.71	23.50	0.208	Battery 3#	/

Table 125: 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)	Accessory Information	SAR Plot
			1-g	10-g						
Front Side	23130/711	10M QPSK 1RB#25	0.200	0.159	-0.03	22.71	23.50	0.240	Battery1#	/
Back Side	23130/711	10M QPSK 1RB#25	0.211	0.159	0.03	22.71	23.50	0.253	Battery1#	/
Left Side	23130/711	10M QPSK 1RB#25	0.099	0.068	-0.11	22.71	23.50	0.118	Battery1#	/
Right Side	23130/711	10M QPSK 1RB#25	**0.309**	0.215	-0.05	22.71	23.50	**0.371**	Battery1#	Yes
Bottom Side	23130/711	10M QPSK 1RB#25	0.142	0.073	0.15	22.71	23.50	0.170	Battery1#	/
Front Side	23130/711	10M QPSK 50%RB#13	0.155	0.111	0.04	21.56	22.50	0.192	Battery1#	/
Back Side	23130/711	10M QPSK 50%RB#13	0.167	0.116	-0.01	21.56	22.50	0.207	Battery1#	/
Left Side	23130/711	10M QPSK 50%RB#13	0.078	0.053	0.00	21.56	22.50	0.097	Battery1#	/
Right Side	23130/711	10M QPSK 50%RB#13	0.245	0.170	-0.09	21.56	22.50	0.304	Battery1#	/
Bottom Side	23130/711	10M QPSK 50%RB#13	0.111	0.057	0.05	21.56	22.50	0.138	Battery1#	/
Right Side	23130/711	10M QPSK 1RB#25	0.296	0.206	-0.03	22.71	23.50	0.355	With SIM2	/
Right Side	23130/711	10M QPSK 1RB#25	0.302	0.209	-0.05	22.71	23.50	0.362	Battery 2#	/
Right Side	23130/711	10M QPSK 1RB#25	0.301	0.208	-0.05	22.71	23.50	0.361	Battery 3#	/

Table 126: Hotspot SAR test results of LTE Band XII

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

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

SAR for LTE Band 17 (Frequency range:704-716 MHz) is covered by LTE Band 12 (Frequency range:699-716 MHz) due to similar frequency range,same maximum tune up limit and same channel bandwidth.

7.2.14 SAR measurement Result of WiFi 2.4G

Test Position of Head	Test channel /Freq.(MHz)	Test Mode	Area Scan 1-g SAR (W/kg)	SAR Value (W/kg)		Power Drift (dB)	Actual duty factor	Scaled 1-g SAR (W/kg)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported SAR1-g (W/kg)	Accessory Information	SAR Plot
				1-g Zoom Scan	10-g Zoom Scan								
Left touch	6/2437	802.11b	0.354	0.336	0.161	0.05	99.70%	0.337	9.06	10.30	0.448	Battery 1#	/
Left tilt	6/2437	802.11b	0.352	**0.342**	0.145	0.15	99.70%	0.343	9.06	10.30	0.456	Battery 1#	Yes
Right touch	6/2437	802.11b	0.100	0.099	0.051	0.18	99.70%	0.100	9.06	10.30	0.133	Battery 1#	/
Right tilt	6/2437	802.11b	0.101	0.102	0.047	0.08	99.70%	0.102	9.06	10.30	0.136	Battery 1#	/
Left tilt	1/2412	802.11b	0.239	0.236	0.100	0.03	99.70%	0.237	8.54	10.30	0.355	Battery 1#	/
Left tilt	11/2462	802.11b	0.395	0.341	0.142	0.10	99.70%	0.342	8.49	10.30	**0.519**	Battery 1#	/
Left tilt	11/2462	802.11b	0.351	0.320	0.134	0.10	99.70%	0.321	8.49	10.30	0.487	Battery 2#	/
Left tilt	11/2462	802.11b	0.329	0.323	0.134	0.14	99.70%	0.324	8.49	10.30	0.491	Battery 3#	/

Table 127: Head SAR test results of WiFi 2.4G

Mode	Tune-up (dBm)	Tune-up (mW)	Hightest Reported SAR(W/kg)	Adjusted SAR (W/kg)	SAR test
802.11b	10.30	10.72	0.519	/	Yes
802.11g	11.00	12.59	/	0.610	No
802.11n 20M	11.00	12.59	/	0.610	No
802.11n 40M	11.00	12.59	/	0.610	No

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

Test Position of Body-Worn 15mm	Test channel /Freq.(MHz)	Test Mode	Area Scan 1-g SAR (W/kg)	SAR Value (W/kg)		Power Drift (dB)	Actual duty factor	Scaled 1-g SAR (W/kg)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported SAR1-g (W/kg)	Accessory Information	SAR Plot
				1-g Zoom Scan	10-g Zoom Scan								
Front Side	6/2437	802.11b	0.158	0.159	0.092	-0.12	99.70%	0.159	16.54	18.30	0.239	Battery 1#	/
Back Side	6/2437	802.11b	0.172	**0.175**	0.099	0.06	99.70%	**0.176**	16.54	18.30	**0.263**	Battery 1#	Yes
Back Side	6/2437	802.11b	0.171	0.173	0.098	-0.10	99.70%	0.174	16.54	18.30	0.260	Battery 2#	/
Back Side	6/2437	802.11b	0.168	0.170	0.097	0.04	99.70%	0.171	16.54	18.30	0.256	Battery 3#	/

Table 128: Body-Worn SAR test results of WiFi 2.4G

Mode	Tune-up (dBm)	Tune-up (mW)	Hightest Reported SAR(W/kg)	Adjusted SAR (W/kg)	SAR test
802.11b	18.30	67.61	0.263	/	Yes
802.11g	17.00	50.12	/	0.195	No
802.11n 20M	15.00	31.62	/	0.123	No
802.11n 40M	15.00	31.62	/	0.123	No

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

Test Position of Hotspot with 10mm	Test channel /Freq.(MHz)	Test Mode	Area Scan 1-g SAR (W/kg)	SAR Value (W/kg)		Power Drift (dB)	Actual duty factor	Scaled 1-g SAR (W/kg)	Conducted Power (dBm)	Tune-up Power (dBm)	Reported SAR1-g (W/kg)	Accessory Information	SAR Plot
				1-g Zoom Scan	10-g Zoom Scan								
Front Side	6/2437	802.11b	0.295	0.294	0.167	-0.04	99.70%	0.295	16.54	18.30	0.442	Battery1#	/
Back Side	6/2437	802.11b	0.342	0.348	0.192	-0.04	99.70%	0.349	16.54	18.30	0.523	Battery1#	/
Right Side	6/2437	802.11b	0.362	**0.357**	0.180	-0.10	99.70%	**0.358**	16.54	18.30	**0.537**	Battery1#	Yes
Top Side	6/2437	802.11b	0.191	0.210	0.090	-0.11	99.70%	0.211	16.54	18.30	0.316	Battery1#	/
Right Side	6/2437	802.11b	0.307	0.305	0.154	0.12	99.70%	0.306	16.54	18.30	0.459	Battery 2#	/
Right Side	6/2437	802.11b	0.317	0.312	0.168	-0.10	99.70%	0.313	16.54	18.30	0.469	Battery 3#	/

Table 129: Hotspot SAR test results of WiFi 2.4G

Mode	Tune-up (dBm)	Tune-up (mW)	Hightest Reported SAR(W/kg)	Adjusted SAR (W/kg)	SAR test
802.11b	18.30	67.61	0.537	/	Yes
802.11g	17.00	50.12	/	0.398	No
802.11n 20M	15.00	31.62	/	0.251	No
802.11n 40M	15.00	31.62	/	0.251	No

Note:

1) Per KDB248227D01, for Hotspot SAR test of WiFi 2.4G, SAR is measured for 2.4 GHz 802.11b DSSS using the initial test position procedure. The highest *reported* SAR for DSSS is adjusted by the ratio of OFDM 802.11g/n to DSSS specified maximum output power and the adjusted SAR is < 1.2 W/kg, so SAR for 802.11g/n is not required.
2) Note: Per KDB 648474 D04, product specific 10-g SAR test is not required for this frequency band since hotspot mode 1-g reported SAR < 1.2 W/kg.

7.2.15 SAR measurement Result of BT

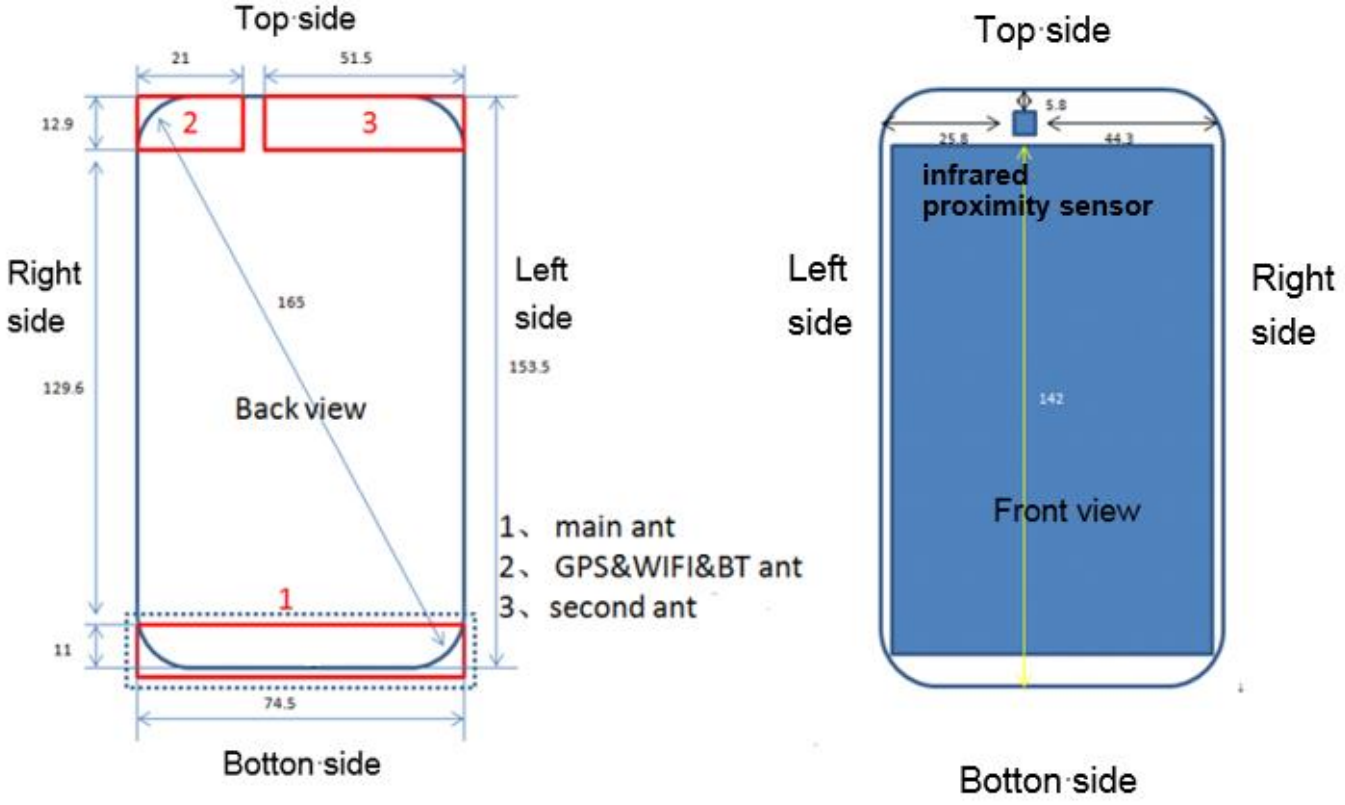
Test Position of Head	**Test channel /Freq. (MHz)**	**Test Mode**	**SAR Value (W/kg)**		**Power Drift (dB)**	**Actual duty factor**	**Scaled 1-g SAR (W/kg)**	**Conducted Power (dBm)**	**Tune-up Power (dBm)**	**Reported SAR1-g (W/kg)**	Accessory Information	SAR Plot
			1-g	**10-g**								
Left touch	78/2480	DH5	0.142	0.057	0.18	76.90%	0.185	10.97	12.00	0.234	Battery1#	/
Left tilt	78/2480	DH5	0.202	0.085	0.19	76.90%	0.263	10.97	12.00	0.333	Battery1#	/
Right touch	78/2480	DH5	0.034	0.016	0.11	76.90%	0.044	10.97	12.00	0.056	Battery1#	/
Right tilt	78/2480	DH5	0.036	0.016	0.00	76.90%	0.046	10.97	12.00	0.059	Battery1#	/
Left tilt	0/2402	DH5	0.184	0.078	-0.10	76.90%	0.239	10.05	12.00	0.375	Battery1#	/
Left tilt	39/2441	DH5	**0.219**	0.091	-0.17	76.90%	**0.285**	10.09	12.00	**0.442**	Battery1#	Yes
Left tilt	39/2441	DH5	0.157	0.065	0.03	76.90%	0.204	10.09	12.00	0.317	Battery 2#	/
Left tilt	39/2441	DH5	0.199	0.081	0.01	76.90%	0.259	10.09	12.00	0.402	Battery 3#	/

Table 130: Head SAR test results of BT

7.3 Multiple Transmitter Evaluation

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

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



Note:

1) Per KDB 648474 D04, because the diagonal distance of this device is > 160mm, it is considered a “Phablet” device.

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

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

Table 131: Sides for Hotspot SAR testing

Note:

1) Per KDB 941225 D06 and KDB 648474 D04, particular DUT edges were not required to be evaluated for Hotspot SAR if the antenna-to-edge distance is greater than 2.5cm;

2) Per KDB 648474 D04, when hotspot mode applies, product specific 10-g SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg;

7.3.1 Stand-alone SAR test exclusion

Per FCC KDB 447498D01v06, the 1-g SAR and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)]·[√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where:

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

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

Mode	Position	P_{max} (dBm)*	P_{max} (mW)	Distance (mm)	f (GHz)	Calculation Result	SAR Exclusion threshold	SAR test exclusion
BT	Head	12.00	15.85	5	2.480	4.99	3.00	No
BT	Body-Worn	12.00	15.85	15	2.480	1.66	3.00	Yes
BT	product specific 10-g SAR	12.00	15.85	5	2.480	4.99	7.50	Yes

Table 132: Standalone SAR test exclusion for BT

Note:

1)* - maximum possible output power declared by manufacturer

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

(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] • [√f(GHz)/x] W/kg for test separation distances ≤ 50 mm,where x = 7.5 for 1-g SAR and x = 18.75 for 10-g SAR.

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

Mode	Position	P_{max} (dBm)*	P_{max} (mW)	Distance (mm)	f (GHz)	X	Estimated SAR (W/kg)*
BT	Body-worn	12.00	15.85	15	2.480	7.50	0.222
BT	product specific 10-g SAR	12.00	15.85	5	2.480	18.75	0.266

Table 133: 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.	Simultaneous Tx Combination	Head	Body-worn	Hotspot	product specific 10-g SAR
1	GSM Voice(Main ant) + BT	Yes	Yes	N/A	Yes
2	GSM DATA(Main ant) + BT	N/A	Yes	N/A	Yes
3	GSM Voice(Second ant) + BT	Yes	Yes	N/A	Yes
4	GSM DATA (Second ant)+ BT	N/A	Yes	N/A	Yes
5	GSM Voice(Main ant) + WiFi 2.4G	Yes	Yes	N/A	Yes
6	GSM DATA(Main ant) + WiFi 2.4G	N/A	Yes	Yes	Yes
7	GSM Voice(Second ant) + WiFi 2.4G	Yes	Yes	N/A	Yes
8	GSM DATA(Second ant) + WiFi 2.4G	N/A	Yes	Yes	Yes
9	UMTS Voice(Main ant) + BT	Yes	Yes	N/A	Yes
10	UMTS Data(Main ant) + BT	N/A	Yes	N/A	Yes
11	UMTS Voice(Second ant) + BT	Yes	Yes	N/A	Yes
12	UMTS Data(Second ant) + BT	N/A	Yes	N/A	Yes
13	UMTS Voice(Main ant) + WiFi 2.4G	Yes	Yes	N/A	Yes
14	UMTS Data (Main ant) + WiFi 2.4G	N/A	Yes	Yes	Yes
15	UMTS Voice (Second ant) + WiFi 2.4G	Yes	Yes	N/A	Yes
16	UMTS Data (Second ant)+ WiFi 2.4G	N/A	Yes	Yes	Yes
17	LTE (Main ant) + WiFi 2.4G	Yes*	Yes*	Yes	Yes
18	LTE(Main ant) + BT	Yes*	Yes*	N/A	Yes
19	LTE (Second ant) + WiFi 2.4G	Yes*	Yes*	Yes	Yes
20	LTE (Second ant) + BT	Yes*	Yes*	N/A	Yes

Table 134: Simultaneous Transmission Possibilities

Note:

1) Wi-Fi and Bluetooth share the same Tx antenna and can't transmit simultaneously.

2) The device does not support DTM function.

3) * VoLTE or pre-installed VOIP applications are considered.

4) The Main Antenna and Second Antenna can't transmit simultaneously.

6) The device supports VoWIFI function.

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 (Also see Section 7.3). 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 power reduction are used.

Test Position		Main antenna SAR_{Max}										WiFi/BT antenna SAR_{Max}		Σ1-g or Prouduct Specific 10-g SAR	SPLSR	Volume scan
		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	WiFi 2.4G	BT			
Head	Left touch	0.280	0.093	0.191	0.117	0.392	0.130	0.117	0.292	0.166	0.160	0.448	0.234	0.840	N/A	N/A
	Left tilt	0.177	0.094	0.210	0.074	0.188	0.123	0.066	0.152	0.118	0.144	0.519	0.442	0.729	N/A	N/A
	Right touch	0.453	0.192	0.396	0.276	0.527	0.259	0.219	0.356	0.250	0.193	0.133	0.056	0.660	N/A	N/A
	Right tilt	0.291	0.136	0.277	0.100	0.196	0.148	0.091	0.158	0.238	0.151	0.136	0.059	0.427	N/A	N/A
Body-worn 15mm	Front side	0.406	0.365	0.791	0.594	0.364	0.544	0.658	0.271	0.583	0.214	0.239	0.222	1.030	N/A	N/A
	Back side	0.427	0.335	0.716	0.515	0.437	0.468	0.570	0.282	0.492	0.211	0.263	0.222	0.979	N/A	N/A
Hotspot 10mm	Front side	0.446	0.608	0.412	0.749	0.490	0.598	0.519	0.350	0.384	0.240	0.442	/	1.191	N/A	N/A
	Back side	0.412	0.597	0.381	0.645	0.504	0.540	0.439	0.362	0.380	0.253	0.523	/	1.168	N/A	N/A
	Left side	0.351	0.080	0.061	0.059	0.323	0.130	0.031	0.285	0.072	0.118	/	/	0.351	N/A	N/A
	Right side	0.721	0.142	0.106	0.101	0.754	0.246	0.072	0.593	0.079	0.371	0.537	/	1.291	N/A	N/A
	Top side	/	/	/	/	/	/	/	/	/	/	0.316	/	0.316	N/A	N/A
	Bottom side	0.360	0.960	0.834	1.298	0.400	1.109	0.857	0.281	0.714	0.170	/	/	**1.298**	N/A	N/A
Prouduct Specific 10-g 0mm	Front side	/	/	/	/	/	/	/	/	/	/	/	0.266	0.266	N/A	N/A
	Back side	/	/	/	/	/	/	/	/	/	/	/	0.266	0.266	N/A	N/A
	Left side	/	/	/	/	/	/	/	/	/	/	/	/	0.000	N/A	N/A
	Right side	/	/	/	/	/	/	/	/	/	/	/	0.266	0.266	N/A	N/A
	Top side	/	/	/	/	/	/	/	/	/	/	/	0.266	0.266	N/A	N/A
	Bottom side	/	1.516	2.926	3.108	/	2.983	2.426	/	1.986	/	/	/	3.108	N/A	N/A

Table 135: SAR Simultaneous Tx Combination of Main antenna and WiFi/BT antenna.

Test Position		Second antenna SAR_{Max}										WiFi/BT antenna SAR_{Max}		Σ1-g or Prouduct Specific 10-g SAR	SPLSR	Volume scan
		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	WiFi 2.4G	BT			
Head	Left touch	0.929	0.270	0.315	0.279	0.958	0.314	0.334	0.613	0.250	0.494	0.448	0.234	1.406	N/A	N/A
	Left tilt	0.912	0.234	0.300	0.258	0.899	0.237	0.324	0.615	0.263	0.525	0.519	0.442	**1.431**	N/A	N/A
	Right touch	1.295	1.007	1.077	1.046	1.246	1.223	1.230	0.956	0.977	0.943	0.133	0.056	1.428	N/A	N/A
	Right tilt	1.083	0.679	0.821	0.735	1.127	0.759	1.082	0.781	0.993	0.761	0.136	0.059	1.263	N/A	N/A
Body 15mm	Front side	0.421	0.145	0.317	0.211	0.421	0.214	0.149	0.298	0.281	0.242	0.239	0.222	0.660	N/A	N/A
	Back side	0.355	0.166	0.340	0.235	0.375	0.203	0.166	0.265	0.249	0.218	0.263	0.222	0.638	N/A	N/A
Hotspot 10mm	Front side	0.838	0.345	0.566	0.458	0.924	0.348	0.298	0.650	0.481	0.457	0.442	/	1.366	N/A	N/A
	Back side	0.793	0.322	0.605	0.418	0.769	0.353	0.314	0.525	0.489	0.480	0.523	/	1.316	N/A	N/A
	Left side	0.734	0.445	0.910	0.472	0.683	0.600	0.345	0.467	0.939	0.348	/	/	0.939	N/A	N/A
	Right side	0.243	0.026	0.060	0.034	0.186	0.042	0.022	0.131	0.020	0.095	0.537	/	0.780	N/A	N/A
	Top side	0.824	0.338	0.524	0.560	0.866	0.361	0.375	0.578	0.462	0.391	0.316	/	1.182	N/A	N/A
	Bottom side	/	/	/	/	/	/	/	/	/	/	/	/	0.000	N/A	N/A
Prouduct Specific 10-g 0mm	Front side	/	/	/	/	/	/	/	/	/	/	/	0.266	0.266	N/A	N/A
	Back side	/	/	/	/	/	/	/	/	/	/	/	0.266	0.266	N/A	N/A
	Left side	/	/	/	/	/	/	/	/	/	/	/	/	0.000	N/A	N/A
	Right side	/	/	/	/	/	/	/	/	/	/	/	0.266	0.266	N/A	N/A
	Top side	/	/	/	/	/	/	/	/	/	/	/	0.266	0.266	N/A	N/A
	Bottom side	/	/	/	/	/	/	/	/	/	/	/	/	0.000	N/A	N/A

Table 136: SAR Simultaneous Tx Combination of Second antenna and WiFi/BT antenna.

7.3.4 Simultaneous Transmission Conclusion

The above numeral summed SAR results is sufficient to determine that simultaneous transmission cases will not exceed the SAR limit and therefore simultaneous transmission SAR with Volume Scans is not required per KDB 447498 D01v06.

Appendix A. System Check Plots
(Pls See Appendix No.: SYBH(Z-SAR)019042017-2A, total: 32 pages)

Appendix B. SAR Measurement Plots
(Pls See Appendix No.: SYBH(Z-SAR)019042017-2B, total: 92 pages)

Appendix C. Calibration Certificate
(Pls See Appendix No.: SYBH(Z-SAR)019042017-2C, total: 92 pages)

Appendix D. Photo documentation
(Pls See Appendix No.: SYBH(Z-SAR)019042017-2D, total: 6 pages)

End