



FCC SAR Compliance Test Report

Product Name: Smart Phone

Model: H1512

Report No.: SYBH(Z-SAR)019082015-2

FCC ID: QISH1512

	APPROVED (Lab Manager)	PREPARED (Test Engineer)
BY	<i>Wei Huanbin</i>	<i>Gong Zhong</i>
DATE	2015-09-15	2015-09-15

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Reliability Laboratory of Huawei Technologies Co., Ltd.

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

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

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※ ※ **Modified History** ※ ※

REV.	DESCRIPTION	ISSUED DATE	REMARK
Rev.1.0	Initial Test Report Release	2015-09-15	Gong Zhong

1 General Information

1.1 Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for H1512 is as below Table 1.

Band	Max Reported SAR(W/kg)			
	1-g Head	1-g Body-worn (15mm) *	1-g Hotspot (10mm)	10-g Extremity (0mm)**
GSM850	1.49	0.30	0.48	/
GSM1900	0.14	0.60	1.17	1.43
UMTS Band II	0.14	0.69	0.84	1.46
UMTS Band IV	0.12	0.53	1.14	3.59
UMTS Band V	1.49	0.32	0.42	/
CDMA BC 0	1.39	0.41	0.67	/
CDMA BC 1	0.15	0.67	1.23	3.49
LTE Band II	0.18	0.81	1.14	1.44
LTE Band IV	0.11	0.56	1.43	3.62
LTE Band V	1.31	0.30	0.58	/
LTE Band VII	0.50	0.49	1.33	3.62
LTE Band XVII	1.28	0.23	0.31	/
LTE Band XXXVIII	0.24	0.14	0.58	/
LTE Band XLI	0.31	0.25	0.91	0.58
WiFi 2.4G	0.80	0.21	0.11	/
WiFi 5G	1.06	0.25	0.11	3.54
The highest simultaneous SAR value is 1.55 W/kg per KDB690783 D01				

Table 1: Summary of test result

Note:

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

2)** For 10-g Extremity operation, this device has been tested and meets the 10-g SAR limits of 4.0 W/kg for general population/ uncontrolled exposure according to ANSI C95.1:1992/IEEE C95.1:1991 and Industry Canada Radio Standards Specification RSS-102.

The device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits according to the FCC rule §2.1093, the ANSI C95.1:1992/IEEE C95.1:1991, the NCRP Report Number 86 for uncontrolled environment, according to the Industry Canada Radio Standards Specification RSS-102 for General Population/Uncontrolled exposure, and had been tested in accordance with the measurement methods and procedures specified in IEEE Std 1528-2013.

1.2 RF exposure limits

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

Table 2: RF exposure limits

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

Notes:

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

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

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

1.3 EUT Description

Device Information:			
Product Name:	Smart Phone		
Model:	H1512		
FCC ID :	QISH1512		
MEID:	86798202000363		
Device Type :	Portable device		
Device Phase:	Identical Prototype		
Exposure Category:	Uncontrolled environment / general population		
Hardware Version :	HL3NINAMH		
Software Version :	User release M MDA2		
Antenna Type :	Internal antenna		
Others Accessories	Headset		
Device Operating Configurations:			
Supporting Mode(s)	GSM850/1900, UMTS Band II/IV/V, CDMA BC0/BC1, LTE Band II/IV/V/VII/XVII/ XXXVIII/XLI, WiFi 2.4G/5G, BT, NFC		
Test Modulation	GSM(GMSK/8PSK),UMTS(QPSK),CDMA(QPSK),LTE(QPSK/16QAM), WiFi(DSSS/OFDM),BT(GFSK)		
Device Class	B		
Operating Frequency Range(s)	Band	Tx (MHz)	Rx (MHz)
	GSM850	824-849	869-894
	GSM1900	1850-1910	1930-1990
	UMTS Band II	1850-1910	1930-1990
	UMTS Band IV	1710-1755	2110-2155
	UMTS Band V	824-849	869-894
	CDMA BC0	824-849	869-894
	CDMA BC1	1850-1910	1930-1990
	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 XVII	704-716	734-746
	LTE Band XXXVIII	2570-2620	2570-2620
	LTE Band XLI	2496-2690	2496-2690
	BT	2402-2480	
	WiFi 2.4G	2412-2462	
	WiFi 5G	5150-5250	
		5250-5350	
		5470-5725	
5725-5850			
NFC	13.56		
GPRS Multislot Class(10)	Max Number of Timeslots in Uplink:	2	
	Max Number of Timeslots in Downlink:	4	
	Max Total Timeslot:	5	

EGPRS Multislot Class(10)	Max Number of Timeslots in Uplink:	2
	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 Up"(CDMA BC 0)	
	3, tested with power control "all Up"(CDMA BC 1)	
	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 XVII)	
	3, tested with power control all Max.(LTE Band XXXVIII)	
	3, tested with power control all Max.(LTE Band XLI)	
	Test Channels (low-mid-high):	128-190-251(GSM850)
512-661-810(GSM1900)		
9262-9400-9538(UMTS Band II)		
1312-1413-1513(UMTS Band IV)		
4132-4182-4233(UMTS Band V)		
1013-384-777(CDMA BC 0)		
25-600-1175(CDMA BC 1)		
450-565-670(CDMA BC 10)		
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)		

Test Channels (low-mid-high):	23755-23790-23825(LTE Band XVII BW=5MHz)
	23780-23790-23800(LTE Band XVII BW=10MHz)
	37775-38000-38225(LTE Band XXXVIII BW=5MHz)
	37800-38000-38200(LTE Band XXXVIII BW=10MHz)
	37825-38000-38175(LTE Band XXXVIII BW=15MHz)
	37850-38000-38150(LTE Band XXXVIII BW=20MHz)
	39675-40148-40620-41092-41565(LTE Band XLI BW=5MHz)
	39700-40160-40620-41080-41540(LTE Band XLI BW=10MHz)
	39725-40173-40620-41068-41515(LTE Band XLI BW=15MHz)
	39750-40185-40620-41055-41490(LTE Band XLI BW=20MHz)
	802.11b/g/n 20M:1-6-11 (WiFi 2.4G)
	802.11n 40M: 3-6-9(WiFi 2.4G)
	802.11a/n/ac 20M: 36-40-44-48-52-56-60-64-100-104-108-112-116-120-124-128-132-136-140-144-149-153-157-161-165
	802.11 n/ac 40M: 38-46-54-62-102-110-118-126-134-142-151-159
802.11ac 80M: 42-58-106-122-138-155(WiFi 5G)	

Table 3: Device information and operating configuration

1.3.1 General Description

H1512 is subscriber equipment in the LTE/WCDMA/CDMA/GSM system. The GSM/GPRS/EDGE frequency band includes GSM850 and GSM900 and DCS1800 and PCS1900. The HSPA+/UMTS frequency band is Band I and Band II and Band IV and Band V. The CDMA/1XEV-DO band is BC1 and BC0. The LTE frequency band is B1/2/3/4/5/7/8/9/17/19/20/28/38/39/40/41. But only GSM850 and GSM1900MHz and WCDMA Band II and Band IV and Band V and CDMA BC1 and BC0 and LTE 2/4/5/7/17/38/41 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 and CDMA2000 1x and 1XEV-DO protocol processing, voice, video MMS service, GPS, AGPS, NFC and WIFI etc. Externally it provides micro SD card interface (it can also used as micro SD card interface), earphone port (to provide voice service) and USIM card interface. It also provides Bluetooth module to synchronize data between a PC and the phone, or to use the built-in modem of the phone to access the Internet with a PC, or to exchange data with other Bluetooth devices.

Battery information:

Name	Manufacture	Serials number	Description
Rechargeable Li-ion	Huawei Technologies Co., Ltd.	NA	Battery Model: HB416683ECW Rated capacity: 3450mAh Nominal Voltage:  +3.8V Charging Voltage:  +4.35V

The mobile phone H1511 and H1512 are LTE/UMTS mobile phone with NFC. The differences between H1511 and H1512 are showed in the following table. Other parts of the mobile phone are the same, including the appearance, the antenna, Chipset, NFC mode, Bluetooth mode, Wifi mode, Battery, Mainboard and so on. The different frequency accord to the software to control

	H1511	H1512
LTE bands	B2/4/5/7/12/13/17/25/26/29/30/41	B2/4/5/7/17/38/41
WCDMA bands	B2/B4/B5	B2/B4/B5
CDMA Bands	BC0/1/10	BC0/1
GSM bands	850/1900	850/1900
NFC mode	the same	the same
camera	the same	the same
FLASH	the same	the same
Main board	the same	the same
PCB layout	the same	the same
Appearance	the same	the same
Bluetooth mode	the same	the same
2.4G Wi-Fi STA	2412-2462 MHz	2412-2462 MHz
2.4G Wi-Fi Hotspot	2412-2462 MHz	2412-2462 MHz
5G Wi-Fi STA	5150-5350, 5470-5850 MHz	5150-5350, 5470-5850 MHz
5G Wi-Fi Hotspot	5150-5250 MHz, 5725-5850 MHz	5150-5250 MHz, 5725-5850 MHz
BT/ WLAN antenna	the same	the same
GSM/ WCDMA /LTE antenna	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

Note: According to the difference description above, for the new-added LTE Band XXXVIII, full SAR test is performed on H1512; for the other same frequency band, H1512 shares the same test data of the H1511 (report no.: SYBH(Z-SAR)011072015-2) for each frequency band and each RF exposure condition.

1.3.2 TDD LTE additional specification

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

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

1.3.3 Power reduction specification

This device uses a single fixed level of power reduction through static table look-up for SAR compliance and it is triggered by a single event or operation:

1) A fixed level power reduction is applied for some frequency bands when hotspot mode becomes active. When the hotspot is disabled, the power value will be recovered.

2) A fixed level power reduction is applied for some frequency bands when simultaneously transmitting with the other antennas in certain simultaneous transmission conditions. The standalone SAR compliance still uses the standalone SAR results tested at the maximum output power level without any power reduction.

3) This device uses an infrared proximity sensor to facilitate triggering in typical user interactivity with the device. The proximity sensor is used to indicate when the phone is held close to a user's ear or used in front side of body-worn/10g extremity exposure condition. It utilizes the proximity sensor to reduce a fixed level output power in specific wireless and operating modes to ensure SAR compliance for the following scenarios:

a) To reduce the output power of Wi-Fi antennas during Wi-Fi calling (Wi-Fi VOIP) in held-to-ear scenario.

b) To reduce the output power when 2G&3G&4G sub antenna in voice mode and Wi-Fi antennas transmitting simultaneously in held-to-ear scenario or front side of body-worn/10g extremity scenario.

The procedures in KDB 616217 are applied to determine the sensor triggering distances (Refer to Section 7 for details).

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.

WiFi antenna(s) Only		
Band	Power Reduction Level Amount(dB)	
	WiFi ant(WiFi VOIP) + Sensor on	WiFi ant (WiFi VOIP) + Sensor off
WiFi 2.4G	5.0	0.0
WiFi 5G	5.0	0.0

2G&3G&4G Second antenna + WiFi antenna(s) simultaneous transmission			
Band	Power Reduction Level Amount (dB)		
	Second Antenna(Voice) + WiFi station+Sensor on	Second Antenna(Voice) +WiFi station+Sensor off	Second Antenna +WiFi Hotspot
GSM850	2.0	1.0	3.5
UMTS Band V	2.8	1.8	2.8
CDMA BC0	3.2	2.2	3.2
LTE B5	1.7	0.7	1.7
LTE B17	1.7	0.7	1.7
2.4G WIFI	8.0	6.0	8.0
5G WIFI	8.0	6.0	8.0

2G&3G&4G Main antenna + WiFi antenna(s) simultaneous transmission		
Band	Power Reduction Level Amount (dB)	
	Main Antenna(Voice) + WiFi station	Main Antenna + WiFi Hotspot
GSM850	1.0	2.0
GSM1900	2.0	3.0
UMTS Band II	2.0	3.0
UMTS Band IV	2.0	3.0
UMTS Band V	1.0	2.0
CDMA BC0	1.5	2.5
CDMA BC1	2.7	3.7
LTE B2	1.8	2.8
LTE B4	2.0	3.0
LTE B5	0.0	1.0
LTE B7	1.8	2.8
LTE B17	0.0	1.0
LTE B38	0.0	0.0
LTE B41	1.7	2.7
2.4G WIFI	7.0	7.0
5G WIFI	7.0	7.0

1.3.4 Downlink LTE CA additional specification

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

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

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

E-UTRA CA configuration / Bandwidth combination set				
E-UTRA CA configuration	Component carriers in order of increasing carrier frequency		Maximum aggregated bandwidth [MHz]	Bandwidth combination set
	Channel bandwidths for carrier [MHz]	Channel bandwidths for carrier [MHz]		
CA_3C	5, 10, 15	20	40	0
	20	5, 10, 15, 20		
CA_7C	15	15	40	0
	20	20		
	10	20	40	1
	15	15, 20		
	20	10, 15, 20		
CA_39C	5,10,15	20	35	0
	20	5, 10, 15		
CA_40C	10	20	40	0
	15	15		
	20	10, 20		
	10, 15	20	40	1
	15	15		
	20	10, 15, 20		
CA_41C	10	20	40	0
	15	15, 20		
	20	10, 15, 20		
	5, 10	20	40	1
	15	15, 20		
	20	5, 10, 15, 20		
	10	15, 20	40	2
	15	10, 15, 20		
	20	10, 15, 20		

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

E-UTRA CA configuration / Bandwidth combination set				
E-UTRACA configuration	Component carriers in order of increasing carrier frequency		Maximum aggregated bandwidth [MHz]	Bandwidth combination set
	Channel bandwidths for carrier [MHz]	Channel bandwidths for carrier [MHz]		
CA_3A-3A	5, 10, 15, 20	5, 10, 15, 20	40	0
CA_7A-7A	5	15	40	0
	10	10, 15		
	15	15, 20		
	20	20		

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

E-UTRA CA configuration / Bandwidth combination set									
E-UTRA CA Configuration	E-UTRA Bands	1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz	Maximum aggregated bandwidth [MHz]	Bandwidth combination set
CA_1A-5A	1				Yes			20	0
	5				Yes				
CA_1A-5A	1			Yes	Yes	Yes	Yes	30	1
	5			Yes	Yes				
CA_1A-8A	1			Yes	Yes	Yes	Yes	30	0
	8			Yes	Yes				
	1			Yes	Yes			20	1
	8			Yes	Yes				
	1			Yes	Yes	Yes	Yes	30	2
8		Yes	Yes	Yes					
CA_1A-19A	1			Yes	Yes	Yes	Yes	35	0
	19			Yes	Yes	Yes			
CA_3A-5A	3				Yes			20	1
	5			Yes	Yes				
CA_3A-7A	3			Yes	Yes	Yes	Yes	40	0
	7				Yes	Yes	Yes		
CA_3A-8A	3				Yes	Yes	Yes	30	0
	8			Yes	Yes				
	3				Yes			20	1
	8			Yes	Yes				
	3			Yes	Yes	Yes	Yes	30	2
8		Yes	Yes	Yes					
CA_3A-19A	3			Yes	Yes	Yes	Yes	35	0
	19			Yes	Yes	Yes			
CA_3A-20A	3			Yes	Yes	Yes	Yes	30	0
	20			Yes	Yes				
	3			Yes	Yes	Yes	Yes	40	1
	20			Yes	Yes	Yes	Yes		
CA_3A-28A	3			Yes	Yes	Yes	Yes	40	0
	28			Yes	Yes	Yes	Yes		
	13				Yes				
	30			Yes	Yes				
CA_5A-7A	5	Yes	Yes	Yes	Yes			30	0
	7				Yes	Yes	Yes		
CA_7A-20A	7				Yes	Yes	Yes	30	0
	20			Yes	Yes				
	7				Yes	Yes	Yes	40	1
	20			Yes	Yes	Yes	Yes		
CA_7A-28A	7			Yes	Yes	Yes	Yes	35	0
	28			Yes	Yes	Yes			

Note:

- 1) For inter-band CA, all the listed bands above can be used as PCC or SCC except for LTE B29. LTE B29 can be used as SCC only.
- 2) The channel spacing and aggregated channel bandwidth for CA are identical to the associated specification in 3GPP TS 36.101 V12.8.0.
- 3) The reference test frequencies for CA refers to 3GPP TS 36.508 V12.5.0.
- 4) Downlink LTE CA Conducted Power Testing is not required in bands or modes not intended/allowed for US operation(Refer to section 7.1 for details).

1.3.5 Dynamic antenna switching specification

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

1) Description of 2G&3G&4G dynamic antenna switching

The device has two 2G/3G/4G Tx antennas (Main Antenna and Second Antenna). It can transmit from either Main Antenna (Ant1) or Second Antenna (Ant 2), but they can not transmit simultaneously. For 2G&3G&4G SAR test, the Main Antenna and Second Antenna are set to the MAX transmit power level respectively and test the SAR respectively in all applicable RF exposure conditions. Some AT commands are supplied to fix the operation state and choose the antenna so that only one TX antenna is chosen and tested at a time. All independent antennas will be completely covered by the appropriate SAR measurements and all simultaneous transmission possibilities will be fully considered to ensure SAR compliance. (Refer to Section 7 for details)

2) Description of 802.11b 2.4G Wi-Fi dynamic switching

The device also supports the dynamic antenna switching function for 802.11b 2.4G WiFi .The device has two Wi-Fi Tx antennas (Main Wi-Fi &BT antenna and Sub WiFi Antenna). The 802.11b Wi-Fi dynamic switching is based on diversity technology. In 802.11b diversity mode, Wi-Fi function is able to judge the one of the two paths with the higher RSSI and select it as the Tx/Rx path dynamically in order to gain the best performance. 802.11b can transmit from either Main Wi-Fi antenna or Sub WiFi Antenna, but can not transmit simultaneously.

For 802.11b Wi-Fi SAR test, the test lab will set the Main Wi-Fi Antenna / Sub Wi-Fi Antenna to the MAX transmit power level respectively and test the SAR respectively in all applicable RF exposure conditions per KDB248227D01v02r01. Only one Wi-Fi TX antenna is chosen at a time. It is conservative enough to ensure the SAR compliance.

1.3.6 802.11g/a Wi-Fi CDD and 802.11 n/ac Wi-Fi MIMO specification

The device supports Wi-Fi CDD mode when Wi-Fi working in 802.11g/a mode.

CDD is a kind of transmit diversity mechanism implemented by applying a different phase delay (cyclic phase delay) for each OFDM subcarrier. It is used in spatial multiplexing to increase diversity between the two spatial paths. In CDD mode, both of the Wi-Fi Tx antennas are transmitting the same information with the same data rate, at the same channel and the same time. CDD means it is not one but two paths of Wi-Fi transmitting as the same time.

Besides, the device also supports Wi-Fi MIMO mode in 802.11 n/ac. It does not support 802.11 n/ac Wi-Fi SISO mode. The two Wi-Fi antennas can only transmit at the same time in 802.11 n/ac.

For 802.11 g/a WIFI CDD and 802.11n/ac Wi-Fi MIMO SAR test, only the scenario two Wi-Fi antennas transmitting at the same time are supported and need to be considered. The common Initial Test Position and OFDM Initial Test Configuration Procedures per KDB 248227D01v02r01 are applied for 2.4G Wi-Fi 802.11g/n and 5G Wi-Fi 802.11 a/n/ac SAR test respectively in all applicable RF exposure conditions.

1.4 Test specification(s)

ANSI C95.1:1992	Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz – 300 GHz.(IEEE Std C95.1-1991)
IEEE Std 1528-2013	Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques
RSS-102	Radio Frequency Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands (Issue 5 of March 2015)
KDB941225 D01	3G SAR Procedures v03
KDB941225 D05	SAR for LTE Devices v02r03
KDB941225 D05A	LTE Rel.10 KDB Inquiry Sheet v01
KDB941225 D06	Hotspot SAR v02
KDB447498 D01	General RF Exposure Guidance v05r02
KDB616217 D04	SAR for laptop and tablets v01r01
KDB648474 D04	Handsets SAR v01r02
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 v01r01
KDB690783 D01	SAR Listings on Grants v01r03

1.5 Testing laboratory

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

1.6 Applicant and Manufacturer

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

1.7 Application details

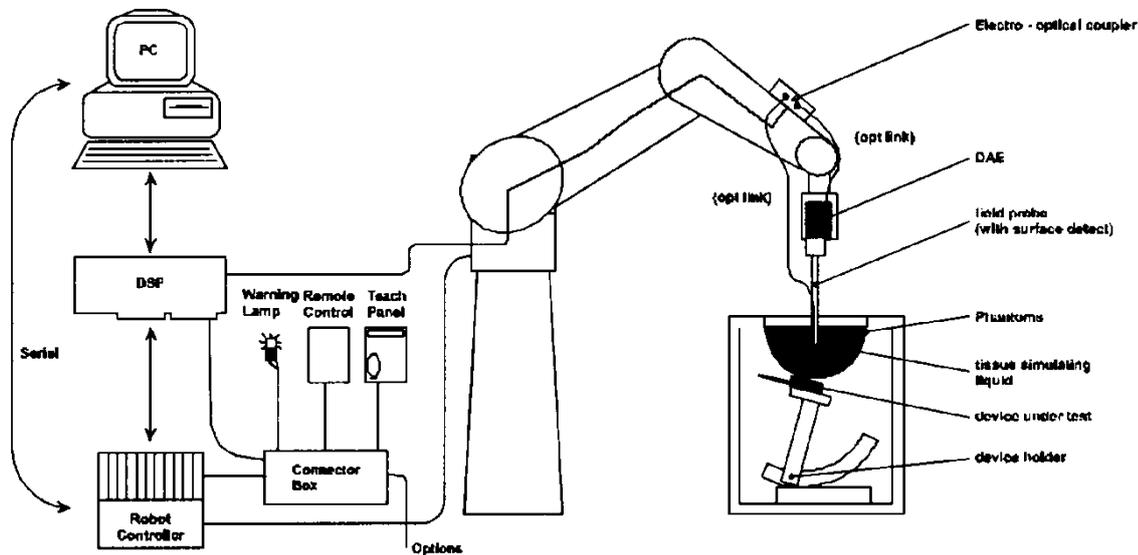
Start Date of test	2015-07-22
End Date of test	2015-09-04

1.8 Ambient Condition

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

2 SAR Measurement System

2.1 SAR Measurement Set-up



The DASY5 system for performing compliance tests consists of the following items:

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

2.2 Test environment

The DASY5 measurement system is placed at the head end of a room with dimensions: 5 x 2.5 x 3 m³, the SAM phantom is placed in a distance of 75 cm from the side walls and 1.1m from the rear wall. Above the test system a 1.5 x 1.5 m² array of pyramid absorbers is installed to reduce reflections from the ceiling.

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

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

2.3 Data Acquisition Electronics description

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

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

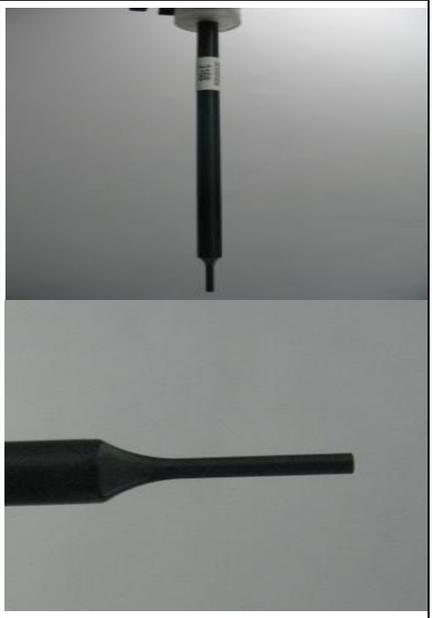
DAE4

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

2.4 Probe description

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

Isotropic E-Field Probe ES3DV3 for Dosimetric Measurements

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

Isotropic E-Field Probe EX3DV4 for Dosimetric Measurements

Construction	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)	
Calibration	ISO/IEC 17025 calibration service available.	
Frequency	10 MHz to >6 GHz; Linearity: ± 0.2 dB (30 MHz to 6 GHz)	
Directivity	± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)	
Dynamic range	10 μ W/g to > 100 mW/g; Linearity: ± 0.2 dB (noise: typically < 1 μ W/g)	
Dimensions	Overall length: 337 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm	
Application	High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields). Only probe which enables compliance testing for frequencies up to 6 GHz with precision of better 30%	

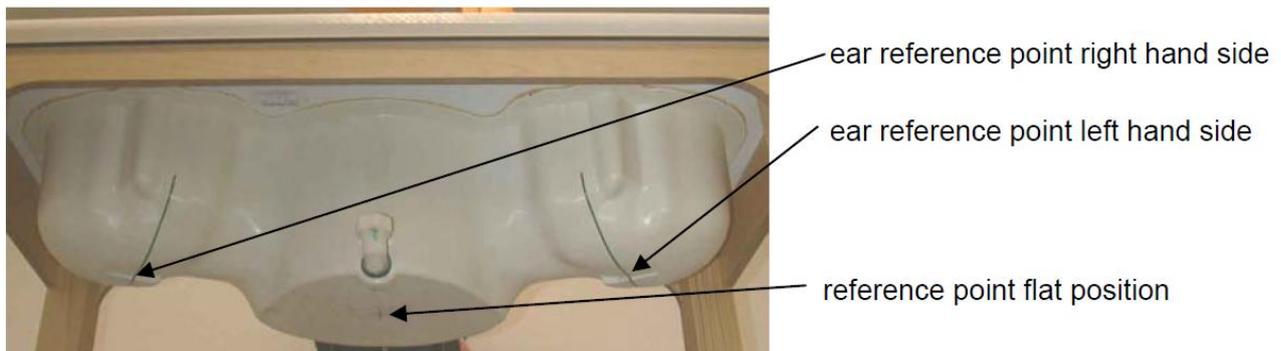
2.5 Phantom description

SAM Twin Phantom

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

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

The following figure shows the definition of reference point:



ELI4 Phantom

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

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

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

2.6 Device holder description

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



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

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

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

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

2.7 Test Equipment List

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

Devices used during the test described are marked

	Manufacturer	Device	Type	Serial number	Date of last calibration	Valid period
<input checked="" type="checkbox"/>	SPEAG	Dosimetric E-Field Probe	EX3DV4	3736	2015-04-30	One year
<input checked="" type="checkbox"/>	SPEAG	Dosimetric E-Field Probe	EX3DV4	7350	2015-01-08	One year
<input checked="" type="checkbox"/>	SPEAG	Dosimetric E-Field Probe	ES3DV3	3168	2014-09-24	One year
<input checked="" type="checkbox"/>	SPEAG	750MHz Dipole	D750V3	1044	2014-09-19	Three years
<input checked="" type="checkbox"/>	SPEAG	835MHz Dipole	D835V2	4d059	2013-05-02	Three years
<input checked="" type="checkbox"/>	SPEAG	1750MHz Dipole	D1750V2	1123	2014-07-08	Three years
<input checked="" type="checkbox"/>	SPEAG	1900MHz Dipole	D1900V2	5d143	2014-09-23	Three years
<input checked="" type="checkbox"/>	SPEAG	2300MHz Dipole	D2300V2	1016	2014-11-19	Three years
<input checked="" type="checkbox"/>	SPEAG	2450MHz Dipole	D2450V2	860	2014-11-19	Three years
<input checked="" type="checkbox"/>	SPEAG	2600MHz Dipole	D2600V2	1021	2015-07-24	Three years
<input checked="" type="checkbox"/>	SPEAG	5GHz Dipole	D5GHzV2	1155	2015-04-27	Three years
<input checked="" type="checkbox"/>	SPEAG	Data acquisition electronics	DAE4	1236	2014-11-13	One year
<input checked="" type="checkbox"/>	SPEAG	Data acquisition electronics	DAE4	852	2015-04-27	One year
<input checked="" type="checkbox"/>	SPEAG	Software	DASY 5	N/A	NCR	NCR
<input checked="" type="checkbox"/>	SPEAG	Twin Phantom	SAM1	TP-1475	NCR	NCR
<input checked="" type="checkbox"/>	SPEAG	Twin Phantom	SAM2	TP-1474	NCR	NCR
<input checked="" type="checkbox"/>	SPEAG	Twin Phantom	SAM3	TP-1597	NCR	NCR
<input checked="" type="checkbox"/>	SPEAG	Twin Phantom	SAM4	TP-1620	NCR	NCR
<input type="checkbox"/>	SPEAG	Flat Phantom	ELI 4.0	TP-1038	NCR	NCR
<input type="checkbox"/>	SPEAG	Flat Phantom	ELI 4.0	TP-1111	NCR	NCR
<input type="checkbox"/>	R & S	Universal Radio Communication Tester	CMU 200	113989	2015-05-18	One year
<input checked="" type="checkbox"/>	R & S	Universal Radio Communication Tester	CMW 500	126855	2015-07-02	One year
<input checked="" type="checkbox"/>	Agilent	Network Analyser	E5071C	MY46213349	2015-02-13	One year
<input checked="" type="checkbox"/>	Agilent	Dielectric Probe Kit	85070E	2484	NCR	NCR
<input checked="" type="checkbox"/>	Agilent	Signal Generator	N5181A	MY47420989	2015-01-07	One year
<input checked="" type="checkbox"/>	MINI-CIRCUITS	Amplifier	ZHL-42W	QA1402001	NCR	NCR
<input type="checkbox"/>	MINI-CIRCUITS	Amplifier	ZVE-8G+	N523101139	NCR	NCR
<input checked="" type="checkbox"/>	AR	Directional Coupler	DC7144M1	0423264	2015-03-31	One year
<input type="checkbox"/>	Agilent	Dual Directional Coupler	772D	MY52180173	2015-01-08	One year
<input checked="" type="checkbox"/>	R & S	Power Meter	NRP	100740	2015-07-02	One year
<input checked="" type="checkbox"/>	R & S	Power Meter Sensor	NRP-Z11	106288	2015-07-02	One year
<input checked="" type="checkbox"/>	Agilent	Power Meter	E4417A	MY45101339	2015-01-07	One year
<input checked="" type="checkbox"/>	Agilent	Power Meter Sensor	E9321A	MY44420359	2015-01-07	One year

Note:

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

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

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

3 SAR Measurement Procedure

3.1 Scanning procedure

The DASY5 installation includes predefined files with recommended procedures for measurements and system check. They are read-only document files and destined as fully defined but unmeasured masks. All test positions (head or body-worn) are tested with the same configuration of test steps differing only in the grid definition for the different test positions.

- The “reference” and “drift” measurements are located at the beginning and end of the batch process. They measure the field drift at one single point in the liquid over the complete procedure. The indicated drift is mainly the variation of the DUT’s output power and should vary max. +/- 5 %.
- The “surface check” measurement tests the optical surface detection system of the DASY5 system by repeatedly detecting the surface with the optical and mechanical surface detector and comparing the results. The output gives the detecting heights of both systems, the difference between the two systems and the standard deviation of the detection repeatability. Air bubbles or refraction in the liquid due to separation of the sugar-water mixture gives poor repeatability (above $\pm 0.1\text{mm}$). To prevent wrong results tests are only executed when the liquid is free of air bubbles. The difference between the optical surface detection and the actual surface depends on the probe and is specified with each probe. (It does not depend on the surface reflectivity or the probe angle to the surface within $\pm 30^\circ$.)
- The “area scan” measures the SAR above the DUT or verification dipole on a parallel plane to the surface. It is used to locate the approximate location of the peak SAR with 2D spline interpolation. The robot performs a stepped movement along one grid axis while the local electrical field strength is measured by the probe. The probe is touching the surface of the SAM during acquisition of measurement values. The standard scan uses large grid spacing for faster measurement. Standard grid spacing for head measurements is 15 mm in x- and y- dimension ($\leq 2\text{GHz}$), 12 mm in x- and y- dimension (2-4 GHz) and 10mm in x- and y- dimension (4-6GHz). If a finer resolution is needed, the grid spacing can be reduced. Grid spacing and orientation have no influence on the SAR result. For special applications where the standard scan method does not find the peak SAR within the grid, e.g. mobile phones with flip cover, the grid can be adapted in orientation. Results of this coarse scan are shown in Appendix B.
- A “zoom scan” measures the field in a volume around the 2D peak SAR value acquired in the previous “coarse” scan. This is a fine grid with maximum scan spatial resolution: Δx_{zoom} , $\Delta y_{\text{zoom}} \leq 2\text{GHz} - \leq 8\text{mm}$, 2-4GHz - $\leq 5\text{ mm}$ and 4-6 GHz- $\leq 4\text{mm}$; $\Delta z_{\text{zoom}} \leq 3\text{GHz} - \leq 5\text{ mm}$, 3-4 GHz- $\leq 4\text{mm}$ and 4-6GHz- $\leq 2\text{mm}$ where the robot additionally moves the probe along the z-axis away from the bottom of the Phantom. DASY is also able to perform repeated zoom scans if more than 1 peak is found during area scan. In this document, the evaluated peak 1g and 10g averaged SAR values are shown in the 2D-graphics in Appendix B. Test results relevant for the specified standard (see chapter 1.4.) are shown in table form form in chapter 7.2.
- A Z-axis scan measures the total SAR value at the x-and y-position of the maximum SAR value found during the cube scan. The probe is moved away in z-direction from the bottom of the SAM phantom in 2 mm steps. This measurement shows the continuity of the liquid and can - depending in the field strength – also show the liquid depth. A z-axis scan of the measurement with maximum SAR value is shown in Appendix B.

The following table summarizes the area scan and zoom scan resolutions per FCC KDB 865664D01:

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

3.2 Spatial Peak SAR Evaluation

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

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

Extrapolation

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

Interpolation

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

Volume Averaging

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

Advanced Extrapolation

DASY5 uses the advanced extrapolation option which is able to compensates 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 ₁₀ , a ₁₁ , a ₁₂
	- Conversion factor	ConvF _i
	- Diode compression point	Dcpi
Device parameters:	- Frequency	f
	- Crest factor	cf
Media parameters:	- Conductivity	σ
	- Density	ρ

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

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

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

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

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

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

$$E_i = (V_i / \text{Norm}_i \cdot \text{ConvF})^{1/2}$$

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

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

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

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

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

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

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

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

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

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

4 System Verification Procedure

4.1 Tissue Verification

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

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

Ingredients (% of weight)	Head Tissue						
	750	835	1750	1900	2300	2450	2600
Frequency Band (MHz)							
Water	39.2	41.45	52.64	55.242	62.82	62.7	55.242
Salt (NaCl)	2.7	1.45	0.36	0.306	0.51	0.5	0.306
Sugar	57.0	56.0	0.0	0.0	0.0	0.0	0.0
HEC	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Bactericide	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Triton X-100	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DGBE	0.0	0.0	47.0	44.542	36.67	36.8	44.452
Ingredients (% of weight)	Body Tissue						
	750	835	1750	1900	2300	2450	2600
Frequency Band (MHz)							
Water	50.3	52.4	69.91	69.91	73.32	73.2	64.493
Salt (NaCl)	1.60	1.40	0.13	0.13	0.06	0.04	0.024
Sugar	47.0	45.0	0.0	0.0	0.0	0.0	0.0
HEC	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Bactericide	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Triton X-100	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DGBE	0.0	0.0	29.96	29.96	26.62	26.7	32.252

Table 4: Tissue Dielectric Properties

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

Simulating Head Liquid for 5G(HBBL3500-5800MHz), Manufactured by SPEAG:

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

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

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

Tissue Type	Measured Frequency (MHz)	Target Tissue		Measured Tissue		Liquid Temp.	Test Date
		ϵ_r (+/-5%)	σ (S/m) (+/-5%)	ϵ_r	σ (S/m)		
The data of H1511 from the report no.: SYBH(Z-SAR)011072015-2							
750H	705	42.14 (40.03~44.24)	0.89 (0.85~0.93)	43.51	0.853	21.4°C	2015-07-26
	710	42.11 (40.00~44.21)	0.89 (0.85~0.93)	43.55	0.857		
	750	41.90 (39.81~43.99)	0.89 (0.85~0.93)	42.90	0.892		
750B	705	55.70 (52.92~58.48)	0.96 (0.92~1.008)	55.80	0.928	21.4°C	2015-07-25
	710	55.70 (52.92~58.48)	0.96 (0.92~1.008)	55.67	0.935		
	750	55.50 (52.73~58.27)	0.96 (0.92~1.008)	55.42	0.973		
750B	705	55.70 (52.92~58.48)	0.96 (0.92~1.008)	55.13	0.927	21.4°C	2015-08-23
	710	55.70 (52.92~58.48)	0.96 (0.92~1.008)	55.08	0.931		
	750	55.50 (52.73~58.27)	0.96 (0.92~1.008)	54.71	0.972		
835H	825	41.60 (39.52~43.68)	0.90 (0.86~0.95)	41.88	0.881	21.4°C	2015-07-24
	835	41.50 (39.43~43.58)	0.90 (0.86~0.95)	41.78	0.884		
	850	41.50 (39.43~43.58)	0.92 (0.87~0.96)	41.64	0.902		
835H	825	41.60 (39.52~43.68)	0.90 (0.86~0.95)	40.53	0.873	21.4°C	2015-07-28
	835	41.50 (39.43~43.58)	0.90 (0.86~0.95)	40.50	0.879		
	850	41.50 (39.43~43.58)	0.92 (0.87~0.96)	40.34	0.889		
835H	825	41.60 (39.52~43.68)	0.90 (0.86~0.95)	42.73	0.918	21.4°C	2015-08-17
	835	41.50 (39.43~43.58)	0.90 (0.86~0.95)	42.53	0.925		
	850	41.50 (39.43~43.58)	0.92 (0.87~0.96)	42.41	0.941		
835B	825	55.20 (52.44~57.96)	0.97 (0.92~1.02)	55.15	0.957	21.5°C	2015-07-23
	835	55.20 (52.44~57.96)	0.97 (0.92~1.02)	55.03	0.966		
	850	55.20 (52.44~57.96)	0.99 (0.94~1.04)	54.86	0.982		
835B	825	55.20 (52.44~57.96)	0.97 (0.92~1.02)	54.30	0.972	21.5°C	2015-08-19
	835	55.20 (52.44~57.96)	0.97 (0.92~1.02)	54.19	0.982		
	850	55.20 (52.44~57.96)	0.99 (0.94~1.04)	54.01	0.999		

835B	825	55.20 (52.44~57.96)	0.97 (0.92~1.02)	53.33	0.965	21.5°C	2015-08-24
	835	55.20 (52.44~57.96)	0.97 (0.92~1.02)	53.21	0.976		
	850	55.20 (52.44~57.96)	0.99 (0.94~1.04)	53.04	0.993		
1750H	1710	40.1 (38.10~42.11)	1.35 (1.28~1.42)	39.23	1.311	21.5°C	2015-07-30
	1730	40.1 (38.10~42.11)	1.36 (1.29~1.43)	39.16	1.338		
	1750	40.1 (38.10~42.11)	1.37 (1.30~1.44)	39.05	1.352		
	1800	40 (38.00~42.00)	1.4 (1.33~1.47)	38.86	1.399		
1750B	1710	53.5 (50.83~56.18)	1.46 (1.39~1.53)	51.13	1.495	21.8°C	2015-07-22
	1730	53.5 (50.83~56.18)	1.48 (1.41~1.55)	51.05	1.512		
	1750	53.4 (50.73~56.07)	1.49 (1.42~1.56)	50.97	1.528		
	1800	53.3 (50.64~55.97)	1.52 (1.44~1.60)	50.81	1.572		
1750B	1710	53.5 (50.83~56.18)	1.46 (1.39~1.53)	51.62	1.502	21.8°C	2015-07-29
	1730	53.5 (50.83~56.18)	1.48 (1.41~1.55)	51.62	1.512		
	1750	53.4 (50.73~56.07)	1.49 (1.42~1.56)	51.54	1.527		
	1800	53.3 (50.64~55.97)	1.52 (1.44~1.60)	51.43	1.580		
1750B	1710	53.5 (50.83~56.18)	1.46 (1.39~1.53)	51.51	1.403	21.8°C	2015-08-28
	1730	53.5 (50.83~56.18)	1.48 (1.41~1.55)	51.44	1.424		
	1750	53.4 (50.73~56.07)	1.49 (1.42~1.56)	51.36	1.444		
	1800	53.3 (50.64~55.97)	1.52 (1.44~1.60)	51.19	1.493		
1900H	1850	40.00 (38.00~42.00)	1.40 (1.33~1.47)	39.39	1.352	22.0°C	2015-07-29
	1880	40.00 (38.00~42.00)	1.40 (1.33~1.47)	39.30	1.388		
	1900	40.00 (38.00~42.00)	1.40 (1.33~1.47)	39.16	1.405		
	1910	40.00 (38.00~42.00)	1.40 (1.33~1.47)	39.18	1.416		
1900H	1850	40.00 (38.00~42.00)	1.40 (1.33~1.47)	39.74	1.391	22.0°C	2015-08-19
	1880	40.00 (38.00~42.00)	1.40 (1.33~1.47)	39.61	1.421		
	1900	40.00 (38.00~42.00)	1.40 (1.33~1.47)	39.53	1.439		
	1910	40.00 (38.00~42.00)	1.40 (1.33~1.47)	39.49	1.448		

1900B	1850	53.30 (50.64~55.97)	1.52 (1.44~1.60)	52.36	1.469	21.0°C	2015-07-21
	1880	53.30 (50.64~55.97)	1.52 (1.44~1.60)	52.28	1.502		
	1900	53.30 (50.64~55.97)	1.52 (1.44~1.60)	52.21	1.521		
	1910	53.30 (50.64~55.97)	1.52 (1.44~1.60)	52.18	1.531		
1900B	1850	53.30 (50.64~55.97)	1.52 (1.44~1.60)	51.83	1.520	21.0°C	2015-07-27
	1880	53.30 (50.64~55.97)	1.52 (1.44~1.60)	51.72	1.551		
	1900	53.30 (50.64~55.97)	1.52 (1.44~1.60)	51.65	1.571		
	1910	53.30 (50.64~55.97)	1.52 (1.44~1.60)	51.63	1.583		
1900B	1850	53.30 (50.64~55.97)	1.52 (1.44~1.60)	51.60	1.502	21.0°C	2015-08-24
	1880	53.30 (50.64~55.97)	1.52 (1.44~1.60)	51.51	1.533		
	1900	53.30 (50.64~55.97)	1.52 (1.44~1.60)	51.44	1.552		
	1910	53.30 (50.64~55.97)	1.52 (1.44~1.60)	51.40	1.562		
1900B	1850	53.30 (50.64~55.97)	1.52 (1.44~1.60)	51.63	1.502	21.0°C	2015-09-02
	1880	53.30 (50.64~55.97)	1.52 (1.44~1.60)	51.56	1.536		
	1900	53.30 (50.64~55.97)	1.52 (1.44~1.60)	51.52	1.556		
	1910	53.30 (50.64~55.97)	1.52 (1.44~1.60)	51.44	1.566		
2450H	2410	39.30 (37.34~41.26)	1.76 (1.67~1.85)	38.78	1.817	21.6°C	2015-08-22
	2435	39.20 (37.24~41.16)	1.79 (1.70~1.88)	38.70	1.845		
	2450	39.20 (37.24~41.16)	1.80 (1.71~1.89)	38.65	1.863		
	2460	39.20 (37.24~41.16)	1.81 (1.72~1.90)	38.62	1.874		
2450B	2410	52.80 (50.16~55.44)	1.91 (1.81~2.00)	50.69	1.991	21.0°C	2015-07-26
	2435	52.70 (50.07~55.34)	1.94 (1.84~2.04)	50.60	2.023		
	2450	52.70 (50.07~55.34)	1.95 (1.85~2.05)	50.54	2.043		
	2460	52.70 (50.07~55.34)	1.96 (1.86~2.06)	50.50	2.056		

2450B	2410	52.80 (50.16~55.44)	1.91 (1.81~2.00)	51.65	1.965	21.0°C	2015-08-21
	2435	52.70 (50.07~55.34)	1.94 (1.84~2.04)	51.56	1.993		
	2450	52.70 (50.07~55.34)	1.95 (1.85~2.05)	51.50	2.010		
	2460	52.70 (50.07~55.34)	1.96 (1.86~2.06)	51.46	2.021		
2600H	2510	39.12 (37.16~41.01)	1.86 (1.77~1.96)	38.18	1.873	21.5°C	2015-07-30
	2535	39.1 (37.13~41.04)	1.89 (1.80~1.98)	38.06	1.901		
	2560	39 (37.05~40.95)	1.917 (1.82~2.01)	37.99	1.933		
	2600	39 (37.05~40.95)	1.96 (1.86~2.05)	37.83	1.977		
2600H	2510	39.12 (37.16~41.01)	1.86 (1.77~1.96)	38.10	1.838	21.5°C	2015-08-01
	2535	39.1 (37.13~41.04)	1.89 (1.80~1.98)	38.05	1.874		
	2560	39 (37.05~40.95)	1.917 (1.82~2.01)	37.88	1.902		
	2600	39 (37.05~40.95)	1.96 (1.86~2.05)	37.78	1.948		
2600B	2510	52.62 (49.99~55.25)	2.03 (1.93~2.13)	51.43	2.104	21.5°C	2015-07-28
	2535	52.59 (49.96~55.22)	2.07 (1.97~2.17)	51.36	2.134		
	2560	52.57 (49.94~55.20)	2.09 (1.99~2.19)	51.28	2.165		
	2600	52.5 (49.88~55.13)	2.16 (2.05~2.27)	51.16	2.216		
2600B	2510	52.62 (49.99~55.25)	2.03 (1.93~2.13)	51.19	2.096	21.5°C	2015-07-31
	2535	52.59 (49.96~55.22)	2.07 (1.97~2.17)	51.19	2.128		
	2560	52.57 (49.94~55.20)	2.09 (1.99~2.19)	51.11	2.158		
	2600	52.5 (49.88~55.13)	2.16 (2.05~2.27)	51.01	2.200		
2600B	2510	52.62 (49.99~55.25)	2.03 (1.93~2.13)	50.83	2.098	21.5°C	2015-08-26
	2535	52.59 (49.96~55.22)	2.07 (1.97~2.17)	50.74	2.131		
	2560	52.57 (49.94~55.20)	2.09 (1.99~2.19)	50.70	2.168		
	2600	52.5 (49.88~55.13)	2.16 (2.05~2.27)	50.58	2.217		

2600B	2510	52.62 (49.99~55.25)	2.03 (1.93~2.13)	50.83	2.116	21.5°C	2015-08-28
	2535	52.59 (49.96~55.22)	2.07 (1.97~2.17)	50.78	2.140		
	2560	52.57 (49.94~55.20)	2.09 (1.99~2.19)	50.72	2.176		
	2600	52.5 (49.88~55.13)	2.16 (2.05~2.27)	50.64	2.229		
5G H	5300	36.0 (34.20~37.80)	4.66 (4.43~4.89)	35.03	4.559	21.3°C	2015-08-21
	5600	35.5 (33.73~37.28)	5.07 (4.82~5.32)	34.69	5.117		
	5800	35.3 (33.54~37.07)	5.27 (5.01~5.53)	35.01	5.188		
5G B	5300	49.00 (46.55~51.45)	5.30 (5.04~5.56)	47.18	5.480	21.3°C	2015-08-02
	5600	48.50 (46.08~50.92)	5.77 (5.48~6.05)	46.59	5.904		
	5800	48.20 (45.79~50.61)	6.00 (5.70~6.30)	46.63	6.224		
5G B	5200	49.0 (46.55~51.45)	5.30 (5.03~5.56)	49.97	5.223	21.3°C	2015-08-22
	5300	49.00 (46.55~51.45)	5.30 (5.04~5.56)	48.18	5.472		
	5600	48.50 (46.08~50.92)	5.77 (5.48~6.05)	47.59	5.888		
	5800	48.20 (45.79~50.61)	6.00 (5.70~6.30)	47.63	6.207		
5G B	5300	49.00 (46.55~51.45)	5.30 (5.04~5.56)	48.38	5.413	21.3°C	2015-08-31
	5600	48.50 (46.08~50.92)	5.77 (5.48~6.05)	47.79	5.920		
Tissue Type	Measured Frequency (MHz)	Target Tissue		Measured Tissue		Liquid Temp.	Test Date
		ϵ_r (+/-5%)	σ (S/m) (+/-5%)	ϵ_r	σ (S/m)		
The data of H1512							
2600H	2510	39.12 (37.16~41.01)	1.86 (1.77~1.96)	38.61	1.916	21.7°C	2015-09-03
	2535	39.1 (37.13~41.04)	1.89 (1.80~1.98)	38.50	1.941		
	2560	39 (37.05~40.95)	1.917 (1.82~2.01)	38.43	1.976		
	2600	39 (37.05~40.95)	1.96 (1.86~2.05)	38.26	2.021		
2600B	2510	52.62 (49.99~55.25)	2.03 (1.93~2.13)	51.04	2.111	21.3°C	2015-09-04
	2535	52.59 (49.96~55.22)	2.07 (1.97~2.17)	51.00	2.136		
	2560	52.57 (49.94~55.20)	2.09 (1.99~2.19)	50.94	2.171		
	2600	52.5 (49.88~55.13)	2.16 (2.05~2.27)	50.85	2.224		

Table 5: Measured Tissue Parameter

Note: 1) The dielectric parameters of the tissue-equivalent liquid should be measured under similar ambient conditions and within 2°C of the conditions expected during the SAR evaluation to satisfy protocol requirements.

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

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

4.2 System Check

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

System Check	Target SAR (1W) (+/-10%)		Measured SAR (Normalized to 1W)		Liquid Temp.	Test Date
	1-g (mW/g)	10-g (mW/g)	1-g (mW/g)	10-g (mW/g)		
The data of H1511 from the report no.: SYBH(Z-SAR)011072015-2						
750MHz Head	8.22 (7.40~9.04)	5.41 (4.87~5.95)	8.40	5.56	21.4°C	2015-07-26
835MHz Head	9.49 (8.54~10.44)	6.18 (5.56~6.80)	9.32	6.12	21.4°C	2015-07-24
835MHz Head	9.49 (8.54~10.44)	6.18 (5.56~6.80)	9.56	6.32	21.4°C	2015-07-28
835MHz Head	9.49 (8.54~10.44)	6.18 (5.56~6.80)	9.80	6.44	21.4°C	2015-08-17
1750MHz Head	35.1 (31.59~38.61)	18.6 (16.74~20.46)	35.52	18.84	21.5°C	2015-07-30
1900MHz Head	40.80 (36.72~44.88)	21.40 (19.26~23.54)	41.20	21.60	22.0°C	2015-07-29
1900MHz Head	40.80 (36.72~44.88)	21.40 (19.26~23.54)	42.00	22.12	22.0°C	2015-08-19
2450MHz Head	52.30 (47.07~57.53)	24.50 (22.05~26.95)	54.40	25.88	21.6°C	2015-08-22
2600MHz Head	57.8 (52.02~63.58)	26.3 (23.67~28.93)	61.20	27.84	21.5°C	2015-07-30
2600MHz Head	57.8 (52.02~63.58)	26.3 (23.67~28.93)	61.60	28.04	21.5°C	2015-08-01
5300MHz Head	83.5 (74.15~91.85)	23.9 (21.51~26.29)	86.90	25.30	21.3°C	2015-08-21
5600MHz Head	81.9 (73.71~90.09)	23.3 (20.97~25.63)	79.30	23.00	21.3°C	2015-08-21
5800MHz Head	78.8 (70.92~80.68)	22.4 (20.16~24.64)	74.30	21.60	21.3°C	2015-08-21
750MHz Body	8.69 (7.82~9.56)	5.76 (4.19~6.33)	8.28	5.52	21.4°C	2015-07-25
750MHz Body	8.69 (7.82~9.56)	5.76 (4.19~6.33)	8.88	6.00	21.4°C	2015-08-23
835MHz Body	9.42 (8.48~10.36)	6.19 (5.57~6.80)	9.48	6.24	21.5°C	2015-07-23
835MHz Body	9.42 (8.48~10.36)	6.19 (5.57~6.80)	9.56	6.28	21.5°C	2015-08-19
835MHz Body	9.42 (8.48~10.36)	6.19 (5.57~6.80)	9.44	6.20	21.5°C	2015-08-24
1750MHz Body	36.3 (32.67~39.93)	19.5 (17.55~21.45)	36.96	19.36	21.8°C	2015-07-22
1750MHz Body	36.3 (32.67~39.93)	19.5 (17.55~21.45)	37.56	19.64	21.8°C	2015-07-29
1750MHz Body	36.3 (32.67~39.93)	19.5 (17.55~21.45)	36.56	19.68	21.8°C	2015-08-19

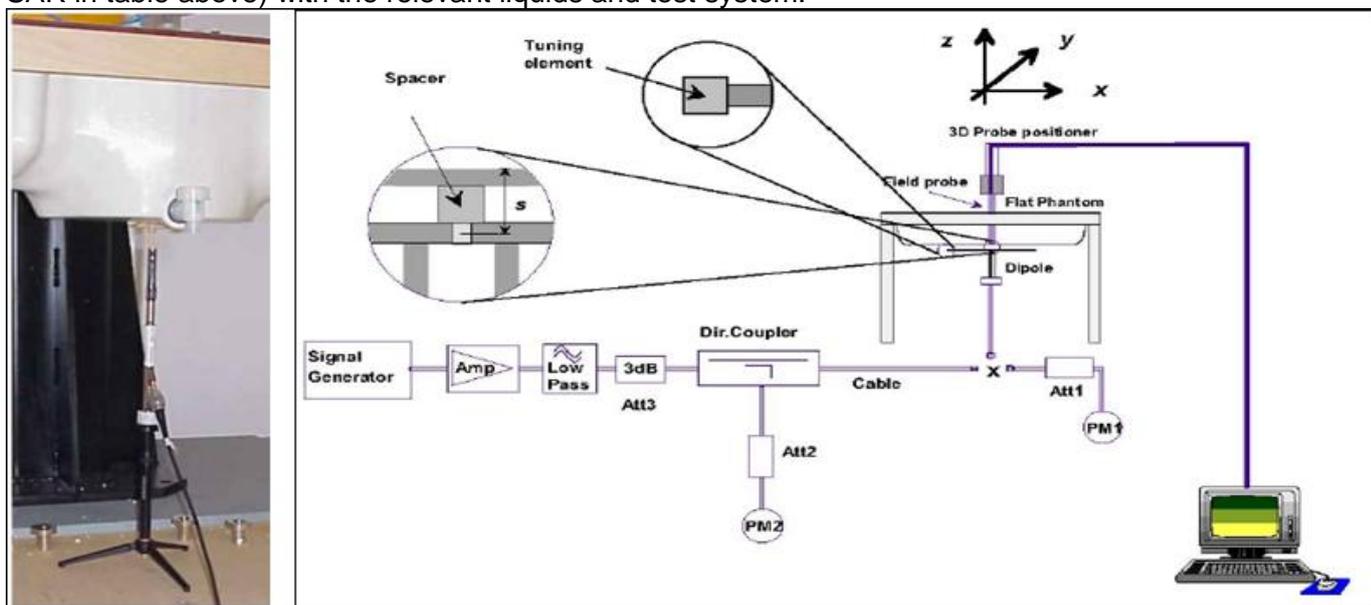
1750MHz Body	36.3 (32.67~39.93)	19.5 (17.55~21.45)	36.16	19.44	21.8°C	2015-08-28
1900MHz Body	40.20 (36.18~44.22)	21.30 (19.17~23.43)	41.20	21.60	21.0°C	2015-07-21
1900MHz Body	40.20 (36.18~44.22)	21.30 (19.17~23.43)	42.00	21.72	21.0°C	2015-07-27
1900MHz Body	40.20 (36.18~44.22)	21.30 (19.17~23.43)	40.80	21.20	21.0°C	2015-08-24
1900MHz Body	40.20 (36.18~44.22)	21.30 (19.17~23.43)	41.60	21.76	21.0°C	2015-09-02
2450MHz Body	51.4 (46.26~56.54)	23.9 (21.51~26.29)	54.40	25.00	21.0°C	2015-07-26
2450MHz Body	51.4 (46.26~56.54)	23.9 (21.51~26.29)	52.40	23.72	21.0°C	2015-08-21
2600MHz Body	57.5 (51.75~63.25)	25.9 (23.31~28.49)	60.80	26.76	21.5°C	2015-07-28
2600MHz Body	57.5 (51.75~63.25)	25.9 (23.31~28.49)	60.80	26.56	21.5°C	2015-07-31
2600MHz Body	57.5 (51.75~63.25)	25.9 (23.31~28.49)	59.60	27.20	21.5°C	2015-08-26
2600MHz Body	57.5 (51.75~63.25)	25.9 (23.31~28.49)	60.40	27.08	21.5°C	2015-08-28
5200MHz Body	74.7 (67.23~82.17)	20.9 (18.81~22.99)	75.60	21.20	21.3°C	2015-08-22
5300MHz Body	75.0 (67.50~82.50)	21.0 (18.90~23.10)	76.20	21.00	21.3°C	2015-08-02
5300MHz Body	75.0 (67.50~82.50)	21.0 (18.90~23.10)	78.20	21.60	21.3°C	2015-08-22
5300MHz Body	75.0 (67.50~82.50)	21.0 (18.90~23.10)	76.30	21.00	21.3°C	2015-08-31
5600MHz Body	77.8 (70.02~85.58)	21.6 (19.44~23.76)	79.80	22.00	21.3°C	2015-08-02
5600MHz Body	77.8 (70.02~85.58)	21.6 (19.44~23.76)	77.10	21.70	21.3°C	2015-08-22
5600MHz Body	77.8 (70.02~85.58)	21.6 (19.44~23.76)	78.40	22.10	21.3°C	2015-08-31
5800MHz Body	76.2 (68.58~83.82)	21.0 (18.9~23.10)	73.70	20.20	21.3°C	2015-08-02
5800MHz Body	76.2 (68.58~83.82)	21.0 (18.9~23.10)	73.50	20.80	21.3°C	2015-08-22
System Check	Target SAR (1W) (+/-10%)		Measured SAR (Normalized to 1W)		Liquid Temp.	Test Date
	1-g (mW/g)	10-g (mW/g)	1-g (mW/g)	10-g (mW/g)		
The data of H1512						
2600MHz Head	57.8 (52.02~63.58)	26.3 (23.67~28.93)	61.20	28.00	21.7°C	2015-09-03
2600MHz Body	57.5 (51.75~63.25)	25.9 (23.31~28.49)	60.40	27.36	21.3°C	2015-09-04

Table 6: System Check Results

4.3 System check Procedure

The system check is performed by using a system check dipole which is positioned parallel to the planar part of the SAM phantom at the reference point. The distance of the dipole to the SAM phantom is determined by a plexiglass spacer. The dipole is connected to the signal source consisting of signal generator and amplifier via a directional coupler, N-connector cable and adaption to SMA. It is fed with a power of 250 mW(below 5GHz) or 100mW(above 5GHz). To adjust this power a power meter is used. The power sensor is connected to the cable before the system check to measure the power at this point and do adjustments at the signal generator. At the outputs of the directional coupler both return loss as well as forward power are controlled during the system check to make sure that emitted power at the dipole is kept constant. This can also be checked by the power drift measurement after the test (result on plot).

System check results have to be equal or near the values determined during dipole calibration (target SAR in table above) with the relevant liquids and test system.



5 SAR measurement variability and uncertainty

5.1 SAR measurement variability

Per KDB865664 D01 SAR measurement 100 MHz to 6 GHz v01r04, SAR measurement variability must be assessed for each frequency band, which is determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. The additional measurements are repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

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

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

The detailed repeated measurement results are shown in Section 7.2.

5.2 SAR measurement uncertainty

Per KDB865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg, the extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval. The equivalent ratio (1.5/1.6) is applied to extremity and occupational exposure conditions.

6 SAR Test Configuration

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

6.2 GSM Test Configuration

SAR tests for GSM850 and GSM1900, a communication link is set up with a base station by air link. Using CMU200 the power level is set to “5” and “0” in SAR of GSM850 and GSM1900. The tests in the band of GSM850 and GSM1900 are performed in the mode of GPRS/EGPRS function. Since the GPRS class is 10 for this EUT, it has at most 2 timeslots in uplink and at most 4 timeslots in downlink, the maximum total timeslot is 5. The EGPRS class is 10 for this EUT, it has at most 2 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.

6.3 UMTS Test Configuration

1) Output Power Verification

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

2) WCDMA

a. Head SAR Measurements

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

b. Body SAR Measurements

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

3) HSDPA

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

Per KDB941225 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 $\Delta ACK, \Delta NACK, \Delta CQI = 8$. The variation of the β_c / β_d ratio causes a power reduction at sub-tests 2 - 4.

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

Note 1: ΔACK , $\Delta NACK$ and $\Delta CQI = 8$ $A_{hs} = \beta_{hs} / \beta_c = 30/15$ $\beta_{hs} = 30/15 * \beta_c$
 Note 2 : CM=1 for $\beta_c / \beta_d = 12/15$, $\beta_{hs} / \beta_c = 24/15$. For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.
 Note 3 : For subtest 2 the β_c / β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 11/15$ and $\beta_d = 15/15$

Table 7: Sub-tests for UMTS Release 5 HSDPA

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

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

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

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

Table 9: HSDPA UE category

4) HSUPA

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

Per KDB941225 D01v03, the 3G SAR test reduction procedure is applied to HSPA (HSUPA/HSDPA with RMC) body configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for HSPA using the HSPA body SAR procedures for the highest reported body exposure SAR configuration in 12.2 kbps RMC.

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

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

Note 1: $\Delta ACK, \Delta NACK$ and $\Delta CQI = 8$ $A_{hs} = \beta_{hs}/\beta_c = 30/15$ $\beta_{hs} = 30/15 * \beta_c$ [⊕]
 Note 2: CM = 1 for $\beta_c/\beta_d = 12/15, \beta_{hs}/\beta_c = 24/15$. For all other combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference[⊕]
 Note 3 : For subtest 1 the β_c/β_d ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 10/15$ and $\beta_d = 15/15$ [⊕]
 Note 4 : For subtest 5 the β_c/β_d ratio of 15/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 14/15$ and $\beta_d = 15/15$ [⊕]
 Note 5 : Testing UE using E-DPDCH Physical Layer category 1 Sub-test 3 is not required according to TS 25.306 Table 5.1g[⊕]
 Note 6: β_{ed} can not be set directly; it is set by Absolute Grant Value.[⊕]

Table 10:Subtests for UMTS Release 6 HSUPA

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

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

Table 11:HSUPA UE category

5) DC-HSDPA

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

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

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

Table E.5.0: Levels for HSDPA connection setup

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

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

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

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

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

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

Note:

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

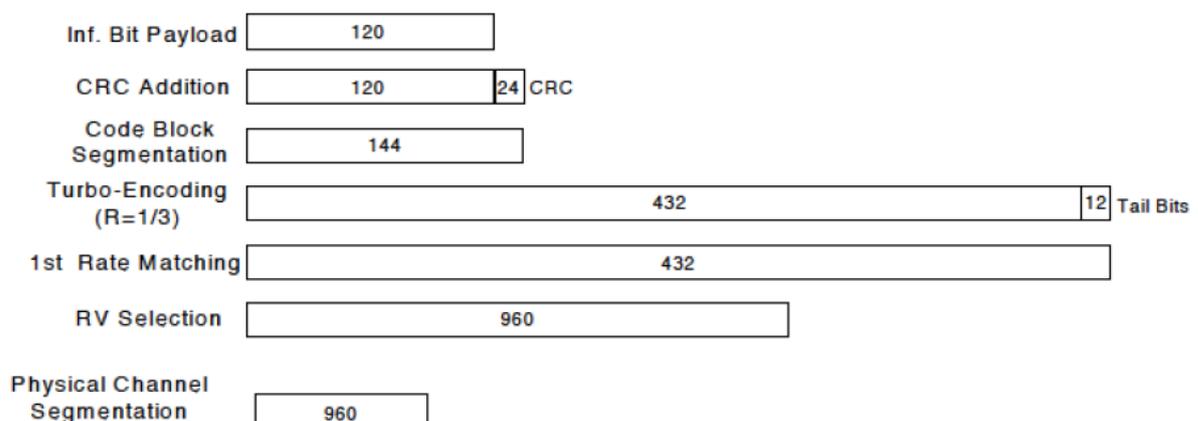


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

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

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

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

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.^o

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 $\beta_d = 15/15$ ^o

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.

6.4 CDMA Test Configuration

6.4.1 1x RTT Handsets

1) Output Power Verification

Maximum output power is verified on the high, middle and low channels according to procedures in section 4.4.5.2 of 3GPP2 C.S0011/TIA-98-E. Results for at least steps 3, 4 and 10 of the power measurement procedures are required in the SAR report. Steps 3 and 4 are measured using Loopback Service Option SO55 with power control bits in “All Up” condition. TDSO/SO32 may be used instead of SO55 for step 4. Step 10 is measured using TDSO/SO32 with power control bits in the “Bits Hold” condition (i.e. alternative Up/Down Bits). All power measurements defined in C.S0011/TIA-98-E that are inapplicable to the handset or cannot be measured due to technical or equipment limitations must be clearly identified in the test report.

Test Parameter setup for maximum RF output power according to section 4.4.5 of 3GPP2;

Parameter	Units	Value
I or	dBm/1.23MHz	-104
PilotE c/I or	dB	-7
TrafficE c /I or	dB	-7.4

2) Head SAR

SAR for next to the ear head exposure is measured in RC3 with the handset configured to transmit at full rate in SO55. The 3G SAR test reduction procedure is applied to RC1 with RC3 as the primary mode; otherwise, SAR is required for the channel with maximum measured output in RC1 using the head exposure configuration that results in the highest *reported* SAR in RC3.

3) Body-Worn Accessory SAR

Body-worn accessory SAR is measured in RC3 with the handset configured in TDSO/SO32 to transmit at full rate on FCH only with all other code channels disabled. The body-worn accessory procedures in KDB Publication 447498 are applied. The 3G SAR test reduction procedure is applied to the multiple code channel configuration (FCH+SCHn), with FCH only as the primary mode. Otherwise, SAR is required for multiple code channel configuration (FCH + SCHn), with FCH at full rate and SCH0 enabled at 9600 bps, using the highest *reported* SAR configuration for FCH only. When multiple code channels are enabled, the transmitter output can shift by more than 0.5 dB and may lead to higher SAR drifts and SCH dropouts.

The 3G SAR test reduction procedure is applied to body-worn accessory SAR in RC1 with RC3 as the primary mode.⁹ Otherwise, SAR is required for RC1, with SO55 and full rate, using the highest *reported* SAR configuration for body-worn accessory exposure in RC3.

Test communication setup meet as followings:

Communication standard between mobile station and base station simulator	3GPP2 C.S0011-B
Radio configuration	RC3(Supporting CDMA 1X)
Spreading Rate	SR1
Data Rate	9600bps
Service Options	SO55(Loopback service)
Service Options	SO32(Test Data service)
Multiplex Options	The mobile station does not support this service

4) Handsets with built-in Ev-Do

For handsets with Ev-Do capabilities, the 3G SAR test reduction procedure is applied to Ev-Do Rev. 0 with 1x RTT RC3 as the primary mode to determine body-worn accessory test requirements. Otherwise, body-worn accessory SAR is required for Rev. 0, at 153.6 kbps, using the highest *reported* SAR configuration for body-worn accessory exposure in RC3.

The 3G SAR test reduction procedure is applied separately to Rev. A and Rev. B, with Rev. 0 as the primary mode to determine body-worn accessory SAR test requirements. When SAR is not required for Rev. 0, the 3G SAR test reduction is applied with 1x RTT RC3 as the primary mode. Otherwise, SAR is required for Rev. A or Rev. B, with a Reverse Data Channel payload size of 4096 bits and a Termination Target of 16 slots defined for Subtype 2 and 3 Physical Layer configurations, using the highest *reported* SAR configuration for body-worn accessory exposure in Rev. 0 or RC3, as appropriate.

A Forward Traffic Channel data rate corresponding to the 2-slot version of 307.2 kbps with ACK Channel transmitting in all slots is configured in the downlink for Rev. 0, Rev. A and Rev. B.

6.4.2 1x Ev-Do Data Devices

1) Output Power Verification

Maximum output power is verified on the high, middle and low channels according to procedures in section 3.1.2.3.4 of 3GPP2 C.S0033-0/TIA-866 for Rev. 0, section 4.3.4 of 3GPP2 C.S0033-A for Rev. A and section 4.3.4 of 3GPP2 C.S0033-C for Rev. B. Maximum output power is measured for Rev. 0 and Rev. A in Subtype 0/1 and Subtype 2 Physical Layer configurations, respectively. For Rev. B, maximum output power is measured according to power back-off requirements using Subtype 3 Physical Layer with “test 2” and “test 3” configurations. Power is measured using “test 2” with two carries in the maximum frequency separation condition and “test 3” for N-adjacent carriers; where N is the maximum number of carriers supported by the device. Both “test 2” and “test 3” configurations are measured with the channels centered within the transmit frequency band. The device operating configurations under TAP/ETAP/MCTAP must be clearly documented in the test report; including power control, code channel and RF channel output power conditions. The measurement results are required in the SAR report with any measurement difficulties and equipment limitations clearly identified.

2) SAR Measurement

SAR is measured using the F/R TAP configurations required for Rev. 0, Rev. A and Rev. B. The AT is tested with a Reverse Data Channel rate of 153.6 kbps in Subtype 0/1 Physical Layer configurations. A Reverse Data Channel payload size of 4096 bits and Termination Target of 16 slots are used for Subtype 2 and 3. FTAP, FETAP and FMCTAP are all configured with a Forward Traffic Channel data rate corresponding to the 2-slot version of 307.2 kbps with ACK Channel transmitting in all slots. AT power control is in “All Bits Up” conditions for the TAP/ETAP/MCTAP.

Body-worn accessory and other body SAR are measured using Subtype 0/1 Physical Layer configurations for Rev. 0. The 3G SAR test reduction procedure is applied to Rev. A, Subtype 2 Physical layer configuration, with Rev. 0 as the primary mode; otherwise, SAR is measured for Rev. A using the highest *reported* SAR configuration for body-worn accessory exposure in Rev. 0.

3) 1x RTT Support

For Ev-Do data devices that also support 1x RTT voice and/or data operations, the 3G SAR test reduction procedure is applied to 1x RTT RC3 and RC1 with Ev-Do Rev. 0, Rev. A and Rev. B as the respective primary modes. Otherwise, the ‘Body-Worn Accessory SAR’ procedures in the ‘3GPP2 CDMA 2000 1x Handsets’ section are applied.

4) 1x-Advanced

Maximum output power is verified for 1x-Advanced by applying the 1x RTT power measurement procedures using SO75, with RC 8 in the uplink and RC11 in the downlink. Smart blanking must be disabled. The test device is configured with Forward Power Control Mode = 000 and Reverse Power Control = 400 bps; that is, 400 kHz for both uplink and downlink power control. The power measurement results must be included in the SAR report to satisfy power requirements in KDB Publication 447498 and to qualify for SAR test exclusion or to support the SAR test setup and results.

The 3G SAR test reduction procedure is applied to 1x-Advanced with 1x RTT RC3 as the primary mode. When SAR measurement is required, the 1x-Advanced power measurement configurations are used. The 1x Advanced SAR procedures are applied separately to head, body-worn accessory and other exposure conditions.

6.5 LTE Test Configuration

SAR for LTE band exposure configurations is measured according to the procedures of KDB 941225 D05 SAR for LTE Devices v02r03. The CMW500 WideBand Radio Communication Tester was used for LTE output power measurements and SAR testing. Closed loop power control was used so the UE transmits with maximum output power during SAR testing. SAR test were performed with the same number of RB and RB offsets transmitting on all TTI frames(Maximum TTI)

1) Spectrum Plots for RB configurations

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

2) MPR

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

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

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

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

3) A-MPR

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

4) LTE procedures for SAR testing

A) Largest channel bandwidth standalone SAR test requirements

i) QPSK with 1 RB allocation

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

ii) QPSK with 50% RB allocation

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

iii) QPSK with 100% RB allocation

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

iv) Higher order modulations

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

B) Other channel bandwidth standalone SAR test requirements

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

5) TDD LTE test configuration

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

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

Figure 4.2-1: Frame structure type 2

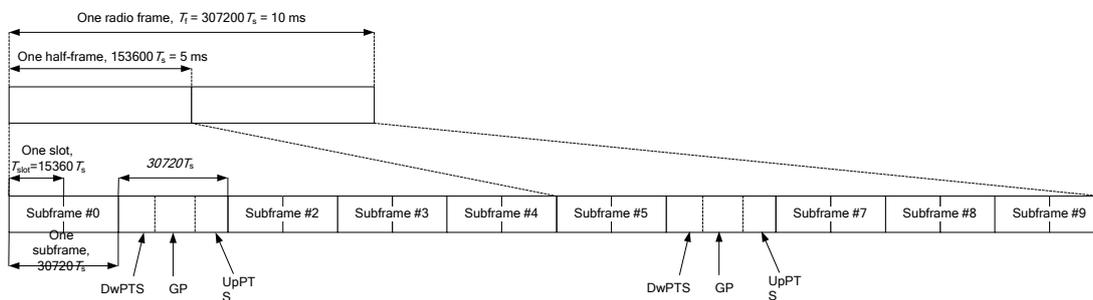


Table 4.2-1: Configuration of special subframe (lengths of DwPTS/GP/UpPTS)

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

Table 4.2-2: Uplink-downlink configurations

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

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

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

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

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

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

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

And we can get different Duty cycles under different configurations:

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

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

6.6 WiFi Test Configuration

For WiFi SAR testing, a communication link is set up with the testing software for WiFi mode test. During the test, at the each test frequency channel, the EUT is operated at the RF continuous emission mode. The RF signal utilized in SAR measurement has 100% duty cycle and its crest factor is 1. The test procedures in KDB 248227D01v02r01 are applied. (Refer to KDB 248227D01v02r01 for more details)

6.6.1 Initial Test Position Procedure

For exposure condition with multiple test position, such as handsets operating next to the ear, devices with hotspot mode or UMPC mini-tablet, procedures for initial test position can be applied. Using the transmission mode determined by the DSSS procedure or initial test configuration, area scans are measured for all position in an exposure condition. The test position with the highest extrapolated (peak) SAR is used as the initial test position. When reported SAR for the initial test position is $\leq 0.4\text{W/kg}$, no additional testing for the remaining test position is required. Otherwise, SAR is evaluated at the subsequent highest peak SAR position until the reported SAR result is $\leq 0.8\text{W/kg}$ or all test position are measured. For all positions/configurations tested using the initial test position and subsequent test positions, when the *reported* SAR is $> 0.8\text{W/kg}$, SAR is measured for these test positions/configurations on the subsequent next highest measured output power channel(s) until the *reported* SAR is $\leq 1.2\text{W/kg}$ or all required channels are tested.

6.6.2 Initial Test Configuration Procedure

An initial test configuration is determined for OFDM transmission modes according to the channel bandwidth, modulation and data rate combination(s) with the highest maximum output power specified for production units in each standalone and aggregated frequency band. SAR is measured using the highest measured maximum output power channel. For configurations with the same specified or measured maximum output power, additional transmission mode and test channel selection procedures are required (see section 5.3.2 of KDB 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 $> 0.8\text{W/kg}$, SAR measurement is required for the subsequent next highest measured output power channel(s) in the initial test configuration until the *reported* SAR is $\leq 1.2\text{W/kg}$ or all required channels are tested.

6.6.3 Sub Test Configuration Procedure

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

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

6.6.4 WiFi 2.4G SAR Test Procedures

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

A) 802.11b DSSS SAR Test Requirements

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

- 1) When the *reported* SAR of the highest measured maximum output power channel (section 3.1 of of KDB 248227D01v02) for the exposure configuration is ≤ 0.8 W/kg, no further SAR testing is required for 802.11b DSSS in that exposure configuration.
- 2) When the *reported* SAR is > 0.8 W/kg, SAR is required for that exposure configuration using the next highest measured output power channel. When any *reported* SAR is > 1.2 W/kg, SAR is required for the third channel; i.e., all channels require testing.

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

When SAR measurement is required for 2.4 GHz 802.11g/n OFDM configurations, the measurement and test reduction procedures for OFDM are applied (section 5.3 of of KDB 248227D01v02r01). SAR is not required for the following 2.4 GHz OFDM conditions.

- 1) When KDB Publication 447498 SAR test exclusion applies to the OFDM configuration.
- 2) When the highest *reported* SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg.

C) SAR Test Requirements for OFDM configurations

When SAR measurement is required for 802.11 g/n OFDM configurations, each standalone and frequency aggregated band is considered separately for SAR test reduction. In applying the initial test configuration and subsequent test configuration procedures, the 802.11 transmission configuration with the highest specified maximum output power and the channel within a test configuration with the highest measured maximum output power should be clearly distinguished to apply the procedures.

6.6.5 WiFi 5G SAR Test Procedures

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

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

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

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

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

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

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

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

- 1) The largest channel bandwidth configuration is selected among the multiple configurations with the same specified maximum output power.
- 2) If multiple configurations have the same specified maximum output power and largest channel bandwidth, the lowest order modulation among the largest channel bandwidth configurations is selected.
- 3) If multiple configurations have the same specified maximum output power, largest channel bandwidth and lowest order modulation, the lowest data rate configuration among these configurations is selected.
- 4) When multiple transmission modes (802.11a/g/n/ac) have the same specified maximum output power, largest channel bandwidth, lowest order modulation and lowest data rate, the lowest order 802.11 mode is selected; i.e., 802.11a is chosen over 802.11n then 802.11ac or 802.11g is chosen over 802.11n.

After an initial test configuration is determined, if multiple test channels have the same measured maximum output power, the channel chosen for SAR measurement is determined according to the following. These channel selection procedures apply to both the initial test configuration and subsequent test configuration(s), with respect to the default power measurement procedures or additional power measurements required for further SAR test reduction. The same procedures also apply to subsequent highest output power channel(s) selection.

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

D) SAR Test Requirements for OFDM configurations

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

6.6.6 MIMO SAR Considerations

Per KDB 248227D01v02, simultaneous transmission provisions in KDB Publication 447498 should be used to determine simultaneous transmission SAR test exclusion for WiFi MIMO. If the sum of 1-g SAR single transmission SAR measurement is $<1.6\text{W/kg}$, no additional SAR measurements for MIMO are required. Alternatively, SAR for MIMO can be measured with all antennas transmitting simultaneously at the specified maximum output power of MIMO operation.

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)

Full Power:

GSM850		Burst-Averaged output Power (dBm)				Division Factors	Frame-Averaged output Power (dBm)			
		Tune-up	128CH	190CH	251CH		Tune-up	128CH	190CH	251CH
GSM (CS)		31.50	30.69	30.63	30.60	-9.19	22.31	21.50	21.44	21.41
GPRS/EDGE (GMSK)	1 Tx Slot	33.50	32.89	32.89	32.83	-9.19	24.31	23.70	23.70	23.64
	2 Tx Slots	31.00	30.32	30.24	30.10	-6.13	24.87	24.19	24.11	23.97
EDGE (8PSK)	1 Tx Slot	27.00	26.22	26.17	26.23	-9.19	17.81	17.03	16.98	17.04
	2 Tx Slots	25.00	24.34	24.34	24.35	-6.13	18.87	18.21	18.21	18.22

Table 13: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 timeslots.
- 3) Per KDB941225 D01v03, SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power specified for production units, including tune-up tolerance. The data mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested.

Second antenna(Voice) + WiFi Station +Sensor 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)		29.50	29.39	29.31	29.23	-9.19	20.31	20.20	20.12	20.04

Table 14: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 timeslots.

Second antenna(Voice) + WiFi Station +Sensor off:

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)	30.50	30.36	30.25	30.06	-9.19	21.31	21.17	21.06	20.87

Table 15: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 timeslots.

Second antenna + WiFi Hotspot:

GSM850		Burst-Averaged output Power (dBm)				Division Factors	Frame-Averaged output Power (dBm)			
		Tune-up	128CH	190CH	251CH		Tune-up	128CH	190CH	251CH
GPRS/ EDGE (GMSK)	1 Tx Slot	30.00	29.95	29.91	29.86	-9.19	20.81	20.76	20.72	20.67
	2 Tx Slots	27.50	27.34	27.25	27.09	-6.13	21.37	21.21	21.12	20.96
EDGE (8PSK)	1 Tx Slot	27.00	26.61	26.43	26.29	-9.19	17.81	17.42	17.24	17.10
	2 Tx Slots	25.00	24.78	24.62	24.51	-6.13	18.87	18.65	18.49	18.38

Table 16: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 timeslots.
- 3) Per KDB941225 D01v03, SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power specified for production units, including tune-up tolerance. The data mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested.

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

Full Power:

UMTS Band V		Tune-up	Conducted Power (dBm)		
			4132CH	4182CH	4233CH
WCDMA	12.2kbps RMC	23.80	22.90	22.91	23.06
HSDPA	Subtest 1	22.80	21.87	21.89	21.99
	Subtest 2	22.30	21.91	21.80	21.71
	Subtest 3	21.80	21.39	21.41	21.53
	Subtest 4	21.80	21.39	21.10	21.22
HSUPA	Subtest 1	22.80	20.95	21.02	21.15
	Subtest 2	21.30	20.71	20.74	20.83
	Subtest 3	21.30	20.73	20.76	20.87
	Subtest 4	21.30	21.18	21.22	21.23
	Subtest 5	22.80	21.44	21.02	21.56
DC-HSDPA	Subtest 1	22.80	21.82	21.80	21.99
	Subtest 2	22.30	21.84	21.72	21.71
	Subtest 3	21.80	21.32	21.38	21.48
	Subtest 4	21.80	21.34	21.02	21.14

Table 17: 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 D01v03, When the maximum output power and tune-up tolerance specified for production units in a Second mode is $\leq \frac{1}{4}$ dB higher than the primary mode or when the highest *reported* SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of Second to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the Second mode.

Second antenna(Voice) + WiFi Station +Sensor on:

UMTS Band V		Tune-up	Conducted Power (dBm)		
			4132CH	4182CH	4233CH
WCDMA	12.2kbps RMC	21.00	19.47	19.61	19.71

Table 18: Conducted power measurement results of UMTS Band V

Second antenna(Voice) + WiFi Station +Sensor off:

UMTS Band V		Tune-up	Conducted Power (dBm)		
			4132CH	4182CH	4233CH
WCDMA	12.2kbps RMC	22.00	20.65	20.74	20.66

Table 19: Conducted power measurement results of UMTS Band V

Second antenna + WiFi Hotspot:

UMTS Band V		Tune-up	Conducted Power (dBm)		
			4132CH	4182CH	4233CH
WCDMA	12.2kbps RMC	21.00	20.91	20.89	20.87
HSDPA	Subtest 1	20.00	19.92	19.92	19.84
	Subtest 2	19.50	19.43	19.47	19.42
	Subtest 3	19.00	18.92	18.95	18.89
	Subtest 4	19.00	18.89	18.93	18.94
HSUPA	Subtest 1	20.00	19.23	19.39	19.30
	Subtest 2	18.50	18.42	18.43	18.41
	Subtest 3	18.50	18.35	18.38	18.47
	Subtest 4	18.50	18.43	18.32	18.24
	Subtest 5	20.00	19.14	19.60	19.48
DC-HSDPA	Subtest 1	20.00	19.85	19.85	19.78
	Subtest 2	19.50	19.36	19.41	19.36
	Subtest 3	19.00	18.84	18.88	18.81
	Subtest 4	19.00	18.82	18.87	18.88

Table 20: 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 D01v03, When the maximum output power and tune-up tolerance specified for production units in a Second mode is $\leq \frac{1}{4}$ dB higher than the primary mode or when the highest *reported* SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of Second to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the Second mode.

7.1.3 Conducted power measurements of CDMA BC0(Second Antenna)

Full Power:

CDMA BC0		Average Power (dBm)			
		Tune-up	1013CH	384CH	777CH
RC1	SO55 (Loopback)	24.20	23.51	23.50	23.70
RC3	SO55 (Loopback)	24.20	23.42	23.45	23.65
	TDSO32 (FCH+SCH)	24.20	23.49	23.60	23.62
	TDSO32 (FCH)	24.20	23.50	23.61	23.60
1x Advanced	SO75	24.20	23.48	23.50	23.52
Rev 0	FTAP/RTAP	24.20	23.30	23.40	23.65
Rev A	FETAP/RETAP	24.20	23.10	23.25	23.45

Table 21: Conducted power measurement results of CDMA BC0

Note: 1) The conducted power of CDMA BC0 is measured with RMS detector.

2) Per KDB941225 D01v03, When the maximum output power and tune-up tolerance specified for production units in a Second mode is $\leq \frac{1}{4}$ dB higher than the primary mode or when the highest *reported* SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of Second to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the Second mode.

Second antenna(Voice) + WiFi Station +Sensor on:

CDMA BC0		Average Power (dBm)			
		Tune-up	1013CH	384CH	777CH
RC1	SO55 (Loopback)	21.00	19.52	19.56	19.55
RC3	SO55 (Loopback)	21.00	19.51	19.49	19.65
	TDSO32 (FCH+SCH)	21.00	19.54	19.44	19.47
	TDSO32 (FCH)	21.00	19.51	19.45	19.45
1x Advanced	SO75	21.00	19.51	19.48	19.42

Table 22: Conducted power measurement results of CDMA BC0

Note: 1) The conducted power of CDMA BC0 is measured with RMS detector.

2) Per KDB941225 D01v03, When the maximum output power and tune-up tolerance specified for production units in a Second mode is $\leq \frac{1}{4}$ dB higher than the primary mode or when the highest *reported* SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of Second to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the Second mode.

Second antenna(Voice) + WiFi Station +Sensor off:

CDMA BC0		Average Power (dBm)			
		Tune-up	1013CH	384CH	777CH
RC1	SO55 (Loopback)	22.00	20.52	20.55	20.66
RC3	SO55 (Loopback)	22.00	20.53	20.47	20.62
	TDSO32 (FCH+SCH)	22.00	20.51	20.49	20.61
	TDSO32 (FCH)	22.00	20.57	20.51	20.65
1x Advanced	SO75	22.00	20.54	20.49	20.61

Table 23: Conducted power measurement results of CDMA BC0

Note: 1) The conducted power of CDMA BC0 is measured with RMS detector.

2) Per KDB941225 D01v03, When the maximum output power and tune-up tolerance specified for production units in a Second mode is $\leq \frac{1}{4}$ dB higher than the primary mode or when the highest *reported* SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of Second to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the Second mode.

Second antenna + WiFi Hotspot:

CDMA BC0		Average Power (dBm)			
		Tune-up	1013CH	384CH	777CH
RC1	SO55 (Loopback)	21.00	20.25	20.22	20.26
RC3	SO55 (Loopback)	21.00	20.17	20.18	20.21
	TDSO32 (FCH+SCH)	21.00	20.12	20.18	20.22
	TDSO32 (FCH)	21.00	20.08	20.20	20.19
1x Advanced	SO75	21.00	20.22	20.24	20.26
Rev 0	FTAP/RTAP	21.00	20.15	20.17	20.19
Rev A	FETAP/RETAP	21.00	20.22	20.23	20.29

Table 24: Conducted power measurement results of CDMA BC0

Note: 1) The conducted power of CDMA BC0 is measured with RMS detector.

2) Per KDB941225 D01v03, When the maximum output power and tune-up tolerance specified for production units in a Second mode is $\leq \frac{1}{4}$ dB higher than the primary mode or when the highest *reported* SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of Second to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the Second mode.

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

Full Power:

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20407CH	20525CH	20643CH
1.4MHz	QPSK	1	0	22.70	21.68	21.57	21.68
		1	3	22.70	21.67	21.59	21.63
		1	5	22.70	21.50	21.57	21.62
		3	0	22.70	21.49	21.41	21.56
		3	2	22.70	21.54	21.51	21.64
		3	3	22.70	21.43	21.47	21.54
		6	0	21.70	20.56	20.44	20.54
	16QAM	1	0	21.70	20.71	20.66	20.79
		1	3	21.70	20.99	20.72	20.90
		1	5	21.70	20.69	20.82	20.82
		3	0	21.70	20.58	20.55	20.65
		3	2	21.70	20.60	20.64	20.65
		3	3	21.70	20.50	20.56	20.63
		6	0	20.70	19.69	19.57	19.75
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20415CH	20525CH	20635CH
3MHz	QPSK	1	0	22.70	21.56	21.42	21.54
		1	7	22.70	21.54	21.46	21.62
		1	14	22.70	21.45	21.71	21.59
		8	0	21.70	20.49	20.49	20.55
		8	4	21.70	20.60	20.55	20.69
		8	7	21.70	20.55	20.48	20.60
		15	0	21.70	20.51	20.50	20.58
	16QAM	1	0	21.70	20.91	20.83	21.05
		1	7	21.70	20.89	21.01	21.00
		1	14	21.70	20.84	20.87	21.04
		8	0	20.70	19.63	19.52	19.62
		8	4	20.70	19.69	19.59	19.76
		8	7	20.70	19.63	19.55	19.75
		15	0	20.70	19.59	19.51	19.63

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20425CH	20525CH	20625CH
5MHz	QPSK	1	0	22.70	21.73	21.60	21.58
		1	13	22.70	21.65	21.67	21.73
		1	24	22.70	21.54	21.72	21.66
		12	0	21.70	20.50	20.43	20.52
		12	6	21.70	20.47	20.54	20.61
		12	13	21.70	20.45	20.44	20.57
		25	0	21.70	20.54	20.44	20.54
	16QAM	1	0	21.70	20.79	20.77	20.81
		1	13	21.70	20.79	20.79	20.91
		1	24	21.70	20.79	20.73	20.85
		12	0	20.70	19.64	19.52	19.62
		12	6	20.70	19.58	19.61	19.71
		12	13	20.70	19.58	19.54	19.75
		25	0	20.70	19.56	19.44	19.60
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20450CH	20525CH	20600CH
10MHz	QPSK	1	0	22.70	21.76	21.54	21.58
		1	25	22.70	21.57	21.52	21.55
		1	49	22.70	21.41	21.76	21.66
		25	0	21.70	20.58	20.55	20.53
		25	13	21.70	20.45	20.50	20.55
		25	25	21.70	20.39	20.49	20.54
		50	0	21.70	20.54	20.58	20.55
	16QAM	1	0	21.70	20.69	20.70	20.74
		1	25	21.70	20.38	20.50	20.47
		1	49	21.70	20.56	20.65	20.71
		25	0	20.70	19.64	19.57	19.50
		25	13	20.70	19.56	19.53	19.58
		25	25	20.70	19.43	19.44	19.59
		50	0	20.70	19.54	19.53	19.49

Table 25: Conducted power measurement results of LTE Band V

**Second antenna(Voice) + WiFi station + Sensor on:**

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20407CH	20525CH	20643CH
1.4MHz	QPSK	1	0	21.00	19.82	19.68	19.84
		1	3	21.00	19.86	19.75	19.91
		1	5	21.00	19.70	19.68	19.74
		3	0	21.00	19.54	19.55	19.59
		3	2	21.00	19.63	19.60	19.67
		3	3	21.00	19.51	19.56	19.60
		6	0	21.00	19.58	19.70	19.41
	16QAM	1	0	21.00	19.71	19.56	19.71
		1	3	21.00	19.71	19.62	19.94
		1	5	21.00	19.78	19.56	19.81
		3	0	21.00	19.93	19.64	19.67
		3	2	21.00	20.03	19.88	19.74
		3	3	21.00	19.59	19.55	19.55
		6	0	21.00	19.97	19.50	19.98
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20415CH	20525CH	20635CH
3MHz	QPSK	1	0	21.00	19.58	19.49	19.58
		1	7	21.00	19.64	19.59	19.64
		1	14	21.00	19.61	19.62	19.62
		8	0	21.00	19.70	19.64	19.71
		8	4	21.00	19.58	19.39	19.66
		8	7	21.00	19.69	19.51	19.80
		15	0	21.00	19.57	19.57	19.50
	16QAM	1	0	21.00	19.45	19.66	19.76
		1	7	21.00	19.45	19.68	19.50
		1	14	21.00	19.75	19.81	19.74
		8	0	21.00	19.59	19.38	19.63
		8	4	21.00	19.64	19.55	19.57
		8	7	21.00	19.63	19.82	19.70
		15	0	21.00	19.47	19.32	19.54

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20425CH	20525CH	20625CH
5MHz	QPSK	1	0	21.00	19.86	19.76	19.67
		1	13	21.00	19.81	19.76	19.87
		1	24	21.00	19.71	19.67	19.76
		12	0	21.00	19.80	19.71	19.62
		12	6	21.00	19.66	19.80	19.80
		12	13	21.00	19.70	19.62	19.69
		25	0	21.00	19.77	19.82	19.71
	16QAM	1	0	21.00	19.96	19.77	20.03
		1	13	21.00	19.59	19.65	19.95
		1	24	21.00	19.72	19.56	19.78
		12	0	21.00	19.76	19.69	19.54
		12	6	21.00	19.89	19.91	19.89
		12	13	21.00	19.70	19.54	19.67
		25	0	21.00	19.65	19.90	19.57
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20450CH	20525CH	20600CH
10MHz	QPSK	1	0	21.00	19.85	19.66	19.71
		1	25	21.00	19.60	19.62	19.58
		1	49	21.00	19.64	19.75	19.97
		25	0	21.00	20.00	19.67	19.63
		25	13	21.00	19.67	19.75	19.52
		25	25	21.00	19.53	19.79	19.88
		50	0	21.00	19.91	19.68	19.78
	16QAM	1	0	21.00	19.68	19.46	19.91
		1	25	21.00	19.49	19.42	19.53
		1	49	21.00	19.79	19.70	19.90
		25	0	21.00	19.66	19.74	19.62
		25	13	21.00	19.53	19.54	19.41
		25	25	21.00	19.76	19.57	20.07
		50	0	21.00	19.96	19.52	19.69

Table 26: Conducted power measurement results of LTE Band V

**Second antenna(Voice) + WiFi station + Sensor off:**

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20407CH	20525CH	20643CH
1.4MHz	QPSK	1	0	22.00	21.04	20.93	21.02
		1	3	22.00	20.99	20.99	21.04
		1	5	22.00	20.93	20.92	20.92
		3	0	22.00	20.81	20.81	20.87
		3	2	22.00	20.90	20.85	20.95
		3	3	22.00	20.77	20.83	20.85
		6	0	21.00	19.91	19.77	19.87
	16QAM	1	0	21.00	20.12	19.88	20.06
		1	3	21.00	20.35	20.22	20.07
		1	5	21.00	20.05	20.16	19.97
		3	0	21.00	19.96	19.83	19.94
		3	2	21.00	20.02	19.95	20.02
		3	3	21.00	19.87	19.76	19.95
		6	0	20.00	19.01	18.94	18.99
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20415CH	20525CH	20635CH
3MHz	QPSK	1	0	22.00	20.86	20.73	20.80
		1	7	22.00	20.85	20.96	20.89
		1	14	22.00	20.84	20.82	20.88
		8	0	21.00	19.91	19.82	19.85
		8	4	21.00	19.89	19.86	19.96
		8	7	21.00	19.91	19.78	19.90
		15	0	21.00	19.81	19.79	19.95
	16QAM	1	0	21.00	20.37	20.13	20.33
		1	7	21.00	20.33	20.12	20.39
		1	14	21.00	20.44	20.29	20.30
		8	0	20.00	18.97	18.98	18.94
		8	4	20.00	19.00	18.93	19.03
		8	7	20.00	19.03	18.94	18.99
		15	0	20.00	18.90	18.88	18.98

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20425CH	20525CH	20625CH
5MHz	QPSK	1	0	22.00	20.90	20.88	20.79
		1	13	22.00	21.01	20.99	21.00
		1	24	22.00	20.89	20.87	21.02
		12	0	21.00	19.78	19.66	19.82
		12	6	21.00	19.88	19.80	19.91
		12	13	21.00	19.83	19.72	19.89
		25	0	21.00	19.88	19.81	19.87
	16QAM	1	0	21.00	20.17	20.16	20.10
		1	13	21.00	20.31	20.15	20.29
		1	24	21.00	20.22	19.99	20.22
		12	0	20.00	19.01	18.97	18.88
		12	6	20.00	19.03	18.90	19.00
		12	13	20.00	19.10	19.00	19.03
		25	0	20.00	18.87	18.88	18.87
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20450CH	20525CH	20600CH
10MHz	QPSK	1	0	22.00	21.07	20.94	20.92
		1	25	22.00	20.86	20.93	20.67
		1	49	22.00	20.98	20.72	21.03
		25	0	21.00	19.95	19.89	19.97
		25	13	21.00	19.94	19.83	19.75
		25	25	21.00	19.91	19.75	19.87
		50	0	21.00	19.95	19.94	19.85
	16QAM	1	0	21.00	20.13	20.12	20.11
		1	25	21.00	19.43	19.63	19.56
		1	49	21.00	20.00	19.83	20.11
		25	0	20.00	18.98	18.92	18.87
		25	13	20.00	19.03	18.92	18.84
		25	25	20.00	18.83	18.81	18.90
		50	0	20.00	18.89	18.91	18.90

Table 27: Conducted power measurement results of LTE Band V

**Second antenna + WiFi Hotspot:**

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20407CH	20525CH	20643CH
1.4MHz	QPSK	1	0	21.00	19.84	19.72	19.88
		1	3	21.00	19.98	19.76	19.94
		1	5	21.00	19.77	19.75	19.84
		3	0	21.00	19.76	19.55	19.73
		3	2	21.00	19.76	19.63	19.81
		3	3	21.00	19.64	19.58	19.74
		6	0	21.00	19.79	19.68	19.76
	16QAM	1	0	21.00	19.87	20.01	20.02
		1	3	21.00	19.94	20.12	19.94
		1	5	21.00	20.16	20.18	19.94
		3	0	21.00	19.81	19.77	19.82
		3	2	21.00	19.95	19.82	19.92
		3	3	21.00	19.75	19.83	19.78
		6	0	21.00	19.42	19.36	19.39
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20415CH	20525CH	20635CH
3MHz	QPSK	1	0	21.00	19.63	19.51	19.50
		1	7	21.00	19.79	19.66	19.83
		1	14	21.00	19.62	19.63	19.69
		8	0	21.00	19.74	19.80	19.76
		8	4	21.00	19.83	19.77	19.80
		8	7	21.00	19.81	19.75	19.77
		15	0	21.00	19.79	19.71	19.82
	16QAM	1	0	21.00	20.21	20.17	20.23
		1	7	21.00	20.34	20.33	20.32
		1	14	21.00	20.31	20.20	20.24
		8	0	21.00	19.40	19.43	19.41
		8	4	21.00	19.47	19.39	19.40
		8	7	21.00	19.41	19.37	19.41
		15	0	21.00	19.33	19.29	19.36

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20425CH	20525CH	20625CH
5MHz	QPSK	1	0	21.00	19.81	19.73	19.65
		1	13	21.00	19.89	19.84	19.75
		1	24	21.00	19.76	19.68	19.77
		12	0	21.00	19.74	19.70	19.65
		12	6	21.00	19.83	19.75	19.73
		12	13	21.00	19.75	19.68	19.66
		25	0	21.00	19.81	19.72	19.69
	16QAM	1	0	21.00	20.14	20.10	20.03
		1	13	21.00	20.23	20.13	20.13
		1	24	21.00	20.21	19.93	20.02
		12	0	21.00	19.45	19.43	19.33
		12	6	21.00	19.47	19.39	19.35
		12	13	21.00	19.45	19.31	19.33
		25	0	21.00	19.33	19.23	19.22
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20450CH	20525CH	20600CH
10MHz	QPSK	1	0	21.00	19.96	19.91	19.71
		1	25	21.00	19.87	19.67	19.58
		1	49	21.00	19.75	19.90	19.93
		25	0	21.00	19.85	19.83	19.81
		25	13	21.00	19.79	19.70	19.84
		25	25	21.00	19.77	19.76	19.79
		50	0	21.00	19.90	19.75	19.84
	16QAM	1	0	21.00	19.95	19.96	19.97
		1	25	21.00	19.75	19.65	19.59
		1	49	21.00	20.06	20.03	19.88
		25	0	21.00	19.39	19.31	19.34
		25	13	21.00	19.38	19.32	19.39
		25	25	21.00	19.32	19.30	19.33
		50	0	21.00	19.37	19.25	19.32

Table 28: Conducted power measurement results of LTE Band V

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

Full Power:

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					23755CH	23790CH	23825CH
5MHz	QPSK	1	0	22.70	21.46	21.37	21.32
		1	13	22.70	21.43	21.48	21.42
		1	24	22.70	21.51	21.51	21.49
		12	0	21.70	20.38	20.45	20.42
		12	6	21.70	20.39	20.49	20.40
		12	13	21.70	20.30	20.39	20.32
		25	0	21.70	20.40	20.43	20.36
	16QAM	1	0	21.70	20.48	20.59	20.44
		1	13	21.70	20.55	20.72	20.48
		1	24	21.70	20.60	20.52	20.46
		12	0	20.70	19.50	19.54	19.46
		12	6	20.70	19.51	19.56	19.41
		12	13	20.70	19.48	19.50	19.44
		25	0	20.70	19.36	19.43	19.39
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					23780CH	23790CH	23800CH
10MHz	QPSK	1	0	22.70	21.54	21.38	21.37
		1	25	22.70	21.53	21.54	21.52
		1	49	22.70	21.52	21.52	21.51
		25	0	21.70	20.34	20.37	20.43
		25	13	21.70	20.46	20.53	20.47
		25	25	21.70	20.45	20.34	20.42
		50	0	21.70	20.41	20.50	20.43
	16QAM	1	0	21.70	20.34	20.40	20.40
		1	25	21.70	20.64	20.54	20.44
		1	49	21.70	20.49	20.37	20.38
		25	0	20.70	19.39	19.41	19.40
		25	13	20.70	19.51	19.57	19.54
		25	25	20.70	19.55	19.38	19.41
		50	0	20.70	19.39	19.52	19.46

Table 29: Conducted power measurement results of LTE Band XVII

Second antenna(Voice) + WiFi station + Sensor on:

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					23755CH	23790CH	23825CH
5MHz	QPSK	1	0	21.00	19.93	19.67	19.92
		1	13	21.00	19.82	19.80	19.85
		1	24	21.00	19.77	19.77	19.86
		12	0	21.00	19.97	19.62	19.87
		12	6	21.00	19.75	19.68	19.89
		12	13	21.00	19.68	19.70	19.88
		25	0	21.00	20.03	19.54	20.07
	16QAM	1	0	21.00	19.87	19.54	20.10
		1	13	21.00	19.89	19.84	20.02
		1	24	21.00	19.72	19.65	19.67
		12	0	21.00	19.99	19.62	19.93
		12	6	21.00	19.98	19.61	19.91
		12	13	21.00	19.86	19.65	19.76
		25	0	21.00	19.83	19.84	20.09
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					23780CH	23790CH	23800CH
10MHz	QPSK	1	0	21.00	19.63	19.68	19.67
		1	25	21.00	19.61	19.56	19.69
		1	49	21.00	19.64	19.62	19.62
		25	0	21.00	19.87	19.49	19.55
		25	13	21.00	19.42	19.40	19.61
		25	25	21.00	20.00	19.91	19.83
		50	0	21.00	19.82	19.81	19.84
	16QAM	1	0	21.00	19.66	19.67	19.78
		1	25	21.00	19.80	19.56	19.52
		1	49	21.00	19.88	19.78	19.92
		25	0	21.00	19.77	19.64	19.67
		25	13	21.00	19.44	19.39	19.72
		25	25	21.00	19.76	19.75	19.78
		50	0	21.00	19.61	19.50	19.81

Table 30: Conducted power measurement results of LTE Band XVII

Second antenna(Voice) + WiFi station + Sensor off:

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					23755CH	23790CH	23825CH
5MHz	QPSK	1	0	22.00	20.81	20.73	20.75
		1	13	22.00	20.74	20.82	20.89
		1	24	22.00	20.74	20.75	20.95
		12	0	21.00	19.61	19.57	19.62
		12	6	21.00	19.71	19.65	19.78
		12	13	21.00	19.58	19.62	19.73
		25	0	21.00	19.65	19.66	19.66
	16QAM	1	0	21.00	19.82	19.82	19.72
		1	13	21.00	19.79	19.85	19.80
		1	24	21.00	19.77	19.68	19.87
		12	0	20.00	18.73	18.65	18.65
		12	6	20.00	18.78	18.71	18.73
		12	13	20.00	18.69	18.69	18.75
		25	0	20.00	18.66	18.65	18.68
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					23780CH	23790CH	23800CH
10MHz	QPSK	1	0	22.00	20.81	20.72	20.61
		1	25	22.00	20.57	20.55	20.69
		1	49	22.00	20.76	21.03	21.06
		25	0	21.00	19.65	19.57	19.65
		25	13	21.00	19.57	19.69	19.65
		25	25	21.00	19.62	19.60	19.66
		50	0	21.00	19.66	19.63	19.76
	16QAM	1	0	21.00	19.76	19.73	19.61
		1	25	21.00	19.40	19.40	19.55
		1	49	21.00	19.72	20.02	19.85
		25	0	20.00	18.66	18.62	18.68
		25	13	20.00	18.66	18.71	18.69
		25	25	20.00	18.57	18.60	18.65
		50	0	20.00	18.63	18.62	18.68

Table 31: Conducted power measurement results of LTE Band XVII

Second antenna + WiFi Hspot:

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					23755CH	23790CH	23825CH
5MHz	QPSK	1	0	21.00	20.03	20.06	20.09
		1	13	21.00	20.09	20.07	20.07
		1	24	21.00	20.01	20.15	20.01
		12	0	21.00	19.83	19.79	19.87
		12	6	21.00	19.91	19.84	19.88
		12	13	21.00	19.83	19.86	19.91
		25	0	21.00	19.79	19.92	19.91
	16QAM	1	0	21.00	20.02	20.11	19.99
		1	13	21.00	20.19	20.16	20.14
		1	24	21.00	20.09	20.05	19.95
		12	0	21.00	19.67	19.67	19.66
		12	6	21.00	19.69	19.66	19.68
		12	13	21.00	19.65	19.68	19.61
		25	0	21.00	19.52	19.66	19.64
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					23780CH	23790CH	23800CH
10MHz	QPSK	1	0	21.00	19.89	20.01	20.03
		1	25	21.00	19.76	19.85	19.96
		1	49	21.00	19.90	19.95	19.86
		25	0	21.00	19.86	19.88	19.90
		25	13	21.00	19.89	19.90	19.91
		25	25	21.00	19.92	19.86	19.89
		50	0	21.00	19.93	19.95	19.96
	16QAM	1	0	21.00	20.00	19.92	20.08
		1	25	21.00	19.76	19.89	19.83
		1	49	21.00	20.11	20.13	19.99
		25	0	21.00	19.60	19.58	19.56
		25	13	21.00	19.65	19.65	19.56
		25	25	21.00	19.63	19.40	19.51
		50	0	21.00	19.61	19.66	19.59

Table 32: Conducted power measurement results of LTE Band XVII

7.1.6 Conducted power measurements of GSM850 (Main Antenna)

Full Power:

GSM850		Burst-Averaged output Power (dBm)				Division Factors	Frame-Averaged output Power (dBm)			
		Tune-up	128CH	190CH	251CH		Tune-up	128CH	190CH	251CH
GSM (CS)		33.50	32.72	32.70	32.73	-9.19	24.31	23.53	23.51	23.54
GPRS/EDGE (GMSK)	1 Tx Slot	33.50	32.70	32.71	32.66	-9.19	24.31	23.51	23.52	23.47
	2 Tx Slots	31.00	29.98	29.93	29.81	-6.13	24.87	23.85	23.80	23.68
EDGE (8PSK)	1 Tx Slot	27.00	25.90	25.90	25.85	-9.19	17.81	16.71	16.71	16.66
	2 Tx Slots	25.00	24.02	24.10	24.07	-6.13	18.87	17.89	17.97	17.94

Table 33: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 timeslots.
- 3) Per KDB941225 D01v03, SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power specified for production units, including tune-up tolerance. The data mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested.

Main antenna(Voice) + WiFi station:

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)		32.50	31.65	31.63	31.79	-9.19	23.31	22.46	22.44	22.60

Table 34: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 timeslots.

Main antenna + WiFi Hotspot:

GSM850		Burst-Averaged output Power (dBm)				Division Factors	Frame-Averaged output Power (dBm)			
		Tune-up	128CH	190CH	251CH		Tune-up	128CH	190CH	251CH
GPRS/ EDGE (GMSK)	1 Tx Slot	31.50	30.21	30.34	30.15	-9.19	22.31	21.02	21.15	20.96
	2 Tx Slots	29.00	27.88	27.96	27.82	-6.13	22.87	21.75	21.83	21.69
EDGE (8PSK)	1 Tx Slot	27.00	26.48	26.42	26.29	-9.19	17.81	17.29	17.23	17.10
	2 Tx Slots	25.00	24.03	23.95	23.83	-6.13	18.87	17.90	17.82	17.70

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 timeslots.
- 3) Per KDB941225 D01v03, SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power specified for production units, including tune-up tolerance. The data mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested.

7.1.7 Conducted power measurements of GSM1900 (Main Antenna)

Full Power:

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)		31.00	30.97	30.94	30.92	-9.19	21.81	21.78	21.75	21.73
GPRS/ EDGE (GMSK)	1 Tx Slot	31.00	30.95	30.93	30.90	-9.19	21.81	21.76	21.74	21.71
	2 Tx Slots	28.50	27.72	27.55	27.48	-6.13	22.37	21.59	21.42	21.35
EDGE (8PSK)	1 Tx Slot	26.00	25.51	25.39	25.40	-9.19	16.81	16.32	16.20	16.21
	2 Tx Slots	24.00	23.23	23.20	23.19	-6.13	17.87	17.10	17.07	17.06

Table 36: Conducted power measurement results of GSM1900

Note:

- 1) The conducted power of GSM1900 is measured with RMS detector.
- 2) Frame-averaged output power was calculated from the measured burst-averaged output power by converting the slot powers into linear units and calculating the energy over 8 timeslots.
- 3) Per KDB941225 D01v03, SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power specified for production units, including tune-up tolerance. The data mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested.

Main antenna(Voice) + WiFi station:

GSM1900		Burst-Averaged output Power (dBm)				Division Factors	Frame-Averaged output Power (dBm)			
		Tune-up	512CH	661CH	810CH		Tune-up	512CH	661CH	810CH
GSM (CS)		29.00	28.91	28.82	28.77	-9.19	19.81	19.72	19.63	19.58

Table 37: Conducted power measurement results of GSM1900

Note:

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

Main antenna + WiFi Hotspot:

GSM1900		Burst-Averaged output Power (dBm)				Division Factors	Frame-Averaged output Power (dBm)			
		Tune-up	512CH	661CH	810CH		Tune-up	512CH	661CH	810CH
GPRS/ EDGE (GMSK)	1 Tx Slot	28.00	27.04	26.95	26.93	-9.19	18.81	17.85	17.76	17.74
	2 Tx Slots	25.50	24.27	24.81	24.73	-6.13	19.37	18.14	18.68	18.60
EDGE (8PSK)	1 Tx Slot	26.00	25.63	25.58	25.45	-9.19	16.81	16.44	16.39	16.26
	2 Tx Slots	24.00	23.17	23.13	23.06	-6.13	17.87	17.04	17.00	16.93

Table 38: Conducted power measurement results of GSM1900

Note:

- 1) The conducted power of GSM1900 is measured with RMS detector.
- 2) Frame-averaged output power was calculated from the measured burst-averaged output power by converting the slot powers into linear units and calculating the energy over 8 timeslots.
- 3) Per KDB941225 D01v03, SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power specified for production units, including tune-up tolerance. The data mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested.

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

Full Power:

UMTS Band II		Tune-up	Conducted Power (dBm)		
			9262CH	9400CH	9538CH
WCDMA	12.2kbps RMC	23.00	22.77	22.77	22.71
HSDPA	Subtest 1	22.00	21.85	21.80	21.71
	Subtest 2	21.50	21.42	21.35	21.43
	Subtest 3	21.00	20.93	20.89	20.91
	Subtest 4	21.00	20.88	20.89	20.93
HSUPA	Subtest 1	22.00	20.87	20.87	20.80
	Subtest 2	20.50	20.42	20.44	20.39
	Subtest 3	20.50	20.37	20.35	20.34
	Subtest 4	20.50	20.43	20.42	20.36
	Subtest 5	22.00	21.33	21.29	21.23
DC-HSDPA	Subtest 1	22.00	21.78	21.72	21.63
	Subtest 2	21.50	21.36	21.28	21.36
	Subtest 3	21.00	20.86	20.81	20.82
	Subtest 4	21.00	20.81	20.82	20.81

Table 39: Conducted power measurement results of UMTS Band II

Note: 1) The conducted power of UMTS Band II is measured with RMS detector.

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

3) Per KDB941225 D01v03, When the maximum output power and tune-up tolerance specified for production units in a Second mode is $\leq \frac{1}{4}$ dB higher than the primary mode or when the highest *reported* SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of Second to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the Second mode.

Main antenna(Voice) + WiFi station:

UMTS Band II		Tune-up	Conducted Power (dBm)		
			9262CH	9400CH	9538CH
WCDMA	12.2kbps RMC	21.00	20.42	20.48	20.52

Table 40: Conducted power measurement results of UMTS Band II

Note: 1) The conducted power of UMTS Band II is measured with RMS detector.

Main antenna + WiFi Hotspot:

UMTS Band II		Tune-up	Conducted Power (dBm)		
			9262CH	9400CH	9538CH
WCDMA	12.2kbps RMC	20.00	19.80	19.85	19.84
HSDPA	Subtest 1	19.00	18.93	18.91	18.84
	Subtest 2	18.50	18.16	18.21	18.17
	Subtest 3	18.00	17.88	17.76	17.81
	Subtest 4	18.00	17.84	17.72	17.83
HSUPA	Subtest 1	19.00	18.75	18.73	18.79
	Subtest 2	17.50	17.12	17.09	17.16
	Subtest 3	17.50	17.14	17.16	17.05
	Subtest 4	17.50	17.21	17.18	17.08
	Subtest 5	19.00	18.63	18.54	18.47
DC-HSDPA	Subtest 1	19.00	18.86	18.82	18.78
	Subtest 2	18.50	18.10	18.13	18.10
	Subtest 3	18.00	17.81	17.69	17.72
	Subtest 4	18.00	17.80	17.63	17.73

Table 41: Conducted power measurement results of UMTS Band II

Note: 1) The conducted power of UMTS Band II is measured with RMS detector.

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

 3) Per KDB941225 D01v03, When the maximum output power and tune-up tolerance specified for production units in a Second mode is $\leq \frac{1}{4}$ dB higher than the primary mode or when the highest *reported* SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of Second to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the Second mode.

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

Full Power:

UMTS Band IV		Tune-up	Conducted Power (dBm)		
			1312CH	1413CH	1513CH
WCDMA	12.2kbps RMC	23.00	22.42	22.50	22.50
HSDPA	Subtest 1	22.00	21.49	21.50	21.49
	Subtest 2	21.50	21.31	21.35	21.33
	Subtest 3	21.00	20.63	20.49	20.45
	Subtest 4	21.00	20.64	20.82	20.71
HSUPA	Subtest 1	22.00	20.59	20.60	20.62
	Subtest 2	20.50	20.27	20.24	20.25
	Subtest 3	20.50	20.28	20.26	20.20
	Subtest 4	20.50	20.45	20.44	20.39
	Subtest 5	22.00	20.97	20.89	20.90
DC-HSDPA	Subtest 1	22.00	21.41	21.42	21.41
	Subtest 2	21.50	21.22	21.26	21.28
	Subtest 3	21.00	20.54	20.42	20.37
	Subtest 4	21.00	20.58	20.76	20.66

Table 42: Conducted power measurement results of UMTS Band IV

Note: 1) The conducted power of UMTS Band IV is measured with RMS detector.

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

3) Per KDB941225 D01v03, When the maximum output power and tune-up tolerance specified for production units in a Second mode is $\leq \frac{1}{4}$ dB higher than the primary mode or when the highest *reported* SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of Second to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the Second mode.

Main antenna(Voice) + WiFi Station:

UMTS Band IV		Tune-up	Conducted Power (dBm)		
			1312CH	1413CH	1513CH
WCDMA	12.2kbps RMC	21.00	20.74	20.83	20.81

Table 43: Conducted power measurement results of UMTS Band IV

Note: 1) The conducted power of UMTS Band IV is measured with RMS detector.

Main antenna + WiFi Hotspot:

UMTS Band IV		Tune-up	Conducted Power (dBm)		
			1312CH	1413CH	1513CH
WCDMA	12.2kbps RMC	20.00	19.46	19.42	19.37
HSDPA	Subtest 1	19.00	18.33	18.59	18.51
	Subtest 2	18.50	18.24	18.46	18.40
	Subtest 3	18.00	17.63	17.67	17.27
	Subtest 4	18.00	17.86	17.89	17.92
HSUPA	Subtest 1	19.00	18.22	18.01	18.04
	Subtest 2	17.50	17.17	17.24	17.35
	Subtest 3	17.50	17.25	17.28	17.44
	Subtest 4	17.50	17.45	17.40	17.31
	Subtest 5	19.00	18.38	18.05	18.04
DC-HSDPA	Subtest 1	19.00	18.25	18.51	18.41
	Subtest 2	18.50	18.17	18.40	18.32
	Subtest 3	18.00	17.55	17.62	17.22
	Subtest 4	18.00	17.79	17.83	17.82

Table 44: Conducted power measurement results of UMTS Band IV

Note: 1) The conducted power of UMTS Band IV is measured with RMS detector.

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

3) Per KDB941225 D01v03, When the maximum output power and tune-up tolerance specified for production units in a Second mode is $\leq \frac{1}{4}$ dB higher than the primary mode or when the highest *reported* SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of Second to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the Second mode.

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

Full Power:

UMTS Band V		Tune-up	Conducted Power (dBm)		
			4132CH	4182CH	4233CH
WCDMA	12.2kbps RMC	24.50	23.52	23.66	23.64
HSDPA	Subtest 1	23.50	22.50	22.60	22.59
	Subtest 2	23.00	22.56	22.51	22.34
	Subtest 3	22.50	22.05	21.78	22.14
	Subtest 4	22.50	21.99	21.76	22.14
HSUPA	Subtest 1	23.50	21.64	21.71	21.75
	Subtest 2	22.00	21.37	21.44	21.44
	Subtest 3	22.00	21.37	21.45	21.47
	Subtest 4	22.00	21.83	21.89	21.92
	Subtest 5	23.50	22.09	22.11	22.20
DC-HSDPA	Subtest 1	23.50	22.42	22.52	22.52
	Subtest 2	23.00	22.48	22.52	22.28
	Subtest 3	22.50	21.95	21.71	22.09
	Subtest 4	22.50	21.92	21.70	22.10

Table 45: 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 D01v03, When the maximum output power and tune-up tolerance specified for production units in a Second mode is $\leq \frac{1}{4}$ dB higher than the primary mode or when the highest *reported* SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of Second to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the Second mode.

Main antenna(Voice) + WiFi station:

UMTS Band V		Tune-up	Conducted Power (dBm)		
			4132CH	4182CH	4233CH
WCDMA	12.2kbps RMC	23.50	22.13	22.29	22.19

Table 46: Conducted power measurement results of UMTS Band V

Note: 1) The conducted power of UMTS Band V is measured with RMS detector.

Main antenna + WiFi Hotspot:

UMTS Band V		Tune-up	Conducted Power (dBm)		
			4132CH	4182CH	4233CH
WCDMA	12.2kbps RMC	22.50	22.02	22.10	22.09
HSDPA	Subtest 1	21.50	21.06	21.11	21.10
	Subtest 2	21.00	20.93	20.96	20.96
	Subtest 3	20.50	20.48	20.49	20.49
	Subtest 4	20.50	20.07	20.42	20.18
HSUPA	Subtest 1	21.50	20.27	20.46	20.47
	Subtest 2	20.00	19.95	19.97	19.91
	Subtest 3	20.00	19.67	19.66	19.64
	Subtest 4	20.00	19.95	19.89	19.91
	Subtest 5	21.50	20.28	20.27	20.27
DC-HSDPA	Subtest 1	21.50	21.00	21.02	21.02
	Subtest 2	21.00	20.88	20.82	20.88
	Subtest 3	20.50	20.42	20.41	20.42
	Subtest 4	20.50	19.98	20.36	20.11

Table 47: 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 D01v03, When the maximum output power and tune-up tolerance specified for production units in a Second mode is $\leq \frac{1}{4}$ dB higher than the primary mode or when the highest *reported* SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of Second to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the Second mode.

7.1.11 Conducted power measurements of CDMA BC0 (Main Antenna)

Full Power:

CDMA BC0		Average Power (dBm)			
		Tune-up	1013CH	384CH	777CH
RC1	SO55 (Loopback)	25.00	23.98	24.08	24.03
RC3	SO55 (Loopback)	25.00	24.08	24.09	24.10
	TDSO32 (FCH+SCH)	25.00	23.99	24.07	24.12
	TDSO32 (FCH)	25.00	24.00	24.08	24.10
1x Advanced	SO75	25.00	24.02	24.05	24.04
Rev 0	FTAP/RTAP	25.00	24.07	24.00	23.80
Rev A	FETAP/RETAP	25.00	23.72	23.80	23.80

Table 48: Conducted power measurement results of CDMA BC0

Note: 1) The conducted power of CDMA BC0 is measured with RMS detector.

2) Per KDB941225 D01v03, When the maximum output power and tune-up tolerance specified for production units in a Second mode is $\leq \frac{1}{4}$ dB higher than the primary mode or when the highest *reported* SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of Second to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the Second mode.

Main antenna(Voice) + WiFi station:

CDMA BC0		Average Power (dBm)			
		Tune-up	1013CH	384CH	777CH
RC1	SO55 (Loopback)	23.50	23.08	23.15	22.97
RC3	SO55 (Loopback)	23.50	23.18	23.16	23.17
	TDSO32 (FCH+SCH)	23.50	23.09	23.11	23.19
	TDSO32 (FCH)	23.50	23.10	23.19	23.13
1x Advanced	SO75	23.50	23.12	23.03	23.02

Table 49: Conducted power measurement results of CDMA BC0

Note: 1) The conducted power of CDMA BC0 is measured with RMS detector.

2) Per KDB941225 D01v03, When the maximum output power and tune-up tolerance specified for production units in a Second mode is $\leq \frac{1}{4}$ dB higher than the primary mode or when the highest *reported* SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of Second to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the Second mode.

Main antenna + WiFi Hotspot:

CDMA BC0		Average Power (dBm)			
		Tune-up	1013CH	384CH	777CH
RC1	SO55 (Loopback)	22.50	21.52	21.57	21.50
RC3	SO55 (Loopback)	22.50	21.53	21.58	21.50
	TDSO32 (FCH+SCH)	22.50	21.55	21.56	21.52
	TDSO32 (FCH)	22.50	21.56	21.58	21.51
1x Advanced	SO75	22.50	21.52	21.55	54.50
Rev 0	FTAP/RTAP	22.50	21.55	21.65	21.35
Rev A	FETAP/RETAP	22.50	21.30	21.45	21.30

Table 50: Conducted power measurement results of CDMA BC0

Note: 1) The conducted power of CDMA BC0 is measured with RMS detector.

2) Per KDB941225 D01v03, When the maximum output power and tune-up tolerance specified for production units in a Second mode is $\leq \frac{1}{4}$ dB higher than the primary mode or when the highest *reported* SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of Second to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the Second mode.

7.1.12 Conducted power measurements of CDMA BC1 (Main Antenna)
Full Power:

CDMA BC1		Average Power (dBm)			
		Tune-up	25CH	600CH	1175CH
RC1	SO55 (Loopback)	23.70	23.37	23.28	23.25
RC3	SO55 (Loopback)	23.70	23.38	23.28	23.24
	TDSO32 (FCH+SCH)	23.70	23.39	23.29	23.29
	TDSO32 (FCH)	23.70	23.42	23.34	23.28
1x Advanced	SO75	23.70	23.40	23.30	23.26
Rev 0	FTAP/RTAP	23.70	23.42	23.32	23.28
Rev A	FETAP/RETAP	23.70	23.35	23.29	23.24

Table 51: Conducted power measurement results of CDMA BC 1

Note: 1) The conducted power of CDMA BC1 is measured with RMS detector.

2) Per KDB941225 D01v03, When the maximum output power and tune-up tolerance specified for production units in a Second mode is $\leq \frac{1}{4}$ dB higher than the primary mode or when the highest *reported* SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of Second to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the Second mode.

Main antenna(Voice) + WiFi station:

CDMA BC1		Average Power (dBm)			
		Tune-up	25CH	600CH	1175CH
RC1	SO55 (Loopback)	21.00	20.87	20.75	20.55
RC3	SO55 (Loopback)	21.00	20.61	20.82	20.68
	TDSO32 (FCH+SCH)	21.00	20.75	20.85	20.65
	TDSO32 (FCH)	21.00	20.66	20.91	20.65
1x Advanced	SO75	21.00	20.66	20.94	20.70

Table 52: Conducted power measurement results of CDMA BC 1

Note: 1) The conducted power of CDMA BC1 is measured with RMS detector.

2) Per KDB941225 D01v03, When the maximum output power and tune-up tolerance specified for production units in a Second mode is $\leq \frac{1}{4}$ dB higher than the primary mode or when the highest *reported* SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of Second to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the Second mode.

Main antenna + WiFi Hotspot:

CDMA BC1		Average Power (dBm)			
		Tune-up	25CH	600CH	1175CH
RC1	SO55 (Loopback)	20.00	18.60	18.62	18.50
RC3	SO55 (Loopback)	20.00	18.66	18.61	18.46
	TDSO32 (FCH+SCH)	20.00	18.65	18.60	18.52
	TDSO32 (FCH)	20.00	18.70	18.60	18.58
1x Advanced	SO75	20.00	18.68	18.55	18.48
Rev 0	FTAP/RTAP	20.00	18.67	18.66	18.55
Rev A	FETAP/RETAP	20.00	18.49	18.43	18.38

Table 53: Conducted power measurement results of CDMA BC 1

Note: 1) The conducted power of CDMA BC1 is measured with RMS detector.

2) Per KDB941225 D01v03, When the maximum output power and tune-up tolerance specified for production units in a Second mode is $\leq \frac{1}{4}$ dB higher than the primary mode or when the highest *reported* SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of Second to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the Second mode.

7.1.13 Conducted power measurements of LTE Band II (Main Antenna)
Full Power:

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18607CH	18900CH	19193CH
1.4MHz	QPSK	1	0	22.80	22.18	21.87	21.86
		1	3	22.80	21.93	21.84	21.92
		1	5	22.80	21.90	21.85	21.86
		3	0	22.80	21.75	21.58	21.66
		3	2	22.80	21.81	21.71	21.79
		3	3	22.80	21.83	21.72	21.75
		6	0	21.80	20.85	20.72	20.73
	16QAM	1	0	21.80	21.02	20.87	21.09
		1	3	21.80	21.08	20.94	21.21
		1	5	21.80	20.97	20.97	21.20
		3	0	21.80	20.75	20.70	20.80
		3	2	21.80	20.82	20.76	20.87
		3	3	21.80	20.76	20.81	20.85
		6	0	20.80	19.89	19.89	19.93
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18615CH	18900CH	19185CH
3MHz	QPSK	1	0	22.80	22.22	21.78	21.82
		1	7	22.80	21.86	21.78	21.92
		1	14	22.80	21.91	21.84	21.82
		8	0	21.80	20.91	20.87	20.78
		8	4	21.80	20.92	20.81	20.84
		8	7	21.80	20.91	20.80	20.78
		15	0	21.80	20.95	20.77	20.90
	16QAM	1	0	21.80	21.13	20.99	21.10
		1	7	21.80	21.13	20.94	21.07
		1	14	21.80	20.99	20.90	21.04
		8	0	20.80	19.90	19.94	19.78
		8	4	20.80	19.89	19.88	19.83
		8	7	20.80	19.88	19.85	19.86
		15	0	20.80	19.94	19.83	19.92

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18625CH	18900CH	19175CH
5MHz	QPSK	1	0	22.80	22.25	21.88	21.99
		1	13	22.80	22.09	21.98	22.00
		1	24	22.80	21.96	21.76	21.85
		12	0	21.80	20.94	20.72	20.86
		12	6	21.80	20.93	20.84	20.90
		12	13	21.80	20.88	20.68	20.82
		25	0	21.80	20.93	20.81	20.79
	16QAM	1	0	21.80	21.07	20.95	21.06
		1	13	21.80	21.19	20.99	21.00
		1	24	21.80	20.95	20.82	21.02
		12	0	20.80	19.98	19.91	19.93
		12	6	20.80	20.02	19.86	19.87
		12	13	20.80	20.03	19.83	19.88
		25	0	20.80	19.94	19.87	19.75
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18650CH	18900CH	19150CH
10MHz	QPSK	1	0	22.80	22.48	22.52	22.58
		1	25	22.80	21.90	21.82	21.96
		1	49	22.80	22.00	21.81	22.04
		25	0	21.80	21.06	20.87	20.90
		25	13	21.80	20.94	20.81	20.90
		25	25	21.80	20.90	20.68	20.77
		50	0	21.80	20.96	20.80	20.92
	16QAM	1	0	21.80	21.31	21.18	21.21
		1	25	21.80	20.88	20.75	20.82
		1	49	21.80	21.02	20.89	20.82
		25	0	20.80	20.08	19.88	19.93
		25	13	20.80	19.97	19.90	19.96
		25	25	20.80	19.89	19.63	19.78
		50	0	20.80	19.89	19.79	19.94

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18675CH	18900CH	19125CH
15MHz	QPSK	1	0	22.80	22.49	22.38	22.37
		1	38	22.80	21.90	21.82	21.76
		1	74	22.80	21.93	22.03	21.84
		36	0	21.80	21.05	20.82	21.01
		36	18	21.80	20.97	20.80	20.87
		36	39	21.80	20.78	20.74	20.79
		75	0	21.80	20.93	20.81	21.07
	16QAM	1	0	21.80	21.19	21.11	21.13
		1	38	21.80	20.64	20.52	20.58
		1	74	21.80	20.73	20.60	20.69
		36	0	20.80	19.99	19.91	20.02
		36	18	20.80	19.84	19.72	19.87
		36	39	20.80	19.68	19.76	19.72
		75	0	20.80	19.88	19.85	20.02
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18700CH	18900CH	19100CH
20MHz	QPSK	1	0	22.80	22.55	22.40	22.43
		1	50	22.80	21.71	21.68	21.76
		1	99	22.80	21.78	21.77	21.82
		50	0	21.80	21.03	21.00	21.05
		50	25	21.80	20.83	20.65	20.80
		50	50	21.80	20.72	20.66	20.69
		100	0	21.80	20.98	20.82	20.86
	16QAM	1	0	21.80	21.90	21.86	21.93
		1	50	21.80	21.13	21.21	21.30
		1	99	21.80	21.31	21.29	21.41
		50	0	20.80	20.14	20.14	20.08
		50	25	20.80	19.81	19.78	19.79
		50	50	20.80	19.68	19.69	19.77
		100	0	20.80	19.99	19.86	19.95

Table 54: Conducted power measurement results of LTE Band II

Main antenna(Voice) + WiFi station:

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18607CH	18900CH	19193CH
1.4MHz	QPSK	1	0	21.00	20.04	20.13	20.03
		1	3	21.00	20.08	20.09	20.08
		1	5	21.00	19.97	20.02	20.11
		3	0	21.00	19.87	19.78	19.89
		3	2	21.00	19.95	19.92	20.02
		3	3	21.00	19.88	19.90	19.96
		6	0	21.00	19.96	20.25	20.10
	16QAM	1	0	21.00	20.18	20.10	20.06
		1	3	21.00	20.22	20.00	20.03
		1	5	21.00	19.79	19.83	20.20
		3	0	21.00	20.02	20.00	20.14
		3	2	21.00	20.07	20.01	20.24
		3	3	21.00	19.95	19.87	20.08
		6	0	21.00	19.94	19.60	19.71
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18615CH	18900CH	19185CH
3MHz	QPSK	1	0	21.00	20.14	20.18	20.07
		1	7	21.00	20.15	20.17	20.19
		1	14	21.00	20.15	20.13	20.09
		8	0	21.00	20.27	20.03	20.10
		8	4	21.00	20.04	20.30	20.37
		8	7	21.00	19.99	20.13	19.93
		15	0	21.00	20.09	20.13	20.03
	16QAM	1	0	21.00	20.23	20.03	20.30
		1	7	21.00	20.26	20.22	20.27
		1	14	21.00	20.36	20.03	20.17
		8	0	21.00	19.84	20.49	20.42
		8	4	21.00	20.19	20.26	19.79
		8	7	21.00	20.20	20.28	19.87
		15	0	21.00	20.23	20.09	20.15

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18625CH	18900CH	19175CH
5MHz	QPSK	1	0	21.00	20.33	20.30	20.34
		1	13	21.00	20.25	20.27	20.14
		1	24	21.00	20.24	20.17	20.10
		12	0	21.00	20.25	20.40	20.48
		12	6	21.00	20.24	20.40	20.08
		12	13	21.00	20.30	20.20	20.26
		25	0	21.00	20.38	20.13	20.15
	16QAM	1	0	21.00	20.38	20.39	20.00
		1	13	21.00	20.42	20.07	20.11
		1	24	21.00	20.39	20.36	20.28
		12	0	21.00	20.09	20.32	20.20
		12	6	21.00	20.37	20.11	20.24
		12	13	21.00	20.17	20.49	20.66
		25	0	21.00	20.20	20.51	20.08
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18650CH	18900CH	19150CH
10MHz	QPSK	1	0	21.00	20.67	20.44	20.54
		1	25	21.00	20.24	20.08	20.05
		1	49	21.00	20.27	20.16	20.30
		25	0	21.00	20.57	20.62	20.52
		25	13	21.00	20.26	19.97	19.88
		25	25	21.00	20.16	20.31	20.11
		50	0	21.00	20.83	20.42	20.68
	16QAM	1	0	21.00	20.81	20.48	20.48
		1	25	21.00	20.38	19.92	20.12
		1	49	21.00	20.39	20.23	20.10
		25	0	21.00	20.72	20.51	20.44
		25	13	21.00	20.24	19.95	20.11
		25	25	21.00	20.41	20.30	20.25
		50	0	21.00	20.18	19.92	19.92

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18675CH	18900CH	19125CH
15MHz	QPSK	1	0	21.00	20.93	20.78	20.86
		1	38	21.00	20.22	20.17	20.10
		1	74	21.00	20.53	20.49	20.32
		36	0	21.00	20.87	20.94	20.79
		36	18	21.00	19.97	20.30	19.83
		36	39	21.00	20.69	20.22	20.23
		75	0	21.00	20.86	20.74	20.95
	16QAM	1	0	21.00	20.76	20.96	20.90
		1	38	21.00	20.12	20.45	20.06
		1	74	21.00	20.32	20.38	20.37
		36	0	21.00	20.84	20.95	20.91
		36	18	21.00	20.34	20.28	20.25
		36	39	21.00	20.53	20.28	20.51
		75	0	21.00	20.44	20.57	20.11
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18700CH	18900CH	19100CH
20MHz	QPSK	1	0	21.00	20.94	20.90	20.95
		1	50	21.00	20.02	20.03	19.98
		1	99	21.00	20.34	20.41	20.33
		50	0	21.00	20.89	20.84	20.87
		50	25	21.00	19.95	19.89	20.06
		50	50	21.00	20.52	20.33	20.13
		100	0	21.00	20.97	20.67	21.07
	16QAM	1	0	21.00	20.00	19.74	20.01
		1	50	21.00	20.40	20.27	20.21
		1	99	21.00	20.88	20.54	20.45
		50	0	21.00	19.89	19.65	20.19
		50	25	21.00	20.23	20.44	20.33
		50	50	21.00	20.89	20.73	20.21
		100	0	21.00	19.89	19.48	20.07

Table 55: Conducted power measurement results of LTE Band II

Main antenn(Voice) + WiFi Hotspot:

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18607CH	18900CH	19193CH
1.4MHz	QPSK	1	0	20.00	18.83	18.74	18.73
		1	3	20.00	18.89	18.80	18.74
		1	5	20.00	18.82	18.74	18.77
		3	0	20.00	18.74	18.55	18.56
		3	2	20.00	18.77	18.65	18.66
		3	3	20.00	18.75	18.60	18.57
		6	0	20.00	18.87	18.69	18.65
	16QAM	1	0	20.00	19.00	18.91	18.88
		1	3	20.00	19.01	18.88	18.98
		1	5	20.00	19.10	19.08	18.91
		3	0	20.00	18.86	18.67	18.71
		3	2	20.00	18.84	18.74	18.74
		3	3	20.00	18.79	18.70	18.70
		6	0	20.00	18.82	18.84	18.84
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18615CH	18900CH	19185CH
3MHz	QPSK	1	0	20.00	19.10	18.88	18.92
		1	7	20.00	19.00	18.76	18.83
		1	14	20.00	19.12	18.83	18.79
		8	0	20.00	18.90	18.80	18.70
		8	4	20.00	18.89	18.75	18.71
		8	7	20.00	18.83	18.73	18.66
		15	0	20.00	18.88	18.73	18.75
	16QAM	1	0	20.00	19.03	18.92	18.91
		1	7	20.00	19.00	18.88	18.89
		1	14	20.00	18.91	18.81	18.81
		8	0	20.00	18.96	18.91	18.73
		8	4	20.00	18.95	18.83	18.78
		8	7	20.00	18.89	18.83	18.79
		15	0	20.00	18.92	18.81	18.79

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18625CH	18900CH	19175CH
5MHz	QPSK	1	0	20.00	19.05	18.89	18.90
		1	13	20.00	19.02	18.89	18.85
		1	24	20.00	18.90	18.85	18.77
		12	0	20.00	18.85	18.71	18.75
		12	6	20.00	18.89	18.76	18.79
		12	13	20.00	18.84	18.67	18.70
		25	0	20.00	18.88	18.74	18.74
	16QAM	1	0	20.00	19.03	18.89	18.82
		1	13	20.00	19.06	18.96	18.88
		1	24	20.00	18.90	18.82	18.78
		12	0	20.00	18.99	18.85	18.85
		12	6	20.00	18.94	18.85	18.78
		12	13	20.00	18.92	18.81	18.77
		25	0	20.00	18.89	18.76	18.73
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18650CH	18900CH	19150CH
10MHz	QPSK	1	0	20.00	19.24	19.17	19.03
		1	25	20.00	18.95	18.85	18.74
		1	49	20.00	18.94	18.78	18.77
		25	0	20.00	19.01	18.90	18.76
		25	13	20.00	18.85	18.78	18.69
		25	25	20.00	18.79	18.68	18.63
		50	0	20.00	18.93	18.81	18.84
	16QAM	1	0	20.00	19.16	19.23	19.16
		1	25	20.00	19.06	18.82	18.82
		1	49	20.00	19.07	18.82	18.82
		25	0	20.00	19.02	18.89	18.81
		25	13	20.00	18.91	18.83	18.82
		25	25	20.00	18.86	18.70	18.67
		50	0	20.00	18.96	18.77	18.88

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18675CH	18900CH	19125CH
15MHz	QPSK	1	0	20.00	19.46	19.52	19.35
		1	38	20.00	18.82	18.68	18.70
		1	74	20.00	18.95	18.86	18.94
		36	0	20.00	19.08	18.97	18.98
		36	18	20.00	18.93	18.80	18.69
		36	39	20.00	18.72	18.68	18.80
		75	0	20.00	18.94	18.75	18.78
	16QAM	1	0	20.00	19.27	19.23	19.12
		1	38	20.00	18.68	18.52	18.49
		1	74	20.00	18.88	18.63	18.69
		36	0	20.00	19.04	19.04	18.97
		36	18	20.00	18.91	18.78	18.73
		36	39	20.00	18.74	18.64	18.77
		75	0	20.00	18.96	18.81	18.82
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					18700CH	18900CH	19100CH
20MHz	QPSK	1	0	20.00	19.43	19.47	19.34
		1	50	20.00	18.65	18.56	18.76
		1	99	20.00	18.90	18.76	18.79
		50	0	20.00	19.18	19.11	19.04
		50	25	20.00	18.92	18.78	18.80
		50	50	20.00	18.77	18.74	18.73
		100	0	20.00	19.05	18.90	18.99
	16QAM	1	0	20.00	19.63	19.70	19.69
		1	50	20.00	19.20	19.19	19.27
		1	99	20.00	19.50	19.31	19.39
		50	0	20.00	19.27	19.17	19.08
		50	25	20.00	18.95	18.85	18.84
		50	50	20.00	18.86	18.85	18.86
		100	0	20.00	19.14	18.94	19.09

Table 56: Conducted power measurement results of LTE Band II

7.1.14 Conducted power measurements of LTE Band IV (Main Antenna)
Full Power:

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					19957CH	20175CH	20393CH
1.4MHz	QPSK	1	0	23.00	21.78	21.85	21.79
		1	3	23.00	21.69	21.86	21.78
		1	5	23.00	21.75	21.78	21.57
		3	0	23.00	21.55	21.68	21.64
		3	2	23.00	21.60	21.79	21.57
		3	3	23.00	21.58	21.67	21.50
		6	0	22.00	20.69	20.79	20.58
	16QAM	1	0	22.00	20.76	21.08	20.89
		1	3	22.00	20.73	21.16	20.83
		1	5	22.00	20.96	20.90	20.92
		3	0	22.00	20.62	20.77	20.61
		3	2	22.00	20.58	20.82	20.68
		3	3	22.00	20.58	20.72	20.62
		6	0	21.00	19.76	19.83	19.78
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					19965CH	20175CH	20385CH
3MHz	QPSK	1	0	23.00	21.78	21.96	21.85
		1	7	23.00	21.76	21.91	21.76
		1	14	23.00	21.62	21.77	21.67
		8	0	22.00	20.70	20.86	20.66
		8	4	22.00	20.73	20.81	20.69
		8	7	22.00	20.64	20.73	20.66
		15	0	22.00	20.68	20.80	20.67
	16QAM	1	0	22.00	21.05	21.02	21.06
		1	7	22.00	20.90	21.00	20.92
		1	14	22.00	20.74	21.05	20.97
		8	0	21.00	19.74	19.91	19.72
		8	4	21.00	19.77	19.83	19.70
		8	7	21.00	19.72	19.85	19.76
		15	0	21.00	19.73	19.86	19.69

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					19975CH	20175CH	20375CH
5MHz	QPSK	1	0	23.00	22.22	22.23	22.32
		1	13	23.00	21.90	21.98	21.81
		1	24	23.00	21.72	21.85	21.76
		12	0	22.00	20.64	20.79	20.63
		12	6	22.00	20.63	20.89	20.69
		12	13	22.00	20.51	20.73	20.68
		25	0	22.00	20.65	20.75	20.69
	16QAM	1	0	22.00	20.83	21.03	20.79
		1	13	22.00	20.85	20.95	20.82
		1	24	22.00	20.74	20.85	20.76
		12	0	21.00	19.69	19.85	19.68
		12	6	21.00	19.71	19.89	19.73
		12	13	21.00	19.65	19.81	19.79
		25	0	21.00	19.65	19.72	19.69
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20000CH	20175CH	20350CH
10MHz	QPSK	1	0	23.00	22.47	22.57	22.68
		1	25	23.00	21.69	21.90	21.69
		1	49	23.00	21.65	21.92	21.76
		25	0	22.00	20.79	20.97	20.80
		25	13	22.00	20.64	20.85	20.64
		25	25	22.00	20.71	20.76	20.58
		50	0	22.00	20.77	20.89	20.72
	16QAM	1	0	22.00	21.27	21.21	21.02
		1	25	22.00	20.61	20.69	20.60
		1	49	22.00	20.78	20.84	20.85
		25	0	21.00	19.78	19.97	19.76
		25	13	21.00	19.70	19.88	19.67
		25	25	21.00	19.68	19.73	19.59
		50	0	21.00	19.72	19.81	19.69

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20025CH	20175CH	20325CH
15MHz	QPSK	1	0	23.00	22.38	22.55	22.62
		1	38	23.00	21.65	21.88	21.87
		1	74	23.00	21.93	22.02	22.14
		36	0	22.00	20.88	20.96	21.01
		36	18	22.00	20.78	20.91	20.90
		36	39	22.00	20.76	20.83	20.78
		75	0	22.00	20.82	20.92	20.91
	16QAM	1	0	22.00	21.06	21.25	21.09
		1	38	22.00	20.44	20.56	20.53
		1	74	22.00	20.63	20.66	20.57
		36	0	21.00	19.86	20.00	20.02
		36	18	21.00	19.81	19.89	19.86
		36	39	21.00	19.71	19.82	19.70
		75	0	21.00	19.83	19.92	19.91
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20050CH	20175CH	20300CH
20MHz	QPSK	1	0	23.00	22.42	22.67	22.66
		1	50	23.00	21.63	21.76	21.73
		1	99	23.00	21.96	21.93	21.76
		50	0	22.00	20.93	21.12	21.06
		50	25	22.00	20.77	20.91	20.80
		50	50	22.00	20.83	20.74	20.75
		100	0	22.00	20.89	20.98	20.96
	16QAM	1	0	22.00	21.85	21.98	21.96
		1	50	22.00	21.22	21.29	21.29
		1	99	22.00	21.53	21.50	21.37
		50	0	21.00	20.07	20.19	20.08
		50	25	21.00	19.80	19.97	19.86
		50	50	21.00	19.87	19.85	19.84
		100	0	21.00	19.99	19.96	19.99

Table 57: Conducted power measurement results of LTE Band IV

**Main antenna(Voice) + WiFi station:**

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					19957CH	20175CH	20393CH
1.4MHz	QPSK	1	0	21.00	20.19	20.15	20.09
		1	3	21.00	20.19	20.15	20.09
		1	5	21.00	20.19	20.15	20.09
		3	0	21.00	20.19	20.15	20.09
		3	2	21.00	20.19	20.15	20.09
		3	3	21.00	20.19	20.15	20.09
		6	0	21.00	20.19	20.15	20.09
	16QAM	1	0	21.00	20.19	20.15	20.09
		1	3	21.00	20.19	20.15	20.09
		1	5	21.00	20.19	20.15	20.09
		3	0	21.00	20.19	20.15	20.09
		3	2	21.00	20.19	20.15	20.09
		3	3	21.00	19.14	20.15	20.09
		6	0	21.00	19.14	19.42	19.45
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					19965CH	20175CH	20385CH
3MHz	QPSK	1	0	21.00	19.05	19.13	19.16
		1	7	21.00	19.13	19.21	19.18
		1	14	21.00	19.09	19.15	19.08
		8	0	21.00	19.01	19.06	19.05
		8	4	21.00	19.05	19.32	19.23
		8	7	21.00	19.04	19.13	19.14
		15	0	21.00	19.07	19.11	19.16
	16QAM	1	0	21.00	19.24	19.11	19.00
		1	7	21.00	19.13	19.05	19.26
		1	14	21.00	19.21	19.25	19.07
		8	0	21.00	19.14	19.26	19.08
		8	4	21.00	19.04	19.40	19.05
		8	7	21.00	19.03	19.05	19.27
		15	0	21.00	19.07	19.32	19.35



Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					19975CH	20175CH	20375CH
5MHz	QPSK	1	0	21.00	19.09	19.14	19.17
		1	13	21.00	19.16	19.25	19.15
		1	24	21.00	19.08	19.13	19.21
		12	0	21.00	19.16	19.13	19.17
		12	6	21.00	19.08	19.36	19.11
		12	13	21.00	19.09	19.24	19.36
		25	0	21.00	19.24	19.32	19.25
	16QAM	1	0	21.00	19.00	19.13	19.10
		1	13	21.00	19.05	19.24	19.06
		1	24	21.00	18.89	19.04	19.28
		12	0	21.00	19.06	19.33	19.37
		12	6	21.00	19.06	19.06	19.35
		12	13	21.00	19.02	19.12	19.16
		25	0	21.00	19.29	19.06	19.06
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20000CH	20175CH	20350CH
10MHz	QPSK	1	0	21.00	19.09	19.16	19.19
		1	25	21.00	19.15	19.25	19.17
		1	49	21.00	19.24	19.18	19.16
		25	0	21.00	19.01	19.32	19.00
		25	13	21.00	19.34	19.24	19.26
		25	25	21.00	19.27	19.09	19.19
		50	0	21.00	19.20	19.46	19.05
	16QAM	1	0	21.00	18.94	19.32	19.13
		1	25	21.00	19.32	19.27	19.09
		1	49	21.00	19.32	19.29	19.00
		25	0	21.00	19.06	19.00	19.03
		25	13	21.00	19.05	19.10	19.38
		25	25	21.00	19.09	19.32	19.08
		50	0	21.00	19.38	19.25	19.19

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20025CH	20175CH	20325CH
15MHz	QPSK	1	0	21.00	19.53	19.16	19.21
		1	38	21.00	19.61	19.19	19.16
		1	74	21.00	19.74	19.20	19.27
		36	0	21.00	19.48	19.19	19.26
		36	18	21.00	19.45	19.37	19.22
		36	39	21.00	19.60	19.32	19.45
		75	0	21.00	19.66	19.25	19.36
	16QAM	1	0	21.00	19.54	19.10	19.02
		1	38	21.00	19.53	19.13	19.00
		1	74	21.00	19.70	19.09	19.37
		36	0	21.00	19.64	19.28	19.44
		36	18	21.00	19.71	19.08	19.26
		36	39	21.00	19.70	19.08	19.25
		75	0	21.00	19.56	19.34	19.29
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20050CH	20175CH	20300CH
20MHz	QPSK	1	0	21.00	19.57	19.14	19.19
		1	50	21.00	19.64	19.18	19.15
		1	99	21.00	19.75	19.23	19.31
		50	0	21.00	19.70	19.04	19.27
		50	25	21.00	19.54	19.09	19.16
		50	50	21.00	19.78	19.34	19.45
		100	0	21.00	19.53	19.18	19.15
	16QAM	1	0	21.00	19.59	18.98	19.17
		1	50	21.00	19.75	19.03	19.27
		1	99	21.00	19.82	19.05	19.46
		50	0	21.00	19.51	19.09	19.05
		50	25	21.00	19.64	19.34	19.03
		50	50	21.00	19.82	19.34	19.20
		100	0	21.00	19.55	19.07	19.33

Table 58: Conducted power measurement results of LTE Band IV

Main antenna + WiFi Hotspot:

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					19957CH	20175CH	20393CH
1.4MHz	QPSK	1	0	20.00	18.92	18.94	18.96
		1	3	20.00	18.83	18.95	18.96
		1	5	20.00	18.75	18.88	18.86
		3	0	20.00	18.66	18.75	18.82
		3	2	20.00	18.75	18.84	18.90
		3	3	20.00	18.74	18.74	18.87
		6	0	20.00	18.83	18.89	18.82
	16QAM	1	0	20.00	19.11	19.06	19.13
		1	3	20.00	19.18	19.26	19.32
		1	5	20.00	19.25	19.26	19.26
		3	0	20.00	18.89	18.94	18.92
		3	2	20.00	19.02	18.93	19.01
		3	3	20.00	18.97	18.93	18.98
		6	0	20.00	19.04	18.99	19.02
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					19965CH	20175CH	20385CH
3MHz	QPSK	1	0	20.00	18.84	19.03	18.87
		1	7	20.00	18.75	18.94	18.85
		1	14	20.00	18.80	18.82	18.82
		8	0	20.00	18.98	18.98	18.91
		8	4	20.00	18.79	18.94	18.92
		8	7	20.00	18.84	18.90	18.82
		15	0	20.00	18.82	18.95	18.92
	16QAM	1	0	20.00	19.27	19.30	19.26
		1	7	20.00	19.28	19.22	19.39
		1	14	20.00	19.18	19.26	19.29
		8	0	20.00	19.07	19.02	19.00
		8	4	20.00	18.92	18.96	19.04
		8	7	20.00	18.98	18.97	19.03
		15	0	20.00	19.02	18.98	19.03

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					19975CH	20175CH	20375CH
5MHz	QPSK	1	0	20.00	18.99	19.12	18.98
		1	13	20.00	18.93	18.99	19.10
		1	24	20.00	18.94	18.93	18.92
		12	0	20.00	18.82	18.97	18.96
		12	6	20.00	18.91	18.99	18.90
		12	13	20.00	18.78	18.89	18.84
		25	0	20.00	18.87	18.94	18.88
	16QAM	1	0	20.00	19.22	19.20	19.22
		1	13	20.00	19.15	19.18	19.24
		1	24	20.00	19.09	19.11	19.10
		12	0	20.00	19.04	19.04	19.10
		12	6	20.00	19.03	18.99	19.01
		12	13	20.00	18.93	18.97	19.02
		25	0	20.00	18.99	18.95	18.99
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20000CH	20175CH	20350CH
10MHz	QPSK	1	0	20.00	19.31	19.26	19.10
		1	25	20.00	18.87	18.88	18.85
		1	49	20.00	19.07	19.18	19.14
		25	0	20.00	19.04	19.12	19.06
		25	13	20.00	18.96	18.98	18.94
		25	25	20.00	18.95	18.96	18.92
		50	0	20.00	19.04	19.05	18.93
	16QAM	1	0	20.00	19.45	19.44	19.51
		1	25	20.00	19.02	18.85	19.02
		1	49	20.00	19.01	19.08	19.13
		25	0	20.00	19.03	19.12	19.13
		25	13	20.00	18.95	19.01	19.07
		25	25	20.00	18.96	18.94	18.89
		50	0	20.00	18.96	18.99	18.94

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20025CH	20175CH	20325CH
15MHz	QPSK	1	0	20.00	19.49	19.44	19.62
		1	38	20.00	18.84	18.79	18.98
		1	74	20.00	18.98	19.17	19.17
		36	0	20.00	19.12	19.08	19.24
		36	18	20.00	18.96	18.97	19.13
		36	39	20.00	18.95	18.98	19.04
		75	0	20.00	19.04	19.04	19.16
	16QAM	1	0	20.00	19.41	19.24	19.37
		1	38	20.00	18.75	18.80	18.93
		1	74	20.00	18.90	18.89	18.88
		36	0	20.00	19.17	19.08	19.18
		36	18	20.00	19.05	18.96	19.10
		36	39	20.00	19.02	18.96	18.98
		75	0	20.00	19.00	19.04	19.12
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20050CH	20175CH	20300CH
20MHz	QPSK	1	0	20.00	19.79	19.71	19.60
		1	50	20.00	18.78	18.83	18.88
		1	99	20.00	19.07	19.11	19.13
		50	0	20.00	19.21	19.23	19.25
		50	25	20.00	19.07	18.95	19.09
		50	50	20.00	19.00	18.99	19.09
		100	0	20.00	19.12	19.08	19.18
	16QAM	1	0	20.00	19.80	19.78	19.85
		1	50	20.00	19.52	19.54	19.60
		1	99	20.00	19.60	19.71	19.77
		50	0	20.00	19.20	19.29	19.37
		50	25	20.00	19.06	19.00	19.18
		50	50	20.00	19.00	19.05	19.18
		100	0	20.00	19.12	19.20	19.28

Table 59: Conducted power measurement results of LTE Band IV

7.1.15 Conducted power measurements of LTE Band V (Main Antenna)
Full Power:

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20407CH	20525CH	20643CH
1.4MHz	QPSK	1	0	23.50	22.29	22.39	22.38
		1	3	23.50	22.33	22.34	22.39
		1	5	23.50	22.25	22.37	22.34
		3	0	23.50	22.19	22.22	22.28
		3	2	23.50	22.28	22.30	22.37
		3	3	23.50	22.14	22.23	22.26
		6	0	22.50	21.30	21.26	21.31
	16QAM	1	0	22.50	21.35	21.39	21.51
		1	3	22.50	21.54	21.63	21.69
		1	5	22.50	21.58	21.59	21.60
		3	0	22.50	21.32	21.33	21.36
		3	2	22.50	21.36	21.35	21.37
		3	3	22.50	21.23	21.34	21.35
		6	0	21.50	20.45	20.37	20.44
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20415CH	20525CH	20635CH
3MHz	QPSK	1	0	23.50	22.26	22.23	22.38
		1	7	23.50	22.29	22.25	22.36
		1	14	23.50	22.22	22.35	22.33
		8	0	22.50	21.24	21.27	21.31
		8	4	22.50	21.30	21.33	21.43
		8	7	22.50	21.25	21.29	21.34
		15	0	22.50	21.26	21.27	21.35
	16QAM	1	0	22.50	21.61	21.65	21.78
		1	7	22.50	21.65	21.69	21.76
		1	14	22.50	21.62	21.69	21.63
		8	0	21.50	20.34	20.33	20.36
		8	4	21.50	20.41	20.37	20.50
		8	7	21.50	20.39	20.34	20.40
		15	0	21.50	20.37	20.34	20.39

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20425CH	20525CH	20625CH
5MHz	QPSK	1	0	23.50	22.37	22.37	22.38
		1	13	23.50	22.38	22.35	22.39
		1	24	23.50	22.38	22.39	22.39
		12	0	22.50	21.24	21.25	21.33
		12	6	22.50	21.21	21.33	21.39
		12	13	22.50	21.22	21.23	21.35
		25	0	22.50	21.35	21.26	21.29
	16QAM	1	0	22.50	21.46	21.59	21.52
		1	13	22.50	21.55	21.63	21.63
		1	24	22.50	21.51	21.54	21.56
		12	0	21.50	20.40	20.34	20.38
		12	6	21.50	20.38	20.40	20.43
		12	13	21.50	20.34	20.35	20.47
		25	0	21.50	20.32	20.25	20.29
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20450CH	20525CH	20600CH
10MHz	QPSK	1	0	23.50	22.36	22.37	22.40
		1	25	23.50	22.37	22.32	22.33
		1	49	23.50	22.23	22.39	22.38
		25	0	22.50	21.33	21.34	21.29
		25	13	22.50	21.24	21.26	21.32
		25	25	22.50	21.19	21.28	21.30
		50	0	22.50	21.30	21.41	21.35
	16QAM	1	0	22.50	21.40	21.52	21.45
		1	25	22.50	21.29	21.16	21.22
		1	49	22.50	21.44	21.39	21.37
		25	0	21.50	20.40	20.33	20.32
		25	13	21.50	20.36	20.29	20.39
		25	25	21.50	20.19	20.26	20.36
		50	0	21.50	20.27	20.34	20.26

Table 60: Conducted power measurement results of LTE Band V

Main antenna(Voice) + WiFi station:

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20407CH	20525CH	20643CH
1.4MHz	QPSK	1	0	23.50	22.29	22.39	22.38
		1	3	23.50	22.33	22.34	22.39
		1	5	23.50	22.25	22.37	22.34
		3	0	23.50	22.19	22.22	22.28
		3	2	23.50	22.28	22.30	22.37
		3	3	23.50	22.14	22.23	22.26
		6	0	22.50	21.30	21.26	21.31
	16QAM	1	0	22.50	21.35	21.39	21.51
		1	3	22.50	21.54	21.63	21.69
		1	5	22.50	21.58	21.59	21.60
		3	0	22.50	21.32	21.33	21.36
		3	2	22.50	21.36	21.35	21.37
		3	3	22.50	21.23	21.34	21.35
		6	0	21.50	20.45	20.37	20.44
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20415CH	20525CH	20635CH
3MHz	QPSK	1	0	23.50	22.26	22.23	22.38
		1	7	23.50	22.29	22.25	22.36
		1	14	23.50	22.22	22.35	22.33
		8	0	22.50	21.24	21.27	21.31
		8	4	22.50	21.30	21.33	21.43
		8	7	22.50	21.25	21.29	21.34
		15	0	22.50	21.26	21.27	21.35
	16QAM	1	0	22.50	21.61	21.65	21.78
		1	7	22.50	21.65	21.69	21.76
		1	14	22.50	21.62	21.69	21.63
		8	0	21.50	20.34	20.33	20.36
		8	4	21.50	20.41	20.37	20.50
		8	7	21.50	20.39	20.34	20.40
		15	0	21.50	20.37	20.34	20.39

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20425CH	20525CH	20625CH
5MHz	QPSK	1	0	23.50	22.37	22.37	22.38
		1	13	23.50	22.38	22.35	22.39
		1	24	23.50	22.38	22.39	22.39
		12	0	22.50	21.24	21.25	21.33
		12	6	22.50	21.21	21.33	21.39
		12	13	22.50	21.22	21.23	21.35
		25	0	22.50	21.35	21.26	21.29
	16QAM	1	0	22.50	21.46	21.59	21.52
		1	13	22.50	21.55	21.63	21.63
		1	24	22.50	21.51	21.54	21.56
		12	0	21.50	20.40	20.34	20.38
		12	6	21.50	20.38	20.40	20.43
		12	13	21.50	20.34	20.35	20.47
		25	0	21.50	20.32	20.25	20.29
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20450CH	20525CH	20600CH
10MHz	QPSK	1	0	23.50	22.36	22.37	22.40
		1	25	23.50	22.37	22.32	22.33
		1	49	23.50	22.23	22.39	22.38
		25	0	22.50	21.33	21.34	21.29
		25	13	22.50	21.24	21.26	21.32
		25	25	22.50	21.19	21.28	21.30
		50	0	22.50	21.30	21.41	21.35
	16QAM	1	0	22.50	21.40	21.52	21.45
		1	25	22.50	21.29	21.16	21.22
		1	49	22.50	21.44	21.39	21.37
		25	0	21.50	20.40	20.33	20.32
		25	13	21.50	20.36	20.29	20.39
		25	25	21.50	20.19	20.26	20.36
		50	0	21.50	20.27	20.34	20.26

Table 61: Conducted power measurement results of LTE Band V

Main antenna + WiFi Hotspot:

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20407CH	20525CH	20643CH
1.4MHz	QPSK	1	0	22.50	21.19	21.19	21.15
		1	3	22.50	21.16	21.22	21.15
		1	5	22.50	21.18	21.15	21.10
		3	0	22.50	21.01	21.07	21.08
		3	2	22.50	21.12	21.12	21.13
		3	3	22.50	21.05	21.06	21.06
		6	0	21.50	21.11	21.06	21.05
	16QAM	1	0	21.50	21.30	21.16	21.23
		1	3	21.50	21.47	21.48	21.24
		1	5	21.50	21.36	21.47	21.41
		3	0	21.50	21.10	21.14	21.05
		3	2	21.50	21.15	21.23	21.14
		3	3	21.50	21.12	21.14	21.09
6	0	20.50	20.22	20.23	20.19		
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20415CH	20525CH	20635CH
3MHz	QPSK	1	0	22.50	21.06	20.99	21.09
		1	7	22.50	21.11	21.09	21.17
		1	14	22.50	21.06	20.98	21.02
		8	0	21.50	21.14	21.21	21.11
		8	4	21.50	21.19	21.16	21.15
		8	7	21.50	21.14	21.12	21.06
		15	0	21.50	21.09	21.15	21.15
	16QAM	1	0	21.50	21.47	21.48	21.45
		1	7	21.50	21.49	21.47	21.42
		1	14	21.50	21.47	21.49	21.36
		8	0	20.50	20.29	20.28	20.18
		8	4	20.50	20.29	20.26	20.22
		8	7	20.50	20.28	20.25	20.18
15	0	20.50	20.18	20.21	20.16		

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20425CH	20525CH	20625CH
5MHz	QPSK	1	0	22.50	21.22	21.09	21.04
		1	13	22.50	21.24	21.34	21.16
		1	24	22.50	21.13	21.14	21.06
		12	0	21.50	21.06	21.15	21.04
		12	6	21.50	21.19	21.12	21.08
		12	13	21.50	21.13	21.05	20.95
		25	0	21.50	21.16	21.13	20.96
	16QAM	1	0	21.50	21.44	21.40	21.34
		1	13	21.50	21.45	21.48	21.41
		1	24	21.50	21.31	21.34	21.29
		12	0	20.50	20.27	20.29	20.27
		12	6	20.50	20.30	20.24	20.27
		12	13	20.50	20.29	20.18	20.18
		25	0	20.50	20.18	20.16	20.11
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20450CH	20525CH	20600CH
10MHz	QPSK	1	0	22.50	21.20	21.16	21.19
		1	25	22.50	21.09	21.13	21.18
		1	49	22.50	21.12	21.17	21.23
		25	0	21.50	21.19	21.21	21.22
		25	13	21.50	21.14	21.13	21.16
		25	25	21.50	21.09	21.13	21.04
		50	0	21.50	21.19	21.24	21.17
	16QAM	1	0	21.50	21.30	21.17	21.15
		1	25	21.50	20.90	21.12	21.11
		1	49	21.50	21.18	21.15	21.12
		25	0	20.50	20.23	20.18	20.24
		25	13	20.50	20.20	20.21	20.21
		25	25	20.50	20.17	20.14	20.11
		50	0	20.50	20.11	20.13	20.13

Table 62: Conducted power measurement results of LTE Band V

7.1.16 Conducted power measurements of LTE Band VII (Main Antenna)
Full Power:

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20775CH	21100CH	21425CH
5MHz	QPSK	1	0	22.80	22.25	22.26	22.00
		1	13	22.80	22.27	22.14	22.16
		1	24	22.80	21.97	22.07	21.93
		12	0	21.80	21.06	21.12	20.88
		12	6	21.80	20.94	21.08	20.96
		12	13	21.80	20.89	20.93	20.83
		25	0	21.80	20.92	21.04	20.89
	16QAM	1	0	21.80	21.22	21.25	21.15
		1	13	21.80	21.41	21.45	21.25
		1	24	21.80	21.23	21.35	21.01
		12	0	20.80	20.14	20.25	19.99
		12	6	20.80	20.08	20.19	19.97
		12	13	20.80	20.04	20.08	19.93
		25	0	20.80	19.95	19.97	19.89
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20800CH	21100CH	21400CH
10MHz	QPSK	1	0	22.80	21.87	22.19	22.28
		1	25	22.80	21.91	21.94	21.97
		1	49	22.80	21.62	22.02	21.77
		25	0	21.80	20.91	21.09	20.87
		25	13	21.80	20.89	21.09	20.86
		25	25	21.80	20.75	20.96	20.74
		50	0	21.80	20.89	21.09	20.77
	16QAM	1	0	21.80	21.29	21.39	21.22
		1	25	21.80	20.76	20.85	20.85
		1	49	21.80	20.92	21.25	20.79
		25	0	20.80	20.03	20.07	19.91
		25	13	20.80	20.06	20.12	20.01
		25	25	20.80	19.87	19.94	19.86
		50	0	20.80	19.94	19.93	19.81

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20825CH	21100CH	21375CH
15MHz	QPSK	1	0	22.80	22.01	22.15	22.28
		1	38	22.80	22.02	22.04	22.07
		1	74	22.80	21.79	21.81	21.75
		36	0	21.80	20.97	21.09	21.08
		36	18	21.80	20.98	21.11	21.02
		36	39	21.80	20.73	21.06	20.86
		75	0	21.80	20.87	21.03	20.95
	16QAM	1	0	21.80	20.90	21.02	20.88
		1	38	21.80	20.80	20.88	20.79
		1	74	21.80	20.58	20.81	20.48
		36	0	20.80	20.02	20.15	20.14
		36	18	20.80	20.07	20.20	20.10
		36	39	20.80	19.85	20.15	19.90
		75	0	20.80	19.95	20.07	20.02
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20850CH	21100CH	21350CH
20MHz	QPSK	1	0	22.80	21.98	22.03	21.98
		1	50	22.80	22.07	22.12	22.13
		1	99	22.80	21.50	21.72	21.54
		50	0	21.80	20.94	21.16	21.03
		50	25	21.80	20.98	21.14	21.05
		50	50	21.80	20.77	20.98	20.77
		100	0	21.80	20.88	21.07	20.91
	16QAM	1	0	21.80	21.48	21.67	21.68
		1	50	21.80	21.78	21.92	21.79
		1	99	21.80	21.13	21.30	21.07
		50	0	20.80	20.05	20.21	20.11
		50	25	20.80	20.07	20.16	20.13
		50	50	20.80	19.85	20.04	19.88
		100	0	20.80	19.95	20.15	20.02

Table 63: Conducted power measurement results of LTE Band VII

**Main antenna(Voice) + WiFi station:**

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20775CH	21100CH	21425CH
5MHz	QPSK	1	0	21.00	19.93	19.86	19.84
		1	13	21.00	19.71	19.91	20.03
		1	24	21.00	19.35	19.46	19.51
		12	0	21.00	20.03	19.80	19.98
		12	6	21.00	19.81	20.08	20.12
		12	13	21.00	19.31	19.34	19.47
		25	0	21.00	19.86	19.81	19.67
	16QAM	1	0	21.00	19.97	19.89	20.04
		1	13	21.00	19.73	19.87	20.22
		1	24	21.00	19.38	19.59	19.36
		12	0	21.00	19.77	19.72	20.01
		12	6	21.00	19.64	19.74	20.20
		12	13	21.00	19.46	19.31	19.63
		25	0	21.00	19.96	19.67	19.72
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20800CH	21100CH	21400CH
10MHz	QPSK	1	0	21.00	19.84	19.83	19.75
		1	25	21.00	19.67	19.85	20.09
		1	49	21.00	19.33	19.53	19.43
		25	0	21.00	19.97	19.92	19.86
		25	13	21.00	19.60	19.90	20.20
		25	25	21.00	19.20	19.67	19.29
		50	0	21.00	19.91	19.74	19.69
	16QAM	1	0	21.00	19.70	20.01	19.89
		1	25	21.00	19.64	19.70	20.04
		1	49	21.00	19.17	19.40	19.59
		25	0	21.00	19.78	19.89	19.71
		25	13	21.00	19.85	19.80	20.18
		25	25	21.00	19.45	19.57	19.43
		50	0	21.00	19.67	19.79	19.84

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20825CH	21100CH	21375CH
15MHz	QPSK	1	0	21.00	19.88	20.03	19.64
		1	38	21.00	19.61	19.87	20.01
		1	74	21.00	19.24	19.54	19.41
		36	0	21.00	19.87	20.00	19.81
		36	18	21.00	19.72	20.01	20.16
		36	39	21.00	19.09	19.73	19.54
		75	0	21.00	20.03	20.19	19.51
	16QAM	1	0	21.00	20.08	20.22	19.56
		1	38	21.00	19.80	19.89	19.94
		1	74	21.00	19.22	19.44	19.50
		36	0	21.00	19.80	20.22	19.83
		36	18	21.00	19.74	19.69	20.13
		36	39	21.00	19.16	19.67	19.34
		75	0	21.00	19.90	20.17	19.84
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20850CH	21100CH	21350CH
20MHz	QPSK	1	0	21.00	19.95	20.05	19.91
		1	50	21.00	19.74	19.97	20.04
		1	99	21.00	19.41	19.46	19.55
		50	0	21.00	19.98	19.95	19.79
		50	25	21.00	19.92	19.87	20.18
		50	50	21.00	19.33	19.38	19.45
		100	0	21.00	20.10	19.88	19.79
	16QAM	1	0	21.00	20.15	19.90	19.82
		1	50	21.00	19.55	19.90	19.91
		1	99	21.00	19.45	19.51	19.47
		50	0	21.00	19.95	19.97	19.93
		50	25	21.00	19.61	19.97	19.88
		50	50	21.00	19.26	19.51	19.48
		100	0	21.00	20.11	19.88	19.93

Table 64: Conducted power measurement results of LTE Band VII

Main antenna + WiFi Hotspot:

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20775CH	21100CH	21425CH
5MHz	QPSK	1	0	20.00	19.24	19.29	19.41
		1	13	20.00	19.25	19.49	19.49
		1	24	20.00	19.12	19.37	19.31
		12	0	20.00	19.03	19.31	19.32
		12	6	20.00	19.16	19.34	19.37
		12	13	20.00	19.05	19.27	19.27
		25	0	20.00	19.07	19.29	19.36
	16QAM	1	0	20.00	19.32	19.58	19.57
		1	13	20.00	19.38	19.65	19.67
		1	24	20.00	19.27	19.53	19.44
		12	0	20.00	19.14	19.43	19.42
		12	6	20.00	19.19	19.41	19.39
		12	13	20.00	19.12	19.39	19.36
		25	0	20.00	18.99	19.30	19.30
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20800CH	21100CH	21400CH
10MHz	QPSK	1	0	20.00	19.11	19.45	19.36
		1	25	20.00	19.08	19.40	19.30
		1	49	20.00	19.04	19.24	19.21
		25	0	20.00	19.09	19.43	19.28
		25	13	20.00	19.11	19.35	19.26
		25	25	20.00	19.09	19.21	19.19
		50	0	20.00	19.11	19.19	19.26
	16QAM	1	0	20.00	19.10	19.37	19.28
		1	25	20.00	18.90	19.13	19.13
		1	49	20.00	19.02	19.22	19.27
		25	0	20.00	19.09	19.43	19.35
		25	13	20.00	19.11	19.34	19.38
		25	25	20.00	19.06	19.31	19.26
		50	0	20.00	19.04	19.26	19.28

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20825CH	21100CH	21375CH
15MHz	QPSK	1	0	20.00	19.33	19.32	19.34
		1	38	20.00	19.30	19.38	19.38
		1	74	20.00	18.98	19.01	19.07
		36	0	20.00	19.30	19.34	19.34
		36	18	20.00	19.28	19.35	19.40
		36	39	20.00	19.11	19.03	19.23
		75	0	20.00	19.14	19.19	19.27
	16QAM	1	0	20.00	19.25	19.31	19.13
		1	38	20.00	19.16	19.24	19.17
		1	74	20.00	18.86	18.91	18.81
		36	0	20.00	19.32	19.37	19.36
		36	18	20.00	19.36	19.43	19.42
		36	39	20.00	19.15	19.18	19.23
		75	0	20.00	19.20	19.25	19.32
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					20850CH	21100CH	21350CH
20MHz	QPSK	1	0	20.00	19.28	19.26	19.39
		1	50	20.00	19.41	19.39	19.40
		1	99	20.00	18.78	18.85	18.87
		50	0	20.00	19.28	19.36	19.35
		50	25	20.00	19.33	19.34	19.39
		50	50	20.00	19.10	19.09	19.17
		100	0	20.00	19.22	19.25	19.24
	16QAM	1	0	20.00	19.53	19.57	19.69
		1	50	20.00	19.71	19.79	19.72
		1	99	20.00	19.39	19.44	19.40
		50	0	20.00	19.39	19.44	19.42
		50	25	20.00	19.39	19.40	19.42
		50	50	20.00	19.18	19.10	19.24
		100	0	20.00	19.30	19.31	19.33

Table 65: Conducted power measurement results of LTE Band VII

7.1.17 Conducted power measurements of LTE Band XVII (Main Antenna)
Full Power:

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					23755CH	23790CH	23825CH
5MHz	QPSK	1	0	23.50	22.33	22.28	22.22
		1	13	23.50	22.20	22.34	22.33
		1	24	23.50	22.18	22.30	22.25
		12	0	22.50	21.13	21.22	21.21
		12	6	22.50	21.23	21.32	21.20
		12	13	22.50	21.15	21.20	21.11
		25	0	22.50	21.10	21.19	21.15
	16QAM	1	0	22.50	21.38	21.35	21.27
		1	13	22.50	21.40	21.48	21.32
		1	24	22.50	21.31	21.27	21.24
		12	0	21.50	20.24	20.30	20.22
		12	6	21.50	20.28	20.35	20.15
		12	13	21.50	20.23	20.29	20.18
		25	0	21.50	20.12	20.22	20.16
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					23780CH	23790CH	23800CH
10MHz	QPSK	1	0	23.50	22.32	22.13	22.12
		1	25	23.50	22.31	22.19	22.38
		1	49	23.50	22.24	22.38	22.36
		25	0	22.50	21.13	21.17	21.20
		25	13	22.50	21.22	21.31	21.25
		25	25	22.50	21.26	21.19	21.19
		50	0	22.50	21.19	21.28	21.23
	16QAM	1	0	22.50	21.23	21.26	21.22
		1	25	22.50	21.35	21.35	21.22
		1	49	22.50	21.21	21.18	21.15
		25	0	21.50	20.13	20.21	20.13
		25	13	21.50	20.26	20.32	20.31
		25	25	21.50	20.24	20.19	20.20
		50	0	21.50	20.12	20.23	20.19

Table 66: Conducted power measurement results of LTE Band XVII

Main antenna(Voice) + WiFi station:

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					23755CH	23790CH	23825CH
5MHz	QPSK	1	0	23.50	22.33	22.28	22.22
		1	13	23.50	22.20	22.34	22.33
		1	24	23.50	22.18	22.30	22.25
		12	0	22.50	21.13	21.22	21.21
		12	6	22.50	21.23	21.32	21.20
		12	13	22.50	21.15	21.20	21.11
		25	0	22.50	21.10	21.19	21.15
	16QAM	1	0	22.50	21.38	21.35	21.27
		1	13	22.50	21.40	21.48	21.32
		1	24	22.50	21.31	21.27	21.24
		12	0	21.50	20.24	20.30	20.22
		12	6	21.50	20.28	20.35	20.15
		12	13	21.50	20.23	20.29	20.18
		25	0	21.50	20.12	20.22	20.16
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					23780CH	23790CH	23800CH
10MHz	QPSK	1	0	23.50	22.32	22.13	22.12
		1	25	23.50	22.31	22.19	22.38
		1	49	23.50	22.24	22.38	22.36
		25	0	22.50	21.13	21.17	21.20
		25	13	22.50	21.22	21.31	21.25
		25	25	22.50	21.26	21.19	21.19
		50	0	22.50	21.19	21.28	21.23
	16QAM	1	0	22.50	21.23	21.26	21.22
		1	25	22.50	21.35	21.35	21.22
		1	49	22.50	21.21	21.18	21.15
		25	0	21.50	20.13	20.21	20.13
		25	13	21.50	20.26	20.32	20.31
		25	25	21.50	20.24	20.19	20.20
		50	0	21.50	20.12	20.23	20.19

Table 67: Conducted power measurement results of LTE Band XVII

Main antenna + WiFi Hotspot:

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					23755CH	23790CH	23825CH
5MHz	QPSK	1	0	22.50	21.16	21.19	21.08
		1	13	22.50	21.16	21.19	21.20
		1	24	22.50	21.11	21.22	21.21
		12	0	21.50	20.92	20.99	21.02
		12	6	21.50	21.02	21.13	21.11
		12	13	21.50	20.92	21.03	21.04
		25	0	21.50	21.01	21.05	21.15
	16QAM	1	0	21.50	21.22	21.27	21.16
		1	13	21.50	21.30	21.32	21.31
		1	24	21.50	21.19	21.29	21.18
		12	0	20.50	20.30	20.36	20.27
		12	6	20.50	20.35	20.39	20.31
		12	13	20.50	20.31	20.30	20.28
		25	0	20.50	20.23	20.31	20.32
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					23780CH	23790CH	23800CH
10MHz	QPSK	1	0	22.50	21.17	21.03	20.98
		1	25	22.50	20.98	21.05	21.01
		1	49	22.50	21.09	21.38	21.07
		25	0	21.50	20.91	21.07	21.03
		25	13	21.50	21.00	21.04	21.11
		25	25	21.50	21.05	21.11	21.08
		50	0	21.50	21.03	21.11	21.14
	16QAM	1	0	21.50	21.29	21.14	21.12
		1	25	21.50	20.91	21.10	21.11
		1	49	21.50	21.08	21.21	21.13
		25	0	20.50	20.20	20.27	20.23
		25	13	20.50	20.26	20.30	20.40
		25	25	20.50	20.21	20.30	20.28
		50	0	20.50	20.18	20.28	20.30

Table 68: Conducted power measurement results of LTE Band XVII

7.1.18 Conducted power measurements of LTE Band XXXVIII (Main Antenna)
Full Power:

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					37775CH	38000CH	38225CH
5MHz	QPSK	1	0	22.70	21.74	21.77	21.86
		1	13	22.70	21.81	21.80	21.88
		1	24	22.70	21.68	21.72	21.76
		12	0	21.70	20.70	20.68	20.72
		12	6	21.70	20.79	20.74	20.79
		12	13	21.70	20.67	20.70	20.68
		25	0	21.70	20.76	20.70	20.72
	16QAM	1	0	21.70	21.11	21.06	21.18
		1	13	21.70	21.25	21.25	21.29
		1	24	21.70	21.05	20.97	21.05
		12	0	20.70	19.77	19.80	19.82
		12	6	20.70	19.92	19.78	19.82
		12	13	20.70	19.78	19.64	19.76
		25	0	20.70	19.79	19.76	19.76
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					37800CH	38000CH	38200CH
10MHz	QPSK	1	0	22.70	21.74	21.73	21.75
		1	25	22.70	21.79	21.75	21.80
		1	49	22.70	21.60	21.49	21.54
		25	0	21.70	20.81	20.72	20.76
		25	13	21.70	20.82	20.72	20.74
		25	25	21.70	20.68	20.65	20.66
		50	0	21.70	20.72	20.77	20.74
	16QAM	1	0	21.70	21.25	21.19	21.24
		1	25	21.70	21.39	21.27	21.30
		1	49	21.70	21.04	20.93	21.02
		25	0	20.70	19.84	19.76	19.80
		25	13	20.70	19.89	19.79	19.75
		25	25	20.70	19.70	19.69	19.68
		50	0	20.70	19.74	19.72	19.69

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					37825CH	38000CH	38175CH
15MHz	QPSK	1	0	22.70	21.81	21.67	21.66
		1	38	22.70	21.61	21.57	21.61
		1	74	22.70	21.37	21.31	21.43
		36	0	21.70	20.78	20.71	20.78
		36	18	21.70	20.74	20.70	20.75
		36	39	21.70	20.63	20.54	20.62
		75	0	21.70	20.70	20.63	20.68
	16QAM	1	0	21.70	21.21	21.10	21.13
		1	38	21.70	21.03	20.94	21.09
		1	74	21.70	20.83	20.77	20.80
		36	0	20.70	19.78	19.74	19.76
		36	18	20.70	19.77	19.71	19.77
		36	39	20.70	19.65	19.58	19.64
		75	0	20.70	19.80	19.68	19.74
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					37850CH	38000CH	38150CH
20MHz	QPSK	1	0	22.70	21.96	21.92	21.88
		1	50	22.70	21.91	21.49	21.33
		1	99	22.70	21.45	21.41	21.38
		50	0	21.70	20.85	20.75	20.79
		50	25	21.70	20.75	20.74	20.78
		50	50	21.70	20.53	20.53	20.58
		100	0	21.70	20.69	20.66	20.68
	16QAM	1	0	21.70	21.10	21.01	21.01
		1	50	21.70	21.03	20.91	20.99
		1	99	21.70	20.56	20.56	20.56
		50	0	20.70	19.89	19.82	19.83
		50	25	20.70	19.83	19.78	19.83
		50	50	20.70	19.61	19.58	19.64
		100	0	20.70	19.73	19.71	19.71

Table 69: Conducted power measurement results of LTE Band XXXVIII

Main antenna(Voice) + WiFi station:

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					37775CH	38000CH	38225CH
5MHz	QPSK	1	0	22.70	21.74	21.77	21.86
		1	13	22.70	21.81	21.80	21.88
		1	24	22.70	21.68	21.72	21.76
		12	0	21.70	20.70	20.68	20.72
		12	6	21.70	20.79	20.74	20.79
		12	13	21.70	20.67	20.70	20.68
		25	0	21.70	20.76	20.70	20.72
	16QAM	1	0	21.70	21.11	21.06	21.18
		1	13	21.70	21.25	21.25	21.29
		1	24	21.70	21.05	20.97	21.05
		12	0	20.70	19.77	19.80	19.82
		12	6	20.70	19.92	19.78	19.82
		12	13	20.70	19.78	19.64	19.76
		25	0	20.70	19.79	19.76	19.76
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					37800CH	38000CH	38200CH
10MHz	QPSK	1	0	22.70	21.74	21.73	21.75
		1	25	22.70	21.79	21.75	21.80
		1	49	22.70	21.60	21.49	21.54
		25	0	21.70	20.81	20.72	20.76
		25	13	21.70	20.82	20.72	20.74
		25	25	21.70	20.68	20.65	20.66
		50	0	21.70	20.72	20.77	20.74
	16QAM	1	0	21.70	21.25	21.19	21.24
		1	25	21.70	21.39	21.27	21.30
		1	49	21.70	21.04	20.93	21.02
		25	0	20.70	19.84	19.76	19.80
		25	13	20.70	19.89	19.79	19.75
		25	25	20.70	19.70	19.69	19.68
		50	0	20.70	19.74	19.72	19.69

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					37825CH	38000CH	38175CH
15MHz	QPSK	1	0	22.70	21.81	21.67	21.66
		1	38	22.70	21.61	21.57	21.61
		1	74	22.70	21.37	21.31	21.43
		36	0	21.70	20.78	20.71	20.78
		36	18	21.70	20.74	20.70	20.75
		36	39	21.70	20.63	20.54	20.62
		75	0	21.70	20.70	20.63	20.68
	16QAM	1	0	21.70	21.21	21.10	21.13
		1	38	21.70	21.03	20.94	21.09
		1	74	21.70	20.83	20.77	20.80
		36	0	20.70	19.78	19.74	19.76
		36	18	20.70	19.77	19.71	19.77
		36	39	20.70	19.65	19.58	19.64
		75	0	20.70	19.80	19.68	19.74
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					37850CH	38000CH	38150CH
20MHz	QPSK	1	0	22.70	21.96	21.92	21.88
		1	50	22.70	21.91	21.49	21.33
		1	99	22.70	21.45	21.41	21.38
		50	0	21.70	20.85	20.75	20.79
		50	25	21.70	20.75	20.74	20.78
		50	50	21.70	20.53	20.53	20.58
		100	0	21.70	20.69	20.66	20.68
	16QAM	1	0	21.70	21.10	21.01	21.01
		1	50	21.70	21.03	20.91	20.99
		1	99	21.70	20.56	20.56	20.56
		50	0	20.70	19.89	19.82	19.83
		50	25	20.70	19.83	19.78	19.83
		50	50	20.70	19.61	19.58	19.64
		100	0	20.70	19.73	19.71	19.71

Table 70: Conducted power measurement results of LTE Band XXXVIII

Main antenna + WiFi Hotspot:

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					37775CH	38000CH	38225CH
5MHz	QPSK	1	0	22.70	21.74	21.77	21.86
		1	13	22.70	21.81	21.80	21.88
		1	24	22.70	21.68	21.72	21.76
		12	0	21.70	20.70	20.68	20.72
		12	6	21.70	20.79	20.74	20.79
		12	13	21.70	20.67	20.70	20.68
		25	0	21.70	20.76	20.70	20.72
	16QAM	1	0	21.70	21.11	21.06	21.18
		1	13	21.70	21.25	21.25	21.29
		1	24	21.70	21.05	20.97	21.05
		12	0	20.70	19.77	19.80	19.82
		12	6	20.70	19.92	19.78	19.82
		12	13	20.70	19.78	19.64	19.76
		25	0	20.70	19.79	19.76	19.76
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					37800CH	38000CH	38200CH
10MHz	QPSK	1	0	22.70	21.74	21.73	21.75
		1	25	22.70	21.79	21.75	21.80
		1	49	22.70	21.60	21.49	21.54
		25	0	21.70	20.81	20.72	20.76
		25	13	21.70	20.82	20.72	20.74
		25	25	21.70	20.68	20.65	20.66
		50	0	21.70	20.72	20.77	20.74
	16QAM	1	0	21.70	21.25	21.19	21.24
		1	25	21.70	21.39	21.27	21.30
		1	49	21.70	21.04	20.93	21.02
		25	0	20.70	19.84	19.76	19.80
		25	13	20.70	19.89	19.79	19.75
		25	25	20.70	19.70	19.69	19.68
		50	0	20.70	19.74	19.72	19.69

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					37825CH	38000CH	38175CH
15MHz	QPSK	1	0	22.70	21.81	21.67	21.66
		1	38	22.70	21.61	21.57	21.61
		1	74	22.70	21.37	21.31	21.43
		36	0	21.70	20.78	20.71	20.78
		36	18	21.70	20.74	20.70	20.75
		36	39	21.70	20.63	20.54	20.62
		75	0	21.70	20.70	20.63	20.68
	16QAM	1	0	21.70	21.21	21.10	21.13
		1	38	21.70	21.03	20.94	21.09
		1	74	21.70	20.83	20.77	20.80
		36	0	20.70	19.78	19.74	19.76
		36	18	20.70	19.77	19.71	19.77
		36	39	20.70	19.65	19.58	19.64
		75	0	20.70	19.80	19.68	19.74
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel
					37850CH	38000CH	38150CH
20MHz	QPSK	1	0	22.70	21.96	21.92	21.88
		1	50	22.70	21.91	21.49	21.33
		1	99	22.70	21.45	21.41	21.38
		50	0	21.70	20.85	20.75	20.79
		50	25	21.70	20.75	20.74	20.78
		50	50	21.70	20.53	20.53	20.58
		100	0	21.70	20.69	20.66	20.68
	16QAM	1	0	21.70	21.10	21.01	21.01
		1	50	21.70	21.03	20.91	20.99
		1	99	21.70	20.56	20.56	20.56
		50	0	20.70	19.89	19.82	19.83
		50	25	20.70	19.83	19.78	19.83
		50	50	20.70	19.61	19.58	19.64
		100	0	20.70	19.73	19.71	19.71

Table 71: Conducted power measurement results of LTE Band XXXVIII

7.1.19 Conducted power measurements of LTE Band XLI (Main Antenna)
Full Power:

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel	Channel	Channel
					39675CH	40148CH	40620CH	41093CH	41565CH
5MHz	QPSK	1	0	22.70	21.75	21.60	22.07	21.84	21.81
		1	13	22.70	21.85	21.70	22.13	22.24	21.81
		1	24	22.70	21.66	21.28	21.97	21.76	21.62
		12	0	21.70	21.04	20.75	21.29	21.14	21.01
		12	6	21.70	21.06	21.30	21.30	21.52	21.13
		12	13	21.70	20.93	20.50	21.19	20.96	21.05
		25	0	21.70	21.04	20.86	21.29	21.20	21.08
	16QAM	1	0	21.70	21.20	20.25	21.38	20.70	21.12
		1	13	21.70	21.16	20.30	21.35	20.96	21.13
		1	24	21.70	21.01	19.30	21.18	20.65	20.97
		12	0	20.70	20.11	20.25	20.22	20.54	20.08
		12	6	20.70	20.10	20.26	20.28	20.71	20.06
		12	13	20.70	20.06	19.95	20.28	20.38	19.95
		25	0	20.70	20.02	19.83	20.23	20.18	20.07
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel	Channel	Channel
					39700CH	40160CH	40620CH	41080CH	41540CH
10MHz	QPSK	1	0	22.70	21.69	21.56	22.04	21.82	21.80
		1	25	22.70	21.81	21.65	22.07	22.19	21.88
		1	49	22.70	21.66	21.14	21.69	21.68	21.47
		25	0	21.70	21.10	20.75	21.22	21.14	21.15
		25	13	21.70	21.09	21.25	21.16	21.47	21.08
		25	25	21.70	20.92	20.54	21.28	21.00	20.94
		50	0	21.70	20.99	20.79	21.19	21.13	21.02
	16QAM	1	0	21.70	21.26	20.35	21.51	20.80	21.26
		1	25	21.70	21.14	20.38	21.54	20.95	21.17
		1	49	21.70	21.30	19.54	21.38	20.79	21.07
		25	0	20.70	20.06	20.30	20.37	20.49	20.17
		25	13	20.70	20.05	20.24	20.30	20.59	20.03
		25	25	20.70	20.07	19.89	20.14	20.32	19.92
		50	0	20.70	20.10	19.84	20.16	20.18	20.07

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel	Channel	Channel
					39725CH	40173CH	40620CH	41068CH	41515CH
15MHz	QPSK	1	0	22.70	21.73	21.67	21.89	21.96	21.85
		1	38	22.70	21.68	21.92	21.93	22.33	22.33
		1	74	22.70	21.40	21.41	21.68	21.85	21.25
		36	0	21.70	20.95	20.99	21.15	21.31	21.14
		36	18	21.70	21.03	21.19	21.28	21.41	21.10
		36	39	21.70	20.80	20.88	21.08	21.32	20.81
		75	0	21.70	20.86	20.94	21.20	21.25	21.02
	16QAM	1	0	21.70	20.94	20.93	21.25	21.38	21.10
		1	38	21.70	20.96	20.86	21.27	21.40	21.10
		1	74	21.70	20.66	20.69	20.93	21.27	20.58
		36	0	20.70	20.01	20.34	20.38	20.57	20.16
		36	18	20.70	20.03	20.22	20.35	20.56	20.05
		36	39	20.70	19.87	20.05	20.20	20.39	19.90
		75	0	20.70	19.92	20.03	20.15	20.26	20.13
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel	Channel	Channel
					39750CH	40185CH	40620CH	41055CH	41490CH
20MHz	QPSK	1	0	22.70	21.70	21.72	21.97	22.01	21.93
		1	50	22.70	21.42	21.76	22.03	22.26	21.56
		1	99	22.70	21.32	21.23	21.58	21.67	21.32
		50	0	21.70	21.01	21.13	21.23	21.39	21.16
		50	25	21.70	20.98	21.12	21.26	21.38	21.23
		50	50	21.70	20.77	20.80	21.03	21.24	20.84
		100	0	21.70	20.95	21.01	21.18	21.33	20.97
	16QAM	1	0	21.70	21.12	21.08	21.22	21.50	21.17
		1	50	21.70	21.19	21.24	21.42	21.68	21.15
		1	99	21.70	20.66	20.59	20.83	21.15	20.46
		50	0	20.70	20.02	20.16	20.19	20.42	20.09
		50	25	20.70	20.01	20.11	20.26	20.45	20.13
		50	50	20.70	19.83	19.88	20.07	20.25	19.83
		100	0	20.70	19.96	20.06	20.14	20.31	20.06

Table 72: Conducted power measurement results of LTE Band XLI

Main antenna(Voice) + WiFi station:

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel	Channel	Channel
					39675CH	40148CH	40620CH	41093CH	41565CH
5MHz	QPSK	1	0	21.00	19.66	19.85	19.75	19.58	19.71
		1	13	21.00	19.99	19.83	19.85	19.80	19.70
		1	24	21.00	19.61	19.70	19.65	19.47	19.63
		12	0	21.00	19.97	19.87	19.81	19.71	19.67
		12	6	21.00	20.16	20.02	20.00	20.15	20.13
		12	13	21.00	19.80	19.66	19.80	19.83	19.85
		25	0	21.00	19.69	19.84	19.72	19.64	19.60
	16QAM	1	0	21.00	19.99	19.85	19.85	20.05	19.81
		1	13	21.00	19.71	19.65	19.81	19.84	19.67
		1	24	21.00	19.50	19.49	19.55	19.37	19.55
		12	0	21.00	19.81	19.80	19.77	19.89	19.87
		12	6	21.00	19.78	20.04	19.90	19.90	19.92
		12	13	21.00	19.57	19.48	19.38	19.53	19.21
		25	0	21.00	19.73	19.74	19.57	19.50	19.59
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel	Channel	Channel
					39700CH	40160CH	40620CH	41080CH	41540CH
10MHz	QPSK	1	0	21.00	19.90	19.86	19.75	19.79	19.71
		1	25	21.00	19.67	19.71	19.66	19.69	19.77
		1	49	21.00	19.66	19.38	19.53	19.43	19.66
		25	0	21.00	19.87	19.95	19.83	19.94	19.94
		25	13	21.00	19.57	19.77	19.74	19.66	19.71
		25	25	21.00	19.57	19.35	19.48	19.45	19.63
		50	0	21.00	19.66	19.47	19.46	19.50	19.59
	16QAM	1	0	21.00	19.57	19.78	19.62	19.69	19.48
		1	25	21.00	19.83	19.78	19.74	19.67	19.69
		1	49	21.00	19.79	19.54	19.61	19.79	19.51
		25	0	21.00	19.59	19.61	19.63	19.71	19.81
		25	13	21.00	19.69	19.61	19.58	19.51	19.42
		25	25	21.00	19.47	19.74	19.59	19.61	19.71
		50	0	21.00	19.94	20.01	19.87	20.06	20.05

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel	Channel	Channel
					39725CH	40173CH	40620CH	41068CH	41515CH
15MHz	QPSK	1	0	21.00	19.80	19.55	19.69	19.64	19.75
		1	38	21.00	19.90	19.91	19.75	19.63	19.86
		1	74	21.00	19.55	19.60	19.48	19.37	19.62
		36	0	21.00	19.68	19.59	19.57	19.52	19.44
		36	18	21.00	19.76	19.77	19.76	19.63	19.71
		36	39	21.00	19.40	19.48	19.59	19.54	19.59
		75	0	21.00	19.46	19.51	19.58	19.56	19.52
	16QAM	1	0	21.00	19.81	19.89	19.81	19.75	19.94
		1	38	21.00	19.67	19.93	19.85	19.75	19.95
		1	74	21.00	19.39	19.67	19.51	19.47	19.35
		36	0	21.00	19.61	19.53	19.60	19.62	19.50
		36	18	21.00	19.90	19.96	19.85	19.75	19.89
		36	39	21.00	19.70	19.60	19.55	19.53	19.62
		75	0	21.00	19.21	19.54	19.35	19.34	19.46
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel	Channel	Channel
					39750CH	40185CH	40620CH	41055CH	41490CH
20MHz	QPSK	1	0	21.00	19.55	19.72	19.73	19.87	19.59
		1	50	21.00	19.47	19.58	19.64	19.66	19.69
		1	99	21.00	19.36	19.25	19.39	19.39	19.52
		50	0	21.00	19.34	19.59	19.53	19.72	19.59
		50	25	21.00	19.36	19.50	19.48	19.52	19.55
		50	50	21.00	19.37	19.19	19.28	19.20	19.36
		100	0	21.00	19.54	19.40	19.49	19.55	19.31
	16QAM	1	0	21.00	19.66	19.84	19.72	19.92	19.72
		1	50	21.00	19.68	19.49	19.59	19.70	19.69
		1	99	21.00	19.20	19.21	19.34	19.37	19.43
		50	0	21.00	19.84	19.80	19.84	19.68	19.77
		50	25	21.00	19.50	19.74	19.68	19.80	19.57
		50	50	21.00	19.47	19.52	19.41	19.48	19.47
		100	0	21.00	19.26	19.36	19.23	19.27	19.43

Table 73: Conducted power measurement results of LTE Band XLI

Main antenna + WiFi Hotspot:

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel	Channel	Channel
					39675CH	40148CH	40620CH	41093CH	41565CH
5MHz	QPSK	1	0	20.00	18.51	18.62	18.48	18.22	18.28
		1	13	20.00	18.52	18.72	18.54	18.32	18.32
		1	24	20.00	18.33	18.42	18.33	18.16	18.27
		12	0	20.00	18.57	18.69	18.62	18.48	18.50
		12	6	20.00	18.75	18.74	18.63	18.48	18.52
		12	13	20.00	18.57	18.58	18.60	18.36	18.37
		25	0	20.00	18.67	18.70	18.58	18.44	18.40
	16QAM	1	0	20.00	18.61	18.74	18.68	18.41	18.50
		1	13	20.00	18.54	18.68	18.68	18.43	18.36
		1	24	20.00	18.44	18.50	18.47	18.24	18.31
		12	0	20.00	18.67	18.79	18.55	18.54	18.50
		12	6	20.00	18.70	18.79	18.63	18.48	18.50
		12	13	20.00	18.59	18.74	18.57	18.39	18.43
		25	0	20.00	18.67	18.78	18.59	18.57	18.51
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel	Channel	Channel
					39700CH	40160CH	40620CH	41080CH	41540CH
10MHz	QPSK	1	0	20.00	18.47	18.49	18.52	18.31	18.34
		1	25	20.00	18.46	18.49	18.47	18.37	18.33
		1	49	20.00	18.38	18.42	18.32	18.15	18.07
		25	0	20.00	18.69	18.75	18.73	18.53	18.60
		25	13	20.00	18.73	18.82	18.74	18.55	18.67
		25	25	20.00	18.53	18.64	18.63	18.38	18.44
		50	0	20.00	18.61	18.74	18.67	18.40	18.52
	16QAM	1	0	20.00	18.56	18.65	18.54	18.33	18.39
		1	25	20.00	18.68	18.71	18.62	18.39	18.39
		1	49	20.00	18.49	18.50	18.40	18.18	18.18
		25	0	20.00	18.77	18.79	18.77	18.48	18.56
		25	13	20.00	18.78	18.80	18.69	18.52	18.49
		25	25	20.00	18.65	18.69	18.48	18.44	18.42
		50	0	20.00	18.70	18.74	18.56	18.38	18.50

Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel	Channel	Channel
					39725CH	40173CH	40620CH	41068CH	41515CH
15MHz	QPSK	1	0	20.00	18.72	18.59	18.61	18.31	18.40
		1	38	20.00	18.66	18.55	18.47	18.28	18.32
		1	74	20.00	18.22	18.30	18.17	18.02	17.91
		36	0	20.00	18.85	18.86	18.69	18.71	18.58
		36	18	20.00	18.73	18.87	18.71	18.59	18.53
		36	39	20.00	18.51	18.68	18.41	18.41	18.32
		75	0	20.00	18.59	18.59	18.59	18.46	18.52
	16QAM	1	0	20.00	18.65	18.43	18.48	18.18	18.31
		1	38	20.00	18.53	18.49	18.55	18.24	18.16
		1	74	20.00	18.10	18.05	18.09	18.12	18.16
		36	0	20.00	18.78	18.83	18.69	18.67	18.57
		36	18	20.00	18.77	18.81	18.73	18.61	18.54
		36	39	20.00	18.57	18.64	18.53	18.42	18.32
		75	0	20.00	18.63	18.77	18.58	18.52	18.55
Bandwidth	Modulation	RB size	RB offset	Tune-up	Channel	Channel	Channel	Channel	Channel
					39750CH	40185CH	40620CH	41055CH	41490CH
20MHz	QPSK	1	0	20.00	18.51	18.45	18.48	18.25	18.18
		1	50	20.00	18.36	18.59	18.45	18.30	18.34
		1	99	20.00	18.10	18.08	18.06	18.10	18.03
		50	0	20.00	18.88	18.70	18.59	18.42	18.60
		50	25	20.00	18.73	18.89	18.73	18.65	18.52
		50	50	20.00	18.49	18.61	18.47	18.40	18.30
		100	0	20.00	18.74	18.73	18.65	18.53	18.41
	16QAM	1	0	20.00	18.73	18.72	18.66	18.42	18.34
		1	50	20.00	18.70	18.81	18.62	18.52	18.37
		1	99	20.00	18.28	18.24	18.12	18.03	18.12
		50	0	20.00	18.78	18.90	18.72	18.56	18.50
		50	25	20.00	18.79	18.74	18.77	18.62	18.54
		50	50	20.00	18.51	18.49	18.50	18.35	18.32
		100	0	20.00	18.67	18.67	18.62	18.53	18.50

Table 74: Conducted power measurement results of LTE Band XLI

7.1.20 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 v01r01.

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

Power test equipment: a R&S Radio Communication Tester CMW500 was used.

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



Table 75: Conducted power measurement setup of LTE CA per 3GPP TS 36.521-1 V12.6.0

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

DL LTE CA Class	PCC								SCC			Power	
	PCC Band	PCC Bandwidth (MHz)	PCC UL RB size	PCC UL RB offset	PCC DL RB size	PCC DL RB offset	PCC UL Channel	PCC DL Channel	SCC Band	SCC Bandwidth (MHz)	SCC DL Channel	Rel 8 LTE Tx Power(dBm)	Rel 10 DL LTE CA Tx Power(dBm)
CA_7C	LTE B7	15	1	0	75	0	21375	3375	LTE B7	15	3225	22.28	22.30
CA_41C	LTE B41	15	1	38	75	0	41515	41515	LTE B41	15	41365	22.33	22.36
CA_7A-7A	LTE B7	10	1	0	50	0	21400	3400	LTE B7	20	2850	22.28	22.32
CA_1A-5A	LTE B5	10	1	0	50	0	20600	2600	LTE B1	10	550	22.40	22.45
CA_3A-5A	LTE B5	10	1	0	50	0	20600	2600	LTE B3	10	1900	22.40	22.43
CA_3A-7A	LTE B7	10	1	0	50	0	21400	3400	LTE B3	10	1900	22.28	22.32
CA_5A-7A	LTE B5	10	1	0	50	0	20600	2600	LTE B7	10	3400	22.40	22.45
	LTE B7	10	1	0	50	0	21400	3400	LTE B5	10	2600	22.28	22.33
CA_7A-20A	LTE B7	10	1	0	50	0	21400	3400	LTE B20	10	6400	22.28	22.36
CA_7A-28A	LTE B7	10	1	0	50	0	21400	3400	LTE B28	10	9460	22.28	22.35

Note: 1) Note: 1) H1512 Main Antenna only supports LTE B2/4/5/7/17/38/41 for US LTE Bands. Testing is not required in bands or modes not intended/allowed for US operation.

2) Testing is not required in bands or modes not intended/allowed for US operation.

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

DL LTE CA Class	PCC								SCC			Power	
	PCC Band	PCC Bandwidth (MHz)	PCC UL RB size	PCC UL RB offset	PCC DL RB size	PCC DL RB offset	PCC UL Channel	PCC DL Channel	SCC Band	SCC Bandwidth (MHz)	SCC DL Channel	Rel 8 LTE Tx Power(dBm)	Rel 10 DL LTE CA Tx Power(dBm)
CA_1A-5A	LTE B5	10	1	0	50	0	20450	2450	LTE B1	10	300	21.76	21.80
CA_3A-5A	LTE B5	10	1	0	50	0	20450	2450	LTE B3	10	1575	21.76	21.82
CA_5A-7A	LTE B5	10	1	0	50	0	20450	2450	LTE B7	10	3100	21.76	21.79

Note: H1512 Second Antenna only supports 5/17 for US LTE Bands. Testing is not required in bands or modes not intended/allowed for US operation.

7.1.21 Conducted power measurements of Proximity sensor triggering

In this section, the following procedure is used to determine the triggering distances, coverage and tilt angle influences per FCC KDB 616217 D04v01§6.

1) Procedures for determining proximity sensor triggering distances

As the IR 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 under voice mode(WiFi VOIP or 2G&3G&4G sub antenna voice + WiFi simultaneous transmission).

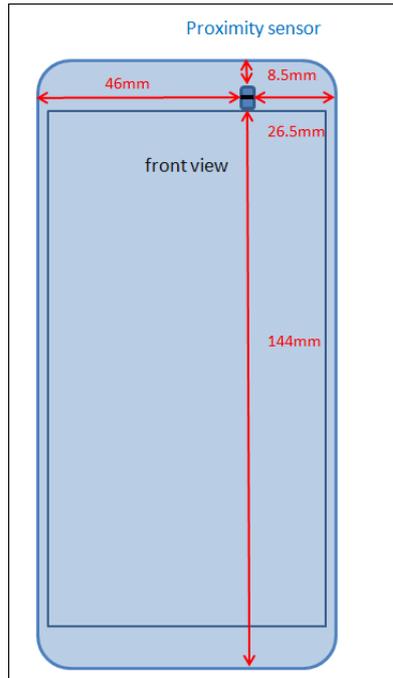


Figure 1: The location of the IR proximity sensor

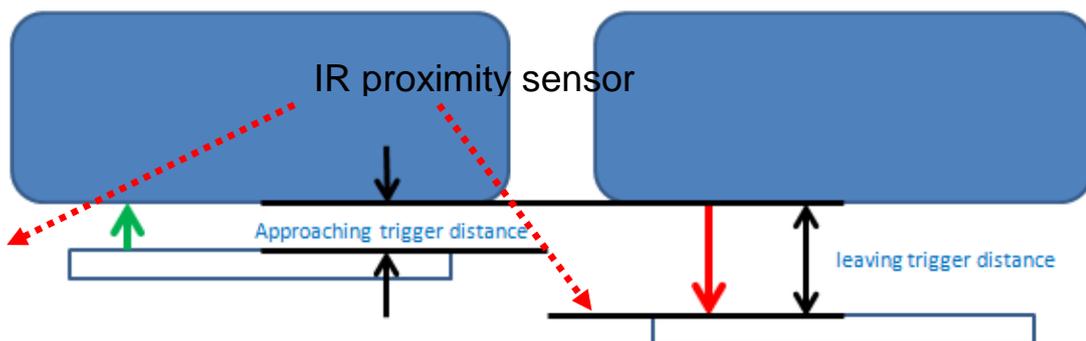
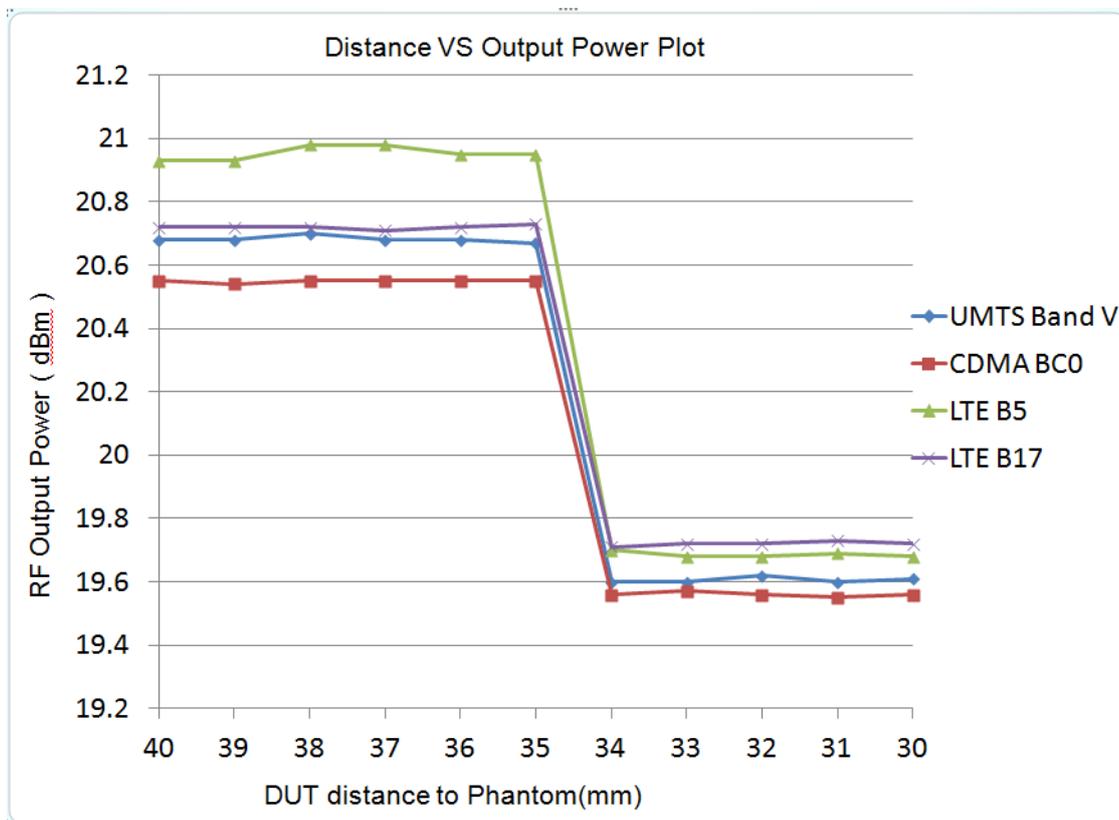
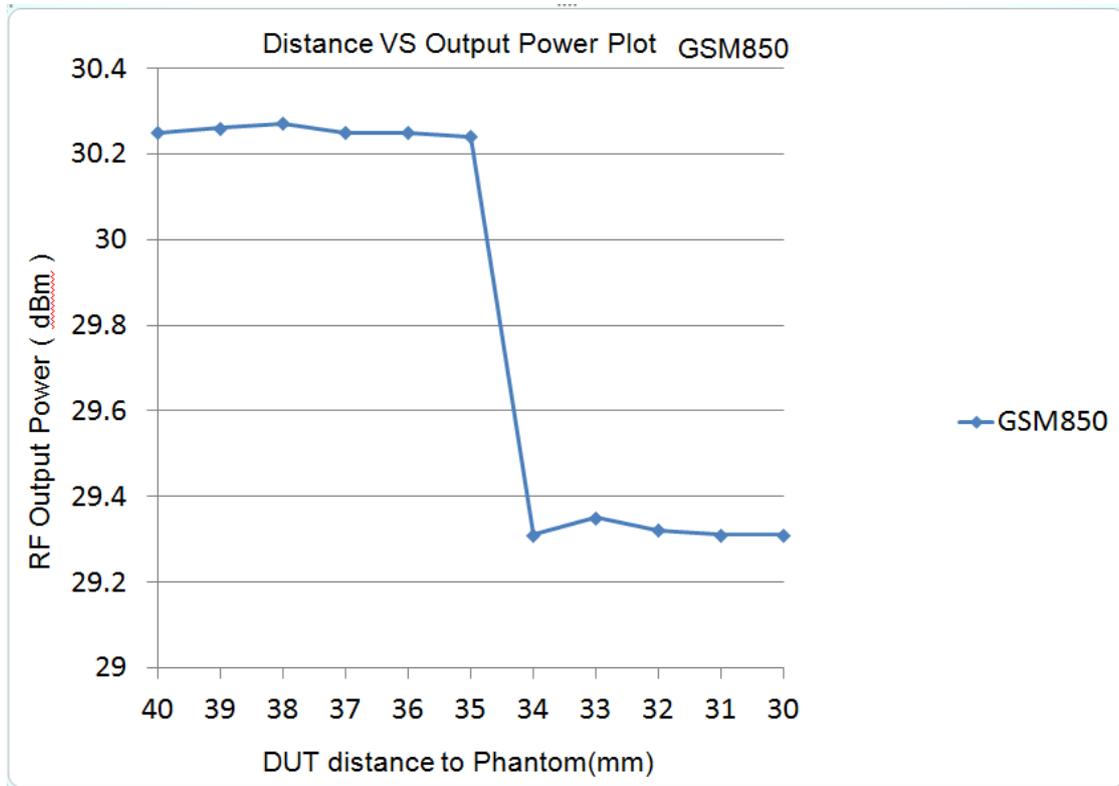
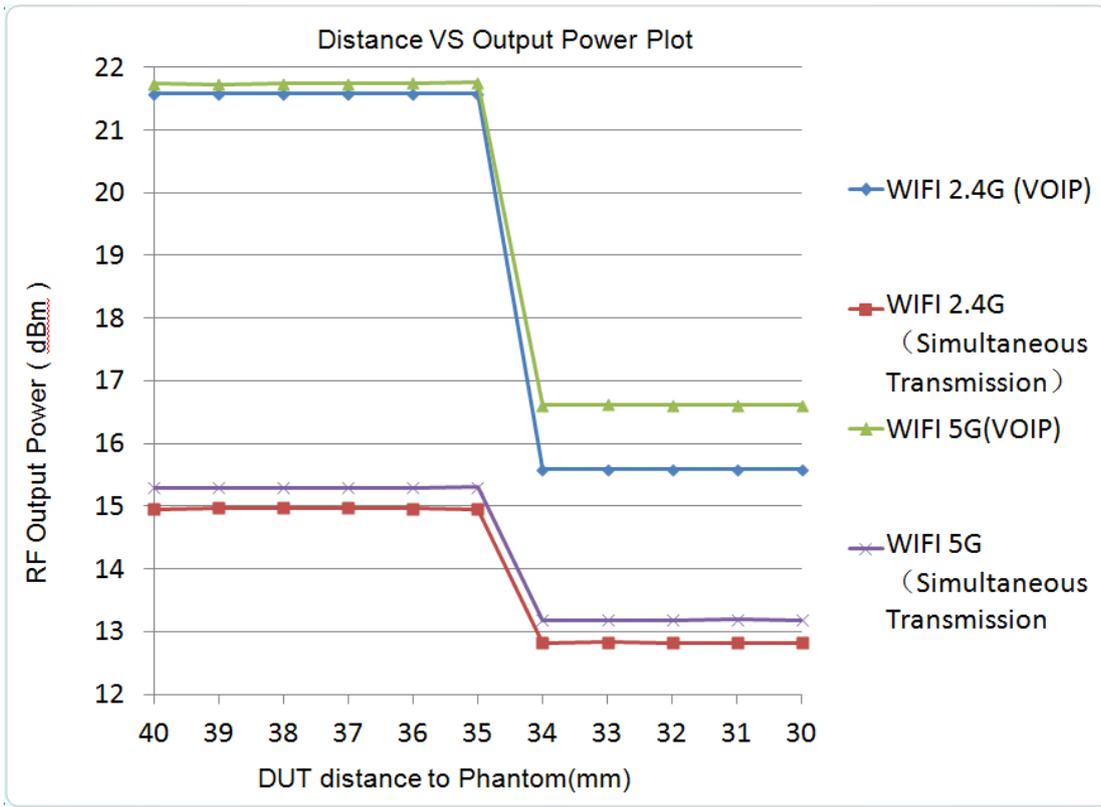


Figure 2: Proximity sensor triggering distances assessment (Front side)

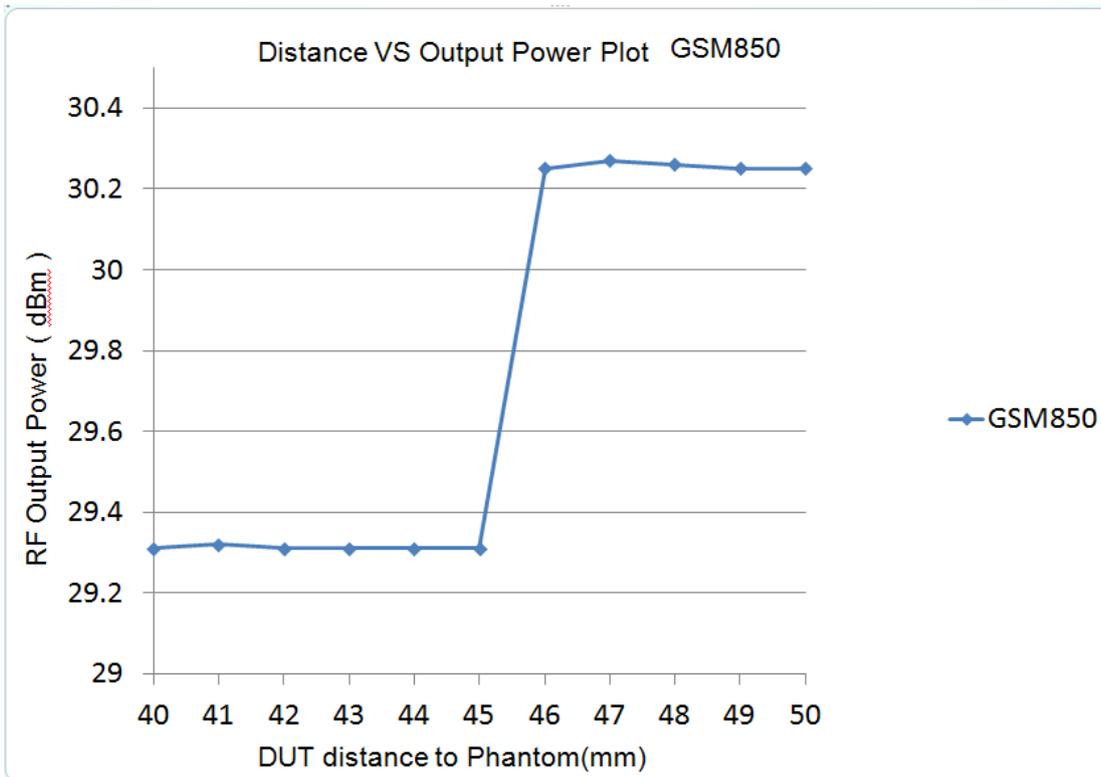
FCC KDB 616217 D04v01§6.2, the proximity sensor triggering distance measurement results are as below:

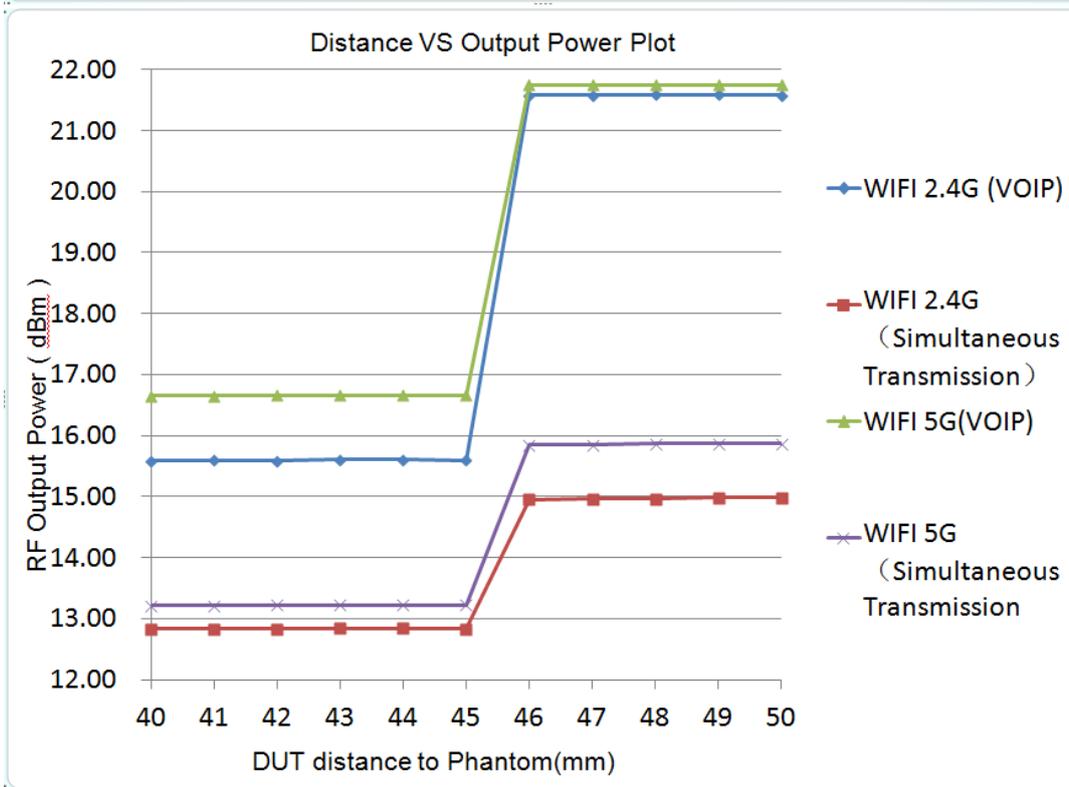
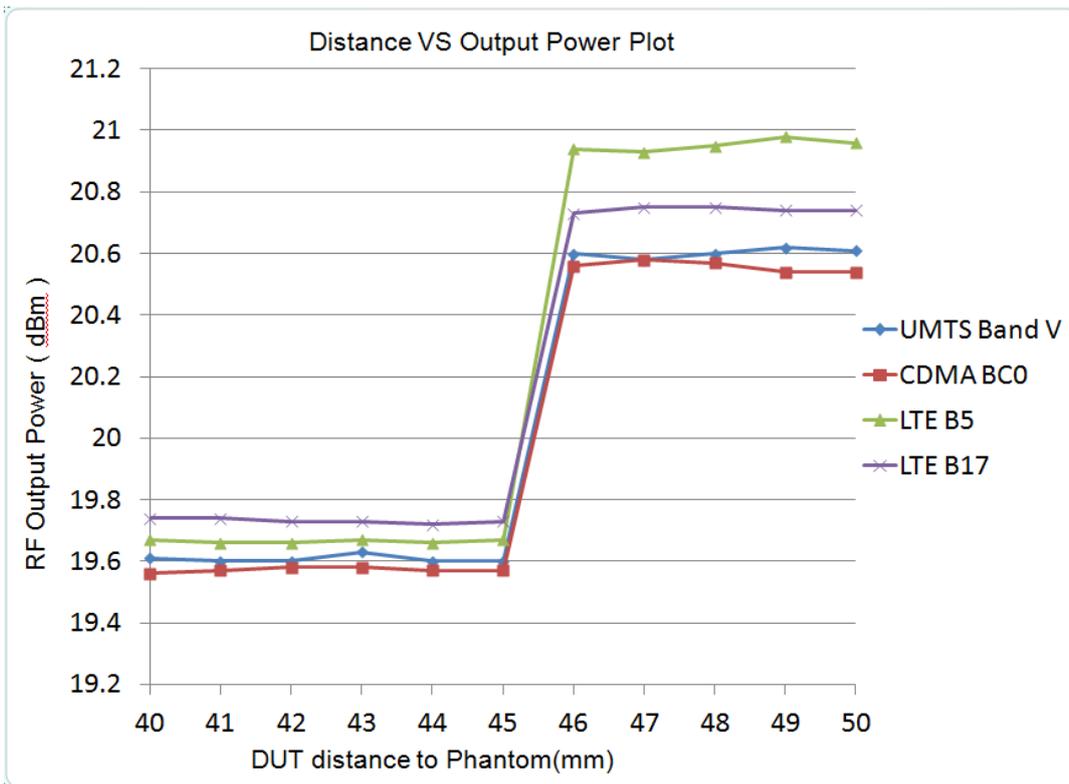
The DUT is moved towards from the flat phantom:





The DUT is moved away from the flat phantom:





Conclusion: The Proximity sensor triggering distance is >15 mm, so it can be ensured that the proximity sensor is valid triggered for the Head, body-worn and 10g extremity exposure condition.

2) Procedures for determining antenna and proximity sensor coverage

As the IR proximity sensor locates on the front face of the device and detects objects approaching only from the front side, there is no spatial offset between the sub antenna and the proximity sensor element, 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

As the proximity sensor triggering power reduction is only applicable for the front side, so tilt angle influences for the other edges per KDB616217 §6.4 does not need to be assessed.

4) Summary SAR test Plan for Proximity sensor power reduction

For Head SAR compliance, the device uses proximity sensor power reduction during Wi-Fi VOIP or when Wi-Fi antennas transmit simultaneously with the second antenna(Voice) in held-to-ear scenarios. Therefore:

- a) Standalone Head SAR for Wi-Fi antennas(WiFi VOIP)are evaluated at reduced power levels according to the real usage scenarios.
- b) Additional Head SAR tests at lower reduced power levels in WiFi and 2G&3G&4G Second antenna(Voice) simultaneous transmission scenarios are also tested for some frequency bands and test positions, which are only used to ensure simultaneous transmission SAR test exclusion.

For Body-worn/10g Extremity SAR compliance, the device uses proximity sensor power reduction for front side of some frequency bands when sub antenna in voice mode and Wi-Fi antennas transmit simultaneously.

- a) Standalone SAR compliance are still tested at the maximum output power level without any power reduction.
- b) Additional Body-worn/10g Extremity SAR of front side at proximity sensor triggered reduced power levels are tested for some frequency bands in WiFi and 2G&3G&4G Sub antenna simultaneous transmission scenario, which are only used to ensure simultaneous transmission SAR test exclusion.

7.1.22 Conducted power measurements of WiFi 2.4G

Mode	Ant	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)	Power Setting Level
802.11b	CORE0	1	2412	1	19.00	17.95	Yes	18
		6	2437		19.00	18.35	Yes	
		11	2462		19.00	17.51	Yes	
	CORE1	1	2412	1	19.00	18.02	Yes	18
		6	2437		19.00	17.90	Yes	
		11	2462		19.00	17.98	Yes	
802.11g	2Tx CDD	1	2412	6	22.00	21.64	Yes	18
		6	2437		22.00	21.63	Yes	
		11	2462		22.00	21.37	Yes	
802.11n-20M	2Tx MIMO	1	2412	6.5	21.00	Not Required	No	18
		6	2437		21.00	Not Required	No	
		11	2462		21.00	Not Required	No	
802.11n-40M	2Tx MIMO	3	2422	13.5	21.00	Not Required	No	18
		6	2437		21.00	Not Required	No	
		9	2452		21.00	Not Required	No	

Table 76: Conducted power measurement results of WiFi 2.4G(Full Power: Power Setting Level 18).

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

Mode	Ant	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)	Power Setting Level
802.11b	CORE0	1	2412	1	14.00	12.62	Yes	13
		6	2437		14.00	13.24	Yes	
		11	2462		14.00	12.35	Yes	
	CORE1	1	2412	1	14.00	12.73	Yes	13
		6	2437		14.00	12.77	Yes	
		11	2462		14.00	12.44	Yes	
802.11g	2Tx CDD	1	2412	6	17.00	Not Required	No	13
		6	2437		17.00	Not Required	No	
		11	2462		17.00	Not Required	No	
802.11n-20M	2Tx MIMO	1	2412	6.5	17.00	Not Required	No	13
		6	2437		17.00	Not Required	No	
		11	2462		17.00	Not Required	No	
802.11n-40M	2Tx MIMO	3	2422	13.5	17.00	15.68	Yes	13
		6	2437		17.00	15.84	Yes	
		9	2452		17.00	15.75	Yes	

Table 77: Conducted power measurement results of WiFi 2.4G(Power Setting Level 13).

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

Mode	Ant	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)	Power Setting Level
802.11b	CORE0	1	2412	1M	13.00	11.73	No	12
		6	2437		13.00	12.12	No	
		11	2462		13.00	11.43	No	
	CORE1	1	2412	1M	13.00	11.78	No	12
		6	2437		13.00	11.68	No	
		11	2462		13.00	11.52	No	
8.2.11g	2TX CDD	1	2412	6M	16.00	Not Required	No	12
		6	2437		16.00	Not Required	No	
		11	2462		16.00	Not Required	No	
802.11n 20M	2TX MIMO	1	2412	6.5M	16.00	Not Required	No	12
		6	2437		16.00	Not Required	No	
		11	2462		16.00	Not Required	No	
802.11n 40M	2TX MIMO	3	2422	13.5M	16.00	14.70	No	12
		6	2437		16.00	14.70	No	
		9	2452		16.00	14.74	No	

Table 78: Conducted power measurement results of WiFi 2.4G(Power Setting Level 12).

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

Mode	Ant	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)	Power Setting Level
802.11b	CORE0	1	2412	1	12.00	10.29	Yes	11
		6	2437		12.00	10.89	Yes	
		11	2462		12.00	9.95	Yes	
	CORE1	1	2412	1	12.00	10.85	Yes	11
		6	2437		12.00	10.39	Yes	
		11	2462		12.00	10.31	Yes	
802.11g	2Tx CDD	1	2412	6	15.00	Not Required	No	11
		6	2437		15.00	Not Required	No	
		11	2462		15.00	Not Required	No	
802.11n 20M	2Tx MIMO	1	2412	6.5	15.00	Not Required	No	11
		6	2437		15.00	Not Required	No	
		11	2462		15.00	Not Required	No	
802.11n-40M	2Tx MIMO	3	2422	13.5	15.00	13.99	Yes	11
		6	2437		15.00	14.14	Yes	
		9	2452		15.00	13.83	Yes	

Table 79: Conducted power measurement results of WiFi 2.4G(Power Setting Level 11).

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

Mode	Ant	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)	Power Setting Level
802.11b	CORE0	1	2412	1	11.00	9.20	Yes	10
		6	2437		11.00	9.51	Yes	
		11	2462		11.00	9.03	Yes	
	CORE1	1	2412	1	11.00	9.30	Yes	10
		6	2437		11.00	9.11	Yes	
		11	2462		11.00	9.40	Yes	
802.11g	2Tx CDD	1	2412	6	14.00	Not Required	No	10
		6	2437		14.00	Not Required	No	
		11	2462		14.00	Not Required	No	
802.11n 20M	2Tx MIMO	1	2412	6.5	14.00	Not Required	No	10
		6	2437		14.00	Not Required	No	
		11	2462		14.00	Not Required	No	
802.11n- 40M	2Tx MIMO	3	2422	13.5	14.00	12.66	Yes	10
		6	2437		14.00	12.83	Yes	
		9	2452		14.00	12.82	Yes	

Table 80: Conducted power measurement results of WiFi 2.4G(Power Setting Level 10).

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

7.1.23 Conducted power measurements of WiFi 5G

Band (GHz)	Mode	Antenna	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)	Power Setting Level
5.2	802.11a	2TX CDD	CH 36	5180	6M	22.00	Not Required	NO	18
			CH 40	5200		22.00	Not Required	NO	
			CH 44	5220		22.00	Not Required	NO	
			CH 48	5240		22.00	Not Required	NO	
	802.11n 20M	2TX MIMO	CH 36	5180	6.5M	22.00	Not Required	NO	
			CH 40	5200		22.00	Not Required	NO	
			CH 44	5220		22.00	Not Required	NO	
			CH 48	5240		22.00	Not Required	NO	
	802.11n 40M	2TX MIMO	CH 38	5190	13.5M	21.00	Not Required	NO	
			CH 46	5230		21.00	Not Required	NO	
	802.11ac 20M	2TX MIMO	CH 36	5180	6.5M	22.00	Not Required	NO	
			CH 40	5200		22.00	Not Required	NO	
			CH 44	5220		22.00	Not Required	NO	
			CH 48	5240		22.00	Not Required	NO	
	802.11ac 40M	2TX MIMO	CH 38	5190	13.5M	21.00	Not Required	NO	
			CH 46	5230		21.00	Not Required	NO	
	802.11ac 80M	2TX MIMO	CH 42	5210	29.3M	20.50	Not Required	NO	

Band (GHz)	Mode	Antenna	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)	Power Setting Level
5.3	802.11a	2TX CDD	CH 52	5260	6M	22.00	21.73	Yes	18
			CH 56	5280		22.00	21.43	Yes	
			CH 60	5300		22.00	21.22	Yes	
			CH 64	5320		22.00	21.27	Yes	
	802.11n 20M	2TX MIMO	CH 52	5260	6.5M	22.00	21.07	Yes	
			CH 56	5280		22.00	20.92	Yes	
			CH 60	5300		22.00	20.83	Yes	
			CH 64	5320		22.00	20.83	Yes	
	802.11n 40M	2TX MIMO	CH 54	5270	13.5M	21.00	Not Required	NO	
			CH 62	5310		21.00	Not Required	NO	
	802.11ac 20M	2TX MIMO	CH 52	5260	6.5M	22.00	21.33	Yes	
			CH 56	5280		22.00	21.25	Yes	
			CH 60	5300		22.00	21.19	Yes	
			CH 64	5320		22.00	21.10	Yes	
	802.11ac 40M	2TX MIMO	CH 54	5270	13.5M	21.00	Not Required	NO	
			CH 62	5310		21.00	Not Required	NO	
802.11ac 80M	2TX MIMO	CH 58	5290	29.3M	20.50	Not Required	NO		
Band (GHz)	Mode	Antenna	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)	Power Setting Level
5.5	802.11a	2TX CDD	CH 100	5500	6M	22.00	21.30	Yes	18
			CH 104	5520		22.00	21.43	Yes	
			CH 108	5540		22.00	21.40	Yes	
			CH 112	5560		22.00	21.48	Yes	
			CH 116	5580		22.00	21.69	Yes	
			CH 120	5600		22.00	21.55	Yes	
			CH 124	5620		22.00	21.67	Yes	
			CH 128	5640		22.00	21.79	Yes	
			CH 132	5660		22.00	21.67	Yes	
			CH 136	5680		22.00	21.45	Yes	
			CH 140	5700		22.00	21.55	Yes	
			CH 144	5720		22.00	21.56	Yes	



Band (GHz)	Mode	Antenna	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)	Power Setting Level
5.5	802.11n 20M	2TX MIMO	CH 100	5500	6.5M	22.00	Not Required	No	18
			CH 104	5520		22.00	Not Required	No	
			CH 108	5540		22.00	Not Required	No	
			CH 112	5560		22.00	Not Required	No	
			CH 116	5580		22.00	Not Required	No	
			CH 120	5600		22.00	Not Required	No	
			CH 124	5620		22.00	Not Required	No	
			CH 128	5640		22.00	Not Required	No	
			CH 132	5660		22.00	Not Required	No	
			CH 136	5680		22.00	Not Required	No	
			CH 140	5700		22.00	Not Required	No	
	CH 144	5720	22.00	Not Required	No				
	802.11n 40M	2TX MIMO	CH 102	5510	13.5M	21.00	Not Required	No	
			CH 110	5550		21.00	Not Required	No	
			CH 118	5590		21.00	Not Required	No	
			CH 126	5630		21.00	Not Required	No	
			CH 134	5670		21.00	Not Required	No	
	802.11ac 20M	2TX MIMO	CH 100	5500	6.5M	22.00	Not Required	No	
			CH 104	5520		22.00	Not Required	No	
			CH 108	5540		22.00	Not Required	No	
			CH 112	5560		22.00	Not Required	No	
			CH 116	5580		22.00	Not Required	No	
			CH 120	5600		22.00	Not Required	No	
			CH 124	5620		22.00	Not Required	No	
			CH 128	5640		22.00	Not Required	No	
			CH 132	5660		22.00	Not Required	No	
			CH 136	5680		22.00	Not Required	No	
	CH 140	5700	22.00	Not Required	No				
	802.11ac 40M	2TX MIMO	CH 102	5510	13.5M	21.00	Not Required	No	
			CH 110	5550		21.00	Not Required	No	
			CH 118	5590		21.00	Not Required	No	
			CH 126	5630		21.00	Not Required	No	
			CH 134	5670		21.00	Not Required	No	
802.11ac 80M	2TX MIMO	CH 106	5530	29.3M	20.50	Not Required	No		
		CH 122	5610		20.50	Not Required	No		
		CH 138	5690		20.50	Not Required	No		

Band (GHz)	Mode	Antenna	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)	Power Setting Level
5.8	802.11a	2TX CDD	CH 149	5745	6M	22.00	21.41	Yes	18
			CH 153	5765		22.00	21.25	Yes	
			CH 157	5785		22.00	21.36	Yes	
			CH 161	5805		22.00	21.60	Yes	
			CH 165	5825		22.00	21.59	Yes	
	802.11n 20M	2TX MIMO	CH 149	5745	6.5M	22.00	Not Required	No	
			CH 153	5765		22.00	Not Required	No	
			CH 157	5785		22.00	Not Required	No	
			CH 161	5805		22.00	Not Required	No	
			CH 165	5825		22.00	Not Required	No	
	802.11n 40M	2TX MIMO	CH 151	5755	13.5M	21.00	Not Required	No	
			CH 159	5795		21.00	Not Required	No	
	802.11ac 20M	2TX MIMO	CH 149	5745	6.5M	22.00	Not Required	No	
			CH 153	5765		22.00	Not Required	No	
			CH 157	5785		22.00	Not Required	No	
			CH 161	5805		22.00	Not Required	No	
			CH 165	5825		22.00	Not Required	No	
	802.11ac 40M	2TX MIMO	CH 151	5755	13.5M	21.00	Not Required	No	
			CH 159	5795		21.00	Not Required	No	
	802.11ac 80M	2TX MIMO	CH 155	5775	29.3M	20.50	Not Required	No	

Table 81: Conducted power measurement results of WiFi 5G(Power Setting Level 18).

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

Band (GHz)	Mode	Antenna	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)	Power Setting Level
5.2	802.11a	2TX CDD	CH 36	5180	6M	17.50	Not Required	NO	13
			CH 40	5200		17.50	Not Required	NO	
			CH 44	5220		17.50	Not Required	NO	
			CH 48	5240		17.50	Not Required	NO	
	802.11n 20M	2TX MIMO	CH 36	5180	6.5M	17.50	Not Required	NO	
			CH 40	5200		17.50	Not Required	NO	
			CH 44	5220		17.50	Not Required	NO	
			CH 48	5240		17.50	Not Required	NO	
	802.11n 40M	2TX MIMO	CH 38	5190	13.5M	17.50	Not Required	NO	
			CH 46	5230		17.50	Not Required	NO	
	802.11ac 20M	2TX MIMO	CH 36	5180	6.5M	17.50	Not Required	NO	
			CH 40	5200		17.50	Not Required	NO	
			CH 44	5220		17.50	Not Required	NO	
			CH 48	5240		17.50	Not Required	NO	
802.11ac 40M	2TX MIMO	CH 38	5190	13.5M	17.50	Not Required	NO		
		CH 46	5230		17.50	Not Required	NO		
802.11ac 80M	2TX MIMO	CH 42	5210	29.3M	17.50	Not Required	NO		
Band (GHz)	Mode	Antenna	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)	Power Setting Level
5.3	802.11a	2TX CDD	CH 52	5260	6M	17.50	Not Required	NO	13
			CH 56	5280		17.50	Not Required	NO	
			CH 60	5300		17.50	Not Required	NO	
			CH 64	5320		17.50	Not Required	NO	
	802.11n 20M	2TX MIMO	CH 52	5260	6.5M	17.50	Not Required	NO	
			CH 56	5280		17.50	Not Required	NO	
			CH 60	5300		17.50	Not Required	NO	
			CH 64	5320		17.50	Not Required	NO	
	802.11n 40M	2TX MIMO	CH 54	5270	13.5M	17.50	Not Required	NO	
			CH 62	5310		17.50	Not Required	NO	
	802.11ac 20M	2TX MIMO	CH 52	5260	6.5M	17.50	Not Required	NO	
			CH 56	5280		17.50	Not Required	NO	
			CH 60	5300		17.50	Not Required	NO	
			CH 64	5320		17.50	Not Required	NO	
	802.11ac 40M	2TX MIMO	CH 54	5270	13.5M	17.50	Not Required	NO	
			CH 62	5310		17.50	Not Required	NO	
	802.11ac 80M	2TX MIMO	CH 58	5290	29.3M	17.50	15.93	Yes	

Band (GHz)	Mode	Antenna	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)	Power Setting Level
5.5	802.11a	2TX CDD	CH 100	5500	6M	17.50	Not Required	NO	13
			CH 104	5520		17.50	Not Required	NO	
			CH 108	5540		17.50	Not Required	NO	
			CH 112	5560		17.50	Not Required	NO	
			CH 116	5580		17.50	Not Required	NO	
			CH 120	5600		17.50	Not Required	NO	
			CH 124	5620		17.50	Not Required	NO	
			CH 128	5640		17.50	Not Required	NO	
			CH 132	5660		17.50	Not Required	NO	
			CH 136	5680		17.50	Not Required	NO	
			CH 140	5700		17.50	Not Required	NO	
			CH 144	5720		17.50	Not Required	NO	
	8.2.11n 20M	2TX MIMO	CH 100	5500	6.5M	17.50	Not Required	NO	
			CH 104	5520		17.50	Not Required	NO	
			CH 108	5540		17.50	Not Required	NO	
			CH 112	5560		17.50	Not Required	NO	
			CH 116	5580		17.50	Not Required	NO	
			CH 120	5600		17.50	Not Required	NO	
			CH 124	5620		17.50	Not Required	NO	
			CH 128	5640		17.50	Not Required	NO	
			CH 132	5660		17.50	Not Required	NO	
			CH 136	5680		17.50	Not Required	NO	
			CH 140	5700		17.50	Not Required	NO	
			CH 144	5720		17.50	Not Required	NO	



Band (GHz)	Mode	Antenna	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)	Power Setting Level
5.5	8.2.11n 40M	2TX MIMO	CH 102	5510	13.5M	17.50	Not Required	NO	13
			CH 110	5550		17.50	Not Required	NO	
			CH 118	5590		17.50	Not Required	NO	
			CH 126	5630		17.50	Not Required	NO	
			CH 134	5670		17.50	Not Required	NO	
			CH 142	5710		17.50	Not Required	NO	
	8.2.11ac 20M	2TX MIMO	CH 100	5500	6.5M	17.50	Not Required	NO	
			CH 104	5520		17.50	Not Required	NO	
			CH 108	5540		17.50	Not Required	NO	
			CH 112	5560		17.50	Not Required	NO	
			CH 116	5580		17.50	Not Required	NO	
			CH 120	5600		17.50	Not Required	NO	
			CH 124	5620		17.50	Not Required	NO	
			CH 128	5640		17.50	Not Required	NO	
			CH 132	5660		17.50	Not Required	NO	
			CH 136	5680		17.50	Not Required	NO	
	CH 140	5700	17.50	Not Required	NO				
	CH 144	5720	17.50	Not Required	NO				
	8.2.11ac 40M	2TX MIMO	CH 102	5510	13.5M	17.50	Not Required	NO	
			CH 110	5550		17.50	Not Required	NO	
			CH 118	5590		17.50	Not Required	NO	
			CH 126	5630		17.50	Not Required	NO	
			CH 134	5670		17.50	Not Required	NO	
			CH 142	5710		17.50	Not Required	NO	
8.2.11ac 80M	2TX MIMO	CH 106	5530	29.3M	17.50	15.63	Yes		
		CH 122	5610		17.50	15.52	Yes		
		CH 138	5690		17.50	16.26	Yes		

Band (GHz)	Mode	Antenna	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)	Power Setting Level
5.8	8.0211a	2TX CDD	CH 149	5745	6M	17.50	Not Required	No	13
			CH 153	5765		17.50	Not Required	No	
			CH 157	5785		17.50	Not Required	No	
			CH 161	5805		17.50	Not Required	No	
			CH 165	5825		17.50	Not Required	No	
	8.0211n 20M	2TX MIMO	CH 149	5745	6.5M	17.50	Not Required	No	
			CH 153	5765		17.50	Not Required	No	
			CH 157	5785		17.50	Not Required	No	
			CH 161	5805		17.50	Not Required	No	
			CH 165	5825		17.50	Not Required	No	
	8.0211n 40M	2TX MIMO	CH 151	5755	13.5M	17.50	Not Required	No	
			CH 159	5795		17.50	Not Required	No	
	802.11ac 20M	2TX MIMO	CH 149	5745	6.5M	17.50	Not Required	No	
			CH 153	5765		17.50	Not Required	No	
			CH 157	5785		17.50	Not Required	No	
			CH 161	5805		17.50	Not Required	No	
			CH 165	5825		17.50	Not Required	No	
	802.11ac 40M	2TX MIMO	CH 151	5755	13.5M	17.50	Not Required	No	
CH 159			5795	17.50		Not Required	No		
802.11ac 80M	2TX MIMO	CH 155	5775	29.3M	17.50	16.15	Yes		

Table 82: Conducted power measurement results of WiFi 5G(Power Setting Level 13).

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

Band (GHz)	Mode	Antenna	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)	Power Setting Level
5.2	802.11a	2TX CDD	CH 36	5180	6M	16.50	Not Required	NO	12
			CH 40	5200		16.50	Not Required	NO	
			CH 44	5220		16.50	Not Required	NO	
			CH 48	5240		16.50	Not Required	NO	
	802.11n 20M	2TX MIMO	CH 36	5180	6.5M	16.50	Not Required	NO	
			CH 40	5200		16.50	Not Required	NO	
			CH 44	5220		16.50	Not Required	NO	
			CH 48	5240		16.50	Not Required	NO	
	802.11n 40M	2TX MIMO	CH 38	5190	13.5M	16.50	Not Required	NO	
			CH 46	5230		16.50	Not Required	NO	
	802.11ac 20M	2TX MIMO	CH 36	5180	6.5M	16.50	Not Required	NO	
			CH 40	5200		16.50	Not Required	NO	
			CH 44	5220		16.50	Not Required	NO	
			CH 48	5240		16.50	Not Required	NO	
802.11ac 40M	2TX MIMO	CH 38	5190	13.5M	16.50	Not Required	NO		
		CH 46	5230		16.50	Not Required	NO		
802.11ac 80M	2TX MIMO	CH 42	5210	29.3M	16.50	15.05	NO		
Band (GHz)	Mode	Antenna	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)	Power Setting Level
5.3	802.11a	2TX CDD	CH 52	5260	6M	16.50	Not Required	NO	12
			CH 56	5280		16.50	Not Required	NO	
			CH 60	5300		16.50	Not Required	NO	
			CH 64	5320		16.50	Not Required	NO	
	802.11n 20M	2TX MIMO	CH 52	5260	6.5M	16.50	Not Required	NO	
			CH 56	5280		16.50	Not Required	NO	
			CH 60	5300		16.50	Not Required	NO	
			CH 64	5320		16.50	Not Required	NO	
	802.11n 40M	2TX MIMO	CH 54	5270	13.5M	16.50	Not Required	NO	
			CH 62	5310		16.50	Not Required	NO	
	802.11ac 20M	2TX MIMO	CH 52	5260	6.5M	16.50	Not Required	NO	
			CH 56	5280		16.50	Not Required	NO	
			CH 60	5300		16.50	Not Required	NO	
			CH 64	5320		16.50	Not Required	NO	
802.11ac 40M	2TX MIMO	CH 54	5270	13.5M	16.50	Not Required	NO		
		CH 62	5310		16.50	Not Required	NO		
802.11ac 80M	2TX MIMO	CH 58	5290	29.3M	16.50	14.63	No		

Band (GHz)	Mode	Antenna	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)	Power Setting Level
5.5	802.11a	2TX CDD	CH 100	5500	6M	16.50	Not Required	NO	12
			CH 104	5520		16.50	Not Required	NO	
			CH 108	5540		16.50	Not Required	NO	
			CH 112	5560		16.50	Not Required	NO	
			CH 116	5580		16.50	Not Required	NO	
			CH 120	5600		16.50	Not Required	NO	
			CH 124	5620		16.50	Not Required	NO	
			CH 128	5640		16.50	Not Required	NO	
			CH 132	5660		16.50	Not Required	NO	
			CH 136	5680		16.50	Not Required	NO	
			CH 140	5700		16.50	Not Required	NO	
			CH 144	5720		16.50	Not Required	NO	
	8.2.11n 20M	2TX MIMO	CH 100	5500	6.5M	16.50	Not Required	NO	
			CH 104	5520		16.50	Not Required	NO	
			CH 108	5540		16.50	Not Required	NO	
			CH 112	5560		16.50	Not Required	NO	
			CH 116	5580		16.50	Not Required	NO	
			CH 120	5600		16.50	Not Required	NO	
			CH 124	5620		16.50	Not Required	NO	
			CH 128	5640		16.50	Not Required	NO	
			CH 132	5660		16.50	Not Required	NO	
			CH 136	5680		16.50	Not Required	NO	
			CH 140	5700		16.50	Not Required	NO	
			CH 144	5720		16.50	Not Required	NO	

Band (GHz)	Mode	Antenna	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)	Power Setting Level
5.5	8.2.11n 40M	2TX MIMO	CH 102	5510	13.5M	16.50	Not Required	NO	12
			CH 110	5550		16.50	Not Required	NO	
			CH 118	5590		16.50	Not Required	NO	
			CH 126	5630		16.50	Not Required	NO	
			CH 134	5670		16.50	Not Required	NO	
			CH 142	5710		16.50	Not Required	NO	
	8.2.11ac 20M	2TX MIMO	CH 100	5500	6.5M	16.50	Not Required	NO	
			CH 104	5520		16.50	Not Required	NO	
			CH 108	5540		16.50	Not Required	NO	
			CH 112	5560		16.50	Not Required	NO	
			CH 116	5580		16.50	Not Required	NO	
			CH 120	5600		16.50	Not Required	NO	
			CH 124	5620		16.50	Not Required	NO	
			CH 128	5640		16.50	Not Required	NO	
			CH 132	5660		16.50	Not Required	NO	
			CH 136	5680		16.50	Not Required	NO	
	8.2.11ac 40M	2TX MIMO	CH 102	5510	13.5M	16.50	Not Required	NO	
			CH 110	5550		16.50	Not Required	NO	
			CH 118	5590		16.50	Not Required	NO	
			CH 126	5630		16.50	Not Required	NO	
			CH 134	5670		16.50	Not Required	NO	
			CH 142	5710		16.50	Not Required	NO	
	8.2.11ac 80M	2TX MIMO	CH 106	5530	29.3M	16.50	14.36	No	
			CH 122	5610		16.50	14.55	No	
			CH 138	5690		16.50	14.52	No	

Table 83: Conducted power measurement results of WiFi 5G(Power Setting Level 12).

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

Band (GHz)	Mode	Antenna	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)	Power Setting Level
5.2	802.11a	2TX CDD	CH 36	5180	6M	15.50	Not Required	NO	11
			CH 40	5200		15.50	Not Required	NO	
			CH 44	5220		15.50	Not Required	NO	
			CH 48	5240		15.50	Not Required	NO	
	802.11n 20M	2TX MIMO	CH 36	5180	6.5M	15.50	Not Required	NO	
			CH 40	5200		15.50	Not Required	NO	
			CH 44	5220		15.50	Not Required	NO	
			CH 48	5240		15.50	Not Required	NO	
	802.11n 40M	2TX MIMO	CH 38	5190	13.5M	15.50	Not Required	NO	
			CH 46	5230		15.50	Not Required	NO	
	802.11ac 20M	2TX MIMO	CH 36	5180*	6.5M	15.50	Not Required	NO	
			CH 40	5200		15.50	Not Required	NO	
			CH 44	5220		15.50	Not Required	NO	
			CH 48	5240		15.50	Not Required	NO	
	802.11ac 40M	2TX MIMO	CH 38	5190	13.5M	15.50	Not Required	NO	
			CH 46	5230		15.50	Not Required	NO	
802.11ac 80M	2TX MIMO	CH 42	5210	29.3M	15.50	14.19	Yes		
Band (GHz)	Mode	Antenna	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)	Power Setting Level
5.3	802.11a	2TX CDD	CH 52	5260	6M	15.50	Not Required	NO	11
			CH 56	5280		15.50	Not Required	NO	
			CH 60	5300		15.50	Not Required	NO	
			CH 64	5320		15.50	Not Required	NO	
	802.11n 20M	2TX MIMO	CH 52	5260	6.5M	15.50	Not Required	NO	
			CH 56	5280		15.50	Not Required	NO	
			CH 60	5300		15.50	Not Required	NO	
			CH 64	5320		15.50	Not Required	NO	
	802.11n 40M	2TX MIMO	CH 54	5270	13.5M	15.50	Not Required	NO	
			CH 62	5310		15.50	Not Required	NO	
	802.11ac 20M	2TX MIMO	CH 52	5260	6.5M	15.50	Not Required	NO	
			CH 56	5280		15.50	Not Required	NO	
			CH 60	5300		15.50	Not Required	NO	
			CH 64	5320		15.50	Not Required	NO	
	802.11ac 40M	2TX MIMO	CH 54	5270	13.5M	15.50	Not Required	NO	
			CH 62	5310		15.50	Not Required	NO	
802.11ac 80M	2TX MIMO	CH 58	5290	29.3M	15.50	14.12	Yes		

Band (GHz)	Mode	Antenna	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)	Power Setting Level
5.5	802.11a	2TX CDD	CH 100	5500	6M	15.50	Not Required	NO	11
			CH 104	5520		15.50	Not Required	NO	
			CH 108	5540		15.50	Not Required	NO	
			CH 112	5560		15.50	Not Required	NO	
			CH 116	5580		15.50	Not Required	NO	
			CH 120	5600		15.50	Not Required	NO	
			CH 124	5620		15.50	Not Required	NO	
			CH 128	5640		15.50	Not Required	NO	
			CH 132	5660		15.50	Not Required	NO	
			CH 136	5680		15.50	Not Required	NO	
			CH 140	5700		15.50	Not Required	NO	
			CH 144	5720		15.50	Not Required	NO	
	802.11n 20M	2TX MIMO	CH 100	5500	6.5M	15.50	Not Required	NO	
			CH 104	5520		15.50	Not Required	NO	
			CH 108	5540		15.50	Not Required	NO	
			CH 112	5560		15.50	Not Required	NO	
			CH 116	5580		15.50	Not Required	NO	
			CH 120	5600		15.50	Not Required	NO	
			CH 124	5620		15.50	Not Required	NO	
			CH 128	5640		15.50	Not Required	NO	
			CH 132	5660		15.50	Not Required	NO	
			CH 136	5680		15.50	Not Required	NO	
			CH 140	5700		15.50	Not Required	NO	
			CH 144	5720		15.50	Not Required	NO	

Band (GHz)	Mode	Antenna	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)	Power Setting Level
5.5	802.11n 40M	2TX MIMO	CH 102	5510	13.5M	15.50	Not Required	NO	11
			CH 110	5550		15.50	Not Required	NO	
			CH 118	5590		15.50	Not Required	NO	
			CH 126	5630		15.50	Not Required	NO	
			CH 134	5670		15.50	Not Required	NO	
			CH 142	5710		15.50	Not Required	NO	
	802.11ac 20M	2TX MIMO	CH 100	5500	6.5M	15.50	Not Required	NO	
			CH 104	5520		15.50	Not Required	NO	
			CH 108	5540		15.50	Not Required	NO	
			CH 112	5560		15.50	Not Required	NO	
			CH 116	5580		15.50	Not Required	NO	
			CH 120	5600		15.50	Not Required	NO	
			CH 124	5620		15.50	Not Required	NO	
			CH 128	5640		15.50	Not Required	NO	
			CH 132	5660		15.50	Not Required	NO	
			CH 136	5680		15.50	Not Required	NO	
			CH 140	5700		15.50	Not Required	NO	
	CH 144	5720	15.50	Not Required	NO				
	802.11ac 40M	2TX MIMO	CH 102	5510	13.5M	15.50	Not Required	NO	
			CH 110	5550		15.50	Not Required	NO	
			CH 118	5590		15.50	Not Required	NO	
			CH 126	5630		15.50	Not Required	NO	
			CH 134	5670		15.50	Not Required	NO	
			CH 142	5710		15.50	Not Required	NO	
	802.11ac 80M	2TX MIMO	CH 106	5530	29.3M	15.50	13.52	Yes	
			CH 122	5610		15.50	13.76	Yes	
			CH 138	5690		15.50	13.77	Yes	

Band (GHz)	Mode	Antenna	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)	Power Setting Level
5.8	802.11a	2TX CDD	CH 149	5745	6M	15.50	Not Required	No	11
			CH 153	5765		15.50	Not Required	No	
			CH 157	5785		15.50	Not Required	No	
			CH 161	5805		15.50	Not Required	No	
			CH 165	5825		15.50	Not Required	No	
	802.11n 20M	2TX MIMO	CH 149	5745	6.5M	15.50	Not Required	No	
			CH 153	5765		15.50	Not Required	No	
			CH 157	5785		15.50	Not Required	No	
			CH 161	5805		15.50	Not Required	No	
			CH 165	5825		15.50	Not Required	No	
	802.11n 40M	2TX MIMO	CH 151	5755	13.5M	15.50	Not Required	No	
			CH 159	5795		15.50	Not Required	No	
	802.11ac 20M	2TX MIMO	CH 149	5745	6.5M	15.50	Not Required	No	
			CH 153	5765		15.50	Not Required	No	
			CH 157	5785		15.50	Not Required	No	
			CH 161	5805		15.50	Not Required	No	
			CH 165	5825		15.50	Not Required	No	
	802.11ac 40M	2TX MIMO	CH 151	5755	13.5M	15.50	Not Required	No	
			CH 159	5795		15.50	Not Required	No	
	802.11ac 80M	2TX MIMO	CH 155	5775	29.3M	15.50	13.84	Yes	

Table 84: Conducted power measurement results of WiFi 5G(Power Setting Level 11).

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



Band (GHz)	Mode	Antenna	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)	Power Setting Level
5.2	802.11a	2TX CDD	CH 36	5180	6M	17.50	Not Required	NO	10
			CH 40	5200		17.50	Not Required	NO	
			CH 44	5220		17.50	Not Required	NO	
			CH 48	5240		17.50	Not Required	NO	
	802.11n 20M	2TX MIMO	CH 36	5180	6.5M	17.50	Not Required	NO	
			CH 40	5200		17.50	Not Required	NO	
			CH 44	5220		17.50	Not Required	NO	
			CH 48	5240		17.50	Not Required	NO	
	802.11n 40M	2TX MIMO	CH 38	5190	13.5M	17.50	Not Required	NO	
			CH 46	5230		17.50	Not Required	NO	
	802.11ac 20M	2TX MIMO	CH 36	5180	6.5M	17.50	Not Required	NO	
			CH 40	5200		17.50	Not Required	NO	
			CH 44	5220		17.50	Not Required	NO	
			CH 48	5240		17.50	Not Required	NO	
802.11ac 40M	2TX MIMO	CH 38	5190	13.5M	17.50	Not Required	NO		
		CH 46	5230		17.50	Not Required	NO		
802.11ac 80M	2TX MIMO	CH 42	5210	29.3M	17.50	Not Required	NO		
Band (GHz)	Mode	Antenna	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)	Power Setting Level
5.3	802.11a	2TX CDD	CH 52	5260	6M	17.50	Not Required	NO	10
			CH 56	5280		17.50	Not Required	NO	
			CH 60	5300		17.50	Not Required	NO	
			CH 64	5320		17.50	Not Required	NO	
	802.11n 20M	2TX MIMO	CH 52	5260	6.5M	17.50	Not Required	NO	
			CH 56	5280		17.50	Not Required	NO	
			CH 60	5300		17.50	Not Required	NO	
			CH 64	5320		17.50	Not Required	NO	
	802.11n 40M	2TX MIMO	CH 54	5270	13.5M	17.50	Not Required	NO	
			CH 62	5310		17.50	Not Required	NO	
	802.11ac 20M	2TX MIMO	CH 52	5260	6.5M	17.50	Not Required	NO	
			CH 56	5280		17.50	Not Required	NO	
			CH 60	5300		17.50	Not Required	NO	
			CH 64	5320		17.50	Not Required	NO	
802.11ac 40M	2TX MIMO	CH 54	5270	13.5M	17.50	Not Required	NO		
		CH 62	5310		17.50	Not Required	NO		
802.11ac 80M	2TX MIMO	CH 58	5290	29.3M	17.50	12.81	Yes		



Band (GHz)	Mode	Antenna	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)	Power Setting Level
5.5	802.11a	2TX CDD	CH 100	5500	6M	17.50	Not Required	NO	10
			CH 104	5520		17.50	Not Required	NO	
			CH 108	5540		17.50	Not Required	NO	
			CH 112	5560		17.50	Not Required	NO	
			CH 116	5580		17.50	Not Required	NO	
			CH 120	5600		17.50	Not Required	NO	
			CH 124	5620		17.50	Not Required	NO	
			CH 128	5640		17.50	Not Required	NO	
			CH 132	5660		17.50	Not Required	NO	
			CH 136	5680		17.50	Not Required	NO	
			CH 140	5700		17.50	Not Required	NO	
			CH 144	5720		17.50	Not Required	NO	
	802.11n 20M	2TX MIMO	CH 100	5500	6.5M	17.50	Not Required	NO	
			CH 104	5520		17.50	Not Required	NO	
			CH 108	5540		17.50	Not Required	NO	
			CH 112	5560		17.50	Not Required	NO	
			CH 116	5580		17.50	Not Required	NO	
			CH 120	5600		17.50	Not Required	NO	
			CH 124	5620		17.50	Not Required	NO	
			CH 128	5640		17.50	Not Required	NO	
			CH 132	5660		17.50	Not Required	NO	
			CH 136	5680		17.50	Not Required	NO	
			CH 140	5700		17.50	Not Required	NO	
			CH 144	5720		17.50	Not Required	NO	

Band (GHz)	Mode	Antenna	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)	Power Setting Level
5.5	802.11n 40M	2TX MIMO	CH 102	5510	13.5M	17.50	Not Required	NO	10
			CH 110	5550		17.50	Not Required	NO	
			CH 118	5590		17.50	Not Required	NO	
			CH 126	5630		17.50	Not Required	NO	
			CH 134	5670		17.50	Not Required	NO	
			CH 142	5710		17.50	Not Required	NO	
	802.11ac 20M	2TX MIMO	CH 100	5500	6.5M	17.50	Not Required	NO	
			CH 104	5520		17.50	Not Required	NO	
			CH 108	5540		17.50	Not Required	NO	
			CH 112	5560		17.50	Not Required	NO	
			CH 116	5580		17.50	Not Required	NO	
			CH 120	5600		17.50	Not Required	NO	
			CH 124	5620		17.50	Not Required	NO	
			CH 128	5640		17.50	Not Required	NO	
			CH 132	5660		17.50	Not Required	NO	
			CH 136	5680		17.50	Not Required	NO	
	CH 140	5700	17.50	Not Required	NO				
	CH 144	5720	17.50	Not Required	NO				
	802.11ac 40M	2TX MIMO	CH 102	5510	13.5M	17.50	Not Required	NO	
			CH 110	5550		17.50	Not Required	NO	
			CH 118	5590		17.50	Not Required	NO	
			CH 126	5630		17.50	Not Required	NO	
			CH 134	5670		17.50	Not Required	NO	
			CH 142	5710		17.50	Not Required	NO	
	802.11ac 80M	2TX MIMO	CH 106	5530	29.3M	17.50	12.41	Yes	
			CH 122	5610		17.50	12.74	Yes	
			CH 138	5690		17.50	12.59	Yes	

Band (GHz)	Mode	Antenna	Channel	Frequency (MHz)	Data Rate (Mbps)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)	Power Setting Level
5.8	802.11a	2TX CDD	CH 149	5745	6M	17.50	Not Required	No	10
			CH 153	5765		17.50	Not Required	No	
			CH 157	5785		17.50	Not Required	No	
			CH 161	5805		17.50	Not Required	No	
			CH 165	5825		17.50	Not Required	No	
	802.11n 20M	2TX MIMO	CH 149	5745	6.5M	17.50	Not Required	No	
			CH 153	5765		17.50	Not Required	No	
			CH 157	5785		17.50	Not Required	No	
			CH 161	5805		17.50	Not Required	No	
			CH 165	5825		17.50	Not Required	No	
	802.11n 40M	2TX MIMO	CH 151	5755	13.5M	17.50	Not Required	No	
			CH 159	5795		17.50	Not Required	No	
	802.11ac 20M	2TX MIMO	CH 149	5745	6.5M	17.50	Not Required	No	
			CH 153	5765		17.50	Not Required	No	
			CH 157	5785		17.50	Not Required	No	
			CH 161	5805		17.50	Not Required	No	
			CH 165	5825		17.50	Not Required	No	
	802.11ac 40M	2TX MIMO	CH 151	5755	13.5M	17.50	Not Required	No	
CH 159			5795	17.50		Not Required	No		
802.11ac 80M	2TX MIMO	CH 155	5775	29.3M	17.50	12.79	Yes		

Table 85: Conducted power measurement results of WiFi 5G(Power Setting Level 10).

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

7.1.24 Conducted power measurements of BT

The output power of BT antenna is as following:

BT 2450	Tune-up	Average Conducted Power (dBm)		
		0CH	39CH	78CH
DH5	11.00	8.39	9.73	8.83
2DH5	11.00	5.44	6.86	5.12
3DH5	11.00	5.29	6.75	4.96

BT 2450	Tune-up	Average Conducted Power (dBm)		
		0CH	19CH	39CH
BLE	11.00	5.70	8.20	5.30

Table 86: Conducted power measurement results of BT.

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

7.2 SAR measurement Results

General Notes:

- 1) Per KDB447498 D01v05r02, all SAR measurement results are scaled to the maximum tune-up tolerance limit to demonstrate SAR compliance.
- 2) Per KDB447498 D01v05r02, testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is:
 - $\leq 0.8\text{W/kg}$ for 1-g or 2.0W/kg for 10-g respectively, when the transmission band is $\leq 100\text{MHz}$.
 - $\leq 0.6\text{ W/kg}$ or 1.5 W/kg , for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz.
 - $\leq 0.4\text{ W/kg}$ or 1.0 W/kg , for 1-g or 10-g respectively, when the transmission band is $\geq 200\text{ MHz}$.When the maximum output power variation across the required test channels is $> \frac{1}{2}\text{ dB}$, instead of the middle channel, the highest output power channel must be used.
- 3) Per KDB865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is $\geq 0.8\text{W/Kg}$; if the deviation among the repeated measurement is $\leq 20\%$, and the measured SAR $< 1.45\text{W/Kg}$, only one repeated measurement is required.
- 4) Per KDB941225 D06v02, the DUT Dimension is bigger than 9 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 D04v01r02, SAR is evaluated without a headset connected to the device. When the standalone reported body-worn SAR is $\leq 1.2\text{ W/kg}$, no additional SAR evaluations using a headset are required.
- 6) Per KDB865664 D02v01r01, SAR plot is only required for the highest measured SAR in each exposure configuration, wireless mode and frequency band combination; Plots are also required when the measured SAR is $> 1.5\text{ W/kg}$, or $> 7.0\text{ W/kg}$ for occupational exposure. The published RF exposure KDB procedures may require additional plots; for example, to support SAR to peak location separation ratio test exclusion and/or volume scan post-processing(Refer to the blue SAR test results in the tables of Section 7.3 and appendix B for detailed SAR plots).
- 7) Additional SAR tests in simultaneous transmission fixed power reduction scenario are also tested in some frequency bands and test positions, which are only used to ensure simultaneous transmission SAR test exclusion. The standalone SAR compliance still uses the SAR results tested at the maximum output power level.

GSM Notes:

- 1) Per KDB941225 D01v03, SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power specified for production units, including tune-up tolerance. The data mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested.
- 2) Per KDB648474 D04v01r02, 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 D01v03, When the maximum output power and tune-up tolerance specified for production units in a Second mode is $\leq \frac{1}{4}$ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of Second to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the Second mode.

CDMA Notes:

1) Per KDB941225 D01v03, When the maximum output power and tune-up tolerance specified for production units in a Second mode is $\leq \frac{1}{4}$ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of Second to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the Second mode.

LTE Notes:

- 1) The LTE test configurations are determined according to KDB941225 D05 SAR for LTE Devices v02r03. The general test procedures used for SAR testing can be found in Section 6.5.
- 2) A-MPR was disabled for all SAR test by setting NS_01 on the base station simulator. SAR tests were performed with the same number of RB and RB offsets transmitting on all TTI frames (maximum TTI)
- 3) According to KDB 941225 D05 SAR for LTE Devices v02r03, for Time-Division Duplex (TDD) systems, SAR is tested using a fixed periodic duty factor according to the highest transmission duty factor (63.33%) implemented for the device and supported by the defined 3GPP LTE TDD configurations.

WiFi Notes:

Per KDB248227D01v02r01:

- 1) When reported SAR for the initial test position is ≤ 0.4 W/kg, no additional testing for the remaining test position is required. Otherwise, SAR is evaluated at the subsequent highest peak SAR position until the reported SAR result is ≤ 0.8 W/kg or all test position are measured. For all positions/configurations tested using the initial test position and subsequent test positions, when the *reported* SAR is > 0.8 W/kg, SAR is measured for these test positions/configurations on the subsequent next highest measured output power channel(s) until the *reported* SAR is ≤ 1.2 W/kg or all required channels are tested.
- 2) For 802.11b Wi-Fi SAR test, the test lab will set the Main Wi-Fi Antenna / Sub Wi-Fi Antenna to the MAX transmit power level respectively and test the SAR respectively in all applicable RF exposure conditions per KDB248227D01v02r01. Only one Wi-Fi TX antenna is chosen at a time.
- 3) For 802.11 g/a WIFI CDD and 802.11n/ac Wi-Fi MIMO SAR test, only the scenario that two Wi-Fi antennas transmitting at the same time are supported and need to be considered. The common Initial Test Position and OFDM Initial Test Configuration Procedures per KDB 248227D01v02r01 are applied for 2.4G Wi-Fi 802.11g/n and 5G Wi-Fi 802.11 a/n/ac SAR test respectively in all applicable RF exposure conditions.
- 4) The highest SAR measured for the initial test position or initial test configuration should be used to determine SAR test exclusion according to the sum of 1-g SAR and SAR peak to location ratio provisions in KDB 447498. In addition, a test lab may also choose to perform standalone SAR measurements for test positions and 802.11 configurations that are not required by the initial test position or initial test configuration procedures and apply the results to determine simultaneous transmission SAR test exclusion, according to sum of 1-g and SAR peak to location ratio requirements to reduce the number of simultaneous transmission SAR measurements.

5) For Head SAR compliance, the device uses proximity sensor power reduction during Wi-Fi VOIP or when Wi-Fi antennas transmit simultaneously with the second antenna(Voice) in held-to-ear scenarios. Therefore:

- a) Standalone Head SAR for Wi-Fi antennas(WiFi VOIP)are evaluated at reduced power levels according to the real usage scenarios.
- b) Additional Head SAR tests at lower reduced power levels in WiFi and 2G&3G&4G Second antenna(Voice) simultaneous transmission scenarios are also tested for some frequency bands and test positions, which are only used to ensure simultaneous transmission SAR test exclusion.
- 6) WiFi 5G hotspot is only supported for U-NII-1 and U-NII-3, therefore U-NII-2A and U-NII-2C were not evaluated for hotspot condition.

7.2.1 SAR measurement Result of GSM850 (Second Antenna)

Test Position of Head	Test channel /Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
Left Hand Touched	190/836.6	GSM	0.699	0.389	-0.110	30.63	31.50	0.854	21.4°C
Left Hand Touched	128/824.2	GSM	0.590	0.329	-0.190	30.69	31.50	0.711	21.4°C
Left Hand Touched	251/848.8	GSM	0.785	0.438	-0.150	30.60	31.50	0.966	21.4°C
Left Hand Tilted 15°	190/836.6	GSM	0.628	0.338	-0.130	30.63	31.50	0.767	21.4°C
Right Hand Touched	190/836.6	GSM	1.090	0.590	-0.060	30.63	31.50	1.332	21.4°C
Right Hand Touched	128/824.2	GSM	0.945	0.511	-0.110	30.69	31.50	1.139	21.4°C
Right Hand Touched	251/848.8	GSM	1.170	0.631	-0.140	30.60	31.50	1.439	21.4°C
Right Hand Touched-repeated	251/848.8	GSM	1.210	0.633	-0.030	30.60	31.50	1.489	21.4°C
Right Hand Tilted 15°	190/836.6	GSM	0.942	0.480	-0.100	30.63	31.50	1.151	21.4°C
Right Hand Tilted 15°	128/824.2	GSM	0.832	0.424	-0.110	30.69	31.50	1.003	21.4°C
Right Hand Tilted 15°	251/848.8	GSM	1.000	0.511	-0.150	30.60	31.50	1.230	21.4°C
Additional SAR test when simultaneous transmission with WiFi, sensor on									
Right Hand Touched	251/848.8	GSM	0.765	0.414	-0.050	29.23	29.50	0.814	21.4°C
Right Hand Tilted 15°	251/848.8	GSM	0.654	0.331	-0.060	29.23	29.50	0.696	21.4°C

Table 87: 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)	Conducte d Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
Front Side	190/836.6	GSM	0.229	0.158	-0.030	30.63	31.50	0.280	21.5°C
Back Side	190/836.6	GSM	0.245	0.172	0.020	30.63	31.50	0.299	21.5°C

Table 88: Body-Worn SAR test results of GSM850

Test Position of Hotspot with 10mm	Test channel /Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
Front Side	190/836.6	GPRS 2TS	0.313	0.182	0.040	27.25	27.50	0.332	21.5°C
Back Side	190/836.6	GPRS 2TS	0.342	0.196	-0.070	27.25	27.50	0.362	21.5°C
Left Side	190/836.6	GPRS 2TS	0.146	0.098	0.060	27.25	27.50	0.155	21.5°C
Right Side	190/836.6	GPRS 2TS	0.029	0.018	0.190	27.25	27.50	0.031	21.5°C
Top Side	190/836.6	GPRS 2TS	0.199	0.113	0.170	27.25	27.50	0.211	21.5°C

Table 89: Hotspot SAR test results of GSM850

Per KDB648474D04, when hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg; 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.	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	10-g Extremity SAR Exclusion
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
Front Side	190/836.6	GPRS 2TS	0.313	0.182	0.040	27.25	31.00	0.742	Yes
Back Side	190/836.6	GPRS 2TS	0.342	0.196	-0.070	27.25	21.00	0.081	Yes
Left Side	190/836.6	GPRS 2TS	0.146	0.098	0.060	27.25	31.00	0.346	Yes
Right Side	190/836.6	GPRS 2TS	0.029	0.018	0.190	27.25	31.00	0.069	Yes
Top Side	190/836.6	GPRS 2TS	0.199	0.113	0.170	27.25	31.00	0.472	Yes

Table 90: 10-g Extremity SAR test reduction evaluation of GSM850

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

7.2.2 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)	Conducte d Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
Left Hand Touched	4182/836.4	RMC	0.791	0.438	-0.090	22.91	23.80	0.971	21.4°C
Left Hand Touched	4132/826.4	RMC	0.713	0.394	-0.160	22.90	23.80	0.877	21.4°C
Left Hand Touched	4233/846.6	RMC	0.913	0.505	-0.120	23.06	23.80	1.083	21.4°C
Left Hand Tilted 15°	4182/836.4	RMC	0.758	0.407	-0.120	22.91	23.80	0.930	21.4°C
Left Hand Tilted 15°	4132/826.4	RMC	0.725	0.384	0.080	22.90	23.80	0.892	21.4°C
Left Hand Tilted 15°	4233/846.6	RMC	0.876	0.464	-0.050	23.06	23.80	1.039	21.4°C
Right Hand Touched	4182/836.4	RMC	1.200	0.643	-0.130	22.91	23.80	1.473	21.4°C
Right Hand Touched	4132/826.4	RMC	1.050	0.564	-0.020	22.90	23.80	1.292	21.4°C
Right Hand Touched	4233/846.6	RMC	1.230	0.661	-0.030	23.06	23.80	1.458	21.4°C
Right Hand Touched-repeated	4233/846.6	RMC	1.260	0.677	-0.010	23.06	23.80	1.494	21.4°C
Right Hand Tilted 15°	4182/836.4	RMC	1.060	0.531	-0.160	22.91	23.80	1.301	21.4°C
Right Hand Tilted 15°	4132/826.4	RMC	1.040	0.525	0.050	22.90	23.80	1.279	21.4°C
Right Hand Tilted 15°	4233/846.6	RMC	1.130	0.558	0.150	23.06	23.80	1.340	21.4°C
Additional SAR test when simultaneous transmission with WiFi, sensor on									
Right Hand Touched	4233/846.6	RMC	0.548	0.289	-0.080	19.71	21.00	0.738	21.4°C
Right Hand Tilted 15°	4233/846.6	RMC	0.529	0.256	-0.010	19.71	21.00	0.712	21.4°C

Table 91: 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)	Conducte d Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
Front Side	4182/836.4	RMC	0.068	0.048	0.060	22.91	23.80	0.083	21.5°C
Back Side	4182/836.4	RMC	0.143	0.100	-0.030	22.91	23.80	0.176	21.5°C

Table 92: Body-Worn SAR test results of UMTS Band V

Test Position of Hotspot with 10mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
Front Side	4182/836.4	RMC	0.221	0.146	0.070	20.89	21.00	0.227	21.5°C
Back Side	4182/836.4	RMC	0.274	0.158	-0.100	20.89	21.00	0.281	21.5°C
Left Side	4182/836.4	RMC	0.115	0.078	0.070	20.89	21.00	0.118	21.5°C
Right Side	4182/836.4	RMC	0.027	0.016	-0.130	20.89	21.00	0.027	21.5°C
Top Side	4182/836.4	RMC	0.172	0.086	-0.080	20.89	21.00	0.176	21.5°C

Table 93: Hotspot SAR test results of UMTS Band V

Per KDB648474D04, when hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg; 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.	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	10-g Extremity SAR Exclusion
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
Front Side	4182/836.4	RMC	0.221	0.146	0.070	21.13	23.80	0.409	Yes
Back Side	4182/836.4	RMC	0.274	0.158	-0.100	21.13	23.80	0.507	Yes
Left Side	4182/836.4	RMC	0.115	0.078	0.070	21.13	23.80	0.213	Yes
Right Side	4182/836.4	RMC	0.027	0.016	-0.130	21.13	23.80	0.049	Yes
Top Side	4182/836.4	RMC	0.172	0.086	-0.080	21.13	23.80	0.318	Yes

Table 94: 10-g Extremity SAR test reduction evaluation of UMTS Band V

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

7.2.3 SAR measurement Result of CDMA BC 0 (Second Antenna)

Test Position of Head	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
Left Hand Touched	384/836.52	RC3 SO55	0.707	0.319	-0.190	23.45	24.20	0.840	21.4°C
Left Hand Touched	1013/824.7	RC3 SO55	0.683	0.378	-0.140	23.42	24.20	0.817	21.4°C
Left Hand Touched	777/848.31	RC3 SO55	0.796	0.441	-0.130	23.65	24.20	0.903	21.4°C
Left Hand Tilted 15°	384/836.52	RC3 SO55	0.670	0.359	-0.130	23.45	24.20	0.796	21.4°C
Right Hand Touched	384/836.52	RC3 SO55	1.010	0.539	-0.070	23.45	24.20	1.200	21.4°C
Right Hand Touched	1013/824.7	RC3 SO55	1.100	0.591	-0.110	23.42	24.20	1.316	21.4°C
Right Hand Touched	777/848.31	RC3 SO55	1.200	0.643	-0.050	23.65	24.20	1.362	21.4°C
Right Hand Touched-repeated	777/848.31	RC3 SO55	1.220	0.649	-0.130	23.65	24.20	1.385	21.4°C
Right Hand Tilted 15°	384/836.52	RC3 SO55	0.797	0.413	-0.130	23.45	24.20	0.947	21.4°C
Right Hand Tilted 15°	1013/824.7	RC3 SO55	0.798	0.416	-0.070	23.42	24.20	0.955	21.4°C
Right Hand Tilted 15°	777/848.31	RC3 SO55	0.886	0.456	0.030	23.65	24.20	1.006	21.4°C
Additional SAR test when simultaneous transmission with WiFi, sensor on									
Right Hand Touched	777/848.31	RC3 SO55	0.570	0.308	-0.080	19.65	21.00	0.778	21.4°C
Right Hand Tilted 15°	777/848.31	RC3 SO55	0.507	0.255	-0.060	19.65	21.00	0.692	21.4°C

Table 95: Head SAR test results of CDMA BC0

Test Position of Body-Worn with 15mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
Front Side	384/836.52	RC3 S032	0.153	0.106	0.060	23.61	24.20	0.175	21.5°C
Back Side	384/836.52	RC3 S032	0.175	0.122	-0.020	23.61	24.20	0.200	21.5°C

Table 96: Body-Worn SAR test results of CDMA BC 0

Test Position of Hotspot with 10mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
Front Side	384/836.52	Rev.0	0.258	0.152	0.100	20.17	21.00	0.312	21.5°C
Back Side	384/836.52	Rev.0	0.296	0.165	-0.010	20.17	21.00	0.358	21.5°C
Left Side	384/836.52	Rev.0	0.121	0.076	0.120	20.17	21.00	0.146	21.5°C
Right Side	384/836.52	Rev.0	0.029	0.019	0.080	20.17	21.00	0.035	21.5°C
Top Side	384/836.52	Rev.0	0.242	0.122	0.130	20.17	21.00	0.293	21.5°C

Table 97: Hotspot SAR test results of CDMA BC 0

Per KDB648474D04, when hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg; 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.	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	10-g Extremity SAR Exclusion
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
Front Side	384/836.52	Rev.0	0.258	0.152	0.100	20.17	24.20	0.653	Yes
Back Side	384/836.52	Rev.0	0.296	0.165	-0.010	20.17	24.20	0.749	Yes
Left Side	384/836.52	Rev.0	0.121	0.076	0.120	20.17	24.20	0.306	Yes
Right Side	384/836.52	Rev.0	0.029	0.019	0.080	20.17	24.20	0.074	Yes
Top Side	384/836.52	Rev.0	0.242	0.122	0.130	20.17	24.20	0.612	Yes

Table 98: 10-g Extremity SAR test reduction evaluation of CDMA BC0

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

**7.2.4 SAR measurement Result of LTE Band V (Second Antenna)**

Test Position of Head	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
1RB									
Left Hand Touched	20525/836.5	10M QPSK 1RB#49	0.671	0.371	0.000	21.76	22.70	0.833	21.4°C
Left Hand Touched	20450/829	10M QPSK 1RB#0	0.581	0.348	0.050	21.76	22.70	0.721	21.4°C
Left Hand Touched	20600/844	10M QPSK 1RB#49	0.727	0.402	-0.040	21.66	22.70	0.924	21.4°C
Left Hand Tilted 15°	20525/836.5	10M QPSK 1RB#49	0.676	0.361	-0.060	21.76	22.70	0.839	21.4°C
Left Hand Tilted 15°	20450/829	10M QPSK 1RB#0	0.567	0.329	-0.060	21.76	22.70	0.704	21.4°C
Left Hand Tilted 15°	20600/844	10M QPSK 1RB#49	0.684	0.366	-0.050	21.66	22.70	0.869	21.4°C
Right Hand Touched	20525/836.5	10M QPSK 1RB#49	0.912	0.490	-0.080	21.76	22.70	1.132	21.4°C
Right Hand Touched	20450/829	10M QPSK 1RB#0	0.835	0.448	-0.060	21.76	22.70	1.037	21.4°C
Right Hand Touched	20600/844	10M QPSK 1RB#49	0.963	0.520	0.090	21.66	22.70	1.224	21.4°C
Right Hand Touched	20600/844	10M QPSK 1RB#49	1.030	0.553	-0.120	21.66	22.70	1.309	21.4°C
Right Hand Tilted 15°	20525/836.5	10M QPSK 1RB#49	0.828	0.427	-0.070	21.76	22.70	1.028	21.4°C
Right Hand Tilted 15°	20450/829	10M QPSK 1RB#0	0.772	0.390	-0.080	21.76	22.70	0.959	21.4°C
Right Hand Tilted 15°	20600/844	10M QPSK 1RB#49	0.878	0.448	0.000	21.66	22.70	1.116	21.4°C
50%RB									
Left Hand Touched	20450/829	10M QPSK 50%RB#0	0.421	0.230	0.010	20.58	21.70	0.545	21.4°C
Left Hand Tilted 15°	20450/829	10M QPSK 50%RB#0	0.430	0.250	-0.010	20.58	21.70	0.557	21.4°C
Right Hand Touched	20450/829	10M QPSK 50%RB#0	0.652	0.351	-0.050	20.58	21.70	0.844	21.4°C
Right Hand Touched	20525/836.5	10M QPSK 50%RB#0	0.696	0.375	0.000	20.55	21.70	0.907	21.4°C
Right Hand Touched	20600/844	10M QPSK 50%RB#13	0.744	0.400	-0.030	20.55	21.70	0.970	21.4°C
Right Hand Tilted 15°	20450/829	10M QPSK 50%RB#0	0.607	0.312	-0.030	20.58	21.70	0.786	21.4°C
100%RB									
Left Hand Touched	20525/836.5	10M QPSK 100%RB#0	0.469	0.281	-0.070	20.58	21.70	0.607	21.4°C
Left Hand Tilted 15°	20525/836.5	10M QPSK 100%RB#0	0.473	0.274	-0.030	20.58	21.70	0.612	21.4°C
Right Hand Touched	20525/836.5	10M QPSK 100%RB#0	0.678	0.363	0.070	20.58	21.70	0.877	21.4°C
Right Hand Tilted 15°	20525/836.5	10M QPSK 100%RB#0	0.538	0.329	0.030	20.58	21.70	0.696	21.4°C

Additional SAR test when simultaneous transmission with WiFi, sensor on									
Right Hand Touched	20600/844	10M QPSK 1RB#49	0.666	0.361	-0.060	19.97	21.00	0.844	21.4°C
Right Hand Tilted 15°	20600/844	10M QPSK 1RB#49	0.657	0.327	-0.150	19.97	21.00	0.833	21.4°C

Table 99: Head SAR test results of LTE Band V

Test Position of Body-Worn with 15mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
1RB									
Front Side	20525/836.5	10M QPSK 1RB#49	0.125	0.089	0.160	21.76	22.70	0.155	21.5°C
Back Side	20525/836.5	10M QPSK 1RB#49	0.147	0.100	0.020	21.76	22.70	0.183	21.5°C
50%RB									
Front Side	20450/829	10M QPSK 50%RB#0	0.075	0.051	0.100	20.58	21.70	0.097	21.5°C
Back Side	20450/829	10M QPSK 50%RB#0	0.090	0.059	0.030	20.58	21.70	0.116	21.5°C

Table 100: 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)	Conducte d Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
1RB									
Front Side	20450/829	10M QPSK 1RB#0	0.111	0.065	0.030	19.96	21.00	0.141	21.5°C
Back Side	20450/829	10M QPSK 1RB#0	0.133	0.076	0.070	19.96	21.00	0.169	21.5°C
Left Side	20450/829	10M QPSK 1RB#0	0.064	0.044	0.140	19.96	21.00	0.081	21.5°C
Right Side	20450/829	10M QPSK 1RB#0	0.009	0.006	0.040	19.96	21.00	0.011	21.5°C
Top Side	20450/829	10M QPSK 1RB#0	0.090	0.045	0.080	19.96	21.00	0.115	21.5°C
50%RB									
Front Side	20450/829	10M QPSK 50%RB#0	0.100	0.067	0.100	19.85	21.00	0.130	21.5°C
Back Side	20450/829	10M QPSK 50%RB#0	0.134	0.076	-0.050	19.85	21.00	0.175	21.5°C
Left Side	20450/829	10M QPSK 50%RB#0	0.064	0.043	0.000	19.85	21.00	0.084	21.5°C
Right Side	20450/829	10M QPSK 50%RB#0	0.008	0.006	0.130	19.85	21.00	0.011	21.5°C
Top Side	20450/829	10M QPSK 50%RB#0	0.091	0.046	0.130	19.85	21.00	0.119	21.5°C

Table 101: Hotspot SAR test results of LTE Band V

Per KDB648474D04, when hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg; 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)	Conduct Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	10-g Extremity SAR Exclusion
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
1RB									
Front Side	20450/829	10M QPSK 1RB#0	0.111	0.065	0.030	19.96	22.70	0.209	Yes
Back Side	20450/829	10M QPSK 1RB#0	0.133	0.076	0.070	19.96	22.70	0.250	Yes
Left Side	20450/829	10M QPSK 1RB#0	0.064	0.044	0.140	19.96	22.70	0.120	Yes
Right Side	20450/829	10M QPSK 1RB#0	0.009	0.006	0.040	19.96	22.70	0.016	Yes
Top Side	20450/829	10M QPSK 1RB#0	0.090	0.045	0.080	19.96	22.70	0.170	Yes
50%RB									
Front Side	20450/829	10M QPSK 50%RB#0	0.100	0.067	0.100	19.85	21.70	0.153	Yes
Back Side	20450/829	10M QPSK 50%RB#0	0.134	0.076	-0.050	19.85	21.70	0.205	Yes
Left Side	20450/829	10M QPSK 50%RB#0	0.064	0.043	0.000	19.85	21.70	0.098	Yes
Right Side	20450/829	10M QPSK 50%RB#0	0.008	0.006	0.130	19.85	21.70	0.012	Yes
Top Side	20450/829	10M QPSK 50%RB#0	0.091	0.046	0.130	19.85	21.70	0.139	Yes

Table 102: 10-g Extremity SAR test reduction evaluation of LTE Band V

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

**7.2.5 SAR measurement Result of LTE Band XVII (Second Antenna)**

Test Position of Head	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
1RB									
Left Hand Touched	23790/710	10M QPSK 1RB#25	0.736	0.400	-0.060	21.54	22.70	0.961	21.4°C
Left Hand Touched	23780/709	10M QPSK 1RB#25	0.710	0.386	0.140	21.53	22.70	0.930	21.4°C
Left Hand Touched	23800/711	10M QPSK 1RB#25	0.758	0.412	-0.090	21.52	22.70	0.995	21.4°C
Left Hand Tilted 15°	23790/710	10M QPSK 1RB#25	0.649	0.342	-0.090	21.54	22.70	0.848	21.4°C
Left Hand Tilted 15°	23780/709	10M QPSK 1RB#25	0.653	0.346	0.070	21.53	22.70	0.855	21.4°C
Left Hand Tilted 15°	23800/711	10M QPSK 1RB#25	0.666	0.356	-0.060	21.52	22.70	0.874	21.4°C
Right Hand Touched	23790/710	10M QPSK 1RB#25	0.930	0.496	-0.010	21.54	22.70	1.215	21.4°C
Right Hand Touched	23780/709	10M QPSK 1RB#25	0.910	0.485	-0.010	21.53	22.70	1.191	21.4°C
Right Hand Touched	23800/711	10M QPSK 1RB#25	0.972	0.515	-0.160	21.52	22.70	1.275	21.4°C
Right Hand Touched-repeated	23800/711	10M QPSK 1RB#25	0.952	0.513	-0.020	21.52	22.70	1.249	21.4°C
Right Hand Tilted 15°	23790/710	10M QPSK 1RB#25	0.866	0.422	-0.010	21.54	22.70	1.131	21.4°C
Right Hand Tilted 15°	23780/709	10M QPSK 1RB#25	0.803	0.400	-0.010	21.53	22.70	1.051	21.4°C
Right Hand Tilted 15°	23800/711	10M QPSK 1RB#25	0.802	0.400	-0.010	21.52	22.70	1.052	21.4°C
50%RB									
Left Hand Touched	23790/710	10M QPSK 50%RB#13	0.597	0.324	-0.050	20.53	21.70	0.782	21.4°C
Left Hand Tilted 15°	23790/710	10M QPSK 50%RB#13	0.527	0.298	-0.030	20.53	21.70	0.690	21.4°C
Right Hand Touched	23790/710	10M QPSK 50%RB#13	0.730	0.387	0.080	20.53	21.70	0.956	21.4°C
Right Hand Touched	23780/709	10M QPSK 50%RB#13	0.759	0.409	-0.100	20.46	21.70	1.010	21.4°C
Right Hand Touched	23800/711	10M QPSK 50%RB#13	0.777	0.418	-0.050	20.47	21.70	1.031	21.4°C
Right Hand Tilted 15°	23790/710	10M QPSK 50%RB#13	0.659	0.328	-0.010	20.53	21.70	0.863	21.4°C
Right Hand Tilted 15°	23780/709	10M QPSK 50%RB#13	0.758	0.367	-0.060	20.46	21.70	1.008	21.4°C
Right Hand Tilted 15°	23800/711	10M QPSK 50%RB#13	0.768	0.372	-0.020	20.47	21.70	1.019	21.4°C
100%RB									
Left Hand Touched	23790/710	10M QPSK 100%RB#0	0.587	0.317	-0.010	20.50	21.70	0.774	21.4°C
Left Hand Tilted 15°	23790/710	10M QPSK 100%RB#0	0.549	0.288	-0.080	20.50	21.70	0.724	21.4°C

Right Hand Touched	23790/710	10M QPSK 100%RB#0	0.720	0.383	-0.020	20.50	21.70	0.949	21.4°C
Right Hand Tilted 15°	23790/710	10M QPSK 100%RB#0	0.658	0.325	-0.010	20.50	21.70	0.867	21.4°C
Additional SAR test when simultaneous transmission with WiFi, sensor on									
Right Hand Touched	23800/711	10M QPSK 1RB#25	0.601	0.318	-0.060	19.69	21.00	0.813	21.4°C
Right Hand Tilted 15°	23800/711	10M QPSK 1RB#25	0.558	0.270	-0.060	19.69	21.00	0.754	21.4°C

Table 103: Head SAR test results of LTE Band XVII

Test Position of Body-Worn with 15mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
1RB									
Front Side	23790/710	10M QPSK 1RB#49	0.118	0.079	0.070	21.54	22.70	0.154	21.4°C
Back Side	23790/710	10M QPSK 1RB#49	0.122	0.075	0.100	21.54	22.70	0.159	21.4°C
50%RB									
Front Side	23790/710	10M QPSK 50%RB#13	0.082	0.056	-0.010	20.53	21.70	0.107	21.4°C
Back Side	23790/710	10M QPSK 50%RB#13	0.084	0.057	0.130	20.53	21.70	0.110	21.4°C

Table 104: Body-Worn SAR test results of LTE Band XVII

Test Position of Hotspot with 10mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducte d Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
1RB									
Front Side	23800/711	10M QPSK 1RB#0	0.165	0.111	0.000	20.03	21.00	0.206	21.4°C
Back Side	23800/711	10M QPSK 1RB#0	0.200	0.116	-0.150	20.03	21.00	0.250	21.4°C
Left Side	23800/711	10M QPSK 1RB#0	0.099	0.067	-0.160	20.03	21.00	0.124	21.4°C
Right Side	23800/711	10M QPSK 1RB#0	0.018	0.012	-0.110	20.03	21.00	0.022	21.4°C
Top Side	23800/711	10M QPSK 1RB#0	0.141	0.070	-0.030	20.03	21.00	0.176	21.4°C
50%RB									
Front Side	23780/709	10M QPSK 50%RB#25	0.196	0.132	-0.100	19.92	21.00	0.251	21.4°C
Back Side	23780/709	10M QPSK 50%RB#25	0.238	0.138	-0.110	19.92	21.00	0.305	21.4°C
Left Side	23780/709	10M QPSK 50%RB#25	0.107	0.073	-0.180	19.92	21.00	0.137	21.4°C
Right Side	23780/709	10M QPSK 50%RB#25	0.019	0.012	-0.050	19.92	21.00	0.024	21.4°C
Top Side	23780/709	10M QPSK 50%RB#25	0.180	0.091	-0.020	19.92	21.00	0.231	21.4°C

Table 105: Hotspot SAR test results of LTE Band XVII

Per KDB648474D04, when hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg; 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)	Conduct Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	10-g Extremity SAR Exclusion
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
1RB									
Front Side	23800/711	10M QPSK 1RB#0	0.165	0.111	0.000	20.03	22.70	0.305	Yes
Back Side	23800/711	10M QPSK 1RB#0	0.200	0.116	-0.150	20.03	22.70	0.370	Yes
Left Side	23800/711	10M QPSK 1RB#0	0.099	0.067	-0.160	20.03	22.70	0.183	Yes
Right Side	23800/711	10M QPSK 1RB#0	0.018	0.012	-0.110	20.03	22.70	0.032	Yes
Top Side	23800/711	10M QPSK 1RB#0	0.141	0.070	-0.030	20.03	22.70	0.261	Yes
50%RB									
Front Side	23780/709	10M QPSK 50%RB#25	0.196	0.132	-0.100	19.92	21.70	0.295	Yes
Back Side	23780/709	10M QPSK 50%RB#25	0.238	0.138	-0.110	19.92	21.70	0.359	Yes
Left Side	23780/709	10M QPSK 50%RB#25	0.107	0.073	-0.180	19.92	21.70	0.161	Yes
Right Side	23780/709	10M QPSK 50%RB#25	0.019	0.012	-0.050	19.92	21.70	0.028	Yes
Top Side	23780/709	10M QPSK 50%RB#25	0.180	0.091	-0.020	19.92	21.70	0.271	Yes

Table 106: 10-g Extremity SAR test reduction evaluation of LTE Band XVII

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

7.2.6 SAR measurement Result of GSM850 (Main Antenna)

Test Position of Head	Test channel /Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
Left Hand Touched	190/836.6	GSM	0.198	0.155	0.050	32.70	33.50	0.238	21.4°C
Left Hand Tilted 15°	190/836.6	GSM	0.175	0.113	0.040	32.70	33.50	0.210	21.4°C
Right Hand Touched	190/836.6	GSM	0.269	0.209	-0.160	32.70	33.50	0.323	21.4°C
Right Hand Tilted 15°	190/836.6	GSM	0.142	0.104	-0.060	32.70	33.50	0.171	21.4°C
Right Hand Touched	128/824.2	GSM	0.244	0.189	0.070	32.72	33.50	0.292	21.4°C
Right Hand Touched	251/848.8	GSM	0.303	0.235	0.130	32.73	33.50	0.362	21.4°C

Table 107: Head SAR test results of GSM850

Test Position of Body-Worn with 15mm	Test channel /Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
Front Side	190/836.6	GSM	0.226	0.171	-0.030	32.70	33.50	0.272	21.5°C
Back Side	190/836.6	GSM	0.233	0.178	0.000	32.70	33.50	0.280	21.5°C

Table 108: Body-Worn SAR test results of GSM850

Test Position of Hotspot with 10mm	Test channel /Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
Front Side	190/836.6	GPRS 2TS	0.316	0.204	0.080	27.96	29.00	0.402	21.5°C
Back Side	190/836.6	GPRS 2TS	0.374	0.211	0.040	27.96	29.00	0.475	21.5°C
Left Side	190/836.6	GPRS 2TS	0.101	0.068	-0.040	27.96	29.00	0.128	21.5°C
Right Side	190/836.6	GPRS 2TS	0.288	0.193	0.050	27.96	29.00	0.366	21.5°C
Bottom Side	190/836.6	GPRS 2TS	0.210	0.108	-0.050	27.96	29.00	0.267	21.5°C

Table 109: Hotspot SAR test results of GSM850

Per KDB648474D04, when hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg; 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.	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	10-g Extremity SAR Exclusion
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
Front Side	190/836.6	GPRS 2TS	0.316	0.204	0.080	27.96	31.00	0.636	Yes
Back Side	190/836.6	GPRS 2TS	0.374	0.211	0.040	27.96	31.00	0.753	Yes
Left Side	190/836.6	GPRS 2TS	0.101	0.068	-0.040	27.96	31.00	0.203	Yes
Right Side	190/836.6	GPRS 2TS	0.288	0.193	0.050	27.96	31.00	0.580	Yes
Bottom Side	190/836.6	GPRS 2TS	0.210	0.108	-0.050	27.96	31.00	0.423	Yes

Table 110: 10-g Extremity SAR test reduction evaluation of GSM850

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

7.2.7 SAR measurement Result of GSM1900 (Main Antenna)

Test Position of Head	Test channel /Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
Left Hand Touched	661/1880	GSM	0.120	0.077	0.180	30.94	31.00	0.122	22.0°C
Left Hand Tilted 15°	661/1880	GSM	0.075	0.041	0.000	30.94	31.00	0.076	22.0°C
Right Hand Touched	661/1880	GSM	0.139	0.089	0.040	30.94	31.00	0.141	22.0°C
Right Hand Tilted 15°	661/1880	GSM	0.080	0.044	0.040	30.94	31.00	0.081	22.0°C
Right Hand Touched	512/1850.2	GSM	0.109	0.065	0.140	30.97	31.00	0.110	22.0°C
Right Hand Touched	810/1909.8	GSM	0.140	0.089	0.020	30.92	31.00	0.143	22.0°C

Table 111: Head SAR test results of GSM1900

Test Position of Body-Worn with 15mm	Test channel /Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
Front Side	661/1880	GSM	0.555	0.329	-0.090	30.94	31.00	0.563	21.4°C
Back Side	661/1880	GSM	0.594	0.354	0.170	30.94	31.00	0.602	21.4°C

Table 112: Body-Worn SAR test results of GSM1900

Test Position of Hotspot with 10mm	Test channel /Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
Front Side	512/1850.2	GPRS 2TS	0.466	0.268	0.100	24.81	25.50	0.546	21.4°C
Back Side	512/1850.2	GPRS 2TS	0.507	0.290	0.110	24.81	25.50	0.594	21.4°C
Left Side	512/1850.2	GPRS 2TS	0.110	0.063	0.180	24.81	25.50	0.129	21.4°C
Right Side	512/1850.2	GPRS 2TS	0.047	0.028	0.060	24.81	25.50	0.055	21.4°C
Bottom Side	512/1850.2	GPRS 2TS	0.966	0.522	-0.070	24.81	25.50	1.132	21.4°C
Bottom Side-Reteaped	512/1850.2	GPRS 2TS	0.994	0.534	-0.030	24.81	25.50	1.165	21.4°C
Bottom Side	661/1880	GPRS 2TS	0.756	0.406	-0.040	24.27	25.50	1.004	21.4°C
Bottom Side	810/1909.8	GPRS 2TS	0.587	0.313	-0.080	24.73	25.50	0.701	21.4°C

Table 113: Hotspot SAR test results of GSM1900

Per KDB648474D04, when hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg; 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.	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	10-g Extremity SAR Exclusion
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
Front Side	512/1850.2	GPRS 2TS	0.466	0.268	0.100	24.81	28.50	1.090	Yes
Back Side	512/1850.2	GPRS 2TS	0.507	0.290	0.110	24.81	28.50	1.186	Yes
Left Side	512/1850.2	GPRS 2TS	0.110	0.063	0.180	24.81	28.50	0.257	Yes
Right Side	512/1850.2	GPRS 2TS	0.047	0.028	0.060	24.81	28.50	0.110	Yes
Bottom Side	512/1850.2	GPRS 2TS	0.966	0.522	-0.070	24.81	28.50	2.259	No
Bottom Side-Reteaped	512/1850.2	GPRS 2TS	0.994	0.534	-0.030	24.81	28.50	2.325	No
Bottom Side	661/1880	GPRS 2TS	0.756	0.406	-0.040	24.27	28.50	2.002	No
Bottom Side	810/1909.8	GPRS 2TS	0.587	0.313	-0.080	24.73	28.50	1.398	No

Table 114: 10-g Extremity SAR test reduction evaluation of GSM1900

Note : According to the table above , 10-g Extremity SAR test is required for this frequency band.

According to the table above , only **Bottom Side** 10-g Extremity SAR test are required for this frequency band:

Test Position of 10-g Extremity with 0mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducte d Power (dBm)	Tune-up Power (dBm)	Scaled 10-g SAR (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
Bottom Side	661/1880	GPRS 2TS	2.730	1.150	-0.180	27.55	28.50	1.431	20.3°C

Table 115: 10-g Extremity SAR results of GSM1900

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

Test Position of Head	Test channel /Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
Left Hand Touched	9400/1880	RMC	0.120	0.077	0.190	22.77	23.00	0.127	22.0°C
Left Hand Tilted 15°	9400/1880	RMC	0.113	0.068	0.110	22.77	23.00	0.119	22.0°C
Right Hand Touched	9400/1880	RMC	0.136	0.088	0.110	22.77	23.00	0.143	22.0°C
Right Hand Tilted 15°	9400/1880	RMC	0.072	0.040	0.040	22.77	23.00	0.076	22.0°C
Right Hand Touched	9262/1852.4	RMC	0.117	0.071	0.120	22.77	23.00	0.123	22.0°C
Right Hand Touched	9538/1907.6	RMC	0.104	0.073	0.160	22.71	23.00	0.111	22.0°C

Table 116: Head SAR test results of UMTS Band II

Test Position of Body-Worn with 15mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
Front Side	9400/1880	RMC	0.652	0.385	0.040	22.77	23.00	0.687	22.0°C
Back Side	9400/1880	RMC	0.639	0.381	0.010	22.77	23.00	0.674	22.0°C

Table 117: Body-Worn SAR test results of UMTS Band II

Test Position of Hotspot with 10mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
Front Side	9400/1880	RMC	0.527	0.294	-0.020	19.85	20.00	0.546	21.5°C
Back Side	9400/1880	RMC	0.576	0.323	-0.130	19.85	20.00	0.596	21.5°C
Left Side	9400/1880	RMC	0.083	0.046	0.190	19.85	20.00	0.086	21.5°C
Right Side	9400/1880	RMC	0.033	0.018	0.130	19.85	20.00	0.034	21.5°C
Bottom Side	9400/1880	RMC	0.705	0.379	0.090	19.85	20.00	0.730	21.5°C
Bottom Side	9262/1852.4	RMC	0.803	0.434	0.070	19.80	20.00	0.841	21.5°C
Bottom Side-reteaped	9262/1852.5	RMC	0.744	0.402	0.070	19.80	20.00	0.779	21.5°C
Bottom Side	9538/1907.6	RMC	0.750	0.403	0.050	19.84	20.00	0.778	21.5°C

Table 118: Hotspot SAR test results of UMTS Band II

Per KDB648474D04, when hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg; 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.	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	10-g Extremity SAR Exclusion
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
Front Side	9400/1880	RMC	0.527	0.294	-0.020	19.85	23.00	1.088	Yes
Back Side	9400/1880	RMC	0.576	0.323	-0.130	19.85	23.00	1.190	Yes
Left Side	9400/1880	RMC	0.083	0.046	0.190	19.85	23.00	0.171	Yes
Right Side	9400/1880	RMC	0.033	0.018	0.130	19.85	23.00	0.067	Yes
Bottom Side	9400/1880	RMC	0.705	0.379	0.090	19.85	23.00	1.456	No
Bottom Side	9262/1852.4	RMC	0.803	0.434	0.070	19.80	23.00	1.678	No
Bottom Side-reteaped	9262/1852.5	RMC	0.744	0.402	0.070	19.80	23.00	1.554	No
Bottom Side	9538/1907.6	RMC	0.750	0.403	0.050	19.84	23.00	1.553	No

Table 119: 10-g Extremity SAR test reduction evaluation of UMTS Band II

Note : According to the table above , 10-g Extremity SAR test is required for this frequency band.

According to the table above , only **Bottom Side** 10-g Extremity SAR test are required for this frequency band:

Test Position of 10-g Extremity with 0mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducte d Power (dBm)	Tune-up Power (dBm)	Scaled 10-g SAR (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
Bottom Side	9400/1880	RMC	3.010	1.380	-0.190	22.77	23.00	1.455	22.0°C

Table 120: 10-g Extremity SAR results of UMTS Band II

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

Test Position of Head	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
Left Hand Touched	1413/1732.6	RMC	0.081	0.053	0.070	22.50	23.00	0.091	21.5°C
Left Hand Tilted 15°	1413/1732.6	RMC	0.028	0.016	0.130	22.50	23.00	0.031	21.5°C
Right Hand Touched	1413/1732.6	RMC	0.085	0.055	0.050	22.50	23.00	0.095	21.5°C
Right Hand Tilted 15°	1413/1732.6	RMC	0.050	0.025	0.130	22.50	23.00	0.056	21.5°C
Right Hand Touched	1312/1712.4	RMC	0.089	0.057	0.070	22.42	23.00	0.102	21.5°C
Right Hand Touched	1513/1752.6	RMC	0.107	0.068	0.170	22.50	23.00	0.120	21.5°C

Table 121: Head SAR test results of UMTS Band IV

Test Position of Body-Worn with 15mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
Front Side	1413/1732.6	RMC	0.470	0.273	0.000	22.50	23.00	0.527	21.8°C
Back Side	1413/1732.6	RMC	0.454	0.267	0.030	22.50	23.00	0.509	21.8°C

Table 122: Body-Worn SAR test results of UMTS Band IV

Test Position of Hotspot with 10mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
Front Side	1413/1732.6	RMC	0.633	0.354	0.100	19.42	20.00	0.723	21.8°C
Back Side	1413/1732.6	RMC	0.684	0.387	0.170	19.42	20.00	0.782	21.8°C
Back Side	1312/1712.4	RMC	0.541	0.309	-0.050	19.46	20.00	0.613	21.8°C
Back Side	1513/1752.6	RMC	0.634	0.361	-0.070	19.37	20.00	0.733	21.8°C
Left Side	1413/1732.6	RMC	0.141	0.081	-0.030	19.42	20.00	0.161	21.8°C
Right Side	1413/1732.6	RMC	0.062	0.035	0.130	19.42	20.00	0.071	21.8°C
Bottom Side	1413/1732.6	RMC	0.950	0.520	-0.040	19.42	20.00	1.086	21.8°C
Bottom Side-reteaped	1413/1732.6	RMC	1.000	0.548	0.010	19.42	20.00	1.143	21.8°C
Bottom Side	1312/1712.4	RMC	0.920	0.504	-0.050	19.46	20.00	1.042	21.8°C
Bottom Side	1513/1752.6	RMC	0.902	0.492	-0.050	19.37	20.00	1.043	21.8°C

Table 123: Hotspot SAR test results of UMTS Band IV

Per KDB648474D04, when hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg; 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.	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	10-g Extremity SAR Exclusion
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
Front Side	1413/1732.6	RMC	0.633	0.354	0.100	19.42	23.00	1.443	No
Back Side	1413/1732.6	RMC	0.684	0.387	0.170	19.42	23.00	1.560	No
Back Side	1312/1712.4	RMC	0.541	0.309	-0.050	19.46	23.00	1.222	No
Back Side	1513/1752.6	RMC	0.634	0.361	-0.070	19.37	23.00	1.462	No
Left Side	1413/1732.6	RMC	0.141	0.081	-0.030	19.42	23.00	0.322	Yes
Right Side	1413/1732.6	RMC	0.062	0.035	0.130	19.42	23.00	0.141	Yes
Bottom Side	1413/1732.6	RMC	0.950	0.520	-0.040	19.42	23.00	2.166	No
Bottom Side-reteaped	1413/1732.6	RMC	1.000	0.548	0.010	19.42	23.00	2.280	No
Bottom Side	1312/1712.4	RMC	0.920	0.504	-0.050	19.46	23.00	2.079	No
Bottom Side	1513/1752.6	RMC	0.902	0.492	-0.050	19.37	23.00	2.081	No

Table 124: 10-g Extremity SAR test reduction evaluation of UMTS Band IV

Note : According to the table above , 10-g Extremity SAR test is required for this frequency band.

According to the table above , only **Front Side** and **Back Side** and **Bottom side** 10-g Extremity SAR test are required for this frequency band:

Test Position of 10-g Extremity with 0mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducte d Power (dBm)	Tune-up Power (dBm)	Scaled 10-g SAR (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
Front Side	1413/1732.6	RMC	6.230	2.780	0.120	22.50	23.00	3.119	21.8°C
Front Side	1312/1712.4	RMC	6.500	2.900	0.080	22.42	23.00	3.314	21.8°C
Front Side	1513/1752.6	RMC	7.200	3.200	-0.130	22.50	23.00	3.590	21.8°C
Front Side-repeated	1513/1752.6	RMC	6.940	3.040	0.130	22.50	23.00	3.411	21.8°C
Back Side	1413/1732.6	RMC	5.730	2.530	0.190	22.50	23.00	2.839	21.8°C
Back Side	1312/1712.4	RMC	6.070	2.690	0.030	22.42	23.00	3.074	21.8°C
Back Side	1513/1752.6	RMC	6.790	2.970	-0.160	22.50	23.00	3.332	21.8°C
Bottom Side	1413/1732.6	RMC	5.040	2.090	0.120	22.50	23.00	2.345	21.8°C
Bottom Side	1312/1712.4	RMC	5.810	2.340	-0.060	22.42	23.00	2.674	21.8°C
Bottom Side	1513/1752.6	RMC	5.240	2.090	-0.170	22.50	23.00	2.345	21.8°C

Table 125: 10-g Extremity SAR results of UMTS Band IV

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

Test Position of Head	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
Left Hand Touched	4182/836.4	RMC	0.227	0.178	0.070	23.66	24.50	0.275	21.4°C
Left Hand Tilted 15°	4182/836.4	RMC	0.216	0.140	0.110	23.66	24.50	0.262	21.4°C
Right Hand Touched	4182/836.4	RMC	0.299	0.230	0.150	23.66	24.50	0.363	21.4°C
Right Hand Tilted 15°	4182/836.4	RMC	0.167	0.112	-0.070	23.66	24.50	0.203	21.4°C
Right Hand Touched	4132/826.4	RMC	0.292	0.229	0.040	23.52	24.50	0.366	21.4°C
Right Hand Touched	4233/846.6	RMC	0.330	0.258	0.170	23.64	24.50	0.402	21.4°C

Table 126: Head SAR test results of UMTS Band V

Test Position of Body-Worn with 15mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
Front Side	4182/836.4	RMC	0.243	0.185	-0.020	23.66	24.50	0.295	21.5°C
Back Side	4182/836.4	RMC	0.263	0.201	0.000	23.66	24.50	0.319	21.5°C

Table 127: Body-Worn SAR test results of UMTS Band V

Test Position of Hotspot with 10mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
Front Side	4182/836.4	RMC	0.343	0.218	-0.090	22.10	22.50	0.376	21.5°C
Back Side	4182/836.4	RMC	0.382	0.221	0.010	22.10	22.50	0.419	21.5°C
Left Side	4182/836.4	RMC	0.158	0.106	0.000	22.10	22.50	0.173	21.5°C
Right Side	4182/836.4	RMC	0.367	0.247	0.050	22.10	22.50	0.402	21.5°C
Bottom Side	4182/836.4	RMC	0.247	0.131	-0.190	22.10	22.50	0.271	21.5°C

Table 128: Hotspot SAR test results of UMTS Band V

Per KDB648474D04, when hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg; 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.	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	10-g Extremity SAR Exclusion
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
Front Side	4182/836.4	RMC	0.343	0.218	-0.090	22.10	24.50	0.596	No
Back Side	4182/836.4	RMC	0.382	0.221	0.010	22.10	24.50	0.664	No
Left Side	4182/836.4	RMC	0.158	0.106	0.000	22.10	24.50	0.275	No
Right Side	4182/836.4	RMC	0.367	0.247	0.050	22.10	24.50	0.638	No
Bottom Side	4182/836.4	RMC	0.247	0.131	-0.190	22.10	24.50	0.429	No

Table 129: 10-g Extremity SAR test reduction evaluation of UMTS Band V

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

7.2.11 SAR measurement Result of CDMA BC0 (Main Antenna)

Test Position of Head	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
Left Hand Touched	384/836.52	RC3 SO55	0.277	0.191	-0.170	24.09	25.00	0.342	21.4°C
Left Hand Tilted 15°	384/836.52	RC3 SO55	0.267	0.193	-0.030	24.09	25.00	0.329	21.4°C
Right Hand Touched	384/836.52	RC3 SO55	0.330	0.255	-0.060	24.09	25.00	0.407	21.4°C
Right Hand Tilted 15°	384/836.52	RC3 SO55	0.209	0.142	0.090	24.09	25.00	0.258	21.4°C
Right Hand Touched	1013/824.7	RC3 SO55	0.309	0.240	0.070	24.08	25.00	0.382	21.4°C
Right Hand Touched	777/848.31	RC3 SO55	0.372	0.288	-0.010	24.10	25.00	0.458	21.4°C

Table 130: Head SAR test results of CDMA BC0

Test Position of Body-Worn with 15mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
Front Side	384/836.52	RC3 SO32	0.273	0.208	-0.010	24.08	25.00	0.337	21.5°C
Back Side	384/836.52	RC3 SO32	0.332	0.254	-0.080	24.08	25.00	0.410	21.5°C

Table 131: Body-Worn SAR test results of CDMA BC0

Test Position of Hotspot with 10mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
Front Side	384/836.52	Rev.0	0.548	0.313	0.020	21.65	22.50	0.666	21.5°C
Back Side	384/836.52	Rev.0	0.551	0.315	0.070	21.65	22.50	0.670	21.5°C
Left Side	384/836.52	Rev.0	0.241	0.160	-0.040	21.65	22.50	0.293	21.5°C
Right Side	384/836.52	Rev.0	0.465	0.311	0.060	21.65	22.50	0.566	21.5°C
Bottom Side	384/836.52	Rev.0	0.318	0.157	-0.070	21.65	22.50	0.387	21.5°C

Table 132: Hotspot SAR test results of CDMA BC 0

Per KDB648474D04, when hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg; 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.	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	10-g Extremity SAR Exclusion
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
Front Side	384/836.52	Rev.0	0.548	0.313	0.020	21.65	25.00	1.185	No
Back Side	384/836.52	Rev.0	0.551	0.315	0.070	21.65	25.00	1.192	No
Left Side	384/836.52	Rev.0	0.241	0.160	-0.040	21.65	25.00	0.521	No
Right Side	384/836.52	Rev.0	0.465	0.311	0.060	21.65	25.00	1.006	No
Bottom Side	384/836.52	Rev.0	0.318	0.157	-0.070	21.65	25.00	0.688	No

Table 133: 10-g Extremity SAR test reduction evaluation of CDMA BC 0

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

7.2.12 SAR measurement Result of CDMA BC 1 (Main Antenna)

Test Position of Head	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
Left Hand Touched	600/1880	RC3 SO55	0.108	0.070	0.040	23.28	23.70	0.119	22.0°C
Left Hand Tilted 15°	600/1880	RC3 SO55	0.081	0.046	0.130	23.28	23.70	0.089	22.0°C
Right Hand Touched	600/1880	RC3 SO55	0.117	0.075	0.040	23.28	23.70	0.129	22.0°C
Right Hand Tilted 15°	600/1880	RC3 SO55	0.077	0.043	0.050	23.28	23.70	0.084	22.0°C
Right Hand Touched	25/1851.25	RC3 SO55	0.139	0.090	-0.080	23.38	23.70	0.150	22.0°C
Right Hand Touched	1175/1908.75	RC3 SO55	0.106	0.068	0.020	23.24	23.70	0.118	22.0°C

Table 134: Head SAR test results of CDMA BC 1

Test Position of Body-Worn with 15mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
Front Side	600/1880	RC3 SO32	0.616	0.361	0.050	23.34	23.70	0.669	22.0°C
Back Side	600/1880	RC3 SO32	0.546	0.327	0.090	23.34	23.70	0.593	22.0°C

Table 135: Body-Worn SAR test results of CDMA BC 1

Test Position of Hotspot with 10mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
Front Side	600/1880	Rev.0	0.460	0.247	0.180	18.66	20.00	0.626	21.4°C
Back Side	600/1880	Rev.0	0.524	0.292	0.120	18.66	20.00	0.713	21.4°C
Left Side	600/1880	Rev.0	0.079	0.045	0.030	18.66	20.00	0.107	21.4°C
Right Side	600/1880	Rev.0	0.029	0.017	0.130	18.66	20.00	0.039	21.4°C
Bottom Side	600/1880	Rev.0	0.745	0.398	-0.180	18.66	20.00	1.014	21.4°C
Bottom Side	25/1851.25	Rev.0	0.900	0.486	0.030	18.67	20.00	1.222	21.4°C
Bottom Side-repeated	25/1851.25	Rev.0	0.904	0.489	-0.140	18.67	20.00	1.228	21.4°C
Bottom Side	1175/1908.75	Rev.0	0.841	0.450	-0.120	18.55	20.00	1.174	21.4°C

Table 136: Hotspot SAR test results of CDMA BC 1

Per KDB648474D04, when hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg; 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.	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR1-g (W/kg)	10-g Extremity SAR Exclusion
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
Front Side	600/1880	Rev.0	0.460	0.247	0.180	18.66	23.70	1.468	No
Back Side	600/1880	Rev.0	0.524	0.292	0.120	18.66	23.70	1.672	No
Left Side	600/1880	Rev.0	0.079	0.045	0.030	18.66	23.70	0.251	Yes
Right Side	600/1880	Rev.0	0.029	0.017	0.130	18.66	23.70	0.092	Yes
Bottom Side	600/1880	Rev.0	0.745	0.398	-0.180	18.66	23.70	2.378	No
Bottom Side	25/1851.25	Rev.0	0.900	0.486	0.030	18.67	23.70	2.866	No
Bottom Side-repeated	25/1851.25	Rev.0	0.904	0.489	-0.140	18.67	23.70	2.879	No
Bottom Side	1175/1908.75	Rev.0	0.841	0.450	-0.120	18.55	23.70	2.753	No

Table 137: 10-g Extremity SAR test reduction evaluation of CDMA BC1

Note : According to the table above , 10-g Extremity SAR test is required for this frequency band.

According to the table above , only **Front Side** and **Back Side** and **Bottom Side** 10-g Extremity SAR test are required for this frequency band:

Test Position of 10-g Extremity with 0mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducte d Power (dBm)	Tune-up Power (dBm)	Scaled 10-g SAR (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
Front Side	600/1880	Rev.0	5.590	2.650	0.180	23.32	23.70	2.892	22.0°C
Front Side	25/1851.25	Rev.0	5.570	2.650	0.190	23.42	23.70	2.826	22.0°C
Front Side	1175/1908.75	Rev.0	5.550	2.660	0.090	23.28	23.70	2.930	22.0°C
Back Side	600/1880	Rev.0	6.880	3.080	0.120	23.32	23.70	3.362	22.0°C
Back Side	25/1851.25	Rev.0	6.620	3.020	0.130	23.42	23.70	3.221	22.0°C
Back Side	1175/1908.75	Rev.0	7.140	3.140	0.140	23.28	23.70	3.459	22.0°C
Back Side-repeated	1175/1908.75	Rev.0	7.230	3.170	0.090	23.28	23.70	3.492	22.0°C
Bottom Side	600/1880	Rev.0	3.260	1.470	-0.050	23.32	23.70	1.604	22.0°C

Table 138: 10-g Extremity SAR results of CDMA BC 1

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

Test Position of Head	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
1RB									
Left Hand Touched	18700/1860	20M QPSK 1RB#0	0.171	0.106	0.110	22.55	22.80	0.181	22.0°C
Left Hand Tilted 15°	18700/1860	20M QPSK 1RB#0	0.113	0.062	0.060	22.55	22.80	0.120	22.0°C
Right Hand Touched	18700/1860	20M QPSK 1RB#0	0.149	0.096	-0.190	22.55	22.80	0.158	22.0°C
Right Hand Tilted 15°	18700/1860	20M QPSK 1RB#0	0.102	0.058	0.100	22.55	22.80	0.108	22.0°C
Left Hand Touched	18900/1880	20M QPSK 1RB#0	0.137	0.087	0.090	22.40	22.80	0.150	22.0°C
Left Hand Touched	19100/1900	20M QPSK 1RB#0	0.124	0.072	0.040	22.43	22.80	0.135	22.0°C
50%RB									
Left Hand Touched	19100/1900	20M QPSK 50%RB#0	0.102	0.059	0.150	21.05	21.80	0.121	22.0°C
Left Hand Tilted 15°	19100/1900	20M QPSK 50%RB#0	0.055	0.030	0.050	21.05	21.80	0.065	22.0°C
Right Hand Touched	19100/1900	20M QPSK 50%RB#0	0.094	0.054	-0.140	21.05	21.80	0.111	22.0°C
Right Hand Tilted 15°	19100/1900	20M QPSK 50%RB#0	0.055	0.031	0.200	21.05	21.80	0.066	22.0°C

Table 139: Head SAR test results of LTE Band II

Test Position of Body-Worn with 15mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
1RB									
Front Side	18700/1860	20M QPSK 1RB#0	0.706	0.425	0.000	22.55	22.80	0.748	22.0°C
Back Side	18700/1860	20M QPSK 1RB#0	0.767	0.458	-0.030	22.55	22.80	0.812	22.0°C
Back Side	18900/1880	20M QPSK 1RB#0	0.739	0.444	0.050	22.40	22.80	0.810	22.0°C
Back Side	19100/1900	20M QPSK 1RB#0	0.710	0.423	0.180	22.43	22.80	0.773	22.0°C
50%RB									
Front Side	19100/1900	20M QPSK 50%RB#0	0.417	0.241	-0.030	21.05	21.80	0.496	22.0°C
Back Side	19100/1900	20M QPSK 50%RB#0	0.455	0.259	-0.020	21.05	21.80	0.541	22.0°C
100%RB									
Back Side	18700/1860	20M QPSK 100%RB#0	0.501	0.284	0.130	20.98	21.80	0.605	22.0°C

Table 140: Body-Worn SAR test results of LTE Band II

Test Position of Hotspot with 10mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
1RB									
Front Side	18900/1880	20M QPSK 1RB#0	0.484	0.265	0.120	19.47	20.00	0.547	21.4°C
Back Side	18900/1880	20M QPSK 1RB#0	0.470	0.269	-0.080	19.47	20.00	0.531	21.4°C
Left Side	18900/1880	20M QPSK 1RB#0	0.111	0.063	-0.170	19.47	20.00	0.125	21.4°C
Right Side	18900/1880	20M QPSK 1RB#0	0.043	0.025	0.160	19.47	20.00	0.049	21.4°C
Bottom Side	18900/1880	20M QPSK 1RB#0	0.796	0.425	-0.130	19.47	20.00	0.899	21.4°C
Bottom Side	18700/1860	20M QPSK 1RB#0	0.929	0.498	-0.050	19.43	20.00	1.059	21.4°C
Bottom Side- reteaped	18700/1860	20M QPSK 1RB#0	1.000	0.538	-0.060	19.43	20.00	1.140	21.4°C
Bottom Side	19100/1900	20M QPSK 1RB#0	0.869	0.463	-0.010	19.34	20.00	1.012	21.4°C
50%RB									
Front Side	18700/1860	20M QPSK 50%RB#0	0.457	0.247	0.120	19.18	20.00	0.552	21.4°C
Back Side	18700/1860	20M QPSK 50%RB#0	0.450	0.258	0.130	19.18	20.00	0.544	21.4°C
Left Side	18700/1860	20M QPSK 50%RB#0	0.104	0.059	-0.006	19.18	20.00	0.126	21.4°C
Right Side	18700/1860	20M QPSK 50%RB#0	0.044	0.025	0.170	19.18	20.00	0.053	21.4°C
Bottom Side	18700/1860	20M QPSK 50%RB#0	0.806	0.430	-0.080	19.18	20.00	0.973	21.4°C
Bottom Side	18900/1880	20M QPSK 50%RB#0	0.755	0.402	-0.070	19.11	20.00	0.927	21.4°C
Bottom Side	19100/1900	20M QPSK 50%RB#0	0.762	0.405	-0.040	19.04	20.00	0.951	21.4°C
100%RB									
Bottom Side	18700/1860	20M QPSK 100%RB#0	0.787	0.420	-0.050	19.05	20.00	0.979	21.4°C

Table 141: Hotspot SAR test results of LTE Band II

Per KDB648474D04, when hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg; 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)	Conduct Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	10-g Extremity SAR Exclusion
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
1RB									
Front Side	18900/1880	20M QPSK 1RB#0	0.484	0.265	0.120	19.47	22.80	1.042	Yes
Back Side	18900/1880	20M QPSK 1RB#0	0.470	0.269	-0.080	19.47	22.80	1.012	Yes
Left Side	18900/1880	20M QPSK 1RB#0	0.111	0.063	-0.170	19.47	22.80	0.239	Yes
Right Side	18900/1880	20M QPSK 1RB#0	0.043	0.025	0.160	19.47	22.80	0.093	Yes
Bottom Side	18900/1880	20M QPSK 1RB#0	0.796	0.425	-0.130	19.47	22.80	1.714	No
Bottom Side	18700/1860	20M QPSK 1RB#0	0.929	0.498	-0.050	19.43	22.80	2.018	No
Bottom Side-reteaped	18700/1860	20M QPSK 1RB#0	1.000	0.538	-0.060	19.43	22.80	2.173	No
Bottom Side	19100/1900	20M QPSK 1RB#0	0.869	0.463	-0.010	19.34	22.80	1.928	No
50%RB									
Front Side	18700/1860	20M QPSK 50%RB#0	0.457	0.247	0.120	19.18	21.80	0.835	Yes
Back Side	18700/1860	20M QPSK 50%RB#0	0.450	0.258	0.130	19.18	21.80	0.823	Yes
Left Side	18700/1860	20M QPSK 50%RB#0	0.104	0.059	-0.006	19.18	21.80	0.190	Yes
Right Side	18700/1860	20M QPSK 50%RB#0	0.044	0.025	0.170	19.18	21.80	0.080	Yes
Bottom Side	18700/1860	20M QPSK 50%RB#0	0.806	0.430	-0.080	19.18	21.80	1.473	No
Bottom Side	18900/1880	20M QPSK 50%RB#0	0.755	0.402	-0.070	19.11	21.80	1.403	No
Bottom Side	19100/1900	20M QPSK 50%RB#0	0.762	0.405	-0.040	19.04	21.80	1.439	No
100%RB									
Bottom Side	18700/1860	20M QPSK 100%RB#0	0.787	0.420	-0.050	19.05	21.80	1.482	No

Table 142: 10-g Extremity SAR test reduction evaluation of LTE Band II

Note : According to the table above , 10-g Extremity SAR test is required for this frequency band.



According to the table above , only **Bottom Side** 10-g Extremity SAR test are required for this frequency band:

Test Position of 10-g Extremity with 0mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{10-g} (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
1RB									
Bottom Side	18700/1860	20M QPSK 1RB#0	3.370	1.360	0.050	22.55	22.80	1.441	22.0°C
50%RB									
Bottom Side	19100/1900	20M QPSK 50%RB#0	2.110	0.884	-0.170	21.05	21.80	1.051	22.0°C

Table 143: 10-g Extremity SAR results of LTE Band II

7.2.14 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)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
1RB									
Left Hand Touched	20175/1732.5	20M QPSK 1RB#0	0.105	0.068	0.090	22.67	23.00	0.113	21.5°C
Left Hand Touched	20050/1720	20M QPSK 1RB#0	0.091	0.059	0.160	22.42	23.00	0.104	21.5°C
Left Hand Touched	20300/1745	20M QPSK 1RB#0	0.093	0.061	0.110	22.66	23.00	0.100	21.5°C
Left Hand Tilted 15°	20175/1732.5	20M QPSK 1RB#0	0.030	0.020	0.150	22.67	23.00	0.032	21.5°C
Right Hand Touched	20175/1732.5	20M QPSK 1RB#0	0.099	0.065	0.090	22.67	23.00	0.107	21.5°C
Right Hand Tilted 15°	20175/1732.5	20M QPSK 1RB#0	0.040	0.026	-0.030	22.67	23.00	0.043	21.5°C
50%RB									
Left Hand Touched	20175/1732.5	20M QPSK 50%RB#0	0.060	0.042	0.120	21.12	22.00	0.073	21.5°C
Left Hand Tilted 15°	20175/1732.5	20M QPSK 50%RB#0	0.020	0.012	0.120	21.12	22.00	0.025	21.5°C
Right Hand Touched	20175/1732.5	20M QPSK 50%RB#0	0.063	0.041	0.050	21.12	22.00	0.077	21.5°C
Right Hand Tilted 15°	20175/1732.5	20M QPSK 50%RB#0	0.031	0.017	0.130	21.12	22.00	0.038	21.5°C

Table 144: 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)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
1RB									
Front Side	20175/1732.5	20M QPSK 1RB#0	0.474	0.282	0.060	22.67	23.00	0.511	21.8°C
Back Side	20175/1732.5	20M QPSK 50%RB#0	0.517	0.304	0.100	22.67	23.00	0.558	21.8°C
50%RB									
Front Side	20175/1732.5	20M QPSK 50%RB#0	0.330	0.193	0.090	21.12	22.00	0.404	21.8°C
Back Side	20175/1732.5	20M QPSK 50%RB#0	0.325	0.188	0.020	21.12	22.00	0.398	21.8°C

Table 145: Body-Worn SAR test results of LTE Band IV



Test Position of Hotspot with 10mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
1RB									
Front Side	20050/1720	20M QPSK 1RB#0	0.793	0.452	0.030	19.79	20.00	0.832	21.8°C
Front Side	20175/1732 .5	20M QPSK 1RB#0	0.806	0.458	-0.080	19.71	20.00	0.862	21.8°C
Front Side	20300/1745	20M QPSK 1RB#0	0.833	0.477	0.130	19.60	20.00	0.913	21.8°C
Back Side	20050/1720	20M QPSK 1RB#0	1.030	0.579	0.000	19.79	20.00	1.081	21.8°C
Back Side	20175/1732 .5	20M QPSK 1RB#0	1.050	0.596	0.130	19.71	20.00	1.123	21.8°C
Back Side	20300/1745	20M QPSK 1RB#0	1.060	0.600	0.020	19.60	20.00	1.162	21.8°C
Left Side	20050/1720	20M QPSK 1RB#0	0.219	0.125	0.120	19.79	20.00	0.230	21.8°C
Right Side	20050/1720	20M QPSK 1RB#0	0.090	0.052	0.130	19.79	20.00	0.095	21.8°C
Bottom Side	20050/1720	20M QPSK 1RB#0	1.180	0.642	0.030	19.79	20.00	1.238	21.8°C
Bottom Side	20175/1732 .5	20M QPSK 1RB#0	1.260	0.692	-0.080	19.71	20.00	1.347	21.8°C
Bottom Side	20300/1745	20M QPSK 1RB#0	1.290	0.709	0.060	19.60	20.00	1.414	21.8°C
Bottom Side-Reteaped	20300/1745	20M QPSK 1RB#0	1.230	0.676	0.070	19.60	20.00	1.349	21.8°C
50%RB									
Front Side	20300/1745	20M QPSK 50%RB#0	0.749	0.426	0.090	19.25	20.00	0.890	21.8°C
Front Side	20050/1720	20M QPSK 50%RB#0	0.723	0.412	0.100	19.21	20.00	0.867	21.8°C
Front Side	20175/1732 .5	20M QPSK 50%RB#0	0.717	0.408	0.040	19.23	20.00	0.856	21.8°C
Back Side	20300/1745	20M QPSK 50%RB#0	0.961	0.543	0.100	19.25	20.00	1.142	21.8°C
Back Side	20050/1720	20M QPSK 50%RB#0	0.922	0.519	0.000	19.21	20.00	1.106	21.8°C
Back Side	20175/1732 .5	20M QPSK 50%RB#0	0.919	0.519	0.010	19.23	20.00	1.097	21.8°C
Left Side	20300/1745	20M QPSK 50%RB#0	0.280	0.128	0.120	19.25	20.00	0.333	21.8°C
Right Side	20300/1745	20M QPSK 50%RB#0	0.099	0.056	0.180	19.25	20.00	0.117	21.8°C
Bottom Side	20300/1745	20M QPSK 50%RB#0	1.160	0.629	0.040	19.25	20.00	1.379	21.8°C
Bottom Side	20050/1720	20M QPSK 50%RB#0	1.110	0.606	0.030	19.21	20.00	1.331	21.8°C
Bottom Side	20175/1732 .5	20M QPSK 50%RB#0	1.120	0.609	0.040	19.23	20.00	1.337	21.8°C



100%RB									
Front Side	20300/1745	20M QPSK 100%RB#0	0.727	0.414	-0.050	19.18	20.00	0.878	21.8°C
Back Side	20300/1745	20M QPSK 100%RB#0	0.932	0.526	0.040	19.18	20.00	1.126	21.8°C
Bottom Side	20300/1745	20M QPSK 100%RB#0	1.180	0.641	-0.080	19.18	20.00	1.425	21.8°C

Table 146: Hotspot SAR test results of LTE Band IV

Per KDB648474D04, when hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg; 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)	Conduct Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	10-g Extremity SAR Exclusion
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
1RB									
Front Side	20050/1720	20M QPSK 1RB#0	0.793	0.452	0.030	19.79	23.00	1.661	No
Front Side	20175/1732 .5	20M QPSK 1RB#0	0.806	0.458	-0.080	19.71	23.00	1.719	No
Front Side	20300/1745	20M QPSK 1RB#0	0.833	0.477	0.130	19.60	23.00	1.822	No
Back Side	20050/1720	20M QPSK 1RB#0	1.030	0.579	0.000	19.79	23.00	2.157	No
Back Side	20175/1732 .5	20M QPSK 1RB#0	1.050	0.596	0.130	19.71	23.00	2.240	No
Back Side	20300/1745	20M QPSK 1RB#0	1.060	0.600	0.020	19.60	23.00	2.319	No
Left Side	20050/1720	20M QPSK 1RB#0	0.219	0.125	0.120	19.79	23.00	0.459	Yes
Right Side	20050/1720	20M QPSK 1RB#0	0.090	0.052	0.130	19.79	23.00	0.189	Yes
Bottom Side	20050/1720	20M QPSK 1RB#0	1.180	0.642	0.030	19.79	23.00	2.471	No
Bottom Side	20175/1732 .5	20M QPSK 1RB#0	1.260	0.692	-0.080	19.71	23.00	2.688	No
Bottom Side	20300/1745	20M QPSK 1RB#0	1.290	0.709	0.060	19.60	23.00	2.822	No
Bottom Side-Reteaped	20300/1745	20M QPSK 1RB#0	1.230	0.676	0.070	19.60	23.00	2.691	No
50%RB									
Front Side	20300/1745	20M QPSK 50%RB#0	0.749	0.426	0.090	19.25	22.00	1.411	No
Front Side	20050/1720	20M QPSK 50%RB#0	0.723	0.412	0.100	19.21	22.00	1.374	No
Front Side	20175/1732 .5	20M QPSK 50%RB#0	0.717	0.408	0.040	19.23	22.00	1.357	No
Back Side	20300/1745	20M QPSK 50%RB#0	0.961	0.543	0.100	19.25	22.00	1.810	No

Back Side	20050/1720	20M QPSK 50%RB#0	0.922	0.519	0.000	19.21	22.00	1.753	No
Back Side	20175/1732 .5	20M QPSK 50%RB#0	0.919	0.519	0.010	19.23	22.00	1.739	No
Left Side	20300/1745	20M QPSK 50%RB#0	0.280	0.128	0.120	19.25	22.00	0.527	Yes
Right Side	20300/1745	20M QPSK 50%RB#0	0.099	0.056	0.180	19.25	22.00	0.186	Yes
Bottom Side	20300/1745	20M QPSK 50%RB#0	1.160	0.629	0.040	19.25	22.00	2.185	No
Bottom Side	20050/1720	20M QPSK 50%RB#0	1.110	0.606	0.030	19.21	22.00	2.110	No
Bottom Side	20175/1732 .5	20M QPSK 50%RB#0	1.120	0.609	0.040	19.23	22.00	2.119	No
100%RB									
Front Side	20300/1745	20M QPSK 100%RB#0	0.727	0.414	-0.050	19.18	22.00	1.392	No
Back Side	20300/1745	20M QPSK 100%RB#0	0.932	0.526	0.040	19.18	22.00	1.784	No
Bottom Side	20300/1745	20M QPSK 100%RB#0	1.180	0.641	-0.080	19.18	22.00	2.259	No

Table 147: 10-g Extremity SAR test reduction evaluation of LTE Band IV

Note : According to the table above , 10-g Extremity SAR test is required for this frequency band.

According to the table above , only **Front Side** and **Back Side** and **Bottom Side** 10-g Extremity SAR test are required for this frequency band:

Test Position of 10-g Extremity with 0mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{10-g} (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
1RB									
Front Side	20175/1732 .5	20M QPSK 1RB#0	7.480	3.350	0.150	22.67	23.00	3.614	21.8°C
Front Side	20050/1720	20M QPSK 1RB#0	7.160	3.170	0.130	22.42	23.00	3.623	21.8°C
Front Side	20300/1745	20M QPSK 1RB#0	7.570	3.340	0.020	22.66	23.00	3.612	21.8°C
Front Side-Repeated	20175/1732 .5	20M QPSK 1RB#0	7.380	3.260	0.190	22.66	23.00	3.525	21.8°C
Back Side	20175/1732 .5	20M QPSK 1RB#0	6.700	2.990	0.120	22.67	23.00	3.226	21.8°C
Back Side	20050/1720	20M QPSK 1RB#0	6.830	3.050	0.160	22.42	23.00	3.486	21.8°C
Back Side	20300/1745	20M QPSK 1RB#0	7.040	3.140	0.000	22.66	23.00	3.396	21.8°C
Bottom Side	20175/1732 .5	20M QPSK 1RB#0	6.250	2.580	0.150	22.67	23.00	2.784	21.8°C
Bottom Side	20050/1720	20M QPSK 1RB#0	6.290	2.590	-0.140	22.42	23.00	2.960	21.8°C
Bottom Side	20300/1745	20M QPSK 1RB#0	6.050	2.530	0.100	22.66	23.00	2.736	21.8°C

50%RB									
Front Side	20175/1732 .5	20M QPSK 50%RB#0	4.730	2.110	0.150	21.12	22.00	2.584	21.8°C
Front Side	20050/1720	20M QPSK 50%RB#0	4.510	2.010	0.150	20.93	22.00	2.572	21.8°C
Front Side	20300/1745	20M QPSK 50%RB#0	5.090	2.260	0.170	21.06	22.00	2.806	21.8°C
Back Side	20175/1732 .5	20M QPSK 50%RB#0	4.910	2.110	0.120	21.12	22.00	2.584	21.8°C
Back Side	20050/1720	20M QPSK 50%RB#0	4.650	2.010	0.170	20.93	22.00	2.572	21.8°C
Back Side	20300/1745	20M QPSK 50%RB#0	5.170	2.220	0.180	21.06	22.00	2.756	21.8°C
Bottom Side	20175/1732 .5	20M QPSK 50%RB#0	4.190	1.660	0.050	21.12	22.00	2.033	21.8°C
Bottom Side	20050/1720	20M QPSK 50%RB#0	4.480	1.860	-0.110	20.93	22.00	2.380	21.8°C
Bottom Side	20300/1745	20M QPSK 50%RB#0	4.110	1.700	-0.130	21.06	22.00	2.111	21.8°C
100%RB									
Front Side	20175/1732 .5	20M QPSK 100%RB#0	4.810	2.130	0.010	20.98	22.00	2.694	21.8°C
Back Side	20175/1732 .5	20M QPSK 100%RB#0	4.850	2.090	0.000	20.98	22.00	2.643	21.8°C
Bottom Side	20175/1732 .5	20M QPSK 100%RB#0	4.210	1.710	-0.110	20.98	22.00	2.163	21.8°C

Table 148: 10-g Extremity SAR results of LTE Band IV

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

Test Position of Head	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
1RB									
Left Hand Touched	20600/844	10M QPSK 1RB#0	0.183	0.127	0.010	22.40	23.50	0.236	21.4°C
Left Hand Tilted 15°	20600/844	10M QPSK 1RB#0	0.127	0.086	0.090	22.40	23.50	0.164	21.4°C
Right Hand Touched	20600/844	10M QPSK 1RB#0	0.247	0.193	0.190	22.40	23.50	0.318	21.4°C
Right Hand Tilted 15°	20600/844	10M QPSK 1RB#0	0.120	0.084	0.030	22.40	23.50	0.155	21.4°C
Right Hand Touched	20450/829	10M QPSK 1RB#25	0.211	0.146	0.190	22.37	23.50	0.274	21.4°C
Right Hand Touched	20525/836.5	10M QPSK 1RB#49	0.242	0.191	0.200	22.39	23.50	0.312	21.4°C
50%RB									
Left Hand Touched	20525/836.5	10M QPSK 50%RB#0	0.142	0.099	0.130	21.34	22.50	0.185	21.4°C
Left Hand Tilted 15°	20525/836.5	10M QPSK 50%RB#0	0.100	0.067	0.180	21.34	22.50	0.130	21.4°C
Right Hand Touched	20525/836.5	10M QPSK 50%RB#0	0.179	0.124	0.110	21.34	22.50	0.234	21.4°C
Right Hand Tilted 15°	20525/836.5	10M QPSK 50%RB#0	0.086	0.061	0.150	21.34	22.50	0.112	21.4°C

Table 149: Head SAR test results of LTE Band V

Test Position of Body-Worn with 15mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
1RB									
Front Side	20600/844	10M QPSK 1RB#0	0.230	0.176	-0.090	22.40	23.50	0.296	21.5°C
Back Side	20600/844	10M QPSK 1RB#0	0.214	0.164	0.050	22.40	23.50	0.276	21.5°C
50%RB									
Front Side	20525/836.5	10M QPSK 50%RB#0	0.155	0.109	-0.020	21.34	22.50	0.202	21.5°C
Back Side	20525/836.5	10M QPSK 50%RB#0	0.160	0.113	0.020	21.34	22.50	0.209	21.5°C

Table 150: Body-Worn SAR test results of LTE Band V

Test Position of Hotspot with 10mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
1RB									
Front Side	20600/844	10M QPSK 1RB#49	0.410	0.231	0.010	21.23	22.50	0.549	21.5°C
Back Side	20600/844	10M QPSK 1RB#49	0.431	0.243	0.060	21.23	22.50	0.577	21.5°C
Left Side	20600/844	10M QPSK 1RB#49	0.140	0.094	-0.030	21.23	22.50	0.188	21.5°C
Right Side	20600/844	10M QPSK 1RB#49	0.331	0.225	0.010	21.23	22.50	0.443	21.5°C
Bottom Side	20600/844	10M QPSK 1RB#49	0.230	0.115	-0.020	21.23	22.50	0.308	21.5°C
50%RB									
Front Side	20600/844	10M QPSK 50%RB#0	0.360	0.225	0.040	21.22	21.50	0.384	21.5°C
Back Side	20600/844	10M QPSK 50%RB#0	0.424	0.264	0.030	21.22	21.50	0.452	21.5°C
Left Side	20600/844	10M QPSK 50%RB#0	0.125	0.084	0.040	21.22	21.50	0.133	21.5°C
Right Side	20600/844	10M QPSK 50%RB#0	0.307	0.206	0.010	21.22	21.50	0.327	21.5°C
Bottom Side	20600/844	10M QPSK 50%RB#0	0.195	0.099	0.000	21.22	21.50	0.208	21.5°C

Table 151: Hotspot SAR test results of LTE Band V

Per KDB648474D04, when hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg; 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)	Conduct Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	10-g Extremity SAR Exclusion
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
1RB									
Front Side	20600/844	10M QPSK 1RB#49	0.410	0.231	0.010	21.23	23.50	0.691	Yes
Back Side	20600/844	10M QPSK 1RB#49	0.431	0.243	0.060	21.23	23.50	0.727	Yes
Left Side	20600/844	10M QPSK 1RB#49	0.140	0.094	-0.030	21.23	23.50	0.236	Yes
Right Side	20600/844	10M QPSK 1RB#49	0.331	0.225	0.010	21.23	23.50	0.558	Yes
Bottom Side	20600/844	10M QPSK 1RB#49	0.230	0.115	-0.020	21.23	23.50	0.388	Yes
50%RB									
Front Side	20600/844	10M QPSK 50%RB#0	0.360	0.225	0.040	21.22	22.50	0.483	Yes
Back Side	20600/844	10M QPSK 50%RB#0	0.424	0.264	0.030	21.22	22.50	0.569	Yes
Left Side	20600/844	10M QPSK 50%RB#0	0.125	0.084	0.040	21.22	22.50	0.168	Yes
Right Side	20600/844	10M QPSK 50%RB#0	0.307	0.206	0.010	21.22	22.50	0.412	Yes
Bottom Side	20600/844	10M QPSK 50%RB#0	0.195	0.099	0.000	21.22	22.50	0.262	Yes

Table 152: 10-g Extremity SAR test reduction evaluation of LTE Band V

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

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

Test Position of Head	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
1RB									
Left Hand Touched	21350/2560	20M QPSK 1RB#50	0.326	0.183	0.040	22.13	22.80	0.380	21.5°C
Left Hand Tilted 15°	21350/2560	20M QPSK 1RB#50	0.082	0.043	-0.060	22.13	22.80	0.095	21.5°C
Right Hand Touched	21350/2560	20M QPSK 1RB#50	0.169	0.091	0.020	22.13	22.80	0.197	21.5°C
Right Hand Tilted 15°	21350/2560	20M QPSK 1RB#50	0.108	0.054	-0.010	22.13	22.80	0.126	21.5°C
Left Hand Touched	20850/2510	20M QPSK 1RB#50	0.426	0.242	-0.150	22.07	22.80	0.504	21.5°C
Left Hand Touched	21100/2535	20M QPSK 1RB#50	0.405	0.229	0.050	22.12	22.80	0.474	21.5°C
50%RB									
Left Hand Touched	21100/2535	20M QPSK 50%RB#25	0.305	0.165	0.120	21.16	21.80	0.353	21.5°C
Left Hand Tilted 15°	21100/2535	20M QPSK 50%RB#25	0.080	0.042	0.090	21.16	21.80	0.092	21.5°C
Right Hand Touched	21100/2535	20M QPSK 50%RB#25	0.143	0.079	-0.040	21.16	21.80	0.166	21.5°C
Right Hand Tilted 15°	21100/2535	20M QPSK 50%RB#25	0.114	0.057	0.020	21.16	21.80	0.132	21.5°C

Table 153: Head SAR test results of LTE Band VII

Test Position of Body-Worn with 15mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
1RB									
Front Side	21350/2560	20M QPSK 1RB#50	0.423	0.220	0.150	22.13	22.80	0.494	21.5°C
Back Side	21350/2560	20M QPSK 1RB#50	0.380	0.193	0.160	22.13	22.80	0.443	21.5°C
50%RB									
Front Side	21100/2535	20M QPSK 50%RB#25	0.322	0.175	0.150	21.16	21.80	0.373	21.5°C
Back Side	21100/2535	20M QPSK 50%RB#25	0.294	0.159	0.180	21.16	21.80	0.341	21.5°C

Table 154: Body-Worn SAR test results of LTE Band VII

Test Position of Hotspot with 10mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
1RB									
Front Side	20850/2510	20M QPSK 1RB#50	0.450	0.226	-0.080	19.41	20.00	0.515	21.5°C
Back Side	20850/2510	20M QPSK 1RB#50	0.551	0.254	0.100	19.41	20.00	0.631	21.5°C
Left Side	20850/2510	20M QPSK 1RB#50	0.227	0.116	0.150	19.41	20.00	0.260	21.5°C
Right Side	20850/2510	20M QPSK 1RB#50	0.040	0.024	0.170	19.41	20.00	0.046	21.5°C
Bottom Side	20850/2510	20M QPSK 1RB#50	1.160	0.547	0.010	19.41	20.00	1.329	21.5°C
Bottom Side-repeated	20850/2510	20M QPSK 1RB#50	1.150	0.538	-0.100	19.41	20.00	1.317	21.5°C
Bottom Side	21100/2535	20M QPSK 1RB#50	1.060	0.500	-0.080	19.39	20.00	1.220	21.5°C
Bottom Side	21350/2560	20M QPSK 1RB#50	0.957	0.452	0.000	19.40	20.00	1.099	21.5°C
50%RB									
Front Side	21350/2560	20M QPSK 50%RB#25	0.412	0.216	0.080	19.39	20.00	0.474	21.5°C
Back Side	21350/2560	20M QPSK 50%RB#25	0.437	0.211	-0.100	19.39	20.00	0.503	21.5°C
Left Side	21350/2560	20M QPSK 50%RB#25	0.208	0.107	-0.150	19.39	20.00	0.239	21.5°C
Right Side	21350/2560	20M QPSK 50%RB#25	0.034	0.020	0.140	19.39	20.00	0.039	21.5°C
Bottom Side	21350/2560	20M QPSK 50%RB#25	0.968	0.452	0.060	19.39	20.00	1.114	21.5°C
Bottom Side	20850/2510	20M QPSK 50%RB#25	1.140	0.532	-0.130	19.33	20.00	1.330	21.5°C
Bottom Side	21100/2535	20M QPSK 50%RB#0	1.120	0.520	-0.060	19.36	20.00	1.298	21.5°C
100%RB									
Bottom Side	21100/2535	20M QPSK 100%RB#0	1.050	0.491	-0.090	19.25	20.00	1.248	21.5°C

Table 155: Hotspot SAR test results of LTE Band VII

Per KDB648474D04, when hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg; 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)	Conduct Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	10-g Extremity SAR Exclusion
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
1RB									
Front Side	20850/2510	20M QPSK 1RB#50	0.450	0.226	-0.080	19.41	22.80	0.982	Yes
Back Side	20850/2510	20M QPSK 1RB#50	0.551	0.254	0.100	19.41	22.80	1.203	No
Left Side	20850/2510	20M QPSK 1RB#50	0.227	0.116	0.150	19.41	22.80	0.495	Yes
Right Side	20850/2510	20M QPSK 1RB#50	0.040	0.024	0.170	19.41	22.80	0.088	Yes
Bottom Side	20850/2510	20M QPSK 1RB#50	1.160	0.547	0.010	19.41	22.80	2.532	No
Bottom Side-repeated	20850/2510	20M QPSK 1RB#50	1.150	0.538	-0.100	19.41	22.80	2.510	No
Bottom Side	21100/2535	20M QPSK 1RB#50	1.060	0.500	-0.080	19.39	22.80	2.324	No
Bottom Side	21350/2560	20M QPSK 1RB#50	0.957	0.452	0.000	19.40	22.80	2.094	No
50%RB									
Front Side	21350/2560	20M QPSK 50%RB#25	0.412	0.216	0.080	19.39	21.80	0.718	Yes
Back Side	21350/2560	20M QPSK 50%RB#25	0.437	0.211	-0.100	19.39	21.80	0.761	Yes
Left Side	21350/2560	20M QPSK 50%RB#25	0.208	0.107	-0.150	19.39	21.80	0.362	Yes
Right Side	21350/2560	20M QPSK 50%RB#25	0.034	0.020	0.140	19.39	21.80	0.058	Yes
Bottom Side	21350/2560	20M QPSK 50%RB#25	0.968	0.452	0.060	19.39	21.80	1.686	No
Bottom Side	20850/2510	20M QPSK 50%RB#25	1.140	0.532	-0.130	19.33	21.80	2.013	No
Bottom Side	21100/2535	20M QPSK 50%RB#0	1.120	0.520	-0.060	19.36	21.80	1.964	No
100%RB									
Bottom Side	21100/2535	20M QPSK 100%RB#0	1.050	0.491	-0.090	19.25	21.80	1.889	No

Table 156: 10-g Extremity SAR test reduction evaluation of LTE Band VII

Note : According to the table above , 10-g Extremity SAR test is required for this frequency band.

According to the table above , only **Back Side** and **Bottom Side** 10-g Extremity SAR test are required for this frequency band:

Test Position of 10-g Extremity with 0mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{10-g} (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
1RB									
Back Side	21350/2560	20M QPSK 1RB#50	9.290	3.100	0.120	22.13	22.80	3.617	21.5°C
Back Side-reteaped	21350/2560	20M QPSK 1RB#50	9.160	3.050	0.090	22.13	22.80	3.559	21.5°C
Back Side	20850/2510	20M QPSK 1RB#50	9.140	3.010	0.070	22.07	22.80	3.561	21.5°C
Back Side	21100/2535	20M QPSK 1RB#50	9.270	3.060	0.120	22.12	22.80	3.579	21.5°C
Bottom Side	21350/2560	20M QPSK 1RB#50	3.860	1.160	-0.180	22.13	22.80	1.353	21.5°C
50%RB									
Back Side	21100/2535	20M QPSK 50%RB#25	7.710	2.520	0.120	21.16	21.80	2.920	21.5°C
Back Side	20850/2510	20M QPSK 50%RB#25	7.450	2.430	0.180	20.98	21.80	2.935	21.5°C
Back Side	21350/2560	20M QPSK 50%RB#25	7.450	2.460	0.120	21.05	21.80	2.924	21.5°C
Bottom Side	21100/2535	20M QPSK 50%RB#25	3.310	0.992	-0.120	21.16	21.80	1.150	21.5°C
100%RB									
Back Side	21100/2535	20M QPSK 100%RB#0	7.200	2.380	0.140	21.07	21.80	2.816	21.5°C

Table 157: 10-g Extremity SAR results of LTE Band VII

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

Test Position of Head	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
1RB									
Left Hand Touched	23800/711	10M QPSK 1RB#25	0.116	0.093	0.150	22.38	23.50	0.150	21.4°C
Left Hand Tilted 15°	23800/711	10M QPSK 1RB#25	0.094	0.062	0.160	22.38	23.50	0.122	21.4°C
Right Hand Touched	23800/711	10M QPSK 1RB#25	0.141	0.112	-0.060	22.38	23.50	0.182	21.4°C
Right Hand Tilted 15°	23800/711	10M QPSK 1RB#25	0.061	0.048	-0.180	22.38	23.50	0.079	21.4°C
Right Hand Touched	23780/709	10M QPSK 1RB#0	0.126	0.101	0.020	22.32	23.50	0.165	21.4°C
Right Hand Touched	23790/710	10M QPSK 1RB#49	0.140	0.112	0.130	22.38	23.50	0.181	21.4°C
50%RB									
Left Hand Touched	23790/710	10M QPSK 50%RB#13	0.086	0.606	0.080	21.31	22.50	0.114	21.4°C
Left Hand Tilted 15°	23790/710	10M QPSK 50%RB#13	0.071	0.045	0.180	21.31	22.50	0.094	21.4°C
Right Hand Touched	23790/710	10M QPSK 50%RB#13	0.104	0.073	0.180	21.31	22.50	0.137	21.4°C
Right Hand Tilted 15°	23790/710	10M QPSK 50%RB#13	0.051	0.034	0.070	21.31	22.50	0.066	21.4°C

Table 158: Head SAR test results of LTE Band XVII

Test Position of Body-Worn with 15mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
1RB									
Front Side	23800/711	10M QPSK 1RB#25	0.170	0.134	0.060	22.38	23.50	0.220	21.4°C
Back Side	23800/711	10M QPSK 1RB#25	0.179	0.141	-0.050	22.38	23.50	0.232	21.4°C
50%RB									
Front Side	23790/710	10M QPSK 50%RB#13	0.130	0.094	-0.010	21.31	22.50	0.171	21.4°C
Back Side	23790/710	10M QPSK 50%RB#13	0.136	0.098	-0.100	21.31	22.50	0.179	21.4°C

Table 159: Body-Worn SAR test results of LTE Band XVII

Test Position of Hotspot with 10mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
1RB									
Front Side	23790/710	10M QPSK 1RB#49	0.152	0.109	0.060	21.38	22.50	0.197	21.4°C
Back Side	23790/710	10M QPSK 1RB#49	0.176	0.138	-0.060	21.38	22.50	0.228	21.4°C
Left Side	23790/710	10M QPSK 1RB#49	0.105	0.072	-0.070	21.38	22.50	0.136	21.4°C
Right Side	23790/710	10M QPSK 1RB#49	0.225	0.160	-0.160	21.38	22.50	0.291	21.4°C
Bottom Side	23790/710	10M QPSK 1RB#49	0.079	0.043	-0.040	21.38	22.50	0.103	21.4°C
50%RB									
Front Side	23790/710	10M QPSK 50%RB#25	0.147	0.106	-0.060	21.11	21.50	0.161	21.4°C
Back Side	23790/710	10M QPSK 50%RB#25	0.175	0.134	-0.030	21.11	21.50	0.191	21.4°C
Left Side	23790/710	10M QPSK 50%RB#25	0.104	0.071	-0.100	21.11	21.50	0.114	21.4°C
Right Side	23790/710	10M QPSK 50%RB#25	0.218	0.155	-0.130	21.11	21.50	0.238	21.4°C
Bottom Side	23790/710	10M QPSK 50%RB#25	0.074	0.040	-0.010	21.11	21.50	0.081	21.4°C

Table 160: Hotspot SAR test results of LTE Band XVII

Per KDB648474D04, when hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg; 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)	Conduct Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	10-g Extremity SAR Exclusion
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
1RB									
Front Side	23790/710	10M QPSK 1RB#49	0.152	0.109	0.060	21.38	23.50	0.248	Yes
Back Side	23790/710	10M QPSK 1RB#49	0.176	0.138	-0.060	21.38	23.50	0.287	Yes
Left Side	23790/710	10M QPSK 1RB#49	0.105	0.072	-0.070	21.38	23.50	0.171	Yes
Right Side	23790/710	10M QPSK 1RB#49	0.225	0.160	-0.160	21.38	23.50	0.367	Yes
Bottom Side	23790/710	10M QPSK 1RB#49	0.079	0.043	-0.040	21.38	23.50	0.129	Yes
50%RB									
Front Side	23790/710	10M QPSK 50%RB#25	0.147	0.106	-0.060	21.11	22.50	0.202	Yes
Back Side	23790/710	10M QPSK 50%RB#25	0.175	0.134	-0.030	21.11	22.50	0.241	Yes
Left Side	23790/710	10M QPSK 50%RB#25	0.104	0.071	-0.100	21.11	22.50	0.143	Yes
Right Side	23790/710	10M QPSK 50%RB#25	0.218	0.155	-0.130	21.11	22.50	0.300	Yes
Bottom Side	23790/710	10M QPSK 50%RB#25	0.074	0.040	-0.010	21.11	22.50	0.102	Yes

Table 161: 10-g Extremity SAR test reduction evaluation of LTE Band XVII

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

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

Test Position of Head	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
1RB									
Left Hand Touched	37850/2580	20M QPSK 1RB#0	0.199	0.109	-0.120	21.96	22.70	0.236	21.7°C
Left Hand Tilted 15°	37850/2580	20M QPSK 1RB#0	0.037	0.021	0.110	21.96	22.70	0.044	21.7°C
Right Hand Touched	37850/2580	20M QPSK 1RB#0	0.080	0.046	0.190	21.96	22.70	0.095	21.7°C
Right Hand Tilted 15°	37850/2580	20M QPSK 1RB#0	0.054	0.029	0.170	21.96	22.70	0.065	21.7°C
Left Hand Touched	38000/2595	20M QPSK 1RB#0	0.152	0.080	-0.130	21.92	22.70	0.182	21.7°C
Left Hand Touched	38150/2610	20M QPSK 1RB#0	0.140	0.059	0.160	21.88	22.70	0.169	21.7°C
50%RB									
Left Hand Touched	37850/2580	20M QPSK 50%RB#0	0.155	0.081	0.120	20.85	21.70	0.189	21.7°C
Left Hand Tilted 15°	37850/2580	20M QPSK 50%RB#0	0.030	0.017	-0.100	20.85	21.70	0.036	21.7°C
Right Hand Touched	37850/2580	20M QPSK 50%RB#0	0.043	0.016	-0.020	20.85	21.70	0.053	21.7°C
Right Hand Tilted 15°	37850/2580	20M QPSK 50%RB#0	0.002	<0.001	0.180	20.85	21.70	0.002	21.7°C

Table 162: Head SAR test results of LTE Band XXXVIII

Test Position of Body-Worn with 15mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
1RB									
Front Side	37850/2580	20M QPSK 1RB#0	0.120	0.058	-0.030	21.96	22.70	0.142	21.3°C
Back Side	37850/2580	20M QPSK 1RB#0	0.102	0.053	0.140	21.96	22.70	0.121	21.3°C
50%RB									
Front Side	37850/2580	20M QPSK 50%RB#0	0.096	0.051	-0.120	20.85	21.70	0.117	21.3°C
Back Side	37850/2580	20M QPSK 50%RB#0	0.088	0.044	-0.030	20.85	21.70	0.107	21.3°C

Table 163: Body-Worn SAR test results of LTE Band XXXVIII

Test Position of Hotspot with 10mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
1RB									
Front Side	37850/2580	20M QPSK 1RB#0	0.258	0.131	-0.040	21.96	22.70	0.306	21.3°C
Back Side	37850/2580	20M QPSK 1RB#0	0.246	0.122	-0.150	21.96	22.70	0.292	21.3°C
Left Side	37850/2580	20M QPSK 1RB#0	0.139	0.072	0.180	21.96	22.70	0.165	21.3°C
Right Side	37850/2580	20M QPSK 1RB#0	0.033	0.016	-0.150	21.96	22.70	0.039	21.3°C
Bottom Side	37850/2580	20M QPSK 1RB#0	0.492	0.238	-0.130	21.96	22.70	0.583	21.3°C
50%RB									
Front Side	37850/2580	20M QPSK 50%RB#0	0.207	0.105	-0.080	20.85	21.70	0.252	21.3°C
Back Side	37850/2580	20M QPSK 50%RB#0	0.197	0.097	-0.150	20.85	21.70	0.240	21.3°C
Left Side	37850/2580	20M QPSK 50%RB#0	0.113	0.058	-0.140	20.85	21.70	0.137	21.3°C
Right Side	37850/2580	20M QPSK 50%RB#0	0.029	0.014	0.020	20.85	21.70	0.035	21.3°C
Bottom Side	37850/2580	20M QPSK 50%RB#0	0.405	0.188	-0.080	20.85	21.70	0.493	21.3°C

Table 164: Hotspot SAR test results of LTE Band XXXVIII

Note: Per KDB648474 D04, 10-g Extremity SAR was not evaluated for this frequency band since the hotspot 1-g reported SAR < 1.2W/kg.

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

Test Position of Head	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
1RB									
Left Hand Touched	41055/2636 .5	20M QPSK 1RB#50	0.165	0.090	-0.020	22.26	22.70	0.183	21.5°C
Left Hand Tilted 15°	41055/2636 .5	20M QPSK 1RB#50	0.032	0.017	0.180	22.26	22.70	0.035	21.5°C
Right Hand Touched	41055/2636 .5	20M QPSK 1RB#50	0.075	0.043	0.130	22.26	22.70	0.083	21.5°C
Right Hand Tilted 15°	41055/2636 .5	20M QPSK 1RB#50	0.051	0.027	0.170	22.26	22.70	0.056	21.5°C
Left Hand Touched	39750/2506	20M QPSK 1RB#0	0.243	0.139	0.130	21.70	22.70	0.306	21.5°C
Left Hand Touched	40185/2549 .5	20M QPSK 1RB#50	0.221	0.124	0.160	21.76	22.70	0.274	21.5°C
Left Hand Touched	40620/2593	20M QPSK 1RB#50	0.186	0.102	0.170	22.03	22.70	0.217	21.5°C
Left Hand Touched	41490/2680	20M QPSK 1RB#0	0.151	0.081	0.140	21.93	22.70	0.180	21.5°C
50%RB									
Left Hand Touched	41055/2636 .5	20M QPSK 50%RB#0	0.127	0.071	-0.180	21.39	21.70	0.136	21.5°C
Left Hand Tilted 15°	41055/2636 .5	20M QPSK 50%RB#0	0.030	0.018	0.120	21.39	21.70	0.032	21.5°C
Right Hand Touched	41055/2636 .5	20M QPSK 50%RB#0	0.062	0.033	0.020	21.39	21.70	0.066	21.5°C
Right Hand Tilted 15°	41055/2636 .5	20M QPSK 50%RB#0	0.043	0.022	0.050	21.39	21.70	0.046	21.5°C

Table 165: Head SAR test results of LTE Band XLI

Test Position of Body-Worn with 15mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
1RB									
Front Side	41055/2636. 5	20M QPSK 1RB#50	0.185	0.095	0.180	22.26	22.70	0.205	21.5°C
Back Side	41055/2636. 5	20M QPSK 1RB#50	0.228	0.112	0.180	22.26	22.70	0.252	21.5°C
50%RB									
Front Side	41055/2636. 5	20M QPSK 50%RB#0	0.158	0.084	-0.080	21.39	21.70	0.170	21.5°C
Back Side	41055/2636. 5	20M QPSK 50%RB#0	0.186	0.098	0.150	21.39	21.70	0.200	21.5°C

Table 166: Body-Worn SAR test results of LTE Band XLI

Test Position of Hotspot with 10mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
1RB									
Front Side	40185/2549 .5	20M QPSK 1RB#50	0.233	0.113	0.010	18.59	20.00	0.322	21.5°C
Back Side	40185/2549 .5	20M QPSK 1RB#50	0.209	0.103	-0.140	18.59	20.00	0.289	21.5°C
Left Side	40185/2549 .5	20M QPSK 1RB#50	0.103	0.052	-0.110	18.59	20.00	0.143	21.5°C
Right Side	40185/2549 .5	20M QPSK 1RB#50	0.039	0.024	0.050	18.59	20.00	0.053	21.5°C
Bottom Side	40185/2549 .5	20M QPSK 1RB#50	0.526	0.249	-0.180	18.59	20.00	0.728	21.5°C
Bottom Side	39750/2506	20M QPSK 1RB#0	0.648	0.305	0.030	18.51	20.00	0.913	21.5°C
Bottom Side	40620/2593	20M QPSK 1RB#0	0.484	0.227	-0.140	18.48	20.00	0.687	21.5°C
Bottom Side	41055/2636 .5	20M QPSK 1RB#50	0.441	0.206	-0.110	18.30	20.00	0.652	21.5°C
Bottom Side	41490/2680	20M QPSK 1RB#50	0.450	0.209	-0.140	18.34	20.00	0.659	21.5°C
50%RB									
Front Side	40185/2549 .5	20M QPSK 50%RB#25	0.268	0.126	0.110	18.89	20.00	0.346	21.5°C
Back Side	40185/2549 .5	20M QPSK 50%RB#25	0.243	0.116	-0.030	18.89	20.00	0.314	21.5°C
Left Side	40185/2549 .5	20M QPSK 50%RB#25	0.110	0.055	-0.140	18.89	20.00	0.142	21.5°C
Right Side	40185/2549 .5	20M QPSK 50%RB#25	0.041	0.023	0.100	18.89	20.00	0.053	21.5°C
Bottom Side	40185/2549 .5	20M QPSK 50%RB#25	0.561	0.265	0.130	18.89	20.00	0.724	21.5°C
100%RB									
Bottom Side	39750/2506	20M QPSK 100%RB#0	0.646	0.306	-0.190	18.74	20.00	0.863	21.5°C

Table 167: Hotspot SAR test results of LTE Band XLI

Per KDB648474D04, when hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg; 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)	Conduct Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	10-g Extremity SAR Exclusion
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
1RB									
Front Side	40185/2549.5	20M QPSK 1RB#50	0.233	0.113	0.010	18.59	22.70	0.600	Yes
Back Side	40185/2549.5	20M QPSK 1RB#50	0.209	0.103	-0.140	18.59	22.70	0.538	Yes
Left Side	40185/2549.5	20M QPSK 1RB#50	0.103	0.052	-0.110	18.59	22.70	0.265	Yes
Right Side	40185/2549.5	20M QPSK 1RB#50	0.039	0.024	0.050	18.59	22.70	0.099	Yes
Bottom Side	40185/2549.5	20M QPSK 1RB#50	0.526	0.249	-0.180	18.59	22.70	1.355	No
Bottom Side	39750/2506	20M QPSK 1RB#0	0.648	0.305	0.030	18.51	22.70	1.700	No
Bottom Side	40620/2593	20M QPSK 1RB#0	0.484	0.227	-0.140	18.48	22.70	1.279	No
Bottom Side	41055/2636.5	20M QPSK 1RB#50	0.441	0.206	-0.110	18.30	22.70	1.215	No
Bottom Side	41490/2680	20M QPSK 1RB#50	0.450	0.209	-0.140	18.34	22.70	1.228	No
50%RB									
Front Side	40185/2549.5	20M QPSK 50%RB#25	0.268	0.126	0.110	18.89	21.70	0.512	Yes
Back Side	40185/2549.5	20M QPSK 50%RB#25	0.243	0.116	-0.030	18.89	21.70	0.464	Yes
Left Side	40185/2549.5	20M QPSK 50%RB#25	0.110	0.055	-0.140	18.89	21.70	0.210	Yes
Right Side	40185/2549.5	20M QPSK 50%RB#25	0.041	0.023	0.100	18.89	21.70	0.078	Yes
Bottom Side	40185/2549.5	20M QPSK 50%RB#25	0.561	0.265	0.130	18.89	21.70	1.071	Yes
100%RB									
Bottom Side	39750/2506	20M QPSK 100%RB#0	0.646	0.306	-0.190	18.74	21.70	1.277	No

Table 168: 10-g Extremity SAR test reduction evaluation of LTE Band XLI

Note : According to the table above , 10-g Extremity SAR test is required for this frequency band.

According to the table above , only **Bottom Side** 10-g Extremity SAR test are required for this frequency band:

Test Position of 10-g Extremity with 0mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{10-g} (W/kg)	Liquid Temp.
			1-g	10-g					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
1RB									
Bottom Side	41055/2636 .5	20M QPSK 1RB#50	1.450	0.526	-0.160	22.26	22.70	0.582	21.4°C
50%RB									
Bottom Side	41055/2636 .5	20M QPSK 50%RB#0	1.220	0.439	-0.090	21.39	21.70	0.471	21.4°C

Table 169: 10-g Extremity SAR results of LTE Band XLI

7.2.20 SAR measurement Result of WiFi 2.4G

Test Position of Head	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g Area Scan	1-g Zoom Scan					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
CORE0(Power setting Level 13)									
Left Hand Touched	6/2437	802.11 b	0.113	/	0.150	13.24	14.00	/	21.6°C
Left Hand Tilted 15°	6/2437	802.11 b	0.079	/	0.140	13.24	14.00	/	21.6°C
Right Hand Touched	6/2437	802.11 b	0.491	0.504	0.070	13.24	14.00	0.600	21.6°C
Right Hand Tilted 15°	6/2437	802.11 b	0.329	0.290	0.090	13.24	14.00	0.345	21.6°C
Right Hand Touched	1/2412	802.11 b	0.461	0.449	0.130	12.62	14.00	0.617	21.6°C
Right Hand Touched	11/2462	802.11 b	0.399	0.389	0.140	12.35	14.00	0.569	21.6°C
CORE1(Power setting Level 13)									
Left Hand Touched	6/2437	802.11 b	0.564	0.599	0.140	12.77	14.00	0.795	21.6°C
Left Hand Tilted 15°	6/2437	802.11 b	0.433	0.438	-0.130	12.77	14.00	0.581	21.6°C
Right Hand Touched	6/2437	802.11 b	0.123	/	-0.170	12.77	14.00	/	21.6°C
Right Hand Tilted 15°	6/2437	802.11 b	0.192	/	0.170	12.77	14.00	/	21.6°C
Left Hand Touched	1/2412	802.11 b	0.428	0.491	-0.160	12.73	14.00	0.658	21.6°C
Left Hand Touched	11/2462	802.11 b	0.368	0.399	0.040	12.44	14.00	0.571	21.6°C
MIMO 40M(Power setting Level 13)									
Left Hand Touched	6/2437	802.11 n	0.475	0.541	0.140	15.84	17.00	0.707	21.6°C
Left Hand Tilted 15°	6/2437	802.11 n	0.349	/	0.110	15.84	17.00	/	21.6°C
Right Hand Touched	6/2437	802.11 n	0.528	0.545	-0.020	15.84	17.00	0.712	21.6°C
Right Hand Tilted 15°	6/2437	802.11 n	0.392	/	0.060	15.84	17.00	/	21.6°C
Right Hand Touched	3/2422	802.11 n	0.476	0.483	0.130	15.68	17.00	0.655	21.6°C
Right Hand Touched	9/2452	802.11 n	0.472	0.472	0.140	15.75	17.00	0.629	21.6°C
Additional SISO SAR test when simultaneous transmission with Second Antenna,Power setting Level 10									
CORE0									
Right Hand Touched	6/2437	802.11 b	0.198	0.193	0.050	9.51	11.00	0.272	21.6°C
Right Hand Tilted 15°	6/2437	802.11 b	0.147	0.123	0.060	9.51	11.00	0.173	21.6°C

CORE1									
Left Hand Touched	6/2437	802.11 b	0.213	0.237	0.030	9.11	11.00	0.366	21.6°C
Left Hand Tilted 15°	6/2437	802.11 b	0.170	0.175	0.080	9.11	11.00	0.270	21.6°C
Additional MIMO SAR test twhen simultaneous transmission with Second Antenna,Power setting Level 10)									
Left Hand Touched	6/2437	802.11 n	0.214	0.238	0.050	12.83	14.00	0.312	21.6°C
Left Hand Tilted 15°	6/2437	802.11 n	0.176	0.181	0.060	12.83	14.00	0.237	21.6°C
Right Hand Touched	6/2437	802.11 n	0.195	0.205	0.030	12.83	14.00	0.268	21.6°C
Right Hand Tilted 15°	6/2437	802.11 n	0.147	0.142	0.110	12.83	14.00	0.186	21.6°C

Table 170: Head SAR test results of WiFi 2450MHz

Test Position of Body-Worn with 15mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g Area Scan	1-g Zoom Scan					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
CORE0(Power setting Level 18)									
Front Side	6/2437	802.11 b	0.148	/	0.130	18.35	19.00	/	21.0°C
Back Side	6/2437	802.11 b	0.173	0.181	0.140	18.35	19.00	0.210	21.0°C
CORE1(Power setting Level 18)									
Front Side	1/2412	802.11 b	0.089	/	0.100	18.02	19.00	/	21.0°C
Back Side	1/2412	802.11 b	0.116	0.125	0.140	18.02	19.00	0.157	21.0°C
MIMO-802.11g CDD(Power setting Level 18)									
Front Side	1/2412	802.11 g	0.135	/	0.170	21.64	22.00	/	21.0°C
Back Side	1/2412	802.11 g	0.157	0.158	0.000	21.64	22.00	0.172	21.0°C

Table 171: Body-Worn SAR test results of WiFi 2450MHz

Test Position of Hotspot with 10mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g Area Scan	1-g Zoom Scan					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
CORE0(Power setting Level 11)									
Front Side	6/2437	802.11 b	0.044	/	0.180	10.89	12.00	/	21.0°C
Back Side	6/2437	802.11 b	0.059	/	0.060	10.89	12.00	/	21.0°C
Left Side	6/2437	802.11 b	0.067	0.068	0.170	10.89	12.00	0.087	21.0°C
Right Side	6/2437	802.11 b	<0.01	/	0.130	10.89	12.00	/	21.0°C
Top Side	6/2437	802.11 b	0.042	/	0.120	10.89	12.00	/	21.0°C
CORE1(Power setting Level 11)									
Front Side	1/2412	802.11 b	0.045	/	0.130	10.85	12.00	/	21.0°C
Back Side	1/2412	802.11 b	0.057	/	0.100	10.85	12.00	/	21.0°C
Left Side	1/2412	802.11 b	<0.01	/	0.000	10.85	12.00	/	21.0°C
Right Side	1/2412	802.11 b	0.061	/	-0.110	10.85	12.00	/	21.0°C
Top Side	1/2412	802.11 b	0.082	0.081	0.130	10.85	12.00	0.105	21.0°C
MIMO 40M(Power setting Level 11)									
Front Side	6/2437	802.11 n	0.037	/	0.030	14.14	15.00	/	21.0°C
Back Side	6/2437	802.11 n	0.041	/	0.150	14.14	15.00	/	21.0°C
Left Side	6/2437	802.11 n	0.035	/	0.130	14.14	15.00	/	21.0°C
Right Side	6/2437	802.11 n	0.052	/	0.180	14.14	15.00	/	21.0°C
Top Side	6/2437	802.11 n	0.082	0.082	0.180	14.14	15.00	0.099	21.0°C

Table 172: Hotspot SAR test results of WiFi 2450MHz

Per KDB648474D04, when hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg; 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)	10-g Extremity SAR Exclusion
			1-g Area Scan	1-g Zoom Scan					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
CORE0(Power setting Level 11)									
Front Side	6/2437	802.11 b	0.044	/	0.180	10.89	19.00	/	No
Back Side	6/2437	802.11 b	0.059	/	0.060	10.89	19.00	/	No
Left Side	6/2437	802.11 b	0.067	0.068	0.170	10.89	19.00	0.437	No
Right Side	6/2437	802.11 b	<0.01	/	0.130	10.89	19.00	/	No
Top Side	6/2437	802.11 b	0.042	/	0.120	10.89	19.00	/	No
CORE1(Power setting Level 11)									
Front Side	1/2412	802.11 b	0.045	/	0.130	10.85	19.00	/	No
Back Side	1/2412	802.11 b	0.057	/	0.100	10.85	19.00	/	No
Left Side	1/2412	802.11 b	<0.01	/	0.000	10.85	19.00	/	No
Right Side	1/2412	802.11 b	0.061	/	-0.110	10.85	19.00	/	No
Top Side	1/2412	802.11 b	0.082	0.081	0.130	10.85	19.00	0.526	No
MIMO 40M(Power setting Level 11)									
Front Side	6/2437	802.11 n	0.037	/	0.030	14.14	21.00	/	No
Back Side	6/2437	802.11 n	0.041	/	0.150	14.14	21.00	/	No
Left Side	6/2437	802.11 n	0.035	/	0.130	14.14	21.00	/	No
Right Side	6/2437	802.11 n	0.052	/	0.180	14.14	21.00	/	No
Top Side	6/2437	802.11 n	0.082	0.082	0.180	14.14	21.00	0.396	No

Table 173: 10-g Extremity SAR test reduction evaluation of WiFi 2450MHz

Note : According to the table above , 10-g Extremity SAR test is required for this frequency band.

7.2.21 SAR measurement Result of WiFi 5G

Test Position of Head	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g Area Scan	1-g Zoom Scan					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
802.11ac 80M MIMO(Power setting Level 13)									
5.3G									
Left Hand Touched	58/5290	802.11ac	0.581	0.624	0.100	15.93	17.50	0.896	21.3°C
Left Hand Tilted 15°	58/5290	802.11ac	0.418	/	-0.170	15.93	17.50	/	21.3°C
Right Hand Touched	58/5290	802.11ac	0.430	0.536	0.060	15.93	17.50	0.769	21.3°C
Right Hand Tilted 15°	58/5290	802.11ac	0.352	/	0.020	15.93	17.50	/	21.3°C
5.5G									
Left Hand Touched	138/5690	802.11ac	0.545	0.589	0.110	16.26	17.50	0.784	21.3°C
Left Hand Tilted 15°	138/5690	802.11ac	0.455	/	0.140	16.26	17.50	/	21.3°C
Right Hand Touched	138/5690	802.11ac	0.620	0.800	0.110	16.26	17.50	1.064	21.3°C
Right Hand Touched-repeated	138/5690	802.11ac	0.640	0.780	0.060	16.26	17.50	1.038	21.3°C
Right Hand Touched	106/5530	802.11ac	0.472	0.623	0.170	15.63	17.50	0.958	21.3°C
Right Hand Touched	122/5610	802.11ac	0.610	/	0.030	15.52	17.50	/	21.3°C
5.8G									
Left Hand Touched	155/5775	802.11ac	0.463	0.485	0.120	16.15	17.50	0.662	21.3°C
Left Hand Tilted 15°	155/5775	802.11ac	0.332	/	0.070	16.15	17.50	/	21.3°C
Right Hand Touched	155/5775	802.11ac	0.640	0.718	0.030	16.15	17.50	0.980	21.3°C
Right Hand Tilted 15°	155/5775	802.11ac	0.447	/	0.190	16.15	17.50	/	21.3°C
Additional SAR test(transmission with Second Antenna,Power setting Level 10)									
Left Hand Touched	58/5290	802.11ac	0.291	0.315	0.030	12.81	14.50	0.465	21.3°C
Left Hand Tilted 15°	138/5690	802.11ac	0.193	0.203	0.040	12.59	14.50	0.315	21.3°C
Right Hand Touched	138/5690	802.11ac	0.297	0.364	-0.160	12.59	14.50	0.565	21.3°C
Right Hand Tilted 15°	155/5775	802.11ac	0.223	0.284	0.090	12.79	14.50	0.421	21.3°C

Table 174: Head SAR test results of WiFi 5G

Test Position of Body-Worn with 15mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g Area Scan	1-g Zoom Scan					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
5.3G(Power setting Level 18)									
Front Side	52/5260	802.11a	0.205	0.208	-0.020	21.73	22.00	0.221	21.3°C
Back Side	52/5260	802.11a	0.180	0.186	-0.130	21.73	22.00	0.198	21.3°C
5.5G(Power setting Level 18)									
Front Side	128/5640	802.11a	0.236	0.238	0.150	21.79	22.00	0.250	21.3°C
Back Side	128/5640	802.11a	0.180	0.178	0.070	21.79	22.00	0.187	21.3°C
5.8G(Power setting Level 18)									
Front Side	161/5805	802.11a	0.198	0.202	-0.170	21.60	22.00	0.221	21.3°C
Back Side	161/5805	802.11a	0.190	0.188	0.190	21.60	22.00	0.206	21.3°C

Table 175: Body-Worn SAR test results of WiFi 5G

Note: Per KDB 248227D01, as the same maximum output power is specified for U-NII-1(5.2G) and U-NII-2A(5.3G) bands, begin SAR measurement in U-NII-2A band by applying the OFDM SAR requirements. As the highest reported SAR for a test configuration is ≤ 1.2 W/kg, SAR is not required for U-NII-1 band for that configuration.

Test Position of Hotspot with 10mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{1-g} (W/kg)	Liquid Temp.
			1-g Area Scan	1-g Zoom Scan					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
5.2G(80M,Power setting Level 11)									
Front Side	42/5210	802.11ac	0.059	/	0.150	14.19	15.50	/	21.3°C
Back Side	42/5210	802.11ac	0.064	/	0.120	14.19	15.50	/	21.3°C
Left Side	42/5210	802.11ac	0.085	0.076	0.070	14.19	15.50	0.102	21.3°C
Right Side	42/5210	802.11ac	0.073	/	-0.130	14.19	15.50	/	21.3°C
Top Side	42/5210	802.11ac	0.054	/	0.130	14.19	15.50	/	21.3°C
5.8G(80M,Power setting Level 11)									
Front Side	155/5775	802.11ac	0.063	/	0.160	13.84	15.50	/	21.3°C
Back Side	155/5775	802.11ac	0.068	/	0.000	13.84	15.50	/	21.3°C
Left Side	155/5775	802.11ac	0.088	0.077	0.130	13.84	15.50	0.113	21.3°C
Right Side	155/5775	802.11ac	0.076	/	0.170	13.84	15.50	/	21.3°C
Top Side	155/5775	802.11ac	0.044	/	0.190	13.84	15.50	/	21.3°C

Table 176: Hotspot SAR test results of WiFi 5G

Note: WiFi 5G hotspot is only supported for U-NII-1(5.2G) and U-NII-3 (5.8G) bands, therefore U-NII-2A (5.3G) and U-NII-2C(5.5G) were not evaluated for hotspot condition.

Per KDB648474D04, when hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg; 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)	10-g Extremity SAR Exclusion
			1-g Area Scan	1-g Zoom Scan					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
5.2G(80M,Power setting Level 11)									
Front Side	42/5210	802.11ac	0.059	/	0.150	14.19		/	No
Back Side	42/5210	802.11ac	0.064	/	0.120	14.19		/	No
Left Side	42/5210	802.11ac	0.085	0.076	0.070	14.19	20.50	0.323	No
Right Side	42/5210	802.11ac	0.073	/	-0.130	14.19		/	No
Top Side	42/5210	802.11ac	0.054	/	0.130	14.19		/	No
5.8G(80M,Power setting Level 11)									
Front Side	155/5775	802.11ac	0.063	/	0.160	13.84		/	No
Back Side	155/5775	802.11ac	0.068	/	0.000	13.84		/	No
Left Side	155/5775	802.11ac	0.088	0.077	0.130	13.84	20.50	0.357	No
Right Side	155/5775	802.11ac	0.076	/	0.170	13.84		/	No
Top Side	155/5775	802.11ac	0.044	/	0.190	13.84		/	No

Table 177: 10-g Extremity SAR test reduction evaluation of WiFi 5G(5.2G&5.8G)

Note : According to the table above , 10-g Extremity SAR test is required for WiFi 5G(5.2G&5.8G).



Test Position of 10-g extremity 0mm	Test channel / Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR _{10-g} (W/kg)	Liquid Temp.
			1-g Area Scan	1-g Zoom Scan					
The data of H1511 from the report No.: SYBH(Z-SAR)011072015-2									
5.3G(20M,Power setting Level 18)									
Front Side	52/5260	802.11a	2.010	2.010	0.000	21.73	22.00	2.139	21.3°C
Front Side	56/5280	802.11a	1.710	1.730	0.000	21.43	22.00	1.973	21.3°C
Back Side	52/5260	802.11a	1.000	1.220	0.000	21.73	22.00	1.298	21.3°C
Left Side	52/5260	802.11a	1.300	1.440	-0.190	21.73	22.00	1.532	21.3°C
Right Side	52/5260	802.11a	2.690	2.980	-0.060	21.73	22.00	3.171	21.3°C
Right Side-repeated	52/5260	802.11a	2.310	3.110	-0.060	21.73	22.00	3.309	21.3°C
Right Side	56/5280	802.11a	2.210	2.840	0.100	21.43	22.00	3.238	21.3°C
Right Side	64/5320	802.11a	2.060	2.820	0.100	21.27	22.00	3.336	21.3°C
Right Side	60/5300	802.11a	2.080	2.930	-0.090	21.22	22.00	3.506	21.3°C
Top Side	52/5260	802.11a	0.871	/	-0.130	21.73	22.00	/	21.3°C
Front Side	52/5260	802.11n	1.640	1.740	0.000	21.07	22.00	2.156	21.3°C
Back Side	52/5260	802.11n	0.888	1.090	0.000	21.07	22.00	1.350	21.3°C
Left Side	52/5260	802.11n	1.260	1.330	0.000	21.07	22.00	1.648	21.3°C
Right Side	52/5260	802.11n	2.140	2.700	0.010	21.07	22.00	3.345	21.3°C
Right Side	56/5280	802.11n	2.010	2.630	-0.170	20.92	22.00	3.373	21.3°C
Right Side	60/5300	802.11n	2.050	2.700	0.170	20.83	22.00	3.535	21.3°C
Right Side-repeated	64/5320	802.11n	2.110	2.650	0.150	20.83	22.00	3.469	21.3°C
Top Side	52/5260	802.11n	0.815	/	0.140	21.07	22.00	/	21.3°C
Front Side	52/5260	802.11n	1.770	1.750	0.000	21.33	22.00	2.042	21.3°C
Back Side	52/5260	802.11n	1.120	1.170	0.000	21.33	22.00	1.365	21.3°C
Left Side	52/5260	802.11n	1.020	1.350	0.040	21.33	22.00	1.575	21.3°C
Right Side	52/5260	802.11n	2.620	2.840	0.020	21.33	22.00	3.314	21.3°C
Right Side	56/5280	802.11n	2.500	2.690	-0.160	21.25	22.00	3.197	21.3°C
Right Side	60/5300	802.11n	2.390	2.880	-0.030	21.10	22.00	3.543	21.3°C
Right Side	64/5320	802.11n	2.610	2.740	-0.140	21.19	22.00	3.302	21.3°C
Top Side	52/5260	802.11n	0.752	/	0.120	21.33	22.00	/	21.3°C
5.5G(20M,Power setting Level 18)									
Front Side	128/5640	802.11a	1.570	1.690	0.180	21.79	22.00	1.774	21.3°C
Back Side	128/5640	802.11a	0.926	1.180	0.000	21.79	22.00	1.238	21.3°C
Left Side	128/5640	802.11a	1.910	2.190	-0.180	21.79	22.00	2.298	21.3°C
Left Side	116/5580	802.11a	1.550	2.180	0.060	21.69	22.00	2.341	21.3°C
Right Side	128/5640	802.11a	1.400	/	0.150	21.79	22.00	/	21.3°C
Top Side	128/5640	802.11a	0.761	/	0.170	21.79	22.00	/	21.3°C
Additional SAR test(5.3G 80M,transmission with Main Antenna,Power setting Level 11)									
Front Side	58/5290	802.11ac	0.278	0.269	0.000	14.12	15.50	0.370	21.3°C
Back Side	58/5290	802.11ac	0.168	0.153	0.000	14.12	15.50	0.210	21.3°C
Left Side	58/5290	802.11ac	0.175	/	0.080	14.12	15.50	/	21.3°C
Right Side	58/5290	802.11ac	0.377	0.423	0.110	14.12	15.50	0.581	21.3°C



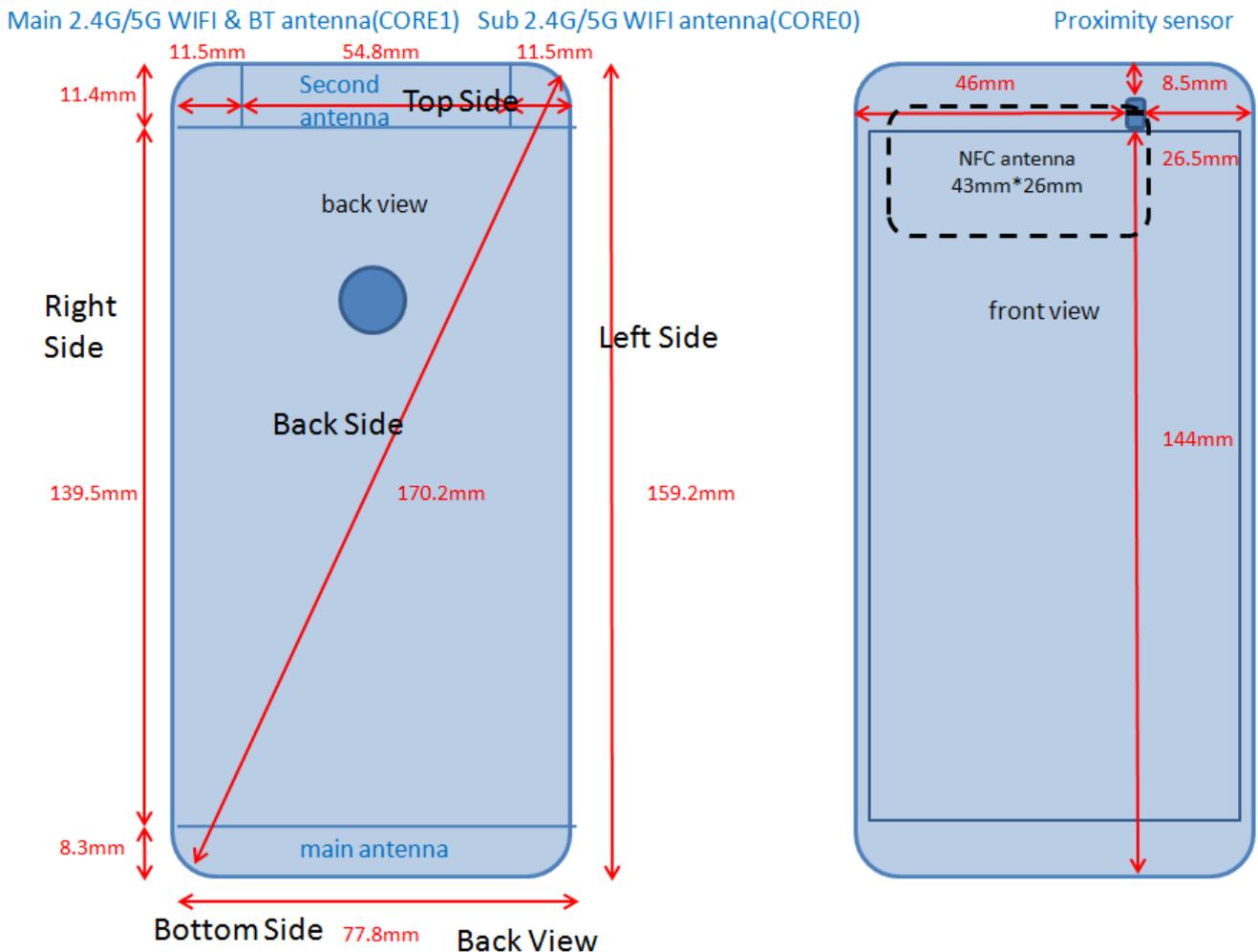
Top Side	58/5290	802.11ac	0.123	/	0.190	14.12	15.50	/	21.3°C
Additional SAR test(5.5G 80M,transmission with Main Antenna,Power setting Level 11)									
Front Side	138/5690	802.11ac	0.197	0.210	0.000	13.77	15.50	0.313	21.3°C
Back Side	138/5690	802.11ac	0.150	0.156	0.000	13.77	15.50	0.232	21.3°C
Left Side	138/5690	802.11ac	0.238	0.320	0.150	13.77	15.50	0.477	21.3°C
Right Side	138/5690	802.11ac	0.196	0.203	0.060	13.77	15.50	0.302	21.3°C
Top Side	138/5690	802.11ac	0.108	0.121	0.120	13.77	15.50	0.180	21.3°C

Table 178: 10-g extremity SAR test results of WiFi 5G

Note: As U-NII-2A (5.3G) and U-NII-2C(5.5G) do not support hotspot function, so full 10-g extremity SAR tests were evaluated for U-NII-2A (5.3G) and U-NII-2C(5.5G) bands.

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 v05r02. The location of the antennas inside the device is shown as below picture:



Note:

- 1) The device has two 2G/3G/4G Tx antennas (Main Antenna and Second Antenna). It can transmit from either Main Antenna or Second Antenna, but they can not transmit simultaneously.
- 2) The device also supports the dynamic antenna switching function for 802.11b 2.4G WiFi .The device has two Wi-Fi Tx antennas (Main Wi-Fi antenna and Sub WiFi &BT Antenna). 802.11b can transmit from either Main Wi-Fi antenna or Sub WiFi Antenna, but can not transmit simultaneously.
- 3) The NFC antenna is integrated onto the Back cover. The SAR tests were performed with the Battery cover. Per KDB 648474 D04 Phones with built-in NFC functions do not require separate SAR testing and can generally be tested according to the SAR measurement procedures normally required for the phone. Influences of the hardware introduced by the built-in NFC functions are inherently considered through testing of the other transmitters that require SAR.
- 4)The overall dimension of the device (Length* Width) is 159.2mm*77.8mm . Per KDB 648474 D04, because the diagonal distance of this device is > 160mm, it is considered a “Phablet” device.

Mode	Exposure Condition	Front Side	Back Side	Left Side	Right Side	Top Side	Bottom Side
Main antenna	Hotspot/ Extremity	Yes	Yes	Yes	Yes	No	Yes
Second antenna	Hotspot/ Extremity	Yes	Yes	Yes	Yes	Yes	No
WiFi antenna(CORE0)	Hotspot/ Extremity*	Yes	Yes	Yes	No	Yes	No
WiFi antenna(CORE1)	Hotspot/ Extremity*	Yes	Yes	No	Yes	Yes	No
WiFi MIMO	Hotspot/ Extremity*	Yes	Yes	Yes	Yes	Yes	No

Table 179: 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 and/or Extremity SAR if the antenna-to-edge distance is greater than 2.5cm.
- 2) Per KDB 648474 D04, when hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg;
- 3) *- WiFi 5G hotspot is only supported for U-NII-1 and U-NII-3, therefore U-NII-2A and U-NII-2C were not evaluated for hotspot condition.

7.3.1 Stand-alone SAR test exclusion

Per FCC KDB 447498D01v05, the 1-g SAR and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

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

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

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

Mode	Position	P_{max} (dBm)*	P_{max} (mW)	Distance (mm)	f (GHz)	Calculation Result	SAR Exclusion threshold	SAR test exclusion
BT	Body-Worn	11.00	12.59	15	2.450	1.31	3.00	Yes
BT	10-g Extremity	11.00	12.59	5	2.450	3.94	7.50	Yes

Table 180: Standalone SAR test exclusion for BT

Note:

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

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

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

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

Mode	Position	P_{max} (dBm)*	P_{max} (mW)	Distance (mm)	f (GHz)	X	Estimated SAR (W/Kg)*
BT	Body-worn	11.00	12.59	15	2.450	7.50	0.175
BT	10-g Extremity	11.00	12.59	5	2.450	18.75	0.210

Table 181: Estimated SAR calculation for BT

Note:

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

7.3.2 Simultaneous Transmission Possibilities

The Simultaneous Transmission Possibilities of this device are as below:

No.	Configuration	Head	Body-worn	Hotspot	10g Extremity
1	GSM(Voice) + BT	No	Yes	No	Yes
2	GSM(DATA) + BT	No	No	No	Yes
3	GSM(Voice)+ WLAN 2.4G/5G	Yes	Yes	No	Yes
4	GSM(DATA) + WLAN 2.4G/5G	No	No	Yes	Yes
5	UMTS(voice) + BT	No	Yes	No	Yes
6	UMTS(Data) + BT	No	Yes	No	Yes
7	UMTS(voice) + WLAN 2.4G/5G	Yes	Yes	No	Yes
8	UMTS(Data) + WLAN 2.4G/5G	No	Yes	Yes	Yes
9	1x CDMA(Voice) + BT	No	Yes	No	Yes
10	1x/EVDO(Data) + BT	No	Yes	No	Yes
11	1x CDMA(Voice) + WLAN 2.4G/5G	Yes	Yes	No	Yes
12	1x/EVDO(Data) + WLAN 2.4G/5G	No	Yes	Yes	Yes
13	LTE(Data) + BT	No	Yes	No	Yes
14	LTE(VoLTE) + BT	No	Yes	No	Yes
15	LTE(Data) + WLAN 2.4G/5G	No	Yes	Yes	Yes
16	LTE(VoLTE) + WLAN 2.4G/5G	Yes	Yes	Yes	Yes

Table 182: Simultaneous Transmission Possibilities

Note:

- 1) 2G&3G&4G can't transmit simutanously.It can transmit from either 2G&3G&4G Main antenna or 2G&3G&4G Second antenna, but Main antenna and Second antenna can't transmit simutanously,
- 2) WiFi 2.4G and WiFi 5G can't transmit simutanously.
- 3) WiFi 2.4G/5G and BT can't transmit simutanously.
- 4) WiFi 5G hotspot is only supported for U-NII-1 and U-NII-3, therefore U-NII-2A and U-NII-2C were not evaluated for hotspot condition.
- 5) The device supports VoLTE and WiFi VOIP function.
- 6) The device does not support 2G&3G VoIP function.
- 7) The device does not support SVDO or SVLTE function.
- 8) The device does not support GSM DTM function. Body-worn accessory testing is typically associated with voice operations. Therefore, GSM voice was evaluated for body-worn SAR.
- 9) Held to ear configurations are not applicable to Bluetooth for this device.
- 10) 2G&3G&4G and WiFi VOIP can't transmit simutanously

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 simultaneous transmission power reduction are used.

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

Test Position		Second antenna SAR _{Max}					WiFi antenna SAR _{Max}		BT	Σ1-g or 10-g Extremity SAR
		GSM850	UMTS Band V	CDMA BC0	LTE Band V	LTE Band XVII	WiFi 2.4G 1TX	WiFi 2.4G 2TX CDD/MIMO		
Head	Left Hand Touched	0.966	1.083	0.903	0.924	0.995	0.366	0.312	/	1.449
	Left Hand Tilted 15°	0.767	1.039	0.796	0.869	0.874	0.270	0.237	/	1.309
	Right Hand Touched	0.814	0.738	0.778	0.844	0.813	0.272	0.268	/	1.116
	Right Hand Tilted 15°	0.696	0.712	0.692	0.833	0.754	0.173	0.186	/	1.019
Body-worn	Front side	0.280	0.083	0.175	0.155	0.154	0.210	0.172	0.175	0.490
	Back side	0.299	0.176	0.200	0.183	0.159	0.210	0.172	0.175	0.509
Hotspot 10mm	Front side	0.332	0.227	0.312	0.141	0.251	0.105	0.099	/	0.437
	Back side	0.362	0.281	0.358	0.175	0.305	0.105	0.099	/	0.467
	Left side	0.155	0.118	0.146	0.084	0.137	0.105	0.099	/	0.260
	Right side	0.031	0.027	0.035	0.011	0.024	0.105	0.099	/	0.140
	Top side	0.211	0.176	0.293	0.119	0.231	0.105	0.099	/	0.398
	Bottom side	/	/	/	/	/	/	0.099	/	0.099
10-g Extremity 0mm	Front side	/	/	/	/	/	/	/	0.210	0.210
	Back side	/	/	/	/	/	/	/	0.210	0.210
	Left side	/	/	/	/	/	/	/	0.210	0.210
	Right side	/	/	/	/	/	/	/	0.210	0.210
	Top side	/	/	/	/	/	/	/	0.210	0.210
	Bottom side	/	/	/	/	/	/	/	0.210	0.210

Table 183: SAR Simultaneous Tx Combination of Second Antenna and 2.4G WiFi/BT.

Test Position		Second antenna SAR _{Max}					WiFi antenna SAR _{Max}	Σ1-g or 10-g ExtremitySAR
		GSM850	UMTS Band V	CDMA BC0	LTE Band V	LTE Band XVII	WiFi 5G 2TX CDD/MIMO	
Head	Left Hand Touched	0.966	1.083	0.903	0.924	0.995	0.465	1.547
	Left Hand Tilted 15°	0.767	1.039	0.796	0.869	0.874	0.315	1.354
	Right Hand Touched	0.814	0.738	0.778	0.844	0.813	0.565	1.409
	Right Hand Tilted 15°	0.696	0.712	0.692	0.833	0.754	0.421	1.254
Body-worn	Front side	0.280	0.083	0.175	0.155	0.154	0.250	0.530
	Back side	0.299	0.176	0.200	0.183	0.159	0.206	0.505
Hotspot 10mm	Front side	0.332	0.227	0.312	0.141	0.251	0.113	0.445
	Back side	0.362	0.281	0.358	0.175	0.305	0.113	0.475
	Left side	0.155	0.118	0.146	0.084	0.137	0.113	0.268
	Right side	0.031	0.027	0.035	0.011	0.024	0.113	0.148
	Top side	0.211	0.176	0.293	0.119	0.231	0.113	0.406
	Bottom side	/	/	/	/	/	0.113	0.113
10-g Extremity 0mm	Front side	/	/	/	/	/	0.370	0.370
	Back side	/	/	/	/	/	0.232	0.232
	Left side	/	/	/	/	/	0.447	0.447
	Right side	/	/	/	/	/	0.581	0.581
	Top side	/	/	/	/	/	0.581	0.581
	Bottom side	/	/	/	/	/	/	0.000

Table 184: SAR Simultaneous Tx Combination of Second Antenna and 5G WiFi.

Test Position		Main antenna SAR _{Max}														WiFi antenna SAR _{Max}		BT	Σ1-g or 10-g Extremity SAR
		GSM850	GSM1900	UMTS Band II	UMTS Band IV	UMTS Band V	CDMA BC0	CDMA BC1	LTE Band II	LTE Band IV	LTE Band V	LTE Band VII	LTE Band XVII	LTE Band XXXVIII	LTE Band XLI	WiFi 2.4G 1TX	WiFi 2.4G 2TX CDD/MIMO		
Head	Left Hand Touched	0.238	0.122	0.127	0.091	0.275	0.342	0.119	0.181	0.113	0.236	0.504	0.150	0.236	0.306	0.759	0.707	/	1.263
	Left Hand Tilted 15°	0.210	0.076	0.119	0.031	0.262	0.329	0.089	0.120	0.032	0.164	0.095	0.122	0.440	0.035	0.581	0.712	/	1.152
	Right Hand Touched	0.362	0.143	0.143	0.120	0.402	0.458	0.150	0.158	0.107	0.318	0.197	0.182	0.095	0.083	0.617	0.712	/	1.170
	Right Hand Tilted 15°	0.171	0.081	0.076	0.056	0.203	0.258	0.084	0.108	0.043	0.155	0.132	0.079	0.065	0.056	0.345	0.712	/	0.970
Body 15mm	Front side	0.272	0.563	0.687	0.527	0.295	0.337	0.669	0.748	0.511	0.296	0.494	0.220	0.142	0.205	0.210	0.172	0.175	0.958
	Back side	0.280	0.602	0.674	0.509	0.319	0.410	0.593	0.812	0.558	0.276	0.443	0.232	0.121	0.252	0.210	0.172	0.175	1.022
Hotspot 10mm	Front side	0.402	0.546	0.546	0.723	0.376	0.666	0.626	0.552	0.913	0.549	0.515	0.197	0.306	0.346	0.105	0.099	/	1.018
	Back side	0.475	0.594	0.596	0.782	0.419	0.670	0.713	0.544	1.162	0.577	0.631	0.228	0.292	0.314	0.105	0.099	/	1.267
	Left side	0.128	0.129	0.086	0.161	0.173	0.293	0.107	0.126	0.333	0.188	0.260	0.136	0.165	0.143	0.105	0.099	/	0.438
	Right side	0.366	0.055	0.034	0.071	0.402	0.566	0.039	0.053	0.117	0.443	0.046	0.291	0.039	0.053	0.105	0.099	/	0.671
	Top side	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0.105	0.099	/	0.105
	Bottom side	0.267	1.165	0.841	1.143	0.271	0.387	1.228	1.140	1.425	0.308	1.329	0.103	0.583	0.913	/	/	/	1.425
10-g Extremity 0mm	Front side	/	/	/	3.590	/	/	2.930	/	3.623	/	/	/	/	/	/	/	0.210	3.833
	Back side	/	/	/	3.332	/	/	3.492	/	3.486	/	3.617	/	/	/	/	/	0.210	3.827
	Left side	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0.210	0.210
	Right side	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0.210	0.210
	Top side	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0.210	0.210
	Bottom side	/	1.431	1.455	2.674	/	/	1.604	1.441	2.960	/	1.353	/	/	0.582	/	/	0.210	3.170

Table 185: SAR Simultaneous Tx Combination of Main Antenna and 2.4GWiFi/BT.

Test Position		Main antenna SAR _{Max}														WiFi antenna SAR _{Max}	Σ1-g or 10-g Extremity SAR
		GSM850	GSM1900	UMTS Band II	UMTS Band IV	UMTS Band V	CDMA BC0	CDMA BC1	LTE Band II	LTE Band IV	LTE Band V	LTE Band VII	LTE Band XVII	LTE Band XXXVIII	LTE Band XLI	WiFi 5G 2TX CDD/MIMO	
Head	Left Hand Touched	0.238	0.122	0.127	0.091	0.275	0.342	0.119	0.181	0.113	0.236	0.504	0.150	0.236	0.306	0.896	1.400
	Left Hand Tilted 15°	0.210	0.076	0.119	0.031	0.262	0.329	0.089	0.120	0.032	0.164	0.095	0.122	0.440	0.035	1.064	1.504
	Right Hand Touched	0.362	0.143	0.143	0.120	0.402	0.458	0.150	0.158	0.107	0.318	0.197	0.182	0.095	0.083	1.064	1.522
	Right Hand Tilted 15°	0.171	0.081	0.076	0.056	0.203	0.258	0.084	0.108	0.043	0.155	0.132	0.079	0.065	0.056	1.064	1.322
Body 15mm	Front side	0.272	0.563	0.687	0.527	0.295	0.337	0.669	0.748	0.511	0.296	0.494	0.220	0.142	0.205	0.250	0.998
	Back side	0.280	0.602	0.674	0.509	0.319	0.410	0.593	0.812	0.558	0.276	0.443	0.232	0.121	0.252	0.206	1.019
Hotspot 10mm	Front side	0.402	0.546	0.546	0.723	0.376	0.666	0.626	0.552	0.913	0.549	0.515	0.197	0.306	0.346	0.113	1.026
	Back side	0.475	0.594	0.596	0.782	0.419	0.670	0.713	0.544	1.162	0.577	0.631	0.228	0.292	0.314	0.113	1.275
	Left side	0.128	0.129	0.086	0.161	0.173	0.293	0.107	0.126	0.333	0.188	0.260	0.136	0.165	0.143	0.113	0.446
	Right side	0.366	0.055	0.034	0.071	0.402	0.566	0.039	0.053	0.117	0.443	0.046	0.291	0.039	0.053	0.113	0.679
	Top side	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0.113	0.113
	Bottom side	0.267	1.165	0.841	1.143	0.271	0.387	1.228	1.140	1.425	0.308	1.329	0.103	0.583	0.913	0.113	1.538
10-g Extremity 0mm	Front side	/	/	/	3.590	/	/	2.930	/	3.623	/	/	/	/	/	0.370	3.993
	Back side	/	/	/	3.332	/	/	3.492	/	3.486	/	3.617	/	/	/	0.232	3.849
	Left side	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0.447	0.447
	Right side	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0.581	0.581
	Top side	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0.581	0.581
	Bottom side	/	1.431	1.455	2.674	/	/	1.604	1.441	2.960	/	1.353	/	/	0.582	/	2.960

Table 186: SAR Simultaneous Tx Combination of Main Antenna and 5GWiFi.



7.3.4 Simultaneous Transmission Conclusion

The above numeral summed SAR results and SPLSR analysis is sufficient to determine that simultaneous transmission cases will not exceed the SAR limit and therefore simultaneous transmission SAR with Volume Scans is not required per KDB 447498 D01v05r02



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

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

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

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

End