



# SAR TEST REPORT

**Applicant** Guangdong OPPO Mobile  
Telecommunications Corp., Ltd.

**Product** Mobile Phone

**Brand** OPPO

**Model** CPH2211

**Report No.** R2012A0892-S1

**Issue Date** February 23, 2021

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **IEEE 1528- 2013, ANSI C95.1: 1992, IEEE C95.1: 1991**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

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# 1 Test Laboratory

## 1.1 Notes of the Test Report

This report shall not be reproduced in full or partial, without the written approval of **TA technology (shanghai) co., Ltd.** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein .Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support regulatory compliance of the applicable standards stated above.

## 1.2 Test facility

### **FCC (Designation number: CN1179, Test Firm Registration Number: 446626)**

TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform measurements.

### **A2LA (Certificate Number: 3857.01)**

TA Technology (Shanghai) Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform measurement.

## 1.3 Testing Location

Company: TA Technology (Shanghai) Co., Ltd.  
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## 1.4 Laboratory Environment

Temperature	Min. = 18°C, Max. = 25 °C
Relative humidity	Min. = 30%, Max. = 70%
Ground system resistance	< 0.5 $\Omega$
Ambient noise is checked and found very low and in compliance with requirement of standards. Reflection of surrounding objects is minimized and in compliance with requirement of standards.	



## 2 Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for the EUT are as follows:

Table 1: Highest Reported SAR

Mode	Highest Reported SAR (W/kg)			
	1g SAR Head	1g SAR Body-worn (Separation 15mm)	1g SAR Hotspot (Separation 10mm)	Product Specific 10-g SAR (Separation 0mm)
GSM 850	1.055	0.303	0.556	/
GSM 1900	0.866	0.311	0.576	/
WCDMA Band II	1.075	0.563	0.781	1.805
WCDMA Band IV	1.046	0.319	0.797	2.280
WCDMA Band V	0.998	0.252	0.339	/
LTE FDD 2	1.142	0.555	0.737	1.813
LTE FDD 4	0.974	0.495	0.645	1.574
LTE FDD 5	1.015	0.283	0.348	/
LTE (EN-DC)FDD 5	0.356	0.283	0.348	/
LTE FDD 7	0.704	0.405	0.930	0.945
LTE (EN-DC)FDD 7	0.681	0.308	0.721	0.945
LTE FDD 12	0.631	0.303	0.394	/
LTE (EN-DC)FDD 12	0.631	0.303	0.394	/
LTE FDD 17	/	/	/	/
LTE FDD 26	0.956	0.219	0.268	/
LTE TDD 38	0.842	0.333	0.855	/
LTE TDD 41	0.571	0.340	0.589	/
LTE FDD 66	1.153	0.373	0.683	<b>2.457</b>
NR (SA) n5	0.602	0.267	0.366	/
NR (SA) n7	1.074	<b>0.567</b>	0.796	/
NR (SA) n38	1.026	0.524	<b>0.981</b>	/
NR (SA) n41	0.766	0.387	0.799	/
NR (SA) n66	<b>1.198</b>	0.447	0.789	
NR (EN-DC) n66	0.778	0.372	0.403	/
Wi-Fi (2.4G)	0.994	0.138	0.286	/



Wi-Fi (5G)	1.142	0.374	0.681	1.263
BT	0.319	0.050	0.078	/

Date of Testing: January 2, 2021 ~ January 29, 2021

Date of Sample Received: December 28, 2020

Note: 1. The device is in compliance with SAR for Uncontrolled Environment /General Population exposure limits (1.6 W/kg and 4.0 W/kg) specified in ANSI C95.1: 1992/IEEE C95.1: 1991, and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528-2013.  
 2.All indications of Pass/Fail in this report are opinions expressed by TA Technology (Shanghai) Co., Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only.  
 3.LTE Band 12 overlaps the entire frequency range of LTE Band 17. Therefore, the test results of LTE Band 12 provided in this report covers Band 17.

Table 2: Highest Simultaneous Transmission SAR

Exposure Configuration	1g SAR Head	1g SAR Body-worn (Separation 15mm)	1g SAR Hotspot (Separation 10mm)	Product Specific 10-g SAR (Separation 0mm)
Highest Simultaneous Transmission SAR (W/kg)	1.496	0.991	1.496	2.540

Note: The detail for simultaneous transmission consideration is described in chapter 10.3.

### 3 Description of Equipment under Test

#### Client Information

Applicant	Guangdong OPPO Mobile Telecommunications Corp., Ltd.
Applicant address	NO.18 HaiBin Road, Wusha village, Chang An Town, DongGuan City, Guangdong, China
Manufacturer	Guangdong OPPO Mobile Telecommunications Corp., Ltd.
Manufacturer address	NO.18 HaiBin Road, Wusha village, Chang An Town, DongGuan City, Guangdong, China

#### General Technologies

Application Purpose	Original Grant
EUT Stage	Identical Prototype
Model	CPH2211
IMEI	860391050018656
Hardware Version	11
Software Version	ColorOS V11.1
Antenna Type	Internal Antenna
Device Class	B
Wi-Fi Hotspot	Wi-Fi 2.4G Wi-Fi 5G U-NII-1&U-NII-3
Power Class	GSM 850: 4 GSM 1900: 1 UMTS Band II/IV/V: 3 LTE FDD 2/4/5/7/12/17/26/66: 3 LTE TDD 38/41: 3 NR FDD n5/n7/n66: 3 NR TDD n38 /n41: 3
Power Level	GSM 850: level 5 GSM 1900: level 0 UMTS Band II/IV/V: all up bits LTE FDD 2/4/5/7/12/17/26/66: max power LTE TDD 38/41: max power NR FDD n5/n7/n66: max power NR TDD n38 /n41: max power
EUT Accessory	
Battery 1	Manufacturer: Sunwoda Electronic CO.,LTD. Model: BLP839
Battery 2	Manufacturer: TWS TECHNOLOGY (GUANGZHOU) LIMITED Model: BLP839





Earphone

Manufacturer: OPPO

Model: MH156

Note: 1. The EUT is sent from the applicant to TA and the information of the EUT is declared by the applicant.

2. There are two forms of this product: it supports dual cards in some regions or operators; while in other regions or operators supports single cards.

When supports dual cards, SIM1 and SIM2 are based on the same radio frequency module, and the working mechanism is dual-standby with single-pass, which means SIM1 and SIM2 cannot work at the same time in the communication mode;

When only supports a single card, other software and hardware are consistent with the status that supports dual cards;

This report focuses on the dual-card status, carries out SAR evaluation, and verifies the compliance of the single-card. The test data in the report is the dual-card status of SIM1 under the worst conditions.



**Wireless Technology and Frequency Range**

Wireless Technology		Modulation	Operating mode	Tx (MHz)
GSM	850	Voice(GMSK) GPRS(GMSK)	<input type="checkbox"/> Multi-slot Class:8-1UP <input type="checkbox"/> Multi-slot Class:10-2UP <input checked="" type="checkbox"/> Multi-slot Class:12-4UP <input type="checkbox"/> Multi-slot Class:33-4UP	824 ~ 849
	1900	EGPRS(GMSK,8PSK)		1850 ~ 1910
	Does this device support DTM (Dual Transfer Mode)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
UMTS	Band II	Up Link: QPSK Down Link: QPSK, 16QAM	HSDPA HSUPA	1850 ~ 1910
	Band IV			1710 ~ 1755
	Band V			824 ~ 849
LTE	FDD 2	Up Link: QPSK, 16QAM, 64QAM Down Link: QPSK, 16QAM, 64QAM, 256QAM	Rel. 15	1850 ~ 1910
	FDD 4			1710 ~ 1755
	FDD 5			824 ~ 849
	FDD 7			2500 ~ 2570
	FDD 12			699 ~ 716
	FDD 17			704 ~ 716
	FDD 26			814 ~ 849
	TDD 38			2570 ~ 2620
	TDD 41			2496 ~ 2690
	FDD 66			1710 ~ 1780
	Does this device support Carrier Aggregation (CA) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Does this device support SV-LTE (1xRTT-LTE)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
NR	FDD n5	CP-OFDM: QPSK, 16QAM, 64QAM, 256QAM; DFT-s OFDM: PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM	/	824 ~ 849
	FDD n7			2500 ~ 2570
	TDD n38			2570 ~ 2620
	TDD n41			2496 ~ 2690
	FDD n66			1710 ~ 1780
BT	2.4G	Version 5.0 LE		2402 ~2480
Wi-Fi	2.4G	DSSS, OFDM	802.11b/g/n HT20	2412 ~ 2462
		OFDM	802.11n HT40	2422 ~ 2452
	5G	OFDM	802.11a/n HT20/ HT40/ ac VHT20/ VHT40/ VHT80	5150 ~ 5250 5250 ~ 5350 5470 ~ 5725 5725 ~ 5850



	Does this device support MIMO <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
NFC	13.56MHz



## 4 Test Specification, Methods and Procedures

The tests documented in this report were performed in accordance with FCC 47 CFR § 2.1093, IEEE 1528- 2013, ANSI C95.1: 1992, IEEE C95.1: 1991, the following FCC Published RF exposure KDB procedures:

IEC 62209-1

### Reference Standards

KDB 248227 D01 802.11Wi-Fi SAR v02r02

KDB 447498 D01 General RF Exposure Guidance v06

KDB 648474 D04 Handset SAR v01r03

KDB 690783 D01 SAR Listings on Grants v01r03

KDB 865664 D01 SAR measurement 100 MHz to 6 GHz v01r04

KDB 865664 D02 RF Exposure Reporting v01r02

KDB 941225 D01 3G SAR Procedures v03r01

KDB 941225 D05 SAR for LTE Devices v02r05

KDB 941225 D05A LTE Rel.10 KDB Inquiry Sheet v01r02

KDB 941225 D06 Hotspot Mode v02r01

## 5 Operational Conditions during Test

### 5.1 Test Positions

#### 5.1.1 Against Phantom Head

Measurements were made in “cheek” and “tilt” positions on both the left hand and right hand sides of the phantom.

The positions used in the measurements were according to IEEE 1528 - 2013 "IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques".

#### 5.1.2 Body Worn Configuration

Body-worn operating configurations should be tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in normal use configurations.

Per FCC KDB Publication 648474 D04, Body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in FCC KDB Publication 447498 D01 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode, when applicable. When the reported SAR for a body-worn accessory, measured without a headset connected to the handset, is  $> 1.2$  W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset.

Accessories for Body-worn operation configurations are divided into two categories: those that do not contain metallic components and those that do contain metallic components. When multiple accessories that do not contain metallic components are supplied with the device, the device is tested with only the accessory that dictates the closest spacing to the body. Then multiple accessories that contain metallic components are tested with the device with each accessory. If multiple accessories share an identical metallic component (i.e. the same metallic belt-clip used with different holsters with no other metallic components) only the accessory that dictates the closest spacing to the body is tested.

Body-worn accessories may not always be supplied or available as options for some devices intended to be authorized for body-worn use. In this case, a test configuration with a separation distance between the back of the device and the flat phantom is used. Test position spacing was documented. Transmitters that are designed to operate in front of a person's face, as in push-to-talk configurations, are tested for SAR compliance with the front of the device positioned to face the flat phantom in head fluid. For devices that are carried next to the body such as a shoulder, waist or chest-worn transmitters, SAR compliance is tested with the accessories, including headsets and microphones, attached to the device and positioned against a flat phantom in a normal use configuration.

### 5.1.3 Phablet SAR test considerations

For smart phones, with a display diagonal dimension  $> 15.0$  cm or an overall diagonal dimension  $> 16.0$  cm, that can provide similar mobile web access and multimedia support found in mini-tablets or UMPC mini-tablets and support voice calls next to the ear, unless it is confirmed otherwise through KDB inquiries, the following phablet procedures should be applied to evaluate SAR compliance for each applicable wireless modes and frequency band. Devices marketed as phablets, regardless of form factors and operating characteristics must be tested as a phablet to determine SAR compliance.

- a) The normally required head and body-worn accessory SAR test procedures for handsets, including hotspot mode, must be applied.
- b) The UMPC mini-tablet procedures must also be applied to test the SAR of all surfaces and edges with an antenna located at  $\leq 25$  mm from that surface or edge, in direct contact with a flat phantom, for product specific 10-g SAR according to the body-equivalent tissue dielectric parameters in KDB Publication 865664 D01 to address interactive hand use exposure conditions. The 1-g SAR at 5 mm for UMPC mini-tablets is not required. When hotspot mode applies, product specific 10-g SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR  $> 1.2$  W/kg; however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold. The normal tablet procedures in KDB Publication 616217 are required when the overall diagonal dimension of the device is  $> 20.0$  cm. Hotspot mode SAR is not required when normal tablet procedures are applied. Product specific 10-g SAR is also not required for the front (top) surface of larger form factor full size tablets. The more conservative normal tablet SAR results can be used to support phablet mode product specific 10-g SAR.
- c) The simultaneous transmission operating configurations applicable to voice and data transmissions for both phone and mini-tablet modes must be taken into consideration separately for 1-g and 10-g SAR to determine the simultaneous transmission SAR test exclusion and measurement requirements for the relevant wireless modes and exposure conditions.

## 5.2 Measurement Variability

Per FCC KDB Publication 865664 D01, SAR measurement variability was assessed for each frequency band, which was determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. When both head and body tissue-equivalent media were required for SAR measurements in a frequency band, the variability measurement procedures were applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium. These additional measurements were repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device was returned to ambient conditions (normal room temperature) with the battery fully charged before it was re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

SAR Measurement Variability was assessed using the following procedures for each frequency band:

- 1) When the original highest measured SAR is  $\geq 0.80$  W/kg, the measurement was repeated once.
- 2) A second repeated measurement was performed only if the ratio of largest to smallest SAR for the original and first repeated measurements was  $> 1.20$  or when the original or repeated measurement was  $\geq 1.45$  W/kg (~ 10% from the 1-g SAR limit).
- 3) A third repeated measurement was performed only if the original, first or second repeated measurement was  $\geq 1.5$  W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is  $> 1.20$ .
- 4) Repeated measurements are not required when the original highest measured SAR is  $< 0.80$  W/kg

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.

## 5.3 Test Configuration

### 5.3.1 GSM Test Configuration

According to specification 3GPP TS 51.010, the maximum power of the GSM can do the power reduction for the multi-slot. The allowed power reduction in the multi-slot configuration is as following:

Output power of reductions:

**Table 3: The allowed power reduction in the multi-slot configuration**

Number of timeslots in uplink assignment	Permissible nominal reduction of maximum output power (dB)
1	0
2	0 to 3,0
3	1,8 to 4,8
4	3,0 to 6,0

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. GSM voice and GPRS data use GMSK, which is a constant amplitude modulation with minimal peak to average power difference within the time-slot burst. For EDGE, GMSK is used for MCS 1 – MCS 4 and 8-PSK is used for MCS 5 – MCS 9; where 8-PSK has an inherently higher peak-to-average power ratio. The GMSK and 8-PSK EDGE configurations are considered separately for SAR compliance. The GMSK EDGE configurations are grouped with GPRS and considered with respect to time-averaged maximum output power to determine compliance. The 3G SAR test reduction procedure is applied to 8-PSK EDGE with GMSK GPRS/EDGE as the primary mode.

### 5.3.2 UMTS Test Configuration

#### 5.3.2.1 3G SAR Test Reduction Procedure

The default test configuration is to measure SAR with an established radio link between the EUT and a communication test set using a 12.2 kbps RMC (reference measurement channel) configured in Test Loop Mode 1. SAR is selectively confirmed for other physical channel configurations modes according to output power, exposure conditions and device operating capabilities. Maximum output power is verified by applying the applicable versions of 3GPP TS 34.121.

#### 5.3.2.2 Head SAR

SAR for next to the ear head exposure is measured using a 12.2 kbps RMC with TPC bits configured to all "1's". The 3G SAR test reduction procedure is applied to AMR configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for 12.2 kbps AMR in 3.4 kbps SRB (signaling radio bearer) using the highest SAR configuration in 12.2 kbps RMC for head exposure.



### 5.3.2.3 Body-worn accessory SAR

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 EUT with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured using an applicable RMC configuration with the corresponding spreading code or DPDCHn, for the highest reported body-worn accessory exposure SAR configuration in 12.2 kbps RMC. When more than 2 DPDCHn are supported by the EUT, it may be necessary to configure additional DPDCHn using FTM (Factory Test Mode) or other chipset based test approaches with parameters similar to those used in 384 kbps and 768 kbps RMC

### 5.3.2.4 Release 5 HSDPA Test Configuration

The 3G SAR test reduction procedure is applied to HSDPA body-worn accessory configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for HSDPA using the HSDPA body SAR procedures in the “Release 5 HSDPA Data Devices” section of this document, for the highest SAR body-worn accessory exposure configuration in 12.2 kbps RMC. EUT with both HSDPA and HSUPA are tested according to Release 6 HSPA test procedures.

HSDPA should be configured according to the UE category of a test device. The number of HSDSCH/HS-PDSCHs, HARQ processes, minimum inter-TTI interval, transport block sizes and RV coding sequence are defined by the H-set. To maintain a consistent test configuration and stable transmission conditions, QPSK is used in the H-set for SAR testing. HS-DPCCH should be configured with a CQI feedback cycle of 4 ms with a CQI repetition factor of 2 to maintain a constant rate of active CQI slots. DPCCH and DPDCH gain factors ( $\beta_c$ ,  $\beta_d$ ), and HS-DPCCH power offset parameters ( $\Delta_{ACK}$ ,  $\Delta_{NACK}$ ,  $\Delta_{CQI}$ ) should be set according to values indicated in the Table below. The CQI value is determined by the UE category, transport block size, number of HS-PDSCHs and modulation used in the H-set.

**Table 4: Subtests for UMTS Release 5 HSDPA**

Sub-set	$\beta_c$	$\beta_d$	$\beta_d$ (SF)	$\beta_c/\beta_d$	$\beta_{hs}$ (note 1, note 2)	CM(dB) (note 3)	MPR(dB)
1	2/15	15/15	64	2/15	4/15	0.0	0.0
2	12/15 (note 4)	15/15 (note 4)	64	12/15 (note 4)	24/15	1.0	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:  $\Delta_{ACK}$ ,  $\Delta_{NACK}$  and  $\Delta_{CQI} = 8 \Leftrightarrow A_{hs} = \beta_{hs}/\beta_c = 30/15 \Leftrightarrow \beta_{hs} = 30/15 * \beta_c$   
 Note 2: CM=1 for  $\beta_c/\beta_d = 12/15$ ,  $\beta_{hs}/\beta_c = 24/15$ .  
 Note 3: For subtest 2 the  $\beta_c/\beta_d$  ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TFC1, TF1) to  $\beta_c = 11/15$  and  $\beta_d = 15/15$ .

### 5.3.2.5 Release 6 HSUPA Test Configuration

The 3G SAR test reduction procedure is applied to HSPA (HSUPA/HSDPA with RMC) body-worn accessory configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for HSPA using the HSPA body SAR procedures in the “Release 6 HSPA Data Devices” section of this document, for the highest body-worn accessory exposure SAR configuration in 12.2 kbps RMC. When VOIP is applicable for next to the ear head exposure in HSPA, the 3G SAR test reduction procedure is applied to HSPA with 12.2 kbps RMC as the primary mode; otherwise, the same HSPA configuration used for body-worn accessory measurements is tested for next to the ear head exposure.

Due to inner loop power control requirements in HSPA, a communication test set is required for output power and SAR tests. The 12.2 kbps RMC, FRC H-set 1 and E-DCH configurations for HSPA are configured according to the  $\beta$  values indicated in Table 2 and other applicable procedures described in the ‘WCDMA EUT’ and ‘Release 5 HSDPA Data Devices’ sections of this document

**Table 5: Sub-Test 5 Setup for Release 6 HSUPA**

Sub-set	$\beta_c$	$\beta_d$	$\beta_d$ (SF)	$\beta_c/\beta_d$	$\beta_{hs}^{(1)}$	$\beta_{ec}$	$\beta_{ed}$	$\beta_{ed}$ (SF)	$\beta_{ed}$ (codes)	CM <sup>(2)</sup> (dB)	MPR (dB)	AG <sup>(4)</sup> Index	E-TFCI
1	11/15 <sup>(3)</sup>	15/15 <sup>(3)</sup>	64	11/15 <sup>(3)</sup>	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 <sup>(4)</sup>	15/15 <sup>(4)</sup>	64	15/15 <sup>(4)</sup>	30/15	24/15	134/15	4	1	1.0	0.0	21	81

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

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  $\beta_c/\beta_d$  ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TF1, TF1) to  $\beta_c = 10/15$  and  $\beta_d = 15/15$ .

Note 4: For subtest 5 the  $\beta_c/\beta_d$  ratio of 15/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled 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 Figure 5.1g.

Note 6:  $\beta_{ed}$  cannot be set directly; it is set by Absolute Grant Value.

**Table 6: HSUPA UE category**

UE E-DCH Category	Maximum E-DCH Codes Transmitted	Number of HARQ Processes	E-DCHTTI (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	2	2 SF2 & 2	11484	5.76
	4	4	10	SF4	20000	2.00
7 (No DPDCH)	4	8	2	2 SF2 & 2	22996	?
	4	4	10	SF4	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 supports QPSK only. UE Category 7 supports QPSK and 16QAM.  
(TS25.306-7.3.0)

### 5.3.3 LTE Test Configuration

LTE modes were tested according to FCC KDB 941225 D05 publication. Please see notes after the tabulated SAR data for required test configurations. Establishing connections with base station simulators ensure a consistent means for testing SAR and are recommended for evaluating SAR. The R&S CMW500 was used for LTE output power measurements and SAR testing. Max power control was used so the UE transmits with maximum output power during SAR testing. SAR must be measured with the maximum TTI (transmit time interval) supported by the device in each LTE configuration.

#### A) Spectrum Plots for RB Configurations

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

#### B) MPR

MPR is permanently implemented for this device by the manufacturer. The specific manufacturer target MPR is indicated alongside the SAR results. MPR is enabled for this device, according to 3GPP TS36.101 Section 6.2.3 – 6.2.5 under Table 6.2.3-1.

#### C) A-MPR

A-MPR (Additional MPR) has been disabled for all SAR tests by setting NS=01 on the base station simulator.

#### D) Largest channel bandwidth standalone SAR test requirements

##### 1) 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  $\leq 0.8$  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.

##### 2) QPSK with 50% RB allocation

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

##### 3) 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 1) and 2) are  $\leq 0.8$  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.

##### 4) 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.

#### E) 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 > 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.

**5.3.4 Additional requirements for TDD LTE specification**

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 supports 3GPP TS 36.211 section 4.2 for Type 2 Frame Structure and Table: Uplink-downlink configurations for uplink-downlink configurations and Table: Configuration of special subframe (lengths of DwPTS/GP/UpPTS) for Special subframe configurations.

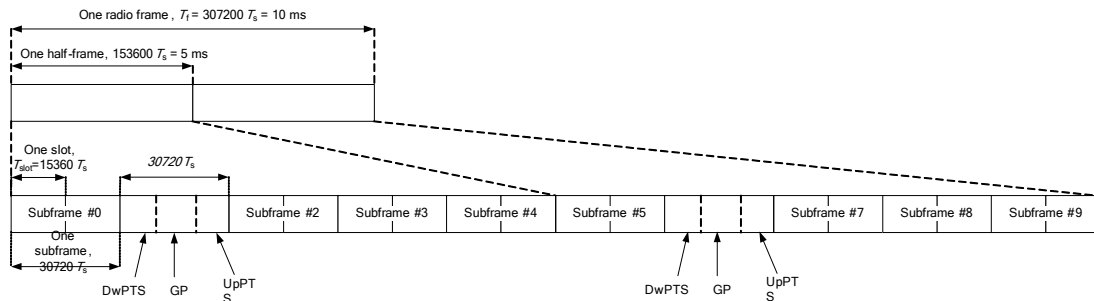


Figure 1: Frame structure type 2

**Table 7: Configuration of special subframe (lengths of DwPTS/GP/UpPTS)**

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

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

About the uplink component of Special subframes, we can figure out by Table: Configuration of special subframe (lengths of DwPTS/GP/UpPTS):

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

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.

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

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			
	D	S	U	Normal cyclic prefix in uplink		Extended cyclic prefix in uplink		Normal cyclic prefix in uplink		Extended cyclic prefix in uplink	
				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%

SAR test Plan: 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

Path: Physical Cell Setup/TDD/Uplink Downlink Configuration

Duplex Mode: TDD Use Carrier Specific:  Frame Structure Type 2

Search... 1CC - 1x1

DL Cell Bandwidth: 20.0 MHz #RB Max: 100

UL Cell Bandwidth: 20.0 MHz

Physical Cell ID: 0

Cyclic Prefix: Normal

Sounding RS (SRS):

SRS

TDD

Use Carrier Specific:

Uplink Downlink Configurat... 0

0	1	2	3	4	5	6	7	8	9
↓	S	↑	↑	↑	↓	S	↑	↑	↑

Special Subframe: 7

LTE Signaling ON



### 5.3.5 5G NR Test Configuration

For 5G NR SAR testing, due to test setup limitations, SAR testing for NR was performed using factory test mode software to establish the connection and perform SAR with 100% transmission.

The DFT-s-OFDM and CP-OFDM waveforms were investigated, and DFT-s-OFDM was found to be the worst case.

The worst-case scenario for all measurements is based on an engineering evaluation and QPSK was observed as the worst one and set for all conducted and radiated. Output power measurements were measured on QPSK, 16QAM, 64QAM, 256QAM modulations.



### 5.3.6 LTE CA specification

The device supports LTE advanced Rel. 15, Carrier Aggregation (CA) on downlink for Intra band and inter-band. Uplink CA is supported for Intra band only, more details information is provided in tables below:

#### 1) DL CA Intra band contiguous

E-UTRA CA configuration / Bandwidth combination set								
E-UTRA CA configuration	Uplink CA configurations (NOTE 3)	Component carriers in order of increasing carrier frequency					Maximum aggregated bandwidth [MHz]	Bandwidth combination set
		Channel bandwidths for carrier [MHz]	Channel bandwidths for carrier [MHz]	Channel bandwidths for carrier [MHz]	Channel bandwidths for carrier [MHz]	Channel bandwidths for carrier [MHz]		
CA_7C	CA_7C	15	15				40	0
		20	20					
		10	20				40	1
		15	15, 20					
		20	10, 15, 20				40	2
		15	10, 15					
CA_38C	CA_38C	15	15				40	0
		20	20					
CA_41C	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				40	2
		10	15, 20					
		15	10, 15, 20					
		20	10, 15, 20				40	3
		10	20					
20	20							

NOTE 1: The CA configuration refers to an operating band and a CA bandwidth class specified in Table 5.6A-1 (the indexing letter). Absence of a CA bandwidth class for an operating band implies support of all classes.

NOTE 2: For the supported CC bandwidth combinations, the CC downlink and uplink bandwidths are equal.

NOTE 3: Uplink CA configurations are the configurations supported by the present release of specifications.

NOTE 4: Restricted to E-UTRA operation when inter-band carrier aggregation is configured. The downlink operating band is paired with the uplink operating band (external) of the carrier aggregation configuration that is supporting the configured Pcell.

### 5.3.7 Wi-Fi Test Configuration

SAR test reduction for 802.11 Wi-Fi transmission mode configurations are considered separately for DSSS and OFDM. An initial test position is determined to reduce the number of tests required for certain exposure configurations with multiple test positions. An initial test configuration is determined for each frequency band and aggregated band according to maximum output power, channel bandwidth, wireless mode configurations and other operating parameters to streamline the measurement requirements. For 2.4 GHz DSSS, either the initial test position or DSSS procedure is applied to reduce the number of SAR tests; These are mutually exclusive. For OFDM, an initial test position is only applicable to next to the ear, UMPC mini-tablet and hotspot mode configurations, which is tested using the initial test configuration to facilitate test reduction. For other exposure conditions with a fixed test position, SAR test reduction is determined using only the initial test configuration.

The multiple test positions require SAR measurements in head, hotspot mode or UMPC mini-tablet configurations may be reduced according to the highest reported SAR determined using the *initial test position(s)* by applying the DSSS or OFDM SAR measurement procedures in the required wireless mode test configuration(s). The *initial test position(s)* is measured using the highest measured maximum output power channel in the required wireless mode test configuration(s). When the *reported SAR* for the *initial test position* is:

- $\leq 0.4$  W/kg, further SAR measurement is not required for the other test positions in that exposure configuration and wireless mode combination within the frequency band or aggregated band. DSSS and OFDM configurations are considered separately according to the required SAR procedures.
- 0.4 W/kg, SAR is repeated using the same wireless mode test configuration tested in the *initial test position* to measure the subsequent next closet/smallest test separation distance and maximum coupling test position, on the highest maximum output power channel, until the *reported SAR* is  $\leq 0.8$  W/kg or all required test positions are tested.
  - ◇ For subsequent test positions with equivalent test separation distance or when exposure is dominated by coupling conditions, the position for maximum coupling condition should be tested.
  - ◇ When it is unclear, all equivalent conditions must be tested.
- For all positions/configurations tested using the *initial test position* and subsequent test positions, when the *reported SAR* is  $> 0.8$  W/kg, measure the SAR for these positions/configurations on the subsequent next highest measured output power channel(s) until the *reported SAR* is  $\leq 1.2$  W/kg or all required test channels are considered.
  - ◇ The additional power measurements required for this step should be limited to those necessary for identifying subsequent highest output power channels to apply the test reduction.

To determine the initial test position, Area Scans were performed to determine the position with the Maximum Value of SAR (measured). The position that produced the highest Maximum Value of SAR is considered the worst case position; thus used as the initial test position.

A Wi-Fi device must be configured to transmit continuously at the required data rate, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools for SAR measurement.



### 5.3.8 BT Test Configuration

For BT SAR testing, BT engineering testing software installed on the EUT can provide continuous transmitting RF signal with maximum output power. And the CBT control the EUT operating with hopping off and data rate set for DH5.

The SAR measurement takes full account of the BT duty cycle and is reflected in the report, and the duty factor of the device is 76.53%.

### 5.3.9 Power Reduction Configuration

Overview of power reduction scenarios

The mobile phone device meets SAR requirements by accurately reducing the power of various scenes. Mainly the following scenarios:

- 1) Head SAR is mainly determined by whether the rec on or rec on + Wi-Fi on.
- 2) Body SAR is mainly determined by whether the rec off or rec off + sensor on/off or rec off + sensor on/off + wifi on.

Description of power reduction scenarios

The mobile phone device supports the receiver detection mechanism. This device uses the receiver to indicate whether the user is making a call in head or body.

When there is a voice call (including VOIP) and the audio is actively routed through the earpiece receiver, which indicating the head exposure condition it will trigger the head exposure reduced the power.

When there is a voice call (including VOIP), and the audio is actively routed through the headset or speaker, which indicating the body exposure conditions will trigger the body exposure reduced the power.

When this device used data mode only, and the receiver will not work too, the reduced the power are same as body exposure.

**WWAN Reduced power level table**

Antenna	Position	Reduced level	Receiver State	Sensor State	Transmitting conditions
ANT0	Head	LEVEL1	On	N/A	WWAN Only
		LEVEL2	On	N/A	WWAN+WLAN2.4G
		LEVEL3	On	N/A	WWAN+WLAN5G
	Body wron/ Product Specific	LEVEL4	Off	N/A	WWAN Only
	Body wron/Hotspot/Product Specific	LEVEL5	Off	N/A	WWAN+WLAN2.4G
		LEVEL6	Off	N/A	WWAN+WLAN5G
ANT1	Head	LEVEL1	On	N/A	WWAN Only
		LEVEL2	On	N/A	WWAN+WLAN2.4G
		LEVEL3	On	N/A	WWAN+WLAN5G
	Body wron/Product Specific	LEVEL4	Off	Off	WWAN Only/WWAN+WLAN2.4G/ WWAN+WLAN5G
			Off	On	
	Body wron/Hotspot/Product Specific	LEVEL5	Off	Off	
			Off	On	
		LEVEL6	Off	Off	
			Off	On	



Mode		Full power (dBm)	Antenna	Head(Receiver on)			Body wron/Hotspot/Product Specific(Receiver off)			Body wron/Hotspot/Product Specific(Receiver off+Sensor on)			Body wron/Hotspot/Product Specific(Receiver off+Sensor off)		
				Standalone	Simultaneous transmission		Standalone	Simultaneous transmission		Standalone	Simultaneous transmission		Standalone	Simultaneous transmission	
					WWAN+ 2.4G WLAN	WWAN+ 5G WLAN		WWAN+ 2.4G WLAN	WWAN+ 5G WLAN		WWAN+ 2.4G WLAN	WWAN+ 5G WLAN		WWAN+ 2.4G WLAN	WWAN+ 5G WLAN
GSM 850	GSM (CS)	33.5	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	/	/	/	/	/	/
GSM 1900	GSM (CS)	30.5	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	/	/	/	/	/	/
WCDMA Band2	12.2kbps RMC	24.3	Ant.0	0.0	0.0	0.0	2.0	2.0	2.0	/	/	/	/	/	/
WCDMA Band4	12.2kbps RMC	24.3	Ant.0	0.0	0.0	0.0	2.5	2.5	2.5	/	/	/	/	/	/
WCDMA Band5	12.2kbps RMC	25.0	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	/	/	/	/	/	/

Mode		Full power (dBm)	Antenna	Head(Receiver on)			Body wron/Hotspot/Product Specific(Receiver off+Sensor on)			Body wron/Hotspot/Product Specific(Receiver off+Sensor off)		
				Standalone	Simultaneous transmission		Standalone	Simultaneous transmission		Standalone	Simultaneous transmission	
					WWAN+ 2.4G WLAN	WWAN+ 5G WLAN		WWAN+ 2.4G WLAN	WWAN+ 5G WLAN		WWAN+ 2.4G WLAN	WWAN+ 5G WLAN
GSM 850	GSM (CS)	33.5	Ant.1	2.5	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0
GSM 1900	GSM (CS)	30.5	Ant.1	6.0	7.5	7.5	3.0	3.0	3.0	0.0	0.0	0.0
WCDMA Band2	12.2kbps RMC	24.3	Ant.1	7.5	9.0	9.0	4.5	4.5	4.5	0.0	0.0	0.0
WCDMA Band4	12.2kbps RMC	24.3	Ant.1	6.0	7.5	7.5	2.5	2.5	2.5	0.0	0.0	0.0
WCDMA Band5	12.2kbps RMC	25.0	Ant.1	1.5	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0



Mode	Band	Full power (dBm)	Antenna	Head(Receiver on)			Body wron/Hotspot/Product Specific(Receiver off)			Body wron/Hotspot/Product Specific(Receiver off+Sensor on)			Body wron/Hotspot/Product Specific(Receiver off+Sensor off)		
				Standalone	Simultaneous transmission		Standalone	Simultaneous transmission		Standalone	Simultaneous transmission		Standalone	Simultaneous transmission	
					WWAN+	WWAN+		WWAN+	WWAN+		WWAN+	WWAN+			
					2.4G WLAN	5G WLAN		2.4G WLAN	5G WLAN		2.4G WLAN	5G WLAN			
LTE Bands	LTE B2	24.5	Ant.0	0.0	0.0	0.0	2.5	2.5	2.5	/	/	/	/	/	/
	LTE B4	24.5	Ant.0	0.0	0.0	0.0	1.5	1.5	1.5	/	/	/	/	/	/
	LTE B5	25.0	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	/	/	/	/	/	/
	LTE B7	24.0	Ant.0	0.0	0.0	0.0	1.0	1.0	1.0	/	/	/	/	/	/
	LTE B12	25.0	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	/	/	/	/	/	/
	LTE B17	25.0	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	/	/	/	/	/	/
	LTE B26	25.0	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	/	/	/	/	/	/
	LTE B66	24.5	Ant.0	0.0	0.0	0.0	2.5	2.5	2.5	/	/	/	/	/	/
	LTE B38	24.5	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	/	/	/	/	/	/
	LTE B41	24.5	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	/	/	/	/	/	/
SA Bands	N5	24.8	Ant.0	0.0	0.0	0.0	0.0	1.0	1.0	/	/	/	/	/	/
	N7	24.0	Ant.0	0.0	0.0	0.0	0.5	0.5	0.5	/	/	/	/	/	/
	N38	24.0	Ant.0	0.0	0.0	0.0	1.5	1.5	1.5	/	/	/	/	/	/
	N41	23.5	Ant.0	0.0	0.0	0.0	1.5	1.5	1.5	/	/	/	/	/	/
	N66	24.0	Ant.0	0.0	0.0	0.0	1.0	1.0	1.0	/	/	/	/	/	/



Mode	Band	Full power (dBm)	Antenna	Head(Receiver on)			Body wron/Hotspot/Product Specific(Receiver off+Sensor on)			Body wron/Hotspot/Product Specific(Receiver off+Sensor off)		
				Standalone	Simultaneous transmission		Standalone	Simultaneous transmission		Standalone	Simultaneous transmission	
					WWAN+ 2.4G WLAN	WWAN+ 5G WLAN		WWAN+ 2.4G WLAN	WWAN+ 5G WLAN		WWAN+ 2.4G WLAN	WWAN+ 5G WLAN
LTE Bands	LTE B2	24.5	Ant.1	7.5	9.0	9.0	4.5	4.5	4.5	0.0	0.0	0.0
	LTE B4	24.5	Ant.1	7.5	9.0	9.0	4.0	4.0	4.0	0.0	0.0	0.0
	LTE B5	25.0	Ant.1	1.5	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0
	LTE B7	24.0	Ant.1	7.7	9.5	9.5	4.5	4.5	4.5	0.0	0.0	0.0
	LTE B12	25.0	Ant.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	LTE B17	25.0	Ant.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	LTE B26	25.0	Ant.1	1.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0
	LTE B66	24.5	Ant.1	5.5	7.5	7.5	3.0	3.0	3.0	0.0	0.0	0.0
	LTE B38	24.5	Ant.1	6.0	8.0	8.0	1.5	1.5	1.5	0.0	0.0	0.0
	LTE B41	24.5	Ant.1	6.0	8.0	8.0	0.5	0.5	0.5	0.0	0.0	0.0
SA Bands	N5	24.8	Ant.1	3.5	5.5	5.5	0.0	0.0	0.0	0.0	0.0	0.0
	N7	24.0	Ant.1	7.5	9.0	9.0	4.0	4.0	4.0	0.0	0.0	0.0
	N38	24.0	Ant.1	4.5	6.5	6.5	3.0	3.0	3.0	0.0	0.0	0.0
	N41	24.0	Ant.1	8.0	10.0	10.0	2.5	2.5	2.5	0.0	0.0	0.0
	N66	23.5	Ant.1	6.5	8.0	8.0	2.5	2.5	2.5	0.0	0.0	0.0



Mode	Band	Full power (dBm)	Antenna	Head(Receiver on)			Body/ Product Specific (Receiver off)			Body/ Product Specific (Receiver off +Sensor on)			Body/ Product Specific (Receiver off +Sensor off)		
				Standalone	Simultaneous transmission		Standalone	Simultaneous transmission		Standalone	Simultaneous transmission		Standalone	Simultaneous transmission	
					WWAN+	WWAN+		WWAN+	WWAN+		WWAN+	WWAN+			
					2.4G WLAN	5G WLAN		2.4G WLAN	5G WLAN		2.4G WLAN	5G WLAN			
LTE Bands	LTE B2	/	/	/	/	/	/	/	/	/	/	/	/	/	
	LTE B4	/	/	/	/	/	/	/	/	/	/	/	/	/	
	LTE B5	/	/	/	/	/	/	/	/	/	/	/	/	/	
	LTE B7	/	/	/	/	/	/	/	/	/	/	/	/	/	
	LTE B12	/	/	/	/	/	/	/	/	/	/	/	/	/	
	LTE B17	/	/	/	/	/	/	/	/	/	/	/	/	/	
	LTE B26	/	/	/	/	/	/	/	/	/	/	/	/	/	
	LTE B66	/	/	/	/	/	/	/	/	/	/	/	/	/	
	LTE B38	/	/	/	/	/	/	/	/	/	/	/	/	/	
	LTE B41	/	/	/	/	/	/	/	/	/	/	/	/	/	
SA Bands	N5		/	/	/	/	/	/	/	/	/	/	/	/	
	N7	23.0	Ant.4	0.5	2.0	2.0	0.5	0.5	0.5	/	/	/	/	/	
	N38	23.0	Ant.4	0.0	0.0	0.0	1.5	1.5	1.5	/	/	/	/	/	
	N41	22.5	Ant.4	1.5	3.0	3.0	1.5	1.5	1.5	/	/	/	/	/	
	N66	23.5	Ant.4	0.0	0.0	0.0	0.0	0.0	0.0	/	/	/	/	/	



Mode	Band	Full power (dBm)	Antenna	Head(Receiver on)			Body wron/Hotspot/Product Specific(Receiver off+Sensor on)			Body wron/Hotspot/Product Specific(Receiver off+Sensor off)		
				Standalone	Simultaneous transmission		Standalone	Simultaneous transmission		Standalone	Simultaneous transmission	
					WWAN+ 2.4G WLAN	WWAN+ 5G WLAN		WWAN+ 2.4G WLAN	WWAN+ 5G WLAN		WWAN+ 2.4G WLAN	WWAN+ 5G WLAN
EN-DC (B5+N66)	LTE B5	25.0	Ant.1	3.0	5.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0
	N66	24.0	Ant.0	0.0	0.0	0.0	4.0	4.0	4.0	4.0	4.0	4.0
EN-DC (B7+N66)	LTE B7	24.0	Ant.1	9.0	11.0	11.0	6.0	6.0	6.0	0.0	0.0	0.0
	N66	24.0	Ant.0	0.0	0.0	0.0	/	/	/	/	/	/
EN-DC (B12+N66)	LTE B12	25.0	Ant.1	0.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0
	N66	24.0	Ant.0	0.0	0.0	0.0	4.0	4.0	4.0	4.0	4.0	4.0

Mode	Band	Full power (dBm)	Antenna	Head(Receiver on)			Body wron/Hotspot/Product Specific(Receiver off+Sensor on)			Body wron/Hotspot/Product Specific(Receiver off+Sensor off)		
				Standalone	Simultaneous transmission		Standalone	Simultaneous transmission		Standalone	Simultaneous transmission	
					WWAN+ 2.4G WLAN	WWAN+ 5G WLAN		WWAN+ 2.4G WLAN	WWAN+ 5G WLAN		WWAN+ 2.4G WLAN	WWAN+ 5G WLAN
EN-DC (B5+N66)	LTE B5	25.0	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	N66	23.5	Ant.1	8.5	10.0	10.0	6.0	6.0	6.0	0.0	0.0	0.0
EN-DC (B7+N66)	LTE B7	23.0	Ant.4	0.0	3.5	3.5	3.0	3.0	3.0	3.0	3.0	3.0
	N66	24.0	Ant.0	0.0	0.0	0.0	4.0	4.0	4.0	4.0	4.0	4.0
EN-DC (B12+N66)	LTE B12	25.0	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	N66	23.5	Ant.1	8.5	10.0	10.0	6.0	6.0	6.0	0.0	0.0	0.0





Mode	Band	Full power (dBm)	Antenna	Head(Receiver on)			Body wron/Hotspot/Product Specific(Receiver off+Sensor on)			Body wron/Hotspot/Product Specific(Receiver off+Sensor off)		
				Standalone	Simultaneous transmission		Standalone	Simultaneous transmission		Standalone	Simultaneous transmission	
					WWAN+ 2.4G WLAN	WWAN+ 5G WLAN		WWAN+ 2.4G WLAN	WWAN+ 5G WLAN		WWAN+ 2.4G WLAN	WWAN+ 5G WLAN
EN-DC (B5+N66)	LTE B5	25.0	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	N66	23.5	Ant.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EN-DC (B7+N66)	LTE B7	24.0	Ant.0	0.0	0.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0
	N66	23.5	Ant.1	8.5	10.0	10.0	6.0	6.0	6.0	0.0	0.0	0.0
EN-DC (B12+N66)	LTE B12	25.0	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	N66	23.5	Ant.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Mode	Band	Full power (dBm)	Antenna	Head(Receiver on)			Body wron/Hotspot/Product Specific(Receiver off+Sensor on)			Body wron/Hotspot/Product Specific(Receiver off+Sensor off)		
				Standalone	Simultaneous transmission		Standalone	Simultaneous transmission		Standalone	Simultaneous transmission	
					WWAN+ 2.4G WLAN	WWAN+ 5G WLAN		WWAN+ 2.4G WLAN	WWAN+ 5G WLAN		WWAN+ 2.4G WLAN	WWAN+ 5G WLAN
EN-DC (B5+N66)	LTE B5	25.0	Ant.1	3.0	5.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0
	N66	23.5	Ant.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EN-DC (B7+N66)	LTE B7	23.0	Ant.4	0.0	3.5	3.5	3.0	3.0	3.0	3.0	3.0	3.0
	N66	23.5	Ant.1	8.5	10.0	10.0	6.0	6.0	6.0	0.0	0.0	0.0
EN-DC (B12+N66)	LTE B12	25.0	Ant.1	0.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0
	N66	23.5	Ant.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



Mode	Band	Full power (dBm)	Antenna	Head(Receiver on)			Body wron/Hotspot/Product Specific(Receiver off+Sensor on)			Body wron/Hotspot/Product Specific(Receiver off+Sensor off)		
				Standalone	Simultaneous transmission		Standalone	Simultaneous transmission		Standalone	Simultaneous transmission	
					WWAN+ 2.4G WLAN	WWAN+ 5G WLAN		WWAN+ 2.4G WLAN	WWAN+ 5G WLAN		WWAN+ 2.4G WLAN	WWAN+ 5G WLAN
EN-DC (B5+N66)	LTE B5	/	/	/	/	/	/	/	/	/	/	/
	N66	/	/	/	/	/	/	/	/	/	/	/
EN-DC (B7+N66)	LTE B7	24.0	Ant.0	0.0	0.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0
	N66	23.5	Ant.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EN-DC (B12+N66)	LTE B12	/	/	/	/	/	/	/	/	/	/	/
	N66	/	/	/	/	/	/	/	/	/	/	/

Mode	Band	Full power (dBm)	Antenna	Head(Receiver on)			Body wron/Hotspot/Product Specific(Receiver off+Sensor on)			Body wron/Hotspot/Product Specific(Receiver off+Sensor off)		
				Standalone	Simultaneous transmission		Standalone	Simultaneous transmission		Standalone	Simultaneous transmission	
					WWAN+ 2.4G WLAN	WWAN+ 5G WLAN		WWAN+ 2.4G WLAN	WWAN+ 5G WLAN		WWAN+ 2.4G WLAN	WWAN+ 5G WLAN
EN-DC (B5+N66)	LTE B5	/	/	/	/	/	/	/	/	/	/	/
	N66	/	/	/	/	/	/	/	/	/	/	/
EN-DC (B7+N66)	LTE B7	24.0	Ant.1	9.0	11.0	11.0	6.0	6.0	6.0	0.0	0.0	0.0
	N66	23.5	Ant.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EN-DC (B12+N66)	LTE B12	/	/	/	/	/	/	/	/	/	/	/
	N66	/	/	/	/	/	/	/	/	/	/	/



**WLAN Reduced power level table**

Antenna	Position	Reduced level	Receiver State	Transmitting conditions
ANT7	Head	LEVEL1	On	WWAN Only
		LEVEL2	On	WWAN+WLAN2.4G or WLAN5G
	Body wron/Product Specific	LEVEL3	Off	WWAN Only
	Body wron/Hotspot/Product Specific	LEVEL4	Off	WWAN+WLAN2.4G or WLAN5G

Mode	Band	Full power (dBm)	Head(Receiver on)		Body wron/Product Specific(Receiver off)	Body wron/Hotspot/Product Specific(Receiver off)
			Standalone	Simultaneous transmission	Standalone	Simultaneous transmission
				WWAN+ 2.4/5G WLAN		WWAN+ 2.4/5G WLAN
2.4G	802.11b CH1-11	14.0	0.0	0.0	0.0	0.0
	802.11g CH1-11	19.0	1.0	3.0	0.0	0.0
	802.11nHT20 CH1-11	19.0	1.0	3.0	0.0	0.0
	802.11nHT40 CH3-9	19.0	4.0	3.0	0.0	0.0
5G U-NII-1	802.11a CH36-48	19.0	3.0	6.0	1.0	3.0
	802.11nHT20 CH36-48	19.0	3.0	6.0	1.0	3.0
	802.11nHT40 CH38-46	19.0	3.0	6.0	1.0	3.0
	802.11acVHT20 CH36-48	19.0	3.0	6.0	1.0	3.0
	802.11acVHT40 CH38-46	19.0	3.0	6.0	1.0	3.0
	802.11acVHT80 CH42	11.0	0.0	0.0	0.0	0.0
5G U-NII-2A	802.11a CH52-64	19.0	3.0	6.0	1.0	3.0
	802.11nHT20 CH52-64	19.0	3.0	6.0	1.0	3.0
	802.11nHT40 CH54-62	19.0	3.0	6.0	1.0	3.0
	802.11acVHT20 CH52-64	19.0	3.0	6.0	1.0	3.0



	802.11acVHT40 CH54-62	19.0	3.0	6.0	1.0	3.0
	802.11acVHT80 CH58	13.0	0.0	0.0	0.0	0.0
5G U-NII-2C	802.11a CH100-140	19.0	3.0	6.0	1.0	3.0
	802.11nHT20 CH100-140	19.0	3.0	6.0	1.0	3.0
	802.11nHT40 CH102-134	19.0	3.0	6.0	1.0	3.0
	802.11acVHT20 CH100-140	19.0	3.0	6.0	1.0	3.0
	802.11acVHT40 CH102-134	19.0	3.0	6.0	1.0	3.0
	802.11acVHT80 CH106-122	17.0	1.0	4.0	0.0	1.0
5G U-NII-3	802.11a CH149-165	19.0	3.0	6.0	1.0	3.0
	802.11nHT20 CH149-165	19.0	3.0	6.0	1.0	3.0
	802.11nHT40 CH151-159	19.0	3.0	6.0	1.0	3.0
	802.11acVHT20 CH149-165	19.0	3.0	6.0	1.0	3.0
	802.11acVHT40 CH151-159	19.0	3.0	6.0	1.0	3.0
	802.11acVHT80 CH155	16.0	0.0	3.0	0.0	0.0

### 5.3.10 Proximity sensor Configuration

Due to the operating configurations and exposure conditions required by the device, the proximity sensor is used to indicate when the device is held close to a user's body exposure condition. It utilizes the proximity sensor to reduce the output power in specific wireless and operating modes of Antenna 1 to ensure SAR compliance. It is also set an output power leveled to the lowest one to make sure that in any case of SAR sensor hardware failure, the SAR requirements can still be satisfied.

The following tables summarize the key power reduction information for proximity sensor. The test procedures be applied to determine proximity sensor triggering distances, and sensor coverage for normal and tilt positions. To ensure all production units are compliant, it is generally necessary to reduce the triggering distance determined from the triggering tests by 1 mm, or more if it is necessary, and use the smallest distance for movements to and from the phantom, minus 1 mm, as the sensor triggering distance for determining the SAR measurement distance.

Antenna 1				
Band	Test position	Sensor Trigger Distance range (DUT to Phantom)	Power reduction amount(dB)	Power level
GSM 1900	Back side	0mm≤distance≤17mm	3.0	LEVEL4&5&6-Sensor on
		17mm<distance	0.0	LEVEL4&5&6-Sensor off
	Front side	0mm≤distance≤11mm	3.0	LEVEL4&5&6-Sensor on
		11mm<distance	0.0	LEVEL4&5&6-Sensor off
	Left edge	0mm≤distance≤10mm	3.0	LEVEL4&5&6-Sensor on
		10mm<distance	0.0	LEVEL4&5&6-Sensor off
	Top edge	0mm≤distance≤19mm	3.0	LEVEL4&5&6-Sensor on
		19mm<distance	0.0	LEVEL4&5&6-Sensor off
	Right edge	ALL	0.0	LEVEL4&5&6-Sensor off
	Bottom Edge	ALL	0.0	LEVEL4&5&6-Sensor off
WCDMA B2	Back side	0mm≤distance≤17mm	4.5	LEVEL4&5&6-Sensor on
		17mm<distance	0.0	LEVEL4&5&6-Sensor off
	Front side	0mm≤distance≤11mm	4.5	LEVEL4&5&6-Sensor on
		11mm<distance	0.0	LEVEL4&5&6-Sensor off
	Left edge	0mm≤distance≤10mm	4.5	LEVEL4&5&6-Sensor on
		10mm<distance	0.0	LEVEL4&5&6-Sensor off
	Top edge	0mm≤distance≤19mm	4.5	LEVEL4&5&6-Sensor on
		19mm<distance	0.0	LEVEL4&5&6-Sensor off
	Right edge	ALL	0.0	LEVEL4&5&6-Sensor off
	Bottom Edge	ALL	0.0	LEVEL4&5&6-Sensor off
WCDMA B4	Back side	0mm≤distance≤17mm	2.5	LEVEL4&5&6-Sensor on
		17mm<distance	0.0	LEVEL4&5&6-Sensor off
	Front side	0mm≤distance≤11mm	2.5	LEVEL4&5&6-Sensor on
		11mm<distance	0.0	LEVEL4&5&6-Sensor off
	Left edge	0mm≤distance≤10mm	2.5	LEVEL4&5&6-Sensor on



	Top edge	10mm<distance	0.0	LEVEL4&5&6-Sensor off
		0mm≤distance≤19mm	2.5	LEVEL4&5&6-Sensor on
		19mm<distance	0.0	LEVEL4&5&6-Sensor off
	Right edge	ALL	0.0	LEVEL4&5&6-Sensor off
	Bottom Edge	ALL	0.0	LEVEL4&5&6-Sensor off
LTE B2	Back side	0mm≤distance≤17mm	4.5	LEVEL4&5&6-Sensor on
		17mm<distance	0.0	LEVEL4&5&6-Sensor off
	Front side	0mm≤distance≤11mm	4.5	LEVEL4&5&6-Sensor on
		11mm<distance	0.0	LEVEL4&5&6-Sensor off
	Left edge	0mm≤distance≤10mm	4.5	LEVEL4&5&6-Sensor on
		10mm<distance	0.0	LEVEL4&5&6-Sensor off
	Top edge	0mm≤distance≤19mm	4.5	LEVEL4&5&6-Sensor on
		19mm<distance	0.0	LEVEL4&5&6-Sensor off
	Right edge	ALL	0.0	LEVEL4&5&6-Sensor off
	Bottom Edge	ALL	0.0	LEVEL4&5&6-Sensor off
LTE B4	Back side	0mm≤distance≤17mm	4.0	LEVEL4&5&6-Sensor on
		17mm<distance	0.0	LEVEL4&5&6-Sensor off
	Front side	0mm≤distance≤11mm	4.0	LEVEL4&5&6-Sensor on
		11mm<distance	0.0	LEVEL4&5&6-Sensor off
	Left edge	0mm≤distance≤10mm	4.0	LEVEL4&5&6-Sensor on
		10mm<distance	0.0	LEVEL4&5&6-Sensor off
	Top edge	0mm≤distance≤19mm	4.0	LEVEL4&5&6-Sensor on
		19mm<distance	0.0	LEVEL4&5&6-Sensor off
	Right edge	ALL	0.0	LEVEL4&5&6-Sensor off
	Bottom Edge	ALL	0.0	LEVEL4&5&6-Sensor off
LTE B7	Back side	0mm≤distance≤17mm	4.5	LEVEL4&5&6-Sensor on
		17mm<distance	0.0	LEVEL4&5&6-Sensor off
	Front side	0mm≤distance≤11mm	4.5	LEVEL4&5&6-Sensor on



	Left edge	11mm<distance	0.0	LEVEL4&5&6-Sensor off
		0mm≤distance≤10mm	4.5	LEVEL4&5&6-Sensor on
	Top edge	10mm<distance	0.0	LEVEL4&5&6-Sensor off
		0mm≤distance≤19mm	4.5	LEVEL4&5&6-Sensor on
	Right edge	19mm<distance	0.0	LEVEL4&5&6-Sensor off
		ALL	0.0	LEVEL4&5&6-Sensor off
	Bottom Edge	ALL	0.0	LEVEL4&5&6-Sensor off
LTE B66	Back side	0mm≤distance≤17mm	3.0	LEVEL4&5&6-Sensor on
		17mm<distance	0.0	LEVEL4&5&6-Sensor off
	Front side	0mm≤distance≤11mm	3.0	LEVEL4&5&6-Sensor on
		11mm<distance	0.0	LEVEL4&5&6-Sensor off
	Left edge	0mm≤distance≤10mm	3.0	LEVEL4&5&6-Sensor on
		10mm<distance	0.0	LEVEL4&5&6-Sensor off
	Top edge	0mm≤distance≤19mm	3.0	LEVEL4&5&6-Sensor on
		19mm<distance	0.0	LEVEL4&5&6-Sensor off
	Right edge	ALL	0.0	LEVEL4&5&6-Sensor off
	Bottom Edge	ALL	0.0	LEVEL4&5&6-Sensor off
LTE B38	Back side	0mm≤distance≤17mm	1.5	LEVEL4&5&6-Sensor on
		17mm<distance	0.0	LEVEL4&5&6-Sensor off
	Front side	0mm≤distance≤11mm	1.5	LEVEL4&5&6-Sensor on
		11mm<distance	0.0	LEVEL4&5&6-Sensor off
	Left edge	0mm≤distance≤10mm	1.5	LEVEL4&5&6-Sensor on
		10mm<distance	0.0	LEVEL4&5&6-Sensor off
	Top edge	0mm≤distance≤19mm	1.5	LEVEL4&5&6-Sensor on
		19mm<distance	0.0	LEVEL4&5&6-Sensor off
	Right edge	ALL	0.0	LEVEL4&5&6-Sensor off
	Bottom Edge	ALL	0.0	LEVEL4&5&6-Sensor off
LTE B41	Back side	0mm≤distance≤17mm	0.5	LEVEL4&5&6-Sensor on



	Front side	17mm<distance	0.0	LEVEL4&5&6-Sensor off
		0mm≤distance≤11mm	0.5	LEVEL4&5&6-Sensor on
	Left edge	11mm<distance	0.0	LEVEL4&5&6-Sensor off
		0mm≤distance≤10mm	0.5	LEVEL4&5&6-Sensor on
	Top edge	10mm<distance	0.0	LEVEL4&5&6-Sensor off
		0mm≤distance≤19mm	0.5	LEVEL4&5&6-Sensor on
	Right edge	19mm<distance	0.0	LEVEL4&5&6-Sensor off
	Bottom Edge	ALL	0.0	LEVEL4&5&6-Sensor off
SA N7	Back side	ALL	0.0	LEVEL4&5&6-Sensor off
		0mm≤distance≤17mm	4.0	LEVEL4&5&6-Sensor on
	Front side	17mm<distance	0.0	LEVEL4&5&6-Sensor off
		0mm≤distance≤11mm	4.0	LEVEL4&5&6-Sensor on
	Left edge	11mm<distance	0.0	LEVEL4&5&6-Sensor off
		0mm≤distance≤10mm	4.0	LEVEL4&5&6-Sensor on
	Top edge	10mm<distance	0.0	LEVEL4&5&6-Sensor off
		0mm≤distance≤19mm	4.0	LEVEL4&5&6-Sensor on
Right edge	19mm<distance	0.0	LEVEL4&5&6-Sensor off	
Bottom Edge	ALL	0.0	LEVEL4&5&6-Sensor off	
SA N38	Back side	ALL	0.0	LEVEL4&5&6-Sensor off
		0mm≤distance≤17mm	3.0	LEVEL4&5&6-Sensor on
	Front side	17mm<distance	0.0	LEVEL4&5&6-Sensor off
		0mm≤distance≤11mm	3.0	LEVEL4&5&6-Sensor on
	Left edge	11mm<distance	0.0	LEVEL4&5&6-Sensor off
		0mm≤distance≤10mm	3.0	LEVEL4&5&6-Sensor on
	Top edge	10mm<distance	0.0	LEVEL4&5&6-Sensor off
		0mm≤distance≤19mm	3.0	LEVEL4&5&6-Sensor on
Right edge	19mm<distance	0.0	LEVEL4&5&6-Sensor off	
Bottom Edge	ALL	0.0	LEVEL4&5&6-Sensor off	





	Bottom Edge	ALL	0.0	LEVEL4&5&6-Sensor off
SA N41	Back side	0mm≤distance≤17mm	2.5	LEVEL4&5&6-Sensor on
		17mm<distance	0.0	LEVEL4&5&6-Sensor off
	Front side	0mm≤distance≤11mm	2.5	LEVEL4&5&6-Sensor on
		11mm<distance	0.0	LEVEL4&5&6-Sensor off
	Left edge	0mm≤distance≤10mm	2.5	LEVEL4&5&6-Sensor on
		10mm<distance	0.0	LEVEL4&5&6-Sensor off
	Top edge	0mm≤distance≤19mm	2.5	LEVEL4&5&6-Sensor on
		19mm<distance	0.0	LEVEL4&5&6-Sensor off
	Right edge	ALL	0.0	LEVEL4&5&6-Sensor off
	Bottom Edge	ALL	0.0	LEVEL4&5&6-Sensor off
SA n66	Back side	0mm≤distance≤17mm	2.5	LEVEL4&5&6-Sensor on
		17mm<distance	0.0	LEVEL4&5&6-Sensor off
	Front side	0mm≤distance≤11mm	2.5	LEVEL4&5&6-Sensor on
		11mm<distance	0.0	LEVEL4&5&6-Sensor off
	Left edge	0mm≤distance≤10mm	2.5	LEVEL4&5&6-Sensor on
		10mm<distance	0.0	LEVEL4&5&6-Sensor off
	Top edge	0mm≤distance≤19mm	2.5	LEVEL4&5&6-Sensor on
		19mm<distance	0.0	LEVEL4&5&6-Sensor off
	Right edge	ALL	0.0	LEVEL4&5&6-Sensor off
	Bottom Edge	ALL	0.0	LEVEL4&5&6-Sensor off
EN-DC_LTE B7	Back side	0mm≤distance≤17mm	6.0	LEVEL4&5&6-Sensor on
		17mm<distance	0.0	LEVEL4&5&6-Sensor off
	Front side	0mm≤distance≤11mm	6.0	LEVEL4&5&6-Sensor on
		11mm<distance	0.0	LEVEL4&5&6-Sensor off
	Left edge	0mm≤distance≤10mm	6.0	LEVEL4&5&6-Sensor on
		10mm<distance	0.0	LEVEL4&5&6-Sensor off
	Top edge	0mm≤distance≤19mm	6.0	LEVEL4&5&6-Sensor on



		19mm<distance	0.0	LEVEL4&5&6-Sensor off
	Right edge	ALL	0.0	LEVEL4&5&6-Sensor off
	Bottom Edge	ALL	0.0	LEVEL4&5&6-Sensor off
EN-DC_N66	Back side	0mm≤distance≤17mm	6.0	LEVEL4&5&6-Sensor on
		17mm<distance	0.0	LEVEL4&5&6-Sensor off
	Front side	0mm≤distance≤11mm	6.0	LEVEL4&5&6-Sensor on
		11mm<distance	0.0	LEVEL4&5&6-Sensor off
	Left edge	0mm≤distance≤10mm	6.0	LEVEL4&5&6-Sensor on
		10mm<distance	0.0	LEVEL4&5&6-Sensor off
	Top edge	0mm≤distance≤19mm	6.0	LEVEL4&5&6-Sensor on
		19mm<distance	0.0	LEVEL4&5&6-Sensor off
	Right edge	ALL	0.0	LEVEL4&5&6-Sensor off
	Bottom Edge	ALL	0.0	LEVEL4&5&6-Sensor off

**Note:**

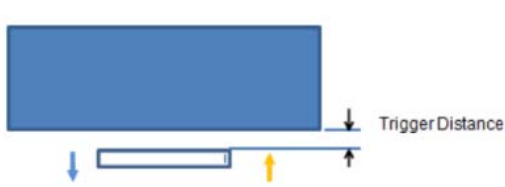
To ensure all production units are compliant, the smallest separation distance determined by the sensor triggering and sensor coverage for normal and tit positions for all usage conditions and applicable sides, minus 1 mm, must be used as the test separation distance for additional SAR testing of each higherpower stage.

For the other sides or other frequency bands of the device, SAR is still tested at the maximum full powerlevel with sensor off.

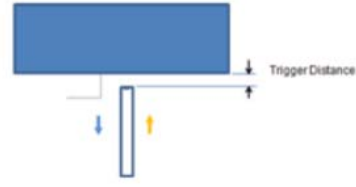
**2.Procedures for determining proximity sensor triggering distances**

The device was tested by the test lab to determine the proximity sensor triggering distances for the frontside, back side and bottom side of the device. To ensure all production units are compliant, the smallest separation distance determined by the sensor triggering minus 1 mm, must be used as the test separation distance for SAR testing.

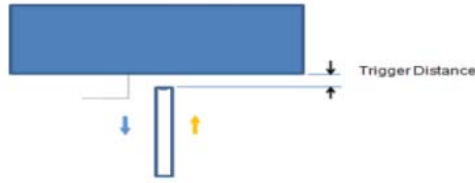
TheProximity sensor triggering distance measurement method are as below:



Picture: Proximity sensor triggering distances assessment (Front/Back side)



Picture: Proximity sensor triggering distances assessment (Left edge)



Picture: Proximity sensor triggering distances assessment (Top edge)

**Table: Summary of Trigger Distances**

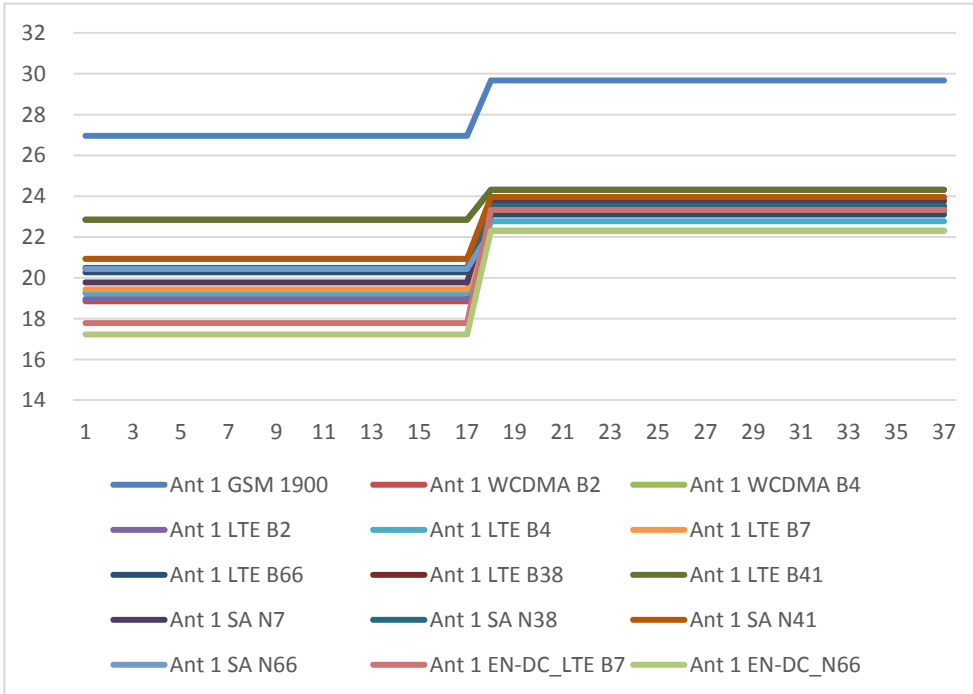
Band	Trigger distance- Back Side		Trigger distance- Front Side		Trigger distance- Left Edge	
	Moving toward Phantom	Moving away from Phantom	Moving toward Phantom	Moving away from Phantom	Moving toward Phantom	Moving away from Phantom
GSM 1900	17mm	17mm	11mm	11mm	10mm	10mm
WCDMA B2	17mm	17mm	11mm	11mm	10mm	10mm
WCDMA B4	17mm	17mm	11mm	11mm	10mm	10mm
LTE B2	17mm	17mm	11mm	11mm	10mm	10mm
LTE B4	17mm	17mm	11mm	11mm	10mm	10mm
LTE B7& EN-DC_LTE B7	17mm	17mm	11mm	11mm	10mm	10mm
LTE B66	17mm	17mm	11mm	11mm	10mm	10mm
LTE B38	17mm	17mm	11mm	11mm	10mm	10mm
LTE B41	17mm	17mm	11mm	11mm	10mm	10mm
SA N7	17mm	17mm	11mm	11mm	10mm	10mm
SA N38	17mm	17mm	11mm	11mm	10mm	10mm
SA N41	17mm	17mm	11mm	11mm	10mm	10mm
SA N66& EN-DC_N66	17mm	17mm	11mm	11mm	10mm	10mm

Band	Trigger distance- Right Edge		Trigger distance- Top Edge	
	Moving toward Phantom	Moving away from Phantom	Moving toward Phantom	Moving away from Phantom
GSM 1900	N/A	N/A	19mm	19mm
WCDMA B2	N/A	N/A	19mm	19mm
WCDMA B4	N/A	N/A	19mm	19mm
LTE B2	N/A	N/A	19mm	19mm
LTE B4	N/A	N/A	19mm	19mm
LTE B7& EN-DC_LTE B7	N/A	N/A	19mm	19mm
LTE B66	N/A	N/A	19mm	19mm
LTE B38	N/A	N/A	19mm	19mm
LTE B41	N/A	N/A	19mm	19mm
SA N7	N/A	N/A	19mm	19mm
SA N38	N/A	N/A	19mm	19mm
SA N41	N/A	N/A	19mm	19mm
SA N66& EN-DC_N66	N/A	N/A	19mm	19mm

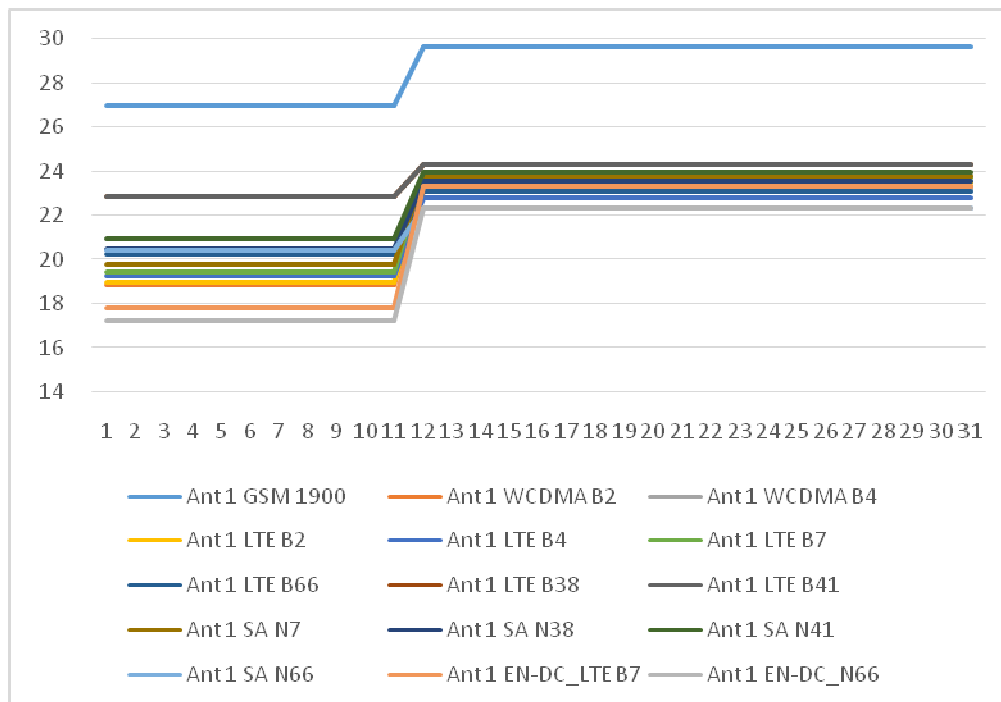
**Conclusion:** It can be ensured that the proximity sensor can be valid triggered for the body exposure condition(GSM1900,UMTS Band2/4,LTE Band 2/4/7/38/41/66 NR Band 7/38/41/66,EN-DC LTE Band 7,EN-DC NR Band 66 with Antenna 1).

The detailed conducted power measurement data to determine the triggering distances is as below:

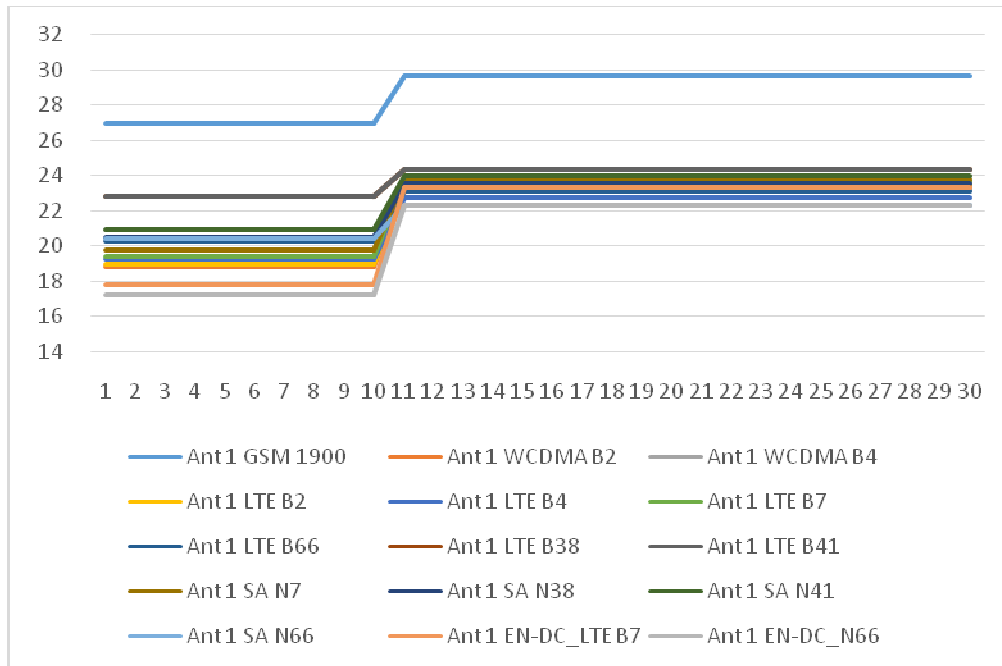
The DUT (Back side) is moved towards the flat phantom:



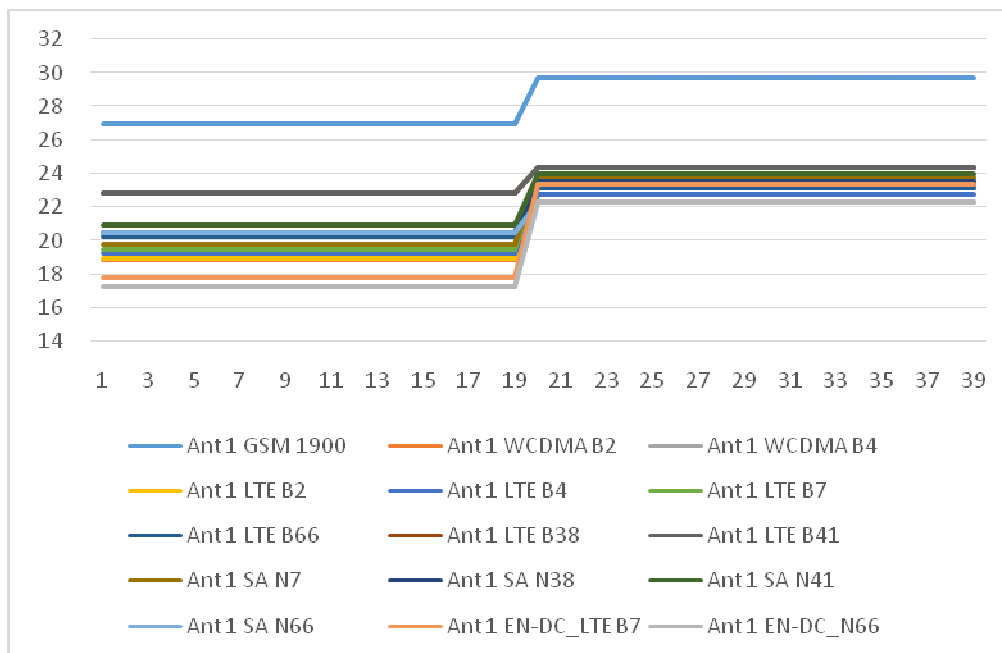
The DUT (Front side) is moved towards the flat phantom:



**The DUT (Left edge) is moved towards the flat phantom:**

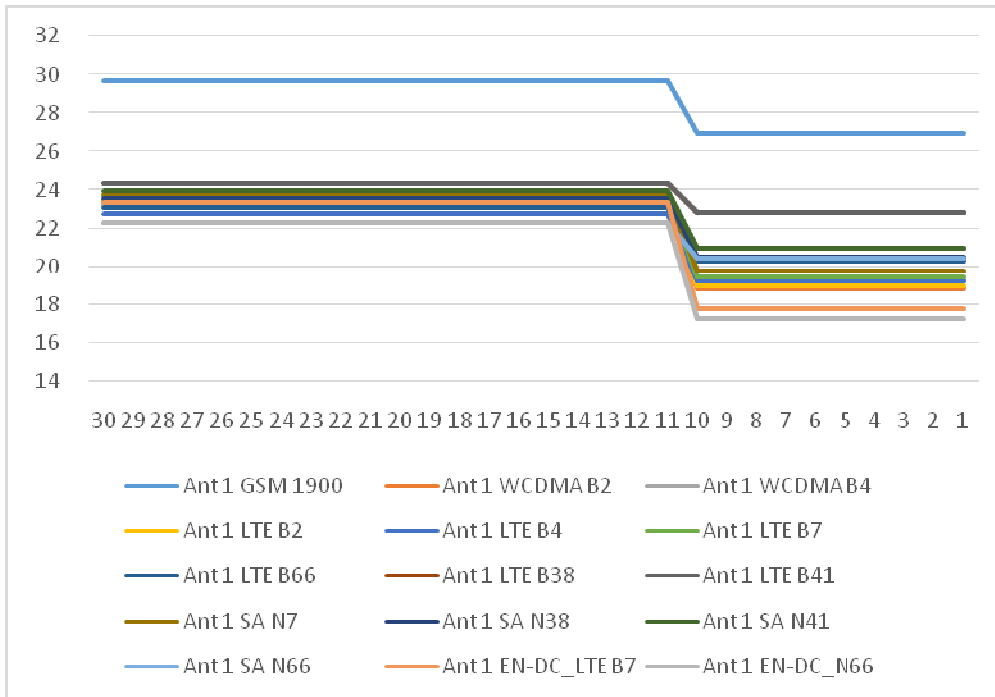


**The DUT (Top edge) is moved towards the flat phantom:**

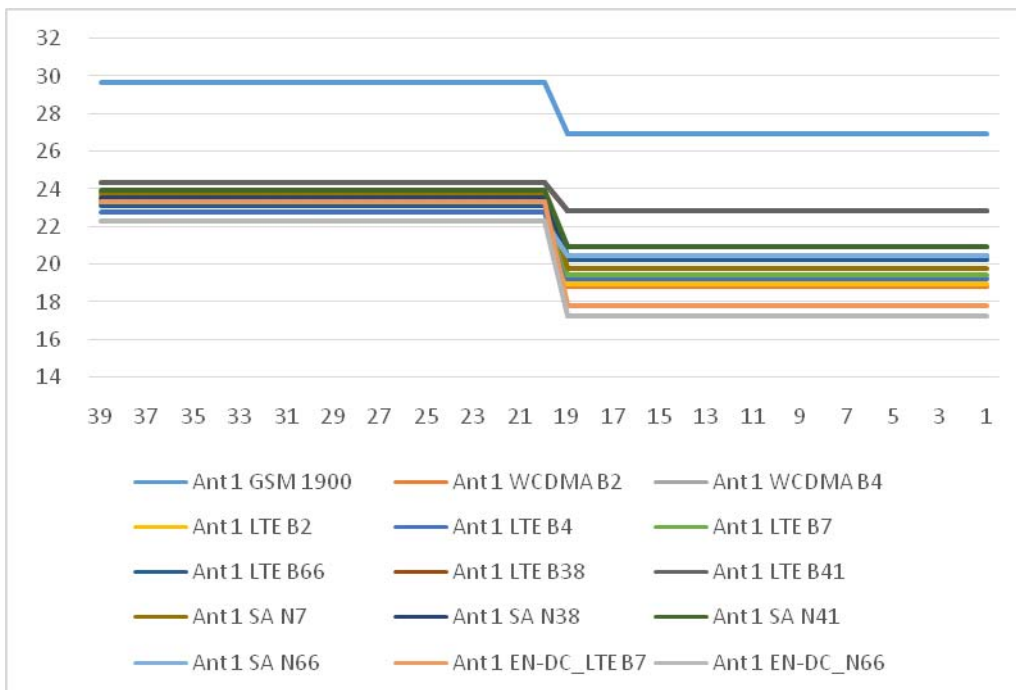




**The DUT (Left edge) is moved away from the flat phantom:**



**The DUT (Top edge) is moved away from the flat phantom:**







The detailed conducted power measurement data to determine the triggering distances is as below:

Table: Full Power and Reduced power (Moving toward phantom)

Four large data tables showing SAR test results for various bands (2G, 3G, 4G, LTE) and positions (Back, Front, Left, Right) moving toward the phantom. Each table contains columns for frequency, power, and SAR values.

Table: Full Power and Reduced power (Moving away from phantom)

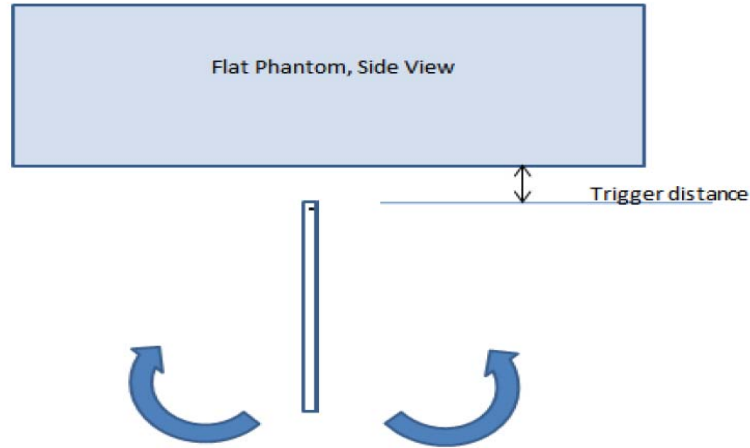
Four large data tables showing SAR test results for various bands (2G, 3G, 4G, LTE) and positions (Back, Front, Left, Right) moving away from the phantom. Each table contains columns for frequency, power, and SAR values.

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

The DUT was positioned directly below the flat phantom at the minimum measured trigger distance with Bottom side parallel to the base of the flat phantom for each band.

The EUT was rotated about Bottom side for angles up to +/- 45°. If the output power increased during the rotation the DUT was moved 1mm toward the phantom and the rotation repeated. This procedure was repeated until the power remained reduced for all angles up to +/- 45°.

The proximity sensor triggering tilt angle measurement method are as below:



**Table: Summary of Tablet Tilt Angle Influence to Proximity Sensor Triggering(Left/Right/Top edge)**

Band(MHz)	Position	Minimum trigger distance at which power reduction was maintained over $\pm 45^\circ$	Power Reduction Status										
			$-45^\circ$	$-35^\circ$	$-25^\circ$	$-15^\circ$	$-5^\circ$	$0^\circ$	$5^\circ$	$15^\circ$	$25^\circ$	$35^\circ$	$45^\circ$
GSM 1900	Left edge	10mm	on	on	on	on	on	on	on	on	on	on	on
WCDMA B2	Left edge	10mm	on	on	on	on	on	on	on	on	on	on	on
WCDMA B4	Left edge	10mm	on	on	on	on	on	on	on	on	on	on	on
LTE B2	Left edge	10mm	on	on	on	on	on	on	on	on	on	on	on
LTE B4	Left edge	10mm	on	on	on	on	on	on	on	on	on	on	on
LTE B7& EN-DC_LTE B7	Left edge	10mm	on	on	on	on	on	on	on	on	on	on	on
LTE B66	Left edge	10mm	on	on	on	on	on	on	on	on	on	on	on
LTE B38	Left edge	10mm	on	on	on	on	on	on	on	on	on	on	on
LTE B41	Left edge	10mm	on	on	on	on	on	on	on	on	on	on	on
SA N7	Left edge	10mm	on	on	on	on	on	on	on	on	on	on	on
SA N38	Left edge	10mm	on	on	on	on	on	on	on	on	on	on	on
SA N41	Left edge	10mm	on	on	on	on	on	on	on	on	on	on	on
SA N66& EN-DC_N66	Left edge	10mm	on	on	on	on	on	on	on	on	on	on	on
GSM 1900	Top edge	19mm	on	on	on	on	on	on	on	on	on	on	on
WCDMA B2	Top edge	19mm	on	on	on	on	on	on	on	on	on	on	on
WCDMA B4	Top edge	19mm	on	on	on	on	on	on	on	on	on	on	on
LTE B2	Top edge	19mm	on	on	on	on	on	on	on	on	on	on	on
LTE B4	Top edge	19mm	on	on	on	on	on	on	on	on	on	on	on
LTE B7& EN-DC_LTE B7	Top edge	19mm	on	on	on	on	on	on	on	on	on	on	on
LTE B66	Top edge	19mm	on	on	on	on	on	on	on	on	on	on	on
LTE B38	Top edge	19mm	on	on	on	on	on	on	on	on	on	on	on



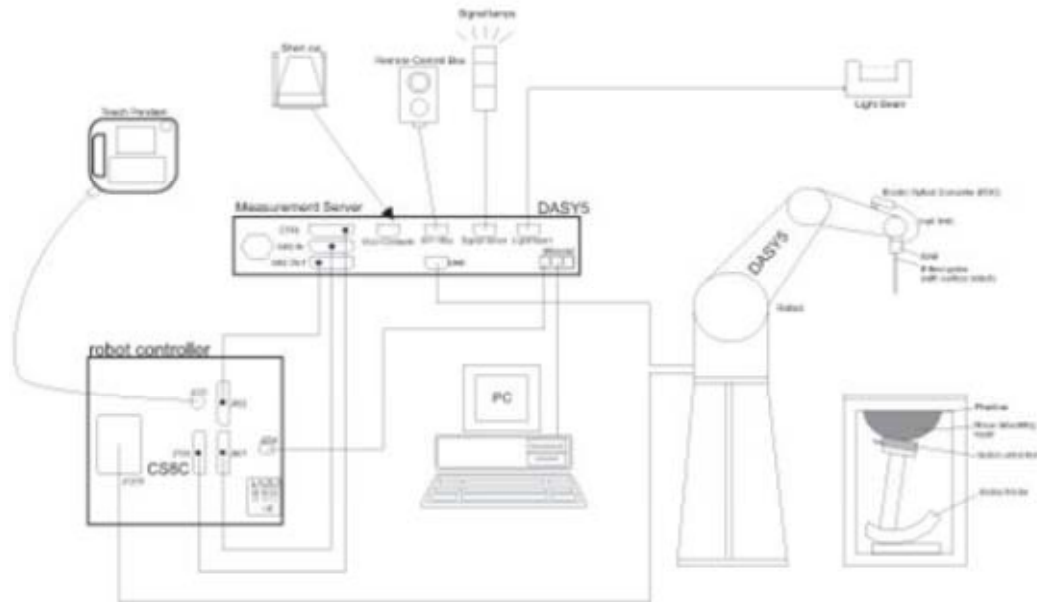
LTE B41	Top edge	19mm	on	on	on	on	on	on	on	on	on	on	on
SA N7	Top edge	19mm	on	on	on	on	on	on	on	on	on	on	on
SA N38	Top edge	19mm	on	on	on	on	on	on	on	on	on	on	on
SA N41	Top edge	19mm	on	on	on	on	on	on	on	on	on	on	on
SA N66& EN-DC_N66	Top edge	19mm	on	on	on	on	on	on	on	on	on	on	on

**Conclusion:** It can be ensured that the proximity sensor can be valid triggered for the DUT tilt coverage exposure condition.

## 6 SAR Measurements System Configuration

### 6.1 SAR Measurement Set-up

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



- A standard high precision 6-axis robot with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic Field probe optimized and calibrated for the targeted measurement.
- A data acquisition electronics (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.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running WinXP or Win7 and the DASY software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

## 6.2 DASY5 E-field Probe System

The SAR measurements were conducted with the dosimetric probe EX3DV4 (manufactured by SPEAG), designed in the classical triangular configuration and optimized for dosimetric evaluation.

### EX3DV4 Probe Specification

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: $\pm 0.2$ dB (30 MHz to 6 GHz)
Directivity	$\pm 0.3$ dB in HSL (rotation around probe axis) $\pm 0.5$ dB in tissue material (rotation normal to probe axis)
Dynamic Range	10 $\mu$ W/g to > 100 mW/g Linearity: $\pm 0.2$ dB (noise: typically < 1 $\mu$ W/g)
Dimensions	Overall length: 330 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%.



### E-field Probe Calibration

Each probe is calibrated according to a dosimetric assessment procedure with accuracy better than  $\pm 10\%$ . The spherical isotropy was evaluated and found to be better than  $\pm 0.25$ dB. The sensitivity parameters (NormX, NormY, NormZ), the diode compression parameter (DCP) and the conversion factor (ConvF) of the probe are tested.

The free space E-field from amplified probe outputs is determined in a test chamber. This is performed in a TEM cell for frequencies below 1 GHz, and in a wave guide above 1 GHz for free space. For the free space calibration, the probe is placed in the volumetric center of the cavity and at the proper orientation with the field. The probe is then rotated 360 degrees.

E-field temperature correlation calibration is performed in a flat phantom filled with the appropriate simulated brain tissue. The measured free space E-field in the medium correlates to temperature rise in a dielectric medium. For temperature correlation calibration a RF transparent thermistor-based temperature probe is used in conjunction with the E-field probe.



$$\text{SAR} = C \Delta T / \Delta t$$

Where:  $\Delta t$  = Exposure time (30 seconds),  
 $C$  = Heat capacity of tissue (brain or muscle),  
 $\Delta T$  = Temperature increase due to RF exposure.

Or

$$\text{SAR} = |E|^2 \sigma / \rho$$

Where:  $\sigma$  = Simulated tissue conductivity,  
 $\rho$  = Tissue density ( $\text{kg}/\text{m}^3$ ).

### 6.3 SAR Measurement Procedure

#### Power Reference Measurement

The Power Reference Measurement and Power Drift Measurements are for monitoring the power drift of the device under test in the batch process. The minimum distance of probe sensors to surface determines the closest measurement point to phantom surface. This distance cannot be smaller than the distance of sensor calibration points to probe tip as defined in the probe properties.

#### Area Scan

The area scan is used as a fast scan in two dimensions to find the area of high field values, before doing a fine measurement around the hot spot. The sophisticated interpolation routines implemented in DASY software can find the maximum found in the scanned area, within a range of the global maximum. The range (in dB) is specified in the standards for compliance testing. For example, a 2 dB range is required in IEEE standard 1528 and IEC 62209 standards, whereby 3 dB is a requirement when compliance is assessed in accordance with the ARIB standard (Japan), if only one zoom scan follows the area scan, then only the absolute maximum will be taken as reference. For cases where multiple maximums are detected, the number of zoom scans has to be increased accordingly.

Area scan parameters extracted from FCC KDB 865664 D01 SAR measurement 100 MHz to 6 GHz.

	$\leq 3$ GHz	$> 3$ GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	$5 \pm 1$ mm	$\frac{1}{2} \cdot \delta \cdot \ln(2) \pm 0.5$ mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	$30^\circ \pm 1^\circ$	$20^\circ \pm 1^\circ$
Maximum area scan spatial resolution: $\Delta x_{\text{Area}}, \Delta y_{\text{Area}}$	$\leq 2$ GHz: $\leq 15$ mm $2 - 3$ GHz: $\leq 12$ mm	$3 - 4$ GHz: $\leq 12$ mm $4 - 6$ GHz: $\leq 10$ mm
	When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be $\leq$ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	

### Zoom Scan

Zoom scans are used to assess the peak spatial SAR values within a cubic averaging volume containing 1 gram and 10 gram of simulated tissue. The zoom scan measures points (refer to table below) within a cube whose base faces are centered on the maxima found in a preceding area scan job within the same procedure. When the measurement is done, the zoom scan evaluates the averaged SAR for 1 gram and 10 gram and displays these values next to the job's label.

Zoom scan parameters extracted from FCC KDB 865664 D01 SAR measurement 100 MHz to 6 GHz.

			≤3GHz	> 3 GHz
Maximum zoom scan spatial resolution: $\Delta x_{zoom} \Delta y_{zoom}$			≤2GHz: ≤8mm 2 – 3GHz: ≤5mm*	3 – 4GHz: ≤5mm* 4 – 6GHz: ≤4mm*
Maximum zoom scan spatial resolution, normal to phantom surface	Uniform grid: $\Delta z_{zoom}(n)$		≤5mm	3 – 4GHz: ≤4mm 4 – 5GHz: ≤3mm 5 – 6GHz: ≤2mm
	Graded grid	$\Delta z_{zoom}(1)$ : between 1 <sup>st</sup> two points closest to phantom surface	≤4mm	3 – 4GHz: ≤3mm 4 – 5GHz: ≤2.5mm 5 – 6GHz: ≤2mm
		$\Delta z_{zoom}(n > 1)$ : between subsequent points	≤1.5 • $\Delta z_{zoom}(n-1)$	
Minimum zoom scan volume	X, y, z		≥30mm	3 – 4GHz: ≥28mm 4 – 5GHz: ≥25mm 5 – 6GHz: ≥22mm
<p>Note: <math>\delta</math> is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.</p> <p>* When zoom scan is required and the <u>reported</u> SAR from the <i>area scan based 1-g SAR estimation</i> procedures of KDB 447498 is ≤ 1.4W/kg, ≤8mm, ≤7mm and ≤5mm zoom scan resolution may be applied, respectively, for 2GHz to 3GHz, 3GHz to 4GHz and 4GHz to 6GHz.</p>				

### Volume Scan Procedures

The volume scan is used to assess overlapping SAR distributions for antennas transmitting in different frequency bands. It is equivalent to an oversized zoom scan used in standalone measurements. The measurement volume will be used to enclose all the simultaneous transmitting antennas. For antennas transmitting simultaneously in different frequency bands, the volume scan is measured separately in each frequency band. In order to sum correctly to compute the 1g aggregate SAR, the EUT remain in the same test position for all measurements and all volume scan use the same spatial resolution and grid spacing. When all volume scan were completed, the software, SEMCAD postprocessor can combine and subsequently superpose these measurement data to calculating the multiband SAR.

### Power Drift Monitoring

All SAR testing is under the EUT install full charged battery and transmit maximum output power. In DASY measurement software, the power reference measurement and power drift measurement procedures are used for monitoring the power drift of EUT during SAR test. Both these procedures measure the field at a specified reference position before and after the SAR testing. The software will calculate the field difference in dB. If the power drifts more than 5%, the SAR will be retested.

## 7 Main Test Equipment

Name of Equipment	Manufacturer	Type/Model	Serial Number	Last Cal.	Cal. Due Date
Network analyzer	Agilent	E5071B	MY42404014	2020-05-17	2021-05-16
Dielectric Probe Kit	HP	85070E	US44020115	2020-05-17	2021-05-16
Power meter	Agilent	E4417A	GB41291714	2020-05-17	2021-05-16
Power sensor	Agilent	N8481H	MY50350004	2020-05-17	2021-05-16
Power sensor	Agilent	E9327A	US40441622	2020-05-17	2021-05-16
Dual directional coupler	Agilent	778D-012	50519	/	/
Dual directional coupler	Agilent	777D	50146	/	/
Dual directional coupler	UCL	UCL-DDC0 56G-S	20010600118	/	/
Amplifier	INDEXSAR	IXA-020	0401	2020-05-17	2021-05-16
Wireless communication tester	Anritsu	MT8820C	6201342015	2020-05-17	2021-05-16
Wireless communication tester	Key sight	E5515C	MY48360988	2020-12-13	2021-12-12
Wideband radio communication tester	R&S	CMW 500	113645	2020-05-17	2021-05-16
Base Station Simulator	R&S	CMW270	100673	2020-05-17	2021-05-16
E-field Probe	SPEAG	EX3DV4	3677	2020-07-06	2021-07-05
DAE	SPEAG	DAE4	1291	2020-02-24	2021-02-23
Validation Kit 750MHz	SPEAG	D750V3	1045	2020-08-28	2023-08-27
Validation Kit 835MHz	SPEAG	D835V2	4d020	2020-08-28	2023-08-27
Validation Kit 1750MHz	SPEAG	D1750V2	1033	2020-02-25	2023-02-24
Validation Kit 1900MHz	SPEAG	D1900V2	5d060	2020-08-27	2023-08-26
Validation Kit 2450MHz	SPEAG	D2450V2	786	2020-08-27	2023-08-26
Validation Kit 2600MHz	SPEAG	D2600V2	1025	2018-05-02	2021-05-01
Validation Kit 5GHz	SPEAG	D5GHzV2	1151	2020-02-27	2023-02-26
Temperature Probe	Tianjin jinming	JM222	381	2020-05-25	2021-05-24
Hygrothermograph	Anymetr	HTC-1	TY2020A043	2020-05-19	2021-05-18
Twin SAM Phantom	Speag	SAM1	1534	/	/





Software for Test	Speag	DASY52	/	/	/
Softwarefor Tissue	Agilent	85070	/	/	/

## 8 Tissue Dielectric Parameter Measurements & System Verification

### 8.1 Tissue Verification

The temperature of the tissue-equivalent medium used during measurement must also be within 18°C to 25°C and within ± 2°C of the temperature when the tissue parameters are characterized. The dielectric parameters must be measured before the tissue-equivalent medium is used in a series of SAR measurements. The parameters should be re-measured after each 24 hours of use; or earlier if the dielectric parameters can become out of tolerance.

#### Target values

Frequency (MHz)	Water (%)	Salt (%)	Sugar (%)	Glycol (%)	Preventol (%)	Cellulose (%)	$\epsilon_r$	$\sigma$ (s/m)
750	41.448	1.452	56	0	0.1	1.0	41.9	0.89
835	41.45	1.45	56	0	0.1	1.0	41.5	0.90
1750	55.24	0.31	0	44.45	0	0	40.1	1.37
1900	55.242	0.306	0	44.452	0	0	40.0	1.40
2450	62.7	0.5	0	36.8	0	0	39.2	1.80
2600	55.242	0.306	0	44.452	0	0	39.0	1.96
Frequency (MHz)	Water (%)	Diethylenglycol monohexylether			Triton X-100		$\epsilon_r$	$\sigma$ (s/m)
5250	65.53	17.24			17.23		35.9	4.71
5600	65.53	17.24			17.23		35.5	5.07
5750	65.53	17.24			17.23		35.4	5.22

**Measurements results**

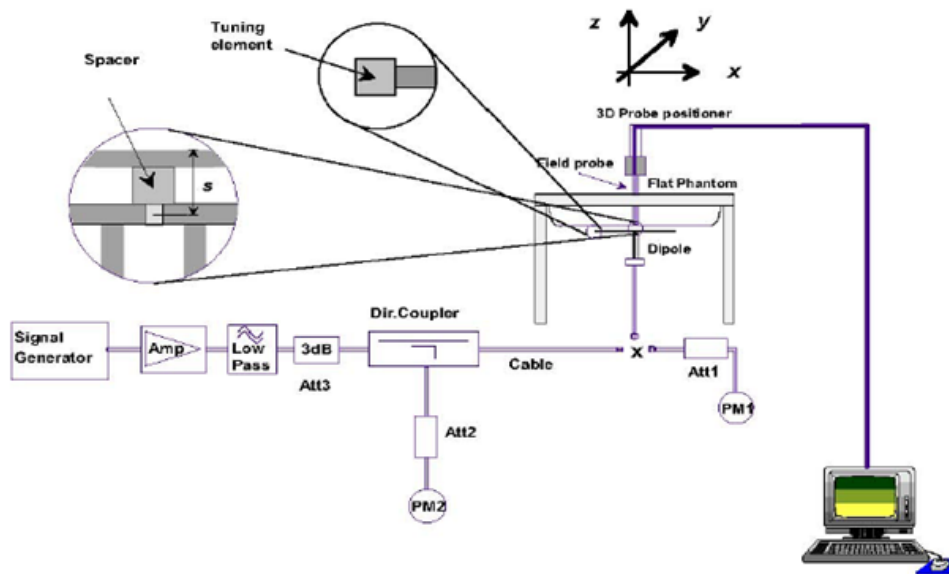
Frequency (MHz)	Test Date	Temp °C	Measured Dielectric Parameters		Target Dielectric Parameters		Limit (Within ±5%)	
			$\epsilon_r$	$\sigma$ (s/m)	$\epsilon_r$	$\sigma$ (s/m)	Dev $\epsilon_r$ (%)	Dev $\sigma$ (%)
750	1/17/2021	21.5	42.0	0.87	41.9	0.89	0.24	-2.25
835	1/12/2021	21.5	41.4	0.88	41.5	0.90	-0.24	-2.22
	1/15/2021	21.5	41.3	0.87	41.5	0.90	-0.48	-3.33
	1/23/2021	21.5	41.4	0.92	41.5	0.90	-0.24	2.22
	1/24/2021	21.5	41.3	0.89	41.5	0.90	-0.48	-1.11
1750	1/8/2021	21.5	40.2	1.36	40.1	1.37	0.25	-0.73
	1/9/2021	21.5	40.1	1.34	40.1	1.37	0.00	-2.19
	1/10/2021	21.5	40.2	1.36	40.1	1.37	0.25	-0.73
	1/11/2021	21.5	39.3	1.37	40.1	1.37	-2.00	0.00
1900	1/16/2021	21.5	40.1	1.41	40.0	1.40	0.25	0.71
	1/18/2021	21.5	40.2	1.43	40.0	1.40	0.50	2.14
2450	1/19/2021	21.5	38.6	1.81	39.2	1.80	-1.53	0.56
2600	1/2/2021	21.5	38.2	2.01	39.0	1.96	-2.05	2.55
	1/3/2021	21.5	38.4	1.94	39.0	1.96	-1.54	-1.02
	1/4/2021	21.5	38.3	1.99	39.0	1.96	-1.79	1.53
	1/5/2021	21.5	38.5	1.95	39.0	1.96	-1.28	-0.51
	1/6/2021	21.5	38.2	1.96	39.0	1.96	-2.05	0.00
	1/20/2021	21.5	39.0	1.90	39.0	1.96	0.00	-3.06
	1/21/2021	21.5	39.9	1.97	39.0	1.96	2.31	0.51
	1/22/2021	21.5	38.2	2.01	39.0	1.96	-2.05	2.55
5250	1/27/2021	21.5	35.5	4.80	35.9	4.71	-1.11	1.91
5600	1/29/2021	21.5	34.2	5.21	35.5	5.07	-3.66	2.76
5750	1/28/2021	21.5	34.9	5.21	35.4	5.22	-1.41	-0.19

Note: The depth of tissue-equivalent liquid in a phantom must be  $\geq 15.0$  cm for SAR measurements  $\leq 3$  GHz and  $\geq 10.0$  cm for measurements  $> 3$  GHz.

## 8.2 System Performance Check

The manufacturer calibrates the probes annually. Dielectric parameters of the tissue simulates were measured using the dielectric probe kit and the network analyzer. A system check measurement for every day was made following the determination of the dielectric parameters of the Tissue simulates, using the dipole validation kit. The dipole antenna was placed under the flat section of the twin SAM phantom.

System check is performed regularly on all frequency bands where tests are performed with the DASY system.



Picture 1 System Performance Check setup



Picture 2 Setup Photo

**Justification for Extended SAR Dipole Calibrations**

Usage of SAR dipoles calibrated less than 3 years ago but more than 1 year ago were confirmed in maintaining return loss ( $< -20$  dB, within 20% of prior calibration) and impedance (within 5 ohm from prior calibration) requirements per extended calibrations in KDB 865664 D01:

Dipole		Date of Measurement	Return Loss(dB)	$\Delta$ %	Impedance ( $\Omega$ )	$\Delta\Omega$
Dipole D2600V2 SN: 1025	Head Liquid	5/2/2018	-22.0	/	48.1	/
		5/1/2019	-22.5	-2.2	48.7	-0.6

**System Check results**

Frequency (MHz)	Test Date	Temp $^{\circ}\text{C}$	250mW /100mW Measured SAR1g (W/kg)	1W Normalized SAR1g (W/kg)	1W Target SAR1g (W/kg)	$\Delta$ % (Limit $\pm 10\%$ )	Plot No.
750	1/17/2021	21.5	2.10	8.40	8.37	0.36	1
835	1/12/2021	21.5	2.44	9.76	9.65	1.14	2
	1/15/2021	21.5	2.46	9.84	9.65	1.97	3
	1/23/2021	21.5	2.43	9.72	9.65	0.73	4
	1/24/2021	21.5	2.51	10.04	9.65	4.04	5
1750	1/8/2021	21.5	8.96	35.84	35.90	-0.17	6
	1/9/2021	21.5	9.11	36.44	35.90	1.50	7
	1/10/2021	21.5	8.96	35.84	35.90	-0.17	8
	1/11/2021	21.5	8.92	35.68	35.90	-0.61	9
1900	1/16/2021	21.5	9.88	39.52	39.50	0.05	10
	1/18/2021	21.5	9.85	39.40	39.50	-0.25	11
2450	1/19/2021	21.5	13.70	54.80	52.30	4.78	12
2600	1/2/2021	21.5	13.90	55.60	54.10	2.77	13
	1/3/2021	21.5	13.88	55.52	54.10	2.62	14
	1/4/2021	21.5	13.94	55.76	54.10	3.07	15
	1/5/2021	21.5	13.90	55.60	54.10	2.77	16
	1/6/2021	21.5	13.90	55.60	54.10	2.77	17
	1/20/2021	21.5	13.76	55.04	54.10	1.74	18
	1/21/2021	21.5	13.89	55.56	54.10	2.70	19
1/22/2021	21.5	13.90	55.60	54.10	2.77	20	
5250	1/27/2021	21.5	7.87	78.70	78.00	0.90	21
5600	1/29/2021	21.5	7.67	76.70	80.50	-4.72	22
5750	1/28/2021	21.5	7.66	76.60	77.40	-1.03	23

Note: Target Values used derive from the calibration certificate Data Storage and Evaluation.

### 8.3 SAR System Validation

Per FCC KDB 865664 D02v01, SAR system verification is required to confirm measurement accuracy. The SAR systems (including SAR probes, system components and software versions) used for this device were validated against its performance specifications prior to the SAR measurements. Reference dipoles are used with the required tissue-equivalent media for system validation, according to the procedures outlined in FCC KDB 865664 D01 and IEEE 1528-2013. Since SAR probe calibrations are frequency dependent, each probe calibration point must be validated at a frequency within the valid frequency range of the probe calibration point, using the system that normally operates with the probe for routine SAR measurements and according to the required tissue-equivalent media.

A tabulated summary of the system validation status, measurement frequencies, SAR probes, calibrated signal type(s) and tissue dielectric parameters has been included.

Frequency [MHz]	Date	Probe SN	Probe Type	Probe Cal Point		PERM (Er)	COND (Σ)	CW Validation			Mod. Validation		
								Sensitivity	Probe Linearity	Probe Isotropy	Mod. Type	Duty Factor	PAR
750	7/6/2020	3677	EX3DV4	750	Head	42.81	0.85	PASS	PASS	PASS	FDD	PASS	N/A
835	7/6/2020	3677	EX3DV4	835	Head	42.22	0.90	PASS	PASS	PASS	GMSK	PASS	N/A
1750	7/6/2020	3677	EX3DV4	1750	Head	39.91	1.32	PASS	PASS	PASS	NA	N/A	N/A
1900	7/6/2020	3677	EX3DV4	1900	Head	39.43	1.42	PASS	PASS	PASS	GMSK	PASS	N/A
2450	7/6/2020	3677	EX3DV4	2450	Head	38.19	1.83	PASS	PASS	PASS	OFDM	PASS	PASS
2600	7/6/2020	3677	EX3DV4	2600	Head	37.60	1.99	PASS	PASS	PASS	TDD	PASS	N/A
5250	7/6/2020	3677	EX3DV4	5250	Head	35.36	4.83	PASS	PASS	PASS	OFDM	N/A	PASS
5600	7/6/2020	3677	EX3DV4	5600	Head	34.43	5.29	PASS	PASS	PASS	OFDM	N/A	PASS
5750	7/6/2020	3677	EX3DV4	5750	Head	34.07	5.47	PASS	PASS	PASS	OFDM	N/A	PASS

NOTE: While the probes have been calibrated for both CW and modulated signals, all measurements were performed using communication systems calibrated for CW signals only. Modulations in the table above represent test configurations for which the measurement system has been validated per FCC KDB Publication 865664D01v01 for scenarios when CW probe calibrations are used with other signal types. SAR systems were validated for modulated signals with a periodic duty cycle, such as GMSK, or with a high peak to average ratio (>5dB), such as OFDM according to KDB 865664.

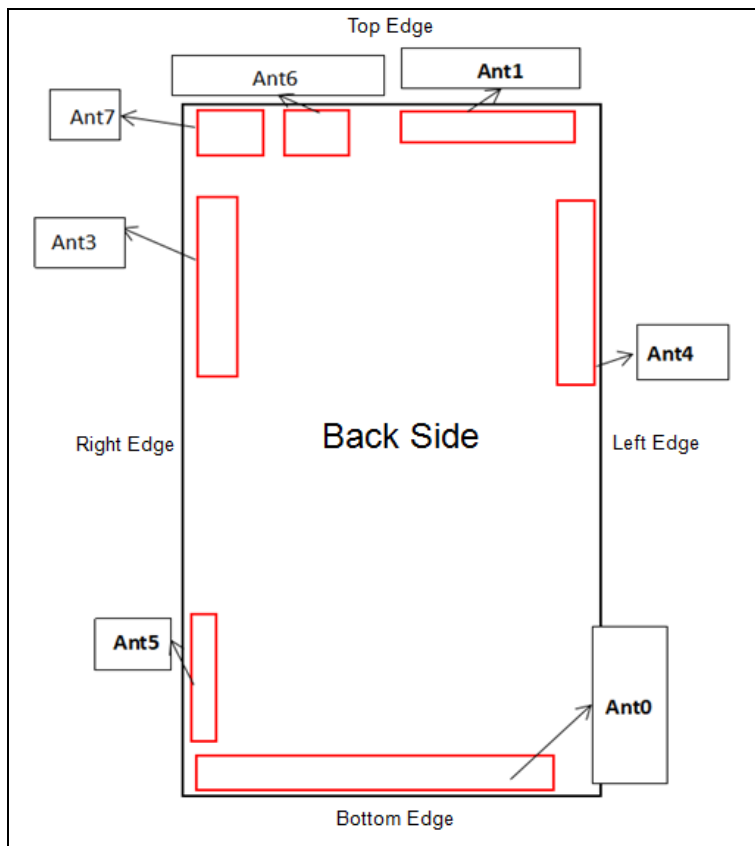


## 9 Normal and Maximum Output Power

The detailed Normal and Maximum Output Power results refer to *R2012A0892 Normal and Maximum Output Power*.

# 10 Measured and Reported (Scaled) SAR Results

## 10.1 EUT Antenna Locations



Antenna	Support Bands
ANT0	GSM850/1900
	WCDMA B2/4/5
	LTE B2/4/5/7/12/17/26/38/41/66 LTE(EN-DC)B5/7/12
	NR n5/n7/n38/n41/n66
ANT1	GSM850/1900
	WCDMA B2/4/5
	LTE B2/4/5/7/12/17/26/38/41/66 LTE(EN-DC)B5/7/12
	NR n5/n7/n38/n41/n66
ANT4	LTE(EN-DC)B7
	NR n7/n38/n41 NR(EN-DC) n66
ANT7	WLAN 2.4G/5G/Bluetooth

Overall (Length x Width): 160.1 mm x 73.4 mm

Overall Diagonal: 169 mm

Distance of the Antenna to the EUT surface/edge

Antenna	Back Side	Front side	Left Edge	Right Edge	Top Edge	Bottom Edge
Ant 0	<25mm	<25mm	<25mm	<25mm	>25mm	<25mm
Ant 1	<25mm	<25mm	<25mm	>25mm	<25mm	>25mm
Ant 4	<25mm	<25mm	<25mm	>25mm	<25mm	>25mm
Ant 7	<25mm	<25mm	>25mm	<25mm	<25mm	>25mm

Hotspot mode, Positions for SAR tests

Mode	Back Side	Front side	Left Edge	Right Edge	Top Edge	Bottom Edge
Ant 0	Yes	Yes	Yes	Yes	N/A	Yes
Ant 1	Yes	Yes	Yes	N/A	Yes	N/A
Ant 4	Yes	Yes	Yes	N/A	Yes	N/A
Ant 7	Yes	Yes	N/A	Yes	Yes	N/A

Note: 1. Per KDB 941225 D06, when the overall device length and width are  $\geq 9\text{cm} \times 5\text{cm}$ , the test distance is 10mm. SAR must be measured for all sides and surfaces with a transmitting antenna located within 25mm from that surface or edge.

2. For smart phones with an overall diagonal dimension is 169mm. Per KDB 648474 D04, for smart phones with a





display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm, product specific 10-g SAR must be tested as a phablet to determine SAR compliance. For Phablet, Since hotspot mode 1-g reported SAR < 1.2 W/kg, product specific 10-g SAR is no required.

3. Per FCC KDB 447498 D01, for each exposure position, 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:

- a)  $\leq 0.8$  W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is  $\leq 100$  MHz
- b)  $\leq 0.6$  W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz.
- c)  $\leq 0.4$  W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is  $\geq 200$  MHz.

4. When the original highest measured SAR is  $\geq 0.80$  W/kg, the measurement was repeated once.

5. Per FCC KDB Publication 648474 D04, SAR was evaluated without a headset connected to the device. Since the reported SAR was  $\leq 1.2$  W/kg, no additional SAR evaluations using a headset cable were required.



### 10.2 Measured SAR Results

Table 9: GSM 850

Antenna	Power Reduction	Distance Sensor	Mode	Position	Dist. (mm)	Ch.	Frequency (MHz)	Power Drift (dB)	Limit of SAR 1.6 W/kg (mW/g)					Plot No.
									1g Measured SAR (W/kg)	Measured Power (dBm)	Max. tune-power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)	
<b>Head SAR</b>														
ANT1	LEVEL1	/	DATA 4 Slots	Left Cheek	0	251	848.8	-0.02	0.513	28.03	29.00	1.250	0.641	/
	LEVEL1	/		Left Tilt	0	251	848.8	-0.12	0.472	28.03	29.00	1.250	0.590	/
	LEVEL1	/		Right Cheek	0	251	848.8	-0.09	0.782	28.03	29.00	1.250	0.977	/
	LEVEL1	/			0	190	836.6	-0.14	0.816	27.89	29.00	1.293	1.055	24
	LEVEL1	/		Right Tilt	0	128	824.2	-0.11	0.683	27.95	29.00	1.273	0.869	/
	LEVEL1	/			0	251	848.8	-0.02	0.649	28.03	29.00	1.250	0.811	/
	LEVEL1	/		0	190	836.6	0.14	0.652	27.89	29.00	1.293	0.843	/	
	LEVEL1	/		0	128	824.2	0.17	0.648	27.95	29.00	1.273	0.825	/	
ANT1	LEVEL2&3	/	DATA 4 Slots	Right Cheek (Repeated)	0	190	836.6	-0.070	0.794	27.89	29.00	1.293	1.026	/
	LEVEL2&3	/		Left Cheek	0	251	848.8	0.09	0.360	24.06	25.00	1.241	0.447	/
	LEVEL2&3	/		Left Tilt	0	251	848.8	-0.17	0.335	24.06	25.00	1.241	0.416	/
	LEVEL2&3	/		Right Cheek	0	251	848.8	-0.12	0.538	24.06	25.00	1.241	0.668	/
ANT0	LEVEL1&2&3	/	DATA 4 Slots	Right Tilt	0	251	848.8	0.18	0.469	24.06	25.00	1.241	0.582	/
	LEVEL1&2&3	/		Left Cheek	0	251	848.8	-0.01	0.311	28.12	29.00	1.225	0.381	/
	LEVEL1&2&3	/		Left Tilt	0	251	848.8	0.07	0.156	28.12	29.00	1.225	0.191	/
	LEVEL1&2&3	/		Right Cheek	0	251	848.8	-0.04	0.225	28.12	29.00	1.225	0.276	/
ANT1	LEVEL1	/	DATA 4 Slots	Right Tilt	0	251	848.8	0.09	0.121	28.12	29.00	1.225	0.148	/
ANT1	LEVEL1	/	DATA 4 Slots	Right Cheek (Battery 2)	0	190	836.6	0.020	0.803	27.89	29.00	1.293	1.038	/
<b>Body-worn SAR</b>														
ANT1	LEVEL4	OFF	Voice	Front Side	15	251	848.8	0.18	0.085	32.17	33.50	1.358	0.115	/
	LEVEL4	ON		Back Side	15	251	848.8	0.06	0.094	32.17	33.50	1.358	0.128	/
	LEVEL4	OFF	DATA 4 Slots	Front Side	15	251	848.8	0.07	0.123	28.03	29.00	1.250	0.154	/
	LEVEL4	ON		Back Side	15	251	848.8	-0.070	0.139	28.03	29.00	1.250	0.174	/
ANT0	LEVEL4	/	Voice	Front Side	15	251	848.8	-0.06	0.131	32.16	33.50	1.361	0.178	/
	LEVEL4	/		Back Side	15	251	848.8	0.16	0.166	32.16	33.50	1.361	0.226	/
	LEVEL4	/	DATA 4 Slots	Front Side	15	251	848.8	0.19	0.202	28.12	29.00	1.225	0.248	/
	LEVEL4	/		Back Side	15	251	848.8	0.16	0.247	28.12	29.00	1.225	0.303	25
ANT0	LEVEL4	/	DATA 4 Slots	Back Side (Battery 2)	15	251	848.8	-0.010	0.233	28.12	29.00	1.225	0.285	/
<b>Hotspot SAR</b>														
ANT1	LEVEL5&6	ON	Voice	Front Side	10	190	836.6	0.16	0.139	32.17	33.50	1.358	0.189	/
	LEVEL5&6	ON		Back Side	10	190	836.6	0.10	0.177	32.17	33.50	1.358	0.240	/



	LEVEL5&6	ON	DATA 4 Slots	Front Side	10	190	836.6	-0.17	0.204	28.03	29.00	1.250	0.255	/
	LEVEL5&6	ON		Back Side	10	190	836.6	-0.060	0.306	28.03	29.00	1.250	0.382	/
	LEVEL5&6	ON		Left Edge	10	190	836.6	-0.15	0.093	28.03	29.00	1.250	0.116	/
	LEVEL5&6	ON		Top Edge	10	190	836.6	-0.05	0.218	28.03	29.00	1.250	0.272	/
ANT0	LEVEL5&6	/	Voice	Front Side	10	251	848.8	-0.01	0.171	32.16	33.50	1.361	0.233	/
	LEVEL5&6	/		Back Side	10	251	848.8	0.04	0.275	32.16	33.50	1.361	0.374	/
	LEVEL5&6	/	DATA 4 Slots	Front Side	10	251	848.8	-0.01	0.257	28.12	29.00	1.225	0.315	/
	LEVEL5&6	/		Back Side	10	251	848.8	-0.08	0.454	28.12	29.00	1.225	0.556	26
	LEVEL5&6	/		Right Edge	10	251	848.8	0.07	0.085	28.12	29.00	1.225	0.104	/
	LEVEL5&6	/		Left Edge	10	251	848.8	-0.08	0.255	28.12	29.00	1.225	0.312	/
	LEVEL5&6	/		Bottom Edge	10	251	848.8	0.16	0.279	28.12	29.00	1.225	0.342	/
ANT0	LEVEL5&6	/	DATA 4 Slots	Back Side (Battery 2)	10	251	848.8	-0.170	0.418	28.12	29.00	1.225	0.512	/
<b>Additional SAR test at a conservative distance (triggering distance minus 1mm)</b>														
ANT1	OFF	/	Voice	Front Side	10	190	836.6	0.01	0.140	32.17	33.50	1.358	0.190	/
	OFF	/		Back Side	16	190	836.6	0.08	0.053	32.17	33.50	1.358	0.072	/
	OFF	/	DATA 4 Slots	Front Side	10	190	836.6	-0.11	0.201	28.03	29.00	1.250	0.251	/
	OFF	/		Back Side	16	190	836.6	-0.02	0.083	28.03	29.00	1.250	0.104	/
	OFF	/		Left Edge	9	190	836.6	0.14	0.069	28.03	29.00	1.250	0.086	/
	OFF	/		Top Edge	18	190	836.6	0.06	0.057	28.03	29.00	1.250	0.071	/

Note: 1. The value with blue color is the maximum SAR Value of each test band.

### Measurement Variability

Test Position	Channel/ Frequency(MHz)	MAX Measured SAR <sub>1g</sub> (W/kg)	1 <sup>st</sup> Repeated SAR <sub>1g</sub> (W/kg)	Ratio
Right Cheek	190/836.6	0.816	0.794	1.03

Note: 1) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).

2) A third repeated measurement was performed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.



**Table 10: GSM 1900**

Antenna	Power Reduction	Distance Sensor	Mode	Position	Dist. (mm)	Ch.	Frequency (MHz)	Power Drift (dB)	Limit of SAR 1.6 W/kg (mW/g)					Plot No.
									1g Measured SAR (W/kg)	Measured Power (dBm)	Max. tune-power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)	
<b>Head SAR</b>														
ANT1	LEVEL1	/	DATA 3Slots	Left Cheek	0	512	1850.20	0.03	0.381	26.45	27.00	1.135	0.432	/
	LEVEL1	/		Left Tilt	0	512	1850.20	-0.06	0.487	26.45	27.00	1.135	0.553	/
	LEVEL1	/		Right Cheek	0	512	1850.20	0.100	0.589	26.45	27.00	1.135	0.669	/
	LEVEL1	/		Right Tilt	0	512	1850.20	-0.024	0.763	26.45	27.00	1.135	0.866	27
	LEVEL1	/			0	661	1880.00	-0.028	0.718	26.45	27.00	1.135	0.815	/
	LEVEL1	/			0	810	1909.80	0.016	0.745	26.45	27.00	1.135	0.846	/
ANT1	LEVEL2&3	/	DATA 3Slots	Left Cheek	0	661	1880.00	-0.01	0.284	18.94	19.50	1.138	0.323	/
	LEVEL2&3	/		Left Tilt	0	661	1880.00	-0.13	0.356	18.94	19.50	1.138	0.405	/
	LEVEL2&3	/		Right Cheek	0	661	1880.00	0.11	0.412	18.94	19.50	1.138	0.469	/
	LEVEL2&3	/		Right Tilt	0	661	1880.00	0.07	0.477	18.94	19.50	1.138	0.543	/
ANT0	LEVEL1&2&3	/	DATA 3Slots	Left Cheek	0	512	1850.20	-0.02	0.058	26.28	27.00	1.179	0.068	/
	LEVEL1&2&3	/		Left Tilt	0	512	1850.20	0.04	0.023	26.28	27.00	1.179	0.027	/
	LEVEL1&2&3	/		Right Cheek	0	512	1850.20	-0.15	0.035	26.28	27.00	1.179	0.041	/
	LEVEL1&2&3	/		Right Tilt	0	512	1850.20	-0.01	0.033	26.28	27.00	1.179	0.039	/
ANT1	LEVEL1	/	DATA 3Slots	Right Tilt (Battery 2)	0	512	1850.20	0.080	0.741	26.45	27.00	1.135	0.841	/
<b>Body-worn SAR</b>														
ANT1	LEVEL4	OFF	Voice	Front Side	15	661	1880.00	-0.10	0.126	29.67	30.50	1.211	0.153	/
	LEVEL4	ON		Back Side	15	661	1880.00	0.01	0.099	26.96	27.50	1.132	0.112	/
	LEVEL4	OFF	DATA 3Slots	Front Side	15	512	1850.20	0.053	0.274	26.45	27.00	1.135	0.311	28
	LEVEL4	ON		Back Side	15	661	1880.00	0.10	0.123	23.40	24.00	1.149	0.141	/
ANT0	LEVEL4	/	Voice	Front Side	15	810	1909.80	0.14	0.094	29.49	30.50	1.262	0.119	/
	LEVEL4	/		Back Side	15	810	1909.80	0.06	0.154	29.49	30.50	1.262	0.194	/
	LEVEL4	/	DATA 3Slots	Front Side	15	512	1850.20	-0.08	0.100	26.28	27.00	1.179	0.118	/
	LEVEL4	/		Back Side	15	512	1850.20	0.130	0.227	26.28	27.00	1.179	0.268	/
ANT1	LEVEL4	OFF	DATA 3Slots	Front Side (Battery 2)	15	512	1850.20	0.040	0.268	26.45	27.00	1.135	0.304	/
<b>Hotspot SAR</b>														
ANT1	LEVEL5&6	ON	Voice	Front Side	10	661	1880.00	-0.15	0.210	26.96	27.50	1.132	0.238	/
	LEVEL5&6	ON		Back Side	10	661	1880.00	0.15	0.256	26.96	27.50	1.132	0.290	/
	LEVEL5&6	ON	DATA 3Slots	Front Side	10	661	1880.00	-0.13	0.254	23.40	24.00	1.149	0.292	/
	LEVEL5&6	ON		Back Side	10	661	1880.00	0.07	0.317	23.40	24.00	1.149	0.364	/
	LEVEL5&6	ON		Left Edge	10	661	1880.00	-0.10	0.050	23.40	24.00	1.149	0.057	/
	LEVEL5&6	ON		Top Edge	10	661	1880.00	-0.070	0.501	23.40	24.00	1.149	0.576	29
ANT0	LEVEL5&6	/	Voice	Front Side	10	810	1909.80	0.04	0.149	29.49	30.50	1.262	0.188	/
	LEVEL5&6	/		Back Side	10	810	1909.80	-0.15	0.261	29.49	30.50	1.262	0.329	/



	LEVEL5&6	/	DATA 3Slots	Front Side	10	512	1850.20	-0.05	0.206	26.28	27.00	1.179	0.243	/
	LEVEL5&6	/		Back Side	10	512	1850.20	-0.02	0.367	26.28	27.00	1.179	0.433	/
	LEVEL5&6	/		Right Edge	10	512	1850.20	0.01	0.065	26.28	27.00	1.179	0.077	/
	LEVEL5&6	/		Left Edge	10	512	1850.20	0.040	0.000	26.28	27.00	1.179	0.000	/
	LEVEL5&6	/		Bottom Edge	10	512	1850.20	0.150	0.461	26.28	27.00	1.179	0.544	/
ANT1	LEVEL5&6	ON	DATA 3Slots	Top Edge (Battery 2)	10	661	1880.00	-0.170	0.488	23.40	24.00	1.149	0.561	/
<b>Additional SAR test at a conservative distance (triggering distance minus 1mm)</b>														
ANT1	OFF	/	Voice	Front Side	10	661	1880.00	0.01	0.365	29.67	30.50	1.211	0.442	/
	OFF	/		Back Side	16	661	1880.00	0.12	0.191	29.67	30.50	1.211	0.231	/
	OFF	/	DATA 3Slots	Front Side	10	512	1850.20	-0.15	0.478	26.45	27.00	1.135	0.543	/
	OFF	/		Back Side	16	512	1850.20	-0.03	0.251	26.45	27.00	1.135	0.285	/
	OFF	/		Left Edge	9	512	1850.20	0.04	0.091	26.45	27.00	1.135	0.103	/
	OFF	/		Top Edge	18	512	1850.20	-0.01	0.307	26.45	27.00	1.135	0.348	/

Note: 1.The value with blue color is the maximum SAR Value of each test band.

MAX Adjusted SAR														
Band	Antenna	Power Reduction	Distance Sensor	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	1 g Meas SAR(W/kg)	Meas. Power (dBm)	Max. tune-power(dBm)	Scaling Factor	1g Scaled SAR (W/kg)	0mm SAR
GSM1900	ANT1	LEVEL5&6	ON	DATA 3Slots	Front Side	10	661	1880.00	0.292	24.00	27.00	1.995	0.582	NO
		LEVEL5&6	ON		Back Side	10	661	1880.00	0.364	24.00	27.00	1.995	0.727	NO
		LEVEL5&6	ON		Left Edge	10	661	1880.00	0.057	24.00	27.00	1.995	0.115	NO
		LEVEL5&6	ON		Top Edge	10	661	1880.00	0.576	24.00	27.00	1.995	1.149	NO

Note: According to 648474 D04 Handset SAR v01r03, For Phablet, Since hotspot mode 1-g reported SAR < 1.2 W/kg, Product Specific 10-g SAR is not required.



**Table 11: UMTS Band II**

Antenna	Power Reduction	Distance Sensor	Position	Dist. (mm)	Ch.	Frequency (MHz)	Power Drift (dB)	Limit of SAR 1.6 W/kg (mW/g)					Plot No.
								1g Measured SAR (W/kg)	Measured Power (dBm)	Max. tune-power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)	
<b>Head SAR</b>													
ANT1	LEVEL1	/	Left Cheek	0	9538	1907.6	-0.18	0.485	15.79	16.80	1.262	0.612	/
	LEVEL1	/	Left Tilt	0	9538	1907.6	-0.17	0.614	15.79	16.80	1.262	0.775	/
	LEVEL1	/	Right Cheek	0	9538	1907.6	-0.07	0.728	15.79	16.80	1.262	0.919	/
	LEVEL1	/	Right Tilt	0	9538	1907.6	-0.14	0.852	15.79	16.80	1.262	1.075	30
	LEVEL1	/		0	9262	1852.4	-0.08	0.812	15.77	16.80	1.268	1.029	/
	LEVEL1	/	0	9400	1880.0	-0.06	0.809	15.71	16.80	1.285	1.040	/	
	LEVEL1	/	Right Tilt (Repeated)	0	9538	1907.6	0.160	0.836	15.79	16.80	1.262	1.055	/
ANT1	LEVEL2&3	/	Left Cheek	0	9262	1852.4	-0.18	0.362	14.28	15.30	1.265	0.458	/
	LEVEL2&3	/	Left Tilt	0	9262	1852.4	0.02	0.452	14.28	15.30	1.265	0.572	/
	LEVEL2&3	/	Right Cheek	0	9262	1852.4	0.13	0.531	14.28	15.30	1.265	0.672	/
	LEVEL2&3	/	Right Tilt	0	9262	1852.4	-0.15	0.631	14.28	15.30	1.265	0.798	/
ANT0	LEVEL1&2&3	/	Left Cheek	0	9400	1880.0	0.047	0.103	23.17	24.30	1.297	0.134	/
	LEVEL1&2&3	/	Left Tilt	0	9400	1880.0	-0.05	0.045	23.17	24.30	1.297	0.058	/
	LEVEL1&2&3	/	Right Cheek	0	9400	1880.0	-0.19	0.053	23.17	24.30	1.297	0.069	/
	LEVEL1&2&3	/	Right Tilt	0	9400	1880.0	0.04	0.055	23.17	24.30	1.297	0.071	/
ANT1	LEVEL1	/	Right Tilt (Battery 2)	0	9538	1907.6	0.080	0.818	15.79	16.80	1.262	1.032	/
<b>Body-worn SAR</b>													
ANT1	LEVEL4	OFF	Front Side	15	9400	1880.0	0.044	0.451	23.34	24.30	1.247	0.563	31
	LEVEL4	ON	Back Side	15	9400	1880.0	0.09	0.194	18.85	19.80	1.245	0.241	/
ANT0	LEVEL4	/	Front Side	15	9400	1880.0	-0.19	0.132	21.05	22.30	1.334	0.176	/
	LEVEL4	/	Back Side	15	9400	1880.0	-0.02	0.227	21.05	22.30	1.334	0.303	/
ANT1	LEVEL4	OFF	Front Side	15	9400	1880.0	-0.020	0.428	23.34	24.30	1.247	0.534	/
ANT1	LEVEL4	OFF	Front Side (Battery 2)	15	9400	1880.0	-0.020	0.428	23.34	24.30	1.247	0.534	/
<b>Hotspot SAR</b>													
ANT1	LEVEL5&6	ON	Front Side	10	9400	1880.0	-0.010	0.265	18.85	19.80	1.245	0.330	/
	LEVEL5&6	ON	Back Side	10	9400	1880.0	-0.090	0.333	18.85	19.80	1.245	0.414	/
	LEVEL5&6	ON	Left Edge	10	9400	1880.0	-0.150	0.054	18.85	19.80	1.245	0.067	/
	LEVEL5&6	ON	Top Edge	10	9400	1880.0	-0.032	0.588	18.85	19.80	1.245	0.732	32
ANT0	LEVEL5&6	/	Front Side	10	9400	1880.0	0.062	0.271	21.05	22.30	1.334	0.361	/
	LEVEL5&6	/	Back Side	10	9400	1880.0	0.010	0.428	21.05	22.30	1.334	0.571	/
	LEVEL5&6	/	Right Edge	10	9400	1880.0	0.020	0.051	21.05	22.30	1.334	0.068	/
	LEVEL5&6	/	Left Edge	10	9400	1880.0	0.150	0.000	21.05	22.30	1.334	0.000	/
	LEVEL5&6	/	Bottom Edge	10	9400	1880.0	0.043	0.586	21.05	22.30	1.334	0.781	/



ANT0	LEVEL5&6	/	Bottom Edge (Battery 2)	10	9400	1880.0	-0.140	0.558	21.05	22.30	1.334	0.744	/
<b>Additional SAR test at a conservative distance (triggering distance minus 1mm)</b>													
ANT1	OFF	/	Front Side	10	9400	1880.0	0.00	0.718	23.34	24.30	1.247	0.896	/
	OFF	/	Back Side	16	9400	1880.0	-0.10	0.398	23.34	24.30	1.247	0.496	/
	OFF	/	Left Edge	9	9400	1880.0	0.10	0.148	23.34	24.30	1.247	0.185	/
	OFF	/	Top Edge	18	9400	1880.0	0.01	0.483	23.34	24.30	1.247	0.602	/
ANT1	OFF	/	Front Side	10	9262	1852.4	0.170	0.659	23.20	24.30	1.288	0.849	/
ANT1	OFF	/	Front Side	10	9538	1907.6	-0.020	0.681	23.32	24.30	1.253	0.853	/
Antenna	Power Reduction	Distance Sensor	Position	Dist. (mm)	Ch.	Frequency (MHz)	Power Drift (dB)	Limit of SAR 4 W/kg (mW/g)					Plot No.
								10g Measured SAR (W/kg)	Measured Power (dBm)	Max. tune-power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	
<b>Product Specific 10-g SAR</b>													
ANT1	LEVEL4	ON	Top Edge	0	9400	1880.0	0.190	1.450	18.85	19.80	1.245	1.805	33
ANT1	LEVEL4	ON	Top Edge (Battery 2)	0	9400	1880.0	0.140	1.400	18.85	19.80	1.245	1.742	/
Note: 1. The value with blue color is the maximum SAR Value of each test band.													

Measurement Variability				
Test Position	Channel/ Frequency(MHz)	MAX Measured SAR <sub>1g</sub> (W/kg)	1 <sup>st</sup> Repeated SAR <sub>1g</sub> (W/kg)	Ratio
Right Tilt	9538/1907.6	0.852	0.836	1.02

Note: 1) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).

2) A third repeated measurement was performed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

**Table 12: UMTS Band IV**

Antenna	Power Reduction	Distance Sensor	Position	Dist. (mm)	Ch.	Frequency (MHz)	Power Drift (dB)	Limit of SAR 1.6 W/kg (mW/g)					Plot No.
								1g Measured SAR (W/kg)	Measured Power (dBm)	Max. tune-power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)	
<b>Head SAR</b>													
ANT1	LEVEL1	/	Left Cheek	0	1412	1732.4	-0.11	0.426	17.31	18.30	1.256	0.535	/
	LEVEL1	/	Left Tilt	0	1412	1732.4	-0.19	0.537	17.31	18.30	1.256	0.674	/
	LEVEL1	/	Right Cheek	0	1412	1732.4	0.16	0.618	17.31	18.30	1.256	0.776	/
	LEVEL1	/	Right Tilt	0	1412	1732.4	0.15	0.769	17.31	18.30	1.256	0.966	/
	LEVEL1	/		0	1312	1712.4	-0.03	0.768	17.25	18.30	1.274	0.978	/
	LEVEL1	/		0	1513	1752.6	0.00	0.825	17.27	18.30	1.268	1.046	34
	LEVEL1	/	Right Tilt	0	1513	1752.6	0.070	0.793	17.27	18.30	1.268	1.005	/



			(Repeated)										
ANT1	LEVEL2&3	/	Left Cheek	0	1312	1712.4	0.14	0.294	15.88	16.80	1.236	0.363	/
	LEVEL2&3	/	Left Tilt	0	1312	1712.4	-0.11	0.365	15.88	16.80	1.236	0.451	/
	LEVEL2&3	/	Right Cheek	0	1312	1712.4	-0.03	0.454	15.88	16.80	1.236	0.561	/
	LEVEL2&3	/	Right Tilt	0	1312	1712.4	0.06	0.528	15.88	16.80	1.236	0.653	/
ANT0	LEVEL1&2&3	/	Left Cheek	0	1513	1752.6	0.180	0.180	23.25	24.30	1.274	0.229	/
	LEVEL1&2&3	/	Left Tilt	0	1513	1752.6	-0.09	0.054	23.25	24.30	1.274	0.069	/
	LEVEL1&2&3	/	Right Cheek	0	1513	1752.6	-0.01	0.084	23.25	24.30	1.274	0.107	/
	LEVEL1&2&3	/	Right Tilt	0	1513	1752.6	-0.16	0.058	23.25	24.30	1.274	0.074	/
ANT1	LEVEL1	/	Right Tilt (Battery 2)	0	1513	1752.6	-0.110	0.810	17.27	18.30	1.268	1.027	/
<b>Body-worn SAR</b>													
ANT1	LEVEL4	OFF	Front Side	15	1513	1752.6	0.023	0.249	23.22	24.30	1.282	0.319	35
	LEVEL4	ON	Back Side	15	1513	1752.6	-0.150	0.143	20.94	21.80	1.219	0.174	/
ANT0	LEVEL4	/	Front Side	15	1312	1712.4	0.030	0.161	20.86	21.80	1.242	0.200	/
	LEVEL4	/	Back Side	15	1312	1712.4	0.021	0.186	20.86	21.80	1.242	0.231	/
ANT1	LEVEL4	OFF	Front Side (Battery 2)	15	1513	1752.6	0.010	0.215	23.22	24.30	1.282	0.276	/
<b>Hotspot SAR</b>													
ANT1	LEVEL5&6	ON	Front Side	10	1513	1752.6	0.021	0.259	20.94	21.80	1.219	0.316	/
	LEVEL5&6	ON	Back Side	10	1513	1752.6	0.010	0.306	20.94	21.80	1.219	0.373	/
	LEVEL5&6	ON	Left Edge	10	1513	1752.6	0.130	0.043	20.94	21.80	1.219	0.052	/
	LEVEL5&6	ON	Top Edge	10	1513	1752.6	0.038	0.576	20.94	21.80	1.219	0.702	/
ANT0	LEVEL5&6	/	Front Side	10	1312	1712.4	0.035	0.384	20.86	21.80	1.242	0.477	/
	LEVEL5&6	/	Back Side	10	1312	1712.4	0.069	0.432	20.86	21.80	1.242	0.536	/
	LEVEL5&6	/	Right Edge	10	1312	1712.4	0.080	0.057	20.86	21.80	1.242	0.071	/
	LEVEL5&6	/	Left Edge	10	1312	1712.4	0.000	0.081	20.86	21.80	1.242	0.101	/
	LEVEL5&6	/	Bottom Edge	10	1312	1712.4	0.027	0.642	20.86	21.80	1.242	0.797	36
ANT0	LEVEL5&6	/	Bottom Edge (Battery 2)	10	1312	1712.4	0.010	0.618	20.86	21.80	1.242	0.797	/
<b>Additional SAR test at a conservative distance (triggering distance minus 1mm)</b>													
ANT1	OFF	/	Front Side	10	1513	1752.6	-0.08	0.427	23.22	24.30	1.282	0.548	/
	OFF	/	Back Side	16	1513	1752.6	-0.12	0.214	23.22	24.30	1.282	0.274	/
	OFF	/	Left Edge	9	1513	1752.6	-0.08	0.075	23.22	24.30	1.282	0.096	/
	OFF	/	Top Edge	18	1513	1752.6	0.14	0.268	23.22	24.30	1.282	0.344	/
Antenna	Power Reduction	Distance Sensor	Position	Dist. (mm)	Ch.	Frequency (MHz)	Power Drift (dB)	Limit of SAR 4W/kg (mW/g)					Plot No.
								10g Measured SAR (W/kg)	Measured Power (dBm)	Max. tune-power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	
<b>Product Specific 10-g SAR</b>													
ANT1	LEVEL4	ON	Top Edge	0	1312	1712.4	0.042	1.590	20.92	21.80	1.225	1.947	/
	LEVEL4	ON	Top Edge	0	1412	1732.4	-0.190	1.730	20.84	21.80	1.247	2.158	/
	LEVEL4	ON	Top Edge	0	1513	1752.6	0.060	1.870	20.94	21.80	1.219	2.280	37





ANT1	LEVEL4	ON	Top Edge (Battery 2)	0	1513	1752.6	0.010	1.820	20.94	21.80	1.219	2.219	/
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Note: 1. The value with blue color is the maximum SAR Value of each test band.

#### Measurement Variability

Test Position	Channel/ Frequency(MHz)	MAX Measured SAR <sub>1g</sub> (W/kg)	1 <sup>st</sup> Repeated SAR <sub>1g</sub> (W/kg)	Ratio
Right Tilt	1513/1752.6	0.825	0.793	1.04

Note: 1) A second repeated measurement was performed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was  $\geq 1.45$  W/kg (~ 10% from the 1-g SAR limit).

2) A third repeated measurement was performed only if the original, first or second repeated measurement was  $\geq 1.5$  W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.



**Table 13: UMTS Band V**

Antenna	Power Reduction	Distance Sensor	Position	Dist. (mm)	Ch.	Frequency (MHz)	Power Drift (dB)	Limit of SAR 1.6 W/kg (mW/g)					Plot No.
								1g Measured SAR (W/kg)	Measured Power (dBm)	Max. tune-power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)	
<b>Head SAR</b>													
ANT1	LEVEL1	/	Left Cheek	0	4132	826.4	0.02	0.450	22.17	23.50	1.358	0.611	/
	LEVEL1	/	Left Tilt	0	4132	826.4	-0.06	0.408	22.17	23.50	1.358	0.554	/
	LEVEL1	/	Right Cheek	0	4132	826.4	-0.18	0.735	22.17	23.50	1.358	0.998	38
	LEVEL1	/		0	4182	836.4	0.07	0.702	22.00	23.50	1.413	0.992	/
	LEVEL1	/		0	4233	846.6	-0.14	0.711	22.03	23.50	1.403	0.997	/
	LEVEL1	/	Right Tilt	0	4132	826.4	-0.10	0.587	22.17	23.50	1.358	0.797	/
ANT1	LEVEL2&3	/	Left Cheek	0	4233	846.6	0.02	0.322	20.67	22.00	1.358	0.437	/
	LEVEL2&3	/	Left Tilt	0	4233	846.6	0.09	0.286	20.67	22.00	1.358	0.388	/
	LEVEL2&3	/	Right Cheek	0	4233	846.6	-0.12	0.482	20.67	22.00	1.358	0.655	/
	LEVEL2&3	/	Right Tilt	0	4233	846.6	0.14	0.415	20.67	22.00	1.358	0.564	/
ANT0	LEVEL1&2&3	/	Left Cheek	0	4132	826.4	0.046	0.223	23.95	25.00	1.274	0.284	/
	LEVEL1&2&3	/	Left Tilt	0	4132	826.4	0.11	0.116	23.95	25.00	1.274	0.148	/
	LEVEL1&2&3	/	Right Cheek	0	4132	826.4	-0.13	0.160	23.95	25.00	1.274	0.204	/
	LEVEL1&2&3	/	Right Tilt	0	4132	826.4	-0.09	0.090	23.95	25.00	1.274	0.115	/
ANT1	LEVEL1	/	Right Cheek (Battery 2)	0	4132	826.4	-0.040	0.721	22.17	23.50	1.358	0.979	/
<b>Body-worn SAR</b>													
ANT1	LEVEL4	OFF	Front Side	15	4132	826.4	0.190	0.109	23.75	25.00	1.334	0.145	/
	LEVEL4	ON	Back Side	15	4132	826.4	0.010	0.134	23.75	25.00	1.334	0.179	/
ANT0	LEVEL4	/	Front Side	15	4132	826.4	0.090	0.160	23.95	25.00	1.274	0.204	/
	LEVEL4	/	Back Side	15	4132	826.4	0.120	0.198	23.95	25.00	1.274	0.252	39
ANT0	LEVEL4	/	Back Side (Battery 2)	15	4132	826.4	0.060	0.184	23.95	25.00	1.274	0.234	/
<b>Hotspot SAR</b>													
ANT1	LEVEL5&6	ON	Front Side	10	4132	826.4	0.000	0.131	23.75	25.00	1.334	0.175	/
	LEVEL5&6	ON	Back Side	10	4132	826.4	-0.110	0.176	23.75	25.00	1.334	0.235	/
	LEVEL5&6	ON	Left Edge	10	4132	826.4	-0.150	0.077	23.75	25.00	1.334	0.103	/
	LEVEL5&6	ON	Top Edge	10	4132	826.4	-0.070	0.164	23.75	25.00	1.334	0.219	/
ANT0	LEVEL5&6	/	Front Side	10	4132	826.4	0.010	0.166	23.95	25.00	1.274	0.211	/
	LEVEL5&6	/	Back Side	10	4132	826.4	0.000	0.266	23.95	25.00	1.274	0.339	40
	LEVEL5&6	/	Right Edge	10	4132	826.4	-0.130	0.062	23.95	25.00	1.274	0.079	/
	LEVEL5&6	/	Left Edge	10	4132	826.4	-0.140	0.142	23.95	25.00	1.274	0.181	/
	LEVEL5&6	/	Bottom Edge	10	4132	826.4	0.080	0.198	23.95	25.00	1.274	0.252	/
ANT0	LEVEL5&6	/	Back Side (Battery 2)	10	4132	826.4	-0.040	0.254	23.95	25.00	1.274	0.339	/
<b>Additional SAR test at a conservative distance (triggering distance minus 1mm)</b>													



ANT1	OFF	/	Front Side	10	4132	826.4	0.09	0.094	23.75	25.00	1.334	0.125	/
	OFF	/	Back Side	16	4132	826.4	-0.19	0.063	23.75	25.00	1.334	0.084	/
	OFF	/	Left Edge	9	4132	826.4	-0.11	0.073	23.75	25.00	1.334	0.097	/
	OFF	/	Top Edge	18	4132	826.4	-0.09	0.000	23.75	25.00	1.334	0.000	/

Note: 1.The value with blue color is the maximum SAR Value of each test band.

Band	Antenna	Power Reduction	Distance Sensor	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	1 g Meas SAR(W/kg)	Meas. Power (dBm)	Max. tune-power(dBm)	Scaling Factor	1g Scaled SAR (W/kg)	0mm SAR
WCDMA Band II	ANT1	LEVEL5&6	ON	RMC	Front Side	10	9400	1880.0	0.330	19.80	24.30	2.818	0.929	NO
		LEVEL5&6	ON		Back Side	10	9400	1880.0	0.414	19.80	24.30	2.818	1.168	NO
		LEVEL5&6	ON		Left Edge	10	9400	1880.0	0.067	19.80	24.30	2.818	0.189	NO
		LEVEL5&6	ON		Top Edge	10	9400	1880.0	0.732	19.80	24.30	2.818	2.062	YES
WCDMA Band IV	ANT1	LEVEL5&6	ON	RMC	Front Side	10	1513	1752.6	0.316	21.80	24.30	1.778	0.561	NO
		LEVEL5&6	ON		Back Side	10	1513	1752.6	0.373	21.80	24.30	1.778	0.663	NO
		LEVEL5&6	ON		Left Edge	10	1513	1752.6	0.052	21.80	24.30	1.778	0.093	NO
		LEVEL5&6	ON		Top Edge	10	1513	1752.6	0.702	21.80	24.30	1.778	1.249	YES



Table 14: LTE Band 2 (20MHz)

Antenna	Power Reduction	Distance Sensor	Information	Position	Dist. (mm)	Ch.	Frequency (MHz)	RB	RB Start	Power Drift (dB)	Limit of SAR 1.6 W/kg (mW/g)					Plot No.
											1g Measured SAR (W/kg)	Measured Power (dBm)	Max. tune-power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)	
<b>Head SAR(QPSK)</b>																
ANT1	LEVEL1	/	Standalone	Left Cheek	0	18900	1880	1	Middle	0.14	0.442	16.04	17.00	1.247	0.551	/
	LEVEL1	/				18900	1880	50	Low	-0.06	0.457	16.11	17.00	1.227	0.561	/
	LEVEL1	/		Left Tilt	0	18900	1880	1	Middle	-0.15	0.581	16.04	17.00	1.247	0.725	/
	LEVEL1	/				18900	1880	50	Low	-0.12	0.594	16.11	17.00	1.227	0.729	/
	LEVEL1	/		Right Cheek	0	18900	1880	1	Middle	-0.11	0.625	16.04	17.00	1.247	0.780	/
	LEVEL1	/				18900	1880	50	Low	0.12	0.638	16.11	17.00	1.227	0.783	/
	LEVEL1	/		Right Tilt	0	18900	1880	1	Middle	-0.16	0.833	16.04	17.00	1.247	1.039	/
	LEVEL1	/				18700	1860	1	Middle	0.01	0.769	15.79	17.00	1.321	1.016	/
	LEVEL1	/				19100	1900	1	Middle	-0.05	0.817	15.89	17.00	1.291	1.055	/
	LEVEL1	/				18900	1880	50	Low	0.19	0.844	16.11	17.00	1.227	1.036	/
	LEVEL1	/				18700	1860	50	High	0.01	0.776	15.91	17.00	1.285	0.997	/
	LEVEL1	/				19100	1900	50	Low	-0.14	0.864	15.79	17.00	1.321	1.142	41
	LEVEL1	/				18900	1880	100	Low	-0.16	0.837	15.96	17.00	1.271	1.063	/
	LEVEL1	/				18700	1860	100	Low	-0.060	0.783	15.94	17.00	1.276	0.999	/
	LEVEL1	/		19100	1900	100	Low	0.021	0.825	15.76	17.00	1.330	1.098	/		
LEVEL1	/	Right Tilt (Repeated)	0	19100	1900	50	Low	-0.140	0.864	15.79	17.00	1.321	1.142	/		
ANT1	LEVEL2&3	/	Standalone	Left Cheek	0	18900	1880	1	Middle	-0.04	0.290	14.43	15.50	1.279	0.371	/
	LEVEL2&3	/				18900	1880	50	Low	0.02	0.295	14.47	15.50	1.268	0.374	/
	LEVEL2&3	/		Left Tilt	0	18900	1880	1	Middle	0.00	0.363	14.43	15.50	1.279	0.464	/
	LEVEL2&3	/				18900	1880	50	Low	0.06	0.368	14.47	15.50	1.268	0.466	/
	LEVEL2&3	/		Right Cheek	0	18900	1880	1	Middle	0.09	0.405	14.43	15.50	1.279	0.518	/
	LEVEL2&3	/				18900	1880	50	Low	0.19	0.415	14.47	15.50	1.268	0.526	/
	LEVEL2&3	/		Right Tilt	0	18900	1880	1	Middle	0.01	0.473	14.43	15.50	1.279	0.605	/
	LEVEL2&3	/				18900	1880	50	Low	-0.18	0.493	14.47	15.50	1.268	0.625	/
ANT0	LEVEL1&2&3	/	Standalone	Left Cheek	0	18900	1880	1	Middle	0.045	0.092	23.32	24.50	1.312	0.121	/
	LEVEL1&2&3	/				18700	1860	50	High	-0.01	0.064	22.49	23.50	1.262	0.081	/
	LEVEL1&2&3	/		Left Tilt	0	18900	1880	1	Middle	0.08	0.045	23.32	24.50	1.312	0.059	/
	LEVEL1&2&3	/				18700	1860	50	High	-0.06	0.032	22.49	23.50	1.262	0.040	/
	LEVEL1&2&3	/		Right Cheek	0	18900	1880	1	Middle	-0.03	0.051	23.32	24.50	1.312	0.067	/
	LEVEL1&2&3	/				18700	1860	50	High	0.11	0.044	22.49	23.50	1.262	0.056	/
	LEVEL1&2&3	/		Right Tilt	0	18900	1880	1	Middle	-0.02	0.057	23.32	24.50	1.312	0.075	/
	LEVEL1&2&3	/				18700	1860	50	High	-0.01	0.045	22.49	23.50	1.262	0.057	/
ANT1	LEVEL1	/	Standalone	Right Cheek (Battery 2)	0	19100	1900	50	Low	0.040	0.833	15.79	17.00	1.321	1.101	/



Body-worn SAR(QPSK)																
ANT1	LEVEL4	OFF	Standalone	Front Side	15	18900	1880	1	Middle	-0.110	0.440	23.49	24.50	1.262	0.555	42
	LEVEL4	OFF				18900	1880	50	High	0.19	0.287	22.64	23.50	1.219	0.350	/
	LEVEL4	ON		Back Side	15	18900	1880	1	Middle	0.14	0.157	18.96	20.00	1.271	0.199	/
	LEVEL4	ON				18900	1880	50	Low	-0.03	0.117	18.97	20.00	1.268	0.148	/
ANT0	LEVEL4	/	Standalone	Front Side	15	18900	1880	1	Middle	-0.09	0.138	20.74	22.00	1.337	0.184	/
	LEVEL4	/				18900	1880	50	Middle	-0.02	0.119	20.81	22.00	1.315	0.157	/
	LEVEL4	/		Back Side	15	18900	1880	1	Middle	0.14	0.281	20.74	22.00	1.337	0.376	/
	LEVEL4	/				18900	1880	50	Middle	0.01	0.242	20.81	22.00	1.315	0.318	/
ANT1	LEVEL4	OFF	Standalone	Front Side (Battery 2)	15	18900	1880	1	Middle	-0.010	0.421	23.49	24.50	1.262	0.531	/
Hotspot SAR(QPSK)																
ANT1	LEVEL5&6	ON	Standalone	Front Side	10	18900	1880	1	Middle	0.09	0.244	18.96	20.00	1.271	0.310	/
	LEVEL5&6	ON				18900	1880	50	Low	0.11	0.256	18.97	20.00	1.268	0.325	/
	LEVEL5&6	ON		Back Side	10	18900	1880	1	Middle	-0.12	0.307	18.96	20.00	1.271	0.390	/
	LEVEL5&6	ON				18900	1880	50	Low	-0.13	0.323	18.97	20.00	1.268	0.409	/
	LEVEL5&6	ON		Left Edge	10	18900	1880	1	Middle	-0.14	0.047	18.96	20.00	1.271	0.060	/
	LEVEL5&6	ON				18900	1880	50	Low	-0.11	0.048	18.97	20.00	1.268	0.061	/
	LEVEL5&6	ON		Top Edge	10	18900	1880	1	Middle	-0.13	0.506	18.96	20.00	1.271	0.643	/
LEVEL5&6	ON	18900	1880			50	Low	0.040	0.581	18.97	20.00	1.268	0.737	43		
ANT0	LEVEL5&6	/	Standalone	Front Side	10	18900	1880	1	Middle	0.12	0.134	20.74	22.00	1.337	0.179	/
	LEVEL5&6	/				18900	1880	50	Middle	-0.01	0.146	20.81	22.00	1.315	0.192	/
	LEVEL5&6	/		Back Side	10	18900	1880	1	Middle	-0.14	0.274	20.74	22.00	1.337	0.366	/
	LEVEL5&6	/				18900	1880	50	Middle	-0.11	0.299	20.81	22.00	1.315	0.393	/
	LEVEL5&6	/		Right Edge	10	18900	1880	1	Middle	-0.05	0.047	20.74	22.00	1.337	0.063	/
	LEVEL5&6	/				18900	1880	50	Middle	0.16	0.053	20.81	22.00	1.315	0.070	/
	LEVEL5&6	/		Left Edge	10	18900	1880	1	Middle	0.15	0.025	20.74	22.00	1.337	0.033	/
	LEVEL5&6	/				18900	1880	50	Middle	-0.05	0.024	20.81	22.00	1.315	0.032	/
	LEVEL5&6	/		Bottom Edge	10	18900	1880	1	Middle	0.11	0.395	20.74	22.00	1.337	0.528	/
LEVEL5&6	/	18900	1880			50	Middle	-0.048	0.445	20.81	22.00	1.315	0.585	/		
ANT1	LEVEL5&6	ON	Standalone	Top Edge (Battery 2)	10	18900	1880	50	Low	0.050	0.556	18.97	20.00	1.268	0.705	/
Additional SAR test at a conservative distance (triggering distance minus 1mm) (QPSK)																
ANT1	OFF	/	Standalone	Front Side	10	18900	1880	1	Middle	-0.040	0.772	23.49	24.50	1.262	0.974	/
	OFF	/			10	18700	1860	1	Middle	0.026	0.738	23.45	24.50	1.274	0.940	/
	OFF	/			10	19100	1900	1	Low	0.011	0.742	23.30	24.50	1.318	0.978	/
	OFF	/			10	18900	1880	50	High	0.020	0.622	22.64	23.50	1.219	0.758	/
	OFF	/		Back Side	16	18900	1880	1	Middle	-0.170	0.403	23.49	24.50	1.262	0.509	/
	OFF	/			16	18900	1880	50	High	0.130	0.326	22.64	23.50	1.219	0.397	/
	OFF	/		Left Edge	9	18900	1880	1	Middle	-0.190	0.147	23.49	24.50	1.262	0.185	/
	OFF	/			9	18900	1880	50	High	-0.160	0.118	22.64	23.50	1.219	0.144	/
	OFF	/		Top Edge	18	18900	1880	1	Middle	0.100	0.493	23.49	24.50	1.262	0.622	/
	OFF	/			18	18900	1880	50	High	0.180	0.402	22.64	23.50	1.219	0.490	/



Antenna	Power Reduction	Distance Sensor	Mode	Position	Dist. (mm)	Ch.	Frequency (MHz)	RB Num.	RB Start	Power Drift (dB)	Limit of SAR 4W/kg (mW/g)					Plot No.
											10g Measured SAR (W/kg)	Measured Power (dBm)	Max. tune-power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	
<b>Product Specific 10-g SAR(QPSK)</b>																
ANT1	LEVEL4	ON	Standalone	Top Edge	0	18900	1880	1	Middle	-0.09	1.290	18.96	20.00	1.271	1.639	/
	LEVEL4	ON				18900	1880	50	Low	0.058	1.430	18.97	20.00	1.268	1.813	44
ANT1	LEVEL4	ON	Standalone	Top Edge (Battery 2)	0	18900	1880	50	Low	0.020	1.350	18.97	20.00	1.268	1.711	/

Note: 1. The value with blue color is the maximum SAR Value of each test band.

Measurement Variability				
Test Position	Channel/ Frequency(MHz)	MAX Measured SAR <sub>1g</sub> (W/kg)	1 <sup>st</sup> Repeated SAR <sub>1g</sub> (W/kg)	Ratio
Right Tilt	19100/1900	0.864	0.864	1.00

Note: 1) A second repeated measurement was performed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).  
 2) A third repeated measurement was performed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

**Table 15: LTE Band 4 (20MHz)**

Antenna	Power Reduction	Distance Sensor	Information	Position	Dist. (mm)	Ch.	Frequency (MHz)	RB	RB Start	Power Drift (dB)	Limit of SAR 1.6 W/kg (mW/g)					Plot No.
											1g Measured SAR (W/kg)	Measured Power (dBm)	Max. tune-power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)	
<b>Head SAR(QPSK)</b>																
ANT1	LEVEL1	/	Standalone	Left Cheek	0	20300	1745	1	Middle	-0.140	0.301	15.80	17.00	1.318	0.397	/
	LEVEL1	/				20300	1745	50	Low	-0.080	0.336	15.86	17.00	1.300	0.437	/
	LEVEL1	/		Left Tilt	0	20050	1720	1	Middle	0.110	0.391	15.80	17.00	1.318	0.515	/
	LEVEL1	/				20050	1720	50	Low	0.000	0.432	15.86	17.00	1.300	0.562	/
	LEVEL1	/		Right Cheek	0	20050	1720	1	Middle	0.010	0.462	15.80	17.00	1.318	0.609	/
	LEVEL1	/				20050	1720	50	Low	-0.010	0.515	15.86	17.00	1.300	0.670	/
	LEVEL1	/		Right Tilt	0	20300	1745	1	Middle	0.000	0.725	15.80	17.00	1.318	0.956	/
	LEVEL1	/				20050	1720	1	Middle	-0.030	0.555	15.62	17.00	1.374	0.763	/
	LEVEL1	/				20175	1732.5	1	Middle	0.020	0.647	15.74	17.00	1.337	0.865	/
	LEVEL1	/				20300	1745	50	Low	0.010	0.749	15.86	17.00	1.300	0.974	45
	LEVEL1	/				20050	1720	50	High	-0.120	0.534	15.74	17.00	1.337	0.714	/
	LEVEL1	/				20175	1732.5	50	Low	0.050	0.605	15.73	17.00	1.340	0.811	/
	LEVEL1	/				20175	1732.5	100	Low	-0.040	0.645	15.75	17.00	1.334	0.860	/
	LEVEL1	/				20050	1720	100	Low	-0.090	0.672	15.71	17.00	1.346	0.904	/
	LEVEL1	/				20300	1745	100	Low	-0.028	0.695	15.69	17.00	1.352	0.940	/
ANT1	LEVEL2&3	/	Standalone	Left Cheek	0	20300	1745	1	Middle	0.10	0.224	14.20	15.50	1.349	0.302	/



	LEVEL2&3	/		Left Tilt	0	20300	1745	50	Low	0.13	0.248	14.23	15.50	1.340	0.332	/	
	LEVEL2&3	/				20300	1745	1	Middle	-0.12	0.278	14.20	15.50	1.349	0.375	/	
	LEVEL2&3	/				20300	1745	50	Low	0.08	0.303	14.23	15.50	1.340	0.406	/	
	LEVEL2&3	/			0	Right Cheek	20300	1745	1	Middle	-0.15	0.336	14.20	15.50	1.349	0.453	/
	LEVEL2&3	/					20300	1745	50	Low	-0.10	0.371	14.23	15.50	1.340	0.497	/
	LEVEL2&3	/				Right Tilt	20300	1745	1	Middle	-0.15	0.381	14.20	15.50	1.349	0.514	/
	LEVEL2&3	/					20300	1745	50	Low	0.03	0.419	14.23	15.50	1.340	0.561	/
ANT0	LEVEL1&2&3	/	Standalone	Left Cheek	0	20050	1720	1	Middle	0.090	0.136	23.56	24.50	1.242	0.169	/	
	LEVEL1&2&3	/				20050	1720	50	High	-0.04	0.086	22.72	23.50	1.197	0.103	/	
	LEVEL1&2&3	/		Left Tilt	0	20050	1720	1	Middle	-0.05	0.051	23.56	24.50	1.242	0.063	/	
	LEVEL1&2&3	/				20050	1720	50	High	0.16	0.039	22.72	23.50	1.197	0.047	/	
	LEVEL1&2&3	/		Right Cheek	0	20050	1720	1	Middle	0.17	0.067	23.56	24.50	1.242	0.083	/	
	LEVEL1&2&3	/				20050	1720	50	High	-0.02	0.048	22.72	23.50	1.197	0.057	/	
	LEVEL1&2&3	/		Right Tilt	0	20050	1720	1	Middle	-0.06	0.049	23.56	24.50	1.242	0.061	/	
	LEVEL1&2&3	/				20050	1720	50	High	-0.16	0.038	22.72	23.50	1.197	0.045	/	
ANT1	LEVEL1	/	Standalone	Right Tilt (Battery 2)	0	20300	1745	50	Low	-0.070	0.681	15.86	17.00	1.300	0.885	/	
<b>Body-worn SAR(QPSK)</b>																	
ANT1	LEVEL4	OFF	Standalone	Front Side	15	20175	1732.5	1	Middle	0.020	0.348	22.97	24.50	1.422	0.495	46	
	LEVEL4	OFF				20175	1732.5	50	Low	0.033	0.215	21.98	23.50	1.419	0.305	/	
	LEVEL4	ON		Back Side	15	20300	1745	1	Low	0.11	0.130	19.25	20.50	1.334	0.173	/	
	LEVEL4	ON				20300	1745	50	Low	-0.04	0.121	19.24	20.50	1.337	0.162	/	
ANT0	LEVEL4	/	Standalone	Front Side	15	20175	1732.5	1	Low	0.03	0.161	22.00	23.00	1.259	0.203	/	
	LEVEL4	/				20050	1720	50	High	-0.16	0.125	22.14	23.00	1.219	0.152	/	
	LEVEL4	/		Back Side	15	20175	1732.5	1	Low	0.16	0.216	22.00	23.00	1.259	0.272	/	
	LEVEL4	/				20050	1720	50	High	0.05	0.177	22.14	23.00	1.219	0.216	/	
ANT1	LEVEL4	OFF	Standalone	Front Side (Battery 2)	15	20175	1732.5	1	Middle	-0.140	0.335	22.97	24.50	1.422	0.476	/	
<b>Hotspot SAR(QPSK)</b>																	
ANT1	LEVEL5&6	ON	Standalone	Front Side	10	20300	1745	1	Low	0.19	0.206	19.25	20.50	1.334	0.275	/	
	LEVEL5&6	ON				20300	1745	50	Low	0.01	0.196	19.24	20.50	1.337	0.262	/	
	LEVEL5&6	ON		Back Side	10	20300	1745	1	Low	-0.04	0.224	19.25	20.50	1.334	0.299	/	
	LEVEL5&6	ON				20300	1745	50	Low	-0.01	0.210	19.24	20.50	1.337	0.281	/	
	LEVEL5&6	ON		Left Edge	10	20300	1745	1	Low	-0.14	0.032	19.25	20.50	1.334	0.043	/	
	LEVEL5&6	ON				20300	1745	50	Low	0.17	0.031	19.24	20.50	1.337	0.041	/	
	LEVEL5&6	ON		Top Edge	10	20300	1745	1	Low	0.071	0.418	19.25	20.50	1.334	0.557	/	
	LEVEL5&6	ON				20300	1745	50	Low	-0.09	0.381	19.24	20.50	1.337	0.509	/	
ANT0	LEVEL5&6	/	Standalone	Front Side	10	20175	1732.5	1	Low	-0.15	0.249	22.00	23.00	1.259	0.313	/	
	LEVEL5&6	/				20050	1720	50	High	-0.07	0.242	22.14	23.00	1.219	0.295	/	
	LEVEL5&6	/		Back Side	10	20175	1732.5	1	Low	-0.13	0.321	22.00	23.00	1.259	0.404	/	
	LEVEL5&6	/				20050	1720	50	High	0.19	0.310	22.14	23.00	1.219	0.378	/	
	LEVEL5&6	/		Right Edge	10	20175	1732.5	1	Low	0.05	0.070	22.00	23.00	1.259	0.088	/	
	LEVEL5&6	/				20050	1720	50	High	-0.15	0.065	22.14	23.00	1.219	0.079	/	



	LEVEL5&6	/		Left Edge	10	20175	1732.5	1	Low	0.16	0.091	22.00	23.00	1.259	0.115	/
	LEVEL5&6	/				20050	1720	50	High	0.12	0.089	22.14	23.00	1.219	0.108	/
	LEVEL5&6	/		Bottom Edge	10	20175	1732.5	1	Low	0.11	0.470	22.00	23.00	1.259	0.592	/
	LEVEL5&6	/				20050	1720	50	High	0.028	0.529	22.14	23.00	1.219	0.645	47
ANT0	LEVEL5&6	/	Standalone	Bottom Edge (Battery 2)	10	20050	1720	50	High	0.050	0.506	22.14	23.00	1.219	0.617	/
<b>Additional SAR test at a conservative distance (triggering distance minus 1mm) (QPSK)</b>																
ANT1	OFF	/	Standalone	Front Side	10	20175	1732.5	1	Middle	-0.021	0.617	22.97	24.50	1.422	0.878	/
	OFF	/				20050	1720	1	Middle	-0.011	0.602	22.89	24.50	1.449	0.872	/
	OFF	/				20300	1745	1	Low	0.017	0.583	22.77	24.50	1.489	0.868	/
	OFF	/				20175	1732.5	50	Low	-0.080	0.417	21.98	23.50	1.419	0.592	/
	OFF	/		Back Side	16	20175	1732.5	1	Middle	0.180	0.282	22.97	24.50	1.422	0.401	/
	OFF	/				20175	1732.5	50	Low	0.160	0.208	21.98	23.50	1.419	0.295	/
	OFF	/		Left Edge	9	20175	1732.5	1	Middle	-0.060	0.109	22.97	24.50	1.422	0.155	/
	OFF	/				20175	1732.5	50	Low	0.130	0.081	21.98	23.50	1.419	0.115	/
	OFF	/		Top Edge	18	20175	1732.5	1	Middle	0.190	0.353	22.97	24.50	1.422	0.502	/
	OFF	/				20175	1732.5	50	Low	0.180	0.258	21.98	23.50	1.419	0.366	/
Antenna	Power Reduction	Distance Sensor	Information	Position	Dist. (mm)	Ch.	Frequency (MHz)	RB Num.	RB Start	Power Drift (dB)	Limit of SAR 4W/kg (mW/g)					Plot No.
											10g Measured SAR (W/kg)	Measured Power (dBm)	Max. tune-power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	
<b>Product Specific 10-g SAR(QPSK)</b>																
ANT1	LEVEL4	ON	Standalone	Top Edge	0	20300	1745	1	Low	0.060	1.180	19.25	20.50	1.334	1.574	48
	LEVEL4	ON				20300	1745	50	Low	-0.130	1.010	19.24	20.50	1.337	1.350	/
ANT1	LEVEL4	ON	Standalone	Top Edge (Battery 2)	0	20300	1745	1	Low	0.080	1.060	19.25	20.50	1.334	1.414	/
Note: 1.The value with blue color is the maximum SAR Value of each test band.																





**Table 16: LTE Band 5 (10MHz)**

Antenna	Power Reduction	Distance Sensor	Information	Position	Dist. (mm)	Ch.	Frequency (MHz)	RB	RB Start	Power Drift (dB)	Limit of SAR 1.6 W/kg (mW/g)					Plot No.		
											1g Measured SAR (W/kg)	Measured Power (dBm)	Max. tune-power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)			
<b>Head SAR(QPSK)</b>																		
ANT1	LEVEL1	/	Standalone	Left Cheek	0	20525	836.5	1	Low	0.16	0.448	22.11	23.50	1.377	0.617	/		
	LEVEL1	/				20600	844	25	Low	0.10	0.448	22.19	23.50	1.352	0.606	/		
	LEVEL1	/		Left Tilt	0	20525	836.5	1	Low	0.06	0.411	22.11	23.50	1.377	0.566	/		
	LEVEL1	/				20600	844	25	Low	-0.06	0.413	22.19	23.50	1.352	0.558	/		
	LEVEL1	/		Right Cheek	0	20525	836.5	1	Low	-0.19	0.662	22.11	23.50	1.377	0.912	/		
	LEVEL1	/				20450	829	1	Middle	-0.04	0.641	21.99	23.50	1.416	0.908	/		
	LEVEL1	/				20600	844	1	High	-0.12	0.638	22.09	23.50	1.384	0.883	/		
	LEVEL1	/				20600	844	25	Low	0.05	0.751	22.19	23.50	1.352	1.015	49		
	LEVEL1	/				20450	829	25	High	-0.13	0.715	22.04	23.50	1.400	1.001	/		
	LEVEL1	/				20525	836.5	25	Low	-0.11	0.723	22.11	23.50	1.377	0.996	/		
	LEVEL1	/				20600	844	50	Low	0.14	0.715	22.20	23.50	1.349	0.965	/		
	LEVEL1	/				20450	829	50	Low	-0.061	0.689	22.03	23.50	1.403	0.967	/		
	LEVEL1	/		20525	836.5	50	Low	-0.035	0.724	22.11	23.50	1.377	0.997	/				
	LEVEL1	/		Right Tilt	0	20525	836.5	1	Low	-0.13	0.584	22.11	23.50	1.377	0.804	/		
	LEVEL1	/				20450	829	1	Middle	0.05	0.571	21.99	23.50	1.416	0.808	/		
	LEVEL1	/				20600	844	1	High	-0.12	0.576	22.09	23.50	1.384	0.797	/		
	LEVEL1	/				20600	844	25	Low	0.17	0.570	22.19	23.50	1.352	0.771	/		
	LEVEL1	/		20600	844	50	Low	-0.06	0.566	22.20	23.50	1.349	0.764	/				
	ANT1	LEVEL2&3		/	Standalone	Left Cheek	0	20600	844	1	High	0.02	0.310	20.56	22.00	1.393	0.432	/
		LEVEL2&3		/				20525	836.5	25	Low	0.16	0.311	20.54	22.00	1.400	0.435	/
LEVEL2&3		/	Left Tilt	0		20600	844	1	High	-0.14	0.295	20.56	22.00	1.393	0.411	/		
LEVEL2&3		/				20525	836.5	25	Low	-0.11	0.295	20.54	22.00	1.400	0.413	/		
LEVEL2&3		/	Right Cheek	0		20600	844	1	High	0.11	0.529	20.56	22.00	1.393	0.737	/		
LEVEL2&3		/				20525	836.5	25	Low	-0.08	0.488	20.54	22.00	1.400	0.683	/		
LEVEL2&3		/	Right Tilt	0		20600	844	1	High	0.13	0.411	20.56	22.00	1.393	0.573	/		
LEVEL2&3		/				20525	836.5	25	Low	-0.07	0.416	20.54	22.00	1.400	0.582	/		
ANT1	LEVEL2&3	/	ENDC	Left Cheek	0	20600	844	1	Low	0.08	0.219	19.60	20.00	1.096	0.240	/		
	LEVEL2&3	/				20600	844	25	Low	0.19	0.205	19.64	20.00	1.086	0.223	/		
	LEVEL2&3	/		Left Tilt	0	20600	844	1	Low	0.19	0.200	19.60	20.00	1.096	0.219	/		
	LEVEL2&3	/				20600	844	25	Low	-0.14	0.175	19.64	20.00	1.086	0.190	/		
	LEVEL2&3	/		Right Cheek	0	20600	844	1	Low	0.17	0.325	19.60	20.00	1.096	0.356	/		
	LEVEL2&3	/				20600	844	25	Low	0.19	0.293	19.64	20.00	1.086	0.318	/		
	LEVEL2&3	/		Right Tilt	0	20600	844	1	Low	-0.19	0.288	19.60	20.00	1.096	0.316	/		
	LEVEL2&3	/				20600	844	25	Low	-0.08	0.261	19.64	20.00	1.086	0.284	/		
ANT0	LEVEL1&2&3	/	Standalone & ENDC	Left Cheek	0	20450	829	1	High	0.09	0.202	23.74	25.00	1.337	0.270	/		
	LEVEL1&2&3	/				20450	829	25	High	0.00	0.156	22.78	25.00	1.667	0.260	/		



	LEVEL1&2&3	/		Left Tilt	0	20450	829	1	High	-0.07	0.106	23.74	25.00	1.337	0.142	/
	LEVEL1&2&3	/				20450	829	25	High	-0.14	0.082	22.78	25.00	1.667	0.137	/
	LEVEL1&2&3	/		Right Cheek	0	20450	829	1	High	0.04	0.156	23.74	25.00	1.337	0.209	/
	LEVEL1&2&3	/				20450	829	25	High	0.06	0.122	22.78	25.00	1.667	0.203	/
	LEVEL1&2&3	/		Right Tilt	0	20450	829	1	High	0.02	0.089	23.74	25.00	1.337	0.119	/
	LEVEL1&2&3	/				20450	829	25	High	-0.11	0.069	22.78	25.00	1.667	0.115	/
ANT1	LEVEL1	/	Standalone	Right Cheek (Battery 2)	0	20600	844	25	Low	0.050	0.711	22.19	23.50	1.352	1.015	/
<b>Body-worn SAR(QPSK)</b>																
ANT1	LEVEL4	OFF	Standalone &ENDC	Front Side	15	20450	829	1	High	-0.03	0.067	23.60	25.00	1.380	0.092	/
	LEVEL4	OFF				20600	844	25	Low	0.09	0.053	22.60	24.00	1.380	0.073	/
	LEVEL4	ON		Back Side	15	20450	829	1	High	-0.026	0.119	23.60	25.00	1.380	0.164	/
	LEVEL4	ON				20600	844	25	Low	0.05	0.058	22.60	24.00	1.380	0.080	/
ANT0	LEVEL4	/	Standalone &ENDC	Front Side	15	20450	829	1	High	0.12	0.144	23.74	25.00	1.337	0.192	/
	LEVEL4	/				20450	829	25	High	0.19	0.113	22.78	25.00	1.667	0.188	/
	LEVEL4	/		Back Side	15	20450	829	1	High	-0.100	0.212	23.74	25.00	1.337	0.283	50
	LEVEL4	/				20450	829	25	High	-0.14	0.141	22.78	25.00	1.667	0.235	/
ANT0	LEVEL4	/	Standalone &ENDC	Back Side (Battery 2)	15	20450	829	1	High	0.020	0.206	23.74	25.00	1.337	0.275	/
<b>Hotspot SAR(QPSK)</b>																
ANT1	LEVEL5&6	ON	Standalone &ENDC	Front Side	10	20450	829	1	High	0.13	0.082	23.60	25.00	1.380	0.113	/
	LEVEL5&6	ON				20600	844	25	Low	-0.18	0.068	22.60	24.00	1.380	0.094	/
	LEVEL5&6	ON		Back Side	10	20450	829	1	High	0.047	0.135	23.60	25.00	1.380	0.186	/
	LEVEL5&6	ON				20600	844	25	Low	0.01	0.095	22.60	24.00	1.380	0.131	/
	LEVEL5&6	ON		Left Edge	10	20450	829	1	High	-0.05	0.061	23.60	25.00	1.380	0.084	/
	LEVEL5&6	ON				20600	844	25	Low	0.01	0.051	22.60	24.00	1.380	0.070	/
	LEVEL5&6	ON		Top Edge	10	20450	829	1	High	-0.04	0.109	23.60	25.00	1.380	0.150	/
	LEVEL5&6	ON				20600	844	25	Low	-0.07	0.088	22.60	24.00	1.380	0.121	/
ANT0	LEVEL5&6	/	Standalone &ENDC	Front Side	10	20450	829	1	High	-0.19	0.147	23.74	25.00	1.337	0.196	/
	LEVEL5&6	/				20450	829	25	High	-0.08	0.117	22.78	25.00	1.667	0.195	/
	LEVEL5&6	/		Back Side	10	20450	829	1	High	0.01	0.260	23.74	25.00	1.337	0.348	51
	LEVEL5&6	/				20450	829	25	High	-0.15	0.204	22.78	25.00	1.667	0.340	/
	LEVEL5&6	/		Right Edge	10	20450	829	1	High	-0.03	0.095	23.74	25.00	1.337	0.127	/
	LEVEL5&6	/				20450	829	25	High	-0.17	0.071	22.78	25.00	1.667	0.118	/
	LEVEL5&6	/		Left Edge	10	20450	829	1	High	-0.17	0.179	23.74	25.00	1.337	0.239	/
	LEVEL5&6	/				20450	829	25	High	0.04	0.138	22.78	25.00	1.667	0.230	/
	LEVEL5&6	/		Bottom Edge	10	20450	829	1	High	0.10	0.171	23.74	25.00	1.337	0.229	/
	LEVEL5&6	/				20450	829	25	High	0.18	0.135	22.78	25.00	1.667	0.225	/
ANT1	LEVEL5&6	ON	Standalone &ENDC	Back Side (Battery 2)	10	20450	829	1	High	0.050	0.251	23.60	25.00	1.380	0.186	/
<b>Additional SAR test at a conservative distance (triggering distance minus 1mm) (QPSK)</b>																
ANT1	OFF	/	Standalone	Front Side	10	20450	829	1	High	0.060	0.139	23.60	25.00	1.380	0.192	/
	OFF	/			10	20600	844	25	Low	0.15	0.096	22.60	24.00	1.380	0.133	/



	OFF	/		Back Side	16	20450	829	1	High	0.03	0.080	23.60	25.00	1.380	0.110	/
	OFF	/			16	20600	844	25	Low	0.04	0.065	22.60	24.00	1.380	0.090	/
	OFF	/		Left Edge	9	20450	829	1	High	0.08	0.084	23.60	25.00	1.380	0.116	/
	OFF	/			9	20600	844	25	Low	0.16	0.069	22.60	24.00	1.380	0.095	/
	OFF	/		Top Edge	18	20450	829	1	High	0.08	0.044	23.60	25.00	1.380	0.061	/
	OFF	/			18	20600	844	25	Low	0.12	0.044	22.60	24.00	1.380	0.061	/

Note: 1.The value with blue color is the maximum SAR Value of each test band.

Table 17: LTE Band 7 (20MHz)

Antenna	Power Reduction	Distance Sensor	Information	Position	Dist. (mm)	Ch.	Frequency (MHz)	RB	RB Start	Power Drift (dB)	Limit of SAR 1.6 W/kg (mW/g)					Plot No.
											1g Measured SAR (W/kg)	Measured Power (dBm)	Max. tune-power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)	
<b>Head SAR(QPSK)</b>																
ANT1	LEVEL1	/	Standalone	Left Cheek	0	21100	2535	1	Middle	0.13	0.194	16.13	16.30	1.040	0.202	/
	LEVEL1	/				21350	2560	50	High	0.12	0.193	16.13	16.30	1.040	0.201	/
	LEVEL1	/		Left Tilt	0	21100	2535	1	Middle	0.03	0.256	16.13	16.30	1.040	0.266	/
	LEVEL1	/				21350	2560	50	High	-0.11	0.257	16.13	16.30	1.040	0.267	/
	LEVEL1	/		Right Cheek	0	21100	2535	1	Middle	0.12	0.596	16.13	16.30	1.040	0.620	/
	LEVEL1	/				21350	2560	50	High	-0.13	0.593	16.13	16.30	1.040	0.617	/
	LEVEL1	/		Right Tilt	0	21100	2535	1	Middle	-0.19	0.677	16.13	16.30	1.040	0.704	52
	LEVEL1	/				21350	2560	50	High	0.15	0.637	16.13	16.30	1.040	0.662	/
	LEVEL1	/		Right Tilt	0	21350(PCC)	2560	1	Low	-0.012	0.559	15.88	16.30	1.102	0.616	/
	LEVEL1	/				21152(SCC)	2540.2	1	High							
ANT1	LEVEL2&3	/	Standalone	Left Cheek	0	21100	2535	1	Middle	-0.06	0.129	14.48	14.50	1.005	0.130	/
	LEVEL2&3	/				21350	2560	50	Low	0.06	0.130	14.44	14.50	1.014	0.132	/
	LEVEL2&3	/		Left Tilt	0	21100	2535	1	Middle	0.05	0.168	14.48	14.50	1.005	0.169	/
	LEVEL2&3	/				21350	2560	50	Low	0.17	0.171	14.44	14.50	1.014	0.173	/
	LEVEL2&3	/		Right Cheek	0	21100	2535	1	Middle	0.12	0.403	14.48	14.50	1.005	0.405	/
	LEVEL2&3	/				21350	2560	50	Low	0.18	0.410	14.44	14.50	1.014	0.416	/
	LEVEL2&3	/		Right Tilt	0	21100	2535	1	Middle	0.06	0.444	14.48	14.50	1.005	0.446	/
	LEVEL2&3	/				21350	2560	50	Low	-0.07	0.438	14.44	14.50	1.014	0.444	/
ANT1	LEVEL1	/	ENDC	Left Cheek	0	20850	2510	1	High	-0.06	0.138	14.71	15.00	1.069	0.148	/
	LEVEL1	/				20850	2510	50	High	0.15	0.155	14.66	15.00	1.081	0.168	/
	LEVEL1	/		Left Tilt	0	20850	2510	1	High	0.04	0.185	14.71	15.00	1.069	0.198	/
	LEVEL1	/				20850	2510	50	High	0.11	0.203	14.66	15.00	1.081	0.220	/
	LEVEL1	/		Right Cheek	0	20850	2510	1	High	0.03	0.382	14.71	15.00	1.069	0.408	/
	LEVEL1	/				20850	2510	50	High	0.05	0.429	14.66	15.00	1.081	0.464	/
	LEVEL1	/		Right Tilt	0	20850	2510	1	High	-0.16	0.503	14.71	15.00	1.069	0.538	/
	LEVEL1	/				20850	2510	50	High	0.03	0.548	14.66	15.00	1.081	0.593	/
ANT1	LEVEL2&3	/	ENDC	Left Cheek	0	20850	2510	1	Middle	-0.17	0.089	12.76	13.00	1.057	0.094	/
	LEVEL2&3	/				21100	2535	50	High	-0.17	0.098	12.59	13.00	1.099	0.108	/



	LEVEL2&3	/		Left Tilt	0	20850	2510	1	Middle	0.14	0.119	12.76	13.00	1.057	0.126	/
	LEVEL2&3	/				21100	2535	50	High	-0.04	0.131	12.59	13.00	1.099	0.144	/
	LEVEL2&3	/		Right Cheek	0	20850	2510	1	Middle	0.10	0.241	12.76	13.00	1.057	0.255	/
	LEVEL2&3	/				21100	2535	50	High	0.02	0.269	12.59	13.00	1.099	0.296	/
	LEVEL2&3	/		Right Tilt	0	20850	2510	1	Middle	-0.12	0.326	12.76	13.00	1.057	0.345	/
	LEVEL2&3	/				21100	2535	50	High	0.00	0.349	12.59	13.00	1.099	0.384	/
ANT0	LEVEL1&2&3	/	Standalone &ENDC	Left Cheek	0	21100	2535	1	Middle	-0.17	0.259	23.12	24.00	1.225	0.317	/
	LEVEL1&2&3	/				21100	2535	50	Middle	-0.03	0.197	22.04	24.00	1.570	0.309	/
	LEVEL1&2&3	/		Left Tilt	0	21100	2535	1	Middle	-0.02	0.153	23.12	24.00	1.225	0.187	/
	LEVEL1&2&3	/				21100	2535	50	Middle	0.13	0.113	22.04	24.00	1.570	0.177	/
	LEVEL1&2&3	/		Right Cheek	0	21100	2535	1	Middle	0.041	0.509	23.12	24.00	1.225	0.623	/
	LEVEL1&2&3	/				21100	2535	50	Middle	0.12	0.311	22.04	24.00	1.570	0.488	/
	LEVEL1&2&3	/		Right Tilt	0	21100	2535	1	Middle	-0.06	0.215	23.12	24.00	1.225	0.263	/
	LEVEL1&2&3	/				21100	2535	50	Middle	-0.16	0.166	22.04	24.00	1.570	0.261	/
ANT4	LEVEL1	/	ENDC	Left Cheek	0	21100	2535	1	Middle	0.13	0.255	22.54	23.00	1.112	0.284	/
	LEVEL1	/				21100	2535	50	High	-0.05	0.210	21.53	22.00	1.114	0.234	/
	LEVEL1	/		Left Tilt	0	21100	2535	1	Middle	0.00	0.148	22.54	23.00	1.112	0.165	/
	LEVEL1	/				21100	2535	50	High	0.14	0.116	21.53	22.00	1.114	0.130	/
	LEVEL1	/		Right Cheek	0	21100	2535	1	Middle	0.05	0.613	22.54	23.00	1.112	0.681	/
	LEVEL1	/				21100	2535	50	High	-0.14	0.494	21.53	22.00	1.114	0.550	/
	LEVEL1	/		Right Tilt	0	21100	2535	1	Middle	0.14	0.281	22.54	23.00	1.112	0.312	/
	LEVEL1	/				21100	2535	50	High	0.09	0.231	21.53	22.00	1.114	0.257	/
ANT4	LEVEL2&3	/	ENDC	Left Cheek	0	21100	2535	1	High	-0.16	0.131	19.00	19.50	1.122	0.147	/
	LEVEL2&3	/				21350	2560	50	Middle	-0.16	0.162	19.11	19.50	1.094	0.177	/
	LEVEL2&3	/		Left Tilt	0	21100	2535	1	High	-0.01	0.077	19.00	19.50	1.122	0.086	/
	LEVEL2&3	/				21350	2560	50	Middle	0.16	0.091	19.11	19.50	1.094	0.100	/
	LEVEL2&3	/		Right Cheek	0	21100	2535	1	High	0.17	0.313	19.00	19.50	1.122	0.351	/
	LEVEL2&3	/				21350	2560	50	Middle	0.03	0.386	19.11	19.50	1.094	0.422	/
	LEVEL2&3	/		Right Tilt	0	21100	2535	1	High	0.03	0.141	19.00	19.50	1.122	0.158	/
	LEVEL2&3	/				21350	2560	50	Middle	0.18	0.153	19.11	19.50	1.094	0.167	/
ANT1	LEVEL1	/	Standalone	Right Tilt (Battery 2)	0	21100	2535	1	Middle	-0.020	0.656	16.13	16.30	1.040	0.682	/
<b>Body-worn SAR(QPSK)</b>																
ANT1	LEVEL4	OFF	Standalone &ENDC	Front Side	15	21100	2535	1	Middle	0.053	0.287	23.70	24.00	1.072	0.308	/
	LEVEL4	OFF				21350	2560	50	Middle	-0.11	0.174	22.70	23.00	1.072	0.186	/
	LEVEL4	ON		Back Side	15	21100	2535	1	Middle	0.14	0.154	19.44	19.50	1.014	0.156	/
	LEVEL4	ON				21350	2560	50	Low	-0.07	0.152	19.45	19.50	1.012	0.154	/
ANT0	LEVEL4	/	Standalone	Front Side	15	20850	2510	1	Low	-0.14	0.217	21.98	23.00	1.265	0.274	/
	LEVEL4	/				21100	2535	50	Middle	0.15	0.211	21.92	23.00	1.282	0.271	/
	LEVEL4	/		Back Side	15	20850	2510	1	Low	0.035	0.320	21.98	23.00	1.265	0.405	53
	LEVEL4	/				21100	2535	50	Middle	0.03	0.250	21.92	23.00	1.282	0.321	/
	LEVEL4	/		Back Side	15	21100(PCC)	2535	1	High	0.060	0.237	21.58	23.00	1.387	0.329	/
		21298(SCC)	2554.8			1	Low									



ANT0	LEVEL4	/	ENDC	Front Side	15	20850	2510	1	Middle	-0.09	0.187	20.58	21.00	1.102	0.206	/
	LEVEL4	/				21350	2560	50	Middle	0.18	0.201	20.48	21.00	1.127	0.227	/
	LEVEL4	/		Back Side	15	20850	2510	1	Middle	-0.10	0.216	20.58	21.00	1.102	0.238	/
	LEVEL4	/				21350	2560	50	Middle	-0.09	0.249	20.48	21.00	1.127	0.281	/
ANT4	LEVEL4	/	ENDC	Front Side	15	21350	2560	1	High	-0.03	0.041	19.38	20.00	1.153	0.047	/
	LEVEL4	/				21350	2560	50	Middle	-0.02	0.045	19.47	20.00	1.130	0.051	/
	LEVEL4	/		Back Side	15	21350	2560	1	High	0.05	0.110	19.38	20.00	1.153	0.127	/
	LEVEL4	/				21350	2560	50	Middle	-0.11	0.121	19.47	20.00	1.130	0.137	/
ANT0	LEVEL4	/	Standalone	Back Side (Battery 2)	15	20850	2510	1	Low	0.020	0.287	21.98	23.00	1.265	0.363	/
<b>Hotspot SAR(QPSK)</b>																
ANT1	LEVEL5&6	ON	Standalone & ENDC	Front Side	10	21100	2535	1	Middle	0.14	0.170	19.44	19.50	1.014	0.172	/
	LEVEL5&6	ON				21350	2560	50	Low	-0.10	0.171	19.45	19.50	1.012	0.173	/
	LEVEL5&6	ON		Back Side	10	21100	2535	1	Middle	0.02	0.372	19.44	19.50	1.014	0.377	/
	LEVEL5&6	ON				21350	2560	50	Low	-0.13	0.370	19.45	19.50	1.012	0.374	/
	LEVEL5&6	ON		Left Edge	10	21100	2535	1	Middle	0.04	0.145	19.44	19.50	1.014	0.147	/
	LEVEL5&6	ON				21350	2560	50	Low	-0.14	0.145	19.45	19.50	1.012	0.147	/
	LEVEL5&6	ON		Top Edge	10	21100	2535	1	Middle	0.05	0.526	19.44	19.50	1.014	0.533	/
	LEVEL5&6	ON				21350	2560	50	Low	-0.16	0.515	19.45	19.50	1.012	0.521	/
ANT0	LEVEL5&6	/	Standalone	Front Side	10	20850	2510	1	Low	-0.18	0.488	21.98	23.00	1.265	0.617	/
	LEVEL5&6	/				21100	2535	50	Middle	0.06	0.487	21.92	23.00	1.282	0.624	/
	LEVEL5&6	/		Back Side	10	20850	2510	1	Low	-0.160	0.735	21.98	23.00	1.265	0.930	54
	LEVEL5&6	/				21100	2535	50	Middle	0.17	0.538	21.92	23.00	1.282	0.690	/
	LEVEL5&6	/		Left Edge	10	20850	2510	1	Low	0.03	0.315	21.98	23.00	1.265	0.398	/
	LEVEL5&6	/				21100	2535	50	Middle	-0.01	0.304	21.92	23.00	1.282	0.390	/
	LEVEL5&6	/		Left Edge	10	20850	2510	1	Low	0.08	0.082	21.98	23.00	1.265	0.104	/
	LEVEL5&6	/				21100	2535	50	Middle	-0.11	0.082	21.92	23.00	1.282	0.105	/
	LEVEL5&6	/		Bottom Edge	10	20850	2510	1	Low	0.03	0.278	21.98	23.00	1.265	0.352	/
	LEVEL5&6	/				21100	2535	50	Middle	-0.13	0.273	21.92	23.00	1.282	0.350	/
	LEVEL5&6	/		Back Side	10	21100(PCC)	2535	1	High	-0.150	0.584	21.58	23.00	1.387	0.810	/
	LEVEL5&6	/				21298(SCC)	2554.8	1	Low							
ANT0	LEVEL5&6	/	ENDC	Front Side	10	20850	2510	1	Middle	-0.03	0.345	20.58	21.00	1.102	0.380	/
	LEVEL5&6	/				21350	2560	50	Middle	0.13	0.406	20.48	21.00	1.127	0.458	/
	LEVEL5&6	/		Back Side	10	20850	2510	1	Middle	-0.12	0.458	20.58	21.00	1.102	0.505	/
	LEVEL5&6	/				21350	2560	50	Middle	0.062	0.640	20.48	21.00	1.127	0.721	/
	LEVEL5&6	/		Right Edge	10	20850	2510	1	Middle	-0.18	0.292	20.58	21.00	1.102	0.322	/
	LEVEL5&6	/				21350	2560	50	Middle	0.05	0.298	20.48	21.00	1.127	0.336	/
	LEVEL5&6	/		Left Edge	10	20850	2510	1	Middle	-0.07	0.000	20.58	21.00	1.102	0.000	/
	LEVEL5&6	/				21350	2560	50	Middle	0.19	0.000	20.48	21.00	1.127	0.000	/
	LEVEL5&6	/		Bottom Edge	10	20850	2510	1	Middle	-0.04	0.217	20.58	21.00	1.102	0.239	/
	LEVEL5&6	/				21350	2560	50	Middle	0.17	0.192	20.48	21.00	1.127	0.216	/
ANT4	LEVEL5&6	/	ENDC	Front Side	10	21350	2560	1	High	-0.14	0.075	19.38	20.00	1.153	0.087	/
	LEVEL5&6	/				21350	2560	50	Middle	0.01	0.080	19.47	20.00	1.130	0.090	/



	LEVEL5&6	/		Back Side	10	21350	2560	1	High	-0.010	0.375	19.38	20.00	1.153	0.433	/
	LEVEL5&6	/				21350	2560	50	Middle	0.031	0.485	19.47	20.00	1.130	0.548	/
	LEVEL5&6	/		Left Edge	10	21350	2560	1	High	0.12	0.113	19.38	20.00	1.153	0.130	/
	LEVEL5&6	/				21350	2560	50	Middle	-0.06	0.108	19.47	20.00	1.130	0.122	/
	LEVEL5&6	/		Top Edge	10	21350	2560	1	High	-0.18	0.021	19.38	20.00	1.153	0.024	/
	LEVEL5&6	/				21350	2560	50	Middle	0.14	0.017	19.47	20.00	1.130	0.019	/
ANT0	LEVEL5&6	/	Standalone	Back Side (Battery 2)	10	20850	2510	1	Low	0.020	0.712	21.98	23.00	1.265	0.900	/

**Additional SAR test at a conservative distance (triggering distance minus 1mm) (QPSK)**

ANT1	OFF	/	Standalone	Front Side	10	21100	2535	1	Middle	0.13	0.516	23.70	24.00	1.072	0.553	/
	OFF	/			10	21350	2560	50	Middle	-0.10	0.449	22.70	23.00	1.072	0.481	/
	OFF	/		Back Side	16	21100	2535	1	Middle	-0.07	0.406	23.70	24.00	1.072	0.435	/
	OFF	/			16	21350	2560	50	Middle	0.08	0.335	22.70	23.00	1.072	0.359	/
	OFF	/		Left Edge	9	21100	2535	1	Middle	0.10	0.462	23.70	24.00	1.072	0.495	/
	OFF	/			9	21350	2560	50	Middle	0.13	0.435	22.70	23.00	1.072	0.466	/
	OFF	/		Top Edge	18	21100	2535	1	Middle	-0.15	0.466	23.70	24.00	1.072	0.499	/
	OFF	/			18	21350	2560	50	Middle	0.03	0.398	22.70	23.00	1.072	0.426	/

Antenna	Power Reduction	Distance Sensor	Information	Position	Dist. (mm)	Ch.	Frequency (MHz)	RB Num.	RB Start	Power Drift (dB)	Limit of SAR 4W/kg (mW/g)					Plot No.
											10g Measured SAR (W/kg)	Measured Power (dBm)	Max. tune-power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	

**Product Specific 10-g SAR(QPSK)**

ANT1	LEVEL4	ON	Standalone &ENDC	Top Edge	0	21100	2535	1	Middle	0.18	0.932	19.44	19.50	1.014	0.945	55
	LEVEL4	ON				21350	2560	50	Low	-0.07	0.918	19.45	19.50	1.012	0.929	/
ANT1	LEVEL4	ON	Standalone &ENDC	Top Edge (Battery 2)	0	21100	2535	1	Middle	0.010	0.922	19.44	19.50	1.014	0.935	/

Note: 1. The value with blue color is the maximum SAR Value of each test band.

**Table 18: LTE Band 12 (10MHz)**

Antenna	Power Reduction	Distance Sensor	Information	Position	Dist. (mm)	Ch.	Frequency (MHz)	RB	RB Start	Power Drift (dB)	Limit of SAR 1.6 W/kg (mW/g)					Plot No.
											1g Measured SAR (W/kg)	Measured Power (dBm)	Max. tune-power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)	

**Head SAR(QPSK)**

ANT1	LEVEL1	/	Standalone &ENDC	Left Cheek	0	23130	711	1	Low	0.04	0.350	23.70	25.00	1.349	0.472	/
	LEVEL1	/				23060	709	25	Low	0.01	0.269	22.77	24.00	1.327	0.357	/
	LEVEL1	/		Left Tilt	0	23130	711	1	Low	0.04	0.345	23.70	25.00	1.349	0.465	/
	LEVEL1	/				23060	709	25	Low	0.15	0.266	22.77	24.00	1.327	0.353	/
	LEVEL1	/		Right Cheek	0	23130	711	1	Low	0.02	0.468	23.70	25.00	1.349	0.631	56
	LEVEL1	/				23060	709	25	Low	0.10	0.436	22.77	24.00	1.327	0.579	/
	LEVEL1	/		Right Tilt	0	23130	711	1	Low	-0.15	0.442	23.70	25.00	1.349	0.596	/
	LEVEL1	/				23060	709	25	Low	0.10	0.436	22.77	24.00	1.327	0.579	/



	LEVEL1	/				23060	709	25	Low	-0.10	0.415	22.77	24.00	1.327	0.551	/
ANT1	LEVEL2&3	/	Standalone	Left Cheek	0	23130	711	1	Low	0.09	0.350	23.70	25.00	1.349	0.472	/
	LEVEL2&3	/				23060	709	25	Low	-0.13	0.269	22.77	24.00	1.327	0.357	/
	LEVEL2&3	/		Left Tilt	0	23130	711	1	Low	0.13	0.345	23.70	25.00	1.349	0.465	/
	LEVEL2&3	/				23060	709	25	Low	-0.19	0.266	22.77	24.00	1.327	0.353	/
	LEVEL2&3	/		Right Cheek	0	23130	711	1	Low	-0.06	0.468	23.70	25.00	1.349	0.631	/
	LEVEL2&3	/				23060	709	25	Low	-0.05	0.436	22.77	24.00	1.327	0.579	/
	LEVEL2&3	/		Right Tilt	0	23130	711	1	Low	-0.17	0.442	23.70	25.00	1.349	0.596	/
	LEVEL2&3	/				23060	709	25	Low	0.04	0.415	22.77	24.00	1.327	0.551	/
ANT1	LEVEL2&3	/	ENDC	Left Cheek	0	23060	709	1	Middle	0.15	0.131	22.53	23.50	1.250	0.164	/
	LEVEL2&3	/				23130	711	25	High	-0.08	0.126	22.46	23.50	1.271	0.160	/
	LEVEL2&3	/		Left Tilt	0	23060	709	1	Middle	0.19	0.148	22.53	23.50	1.250	0.185	/
	LEVEL2&3	/				23130	711	25	High	-0.18	0.139	22.46	23.50	1.271	0.177	/
	LEVEL2&3	/		Right Cheek	0	23060	709	1	Middle	0.06	0.187	22.53	23.50	1.250	0.234	/
	LEVEL2&3	/				23130	711	25	High	0.11	0.179	22.46	23.50	1.271	0.227	/
	LEVEL2&3	/		Right Tilt	0	23060	709	1	Middle	0.19	0.229	22.53	23.50	1.250	0.286	/
	LEVEL2&3	/				23130	711	25	High	-0.09	0.217	22.46	23.50	1.271	0.276	/
ANT0	LEVEL1&2&3	/	Standalone &ENDC	Left Cheek	0	23130	711	1	Low	-0.18	0.163	23.71	25.00	1.346	0.219	/
	LEVEL1&2&3	/				23095	710	25	Low	-0.12	0.121	22.86	24.00	1.300	0.157	/
	LEVEL1&2&3	/		Left Tilt	0	23130	711	1	Low	-0.01	0.087	23.71	25.00	1.346	0.117	/
	LEVEL1&2&3	/				23095	710	25	Low	0.06	0.065	22.86	24.00	1.300	0.085	/
	LEVEL1&2&3	/		Right Cheek	0	23130	711	1	Low	-0.15	0.125	23.71	25.00	1.346	0.168	/
	LEVEL1&2&3	/				23095	710	25	Low	-0.01	0.092	22.86	24.00	1.300	0.120	/
	LEVEL1&2&3	/		Right Tilt	0	23130	711	1	Low	0.15	0.070	23.71	25.00	1.346	0.094	/
	LEVEL1&2&3	/				23095	710	25	Low	0.16	0.051	22.86	24.00	1.300	0.066	/
ANT1	LEVEL1	/	Standalone &ENDC	Right Cheek (Battery 2)	0	23130	711	1	Low	0.040	0.452	23.70	25.00	1.349	0.610	/
<b>Body-worn SAR(QPSK)</b>																
ANT1	LEVEL4	OFF	Standalone &ENDC	Front Side	15	23130	711	1	Low	0.160	0.061	23.70	25.00	1.349	0.082	/
	LEVEL4	OFF				23060	709	25	Low	-0.150	0.047	22.77	24.00	1.327	0.062	/
	LEVEL4	ON		Back Side	15	23130	711	1	Low	-0.150	0.097	23.70	25.00	1.349	0.131	/
	LEVEL4	ON				23060	709	25	Low	-0.110	0.049	22.77	24.00	1.327	0.065	/
ANT0	LEVEL4	/	Standalone &ENDC	Front Side	15	23130	711	1	Low	-0.180	0.191	23.71	25.00	1.346	0.257	/
	LEVEL4	/				23095	710	25	Low	-0.130	0.155	22.86	24.00	1.300	0.202	/
	LEVEL4	/		Back Side	15	23130	711	1	Low	-0.030	0.225	23.71	25.00	1.346	0.303	57
	LEVEL4	/				23095	710	25	Low	0.030	0.189	22.86	24.00	1.300	0.246	/
ANT0	LEVEL4	/	Standalone &ENDC	Back Side (Battery 2)	15	23130	711	1	Low	-0.140	0.214	23.71	25.00	1.346	0.288	/
<b>Hotspot SAR(QPSK)</b>																
ANT1	LEVEL5&6	ON	Standalone &ENDC	Front Side	10	23130	711	1	Low	0.07	0.054	23.70	25.00	1.349	0.073	/
	LEVEL5&6	ON				23060	709	25	Low	-0.04	0.033	22.77	24.00	1.327	0.044	/
	LEVEL5&6	ON		Back Side	10	23130	711	1	Low	-0.04	0.062	23.70	25.00	1.349	0.084	/
	LEVEL5&6	ON				23060	709	25	Low	-0.19	0.047	22.77	24.00	1.327	0.062	/



	LEVEL5&6	ON		Left Edge	10	23130	711	1	Low	-0.15	0.070	23.70	25.00	1.349	0.094	/
	LEVEL5&6	ON				23060	709	25	Low	0.17	0.051	22.77	24.00	1.327	0.068	/
	LEVEL5&6	ON		Top Edge	10	23130	711	1	Low	-0.09	0.062	23.70	25.00	1.349	0.084	/
	LEVEL5&6	ON				23060	709	25	Low	0.03	0.054	22.77	24.00	1.327	0.072	/
ANT0	LEVEL5&6	/	Standalone &ENDC	Front Side	10	23130	711	1	Low	0.12	0.178	23.71	25.00	1.346	0.240	/
	LEVEL5&6	/				23095	710	25	Low	-0.02	0.139	22.86	24.00	1.300	0.181	/
	LEVEL5&6	/		Back Side	10	23130	711	1	Low	0.09	0.238	23.71	25.00	1.346	0.320	/
	LEVEL5&6	/				23095	710	25	Low	0.03	0.183	22.86	24.00	1.300	0.238	/
	LEVEL5&6	/		Right Edge	10	23130	711	1	Low	-0.12	0.166	23.71	25.00	1.346	0.223	/
	LEVEL5&6	/				23095	710	25	Low	0.03	0.128	22.86	24.00	1.300	0.166	/
	LEVEL5&6	/		Left Edge	10	23130	711	1	Low	-0.18	0.293	23.71	25.00	1.346	0.394	58
	LEVEL5&6	/				23095	710	25	Low	-0.14	0.239	22.86	24.00	1.300	0.311	/
	LEVEL5&6	/		Bottom Edge	10	23130	711	1	Low	-0.07	0.118	23.71	25.00	1.346	0.159	/
	LEVEL5&6	/				23095	710	25	Low	-0.18	0.101	22.86	24.00	1.300	0.131	/
ANT0	LEVEL5&6	/	Standalone &ENDC	Left Edge (Battery 2)	10	23130	711	1	Low	-0.110	0.278	23.71	25.00	1.346	0.374	/
<b>Additional SAR test at a conservative distance (triggering distance minus 1mm) (QPSK)</b>																
ANT1	OFF	/	Standalone	Front Side	10	23130	711	1	Low	0.05	0.053	23.70	25.00	1.349	0.071	/
	OFF	/				23060	709	25	Low	-0.04	0.031	22.77	24.00	1.327	0.041	/
	OFF	/		Back Side	16	23130	711	1	Low	-0.06	0.065	23.70	25.00	1.349	0.088	/
	OFF	/				23060	709	25	Low	-0.14	0.059	22.77	24.00	1.327	0.078	/
	OFF	/		Left Edge	9	23130	711	1	Low	0.150	0.083	23.70	25.00	1.349	0.111	/
	OFF	/				23060	709	25	Low	0.01	0.062	22.77	24.00	1.327	0.082	/
	OFF	/		Top Edge	18	23130	711	1	Low	0.19	0.000	23.70	25.00	1.349	0.000	/
	OFF	/				23060	709	25	Low	-0.16	0.000	22.77	24.00	1.327	0.000	/
Note: 1.The value with blue color is the maximum SAR Value of each test band.																





**Table 19: LTE Band 26 (15MHz)**

Antenna	Power Reduction	Distance Sensor	Information	Position	Dist. (mm)	Ch.	Frequency (MHz)	RB	RB Start	Power Drift (dB)	Limit of SAR 1.6 W/kg (mW/g)					Plot No.
											1g Measured SAR (W/kg)	Measured Power (dBm)	Max. tune-power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)	
<b>Head SAR(QPSK)</b>																
ANT1	LEVEL1	/	Standalone	Left Cheek	0	26765	821.5	1	Middle	-0.14	0.535	22.59	24.00	1.384	0.740	/
	LEVEL1	/			0	26865	831.5	36	Middle	0.07	0.475	22.57	24.00	1.390	0.660	/
	LEVEL1	/		Left Tilt	0	26765	821.5	1	Middle	-0.19	0.487	22.59	24.00	1.384	0.674	/
	LEVEL1	/			0	26865	831.5	36	Middle	0.07	0.464	22.57	24.00	1.390	0.645	/
	LEVEL1	/		Right Cheek	0	26765	821.5	1	Middle	-0.01	0.691	22.59	24.00	1.384	0.956	59
	LEVEL1	/			0	26865	831.5	1	Middle	0.07	0.668	22.46	24.00	1.426	0.952	/
	LEVEL1	/			0	26965	841.5	1	Middle	-0.14	0.632	22.24	24.00	1.500	0.948	/
	LEVEL1	/			0	26865	831.5	36	Middle	-0.13	0.645	22.57	24.00	1.390	0.897	/
	LEVEL1	/			0	26765	821.5	36	Middle	-0.14	0.655	22.55	24.00	1.396	0.915	/
	LEVEL1	/			0	26965	841.5	36	Middle	-0.05	0.623	22.30	24.00	1.479	0.921	/
	LEVEL1	/		Right Tilt	0	26865	831.5	75	Low	0.17	0.638	22.56	24.00	1.393	0.889	/
	LEVEL1	/			0	26765	831.5	75	Low	0.011	0.625	22.52	24.00	1.406	0.879	/
	LEVEL1	/			0	26965	831.5	75	Low	0.064	0.594	22.33	24.00	1.469	0.873	/
	LEVEL1	/			0	26965	831.5	75	Low	0.064	0.594	22.33	24.00	1.469	0.873	/
	LEVEL1	/		Right Tilt	0	26765	821.5	1	Middle	-0.08	0.684	22.59	24.00	1.384	0.946	/
	LEVEL1	/			0	26865	831.5	1	Middle	-0.14	0.661	22.46	24.00	1.426	0.942	/
	LEVEL1	/			0	26965	841.5	1	Middle	0.06	0.623	22.24	24.00	1.500	0.934	/
	LEVEL1	/			0	26865	831.5	36	Middle	0.05	0.658	22.57	24.00	1.390	0.915	/
	LEVEL1	/			0	26765	821.5	36	Middle	-0.02	0.652	22.55	24.00	1.396	0.910	/
	LEVEL1	/			0	26965	841.5	36	Middle	-0.17	0.625	22.30	24.00	1.479	0.924	/
LEVEL1	/	Right Tilt	0	26865	831.5	75	Low	0.08	0.649	22.56	24.00	1.393	0.904	/		
LEVEL1	/		0	26765	831.5	75	Low	-0.034	0.663	22.52	24.00	1.406	0.932	/		
LEVEL1	/		0	26965	831.5	75	Low	0.020	0.628	22.33	24.00	1.469	0.922	/		
LEVEL1	/		0	26965	831.5	75	Low	0.020	0.628	22.33	24.00	1.469	0.922	/		
ANT1	LEVEL2&3	/	Standalone	Left Cheek	0	26765	821.5	1	Low	0.04	0.338	20.66	22.00	1.361	0.460	/
	LEVEL2&3	/			0	26765	821.5	36	Middle	0.15	0.283	20.64	22.00	1.368	0.387	/
	LEVEL2&3	/		Left Tilt	0	26765	821.5	1	Low	-0.08	0.257	20.66	22.00	1.361	0.350	/
	LEVEL2&3	/			0	26765	821.5	36	Middle	0.15	0.269	20.64	22.00	1.368	0.368	/
	LEVEL2&3	/		Right Cheek	0	26765	821.5	1	Low	0.09	0.429	20.66	22.00	1.361	0.584	/
	LEVEL2&3	/			0	26765	821.5	36	Middle	-0.18	0.438	20.64	22.00	1.368	0.599	/
	LEVEL2&3	/		Right Tilt	0	26765	821.5	1	Low	0.10	0.368	20.66	22.00	1.361	0.501	/
	LEVEL2&3	/			0	26765	821.5	36	Middle	0.02	0.392	20.64	22.00	1.368	0.536	/
ANT0	LEVEL1&2&3	/	Standalone	Left Cheek	0	26765	821.5	1	Low	-0.03	0.224	23.82	25.00	1.312	0.294	/
	LEVEL1&2&3	/			0	26765	821.5	36	Middle	-0.09	0.148	22.78	24.00	1.324	0.196	/
	LEVEL1&2&3	/		Left Tilt	0	26765	821.5	1	Low	0.17	0.117	23.82	25.00	1.312	0.154	/
	LEVEL1&2&3	/			0	26765	821.5	36	Middle	-0.09	0.078	22.78	24.00	1.324	0.103	/
	LEVEL1&2&3	/		Right Cheek	0	26765	821.5	1	Low	-0.14	0.175	23.82	25.00	1.312	0.230	/
	LEVEL1&2&3	/			0	26765	821.5	36	Middle	0.10	0.116	22.78	24.00	1.324	0.154	/



	LEVEL1&2&3	/		Right Tilt	0	26765	821.5	1	Low	-0.01	0.103	23.82	25.00	1.312	0.135	/	
	LEVEL1&2&3	/		Right Tilt	0	26765	821.5	36	Middle	-0.14	0.063	22.78	24.00	1.324	0.083	/	
ANT1	LEVEL1	/	Standalone	Right Cheek (Battery 2)	0	26765	821.5	1	Middle	0.120	0.674	22.59	24.00	1.384	0.933	/	
<b>Body-worn SAR(QPSK)</b>																	
ANT1	LEVEL4	OFF	Standalone	Front Side	15	26765	821.5	1	Low	-0.040	0.084	23.71	25.00	1.346	0.113	/	
	LEVEL4	OFF			15	26765	821.5	36	Low	-0.19	0.046	22.64	24.00	1.368	0.063	/	
	LEVEL4	ON		Back Side	15	26765	821.5	1	Low	0.02	0.079	25.00	25.00	1.000	0.079	/	
	LEVEL4	ON			15	26765	821.5	36	Low	0.06	0.046	22.64	24.00	1.368	0.063	/	
ANT0	LEVEL4	/	Standalone	Front Side	15	26765	821.5	1	Low	0.17	0.163	23.82	25.00	1.312	0.214	/	
	LEVEL4	/			15	26765	821.5	36	Middle	0.06	0.109	22.78	24.00	1.324	0.144	/	
	LEVEL4	/		Back Side	15	26765	821.5	1	Low	-0.05	0.167	23.82	25.00	1.312	0.219	60	
	LEVEL4	/			15	26765	821.5	36	Middle	0.11	0.130	22.78	24.00	1.324	0.172	/	
ANT0	LEVEL4	/	Standalone	Back Side (Battery 2)	15	26765	821.5	1	Low	-0.110	0.155	23.82	25.00	1.312	0.203	/	
<b>Hotspot SAR(QPSK)</b>																	
ANT1	LEVEL5&6	ON	Standalone	Front Side	10	26765	821.5	1	Low	-0.110	0.101	23.71	25.00	1.346	0.136	/	
	LEVEL5&6	ON			10	26765	821.5	36	Low	-0.100	0.062	22.64	24.00	1.368	0.085	/	
	LEVEL5&6	ON		Back Side	10	26765	821.5	1	Low	-0.070	0.141	23.71	25.00	1.346	0.190	/	
	LEVEL5&6	ON			10	26765	821.5	36	Low	-0.100	0.081	22.64	24.00	1.368	0.111	/	
	LEVEL5&6	ON		Left Edge	10	26765	821.5	1	Low	0.190	0.083	23.71	25.00	1.346	0.112	/	
	LEVEL5&6	ON			10	26765	821.5	36	Low	0.140	0.000	22.64	24.00	1.368	0.000	/	
	LEVEL5&6	ON		Top Edge	10	26765	821.5	1	Low	0.120	0.134	23.71	25.00	1.346	0.180	/	
	LEVEL5&6	ON			10	26765	821.5	36	Low	-0.180	0.076	22.64	24.00	1.368	0.104	/	
ANT0	LEVEL5&6	/	Standalone	Front Side	10	26765	821.5	1	Low	0.120	0.168	23.82	25.00	1.312	0.220	/	
	LEVEL5&6	/			10	26765	821.5	36	Middle	-0.190	0.114	22.78	24.00	1.324	0.151	/	
	LEVEL5&6	/		Back Side	10	26765	821.5	1	Low	-0.110	0.204	23.82	25.00	1.312	0.268	61	
	LEVEL5&6	/			10	26765	821.5	36	Middle	0.140	0.196	22.78	24.00	1.324	0.260	/	
	LEVEL5&6	/		Right Edge	10	26765	821.5	1	Low	0.180	0.117	23.82	25.00	1.312	0.154	/	
	LEVEL5&6	/			10	26765	821.5	36	Middle	0.160	0.070	22.78	24.00	1.324	0.093	/	
	LEVEL5&6	/		Left Edge	10	26765	821.5	1	Low	-0.050	0.199	23.82	25.00	1.312	0.261	/	
	LEVEL5&6	/			10	26765	821.5	36	Middle	0.050	0.135	22.78	24.00	1.324	0.179	/	
	LEVEL5&6	/		Bottom Edge	10	26765	821.5	1	Low	-0.040	0.177	23.82	25.00	1.312	0.232	/	
	LEVEL5&6	/			10	26765	821.5	36	Middle	0.000	0.114	22.78	24.00	1.324	0.151	/	
ANT0	LEVEL5&6	/	Standalone	Back Side (Battery 2)	10	26765	821.5	1	Low	-0.140	0.188	23.82	25.00	1.312	0.247	/	
<b>Additional SAR test at a conservative distance (triggering distance minus 1mm) (QPSK)</b>																	
ANT1	OFF	/	Standalone	Front Side	10	26765	821.5	1	Low	0.110	0.094	23.71	25.00	1.346	0.126	/	
	OFF	/			10	26765	821.5	36	Low	-0.19	0.060	22.64	24.00	1.368	0.082	/	
	OFF	/		Back Side	16	26765	821.5	1	Low	-0.11	0.055	23.71	25.00	1.346	0.074	/	
	OFF	/			16	26765	821.5	36	Low	0.06	0.049	22.64	24.00	1.368	0.067	/	
	OFF	/		Left Edge	9	26765	821.5	1	Low	-0.12	0.045	23.71	25.00	1.346	0.061	/	
	OFF	/			9	26765	821.5	36	Low	0.03	0.000	22.64	24.00	1.368	0.000	/	



	OFF	/	Top Edge	18	26765	821.5	1	Low	0.13	0.000	23.71	25.00	1.346	0.000	/
	OFF	/		18	26765	821.5	36	Low	0.15	0.000	22.64	24.00	1.368	0.000	/

Note: 1.The value with blue color is the maximum SAR Value of each test band.

Table 20: LTE Band 38 (20MHz)

Antenna	Power Reduction	Distance Sensor	Information	Position	Dist. (mm)	Ch.	Frequency (MHz)	RB	RB Start	Power Drift (dB)	Limit of SAR 1.6 W/kg (mW/g)					Plot No.
											1g Measured SAR (W/kg)	Measured Power (dBm)	Max. tune-power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)	
<b>Head SAR(QPSK)</b>																
ANT1	LEVEL1	/	Standalone	Left Cheek	0	38000	2595	1	Middle	0.05	0.228	18.22	18.50	1.067	0.243	/
	LEVEL1	/			0	38000	2595	50	High	-0.13	0.234	18.19	18.50	1.074	0.251	/
	LEVEL1	/		Left Tilt	0	38000	2595	1	Middle	-0.07	0.273	18.22	18.50	1.067	0.291	/
	LEVEL1	/			0	38000	2595	50	High	0.18	0.279	18.19	18.50	1.074	0.300	/
	LEVEL1	/		Right Cheek	0	38000	2595	1	Middle	0.00	0.722	18.22	18.50	1.067	0.770	/
	LEVEL1	/			0	38000	2595	50	High	-0.19	0.735	18.19	18.50	1.074	0.789	/
	LEVEL1	/		Right Tilt	0	38000	2595	1	Middle	-0.08	0.716	18.22	18.50	1.067	0.764	/
	LEVEL1	/			0	38000	2595	50	High	0.19	0.780	18.19	18.50	1.074	0.838	62
	LEVEL1	/			0	37850	2580	50	High	-0.14	0.661	18.15	18.50	1.084	0.716	/
	LEVEL1	/			0	38150	2610	50	Low	0.06	0.770	18.11	18.50	1.094	0.842	/
	LEVEL1	/			0	37850	2580	100	Low	0.09	0.751	18.22	18.50	1.067	0.801	/
	LEVEL1	/			0	38150	2610	100	Low	0.011	0.719	18.13	18.50	1.089	0.783	/
	LEVEL1	/		Right Tilt	0	38099(PCC)	2604.9	1	Low	-0.033	0.628	17.66	18.50	1.213	0.762	/
	LEVEL1	/				37901(SCC)	2585.1	1	High							
ANT1	LEVEL2&3	/	Standalone	Left Cheek	0	38000	2595	1	Middle	0.17	0.141	16.36	16.50	1.033	0.146	/
	LEVEL2&3	/			0	37850	2580	50	Middle	-0.16	0.148	16.27	16.50	1.054	0.156	/
	LEVEL2&3	/		Left Tilt	0	38000	2595	1	Middle	0.14	0.171	16.36	16.50	1.033	0.177	/
	LEVEL2&3	/			0	37850	2580	50	Middle	0.17	0.175	16.27	16.50	1.054	0.185	/
	LEVEL2&3	/		Right Cheek	0	38000	2595	1	Middle	0.00	0.461	16.36	16.50	1.033	0.476	/
	LEVEL2&3	/			0	37850	2580	50	Middle	-0.03	0.476	16.27	16.50	1.054	0.502	/
	LEVEL2&3	/		Right Tilt	0	38000	2595	1	Middle	0.01	0.505	16.36	16.50	1.033	0.522	/
	LEVEL2&3	/			0	37850	2580	50	Middle	0.05	0.529	16.27	16.50	1.054	0.558	/
ANT0	LEVEL1&2&3	/	Standalone	Left Cheek	0	37850	2580	1	Middle	0.02	0.238	23.41	24.50	1.285	0.306	/
	LEVEL1&2&3	/			0	37850	2580	50	High	-0.12	0.174	22.44	23.50	1.276	0.222	/
	LEVEL1&2&3	/		Left Tilt	0	37850	2580	1	Middle	0.03	0.125	23.41	24.50	1.285	0.161	/
	LEVEL1&2&3	/			0	37850	2580	50	High	-0.13	0.078	22.44	23.50	1.276	0.100	/
	LEVEL1&2&3	/		Right Cheek	0	37850	2580	1	Middle	0.032	0.475	23.41	24.50	1.285	0.611	/
	LEVEL1&2&3	/			0	37850	2580	50	High	0.19	0.282	22.44	23.50	1.276	0.360	/
	LEVEL1&2&3	/		Right Tilt	0	37850	2580	1	Middle	0.09	0.175	23.41	24.50	1.285	0.225	/
	LEVEL1&2&3	/			0	37850	2580	50	High	0.12	0.119	22.44	23.50	1.276	0.152	/
ANT1	LEVEL1	/	Standalone	Right Tilt	0	38150	2610	50	Low	-0.020	0.745	18.11	18.50	1.094	0.815	/



				(Battery 2)												
<b>Body-worn SAR(QPSK)</b>																
ANT1	LEVEL4	OFF	Standalone	Front Side	15	38000	2595	1	Middle	0.05	0.199	24.38	24.50	1.028	0.205	/
	LEVEL4	OFF			15	37850	2580	50	Middle	-0.04	0.114	23.37	23.50	1.030	0.117	/
	LEVEL4	ON		Back Side	15	38150	2610	1	Low	0.12	0.322	22.85	23.00	1.035	0.333	63
	LEVEL4	ON			15	38000	2595	50	Middle	0.11	0.211	22.83	23.00	1.040	0.219	/
	LEVEL4	ON	Back Side	15	38150(PCC)	2610	1	Low	0.021	0.195	22.23	23.00	1.194	0.233	/	
		37952(SCC)			2590.2	1	High									
ANT0	LEVEL4	/	Standalone	Front Side	15	37850	2580	1	Middle	-0.13	0.195	23.41	24.50	1.285	0.251	/
	LEVEL4	/			15	37850	2580	50	High	0.03	0.156	22.44	23.50	1.276	0.199	/
	LEVEL4	/		Back Side	15	37850	2580	1	Middle	0.10	0.226	23.41	24.50	1.285	0.290	/
	LEVEL4	/			15	37850	2580	50	High	-0.09	0.175	22.44	23.50	1.276	0.223	/
ANT1	LEVEL4	OFF	Standalone	Back Side (Battery 2)	15	38150	2610	1	Low	0.050	0.312	22.85	23.00	1.035	0.323	/
<b>Hotspot SAR(QPSK)</b>																
ANT1	LEVEL5&6	ON	Standalone	Front Side	10	38150	2610	1	Low	-0.19	0.276	22.85	23.00	1.035	0.286	/
	LEVEL5&6	ON			10	38000	2595	50	Middle	-0.14	0.204	22.83	23.00	1.040	0.212	/
	LEVEL5&6	ON		Back Side	10	38150	2610	1	Low	-0.08	0.523	22.85	23.00	1.035	0.541	/
	LEVEL5&6	ON			10	38000	2595	50	Middle	0.09	0.433	22.83	23.00	1.040	0.450	/
	LEVEL5&6	ON		Left Edge	10	38150	2610	1	Low	0.04	0.246	22.85	23.00	1.035	0.255	/
	LEVEL5&6	ON			10	38000	2595	50	Middle	0.18	0.209	22.83	23.00	1.040	0.217	/
	LEVEL5&6	ON		Top Edge	10	38150	2610	1	Low	0.10	0.630	22.85	23.00	1.035	0.652	/
	LEVEL5&6	ON			10	38000	2595	50	Middle	-0.05	0.548	22.83	23.00	1.040	0.570	/
ANT0	LEVEL5&6	/	Standalone	Front Side	10	37850	2580	1	Middle	0.033	0.582	23.41	24.50	1.285	0.748	/
	LEVEL5&6	/			10	37850	2580	50	High	0.046	0.491	22.44	23.50	1.276	0.627	/
	LEVEL5&6	/		Back Side	10	37850	2580	1	Middle	0.070	0.665	23.41	24.50	1.285	0.855	64
	LEVEL5&6	/			10	38000	2595	1	Middle	-0.027	0.629	23.39	24.50	1.291	0.812	/
	LEVEL5&6	/			10	38150	2610	1	Middle	-0.060	0.631	23.29	24.50	1.321	0.834	/
	LEVEL5&6	/		Right Edge	10	37850	2580	50	High	0.020	0.552	22.44	23.50	1.276	0.705	/
	LEVEL5&6	/			10	37850	2580	1	Middle	-0.150	0.293	23.41	24.50	1.285	0.377	/
	LEVEL5&6	/		Left Edge	10	37850	2580	50	High	0.110	0.218	22.44	23.50	1.276	0.278	/
	LEVEL5&6	/			10	37850	2580	1	Middle	0.120	0.067	23.41	24.50	1.285	0.086	/
	LEVEL5&6	/		Bottom Edge	10	37850	2580	50	High	-0.010	0.054	22.44	23.50	1.276	0.069	/
	LEVEL5&6	/			10	37850	2580	1	Middle	0.030	0.228	23.41	24.50	1.285	0.293	/
	LEVEL5&6	/		Back Side	10	37850	2580	50	High	0.100	0.176	22.44	23.50	1.276	0.225	/
	LEVEL5&6	/				38099(PCC)	2604.9	1	Low	0.038	0.634	24.01	24.50	1.119	0.710	/
				37901(SCC)	2585.1	1	High									
ANT0	LEVEL5&6	/	Standalone	Back Side (Battery 2)	10	37850	2580	1	Middle	0.140	0.648	23.41	24.50	1.285	0.833	/
<b>Additional SAR test at a conservative distance (triggering distance minus 1mm) (QPSK)</b>																
ANT1	OFF	/	Standalone	Front Side	10	38000	2595	1	Middle	-0.01	0.362	24.38	24.50	1.028	0.372	/
	OFF	/			10	37850	2580	50	Middle	0.02	0.239	23.37	23.50	1.030	0.246	/
	OFF	/		Back Side	16	38000	2595	1	Middle	-0.13	0.271	24.38	24.50	1.028	0.279	/



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	OFF	/		16	37850	2580	50	Middle	0.09	0.182	23.37	23.50	1.030	0.188	/
	OFF	/	Left Edge	9	38000	2595	1	Middle	0.02	0.431	24.38	24.50	1.028	0.443	/
	OFF	/		9	37850	2580	50	Middle	-0.19	0.279	23.37	23.50	1.030	0.287	/
	OFF	/	Top Edge	18	38000	2595	1	Middle	0.11	0.274	24.38	24.50	1.028	0.282	/
	OFF	/		18	37850	2580	50	Middle	-0.01	0.196	23.37	23.50	1.030	0.202	/

Note: 1. The value with blue color is the maximum SAR Value of each test band.



**Table 21: LTE Band 41 (20MHz)**

Antenna	Power Reduction	Distance Sensor	Information	Position	Dist. (mm)	Ch.	Frequency (MHz)	RB	RB Start	Power Drift (dB)	Limit of SAR 1.6 W/kg (mW/g)					Plot No.
											Measured SAR (W/kg)	Measured Power (dBm)	Max. tune-power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)	
<b>Head SAR(QPSK)</b>																
ANT1	LEVEL1	/	Standalone	Left Cheek	0	41490	2680	1	Middle	0.02	0.149	18.27	18.50	1.054	0.157	/
	LEVEL1	/			0	41490	2680	50	High	-0.19	0.142	18.32	18.50	1.042	0.148	/
	LEVEL1	/		Left Tilt	0	41490	2680	1	Middle	-0.16	0.139	18.27	18.50	1.054	0.147	/
	LEVEL1	/			0	41490	2680	50	High	-0.04	0.135	18.32	18.50	1.042	0.141	/
	LEVEL1	/		Right Cheek	0	41490	2680	1	Middle	0.140	0.500	18.27	18.50	1.054	0.527	65
	LEVEL1	/			0	41490	2680	50	High	-0.11	0.432	18.32	18.50	1.042	0.450	/
	LEVEL1	/		Right Tilt	0	41490	2680	1	Middle	-0.10	0.414	18.27	18.50	1.054	0.437	/
	LEVEL1	/			0	41490	2680	50	High	0.04	0.411	18.32	18.50	1.042	0.428	/
	LEVEL1	/		Right Tilt	0	40620(PCC)	2593	1	High	-0.100	0.436	17.33	18.50	1.309	0.571	/
		40818(SCC)	2612.8			1	Low									
ANT1	LEVEL2&3	/	Standalone	Left Cheek	0	40620	2593	1	Middle	-0.15	0.092	16.34	16.50	1.038	0.095	/
	LEVEL2&3	/			0	40620	2593	50	Middle	0.00	0.089	16.32	16.50	1.042	0.093	/
	LEVEL2&3	/		Left Tilt	0	40620	2593	1	Middle	0.06	0.091	16.34	16.50	1.038	0.094	/
	LEVEL2&3	/			0	40620	2593	50	Middle	-0.14	0.086	16.32	16.50	1.042	0.090	/
	LEVEL2&3	/		Right Cheek	0	40620	2593	1	Middle	-0.06	0.309	16.34	16.50	1.038	0.321	/
	LEVEL2&3	/			0	40620	2593	50	Middle	-0.06	0.299	16.32	16.50	1.042	0.312	/
	LEVEL2&3	/		Right Tilt	0	40620	2593	1	Middle	0.07	0.266	16.34	16.50	1.038	0.276	/
	LEVEL2&3	/			0	40620	2593	50	Middle	0.03	0.264	16.32	16.50	1.042	0.275	/
ANT0	LEVEL1&2&3	/	Standalone	Left Cheek	0	39750	2506	1	Middle	-0.17	0.136	23.28	24.50	1.324	0.180	/
	LEVEL1&2&3	/			0	39750	2506	50	Middle	-0.08	0.107	22.27	23.50	1.327	0.142	/
	LEVEL1&2&3	/		Left Tilt	0	39750	2506	1	Middle	0.03	0.070	23.28	24.50	1.324	0.093	/
	LEVEL1&2&3	/			0	39750	2506	50	Middle	-0.09	0.054	22.27	23.50	1.327	0.072	/
	LEVEL1&2&3	/		Right Cheek	0	39750	2506	1	Middle	-0.09	0.232	23.28	24.50	1.324	0.307	/
	LEVEL1&2&3	/			0	39750	2506	50	Middle	0.01	0.180	22.27	23.50	1.327	0.239	/
	LEVEL1&2&3	/		Right Tilt	0	39750	2506	1	Middle	0.05	0.097	23.28	24.50	1.324	0.128	/
	LEVEL1&2&3	/			0	39750	2506	50	Middle	-0.02	0.076	22.27	23.50	1.327	0.101	/
ANT1	LEVEL1	/	Standalone	Right Cheek (Battery 2)	0	41490	2680	1	Middle	0.050	0.488	18.27	18.50	1.054	0.515	/
<b>Body-worn SAR(QPSK)</b>																
ANT1	LEVEL4	OFF	Standalone	Front Side	15	41490	2680	1	Low	0.06	0.225	24.46	24.50	1.009	0.227	/
	LEVEL4	OFF			15	41490	2680	50	Low	0.18	0.173	23.38	23.50	1.028	0.178	/
	LEVEL4	ON		Back Side	15	41490	2680	1	Low	-0.09	0.233	23.87	24.00	1.030	0.240	/
	LEVEL4	ON			15	41490	2680	50	Low	0.03	0.195	23.33	23.50	1.040	0.203	/
ANT0	LEVEL4	/	Standalone	Front Side	15	39750	2506	1	Middle	0.040	0.241	23.28	24.50	1.324	0.319	/
	LEVEL4	/			15	39750	2506	50	Middle	-0.100	0.218	22.27	23.50	1.327	0.289	/
	LEVEL4	/		Back Side	15	39750	2506	1	Middle	0.045	0.257	23.28	24.50	1.324	0.340	66



	LEVEL4	/			15	39750	2506	50	Middle	0.013	0.224	22.27	23.50	1.327	0.297	/	
	LEVEL4	/		Back Side	15	41490(PCC)	2680	1	Low	0.030	0.251	23.96	24.50	1.132	0.284	/	
						41292(SCC)	2660.2	1	High								
ANT0	LEVEL4	/	Standalone	Back Side (Battery 2)	15	39750	2506	1	Middle	-0.020	0.245	23.28	24.50	1.324	0.324	/	
<b>Hotspot SAR(QPSK)</b>																	
ANT1	LEVEL5&6	ON	Standalone	Front Side	10	41490	2680	1	Low	-0.110	0.376	23.87	24.00	1.030	0.387	/	
	LEVEL5&6	ON			10	41490	2680	50	Low	-0.040	0.332	23.33	23.50	1.040	0.345	/	
	LEVEL5&6	ON		Back Side	10	41490	2680	1	Low	0.031	0.553	23.87	24.00	1.030	0.570	67	
	LEVEL5&6	ON			10	41490	2680	50	Low	0.060	0.446	23.33	23.50	1.040	0.464	/	
	LEVEL5&6	ON		Left Edge	10	41490	2680	1	Low	0.090	0.347	23.87	24.00	1.030	0.358	/	
	LEVEL5&6	ON			10	41490	2680	50	Low	0.140	0.301	23.33	23.50	1.040	0.313	/	
	LEVEL5&6	ON		Top Edge	10	41490	2680	1	Low	0.180	0.416	23.87	24.00	1.030	0.429	/	
	LEVEL5&6	ON			10	41490	2680	50	Low	0.020	0.352	23.33	23.50	1.040	0.366	/	
ANT0	LEVEL5&6	/	Standalone	Front Side	10	39750	2506	1	Middle	-0.190	0.395	23.28	24.50	1.324	0.523	/	
	LEVEL5&6	/			10	39750	2506	50	Middle	0.190	0.335	22.27	23.50	1.327	0.445	/	
	LEVEL5&6	/		Back Side	10	39750	2506	1	Middle	0.034	0.445	23.28	24.50	1.324	0.589	/	
	LEVEL5&6	/			10	39750	2506	50	Middle	0.190	0.375	22.27	23.50	1.327	0.498	/	
	LEVEL5&6	/		Right Edge	10	39750	2506	1	Middle	-0.030	0.294	23.28	24.50	1.324	0.389	/	
	LEVEL5&6	/			10	39750	2506	50	Middle	0.010	0.253	22.27	23.50	1.327	0.336	/	
	LEVEL5&6	/		Left Edge	10	39750	2506	1	Middle	0.020	0.000	23.28	24.50	1.324	0.000	/	
	LEVEL5&6	/			10	39750	2506	50	Middle	0.130	0.000	22.27	23.50	1.327	0.000	/	
	LEVEL5&6	/		Bottom Edge	10	39750	2506	1	Middle	-0.040	0.118	23.28	24.50	1.324	0.156	/	
	LEVEL5&6	/			10	39750	2506	50	Middle	0.080	0.090	22.27	23.50	1.327	0.119	/	
	LEVEL5&6	/		Back Side	10	41490(PCC)	2680	1	Low	-0.016	0.382	23.96	24.50	1.132	0.433	/	
	LEVEL5&6	/					41292(SCC)	2660.2	1								High
ANT0	LEVEL5&6	/	Standalone	Back Side (Battery 2)	10	39750	2506	1	Middle	-0.140	0.425	23.28	24.50	1.324	0.563	/	
<b>Additional SAR test at a conservative distance (triggering distance minus 1mm) (QPSK)</b>																	
ANT1	OFF	/	Standalone	Front Side	10	41490	2680	1	Low	-0.10	0.442	24.46	24.50	1.009	0.446	/	
	OFF	/			10	41490	2680	50	Low	0.18	0.342	23.38	23.50	1.028	0.352	/	
	OFF	/		Back Side	16	41490	2680	1	Low	0.11	0.235	24.46	24.50	1.009	0.237	/	
	OFF	/			16	41490	2680	50	Low	-0.06	0.176	23.38	23.50	1.028	0.181	/	
	OFF	/		Left Edge	9	41490	2680	1	Low	0.190	0.554	24.46	24.50	1.009	0.559	/	
	OFF	/			9	41490	2680	50	Low	-0.15	0.387	23.38	23.50	1.028	0.398	/	
	OFF	/		Top Edge	18	41490	2680	1	Low	0.10	0.165	24.46	24.50	1.009	0.167	/	
	OFF	/			18	41490	2680	50	Low	-0.10	0.125	23.38	23.50	1.028	0.129	/	

Note: 1. The value with blue color is the maximum SAR Value of each test band.



**Table 22: LTE Band 66 (20MHz)**

Antenna	Power Reduction	Distance Sensor	Information	Position	Dist. (mm)	Ch.	Frequency (MHz)	RB	RB Start	Power Drift (dB)	Limit of SAR 1.6 W/kg (mW/g)					Plot No.
											1g Measured SAR (W/kg)	Measured Power (dBm)	Max. tune-power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)	
<b>Head SAR(QPSK)</b>																
ANT1	LEVEL1	/	Standalone	Left Cheek	0	132072	1720	1	Middle	0.17	0.404	17.71	19.00	1.346	0.544	/
	LEVEL1	/				132572	1770	50	Low	-0.06	0.433	17.88	19.00	1.294	0.560	/
	LEVEL1	/		Left Tilt	0	132072	1720	1	Middle	-0.16	0.498	17.71	19.00	1.346	0.670	/
	LEVEL1	/				132572	1770	50	Low	0.09	0.528	17.88	19.00	1.294	0.683	/
	LEVEL1	/		Right Cheek	0	132072	1720	1	Middle	-0.19	0.589	17.71	19.00	1.346	0.793	/
	LEVEL1	/				132572	1770	50	Low	-0.04	0.613	17.88	19.00	1.294	0.793	/
	LEVEL1	/		Right Tilt	0	132072	1720	1	Middle	-0.04	0.741	17.71	19.00	1.346	0.997	/
	LEVEL1	/				132322	1745	1	Low	0.08	0.726	17.69	19.00	1.352	0.982	/
	LEVEL1	/				132572	1770	1	Middle	0.02	0.840	17.65	19.00	1.365	1.146	/
	LEVEL1	/				132572	1770	50	Low	0.04	0.870	17.88	19.00	1.294	1.126	68
	LEVEL1	/				132072	1720	50	Middle	-0.01	0.751	17.71	19.00	1.346	1.011	/
	LEVEL1	/				132322	1745	50	Middle	-0.01	0.771	17.75	19.00	1.334	1.028	/
	LEVEL1	/				132572	1770	100	Low	0.06	0.841	17.63	19.00	1.371	1.153	/
	LEVEL1	/				132072	1720	100	Low	-0.045	0.826	17.60	19.00	1.380	1.140	/
	LEVEL1	/		132322	1745	100	Low	-0.092	0.813	17.54	19.00	1.400	1.138	/		
	LEVEL1	/		Right Tilt (Repeated)	0	132572	1770	100	Low	-0.014	0.833	17.63	19.00	1.371	1.142	/
ANT1	LEVEL2&3	/	Standalone	Left Cheek	0	132322	1745	1	Middle	0.05	0.283	15.80	17.00	1.318	0.373	/
	LEVEL2&3	/				132572	1770	50	Low	0.05	0.295	15.89	17.00	1.291	0.381	/
	LEVEL2&3	/		Left Tilt	0	132322	1745	1	Middle	-0.14	0.347	15.80	17.00	1.318	0.457	/
	LEVEL2&3	/				132572	1770	50	Low	-0.05	0.364	15.89	17.00	1.291	0.470	/
	LEVEL2&3	/		Right Cheek	0	132322	1745	1	Middle	0.05	0.406	15.80	17.00	1.318	0.535	/
	LEVEL2&3	/				132572	1770	50	Low	-0.01	0.431	15.89	17.00	1.291	0.557	/
	LEVEL2&3	/		Right Tilt	0	132322	1745	1	Middle	0.13	0.483	15.80	17.00	1.318	0.637	/
	LEVEL2&3	/				132572	1770	50	Low	0.01	0.508	15.89	17.00	1.291	0.656	/
ANT0	LEVEL1&2&3	/	Standalone	Left Cheek	0	132572	1770	1	Middle	0.033	0.167	23.20	24.50	1.349	0.225	/
	LEVEL1&2&3	/				132072	1720	50	High	0.18	0.122	22.33	23.50	1.309	0.160	/
	LEVEL1&2&3	/		Left Tilt	0	132572	1770	1	Middle	-0.16	0.062	23.20	24.50	1.349	0.084	/
	LEVEL1&2&3	/				132072	1720	50	High	0.11	0.050	22.33	23.50	1.309	0.065	/
	LEVEL1&2&3	/		Right Cheek	0	132572	1770	1	Middle	-0.19	0.088	23.20	24.50	1.349	0.119	/
	LEVEL1&2&3	/				132072	1720	50	High	-0.02	0.075	22.33	23.50	1.309	0.098	/
	LEVEL1&2&3	/		Right Tilt	0	132572	1770	1	Middle	-0.16	0.067	23.20	24.50	1.349	0.090	/
	LEVEL1&2&3	/				132072	1720	50	High	-0.16	0.060	22.33	23.50	1.309	0.079	/
ANT1	LEVEL1	/	Standalone	Right Tilt (Battery 2)	0	132572	1770	100	Low	0.030	0.828	17.63	19.00	1.371	1.135	/
<b>Body-worn SAR(QPSK)</b>																





ANT1	LEVEL4	OFF	Standalone	Front Side	15	132572	1770	1	Middle	-0.040	0.276	23.19	24.50	1.352	0.373	69
	LEVEL4	OFF				132572	1770	50	Low	-0.120	0.166	22.35	23.50	1.303	0.216	/
	LEVEL4	ON		Back Side	15	132072	1720	1	Low	-0.050	0.120	20.27	21.50	1.327	0.159	/
	LEVEL4	ON				132572	1770	50	Low	0.070	0.120	20.42	21.50	1.282	0.154	/
ANT0	LEVEL4	/	Standalone	Front Side	15	132072	1720	1	Low	-0.010	0.151	20.66	22.00	1.361	0.206	/
	LEVEL4	/				132322	1745	50	Low	-0.030	0.159	20.72	22.00	1.343	0.213	/
	LEVEL4	/		Back Side	15	132072	1720	1	Low	-0.180	0.184	20.66	22.00	1.361	0.251	/
	LEVEL4	/				132322	1745	50	Low	-0.084	0.260	20.72	22.00	1.343	0.349	/
ANT1	LEVEL4	OFF	Standalone	Front Side (Battery 2)	15	132572	1770	1	Middle	0.080	0.264	23.19	24.50	1.352	0.357	/
<b>Hotspot SAR(QPSK)</b>																
ANT1	LEVEL5&6	ON	Standalone	Front Side	10	132072	1720	1	Low	-0.10	0.209	20.27	21.50	1.327	0.277	/
	LEVEL5&6	ON				132572	1770	50	Low	0.04	0.206	20.42	21.50	1.282	0.264	/
	LEVEL5&6	ON		Back Side	10	132072	1720	1	Low	0.03	0.238	20.27	21.50	1.327	0.316	/
	LEVEL5&6	ON				132572	1770	50	Low	-0.16	0.238	20.42	21.50	1.282	0.305	/
	LEVEL5&6	ON		Left Edge	10	132072	1720	1	Low	0.17	0.000	20.27	21.50	1.327	0.000	/
	LEVEL5&6	ON				132572	1770	50	Low	-0.01	0.000	20.42	21.50	1.282	0.000	/
	LEVEL5&6	ON		Top Edge	10	132072	1720	1	Low	-0.11	0.410	20.27	21.50	1.327	0.544	/
	LEVEL5&6	ON				132572	1770	50	Low	0.045	0.437	20.42	21.50	1.282	0.560	/
ANT0	LEVEL5&6	/	Standalone	Front Side	10	132072	1720	1	Low	-0.12	0.282	20.66	22.00	1.361	0.384	/
	LEVEL5&6	/				132322	1745	50	Low	0.18	0.297	20.72	22.00	1.343	0.399	/
	LEVEL5&6	/		Back Side	10	132072	1720	1	Low	0.03	0.294	20.66	22.00	1.361	0.400	/
	LEVEL5&6	/				132322	1745	50	Low	0.07	0.312	20.72	22.00	1.343	0.419	/
	LEVEL5&6	/		Right Edge	10	132072	1720	1	Low	-0.05	0.077	20.66	22.00	1.361	0.105	/
	LEVEL5&6	/				132322	1745	50	Low	0.03	0.080	20.72	22.00	1.343	0.107	/
	LEVEL5&6	/		Left Edge	10	132072	1720	1	Low	0.15	0.081	20.66	22.00	1.361	0.110	/
	LEVEL5&6	/				132322	1745	50	Low	0.14	0.081	20.72	22.00	1.343	0.109	/
	LEVEL5&6	/		Bottom Edge	10	132072	1720	1	Low	0.09	0.450	20.66	22.00	1.361	0.613	/
	LEVEL5&6	/				132322	1745	50	Low	-0.17	0.509	20.72	22.00	1.343	0.683	70
ANT0	LEVEL5&6	/	Standalone	Bottom Edge (Battery 2)	10	132322	1745	50	Low	-0.050	0.487	20.72	22.00	1.343	0.654	/
<b>Additional SAR test at a conservative distance (triggering distance minus 1mm) (QPSK)</b>																
ANT1	OFF	/	Standalone	Front Side	10	132572	1770	1	Middle	0.110	0.535	23.19	24.50	1.352	0.723	/
	OFF	/				132572	1770	50	Low	-0.19	0.375	22.35	23.50	1.303	0.489	/
	OFF	/		Back Side	16	132572	1770	1	Middle	0.07	0.251	23.19	24.50	1.352	0.339	/
	OFF	/				132572	1770	50	Low	-0.07	0.187	22.35	23.50	1.303	0.244	/
	OFF	/		Left Edge	9	132572	1770	1	Middle	0.13	0.086	23.19	24.50	1.352	0.116	/
	OFF	/				132572	1770	50	Low	-0.15	0.066	22.35	23.50	1.303	0.086	/
	OFF	/		Top Edge	18	132572	1770	1	Middle	0.12	0.307	23.19	24.50	1.352	0.415	/
	OFF	/				132572	1770	50	Low	0.05	0.229	22.35	23.50	1.303	0.298	/
Antenna	Power	Distance	Information	Position	Dist.	Ch.	Frequency	RB	RB	Power	Limit of SAR 4 W/kg (mW/g)					Plot



	Reduction	Sensor			(mm)		(MHz)	Num.	Start	Drift (dB)	10g Measured SAR (W/kg)	Measured Power (dBm)	Max. tune-power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	No.
<b>Product Specific 10-g SAR(QPSK)</b>																
ANT0	LEVEL4	/	Standalone	Bottom Edge	0	132072	1720	1	Low	0.160	1.450	20.66	22.00	1.361	1.974	/
	LEVEL4	/				132072	1720	50	Low	0.014	1.650	20.71	22.00	1.346	2.221	/
	LEVEL4	/				132322	1745	50	Low	0.033	1.830	20.72	22.00	1.343	2.457	71
	LEVEL4	/				132572	1770	50	Low	-0.020	1.690	20.72	22.00	1.343	2.269	/
ANT0	LEVEL4	/	Standalone	Bottom Edge (Battery 2)	0	132322	1745	50	Low	0.140	1.650	20.72	22.00	1.343	2.216	/
ANT0	LEVEL4	/	Standalone	Bottom Edge (SIM 2)	0	132322	1745	50	Low	-0.050	1.620	20.72	22.00	1.343	2.175	/

Note: 1. The value with blue color is the maximum SAR Value of each test band.  
 2. Accessories that do not contain RF transmitters and have been proven to increase the peak SAR by less than 5 %, such as hands-free kits, do not need SAR tests separate from the SAR tests attached to a main EUT configuration.

<b>Measurement Variability</b>				
Test Position	Channel/ Frequency(MHz)	MAX Measured SAR <sub>1g</sub> (W/kg)	1 <sup>st</sup> Repeated SAR <sub>1g</sub> (W/kg)	Ratio
Right Tilt	132572/1770	0.870	0.833	1.04

Note: 1) A second repeated measurement was performed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).  
 2) A third repeated measurement was performed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

<b>MAX Adjusted SAR</b>																	
Band	Antenna	Power Reduction	Distance Sensor	Mode	Information	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Num.	RB Start	1 g Meas SAR(W/kg)	Meas. Power (dBm)	Max. tune-power(dBm)	Scaling Factor	10g Scaled SAR (W/kg)	0mm SAR
LTE Band 2	ANT1	LEVEL5&6	ON	QPSK	Standalone	Front Side	10	18900	1880	1	Middle	0.310	20.00	24.50	2.818	0.874	NO
		10	18900				1880	50	Low	0.325	20.00	23.50	2.239	0.727	NO		
		Back Side	10			18900	1880	1	Middle	0.390	20.00	24.50	2.818	1.099	NO		
			10			18900	1880	50	Low	0.409	20.00	23.50	2.239	0.917	NO		
		Left Edge	10			18900	1880	1	Middle	0.060	20.00	24.50	2.818	0.168	NO		
			10			18900	1880	50	Low	0.061	20.00	23.50	2.239	0.136	NO		
		Top Edge	10			18900	1880	1	Middle	0.643	20.00	24.50	2.818	1.812	YES		
			10			18900	1880	50	Low	0.737	20.00	23.50	2.239	1.649	YES		
LTE Band 4	ANT1	LEVEL5&6	ON	QPSK	Standalone	Front Side	10	20300	1745	1	Low	0.275	20.50	24.50	2.512	0.690	NO
		10	20300				1745	50	Low	0.262	20.50	23.50	1.995	0.523	NO		
		Back Side	10			20300	1745	1	Low	0.299	20.50	24.50	2.512	0.750	NO		
			10			20300	1745	50	Low	0.281	20.50	23.50	1.995	0.560	NO		





**Table 23: 5G n5 (20MHz Bandwidth)**

Antenna	Power Reduction	Distance Sensor	Information	Position	Dist. (mm)	Ch.	Frequency (MHz)	Power	TAS	VRB Length	VRB Start	Power Drift (dB)	Limit of SAR 1.6 W/kg (mW/g)					Plot No.
													1g Measured SAR (W/kg)	Measured Power (dBm)	Max. tune-power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)	
<b>Head SAR (DFT-s-OFDM BPSK- 15kHz)</b>																		
Ant.0	LEVEL1&2&3	/	SA	Left	0	167800	839	25	0	1	53	-0.090	0.107	23.56	24.80	1.330	0.142	/
	LEVEL1&2&3	/		Cheek	0	167800	839	25	0	50	56	0.120	0.094	23.55	24.80	1.334	0.125	/
	LEVEL1&2&3	/		Left Tilt	0	167800	839	25	0	1	53	0.030	0.072	23.56	24.80	1.330	0.096	/
	LEVEL1&2&3	/			0	167800	839	25	0	50	56	-0.080	0.061	23.55	24.80	1.334	0.081	/
	LEVEL1&2&3	/		Right	0	167800	839	25	0	1	53	0.100	0.072	23.56	24.80	1.330	0.096	/
	LEVEL1&2&3	/			Cheek	0	167800	839	25	0	50	56	-0.060	0.063	23.55	24.80	1.334	0.084
	LEVEL1&2&3	/		Right Tilt	0	167800	839	25	0	1	53	0.060	0.053	23.56	24.80	1.330	0.071	/
	LEVEL1&2&3	/			0	167800	839	25	0	50	56	0.070	0.047	23.55	24.80	1.334	0.063	/
Ant.1	LEVEL1	/	SA	Left	0	167300	836.5	20.5	1	1	53	0.140	0.349	20.94	21.30	1.086	0.379	/
	LEVEL1	/		Cheek	0	167800	839	20.5	1	50	28	0.070	0.355	21.06	21.30	1.057	0.375	/
	LEVEL1	/		Left Tilt	0	167300	836.5	20.5	1	1	53	0.090	0.325	20.94	21.30	1.086	0.353	/
	LEVEL1	/			0	167800	839	20.5	1	50	28	0.170	0.326	21.06	21.30	1.057	0.345	/
	LEVEL1	/		Right	0	167300	836.5	20.5	1	1	53	-0.140	0.524	20.94	21.30	1.086	0.569	/
	LEVEL1	/			Cheek	0	167800	839	20.5	1	50	28	0.030	0.570	21.06	21.30	1.057	0.602
	LEVEL1	/		Right Tilt	0	167300	836.5	20.5	1	1	53	-0.070	0.455	20.94	21.30	1.086	0.494	/
	LEVEL1	/			0	167800	839	20.5	1	50	28	-0.050	0.460	21.06	21.30	1.057	0.486	/
Ant.1	LEVEL2&3	/	SA	Left	0	167300	836.5	18.5	1	1	53	-0.130	0.222	18.90	19.30	1.096	0.243	/
	LEVEL2&3	/		Cheek	0	166800	834	18.5	1	50	28	-0.170	0.216	19.02	19.30	1.067	0.230	/
	LEVEL2&3	/		Left Tilt	0	167300	836.5	18.5	1	1	53	-0.080	0.207	18.90	19.30	1.096	0.227	/
	LEVEL2&3	/			0	166800	834	18.5	1	50	28	-0.060	0.202	19.02	19.30	1.067	0.215	/
	LEVEL2&3	/		Right	0	167300	836.5	18.5	1	1	53	0.060	0.336	18.90	19.30	1.096	0.368	/
	LEVEL2&3	/			Cheek	0	166800	834	18.5	1	50	28	-0.180	0.333	19.02	19.30	1.067	0.355
	LEVEL2&3	/		Right Tilt	0	167300	836.5	18.5	1	1	53	-0.140	0.289	18.90	19.30	1.096	0.317	/
	LEVEL2&3	/			0	166800	834	18.5	1	50	28	0.010	0.278	19.02	19.30	1.067	0.297	/
Ant.1	LEVEL1	/	SA	Right Cheek (Battery 2)	0	167800	839	20.5	1	50	28	0.080	0.555	21.06	21.30	1.057	0.602	/
<b>Head SAR (CP-OFDM QPSK- 15kHz)</b>																		
Ant.1	LEVEL1	/	SA	Right Cheek	0	167800	839	20.5	1	1	1	0.030	0.457	20.90	21.30	1.096	0.501	/
<b>Body-worn SAR (DFT-s-OFDM BPSK- 15kHz)</b>																		
Ant.0	LEVEL4	/	SA	Front Side	15	167800	839	25	0	1	53	0.160	0.071	23.56	24.80	1.330	0.094	/
	LEVEL4	/			15	167800	839	25	0	50	56	0.150	0.056	23.55	24.80	1.334	0.075	/
	LEVEL4	/		Back Side	15	167800	839	25	0	1	53	0.050	0.201	23.56	24.80	1.330	0.267	73



	LEVEL4	/			15	167800	839	25	0	50	56	0.090	0.177	23.55	24.80	1.334	0.236	/	
Ant.1	LEVEL4	OFF	SA	Front Side	15	167800	839	25	1	1	1	0.010	0.079	23.28	24.80	1.419	0.112	/	
	LEVEL4	OFF			15	166800	834	25	1	50	28	0.070	0.104	23.69	24.80	1.291	0.134	/	
	LEVEL4	ON		Back Side	15	167800	839	25	1	1	1	-0.010	0.098	23.28	24.80	1.419	0.139	/	
	LEVEL4	ON			15	166800	834	25	1	50	28	-0.130	0.107	23.69	24.80	1.291	0.138	/	
Ant.0	LEVEL4	/	SA	Back Side (Battery 2)	15	167800	839	25	0	1	53	-0.140	0.189	23.56	24.80	1.330	0.251	/	
<b>Body-worn SAR (CP-OFDM QPSK- 15kHz)</b>																			
Ant.0	LEVEL4	/	SA	Back Side	15	167800	839	25	0	1	1	0.050	0.122	21.93	23.30	1.371	0.167	/	
<b>Hotspot SAR (DFT-s-OFDM BPSK- 15kHz)</b>																			
Ant.0	LEVEL5&6	/	SA	Front Side	10	167800	839	25	0	1	53	-0.020	0.114	23.56	24.80	1.330	0.152	/	
	LEVEL5&6	/			10	167800	839	25	0	50	56	-0.080	0.105	23.55	24.80	1.334	0.140	/	
	LEVEL5&6	/		Back Side	10	167800	839	25	0	1	53	-0.060	0.275	23.56	24.80	1.330	0.366	74	
	LEVEL5&6	/			10	167800	839	25	0	50	56	-0.060	0.212	23.55	24.80	1.334	0.283	/	
	LEVEL5&6	/		Right Edge	10	167800	839	25	0	1	53	-0.050	0.033	23.56	24.80	1.330	0.044	/	
	LEVEL5&6	/			10	167800	839	25	0	50	56	-0.100	0.032	23.55	24.80	1.334	0.043	/	
	LEVEL5&6	/		Left Edge	10	167800	839	25	0	1	53	0.110	0.122	23.56	24.80	1.330	0.162	/	
	LEVEL5&6	/			10	167800	839	25	0	50	56	0.140	0.105	23.55	24.80	1.334	0.140	/	
	LEVEL5&6	/		Bottom Edge	10	167800	839	25	0	1	53	0.040	0.168	23.56	24.80	1.330	0.224	/	
	LEVEL5&6	/			10	167800	839	25	0	50	56	-0.080	0.155	23.55	24.80	1.334	0.207	/	
Ant.1	LEVEL5&6	ON	SA	Front Side	10	167800	839	25	1	1	1	0.010	0.138	23.28	24.80	1.419	0.196	/	
	LEVEL5&6	ON			10	166800	834	25	1	50	28	-0.100	0.150	23.69	24.80	1.291	0.194	/	
	LEVEL5&6	ON		Back Side	10	167800	839	25	1	1	1	0.010	0.185	23.28	24.80	1.419	0.263	/	
	LEVEL5&6	ON			10	166800	834	25	1	50	28	-0.040	0.194	23.69	24.80	1.291	0.250	/	
	LEVEL5&6	ON		Left Edge	10	167800	839	25	1	1	1	0.160	0.088	23.28	24.80	1.419	0.125	/	
	LEVEL5&6	ON			10	166800	834	25	1	50	28	0.180	0.077	23.69	24.80	1.291	0.099	/	
	LEVEL5&6	ON		Top Edge	10	167800	839	25	1	1	1	-0.190	0.134	23.28	24.80	1.419	0.190	/	
	LEVEL5&6	ON			10	166800	834	25	1	50	28	0.100	0.152	23.69	24.80	1.291	0.196	/	
Ant.0	LEVEL5&6	/	SA	Back Side (Battery 2)	10	167800	839	25	0	1	53	-0.040	0.270	23.56	24.80	1.330	0.359	/	
<b>Hotspot SAR (CP-OFDM QPSK- 15kHz)</b>																			
Ant.0	LEVEL5&6	/	SA	Back Side	10	167800	839	25	0	1	1	0.150	0.179	21.93	23.30	1.371	0.245	/	
<b>Additional SAR test at a conservative distance (triggering distance minus 1mm)</b>																			
Ant.1	OFF	/	SA	Front Side	10	167800	839	25	1	1	1	0.09	0.096	23.28	24.80	1.419	0.136	/	
	OFF	/			10	166800	834	25	1	50	28	0.04	0.111	23.69	24.80	1.291	0.143	/	
	OFF	/		Back Side	16	167800	839	25	1	1	1	0.10	0.064	23.28	24.80	1.419	0.091	/	
	OFF	/			16	166800	834	25	1	50	28	0.11	0.071	23.69	24.80	1.291	0.092	/	
	OFF	/		Left Edge	9	167800	839	25	1	1	1	0.10	0.071	23.28	24.80	1.419	0.101	/	
	OFF	/			9	166800	834	25	1	50	28	-0.06	0.081	23.69	24.80	1.291	0.105	/	
	OFF	/		Top Edge	18	167800	839	25	1	1	1	0.10	0.000	23.28	24.80	1.419	0.000	/	



	OFF	/			18	166800	834	25	1	50	28	-0.18	0.045	23.69	24.80	1.291	0.058	/
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Note: 1.The value with blue color is the maximum SAR Value of each test band.

Table 24: 5G n7 (20MHz Bandwidth)

Antenna	Power Reduction	Distance Sensor	Information	Position	Dist. (mm)	Ch.	Frequency (MHz)	Power	TAS	VRB Length	VRB Start	Power Drift (dB)	Limit of SAR 1.6 W/kg (mW/g)					Plot No.
													1g Measured SAR (W/kg)	Measured Power (dBm)	Max. tune-power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)	
<b>Head SAR (DFT-s-OFDM BPSK- 15kHz)</b>																		
Ant.0	LEVEL1&2&3	/	SA	Left Cheek	0	502000	2510	25	0	1	53	-0.150	0.187	22.93	24.00	1.279	0.239	/
	LEVEL1&2&3	/			0	502000	2510	25	0	50	28	0.130	0.199	22.90	24.00	1.288	0.256	/
	LEVEL1&2&3	/		Left Tilt	0	502000	2510	25	0	1	53	-0.140	0.178	22.93	24.00	1.279	0.228	/
	LEVEL1&2&3	/			0	502000	2510	25	0	50	28	0.100	0.183	22.90	24.00	1.288	0.236	/
	LEVEL1&2&3	/		Right Cheek	0	502000	2510	25	0	1	53	0.022	0.379	22.93	24.00	1.279	0.485	/
	LEVEL1&2&3	/			0	502000	2510	25	0	50	28	0.100	0.302	22.90	24.00	1.288	0.389	/
	LEVEL1&2&3	/		Right Tilt	0	502000	2510	25	0	1	53	-0.130	0.091	22.93	24.00	1.279	0.116	/
	LEVEL1&2&3	/			0	502000	2510	25	0	50	28	0.140	0.087	22.90	24.00	1.288	0.112	/
Ant.1	LEVEL1	/	SA	Left Cheek	0	502000	2510	15	1	1	53	0.170	0.168	15.75	16.50	1.189	0.200	/
	LEVEL1	/			0	502000	2510	15	1	50	28	0.180	0.168	15.78	16.50	1.180	0.198	/
	LEVEL1	/		Left Tilt	0	502000	2510	15	1	1	53	-0.160	0.229	15.75	16.50	1.189	0.272	/
	LEVEL1	/			0	502000	2510	15	1	50	28	0.040	0.227	15.78	16.50	1.180	0.268	/
	LEVEL1	/		Right Cheek	0	502000	2510	15	1	1	53	0.060	0.533	15.75	16.50	1.189	0.633	/
	LEVEL1	/			0	502000	2510	15	1	50	28	0.180	0.546	15.78	16.50	1.180	0.644	/
	LEVEL1	/		Right Tilt	0	502000	2510	15	1	1	53	0.080	0.614	15.75	16.50	1.189	0.730	/
	LEVEL1	/			0	502000	2510	15	1	50	28	0.060	0.639	15.78	16.50	1.180	0.754	/
Ant.1	LEVEL2&3	/	SA	Left Cheek	0	502000	2510	14	1	1	53	-0.120	0.137	14.66	15.50	1.213	0.166	/
	LEVEL2&3	/			0	502000	2510	14	1	50	28	0.160	0.135	14.61	15.50	1.227	0.166	/
	LEVEL2&3	/		Left Tilt	0	502000	2510	14	1	1	53	-0.120	0.183	14.66	15.50	1.213	0.222	/
	LEVEL2&3	/			0	502000	2510	14	1	50	28	0.030	0.185	14.61	15.50	1.227	0.227	/
	LEVEL2&3	/		Right Cheek	0	502000	2510	14	1	1	53	0.160	0.433	14.66	15.50	1.213	0.525	/
	LEVEL2&3	/			0	502000	2510	14	1	50	28	0.150	0.439	14.61	15.50	1.227	0.539	/
	LEVEL2&3	/		Right Tilt	0	502000	2510	14	1	1	53	0.000	0.497	14.66	15.50	1.213	0.603	/
	LEVEL2&3	/			0	502000	2510	14	1	50	28	0.030	0.497	14.61	15.50	1.227	0.610	/
Ant.4	LEVEL1	/	SA	Left Cheek	0	507000	2535	22.5	4	1	53	0.160	0.305	21.85	22.50	1.161	0.354	/
	LEVEL1	/			0	512000	2560	22.5	4	50	56	-0.040	0.338	22.00	22.50	1.122	0.379	/
	LEVEL1	/		Left Tilt	0	507000	2535	22.5	4	1	53	0.160	0.154	21.85	22.50	1.161	0.179	/
	LEVEL1	/			0	512000	2560	22.5	4	50	56	-0.150	0.161	22.00	22.50	1.122	0.181	/
	LEVEL1	/		Right Cheek	0	507000	2535	22.5	4	1	53	0.100	0.679	21.85	22.50	1.161	0.789	/
	LEVEL1	/			0	512000	2560	22.5	4	50	56	-0.090	0.957	22.00	22.50	1.122	1.074	75
	LEVEL1	/			0	502000	2510	22.5	4	50	28	0.020	0.798	21.91	22.50	1.146	0.914	/



	LEVEL1	/			0	507000	2535	22.5	4	50	56	0.130	0.781	21.90	22.50	1.148	0.897	/	
	LEVEL1	/			0	512000	2560	22.5	4	100	0	0.040	0.794	21.89	22.50	1.151	0.914	/	
	LEVEL1	/			Right Cheek (Repeated)	0	512000	2560	22.5	4	50	56	0.033	0.948	22.00	22.50	1.122	1.064	/
	LEVEL1	/			Right Tilt	0	507000	2535	22.5	4	1	53	0.050	0.154	21.85	22.50	1.161	0.179	/
	LEVEL1	/			0	512000	2560	22.5	4	50	56	0.130	0.250	22.00	22.50	1.122	0.281	/	
Ant.4	LEVEL2&3	/	SA	Left Cheek	0	512000	2560	21	4	1	53	0.050	0.240	20.41	21.00	1.146	0.275	/	
	LEVEL2&3	/			0	512000	2560	21	4	50	28	0.040	0.242	20.40	21.00	1.148	0.278	/	
	LEVEL2&3	/		Left Tilt	0	512000	2560	21	4	1	53	0.020	0.118	20.41	21.00	1.146	0.135	/	
	LEVEL2&3	/			0	512000	2560	21	4	50	28	-0.150	0.118	20.40	21.00	1.148	0.135	/	
	LEVEL2&3	/		Right Cheek	0	512000	2560	21	4	1	53	0.130	0.549	20.41	21.00	1.146	0.629	/	
	LEVEL2&3	/			0	512000	2560	21	4	50	28	0.140	0.552	20.40	21.00	1.148	0.634	/	
	LEVEL2&3	/		Right Tilt	0	512000	2560	21	4	1	53	0.030	0.187	20.41	21.00	1.146	0.214	/	
	LEVEL2&3	/			0	512000	2560	21	4	50	28	0.000	0.181	20.40	21.00	1.148	0.208	/	
Ant.4	LEVEL1	/	SA	Right Cheek (Battery 2)	0	512000	2560	22.5	4	50	56	0.070	0.942	22.00	22.50	1.122	1.074	/	
<b>Head SAR (CP-OFDM QPSK- 15kHz)</b>																			
Ant.4	LEVEL2&3	/	SA	Right Cheek	0	512000	2560	22.5	4	1	1	0.100	0.771	20.61	21.50	1.227	0.946	/	
<b>Body-worn SAR(DFT-s-OFDM BPSK- 15kHz)</b>																			
Ant.0	LEVEL4	/	SA	Front Side	15	512000	2560	24	0	1	53	0.090	0.219	22.57	23.50	1.239	0.271	/	
	LEVEL4	/			15	507000	2535	24	0	50	28	-0.150	0.226	22.50	23.50	1.259	0.284	/	
	LEVEL4	/		Back Side	15	512000	2560	24	0	1	53	0.150	0.312	22.57	23.50	1.239	0.386	/	
	LEVEL4	/			15	507000	2535	24	0	50	28	0.030	0.450	22.50	23.50	1.259	0.567	76	
Ant.1	LEVEL4	OFF	SA	Front Side	15	502000	2510	25	1	1	53	-0.120	0.205	23.78	24.00	1.052	0.216	/	
	LEVEL4	OFF			15	512000	2560	25	1	50	28	-0.050	0.275	23.85	24.00	1.035	0.285	/	
	LEVEL4	ON		Back Side	15	502000	2510	19	1	1	53	-0.150	0.165	19.78	20.00	1.052	0.174	/	
	LEVEL4	ON			15	502000	2510	19	1	50	56	-0.180	0.163	19.91	20.00	1.021	0.166	/	
Ant.4	LEVEL4	/	SA	Front Side	15	507000	2535	22.5	4	1	53	-0.010	0.068	21.85	22.50	1.161	0.079	/	
	LEVEL4	/			15	502000	2510	22.5	4	50	28	-0.030	0.072	21.91	22.50	1.146	0.082	/	
	LEVEL4	/		Back Side	15	507000	2535	22.5	4	1	53	-0.070	0.221	21.85	22.50	1.161	0.257	/	
	LEVEL4	/			15	502000	2510	22.5	4	50	28	0.020	0.204	21.91	22.50	1.146	0.234	/	
Ant.0	LEVEL4	/	SA	Back Side (Battery 2)	15	507000	2535	24	0	50	28	0.070	0.428	22.50	23.50	1.259	0.567	/	
Ant.0	LEVEL4	/	SA	Back Side (SIM 2)	15	507000	2535	24	0	50	28	0.060	0.437	22.50	23.50	1.259	0.550	/	
<b>Body-worn SAR(CP-OFDM QPSK- 15kHz)</b>																			
Ant.0	LEVEL5&6	/	SA	Back Side	15	502000	2510	24	0	1	1	-0.040	0.323	20.92	22.50	1.439	0.465	/	
<b>Hotspot SAR(DFT-s-OFDM BPSK- 15kHz)</b>																			



Ant.0	LEVEL5&6	/	SA	Front Side	10	512000	2560	24	0	1	53	-0.190	0.407	22.57	23.50	1.239	0.504	/
	LEVEL5&6	/			10	507000	2535	24	0	50	28	-0.080	0.418	22.50	23.50	1.259	0.526	/
	LEVEL5&6	/		Back Side	10	512000	2560	24	0	1	53	-0.130	0.534	22.57	23.50	1.239	0.662	/
	LEVEL5&6	/			10	507000	2535	24	0	50	28	0.160	0.632	22.50	23.50	1.259	0.796	77
	LEVEL5&6	/		Right Edge	10	512000	2560	24	0	1	53	-0.160	0.220	22.57	23.50	1.239	0.273	/
	LEVEL5&6	/			10	507000	2535	24	0	50	28	-0.070	0.259	22.50	23.50	1.259	0.326	/
	LEVEL5&6	/		Left Edge	10	512000	2560	24	0	1	53	0.100	0.041	22.57	23.50	1.239	0.051	/
	LEVEL5&6	/			10	507000	2535	24	0	50	28	-0.010	0.043	22.50	23.50	1.259	0.054	/
	LEVEL5&6	/		Bottom Edge	10	512000	2560	24	0	1	53	-0.040	0.235	22.57	23.50	1.239	0.291	/
	LEVEL5&6	/			10	507000	2535	24	0	50	28	0.050	0.216	22.50	23.50	1.259	0.272	/
Ant.1	LEVEL5&6	ON	SA	Front Side	10	502000	2510	19	1	1	53	-0.170	0.170	19.78	20.00	1.052	0.179	/
	LEVEL5&6	ON			10	502000	2510	19	1	50	56	-0.100	0.170	19.91	20.00	1.021	0.174	/
	LEVEL5&6	ON		Back Side	10	502000	2510	19	1	1	53	0.060	0.382	19.78	20.00	1.052	0.402	/
	LEVEL5&6	ON			10	502000	2510	19	1	50	56	0.160	0.394	19.91	20.00	1.021	0.402	/
	LEVEL5&6	ON		Left Edge	10	502000	2510	19	1	1	53	0.040	0.177	19.78	20.00	1.052	0.186	/
	LEVEL5&6	ON			10	502000	2510	19	1	50	56	-0.100	0.172	19.91	20.00	1.021	0.176	/
	LEVEL5&6	ON		Top Edge	10	502000	2510	19	1	1	53	-0.020	0.479	19.78	20.00	1.052	0.504	/
	LEVEL5&6	ON			10	502000	2510	19	1	50	56	0.110	0.501	19.91	20.00	1.021	0.511	/
Ant.4	LEVEL5&6	/	SA	Front Side	10	507000	2535	22.5	4	1	53	0.000	0.131	21.85	22.50	1.161	0.152	/
	LEVEL5&6	/			10	502000	2510	22.5	4	50	28	0.010	0.121	21.91	22.50	1.146	0.139	/
	LEVEL5&6	/		Back Side	10	507000	2535	22.5	4	1	53	-0.090	0.519	21.85	22.50	1.161	0.603	/
	LEVEL5&6	/			10	502000	2510	22.5	4	50	28	-0.050	0.454	21.91	22.50	1.146	0.520	/
	LEVEL5&6	/		Left Edge	10	507000	2535	22.5	4	1	53	0.130	0.234	21.85	22.50	1.161	0.272	/
	LEVEL5&6	/			10	502000	2510	22.5	4	50	28	-0.180	0.192	21.91	22.50	1.146	0.220	/
	LEVEL5&6	/		Top Edge	10	507000	2535	22.5	4	1	53	-0.180	0.079	21.85	22.50	1.161	0.092	/
	LEVEL5&6	/			10	502000	2510	22.5	4	50	28	-0.010	0.066	21.91	22.50	1.146	0.076	/
Ant.0	LEVEL5&6	/	SA	Back Side (Battery 2)	10	507000	2535	24	0	50	28	0.040	0.611	22.50	23.50	1.259	0.769	/
<b>Hotspot SAR(CP-OFDM QPSK- 15kHz)</b>																		
Ant.0	LEVEL5&6	/	SA	Back Side	10	502000	2510	24	0	1	1	0.024	0.546	20.92	22.50	1.439	0.786	/
<b>Additional SAR test at a conservative distance (triggering distance minus 1mm)</b>																		
Ant.1	OFF	/	SA	Front Side	10	502000	2510	25	1	1	53	-0.17	0.428	23.78	24.00	1.052	0.450	/
	OFF	/			10	512000	2560	25	1	50	28	0.02	0.524	23.85	24.00	1.035	0.542	/
	OFF	/		Back Side	16	502000	2510	25	1	1	53	-0.04	0.375	23.78	24.00	1.052	0.394	/
	OFF	/			16	512000	2560	25	1	50	28	-0.09	0.459	23.85	24.00	1.035	0.475	/
	OFF	/		Left Edge	9	502000	2510	25	1	1	53	-0.06	0.468	23.78	24.00	1.052	0.492	/
	OFF	/			9	512000	2560	25	1	50	28	0.09	0.531	23.85	24.00	1.035	0.550	/
	OFF	/		Top Edge	18	502000	2510	25	1	1	53	-0.05	0.471	23.78	24.00	1.052	0.495	/
	OFF	/			18	512000	2560	25	1	50	28	-0.10	0.521	23.85	24.00	1.035	0.539	/

Note: 1. The value with blue color is the maximum SAR Value of each test band.

2. Accessories that do not contain RF transmitters and have been proven to increase the peak SAR by less than 5 %, such as hands-free kits, do not need SAR tests





separate from the SAR tests attached to a main EUT configuration.

Measurement Variability				
Test Position	Channel/ Frequency(MHz)	MAX Measured SAR <sub>1g</sub> (W/kg)	1 <sup>st</sup> Repeated SAR <sub>1g</sub> (W/kg)	Ratio
Right Cheek	512000/2560	0.957	0.948	1.01

Note: 1) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).  
 2) A third repeated measurement was performed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

Table 25: 5G n38 (20MHz Bandwidth)

Antenna	Power Reduction	Distance Sensor	Information	Position	Dist. (mm)	Ch.	Frequency (MHz)	Power	TAS	VRB Length	VRB Start	Power Drift (dB)	Limit of SAR 1.6 W/kg (mW/g)					Plot No.
													1g Measured SAR (W/kg)	Measured Power (dBm)	Max. tune-power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)	
<b>Head SAR(DFT-s-OFDM BPSK-30kHz)</b>																		
Ant.0	LEVEL1&2&3	/	SA	Left Cheek	0	522000	2610	25	0	1	1	-0.100	0.139	22.68	24.00	1.355	0.188	/
	LEVEL1&2&3	/			0	519000	2595	25	0	25	25	-0.140	0.124	22.74	24.00	1.337	0.166	/
	LEVEL1&2&3	/		Left Tilt	0	522000	2610	25	0	1	1	0.150	0.086	22.68	24.00	1.355	0.117	/
	LEVEL1&2&3	/			0	519000	2595	25	0	25	25	-0.100	0.080	22.74	24.00	1.337	0.107	/
	LEVEL1&2&3	/		Right Cheek	0	522000	2610	25	0	1	1	0.080	0.227	22.68	24.00	1.355	0.308	/
	LEVEL1&2&3	/			0	519000	2595	25	0	25	25	0.160	0.215	22.74	24.00	1.337	0.287	/
	LEVEL1&2&3	/		Right Tilt	0	522000	2610	25	0	1	1	0.060	0.069	22.68	24.00	1.355	0.094	/
	LEVEL1&2&3	/			0	519000	2595	25	0	25	25	0.020	0.067	22.74	24.00	1.337	0.090	/
Ant.1	LEVEL1&2&3	/	SA	Left Cheek	0	519000	2595	16	1	1	49	0.060	0.273	16.96	17.50	1.132	0.309	/
	LEVEL1&2&3	/			0	516000	2580	16	1	25	12	-0.130	0.232	16.95	17.50	1.135	0.263	/
	LEVEL1&2&3	/		Left Tilt	0	519000	2595	16	1	1	49	0.040	0.308	16.96	17.50	1.132	0.349	/
	LEVEL1&2&3	/			0	516000	2580	16	1	25	12	-0.130	0.268	16.95	17.50	1.135	0.305	/
	LEVEL1&2&3	/		Right Cheek	0	519000	2595	16	1	1	49	-0.090	0.853	16.96	17.50	1.132	0.965	/
	LEVEL1&2&3	/			0	516000	2580	16	1	1	49	-0.030	0.835	16.96	17.50	1.132	0.946	/
	LEVEL1&2&3	/			0	522000	2610	16	1	1	49	0.010	0.829	16.86	17.50	1.159	0.961	/
	LEVEL1&2&3	/			0	516000	2580	16	1	25	12	-0.060	0.722	16.95	17.50	1.135	0.819	/
	LEVEL1&2&3	/			0	519000	2595	16	1	25	25	-0.180	0.715	16.91	17.50	1.146	0.819	/
	LEVEL1&2&3	/			0	522000	2610	16	1	25	25	-0.030	0.753	16.90	17.50	1.148	0.865	/
	LEVEL1&2&3	/		Right Tilt	0	522000	2610	16	1	50	0	-0.090	0.745	16.87	17.50	1.156	0.861	/
	LEVEL1&2&3	/			0	519000	2595	16	1	1	49	-0.110	0.765	16.96	17.50	1.132	0.866	/
	LEVEL1&2&3	/			0	516000	2580	16	1	1	49	0.056	0.784	16.96	17.50	1.132	0.888	/
	LEVEL1&2&3	/			0	522000	2610	16	1	1	49	0.020	0.749	16.86	17.50	1.159	0.868	/
	LEVEL1&2&3	/			0	516000	2580	16	1	25	12	-0.060	0.722	16.95	17.50	1.135	0.819	/
	LEVEL1&2&3	/			0	519000	2595	16	1	25	25	0.120	0.752	16.91	17.50	1.146	0.861	/



	LEVEL1&2&3	/			0	522000	2610	16	1	25	25	-0.120	0.714	16.90	17.50	1.148	0.820	/
	LEVEL1&2&3	/			0	522000	2610	16	1	50	0	-0.050	0.733	16.87	17.50	1.156	0.847	/
Ant.4	LEVEL1&2&3	/	SA	Left Cheek	0	522000	2610	23	4	1	49	0.190	0.435	22.69	23.00	1.074	0.467	/
	LEVEL1&2&3	/			0	519000	2595	23	4	25	25	0.140	0.420	22.65	23.00	1.084	0.455	/
	LEVEL1&2&3	/		Left Tilt	0	522000	2610	23	4	1	49	0.080	0.191	22.69	23.00	1.074	0.205	/
	LEVEL1&2&3	/			0	519000	2595	23	4	25	25	-0.120	0.204	22.65	23.00	1.084	0.221	/
	LEVEL1&2&3	/		Right Cheek	0	522000	2610	23	4	1	49	0.020	0.943	22.69	23.00	1.074	1.013	78
	LEVEL1&2&3	/			0	516000	2580	23	4	1	49	-0.130	0.902	22.44	23.00	1.138	1.026	/
	LEVEL1&2&3	/			0	519000	2595	23	4	1	49	0.100	0.915	22.62	23.00	1.091	0.999	/
	LEVEL1&2&3	/			0	519000	2595	23	4	25	25	0.130	0.900	22.65	23.00	1.084	0.976	/
	LEVEL1&2&3	/			0	516000	2580	23	4	25	25	-0.150	0.899	22.52	23.00	1.117	1.004	/
	LEVEL1&2&3	/			0	522000	2610	23	4	25	25	0.170	0.912	22.53	23.00	1.114	1.016	/
	LEVEL1&2&3	/		Right Tilt	0	522000	2610	23	4	50	0	-0.130	0.845	22.26	23.00	1.186	1.002	/
	LEVEL1&2&3	/			0	519000	2595	23	4	25	25	-0.150	0.293	22.65	23.00	1.084	0.318	/
	LEVEL1&2&3	/		Right Cheek (Repeated)	0	522000	2610	23	4	1	49	0.018	0.927	22.69	23.00	1.074	0.996	/
	Ant.4	LEVEL1&2&3		/	SA	Right Cheek (Battery 2)	0	516000	2580	23	4	1	49	0.040	0.889	22.44	23.00	1.138
<b>Head SAR(CP-OFDM QPSK- 30kHz)</b>																		
Ant.4	LEVEL1&2&3	/	SA	Right Cheek	0	522000	2610	23	4	1	1	0.039	0.624	20.89	22.50	1.449	0.904	/
<b>Body-worn SAR(DFT-s-OFDM BPSK-30kHz)</b>																		
Ant.0	LEVEL4	/	SA	Front Side	15	516000	2580	22.5	0	1	25	0.040	0.215	22.00	22.50	1.122	0.241	/
	LEVEL4	/			15	522000	2610	22.5	0	25	25	0.190	0.145	21.97	22.50	1.130	0.164	/
	LEVEL4	/		Back Side	15	516000	2580	22.5	0	1	25	-0.140	0.294	22.00	22.50	1.122	0.330	/
	LEVEL4	/			15	522000	2610	22.5	0	25	25	0.180	0.204	21.97	22.50	1.130	0.230	/
Ant.1	LEVEL4	OFF	SA	Front Side	15	522000	2610	25	1	1	25	0.061	0.488	23.69	24.00	1.074	0.524	79
	LEVEL4	OFF			15	516000	2580	25	1	25	25	0.018	0.369	23.99	24.00	1.002	0.370	/
	LEVEL4	ON		Back Side	15	522000	2610	19.5	1	1	49	0.080	0.199	20.49	21.00	1.125	0.224	/
	LEVEL4	ON			15	519000	2595	19.5	1	25	25	0.050	0.215	20.40	21.00	1.148	0.247	/
Ant.4	LEVEL4	/	SA	Front Side	15	522000	2610	21.5	4	1	49	-0.090	0.086	21.24	21.50	1.062	0.091	/
	LEVEL4	/			15	516000	2580	21.5	4	25	25	0.160	0.093	21.26	21.50	1.057	0.098	/
	LEVEL4	/		Back Side	15	522000	2610	21.5	4	1	49	0.010	0.303	21.24	21.50	1.062	0.322	/
	LEVEL4	/			15	516000	2580	21.5	4	25	25	-0.160	0.319	21.26	21.50	1.057	0.337	/
Ant.1	LEVEL4	OFF	SA	Front Side (Battery 2)	15	522000	2610	25	1	1	25	-0.040	0.465	23.69	24.00	1.074	0.499	/
<b>Body-worn SAR(CP-OFDM QPSK- 30kHz)</b>																		
Ant.1	LEVEL4	OFF	SA	Front Side	15	516000	2580	25	1	1	1	0.180	0.231	22.13	22.50	1.089	0.252	/



Hotspot SAR(DFT-s-OFDM BPSK-30kHz)

Ant.0	LEVEL5&6	/	SA	Front Side	10	516000	2580	22.5	0	1	25	-0.160	0.415	22.00	22.50	1.122	0.466	/
	LEVEL5&6	/			10	522000	2610	22.5	0	25	25	0.050	0.278	21.97	22.50	1.130	0.314	/
	LEVEL5&6	/		Back Side	10	516000	2580	22.5	0	1	25	-0.050	0.517	22.00	22.50	1.122	0.580	/
	LEVEL5&6	/			10	522000	2610	22.5	0	25	25	-0.150	0.368	21.97	22.50	1.130	0.416	/
	LEVEL5&6	/		Right Edge	10	516000	2580	22.5	0	1	25	0.170	0.319	22.00	22.50	1.122	0.358	/
	LEVEL5&6	/			10	522000	2610	22.5	0	25	25	-0.140	0.227	21.97	22.50	1.130	0.256	/
	LEVEL5&6	/		Left Edge	10	516000	2580	22.5	0	1	25	0.180	0.000	22.00	22.50	1.122	0.000	/
	LEVEL5&6	/			10	522000	2610	22.5	0	25	25	0.060	0.000	21.97	22.50	1.130	0.000	/
	LEVEL5&6	/		Bottom Edge	10	516000	2580	22.5	0	1	25	-0.190	0.280	22.00	22.50	1.122	0.314	/
	LEVEL5&6	/			10	522000	2610	22.5	0	25	25	0.040	0.321	21.97	22.50	1.130	0.363	/
Ant.1	LEVEL5&6	ON	SA	Front Side	10	522000	2610	19.5	1	1	49	-0.070	0.309	20.49	21.00	1.125	0.348	/
	LEVEL5&6	ON			10	519000	2595	19.5	1	25	25	0.180	0.285	20.40	21.00	1.148	0.327	/
	LEVEL5&6	ON		Back Side	10	522000	2610	19.5	1	1	49	-0.090	0.512	20.49	21.00	1.125	0.576	/
	LEVEL5&6	ON			10	519000	2595	19.5	1	25	25	0.150	0.509	20.40	21.00	1.148	0.584	/
	LEVEL5&6	ON		Left Edge	10	522000	2610	19.5	1	1	49	0.020	0.306	20.49	21.00	1.125	0.344	/
	LEVEL5&6	ON			10	519000	2595	19.5	1	25	25	0.040	0.292	20.40	21.00	1.148	0.335	/
	LEVEL5&6	ON		Top Edge	10	522000	2610	19.5	1	1	49	0.040	0.488	20.49	21.00	1.125	0.549	/
	LEVEL5&6	ON			10	519000	2595	19.5	1	25	25	-0.180	0.397	20.40	21.00	1.148	0.456	/
Ant.4	LEVEL5&6	/	SA	Front Side	10	522000	2610	21.5	4	1	49	-0.010	0.200	21.24	21.50	1.062	0.212	/
	LEVEL5&6	/			10	516000	2580	21.5	4	25	25	0.050	0.220	21.26	21.50	1.057	0.233	/
	LEVEL5&6	/		Back Side	10	522000	2610	21.5	4	1	49	-0.070	0.798	21.24	21.50	1.062	0.847	/
	LEVEL5&6	/			10	516000	2580	21.5	4	1	49	0.130	0.771	21.11	21.50	1.094	0.843	/
	LEVEL5&6	/			10	519000	2595	21.5	4	1	49	-0.140	0.766	21.17	21.50	1.079	0.826	/
	LEVEL5&6	/			10	516000	2580	21.5	4	25	25	0.110	0.928	21.26	21.50	1.057	0.981	80
	LEVEL5&6	/			10	519000	2595	21.5	4	25	25	-0.070	0.823	21.23	21.50	1.064	0.876	/
	LEVEL5&6	/			10	522000	2610	21.5	4	25	12	0.090	0.811	21.20	21.50	1.072	0.869	/
	LEVEL5&6	/			10	522000	2610	21.5	4	50	0	0.060	0.802	21.42	21.50	1.019	0.817	/
	LEVEL5&6	/			Left Edge	10	522000	2610	21.5	4	1	49	0.050	0.466	21.24	21.50	1.062	0.495
	LEVEL5&6	/		10		516000	2580	21.5	4	25	25	-0.060	0.508	21.26	21.50	1.057	0.537	/
	LEVEL5&6	/		Top Edge	10	522000	2610	21.5	4	1	49	0.160	0.075	21.24	21.50	1.062	0.080	/
	LEVEL5&6	/			10	516000	2580	21.5	4	25	25	-0.060	0.096	21.26	21.50	1.057	0.102	/
	LEVEL5&6	/		Back Side (Repeated)	10	516000	2580	21.5	4	25	25	0.025	0.915	21.26	21.50	1.057	0.967	/
	Ant.4	LEVEL5&6		/	SA	Back Side (Battery 2)	10	516000	2580	21.5	4	25	25	0.040	0.845	21.26	21.50	1.084
Ant.4	LEVEL5&6	/	SA	Back Side (SIM 2)	10	516000	2580	21.5	4	25	25	-0.010	0.872	21.26	21.50	1.057	0.922	/

Hotspot SAR(CP-OFDM QPSK- 30kHz)

Ant.4	LEVEL5&6	/	SA	Back Side	10	522000	2610	21.5	4	1	1	0.160	0.736	20.42	21.50	1.282	0.944	/
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Additional SAR test at a conservative distance (triggering distance minus 1mm)



Ant.1	OFF	/	SA	Front Side	10	522000	2610	25	1	1	25	0.12	0.697	23.69	24.00	1.074	0.749	/
	OFF	/			10	516000	2580	25	1	25	25	0.05	0.453	23.99	24.00	1.002	0.454	/
	OFF	/		Back Side	16	522000	2610	25	1	1	25	-0.14	0.452	23.69	24.00	1.074	0.485	/
	OFF	/			16	516000	2580	25	1	25	25	-0.19	0.340	23.99	24.00	1.002	0.341	/
	OFF	/		Left Edge	9	522000	2610	25	1	1	25	0.01	0.651	23.69	24.00	1.074	0.699	/
	OFF	/			9	516000	2580	25	1	25	25	0.19	0.441	23.99	24.00	1.002	0.442	/
	OFF	/		Top Edge	18	522000	2610	25	1	1	25	-0.10	0.457	23.69	24.00	1.074	0.491	/
	OFF	/			18	516000	2580	25	1	25	25	-0.15	0.370	23.99	24.00	1.002	0.371	/

Note: 1. The value with blue color is the maximum SAR Value of each test band.

2. Accessories that do not contain RF transmitters and have been proven to increase the peak SAR by less than 5 %, such as hands-free kits, do not need SAR tests separate from the SAR tests attached to a main EUT configuration.

Measurement Variability				
Test Position	Channel/ Frequency(MHz)	MAX Measured SAR <sub>1g</sub> (W/kg)	1 <sup>st</sup> Repeated SAR <sub>1g</sub> (W/kg)	Ratio
Right Cheek	522000/2610	0.943	0.927	1.02
Back Side	516000/2580	0.928	0.915	1.01

Note: 1) A second repeated measurement was performed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).  
 2) A third repeated measurement was performed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

Table 26: 5G n41 (100MHz Bandwidth)

Antenna	Power Reduction	Distance Sensor	Information	Position	Dist. (mm)	Ch.	Frequency (MHz)	Power	TAS	VRB Length	VRB Start	Power Drift (dB)	Limit of SAR 1.6 W/kg (mW/g)					Plot No.
													1g Measured SAR (W/kg)	Measured Power (dBm)	Max. tune-power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)	
<b>Head SAR (DFT-s-OFDM BPSK- 30kHz)</b>																		
Ant.0	LEVEL1&2&3	/	SA	Left Cheek	0	528000	2640	25	0	1	271	-0.10	0.065	22.47	23.50	1.268	0.082	/
	LEVEL1&2&3	/			0	528000	2640	25	0	135	138	-0.04	0.067	22.47	23.50	1.268	0.085	/
	LEVEL1&2&3	/		Left Tilt	0	528000	2640	25	0	1	271	-0.15	0.048	22.47	23.50	1.268	0.061	/
	LEVEL1&2&3	/			0	528000	2640	25	0	135	138	-0.14	0.050	22.47	23.50	1.268	0.063	/
	LEVEL1&2&3	/		Right Cheek	0	528000	2640	25	0	1	271	0.15	0.108	22.47	23.50	1.268	0.137	/
	LEVEL1&2&3	/			0	528000	2640	25	0	135	138	0.05	0.119	22.47	23.50	1.268	0.151	/
	LEVEL1&2&3	/		Right Tilt	0	528000	2640	25	0	1	271	-0.18	0.032	22.47	23.50	1.268	0.041	/
	LEVEL1&2&3	/			0	528000	2640	25	0	135	138	0.09	0.031	22.47	23.50	1.268	0.039	/
Ant.1	LEVEL1	/	SA	Left Cheek	0	528000	2640	14.5	1	1	137	0.04	0.232	15.47	16.00	1.130	0.263	/
	LEVEL1	/			0	528000	2640	14.5	1	135	138	-0.15	0.182	15.34	16.00	1.164	0.212	/
	LEVEL1	/		Left Tilt	0	528000	2640	14.5	1	1	137	0.15	0.231	15.47	16.00	1.130	0.261	/
	LEVEL1	/			0	528000	2640	14.5	1	135	138	0.13	0.170	15.34	16.00	1.164	0.198	/
	LEVEL1	/		Right	0	528000	2640	14.5	1	1	137	-0.09	0.678	15.47	16.00	1.130	0.766	81



	LEVEL1	/		Cheek	0	528000	2640	14.5	1	135	138	0.00	0.543	15.34	16.00	1.164	0.632	/	
	LEVEL1	/			Right Tilt	0	528000	2640	14.5	1	1	137	-0.02	0.671	15.47	16.00	1.130	0.759	/
	LEVEL1	/				0	528000	2640	14.5	1	135	138	-0.11	0.489	15.34	16.00	1.164	0.569	/
Ant.1	LEVEL2&3	/	SA	Left Cheek	0	518598	2592.99	12.5	1	1	1	0.05	0.071	12.63	14.00	1.371	0.097	/	
	LEVEL2&3	/			0	509202	2546.01	12.5	1	135	0	0.12	0.070	12.62	14.00	1.374	0.096	/	
	LEVEL2&3	/		Left Tilt	0	518598	2592.99	12.5	1	1	1	0.16	0.086	12.63	14.00	1.371	0.118	/	
	LEVEL2&3	/			0	509202	2546.01	12.5	1	135	0	-0.11	0.094	12.62	14.00	1.374	0.129	/	
	LEVEL2&3	/		Right	0	518598	2592.99	12.5	1	1	1	-0.14	0.211	12.63	14.00	1.371	0.289	/	
	LEVEL2&3	/			0	509202	2546.01	12.5	1	135	0	0.16	0.217	12.62	14.00	1.374	0.298	/	
	LEVEL2&3	/		Right Tilt	0	518598	2592.99	12.5	1	1	1	0.00	0.244	12.63	14.00	1.371	0.334	/	
	LEVEL2&3	/			0	509202	2546.01	12.5	1	135	0	-0.11	0.242	12.62	14.00	1.374	0.333	/	
Ant.4	LEVEL1	/	SA	Left Cheek	0	528000	2640	21	4	1	137	0.06	0.239	20.70	21.00	1.072	0.256	/	
	LEVEL1	/			0	528000	2640	21	4	135	69	-0.15	0.231	20.72	21.00	1.067	0.246	/	
	LEVEL1	/		Left Tilt	0	528000	2640	21	4	1	137	0.16	0.096	20.70	21.00	1.072	0.103	/	
	LEVEL1	/			0	528000	2640	21	4	135	69	-0.18	0.094	20.72	21.00	1.067	0.100	/	
	LEVEL1	/		Right	0	528000	2640	21	4	1	137	0.02	0.487	20.70	21.00	1.072	0.522	/	
	LEVEL1	/			0	528000	2640	21	4	135	69	-0.04	0.492	20.72	21.00	1.067	0.525	/	
	LEVEL1	/		Right Tilt	0	528000	2640	21	4	1	137	0.12	0.135	20.70	21.00	1.072	0.145	/	
	LEVEL1	/			0	528000	2640	21	4	135	69	-0.19	0.140	20.72	21.00	1.067	0.149	/	
Ant.4	LEVEL2&3	/	SA	Left Cheek	0	528000	2640	19.5	4	1	137	0.07	0.165	19.20	19.50	1.072	0.177	/	
	LEVEL2&3	/			0	509202	2546.01	19.5	4	135	69	0.07	0.178	19.16	19.50	1.081	0.192	/	
	LEVEL2&3	/		Left Tilt	0	528000	2640	19.5	4	1	137	0.11	0.066	19.20	19.50	1.072	0.071	/	
	LEVEL2&3	/			0	509202	2546.01	19.5	4	135	69	-0.10	0.089	19.16	19.50	1.081	0.096	/	
	LEVEL2&3	/		Right	0	528000	2640	19.5	4	1	137	0.05	0.337	19.20	19.50	1.072	0.361	/	
	LEVEL2&3	/			0	509202	2546.01	19.5	4	135	69	-0.11	0.357	19.16	19.50	1.081	0.386	/	
	LEVEL2&3	/		Right Tilt	0	528000	2640	19.5	4	1	137	0.06	0.092	19.20	19.50	1.072	0.099	/	
	LEVEL2&3	/			0	509202	2546.01	19.5	4	135	69	-0.01	0.143	19.16	19.50	1.081	0.155	/	
Ant.1	LEVEL1	/	SA	Right Cheek (Battery 2)	0	528000	2640	14.5	1	1	137	-0.040	0.653	15.47	16.00	1.130	0.738	/	
<b>Head SAR(CP-OFDM QPSK- 30kHz)</b>																			
Ant.1	LEVEL1	/	SA	Right Cheek	0	528000	2640	14.5	1	1	1	0.032	0.494	14.68	16.00	1.355	0.669	/	
<b>Body-worn SAR (DFT-s-OFDM BPSK- 30kHz)</b>																			
Ant.0	LEVEL4	/	SA	Front Side	15	528000	2640	22	0	1	137	-0.08	0.115	21.57	22.00	1.104	0.127	/	
	LEVEL4	/			15	509202	2546.01	22	0	135	69	0.17	0.236	21.63	22.00	1.089	0.257	/	
	LEVEL4	/		Back Side	15	528000	2640	22	0	1	137	0.04	0.147	21.57	22.00	1.104	0.162	/	
	LEVEL4	/			15	509202	2546.01	22	0	135	69	0.010	0.298	21.63	22.00	1.089	0.325	82	
Ant.1	LEVEL4	OFF	SA	Front Side	15	518598	2592.99	25	1	1	137	-0.02	0.276	23.96	24.00	1.009	0.279	/	
	LEVEL4	OFF			15	528000	2640	25	1	135	69	-0.19	0.275	23.97	24.00	1.007	0.277	/	



	LEVEL4	ON		Back Side	15	518598	2592.99	20	1	1	137	-0.06	0.194	20.93	21.50	1.140	0.222	/
	LEVEL4	ON			15	528000	2640	20	1	135	138	0.19	0.166	20.93	21.50	1.140	0.189	/
Ant.4	LEVEL4	/	SA	Front Side	15	528000	2640	21	4	1	137	-0.17	0.065	20.70	21.00	1.072	0.070	/
	LEVEL4	/			15	528000	2640	21	4	135	69	-0.05	0.064	20.72	21.00	1.067	0.068	/
	LEVEL4	/		Back Side	15	528000	2640	21	4	1	137	-0.12	0.221	20.70	21.00	1.072	0.237	/
	LEVEL4	/			15	528000	2640	21	4	135	69	-0.16	0.209	20.72	21.00	1.067	0.223	/
Ant.0	LEVEL4	/	SA	Back Side (Battery 2)	15	509202	2546.01	22	0	135	69	0.020	0.288	21.63	22.00	1.089	0.314	/
<b>Body-worn SAR(CP-OFDM QPSK- 30kHz)</b>																		
Ant.0	LEVEL4	/	SA	Back Side	15	509202	2546.01	22	0	1	1	0.190	0.275	20.52	22.00	1.406	0.387	/
<b>Hotspot SAR (DFT-s-OFDM BPSK- 30kHz)</b>																		
Ant.0	LEVEL5&6	/	SA	Front Side	10	528000	2640	22	0	1	137	-0.02	0.140	21.57	22.00	1.104	0.155	/
	LEVEL5&6	/			10	509202	2546.01	22	0	135	69	0.14	0.162	21.63	22.00	1.089	0.176	/
	LEVEL5&6	/		Back Side	10	528000	2640	22	0	1	137	0.011	0.562	21.57	22.00	1.104	0.620	/
	LEVEL5&6	/			10	509202	2546.01	22	0	135	69	0.042	0.734	21.63	22.00	1.089	0.799	83
	LEVEL5&6	/		Right Edge	10	528000	2640	22	0	1	137	-0.064	0.381	21.57	22.00	1.104	0.421	/
	LEVEL5&6	/			10	509202	2546.01	22	0	135	69	0.035	0.439	21.63	22.00	1.089	0.478	/
	LEVEL5&6	/		Left Edge	10	528000	2640	22	0	1	137	0.11	0.029	21.57	22.00	1.104	0.032	/
	LEVEL5&6	/			10	509202	2546.01	22	0	135	69	-0.15	0.031	21.63	22.00	1.089	0.034	/
	LEVEL5&6	/		Bottom Edge	10	528000	2640	22	0	1	137	-0.09	0.171	21.57	22.00	1.104	0.189	/
	LEVEL5&6	/			10	509202	2546.01	22	0	135	69	0.04	0.199	21.63	22.00	1.089	0.216	/
Ant.1	LEVEL5&6	ON	SA	Front Side	10	518598	2592.99	20	1	1	137	0.10	0.308	20.93	21.50	1.140	0.351	/
	LEVEL5&6	ON			10	528000	2640	20	1	135	138	-0.19	0.326	20.93	21.50	1.140	0.372	/
	LEVEL5&6	ON		Back Side	10	518598	2592.99	20	1	1	137	-0.06	0.359	20.93	21.50	1.140	0.409	/
	LEVEL5&6	ON			10	528000	2640	20	1	135	138	0.04	0.377	20.93	21.50	1.140	0.430	/
	LEVEL5&6	ON		Left Edge	10	518598	2592.99	20	1	1	137	-0.15	0.335	20.93	21.50	1.140	0.382	/
	LEVEL5&6	ON			10	528000	2640	20	1	135	138	-0.13	0.332	20.93	21.50	1.140	0.379	/
	LEVEL5&6	ON		Top Edge	10	518598	2592.99	20	1	1	137	-0.02	0.374	20.93	21.50	1.140	0.426	/
	LEVEL5&6	ON			10	528000	2640	20	1	135	138	0.07	0.381	20.93	21.50	1.140	0.434	/
Ant.4	LEVEL5&6	/	SA	Front Side	10	528000	2640	21	4	1	137	0.10	0.113	20.70	21.00	1.072	0.121	/
	LEVEL5&6	/			10	528000	2640	21	4	135	69	-0.15	0.117	20.72	21.00	1.067	0.125	/
	LEVEL5&6	/		Back Side	10	528000	2640	21	4	1	137	0.050	0.641	20.70	21.00	1.072	0.687	/
	LEVEL5&6	/			10	528000	2640	21	4	135	69	0.050	0.700	20.72	21.00	1.067	0.747	/
	LEVEL5&6	/		Left Edge	10	528000	2640	21	4	1	137	-0.120	0.485	20.70	21.00	1.072	0.520	/
	LEVEL5&6	/			10	528000	2640	21	4	135	69	-0.120	0.426	20.72	21.00	1.067	0.454	/
	LEVEL5&6	/		Top Edge	10	528000	2640	21	4	1	137	-0.02	0.039	20.70	21.00	1.072	0.042	/
	LEVEL5&6	/			10	528000	2640	21	4	135	69	-0.05	0.042	20.72	21.00	1.067	0.045	/
Ant.0	LEVEL5&6	/	SA	Back Side (Battery 2)	10	509202	2546.01	22	0	135	69	0.050	0.720	21.63	22.00	1.089	0.784	/
<b>Hotspot SAR(CP-OFDM QPSK- 30kHz)</b>																		



Ant.0	LEVEL5&6	/	SA	Back Side	10	509202	2546.01	22	0	1	1	0.039	0.548	20.52	22.00	1.406	0.771	/
<b>Additional SAR test at a conservative distance (triggering distance minus 1mm)</b>																		
Ant.1	OFF	/	SA	Front Side	10	518598	2592.99	25	1	1	137	0.15	0.565	23.96	24.00	1.009	0.570	/
	OFF	/			10	528000	2640	25	1	135	69	0.130	0.890	23.97	24.00	1.007	0.896	/
	OFF	/		Back Side	16	518598	2592.99	25	1	1	137	-0.02	0.419	23.96	24.00	1.009	0.423	/
	OFF	/			16	528000	2640	25	1	135	69	-0.05	0.436	23.97	24.00	1.007	0.439	/
	OFF	/		Left Edge	9	518598	2592.99	25	1	1	137	0.13	0.545	23.96	24.00	1.009	0.550	/
	OFF	/			9	528000	2640	25	1	135	69	0.05	0.737	23.97	24.00	1.007	0.742	/
	OFF	/		Top Edge	18	518598	2592.99	25	1	1	137	0.12	0.425	23.96	24.00	1.009	0.429	/
	OFF	/			18	528000	2640	25	1	135	69	0.14	0.394	23.97	24.00	1.007	0.397	/
	OFF	/		Front Side (repeated)	10	528000	2640	25	1	135	69	-0.020	0.882	23.97	24.00	1.007	0.888	/
Note: 1.The value with blue color is the maximum SAR Value of each test band.																		

Measurement Variability				
Test Position	Channel/ Frequency(MHz)	MAX Measured SAR <sub>1g</sub> (W/kg)	1 <sup>st</sup> Repeated SAR <sub>1g</sub> (W/kg)	Ratio
Front Side	528000/2640	0.890	0.882	1.01

Note: 1) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).  
 2) A third repeated measurement was performed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

Table 27: 5G n66 (20MHz Bandwidth)

Antenna	Power Reduction	Distance Sensor	Information	Position	Dist. (mm)	Ch.	Frequency (MHz)	Power	TAS	VRB Length	VRB Start	Power Drift (dB)	Limit of SAR 1.6 W/kg (mW/g)					Plot No.
													1g Measured SAR (W/kg)	Measured Power (dBm)	Max. tune-power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)	
<b>Head SAR (DFT-s-OFDM BPSK- 15kHz)</b>																		
Ant.0	LEVEL1&2&3	/	SA& ENDC	Left Cheek	0	344000	1720	25	0	1	104	0.150	0.083	22.99	24.00	1.262	0.105	/
	LEVEL1&2&3	/			0	344000	1720	25	0	50	28	-0.150	0.088	23.06	24.00	1.242	0.109	/
	LEVEL1&2&3	/		Left Tilt	0	344000	1720	25	0	1	104	-0.130	0.045	22.99	24.00	1.262	0.057	/
	LEVEL1&2&3	/			0	344000	1720	25	0	50	28	-0.180	0.046	23.06	24.00	1.242	0.057	/
	LEVEL1&2&3	/		Right Cheek	0	344000	1720	25	0	1	104	0.010	0.072	22.99	24.00	1.262	0.091	/
	LEVEL1&2&3	/			0	344000	1720	25	0	50	28	-0.070	0.074	23.06	24.00	1.242	0.092	/
	LEVEL1&2&3	/		Right Tilt	0	344000	1720	25	0	1	104	-0.070	0.072	22.99	24.00	1.262	0.091	/
	LEVEL1&2&3	/			0	344000	1720	25	0	50	28	-0.080	0.072	23.06	24.00	1.242	0.089	/
Ant.1	LEVEL1	/	SA	Left Cheek	0	354000	1770	17	1	1	53	0.160	0.692	16.42	17.00	1.143	0.791	/
	LEVEL1	/			0	354000	1770	17	1	50	0	-0.120	0.722	16.55	17.00	1.109	0.801	/
	LEVEL1	/			0	344000	1720	17	1	50	28	-0.060	0.715	16.43	17.00	1.140	0.815	/



	LEVEL1	/				0	349000	1745	17	1	50	0	-0.120	0.711	16.36	17.00	1.159	0.824	/			
	LEVEL1	/				0	354000	1770	17	1	100	0	0.160	0.715	16.42	17.00	1.143	0.817	/			
	LEVEL1	/				Left Tilt	0	354000	1770	17	1	1	53	0.000	0.819	16.42	17.00	1.143	0.936	/		
	LEVEL1	/					0	344000	1720	17	1	1	53	-0.160	0.805	16.37	17.00	1.156	0.931	/		
	LEVEL1	/					0	349000	1745	17	1	1	53	0.040	0.803	16.31	17.00	1.172	0.941	/		
	LEVEL1	/					0	354000	1770	17	1	50	0	0.000	0.868	16.55	17.00	1.109	0.963	/		
	LEVEL1	/					0	344000	1720	17	1	50	28	-0.090	0.857	16.43	17.00	1.140	0.977	/		
	LEVEL1	/					0	349000	1745	17	1	50	0	-0.090	0.849	16.36	17.00	1.159	0.984	/		
	LEVEL1	/					0	354000	1770	17	1	100	0	-0.040	0.834	16.42	17.00	1.143	0.953	/		
	LEVEL1	/					Right Cheek	0	354000	1770	17	1	1	53	-0.120	1.000	16.42	17.00	1.143	1.143	/	
	LEVEL1	/						0	344000	1720	17	1	1	53	0.080	1.020	16.37	17.00	1.156	1.179	/	
	LEVEL1	/						0	349000	1745	17	1	1	53	0.010	1.020	16.31	17.00	1.172	1.196	/	
	LEVEL1	/				0		354000	1770	17	1	50	0	-0.100	1.040	16.55	17.00	1.109	1.154	/		
	LEVEL1	/				0		344000	1720	17	1	50	28	0.140	1.030	16.43	17.00	1.140	1.174	/		
	LEVEL1	/				0		349000	1745	17	1	50	0	0.120	1.010	16.36	17.00	1.159	1.170	/		
	LEVEL1	/				0		354000	1770	17	1	100	0	-0.170	1.010	16.42	17.00	1.143	1.154	/		
	LEVEL1	/				Right Tilt		0	354000	1770	17	1	1	53	0.110	1.020	16.42	17.00	1.143	1.166	/	
	LEVEL1	/					0	344000	1720	17	1	1	53	-0.070	1.030	16.37	17.00	1.156	1.191	/		
	LEVEL1	/					0	349000	1745	17	1	1	53	0.120	1.010	16.31	17.00	1.172	1.184	/		
	LEVEL1	/					0	354000	1770	17	1	50	0	-0.110	1.080	16.55	17.00	1.109	1.198	84		
	LEVEL1	/					0	344000	1720	17	1	50	28	-0.120	1.030	16.43	17.00	1.140	1.174	/		
	LEVEL1	/					0	349000	1745	17	1	50	0	0.080	0.998	16.36	17.00	1.159	1.156	/		
	LEVEL1	/					0	354000	1770	17	1	100	0	0.080	0.978	16.42	17.00	1.143	1.118	/		
	LEVEL1	/					Right Tilt (Repeated)	0	354000	1770	17	1	50	0	-0.050	1.050	16.55	17.00	1.109	1.165	/	
	Ant.1	LEVEL2&3				/	SA	Left Cheek	0	349000	1745	15.5	1	1	104	0.010	0.480	15.11	15.50	1.094	0.525	/
		LEVEL2&3				/			0	354000	1770	15.5	1	50	56	-0.020	0.465	14.91	15.50	1.146	0.533	/
		LEVEL2&3				/		Left Tilt	0	349000	1745	15.5	1	1	104	0.190	0.553	15.11	15.50	1.094	0.605	/
		LEVEL2&3				/			0	354000	1770	15.5	1	50	56	0.140	0.573	14.91	15.50	1.146	0.656	/
		LEVEL2&3				/		Right Cheek	0	349000	1745	15.5	1	1	104	0.000	0.690	15.11	15.50	1.094	0.755	/
		LEVEL2&3				/			0	354000	1770	15.5	1	50	56	-0.110	0.713	14.91	15.50	1.146	0.817	/
		LEVEL2&3				/			0	344000	1720	15.5	1	50	28	-0.050	0.689	14.90	15.50	1.148	0.791	/
		LEVEL2&3				/			0	349000	1745	15.5	1	50	0	-0.010	0.679	14.85	15.50	1.161	0.789	/
LEVEL2&3		/	0	349000	1745	15.5			1	100	0	0.130	0.688	15.07	15.50	1.104	0.760	/				
LEVEL2&3		/	Right Tilt	0	349000	1745			15.5	1	1	104	-0.012	0.659	15.11	15.50	1.094	0.721	/			
LEVEL2&3		/		0	344000	1720		15.5	1	1	104	0.041	0.627	14.97	15.50	1.130	0.708	/				
LEVEL2&3		/		0	354000	1770		15.5	1	1	53	0.032	0.651	15.02	15.50	1.117	0.727	/				
LEVEL2&3		/		0	354000	1770		15.5	1	50	56	0.030	0.697	14.91	15.50	1.146	0.798	/				
LEVEL2&3		/		0	344000	1720		15.5	1	50	28	0.018	0.682	14.90	15.50	1.148	0.783	/				
LEVEL2&3		/		0	349000	1745		15.5	1	50	0	-0.010	0.689	14.85	15.50	1.161	0.800	/				





	LEVEL2&3	/			0	349000	1745	15.5	1	100	0	-0.054	0.642	15.07	15.50	1.104	0.709	/	
Ant.1	LEVEL1	/	ENDC	Left Cheek	0	349000	1745	15	1	1	1	0.190	0.402	14.48	15.00	1.127	0.453	/	
	LEVEL1	/			0	344000	1720	15	1	50	0	0.020	0.339	14.42	15.00	1.143	0.387	/	
	LEVEL1	/		Left Tilt	0	349000	1745	15	1	1	1	-0.080	0.483	14.48	15.00	1.127	0.544	/	
	LEVEL1	/			0	344000	1720	15	1	50	0	0.140	0.423	14.42	15.00	1.143	0.483	/	
	LEVEL1	/		Right Cheek	0	349000	1745	15	1	1	1	0.150	0.561	14.48	15.00	1.127	0.632	/	
	LEVEL1	/			0	344000	1720	15	1	50	0	0.140	0.466	14.42	15.00	1.143	0.533	/	
	LEVEL1	/		Right Tilt	0	349000	1745	15	1	1	1	-0.050	0.690	14.48	15.00	1.127	0.778	/	
	LEVEL1	/			0	344000	1720	15	1	50	0	-0.040	0.587	14.42	15.00	1.143	0.671	/	
Ant.1	LEVEL2&3	/	ENDC	Left Cheek	0	349000	1745	13.5	1	1	1	-0.040	0.286	12.97	13.50	1.130	0.323	/	
	LEVEL2&3	/			0	344000	1720	13.5	1	50	0	-0.160	0.242	12.88	13.50	1.153	0.279	/	
	LEVEL2&3	/		Left Tilt	0	349000	1745	13.5	1	1	1	0.160	0.358	12.97	13.50	1.130	0.404	/	
	LEVEL2&3	/			0	344000	1720	13.5	1	50	0	-0.160	0.300	12.88	13.50	1.153	0.346	/	
	LEVEL2&3	/		Right Cheek	0	349000	1745	13.5	1	1	1	0.090	0.399	12.97	13.50	1.130	0.451	/	
	LEVEL2&3	/			0	344000	1720	13.5	1	50	0	-0.070	0.335	12.88	13.50	1.153	0.386	/	
	LEVEL2&3	/		Right Tilt	0	349000	1745	13.5	1	1	1	0.190	0.487	12.97	13.50	1.130	0.550	/	
	LEVEL2&3	/			0	344000	1720	13.5	1	50	0	-0.130	0.403	12.88	13.50	1.153	0.465	/	
Ant.4	LEVEL1&2&3	/	ENDC	Left Cheek	0	344000	1720	25	4	1	104	-0.180	0.000	22.41	23.50	1.285	0.000	/	
	LEVEL1&2&3	/			0	354000	1770	25	4	50	28	0.010	0.000	22.37	23.50	1.297	0.000	/	
	LEVEL1&2&3	/		Left Tilt	0	344000	1720	25	4	1	104	-0.190	0.000	22.41	23.50	1.285	0.000	/	
	LEVEL1&2&3	/			0	354000	1770	25	4	50	28	0.050	0.000	22.37	23.50	1.297	0.000	/	
	LEVEL1&2&3	/		Right Cheek	0	344000	1720	25	4	1	104	-0.060	0.000	22.41	23.50	1.285	0.000	/	
	LEVEL1&2&3	/			0	354000	1770	25	4	50	28	0.080	0.000	22.37	23.50	1.297	0.000	/	
	LEVEL1&2&3	/		Right Tilt	0	344000	1720	25	4	1	104	0.140	0.000	22.41	23.50	1.285	0.000	/	
	LEVEL1&2&3	/			0	354000	1770	25	4	50	28	0.040	0.000	22.37	23.50	1.297	0.000	/	
Ant.1	LEVEL1	/	SA	Right Tilt (Battery 2)	0	354000	1770	17	1	50	0	-0.020	1.040	16.55	17.00	1.109	1.154	/	
Ant.1	LEVEL1	/	SA	Right Tilt (SIM 2)	0	354000	1770	17	1	50	0	0.030	1.020	16.55	17.00	1.109	1.131	/	
<b>Head SAR (CP-OFDM QPSK- 15kHz)</b>																			
Ant.1	LEVEL1	/	SA	Right Tilt	0	344000	1720	17	1	1	1	-0.036	0.771	16.38	17.00	1.153	0.889	/	
<b>Body-worn SAR (DFT-s-OFDM BPSK- 15kHz)</b>																			
Ant.0	LEVEL4	/	SA	Front Side	15	344000	1720	22.5	0	1	53	0.150	0.123	22.54	23.00	1.112	0.137	/	
	LEVEL4	/			15	354000	1770	22.5	0	50	0	0.130	0.144	22.62	23.00	1.091	0.157	/	
	LEVEL4	/		Back Side	15	344000	1720	22.5	0	1	53	0.010	0.135	22.54	23.00	1.112	0.150	/	
	LEVEL4	/			15	354000	1770	22.5	0	50	0	-0.050	0.205	22.62	23.00	1.091	0.224	/	
Ant.0	LEVEL4	/	ENDC	Front Side	15	344000	1720	19.5	0	1	104	0.02	0.066	19.64	20.00	1.086	0.072	/	
	LEVEL4	/			15	349000	1745	19.5	0	50	28	-0.15	0.075	19.62	20.00	1.091	0.082	/	
	LEVEL4	/		Back Side	15	344000	1720	19.5	0	1	104	0.01	0.069	19.64	20.00	1.086	0.075	/	
	LEVEL4	/			15	354000	1770	19.5	0	50	28	0.07	0.104	19.62	20.00	1.091	0.114	/	
Ant.1	LEVEL4	OFF	SA	Front Side	15	354000	1770	25	1	1	53	0.152	0.340	22.31	23.50	1.315	0.447	85	



	LEVEL4	OFF		Back Side	15	349000	1745	25	1	50	28	0.120	0.278	22.23	23.50	1.340	0.372	/
	LEVEL4	ON			15	344000	1720	21	1	1	53	-0.190	0.234	20.44	21.00	1.138	0.266	/
	LEVEL4	ON			15	344000	1720	21	1	50	0	0.030	0.221	20.59	21.00	1.099	0.243	/
Ant.1	LEVEL4	OFF	ENDC	Front Side	15	354000	1770	25	1	1	53	-0.11	0.011	22.31	23.50	1.315	0.014	/
	LEVEL4	OFF			15	349000	1745	25	1	50	28	0.12	0.278	22.23	23.50	1.340	0.372	/
	LEVEL4	ON		Back Side	15	354000	1770	17.5	1	1	53	-0.14	0.125	17.23	17.50	1.064	0.133	/
	LEVEL4	ON			15	354000	1770	17.5	1	50	0	0.05	0.119	17.27	17.50	1.054	0.125	/
Ant.4	LEVEL4	/	ENDC	Front Side	15	344000	1720	25	4	1	104	0.090	0.000	22.41	23.50	1.285	0.000	/
	LEVEL4	/			15	354000	1770	25	4	50	28	0.050	0.000	22.37	23.50	1.297	0.000	/
	LEVEL4	/		Back Side	15	344000	1720	25	4	1	104	0.020	0.000	22.41	23.50	1.285	0.000	/
	LEVEL4	/			15	354000	1770	25	4	50	28	0.130	0.000	22.37	23.50	1.297	0.000	/
Ant.1	LEVEL4	OFF	SA	Front Side (Battery 2)	15	354000	1770	25	1	1	53	0.040	0.334	22.31	23.50	1.315	0.439	/
<b>Body-worn SAR (CP-OFDM QPSK- 15kHz)</b>																		
Ant.1	LEVEL4	OFF	SA	Front Side	15	344000	1720	25	1	1	1	0.022	0.205	20.67	22.00	1.358	0.278	/
<b>Hotspot SAR (DFT-s-OFDM BPSK- 15kHz)</b>																		
Ant.0	LEVEL5&6	/	SA	Front Side	10	344000	1720	22.5	0	1	53	-0.080	0.222	22.54	23.00	1.112	0.247	/
	LEVEL5&6	/			10	354000	1770	22.5	0	50	0	0.150	0.244	22.62	23.00	1.091	0.266	/
	LEVEL5&6	/		Back Side	10	344000	1720	22.5	0	1	53	-0.070	0.276	22.54	23.00	1.112	0.307	/
	LEVEL5&6	/			10	354000	1770	22.5	0	50	0	0.180	0.364	22.62	23.00	1.091	0.397	/
	LEVEL5&6	/		Right Edge	10	344000	1720	22.5	0	1	53	-0.070	0.099	22.54	23.00	1.112	0.110	/
	LEVEL5&6	/			10	354000	1770	22.5	0	50	0	0.190	0.122	22.62	23.00	1.091	0.133	/
	LEVEL5&6	/		Left Edge	10	344000	1720	22.5	0	1	53	0.140	0.050	22.54	23.00	1.112	0.056	/
	LEVEL5&6	/			10	354000	1770	22.5	0	50	0	0.150	0.042	22.62	23.00	1.091	0.046	/
	LEVEL5&6	/		Bottom Edge	10	344000	1720	22.5	0	1	53	0.110	0.699	22.54	23.00	1.112	0.777	/
	LEVEL5&6	/			10	354000	1770	22.5	0	50	0	0.070	0.723	22.62	23.00	1.091	0.789	86
Ant.0	LEVEL5&6	/	ENDC	Front Side	10	344000	1720	19.5	0	1	104	0.02	0.115	19.64	20.00	1.086	0.125	/
	LEVEL5&6	/			10	349000	1745	19.5	0	50	28	-0.14	0.123	19.62	20.00	1.091	0.134	/
	LEVEL5&6	/		Back Side	10	344000	1720	19.5	0	1	104	0.03	0.144	19.64	20.00	1.086	0.156	/
	LEVEL5&6	/			10	349000	1745	19.5	0	50	28	0.01	0.191	19.62	20.00	1.091	0.208	/
	LEVEL5&6	/		Left Edge	10	344000	1720	19.5	0	1	104	-0.02	0.052	19.64	20.00	1.086	0.056	/
	LEVEL5&6	/			10	349000	1745	19.5	0	50	28	0.05	0.066	19.62	20.00	1.091	0.072	/
	LEVEL5&6	/		Left Edge	10	344000	1720	19.5	0	1	104	-0.15	0.029	19.64	20.00	1.086	0.032	/
	LEVEL5&6	/			10	349000	1745	19.5	0	50	28	0.06	0.024	19.62	20.00	1.091	0.026	/
	LEVEL5&6	/		Bottom Edge	10	344000	1720	19.5	0	1	104	0.07	0.358	19.64	20.00	1.086	0.389	/
	LEVEL5&6	/			10	349000	1745	19.5	0	50	28	-0.18	0.369	19.62	20.00	1.091	0.403	/
Ant.1	LEVEL5&6	ON	SA	Front Side	10	344000	1720	21	1	1	53	-0.130	0.387	20.44	21.00	1.138	0.440	/
	LEVEL5&6	ON			10	344000	1720	21	1	50	0	-0.010	0.364	20.59	21.00	1.099	0.400	/
	LEVEL5&6	ON		Back Side	10	344000	1720	21	1	1	53	0.130	0.461	20.44	21.00	1.138	0.524	/
	LEVEL5&6	ON			10	344000	1720	21	1	50	0	-0.070	0.432	20.59	21.00	1.099	0.475	/
	LEVEL5&6	ON		Left Edge	10	344000	1720	21	1	1	53	0.040	0.077	20.44	21.00	1.138	0.088	/



	LEVEL5&6	ON		Top Edge	10	344000	1720	21	1	50	0	-0.110	0.078	20.59	21.00	1.099	0.086	/
	LEVEL5&6	ON			10	344000	1720	21	1	1	53	0.100	0.431	20.44	21.00	1.138	0.490	/
	LEVEL5&6	ON			10	344000	1720	21	1	50	0	0.190	0.425	20.59	21.00	1.099	0.467	/
Ant.1	LEVEL5&6	ON	ENDC	Front Side	10	354000	1770	17.5	1	1	53	0.08	0.198	17.23	17.50	1.064	0.211	/
	LEVEL5&6	ON			10	354000	1770	17.5	1	50	0	-0.12	0.189	17.27	17.50	1.054	0.199	/
	LEVEL5&6	ON		Back Side	10	354000	1770	17.5	1	1	53	-0.07	0.238	17.23	17.50	1.064	0.253	/
	LEVEL5&6	ON			10	354000	1770	17.5	1	50	0	0.01	0.224	17.27	17.50	1.054	0.236	/
	LEVEL5&6	ON		Left Edge	10	354000	1770	17.5	1	1	53	0.16	0.044	17.23	17.50	1.064	0.047	/
	LEVEL5&6	ON			10	354000	1770	17.5	1	50	0	-0.17	0.041	17.27	17.50	1.054	0.043	/
	LEVEL5&6	ON		Top Edge	10	354000	1770	17.5	1	1	53	0.06	0.224	17.23	17.50	1.064	0.238	/
	LEVEL5&6	ON			10	354000	1770	17.5	1	50	0	0.03	0.231	17.27	17.50	1.054	0.244	/
Ant.4	LEVEL5&6	/	ENDC	Front Side	10	344000	1720	25	4	1	104	0.080	0.000	22.41	23.50	1.285	0.000	/
	LEVEL5&6	/			10	354000	1770	25	4	50	28	-0.130	0.000	22.37	23.50	1.297	0.000	/
	LEVEL5&6	/		Back Side	10	344000	1720	25	4	1	104	-0.180	0.000	22.41	23.50	1.285	0.000	/
	LEVEL5&6	/			10	354000	1770	25	4	50	28	0.010	0.000	22.37	23.50	1.297	0.000	/
	LEVEL5&6	/		Left Edge	10	344000	1720	25	4	1	104	0.140	0.000	22.41	23.50	1.285	0.000	/
	LEVEL5&6	/			10	354000	1770	25	4	50	28	-0.090	0.000	22.37	23.50	1.297	0.000	/
	LEVEL5&6	/		Top Edge	10	344000	1720	25	4	1	104	0.100	0.000	22.41	23.50	1.285	0.000	/
	LEVEL5&6	/			10	354000	1770	25	4	50	28	0.010	0.000	22.37	23.50	1.297	0.000	/
Ant.0	LEVEL5&6	/	SA	Bottom Edge (Battery 2)	10	354000	1770	22.5	0	50	0	0.040	0.711	22.62	23.00	1.091	0.776	/
<b>Hotspot SAR (CP-OFDM QPSK- 15kHz)</b>																		
Ant.0	LEVEL5&6	/	SA	Bottom Edge	10	344000	1720	22.5	0	1	1	0.190	0.512	21.44	22.50	1.276	0.654	/
<b>Additional SAR test at a conservative distance (triggering distance minus 1mm)</b>																		
Ant.1	OFF	/	SA	Front Side	10	354000	1770	25	1	1	53	0.192	0.655	22.31	23.50	1.315	0.861	/
	OFF	/			10	349000	1745	25	1	50	28	-0.130	0.469	22.23	23.50	1.340	0.628	/
	OFF	/		Back Side	16	354000	1770	25	1	1	53	-0.050	0.327	22.31	23.50	1.315	0.430	/
	OFF	/			16	349000	1745	25	1	50	28	0.070	0.257	22.23	23.50	1.340	0.344	/
	OFF	/		Left Edge	9	354000	1770	25	1	1	53	0.050	0.105	22.31	23.50	1.315	0.138	/
	OFF	/			9	349000	1745	25	1	50	28	-0.140	0.082	22.23	23.50	1.340	0.110	/
	OFF	/		Top Edge	18	354000	1770	25	1	1	53	0.000	0.392	22.31	23.50	1.315	0.516	/
	OFF	/			18	349000	1745	25	1	50	28	-0.150	0.298	22.23	23.50	1.340	0.399	/
<p>Note: 1. The value with blue color is the maximum SAR Value of each test band.</p> <p>2. Accessories that do not contain RF transmitters and have been proven to increase the peak SAR by less than 5 %, such as hands-free kits, do not need SAR tests separate from the SAR tests attached to a main EUT configuration.</p>																		



Measurement Variability				
Test Position	Channel/ Frequency(MHz)	MAX Measured SAR <sub>1g</sub> (W/kg)	1 <sup>st</sup> Repeated SAR <sub>1g</sub> (W/kg)	Ratio
Right Tilt	354000/1770	1.080	1.050	1.03

Note: 1) A second repeated measurement was performed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).  
 2) A third repeated measurement was performed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

MAX Adjusted SAR																				
Band	Antenna	Power Reduction	Distance Sensor	Mode	Information	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power	TAS	VRB Length	VRB Start	1 g Meas SAR(W/kg)	Meas. Power (dBm)	Max. tune-up power(dBm)	Scaling Factor	1g Scaled SAR (W/kg)	0mm SAR	
NR n38	Ant.1	LEVEL5&6	ON	DFT-s-OFDM	SA	Front	10	522000	2610	19.5	1	1	49	0.348	21.00	24.00	1.995	0.693	NO	
		10	519000				2595	19.5	1	25	25	0.327	21.00	24.00	1.995	0.653	NO			
		LEVEL5&6	ON			BPSK	Side	10	522000	2610	19.5	1	1	49	0.576	21.00	24.00	1.995	1.149	NO
		LEVEL5&6	ON					10	519000	2595	19.5	1	25	25	0.584	21.00	24.00	1.995	1.166	NO
		LEVEL5&6	ON	BPSK		Left Edge	10	522000	2610	19.5	1	1	49	0.344	21.00	24.00	1.995	0.687	NO	
		LEVEL5&6	ON				10	519000	2595	19.5	1	25	25	0.335	21.00	24.00	1.995	0.669	NO	
		LEVEL5&6	ON				10	522000	2610	19.5	1	1	49	0.549	21.00	24.00	1.995	1.095	NO	
		LEVEL5&6	ON				10	519000	2595	19.5	1	25	25	0.456	21.00	24.00	1.995	0.909	NO	
NR n41	Ant.1	LEVEL5&6	ON	DFT-s-OFDM	SA	Front	10	518598	2593	20	1	1	137	0.351	21.50	24.00	1.778	0.625	NO	
		10	528000				2640	20	1	135	138	0.372	21.50	24.00	1.778	0.661	NO			
		LEVEL5&6	ON			BPSK	Back	10	518598	2593	20	1	1	137	0.409	21.50	24.00	1.778	0.728	NO
		LEVEL5&6	ON					10	528000	2640	20	1	135	138	0.430	21.50	24.00	1.778	0.764	NO
		LEVEL5&6	ON	BPSK		Left Edge	10	518598	2593	20	1	1	137	0.382	21.50	24.00	1.778	0.679	NO	
		LEVEL5&6	ON				10	528000	2640	20	1	135	138	0.379	21.50	24.00	1.778	0.673	NO	
		LEVEL5&6	ON				10	518598	2593	20	1	1	137	0.426	21.50	24.00	1.778	0.758	NO	
		LEVEL5&6	ON				10	528000	2640	20	1	135	138	0.381	21.50	24.00	1.778	0.678	NO	
NR n66	Ant.1	LEVEL5&6	ON	DFT-s-OFDM	SA	Front	10	344000	1720	21	1	1	53	0.440	21.00	23.50	1.778	0.783	NO	
		10	344000				1720	21	1	50	0	0.400	21.00	23.50	1.778	0.711	NO			
		LEVEL5&6	ON			BPSK	Back	10	344000	1720	21	1	1	53	0.524	21.00	23.50	1.778	0.933	NO
		LEVEL5&6	ON					10	344000	1720	21	1	50	0	0.475	21.00	23.50	1.778	0.844	NO
		LEVEL5&6	ON	BPSK		Left Edge	10	344000	1720	21	1	1	53	0.088	21.00	23.50	1.778	0.156	NO	
		LEVEL5&6	ON				10	344000	1720	21	1	50	0	0.086	21.00	23.50	1.778	0.152	NO	
		LEVEL5&6	ON				10	344000	1720	21	1	1	53	0.490	21.00	23.50	1.778	0.872	NO	
		LEVEL5&6	ON				10	344000	1720	21	1	50	0	0.467	21.00	23.50	1.778	0.831	NO	

Note: According to 648474 D04 Handset SAR v01r03, For Phablet, Since hotspot mode 1-g reported SAR < 1.2 W/kg, Product Specific 10-g SAR is not required.



**Table 28: Wi-Fi 2.4GHz**

Mode	Power Reduction	Position	Dist. (mm)	Duty cycle (%)	Duty Factor	Ch.	Frequency (MHz)	Power setting	Power Drift (dB)	Limit of SAR 1.6 W/kg (mW/g)					Plot No.
										1g Measured SAR (W/kg)	Measured Power (dBm)	Max. tune-power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)	
<b>Head SAR</b>															
802.11b	LEVEL1&2	Left Cheek	0	99.38	1.006	11	2462	12	-0.12	0.247	13.06	14.00	1.243	0.309	/
	LEVEL1&2	Left Tilt	0	99.38	1.006	11	2462	12	0.07	0.179	13.06	14.00	1.243	0.224	/
	LEVEL1&2	Right Cheek	0	99.38	1.006	11	2462	12	-0.08	0.096	13.06	14.00	1.243	0.120	/
	LEVEL1&2	Right Tilt	0	99.38	1.006	11	2462	12	0.00	0.112	13.06	14.00	1.243	0.140	/
802.11n40	LEVEL1	Left Cheek	0	96.75	1.034	6	2437	16	0.140	0.624	16.12	18.00	1.542	0.994	87
	LEVEL1		0	96.75	1.034	4	2427	16	0.07	0.587	16.04	18.00	1.570	0.953	/
	LEVEL1		0	96.75	1.034	8	2447	16	-0.15	0.581	16.06	18.00	1.563	0.939	/
	LEVEL1	Left Tilt	0	96.75	1.034	6	2437	16	0.10	0.468	16.12	18.00	1.542	0.746	/
	LEVEL1	Right Cheek	0	96.75	1.034	6	2437	16	-0.16	0.228	16.12	18.00	1.542	0.363	/
	LEVEL1	Right Tilt	0	96.75	1.034	6	2437	16	0.02	0.292	16.12	18.00	1.542	0.465	/
802.11n40	LEVEL2	Left Cheek	0	96.75	1.034	6	2437	14	0.19	0.488	14.18	16.00	1.521	0.767	/
	LEVEL2	Left Tilt	0	96.75	1.034	6	2437	14	0.11	0.384	14.18	16.00	1.521	0.604	/
	LEVEL2	Right Cheek	0	96.75	1.034	6	2437	14	0.19	0.198	14.18	16.00	1.521	0.311	/
	LEVEL2	Right Tilt	0	96.75	1.034	6	2437	14	-0.17	0.243	14.18	16.00	1.521	0.382	/
802.11n40	LEVEL1	Left Cheek (Battery 2)	0	96.75	1.034	6	2437	16	0.050	0.614	16.12	18.00	1.542	0.978	/
<b>Body-worn SAR</b>															
802.11b	LEVEL3	Front Side	15	99.38	1.006	11	2462	12	0.150	0.021	13.06	14.00	1.243	0.026	/
	LEVEL3	Back Side	15	99.38	1.006	11	2462	12	0.180	0.026	13.06	14.00	1.243	0.033	/
802.11n40	LEVEL3	Front Side	15	99.38	1.006	6	2437	17	-0.030	0.084	17.16	19.00	1.526	0.129	/
	LEVEL3	Back Side	15	99.38	1.006	6	2437	17	0.180	0.090	17.16	19.00	1.526	0.138	88
802.11n40	LEVEL3	Back Side (Battery 2)	15	99.38	1.006	6	2437	17	-0.020	0.084	17.16	19.00	1.526	0.129	/
<b>Hotspot SAR</b>															
802.11b	LEVEL4	Front Side	10	99.38	1.006	11	2462	12	0.03	0.033	13.06	14.00	1.243	0.041	/
	LEVEL4	Back Side	10	99.38	1.006	11	2462	12	-0.01	0.041	13.06	14.00	1.243	0.051	/
	LEVEL4	Right Edge	10	99.38	1.006	11	2462	12	0.02	0.026	13.06	14.00	1.243	0.033	/
	LEVEL4	Top Edge	10	99.38	1.006	11	2462	12	0.04	0.041	13.06	14.00	1.243	0.052	/
802.11n40	LEVEL4	Front Side	10	96.75	1.034	6	2437	17	-0.16	0.085	17.16	19.00	1.526	0.134	/
	LEVEL4	Back Side	10	96.75	1.034	6	2437	17	0.00	0.093	17.16	19.00	1.526	0.147	/
	LEVEL4	Right Edge	10	96.75	1.034	6	2437	17	0.16	0.059	17.16	19.00	1.526	0.093	/
	LEVEL4	Top Edge	10	96.75	1.034	6	2437	17	0.033	0.181	17.16	19.00	1.526	0.286	89
802.11n40	LEVEL4	Top Edge (Battery 2)	10	96.75	1.034	6	2437	17	0.030	0.166	17.16	19.00	1.526	0.262	/

Note: 1.The value with blue color is the maximum SAR Value of each test band.



**Table 29: Wi-Fi 5GHz**

Frequency Band	Mode	Power Reduction	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power setting	Power Drift (dB)	Limit of SAR 1.6 W/kg (mW/g)							Plot No.
									1g Meas SAR(W/kg)	Meas. Power (dBm)	Max. tune-up power(dBm)	Scaling Factor	Duty cycle(%)	Duty Factor	1g Scaled SAR (W/kg)	
<b>Head SAR</b>																
U-NII-2A	802.11 n40	LEVEL1	Left Cheek	0	54	5270	15.5	-0.140	0.727	15.97	16.00	1.007	94.90	1.054	0.771	/
		LEVEL1	Left Tilt	0	54	5270	15.5	0.180	0.788	15.97	16.00	1.007	94.90	1.054	0.836	90
		LEVEL1		0	62	5310	12	0.040	0.341	12.26	13.00	1.186	94.90	1.054	0.426	/
		LEVEL1	Right Cheek	0	54	5270	15.5	0.010	0.373	15.97	16.00	1.007	94.90	1.054	0.396	/
		LEVEL1	Right Tilt	0	54	5270	15.5	-0.070	0.486	15.97	16.00	1.007	94.90	1.054	0.516	/
U-NII-2A	802.11 ac80	LEVEL2	Left Cheek	0	58	5290	12	-0.110	0.245	12.12	13.00	1.225	90.40	1.106	0.332	/
		LEVEL2	Left Tilt	0	58	5290	12	0.190	0.259	12.12	13.00	1.225	90.40	1.106	0.351	/
		LEVEL2	Right Cheek	0	58	5290	12	-0.020	0.128	12.12	13.00	1.225	90.40	1.106	0.173	/
		LEVEL2	Right Tilt	0	58	5290	12	0.160	0.174	12.12	13.00	1.225	90.40	1.106	0.236	/
U-NII-2C	802.11 ac80	LEVEL1	Left Cheek	0	122	5610	14	0.030	0.527	14.28	16.00	1.486	90.40	1.106	0.866	/
		0		106	5530	12	0.070	0.368	12.66	13.00	1.082	90.40	1.106	0.440	/	
		LEVEL1	Left Tilt	0	122	5610	14	0.050	0.695	14.28	16.00	1.486	90.40	1.106	1.142	91
		0		106	5530	12	-0.130	0.496	12.66	13.00	1.082	90.40	1.106	0.594	/	
		LEVEL1	Right Cheek	0	122	5610	14	0.020	0.351	14.28	16.00	1.486	90.40	1.106	0.577	/
		LEVEL1	Right Tilt	0	122	5610	14	0.100	0.456	14.28	16.00	1.486	90.40	1.106	0.750	/
U-NII-2C	802.11 ac80	LEVEL2	Left Cheek	0	122	5610	11	-0.060	0.270	12.20	13.00	1.202	90.40	1.106	0.359	/
		LEVEL2	Left Tilt	0	122	5610	11	-0.070	0.346	12.20	13.00	1.202	90.40	1.106	0.460	/
		LEVEL2	Right Cheek	0	122	5610	11	0.070	0.203	12.20	13.00	1.202	90.40	1.106	0.270	/
		LEVEL2	Right Tilt	0	122	5610	11	-0.150	0.222	12.20	13.00	1.202	90.40	1.106	0.295	/
U-NII-3	802.11 ac80	LEVEL1	Left Cheek	0	155	5775	14.5	0.050	0.723	15.26	16.00	1.186	90.40	1.106	0.949	/
		LEVEL1	Left Tilt	0	155	5775	14.5	0.080	0.787	15.26	16.00	1.186	90.40	1.106	1.033	92
		LEVEL1	Right Cheek	0	155	5775	14.5	0.012	0.507	15.26	16.00	1.186	90.40	1.106	0.665	/
		LEVEL1	Right Tilt	0	155	5775	14.5	-0.050	0.612	15.26	16.00	1.186	90.40	1.106	0.803	/
U-NII-3	802.11 ac80	LEVEL2	Left Cheek	0	155	5775	12	-0.120	0.395	12.34	13.00	1.164	90.40	1.106	0.508	/
		LEVEL2	Left Tilt	0	155	5775	12	-0.030	0.497	12.34	13.00	1.164	90.40	1.106	0.639	/
		LEVEL2	Right Cheek	0	155	5775	12	0.140	0.270	12.34	13.00	1.164	90.40	1.106	0.348	/
		LEVEL2	Right Tilt	0	155	5775	12	0.090	0.378	12.34	13.00	1.164	90.40	1.106	0.487	/
U-NII-2A	802.11 n40	LEVEL1	Left Tilt (Battery 2)	0	54	5270	15.5	0.040	0.745	15.97	16.00	1.007	94.90	1.054	0.790	/
U-NII-2C	802.11 ac80	LEVEL1	Left Tilt (Battery 2)	0	122	5610	14	0.020	0.668	14.28	16.00	1.486	90.40	1.106	1.098	/
U-NII-3	802.11 ac80	LEVEL1	Left Tilt (Battery 2)	0	155	5775	14.5	0.040	0.755	15.26	16.00	1.186	90.40	1.106	0.991	/
<b>Body-worn SAR</b>																
U-NII-2A	802.11 n40	LEVEL3	Front Side	15	54	5270	16	-0.110	0.084	16.47	18.00	1.422	94.90	1.054	0.126	/
		LEVEL3	Back Side	15	54	5270	16	0.000	0.194	16.47	18.00	1.422	94.90	1.054	0.291	93



U-NII-2C	802.11	LEVEL3	Front Side	15	118	5590	16	-0.140	0.145	16.35	18.00	1.462	94.90	1.054	0.223	/
	n40	LEVEL3	Back Side	15	118	5590	16	0.059	0.243	16.35	18.00	1.462	94.90	1.054	0.374	94
U-NII-3	802.11	LEVEL3	Front Side	15	151	5755	16	-0.040	0.129	16.13	18.00	1.538	94.90	1.054	0.209	/
	n40	LEVEL3	Back Side	15	151	5755	16	-0.040	0.194	16.13	18.00	1.538	94.90	1.054	0.314	95
U-NII-2A	802.11	LEVEL3	Back Side (Battery 2)	15	54	5270	16	-0.040	0.188	16.47	18.00	1.422	94.90	1.054	0.282	/
U-NII-2C	802.11	LEVEL3	Back Side (Battery 2)	15	118	5590	16	0.020	0.240	16.35	18.00	1.462	94.90	1.054	0.370	/
U-NII-3	802.11	LEVEL3	Back Side (Battery 2)	15	151	5755	16	-0.060	0.188	16.13	18.00	1.538	94.90	1.054	0.305	/
<b>Hotspot SAR</b>																
U-NII-1	802.11 n40	LEVEL4	Front Side	10	46	5230	14	0.150	0.198	15.44	16.00	1.138	94.90	1.054	0.237	/
		LEVEL4	Back Side	10	46	5230	14	0.110	0.324	15.44	16.00	1.138	94.90	1.054	0.388	/
		LEVEL4	Right Edge	10	46	5230	14	0.020	0.225	15.44	16.00	1.138	94.90	1.054	0.270	/
		LEVEL4	Top Edge	10	46	5230	14	0.048	0.568	15.44	16.00	1.138	94.90	1.054	0.681	96
U-NII-3	802.11 ac80	LEVEL4	Front Side	10	155	5775	14.5	0.190	0.196	15.26	16.00	1.186	90.40	1.106	0.257	/
		LEVEL4	Back Side	10	155	5775	14.5	0.070	0.262	15.26	16.00	1.186	90.40	1.106	0.344	/
		LEVEL4	Right Edge	10	155	5775	14.5	0.120	0.153	15.26	16.00	1.186	90.40	1.106	0.201	/
		LEVEL4	Top Edge	10	155	5775	14.5	-0.027	0.515	15.26	16.00	1.186	90.40	1.106	0.676	97
U-NII-1	802.11	LEVEL4	Top Edge (Battery 2)	10	46	5230	14	0.020	0.556	15.44	16.00	1.138	94.90	1.054	0.667	/
U-NII-3	802.11	LEVEL4	Top Edge (Battery 2)	10	155	5775	14.5	0.020	0.502	15.26	16.00	1.186	90.40	1.106	0.659	/
Frequency Band	Mode	Power Reduction	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power setting	Power Drift (dB)	Limit of SAR 4 W/kg (mW/g)							Plot No.
									10g Meas SAR(W/kg)	Meas. Power (dBm)	Max. tune-up power(dBm)	Scaling Factor	Duty cycle(%)	Duty Factor	10g Scaled SAR (W/kg)	
<b>Product Specific 10-g SAR</b>																
U-NII-1	802.11	LEVEL3	Top Edge	0	46	5230	16	0.159	0.438	17.16	18.00	1.138	94.90	1.054	0.525	98
U-NII-2A	802.11	LEVEL3	Front Side	0	54	5270	16	-0.100	0.453	16.47	18.00	1.422	94.90	1.054	0.679	/
		LEVEL3	Back Side	0	54	5270	16	-0.160	0.369	16.47	18.00	1.422	94.90	1.054	0.553	/
		LEVEL3	Right Edge	0	54	5270	16	-0.060	0.452	16.47	18.00	1.422	94.90	1.054	0.677	/
		LEVEL3	Top Edge	0	54	5270	16	0.129	0.542	16.47	18.00	1.422	94.90	1.054	0.812	99
U-NII-2A	802.11	LEVEL4	Front Side	0	54	5270	14	0.080	0.297	14.41	16.00	1.442	94.90	1.054	0.451	/
		LEVEL4	Back Side	0	54	5270	14	-0.050	0.204	14.41	16.00	1.442	94.90	1.054	0.310	/
		LEVEL4	Right Edge	0	54	5270	14	-0.090	0.215	14.41	16.00	1.442	94.90	1.054	0.327	/
		LEVEL4	Top Edge	0	54	5270	14	0.170	0.269	14.41	16.00	1.442	94.90	1.054	0.409	/
U-NII-2C	802.11	LEVEL3	Front Side	0	118	5590	16	0.040	0.553	16.35	18.00	1.462	94.90	1.054	0.852	/
		LEVEL3	Back Side	0	118	5590	16	0.090	0.535	16.35	18.00	1.462	94.90	1.054	0.824	/
		LEVEL3	Right Edge	0	118	5590	16	-0.080	0.434	16.35	18.00	1.462	94.90	1.054	0.669	/
		LEVEL3	Top Edge	0	118	5590	16	-0.050	0.820	16.35	18.00	1.462	94.90	1.054	1.263	100



U-NII-2C	802.11 ac80	LEVEL4	Front Side	0	122	5775	14	0.150	0.330	14.28	16.00	1.486	90.40	1.106	0.542	/
		LEVEL4	Back Side	0	122	5775	14	-0.050	0.353	14.28	16.00	1.486	90.40	1.106	0.580	/
		LEVEL4	Right Edge	0	122	5775	14	-0.090	0.183	14.28	16.00	1.486	90.40	1.106	0.301	/
		LEVEL4	Top Edge	0	122	5775	14	0.010	0.442	14.28	16.00	1.486	90.40	1.106	0.727	/
U-NII-3	802.11 n40	LEVEL3	Top Edge	0	151	5755	16	0.066	0.535	16.13	18.00	1.186	94.90	1.106	0.702	101
U-NII-1	802.11 n40	LEVEL3	Top Edge (Battery 2)	0	46	5230	16	0.020	0.420	17.16	18.00	1.138	94.90	1.054	0.503	/
U-NII-2A	802.11 n40	LEVEL3	Top Edge (Battery 2)	0	54	5270	16	-0.060	0.522	16.47	18.00	1.422	94.90	1.054	0.782	/
U-NII-2C	802.11 n40	LEVEL3	Top Edge (Battery 2)	0	118	5590	16	0.010	0.806	16.35	18.00	1.462	94.90	1.054	1.242	/
U-NII-3	802.11 ac80	LEVEL3	Top Edge (Battery 2)	0	151	5755	16	-0.130	0.510	16.13	18.00	1.186	90.40	1.106	0.669	/

Note: 1. The value with blue color is the maximum SAR Value of each test band.

MAX Adjusted SAR

Band	Mode	Power Reduction	Distance Sensor	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power setting	1 g Meas SAR(W/kg)	Meas. Power (dBm)	Max. tune-up power(dBm)	Scaling Factor	Duty cycle(%)	Duty Factor	1g Scaled SAR (W/kg)	0mm SAR	
WWAN 5G	U-NII-1	802.11 n40	LEVEL4	OFF	Front Side	10	46	5230	14	0.237	16.00	19.00	1.995	94.90	1.054	0.499	NO
			LEVEL4	ON	Back Side	10	46	5230	14	0.388	16.00	19.00	1.995	94.90	1.054	0.817	NO
			LEVEL4	ON	Right Edge	10	46	5230	14	0.270	16.00	19.00	1.995	94.90	1.054	0.567	NO
			LEVEL4	ON	Top Edge	10	46	5230	14	0.681	16.00	19.00	1.995	94.90	1.054	1.432	YES
	U-NII-3	802.11 ac80	LEVEL4	OFF	Front Side	10	155	5775	14.5	0.257	16.00	19.00	1.995	90.40	1.106	0.568	NO
			LEVEL4	ON	Back Side	10	155	5775	14.5	0.344	16.00	19.00	1.995	90.40	1.106	0.759	NO
			LEVEL4	ON	Right Edge	10	155	5775	14.5	0.201	16.00	19.00	1.995	90.40	1.106	0.443	NO
			LEVEL4	ON	Top Edge	10	155	5775	14.5	0.676	16.00	19.00	1.995	90.40	1.106	1.492	YES

Note: According to 648474 D04 Handset SAR v01r03, For Phablet, Since hotspot mode 1-g reported SAR < 1.2 W/kg, Product Specific 10-g SAR is not required.





**Table 30: Bluetooth**

Mode	Position	Dist. (mm)	Duty cycle(%)	Duty Factor	Ch.	Frequency (MHz)	Power Drift (dB)	Limit of SAR 1.6 W/kg (mW/g)					Plot No.
								1g Measured SAR (W/kg)	Measured Power (dBm)	Max. tune-power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)	
<b>Head SAR</b>													
DH5	Left Cheek	0	76.53	1.307	78	2480	0.150	0.199	13.11	14.00	1.227	0.319	102
	Left Tilt	0	76.53	1.307	78	2480	0.090	0.082	13.11	14.00	1.227	0.132	/
	Right Cheek	0	76.53	1.307	78	2480	-0.050	0.046	13.11	14.00	1.227	0.074	/
	Right Tilt	0	76.53	1.307	78	2480	-0.070	0.071	13.11	14.00	1.227	0.114	/
	Left Cheek (Battery 2)	0	76.53	1.307	78	2480	0.040	0.187	13.11	14.00	1.227	0.300	/
<b>Body-worn SAR</b>													
DH5	Front Side	15	76.53	1.307	78	2480	-0.020	0.011	13.11	14.00	1.227	0.018	/
	Back Side	15	76.53	1.307	78	2480	0.095	0.031	13.11	14.00	1.227	0.050	103
	Back Side (Battery 2)	15	76.53	1.307	78	2480	0.012	0.028	13.11	14.00	1.227	0.045	/
<b>Hotspot SAR</b>													
DH5	Front Side	10	76.53	1.307	78	2480	-0.190	0.017	13.11	14.00	1.227	0.027	/
	Back Side	10	76.53	1.307	78	2480	-0.090	0.021	13.11	14.00	1.227	0.034	/
	Right Edge	10	76.53	1.307	78	2480	0.080	0.013	13.11	14.00	1.227	0.021	/
	Top Edge	10	76.53	1.307	78	2480	0.051	0.049	13.11	14.00	1.227	0.078	104
	Top Edge (Battery 2)	10	76.53	1.307	78	2480	0.040	0.044	13.11	14.00	1.227	0.071	/
Note: 1. The value with blue color is the maximum SAR Value of each test band.													

### 10.3 Simultaneous Transmission Analysis

Simultaneous Transmission Configurations	Head	Body-worn	Hotspot	Product Specific 10-g SAR
WWAN+WLAN 2.4GHz	Yes	Yes	Yes	Yes
WWAN+WLAN 5GHz	Yes	Yes	Yes	Yes
WWAN+BT	Yes	Yes	Yes	Yes
WWAN+WLAN 5GHz+BT	Yes	Yes	Yes	Yes

**General Note:**

1. The Scaled SAR summation is calculated based on the same configuration and test position.

2. Per KDB 447498 D01, simultaneous transmission SAR is compliant if,

i) Scalar SAR summation  $< 1.6\text{W/kg}$ , simultaneously transmission SAR measurement is not necessary.

ii)  $\text{SPLSR} = (\text{SAR1} + \text{SAR2})^{1.5} / (\text{min. separation distance, mm})$ , and the peak separation distance is determined from the square root of  $[(x1-x2)^2 + (y1-y2)^2 + (z1-z2)^2]$ , where  $(x1, y1, z1)$  and  $(x2, y2, z2)$  are the coordinates of the extrapolated peak SAR locations in the zoom scan.

iii) If  $\text{SPLSR} \leq 0.04$ , simultaneously transmission SAR measurement is not necessary.



The maximum SAR<sub>1g/10g</sub> Value for 2G/3G/4G/5G(SA)

Test Position	Antenna	Head				Body worn		Hotspot						Product specific 10-g SAR					
		Left Cheek	Left Tilt	Right Cheek	Right Tilt	Front Side	Back Side	Front Side	Back Side	Right Edge	Left Edge	Top Edge	Bottom Edge	Back Side	Front Side	Right Edge	Left Edge	Top Edge	Bottom Edge
GSM 850	0	0.381	0.191	0.276	0.148	0.248	0.303	0.315	0.556	0.104	0.312	N/A	0.342	N/A	N/A	N/A	N/A	N/A	N/A
	1	0.447	0.416	0.668	0.582	0.154	0.174	0.255	0.382	N/A	0.116	0.272	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GSM 1900	0	0.068	0.027	0.041	0.039	0.119	0.268	0.243	0.433	0.077	0.000	N/A	0.544	N/A	N/A	N/A	N/A	N/A	
	1	0.323	0.405	0.469	0.543	0.311	0.141	0.292	0.364	N/A	0.057	0.576	N/A	N/A	N/A	N/A	N/A	N/A	
WCDMA Band II	0	0.134	0.058	0.069	0.071	0.176	0.303	0.361	0.571	0.068	0.000	N/A	0.781	N/A	N/A	N/A	N/A	N/A	
	1	0.458	0.572	0.672	0.798	0.563	0.241	0.330	0.414	N/A	0.067	0.732	N/A	N/A	N/A	N/A	1.805	N/A	
WCDMA Band IV	0	0.229	0.069	0.107	0.074	0.200	0.231	0.477	0.536	0.071	0.101	N/A	0.797	N/A	N/A	N/A	N/A	N/A	
	1	0.363	0.451	0.561	0.653	0.319	0.174	0.316	0.373	N/A	0.052	0.702	N/A	N/A	N/A	N/A	N/A	N/A	
WCDMA Band V	0	0.284	0.148	0.204	0.115	0.204	0.252	0.211	0.339	0.079	0.181	N/A	0.252	N/A	N/A	N/A	N/A	N/A	
	1	0.437	0.388	0.655	0.564	0.145	0.179	0.175	0.235	N/A	0.103	0.219	N/A	N/A	N/A	N/A	N/A	N/A	
LTE FDD 2	0	0.121	0.059	0.067	0.075	0.184	0.376	0.192	0.393	0.070	0.033	N/A	0.585	N/A	N/A	N/A	N/A	N/A	
	1	0.374	0.466	0.526	0.625	0.555	0.199	0.325	0.409	N/A	0.061	0.737	N/A	N/A	N/A	N/A	1.813	N/A	
LTE FDD 4	0	0.169	0.063	0.083	0.061	0.203	0.272	0.313	0.404	0.088	0.115	N/A	0.645	N/A	N/A	N/A	N/A	N/A	
	1	0.332	0.406	0.497	0.561	0.495	0.173	0.275	0.299	N/A	0.043	0.557	N/A	N/A	N/A	N/A	1.574	N/A	
LTE FDD 5	0	0.270	0.142	0.209	0.119	0.192	0.283	0.196	0.348	0.127	0.239	N/A	0.229	N/A	N/A	N/A	N/A	N/A	
	1	0.435	0.413	0.737	0.582	0.092	0.164	0.113	0.186	N/A	0.084	0.150	N/A	N/A	N/A	N/A	N/A	N/A	
LTE FDD 7	0	0.317	0.187	0.623	0.263	0.274	0.405	0.624	0.930	0.398	0.105	N/A	0.352	N/A	N/A	N/A	N/A	N/A	
	1	0.132	0.173	0.416	0.446	0.308	0.156	0.173	0.377	N/A	0.147	0.533	N/A	N/A	N/A	N/A	0.945	N/A	
LTE FDD 12	0	0.219	0.117	0.168	0.094	0.257	0.303	0.240	0.320	0.223	0.394	N/A	0.159	N/A	N/A	N/A	N/A	N/A	
	1	0.472	0.465	0.631	0.596	0.082	0.131	0.073	0.084	N/A	0.094	0.084	N/A	N/A	N/A	N/A	N/A	N/A	
LTE FDD 26	0	0.294	0.154	0.230	0.135	0.214	0.219	0.220	0.268	0.154	0.261	N/A	0.232	N/A	N/A	N/A	N/A	N/A	
	1	0.460	0.368	0.599	0.536	0.113	0.106	0.136	0.190	N/A	0.112	0.180	N/A	N/A	N/A	N/A	N/A	N/A	
LTE TDD 38	0	0.306	0.161	0.611	0.225	0.251	0.290	0.748	0.855	0.377	0.086	N/A	0.293	N/A	N/A	N/A	N/A	N/A	
	1	0.156	0.185	0.502	0.558	0.205	0.333	0.286	0.541	N/A	0.255	0.652	N/A	N/A	N/A	N/A	N/A	N/A	
LTE TDD 41	0	0.180	0.093	0.307	0.128	0.319	0.340	0.523	0.589	0.389	0.000	N/A	0.156	N/A	N/A	N/A	N/A	N/A	
	1	0.095	0.094	0.321	0.276	0.227	0.240	0.387	0.570	N/A	0.358	0.429	N/A	N/A	N/A	N/A	N/A	N/A	
LTE FDD 66	0	0.225	0.084	0.119	0.090	0.213	0.349	0.399	0.419	0.107	0.110	N/A	0.683	N/A	N/A	N/A	N/A	2.457	
	1	0.381	0.470	0.557	0.656	0.373	0.159	0.277	0.316	N/A	0.000	0.560	N/A	N/A	N/A	N/A	N/A	N/A	
NR(SA)	N5	0	0.142	0.096	0.096	0.071	0.094	0.267	0.152	0.366	0.044	0.162	N/A	0.224	N/A	N/A	N/A	N/A	
		1	0.243	0.227	0.368	0.317	0.134	0.139	0.196	0.263	N/A	0.125	0.196	N/A	N/A	N/A	N/A	N/A	N/A
	N7	0	0.256	0.236	0.485	0.116	0.284	0.567	0.526	0.796	0.326	0.054	N/A	0.291	N/A	N/A	N/A	N/A	N/A
		1	0.166	0.227	0.539	0.610	0.285	0.174	0.179	0.402	N/A	0.186	0.511	N/A	N/A	N/A	N/A	N/A	N/A
		4	0.278	0.135	0.634	0.214	0.082	0.257	0.152	0.603	N/A	0.272	0.092	N/A	N/A	N/A	N/A	N/A	N/A
	N38	0	0.188	0.117	0.308	0.094	0.241	0.330	0.466	0.580	0.358	0.000	N/A	0.363	N/A	N/A	N/A	N/A	N/A
		1	0.309	0.349	0.965	0.888	0.524	0.247	0.348	0.584	N/A	0.344	0.549	N/A	N/A	N/A	N/A	N/A	N/A
		4	0.467	0.221	1.026	0.318	0.098	0.337	0.233	0.981	N/A	0.537	0.102	N/A	N/A	N/A	N/A	N/A	N/A



MAX. SAR <sub>1g/10g</sub>	N41	0	0.085	0.063	0.151	0.041	0.257	0.387	0.176	0.799	0.478	0.034	N/A	0.216	N/A	N/A	N/A	N/A	N/A	N/A	
		1	0.097	0.129	0.298	0.334	0.279	0.222	0.372	0.430	N/A	0.382	0.434	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		4	0.192	0.096	0.386	0.155	0.070	0.237	0.125	0.747	N/A	0.520	0.045	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	N66	0	0.109	0.057	0.092	0.091	0.157	0.224	0.266	0.397	0.133	0.056	N/A	0.789	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		1	0.533	0.656	0.817	0.800	0.447	0.266	0.440	0.524	N/A	0.088	0.490	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MAX. SAR <sub>1g/10g</sub>			0.533	0.656	1.026	0.888	0.563	0.567	0.748	0.981	0.748	0.537	0.737	0.797	N/A	N/A	N/A	N/A	1.813	2.457	

The maximum SAR<sub>1g/10g</sub> Value for NR (EN-DC)

Test Position SAR <sub>1g/10g</sub> (W/kg)	Antenna	Head				Body worn		Hotspot						Product specific 10-g SAR					
		Left	Left	Right	Right	Front	Back	Front	Back	Right	Left	Top	Bottom	Back	Front	Right	Left	Top	Bottom
		Cheek	Tilt	Cheek	Tilt	Side	Side	Side	Side	Edge	Edge	Edge	Edge	Side	Side	Edge	Edge	Edge	Edge
N 66	0	0.109	0.057	0.092	0.091	0.082	0.114	0.134	0.208	0.072	0.032	N/A	0.403	N/A	N/A	N/A	N/A	N/A	N/A
	1	0.323	0.404	0.451	0.550	0.372	0.133	0.211	0.253	N/A	0.047	0.244	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	N/A	0.000	0.000	N/A	N/A	N/A	N/A	N/A	N/A	N/A
LTE 5	0	0.270	0.142	0.209	0.119	0.192	0.283	0.196	0.348	0.127	0.239	N/A	0.229	N/A	N/A	N/A	N/A	N/A	N/A
	1	0.240	0.219	0.356	0.316	0.092	0.164	0.113	0.186	N/A	0.084	0.150	N/A	N/A	N/A	N/A	N/A	N/A	N/A
LTE 7	0	0.317	0.187	0.623	0.263	0.227	0.281	0.458	0.721	0.336	0.000	N/A	0.239	N/A	N/A	N/A	N/A	N/A	N/A
	1	0.108	0.144	0.296	0.384	0.308	0.156	0.173	0.377	N/A	0.147	0.533	N/A	N/A	N/A	N/A	N/A	0.945	N/A
	4	0.177	0.100	0.422	0.167	0.051	0.137	0.090	0.548	N/A	0.130	0.024	N/A	N/A	N/A	N/A	N/A	N/A	N/A
LTE 12	0	0.219	0.117	0.168	0.094	0.257	0.303	0.240	0.320	0.223	0.394	N/A	0.159	N/A	N/A	N/A	N/A	N/A	N/A
	1	0.164	0.185	0.234	0.286	0.082	0.131	0.073	0.084	N/A	0.094	0.084	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N 66+LTE 5	0+1	0.349	0.276	0.448	0.407	0.174	0.278	0.247	0.394	0.072	0.116	0.150	0.403	N/A	N/A	N/A	N/A	N/A	N/A
	1+0	0.593	0.546	0.660	0.669	0.564	0.416	0.407	0.601	0.127	0.286	0.244	0.229	N/A	N/A	N/A	N/A	N/A	N/A
	4+0	0.270	0.142	0.209	0.119	0.192	0.283	0.196	0.348	0.127	0.239	0.000	0.229	N/A	N/A	N/A	N/A	N/A	N/A
	4+1	0.240	0.219	0.356	0.316	0.092	0.164	0.113	0.186	N/A	0.084	0.150	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	MAX SAR	0.593	0.546	0.660	0.669	0.564	0.416	0.407	0.601	0.127	0.286	0.244	0.403	N/A	N/A	N/A	N/A	N/A	N/A
N 66+LTE 7	0+1	0.217	0.201	0.388	0.475	0.390	0.270	0.307	0.585	0.072	0.179	0.533	0.403	N/A	N/A	N/A	N/A	0.945	N/A
	0+4	0.286	0.157	0.514	0.258	0.133	0.251	0.224	0.756	0.072	0.162	0.024	0.403	N/A	N/A	N/A	N/A	N/A	N/A
	1+0	0.640	0.591	1.074	0.813	0.599	0.414	0.669	0.974	0.336	0.047	0.244	0.239	N/A	N/A	N/A	N/A	N/A	N/A
	1+4	0.500	0.504	0.873	0.717	0.423	0.270	0.301	0.801	N/A	0.177	0.268	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4+0	0.317	0.187	0.623	0.263	0.227	0.281	0.458	0.721	0.336	0.000	0.000	0.239	N/A	N/A	N/A	N/A	N/A	N/A
	4+1	0.108	0.144	0.296	0.384	0.308	0.156	0.173	0.377	N/A	0.147	0.533	N/A	N/A	N/A	N/A	N/A	0.945	N/A
	MAX SAR	0.640	0.591	1.074	0.813	0.599	0.414	0.669	0.974	0.336	0.179	0.533	0.403	N/A	N/A	N/A	N/A	0.945	N/A
N 66+LTE 12	0+1	0.273	0.242	0.326	0.377	0.164	0.245	0.207	0.292	0.072	0.126	0.084	0.403	N/A	N/A	N/A	N/A	N/A	N/A
	1+0	0.542	0.521	0.619	0.644	0.629	0.436	0.451	0.573	0.223	0.441	0.244	0.159	N/A	N/A	N/A	N/A	N/A	N/A
	4+0	0.219	0.117	0.168	0.094	0.257	0.303	0.240	0.320	0.223	0.394	0.000	0.159	N/A	N/A	N/A	N/A	N/A	N/A
	4+1	0.164	0.185	0.234	0.286	0.082	0.131	0.073	0.084	N/A	0.094	0.084	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	MAX SAR	0.542	0.521	0.619	0.644	0.629	0.436	0.451	0.573	0.223	0.441	0.244	0.403	N/A	N/A	N/A	N/A	N/A	N/A



MAX. SAR <sub>1g/10g</sub>	0.640	0.591	1.074	0.813	0.629	0.436	0.669	0.974	0.336	0.441	0.533	0.403	N/A	N/A	N/A	N/A	0.945	N/A
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The maximum SAR<sub>1g/10g</sub> Value for Wi-Fi 5G

SAR <sub>1g/10g</sub> (W/kg)		Wi-Fi (U-NII-1)	Wi-Fi (U-NII-2A)	Wi-Fi (U-NII-2C)	Wi-Fi (U-NII-3)	MAX. ΣSAR <sub>1g/10g</sub>
Test Position						
Head	Left, Cheek	N/A	0.332	0.359	0.508	0.508
	Left, Tilt	N/A	0.351	0.460	0.639	0.639
	Right, Cheek	N/A	0.173	0.270	0.348	0.348
	Right, Tilt	N/A	0.236	0.295	0.487	0.487
Body worn	Back Side	N/A	0.126	0.223	0.209	0.223
	Front Side	N/A	0.291	0.374	0.314	0.374
Hotspot	Front Side	0.237	N/A	N/A	0.257	0.257
	Back Side	0.388	N/A	N/A	0.344	0.388
	Right Edge	0.270	N/A	N/A	0.201	0.270
	Left Edge	N/A	N/A	N/A	N/A	N/A
	Top Edge	0.681	N/A	N/A	0.676	0.681
	Bottom Edge	N/A	N/A	N/A	N/A	N/A
Product Specific 10-g SAR	Front Side	N/A	0.451	0.542	N/A	0.542
	Back Side	N/A	0.310	0.580	N/A	0.580
	Right Edge	N/A	0.327	0.301	N/A	0.327
	Left Edge	N/A	N/A	N/A	N/A	N/A
	Top Edge	0.525	0.409	0.727	0.702	0.727
	Bottom Edge	N/A	N/A	N/A	N/A	N/A



**WWAN + WLAN 2.4G / WLAN 5G/BT**

SAR <sub>1g/10g</sub> (W/kg)		WWAN	Wi-Fi 2.4G	Wi-Fi 5G	BT	MAX. ΣSAR <sub>1g/10g</sub>					
		MAX. SAR <sub>1g/10g</sub>	MAX. SAR <sub>1g/10g</sub>	MAX. SAR <sub>1g/10g</sub>		1	2	3	4	1+2	1+3
Test Position		1	2	3	4	1+2	1+3	1+4	3+4	1+3+4	
Head	Left, Cheek	0.640	0.767	0.508	0.319	1.407	1.148	0.959	0.827	1.467	
	Left, Tilt	0.656	0.604	0.639	0.132	1.260	1.295	0.788	0.771	1.427	
	Right, Cheek	1.074	0.311	0.348	0.074	1.385	1.422	1.148	0.422	1.496	
	Right, Tilt	0.888	0.382	0.487	0.114	1.270	1.375	1.002	0.601	1.489	
Body worn	Back Side	0.629	0.129	0.223	0.018	0.758	0.852	0.647	0.241	0.870	
	Front Side	0.567	0.138	0.374	0.050	0.705	0.941	0.617	0.424	0.991	
Hotspot	Front Side	0.748	0.134	0.257	0.027	0.882	1.005	0.775	0.284	1.032	
	Back Side	0.981	0.147	0.388	0.034	1.128	1.369	1.015	0.422	1.403	
	Right Edge	0.748	0.093	0.270	0.021	0.841	1.018	0.769	0.291	1.039	
	Left Edge	0.537	N/A	N/A	N/A	0.537	0.537	0.537	0.000	0.537	
	Top Edge	0.737	0.286	0.681	0.078	1.023	1.418	0.815	0.759	1.496	
	Bottom Edge	0.797	N/A	N/A	N/A	0.797	0.797	0.797	0.000	0.797	
Product Specific 10-g SAR	Front Side	N/A	N/A	0.542	N/A	0.000	0.542	0.000	0.542	0.542	
	Back Side	N/A	N/A	0.580	N/A	0.000	0.580	0.000	0.580	0.580	
	Right Edge	N/A	N/A	0.327	N/A	0.000	0.327	0.000	0.327	0.327	
	Left Edge	N/A	N/A	N/A	N/A	0.000	0.000	0.000	0.000	0.000	
	Top Edge	1.813	N/A	0.727	N/A	1.813	2.540	1.813	0.727	2.540	
	Bottom Edge	2.457	N/A	N/A	N/A	2.457	2.457	2.457	0.000	2.457	

Note: 1. The value with blue color is the maximum ΣSAR<sub>1g/10g</sub> Value.

2. MAX. ΣSAR<sub>1g/10g</sub> = Unlicensed SAR<sub>MAX</sub> + Licensed SAR<sub>MAX</sub>

MAX. ΣSAR<sub>1g</sub> = 1.496W/kg < 1.6W/kg and MAX. ΣSAR<sub>10g</sub> = 2.540W/kg < 4 W/kg, so the Simultaneous transimtion SAR with volum scan are not required for WWAN and WLAN 2.4G / WLAN 5G/BT Antenna.



## 11 Measurement Uncertainty

Per KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz, when the highest measured 1-g SAR within a frequency band is  $< 1.5$  W/kg, the extensive SAR measurement uncertainty analysis described in IEEE Std 1528- 2013 is not required in SAR reports submitted for equipment approval. This also applies to the 10-g SAR required for phablets in KDB Publication 648474.

## ANNEX A: Test Layout



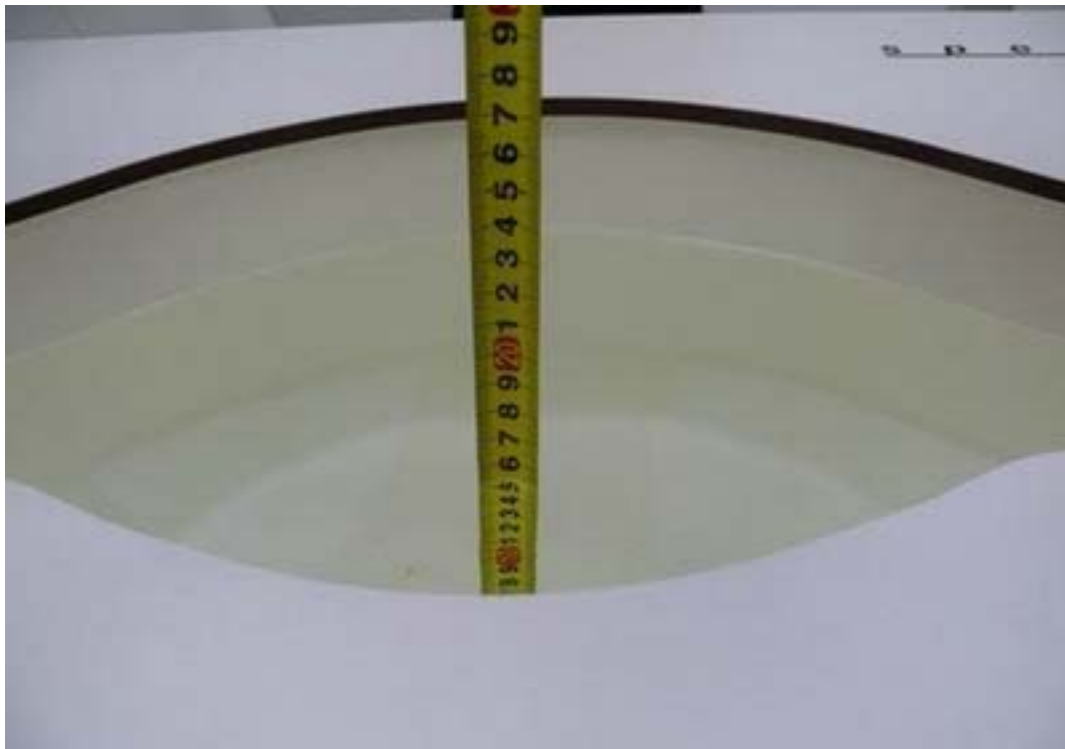


### Tissue Simulating Liquids

For the measurement of the field distribution inside the flat phantom with DASY, the phantom must be filled with around 25 liters of homogeneous body tissue simulating liquid. For Head and Body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm, which is shown in Picture 3 and Picture 4.



Picture 3: liquid depth in the head Phantom



Picture 4: Liquid depth in the flat Phantom



## **ANNEX B: System Check Results**

**The System Check Results are submitted separately.**



## **ANNEX C: Highest Graph Results**

**The System Check Results are submitted separately.**



## ANNEX D: Probe Calibration Certificate



In Collaboration with  
**s p e a g**  
CALIBRATION LABORATORY



中国认可  
国际互认  
校准  
CALIBRATION  
CNAS L0570

Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China  
Tel: +86-10-62304633-2512 Fax: +86-10-62304633-2504  
E-mail: cttl@chinattl.com [Http://www.chinattl.cn](http://www.chinattl.cn)

Client **TA(Shanghai)**Certificate No: **Z20-60218****CALIBRATION CERTIFICATE**

Object **EX3DV4 - SN : 3677**

Calibration Procedure(s) **FF-Z11-004-01**  
**Calibration Procedures for Dosimetric E-field Probes**

Calibration date: **July 06, 2020**

This calibration Certificate documents the traceability to national standards, which realize the physical units of measurements(SI). The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature(22±3)°C and humidity<70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date(Calibrated by, Certificate No.)	Scheduled Calibration
Power Meter NRP2	101919	16-Jun-20(CTTL, No.J20X04344)	Jun-21
Power sensor NRP-Z91	101547	16-Jun-20(CTTL, No.J20X04344)	Jun-21
Power sensor NRP-Z91	101548	16-Jun-20(CTTL, No.J20X04344)	Jun-21
Reference 10dBAttenuator	18N50W-10dB	10-Feb-20(CTTL, No.J20X00525)	Feb-22
Reference 20dBAttenuator	18N50W-20dB	10-Feb-20(CTTL, No.J20X00526)	Feb-22
Reference Probe EX3DV4	SN 3617	30-Jan-20(SPEAG, No.EX3-3617_Jan20/2)	Jan-21
DAE4	SN 1556	4-Feb-20(SPEAG, No.DAE4-1556_Feb20)	Feb-21
Secondary Standards	ID #	Cal Date(Calibrated by, Certificate No.)	Scheduled Calibration
SignalGenerator MG3700A	6201052605	23-Jun-20(CTTL, No.J20X04343)	Jun-21
Network Analyzer E5071C	MY46110673	10-Feb-20(CTTL, No.J20X00515)	Feb-21

	Name	Function	Signature
Calibrated by:	Yu Zongying	SAR Test Engineer	
Reviewed by:	Lin Hao	SAR Test Engineer	
Approved by:	Qi Dianyuan	SAR Project Leader	

Issued: July 08, 2020

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### Glossary:

TSL	tissue simulating liquid
NORM <sub>x,y,z</sub>	sensitivity in free space
ConvF	sensitivity in TSL / NORM <sub>x,y,z</sub>
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A,B,C,D	modulation dependent linearization parameters
Polarization $\Phi$	$\Phi$ rotation around probe axis
Polarization $\theta$	$\theta$ rotation around an axis that is in the plane normal to probe axis (at measurement center), $i$ $\theta=0$ is normal to probe axis

Connector Angle information used in DASY system to align probe sensor X to the robot coordinate system

### Calibration is Performed According to the Following Standards:

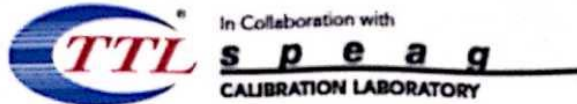
- IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- IEC 62209-1, "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
- IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
- KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

### Methods Applied and Interpretation of Parameters:

- NORM<sub>x,y,z</sub>:** Assessed for E-field polarization  $\theta=0$  ( $f \leq 900\text{MHz}$  in TEM-cell;  $f > 1800\text{MHz}$ : waveguide). NORM<sub>x,y,z</sub> are only intermediate values, i.e., the uncertainties of NORM<sub>x,y,z</sub> does not effect the  $E^2$ -field uncertainty inside TSL (see below ConvF).
- NORM( $f$ )<sub>x,y,z</sub> = NORM<sub>x,y,z</sub> \* frequency\_response** (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of ConvF.
- DCP<sub>x,y,z</sub>:** DCP are numerical linearization parameters assessed based on the data of power sweep (no uncertainty required). DCP does not depend on frequency nor media.
- PAR:** PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics.
- A<sub>x,y,z</sub>; B<sub>x,y,z</sub>; C<sub>x,y,z</sub>; VR<sub>x,y,z</sub>; A,B,C** are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. VR is the maximum calibration range expressed in RMS voltage across the diode.
- ConvF and Boundary Effect Parameters:** Assessed in flat phantom using E-field (or Temperature Transfer Standard for  $f \leq 800\text{MHz}$ ) and inside waveguide using analytical field distributions based on power measurements for  $f > 800\text{MHz}$ . The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty valued are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORM<sub>x,y,z</sub> \* ConvF whereby the uncertainty corresponds to that given for ConvF. A frequency dependent ConvF is used in DASY version 4.4 and higher which allows extending the validity from  $\pm 50\text{MHz}$  to  $\pm 100\text{MHz}$ .
- Spherical isotropy (3D deviation from isotropy):** in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- Sensor Offset:** The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.
- Connector Angle:** The angle is assessed using the information gained by determining the NORM<sub>x</sub> (no uncertainty required).

Certificate No:Z20-60218

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## DASY/EASY – Parameters of Probe: EX3DV4 – SN:3677

### Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm( $\mu V/(V/m)^2$ ) <sup>A</sup>	0.41	0.46	0.40	±10.0%
DCP(mV) <sup>B</sup>	100.7	102.6	102.1	

### Modulation Calibration Parameters

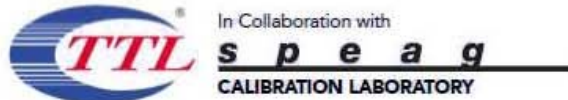
UID	Communication System Name		A dB	B dB· $\mu V$	C	D dB	VR mV	Unc <sup>E</sup> (k=2)
0	CW	X	0.0	0.0	1.0	0.00	174.8	±2.0%
		Y	0.0	0.0	1.0		186.9	
		Z	0.0	0.0	1.0		173.5	

The reported uncertainty of measurement is stated as the standard uncertainty of Measurement multiplied by the coverage factor  $k=2$ , which for a normal distribution corresponds to a coverage probability of approximately 95%.

<sup>A</sup> The uncertainties of Norm X, Y, Z do not affect the E<sup>2</sup>-field uncertainty inside TSL (see Page 4).

<sup>B</sup> Numerical linearization parameter: uncertainty not required.

<sup>E</sup> Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.



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## DASY/EASY – Parameters of Probe: EX3DV4 – SN:3677

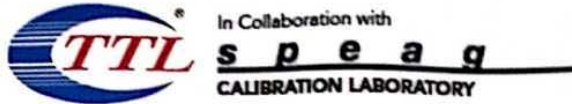
### Calibration Parameter Determined in Head Tissue Simulating Media

f [MHz] <sup>C</sup>	Relative Permittivity <sup>F</sup>	Conductivity (S/m) <sup>F</sup>	ConvF X	ConvF Y	ConvF Z	Alpha <sup>G</sup>	Depth <sup>G</sup> (mm)	Unct. (k=2)
750	41.9	0.89	9.78	9.78	9.78	0.40	0.75	±12.1%
835	41.5	0.90	9.38	9.38	9.38	0.21	1.11	±12.1%
1750	40.1	1.37	8.25	8.25	8.25	0.26	1.05	±12.1%
1900	40.0	1.40	7.90	7.90	7.90	0.28	1.06	±12.1%
2000	40.0	1.40	7.97	7.97	7.97	0.23	1.17	±12.1%
2300	39.5	1.67	7.69	7.69	7.69	0.66	0.68	±12.1%
2450	39.2	1.80	7.54	7.54	7.54	0.66	0.70	±12.1%
2600	39.0	1.96	7.26	7.26	7.26	0.74	0.67	±12.1%
3300	38.2	2.71	7.07	7.07	7.07	0.48	0.97	±13.3%
3500	37.9	2.91	7.03	7.03	7.03	0.49	0.93	±13.3%
3700	37.7	3.12	6.83	6.83	6.83	0.49	0.97	±13.3%
3900	37.5	3.32	6.76	6.76	6.76	0.40	1.20	±13.3%
4100	37.2	3.53	6.78	6.78	6.78	0.40	1.15	±13.3%
4400	36.9	3.84	6.47	6.47	6.47	0.40	1.20	±13.3%
4600	36.7	4.04	6.42	6.42	6.42	0.50	1.13	±13.3%
4800	36.4	4.25	6.35	6.35	6.35	0.45	1.25	±13.3%
4950	36.3	4.40	6.22	6.22	6.22	0.45	1.25	±13.3%
5250	35.9	4.71	5.55	5.55	5.55	0.50	1.15	±13.3%
5600	35.5	5.07	4.97	4.97	4.97	0.55	1.22	±13.3%
5750	35.4	5.22	5.00	5.00	5.00	0.55	1.27	±13.3%

<sup>C</sup> Frequency validity above 300 MHz of ±100MHz only applies for DASY v4.4 and higher (Page 2), else it is restricted to ±50MHz. The uncertainty is the RSS of ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Above 5 GHz frequency validity can be extended to ± 110 MHz.

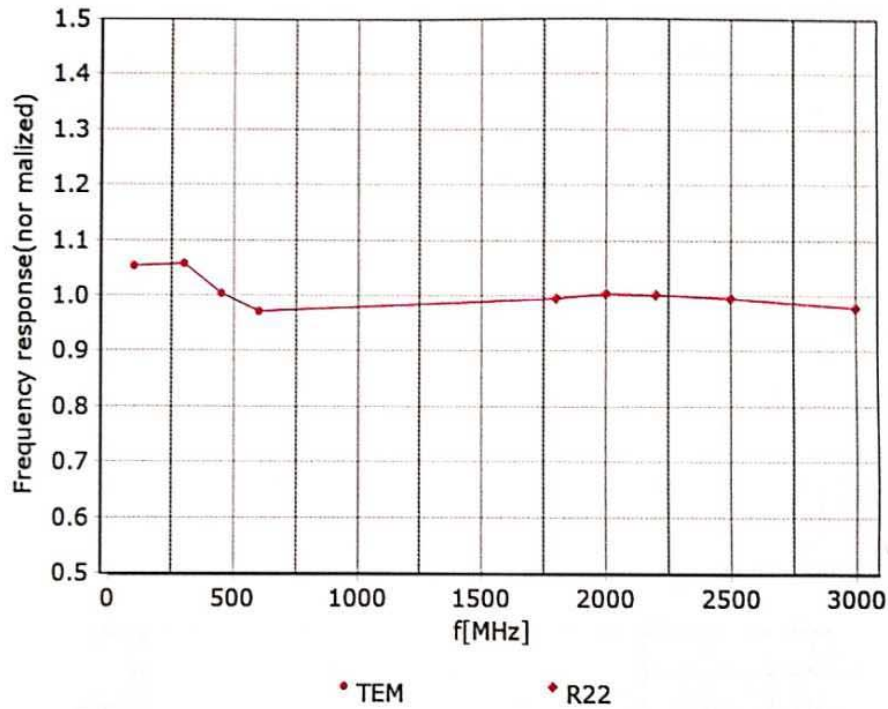
<sup>F</sup> At frequency below 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) can be relaxed to ±10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) is restricted to ±5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

<sup>G</sup> Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for the frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.



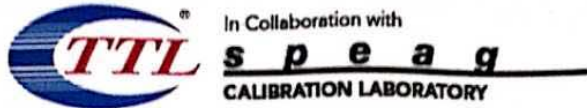
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## Frequency Response of E-Field (TEM-Cell: ifi110 EXX, Waveguide: R22)



Uncertainty of Frequency Response of E-field:  $\pm 7.4\%$  ( $k=2$ )



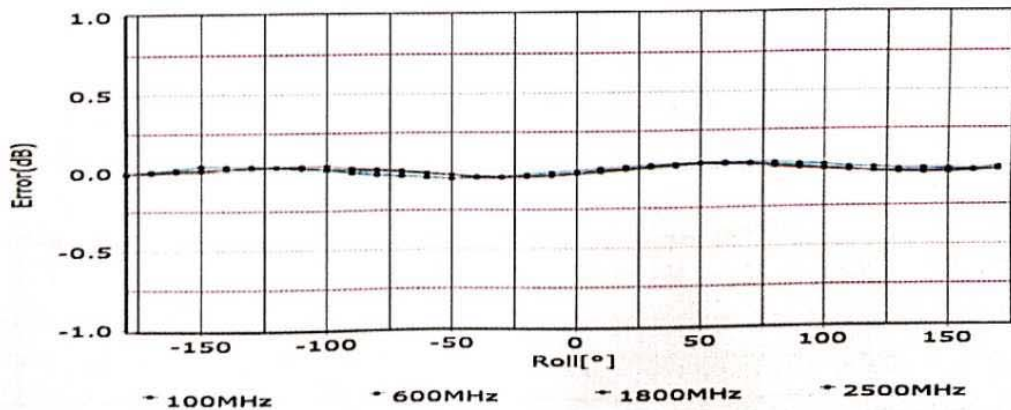
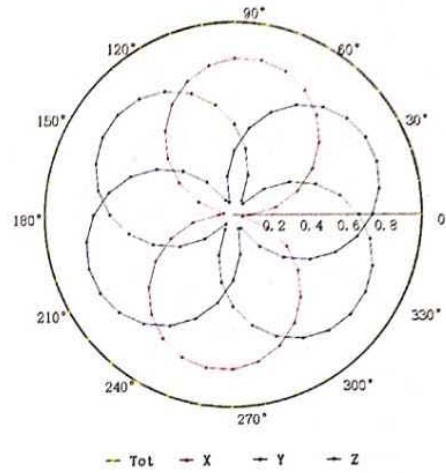
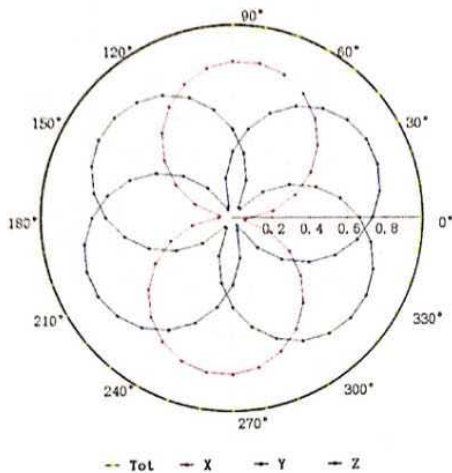


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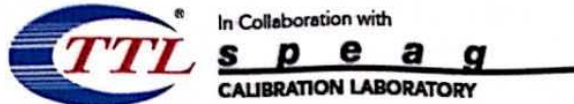
### Receiving Pattern ( $\Phi$ ), $\theta=0^\circ$

**f=600 MHz, TEM**

**f=1800 MHz, R22**

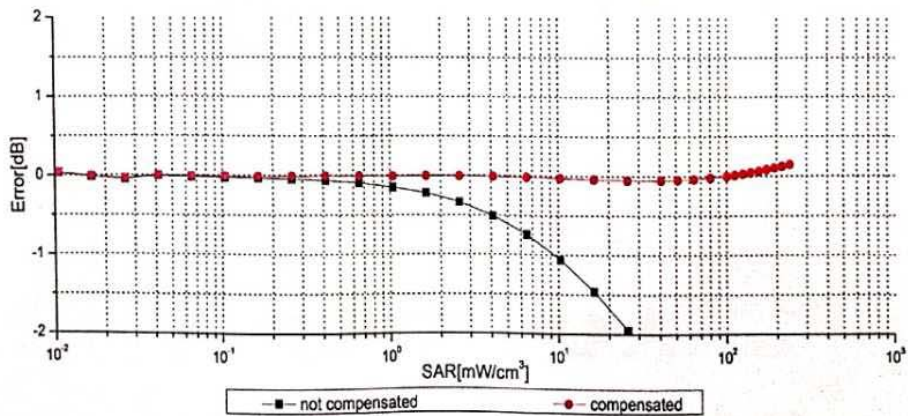
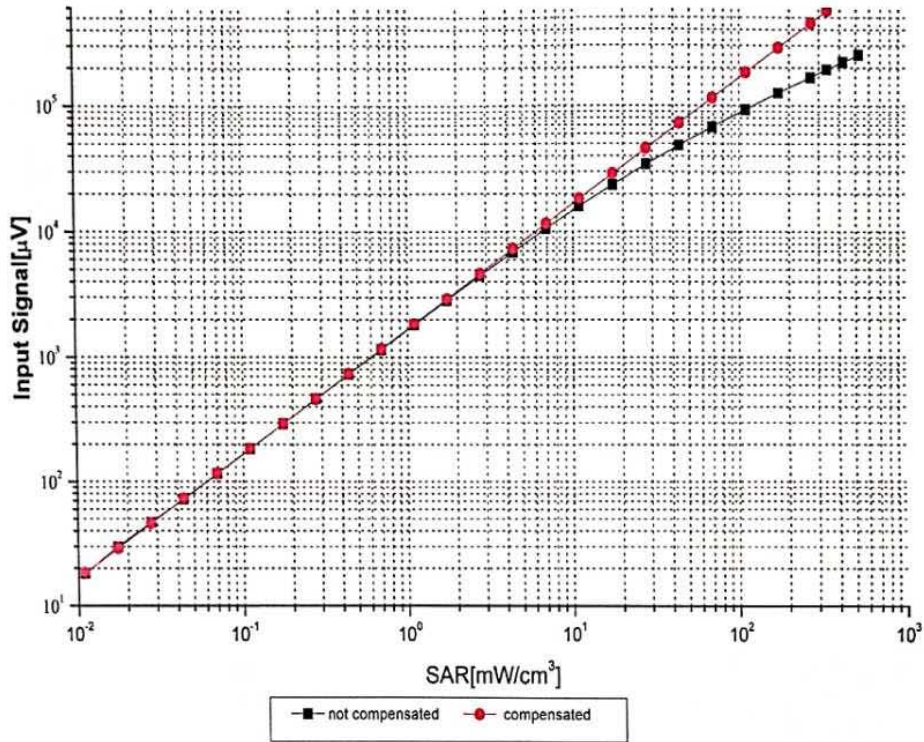


Uncertainty of Axial Isotropy Assessment:  $\pm 1.2\%$  ( $k=2$ )

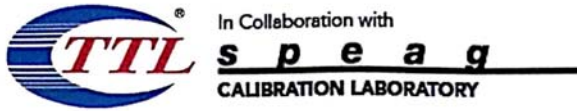


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### Dynamic Range f(SAR<sub>head</sub>) (TEM cell, f = 900 MHz)



Uncertainty of Linearity Assessment: ±0.9% (k=2)

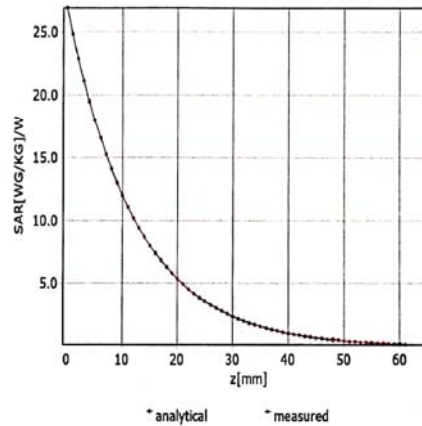
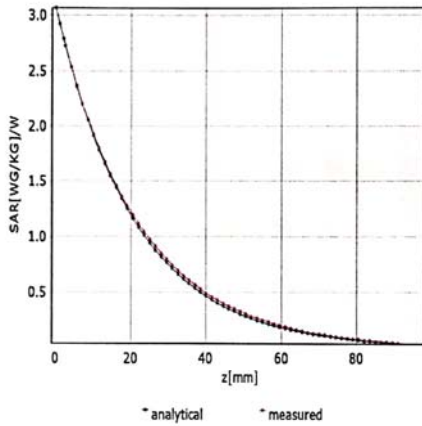


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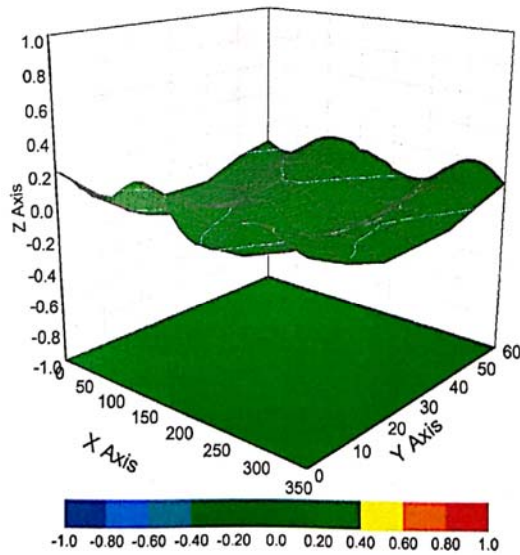
## Conversion Factor Assessment

f=750 MHz,WGLS R9(H\_convF)

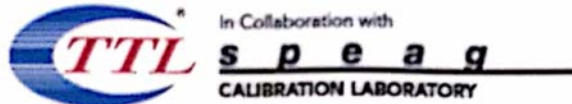
f=1750 MHz,WGLS R22(H\_convF)



## Deviation from Isotropy in Liquid



Uncertainty of Spherical Isotropy Assessment:  $\pm 3.2\%$  ( $k=2$ )



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## DASY/EASY – Parameters of Probe: EX3DV4 – SN:3677

### Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	115.7
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disable
Probe Overall Length	337mm
Probe Body Diameter	10mm
Tip Length	10mm
Tip Diameter	2.5mm
Probe Tip to Sensor X Calibration Point	1mm
Probe Tip to Sensor Y Calibration Point	1mm
Probe Tip to Sensor Z Calibration Point	1mm
Recommended Measurement Distance from Surface	1.4mm



## ANNEX E: D750V3 Dipole Calibration Certificate



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Client TA(Shanghai)

Certificate No: Z20-60299

CALIBRATION CERTIFICATE			
Object	D750V3 - SN: 1045		
Calibration Procedure(s)	FF-Z11-003-01 Calibration Procedures for dipole validation kits		
Calibration date:	August 28, 2020		
<p>This calibration Certificate documents the traceability to national standards, which realize the physical units of measurements(SI). The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.</p> <p>All calibrations have been conducted in the closed laboratory facility: environment temperature(22±3)°C and humidity&lt;70%.</p> <p>Calibration Equipment used (M&amp;TE critical for calibration)</p>			
Primary Standards	ID #	Cal Date(Calibrated by, Certificate No.)	Scheduled Calibration
Power Meter NRP2	106276	12-May-20 (CTTL, No.J20X02965)	May-21
Power sensor NRP6A	101369	12-May-20 (CTTL, No.J20X02965)	May-21
Reference Probe EX3DV4	SN 3617	30-Jan-20(SPEAG,No.EX3-3617_Jan20)	Jan-21
DAE4	SN 771	10-Feb-20(CTTL-SPEAG,No.Z20-60017)	Feb-21
Secondary Standards	ID #	Cal Date(Calibrated by, Certificate No.)	Scheduled Calibration
Signal Generator E4438C	MY49071430	25-Feb-20 (CTTL, No.J20X00516)	Feb-21
NetworkAnalyzer E5071C	MY46110673	10-Feb-20 (CTTL, No.J20X00515)	Feb-21
Calibrated by:	Name Zhao Jing	Function SAR Test Engineer	Signature 
Reviewed by:	Name Lin Hao	Function SAR Test Engineer	Signature 
Approved by:	Name Qi Dianyuan	Function SAR Project Leader	Signature 
Issued: September 3, 2020			
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**Glossary:**

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM <sub>x,y,z</sub>
N/A	not applicable or not measured

**Calibration is Performed According to the Following Standards:**

- IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- IEC 62209-1, "Measurement procedure for assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices- Part 1: Device used next to the ear (Frequency range of 300MHz to 6GHz)", July 2016
- IEC 62209-2, "Procedure to measure the Specific Absorption Rate (SAR) For wireless communication devices used in close proximity to the human body (frequency range of 30MHz to 6GHz)", March 2010
- KDB865664, SAR Measurement Requirements for 100 MHz to 6 GHz

**Additional Documentation:**

- DASY4/5 System Handbook

**Methods Applied and Interpretation of Parameters:**

- Measurement Conditions:** Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- Antenna Parameters with TSL:** The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- Feed Point Impedance and Return Loss:** These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- Electrical Delay:** One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- SAR measured:** SAR measured at the stated antenna input power.
- SAR normalized:** SAR as measured, normalized to an input power of 1 W at the antenna connector.
- SAR for nominal TSL parameters:** The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of Measurement multiplied by the coverage factor  $k=2$ , which for a normal distribution Corresponds to a coverage probability of approximately 95%.



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### Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY52	V52.10.4
Extrapolation	Advanced Extrapolation	
Phantom	Triple Flat Phantom 5.1C	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	750 MHz ± 1 MHz	

### Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	41.9	0.89 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	41.3 ± 6 %	0.87 mho/m ± 6 %
Head TSL temperature change during test	<1.0 °C	---	---

### SAR result with Head TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.07 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	8.37 W/kg ± 18.8 % (k=2)
SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	Condition	
SAR measured	250 mW input power	1.38 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	5.57 W/kg ± 18.7 % (k=2)

### Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	55.5	0.96 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	54.4 ± 6 %	0.94 mho/m ± 6 %
Body TSL temperature change during test	<1.0 °C	---	---

### SAR result with Body TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	2.12 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	8.58 W/kg ± 18.8 % (k=2)
SAR averaged over 10 cm <sup>3</sup> (10 g) of Body TSL	Condition	
SAR measured	250 mW input power	1.41 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	5.70 W/kg ± 18.7 % (k=2)



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#### Appendix (Additional assessments outside the scope of CNAS L0570)

##### Antenna Parameters with Head TSL

Impedance, transformed to feed point	54.3 $\Omega$ - 2.29j $\Omega$
Return Loss	- 26.6dB

##### Antenna Parameters with Body TSL

Impedance, transformed to feed point	47.7 $\Omega$ - 4.58j $\Omega$
Return Loss	- 25.6dB

##### General Antenna Parameters and Design

Electrical Delay (one direction)	0.900 ns
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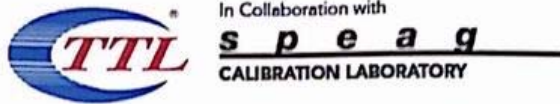
After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard. No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

##### Additional EUT Data

Manufactured by	SPEAG
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**DASY5 Validation Report for Head TSL**

Date: 08.28.2020

Test Laboratory: CTTL, Beijing, China

**DUT: Dipole 750 MHz; Type: D750V3; Serial: D750V3 - SN: 1045**

Communication System: UID 0, CW; Frequency: 750 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 750 \text{ MHz}$ ;  $\sigma = 0.873 \text{ S/m}$ ;  $\epsilon_r = 41.28$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3617; ConvF(10.07, 10.07, 10.07) @ 750 MHz; Calibrated: 2020-01-30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn771; Calibrated: 2020-02-10
- Phantom: MFP\_V5.1C (20deg probe tilt); Type: QD 000 P51 Cx; Serial: 1062
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Dipole Calibration/Zoom Scan (7x7x7) (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 54.97 V/m; Power Drift = -0.02 dB

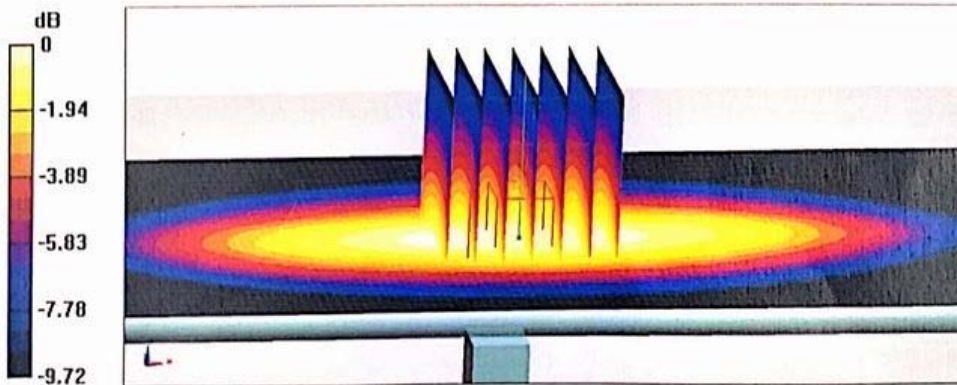
Peak SAR (extrapolated) = 3.00 W/kg

**SAR(1 g) = 2.07 W/kg; SAR(10 g) = 1.38 W/kg**

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

Ratio of SAR at M2 to SAR at M1 = 68.7%

Maximum value of SAR (measured) = 2.71 W/kg



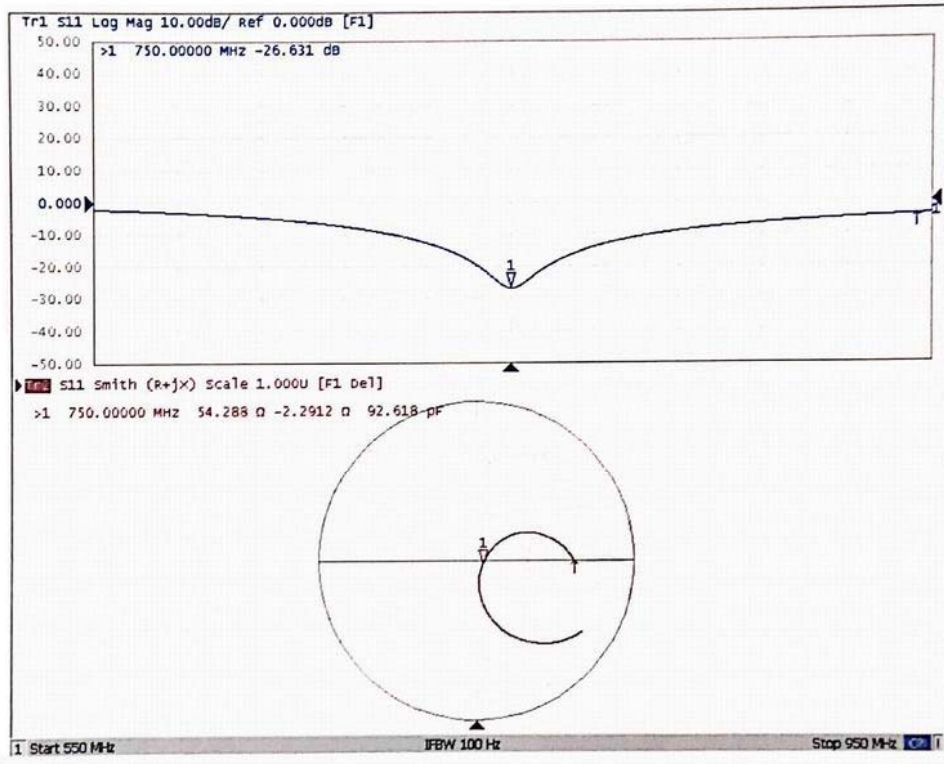
0 dB = 2.71 W/kg = 4.33 dBW/kg



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### Impedance Measurement Plot for Head TSL





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**DASY5 Validation Report for Body TSL**

Date: 08.28.2020

Test Laboratory: CTTL, Beijing, China

**DUT: Dipole 750 MHz; Type: D750V3; Serial: D750V3 - SN: 1045**

Communication System: UID 0, CW; Frequency: 750 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 750 \text{ MHz}$ ;  $\sigma = 0.94 \text{ S/m}$ ;  $\epsilon_r = 54.36$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Center Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3617; ConvF(9.8, 9.8, 9.8) @ 750 MHz; Calibrated: 2020-01-30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn771; Calibrated: 2020-02-10
- Phantom: MFP\_V5.1C (20deg probe tilt); Type: QD 000 P51 Cx; Serial: 1062
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Dipole Calibration/Zoom Scan (7x7x7) (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 53.84 V/m; Power Drift = -0.02 dB

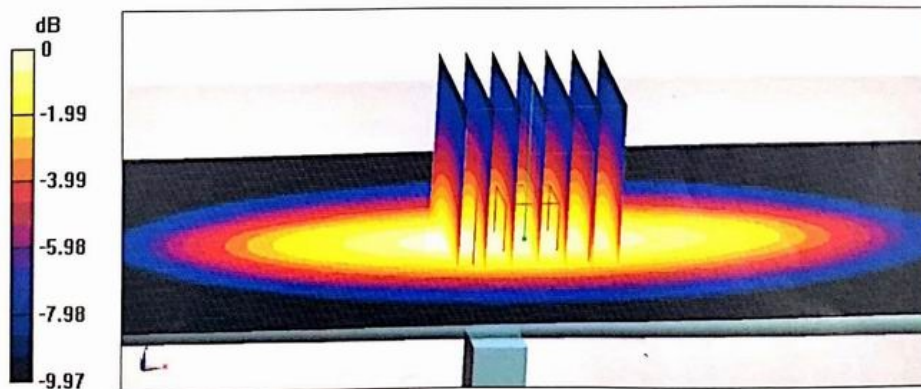
Peak SAR (extrapolated) = 3.14 W/kg

**SAR(1 g) = 2.12 W/kg; SAR(10 g) = 1.41 W/kg**

Smallest distance from peaks to all points 3 dB below = 18.4 mm

Ratio of SAR at M2 to SAR at M1 = 67.9%

Maximum value of SAR (measured) = 2.80 W/kg

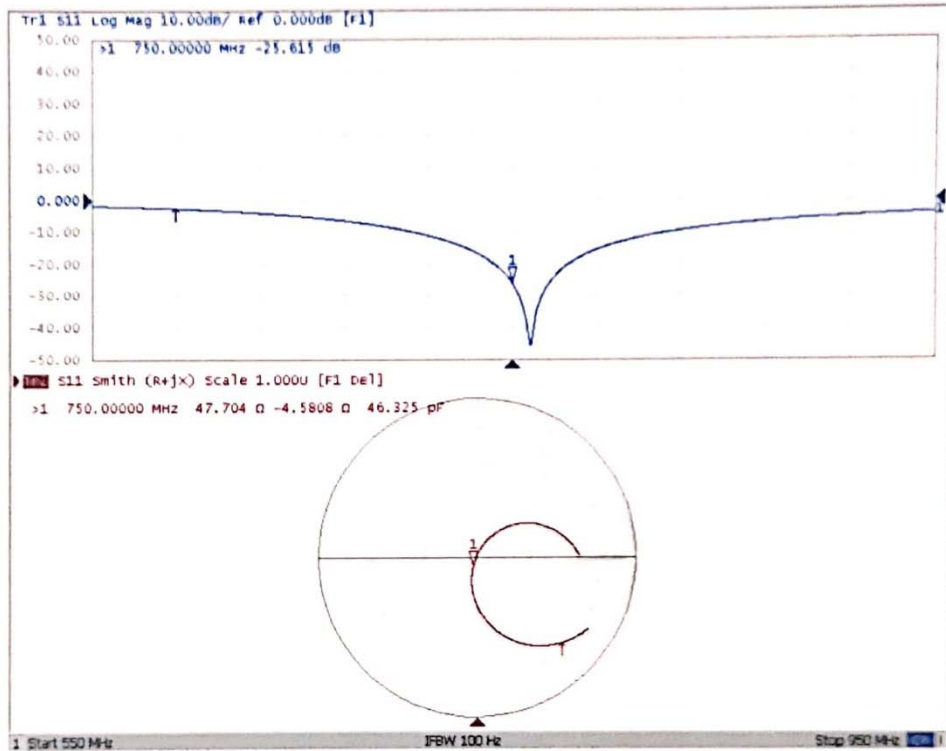




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### Impedance Measurement Plot for Body TSL





## ANNEX F: D835V2 Dipole Calibration Certificate



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中国认可  
国际互认  
校准  
CALIBRATION  
CNAS L0570

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Client TA(Shanghai)

Certificate No: Z20-60296

## CALIBRATION CERTIFICATE

Object D835V2 - SN: 4d020

Calibration Procedure(s) FF-Z11-003-01  
Calibration Procedures for dipole validation kits

Calibration date: August 28, 2020

This calibration Certificate documents the traceability to national standards, which realize the physical units of measurements(SI). The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature(22±3)°C and humidity<70%.

Calibration Equipment used (M&amp;TE critical for calibration)

Primary Standards	ID #	Cal Date(Calibrated by, Certificate No.)	Scheduled Calibration
Power Meter NRP2	106276	12-May-20 (CTTL, No.J20X02965)	May-21
Power sensor NRP6A	101369	12-May-20 (CTTL, No.J20X02965)	May-21
Reference Probe EX3DV4	SN 3617	30-Jan-20(SPEAG,No.EX3-3617_Jan20)	Jan-21
DAE4	SN 771	10-Feb-20(CTTL-SPEAG,No.Z20-60017)	Feb-21
Secondary Standards	ID #	Cal Date(Calibrated by, Certificate No.)	Scheduled Calibration
Signal Generator E4438C	MY49071430	25-Feb-20 (CTTL, No.J20X00516)	Feb-21
NetworkAnalyzer E5071C	MY46110673	10-Feb-20 (CTTL, No.J20X00515)	Feb-21

	Name	Function	Signature
Calibrated by:	Zhao Jing	SAR Test Engineer	
Reviewed by:	Lin Hao	SAR Test Engineer	
Approved by:	Qi Dianyuan	SAR Project Leader	

Issued: September 3, 2020

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Certificate No: Z20-60296

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**Glossary:**

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM <sub>x,y,z</sub>
N/A	not applicable or not measured

**Calibration is Performed According to the Following Standards:**

- IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- IEC 62209-1, "Measurement procedure for assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices- Part 1: Device used next to the ear (Frequency range of 300MHz to 6GHz)", July 2016
- IEC 62209-2, "Procedure to measure the Specific Absorption Rate (SAR) For wireless communication devices used in close proximity to the human body (frequency range of 30MHz to 6GHz)", March 2010
- KDB865664, SAR Measurement Requirements for 100 MHz to 6 GHz

**Additional Documentation:**

- DASY4/5 System Handbook

**Methods Applied and Interpretation of Parameters:**

- Measurement Conditions:** Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- Antenna Parameters with TSL:** The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- Feed Point Impedance and Return Loss:** These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- Electrical Delay:** One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- SAR measured:** SAR measured at the stated antenna input power.
- SAR normalized:** SAR as measured, normalized to an input power of 1 W at the antenna connector.
- SAR for nominal TSL parameters:** The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of Measurement multiplied by the coverage factor  $k=2$ , which for a normal distribution Corresponds to a coverage probability of approximately 95%.