



SAR TEST REPORT

Applicant Huawei Technologies Co., Ltd.
FCC ID QISPAR-LX9
Product Smart Phone
Model PAR-LX9
Report No. R1806H0074-S1
Issue Date July 23, 2018

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.

Jiang peng Lan

Performed by: Jiangpeng Lan

Kai Xu

Approved by: Kai Xu

TA Technology (Shanghai) Co., Ltd.

No.145, Jintang Rd, Tangzhen Industry Park, Pudong Shanghai, China

TEL: +86-021-50791141/2/3

FAX: +86-021-50791141/2/3-8000

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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

CNAS (accreditation number:L2264)

TA Technology (Shanghai) Co., Ltd. has obtained the accreditation of China National Accreditation Service for Conformity Assessment (CNAS).

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 electromagnetic emissions measurements.

IC (recognition number is 8510A)

TA Technology (Shanghai) Co., Ltd. has been listed by industry Canada to perform electromagnetic emission measurement.

VCCI (recognition number is C-4595, T-2154, R-4113, G-10766)

TA Technology (Shanghai) Co., Ltd. has been listed by industry Japan to perform electromagnetic emission measurement.

A2LA (Certificate Number: 3857.01)

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

1.3 Testing Location

Company: TA Technology (Shanghai) Co., Ltd.
Address: No.145, Jintang Rd, Tangzhen Industry Park, Pudong Shanghai, China
City: Shanghai
Post code: 201201
Country: P. R. China
Contact: Xu Kai
Telephone: +86-021-50791141/2/3
Fax: +86-021-50791141/2/3-8000
Website: <http://www.ta-shanghai.com>
E-mail: xukai@ta-shanghai.com

1.4 Laboratory Environment

Temperature	Min. = 18°C, Max. = 25 °C
Relative humidity	Min. = 30%, Max. = 70%
Ground system resistance	< 0.5 Ω
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 2.1: 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	0.73	0.38	0.72	/
GSM 1900	0.75	0.16	0.62	/
WCDMA Band II	1.07	0.40	1.04	/
WCDMA Band IV	0.91	0.24	1.03	/
WCDMA Band V	0.89	0.40	0.88	/
LTE FDD 2	1.05	0.30	0.90	/
LTE FDD 4	0.65	0.17	0.89	/
LTE FDD 5	0.84	0.36	0.88	/
LTE FDD 7	0.81	0.44	0.77	/
LTE FDD 12	0.90	0.18	0.70	/
LTE FDD 17	0.71	0.19	0.71	/
LTE FDD 26	0.83	0.36	0.70	/
LTE TDD 38	0.68	0.16	0.57	/
LTE TDD 41	0.68	0.16	0.56	/
Wi-Fi 2.4G	0.30	<0.10	0.12	/
Wi-Fi 5G	0.59	0.10	0.32	1.23
BT	/	/	/	/
Date of Testing:	June 25, 2018~ July 21, 2018			

Note: 1) Stand-alone SAR evaluation is not required for BT, more details information see section 10.2
2) The SAR values listed on grants should be rounded to two decimal places, and body-worn with Wi-Fi 2.4G values less than 0.10 W/kg, after rounding, should be listed using the less-than symbol.

Note:

1) The highest Reported SAR for head, body-worn, hotspot, Product Specific 10-g SAR and simultaneous transmission exposure conditions are 1.07 W/kg, 0.44 W/kg, 1.04 W/kg, 1.23 W/kg and 1.35 W/kg.

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

The device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits according to the FCC rule § 2.1093, the ANSI C95.1: 1992/IEEE C95.1: 1991, and had been tested in accordance with the measurement methods and procedures specified in IEEE Std 1528-2013.

3 Description of Equipment under Test

Client Information

Applicant	Huawei Technologies Co., Ltd.
Applicant address	Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.China.
Manufacturer	Huawei Technologies Co., Ltd.
Manufacturer address	Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.China.

General Technologies

Application Purpose:	Original Grant
EUT Stage	Identical Prototype
Model:	PAR-LX9
IMEI:	SIM 1: 869592030011338 SIM 2: 869592030012336
Hardware Version:	HL2PARLM
Software Version:	PAR-LX9 8.2.0.120 (C900)
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 2/4/5/7/12/17/26:3 LTE TDD 38/41:3
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:max power LTE TDD 38/41:max power
EUT Accessory	
Adapter 1	Manufacturer: Huawei Technologies Co., Ltd. (Manufacturer: Salcomp) Model: HW-059200EHQ SN:K68304J3T03348
Adapter 2	Manufacturer: Huawei Technologies Co., Ltd. (Manufacturer: BYD) Model: HW-059200EHQ SN:B68331J4E00880
Adapter 3	Manufacturer: Huawei Technologies Co., Ltd. (Manufacturer: Salcomp)

	Model: HW-059200UHQ SN: K76520J4H09868
Adapter 4	Manufacturer: Huawei Technologies Co., Ltd. (Manufacturer: BYD) Model: HW-059200UHQ SN: B76549J4C22420
Adapter 5	Manufacturer: Huawei Technologies Co., Ltd. (Manufacturer: Salcomp) Model: HW-090200EH0 SN:K98814J2100215
Adapter 6	Manufacturer: Huawei Technologies Co., Ltd. (Manufacturer: HUNTKEY) Model: HW-090200EH0 SN:H988K7J3D00176
Adapter 7	Manufacturer: Huawei Technologies Co., Ltd. (Manufacturer: Salcomp) Model: HW-090200UH0 SN: K99201J3Y00029
Adapter 8	Manufacturer: Huawei Technologies Co., Ltd. (Manufacturer: HUNTKEY) Model: HW-090200UH0 SN: H992K5J3X00029
Battery 1	Manufacturer: Huawei Technologies Co., Ltd. (Manufacturer: SCUD) Model: HB386589ECW
Battery 2	Manufacturer: Huawei Technologies Co., Ltd. (Manufacturer: Desay) Model: HB386589ECW
Earphone 1	Manufacturer: Boluo County Quancheng Electronic Co., Ltd. Model: 1311-3291-3.5mm-229
Earphone 2	Manufacturer: Jiangxi Lianchuang Hongsheng Electronic Co., LTD. Model: MEMD1632B580C00
Earphone 3	Manufacturer: Merry Electronics Co., Ltd Model: EMC309-001
USB Cable 1	Manufacturer: Ningbo Broad Telecommunication Co., Ltd Model: WA0002
USB Cable 2	Manufacturer: LUXSHARE Precision Industry Co., Ltd. Model: L99UC093-CS-H
USB Cable 3	Manufacturer: HUIZHOU DEHONG TECHNOLOGY CO.,LTD Model: 330-50362

Wireless Technology and Frequency Range

Wireless Technology		Modulation	Operating mode	Tx (MHz)
GSM	850	Voice(GMSK) GPRS(GMSK) EGPRS(GMSK,8PSK)	<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			1850 ~ 1910
Does this device support DTM (Dual Transfer Mode)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
UMTS	Band II	QPSK	HSDPA UE Category:24 HSUPA UE Category:6	1850 ~ 1910
	Band IV			1710 ~ 1755
	Band V			824 ~ 849
LTE	FDD 2	QPSK, 16QAM, 64QAM	Rel 12	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			2545-2655
	Does this device support Carrier Aggregation (CA) <input checked="" type="checkbox"/> Yes downlink only <input type="checkbox"/> No			
Does this device support SV-LTE (1xRTT-LTE)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
BT	2.4G	BLE		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 HT20/ HT40/ HT80	5150 ~ 5350 5470 ~ 5850
Does this device support MIMO <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				

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:

248227 D01 802.11 Wi-Fi SAR v02r02
447498 D01 General RF Exposure Guidance v06
648474 D04 Handset SAR v01r03
690783 D01 SAR Listings on Grants v01r03
865664 D01 SAR measurement 100 MHz to 6 GHz v01r04
865664 D02 RF Exposure Reporting v01r02
941225 D01 3G SAR Procedures v03r01
941225 D05 SAR for LTE Devices v02r05
941225 D05A LTE Rel.10 KDB Inquiry Sheet v01r02
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.

Body-worn operating configurations are tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration. 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 ≤ 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, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg; however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold. 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. Extremity 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 10-g extremity 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 ≥ 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 ≥ 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 ≥ 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 5.1: 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

5.3.2 3G Test Configuration

3G SAR Test Reduction Procedure

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

5.3.2.1 WCDMA Test Configuration

Output power Verification

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

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 reported SAR configuration in 12.2 kbps RMC for head exposure.

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 handset 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 handset, 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.

Handsets with Release 5 HSDPA

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 reported SAR body-worn accessory exposure configuration in 12.2 kbps RMC. Handsets 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 (β_c , β_d), and HS-DPCCH power offset parameters (Δ_{ACK} , Δ_{NACK} , Δ_{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 5.2: Subtests for UMTS Release 5 HSDPA

Sub-set	β_c	β_d	β_d (SF)	β_c/β_d	β_{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

Note1: Δ_{ACK} , Δ_{NACK} and $\Delta_{CQI} = 8 \Leftrightarrow A_{hs} = \beta_{hs}/\beta_c = 30/15 \Leftrightarrow \beta_{hs} = 30/15 * \beta_c$
 Note2: CM=1 for $\beta_c/\beta_d = 12/15$, $\beta_{hs}/\beta_c = 24/15$.
 Note3: For subtest 2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period(TF1,TF0) is achieved by setting the signaled gain factors for the reference TFC (TFC1,TF1) to $\beta_c=11/15$ and $\beta_d=15/15$.

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 reported 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 β values indicated in Table 2 and other applicable procedures described in the ‘WCDMA Handset’ and ‘Release 5 HSDPA Data Devices’ sections of this document

Table 5.3: Sub-Test 5 Setup for Release 6 HSUPA

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

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

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

Table 5.4: HSUPA UE category

UE E-DCH Category	Maximum E-DCH Codes Transmitted	Number of HARQ Processes	E-DCH TTI (ms)	Minimum Spreading Factor	Maximum E-DCH Transport Block Bits	Max Rate (Mbps)
1	1	4	10	4	7110	0.7296
2	2	8	2	4	2798	1.4592
	2	4	10	4	14484	
3	2	4	10	4	14484	1.4592
4	2	8	2	2	5772	2.9185
	2	4	10	2	20000	2.00
5	2	4	10	2	20000	2.00
6 (No DPDCH)	4	8	2	2 SF2 & 2 SF4	11484	5.76
	4	4	10		20000	2.00
7 (No DPDCH)	4	8	2	2 SF2 & 2 SF4	22996	?
	4	4	10		20000	?

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

HSPA and DC-HSDPA Test Configuration

SAR test exclusion may apply to 3GPP Rel. 6 HSPA, Rel. 8 DC-HSDPA. When SAR measurement is required for HSPA or DC-HSDPA, a KDB inquiry is required to confirm that the wireless mode configurations in the test setup have remained stable throughout the SAR measurements. Without prior KDB confirmation to determine the SAR results are acceptable, a PAG is required for equipment approval.

SAR test exclusion for HSPA and DC-HSDPA is determined according to the following:

- 1) The HSPA procedures are applied to configure 3GPP Rel. 6 HSPA devices in the required sub-test mode(s) to determine SAR test exclusion.
- 2) SAR is required for Rel. 8 DC-HSDPA when SAR is required for Rel. 5 HSDPA; otherwise, the 3G SAR test reduction procedure is applied to DC-HSDPA with 12.2 kbps RMC as the primary mode. Power is measured for DC-HSDPA according to the H-Set 12, FRC configuration in Table C.8.1.12 of 3GPP TS 34.121-1 to determine SAR test reduction. A primary and a secondary serving HS-DSCH Cell are required to perform the power measurement and for the results to be acceptable.
- 3) Regardless of whether a PBA is required, the following information must be verified and included in the SAR report for devices supporting HSP or DC-HSDPA: a) The output power measurement results and applicable release version(s) of 3GPP TS 34.121.

i) Power measurement difficulties due to test equipment setup or availability must be resolved between the grantee and its test lab.

b) The power measurement results are in agreement with the individual device implementation and specifications. When Enhanced MPR (E-MPR) applies, the normal MPR targets may be modified according to the Cubic Metric (CM) measured by the device, which must be taken into consideration.

c) The UE category, operating parameters, such as the β and Δ values used to configure the device for testing, power setback procedures described in 3GPP TS 34.121 for the power measurements, and HSPA channel conditions (active and stable) for the entire duration of the measurement according to the required E-TFCI and AG index values.

4) When SAR measurement is required, the test configurations, procedures and power measurement results must be clearly described to confirm that the required test parameters are used, including E-TFCI and AG index stability and output power conditions.

Table 5.5: HS-DSCH UE category
Table 5.1a: FDD HS-DSCH physical layer categories

HS-DSCH category	Maximum number of HS-DSCH codes received	Minimum inter-TTI interval	Maximum number of bits of an HS-DSCH transport block received within an HS-DSCH TTI NOTE 1	Total number of soft channel bits	Supported modulations without MIMO operation or dual cell operation	Supported modulations with MIMO operation and without dual cell operation	Supported modulations with dual cell operation
Category 1	5	3	7298	19200	QPSK, 16QAM	Not applicable (MIMO not supported)	Not applicable (dual cell operation not supported)
Category 2	5	3	7298	28800			
Category 3	5	2	7298	28800			
Category 4	5	2	7298	38400			
Category 5	5	1	7298	57600			
Category 6	5	1	7298	67200			
Category 7	10	1	14411	115200			
Category 8	10	1	14411	134400			
Category 9	15	1	20251	172800			
Category 10	15	1	27952	172800			
Category 11	5	2	3630	14400	QPSK	Not applicable (dual cell operation not supported)	
Category 12	5	1	3630	28800	QPSK, 16QAM, 64QAM		
Category 13	15	1	35280	259200			
Category 14	15	1	42192	259200	QPSK, 16QAM		
Category 15	15	1	23370	345600			
Category 16	15	1	27952	345600	QPSK, 16QAM, 64QAM		-
Category 17 NOTE 2	15	1	35280	259200			
			23370	345600	-		QPSK, 16QAM
Category 18 NOTE 3	15	1	42192	259200	QPSK, 16QAM, 64QAM		-
			27952	345600	-		QPSK, 16QAM
Category 19	15	1	35280	518400	QPSK, 16QAM, 64QAM	-	
Category 20	15	1	42192	518400			
Category 21	15	1	23370	345600	-	-	QPSK, 16QAM
Category 22	15	1	27952	345600			
Category 23	15	1	35280	518400			
Category 24	15	1	42192	518400			QPSK, 16QAM, 64QAM

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 [4]. 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 ≤ 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 ≤ 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 $> \frac{1}{2}$ dB higher than the equivalent channel configurations in the largest channel bandwidth configuration or the *reported* SAR of a configuration for the largest channel bandwidth is > 1.45 W/kg.

5.3.4 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 4.2-2 for uplink-downlink configurations and Table 4.2-1 for Special subframe configurations.

Figure 4.2-1: Frame structure type 2

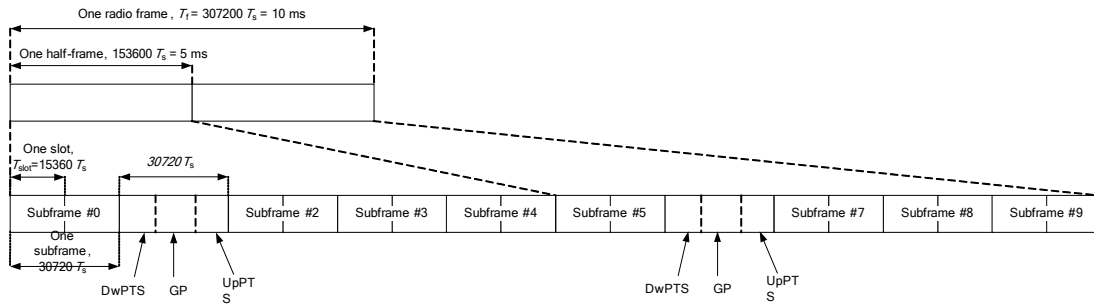


Table 4.2-1: Configuration of special subframe (lengths of DwPTS/GP/UpPTS)

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

Table 4.2-2: Uplink-downlink configurations

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

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

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

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

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

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

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

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

The screenshot displays the 'LTE Signaling - Configuration' window. The left sidebar shows a tree view with 'Physical Cell Setup' and 'TDD' highlighted in red. The main area shows the following configuration:

- Path: Physical Cell Setup/TDD/Uplink Downlink Configuration
- Duplex Mode: TDD
- Use Carrier Specific: FrameStructure 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
 - Subframe Number: 0 1 2 3 4 5 6 7 8 9
 - Direction: ↓ S ↑ ↑ ↑ ↓ S ↑ ↑
 - Special Subframe: 7
- PRACH:
- Network:
- Connection:
- COL Reporting:

On the right sidebar, the 'LTE Signaling' button is highlighted in red and shows 'ON'.

5.3.5 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:

- ≤ 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 ≤ 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 ≤ 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.

5.3.6 Downlink LTE CA specification

The device supports LTE advanced Rel. 12, LTE Carrier Aggregation on downlink for Inter and Intra band. More details information is provided in tables below:

Inter-band CA configurations

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

Note:

- 1) The CA Configuration refers to a combination of an operating band and a CA bandwidth class specified in section 5.6A of 3GPP TS 36.101. Absence of a CA bandwidth class for an operating band implies support of all classes.
- 2) The channel number and frequency are identical to the associated specification in 3GPP TS 36.508.

Intra-band non-contiguous CA configurations

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

Intra-band contiguous CA configurations

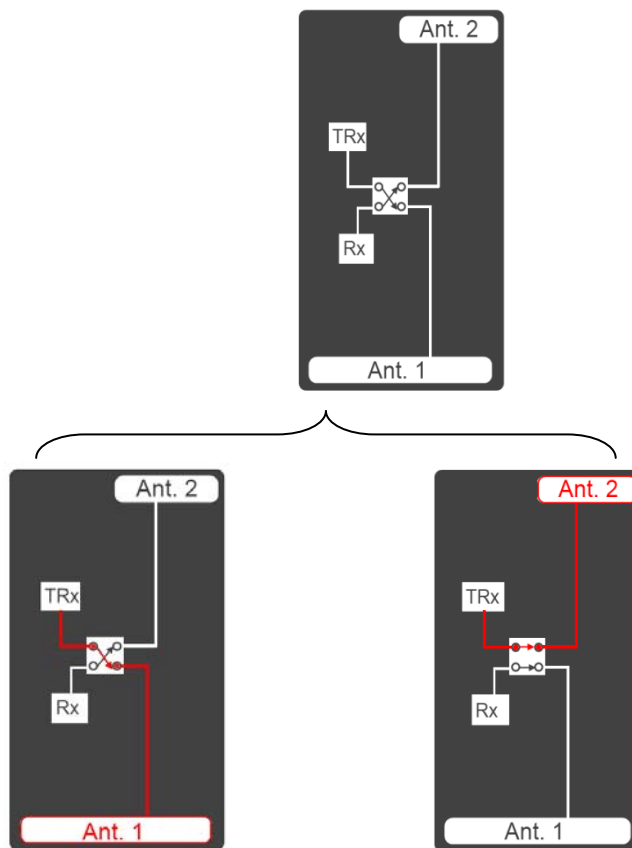
E-UTRA CA configuration	Uplink CA configurations	Component carriers in order of increasing carrier frequency				Maximum aggregated bandwidth [MHz]	Bandwidth combination set
		Channel bandwidths for carrier [MHz]	Channel bandwidths for carrier [MHz]	Channel bandwidths for carrier [MHz]	Channel bandwidths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

5.3.7 Dynamic antenna tuning description

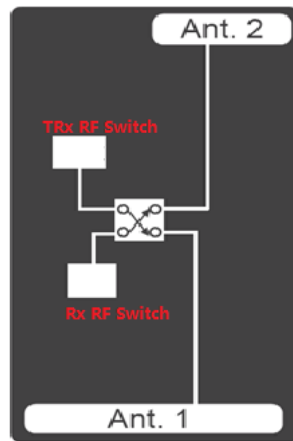
The device supports the dynamic antenna switching function to optimize transmission efficiency for wide range frequency operations. It has two 2G/3G/4G TX antennas (Main Antenna and Secondary Antenna). It can transmit from either Main Antenna (Ant1) or Secondary Antenna (Ant 2).

The device used a DPDT (Double Pole Double Throw) switch to achieve a dynamic antenna switching which is based on the antennas RSSI (Received Signal Strength Indication) comparison and Switch Algorithm. The antenna switching threshold is set to a fixed value (3 dB). The software will choose the Antenna with better RSSI as the main operating TX antenna by comparing the RSSI between Ant1 and Ant 2. When the RSSI of Ant2 is 3 dB higher than Ant1, then the Ant2 will be chosen as the main operating Tx antenna. The switching will refer to all of the 2G/3G/4G operation bands.

The fixture is as below:



The Main Antenna (Ant1) and Secondary Antenna (Ant 2) support the same 2G/3G/4G operating bands. They have the same RF access:



Main antenna (Ant1) and Secondary antenna (Ant 2) can't transmit simultaneously which will be chosen based on the RSSI. Only one antenna can be used for 2G/3G/4G transmission at a time.

Summary test plan: For Dynamic antenna switching SAR test, we will set the Main Antenna / Secondary Antenna to the MAX transmit power level respectively and test the SAR respectively in all applicable RF exposure conditions. Some AT commands or test scripts are supplied to fix the DPDT operation state and choose the antenna, so that only one TX antenna (the Main Antenna or Secondary Antenna) is chosen at a time. All independent antennas and modems will be completely covered by the appropriate SAR measurements and all simultaneous transmission possibilities will be fully considered.

5.3.8 A country code detection mechanism specification

This device support the countries detection mechanism, the main purpose is to distinguish CE countries and FCC countries and apply the relevant power levels accordingly. The main purpose is to provide enhanced user experience while meeting the SAR compliance for different countries. It uses the mobile country code (MCC) to indicate whether the users in CE countries or FCC countries. The selection between CE countries and FCC countries power levels is based on the country code detection mechanism. It can determine the countries where users are and set the relevant power level for 4G (second ant) and Wi-Fi antennas accordingly.

For FCC SAR test:

Standalone FCC SAR of second ant is evaluated with FCC mobile country code.

5.3.9 Receiver detection mechanism specification

This device support the receiver detection mechanism, the main purpose is to minimize triggering associated with power reduction scenarios by receiver detection mechanisms and provide enhanced user experience. It uses the receiver to indicate whether the user is making a call in head scenario or not. The selection between head and body power levels is based on the receiver detection mechanism. It can determine proximity to head or body and set the relevant power level for 2G&3G&4G and Wi-Fi antennas accordingly.

More details information followings:

Second antenna		Power Reduction Level Amount (dB)													
Power Reduction Scenario	Receiver	GSM 850	GSM 1900	UMTS B2	UMTS B4	UMTS B5	LTE B2	LTE B4	LTE B5	LTE B7	LTE B12	LTE B17	LTE B26	LTE B38	LTE B41
Standalone	on	3.5	1.5	2.5	3.0	3.0	2.5	3.0	3.0	3.0	3.5	3.5	3.5	3.5	3.5
	off	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Simultaneous with Wi-Fi on	on	3.5	1.5	2.5	3.0	3.0	2.5	3.0	3.0	3.0	3.5	3.5	3.5	3.5	3.5
	off	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Main antenna		Power Reduction Level Amount (dB)													
Power Reduction Scenario	Receiver	GSM 850	GSM 1900	UMTS B2	UMTS B4	UMTS B5	LTE B2	LTE B4	LTE B5	LTE B7	LTE B12	LTE B17	LTE B26	LTE B38	LTE B41
Standalone	on	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	off	0.0	0.0	1.5	0.3	0.0	1.5	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
Simultaneous with Wi-Fi on	on	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	off	0.0	0.0	1.5	0.3	0.0	1.5	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0

Wi-Fi antenna		Power Reduction Level Amount (dB)									
Power Reduction Scenario	Sensor	WIFI2.4G 11b	WIFI2.4G 11g	WIFI2.4G 11nHT20	WIFI2.4G 11nHT40	WIFI5G 11a	WIFI5G 11nHT20	WIFI5G 11nHT40	WIFI5G 11acHT20	WIFI5G 11acHT40	WIFI5G 11acHT80
Standalone	on	3.0	2.0	0.0	0.0	4.0	3.5	2.5	3.5	2.5	2.5
	off	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Simultaneous with 2G&3G&4G	on	3.0	2.0	0.0	0.0	4.0	3.5	2.5	3.5	2.5	2.5
	off	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

SAR test Plan

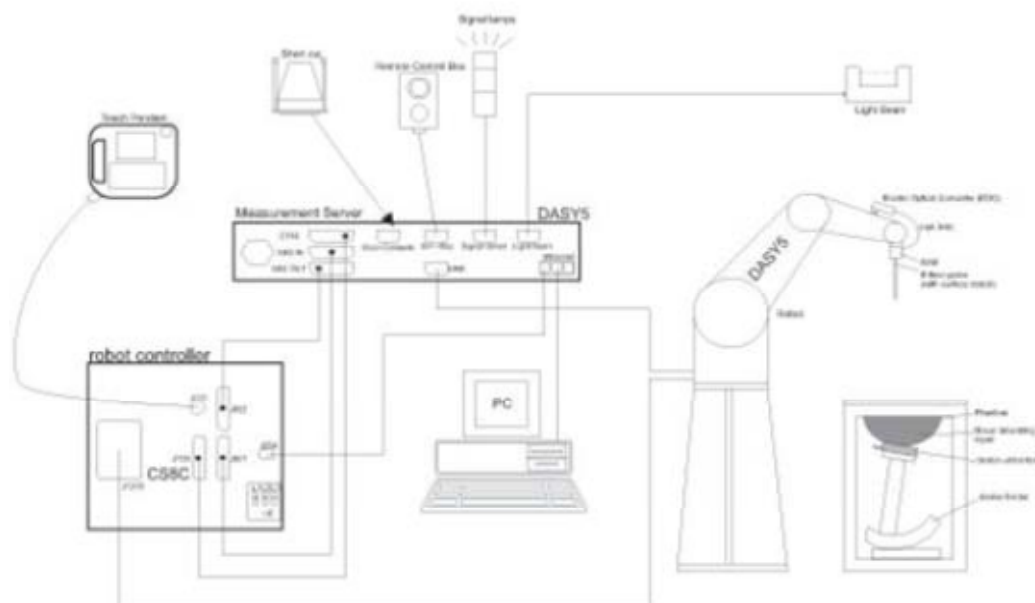
For Head SAR test, standalone SAR is evaluated with receiver on mode

For Body SAR test, standalone SAR is evaluated with receiver off mode.

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

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

Where: Δt = Exposure time (30 seconds),

C = Heat capacity of tissue (brain or muscle),

ΔT = Temperature increase due to RF exposure.

Or

$$\mathbf{SAR=IEI^2\sigma/\rho}$$

Where: σ = Simulated tissue conductivity,

ρ = Tissue density (kg/m³).

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.

	≤3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 ± 1 mm	½·δ·ln(2) ± 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	30° ± 1°	20° ± 1°
Maximum area scan spatial resolution: ΔxArea, ΔyArea	≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 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 ≤ 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: Δx_{zoom} Δy_{zoom}		≤2GHz: ≤8mm 2 – 3GHz: ≤5mm*	3 – 4GHz: ≤5mm* 4 – 6GHz: ≤4mm*	
Maximum zoom scan spatial resolution, normal to phantom surface	Uniform grid: $\Delta z_{\text{zoom}}(n)$	≤5mm	3 – 4GHz: ≤4mm 4 – 5GHz: ≤3mm 5 – 6GHz: ≤2mm	
	Graded grid	$\Delta z_{\text{zoom}}(1)$: between 1 st two points closest to phantom surface	≤4mm	3 – 4GHz: ≤3mm 4 – 5GHz: ≤2.5mm 5 – 6GHz: ≤2mm
		$\Delta z_{\text{zoom}}(n > 1)$: between subsequent points	≤1.5 • $\Delta z_{\text{zoom}}(n-1)$	
Minimum zoom scan volume	X, y, z	≥30mm	3 – 4GHz: ≥28mm 4 – 5GHz: ≥25mm 5 – 6GHz: ≥22mm	
<p>Note: δ 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 <i>reported</i> 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 DASYS 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	2018-05-20	2019-05-19
Dielectric Probe Kit	HP	85070E	US44020115	2018-05-20	2019-05-19
Power meter	Agilent	E4417A	GB41291714	2018-05-21	2019-05-20
Power sensor	Agilent	N8481H	MY50350004	2018-05-21	2019-05-20
Power sensor	Agilent	E9327A	US40441622	2018-05-20	2019-05-19
Dual directional coupler	Agilent	778D-012	50519	2018-05-21	2019-05-20
Dual directional coupler	Agilent	777D	50146	2018-05-20	2019-05-19
Amplifier	INDEXSAR	IXA-020	0401	2018-05-20	2019-05-19
Wideband radio communication tester	R&S	CMW 500	113645	2018-05-20	2019-05-19
BT Base Station Simulator	R&S	CBT	100271	2018-05-14	2019-05-13
E-field Probe	SPEAG	EX3DV4	3677	2018-05-29	2019-05-28
DAE	SPEAG	DAE4	1317	2018-03-23	2019-03-22
Validation Kit 750MHz	SPEAG	D750V3	1045	2017-08-27	2020-08-26
Validation Kit 835MHz	SPEAG	D835V2	4d020	2017-08-28	2020-08-27
Validation Kit 1750MHz	SPEAG	D1750V2	1033	2017-01-10	2020-01-09
Validation Kit 1900MHz	SPEAG	D1900V2	5d060	2017-08-26	2020-08-25
Validation Kit 2450MHz	SPEAG	D2450V2	786	2017-08-29	2020-08-28
Validation Kit 2600MHz	SPEAG	D2600V2	1025	2018-05-02	2021-05-01
Validation Kit 5GHz	SPEAG	D5GHzV2	1151	2017-01-05	2020-01-04
Temperature Probe	Tianjin jinming	JM222	AA1009129	2018-05-17	2019-05-16
Hygrothermograph	Anymetr	NT-311	20150731	2018-05-17	2019-05-16
Software for Test	Speag	DASY5	52.8.8.1222	/	/
Software for Tissue	Agilent	85070	E06.01.36	/	/

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 $\pm 2^\circ\text{C}$ 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 3 – 4 days of use; or earlier if the dielectric parameters can become out of tolerance.

Target values

Frequency (MHz)	Water (%)	Salt (%)	Sugar (%)	Glycol (%)	Preventol (%)	Cellulose (%)	ϵ_r	$\sigma(\text{s/m})$	
Head	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
Body	750	52.49	1.41	45	0	0.1	1.0	55.5	0.96
	835	52.5	1.4	45	0	0.1	1.0	55.2	0.97
	1750	69.91	0.12	0	29.97	0	0	53.4	1.49
	1900	69.91	0.13	0	29.96	0	0	53.3	1.52
	2450	73.2	0.1	0	26.7	0	0	52.7	1.95
	2600	72.6	0.1	0	27.3	0	0	52.5	2.16
Frequency (MHz)	Water (%)	Diethylenglycol mono-hexylether			Triton X-100		ϵ_r	$\sigma(\text{s/m})$	
Head	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
Body	5250	72.52	13.74			13.74		48.9	5.36
	5600	72.52	13.74			13.74		48.5	5.77
	5750	72.52	13.74			13.74		48.3	5.94

Measurements results

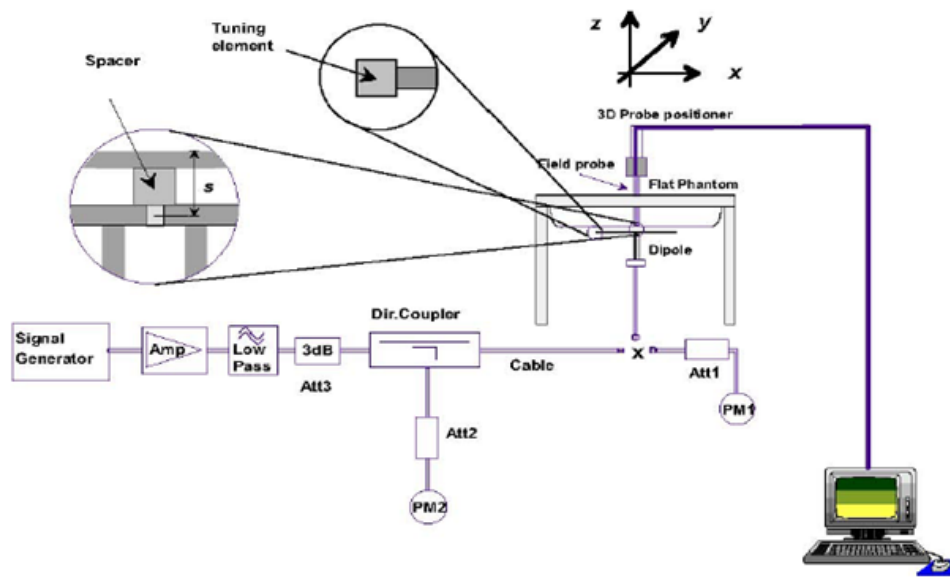
Frequency (MHz)	Test Date	Temp °C	Measured Dielectric Parameters		Target Dielectric Parameters		Limit (Within ±5%)		
			ϵ_r	σ (s/m)	ϵ_r	σ (s/m)	Dev ϵ_r (%)	Dev σ (%)	
750	Head	7/2/2018	21.5	42.6	0.89	41.9	0.89	1.67	0.00
	Body	7/3/2018	21.5	56.7	0.96	55.5	0.96	2.16	0.00
			7/6/2018	21.5	54.5	0.96	55.5	0.96	-1.80
835	Head	7/4/2018	21.5	41.5	0.91	41.5	0.90	0.00	1.11
		7/5/2018	21.5	41.3	0.87	41.5	0.90	-0.48	-3.33
	Body	7/5/2018	21.5	53.8	0.98	55.2	0.97	-2.54	1.03
		7/8/2018	21.5	54.6	0.95	55.2	0.97	-1.09	-2.06
		7/9/2018	21.5	54.5	0.98	55.2	0.97	-1.27	1.03
1750	Head	7/7/2018	21.5	40.7	1.33	40.1	1.37	1.50	-2.92
	Body	7/10/2018	21.5	52.9	1.50	53.4	1.49	-0.94	0.67
		7/11/2018	21.5	52.5	1.51	53.4	1.49	-1.69	1.34
1900	Head	6/30/2018	21.5	39.1	1.38	40.0	1.40	-2.25	-1.43
		7/1/2018	21.5	40.2	1.43	40.0	1.40	0.50	2.14
	Body	6/29/2018	21.5	52.8	1.51	53.3	1.52	-0.94	-0.66
		7/1/2018	21.5	51.6	1.51	53.3	1.52	-3.19	-0.66
2450	Head	7/1/2018	21.5	39.7	1.85	39.2	1.80	1.28	2.78
		7/20/2018	21.5	39.9	1.81	39.2	1.80	1.79	0.56
	Body	7/1/2018	21.5	51.8	1.93	52.7	1.95	-1.71	-1.03
		7/20/2018	21.5	52.9	1.94	52.7	1.95	0.38	-0.51
2600	Head	6/27/2018	21.5	39.3	2.02	39.0	1.96	0.77	3.06
		6/28/2018	21.5	38.2	2.01	39.0	1.96	-2.05	2.55
		7/19/2018	21.5	38.3	1.99	39.0	1.96	-1.79	1.53
		7/20/2018	21.5	38.4	1.98	39.0	1.96	-1.54	1.02
	Body	6/25/2018	21.5	51.4	2.12	52.5	2.16	-2.10	-1.85
		6/26/2018	21.5	51.7	2.21	52.5	2.16	-1.52	2.31
		7/19/2018	21.5	51.7	2.20	52.5	2.16	-1.52	1.85
5250	Head	6/27/2018	21.5	36.0	4.75	35.9	4.71	0.28	0.85
		7/21/2018	21.5	35.7	4.74	35.9	4.71	-0.56	0.64
	Body	7/12/2018	21.5	46.7	5.42	48.9	5.36	-4.50	1.12
		7/20/2018	21.5	47.1	5.40	48.9	5.36	-3.68	0.75
5600	Head	6/27/2018	21.5	35.1	5.20	35.5	5.07	-1.13	2.56
		7/21/2018	21.5	35.4	5.17	35.5	5.07	-0.28	1.97
	Body	7/12/2018	21.5	46.7	6.00	48.5	5.77	-3.71	3.99
		7/21/2018	21.5	47.8	5.88	48.5	5.77	-1.44	1.91
5750	Head	6/27/2018	21.5	34.9	5.21	35.4	5.22	-1.41	-0.19
	Body	7/12/2018	21.5	47.6	6.14	48.3	5.94	-1.45	3.37

Note: The depth of tissue-equivalent liquid in a phantom must be ≥ 15.0 cm for SAR measurements ≤ 3 GHz and ≥ 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)	Δ %	Impedance (Ω)	$\Delta\Omega$
Dipole D1750V2 SN: 1033	Head Liquid	1/10/2017	-40.3	/	49.8	/
		1/9/2018	-40.0	0.7%	49.9	0.1 Ω
	Body Liquid	1/10/2017	-35.0	/	44.7	/
		1/9/2018	-34.7	0.9%	44.9	-0.2 Ω
Dipole D5GHzV2 SN: 1151 (5250MHz)	Head Liquid	1/5/2017	-24.5	/	48.4	/
		1/4/2018	-24.2	1.2%	48.7	0.3 Ω
	Body Liquid	1/5/2017	-24.7	/	50.4	/
		1/4/2018	-24.4	1.2%	49.9	-0.5 Ω
Dipole D5GHzV2 SN: 1151 (5600MHz)	Head Liquid	1/5/2017	-22.8	/	55.5	/
		1/4/2018	-22.4	1.8%	55.2	-0.3 Ω
	Body Liquid	1/5/2017	-23.3	/	57.2	/
		1/4/2018	-23.4	-0.4%	56.8	-0.4 Ω
Dipole D5GHzV2 SN: 1151 (5750MHz)	Head Liquid	1/5/2017	-26.5	/	52.4	/
		1/4/2018	-26.8	-1.1%	52.5	0.1 Ω
	Body Liquid	1/5/2017	-24.9	/	56.0	/
		1/4/2018	-25.2	-1.2%	56.4	0.4 Ω

System Check results

Frequency (MHz)	Test Date	Temp $^{\circ}$ C	250mW/ 100mW Measured SAR _{1g} (W/kg)	1W Normalized SAR _{1g} (W/kg)	1W Target SAR _{1g} (W/kg)	Δ % (Limit \pm 10%)	Plot No.	
750	Head	7/2/2018	21.5	2.13	8.52	8.34	2.16	1
	Body	7/3/2018	21.5	2.22	8.88	8.78	1.14	2
		7/6/2018	21.5	2.17	8.68	8.78	-1.14	3
835	Head	7/4/2018	21.5	2.44	9.76	9.45	3.28	4
		7/5/2018	21.5	2.46	9.84	9.45	4.13	5
	Body	7/5/2018	21.5	2.41	9.64	9.75	-1.13	6
		7/8/2018	21.5	2.42	9.68	9.75	-0.72	7
		7/9/2018	21.5	2.45	9.80	9.75	0.51	8
1750	Head	7/7/2018	21.5	8.95	35.80	37.20	-3.76	9



	Body	7/10/2018	21.5	9.24	36.96	37.60	-1.70	10
		7/11/2018	21.5	9.40	37.60	37.60	0.00	11
1900	Head	6/30/2018	21.5	9.88	39.52	40.10	-1.45	12
		7/1/2018	21.5	9.85	39.40	40.10	-1.75	13
	Body	6/29/2018	21.5	9.93	39.72	39.50	0.56	14
		7/1/2018	21.5	9.91	39.64	39.50	0.35	15
2450	Head	7/1/2018	21.5	13.70	54.80	52.60	4.18	16
		7/20/2018	21.5	13.14	52.56	52.6	-0.08	17
	Body	7/1/2018	21.5	12.50	50.00	50.80	-1.57	18
		7/20/2018	21.5	13.20	52.80	50.80	3.94	19
2600	Head	6/27/2018	21.5	13.90	55.60	54.10	2.77	20
		6/28/2018	21.5	13.90	55.60	54.10	2.77	21
		7/19/2018	21.5	13.94	55.76	54.10	3.07	22
		7/20/2018	21.5	13.90	55.60	54.1	2.77	23
	Body	6/25/2018	21.5	13.50	54.00	54.50	-0.92	24
		6/26/2018	21.5	13.55	54.20	54.50	-0.55	25
7/19/2018		21.5	13.89	55.56	54.50	1.94	26	
5250	Head	6/27/2018	21.5	7.87	78.70	78.40	0.38	27
		7/21/2018	21.5	7.94	79.40	78.40	1.28	28
	Body	7/12/2018	21.5	7.46	74.60	75.60	-1.32	29
		7/20/2018	21.5	7.42	74.20	75.60	-1.85	30
5600	Head	6/27/2018	21.5	7.67	76.70	81.50	-5.89	31
		7/21/2018	21.5	7.98	79.80	81.50	-2.09	32
	Body	7/12/2018	21.5	8.10	81.00	80.20	1.00	33
		7/21/2018	21.5	8.04	80.40	80.20	0.25	34
5750	Head	6/27/2018	21.5	7.66	76.60	80.50	-4.84	35
	Body	7/12/2018	21.5	7.15	71.50	74.60	-4.16	36

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

9 Normal and Maximum Output Power

KDB 447498 D01 at the maximum rated output power and within the tune-up tolerance range specified for the product, but not more than 2 dB lower than the maximum tune-up tolerance limit.

9.1 GSM Mode

Antenna 1

GSM 850		Tune-up (dBm)	Burst-Averaged output power(dBm)			Division actors	Tune-up (dBm)	Frame-Averaged output power(dBm)		
			Channel/Frenqucy(MHz)					Channel/Frenqucy(MHz)		
		MAX	128/824.2	190/836.6	251/848.8	MAX	128/824.2	190/836.6	251/848.8	
GSM	CS	33.70	32.68	32.53	32.46	9.03	24.67	23.65	23.50	23.43
GPRS (GMSK)	1 Tx Slot	33.70	32.64	32.40	32.42	9.03	24.67	23.61	23.37	23.39
	2 Tx Slots	30.70	29.66	29.42	29.46	6.02	24.68	23.64	23.40	23.44
	3 Tx Slots	28.90	27.84	27.60	27.67	4.26	24.64	23.58	23.34	23.41
	4 Tx Slots	27.70	26.69	26.44	26.49	3.01	24.69	23.68	23.43	23.48
EGPRS (8PSK)	1 Tx Slot	29.00	26.12	23.03	26.04	9.03	19.97	17.09	14.00	17.01
	2 Tx Slots	26.00	23.02	23.01	23.05	6.02	19.98	17.00	16.99	17.03
	3 Tx Slots	24.20	21.34	21.18	21.21	4.26	19.94	17.08	16.92	16.95
	4 Tx Slots	23.00	20.24	20.16	20.22	3.01	19.99	17.23	17.15	17.21
GSM 1900		Tune-up (dBm)	Burst-Averaged output power(dBm)			Division actors	Tune-up (dBm)	Frame-Averaged output power(dBm)		
			Channel/Frenqucy(MHz)					Channel/Frenqucy(MHz)		
		MAX	512/1850.2	661/1880	810/1909.8	MAX	512/1850.2	661/1880	810/1909.8	
GSM	CS	31.00	29.73	29.57	29.52	9.03	21.97	20.70	20.54	20.49
GPRS (GMSK)	1 Tx Slot	31.00	29.73	29.57	29.50	9.03	21.97	20.70	20.54	20.47
	2 Tx Slots	28.00	26.86	26.61	26.44	6.02	21.98	20.84	20.59	20.42
	3 Tx Slots	26.20	25.00	24.84	24.59	4.26	21.94	20.74	20.58	20.33
	4 Tx Slots	25.00	23.84	23.66	23.41	3.01	21.99	20.83	20.65	20.40
EGPRS (8PSK)	1 Tx Slot	27.00	25.35	25.19	25.20	9.03	17.97	16.32	16.16	16.17
	2 Tx Slots	25.50	22.15	22.10	22.08	6.02	19.48	16.13	16.08	16.06
	3 Tx Slots	23.70	20.97	20.78	20.84	4.26	19.44	16.71	16.52	16.58
	4 Tx Slots	21.50	19.76	19.67	19.65	3.01	18.49	16.75	16.66	16.64

Notes: The worst-case configuration and mode for SAR testing is determined to be as follows:

1. Standalone: GSM 850 GMSK (GPRS) mode with 4 time slots for Max power, GSM 1900 GMSK (GPRS) mode with 4 time slots for Max power, based on the output power measurements above.
2. SAR is not required for EGPRS (8PSK) mode because its output power is less than that of GPRS Mode.

Antenna 2

GSM 850 Receiver off		Tune-up (dBm)	Burst-Averaged output power(dBm)			Division actors	Tune-up (dBm)	Frame-Averaged output power(dBm)		
			Channel/Frenqucy(MHz)					Channel/Frenqucy(MHz)		
		MAX	128/824.2	190/836.6	251/848.8	MAX	128/824.2	190/836.6	251/848.8	
GSM	CS	33.70	32.47	32.31	32.26	9.03	24.67	23.44	23.28	23.23
GPRS (GMSK)	1 Tx Slot	33.70	32.47	32.33	32.25	9.03	24.67	23.44	23.30	23.22
	2 Tx Slots	30.70	29.54	29.43	29.38	6.02	24.68	23.52	23.41	23.36
	3 Tx Slots	28.90	27.43	27.62	27.60	4.26	24.64	23.17	23.36	23.34
	4 Tx Slots	27.70	26.57	26.45	26.44	3.01	24.69	23.56	23.44	23.43
EGPRS (8PSK)	1 Tx Slot	29.00	26.02	25.90	25.85	9.03	19.97	16.99	16.87	16.82
	2 Tx Slots	26.00	22.79	22.71	22.64	6.02	19.98	16.77	16.69	16.62
	3 Tx Slots	24.20	20.53	20.76	20.73	4.26	19.94	16.27	16.50	16.47
	4 Tx Slots	23.00	19.54	19.44	19.45	3.01	19.99	16.53	16.43	16.44
GSM 1900 Receiver off		Tune-up (dBm)	Burst-Averaged output power(dBm)			Division actors	Tune-up (dBm)	Frame-Averaged output power(dBm)		
			Channel/Frenqucy(MHz)					Channel/Frenqucy(MHz)		
		MAX	512/1850.2	661/1880	810/1909.8	MAX	512/1850.2	661/1880	810/1909.8	
GSM	CS	31.00	29.72	29.55	29.43	9.03	21.97	20.69	20.52	20.40
GPRS (GMSK)	1 Tx Slot	31.00	29.78	29.74	29.56	9.03	21.97	20.75	20.71	20.53
	2 Tx Slots	28.00	26.89	26.65	26.50	6.02	21.98	20.87	20.63	20.48
	3 Tx Slots	26.20	25.09	24.81	24.67	4.26	21.94	20.83	20.55	20.41
	4 Tx Slots	25.00	23.87	23.57	23.43	3.01	21.99	20.86	20.56	20.42
EGPRS (8PSK)	1 Tx Slot	27.00	25.12	25.03	24.88	9.03	17.97	16.09	16.00	15.85
	2 Tx Slots	25.50	22.14	21.89	21.73	6.02	19.48	16.12	15.87	15.71
	3 Tx Slots	23.70	20.41	20.10	19.95	4.26	19.44	16.15	15.84	15.69
	4 Tx Slots	21.50	19.05	18.71	18.58	3.01	18.49	16.04	15.70	15.57

Notes: The worst-case configuration and mode for SAR testing is determined to be as follows:

1. Standalone: GSM 850 GMSK (GPRS) mode with 4 time slots for Max power, GSM 1900 GMSK (GPRS) mode with 4 time slots for Max power, based on the output power measurements above.
2. SAR is not required for EGPRS (8PSK) mode because its output power is less than that of GPRS Mode.

GSM 850 Receiver on		Tune-up	Burst-Averaged output power(dBm)			Division actors	Tune-up	Frame-Averaged output power(dBm)		
		(dBm)	Channel/Frenqucy(MHz)				(dBm)	Channel/Frenqucy(MHz)		
		MAX	128/824.2	190/836.6	251/848.8		MAX	128/824.2	190/836.6	251/848.8
GSM	CS	30.20	29.05	28.91	28.90	9.03	21.17	20.02	19.88	19.87
GPRS (GMSK)	1 Tx Slot	30.20	28.79	28.76	28.74	9.03	21.17	19.76	19.73	19.71
	2 Tx Slots	27.20	25.82	25.81	25.80	6.02	21.18	19.80	19.79	19.78
	3 Tx Slots	25.40	24.04	24.04	24.03	4.26	21.14	19.78	19.78	19.77
	4 Tx Slots	24.20	22.88	22.87	22.87	3.01	21.19	19.87	19.86	19.86
EGPRS (8PSK)	1 Tx Slot	25.50	22.87	22.87	22.83	9.03	16.47	13.84	13.84	13.80
	2 Tx Slots	22.50	20.10	20.11	20.13	6.02	16.48	14.08	14.09	14.11
	3 Tx Slots	20.70	17.98	18.01	17.98	4.26	16.44	13.72	13.75	13.72
	4 Tx Slots	19.50	16.73	16.76	16.75	3.01	16.49	13.72	13.75	13.74
GSM 1900 Receiver on		Tune-up	Burst-Averaged output power(dBm)			Division actors	Tune-up	Frame-Averaged output power(dBm)		
		(dBm)	Channel/Frenqucy(MHz)				(dBm)	Channel/Frenqucy(MHz)		
		MAX	512/1850.2	661/1880	810/1909.8		MAX	512/1850.2	661/1880	810/1909.8
GSM	CS	29.50	28.23	28.03	27.82	9.03	20.47	19.20	19.00	18.79
GPRS (GMSK)	1 Tx Slot	29.50	28.37	28.12	28.02	9.03	20.47	19.34	19.09	18.99
	2 Tx Slots	26.50	25.43	25.13	25.02	6.02	20.48	19.41	19.11	19.00
	3 Tx Slots	24.70	23.57	23.30	23.18	4.26	20.44	19.31	19.04	18.92
	4 Tx Slots	23.50	22.37	22.08	21.92	3.01	20.49	19.36	19.07	18.91
EGPRS (8PSK)	1 Tx Slot	26.50	24.10	23.88	23.76	9.03	17.47	15.07	14.85	14.73
	2 Tx Slots	23.50	20.81	20.55	20.43	6.02	17.48	14.79	14.53	14.41
	3 Tx Slots	21.70	19.27	19.02	18.92	4.26	17.44	15.01	14.76	14.66
	4 Tx Slots	20.50	17.55	17.28	17.14	3.01	17.49	14.54	14.27	14.13

Notes: GSM CS mode will be use for head SAR test.

9.2 WCDMA Mode

The following tests were completed according to the test requirements outlined in the 3GPP TS34.121 specification.

Antenna 1

WCDMA		Band II(dBm) Receiver on				Band IV(dBm) Receiver on				Band V(dBm)			
Tx Channel		9262	9400	9538	Tune-up	1312	1413	1513	Tune-up	4132	4183	4233	Tune-up
Frequency(MHz)		1852.4	1880	1907.6	Limit (dBm)	1712.4	1732.6	1752.6	Limit (dBm)	826.4	836.6	846.6	Limit (dBm)
RMC	12.2kbps	23.38	23.26	23.28	24.60	22.76	22.68	22.73	24.30	24.03	24.12	24.15	25.00
AMR	12.2kbps	23.31	23.17	23.15	24.60	22.69	22.59	22.60	24.30	23.96	24.03	24.02	25.00
HSDPA	Sub 1	22.30	22.18	22.20	23.60	21.68	21.60	21.65	23.30	22.95	23.04	23.07	24.00
	Sub 2	21.79	21.67	21.69	23.10	21.17	21.09	21.14	22.80	22.94	23.03	23.06	24.00
	Sub 3	20.98	20.86	20.88	22.30	20.36	20.28	20.33	22.00	22.63	22.72	22.75	23.70
	Sub 4	20.97	20.85	20.87	22.30	20.35	20.27	20.32	22.00	22.62	22.71	22.74	23.70
HSUPA	Sub 1	21.76	21.64	21.66	23.10	21.14	21.06	21.11	22.80	22.41	22.50	22.53	23.50
	Sub 2	19.75	19.63	19.65	21.10	19.13	19.05	19.10	20.80	20.40	20.49	20.52	21.50
	Sub 3	20.73	20.62	20.64	22.10	20.11	20.04	20.09	21.80	21.38	21.48	21.51	22.50
	Sub 4	19.72	19.61	19.63	21.10	19.10	19.03	19.08	20.80	20.37	20.47	20.50	21.50
	Sub 5	23.21	23.10	23.12	24.60	22.59	22.52	22.57	24.30	23.86	23.96	23.99	25.00
DC-HSDPA	Sub 1	22.22	22.12	22.12	23.60	21.60	21.54	21.57	23.30	22.87	22.98	22.99	24.00
	Sub 2	21.71	21.61	21.61	23.10	21.09	21.03	21.06	22.80	22.86	22.97	22.98	24.00
	Sub 3	20.99	20.80	20.82	22.30	20.37	20.22	20.27	22.00	22.64	22.66	22.69	23.70
	Sub 4	20.98	20.79	20.81	22.30	20.36	20.21	20.26	22.00	22.63	22.65	22.68	23.70

Note: 1. Per KDB 941225 D01, SAR for Head / Hotspot / Body-worn exposure is measured using a 12.2 kbps RMC with TPC bits configured to all "1's".

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



WCDMA		Band II(dBm) Receiver off				Band IV(dBm) Receiver off			
Tx Channel		9262	9400	9538	Tune-up	1312	1413	1513	Tune-up
Frequency(MHz)		1852.4	1880	1907.6	Limit (dBm)	1712.4	1732.6	1752.6	Limit (dBm)
RMC	12.2kbps	21.85	21.89	21.84	23.10	22.50	22.55	22.47	24.00
AMR	12.2kbps	21.78	21.80	21.71	23.10	22.43	22.46	22.34	24.00
HSDPA	Sub 1	20.77	20.81	20.76	22.10	21.42	21.47	21.39	23.00
	Sub 2	20.26	20.30	20.25	21.60	20.91	20.96	20.88	22.50
	Sub 3	19.45	19.49	19.44	20.80	20.10	20.15	20.07	21.70
	Sub 4	19.44	19.48	19.43	20.80	20.09	20.14	20.06	21.70
HSUPA	Sub 1	20.23	20.27	20.22	21.60	20.88	20.93	20.85	22.50
	Sub 2	18.22	18.26	18.21	19.60	18.87	18.92	18.84	20.50
	Sub 3	19.20	19.25	19.20	20.60	19.85	19.91	19.83	21.50
	Sub 4	18.19	18.24	18.19	19.60	18.84	18.90	18.82	20.50
	Sub 5	21.68	21.73	21.68	23.10	22.33	22.39	22.31	24.00
DC-HSDPA	Sub 1	20.69	20.75	20.68	22.10	21.34	21.41	21.31	23.00
	Sub 2	20.18	20.24	20.17	21.60	20.83	20.90	20.80	22.50
	Sub 3	19.46	19.43	19.38	20.80	20.11	20.09	20.01	21.70
	Sub 4	19.45	19.42	19.37	20.80	20.10	20.08	20.00	21.70

Note: 1. Per KDB 941225 D01, SAR for Head / Hotspot / Body-worn exposure is measured using a 12.2 kbps RMC with TPC bits configured to all "1's".

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

Antenna 2

WCDMA		Band II(dBm) Receiver off				Band IV(dBm) Receiver off				Band V(dBm) Receiver off			
Tx Channel		9262	9400	9538	Tune-up	1312	1413	1513	Tune-up	4132	4183	4233	Tune-up
Frequency(MHz)		1852.4	1880	1907.6	Limit (dBm)	1712.4	1732.6	1752.6	Limit (dBm)	826.4	836.6	846.6	Limit (dBm)
RMC	12.2kbps	22.18	23.32	22.19	23.60	21.55	21.57	21.62	23.30	23.40	23.33	23.35	24.50
AMR	12.2kbps	22.11	23.23	22.06	23.60	21.48	21.48	21.49	23.30	23.33	23.24	23.22	24.50
HSDPA	Sub 1	21.10	22.24	21.11	22.60	20.47	20.49	20.54	22.30	22.32	22.25	22.27	23.50
	Sub 2	20.59	21.73	20.60	22.10	19.96	19.98	20.03	21.80	22.31	22.24	22.26	23.50
	Sub 3	19.78	20.92	19.79	21.30	19.15	19.17	19.22	21.00	21.00	20.93	20.95	22.20
	Sub 4	19.77	20.91	19.78	21.30	19.14	19.16	19.21	21.00	20.99	20.92	20.94	22.20
HSUPA	Sub 1	20.56	21.70	20.57	22.10	19.93	19.95	20.00	21.80	22.28	22.21	22.23	23.50
	Sub 2	18.55	19.69	18.56	20.10	17.92	17.94	17.99	19.80	19.77	19.70	19.72	21.00
	Sub 3	19.53	20.68	19.55	21.10	18.90	18.93	18.98	20.80	20.75	20.69	20.71	22.00
	Sub 4	18.52	19.67	18.54	20.10	17.89	17.92	17.97	19.80	19.74	19.68	19.70	21.00
	Sub 5	22.01	23.16	22.03	23.60	21.38	21.41	21.46	23.30	23.23	23.17	23.19	24.50
DC-HSDPA	Sub 1	21.02	22.18	21.03	22.60	20.39	20.43	20.46	22.30	22.24	22.19	22.19	23.50
	Sub 2	20.51	21.67	20.52	22.10	19.88	19.92	19.95	21.80	22.23	22.18	22.18	23.50
	Sub 3	19.79	20.86	19.73	21.30	19.16	19.11	19.16	21.00	21.01	20.87	20.89	22.20
	Sub 4	19.78	20.85	19.72	21.30	19.15	19.10	19.15	21.00	21.00	20.86	20.88	22.20

Note: 1. Per KDB 941225 D01, SAR for Head / Hotspot / Body-worn exposure is measured using a 12.2 kbps RMC with TPC bits configured to all "1's".

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



WCDMA		Band II(dBm) Receiver on				Band IV(dBm) Receiver on				Band V(dBm) Receiver on			
Tx Channel		9262	9400	9538	Tune-up	1312	1413	1513	Tune-up	4132	4183	4233	Tune-up
Frequency(MHz)		1852.4	1880	1907.6	Limit (dBm)	1712.4	1732.6	1752.6	Limit (dBm)	826.4	836.6	846.6	Limit (dBm)
RMC	12.2kbps	19.66	19.78	19.63	21.10	18.45	18.53	18.55	20.30	20.35	20.33	20.35	21.50
AMR	12.2kbps	19.59	19.69	19.50	21.10	18.38	18.44	18.42	20.30	20.28	20.24	20.22	21.50
HSDPA	Sub 1	18.58	18.70	18.55	20.10	17.37	17.45	17.47	19.30	19.27	19.25	19.27	20.50
	Sub 2	18.07	18.19	18.04	19.60	16.86	16.94	16.96	18.80	19.26	19.24	19.26	20.50
	Sub 3	17.26	17.38	17.23	18.80	16.05	16.13	16.15	18.00	17.95	17.93	17.95	19.20
	Sub 4	17.25	17.37	17.22	18.80	16.04	16.12	16.14	18.00	17.94	17.92	17.94	19.20
HSUPA	Sub 1	18.04	18.16	18.01	19.60	16.83	16.91	16.93	18.80	19.23	19.21	19.23	20.50
	Sub 2	16.03	16.15	16.00	17.60	14.82	14.90	14.92	16.80	16.72	16.70	16.72	18.00
	Sub 3	17.01	17.14	16.99	18.60	15.80	15.89	15.91	17.80	17.70	17.69	17.71	19.00
	Sub 4	16.00	16.13	15.98	17.60	14.79	14.88	14.90	16.80	16.69	16.68	16.70	18.00
	Sub 5	19.49	19.62	19.47	21.10	18.28	18.37	18.39	20.30	20.18	20.17	20.19	21.50
DC-HSDPA	Sub 1	18.50	18.64	18.47	20.10	17.29	17.39	17.39	19.30	19.19	19.19	19.19	20.50
	Sub 2	17.99	18.13	17.96	19.60	16.78	16.88	16.88	18.80	19.18	19.18	19.18	20.50
	Sub 3	17.27	17.32	17.17	18.80	16.06	16.07	16.09	18.00	17.96	17.87	17.89	19.20
	Sub 4	17.26	17.31	17.16	18.80	16.05	16.06	16.08	18.00	17.95	17.86	17.88	19.20

Note: 1. Per KDB 941225 D01, SAR for Head / Hotspot / Body-worn exposure is measured using a 12.2 kbps RMC with TPC bits configured to all "1's".

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

9.3 LTE Mode

UE Power Class: 3 (23 +/- 2dBm). The allowed Maximum Power Reduction (MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS36.101.

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

Modulation	Channel bandwidth / Transmission bandwidth (N _{RB})						MPR (dB)
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2
64 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 2
64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 3

Antenna 1

LTE FDD Band 2 Receiver on				Conducted Power(dBm)			Tune-up Limit (dBm)
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				18607/1850.7	18900/1880	19193/1909.3	
1.4MHz	QPSK	1	0	23.48	23.43	23.33	24.10
		1	2	23.16	23.25	23.25	24.10
		1	5	23.39	23.29	23.27	24.10
		3	0	22.78	22.85	22.99	24.10
		3	2	22.67	22.95	22.90	24.10
		3	3	22.74	22.95	22.90	24.10
		6	0	22.23	22.42	22.44	23.10
	16QAM	1	0	22.68	22.62	22.54	23.10
		1	2	22.51	22.48	22.33	23.10
		1	5	22.62	22.55	22.48	23.10
		3	0	21.86	21.97	21.85	23.10
		3	2	21.80	21.87	21.79	23.10
		3	3	21.77	21.92	21.79	23.10
		6	0	21.35	21.46	21.41	22.10
	64QAM	1	0	21.73	21.71	21.60	22.10
		1	2	21.53	21.52	21.37	22.10
		1	5	21.68	21.62	21.56	22.10
		3	0	21.61	21.76	21.62	22.10
		3	2	21.54	21.65	21.57	22.10
		3	3	21.53	21.68	21.56	22.10
		6	0	20.04	20.24	20.18	21.10

Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				18615/1851.5	18900/1880	19185/1908.5	
3MHz	QPSK	1	0	23.50	23.47	23.36	24.10
		1	7	23.19	23.30	23.29	24.10
		1	14	23.42	23.34	23.31	24.10
		8	0	22.36	22.45	22.60	23.10
		8	4	22.27	22.53	22.50	23.10
		8	7	22.32	22.54	22.48	23.10
		15	0	22.26	22.46	22.47	23.10
	16QAM	1	0	22.71	22.64	22.57	23.10
		1	7	22.54	22.53	22.37	23.10
		1	14	22.64	22.59	22.51	23.10
		8	0	21.45	21.58	21.45	22.10
		8	4	21.39	21.48	21.39	22.10
		8	7	21.35	21.52	21.40	22.10
		15	0	21.38	21.50	21.44	22.10
	64QAM	1	0	21.76	21.73	21.63	22.10
		1	7	21.56	21.57	21.41	22.10
		1	14	21.70	21.66	21.59	22.10
		8	0	20.20	20.37	20.22	21.10
		8	4	20.13	20.26	20.17	21.10
		8	7	20.11	20.28	20.17	21.10
		15	0	20.07	20.28	20.21	21.10
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				18625/1852.5	18900/1880	19175/1907.5	
5MHz	QPSK	1	0	23.47	23.45	23.32	24.10
		1	13	23.17	23.26	23.26	24.10
		1	24	23.39	23.29	23.27	24.10
		12	0	22.33	22.40	22.56	23.10
		12	6	22.25	22.49	22.45	23.10
		12	13	22.30	22.52	22.44	23.10
		25	0	22.24	22.45	22.45	23.10
	16QAM	1	0	22.68	22.60	22.54	23.10
		1	13	22.51	22.51	22.34	23.10
		1	24	22.61	22.57	22.47	23.10
		12	0	21.43	21.54	21.42	22.10
		12	6	21.36	21.43	21.35	22.10
		12	13	21.32	21.47	21.36	22.10
		25	0	21.36	21.46	21.39	22.10
	64QAM	1	0	21.73	21.69	21.60	22.10
1		13	21.53	21.55	21.38	22.10	

		1	24	21.67	21.64	21.55	22.10
		12	0	20.18	20.33	20.19	21.10
		12	6	20.10	20.21	20.13	21.10
		12	13	20.08	20.23	20.13	21.10
		25	0	20.05	20.24	20.16	21.10
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				18650/1855	18900/1880	19150/1905	
10MHz	QPSK	1	0	23.49	23.46	23.35	24.10
		1	25	23.20	23.31	23.30	24.10
		1	49	23.41	23.33	23.30	24.10
		25	0	22.36	22.45	22.60	23.10
		25	13	22.28	22.54	22.49	23.10
		25	25	22.32	22.56	22.49	23.10
		50	0	22.32	22.47	22.49	23.10
	16QAM	1	0	22.70	22.63	22.56	23.10
		1	25	22.54	22.55	22.37	23.10
		1	49	22.64	22.59	22.50	23.10
		25	0	21.46	21.59	21.46	22.10
		25	13	21.38	21.47	21.38	22.10
		25	25	21.35	21.52	21.40	22.10
		50	0	21.39	21.51	21.43	22.10
	64QAM	1	0	21.75	21.72	21.62	22.10
		1	25	21.56	21.59	21.41	22.10
		1	49	21.70	21.66	21.58	22.10
		25	0	20.21	20.38	20.23	21.10
		25	13	20.12	20.25	20.16	21.10
		25	25	20.11	20.28	20.17	21.10
		50	0	20.08	20.29	20.20	21.10
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				18675/1857.5	18900/1880	19125/1902.5	
15MHz	QPSK	1	0	23.48	23.42	23.33	24.10
		1	38	23.18	23.30	23.27	24.10
		1	74	23.38	23.28	23.26	24.10
		36	0	22.34	22.41	22.57	23.10
		36	18	22.25	22.49	22.45	23.10
		36	39	22.29	22.53	22.45	23.10
		75	0	22.30	22.43	22.44	23.10
	16QAM	1	0	22.65	22.61	22.54	23.10
		1	38	22.52	22.52	22.35	23.10
		1	74	22.61	22.55	22.47	23.10
		36	0	21.43	21.57	21.43	22.10



		36	18	21.35	21.42	21.34	22.10
		36	39	21.33	21.48	21.37	22.10
		75	0	21.36	21.46	21.39	22.10
	64QAM	1	0	21.70	21.70	21.60	22.10
		1	38	21.54	21.56	21.39	22.10
		1	74	21.67	21.62	21.55	22.10
		36	0	20.18	20.36	20.20	21.10
		36	18	20.09	20.20	20.12	21.10
		36	39	20.09	20.24	20.14	21.10
		75	0	20.05	20.24	20.16	21.10
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				18700/1860	18900/1880	19100/1900	
20MHz	QPSK	1	0	23.45	23.38	23.30	24.10
		1	50	23.17	23.26	23.25	24.10
		1	99	23.36	23.27	23.23	24.10
		50	0	22.31	22.36	22.53	23.10
		50	25	22.23	22.45	22.42	23.10
		50	50	22.26	22.48	22.41	23.10
		100	0	22.27	22.38	22.40	23.10
	16QAM	1	0	22.63	22.57	22.49	23.10
		1	50	22.48	22.50	22.31	23.10
		1	99	22.59	22.52	22.45	23.10
		50	0	21.40	21.53	21.40	22.10
		50	25	21.32	21.40	21.31	22.10
		50	50	21.30	21.43	21.33	22.10
		100	0	21.34	21.42	21.36	22.10
	64QAM	1	0	21.68	21.66	21.55	22.10
		1	50	21.50	21.54	21.35	22.10
		1	99	21.65	21.59	21.53	22.10
		50	0	20.15	20.32	20.17	21.10
		50	25	20.06	20.18	20.09	21.10
		50	50	20.06	20.19	20.10	21.10
		100	0	20.03	20.20	20.13	21.10

LTE FDD Band 2 Receiver off				Conducted Power(dBm)			Tune-up Limit (dBm)
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				18607/1850.7	18900/1880	19193/1909.3	
1.4MHz	QPSK	1	0	21.79	21.73	21.50	22.60
		1	2	21.55	21.47	21.36	22.60
		1	5	21.71	21.73	21.51	22.60
		3	0	21.69	21.76	21.35	22.60

		3	2	21.62	21.74	21.40	22.60	
		3	3	21.59	21.73	21.34	22.60	
		6	0	21.56	21.84	21.45	22.60	
	16QAM	1	0	21.70	21.78	21.57	22.60	
		1	2	21.66	21.69	21.61	22.60	
		1	5	21.82	21.79	21.55	22.60	
		3	0	21.18	21.11	20.74	22.60	
		3	2	21.28	21.21	20.90	22.60	
		3	3	21.39	21.26	20.82	22.60	
		6	0	21.47	21.30	20.92	22.10	
		64QAM	1	0	21.75	21.85	21.63	22.10
			1	2	21.68	21.76	21.66	22.10
	1		5	21.87	21.88	21.62	22.10	
	3		0	21.30	21.27	20.88	22.10	
	3		2	21.38	21.35	21.04	22.10	
	3		3	21.50	21.37	20.96	22.10	
	6		0	20.47	20.38	19.97	21.10	
	Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
18615/1851.5					18900/1880	19185/1908.5		
3MHz	QPSK	1	0	21.81	21.77	21.53	22.60	
		1	7	21.58	21.52	21.40	22.60	
		1	14	21.74	21.78	21.55	22.60	
		8	0	21.77	21.86	21.46	22.60	
		8	4	21.72	21.82	21.50	22.60	
		8	7	21.67	21.82	21.42	22.60	
		15	0	21.59	21.88	21.48	22.60	
	16QAM	1	0	21.73	21.80	21.60	22.60	
		1	7	21.69	21.74	21.65	22.60	
		1	14	21.84	21.83	21.58	22.60	
		8	0	21.27	21.22	20.84	22.10	
		8	4	21.37	21.32	21.00	22.10	
		8	7	21.47	21.36	20.93	22.10	
		15	0	21.50	21.34	20.95	22.10	
	64QAM	1	0	21.77	21.88	21.65	22.10	
		1	7	21.71	21.80	21.69	22.10	
		1	14	21.90	21.90	21.65	22.10	
		8	0	20.33	20.32	19.92	21.10	
		8	4	20.40	20.39	20.07	21.10	
		8	7	20.53	20.42	20.00	21.10	
		15	0	20.50	20.43	20.01	21.10	

Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				18625/1852.5	18900/1880	19175/1907.5	
5MHz	QPSK	1	0	21.78	21.75	21.49	22.60
		1	13	21.56	21.48	21.37	22.60
		1	24	21.71	21.73	21.51	22.60
		12	0	21.74	21.81	21.42	22.60
		12	6	21.70	21.78	21.45	22.60
		12	13	21.65	21.80	21.38	22.60
		25	0	21.57	21.87	21.46	22.60
	16QAM	1	0	21.70	21.76	21.57	22.60
		1	13	21.66	21.72	21.62	22.60
		1	24	21.81	21.81	21.54	22.60
		12	0	21.25	21.18	20.81	22.10
		12	6	21.34	21.27	20.96	22.10
		12	13	21.44	21.31	20.89	22.10
		25	0	21.48	21.30	20.90	22.10
	64QAM	1	0	21.72	21.86	21.63	22.10
		1	13	21.69	21.77	21.67	22.10
		1	24	21.87	21.86	21.62	22.10
		12	0	20.30	20.30	19.89	21.10
		12	6	20.37	20.34	20.03	21.10
		12	13	20.51	20.38	19.97	21.10
		25	0	20.47	20.38	19.97	21.10
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				18650/1855	18900/1880	19150/1905	
10MHz	QPSK	1	0	21.80	21.76	21.52	22.60
		1	25	21.59	21.53	21.41	22.60
		1	49	21.73	21.77	21.54	22.60
		25	0	21.77	21.86	21.46	22.60
		25	13	21.73	21.83	21.49	22.60
		25	25	21.67	21.84	21.43	22.60
		50	0	21.65	21.89	21.50	22.60
	16QAM	1	0	21.72	21.79	21.59	22.60
		1	25	21.69	21.76	21.65	22.60
		1	49	21.84	21.83	21.57	22.60
		25	0	21.28	21.23	20.85	22.10
		25	13	21.36	21.31	20.99	22.10
		25	25	21.47	21.36	20.93	22.10
		50	0	21.51	21.35	20.94	22.10
	64QAM	1	0	21.77	21.88	21.65	22.10
		1	25	21.71	21.80	21.69	22.10

		1	49	21.90	21.90	21.65	22.10
		25	0	20.33	20.32	19.92	21.10
		25	13	20.40	20.39	20.07	21.10
		25	25	20.53	20.42	20.00	21.10
		50	0	20.50	20.43	20.01	21.10
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				18675/1857.5	18900/1880	19125/1902.5	
15MHz	QPSK	1	0	21.79	21.72	21.50	22.60
		1	38	21.57	21.52	21.38	22.60
		1	74	21.70	21.72	21.50	22.60
		36	0	21.75	21.82	21.43	22.60
		36	18	21.70	21.78	21.45	22.60
		36	39	21.64	21.81	21.39	22.60
		75	0	21.63	21.85	21.45	22.60
	16QAM	1	0	21.67	21.77	21.57	22.60
		1	38	21.67	21.73	21.63	22.60
		1	74	21.81	21.79	21.54	22.60
		36	0	21.25	21.21	20.82	22.10
		36	18	21.33	21.26	20.95	22.10
		36	39	21.45	21.32	20.90	22.10
		75	0	21.48	21.30	20.90	22.10
	64QAM	1	0	21.72	21.86	21.63	22.10
		1	38	21.69	21.77	21.67	22.10
		1	74	21.87	21.86	21.62	22.10
		36	0	20.30	20.30	19.89	21.10
		36	18	20.37	20.34	20.03	21.10
		36	39	20.51	20.38	19.97	21.10
		75	0	20.47	20.38	19.97	21.10
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				18700/1860	18900/1880	19100/1900	
20MHz	QPSK	1	0	21.86	21.78	21.57	22.60
		1	50	21.66	21.58	21.46	22.60
		1	99	21.78	21.81	21.57	22.60
		50	0	21.72	21.77	21.39	22.60
		50	25	21.68	21.74	21.52	22.60
		50	50	21.61	21.76	21.35	22.60
		100	0	21.60	21.78	21.41	22.60
	16QAM	1	0	21.65	21.73	21.52	22.60
		1	50	21.63	21.71	21.59	22.60
		1	99	21.79	21.76	21.52	22.60
		50	0	21.22	21.17	20.79	22.10



		50	25	21.30	21.24	20.92	22.10
		50	50	21.42	21.27	20.86	22.10
		100	0	21.46	21.26	20.87	22.10
	64QAM	1	0	21.70	21.82	21.58	22.10
		1	50	21.65	21.75	21.63	22.10
		1	99	21.85	21.83	21.60	22.10
		50	0	20.27	20.26	19.86	21.10
		50	25	20.34	20.32	20.00	21.10
		50	50	20.48	20.33	19.93	21.10
		100	0	20.45	20.34	19.94	21.10

LTE FDD Band 4				Conducted Power(dBm)			Tune-up Limit (dBm)
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				19957/1710.7	20175/1732.5	20393/1754.3	
1.4MHz	QPSK	1	0	22.96	22.96	23.02	23.80
		1	2	22.70	22.62	22.73	23.80
		1	5	22.80	22.77	22.68	23.80
		3	0	22.39	22.41	22.30	23.80
		3	2	22.32	22.39	22.53	23.80
		3	3	22.31	22.21	22.39	23.80
		6	0	21.85	21.96	21.79	22.80
	16QAM	1	0	22.13	22.20	22.13	22.80
		1	2	21.92	22.07	22.07	22.80
		1	5	22.17	22.27	22.06	22.80
		3	0	21.58	21.40	21.35	22.80
		3	2	21.62	21.31	21.62	22.80
		3	3	21.60	21.38	21.54	22.80
		6	0	20.87	20.90	20.87	21.80
	64QAM	1	0	20.68	20.79	20.69	21.80
		1	2	20.44	20.61	20.61	21.80
		1	5	20.73	20.84	20.64	21.80
		3	0	20.33	20.19	20.42	21.80
		3	2	20.36	20.09	20.40	21.80
		3	3	20.36	20.44	20.31	21.80
		6	0	19.86	19.98	19.94	20.80
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				19965/1711.5	20175/1732.5	20385/1753.5	
3MHz	QPSK	1	0	22.98	23.00	23.05	23.80
		1	7	22.73	22.67	22.77	23.80
		1	14	22.83	22.82	22.72	23.80
		8	0	21.97	22.01	21.91	22.80



Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				19975/1712.5	20175/1732.5	20375/1752.5	
	16QAM	8	4	21.92	21.97	22.13	22.80
		8	7	21.89	21.80	21.97	22.80
		15	0	21.88	22.00	21.82	22.80
		1	0	22.16	22.22	22.16	22.80
		1	7	21.95	22.12	22.11	22.80
		1	14	22.19	22.31	22.09	22.80
		8	0	21.17	21.01	20.95	21.80
		8	4	21.21	20.92	21.22	21.80
		8	7	21.18	20.98	21.15	21.80
	15	0	20.90	20.94	20.90	21.80	
	64QAM	1	0	20.71	20.81	20.72	21.80
		1	7	20.47	20.66	20.65	21.80
		1	14	20.75	20.88	20.67	21.80
		8	0	19.92	19.80	20.02	20.80
		8	4	19.95	19.70	20.00	20.80
		8	7	19.94	20.04	19.92	20.80
		15	0	19.89	20.02	19.97	20.80
	5MHz	QPSK	1	0	22.95	22.98	23.01
1			13	22.71	22.63	22.74	23.80
1			24	22.80	22.77	22.68	23.80
12			0	21.94	21.96	21.87	22.80
12			6	21.90	21.93	22.08	22.80
12			13	21.87	21.78	21.93	22.80
25			0	21.86	21.99	21.80	22.80
16QAM		1	0	22.13	22.18	22.13	22.80
		1	13	21.92	22.10	22.08	22.80
		1	24	22.16	22.29	22.05	22.80
		12	0	21.15	20.97	20.92	21.80
		12	6	21.18	20.87	21.18	21.80
		12	13	21.15	20.93	21.11	21.80
		25	0	20.88	20.90	20.85	21.80
64QAM		1	0	20.68	20.77	20.69	21.80
		1	13	20.44	20.64	20.62	21.80
		1	24	20.72	20.86	20.63	21.80
		12	0	19.90	19.76	19.99	20.80
		12	6	19.92	19.65	19.96	20.80
		12	13	19.91	19.99	19.88	20.80
		25	0	19.87	19.98	19.92	20.80

Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				20000/1715	20175/1732.5	20350/1750	
10MHz	QPSK	1	0	22.97	22.99	23.04	23.80
		1	25	22.74	22.68	22.78	23.80
		1	49	22.82	22.81	22.71	23.80
		25	0	21.97	22.01	21.91	22.80
		25	13	21.93	21.98	22.12	22.80
		25	25	21.89	21.82	21.98	22.80
		50	0	21.94	22.01	21.84	22.80
	16QAM	1	0	22.15	22.21	22.15	22.80
		1	25	21.95	22.14	22.11	22.80
		1	49	22.19	22.31	22.08	22.80
		25	0	21.18	21.02	20.96	21.80
		25	13	21.20	20.91	21.21	21.80
		25	25	21.18	20.98	21.15	21.80
		50	0	20.91	20.95	20.89	21.80
	64QAM	1	0	20.70	20.80	20.71	21.80
		1	25	20.47	20.68	20.65	21.80
		1	49	20.75	20.88	20.66	21.80
		25	0	19.93	19.81	20.03	20.80
		25	13	19.94	19.69	19.99	20.80
		25	25	19.94	20.04	19.92	20.80
		50	0	19.90	20.03	19.96	20.80
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				20025/1717.5	20175/1732.5	20325/1747.5	
15MHz	QPSK	1	0	22.96	22.95	23.02	23.80
		1	38	22.72	22.67	22.75	23.80
		1	74	22.79	22.76	22.67	23.80
		36	0	21.95	21.97	21.88	22.80
		36	18	21.90	21.93	22.08	22.80
		36	39	21.86	21.79	21.94	22.80
		75	0	21.92	21.97	21.79	22.80
	16QAM	1	0	22.10	22.19	22.13	22.80
		1	38	21.93	22.11	22.09	22.80
		1	74	22.16	22.27	22.05	22.80
		36	0	21.15	21.00	20.93	21.80
		36	18	21.17	20.86	21.17	21.80
		36	39	21.16	20.94	21.12	21.80
		75	0	20.88	20.90	20.85	21.80
	64QAM	1	0	20.65	20.78	20.69	21.80
1		38	20.45	20.65	20.63	21.80	



Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				20050/1720	20175/1732.5	20300/1745	
		1	74	20.72	20.84	20.63	21.80
		36	0	19.90	19.79	20.00	20.80
		36	18	19.91	19.64	19.95	20.80
		36	39	19.92	20.00	19.89	20.80
		75	0	19.87	19.98	19.92	20.80
20MHz	QPSK	1	0	22.93	22.91	22.99	23.80
		1	50	22.71	22.63	22.73	23.80
		1	99	22.77	22.75	22.64	23.80
		50	0	21.92	21.92	21.84	22.80
		50	25	21.88	21.89	22.05	22.80
		50	50	21.83	21.74	21.90	22.80
		100	0	21.89	21.92	21.75	22.80
	16QAM	1	0	22.08	22.15	22.08	22.80
		1	50	21.89	22.09	22.05	22.80
		1	99	22.14	22.24	22.03	22.80
		50	0	21.12	20.96	20.90	21.80
		50	25	21.14	20.84	21.14	21.80
		50	50	21.13	20.89	21.08	21.80
		100	0	20.86	20.86	20.82	21.80
	64QAM	1	0	20.63	20.74	20.64	21.80
		1	50	20.41	20.63	20.59	21.80
		1	99	20.70	20.81	20.61	21.80
		50	0	19.87	19.75	19.97	20.80
		50	25	19.88	19.62	19.92	20.80
		50	50	19.89	19.95	19.85	20.80
		100	0	19.85	19.94	19.89	20.80

LTE FDD Band 5				Conducted Power(dBm)			Tune-up Limit (dBm)
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				20407/824.7	20525/836.5	20643/848.3	
1.4MHz	QPSK	1	0	23.68	23.71	23.63	24.50
		1	2	23.56	23.63	23.49	24.50
		1	5	23.73	23.64	23.42	24.50
		3	0	23.22	23.20	23.09	24.50
		3	2	23.20	23.29	23.15	24.50
		3	3	23.09	23.20	23.17	24.50
		6	0	22.63	22.78	22.68	23.50
	16QAM	1	0	22.86	22.93	22.89	23.50
		1	2	22.83	22.73	22.74	23.50



		1	5	22.91	22.84	22.80	23.50
		3	0	22.20	22.10	21.95	23.50
		3	2	22.15	22.11	22.14	23.50
		3	3	22.08	22.11	22.06	23.50
		6	0	21.55	21.56	21.70	22.50
	64QAM	1	0	21.61	21.72	21.65	22.50
		1	2	21.55	21.47	21.48	22.50
		1	5	21.67	21.61	21.58	22.50
		3	0	20.75	20.69	20.52	22.50
		3	2	20.69	20.69	20.72	22.50
		3	3	20.64	20.67	20.63	22.50
		6	0	20.04	20.14	20.27	21.50
	Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
20415/825.5					20525/836.5	20635/847.5	
3MHz	QPSK	1	0	23.70	23.75	23.66	24.50
		1	7	23.59	23.68	23.53	24.50
		1	14	23.76	23.69	23.46	24.50
		8	0	22.80	22.80	22.70	23.50
		8	4	22.80	22.87	22.75	23.50
		8	7	22.67	22.79	22.75	23.50
		15	0	22.66	22.82	22.71	23.50
	16QAM	1	0	22.89	22.95	22.92	23.50
		1	7	22.86	22.78	22.78	23.50
		1	14	22.93	22.88	22.83	23.50
		8	0	21.79	21.71	21.55	22.50
		8	4	21.74	21.72	21.74	22.50
		8	7	21.66	21.71	21.67	22.50
		15	0	21.58	21.60	21.73	22.50
	64QAM	1	0	21.63	21.73	21.67	22.50
		1	7	21.58	21.54	21.52	22.50
		1	14	21.69	21.65	21.60	22.50
		8	0	20.35	20.31	20.13	21.50
		8	4	20.27	20.29	20.31	21.50
		8	7	20.22	20.27	20.24	21.50
		15	0	20.08	20.19	20.29	21.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				20425/826.5	20525/836.5	20625/846.5	
5MHz	QPSK	1	0	23.67	23.73	23.62	24.50
		1	13	23.57	23.64	23.50	24.50
		1	24	23.73	23.64	23.42	24.50
		12	0	22.77	22.75	22.66	23.50



		12	6	22.78	22.83	22.70	23.50	
		12	13	22.65	22.77	22.71	23.50	
		25	0	22.64	22.81	22.69	23.50	
	16QAM		1	0	22.86	22.91	22.89	23.50
			1	13	22.83	22.76	22.75	23.50
			1	24	22.90	22.86	22.79	23.50
			12	0	21.77	21.67	21.52	22.50
			12	6	21.71	21.67	21.70	22.50
			12	13	21.63	21.66	21.63	22.50
			25	0	21.56	21.56	21.68	22.50
	64QAM		1	0	21.58	21.71	21.65	22.50
			1	13	21.56	21.51	21.50	22.50
			1	24	21.66	21.61	21.57	22.50
			12	0	20.32	20.29	20.10	21.50
			12	6	20.24	20.24	20.27	21.50
			12	13	20.20	20.23	20.21	21.50
25			0	20.05	20.14	20.25	21.50	
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)	
				20450/829	20525/836.5	20600/844		
10MHz	QPSK	1	0	23.65	23.66	23.60	24.50	
		1	25	23.57	23.64	23.49	24.50	
		1	49	23.70	23.62	23.38	24.50	
		25	0	22.75	22.71	22.63	23.50	
		25	13	22.76	22.79	22.67	23.50	
		25	25	22.61	22.73	22.68	23.50	
		50	0	22.67	22.74	22.64	23.50	
	16QAM		1	0	22.81	22.88	22.84	23.50
			1	25	22.80	22.75	22.72	23.50
			1	49	22.88	22.81	22.77	23.50
			25	0	21.74	21.66	21.50	22.50
			25	13	21.67	21.64	21.66	22.50
			25	25	21.61	21.62	21.60	22.50
			50	0	21.54	21.52	21.65	22.50
	64QAM		1	0	21.56	21.67	21.60	22.50
			1	25	21.52	21.49	21.46	22.50
			1	49	21.64	21.58	21.55	22.50
			25	0	20.29	20.25	20.07	21.50
			25	13	20.21	20.22	20.24	21.50
			25	25	20.17	20.18	20.17	21.50
			50	0	20.03	20.10	20.22	21.50

LTE FDD Band 7 Receiver on				Conducted Power(dBm)			Tune-up Limit (dBm)
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				20775/2502.5	21100/2535	21425/2567.5	
5MHz	QPSK	1	0	22.84	22.70	22.68	23.50
		1	13	22.63	22.54	22.63	23.50
		1	24	22.80	22.45	22.73	23.50
		12	0	21.91	21.74	21.68	23.50
		12	6	21.90	21.75	21.71	23.50
		12	13	21.85	21.80	21.63	23.50
		25	0	21.82	21.68	21.69	22.50
	16QAM	1	0	21.74	21.80	21.61	22.50
		1	13	21.66	21.72	21.62	22.50
		1	24	21.83	21.83	21.56	22.50
		12	0	20.73	20.66	20.29	22.50
		12	6	20.74	20.67	20.36	22.50
		12	13	20.80	20.67	20.25	22.50
		25	0	20.81	20.63	20.23	21.50
	64QAM	1	0	20.99	21.09	20.87	21.50
		1	13	20.88	20.96	20.86	21.50
		1	24	20.79	20.80	20.84	21.50
		12	0	19.98	19.95	19.86	21.50
		12	6	19.98	19.95	19.94	21.50
		12	13	19.76	19.93	19.82	21.50
		25	0	20.00	19.91	19.80	20.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				20800/2505	21100/2535	21400/2565	
10MHz	QPSK	1	0	22.86	22.71	22.71	23.50
		1	25	22.66	22.59	22.67	23.50
		1	49	22.82	22.49	22.76	23.50
		25	0	21.94	21.79	21.72	22.50
		25	13	21.93	21.80	21.75	22.50
		25	25	21.87	21.84	21.68	22.50
		50	0	21.90	21.70	21.73	22.50
	16QAM	1	0	21.76	21.83	21.63	22.50
		1	25	21.69	21.76	21.65	22.50
		1	49	21.86	21.85	21.59	22.50
		25	0	20.76	20.71	20.33	21.50
		25	13	20.76	20.71	20.39	21.50
		25	25	20.83	20.72	20.29	21.50
		50	0	20.84	20.68	20.27	21.50
	64QAM	1	0	21.01	21.12	20.89	21.50



		1	25	20.91	21.00	20.89	21.50
		1	49	20.82	20.82	20.87	21.50
		25	0	20.01	20.00	19.90	20.50
		25	13	20.00	19.99	19.97	20.50
		25	25	19.79	19.98	19.86	20.50
		50	0	20.03	19.96	19.84	20.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				20825/2507.5	21100/2535	21375/2562.5	
15MHz	QPSK	1	0	22.85	22.67	22.69	23.50
		1	38	22.64	22.58	22.64	23.50
		1	74	22.79	22.44	22.72	23.50
		36	0	21.92	21.75	21.69	22.50
		36	18	21.90	21.75	21.71	22.50
		36	39	21.84	21.81	21.64	22.50
		75	0	21.88	21.66	21.68	22.50
	16QAM	1	0	21.71	21.81	21.61	22.50
		1	38	21.67	21.73	21.63	22.50
		1	74	21.83	21.81	21.56	22.50
		36	0	20.73	20.69	20.30	21.50
		36	18	20.73	20.66	20.35	21.50
		36	39	20.81	20.68	20.26	21.50
		75	0	20.81	20.63	20.23	21.50
	64QAM	1	0	20.96	21.10	20.87	21.50
		1	38	20.89	20.97	20.87	21.50
		1	74	20.79	20.78	20.84	21.50
		36	0	19.98	19.98	19.87	20.50
		36	18	19.97	19.94	19.93	20.50
		36	39	19.77	19.94	19.83	20.50
		75	0	20.00	19.91	19.80	20.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				20850/2510	21100/2535	21350/2560	
20MHz	QPSK	1	0	22.82	22.63	22.66	23.50
		1	50	22.63	22.54	22.62	23.50
		1	99	22.77	22.43	22.69	23.50
		50	0	21.89	21.70	21.65	22.50
		50	25	21.88	21.71	21.68	22.50
		50	50	21.81	21.76	21.60	22.50
		100	0	21.85	21.61	21.64	22.50
	16QAM	1	0	21.69	21.77	21.56	22.50
		1	50	21.63	21.71	21.59	22.50
		1	99	21.81	21.78	21.54	22.50



		50	0	20.70	20.65	20.27	21.50
		50	25	20.70	20.64	20.32	21.50
		50	50	20.78	20.63	20.22	21.50
		100	0	20.79	20.59	20.20	21.50
	64QAM	1	0	20.94	21.06	20.82	21.50
		1	50	20.85	20.95	20.83	21.50
		1	99	20.77	20.75	20.82	21.50
		50	0	19.95	19.94	19.84	20.50
		50	25	19.94	19.92	19.90	20.50
		50	50	19.74	19.89	19.79	20.50
		100	0	19.98	19.87	19.77	20.50

LTE FDD Band 7 Receiver off				Conducted Power(dBm)			Tune-up Limit (dBm)
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				20775/2502.5	21100/2535	21425/2567.5	
5MHz	QPSK	1	0	21.99	22.00	21.93	23.00
		1	13	21.95	21.76	21.84	23.00
		1	24	22.06	21.99	22.05	23.00
		12	0	21.69	21.56	21.50	23.00
		12	6	21.64	21.44	21.41	23.00
		12	13	21.63	21.52	21.43	23.00
		25	0	21.63	21.50	21.44	22.50
	16QAM	1	0	21.76	21.82	21.63	22.50
		1	13	21.55	21.61	21.51	22.50
		1	24	21.62	21.62	21.35	22.50
		12	0	20.49	20.42	20.05	22.50
		12	6	20.53	20.46	20.15	22.50
		12	13	20.62	20.49	20.07	22.50
		25	0	20.69	20.51	20.11	21.50
	64QAM	1	0	20.91	21.01	20.79	21.50
		1	13	20.67	20.75	20.65	21.50
		1	24	20.78	20.79	20.53	21.50
		12	0	19.74	19.71	19.62	21.50
		12	6	19.77	19.74	19.73	21.50
		12	13	19.88	19.75	19.64	21.50
		25	0	19.88	19.79	19.68	20.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				20800/2505	21100/2535	21400/2565	
10MHz	QPSK	1	0	22.01	22.01	21.96	23.00
		1	25	21.98	21.81	21.88	23.00



		1	49	22.08	22.03	22.08	23.00	
		25	0	21.72	21.61	21.54	22.50	
		25	13	21.67	21.49	21.45	22.50	
		25	25	21.65	21.56	21.48	22.50	
		50	0	21.71	21.52	21.48	22.50	
	16QAM	1	0	21.78	21.85	21.65	22.50	
		1	25	21.58	21.65	21.54	22.50	
		1	49	21.65	21.64	21.38	22.50	
		25	0	20.52	20.47	20.09	21.50	
		25	13	20.55	20.50	20.18	21.50	
		25	25	20.65	20.54	20.11	21.50	
		50	0	20.72	20.56	20.15	21.50	
	64QAM	1	0	20.93	21.04	20.81	21.50	
		1	25	20.70	20.79	20.68	21.50	
		1	49	20.81	20.81	20.56	21.50	
		25	0	19.77	19.76	19.66	20.50	
		25	13	19.79	19.78	19.76	20.50	
		25	25	19.91	19.80	19.68	20.50	
		50	0	19.91	19.84	19.72	20.50	
	Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
					20825/2507.5	21100/2535	21375/2562.5	
15MHz	QPSK	1	0	22.00	21.97	21.94	23.00	
		1	38	21.96	21.80	21.85	23.00	
		1	74	22.05	21.98	22.04	23.00	
		36	0	21.70	21.57	21.51	22.50	
		36	18	21.64	21.44	21.41	22.50	
		36	39	21.62	21.53	21.44	22.50	
		75	0	21.69	21.48	21.43	22.50	
	16QAM	1	0	21.73	21.83	21.63	22.50	
		1	38	21.56	21.62	21.52	22.50	
		1	74	21.62	21.60	21.35	22.50	
		36	0	20.49	20.45	20.06	21.50	
		36	18	20.52	20.45	20.14	21.50	
		36	39	20.63	20.50	20.08	21.50	
		75	0	20.69	20.51	20.11	21.50	
	64QAM	1	0	20.88	21.02	20.79	21.50	
		1	38	20.68	20.76	20.66	21.50	
		1	74	20.78	20.77	20.53	21.50	
		36	0	19.74	19.74	19.63	20.50	
		36	18	19.76	19.73	19.72	20.50	
		36	39	19.89	19.76	19.65	20.50	
		75	0	19.88	19.79	19.68	20.50	



Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				20850/2510	21100/2535	21350/2560	
20MHz	QPSK	1	0	21.97	21.93	21.91	23.00
		1	50	21.95	21.76	21.83	23.00
		1	99	22.03	21.97	22.01	23.00
		50	0	21.67	21.52	21.47	22.50
		50	25	21.62	21.40	21.38	22.50
		50	50	21.59	21.48	21.40	22.50
		100	0	21.66	21.43	21.39	22.50
	16QAM	1	0	21.71	21.79	21.58	22.50
		1	50	21.52	21.60	21.48	22.50
		1	99	21.60	21.57	21.33	22.50
		50	0	20.46	20.41	20.03	21.50
		50	25	20.49	20.43	20.11	21.50
		50	50	20.60	20.45	20.04	21.50
		100	0	20.67	20.47	20.08	21.50
	64QAM	1	0	20.86	20.98	20.74	21.50
		1	50	20.64	20.74	20.62	21.50
		1	99	20.76	20.74	20.51	21.50
		50	0	19.71	19.70	19.60	20.50
		50	25	19.73	19.71	19.69	20.50
		50	50	19.86	19.71	19.61	20.50
		100	0	19.86	19.75	19.65	20.50

LTE FDD Band 12				Conducted Power(dBm)			Tune-up Limit (dBm)
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				23017/699.7	23095/707.5	23173/715.3	
1.4MHz	QPSK	1	0	23.57	23.67	23.61	24.50
		1	2	23.46	23.59	23.59	24.50
		1	5	23.63	23.66	23.73	24.50
		3	0	22.67	22.64	22.57	24.50
		3	2	22.71	22.72	22.62	24.50
		3	3	22.60	22.64	22.68	24.50
		6	0	22.67	22.65	22.62	23.50
	16QAM	1	0	22.75	22.77	22.92	23.50
		1	2	22.86	22.64	22.72	23.50
		1	5	22.71	22.75	22.91	23.50
		3	0	22.03	21.79	21.87	23.50
		3	2	21.97	21.94	21.94	23.50
		3	3	22.03	21.91	21.91	23.50
		6	0	21.69	21.64	21.59	22.50



Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)	
				23025/700.5	23095/707.5	23165/714.5		
	64QAM	1	0	22.00	22.06	22.18	22.50	
		1	2	22.08	21.88	21.96	22.50	
		1	5	21.97	22.02	22.19	22.50	
		3	0	21.58	21.38	21.44	22.50	
		3	2	21.51	21.52	21.52	22.50	
		3	3	21.59	21.47	21.48	22.50	
		6	0	21.18	21.22	21.16	21.50	
3MHz	QPSK	1	0	23.59	23.71	23.64	24.50	
		1	7	23.49	23.64	23.63	24.50	
		1	14	23.66	23.71	23.77	24.50	
		8	0	22.75	22.74	22.68	23.50	
		8	4	22.81	22.80	22.72	23.50	
		8	7	22.68	22.73	22.76	23.50	
		15	0	22.70	22.69	22.65	23.50	
	16QAM	1	0	22.78	22.79	22.95	23.50	
		1	7	22.89	22.69	22.76	23.50	
		1	14	22.73	22.79	22.94	23.50	
		8	0	21.72	21.50	21.57	22.50	
		8	4	21.66	21.65	21.64	22.50	
		8	7	21.71	21.61	21.62	22.50	
		15	0	21.72	21.68	21.62	22.50	
	64QAM	1	0	21.73	21.78	21.91	22.50	
		1	7	21.81	21.63	21.70	22.50	
		1	14	21.69	21.76	21.92	22.50	
		8	0	20.77	20.59	20.64	21.50	
		8	4	20.70	20.73	20.72	21.50	
		8	7	20.77	20.67	20.69	21.50	
		15	0	20.71	20.76	20.69	21.50	
	Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
					23035/701.5	23095/707.5	23155/713.5	
	5MHz	QPSK	1	0	23.56	23.69	23.60	24.50
			1	13	23.47	23.60	23.60	24.50
			1	24	23.63	23.66	23.73	24.50
			12	0	22.72	22.69	22.64	23.50
			12	6	22.79	22.76	22.67	23.50
12			13	22.66	22.71	22.72	23.50	
25			0	22.68	22.68	22.63	23.50	
16QAM		1	0	22.75	22.75	22.92	23.50	
		1	13	22.86	22.67	22.73	23.50	



Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)	
				23060/704	23095/707.5	23130/711		
		1	24	22.70	22.77	22.90	23.50	
		12	0	21.70	21.46	21.54	22.50	
		12	6	21.63	21.60	21.60	22.50	
		12	13	21.68	21.56	21.58	22.50	
		25	0	21.70	21.64	21.57	22.50	
	64QAM	1	0	21.00	21.04	21.18	22.50	
		1	13	21.08	20.91	20.97	22.50	
		1	24	20.96	21.04	21.18	22.50	
		12	0	19.95	19.75	19.81	21.50	
		12	6	19.87	19.88	19.88	21.50	
		12	13	19.94	19.82	19.85	21.50	
		25	0	19.89	19.92	19.84	21.50	
	10MHz	QPSK	1	0	23.54	23.62	23.58	24.50
			1	25	23.47	23.60	23.59	24.50
1			49	23.60	23.64	23.69	24.50	
25			0	22.70	22.65	22.61	23.50	
25			13	22.77	22.72	22.64	23.50	
25			25	22.62	22.67	22.69	23.50	
50			0	22.71	22.61	22.58	23.50	
16QAM		1	0	22.70	22.72	22.87	23.50	
		1	25	22.83	22.66	22.70	23.50	
		1	49	22.68	22.72	22.88	23.50	
		25	0	21.67	21.45	21.52	22.50	
		25	13	21.59	21.57	21.56	22.50	
		25	25	21.66	21.52	21.55	22.50	
		50	0	21.68	21.60	21.54	22.50	
64QAM		1	0	20.95	21.01	21.13	22.50	
		1	25	21.05	20.90	20.94	22.50	
		1	49	20.94	20.99	21.16	22.50	
		25	0	19.92	19.74	19.79	21.50	
		25	13	19.83	19.85	19.84	21.50	
		25	25	19.92	19.78	19.82	21.50	
		50	0	19.87	19.88	19.81	21.50	

LTE FDD Band 17				Conducted Power(dBm)			Tune-up Limit (dBm)
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				23755/706.5	23790/710	23825/713.5	
5MHz	QPSK	1	0	23.66	23.62	23.53	24.50
		1	13	23.52	23.65	23.47	24.50



		1	24	23.53	23.58	23.61	24.50	
		12	0	22.67	22.78	22.61	23.50	
		12	6	22.60	22.82	22.64	23.50	
		12	13	22.67	22.84	22.73	23.50	
		25	0	22.56	22.68	22.64	23.50	
	16QAM	1	0	22.82	22.77	22.83	23.50	
		1	13	22.67	22.82	22.61	23.50	
		1	24	22.79	22.93	22.88	23.50	
		12	0	21.66	21.49	21.65	22.50	
		12	6	21.64	21.60	21.04	22.50	
		12	13	21.81	21.68	21.57	22.50	
		25	0	21.59	21.62	21.55	22.50	
	64QAM	1	0	21.68	21.59	21.73	22.50	
		1	13	21.64	21.56	21.56	22.50	
		1	24	21.65	21.48	21.60	22.50	
		12	0	19.97	20.18	19.96	21.50	
		12	6	19.95	20.11	19.92	21.50	
		12	13	20.00	20.28	19.93	21.50	
		25	0	19.94	20.18	19.95	21.50	
	Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
					23780/709	23790/710	23800/711	
10MHz	QPSK	1	0	23.64	23.55	23.51	24.50	
		1	25	23.52	23.65	23.46	24.50	
		1	49	23.50	23.56	23.57	24.50	
		25	0	22.65	22.74	22.58	23.50	
		25	13	22.58	22.78	22.61	23.50	
		25	25	22.63	22.80	22.70	23.50	
		50	0	22.59	22.61	22.59	23.50	
	16QAM	1	0	22.77	22.74	22.78	23.50	
		1	25	22.64	22.81	22.58	23.50	
		1	49	22.77	22.88	22.86	23.50	
		25	0	21.63	21.48	21.63	22.50	
		25	13	21.60	21.57	21.00	22.50	
		25	25	21.79	21.64	21.54	22.50	
		50	0	21.57	21.58	21.52	22.50	
	64QAM	1	0	21.52	21.53	21.54	22.50	
		1	25	21.36	21.55	21.32	22.50	
		1	49	21.53	21.65	21.64	22.50	
		25	0	19.88	19.77	19.90	21.50	
		25	13	19.84	19.85	19.28	21.50	
		25	25	20.05	19.90	19.81	21.50	
		50	0	19.76	19.86	19.79	21.50	

LTE FDD Band 26				Conducted Power(dBm)			Tune-up Limit (dBm)
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				26697/814.7	26865/831.5	27033/848.3	
1.4MHz	QPSK	1	0	23.62	23.56	23.52	24.50
		1	2	23.57	23.67	23.64	24.50
		1	5	23.49	23.53	23.47	24.50
		3	0	23.46	23.40	23.41	24.50
		3	2	23.42	23.43	23.31	24.50
		3	3	23.52	23.35	23.30	24.50
		6	0	22.59	22.70	22.59	23.50
	16QAM	1	0	22.83	22.80	22.71	23.50
		1	2	22.80	22.71	22.73	23.50
		1	5	22.76	22.91	22.68	23.50
		3	0	22.37	22.33	22.40	23.50
		3	2	22.48	22.35	22.31	23.50
		3	3	22.36	22.42	22.40	23.50
		6	0	21.64	21.64	21.59	22.50
	64QAM	1	0	21.58	21.59	21.47	22.50
		1	2	21.52	21.45	21.47	22.50
		1	5	21.52	21.68	21.46	22.50
		3	0	20.62	20.62	20.67	22.50
		3	2	20.72	20.63	20.59	22.50
		3	3	20.62	20.68	20.67	22.50
		6	0	19.83	19.92	19.86	21.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				26705/815.5	26865/831.5	27025/847.5	
3MHz	QPSK	1	0	23.64	23.60	23.55	24.50
		1	7	23.60	23.72	23.68	24.50
		1	14	23.52	23.58	23.51	24.50
		8	0	22.74	22.70	22.72	23.50
		8	4	22.72	22.71	22.61	23.50
		8	7	22.80	22.64	22.58	23.50
		15	0	22.62	22.74	22.62	23.50
	16QAM	1	0	22.86	22.82	22.74	23.50
		1	7	22.83	22.76	22.77	23.50
		1	14	22.78	22.95	22.71	23.50
		8	0	21.66	21.64	21.70	22.50
		8	4	21.77	21.66	21.61	22.50
		8	7	21.64	21.72	21.71	22.50
		15	0	21.67	21.68	21.62	22.50
	64QAM	1	0	21.61	21.61	21.50	22.50



Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)	
				26715/816.5	26865/831.5	27015/846.5		
		1	7	21.55	21.50	21.51	22.50	
		1	14	21.54	21.72	21.49	22.50	
		8	0	19.91	19.93	19.97	21.50	
		8	4	20.01	19.94	19.89	21.50	
		8	7	19.90	19.98	19.98	21.50	
		15	0	19.86	19.96	19.89	21.50	
5MHz	QPSK	1	0	23.61	23.58	23.51	24.50	
		1	13	23.58	23.68	23.65	24.50	
		1	24	23.49	23.53	23.47	24.50	
		12	0	22.71	22.65	22.68	23.50	
		12	6	22.70	22.67	22.56	23.50	
		12	13	22.78	22.62	22.54	23.50	
		25	0	22.60	22.73	22.60	23.50	
	16QAM	1	0	22.83	22.78	22.71	23.50	
		1	13	22.80	22.74	22.74	23.50	
		1	24	22.75	22.93	22.67	23.50	
		12	0	21.64	21.60	21.67	22.50	
		12	6	21.74	21.61	21.57	22.50	
		12	13	21.61	21.67	21.67	22.50	
		25	0	21.65	21.64	21.57	22.50	
	64QAM	1	0	21.58	21.57	21.47	22.50	
		1	13	21.52	21.48	21.48	22.50	
		1	24	21.51	21.70	21.45	22.50	
		12	0	19.89	19.89	19.94	21.50	
		12	6	19.98	19.89	19.85	21.50	
		12	13	19.87	19.93	19.94	21.50	
		25	0	19.84	19.92	19.84	21.50	
	Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
					26750/820	26865/831.5	26990/844	
	10MHz	QPSK	1	0	23.63	23.59	23.54	24.50
1			25	23.61	23.73	23.69	24.50	
1			49	23.51	23.57	23.50	24.50	
25			0	22.74	22.70	22.72	23.50	
25			13	22.73	22.72	22.60	23.50	
25			25	22.80	22.66	22.59	23.50	
50			0	22.68	22.75	22.64	23.50	
16QAM		1	0	22.85	22.81	22.73	23.50	
		1	25	22.83	22.78	22.77	23.50	
		1	49	22.78	22.95	22.70	23.50	



Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				26775/822.5	26865/831.5	26965/841.5	
	64QAM	25	0	21.67	21.65	21.71	22.50
		25	13	21.76	21.65	21.60	22.50
		25	25	21.64	21.72	21.71	22.50
		50	0	21.68	21.69	21.61	22.50
		1	0	21.60	21.60	21.49	22.50
		1	25	21.55	21.52	21.51	22.50
		1	49	21.54	21.72	21.48	22.50
		25	0	19.92	19.94	19.98	21.50
		25	13	20.00	19.93	19.88	21.50
		25	25	19.90	19.98	19.98	21.50
		50	0	19.87	19.97	19.88	21.50
15MHz	QPSK	1	0	23.59	23.51	23.49	24.50
		1	38	23.58	23.68	23.64	24.50
		1	74	23.46	23.51	23.43	24.50
		36	0	22.69	22.61	22.65	23.50
		36	18	22.68	22.63	22.53	23.50
		36	39	22.74	22.58	22.51	23.50
		75	0	22.63	22.66	22.55	23.50
	16QAM	1	0	22.78	22.75	22.66	23.50
		1	38	22.77	22.73	22.71	23.50
		1	74	22.73	22.88	22.65	23.50
		36	0	21.61	21.59	21.65	22.50
		36	18	21.70	21.58	21.53	22.50
		36	39	21.59	21.63	21.64	22.50
		75	0	21.63	21.60	21.54	22.50
	64QAM	1	0	21.53	21.54	21.42	22.50
		1	38	21.49	21.47	21.45	22.50
		1	74	21.49	21.65	21.43	22.50
		36	0	19.86	19.88	19.92	21.50
		36	18	19.94	19.86	19.81	21.50
		36	39	19.85	19.89	19.91	21.50
		75	0	19.82	19.88	19.81	21.50

LTE TDD Band 38				Conducted Power(dBm)			Tune-up Limit (dBm)
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				37775/2572.5	38000/2595	38225/2617.5	
5MHz	QPSK	1	0	23.76	23.81	23.86	24.50
		1	13	23.60	23.69	23.89	24.50
		1	24	23.88	23.85	23.91	24.50



		12	0	22.80	22.85	22.91	24.50
		12	6	22.74	22.86	22.94	24.50
		12	13	22.80	22.89	22.95	24.50
		25	0	22.78	22.96	22.99	23.50
	16QAM	1	0	22.87	22.88	22.84	23.50
		1	13	22.71	22.80	23.00	23.50
		1	24	22.74	22.85	23.01	23.50
		12	0	21.67	21.83	21.89	23.50
		12	6	21.67	21.83	21.89	23.50
		12	13	21.71	21.90	21.89	23.50
		25	0	21.68	21.86	21.85	22.50
	64QAM	1	0	21.62	21.67	21.60	22.50
		1	13	21.43	21.54	21.74	22.50
		1	24	21.50	21.62	21.79	22.50
		12	0	20.42	20.62	20.66	22.50
		12	6	20.41	20.61	20.67	22.50
		12	13	20.47	20.66	20.66	22.50
		25	0	20.37	20.64	20.62	21.50
	Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
37800/2575					38000/2595	38200/2615	
10MHz	QPSK	1	0	23.78	23.82	23.89	24.50
		1	25	23.63	23.74	23.93	24.50
		1	49	23.90	23.89	23.94	24.50
		25	0	22.83	22.90	22.95	23.50
		25	13	22.77	22.91	22.98	23.50
		25	25	22.82	22.93	23.00	23.50
		50	0	22.86	22.98	23.03	23.50
	16QAM	1	0	22.89	22.91	22.86	23.50
		1	25	22.74	22.84	23.03	23.50
		1	49	22.77	22.87	23.04	23.50
		25	0	21.70	21.88	21.93	22.50
		25	13	21.69	21.87	21.92	22.50
		25	25	21.74	21.95	21.93	22.50
		50	0	21.71	21.91	21.89	22.50
	64QAM	1	0	21.64	21.70	21.62	22.50
		1	25	21.46	21.58	21.77	22.50
		1	49	21.53	21.64	21.82	22.50
		25	0	20.45	20.67	20.70	21.50
		25	13	20.43	20.65	20.70	21.50
		25	25	20.50	20.71	20.70	21.50
		50	0	20.40	20.69	20.66	21.50

Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				37825/2577.5	38000/2595	38175/2612.5	
15MHz	QPSK	1	0	23.77	23.78	23.87	24.50
		1	38	23.61	23.73	23.90	24.50
		1	74	23.87	23.84	23.90	24.50
		36	0	22.81	22.86	22.92	23.50
		36	18	22.74	22.86	22.94	23.50
		36	39	22.79	22.90	22.96	23.50
		75	0	22.84	22.94	22.98	23.50
	16QAM	1	0	22.84	22.89	22.84	23.50
		1	38	22.72	22.81	23.01	23.50
		1	74	22.74	22.83	23.01	23.50
		36	0	21.67	21.86	21.90	22.50
		36	18	21.66	21.82	21.88	22.50
		36	39	21.72	21.91	21.90	22.50
		75	0	21.68	21.86	21.85	22.50
	64QAM	1	0	21.59	21.68	21.60	22.50
		1	38	21.44	21.55	21.75	22.50
		1	74	21.50	21.60	21.79	22.50
		36	0	20.42	20.65	20.67	21.50
		36	18	20.40	20.60	20.66	21.50
		36	39	20.48	20.67	20.67	21.50
		75	0	20.37	20.64	20.62	21.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				37850/2580	38000/2595	38150/2610	
20MHz	QPSK	1	0	23.74	23.74	23.84	24.50
		1	50	23.60	23.69	23.88	24.50
		1	99	23.85	23.83	23.87	24.50
		50	0	22.78	22.81	22.88	23.50
		50	25	22.72	22.82	22.91	23.50
		50	50	22.76	22.85	22.92	23.50
		100	0	22.81	22.89	22.94	23.50
	16QAM	1	0	22.82	22.85	22.79	23.50
		1	50	22.68	22.79	22.97	23.50
		1	99	22.72	22.80	22.99	23.50
		50	0	21.64	21.82	21.87	22.50
		50	25	21.63	21.80	21.85	22.50
		50	50	21.69	21.86	21.86	22.50
		100	0	21.66	21.82	21.82	22.50
	64QAM	1	0	21.57	21.64	21.55	22.50
1		50	21.40	21.53	21.71	22.50	



		1	99	21.48	21.57	21.77	22.50
		50	0	20.39	20.61	20.64	21.50
		50	25	20.37	20.58	20.63	21.50
		50	50	20.45	20.62	20.63	21.50
		100	0	20.35	20.60	20.59	21.50

LTE TDD Band 41				Conducted Power(dBm)				Tune-up Limit (dBm)
Bandwidth h	Modulation	RB size	RB offset	Channel/Frequency (MHz)				
				40165/2547.5	40515/2582.5	40865/2617.5	41215/2652.5	
5MHz	QPSK	1	0	23.82	24.01	24.05	23.71	24.50
		1	13	23.62	23.79	23.81	23.49	24.50
		1	24	23.78	24.01	24.02	23.60	24.50
		12	0	22.79	22.95	22.99	22.75	24.50
		12	6	22.70	23.06	23.10	22.83	24.50
		12	13	22.76	23.07	23.07	22.71	24.50
		25	0	22.76	23.05	23.14	22.78	23.50
	16QAM	1	0	22.93	22.85	22.84	22.97	23.50
		1	13	22.92	22.87	22.84	22.82	23.50
		1	24	22.89	22.71	22.73	22.82	23.50
		12	0	21.72	21.93	21.93	21.69	23.50
		12	6	21.71	21.87	21.88	21.64	23.50
		12	13	21.74	22.03	22.07	21.66	23.50
		25	0	21.75	21.90	21.94	21.68	22.50
	64QAM	1	0	21.48	21.44	21.43	21.53	22.50
		1	13	21.44	21.41	21.38	21.36	22.50
		1	24	21.45	21.28	21.30	21.40	22.50
		12	0	20.27	20.52	20.52	20.26	22.50
		12	6	20.25	20.45	20.46	20.22	22.50
		12	13	20.30	20.59	20.63	20.23	22.50
		25	0	20.24	20.48	20.52	20.25	21.50
Bandwidth h	Modulation	RB size	RB offset	Channel/Frequency (MHz)				Tune-up Limit (dBm)
				40190/2550	40523/2583.3	40856/2616.6	41190/2650	
10MHz	QPSK	1	0	23.84	23.98	24.03	23.74	24.50
		1	25	23.65	23.77	23.77	23.53	24.50
		1	49	23.80	23.98	23.97	23.63	24.50
		25	0	22.82	22.92	22.94	22.79	23.50
		25	13	22.73	23.04	23.06	22.87	23.50
		25	25	22.78	23.05	23.05	22.76	23.50
		50	0	22.84	23.03	23.13	22.82	23.50
	16QAM	1	0	22.95	22.82	22.80	22.99	23.50
		1	25	22.95	22.84	22.82	22.85	23.50



		1	49	22.92	22.68	22.71	22.85	23.50
		25	0	21.75	21.91	21.89	21.73	22.50
		25	13	21.73	21.84	21.83	21.67	22.50
		25	25	21.77	22.00	22.02	21.70	22.50
		50	0	21.78	21.88	21.90	21.72	22.50
	64QAM	1	0	21.50	21.41	21.39	21.55	22.50
		1	25	21.47	21.38	21.36	21.39	22.50
		1	49	21.48	21.25	21.28	21.43	22.50
		25	0	20.30	20.50	20.48	20.30	21.50
		25	13	20.27	20.42	20.41	20.25	21.50
		25	25	20.33	20.56	20.58	20.27	21.50
		50	0	20.27	20.46	20.48	20.29	21.50
				Channel/Frequency (MHz)				
Bandwidth	Modulation	RB size	RB offset	40215/2552.5	40531/2584.1	40848/2615.8	41165/2647.5	
15MHz	QPSK	1	0	23.83	24.00	24.04	23.72	24.50
		1	38	23.63	23.80	23.82	23.50	24.50
		1	74	23.77	24.00	24.01	23.59	24.50
		36	0	22.80	22.95	22.99	22.76	23.50
		36	18	22.70	23.07	23.11	22.83	23.50
		36	39	22.75	23.07	23.09	22.72	23.50
		75	0	22.82	23.11	23.15	22.77	23.50
	16QAM	1	0	22.90	22.84	22.83	22.97	23.50
		1	38	22.93	22.87	22.86	22.83	23.50
		1	74	22.89	22.71	22.73	22.82	23.50
		36	0	21.72	21.94	21.94	21.70	22.50
		36	18	21.70	21.86	21.87	21.63	22.50
		36	39	21.75	22.03	22.07	21.67	22.50
		75	0	21.75	21.91	21.95	21.68	22.50
	64QAM	1	0	21.45	21.43	21.42	21.53	22.50
		1	38	21.45	21.41	21.40	21.37	22.50
		1	74	21.45	21.28	21.30	21.40	22.50
		36	0	20.27	20.53	20.53	20.27	21.50
		36	18	20.24	20.44	20.45	20.21	21.50
		36	39	20.31	20.59	20.63	20.24	21.50
		75	0	20.24	20.49	20.53	20.25	21.50
		Channel/Frequency (MHz)						Tune-up Limit (dBm)
Bandwidth	Modulation	RB size	RB offset	40240/2555	40540/2585	40840/2615	41140/2645	
20MHz	QPSK	1	0	23.80	23.99	24.00	23.69	24.50
		1	50	23.62	23.78	23.81	23.48	24.50
		1	99	23.75	23.97	23.96	23.56	24.50
		50	0	22.77	22.93	22.95	22.72	23.50



		50	25	22.68	23.04	23.06	22.80	23.50			
		50	50	22.72	23.04	23.02	22.68	23.50			
		100	0	22.79	23.02	23.01	22.73	23.50			
	16QAM		1	0	22.88	22.79	22.81	22.92	23.50		
			1	50	22.89	22.85	22.83	22.79	23.50		
			1	99	22.87	22.68	22.69	22.80	23.50		
			50	0	21.69	21.91	21.92	21.67	22.50		
			50	25	21.67	21.83	21.82	21.60	22.50		
			50	50	21.72	22.01	22.03	21.63	22.50		
			100	0	21.73	21.88	21.90	21.65	22.50		
			64QAM		1	0	21.43	21.38	21.40	21.48	22.50
					1	50	21.41	21.39	21.37	21.33	22.50
	1	99			21.43	21.25	21.26	21.38	22.50		
	50	0			20.24	20.50	20.51	20.24	21.50		
	50	25			20.21	20.41	20.40	20.18	21.50		
	50	50			20.28	20.57	20.59	20.20	21.50		
	100	0			20.22	20.46	20.48	20.22	21.50		

Inter Band

DL				UL														
PCC	SCC	PCC	SCC	PCC						SCC								
Band	Band	BW	Channel	BW	Channel	Modulation	RB	Offset	Channel	Standalone	CA power	Delta	RB	Offset	Channel	Standalone	CA active	Delta
2	5	5	625	10	2450	QPSK	1	0	18625	23.47	23.44	-0.03	/	/	/	/	/	/
		10	650	10	2450	QPSK	1	0	18650	23.29	23.31	0.02	/	/	/	/	/	/
		15	675	10	2450	QPSK	1	0	18675	23.48	23.51	0.03	/	/	/	/	/	/
		20	700	10	2450	QPSK	1	0	18700	23.45	23.40	-0.05	/	/	/	/	/	/
4	7	5	2375	20	3350	QPSK	1	0	20375	23.01	22.95	-0.06	/	/	/	/	/	/
		10	2350	20	3350	QPSK	1	0	20350	23.04	22.97	-0.07	/	/	/	/	/	/
5	2	5	2425	20	700	QPSK	1	24	20425	23.73	23.65	-0.08	/	/	/	/	/	/
		10	2450	20	700	QPSK	1	49	20450	23.70	23.61	-0.09	/	/	/	/	/	/
5	7	1.4	2407	20	2850	QPSK	1	5	20407	23.73	23.63	-0.10	/	/	/	/	/	/
		3	2415	20	2850	QPSK	1	14	20415	23.76	23.65	-0.11	/	/	/	/	/	/
		5	2425	20	2850	QPSK	1	24	20425	23.73	23.61	-0.12	/	/	/	/	/	/
		10	2450	20	2850	QPSK	1	49	20450	23.70	23.74	0.04	/	/	/	/	/	/
7	4	5	2775	20	2050	QPSK	1	0	20775	22.84	22.89	0.05	/	/	/	/	/	/
		10	2800	20	2050	QPSK	1	0	20800	22.86	22.77	-0.09	/	/	/	/	/	/
		15	2825	20	2050	QPSK	1	0	20825	22.85	22.84	-0.01	/	/	/	/	/	/
		20	2850	20	2050	QPSK	1	0	20850	22.82	22.82	0.00	/	/	/	/	/	/
7	5	10	2800	10	2450	QPSK	1	0	20800	22.86	22.87	0.01	/	/	/	/	/	/
		15	2825	10	2450	QPSK	1	0	20825	22.85	22.75	-0.10	/	/	/	/	/	/
		20	2850	10	2450	QPSK	1	0	20850	22.82	22.70	-0.12	/	/	/	/	/	/

Intra Band non-contiguous

DL						UL													
PCC		SCC		PCC		SCC		PCC						SCC					
Band	Band	BW	Channel	BW	Channel	Modulation	RB	Offset	Channel	Standalone	CA power	Delta	RB	Offset	Channel	Standalone	CA active	Delta	
7A	7A	5	2775	15	3375	QPSK	1	0	20775	22.86	22.85	-0.01	/	/	/	/	/	/	
		10	2800	15	3375	QPSK	1	0	20800	22.83	22.79	-0.04	/	/	/	/	/	/	
		15	2825	20	3350	QPSK	1	0	20825	22.80	22.75	-0.05	/	/	/	/	/	/	
		20	2850	20	3350	QPSK	1	0	20850	22.79	22.80	0.01	/	/	/	/	/	/	

Intra-band Contiguous

DL						UL													
PCC		SCC		PCC		SCC		PCC						SCC					
Band	Band	BW	Channel	BW	Channel	Modulation	RB	Offset	Channel	Standalone	CA power	Delta	RB	Offset	Channel	Standalone	CA active	Delta	
7C	7C	10	2805	20	2949	QPSK	1	0	20805	22.83	22.78	-0.05	/	/	/	/	/	/	
		15	2828	20	2999	QPSK	1	0	20828	22.81	22.82	0.01	/	/	/	/	/	/	
		20	2850	20	3048	QPSK	1	0	20850	22.80	22.68	-0.12	/	/	/	/	/	/	
41C	41C	5	40598	20	40715	QPSK	1	0	40598	24.03	23.99	-0.04	/	/	/	/	/	/	
		10	40596	20	40740	QPSK	1	0	40596	24.04	23.99	-0.05	/	/	/	/	/	/	
		15	40593	20	40764	QPSK	1	0	40593	24.00	24.09	0.09	/	/	/	/	/	/	
		20	40591	20	40789	QPSK	1	0	40591	23.96	24.02	0.06	/	/	/	/	/	/	

Antenna 2

LTE FDD Band 2 Receiver off				Conducted Power(dBm)			Tune-up Limit (dBm)
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				18607/1850.7	18900/1880	19193/1909.3	
1.4MHz	QPSK	1	0	21.64	21.81	21.78	23.10
		1	2	21.57	21.52	21.61	23.10
		1	5	21.81	21.87	21.85	23.10
		3	0	21.68	21.79	21.62	23.10
		3	2	21.57	21.81	21.83	23.10
		3	3	21.64	21.73	21.81	23.10
		6	0	21.55	21.79	21.79	22.10
	16QAM	1	0	21.68	21.83	21.82	22.10
		1	2	21.71	21.61	21.73	22.10
		1	5	21.73	21.80	21.76	22.10
		3	0	21.45	21.52	21.39	22.10
		3	2	21.33	21.50	21.55	22.10
		3	3	21.57	21.69	21.72	22.10
		6	0	20.55	20.74	20.75	21.10
	64QAM	1	0	19.95	20.13	20.10	21.10
		1	2	19.96	19.92	20.01	21.10
		1	5	20.01	20.11	20.06	21.10
		3	0	19.92	20.05	19.89	21.10
		3	2	19.77	20.00	20.04	21.10
		3	3	20.03	20.17	20.22	21.10
		6	0	18.98	19.27	19.24	20.10
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				18615/1851.5	18900/1880	19185/1908.5	
3MHz	QPSK	1	0	21.56	21.75	21.71	23.10
		1	7	21.50	21.47	21.55	23.10
		1	14	21.74	21.82	21.79	23.10
		8	0	21.68	21.81	21.65	22.10
		8	4	21.59	21.81	21.85	22.10
		8	7	21.64	21.74	21.81	22.10
		15	0	21.58	21.83	21.82	22.10
	16QAM	1	0	21.71	21.85	21.85	22.10
		1	7	21.74	21.66	21.77	22.10
		1	14	21.75	21.84	21.79	22.10
		8	0	20.56	20.65	20.51	21.10
		8	4	20.44	20.63	20.67	21.10
		8	7	20.67	20.81	20.85	21.10
		15	0	20.58	20.78	20.78	21.10

	64QAM	1	0	20.23	20.42	20.38	21.10
		1	7	20.23	20.15	20.27	21.10
		1	14	20.29	20.37	20.34	21.10
		8	0	18.92	19.03	18.88	20.10
		8	4	18.79	19.00	19.05	20.10
		8	7	19.05	19.17	19.21	20.10
		15	0	18.94	19.22	19.22	20.10
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				18625/1852.5	18900/1880	19175/1907.5	
5MHz	QPSK	1	0	21.53	21.73	21.67	23.10
		1	13	21.48	21.43	21.52	23.10
		1	24	21.71	21.77	21.75	23.10
		12	0	21.65	21.76	21.61	22.10
		12	6	21.57	21.77	21.80	22.10
		12	13	21.62	21.72	21.77	22.10
		25	0	21.56	21.82	21.80	22.10
	16QAM	1	0	21.68	21.81	21.82	22.10
		1	13	21.71	21.64	21.74	22.10
		1	24	21.72	21.82	21.75	22.10
		12	0	20.54	20.61	20.48	21.10
		12	6	20.41	20.58	20.63	21.10
		12	13	20.64	20.76	20.81	21.10
		25	0	20.56	20.74	20.73	21.10
	64QAM	1	0	20.26	20.44	20.41	21.10
		1	13	20.26	20.20	20.31	21.10
		1	24	20.31	20.41	20.37	21.10
		12	0	19.01	19.14	18.98	20.10
		12	6	18.88	19.11	19.15	20.10
		12	13	19.13	19.27	19.32	20.10
		25	0	18.97	19.26	19.25	20.10
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				18650/1855	18900/1880	19150/1905	
10MHz	QPSK	1	0	21.55	21.74	21.70	23.10
		1	25	21.51	21.48	21.56	23.10
		1	49	21.73	21.81	21.78	23.10
		25	0	21.68	21.81	21.65	22.10
		25	13	21.60	21.82	21.84	22.10
		25	25	21.64	21.76	21.82	22.10
		50	0	21.64	21.84	21.84	22.10
	16QAM	1	0	21.70	21.84	21.84	22.10
		1	25	21.74	21.68	21.77	22.10



		1	49	21.75	21.84	21.78	22.10
		25	0	20.57	20.66	20.52	21.10
		25	13	20.43	20.62	20.66	21.10
		25	25	20.67	20.81	20.85	21.10
		50	0	20.59	20.79	20.77	21.10
	64QAM	1	0	20.23	20.40	20.38	21.10
		1	25	20.23	20.18	20.28	21.10
		1	49	20.28	20.39	20.33	21.10
		25	0	18.99	19.10	18.95	20.10
		25	13	18.85	19.06	19.11	20.10
		25	25	19.10	19.22	19.28	20.10
		50	0	18.95	19.22	19.20	20.10
	Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
18675/1857.5					18900/1880	19125/1902.5	
15MHz	QPSK	1	0	21.54	21.70	21.68	23.10
		1	38	21.49	21.47	21.53	23.10
		1	74	21.70	21.76	21.74	23.10
		36	0	21.66	21.77	21.62	22.10
		36	18	21.57	21.77	21.80	22.10
		36	39	21.61	21.73	21.78	22.10
		75	0	21.62	21.80	21.79	22.10
	16QAM	1	0	21.65	21.82	21.82	22.10
		1	38	21.72	21.65	21.75	22.10
		1	74	21.72	21.80	21.75	22.10
		36	0	20.54	20.64	20.49	21.10
		36	18	20.40	20.57	20.62	21.10
		36	39	20.65	20.77	20.82	21.10
		75	0	20.56	20.74	20.73	21.10
	64QAM	1	0	20.20	20.41	20.38	21.10
		1	38	20.24	20.19	20.29	21.10
		1	74	20.28	20.37	20.33	21.10
		36	0	18.99	19.13	18.96	20.10
		36	18	18.84	19.05	19.10	20.10
		36	39	19.11	19.23	19.29	20.10
		75	0	18.95	19.22	19.20	20.10
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				18700/1860	18900/1880	19100/1900	
20MHz	QPSK	1	0	21.51	21.66	21.65	23.10
		1	50	21.48	21.43	21.51	23.10
		1	99	21.68	21.75	21.71	23.10
		50	0	21.63	21.72	21.58	22.10



		50	25	21.55	21.73	21.77	22.10	
		50	50	21.58	21.68	21.74	22.10	
		100	0	21.59	21.75	21.75	22.10	
	16QAM		1	0	21.63	21.78	21.77	22.10
			1	50	21.68	21.63	21.71	22.10
			1	99	21.70	21.77	21.73	22.10
			50	0	20.51	20.60	20.46	21.10
			50	25	20.37	20.55	20.59	21.10
			50	50	20.62	20.72	20.78	21.10
			100	0	20.54	20.70	20.70	21.10
	64QAM		1	0	20.18	20.37	20.33	21.10
			1	50	20.20	20.17	20.25	21.10
			1	99	20.26	20.34	20.31	21.10
			50	0	18.96	19.09	18.93	20.10
			50	25	18.81	19.03	19.07	20.10
			50	50	19.08	19.18	19.25	20.10
			100	0	18.93	19.18	19.17	20.10

LTE FDD Band 2 Receiver on				Conducted Power(dBm)			Tune-up Limit (dBm)	
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)				
				18607/1850.7	18900/1880	19193/1909.3		
1.4MHz	QPSK	1	0	19.71	19.68	19.76	20.60	
		1	2	19.49	19.41	19.51	20.60	
		1	5	19.60	19.64	19.70	20.60	
		3	0	19.74	19.83	19.81	20.60	
		3	2	19.67	19.75	19.81	20.60	
		3	3	19.73	19.71	19.69	20.60	
		6	0	19.67	19.76	19.77	20.60	
	16QAM		1	0	19.85	19.92	19.77	20.60
			1	2	19.87	19.79	19.88	20.60
			1	5	19.86	19.89	19.82	20.60
			3	0	19.77	19.79	19.71	20.60
			3	2	19.87	19.95	19.78	20.60
			3	3	19.88	19.95	19.82	20.60
			6	0	19.59	19.70	19.55	20.60
	64QAM		1	0	19.90	20.01	19.83	20.60
			1	2	19.89	19.83	19.92	20.60
			1	5	19.92	19.96	19.90	20.60
			3	0	19.72	19.78	19.68	20.60
			3	2	19.81	19.93	19.76	20.60
			3	3	19.84	19.91	19.79	20.60

Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				18615/1851.5	18900/1880	19185/1908.5	
				6	0	19.04	
3MHz	QPSK	1	0	19.73	19.72	19.79	20.60
		1	7	19.52	19.46	19.55	20.60
		1	14	19.63	19.69	19.74	20.60
		8	0	19.74	19.85	19.84	20.60
		8	4	19.69	19.75	19.83	20.60
		8	7	19.73	19.72	19.69	20.60
		15	0	19.70	19.80	19.80	20.60
	16QAM	1	0	19.88	19.94	19.80	20.60
		1	7	19.90	19.84	19.92	20.60
		1	14	19.88	19.93	19.85	20.60
		8	0	19.58	19.62	19.53	20.60
		8	4	19.68	19.78	19.60	20.60
		8	7	19.68	19.77	19.65	20.60
		15	0	19.62	19.74	19.58	20.60
	64QAM	1	0	19.93	20.03	19.86	20.60
		1	7	19.92	19.88	19.96	20.60
		1	14	19.94	20.00	19.93	20.60
		8	0	19.13	19.21	19.10	20.10
		8	4	19.22	19.36	19.18	20.10
		8	7	19.24	19.33	19.22	20.10
		15	0	19.11	19.32	19.15	20.10
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				18625/1852.5	18900/1880	19175/1907.5	
				6	0	19.04	
5MHz	QPSK	1	0	19.70	19.70	19.75	20.60
		1	13	19.50	19.42	19.52	20.60
		1	24	19.60	19.64	19.70	20.60
		12	0	19.71	19.80	19.80	20.60
		12	6	19.67	19.71	19.78	20.60
		12	13	19.71	19.70	19.65	20.60
		25	0	19.68	19.79	19.78	20.60
	16QAM	1	0	19.85	19.90	19.77	20.60
		1	13	19.87	19.82	19.89	20.60
		1	24	19.85	19.91	19.81	20.60
		12	0	19.56	19.58	19.50	20.60
		12	6	19.65	19.73	19.56	20.60
		12	13	19.65	19.72	19.61	20.60
		25	0	19.60	19.70	19.53	20.60
	64QAM	1	0	19.90	19.99	19.83	20.60

		1	13	19.89	19.86	19.93	20.60
		1	24	19.91	19.98	19.89	20.60
		12	0	19.11	19.17	19.07	20.10
		12	6	19.19	19.31	19.14	20.10
		12	13	19.21	19.28	19.18	20.10
		25	0	19.09	19.28	19.10	20.10
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				18650/1855	18900/1880	19150/1905	
10MHz	QPSK	1	0	19.72	19.71	19.78	20.60
		1	25	19.53	19.47	19.56	20.60
		1	49	19.62	19.68	19.73	20.60
		25	0	19.74	19.85	19.84	20.60
		25	13	19.70	19.76	19.82	20.60
		25	25	19.73	19.74	19.70	20.60
		50	0	19.76	19.81	19.82	20.60
	16QAM	1	0	19.87	19.93	19.79	20.60
		1	25	19.90	19.86	19.92	20.60
		1	49	19.88	19.93	19.84	20.60
		25	0	19.59	19.63	19.54	20.60
		25	13	19.67	19.77	19.59	20.60
		25	25	19.68	19.77	19.65	20.60
		50	0	19.63	19.75	19.57	20.60
	64QAM	1	0	19.92	20.02	19.85	20.60
		1	25	19.92	19.90	19.96	20.60
		1	49	19.94	20.00	19.92	20.60
		25	0	19.14	19.22	19.11	20.10
		25	13	19.21	19.35	19.17	20.10
		25	25	19.24	19.33	19.22	20.10
		50	0	19.12	19.33	19.14	20.10
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				18675/1857.5	18900/1880	19125/1902.5	
15MHz	QPSK	1	0	19.71	19.67	19.76	20.60
		1	38	19.51	19.46	19.53	20.60
		1	74	19.59	19.63	19.69	20.60
		36	0	19.72	19.81	19.81	20.60
		36	18	19.67	19.71	19.78	20.60
		36	39	19.70	19.71	19.66	20.60
		75	0	19.74	19.77	19.77	20.60
	16QAM	1	0	19.82	19.91	19.77	20.60
		1	38	19.88	19.83	19.90	20.60
		1	74	19.85	19.89	19.81	20.60



		36	0	19.56	19.61	19.51	20.60
		36	18	19.64	19.72	19.55	20.60
		36	39	19.66	19.73	19.62	20.60
		75	0	19.60	19.70	19.53	20.60
	64QAM	1	0	19.87	20.00	19.83	20.60
		1	38	19.90	19.87	19.94	20.60
		1	74	19.91	19.96	19.89	20.60
		36	0	19.11	19.20	19.08	20.10
		36	18	19.18	19.30	19.13	20.10
		36	39	19.22	19.29	19.19	20.10
		75	0	19.09	19.28	19.10	20.10
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				18700/1860	18900/1880	19100/1900	
20MHz	QPSK	1	0	19.68	19.63	19.73	20.60
		1	50	19.50	19.42	19.51	20.60
		1	99	19.57	19.62	19.66	20.60
		50	0	19.69	19.76	19.77	20.60
		50	25	19.65	19.67	19.75	20.60
		50	50	19.67	19.66	19.62	20.60
		100	0	19.71	19.72	19.73	20.60
	16QAM	1	0	19.80	19.87	19.72	20.60
		1	50	19.84	19.81	19.86	20.60
		1	99	19.83	19.86	19.79	20.60
		50	0	19.53	19.57	19.48	20.60
		50	25	19.61	19.70	19.52	20.60
		50	50	19.63	19.68	19.58	20.60
		100	0	19.58	19.66	19.50	20.60
	64QAM	1	0	19.85	19.96	19.78	20.60
		1	50	19.86	19.85	19.90	20.60
		1	99	19.89	19.93	19.87	20.60
		50	0	19.08	19.16	19.05	20.10
		50	25	19.15	19.28	19.10	20.10
		50	50	19.19	19.24	19.15	20.10
		100	0	19.07	19.24	19.07	20.10

LTE FDD Band 4 Receiver off				Conducted Power(dBm)			Tune-up Limit (dBm)
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				19957/1710.7	20175/1732.5	20393/1754.3	
1.4MHz	QPSK	1	0	21.08	21.07	21.23	22.80
		1	2	20.86	20.91	20.82	22.80



		1	5	21.04	20.88	20.97	22.80	
		3	0	21.12	20.96	21.05	22.80	
		3	2	21.02	20.90	21.03	22.80	
		3	3	20.99	20.94	21.00	22.80	
		6	0	20.96	20.99	21.07	21.80	
		6	0	20.96	20.99	21.07	21.80	
	16QAM	1	0	21.22	21.25	21.43	21.80	
		1	2	21.34	21.24	21.18	21.80	
		1	5	21.01	21.16	21.23	21.80	
		3	0	20.71	20.87	21.00	21.80	
		3	2	20.79	20.96	21.12	21.80	
		3	3	20.81	20.87	20.88	21.80	
	64QAM	6	0	19.94	20.02	20.11	20.80	
		1	0	19.67	19.74	19.89	20.80	
		1	2	19.76	19.68	19.62	20.80	
		1	5	19.47	19.63	19.71	20.80	
		3	0	18.96	19.16	19.27	20.80	
		3	2	19.03	19.24	19.40	20.80	
		3	3	19.07	19.13	19.15	20.80	
		6	0	18.13	18.30	18.38	19.80	
		Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
19965/1711.5						20175/1732.5	20385/1753.5	
3MHz		QPSK	1	0	21.10	21.11	21.26	22.80
			1	7	20.89	20.96	20.86	22.80
	1		14	21.07	20.93	21.01	22.80	
	8		0	21.20	21.06	21.16	21.80	
	8		4	21.12	20.98	21.13	21.80	
	8		7	21.07	21.03	21.08	21.80	
	16QAM	15	0	20.99	21.03	21.10	21.80	
		1	0	21.25	21.27	21.46	21.80	
		1	7	21.37	21.29	21.22	21.80	
		1	14	21.03	21.20	21.26	21.80	
		8	0	19.90	20.08	20.20	20.80	
		8	4	19.98	20.17	20.32	20.80	
	64QAM	8	7	19.99	20.07	20.09	20.80	
		15	0	19.97	20.06	20.14	20.80	
		1	0	19.70	19.76	19.92	20.80	
		1	7	19.79	19.73	19.66	20.80	
		1	14	19.49	19.67	19.74	20.80	
		8	0	18.15	18.37	18.47	19.80	
		8	4	18.22	18.45	18.60	19.80	
		8	7	18.25	18.33	18.36	19.80	
		15	0	18.16	18.34	18.41	19.80	

Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				19975/1712.5	20175/1732.5	20375/1752.5	
5MHz	QPSK	1	0	21.07	21.09	21.22	22.80
		1	13	20.87	20.92	20.83	22.80
		1	24	21.04	20.88	20.97	22.80
		12	0	21.17	21.01	21.12	21.80
		12	6	21.10	20.94	21.08	21.80
		12	13	21.05	21.01	21.04	21.80
		25	0	20.97	21.02	21.08	21.80
	16QAM	1	0	21.22	21.23	21.43	21.80
		1	13	21.34	21.27	21.19	21.80
		1	24	21.00	21.18	21.22	21.80
		12	0	19.88	20.04	20.17	20.80
		12	6	19.95	20.12	20.28	20.80
		12	13	19.96	20.02	20.05	20.80
		25	0	19.95	20.02	20.09	20.80
	64QAM	1	0	19.67	19.72	19.89	20.80
		1	13	19.76	19.71	19.63	20.80
		1	24	19.46	19.65	19.70	20.80
		12	0	18.13	18.33	18.44	19.80
		12	6	18.19	18.40	18.56	19.80
		12	13	18.22	18.28	18.32	19.80
		25	0	18.14	18.30	18.36	19.80
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				20000/1715	20175/1732.5	20350/1750	
10MHz	QPSK	1	0	21.09	21.10	21.25	22.80
		1	25	20.90	20.97	20.87	22.80
		1	49	21.06	20.92	21.00	22.80
		25	0	21.20	21.06	21.16	21.80
		25	13	21.13	20.99	21.12	21.80
		25	25	21.07	21.05	21.09	21.80
		50	0	21.05	21.04	21.12	21.80
	16QAM	1	0	21.24	21.26	21.45	21.80
		1	25	21.37	21.31	21.22	21.80
		1	49	21.03	21.20	21.25	21.80
		25	0	19.91	20.09	20.21	20.80
		25	13	19.97	20.16	20.31	20.80
		25	25	19.99	20.07	20.09	20.80
		50	0	19.98	20.07	20.13	20.80
	64QAM	1	0	19.69	19.75	19.91	20.80
		1	25	19.79	19.75	19.66	20.80

Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)	
				20025/1717.5	20175/1732.5	20325/1747.5		
		1	49	19.49	19.67	19.73	20.80	
		25	0	18.16	18.38	18.48	19.80	
		25	13	18.21	18.44	18.59	19.80	
		25	25	18.25	18.33	18.36	19.80	
		50	0	18.17	18.35	18.40	19.80	
15MHz	QPSK	1	0	21.08	21.06	21.23	22.80	
		1	38	20.88	20.96	20.84	22.80	
		1	74	21.03	20.87	20.96	22.80	
		36	0	21.18	21.02	21.13	21.80	
		36	18	21.10	20.94	21.08	21.80	
		36	39	21.04	21.02	21.05	21.80	
		75	0	21.03	21.00	21.07	21.80	
	16QAM	1	0	21.19	21.24	21.43	21.80	
		1	38	21.35	21.28	21.20	21.80	
		1	74	21.00	21.16	21.22	21.80	
		36	0	19.88	20.07	20.18	20.80	
		36	18	19.94	20.11	20.27	20.80	
		36	39	19.97	20.03	20.06	20.80	
		75	0	19.95	20.02	20.09	20.80	
	64QAM	1	0	19.64	19.73	19.89	20.80	
		1	38	19.77	19.72	19.64	20.80	
		1	74	19.46	19.63	19.70	20.80	
		36	0	18.13	18.36	18.45	19.80	
		36	18	18.18	18.39	18.55	19.80	
		36	39	18.23	18.29	18.33	19.80	
		75	0	18.14	18.30	18.36	19.80	
	Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
					20050/1720	20175/1732.5	20300/1745	
	20MHz	QPSK	1	0	21.05	21.02	21.20	22.80
			1	50	20.87	20.92	20.82	22.80
			1	99	21.01	20.86	20.93	22.80
			50	0	21.15	20.97	21.09	21.80
			50	25	21.08	20.90	21.05	21.80
50			50	21.01	20.97	21.01	21.80	
100			0	21.00	20.95	21.03	21.80	
16QAM		1	0	21.17	21.20	21.38	21.80	
		1	50	21.31	21.26	21.16	21.80	
		1	99	20.98	21.13	21.20	21.80	
		50	0	19.85	20.03	20.15	20.80	



		50	25	19.91	20.09	20.24	20.80
		50	50	19.94	19.98	20.02	20.80
		100	0	19.93	19.98	20.06	20.80
	64QAM	1	0	19.62	19.69	19.84	20.80
		1	50	19.73	19.70	19.60	20.80
		1	99	19.44	19.60	19.68	20.80
		50	0	18.10	18.32	18.42	19.80
		50	25	18.15	18.37	18.52	19.80
		50	50	18.20	18.24	18.29	19.80
		100	0	18.12	18.26	18.33	19.80

LTE FDD Band 4 Receiver on				Conducted Power(dBm)			Tune-up Limit (dBm)
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				19957/1710.7	20175/1732.5	20393/1754.3	
1.4MHz	QPSK	1	0	18.78	18.78	18.54	19.80
		1	2	18.51	18.33	18.37	19.80
		1	5	18.58	19.51	18.56	19.80
		3	0	18.63	18.64	18.60	19.80
		3	2	18.50	18.57	18.57	19.80
		3	3	18.45	18.49	18.52	19.80
		6	0	18.59	18.64	18.65	19.80
	16QAM	1	0	19.02	18.84	18.93	19.80
		1	2	18.47	18.52	18.51	19.80
		1	5	18.94	18.87	18.91	19.80
		3	0	18.63	18.49	18.56	19.80
		3	2	18.63	18.47	18.56	19.80
		3	3	18.55	18.53	18.52	19.80
		6	0	18.59	18.54	18.59	19.80
	64QAM	1	0	19.07	18.93	18.99	19.80
		1	2	18.49	18.56	18.55	19.80
		1	5	19.00	18.94	18.99	19.80
		3	0	18.18	18.08	18.13	19.80
		3	2	18.17	18.05	18.14	19.80
		3	3	18.11	18.09	18.09	19.80
		6	0	18.08	18.12	18.16	19.80
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				19965/1711.5	20175/1732.5	20385/1753.5	
3MHz	QPSK	1	0	18.80	18.82	18.57	19.80
		1	7	18.54	18.38	18.41	19.80
		1	14	18.61	19.56	18.60	19.80



		8	0	18.71	18.74	18.71	19.80	
		8	4	18.60	18.65	18.67	19.80	
		8	7	18.53	18.58	18.60	19.80	
		15	0	18.62	18.68	18.68	19.80	
	16QAM	1	0	19.05	18.86	18.96	19.80	
		1	7	18.50	18.57	18.55	19.80	
		1	14	18.96	18.91	18.94	19.80	
		8	0	18.72	18.60	18.66	19.80	
		8	4	18.72	18.58	18.66	19.80	
		8	7	18.63	18.63	18.63	19.80	
		15	0	18.62	18.58	18.62	19.80	
	64QAM	1	0	19.10	18.95	19.02	19.80	
		1	7	18.52	18.61	18.59	19.80	
		1	14	19.02	18.98	19.02	19.80	
		8	0	18.27	18.19	18.23	19.80	
		8	4	18.26	18.16	18.24	19.80	
		8	7	18.19	18.19	18.20	19.80	
		15	0	18.11	18.16	18.19	19.80	
	Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
					19975/1712.5	20175/1732.5	20375/1752.5	
	5MHz	QPSK	1	0	18.77	18.80	18.53	19.80
1			13	18.52	18.34	18.38	19.80	
1			24	18.58	19.51	18.56	19.80	
12			0	18.68	18.69	18.67	19.80	
12			6	18.58	18.61	18.62	19.80	
12			13	18.51	18.56	18.56	19.80	
25			0	18.60	18.67	18.66	19.80	
16QAM		1	0	19.02	18.82	18.93	19.80	
		1	13	18.47	18.55	18.52	19.80	
		1	24	18.93	18.89	18.90	19.80	
		12	0	18.70	18.56	18.63	19.80	
		12	6	18.69	18.53	18.62	19.80	
		12	13	18.60	18.58	18.59	19.80	
		25	0	18.60	18.54	18.57	19.80	
64QAM		1	0	19.07	18.91	18.99	19.80	
		1	13	18.49	18.59	18.56	19.80	
		1	24	18.99	18.96	18.98	19.80	
		12	0	18.25	18.15	18.20	19.80	
		12	6	18.23	18.11	18.20	19.80	
		12	13	18.16	18.14	18.16	19.80	
		25	0	18.09	18.12	18.14	19.80	

Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				20000/1715	20175/1732.5	20350/1750	
10MHz	QPSK	1	0	18.79	18.81	18.56	19.80
		1	25	18.55	18.39	18.42	19.80
		1	49	18.60	19.55	18.59	19.80
		25	0	18.71	18.74	18.71	19.80
		25	13	18.61	18.66	18.66	19.80
		25	25	18.53	18.60	18.61	19.80
		50	0	18.68	18.69	18.70	19.80
	16QAM	1	0	19.04	18.85	18.95	19.80
		1	25	18.50	18.59	18.55	19.80
		1	49	18.96	18.91	18.93	19.80
		25	0	18.73	18.61	18.67	19.80
		25	13	18.71	18.57	18.65	19.80
		25	25	18.63	18.63	18.63	19.80
		50	0	18.63	18.59	18.61	19.80
	64QAM	1	0	19.09	18.94	19.01	19.80
		1	25	18.52	18.63	18.59	19.80
		1	49	19.02	18.98	19.01	19.80
		25	0	18.28	18.20	18.24	19.80
		25	13	18.25	18.15	18.23	19.80
		25	25	18.19	18.19	18.20	19.80
		50	0	18.12	18.17	18.18	19.80
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				20025/1717.5	20175/1732.5	20325/1747.5	
15MHz	QPSK	1	0	18.78	18.77	18.54	19.80
		1	38	18.53	18.38	18.39	19.80
		1	74	18.57	19.50	18.55	19.80
		36	0	18.69	18.70	18.68	19.80
		36	18	18.58	18.61	18.62	19.80
		36	39	18.50	18.57	18.57	19.80
		75	0	18.66	18.65	18.65	19.80
	16QAM	1	0	18.99	18.83	18.93	19.80
		1	38	18.48	18.56	18.53	19.80
		1	74	18.93	18.87	18.90	19.80
		36	0	18.70	18.59	18.64	19.80
		36	18	18.68	18.52	18.61	19.80
		36	39	18.61	18.59	18.60	19.80
		75	0	18.60	18.54	18.57	19.80
	64QAM	1	0	19.04	18.92	18.99	19.80
		1	38	18.50	18.60	18.57	19.80

Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				20050/1720	20175/1732.5	20300/1745	
		1	74	18.99	18.94	18.98	19.80
		36	0	18.25	18.18	18.21	19.80
		36	18	18.22	18.10	18.19	19.80
		36	39	18.17	18.15	18.17	19.80
		75	0	18.09	18.12	18.14	19.80
20MHz	QPSK	1	0	18.75	18.73	18.51	19.80
		1	50	18.52	18.34	18.37	19.80
		1	99	18.55	19.49	18.52	19.80
		50	0	18.66	18.65	18.64	19.80
		50	25	18.56	18.57	18.59	19.80
		50	50	18.47	18.52	18.53	19.80
		100	0	18.63	18.60	18.61	19.80
	16QAM	1	0	18.97	18.79	18.88	19.80
		1	50	18.44	18.54	18.49	19.80
		1	99	18.91	18.84	18.88	19.80
		50	0	18.67	18.55	18.61	19.80
		50	25	18.65	18.50	18.58	19.80
		50	50	18.58	18.54	18.56	19.80
		100	0	18.58	18.50	18.54	19.80
	64QAM	1	0	19.02	18.88	18.94	19.80
		1	50	18.46	18.58	18.53	19.80
		1	99	18.97	18.91	18.96	19.80
		50	0	18.22	18.14	18.18	19.80
		50	25	18.19	18.08	18.16	19.80
		50	50	18.14	18.10	18.13	19.80
		100	0	18.07	18.08	18.11	19.80

LTE FDD Band 5 Receiver off				Conducted Power(dBm)			Tune-up Limit (dBm)
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				20407/824.7	20525/836.5	20643/848.3	
1.4MHz	QPSK	1	0	23.20	23.13	23.15	24.50
		1	2	23.03	23.09	23.08	24.50
		1	5	23.22	23.08	23.19	24.50
		3	0	23.05	23.12	22.97	24.50
		3	2	22.98	23.08	23.03	24.50
		3	3	23.04	23.01	23.13	24.50
		6	0	22.13	22.26	22.27	23.50
	16QAM	1	0	22.27	22.36	22.40	23.50



		1	2	22.06	21.95	21.97	23.50
		1	5	21.96	22.09	22.18	23.50
		3	0	22.12	22.05	21.94	23.50
		3	2	22.20	22.15	22.13	23.50
		3	3	21.88	21.92	21.99	23.50
		6	0	21.26	21.24	21.26	22.50
	64QAM	1	0	21.32	21.43	21.46	22.50
		1	2	21.08	21.02	21.02	22.50
		1	5	21.01	21.18	21.25	22.50
		3	0	21.24	21.21	21.08	22.50
		3	2	21.30	21.29	21.27	22.50
		3	3	20.99	21.03	21.13	22.50
	6	0	20.26	20.32	20.31	21.50	
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				20415/825.5	20525/836.5	20635/847.5	
3MHz	QPSK	1	0	23.22	23.17	23.18	24.50
		1	7	23.06	23.14	23.12	24.50
		1	14	23.25	23.13	23.23	24.50
		8	0	22.23	22.32	22.18	23.50
		8	4	22.18	22.26	22.23	23.50
		8	7	22.22	22.20	22.31	23.50
		15	0	22.16	22.30	22.30	23.50
	16QAM	1	0	22.30	22.38	22.43	23.50
		1	7	22.09	22.00	22.01	23.50
		1	14	21.98	22.13	22.21	23.50
		8	0	21.31	21.26	21.14	22.50
		8	4	21.39	21.36	21.33	22.50
		8	7	21.06	21.12	21.20	22.50
		15	0	21.29	21.28	21.29	22.50
	64QAM	1	0	21.34	21.46	21.48	22.50
		1	7	21.11	21.06	21.05	22.50
		1	14	21.04	21.20	21.28	22.50
		8	0	20.37	20.36	20.22	21.50
		8	4	20.42	20.43	20.40	21.50
		8	7	20.12	20.18	20.27	21.50
		15	0	20.29	20.37	20.35	21.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				20425/826.5	20525/836.5	20625/846.5	
5MHz	QPSK	1	0	23.19	23.15	23.14	24.50
		1	13	23.04	23.10	23.09	24.50
		1	24	23.22	23.08	23.19	24.50



		12	0	22.20	22.27	22.14	23.50
		12	6	22.16	22.22	22.18	23.50
		12	13	22.20	22.18	22.27	23.50
		25	0	22.14	22.29	22.28	23.50
	16QAM	1	0	22.27	22.34	22.40	23.50
		1	13	22.06	21.98	21.98	23.50
		1	24	21.95	22.11	22.17	23.50
		12	0	21.29	21.22	21.11	22.50
		12	6	21.36	21.31	21.29	22.50
		12	13	21.03	21.07	21.16	22.50
		25	0	21.27	21.24	21.24	22.50
	64QAM	1	0	21.29	21.44	21.46	22.50
		1	13	21.09	21.03	21.03	22.50
		1	24	21.01	21.16	21.25	22.50
		12	0	20.34	20.34	20.19	21.50
		12	6	20.39	20.38	20.36	21.50
		12	13	20.10	20.14	20.24	21.50
		25	0	20.26	20.32	20.31	21.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				20450/829	20525/836.5	20600/844	
10MHz	QPSK	1	0	23.17	23.08	23.12	24.50
		1	25	23.04	23.10	23.08	24.50
		1	49	23.19	23.06	23.15	24.50
		25	0	22.18	22.23	22.11	23.50
		25	13	22.14	22.18	22.15	23.50
		25	25	22.16	22.14	22.24	23.50
		50	0	22.17	22.22	22.23	23.50
	16QAM	1	0	22.22	22.31	22.35	23.50
		1	25	22.03	21.97	21.95	23.50
		1	49	21.93	22.06	22.15	23.50
		25	0	21.26	21.21	21.09	22.50
		25	13	21.32	21.28	21.25	22.50
		25	25	21.01	21.03	21.13	22.50
		50	0	21.25	21.20	21.21	22.50
	64QAM	1	0	21.27	21.40	21.41	22.50
		1	25	21.05	21.01	20.99	22.50
		1	49	20.99	21.13	21.23	22.50
		25	0	20.31	20.30	20.16	21.50
		25	13	20.36	20.36	20.33	21.50
		25	25	20.07	20.09	20.20	21.50
		50	0	20.24	20.28	20.28	21.50



LTE FDD Band 5 Receiver on				Conducted Power(dBm)			Tune-up Limit (dBm)
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				20407/824.7	20525/836.5	20643/848.3	
1.4MHz	QPSK	1	0	20.47	20.46	20.42	21.50
		1	2	20.36	20.32	20.38	21.50
		1	5	20.39	20.33	20.50	21.50
		3	0	20.48	20.40	20.37	21.50
		3	2	20.31	20.34	20.35	21.50
		3	3	20.33	20.39	20.30	21.50
		6	0	20.32	20.41	20.42	21.50
	16QAM	1	0	20.70	20.72	20.69	21.50
		1	2	20.51	20.41	20.41	21.50
		1	5	20.65	20.50	20.45	21.50
		3	0	20.30	20.28	20.19	21.50
		3	2	20.29	20.25	20.23	21.50
		3	3	20.23	20.36	20.40	21.50
		6	0	20.33	20.35	20.37	21.50
	64QAM	1	0	20.75	20.81	20.75	21.50
		1	2	20.53	20.45	20.45	21.50
		1	5	20.71	20.57	20.53	21.50
		3	0	20.15	20.17	20.06	21.50
		3	2	20.13	20.13	20.11	21.50
		3	3	20.09	20.22	20.27	21.50
		6	0	20.12	20.23	20.24	21.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				20415/825.5	20525/836.5	20635/847.5	
3MHz	QPSK	1	0	20.49	20.50	20.45	21.50
		1	7	20.39	20.37	20.42	21.50
		1	14	20.42	20.38	20.54	21.50
		8	0	20.56	20.50	20.48	21.50
		8	4	20.41	20.42	20.45	21.50
		8	7	20.41	20.48	20.38	21.50
		15	0	20.35	20.45	20.45	21.50
	16QAM	1	0	20.73	20.74	20.72	21.50
		1	7	20.54	20.46	20.45	21.50
		1	14	20.67	20.54	20.48	21.50
		8	0	20.39	20.39	20.29	21.50
		8	4	20.38	20.36	20.33	21.50
		8	7	20.31	20.46	20.51	21.50
		15	0	20.36	20.39	20.40	21.50
	64QAM	1	0	20.78	20.83	20.78	21.50



Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)	
				20425/826.5	20525/836.5	20625/846.5		
		1	7	20.56	20.50	20.49	21.50	
		1	14	20.73	20.61	20.56	21.50	
		8	0	20.24	20.28	20.16	21.50	
		8	4	20.22	20.24	20.21	21.50	
		8	7	20.17	20.32	20.38	21.50	
		15	0	20.15	20.27	20.27	21.50	
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)	
				20425/826.5	20525/836.5	20625/846.5		
5MHz	QPSK	1	0	20.46	20.48	20.41	21.50	
		1	13	20.37	20.33	20.39	21.50	
		1	24	20.39	20.33	20.50	21.50	
		12	0	20.53	20.45	20.44	21.50	
		12	6	20.39	20.38	20.40	21.50	
		12	13	20.39	20.46	20.34	21.50	
		25	0	20.33	20.44	20.43	21.50	
	16QAM	1	0	20.70	20.70	20.69	21.50	
		1	13	20.51	20.44	20.42	21.50	
		1	24	20.64	20.52	20.44	21.50	
		12	0	20.37	20.35	20.26	21.50	
		12	6	20.35	20.31	20.29	21.50	
		12	13	20.28	20.41	20.47	21.50	
		25	0	20.34	20.35	20.35	21.50	
	64QAM	1	0	20.75	20.79	20.75	21.50	
		1	13	20.53	20.48	20.46	21.50	
		1	24	20.70	20.59	20.52	21.50	
		12	0	20.22	20.24	20.13	21.50	
		12	6	20.19	20.19	20.17	21.50	
		12	13	20.14	20.27	20.34	21.50	
		25	0	20.13	20.23	20.22	21.50	
	Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
					20450/829	20525/836.5	20600/844	
	10MHz	QPSK	1	0	20.44	20.41	20.39	21.50
1			25	20.37	20.33	20.38	21.50	
1			49	20.36	20.31	20.46	21.50	
25			0	20.51	20.41	20.41	21.50	
25			13	20.37	20.34	20.37	21.50	
25			25	20.35	20.42	20.31	21.50	
50			0	20.36	20.37	20.38	21.50	
16QAM		1	0	20.65	20.67	20.64	21.50	
		1	25	20.48	20.43	20.39	21.50	
		1	49	20.62	20.47	20.42	21.50	



		25	0	20.34	20.34	20.24	21.50
		25	13	20.31	20.28	20.25	21.50
		25	25	20.26	20.37	20.44	21.50
		50	0	20.32	20.31	20.32	21.50
	64QAM	1	0	20.70	20.76	20.70	21.50
		1	25	20.50	20.47	20.43	21.50
		1	49	20.68	20.54	20.50	21.50
		25	0	20.19	20.23	20.11	21.50
		25	13	20.15	20.16	20.13	21.50
		25	25	20.12	20.23	20.31	21.50
		50	0	20.11	20.19	20.19	21.50

LTE FDD Band 7 Receiver off				Conducted Power(dBm)			Tune-up Limit (dBm)
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				20775/2502.5	21100/2535	21425/2567.5	
5MHz	QPSK	1	0	21.44	21.38	21.27	22.50
		1	13	21.30	21.02	21.03	22.50
		1	24	21.47	21.21	21.28	22.50
		12	0	21.34	21.30	21.11	21.50
		12	6	21.46	21.29	21.16	21.50
		12	13	21.30	21.30	21.13	21.50
		25	0	21.46	21.34	21.09	21.50
	16QAM	1	0	21.19	21.22	21.30	21.50
		1	13	20.95	21.21	21.23	21.50
		1	24	21.03	21.36	21.28	21.50
		12	0	19.90	19.97	20.16	20.50
		12	6	19.90	19.96	20.09	20.50
		12	13	20.17	20.03	20.18	20.50
		25	0	19.98	19.99	20.21	20.50
	64QAM	1	0	19.47	19.55	19.59	20.50
		1	13	19.20	19.47	19.50	20.50
		1	24	19.32	19.65	19.60	20.50
		12	0	18.17	18.30	18.46	19.50
		12	6	18.17	18.29	18.41	19.50
		12	13	18.46	18.34	18.49	19.50
		25	0	18.19	18.31	18.53	19.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				20800/2505	21100/2535	21400/2565	
10MHz	QPSK	1	0	21.46	21.39	21.30	22.50
		1	25	21.33	21.07	21.07	22.50

		1	49	21.49	21.25	21.31	22.50	
		25	0	21.43	21.35	21.15	21.50	
		25	13	21.49	21.34	21.20	21.50	
		25	25	21.32	21.34	21.18	21.50	
		50	0	21.39	21.36	21.13	21.50	
	16QAM	1	0	21.21	21.25	21.32	21.50	
		1	25	20.98	21.25	21.26	21.50	
		1	49	21.06	21.38	21.31	21.50	
		25	0	19.93	20.02	20.20	20.50	
		25	13	19.92	20.00	20.12	20.50	
		25	25	20.20	20.08	20.22	20.50	
		50	0	20.01	20.04	20.25	20.50	
	64QAM	1	0	19.44	19.51	19.56	20.50	
		1	25	19.17	19.45	19.47	20.50	
		1	49	19.29	19.63	19.56	20.50	
		25	0	18.15	18.26	18.43	19.50	
		25	13	18.14	18.24	18.37	19.50	
		25	25	18.43	18.29	18.45	19.50	
		50	0	18.17	18.27	18.48	19.50	
	Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
					20825/2507.5	21100/2535	21375/2562.5	
15MHz	QPSK	1	0	21.45	21.35	21.28	22.50	
		1	38	21.31	21.06	21.04	22.50	
		1	74	21.46	21.20	21.27	22.50	
		36	0	21.41	21.31	21.12	21.50	
		36	18	21.46	21.29	21.16	21.50	
		36	39	21.29	21.31	21.14	21.50	
		75	0	21.37	21.32	21.08	21.50	
	16QAM	1	0	21.16	21.23	21.30	21.50	
		1	38	20.96	21.22	21.24	21.50	
		1	74	21.03	21.34	21.28	21.50	
		36	0	19.90	20.00	20.17	20.50	
		36	18	19.89	19.95	20.08	20.50	
		36	39	20.18	20.04	20.19	20.50	
		75	0	19.98	19.99	20.21	20.50	
	64QAM	1	0	19.41	19.52	19.56	20.50	
		1	38	19.18	19.46	19.48	20.50	
		1	74	19.29	19.61	19.56	20.50	
		36	0	18.15	18.29	18.44	19.50	
		36	18	18.13	18.23	18.36	19.50	
		36	39	18.44	18.30	18.46	19.50	
		75	0	18.17	18.27	18.48	19.50	

Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				20850/2510	21100/2535	21350/2560	
20MHz	QPSK	1	0	21.42	21.31	21.25	22.50
		1	50	21.30	21.02	21.02	22.50
		1	99	21.44	21.19	21.24	22.50
		50	0	21.27	21.26	21.08	21.50
		50	25	21.04	21.25	21.13	21.50
		50	50	21.26	21.26	21.10	21.50
		100	0	21.09	21.27	21.04	21.50
	16QAM	1	0	21.14	21.19	21.25	21.50
		1	50	20.92	21.20	21.20	21.50
		1	99	21.01	21.31	21.26	21.50
		50	0	19.87	19.96	20.14	20.50
		50	25	19.86	19.93	20.05	20.50
		50	50	20.15	19.99	20.15	20.50
		100	0	19.96	19.95	20.18	20.50
	64QAM	1	0	19.39	19.48	19.51	20.50
		1	50	19.14	19.44	19.44	20.50
		1	99	19.27	19.58	19.54	20.50
		50	0	18.12	18.25	18.41	19.50
		50	25	18.10	18.21	18.33	19.50
		50	50	18.41	18.25	18.42	19.50
		100	0	18.15	18.23	18.45	19.50

LTE FDD Band 7 Receiver on				Conducted Power(dBm)			Tune-up Limit (dBm)
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				20775/2502.5	21100/2535	21425/2567.5	
5MHz	QPSK	1	0	18.59	18.35	18.29	19.50
		1	13	18.44	18.16	18.22	19.50
		1	24	18.50	18.33	18.50	19.50
		12	0	18.64	18.31	18.34	19.50
		12	6	18.63	18.36	18.32	19.50
		12	13	18.53	18.45	18.42	19.50
		25	0	18.61	18.38	18.40	19.50
	16QAM	1	0	18.68	18.67	18.40	19.50
		1	13	18.68	18.61	18.35	19.50
		1	24	18.90	18.78	18.59	19.50
		12	0	18.47	18.31	18.07	19.50
		12	6	18.34	18.26	18.08	19.50
		12	13	18.41	18.45	18.36	19.50



Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)	
				20800/2505	21100/2535	21400/2565		
	64QAM	25	0	18.43	18.31	18.07	19.50	
		1	0	18.43	18.46	18.26	19.50	
		1	13	18.40	18.35	18.19	19.50	
		1	24	18.66	18.55	18.47	19.50	
		12	0	18.22	18.20	18.04	19.50	
		12	6	18.08	18.14	18.06	19.50	
		12	13	18.27	18.31	18.23	19.50	
		25	0	18.12	18.19	18.04	19.50	
10MHz	QPSK	1	0	18.61	18.36	18.32	19.50	
		1	25	18.47	18.21	18.26	19.50	
		1	49	18.52	18.37	18.53	19.50	
		25	0	18.67	18.36	18.38	19.50	
		25	13	18.66	18.41	18.36	19.50	
		25	25	18.55	18.49	18.47	19.50	
		50	0	18.69	18.40	18.44	19.50	
	16QAM	1	0	18.70	18.70	18.42	19.50	
		1	25	18.71	18.65	18.38	19.50	
		1	49	18.93	18.80	18.62	19.50	
		25	0	18.50	18.36	18.11	19.50	
		25	13	18.36	18.30	18.11	19.50	
		25	25	18.44	18.50	18.40	19.50	
		50	0	18.46	18.36	18.11	19.50	
	64QAM	1	0	18.45	18.49	18.28	19.50	
		1	25	18.43	18.39	18.22	19.50	
		1	49	18.69	18.57	18.50	19.50	
		25	0	18.25	18.25	18.08	19.50	
		25	13	18.10	18.18	18.09	19.50	
		25	25	18.30	18.36	18.27	19.50	
		50	0	18.15	18.24	18.08	19.50	
	Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
					20825/2507.5	21100/2535	21375/2562.5	
	15MHz	QPSK	1	0	18.60	18.32	18.30	19.50
1			38	18.45	18.20	18.23	19.50	
1			74	18.49	18.32	18.49	19.50	
36			0	18.65	18.32	18.35	19.50	
36			18	18.63	18.36	18.32	19.50	
36			39	18.52	18.46	18.43	19.50	
75			0	18.67	18.36	18.39	19.50	
16QAM		1	0	18.65	18.68	18.40	19.50	



		1	38	18.69	18.62	18.36	19.50
		1	74	18.90	18.76	18.59	19.50
		36	0	18.47	18.34	18.08	19.50
		36	18	18.33	18.25	18.07	19.50
		36	39	18.42	18.46	18.37	19.50
		75	0	18.43	18.31	18.07	19.50
		75	0	18.43	18.31	18.07	19.50
	64QAM	1	0	18.40	18.47	18.26	19.50
		1	38	18.41	18.36	18.20	19.50
		1	74	18.66	18.53	18.47	19.50
		36	0	18.22	18.23	18.05	19.50
		36	18	18.07	18.13	18.05	19.50
		36	39	18.28	18.32	18.24	19.50
		75	0	18.12	18.19	18.04	19.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				20850/2510	21100/2535	21350/2560	
20MHz	QPSK	1	0	18.57	18.28	18.27	19.50
		1	50	18.44	18.16	18.21	19.50
		1	99	18.47	18.31	18.46	19.50
		50	0	18.62	18.27	18.31	19.50
		50	25	18.61	18.32	18.29	19.50
		50	50	18.49	18.41	18.39	19.50
		100	0	18.64	18.31	18.35	19.50
	16QAM	1	0	18.63	18.64	18.35	19.50
		1	50	18.65	18.60	18.32	19.50
		1	99	18.88	18.73	18.57	19.50
		50	0	18.44	18.30	18.05	19.50
		50	25	18.30	18.23	18.04	19.50
		50	50	18.39	18.41	18.33	19.50
		100	0	18.41	18.27	18.04	19.50
	64QAM	1	0	18.38	18.43	18.21	19.50
		1	50	18.37	18.34	18.16	19.50
		1	99	18.64	18.50	18.45	19.50
		50	0	18.19	18.19	18.02	19.50
		50	25	18.04	18.11	18.02	19.50
		50	50	18.25	18.27	18.20	19.50
		100	0	18.10	18.15	18.01	19.50



LTE FDD Band 12 Receiver off				Conducted Power(dBm)			Tune-up Limit (dBm)
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				23017/699.7	23095/707.5	23173/715.3	
1.4MHz	QPSK	1	0	23.28	23.22	23.23	24.50
		1	2	23.27	23.27	23.25	24.50
		1	5	23.34	23.28	23.31	24.50
		3	0	23.14	23.12	23.06	24.50
		3	2	23.14	23.14	23.20	24.50
		3	3	23.13	23.20	23.17	24.50
		6	0	22.25	22.34	22.35	23.50
	16QAM	1	0	22.37	22.45	22.42	23.50
		1	2	22.19	22.14	22.21	23.50
		1	5	22.24	22.29	22.28	23.50
		3	0	22.03	22.05	22.09	23.50
		3	2	22.16	22.21	22.14	23.50
		3	3	22.17	22.11	22.13	23.50
		6	0	21.30	21.32	21.32	22.50
	64QAM	1	0	21.82	21.92	21.88	22.50
		1	2	21.61	21.61	21.66	22.50
		1	5	21.69	21.78	21.75	22.50
		3	0	21.45	21.51	21.53	22.50
		3	2	21.56	21.65	21.58	22.50
		3	3	21.58	21.52	21.57	22.50
		6	0	20.20	20.30	20.27	21.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				23025/700.5	23095/707.5	23165/714.5	
3MHz	QPSK	1	0	23.30	23.26	23.26	24.50
		1	7	23.30	23.32	23.29	24.50
		1	14	23.37	23.33	23.35	24.50
		8	0	22.32	22.32	22.27	23.50
		8	4	22.34	22.32	22.40	23.50
		8	7	22.31	22.39	22.35	23.50
		15	0	22.28	22.38	22.38	23.50
	16QAM	1	0	22.40	22.47	22.45	23.50
		1	7	22.22	22.19	22.25	23.50
		1	14	22.26	22.33	22.31	23.50
		8	0	21.22	21.26	21.29	22.50
		8	4	21.35	21.42	21.34	22.50
		8	7	21.35	21.31	21.34	22.50
		15	0	21.33	21.36	21.35	22.50
	64QAM	1	0	21.84	21.95	21.90	22.50

Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)	
				23035/701.5	23095/707.5	23155/713.5		
		1	7	21.64	21.65	21.69	22.50	
		1	14	21.72	21.80	21.78	22.50	
		8	0	20.18	20.26	20.27	21.50	
		8	4	20.28	20.39	20.31	21.50	
		8	7	20.31	20.27	20.31	21.50	
		15	0	20.23	20.35	20.31	21.50	
5MHz	QPSK	1	0	23.27	23.24	23.22	24.50	
		1	13	23.28	23.28	23.26	24.50	
		1	24	23.34	23.28	23.31	24.50	
		12	0	22.29	22.27	22.23	23.50	
		12	6	22.32	22.28	22.35	23.50	
		12	13	22.29	22.37	22.31	23.50	
		25	0	22.26	22.37	22.36	23.50	
	16QAM	1	0	22.37	22.43	22.42	23.50	
		1	13	22.19	22.17	22.22	23.50	
		1	24	22.23	22.31	22.27	23.50	
		12	0	21.20	21.22	21.26	22.50	
		12	6	21.32	21.37	21.30	22.50	
		12	13	21.32	21.26	21.30	22.50	
		25	0	21.31	21.32	21.30	22.50	
	64QAM	1	0	21.79	21.93	21.88	22.50	
		1	13	21.62	21.62	21.67	22.50	
		1	24	21.69	21.76	21.75	22.50	
		12	0	20.15	20.24	20.24	21.50	
		12	6	20.25	20.34	20.27	21.50	
		12	13	20.29	20.23	20.28	21.50	
		25	0	20.20	20.30	20.27	21.50	
	Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
					23060/704	23095/707.5	23130/711	
	10MHz	QPSK	1	0	23.25	23.17	23.20	24.50
1			25	23.28	23.28	23.25	24.50	
1			49	23.31	23.26	23.27	24.50	
25			0	22.27	22.23	22.20	23.50	
25			13	22.30	22.24	22.32	23.50	
25			25	22.25	22.33	22.28	23.50	
50			0	22.29	22.30	22.31	23.50	
16QAM		1	0	22.32	22.40	22.37	23.50	
		1	25	22.16	22.16	22.19	23.50	
		1	49	22.21	22.26	22.25	23.50	



		25	0	21.17	21.21	21.24	22.50
		25	13	21.28	21.34	21.26	22.50
		25	25	21.30	21.22	21.27	22.50
		50	0	21.29	21.28	21.27	22.50
	64QAM	1	0	21.77	21.89	21.83	22.50
		1	25	21.58	21.60	21.63	22.50
		1	49	21.67	21.73	21.73	22.50
		25	0	20.12	20.20	20.21	21.50
		25	13	20.22	20.32	20.24	21.50
		25	25	20.26	20.18	20.24	21.50
		50	0	20.18	20.26	20.24	21.50

LTE FDD Band 12 Receiver on				Conducted Power(dBm)			Tune-up Limit (dBm)
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				23017/699.7	23095/707.5	23173/715.3	
1.4MHz	QPSK	1	0	19.58	19.61	19.65	21.00
		1	2	19.66	19.53	19.59	21.00
		1	5	19.72	19.77	19.72	21.00
		3	0	19.64	19.68	19.69	21.00
		3	2	19.60	19.60	19.66	21.00
		3	3	19.74	19.64	19.71	21.00
		6	0	19.59	19.77	19.75	21.00
	16QAM	1	0	19.87	19.86	19.92	21.00
		1	2	19.63	19.71	19.80	21.00
		1	5	19.80	19.74	19.67	21.00
		3	0	19.70	19.66	19.71	21.00
		3	2	19.66	19.71	19.80	21.00
		3	3	19.54	19.65	19.67	21.00
		6	0	19.79	19.72	19.71	21.00
	64QAM	1	0	19.92	19.95	19.98	21.00
		1	2	19.65	19.75	19.84	21.00
		1	5	19.86	19.81	19.75	21.00
		3	0	19.25	19.25	19.28	21.00
		3	2	19.20	19.29	19.38	21.00
		3	3	19.10	19.21	19.24	21.00
		6	0	19.28	19.30	19.28	21.00
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				23025/700.5	23095/707.5	23165/714.5	
3MHz	QPSK	1	0	19.60	19.65	19.68	21.00
		1	7	19.69	19.58	19.63	21.00



		1	14	19.75	19.82	19.76	21.00	
		8	0	19.72	19.78	19.80	21.00	
		8	4	19.70	19.68	19.76	21.00	
		8	7	19.82	19.73	19.79	21.00	
		15	0	19.62	19.81	19.78	21.00	
	16QAM	1	0	19.90	19.88	19.95	21.00	
		1	7	19.66	19.76	19.84	21.00	
		1	14	19.82	19.78	19.70	21.00	
		8	0	19.79	19.77	19.81	21.00	
		8	4	19.75	19.82	19.90	21.00	
		8	7	19.62	19.75	19.78	21.00	
	64QAM	15	0	19.82	19.76	19.74	21.00	
		1	0	19.95	19.97	20.01	21.00	
		1	7	19.68	19.80	19.88	21.00	
		1	14	19.88	19.85	19.78	21.00	
		8	0	19.34	19.36	19.38	21.00	
		8	4	19.29	19.40	19.48	21.00	
		8	7	19.18	19.31	19.35	21.00	
	15	0	19.31	19.34	19.31	21.00		
	Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
					23035/701.5	23095/707.5	23155/713.5	
5MHz	QPSK	1	0	19.57	19.63	19.64	21.00	
		1	13	19.67	19.54	19.60	21.00	
		1	24	19.72	19.77	19.72	21.00	
		12	0	19.69	19.73	19.76	21.00	
		12	6	19.68	19.64	19.71	21.00	
		12	13	19.80	19.71	19.75	21.00	
		25	0	19.60	19.80	19.76	21.00	
	16QAM	1	0	19.87	19.84	19.92	21.00	
		1	13	19.63	19.74	19.81	21.00	
		1	24	19.79	19.76	19.66	21.00	
		12	0	19.77	19.73	19.78	21.00	
		12	6	19.72	19.77	19.86	21.00	
		12	13	19.59	19.70	19.74	21.00	
		25	0	19.80	19.72	19.69	21.00	
	64QAM	1	0	19.92	19.93	19.98	21.00	
		1	13	19.65	19.78	19.85	21.00	
		1	24	19.85	19.83	19.74	21.00	
		12	0	19.32	19.32	19.35	21.00	
		12	6	19.26	19.35	19.44	21.00	
		12	13	19.15	19.26	19.31	21.00	
		25	0	19.29	19.30	19.26	21.00	

Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				23060/704	23095/707.5	23130/711	
10MHz	QPSK	1	0	19.55	19.56	19.62	21.00
		1	25	19.67	19.54	19.59	21.00
		1	49	19.69	19.75	19.68	21.00
		25	0	19.67	19.69	19.73	21.00
		25	13	19.66	19.60	19.68	21.00
		25	25	19.76	19.67	19.72	21.00
		50	0	19.63	19.73	19.71	21.00
	16QAM	1	0	19.82	19.81	19.87	21.00
		1	25	19.60	19.73	19.78	21.00
		1	49	19.77	19.71	19.64	21.00
		25	0	19.74	19.72	19.76	21.00
		25	13	19.68	19.74	19.82	21.00
		25	25	19.57	19.66	19.71	21.00
		50	0	19.78	19.68	19.66	21.00
	64QAM	1	0	19.87	19.90	19.93	21.00
		1	25	19.62	19.77	19.82	21.00
		1	49	19.83	19.78	19.72	21.00
		25	0	19.29	19.31	19.33	21.00
		25	13	19.22	19.32	19.40	21.00
		25	25	19.13	19.22	19.28	21.00
		50	0	19.27	19.26	19.23	21.00

LTE FDD Band 17 Receiver off				Conducted Power(dBm)			Tune-up Limit (dBm)
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				23755/706.5	23790/710	23825/713.5	
5MHz	QPSK	1	0	23.22	23.21	23.17	24.50
		1	13	23.25	23.27	23.23	24.50
		1	24	23.32	23.23	23.29	24.50
		12	0	22.26	22.26	22.21	23.50
		12	6	22.28	22.25	22.30	23.50
		12	13	22.27	22.33	22.28	23.50
		25	0	22.24	22.33	22.33	23.50
	16QAM	1	0	22.34	22.38	22.41	23.50
		1	13	22.08	22.04	22.01	23.50
		1	24	22.18	22.29	22.30	23.50
		12	0	21.19	21.19	21.16	22.50
		12	6	21.29	21.33	21.40	22.50
		12	13	21.28	21.24	21.19	22.50



Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				23780/709	23790/710	23800/711	
10MHz	64QAM	25	0	21.27	21.30	21.31	22.50
		1	0	21.46	21.58	21.57	22.50
		1	13	21.21	21.19	21.16	22.50
		1	24	21.34	21.44	21.48	22.50
		12	0	19.84	19.91	19.84	21.50
		12	6	19.92	20.00	20.07	21.50
		12	13	19.95	19.91	19.87	21.50
		25	0	19.86	19.98	19.98	21.50
10MHz	QPSK	1	0	23.20	23.14	23.15	24.50
		1	25	23.25	23.27	23.22	24.50
		1	49	23.29	23.21	23.25	24.50
		25	0	22.24	22.22	22.18	23.50
		25	13	22.26	22.21	22.27	23.50
		25	25	22.23	22.29	22.25	23.50
		50	0	22.27	22.26	22.28	23.50
	16QAM	1	0	22.29	22.35	22.36	23.50
		1	25	22.05	22.03	21.98	23.50
		1	49	22.16	22.24	22.28	23.50
		25	0	21.16	21.18	21.14	22.50
		25	13	21.25	21.30	21.36	22.50
		25	25	21.26	21.20	21.16	22.50
		50	0	21.25	21.26	21.28	22.50
	64QAM	1	0	21.44	21.54	21.52	22.50
		1	25	21.17	21.17	21.12	22.50
		1	49	21.32	21.41	21.46	22.50
		25	0	19.81	19.87	19.81	21.50
		25	13	19.89	19.98	20.04	21.50
		25	25	19.92	19.86	19.83	21.50
		50	0	19.84	19.94	19.95	21.50

LTE FDD Band 17 Receiver on				Conducted Power(dBm)			Tune-up Limit (dBm)
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				23755/706.5	23790/710	23825/713.5	
5MHz	QPSK	1	0	19.63	19.66	19.56	21.00
		1	13	19.76	19.60	19.58	21.00
		1	24	19.68	19.67	19.65	21.00
		12	0	19.74	19.72	19.69	21.00
		12	6	19.70	19.71	19.83	21.00



Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)	
				23780/709	23790/710	23800/711		
10MHz	16QAM	12	13	19.77	19.76	19.75	21.00	
		25	0	19.73	19.77	19.83	21.00	
		1	0	19.73	19.79	19.85	21.00	
		1	13	19.84	19.84	19.82	21.00	
		1	24	19.86	19.94	19.97	21.00	
		12	0	19.77	19.69	19.66	21.00	
		12	6	19.72	19.72	19.75	21.00	
		12	13	19.68	19.76	19.76	21.00	
	25	0	19.75	19.75	19.69	21.00		
	64QAM	1	0	19.78	19.88	19.91	21.00	
		1	13	19.86	19.88	19.86	21.00	
		1	24	19.92	20.01	20.05	21.00	
		12	0	19.32	19.28	19.23	21.00	
		12	6	19.26	19.30	19.33	21.00	
		12	13	19.24	19.32	19.33	21.00	
		25	0	19.24	19.33	19.26	21.00	
		10MHz	QPSK	1	0	19.71	19.69	19.64
	1			25	19.86	19.70	19.67	21.00
	1			49	19.75	19.75	19.71	21.00
	25			0	19.82	19.78	19.76	21.00
25	13			19.78	19.77	19.85	21.00	
25	25			19.83	19.82	19.82	21.00	
50	0			19.76	19.70	19.78	21.00	
16QAM	1		0	19.68	19.76	19.80	21.00	
	1		25	19.81	19.83	19.79	21.00	
	1		49	19.84	19.89	19.95	21.00	
	25		0	19.74	19.68	19.64	21.00	
	25		13	19.68	19.69	19.71	21.00	
	25		25	19.66	19.72	19.73	21.00	
	50		0	19.73	19.71	19.66	21.00	
64QAM	1		0	19.73	19.85	19.86	21.00	
	1		25	19.83	19.87	19.83	21.00	
	1		49	19.90	19.96	20.03	21.00	
	25		0	19.29	19.27	19.21	21.00	
	25		13	19.22	19.27	19.29	21.00	
	25		25	19.22	19.28	19.30	21.00	
	50	0	19.22	19.29	19.23	21.00		



LTE FDD Band 26 Receiver off				Conducted Power(dBm)			Tune-up Limit (dBm)
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				26697/814.7	26865/831.5	27033/848.3	
1.4MHz	QPSK	1	0	23.16	23.37	23.20	24.50
		1	2	23.33	23.34	23.21	24.50
		1	5	23.25	23.26	23.17	24.50
		3	0	23.37	23.29	23.24	24.50
		3	2	23.24	23.37	23.29	24.50
		3	3	23.34	23.33	23.33	24.50
		6	0	22.18	22.48	22.32	23.50
	16QAM	1	0	22.62	22.47	22.66	23.50
		1	2	22.66	22.47	22.52	23.50
		1	5	22.61	22.50	22.52	23.50
		3	0	22.32	22.28	22.19	23.50
		3	2	22.45	22.38	22.46	23.50
		3	3	22.36	22.36	22.33	23.50
		6	0	21.52	21.39	21.62	22.50
	64QAM	1	0	21.60	21.48	21.65	22.50
		1	2	21.61	21.46	21.50	22.50
		1	5	21.59	21.51	21.53	22.50
		3	0	21.18	21.20	21.08	22.50
		3	2	21.30	21.29	21.36	22.50
		3	3	21.22	21.24	21.23	22.50
		6	0	19.94	19.91	20.12	21.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				26705/815.5	26865/831.5	27025/847.5	
3MHz	QPSK	1	0	23.18	23.41	23.23	24.50
		1	7	23.36	23.39	23.25	24.50
		1	14	23.28	23.31	23.21	24.50
		8	0	22.47	22.41	22.37	23.50
		8	4	22.36	22.47	22.41	23.50
		8	7	22.44	22.44	22.43	23.50
		15	0	22.21	22.52	22.35	23.50
	16QAM	1	0	22.65	22.49	22.69	23.50
		1	7	22.69	22.52	22.56	23.50
		1	14	22.63	22.54	22.55	23.50
		8	0	21.43	21.41	21.31	22.50
		8	4	21.56	21.51	21.58	22.50
		8	7	21.46	21.48	21.46	22.50
		15	0	21.55	21.43	21.65	22.50
	64QAM	1	0	21.57	21.44	21.62	22.50

Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)	
				26715/816.5	26865/831.5	27015/846.5		
		1	7	21.58	21.44	21.47	22.50	
		1	14	21.56	21.49	21.49	22.50	
		8	0	19.86	19.86	19.75	21.50	
		8	4	19.97	19.94	20.02	21.50	
		8	7	19.89	19.89	19.89	21.50	
		15	0	19.92	19.87	20.07	21.50	
5MHz	QPSK	1	0	23.15	23.39	23.19	24.50	
		1	13	23.34	23.35	23.22	24.50	
		1	24	23.25	23.26	23.17	24.50	
		12	0	22.44	22.36	22.33	23.50	
		12	6	22.34	22.43	22.36	23.50	
		12	13	22.42	22.42	22.39	23.50	
		25	0	22.19	22.51	22.33	23.50	
	16QAM	1	0	22.62	22.45	22.66	23.50	
		1	13	22.66	22.50	22.53	23.50	
		1	24	22.60	22.52	22.51	23.50	
		12	0	21.41	21.37	21.28	22.50	
		12	6	21.53	21.46	21.54	22.50	
		12	13	21.43	21.43	21.42	22.50	
		25	0	21.53	21.39	21.60	22.50	
	64QAM	1	0	21.59	21.47	21.64	22.50	
		1	13	21.61	21.48	21.50	22.50	
		1	24	21.59	21.51	21.52	22.50	
		12	0	19.89	19.91	19.79	21.50	
		12	6	19.99	19.98	20.05	21.50	
		12	13	19.92	19.94	19.93	21.50	
		25	0	19.95	19.92	20.11	21.50	
	Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
					26750/820	26865/831.5	26990/844	
	10MHz	QPSK	1	0	23.17	23.40	23.22	24.50
1			25	23.37	23.40	23.26	24.50	
1			49	23.27	23.30	23.20	24.50	
25			0	22.47	22.41	22.37	23.50	
25			13	22.37	22.48	22.40	23.50	
25			25	22.44	22.46	22.44	23.50	
50			0	22.27	22.53	22.37	23.50	
16QAM		1	0	22.64	22.48	22.68	23.50	
		1	25	22.69	22.54	22.56	23.50	
		1	49	22.63	22.54	22.54	23.50	



		25	0	21.44	21.42	21.32	22.50
		25	13	21.55	21.50	21.57	22.50
		25	25	21.46	21.48	21.46	22.50
		50	0	21.56	21.44	21.64	22.50
	64QAM	1	0	21.54	21.45	21.62	22.50
		1	25	21.59	21.45	21.48	22.50
		1	49	21.56	21.47	21.49	22.50
		25	0	19.86	19.89	19.76	21.50
		25	13	19.96	19.93	20.01	21.50
		25	25	19.90	19.90	19.90	21.50
		50	0	19.92	19.87	20.07	21.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				26775/822.5	26865/831.5	26965/841.5	
15MHz	QPSK	1	0	23.13	23.32	23.17	24.50
		1	38	23.34	23.35	23.21	24.50
		1	74	23.22	23.24	23.13	24.50
		36	0	22.42	22.32	22.30	23.50
		36	18	22.32	22.39	22.33	23.50
		36	39	22.38	22.38	22.36	23.50
		75	0	22.22	22.44	22.28	23.50
	16QAM	1	0	22.57	22.42	22.61	23.50
		1	38	22.63	22.49	22.50	23.50
		1	74	22.58	22.47	22.49	23.50
		36	0	21.38	21.36	21.26	22.50
		36	18	21.49	21.43	21.50	22.50
		36	39	21.41	21.39	21.39	22.50
		75	0	21.51	21.35	21.57	22.50
	64QAM	1	0	21.52	21.41	21.57	22.50
		1	38	21.55	21.43	21.44	22.50
		1	74	21.54	21.44	21.47	22.50
		36	0	19.83	19.85	19.73	21.50
		36	18	19.93	19.91	19.98	21.50
		36	39	19.87	19.85	19.86	21.50
		75	0	19.90	19.83	20.04	21.50

LTE FDD Band 26 Receiver on				Conducted Power(dBm)			Tune-up Limit (dBm)
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				26697/814.7	26865/831.5	27033/848.3	
1.4MHz	QPSK	1	0	19.82	19.93	19.86	21.00
		1	2	20.07	19.95	19.95	21.00



		1	5	19.89	19.88	19.85	21.00		
		3	0	20.03	19.99	20.00	21.00		
		3	2	19.99	20.05	20.07	21.00		
		3	3	20.06	20.00	19.92	21.00		
		6	0	19.90	19.97	19.98	21.00		
	16QAM	1	0	20.08	20.06	20.07	21.00		
		1	2	19.97	20.02	20.08	21.00		
		1	5	20.07	20.10	20.06	21.00		
		3	0	20.02	20.00	20.03	21.00		
		3	2	20.03	20.00	20.07	21.00		
		3	3	20.14	19.97	20.09	21.00		
	64QAM	6	0	19.91	19.93	20.08	21.00		
		1	0	19.91	20.09	20.06	21.00		
		1	2	19.91	19.85	19.96	21.00		
		1	5	19.96	20.06	20.02	21.00		
		3	0	19.36	19.49	19.33	21.00		
		3	2	20.03	20.06	20.00	21.00		
		3	3	19.38	19.52	19.57	21.00		
		6	0	18.92	19.21	19.20	21.00		
		Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
						26705/815.5	26865/831.5	27025/847.5	
3MHz		QPSK	1	0	19.84	19.97	19.89	21.00	
			1	7	20.10	20.00	19.99	21.00	
	1		14	19.92	19.93	19.89	21.00		
	8		0	20.04	20.02	20.04	21.00		
	8		4	20.02	20.06	20.10	21.00		
	8		7	20.07	20.02	19.93	21.00		
	15		0	19.93	20.01	20.01	21.00		
	16QAM	1	0	20.11	20.08	20.20	21.00		
		1	7	20.00	20.07	20.12	21.00		
		1	14	20.19	20.14	20.19	21.00		
		8	0	20.04	20.04	20.06	21.00		
		8	4	20.25	20.04	20.20	21.00		
		8	7	20.15	20.00	20.13	21.00		
		15	0	19.94	19.97	20.11	21.00		
	64QAM	1	0	19.88	20.05	20.03	21.00		
		1	7	19.88	19.83	19.93	21.00		
		1	14	19.93	20.04	19.98	21.00		
		8	0	19.04	19.15	19.00	21.00		
		8	4	19.80	20.01	20.06	21.00		
		8	7	19.05	19.17	19.23	21.00		
		15	0	18.90	19.17	19.15	21.00		

Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				26715/816.5	26865/831.5	27015/846.5	
5MHz	QPSK	1	0	19.81	19.95	19.85	21.00
		1	13	20.08	19.96	19.96	21.00
		1	24	19.89	19.88	19.85	21.00
		12	0	20.01	19.97	20.00	21.00
		12	6	20.00	20.02	20.05	21.00
		12	13	20.05	20.00	19.89	21.00
		25	0	19.91	20.00	19.99	21.00
	16QAM	1	0	20.08	20.04	20.17	21.00
		1	13	19.97	20.05	20.09	21.00
		1	24	20.16	20.12	20.15	21.00
		12	0	20.02	20.00	20.03	21.00
		12	6	20.22	19.99	20.16	21.00
		12	13	20.12	19.95	20.09	21.00
		25	0	19.92	19.93	20.06	21.00
	64QAM	1	0	19.90	20.08	20.05	21.00
		1	13	19.91	19.87	19.96	21.00
		1	24	19.96	20.06	20.01	21.00
		12	0	19.07	19.20	19.04	21.00
		12	6	19.82	20.05	20.09	21.00
		12	13	19.08	19.22	19.27	21.00
		25	0	18.93	19.22	19.19	21.00
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				26750/820	26865/831.5	26990/844	
10MHz	QPSK	1	0	19.83	19.96	19.88	21.00
		1	25	20.11	20.01	20.00	21.00
		1	49	19.91	19.92	19.88	21.00
		25	0	20.04	20.02	20.04	21.00
		25	13	20.03	20.07	20.09	21.00
		25	25	20.07	20.04	19.94	21.00
		50	0	19.99	20.02	20.03	21.00
	16QAM	1	0	20.10	20.07	20.19	21.00
		1	25	20.00	20.09	20.12	21.00
		1	49	20.19	20.14	20.18	21.00
		25	0	20.05	20.05	20.07	21.00
		25	13	20.24	20.03	20.19	21.00
		25	25	20.15	20.00	20.13	21.00
		50	0	19.95	19.98	20.10	21.00
	64QAM	1	0	19.85	20.06	20.03	21.00
		1	25	19.89	19.84	19.94	21.00

Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				26775/822.5	26865/831.5	26965/841.5	
		1	49	19.93	20.02	19.98	21.00
		25	0	19.04	19.18	19.01	21.00
		25	13	19.79	20.00	20.05	21.00
		25	25	19.06	19.18	19.24	21.00
		50	0	18.90	19.17	19.15	21.00
15MHz	QPSK	1	0	19.79	19.88	19.83	21.00
		1	38	20.08	19.96	19.95	21.00
		1	74	19.86	19.86	19.81	21.00
		36	0	19.99	19.93	19.97	21.00
		36	18	19.98	19.98	20.02	21.00
		36	39	20.01	19.96	19.86	21.00
		75	0	19.94	19.93	19.92	21.00
	16QAM	1	0	20.03	20.01	20.12	21.00
		1	38	19.94	20.04	20.06	21.00
		1	74	20.14	20.07	20.13	21.00
		36	0	19.99	19.99	20.01	21.00
		36	18	20.18	19.96	20.12	21.00
		36	39	20.10	19.91	20.06	21.00
		75	0	19.90	19.89	20.03	21.00
	64QAM	1	0	19.83	20.02	19.98	21.00
		1	38	19.85	19.82	19.90	21.00
		1	74	19.91	19.99	19.96	21.00
		36	0	19.01	19.14	18.98	21.00
		36	18	19.76	19.98	20.02	21.00
		36	39	19.03	19.13	19.20	21.00
		75	0	19.04	19.13	19.12	21.00

LTE TDD Band 38 Receiver off				Conducted Power(dBm)			Tune-up Limit (dBm)
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				37775/2572.5	38000/2595	38225/2617.5	
5MHz	QPSK	1	0	22.64	22.75	23.00	24.00
		1	13	22.49	22.71	22.83	24.00
		1	24	22.97	22.86	22.91	24.00
		12	0	22.18	22.52	22.41	23.00
		12	6	22.22	22.39	22.46	23.00
		12	13	22.37	22.47	22.38	23.00
		25	0	22.18	22.44	22.45	23.00
	16QAM	1	0	22.17	22.17	22.07	23.00



		1	13	22.00	22.04	22.07	23.00
		1	24	21.87	21.92	21.87	23.00
		12	0	21.13	21.27	21.34	22.00
		12	6	21.29	21.43	21.48	22.00
		12	13	21.36	21.52	21.38	22.00
		25	0	21.23	21.36	21.26	22.00
	64QAM	1	0	21.13	21.30	21.28	22.00
		1	13	21.13	21.08	21.18	22.00
		1	24	21.18	21.29	21.23	22.00
		12	0	19.99	20.10	19.95	21.00
		12	6	19.96	19.96	20.01	21.00
		12	13	19.90	20.02	20.08	21.00
		25	0	19.75	20.02	20.00	21.00
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				37800/2575	38000/2595	38200/2615	
10MHz	QPSK	1	0	22.66	22.76	23.03	24.00
		1	25	22.52	22.76	22.87	24.00
		1	49	22.99	22.90	22.94	24.00
		25	0	22.21	22.57	22.45	23.00
		25	13	22.25	22.44	22.50	23.00
		25	25	22.39	22.51	22.43	23.00
		50	0	22.26	22.46	22.49	23.00
	16QAM	1	0	22.19	22.20	22.09	23.00
		1	25	22.03	22.08	22.10	23.00
		1	49	21.90	21.94	21.90	23.00
		25	0	21.16	21.32	21.38	22.00
		25	13	21.31	21.47	21.51	22.00
		25	25	21.39	21.57	21.42	22.00
		50	0	21.26	21.41	21.30	22.00
	64QAM	1	0	21.15	21.33	21.30	22.00
		1	25	21.16	21.12	21.21	22.00
		1	49	21.21	21.31	21.26	22.00
		25	0	20.02	20.15	19.99	21.00
		25	13	20.07	20.00	20.04	21.00
		25	25	19.93	20.07	20.12	21.00
		50	0	19.78	20.07	20.04	21.00
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				37825/2577.5	38000/2595	38175/2612.5	
15MHz	QPSK	1	0	22.65	22.72	23.01	24.00
		1	38	22.50	22.75	22.84	24.00
		1	74	22.96	22.85	22.90	24.00



		36	0	22.19	22.53	22.42	23.00		
		36	18	22.22	22.39	22.46	23.00		
		36	39	22.36	22.48	22.39	23.00		
		75	0	22.24	22.42	22.44	23.00		
	16QAM	1	0	22.14	22.18	22.07	23.00		
		1	38	22.01	22.05	22.08	23.00		
		1	74	21.87	21.90	21.87	23.00		
		36	0	21.13	21.30	21.35	22.00		
		36	18	21.28	21.42	21.47	22.00		
		36	39	21.37	21.53	21.39	22.00		
	64QAM	75	0	21.23	21.36	21.26	22.00		
		1	0	21.10	21.31	21.28	22.00		
		1	38	21.14	21.09	21.19	22.00		
		1	74	21.18	21.27	21.23	22.00		
		36	0	19.99	20.13	19.96	21.00		
		36	18	20.04	19.95	20.00	21.00		
		36	39	19.91	20.03	20.09	21.00		
		75	0	19.75	20.02	20.00	21.00		
		Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
						37850/2580	38000/2595	38150/2610	
		20MHz	QPSK	1	0	22.62	22.68	22.98	24.00
1	50			22.49	22.71	22.82	24.00		
1	99			22.94	22.84	22.87	24.00		
50	0			22.16	22.48	22.38	23.00		
50	25			22.20	22.35	22.43	23.00		
50	50			22.33	22.43	22.35	23.00		
100	0			22.21	22.37	22.40	23.00		
16QAM	1		0	22.12	22.14	22.02	23.00		
	1		50	21.97	22.03	22.04	23.00		
	1		99	21.85	21.87	21.85	23.00		
	50		0	21.10	21.26	21.32	22.00		
	50		25	21.25	21.40	21.44	22.00		
	50		50	21.34	21.48	21.35	22.00		
	100		0	21.21	21.32	21.23	22.00		
64QAM	1		0	21.08	21.27	21.23	22.00		
	1		50	21.10	21.07	21.15	22.00		
	1		99	21.16	21.24	21.21	22.00		
	50		0	19.96	20.09	19.93	21.00		
	50		25	20.01	19.93	19.97	21.00		
	50		50	19.88	19.98	20.05	21.00		
	100		0	19.73	19.98	19.97	21.00		

LTE TDD Band 38 Receiver on				Conducted Power(dBm)			Tune-up Limit (dBm)
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				37775/2572.5	38000/2595	38225/2617.5	
5MHz	QPSK	1	0	19.23	19.39	19.48	20.50
		1	13	19.15	19.17	19.26	20.50
		1	24	19.41	19.33	19.49	20.50
		12	0	19.31	19.43	19.52	20.50
		12	6	19.28	19.36	19.46	20.50
		12	13	19.38	19.47	19.51	20.50
		25	0	19.27	19.49	19.47	20.50
	16QAM	1	0	19.59	19.46	19.50	20.50
		1	13	19.62	19.58	19.50	20.50
		1	24	19.53	19.50	19.54	20.50
		12	0	19.38	19.34	19.35	20.50
		12	6	19.46	19.29	19.52	20.50
		12	13	19.54	19.41	19.59	20.50
		25	0	19.46	19.34	19.34	20.50
	64QAM	1	0	19.64	19.55	19.56	20.50
		1	13	19.64	19.62	19.54	20.50
		1	24	19.59	19.57	19.62	20.50
		12	0	19.33	19.33	19.32	20.50
		12	6	19.40	19.27	19.50	20.50
		12	13	19.50	19.37	19.56	20.50
		25	0	19.35	19.32	19.31	20.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				37800/2575	38000/2595	38200/2615	
10MHz	QPSK	1	0	19.25	19.40	19.51	20.50
		1	25	19.18	19.22	19.30	20.50
		1	49	19.43	19.37	19.52	20.50
		25	0	19.34	19.48	19.56	20.50
		25	13	19.31	19.41	19.50	20.50
		25	25	19.40	19.51	19.56	20.50
		50	0	19.35	19.51	19.51	20.50
	16QAM	1	0	19.61	19.49	19.52	20.50
		1	25	19.65	19.62	19.53	20.50
		1	49	19.56	19.52	19.57	20.50
		25	0	19.41	19.39	19.39	20.50
		25	13	19.48	19.33	19.55	20.50
		25	25	19.57	19.46	19.63	20.50
		50	0	19.49	19.39	19.38	20.50
	64QAM	1	0	19.66	19.58	19.58	20.50

		1	25	19.67	19.66	19.57	20.50
		1	49	19.62	19.59	19.65	20.50
		25	0	19.36	19.38	19.36	20.50
		25	13	19.42	19.31	19.53	20.50
		25	25	19.53	19.42	19.60	20.50
		50	0	19.38	19.37	19.35	20.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				37825/2577.5	38000/2595	38175/2612.5	
15MHz	QPSK	1	0	19.24	19.36	19.49	20.50
		1	38	19.16	19.21	19.27	20.50
		1	74	19.40	19.32	19.48	20.50
		36	0	19.32	19.44	19.53	20.50
		36	18	19.28	19.36	19.46	20.50
		36	39	19.37	19.48	19.52	20.50
		75	0	19.33	19.47	19.46	20.50
	16QAM	1	0	19.56	19.47	19.50	20.50
		1	38	19.63	19.59	19.51	20.50
		1	74	19.53	19.48	19.54	20.50
		36	0	19.38	19.37	19.36	20.50
		36	18	19.45	19.28	19.51	20.50
		36	39	19.55	19.42	19.60	20.50
		75	0	19.46	19.34	19.34	20.50
	64QAM	1	0	19.61	19.56	19.56	20.50
		1	38	19.65	19.63	19.55	20.50
		1	74	19.59	19.55	19.62	20.50
		36	0	19.33	19.36	19.33	20.50
		36	18	19.39	19.26	19.49	20.50
		36	39	19.51	19.38	19.57	20.50
		75	0	19.35	19.32	19.31	20.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit (dBm)
				37850/2580	38000/2595	38150/2610	
20MHz	QPSK	1	0	19.21	19.32	19.46	20.50
		1	50	19.15	19.17	19.25	20.50
		1	99	19.38	19.31	19.45	20.50
		50	0	19.29	19.39	19.49	20.50
		50	25	19.26	19.32	19.43	20.50
		50	50	19.34	19.43	19.48	20.50
		100	0	19.30	19.42	19.42	20.50
	16QAM	1	0	19.54	19.43	19.45	20.50
		1	50	19.59	19.57	19.47	20.50
		1	99	19.51	19.45	19.52	20.50



		50	0	19.35	19.33	19.33	20.50
		50	25	19.42	19.26	19.48	20.50
		50	50	19.52	19.37	19.56	20.50
		100	0	19.44	19.30	19.31	20.50
	64QAM	1	0	19.59	19.52	19.51	20.50
		1	50	19.61	19.61	19.51	20.50
		1	99	19.57	19.52	19.60	20.50
		50	0	19.30	19.32	19.30	20.50
		50	25	19.36	19.24	19.46	20.50
		50	50	19.48	19.33	19.53	20.50
		100	0	19.33	19.28	19.28	20.50

LTE TDD Band 41 Receiver off				Conducted Power(dBm)				Tune-up Limit (dBm)
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)				
				40165/2547.5	40515/2582.5	40865/2617.5	41215/2652.5	
5MHz	QPSK	1	0	22.86	22.84	22.88	22.90	24.00
		1	13	22.69	22.89	22.91	22.64	24.00
		1	24	22.83	23.07	23.08	22.83	24.00
		12	0	22.35	22.46	22.50	22.39	23.00
		12	6	22.31	22.49	22.53	22.45	23.00
		12	13	22.35	22.58	22.58	22.31	23.00
		25	0	22.22	22.48	22.57	22.50	23.00
	16QAM	1	0	22.17	22.29	22.28	22.21	23.00
		1	13	22.41	22.20	22.17	22.35	23.00
		1	24	22.68	22.49	22.51	22.67	23.00
		12	0	21.45	21.42	21.42	21.47	22.00
		12	6	21.40	21.40	21.41	21.53	22.00
		12	13	21.62	21.41	21.45	21.60	22.00
		25	0	21.40	21.38	21.42	21.61	22.00
	64QAM	1	0	21.42	21.28	21.27	21.47	22.00
		1	13	21.33	21.44	21.41	21.29	22.00
		1	24	21.34	21.16	21.18	21.35	22.00
		12	0	20.10	20.11	20.11	20.14	21.00
		12	6	20.04	20.08	20.09	20.21	21.00
		12	13	20.08	19.87	19.91	20.07	21.00
		25	0	19.79	19.86	19.90	20.08	21.00
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)				Tune-up Limit (dBm)
				40190/2550	40523/2583.3	40856/2616.6	41190/2650	
10MHz	QPSK	1	0	22.88	22.81	22.86	22.93	24.00
		1	25	22.72	22.87	22.87	22.68	24.00



		1	49	22.85	23.04	23.03	22.86	24.00	
		25	0	22.38	22.43	22.45	22.43	23.00	
		25	13	22.34	22.47	22.49	22.49	23.00	
		25	25	22.37	22.56	22.56	22.36	23.00	
		50	0	22.30	22.46	22.56	22.54	23.00	
	16QAM	1	0	22.19	22.26	22.24	22.23	23.00	
		1	25	22.44	22.17	22.15	22.38	23.00	
		1	49	22.71	22.46	22.49	22.70	23.00	
		25	0	21.48	21.40	21.38	21.51	22.00	
		25	13	21.42	21.37	21.36	21.56	22.00	
		25	25	21.65	21.38	21.40	21.64	22.00	
		50	0	21.43	21.36	21.38	21.65	22.00	
	64QAM	1	0	21.44	21.25	21.23	21.49	22.00	
		1	25	21.36	21.41	21.39	21.32	22.00	
		1	49	21.37	21.13	21.16	21.38	22.00	
		25	0	20.13	20.09	20.07	20.18	21.00	
		25	13	20.06	20.05	20.04	20.24	21.00	
		25	25	20.11	19.84	19.86	20.11	21.00	
		50	0	19.82	19.84	19.86	20.12	21.00	
	Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)				Tune-up Limit (dBm)
					40215/2552.5	40531/2584.1	40848/2615.8	41165/2647.5	
15MHz	QPSK	1	0	22.87	22.83	22.87	22.91	24.00	
		1	38	22.70	22.90	22.92	22.65	24.00	
		1	74	22.82	23.06	23.07	22.82	24.00	
		36	0	22.36	22.46	22.50	22.40	23.00	
		36	18	22.31	22.50	22.54	22.45	23.00	
		36	39	22.34	22.58	22.60	22.32	23.00	
		75	0	22.28	22.54	22.58	22.49	23.00	
	16QAM	1	0	22.14	22.28	22.27	22.21	23.00	
		1	38	22.42	22.20	22.19	22.36	23.00	
		1	74	22.68	22.49	22.51	22.67	23.00	
		36	0	21.45	21.43	21.43	21.48	22.00	
		36	18	21.39	21.39	21.40	21.52	22.00	
		36	39	21.63	21.41	21.45	21.61	22.00	
		75	0	21.40	21.39	21.43	21.61	22.00	
	64QAM	1	0	21.39	21.27	21.26	21.47	22.00	
		1	38	21.34	21.44	21.43	21.30	22.00	
		1	74	21.34	21.16	21.18	21.35	22.00	
		36	0	20.10	20.12	20.12	20.15	21.00	
		36	18	20.03	20.07	20.08	20.20	21.00	
		36	39	20.09	19.87	19.91	20.08	21.00	
		75	0	19.79	19.87	19.91	20.08	21.00	



Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)				Tune-up Limit (dBm)
				40240/2555	40540/2585	40840/2615	41140/2645	
20MHz	QPSK	1	0	22.84	22.82	22.83	22.88	24.00
		1	50	22.69	22.88	22.91	22.63	24.00
		1	99	22.80	23.03	22.95	22.79	24.00
		50	0	22.33	22.44	22.46	22.36	23.00
		50	25	22.29	22.47	22.49	22.42	23.00
		50	50	22.31	22.55	22.57	22.28	23.00
		100	0	22.25	22.52	22.54	22.45	23.00
	16QAM	1	0	22.12	22.23	22.25	22.16	23.00
		1	50	22.38	22.18	22.16	22.32	23.00
		1	99	22.66	22.46	22.47	22.65	23.00
		50	0	21.42	21.40	21.41	21.45	22.00
		50	25	21.36	21.36	21.35	21.49	22.00
		50	50	21.60	21.39	21.41	21.57	22.00
		100	0	21.38	21.36	21.38	21.58	22.00
	64QAM	1	0	21.37	21.22	21.24	21.42	22.00
		1	50	21.30	21.42	21.40	21.26	22.00
		1	99	21.32	21.13	21.14	21.33	22.00
		50	0	20.07	20.09	20.10	20.12	21.00
		50	25	20.00	20.04	20.03	20.17	21.00
		50	50	20.06	19.85	19.87	20.04	21.00
		100	0	19.77	19.84	19.86	20.05	21.00

LTE TDD Band 41 Receiver on				Conducted Power(dBm)				Tune-up Limit (dBm)
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)				
				40165/2547.5	40515/2582.5	40865/2617.5	41215/2652.5	
5MHz	QPSK	1	0	19.86	20.00	19.97	19.92	20.50
		1	13	19.76	19.91	19.91	19.84	20.50
		1	24	19.94	20.08	20.09	19.93	20.50
		12	0	19.98	20.08	20.06	19.95	20.50
		12	6	19.82	20.05	20.05	20.05	20.50
		12	13	19.92	19.95	19.96	20.01	20.50
		25	0	19.83	20.10	20.09	19.99	20.50
	16QAM	1	0	19.94	19.92	19.93	20.11	20.50
		1	13	19.77	19.86	19.89	20.10	20.50
		1	24	20.06	19.87	19.86	19.77	20.50
		12	0	20.17	19.97	19.97	20.12	20.50
		12	6	19.99	19.98	19.98	20.15	20.50
		12	13	19.86	19.90	19.88	19.92	20.50



Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)				Tune-up Limit (dBm)	
				40190/2550	40523/2583.3	40856/2616.6	41190/2650		
	64QAM	25	0	19.85	19.91	19.91	20.02	20.50	
		1	0	19.79	19.81	19.82	19.97	20.50	
		1	13	19.59	19.70	19.73	19.94	20.50	
		1	24	19.92	19.74	19.73	19.65	20.50	
		12	0	19.52	19.36	19.36	19.49	20.50	
		12	6	19.33	19.36	19.36	19.53	20.50	
		12	13	19.22	19.26	19.24	19.29	20.50	
		25	0	19.14	19.29	19.29	19.39	20.50	
10MHz	QPSK	1	0	19.88	19.98	19.93	19.95	20.50	
		1	25	19.79	19.87	19.88	19.88	20.50	
		1	49	19.96	20.03	20.05	19.96	20.50	
		25	0	20.01	20.03	20.02	19.99	20.50	
		25	13	19.85	20.01	20.00	20.09	20.50	
		25	25	19.94	19.93	19.92	20.06	20.50	
		50	0	19.91	20.09	20.07	20.03	20.50	
	16QAM	1	0	19.96	19.88	19.90	20.13	20.50	
		1	25	19.80	19.84	19.86	20.13	20.50	
		1	49	20.09	19.85	19.82	19.80	20.50	
		25	0	20.20	19.93	19.94	20.16	20.50	
		25	13	20.01	19.93	19.94	20.18	20.50	
		25	25	19.89	19.85	19.84	19.96	20.50	
		50	0	19.88	19.87	19.86	20.06	20.50	
	64QAM	1	0	19.81	19.77	19.79	19.99	20.50	
		1	25	19.62	19.68	19.70	19.97	20.50	
		1	49	19.95	19.72	19.69	19.68	20.50	
		25	0	19.55	19.32	19.33	19.53	20.50	
		25	13	19.35	19.31	19.32	19.56	20.50	
		25	25	19.25	19.21	19.20	19.33	20.50	
		50	0	19.17	19.25	19.24	19.43	20.50	
	15MHz	QPSK	1	0	19.87	19.99	19.96	19.93	20.50
			1	38	19.77	19.92	19.92	19.85	20.50
	1		74	19.93	20.07	20.08	19.92	20.50	
36	0		19.99	20.08	20.06	19.96	20.50		
36	18		19.82	20.06	20.04	20.05	20.50		
36	39		19.91	19.97	19.97	20.02	20.50		
75	0		19.89	20.11	20.11	19.98	20.50		
16QAM	1	0	19.91	19.91	19.92	20.11	20.50		



		1	38	19.78	19.88	19.89	20.11	20.50
		1	74	20.06	19.87	19.85	19.77	20.50
		36	0	20.17	19.98	19.98	20.13	20.50
		36	18	19.98	19.97	19.97	20.14	20.50
		36	39	19.87	19.90	19.88	19.93	20.50
		75	0	19.85	19.92	19.90	20.02	20.50
		75	0	19.85	19.92	19.90	20.02	20.50
	64QAM	1	0	19.76	19.80	19.81	19.97	20.50
		1	38	19.60	19.72	19.73	19.95	20.50
		1	74	19.92	19.74	19.72	19.65	20.50
		36	0	19.52	19.37	19.37	19.50	20.50
		36	18	19.32	19.35	19.35	19.52	20.50
		36	39	19.23	19.26	19.24	19.30	20.50
		75	0	19.14	19.30	19.28	19.39	20.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)				Tune-up Limit (dBm)
				40240/2555	40540/2585	40840/2615	41140/2645	
20MHz	QPSK	1	0	19.84	19.95	19.94	19.90	20.50
		1	50	19.76	19.91	19.89	19.83	20.50
		1	99	19.91	20.02	20.04	19.89	20.50
		50	0	19.96	20.01	19.98	19.92	20.50
		50	25	19.80	19.90	20.00	20.02	20.50
		50	50	19.88	19.94	19.93	19.98	20.50
		100	0	19.86	19.92	19.96	19.94	20.50
	16QAM	1	0	19.89	19.89	19.90	20.06	20.50
		1	50	19.74	19.85	19.87	20.07	20.50
		1	99	20.04	19.83	19.82	19.75	20.50
		50	0	20.14	19.96	19.95	20.10	20.50
		50	25	19.95	19.92	19.93	20.11	20.50
		50	50	19.84	19.86	19.85	19.89	20.50
		100	0	19.83	19.87	19.86	19.99	20.50
	64QAM	1	0	19.74	19.78	19.79	19.92	20.50
		1	50	19.56	19.69	19.71	19.91	20.50
		1	99	19.90	19.70	19.69	19.63	20.50
		50	0	19.49	19.35	19.34	19.47	20.50
		50	25	19.29	19.30	19.31	19.49	20.50
		50	50	19.20	19.22	19.21	19.26	20.50
		100	0	19.12	19.25	19.24	19.36	20.50

Inter Band

DL						UL												
PCC	SCC	PCC		SCC		PCC						SCC						
Band	Band	BW	Channel	BW	Channel	Modulation	RB	Offset	Channel	Standalone	CA power	Delta	RB	Offset	Channel	Standalone	CA active	Delta
2	5	5	900	10	2525	QPSK	1	99	18900	21.77	21.81	0.04	/	/	/	/	/	/
		10	900	10	2525	QPSK	1	99	18900	21.81	21.86	0.05	/	/	/	/	/	/
		15	900	10	2525	QPSK	1	99	18900	21.76	21.67	-0.09	/	/	/	/	/	/
		20	900	10	2525	QPSK	1	99	18900	21.75	21.74	-0.01	/	/	/	/	/	/
4	7	5	1925	20	3350	QPSK	1	0	19925	21.22	21.22	0.00	/	/	/	/	/	/
		10	1900	20	3350	QPSK	1	0	19900	21.25	21.26	0.01	/	/	/	/	/	/
5	2	5	2425	20	700	QPSK	1	24	20425	23.22	23.12	-0.10	/	/	/	/	/	/
		10	2450	20	700	QPSK	1	49	20450	23.19	23.07	-0.12	/	/	/	/	/	/
5	7	1.4	2407	20	2850	QPSK	1	5	20407	23.22	23.11	-0.11	/	/	/	/	/	/
		3	2415	20	2850	QPSK	1	14	20415	23.25	23.15	-0.10	/	/	/	/	/	/
		5	2425	20	2850	QPSK	1	24	20425	23.22	23.22	0.00	/	/	/	/	/	/
		10	2450	20	2850	QPSK	1	49	20450	23.19	23.20	0.01	/	/	/	/	/	/
7	4	5	2775	20	2050	QPSK	1	24	20775	21.47	21.48	0.01	/	/	/	/	/	/
		10	2800	20	2050	QPSK	1	49	20800	21.49	21.53	0.04	/	/	/	/	/	/
		15	2825	20	2050	QPSK	1	74	20825	21.46	21.55	0.09	/	/	/	/	/	/
		20	2850	20	2050	QPSK	1	99	20850	21.44	21.49	0.05	/	/	/	/	/	/
7	5	10	2800	10	2450	QPSK	1	49	20800	21.49	21.48	-0.01	/	/	/	/	/	/
		15	2825	10	2450	QPSK	1	74	20825	21.46	21.51	0.05	/	/	/	/	/	/
		20	2850	10	2450	QPSK	1	99	20850	21.44	21.43	-0.01	/	/	/	/	/	/

Intra Band non-contiguous

DL						UL												
PCC	SCC	PCC		SCC		PCC						SCC						
Band	Band	BW	Channel	BW	Channel	Modulation	RB	Offset	Channel	Standalone	CA power	Delta	RB	Offset	Channel	Standalone	CA active	Delta
7A	7A	5	2775	15	3375	QPSK	1	24	20775	21.45	21.50	0.05	/	/	/	/	/	/
		10	2800	15	3375	QPSK	1	49	20800	21.42	21.41	-0.01	/	/	/	/	/	/
		15	2825	20	3350	QPSK	1	74	20825	21.26	21.26	0.00	/	/	/	/	/	/
		20	2850	20	3350	QPSK	1	99	20850	21.40	21.29	-0.11	/	/	/	/	/	/

Intra-band Contiguous

DL						UL												
PCC	SCC	PCC		SCC		PCC						SCC						
Band	Band	BW	Channel	BW	Channel	Modulation	RB	Offset	Channel	Standalone	CA power	Delta	RB	Offset	Channel	Standalone	CA active	Delta
7C	7C	10	2805	20	2949	QPSK	1	49	20805	21.45	21.37	-0.08	/	/	/	/	/	/
		15	2828	20	2999	QPSK	1	74	20828	21.42	21.44	0.02	/	/	/	/	/	/
		20	2850	20	3048	QPSK	1	99	20850	21.45	21.48	0.03	/	/	/	/	/	/



41C	41C	5	40598	20	40715	QPSK	1	99	40598	23.03	22.94	-0.09	/	/	/	/	/	/
		10	40596	20	40740	QPSK	1	99	40596	23.02	22.98	-0.04	/	/	/	/	/	/
		15	40593	20	40764	QPSK	1	99	40593	23.07	23.01	-0.06	/	/	/	/	/	/
		20	40591	20	40789	QPSK	1	99	40591	23.01	23.06	0.05	/	/	/	/	/	/

9.4 WLAN Mode

Wi-Fi 2.4G Receiver off	Channel	Frequency (MHz)	Data Rates (bps)	Average Conducted Power Measured (dBm)	Tune-up Limit (dBm)	TX Power Setting level
Mode						
802.11b	1	2412	1M	16.11	17.00	15
	6	2437	1M	15.85	17.00	15
	10	2457	1M	15.74	17.00	15
	11	2462	1M	9.61	14.00	12
Mode	Channel	Frequency (MHz)	/	Average Conducted Power Measured (dBm)	Tune-up Limit (dBm)	TX Power Setting level
802.11g	1	2412	6M	13.70	14.50	13
	2	2417	6M	14.10	15.50	14
	6	2437	6M	14.42	15.50	14
	10	2457	6M	14.50	15.50	14
	11	2462	6M	7.61	11.50	10
Mode	Channel	Frequency (MHz)	/	Average Conducted Power Measured (dBm)	Tune-up Limit (dBm)	TX Power Setting level
802.11n HT20	1	2412	6.5M	13.06	14.00	12
	6	2437	6.5M	12.61	14.00	12
	10	2457	6.5M	12.66	14.00	12
	11	2462	6.5M	6.60	11.00	9
Mode	Channel	Frequency (MHz)	/	Average Conducted Power Measured (dBm)	Tune-up Limit (dBm)	TX Power Setting level
802.11n HT40	3	2422	13.5M	9.90	12.00	10
	4	2427	13.5M	12.05	14.00	12
	6	2437	13.5M	12.33	14.00	12
	8	2447	13.5M	12.15	14.00	12
	9	2452	13.5M	9.60	12.00	10



Wi-Fi 2.4G Receiver on Mode	Channel	Frequency (MHz)	Data Rates (bps)	Average Conducted Power Measured (dBm)	Tune-up Limit (dBm)	TX Power Setting level
802.11b	1	2412	1M	12.65	14.00	12
	6	2437	1M	12.80	14.00	12
	10	2457	1M	12.38	14.00	12
	11	2462	1M	7.11	11.00	9
Mode	Channel	Frequency (MHz)	/	Average Conducted Power Measured (dBm)	Tune-up Limit (dBm)	TX Power Setting level
802.11g	1	2412	6M	11.34	12.50	11
	2	2417	6M	11.94	13.50	12
	6	2437	6M	12.48	13.50	12
	10	2457	6M	12.22	13.50	12
	11	2462	6M	5.59	9.50	8
Mode	Channel	Frequency (MHz)	/	Average Conducted Power Measured (dBm)	Tune-up Limit (dBm)	TX Power Setting level
802.11n HT20	1	2412	6.5M	13.06	14.00	12
	6	2437	6.5M	12.61	14.00	12
	10	2457	6.5M	12.66	14.00	12
	11	2462	6.5M	6.60	11.00	9
Mode	Channel	Frequency (MHz)	/	Average Conducted Power Measured (dBm)	Tune-up Limit (dBm)	TX Power Setting level
802.11n HT40	3	2422	13.5M	9.90	12.00	10
	4	2427	13.5M	12.05	14.00	12
	6	2437	13.5M	12.33	14.00	12
	8	2447	13.5M	12.15	14.00	12
	9	2452	13.5M	9.60	12.00	10

5GHz Wi-Fi Mode Receiver off	Band	Channel	Frequency (MHz)	Average Conducted Power(dBm)	Tune-up Limit(dBm)	TX Power Setting level
				6M		
802.11a	U-NII-1	36	5180	14.54	16.00	14
		40	5200	14.56	16.00	14
		44	5220	14.56	16.00	14
		48	5240	14.54	16.00	14
	U-NII-2A	52	5260	13.83	16.00	14
		56	5280	13.90	16.00	14
		60	5300	13.95	16.00	14
		64	5320	14.02	16.00	14
	U-NII-2C	100	5500	14.29	16.00	14
		116	5580	14.18	16.00	14
		132	5660	14.01	16.00	14
		140	5700	14.01	16.00	14
	U-NII-3	149	5745	14.01	16.00	14
157		5785	13.69	16.00	14	
165		5825	13.51	16.00	14	
Mode	Band	Channel	Frequency (MHz)	MCS0	Tune-up	TX Power Setting level
802.11n HT20	U-NII-1	36	5180	13.30	15.00	13
		40	5200	13.31	15.00	13
		44	5220	13.31	15.00	13
		48	5240	13.27	15.00	13
	U-NII-2A	52	5260	12.54	15.00	13
		56	5280	12.61	15.00	13
		60	5300	12.66	15.00	13
		64	5320	12.69	15.00	13
	U-NII-2C	100	5500	13.05	15.00	13
		116	5580	12.94	15.00	13
		132	5660	12.44	15.00	13
		140	5700	11.97	15.00	13
	U-NII-3	149	5745	12.56	15.00	13
157		5785	12.38	15.00	13	
165		5825	12.19	15.00	13	
Mode	Band	Channel	Frequency (MHz)	MCS0	Tune-up	TX Power Setting level
802.11n HT40	U-NII-1	38	5190	12.40	14.00	12
		46	5230	12.39	14.00	12
	U-NII-2A	54	5270	11.68	14.00	12
		62	5310	11.78	14.00	12
	U-NII-2C	102	5510	12.13	14.00	12



		110	5550	11.83	14.00	12
		118	5590	11.95	14.00	12
		134	5670	11.45	14.00	12
	U-NII-3	151	5755	11.63	14.00	12
		159	5795	11.44	14.00	12
Mode	Band	Channel	Frequency (MHz)	6M	Tune-up	TX Power Setting level
802.11ac HT20	U-NII-1	36	5180	13.32	15.00	13
		40	5200	13.38	15.00	13
		44	5220	13.40	15.00	13
		48	5240	13.41	15.00	13
	U-NII-2A	52	5260	12.68	15.00	13
		56	5280	12.79	15.00	13
		60	5300	12.86	15.00	13
		64	5320	12.91	15.00	13
	U-NII-2C	100	5500	13.08	15.00	13
		116	5580	13.20	15.00	13
		132	5660	12.80	15.00	13
		140	5700	12.42	15.00	13
	U-NII-3	149	5745	12.75	15.00	13
157		5785	12.64	15.00	13	
165		5825	12.54	15.00	13	
Mode	Band	Channel	Frequency (MHz)	MCS0	Tune-up	TX Power Setting level
802.11ac HT40	U-NII-1	38	5190	12.48	14.00	12
		46	5230	12.54	14.00	12
	U-NII-2A	54	5270	11.86	14.00	12
		62	5310	12.01	14.00	12
	U-NII-2C	102	5510	12.12	14.00	12
		110	5550	11.91	14.00	12
		118	5590	12.15	14.00	12
		134	5670	11.71	14.00	12
	U-NII-3	151	5755	11.71	14.00	12
		159	5795	11.59	14.00	12
Mode	Band	Channel	Frequency (MHz)	MCS0	Tune-up	TX Power Setting level
802.11ac HT80	U-NII-1	42	5210	12.33	14.00	12
	U-NII-2A	58	5290	11.59	14.00	12
	U-NII-2C	106	5530	11.80	14.00	12
	U-NII-3	155	5775	11.49	14.00	12

5GHz Wi-Fi Mode Receiver on	Band	Channel	Frequency (MHz)	Average Conducted Power(dBm)	Tune-up Limit(dBm)	TX Power Setting level
				6M		
802.11a	U-NII-1	36	5180	10.84	12.00	10
		40	5200	10.86	12.00	10
		44	5220	10.84	12.00	10
		48	5240	10.90	12.00	10
	U-NII-2A	52	5260	10.16	12.00	10
		56	5280	10.12	12.00	10
		60	5300	10.25	12.00	10
		64	5320	10.36	12.00	10
	U-NII-2C	100	5500	10.56	12.00	10
		116	5580	10.57	12.00	10
		132	5660	10.25	12.00	10
		140	5700	10.03	12.00	10
	U-NII-3	149	5745	10.03	12.00	10
157		5785	10.02	12.00	10	
165		5825	10.04	12.00	10	
Mode	Band	Channel	Frequency (MHz)	MCS0	Tune-up	TX Power Setting level
802.11n HT20	U-NII-1	36	5180	10.11	11.50	10
		40	5200	10.16	11.50	10
		44	5220	10.20	11.50	10
		48	5240	10.20	11.50	10
	U-NII-2A	52	5260	9.52	11.50	10
		56	5280	9.62	11.50	10
		60	5300	9.71	11.50	10
		64	5320	9.78	11.50	10
	U-NII-2C	100	5500	10.09	11.50	10
		116	5580	10.04	11.50	10
		132	5660	9.61	11.50	10
		140	5700	9.22	11.50	10
	U-NII-3	149	5745	9.51	11.50	10
157		5785	9.43	11.50	10	
165		5825	9.33	11.50	10	
Mode	Band	Channel	Frequency (MHz)	MCS0	Tune-up	TX Power Setting level
802.11n HT40	U-NII-1	38	5190	10.21	11.50	10
		46	5230	10.24	11.50	10
	U-NII-2A	54	5270	9.87	11.50	10
		62	5310	10.01	11.50	10
	U-NII-2C	102	5510	10.11	11.50	10



		110	5550	9.84	11.50	10
		118	5590	10.00	11.50	10
		134	5670	9.54	11.50	10
	U-NII-3	151	5755	9.67	11.50	10
		159	5795	9.54	11.50	10
Mode	Band	Channel	Frequency (MHz)	6M	Tune-up	TX Power Setting level
802.11ac HT20	U-NII-1	36	5180	10.06	11.50	10
		40	5200	10.18	11.50	10
		44	5220	10.27	11.50	10
		48	5240	10.36	11.50	10
	U-NII-2A	52	5260	9.61	11.50	10
		56	5280	9.47	11.50	10
		60	5300	9.51	11.50	10
		64	5320	9.66	11.50	10
	U-NII-2C	100	5500	9.92	11.50	10
		116	5580	9.94	11.50	10
		132	5660	9.59	11.50	10
		140	5700	9.16	11.50	10
	U-NII-3	149	5745	9.55	11.50	10
157		5785	9.45	11.50	10	
165		5825	9.39	11.50	10	
Mode	Band	Channel	Frequency (MHz)	MCS0	Tune-up	TX Power Setting level
802.11ac HT40	U-NII-1	38	5190	10.13	11.50	10
		46	5230	10.29	11.50	10
	U-NII-2A	54	5270	9.70	11.50	10
		62	5310	9.80	11.50	10
	U-NII-2C	102	5510	9.86	11.50	10
		110	5550	9.59	11.50	10
		118	5590	9.86	11.50	10
		134	5670	9.46	11.50	10
	U-NII-3	151	5755	9.58	11.50	10
		159	5795	9.48	11.50	10
Mode	Band	Channel	Frequency (MHz)	MCS0	Tune-up	TX Power Setting level
802.11ac HT80	U-NII-1	42	5210	10.07	11.50	10
	U-NII-2A	58	5290	9.38	11.50	10
	U-NII-2C	106	5530	9.54	11.50	10
	U-NII-3	155	5775	9.29	11.50	10

9.5 Bluetooth Mode

BT	Conducted Power(dBm)			Tune-up Limit (dBm)
	Channel/Frequency(MHz)			
	Ch 0/2402 MHz	Ch 39/2441 MHz	Ch 78/2480 MHz	
GFSK	7.51	6.40	5.75	9.00
$\pi/4$ DQPSK	8.12	6.82	6.13	9.00
8DPSK	8.08	7.00	6.33	9.00
BLE	Ch 0/2402 MHz	Ch 19/2440 MHz	Ch 39/2480 MHz	Tune-up Limit (dBm)
GFSK	3.10	3.17	0.17	5.00

10 Measured and Reported (Scaled) SAR Results

10.1 EUT Antenna Locations

The Detailed Antenna Locations refer to **SAR Test Setup and Antenna Locations**.

Overall (Length x Width): 157 mm x 73.7 mm						
Overall Diagonal: 173.4 mm /Display Diagonal: 167mm						
Distance of the Antenna to the EUT surface/edge						
Antenna	Back Side	Front side	Left Edge	Right Edge	Top Edge	Bottom Edge
Main-Antenna (Antenna 1)	<25mm	<25mm	<25mm	<25mm	>25mm	<25mm
Second-Antenna(Antenna 2)	<25mm	<25mm	<25mm	<25mm	<25mm	>25mm
BT/Wi-Fi Antenna	<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
Main-Antenna (Antenna 1)	Yes	Yes	Yes	Yes	N/A	Yes
Second-Antenna(Antenna 2)	Yes	Yes	Yes	Yes	Yes	N/A
BT/Wi-Fi Antenna	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 173.4mm. Per KDB 648474 D04, for smart phones with a display diagonal dimension $> 15.0\text{ cm}$ or an overall diagonal dimension $> 16.0\text{ cm}$, 10-g extremity SAR must be tested as a phablet to determine SAR compliance. For Phablet, Since hotspot mode 1-g *reported* SAR $< 1.2\text{ W/kg}$, 10-g extremity SAR is no required.

3. Per FCC KDB Publication 447498 D01, testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is:

- $\leq 0.8\text{ W/kg}$ or 2.0 W/kg , for 1-g or 10-g respectively, when the transmission band is $\leq 100\text{ MHz}$
- $\leq 0.6\text{ W/kg}$ or 1.5 W/kg , for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
- $\leq 0.4\text{ W/kg}$ or 1.0 W/kg , for 1-g or 10-g respectively, when the transmission band is $\geq 200\text{ MHz}$

4. When the original highest measured SAR is $\geq 0.80\text{ W/kg}$, 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 $\leq 1.2\text{ W/kg}$, no additional SAR evaluations using a headset cable were required.

10.2 Standalone SAR test exclusion considerations

Per KDB 447498 D01, the 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

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

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

Per KDB 447498 D01, when the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

Bluetooth	Distance (mm)	MAX Power (dBm)	Frequency (MHz)	Ratio	Evaluation
Head	5	9	2480	2.50	No
Body-worn	15	9	2480	0.83	No
Product Specific 10-g SAR	5	9	2480	2.50	No

10.3 Measured SAR Results

Table 1: GSM 850 (Antenna 1)

Test Position	Cover Type	Channel/Frequency (MHz)	Time slot	Duty Cycle	Tune-up limit (dBm)	Conducted Power (dBm)	Drift (dB)	Measured SAR _{1g} (W/kg)	Scaling Factor	Reported SAR _{1g} (W/kg)	Plot No.
Head SAR											
Left Cheek	standard	190/836.6	GSM	1:8.3	33.70	32.53	0.110	0.051	1.31	0.067	/
Left Tilt	standard	190/836.6	GSM	1:8.3	33.70	32.53	0.110	0.037	1.31	0.048	/
Right Cheek	standard	190/836.6	GSM	1:8.3	33.70	32.53	0.021	0.056	1.31	0.073	37
Right Tilt	standard	190/836.6	GSM	1:8.3	33.70	32.53	0.110	0.029	1.31	0.038	/
Body-worn (Distance 15mm)											
Back Side	standard	190/836.6	GSM	1:8.3	33.70	32.53	0.120	0.259	1.31	0.339	38
Front Side	standard	190/836.6	GSM	1:8.3	33.70	32.53	-0.081	0.197	1.31	0.258	/
Hotspot (Distance 10mm)											
Back Side	standard	190/836.6	4Txslots	1:2.07	27.70	26.44	0.130	0.455	1.34	0.608	39
Front Side	standard	190/836.6	4Txslots	1:2.07	27.70	26.44	-0.150	0.340	1.34	0.454	/
Left Edge	standard	190/836.6	4Txslots	1:2.07	27.70	26.44	0.180	0.289	1.34	0.386	/
Right Edge	standard	190/836.6	4Txslots	1:2.07	27.70	26.44	0.030	0.078	1.34	0.104	/
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	standard	190/836.6	4Txslots	1:2.07	27.70	26.44	0.160	0.279	1.34	0.373	/
Note: 1. The value with blue color is the maximum SAR Value of each test band. 2. When multiple slots are used, SAR should be tested to account for the maximum source-based time-averaged output power.											

Table 2: GSM 1900 (Antenna 1)

Test Position	Cover Type	Channel/Frequency (MHz)	Time slot	Duty Cycle	Tune-up limit (dBm)	Conducted Power (dBm)	Drift (dB)	Measured SAR _{1g} (W/kg)	Scaling Factor	Reported SAR _{1g} (W/kg)	Plot No.
Head SAR											
Left Cheek	standard	661/1880	GSM	1:8.3	31.00	29.57	-0.044	0.074	1.39	0.102	40
Left Tilt	standard	661/1880	GSM	1:8.3	31.00	29.57	0.027	0.040	1.39	0.055	/
Right Cheek	standard	661/1880	GSM	1:8.3	31.00	29.57	0.136	0.055	1.39	0.077	/
Right Tilt	standard	661/1880	GSM	1:8.3	31.00	29.57	0.022	0.028	1.39	0.039	/
Body-worn (Distance 15mm)											
Back Side	standard	661/1880	GSM	1:8.3	31.00	29.57	0.040	0.113	1.39	0.157	41
Front Side	standard	661/1880	GSM	1:8.3	31.00	29.57	-0.022	0.098	1.39	0.136	/
Hotspot (Distance 10mm)											
Back Side	standard	661/1880	4Txslots	1:2.07	25.00	23.66	0.022	0.193	1.36	0.263	/
Front Side	standard	661/1880	4Txslots	1:2.07	25.00	23.66	0.040	0.134	1.36	0.182	/
Left Edge	standard	661/1880	4Txslots	1:2.07	25.00	23.66	0.040	0.080	1.36	0.109	/
Right Edge	standard	661/1880	4Txslots	1:2.07	25.00	23.66	0.028	0.054	1.36	0.074	/
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	standard	661/1880	4Txslots	1:2.07	25.00	23.66	-0.180	0.452	1.36	0.615	42
Note: 1. The value with blue color is the maximum SAR Value of each test band. 2. When multiple slots are used, SAR should be tested to account for the maximum source-based time-averaged output power.											



Table 3: UMTS Band II (Antenna 1)

Test Position	Cover Type	Channel/Frequency (MHz)	Channel Type	Duty Cycle	Tune-up limit (dBm)	Conducted Power (dBm)	Drift (dB)	Measured SAR _{1g} (W/kg)	Scaling Factor	Reported SAR _{1g} (W/kg)	Plot No.
Head SAR(Receiver on)											
Left Cheek	standard	9400/1880	RMC 12.2K	1:1	24.60	23.26	0.020	0.174	1.36	0.237	43
Left Tilt	standard	9400/1880	RMC 12.2K	1:1	24.60	23.26	0.130	0.084	1.36	0.115	/
Right Cheek	standard	9400/1880	RMC 12.2K	1:1	24.60	23.26	0.099	0.131	1.36	0.178	/
Right Tilt	standard	9400/1880	RMC 12.2K	1:1	24.60	23.26	0.042	0.075	1.36	0.102	/
Body-worn (Distance 15mm) (Receiver off)											
Back Side	standard	9400/1880	RMC 12.2K	1:1	23.10	21.89	-0.070	0.305	1.32	0.403	44
Front Side	standard	9400/1880	RMC 12.2K	1:1	23.10	21.89	0.012	0.200	1.32	0.264	/
Hotspot (Distance 10mm) (Receiver off)											
Back Side	standard	9400/1880	RMC 12.2K	1:1	23.10	21.89	0.100	0.403	1.32	0.532	/
Front Side	standard	9400/1880	RMC 12.2K	1:1	23.10	21.89	0.030	0.295	1.32	0.390	/
Left Edge	standard	9400/1880	RMC 12.2K	1:1	23.10	21.89	-0.080	0.201	1.32	0.266	/
Right Edge	standard	9400/1880	RMC 12.2K	1:1	23.10	21.89	0.024	0.088	1.32	0.116	/
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	standard	9538/1907.6	RMC 12.2K	1:1	23.10	21.84	-0.120	0.771	1.34	1.031	/
	standard	9400/1880	RMC 12.2K	1:1	23.10	21.89	-0.130	0.784	1.32	1.036	45
	standard	9262/1852.4	RMC 12.2K	1:1	23.10	21.85	-0.120	0.724	1.33	0.965	/
Bottom Edge	SIM2	9400/1880	RMC 12.2K	1:1	23.10	21.89	0.010	0.764	1.32	1.009	/
Bottom Edge	Battery 2	9400/1880	RMC 12.2K	1:1	23.10	21.89	0.024	0.758	1.32	1.002	/

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

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

Table 4: UMTS Band IV (Antenna 1)

Test Position	Cover Type	Channel/Frequency (MHz)	Channel Type	Duty Cycle	Tune-up limit (dBm)	Conducted Power (dBm)	Drift (dB)	Measured SAR _{1g} (W/kg)	Scaling Factor	Reported SAR _{1g} (W/kg)	Plot No.
Head SAR(Receive on)											
Left Cheek	standard	1413/1732.6	RMC 12.2K	1:1	24.30	22.68	0.073	0.181	1.45	0.263	/
Left Tilt	standard	1413/1732.6	RMC 12.2K	1:1	24.30	22.68	0.027	0.207	1.45	0.301	/
Right Cheek	standard	1413/1732.6	RMC 12.2K	1:1	24.30	22.68	0.053	0.440	1.45	0.639	/
Right Tilt	standard	1413/1732.6	RMC 12.2K	1:1	24.30	22.68	0.120	0.489	1.45	0.710	46
Right Tilt	SIM2	1413/1732.6	RMC 12.2K	1:1	24.30	22.68	0.024	0.478	1.45	0.694	/
Right Tilt	Battery2	1413/1732.6	RMC 12.2K	1:1	24.30	22.68	0.054	0.481	1.45	0.698	/
Body-worn (Distance 15mm) (Receiver off)											
Back Side	standard	1413/1732.6	RMC 12.2K	1:1	24.00	22.55	-0.030	0.174	1.40	0.243	47
Front Side	standard	1413/1732.6	RMC 12.2K	1:1	24.00	22.55	0.014	0.097	1.40	0.135	/
Hotspot (Distance 10mm) (Receiver off)											
Back Side	standard	1413/1732.6	RMC 12.2K	1:1	24.00	22.55	0.030	0.352	1.40	0.492	/
Front Side	standard	1413/1732.6	RMC 12.2K	1:1	24.00	22.55	0.040	0.217	1.40	0.303	/
Left Edge	standard	1413/1732.6	RMC 12.2K	1:1	24.00	22.55	-0.020	0.195	1.40	0.272	/
Right Edge	standard	1413/1732.6	RMC 12.2K	1:1	24.00	22.55	0.120	0.129	1.40	0.180	/
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	standard	1513/1752.6	RMC 12.2K	1:1	24.00	22.47	-0.030	0.724	1.42	1.030	/
	standard	1413/1732.6	RMC 12.2K	1:1	24.00	22.55	0.010	0.731	1.40	1.021	48
	standard	1312/1712.4	RMC 12.2K	1:1	24.00	22.50	-0.020	0.727	1.41	1.027	/

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

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



Table 5: UMTS Band V (Antenna 1)

Test Position	Cover Type	Channel/Frequency (MHz)	Channel Type	Duty Cycle	Tune-up limit (dBm)	Conducted Power (dBm)	Drift (dB)	Measured SAR _{1g} (W/kg)	Scaling Factor	Reported SAR _{1g} (W/kg)	Plot No.
Head SAR											
Left Cheek	standard	4183/836.6	RMC 12.2K	1:1	25.00	24.12	0.140	0.056	1.22	0.068	/
Left Tilt	standard	4183/836.6	RMC 12.2K	1:1	25.00	24.12	0.160	0.037	1.22	0.045	/
Right Cheek	standard	4183/836.6	RMC 12.2K	1:1	25.00	24.12	-0.049	0.073	1.22	0.090	49
Right Tilt	standard	4183/836.6	RMC 12.2K	1:1	25.00	24.12	0.026	0.028	1.22	0.034	/
Body-worn (Distance 15mm)											
Back Side	standard	4183/836.6	RMC 12.2K	1:1	25.00	24.12	0.030	0.326	1.22	0.399	50
Front Side	standard	4183/836.6	RMC 12.2K	1:1	25.00	24.12	-0.074	0.240	1.22	0.294	/
Hotspot (Distance 10mm)											
Back Side	standard	4183/836.6	RMC 12.2K	1:1	25.00	24.12	0.040	0.530	1.22	0.649	51
Front Side	standard	4183/836.6	RMC 12.2K	1:1	25.00	24.12	0.160	0.462	1.22	0.566	/
Left Edge	standard	4183/836.6	RMC 12.2K	1:1	25.00	24.12	0.080	0.317	1.22	0.388	/
Right Edge	standard	4183/836.6	RMC 12.2K	1:1	25.00	24.12	0.090	0.101	1.22	0.124	/
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	standard	4183/836.6	RMC 12.2K	1:1	25.00	24.12	0.023	0.284	1.22	0.348	/
<p>Note: 1. The value with blue color is the maximum SAR Value of each test band.</p> <p>2. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is $\leq \frac{1}{4}$ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.</p>											

Table 6: LTE Band 2 (Antenna 1)

Test Position	Cover Type	RB size	RB offset	Channel/Frequency (MHz)	Maximum Allowed Power(dBm)	Conducted Power (dBm)	Drift (dB)	Measured SAR _{1g} (W/kg)	Scaling Factor	Reported SAR _{1g} (W/kg)	Plot No.
Head SAR (QPSK) (Receiver on)											
Left Cheek	standard	1RB	0	18700/1860	24.10	23.45	0.010	0.156	1.16	0.181	52
Left Tilt	standard	1RB	0	18700/1860	24.10	23.45	0.021	0.084	1.16	0.098	/
Right Cheek	standard	1RB	0	18700/1860	24.10	23.45	0.059	0.123	1.16	0.143	/
Right Tilt	standard	1RB	0	18700/1860	24.10	23.45	0.000	0.084	1.16	0.098	/
Left Cheek	standard	50%RB	0	19100/1900	23.10	22.53	0.059	0.131	1.14	0.149	/
Left Tilt	standard	50%RB	0	19100/1900	23.10	22.53	0.028	0.053	1.14	0.061	/
Right Cheek	standard	50%RB	0	19100/1900	23.10	22.53	0.130	0.096	1.14	0.109	/
Right Tilt	standard	50%RB	0	19100/1900	23.10	22.53	0.030	0.062	1.14	0.070	/
Body-worn (QPSK, Distance 15mm) (Receiver off)											
Back Side	standard	1RB	0	18700/1860	22.60	21.86	-0.100	0.253	1.19	0.300	53
Front Side	standard	1RB	0	18700/1860	22.60	21.86	0.105	0.170	1.19	0.202	/
Back Side	standard	50%RB	0	18900/1880	22.60	21.77	-0.080	0.218	1.21	0.264	/
Front Side	standard	50%RB	0	18900/1880	22.60	21.77	0.016	0.158	1.21	0.191	/
Hotspot (QPSK, Distance 10mm) (Receive off)											
Back Side	standard	1RB	0	18700/1860	22.60	21.86	0.070	0.301	1.19	0.357	/
Front Side	standard	1RB	0	18700/1860	22.60	21.86	0.070	0.251	1.19	0.298	/
Left Edge	standard	1RB	0	18700/1860	22.60	21.86	0.025	0.196	1.19	0.232	/
Right Edge	standard	1RB	0	18700/1860	22.60	21.86	0.180	0.095	1.19	0.113	/
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	standard	1RB	0	18700/1860	22.60	21.86	-0.090	0.643	1.19	0.762	/
Back Side	standard	50%RB	0	18900/1880	22.60	21.77	0.000	0.314	1.21	0.380	/
Front Side	standard	50%RB	0	18900/1880	22.60	21.77	0.010	0.259	1.21	0.314	/
Left Edge	standard	50%RB	0	18900/1880	22.60	21.77	0.080	0.189	1.21	0.229	/
Right Edge	standard	50%RB	0	18900/1880	22.60	21.77	0.021	0.098	1.21	0.118	/
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	standard	50%RB	25	19100/1900	22.60	21.52	-0.090	0.698	1.28	0.895	54
	standard	50%RB	0	18900/1880	22.60	21.77	-0.070	0.690	1.21	0.835	/
	standard	50%RB	0	18700/1860	22.60	21.72	-0.110	0.648	1.22	0.794	/
Bottom Edge	standard	100%RB	0	18900/1880	22.60	21.78	0.054	0.654	1.21	0.790	/
<p>Note: 1. The value with blue color is the maximum SAR Value of each test band.</p> <p>2. For QPSK with 100% RB allocation, SAR is required when and the highest reported SAR for 1 RB and 50% RB allocation in ≥ 0.8 W/kg.</p>											

Table 7: LTE Band 4 (Antenna 1)

Test Position	Cover Type	RB size	RB offset	Channel/Frequency (MHz)	Maximum Allowed Power(dBm)	Conducted Power (dBm)	Drift (dB)	Measured SAR _{1g} (W/kg)	Scaling Factor	Reported SAR _{1g} (W/kg)	Plot No.
Head SAR (QPSK)											
Left Cheek	standard	1RB	0	20300/1745	23.80	22.99	0.050	0.092	1.21	0.111	/
Left Tilt	standard	1RB	0	20300/1745	23.80	22.99	0.025	0.055	1.21	0.066	/
Right Cheek	standard	1RB	0	20300/1745	23.80	22.99	0.046	0.099	1.21	0.119	55
Right Tilt	standard	1RB	0	20300/1745	23.80	22.99	0.025	0.067	1.21	0.080	/
Left Cheek	standard	50%RB	25	20300/1745	22.80	22.05	0.140	0.075	1.19	0.089	/
Left Tilt	standard	50%RB	25	20300/1745	22.80	22.05	0.037	0.045	1.19	0.053	/
Right Cheek	standard	50%RB	25	20300/1745	22.80	22.05	0.143	0.079	1.19	0.094	/
Right Tilt	standard	50%RB	25	20300/1745	22.80	22.05	0.046	0.053	1.19	0.063	/
Body-worn (QPSK, Distance 15mm)											
Back Side	standard	1RB	0	20300/1745	23.80	22.99	0.080	0.121	1.21	0.146	56
Front Side	standard	1RB	0	20300/1745	23.80	22.99	-0.024	0.086	1.21	0.104	/
Back Side	standard	50%RB	25	20300/1745	22.80	22.05	-0.108	0.103	1.19	0.122	/
Front Side	standard	50%RB	25	20300/1745	22.80	22.05	0.050	0.076	1.19	0.090	/
Hotspot (QPSK, Distance 10mm)											
Back Side	standard	1RB	0	20300/1745	23.80	22.99	-0.020	0.330	1.21	0.398	/
Front Side	standard	1RB	0	20300/1745	23.80	22.99	0.130	0.154	1.21	0.186	/
Left Edge	standard	1RB	0	20300/1745	23.80	22.99	-0.022	0.186	1.21	0.224	/
Right Edge	standard	1RB	0	20300/1745	23.80	22.99	0.038	0.020	1.21	0.024	/
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	standard	1RB	0	20300/1745	23.80	22.99	0.026	0.734	1.21	0.884	57
	standard	1RB	0	20175/1732.5	23.80	22.91	0.022	0.725	1.23	0.890	/
	standard	1RB	0	20050/1720	23.80	22.93	0.027	0.711	1.22	0.869	/
Back Side	standard	50%RB	25	20300/1745	22.80	22.05	-0.110	0.239	1.19	0.284	/
Front Side	standard	50%RB	25	20300/1745	22.80	22.05	-0.010	0.127	1.19	0.151	/
Left Edge	standard	50%RB	25	20300/1745	22.80	22.05	0.030	0.179	1.19	0.213	/
Right Edge	standard	50%RB	25	20300/1745	22.80	22.05	0.138	0.018	1.19	0.021	/
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	standard	50%RB	25	20300/1745	22.80	22.05	0.033	0.582	1.19	0.692	/
Bottom Edge	standard	100%RB	0	20175/1732.5	22.80	21.92	0.026	0.588	1.22	0.720	/
<p>Note: 1. The value with blue color is the maximum SAR Value of each test band.</p> <p>2. For QPSK with 100% RB allocation, SAR is required when and the highest reported SAR for 1 RB and 50% RB allocation in are ≥ 0.8 W/kg.</p>											

Table 8: LTE Band 5 (Antenna 1)

Test Position	Cover Type	RB size	RB offset	Channel/Frequency (MHz)	Maximum Allowed Power (dBm)	Conducted Power (dBm)	Drift (dB)	Measured SAR _{1g} (W/kg)	Scaling Factor	Reported SAR _{1g} (W/kg)	Plot No.
Head SAR (QPSK)											
Left Cheek	standard	1RB	49	20450/829	24.50	23.70	0.070	0.050	1.20	0.060	/
Left Tilt	standard	1RB	49	20450/829	24.50	23.70	0.090	0.036	1.20	0.044	/
Right Cheek	standard	1RB	49	20450/829	24.50	23.70	0.050	0.066	1.20	0.079	58
Right Tilt	standard	1RB	49	20450/829	24.50	23.70	0.037	0.027	1.20	0.033	/
Left Cheek	standard	50%RB	13	20525/836.5	23.50	22.79	0.029	0.043	1.18	0.051	/
Left Tilt	standard	50%RB	13	20525/836.5	23.50	22.79	0.023	0.018	1.18	0.021	/
Right Cheek	standard	50%RB	13	20525/836.5	23.50	22.79	0.094	0.057	1.18	0.067	/
Right Tilt	standard	50%RB	13	20525/836.5	23.50	22.79	0.042	0.021	1.18	0.025	/
Body-worn (QPSK, Distance 15mm)											
Back Side	standard	1RB	49	20450/829	24.50	23.70	0.058	0.291	1.20	0.350	59
Front Side	standard	1RB	49	20450/829	24.50	23.70	0.021	0.203	1.20	0.244	/
Back Side	standard	50%RB	13	20525/836.5	23.50	22.79	-0.070	0.176	1.18	0.207	/
Front Side	standard	50%RB	13	20525/836.5	23.50	22.79	0.009	0.104	1.18	0.122	/
Hotspot (QPSK, Distance 10mm)											
Back Side	standard	1RB	49	20450/829	24.50	23.70	0.020	0.543	1.20	0.653	60
Front Side	standard	1RB	49	20450/829	24.50	23.70	-0.030	0.405	1.20	0.487	/
Left Edge	standard	1RB	49	20450/829	24.50	23.70	0.190	0.351	1.20	0.422	/
Right Edge	standard	1RB	49	20450/829	24.50	23.70	0.046	0.043	1.20	0.052	/
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	standard	1RB	49	20450/829	24.50	23.70	0.020	0.306	1.20	0.368	/
Back Side	standard	50%RB	13	20525/836.5	23.50	22.79	0.170	0.435	1.18	0.512	/
Front Side	standard	50%RB	13	20525/836.5	23.50	22.79	0.049	0.295	1.18	0.347	/
Left Edge	standard	50%RB	13	20525/836.5	23.50	22.79	0.041	0.246	1.18	0.290	/
Right Edge	standard	50%RB	13	20525/836.5	23.50	22.79	0.051	0.032	1.18	0.038	/
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	standard	50%RB	13	20525/836.5	23.50	22.79	0.021	0.234	1.18	0.276	/
Note: 1. The value with blue color is the maximum SAR Value of each test band. 2. For QPSK with 100% RB allocation, SAR is required when and the highest reported SAR for 1 RB and 50% RB allocation in are ≥ 0.8 W/kg.											

Table 9: LTE Band 7 (Antenna 1)

Test Position	Cover Type	RB size	RB offset	Channel/ Frequency (MHz)	Maximum Allowed Power (dBm)	Conducted Power (dBm)	Drift (dB)	Measured SAR _{1g} (W/kg)	Scaling Factor	Reported SAR _{1g} (W/kg)	Plot No.
Head SAR (QPSK)											
Left Cheek	standard	1RB	0	20850/2510	23.50	22.82	0.040	0.245	1.17	0.287	61
Left Tilt	standard	1RB	0	20850/2510	23.50	22.82	0.096	0.055	1.17	0.064	/
Right Cheek	standard	1RB	0	20850/2510	23.50	22.82	0.122	0.137	1.17	0.160	/
Right Tilt	standard	1RB	0	20850/2510	23.50	22.82	0.014	0.113	1.17	0.132	/
Left Cheek	standard	50%RB	0	20850/2510	22.50	21.89	0.025	0.195	1.15	0.224	/
Left Tilt	standard	50%RB	0	20850/2510	22.50	21.89	0.021	0.045	1.15	0.052	/
Right Cheek	standard	50%RB	0	20850/2510	22.50	21.89	0.146	0.088	1.15	0.101	/
Right Tilt	standard	50%RB	0	20850/2510	22.50	21.89	0.103	0.067	1.15	0.077	/
Body-worn (QPSK, Distance 15mm)											
Back Side	standard	1RB	99	20850/2510	23.00	22.03	0.020	0.355	1.25	0.444	62
Front Side	standard	1RB	99	20850/2510	23.00	22.03	0.049	0.160	1.25	0.200	/
Back Side	standard	50%RB	0	20850/2510	22.50	21.67	0.028	0.336	1.21	0.407	/
Front Side	standard	50%RB	0	20850/2510	22.50	21.67	-0.011	0.151	1.21	0.183	/
Back Side	SIM2	1RB	99	20850/2510	23.00	22.03	-0.041	0.338	1.25	0.423	/
Back Side	Battery 2	1RB	99	20850/2510	23.00	22.03	0.106	0.340	1.25	0.425	/
Hotspot (QPSK, Distance 10mm)											
Back Side	standard	1RB	99	20850/2510	23.00	22.03	-0.120	0.613	1.25	0.766	63
Front Side	standard	1RB	99	20850/2510	23.00	22.03	0.040	0.309	1.25	0.386	/
Left Edge	standard	1RB	99	20850/2510	23.00	22.03	0.060	0.238	1.25	0.298	/
Right Edge	standard	1RB	99	20850/2510	23.00	22.03	-0.020	0.013	1.25	0.016	/
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	standard	1RB	99	20850/2510	23.00	22.03	0.100	0.589	1.25	0.736	/
Back Side	standard	50%RB	0	20850/2510	22.50	21.67	-0.060	0.609	1.21	0.737	/
Front Side	standard	50%RB	0	20850/2510	22.50	21.67	0.120	0.270	1.21	0.327	/
Left Edge	standard	50%RB	0	20850/2510	22.50	21.67	0.050	0.214	1.21	0.259	/
Right Edge	standard	50%RB	0	20850/2510	22.50	21.67	0.064	0.007	1.21	0.008	/
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	standard	50%RB	0	20850/2510	22.50	21.67	0.080	0.518	1.21	0.627	/
<p>Note: 1. The value with blue color is the maximum SAR Value of each test band.</p> <p>2. For QPSK with 100% RB allocation, SAR is required when and the highest reported SAR for 1 RB and 50% RB allocation in are ≥ 0.8 W/kg.</p>											

Table 10: LTE Band 12 (Antenna 1)

Test Position	Cover Type	RB size	RB offset	Channel/ Frequency (MHz)	Maximum Allowed Power (dBm)	Conducted Power (dBm)	Drift (dB)	Measured SAR _{1g} (W/kg)	Scaling Factor	Reported SAR _{1g} (W/kg)	Plot No.
Head SAR (QPSK)											
Left Cheek	standard	1RB	49	23130/711	24.50	23.69	0.142	0.028	1.21	0.034	/
Left Tilt	standard	1RB	49	23130/711	24.50	23.69	0.033	0.020	1.21	0.024	/
Right Cheek	standard	1RB	49	23130/711	24.50	23.69	-0.120	0.039	1.21	0.046	64
Right Tilt	standard	1RB	49	23130/711	24.50	23.69	0.062	0.015	1.21	0.018	/
Left Cheek	standard	50%RB	13	23060/704	23.50	22.77	0.120	0.016	1.18	0.019	/
Left Tilt	standard	50%RB	13	23060/704	23.50	22.77	0.057	0.016	1.18	0.019	/
Right Cheek	standard	50%RB	13	23060/704	23.50	22.77	0.102	0.022	1.18	0.026	/
Right Tilt	standard	50%RB	13	23060/704	23.50	22.77	0.094	0.010	1.18	0.012	/
Body-worn (QPSK, Distance 15mm)											
Back Side	standard	1RB	49	23130/711	24.50	23.69	-0.060	0.138	1.21	0.166	65
Front Side	standard	1RB	49	23130/711	24.50	23.69	-0.009	0.110	1.21	0.133	/
Back Side	standard	50%RB	13	23060/704	23.50	22.77	0.040	0.102	1.18	0.121	/
Front Side	standard	50%RB	13	23060/704	23.50	22.77	0.095	0.086	1.18	0.102	/
Hotspot (QPSK, Distance 10mm)											
Back Side	standard	1RB	49	23130/711	24.50	23.69	-0.030	0.300	1.21	0.362	66
Front Side	standard	1RB	49	23130/711	24.50	23.69	0.020	0.264	1.21	0.318	/
Left Edge	standard	1RB	49	23130/711	24.50	23.69	0.190	0.185	1.21	0.223	/
Right Edge	standard	1RB	49	23130/711	24.50	23.69	0.020	0.070	1.21	0.084	/
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	standard	1RB	49	23130/711	24.50	23.69	0.023	0.143	1.21	0.172	/
Back Side	standard	50%RB	13	23060/704	23.50	22.77	0.140	0.180	1.18	0.213	/
Front Side	standard	50%RB	13	23060/704	23.50	22.77	0.120	0.123	1.18	0.146	/
Left Edge	standard	50%RB	13	23060/704	23.50	22.77	0.043	0.098	1.18	0.116	/
Right Edge	standard	50%RB	13	23060/704	23.50	22.77	0.060	0.048	1.18	0.057	/
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	standard	50%RB	13	23060/704	23.50	22.77	0.026	0.083	1.18	0.098	/
Note: 1. The value with blue color is the maximum SAR Value of each test band. 2. For QPSK with 100% RB allocation, SAR is required when and the highest reported SAR for 1 RB and 50% RB allocation in are ≥ 0.8 W/kg.											

Table 11: LTE Band 17 (Antenna 1)

Test Position	Cover Type	RB size	RB offset	Channel/ Frequency (MHz)	Maximum Allowed Power (dBm)	Conducted Power (dBm)	Drift (dB)	Measured SAR _{1g} (W/kg)	Scaling Factor	Reported SAR _{1g} (W/kg)	Plot No.
Head SAR (QPSK)											
Left Cheek	standard	1RB	25	23790/710	24.50	23.65	0.105	0.024	1.22	0.029	/
Left Tilt	standard	1RB	25	23790/710	24.50	23.65	0.034	0.019	1.22	0.023	/
Right Cheek	standard	1RB	25	23790/710	24.50	23.65	0.069	0.032	1.22	0.039	67
Right Tilt	standard	1RB	25	23790/710	24.50	23.65	0.054	0.014	1.22	0.017	/
Left Cheek	standard	50%RB	25	23790/710	23.50	22.80	0.102	0.021	1.17	0.024	/
Left Tilt	standard	50%RB	25	23790/710	23.50	22.80	0.057	0.016	1.17	0.018	/
Right Cheek	standard	50%RB	25	23790/710	23.50	22.80	0.080	0.027	1.17	0.032	/
Right Tilt	standard	50%RB	25	23790/710	23.50	22.80	0.065	0.011	1.17	0.013	/
Body-worn (QPSK, Distance 15mm)											
Back Side	standard	1RB	25	23790/710	24.50	23.65	-0.120	0.114	1.22	0.139	68
Front Side	standard	1RB	25	23790/710	24.50	23.65	0.016	0.089	1.22	0.108	/
Back Side	standard	50%RB	25	23790/710	23.50	22.80	0.077	0.107	1.17	0.126	/
Front Side	standard	50%RB	25	23790/710	23.50	22.80	-0.080	0.081	1.17	0.095	/
Hotspot (QPSK, Distance 10mm)											
Back Side	standard	1RB	25	23790/710	24.50	23.65	0.070	0.256	1.22	0.311	69
Front Side	standard	1RB	25	23790/710	24.50	23.65	0.050	0.179	1.22	0.218	/
Left Edge	standard	1RB	25	23790/710	24.50	23.65	-0.022	0.152	1.22	0.185	/
Right Edge	standard	1RB	25	23790/710	24.50	23.65	0.030	0.063	1.22	0.077	/
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	standard	1RB	25	23790/710	24.50	23.65	0.022	0.119	1.22	0.145	/
Back Side	standard	50%RB	25	23790/710	23.50	22.80	-0.025	0.237	1.17	0.278	/
Front Side	standard	50%RB	25	23790/710	23.50	22.80	-0.050	0.156	1.17	0.183	/
Left Edge	standard	50%RB	25	23790/710	23.50	22.80	0.058	0.136	1.17	0.160	/
Right Edge	standard	50%RB	25	23790/710	23.50	22.80	0.070	0.054	1.17	0.063	/
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	standard	50%RB	25	23790/710	23.50	22.80	0.026	0.105	1.17	0.123	/
<p>Note: 1. The value with blue color is the maximum SAR Value of each test band.</p> <p>2. For QPSK with 100% RB allocation, SAR is required when and the highest reported SAR for 1 RB and 50% RB allocation in are ≥ 0.8 W/kg.</p>											

Table 12: LTE Band 26(Antenna 1)

Test Position	Cover Type	RB size	RB offset	Channel/ Frequency (MHz)	Maximum Allowed Power (dBm)	Conducted Power (dBm)	Drift (dB)	Measured SAR _{1g} (W/kg)	Scaling Factor	Reported SAR _{1g} (W/kg)	Plot No.
Head SAR (QPSK)											
Left Cheek	standard	1RB	38	26865/831.5	24.50	23.68	0.041	0.051	1.21	0.061	70
Left Tilt	standard	1RB	38	26865/831.5	24.50	23.68	0.060	0.039	1.21	0.047	/
Right Cheek	standard	1RB	38	26865/831.5	24.50	23.68	0.094	0.037	1.21	0.045	/
Right Tilt	standard	1RB	38	26865/831.5	24.50	23.68	0.058	0.024	1.21	0.029	/
Left Cheek	standard	50%RB	39	26775/822.5	23.50	22.74	0.078	0.046	1.19	0.055	/
Left Tilt	standard	50%RB	39	26775/822.5	23.50	22.74	0.084	0.031	1.19	0.037	/
Right Cheek	standard	50%RB	39	26775/822.5	23.50	22.74	-0.065	0.029	1.19	0.035	/
Right Tilt	standard	50%RB	39	26775/822.5	23.50	22.74	0.063	0.023	1.19	0.028	/
Body-worn (QPSK, Distance 15mm)											
Back Side	standard	1RB	38	26865/831.5	24.50	23.68	0.020	0.301	1.21	0.364	71
Front Side	standard	1RB	38	26865/831.5	24.50	23.68	0.004	0.217	1.21	0.262	/
Back Side	standard	50%RB	39	26775/822.5	23.50	22.74	-0.087	0.225	1.19	0.268	/
Front Side	standard	50%RB	39	26775/822.5	23.50	22.74	0.041	0.184	1.19	0.219	/
Hotspot (QPSK, Distance 10mm)											
Back Side	standard	1RB	38	26865/831.5	24.50	23.68	0.110	0.562	1.21	0.679	72
Front Side	standard	1RB	38	26865/831.5	24.50	23.68	0.190	0.395	1.21	0.477	/
Left Edge	standard	1RB	38	26865/831.5	24.50	23.68	0.030	0.316	1.21	0.382	/
Right Edge	standard	1RB	38	26865/831.5	24.50	23.68	0.180	0.042	1.21	0.050	/
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	standard	1RB	38	26865/831.5	24.50	23.68	0.190	0.262	1.21	0.316	/
Back Side	standard	50%RB	39	26775/822.5	23.50	22.74	0.140	0.421	1.19	0.502	/
Front Side	standard	50%RB	39	26775/822.5	23.50	22.74	0.140	0.291	1.19	0.347	/
Left Edge	standard	50%RB	39	26775/822.5	23.50	22.74	0.140	0.241	1.19	0.287	/
Right Edge	standard	50%RB	39	26775/822.5	23.50	22.74	0.026	0.031	1.19	0.037	/
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	standard	50%RB	39	26775/822.5	23.50	22.74	0.022	0.202	1.19	0.241	/
<p>Note: 1. The value with blue color is the maximum SAR Value of each test band.</p> <p>2. For QPSK with 100% RB allocation, SAR is required when and the highest reported SAR for 1 RB and 50% RB allocation in are ≥ 0.8 W/kg.</p>											

Table 13: LTE Band 38(Antenna 1)

Test Position	Cover Type	RB size	RB offset	Channel/ Frequency (MHz)	Maximum Allowed Power (dBm)	Conducted Power (dBm)	Drift (dB)	Measured SAR _{1g} (W/kg)	Scaling Factor	Reported SAR _{1g} (W/kg)	Plot No.
Head SAR (QPSK)											
Left Cheek	standard	1RB	50	38150/2610	24.50	23.88	-0.130	0.152	1.15	0.175	73
Left Tilt	standard	1RB	50	38150/2610	24.50	23.88	0.120	0.057	1.15	0.066	/
Right Cheek	standard	1RB	50	38150/2610	24.50	23.88	0.032	0.077	1.15	0.089	/
Right Tilt	standard	1RB	50	38150/2610	24.50	23.88	0.102	0.072	1.15	0.083	/
Left Cheek	standard	50%RB	50	38150/2610	23.50	22.92	0.110	0.124	1.14	0.142	/
Left Tilt	standard	50%RB	50	38150/2610	23.50	22.92	0.118	0.041	1.14	0.047	/
Right Cheek	standard	50%RB	50	38150/2610	23.50	22.92	0.030	0.062	1.14	0.071	/
Right Tilt	standard	50%RB	50	38150/2610	23.50	22.92	0.177	0.055	1.14	0.062	/
Body-worn (QPSK, Distance 15mm)											
Back Side	standard	1RB	50	38150/2610	24.50	23.88	-0.170	0.136	1.15	0.157	74
Front Side	standard	1RB	50	38150/2610	24.50	23.88	0.008	0.117	1.15	0.135	/
Back Side	standard	50%RB	50	38150/2610	23.50	22.92	-0.046	0.130	1.14	0.149	/
Front Side	standard	50%RB	50	38150/2610	23.50	22.92	-0.001	0.102	1.14	0.117	/
Hotspot (QPSK, Distance 10mm)											
Back Side	standard	1RB	50	38150/2610	24.50	23.88	-0.037	0.290	1.15	0.335	/
Front Side	standard	1RB	50	38150/2610	24.50	23.88	0.021	0.214	1.15	0.247	/
Left Edge	standard	1RB	50	38150/2610	24.50	23.88	0.110	0.107	1.15	0.123	/
Right Edge	standard	1RB	50	38150/2610	24.50	23.88	0.040	0.030	1.15	0.034	/
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	standard	1RB	50	38150/2610	24.50	23.88	0.080	0.461	1.15	0.532	75
Back Side	standard	50%RB	50	38150/2610	23.50	22.92	-0.120	0.248	1.14	0.283	/
Front Side	standard	50%RB	50	38150/2610	23.50	22.92	0.020	0.168	1.14	0.192	/
Left Edge	standard	50%RB	50	38150/2610	23.50	22.92	0.100	0.082	1.14	0.094	/
Right Edge	standard	50%RB	50	38150/2610	23.50	22.92	0.039	0.023	1.14	0.026	/
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	standard	50%RB	50	38150/2610	23.50	22.92	0.080	0.344	1.14	0.393	/
Note: 1. The value with blue color is the maximum SAR Value of each test band. 2. For QPSK with 100% RB allocation, SAR is required when and the highest reported SAR for 1 RB and 50% RB allocation in are ≥ 0.8 W/kg.											

Table 14: LTE Band 41 (Antenna 1)

Test Position	Cover Type	RB size	RB offset	Channel/ Frequency (MHz)	Maximum Allowed Power(dBm)	Conducted Power (dBm)	Drift (dB)	Measured SAR _{1g} (W/kg)	Scaling Factor	Reported SAR _{1g} (W/kg)	Plot No.
Head SAR (QPSK)											
Left Cheek	standard	1RB	0	40840/2615	24.50	24.00	0.010	0.163	1.12	0.183	76
Left Tilt	standard	1RB	0	40840/2615	24.50	24.00	0.000	0.060	1.12	0.067	/
Right Cheek	standard	1RB	0	40840/2615	24.50	24.00	0.025	0.076	1.12	0.085	/
Right Tilt	standard	1RB	0	40840/2615	24.50	24.00	0.000	0.072	1.12	0.081	/
Left Cheek	standard	50%RB	25	40840/2615	23.50	23.06	-0.010	0.120	1.11	0.133	/
Left Tilt	standard	50%RB	25	40840/2615	23.50	23.06	0.020	0.043	1.11	0.048	/
Right Cheek	standard	50%RB	25	40840/2615	23.50	23.06	0.054	0.060	1.11	0.066	/
Right Tilt	standard	50%RB	25	40840/2615	23.50	23.06	-0.020	0.043	1.11	0.047	/
Body-worn (QPSK, Distance 15mm)											
Back Side	standard	1RB	0	40840/2615	24.50	24.00	-0.140	0.145	1.12	0.163	77
Front Side	standard	1RB	0	40840/2615	24.50	24.00	-0.030	0.102	1.12	0.114	/
Back Side	standard	50%RB	25	40840/2615	23.50	23.06	-0.030	0.127	1.11	0.141	/
Front Side	standard	50%RB	25	40840/2615	23.50	23.06	0.046	0.086	1.11	0.095	/
Hotspot (QPSK, Distance 10mm)											
Back Side	standard	1RB	0	40840/2615	24.50	24.00	-0.070	0.325	1.12	0.365	/
Front Side	standard	1RB	0	40840/2615	24.50	24.00	0.014	0.233	1.12	0.261	/
Left Edge	standard	1RB	0	40840/2615	24.50	24.00	0.109	0.113	1.12	0.127	/
Right Edge	standard	1RB	0	40840/2615	24.50	24.00	-0.032	0.031	1.12	0.034	/
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	standard	1RB	0	40840/2615	24.50	24.00	0.020	0.482	1.12	0.541	78
Back Side	standard	50%RB	25	40840/2615	23.50	23.06	0.160	0.255	1.11	0.282	/
Front Side	standard	50%RB	25	40840/2615	23.50	23.06	0.090	0.174	1.11	0.193	/
Left Edge	standard	50%RB	25	40840/2615	23.50	23.06	-0.080	0.088	1.11	0.097	/
Right Edge	standard	50%RB	25	40840/2615	23.50	23.06	0.130	0.022	1.11	0.024	/
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	standard	50%RB	25	40840/2615	23.50	23.06	0.030	0.375	1.11	0.415	/
<p>Note: 1. The value with blue color is the maximum SAR Value of each test band.</p> <p>2. For QPSK with 100% RB allocation, SAR is required when and the highest reported SAR for 1 RB and 50% RB allocation in are ≥ 0.8 W/kg.</p>											



Table 15: GSM 850 (Antenna 2)

Test Position	Cover Type	Channel/Frequency (MHz)	Time slot	Duty Cycle	Tune-up limit (dBm)	Conducted Power (dBm)	Drift (dB)	Measured SAR _{1g} (W/kg)	Scaling Factor	Reported SAR _{1g} (W/kg)	Plot No.
Head SAR(Receiver on)											
Left Cheek	Standard	190/836.6	GSM	1:8.3	30.20	28.91	0.161	0.455	1.35	0.612	/
Left Tilt	Standard	190/836.6	GSM	1:8.3	30.20	28.91	-0.010	0.409	1.35	0.550	/
Right Cheek	Standard	190/836.6	GSM	1:8.3	30.20	28.91	0.070	0.540	1.35	0.727	79
Right Tilt	Standard	190/836.6	GSM	1:8.3	30.20	28.91	0.030	0.466	1.35	0.627	/
Body-worn SAR (Distance 15mm)(Receiver off)											
Back Side	Standard	190/836.6	GSM	1:8.3	33.70	32.31	-0.080	0.278	1.38	0.383	80
Front Side	Standard	190/836.6	GSM	1:8.3	33.70	32.31	0.009	0.201	1.38	0.277	/
Back Side	SIM2	190/836.6	GSM	1:8.3	33.70	32.31	0.104	0.270	1.38	0.372	/
Back Side	Battery 2	190/836.6	GSM	1:8.3	33.70	32.31	0.050	0.265	1.38	0.365	/
Hotspot SAR (Distance 10mm)(Receiver off)											
Back Side	Standard	190/836.6	4Txslots	1:2.07	27.70	26.45	-0.033	0.538	1.33	0.717	81
Front Side	Standard	190/836.6	4Txslots	1:2.07	27.70	26.45	0.020	0.455	1.33	0.607	/
Left Edge	Standard	190/836.6	4Txslots	1:2.07	27.70	26.45	0.090	0.323	1.33	0.431	/
Right Edge	Standard	190/836.6	4Txslots	1:2.07	27.70	26.45	0.022	0.034	1.33	0.045	N/A
Top Edge	Standard	190/836.6	4Txslots	1:2.07	27.70	26.45	0.026	0.408	1.33	0.544	/
Bottom Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<p>Note: 1. The value with blue color is the maximum SAR Value of each test band.</p> <p>2. When multiple slots are used, SAR should be tested to account for the maximum source-based time-averaged output power.</p>											



Table 16: GSM 1900(Antenna 2)

Test Position	Cover Type	Channel/Frequency (MHz)	Time slot	Duty Cycle	Tune-up limit (dBm)	Conducted Power (dBm)	Drift (dB)	Measured SAR _{1g} (W/kg)	Scaling Factor	Reported SAR _{1g} (W/kg)	Plot No.
Head SAR(Receiver on)											
Left Cheek	Standard	661/1880	GSM	1:8.3	29.50	28.03	0.028	0.232	1.40	0.325	/
Left Tilt	Standard	661/1880	GSM	1:8.3	29.50	28.03	0.060	0.216	1.40	0.303	/
Right Cheek	Standard	661/1880	GSM	1:8.3	29.50	28.03	-0.010	0.531	1.40	0.745	82
Right Tilt	Standard	661/1880	GSM	1:8.3	29.50	28.03	0.050	0.486	1.40	0.682	/
Body-worn SAR (Distance 15mm)(Receiver off)											
Back Side	Standard	661/1880	GSM	1:8.3	31.00	29.55	-0.040	0.113	1.40	0.158	83
Front Side	Standard	661/1880	GSM	1:8.3	31.00	29.55	0.105	0.077	1.40	0.108	/
Hotspot SAR (Distance 10mm)(Receiver off)											
Back Side	Standard	661/1880	4Txslots	1:2.07	25.00	23.57	-0.110	0.220	1.39	0.306	/
Front Side	Standard	661/1880	4Txslots	1:2.07	25.00	23.57	0.040	0.138	1.39	0.192	/
Left Edge	Standard	661/1880	4Txslots	1:2.07	25.00	23.57	-0.022	0.154	1.39	0.214	/
Right Edge	Standard	661/1880	4Txslots	1:2.07	25.00	23.57	0.029	0.014	1.39	0.020	/
Top Edge	Standard	661/1880	4Txslots	1:2.07	25.00	23.57	-0.027	0.278	1.39	0.386	84
Bottom Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<p>Note: 1. The value with blue color is the maximum SAR Value of each test band.</p> <p>2. When multiple slots are used, SAR should be tested to account for the maximum source-based time-averaged output power.</p>											

Table 17: UMTS Band II (Antenna 2)

Test Position	Cover Type	Channel/Frequency (MHz)	Channel Type	Duty Cycle	Tune-up limit (dBm)	Conducted Power (dBm)	Drift (dB)	Measured SAR _{1g} (W/kg)	Scaling Factor	Reported SAR _{1g} (W/kg)	Plot No.
Head SAR(Receiver on)											
Left Cheek	Standard	9400/1880	RMC 12.2K	1:1	21.10	19.78	-0.070	0.303	1.36	0.411	/
Left Tilt	Standard	9400/1880	RMC 12.2K	1:1	21.10	19.78	-0.060	0.278	1.36	0.377	/
Right Cheek	Standard	9538/1907.6	RMC 12.2K	1:1	21.10	19.63	0.030	0.762	1.40	1.069	/
	Standard	9400/1880	RMC 12.2K	1:1	21.10	19.78	0.041	0.746	1.36	1.011	/
	Standard	9262/1852.4	RMC 12.2K	1:1	21.10	19.66	0.030	0.712	1.39	0.992	/
Right Tilt	Standard	9538/1907.6	RMC 12.2K	1:1	21.10	19.63	0.190	0.763	1.40	1.070	/
	Standard	9400/1880	RMC 12.2K	1:1	21.10	19.78	0.130	0.784	1.36	1.062	85
	Standard	9262/1852.4	RMC 12.2K	1:1	21.10	19.66	0.070	0.762	1.39	1.062	/
Right Tilt	SIM2	9538/1907.6	RMC 12.2K	1:1	21.10	19.63	0.049	0.722	1.40	1.013	/
Right Tilt	Battery2	9538/1907.6	RMC 12.2K	1:1	21.10	19.63	0.036	0.747	1.40	1.048	/
Body-worn SAR (Distance 15mm)(Receiver off)											
Back Side	Standard	9400/1880	RMC 12.2K	1:1	23.60	22.32	-0.030	0.141	1.34	0.189	86
Front Side	Standard	9400/1880	RMC 12.2K	1:1	23.60	22.32	0.005	0.084	1.34	0.113	/
Hotspot SAR (Distance 10mm)(Receiver off)											
Back Side	Standard	9400/1880	RMC 12.2K	1:1	23.60	22.32	-0.070	0.315	1.34	0.423	/
Front Side	Standard	9400/1880	RMC 12.2K	1:1	23.60	22.32	0.140	0.184	1.34	0.247	/
Left Edge	Standard	9400/1880	RMC 12.2K	1:1	23.60	22.32	-0.025	0.256	1.34	0.344	/
Right Edge	Standard	9400/1880	RMC 12.2K	1:1	23.60	22.32	0.030	0.026	1.34	0.035	/
Top Edge	Standard	9400/1880	RMC 12.2K	1:1	23.60	22.32	-0.026	0.316	1.34	0.424	87
Bottom Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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

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

Table 18: UMTS Band IV (Antenna 2)

Test Position	Cover Type	Channel/Frequency (MHz)	Channel Type	Duty Cycle	Tune-up limit (dBm)	Conducted Power (dBm)	Drift (dB)	Measured SAR _{1g} (W/kg)	Scaling Factor	Reported SAR _{1g} (W/kg)	Plot No.
Head SAR(Receiver on)											
Left Cheek	Standard	1413/1732.6	RMC 12.2K	1:1	20.30	18.53	0.040	0.180	1.50	0.271	/
Left Tilt	Standard	1413/1732.6	RMC 12.2K	1:1	20.30	18.53	0.020	0.201	1.50	0.302	/
Right Cheek	Standard	1513/1752.6	RMC 12.2K	1:1	20.30	18.55	0.060	0.552	1.50	0.826	/
	Standard	1413/1732.6	RMC 12.2K	1:1	20.30	18.53	0.120	0.557	1.50	0.837	/
	Standard	1312/1712.4	RMC 12.2K	1:1	20.30	18.45	0.110	0.564	1.53	0.864	/
Right Tilt	Standard	1513/1752.6	RMC 12.2K	1:1	20.30	18.55	0.170	0.578	1.50	0.865	/
	Standard	1413/1732.6	RMC 12.2K	1:1	20.30	18.53	0.160	0.584	1.50	0.878	/
	Standard	1312/1712.4	RMC 12.2K	1:1	20.30	18.45	0.130	0.595	1.53	0.911	88
Body-worn SAR (Distance 15mm)(Receiver off)											
Back Side	Standard	1413/1732.6	RMC 12.2K	1:1	23.30	21.57	0.180	0.147	1.49	0.219	89
Front Side	Standard	1413/1732.6	RMC 12.2K	1:1	23.30	21.57	-0.013	0.108	1.49	0.161	/
Hotspot SAR (Distance 10mm)(Receiver off)											
Back Side	Standard	1413/1732.6	RMC 12.2K	1:1	23.30	21.57	-0.040	0.307	1.49	0.457	90
Front Side	Standard	1413/1732.6	RMC 12.2K	1:1	23.30	21.57	0.029	0.215	1.49	0.320	/
Left Edge	Standard	1413/1732.6	RMC 12.2K	1:1	23.30	21.57	-0.080	0.183	1.49	0.273	/
Right Edge	Standard	1413/1732.6	RMC 12.2K	1:1	23.30	21.57	0.150	0.037	1.49	0.055	N/A
Top Edge	Standard	1413/1732.6	RMC 12.2K	1:1	23.30	21.57	-0.140	0.163	1.49	0.243	/
Bottom Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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

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



Table 19: UMTS Band V (Antenna 2)

Test Position	Cover Type	Channel/Frequency (MHz)	Channel Type	Duty Cycle	Tune-up limit (dBm)	Conducted Power (dBm)	Drift (dB)	Measured SAR _{1g} (W/kg)	Scaling Factor	Reported SAR _{1g} (W/kg)	Plot No.
Head SAR(Receiver on)											
Left Cheek	Standard	4183/836.6	RMC 12.2K	1:1	21.50	20.33	0.020	0.535	1.31	0.700	/
Left Tilt	Standard	4183/836.6	RMC 12.2K	1:1	21.50	20.33	0.010	0.490	1.31	0.641	/
Right Cheek	Standard	4233/846.6	RMC 12.2K	1:1	21.50	20.35	-0.030	0.684	1.30	0.891	91
	Standard	4183/836.6	RMC 12.2K	1:1	21.50	20.33	-0.032	0.671	1.31	0.878	/
	Standard	4132/826.4	RMC 12.2K	1:1	21.50	20.35	-0.040	0.652	1.30	0.850	/
Right Tilt	Standard	4183/836.6	RMC 12.2K	1:1	21.50	20.33	-0.080	0.601	1.31	0.787	/
Body-worn SAR (Distance 15mm)(Receiver off)											
Back Side	Standard	4183/836.6	RMC 12.2K	1:1	24.50	23.33	-0.090	0.248	1.31	0.325	92
Front Side	Standard	4183/836.6	RMC 12.2K	1:1	24.50	23.33	0.100	0.202	1.31	0.264	/
Hotspot SAR (Distance 10mm)(Receiver off)											
Back Side	Standard	4233/846.6	RMC 12.2K	1:1	24.50	23.35	-0.050	0.672	1.30	0.876	93
	Standard	4183/836.6	RMC 12.2K	1:1	24.50	23.33	-0.060	0.633	1.31	0.829	/
	Standard	4132/826.4	RMC 12.2K	1:1	24.50	23.40	-0.030	0.576	1.29	0.742	/
Front Side	Standard	4183/836.6	RMC 12.2K	1:1	24.50	23.33	0.110	0.520	1.31	0.681	/
Left Edge	Standard	4183/836.6	RMC 12.2K	1:1	24.50	23.33	0.080	0.298	1.31	0.390	/
Right Edge	Standard	4183/836.6	RMC 12.2K	1:1	24.50	23.33	0.170	0.051	1.31	0.067	/
Top Edge	Standard	4183/836.6	RMC 12.2K	1:1	24.50	23.33	0.060	0.427	1.31	0.559	/
Bottom Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Back Side	SIM2	4233/846.6	RMC 12.2K	1:1	24.50	23.35	-0.050	0.554	1.30	0.722	/
Back Side	Battery 2	4233/846.6	RMC 12.2K	1:1	24.50	23.35	-0.010	0.583	1.30	0.760	/

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

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

Table 20: LTE Band 2 (Antenna 2)

Test Position	Cover Type	RB size	RB offset	Channel/ Frequency (MHz)	Maximum Allowed Power (dBm)	Conducted Power (dBm)	Drift (dB)	Measured SAR _{1g} (W/kg)	Scaling Factor	Reported SAR _{1g} (W/kg)	Plot No.
Head SAR(Receiver on)											
Left Cheek	Standard	1	0	19100/1900	20.60	19.73	0.051	0.409	1.22	0.500	/
Left Tilt	Standard	1	0	19100/1900	20.60	19.73	0.060	0.418	1.22	0.511	/
Right Cheek	Standard	1	0	19100/1900	20.60	19.73	0.030	0.742	1.22	0.907	/
	Standard	1	0	18900/1880	20.60	19.63	0.130	0.740	1.25	0.925	/
	Standard	1	0	18700/1860	20.60	19.68	0.110	0.727	1.24	0.899	/
Right Tilt	Standard	1	0	19100/1900	20.60	19.73	0.050	0.838	1.22	1.024	/
	Standard	1	0	18900/1880	20.60	19.63	0.140	0.795	1.25	0.994	/
	Standard	1	0	18700/1860	20.60	19.68	-0.080	0.848	1.24	1.048	94
Left Cheek	Standard	50%	0	19100/1900	20.60	19.77	0.140	0.407	1.21	0.493	/
Left Tilt	Standard	50%	0	19100/1900	20.60	19.77	0.140	0.335	1.21	0.406	/
Right Cheek	Standard	50%	0	19100/1900	20.60	19.77	0.120	0.737	1.21	0.892	/
	Standard	50%	0	18900/1880	20.60	19.76	0.160	0.710	1.21	0.862	/
	Standard	50%	0	18700/1860	20.60	19.69	0.100	0.676	1.23	0.834	/
Right Tilt	Standard	50%	0	19100/1900	20.60	19.77	0.050	0.798	1.21	0.966	/
	Standard	50%	0	18900/1880	20.60	19.76	0.190	0.843	1.21	1.023	/
	Standard	50%	0	18700/1860	20.60	19.69	0.150	0.806	1.23	0.994	/
Right Cheek	Standard	100%	0	19100/1900	20.60	19.73	0.080	0.683	1.22	0.834	/
	Standard	100%	0	18900/1880	20.60	19.72	0.170	0.675	1.22	0.827	/
	Standard	100%	0	18700/1860	20.60	19.71	0.140	0.656	1.23	0.805	/
Right Tilt	Standard	100%	0	19100/1900	20.60	19.73	0.160	0.814	1.22	0.995	/
	Standard	100%	0	18900/1880	20.60	19.72	0.035	0.824	1.22	1.009	/
	Standard	100%	0	18700/1860	20.60	19.71	0.140	0.788	1.23	0.967	/
Right Tilt	Repeated	1	0	18700/1860	20.60	19.68	-0.021	0.833	1.24	1.030	/
Body-worn SAR (Distance 15mm)(Receiver off)											
Back Side	Standard	1	99	18900/1880	23.10	21.75	-0.016	0.134	1.36	0.183	/
Front Side	Standard	1	99	18900/1880	23.10	21.75	0.104	0.092	1.36	0.126	/
Back Side	Standard	50%	25	19100/1900	22.10	21.77	0.050	0.151	1.08	0.163	95
Front Side	Standard	50%	25	19100/1900	22.10	21.77	-0.070	0.106	1.08	0.114	/
Hotspot SAR (Distance 10mm)(Receiver off)											
Back Side	Standard	1	99	18900/1880	23.10	21.75	-0.030	0.305	1.36	0.416	/
Front Side	Standard	1	99	18900/1880	23.10	21.75	0.160	0.173	1.36	0.236	/
Left Edge	Standard	1	99	18900/1880	23.10	21.75	-0.080	0.152	1.36	0.207	/
Right Edge	Standard	1	99	18900/1880	23.10	21.75	0.090	0.095	1.36	0.130	/
Top Edge	Standard	1	99	18900/1880	23.10	21.75	-0.027	0.324	1.36	0.442	/



Bottom Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Back Side	Standard	50%	25	19100/1900	22.10	21.77	0.030	0.317	1.08	0.342	/
Front Side	Standard	50%	25	19100/1900	22.10	21.77	0.035	0.184	1.08	0.199	/
Left Edge	Standard	50%	25	19100/1900	22.10	21.77	-0.066	0.149	1.08	0.161	/
Right Edge	Standard	50%	25	19100/1900	22.10	21.77	0.030	0.093	1.08	0.100	/
Top Edge	Standard	50%	25	19100/1900	22.10	21.77	-0.030	0.345	1.08	0.372	96
Bottom Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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

2. For QPSK with 100% RB allocation, SAR is required when and the highest reported SAR for 1 RB and 50% RB allocation in are ≥ 0.8 W/kg.

Measurement Variability

Test Position	Channel/ Frequency(MHz)	MAX Measured SAR _{1g} (W/kg)	1 st Repeated SAR _{1g} (W/kg)	Ratio
Right Tilt	18700/1860	0.848	0.833	1.02

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 ($\sim 10\%$ 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 21: LTE Band 4 (Antenna 2)

Test Position	Cover Type	RB size	RB offset	Channel/Frequency (MHz)	Maximum Allowed Power (dBm)	Conducted Power (dBm)	Drift (dB)	Measured SAR _{1g} (W/kg)	Scaling Factor	Reported SAR _{1g} (W/kg)	Plot No.
Head SAR(Receiver on)											
Left Cheek	Standard	1	0	20050/1720	19.80	18.75	0.020	0.232	1.27	0.295	/
Left Tilt	Standard	1	0	20050/1720	19.80	18.75	0.080	0.195	1.27	0.248	/
Right Cheek	Standard	1	0	20050/1720	19.80	18.75	0.067	0.481	1.27	0.613	/
Right Tilt	Standard	1	0	20050/1720	19.80	18.75	0.060	0.499	1.27	0.635	/
Left Cheek	Standard	50%	0	20050/1720	19.80	18.66	-0.130	0.226	1.30	0.294	/
Left Tilt	Standard	50%	0	20050/1720	19.80	18.66	0.030	0.195	1.30	0.254	/
Right Cheek	Standard	50%	0	20050/1720	19.80	18.66	0.090	0.479	1.30	0.623	/
Right Tilt	Standard	50%	0	20050/1720	19.80	18.66	0.070	0.500	1.30	0.650	97
Body-worn SAR (Distance 15mm)(Receiver off)											
Back Side	Standard	1	0	20300/1745	22.80	21.20	0.180	0.119	1.45	0.172	98
Front Side	Standard	1	0	20300/1745	22.80	21.20	-0.012	0.087	1.45	0.126	/
Back Side	Standard	50%	0	20050/1720	21.80	21.15	0.101	0.110	1.16	0.128	/
Front Side	Standard	50%	0	20050/1720	21.80	21.15	-0.005	0.083	1.16	0.096	/
Hotspot SAR (Distance 10mm)(Receiver off)											
Back Side	Standard	1	0	20300/1745	22.80	21.20	0.030	0.291	1.45	0.421	/
Front Side	Standard	1	0	20300/1745	22.80	21.20	0.044	0.198	1.45	0.286	/
Left Edge	Standard	1	0	20300/1745	22.80	21.20	0.000	0.244	1.45	0.353	/
Right Edge	Standard	1	0	20300/1745	22.80	21.20	0.043	0.060	1.45	0.086	/
Top Edge	Standard	1	0	20300/1745	22.80	21.20	0.050	0.348	1.45	0.503	99
Bottom Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Back Side	Standard	50%	0	20050/1720	21.80	21.15	0.040	0.288	1.16	0.334	/
Front Side	Standard	50%	0	20050/1720	21.80	21.15	0.035	0.197	1.16	0.229	/
Left Edge	Standard	50%	0	20050/1720	21.80	21.15	0.020	0.225	1.16	0.261	/
Right Edge	Standard	50%	0	20050/1720	21.80	21.15	0.139	0.054	1.16	0.063	/
Top Edge	Standard	50%	0	20050/1720	21.80	21.15	-0.010	0.344	1.16	0.400	/
Bottom Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Note: 1. The value with blue color is the maximum SAR Value of each test band. 2. For QPSK with 100% RB allocation, SAR is required when and the highest reported SAR for 1 RB and 50% RB allocation in are ≥ 0.8 W/kg.											



Table 22: LTE Band 5(Antenna 2)

Test Position	Cover Type	RB size	RB offset	Channel/ Frequency (MHz)	Maximum Allowed Power (dBm)	Conducted Power (dBm)	Drift (dB)	Measured SAR _{1g} (W/kg)	Scaling Factor	Reported SAR _{1g} (W/kg)	Plot No.
Head SAR(Receiver on)											
Left Cheek	Standard	1	49	20600/844	21.50	20.46	0.050	0.538	1.27	0.684	/
Left Tilt	Standard	1	49	20600/844	21.50	20.46	-0.020	0.483	1.27	0.614	/
Right Cheek	Standard	1	49	20600/844	21.50	20.46	-0.053	0.644	1.27	0.818	/
	Standard	1	0	20525/836.5	21.50	20.41	0.010	0.656	1.29	0.843	100
	Standard	1	0	20450/829	21.50	20.44	0.000	0.627	1.28	0.800	/
Right Tilt	Standard	1	49	20600/844	21.50	20.46	0.025	0.594	1.27	0.755	/
Left Cheek	Standard	50%	0	20450/829	21.50	20.51	0.000	0.493	1.26	0.619	/
Left Tilt	Standard	50%	0	20450/829	21.50	20.51	-0.010	0.443	1.26	0.556	/
Right Cheek	Standard	50%	0	20450/829	21.50	20.51	0.020	0.628	1.26	0.789	/
Right Tilt	Standard	50%	0	20450/829	21.50	20.51	0.054	0.564	1.26	0.708	/
Right Cheek	Standard	100%	0	20600/844	21.50	20.38	-0.014	0.593	1.29	0.767	/
Body-worn SAR (Distance 15mm)(Receiver off)											
Back Side	Standard	1	49	20450/829	24.50	23.19	-0.070	0.263	1.35	0.356	101
Front Side	Standard	1	49	20450/829	24.50	23.19	0.014	0.205	1.35	0.277	/
Back Side	Standard	50%	25	20600/844	23.50	22.24	0.109	0.211	1.34	0.282	/
Front Side	Standard	50%	25	20600/844	23.50	22.24	-0.032	0.176	1.34	0.235	/
Hotspot SAR (Distance 10mm)(Receiver off)											
Back Side	Standard	1	49	20600/844	24.50	23.15	-0.140	0.641	1.36	0.875	102
	Standard	1	25	20525/836.5	24.50	23.10	-0.030	0.610	1.38	0.842	/
	Standard	1	49	20450/829	24.50	23.19	-0.030	0.610	1.35	0.825	/
Front Side	Standard	1	49	20450/829	24.50	23.19	0.046	0.443	1.35	0.599	/
Left Edge	Standard	1	49	20450/829	24.50	23.19	0.020	0.296	1.35	0.400	/
Right Edge	Standard	1	49	20450/829	24.50	23.19	0.160	0.052	1.35	0.071	/
Top Edge	Standard	1	49	20450/829	24.50	23.19	0.090	0.440	1.35	0.595	/
Bottom Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Back Side	Standard	50%	25	20600/844	23.50	22.24	-0.080	0.515	1.34	0.688	/
Front Side	Standard	50%	25	20600/844	23.50	22.24	0.130	0.371	1.34	0.496	/
Left Edge	Standard	50%	25	20600/844	23.50	22.24	0.030	0.228	1.34	0.305	/
Right Edge	Standard	50%	25	20600/844	23.50	22.24	0.090	0.038	1.34	0.051	/
Top Edge	Standard	50%	25	20600/844	23.50	22.24	0.080	0.388	1.34	0.519	/
Bottom Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Back Side	Standard	100%	0	20600/844	23.50	22.23	-0.100	0.463	1.34	0.620	/
Note: 1. The value with blue color is the maximum SAR Value of each test band.											
2. For QPSK with 100% RB allocation, SAR is required when and the highest reported SAR for 1 RB and 50% RB allocation in are ≥ 0.8 W/kg.											

Table 23: LTE Band 7 (Antenna 2)

Test Position	Cover Type	RB size	RB offset	Channel/Frequency (MHz)	Maximum Allowed Power (dBm)	Conducted Power (dBm)	Drift (dB)	Measured SAR _{1g} (W/kg)	Scaling Factor	Reported SAR _{1g} (W/kg)	Plot No.
Head SAR(Receiver on)											
Left Cheek	Standard	1	0	20850/2510	19.50	18.57	-0.070	0.175	1.24	0.217	/
Left Tilt	Standard	1	0	20850/2510	19.50	18.57	0.021	0.196	1.24	0.243	/
Right Cheek	Standard	1	99	21350/2560	19.50	18.46	0.032	0.611	1.27	0.776	/
	Standard	1	99	21100/2535	19.50	18.31	0.029	0.607	1.32	0.798	/
	Standard	1	0	20850/2510	19.50	18.57	0.031	0.657	1.24	0.814	103
Right Tilt	Standard	1	0	20850/2510	19.50	18.57	0.028	0.492	1.24	0.609	/
Left Cheek	Standard	50%	0	20850/2510	19.50	18.62	0.024	0.170	1.22	0.208	/
Left Tilt	Standard	50%	0	20850/2510	19.50	18.62	0.033	0.194	1.22	0.238	/
Right Cheek	Standard	50%	0	20850/2510	19.50	18.62	0.036	0.568	1.22	0.696	/
Right Tilt	Standard	50%	0	20850/2510	19.50	18.62	0.025	0.378	1.22	0.463	/
Right Cheek	Standard	100%	0	20850/2510	19.50	18.64	0.016	0.490	1.22	0.597	/
Body-worn SAR (Distance 15mm)(Receiver off)											
Back Side	Standard	1	99	20850/2510	22.50	21.44	0.002	0.126	1.28	0.161	/
Front Side	Standard	1	99	20850/2510	22.50	21.44	-0.030	0.119	1.28	0.152	/
Back Side	Standard	50%	0	20850/2510	21.50	21.27	0.180	0.135	1.05	0.142	104
Front Side	Standard	50%	0	20850/2510	21.50	21.27	-0.015	0.130	1.05	0.137	/
Hotspot SAR (Distance 10mm)(Receiver off)											
Back Side	Standard	1	99	20850/2510	22.50	21.44	0.070	0.251	1.28	0.320	/
Front Side	Standard	1	99	20850/2510	22.50	21.44	0.070	0.233	1.28	0.297	/
Left Edge	Standard	1	99	20850/2510	22.50	21.44	-0.150	0.432	1.28	0.551	/
Right Edge	Standard	1	99	20850/2510	22.50	21.44	0.119	0.008	1.28	0.010	/
Top Edge	Standard	1	99	20850/2510	22.50	21.44	0.070	0.185	1.28	0.236	/
Bottom Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Back Side	Standard	50%	0	20850/2510	21.50	21.27	0.190	0.260	1.05	0.274	/
Front Side	Standard	50%	0	20850/2510	21.50	21.27	0.120	0.260	1.05	0.274	/
Left Edge	Standard	50%	0	20850/2510	21.50	21.27	-0.040	0.436	1.05	0.460	105
Right Edge	Standard	50%	0	20850/2510	21.50	21.27	0.021	0.007	1.05	0.007	/
Top Edge	Standard	50%	0	20850/2510	21.50	21.27	0.150	0.187	1.05	0.197	/
Bottom Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<p>Note: 1. The value with blue color is the maximum SAR Value of each test band.</p> <p>2. For QPSK with 100% RB allocation, SAR is required when and the highest reported SAR for 1 RB and 50% RB allocation in are ≥ 0.8 W/kg.</p>											

Table 24: LTE Band 12(Antenna 2)

Test Position	Cover Type	RB size	RB offset	Channel/ Frequency (MHz)	Maximum Allowed Power (dBm)	Conducted Power (dBm)	Drift (dB)	Measured SAR _{1g} (W/kg)	Scaling Factor	Reported SAR _{1g} (W/kg)	Plot No.
Head SAR(Receiver on)											
Left Cheek	Standard	1	49	23095/707.5	21.00	19.75	-0.040	0.373	1.33	0.497	/
Left Tilt	Standard	1	49	23095/707.5	21.00	19.75	0.010	0.464	1.33	0.619	/
Right Cheek	Standard	1	49	23095/707.5	21.00	19.75	0.030	0.530	1.33	0.707	/
Right Tilt	Standard	1	49	23130/711	21.00	19.68	0.000	0.654	1.36	0.886	/
	Standard	1	49	23095/707.5	21.00	19.75	0.030	0.662	1.33	0.883	/
	Standard	1	49	23060/704	21.00	19.69	0.010	0.645	1.35	0.872	/
Left Cheek	Standard	50%	25	23060/704	21.00	19.76	-0.010	0.356	1.33	0.474	/
Left Tilt	Standard	50%	25	23060/704	21.00	19.76	0.170	0.517	1.33	0.688	/
Right Cheek	Standard	50%	25	23060/704	21.00	19.68	0.030	0.522	1.36	0.707	/
Right Tilt	Standard	50%	0	23130/711	21.00	19.73	0.010	0.669	1.34	0.896	106
	Standard	50%	0	23095/707.5	21.00	19.69	0.000	0.661	1.35	0.894	/
	Standard	50%	25	23060/704	21.00	19.76	0.120	0.663	1.33	0.882	/
Right Tilt	Standard	100%	0	23095/707.5	21.00	19.73	0.037	0.543	1.34	0.727	/
Body-worn SAR (Distance 15mm)(Receiver off)											
Back Side	Standard	1	49	23060/704	24.50	23.31	0.020	0.136	1.32	0.179	107
Front Side	Standard	1	49	23060/704	24.50	23.31	0.012	0.094	1.32	0.124	/
Back Side	Standard	50%	25	23095/707.5	23.50	22.33	0.007	0.128	1.31	0.168	/
Front Side	Standard	50%	25	23095/707.5	23.50	22.33	-0.055	0.090	1.31	0.118	/
Hotspot SAR (Distance 10mm)(Receiver off)											
Back Side	Standard	1	49	23060/704	24.50	23.31	0.110	0.535	1.32	0.704	108
Front Side	Standard	1	49	23060/704	24.50	23.31	0.030	0.225	1.32	0.296	/
Left Edge	Standard	1	49	23060/704	24.50	23.31	0.080	0.139	1.32	0.183	/
Right Edge	Standard	1	49	23060/704	24.50	23.31	0.070	0.039	1.32	0.052	/
Top Edge	Standard	1	49	23060/704	24.50	23.31	-0.030	0.162	1.32	0.213	/
Bottom Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Back Side	Standard	50%	25	23095/707.5	23.50	22.33	0.030	0.421	1.31	0.551	/
Front Side	Standard	50%	25	23095/707.5	23.50	22.33	0.010	0.231	1.31	0.302	/
Left Edge	Standard	50%	25	23095/707.5	23.50	22.33	0.060	0.142	1.31	0.186	/
Right Edge	Standard	50%	25	23095/707.5	23.50	22.33	0.070	0.040	1.31	0.052	/
Top Edge	Standard	50%	25	23095/707.5	23.50	22.33	-0.060	0.168	1.31	0.220	/
Bottom Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<p>Note: 1. The value with blue color is the maximum SAR Value of each test band.</p> <p>2. For QPSK with 100% RB allocation, SAR is required when and the highest reported SAR for 1 RB and 50% RB allocation in are ≥ 0.8 W/kg.</p>											

Table 25: LTE Band 17(Antenna 2)

Test Position	Cover Type	RB size	RB offset	Channel/ Frequency (MHz)	Maximum Allowed Power (dBm)	Conducted Power (dBm)	Drift (dB)	Measured SAR _{1g} (W/kg)	Scaling Factor	Reported SAR _{1g} (W/kg)	Plot No.
Head SAR(Receiver on)											
Left Cheek	Standard	1	25	23780/709	21.00	19.86	0.098	0.439	1.30	0.571	/
Left Tilt	Standard	1	25	23780/709	21.00	19.86	0.012	0.416	1.30	0.541	/
Right Cheek	Standard	1	25	23780/709	21.00	19.86	0.010	0.525	1.30	0.683	/
Right Tilt	Standard	1	25	23780/709	21.00	19.86	0.070	0.442	1.30	0.575	/
Left Cheek	Standard	50%	13	23800/711	21.00	19.85	0.070	0.445	1.30	0.580	/
Left Tilt	Standard	50%	13	23800/711	21.00	19.85	0.018	0.433	1.30	0.564	/
Right Cheek	Standard	50%	13	23800/711	21.00	19.85	0.040	0.544	1.30	0.709	109
Right Tilt	Standard	50%	13	23800/711	21.00	19.85	0.078	0.474	1.30	0.618	/
Body-worn SAR (Distance 15mm)(Receiver off)											
Back Side	Standard	1	49	23780/709	24.50	23.29	0.020	0.140	1.32	0.185	110
Front Side	Standard	1	49	23780/709	24.50	23.29	-0.046	0.074	1.32	0.098	/
Back Side	Standard	50%	25	23790/710	23.50	22.29	0.150	0.132	1.32	0.174	/
Front Side	Standard	50%	25	23790/710	23.50	22.29	-0.012	0.065	1.32	0.086	/
Hotspot SAR (Distance 10mm)(Receiver off)											
Back Side	Standard	1	49	23780/709	24.50	23.29	-0.050	0.534	1.32	0.706	111
Front Side	Standard	1	49	23780/709	24.50	23.29	0.050	0.256	1.32	0.338	/
Left Edge	Standard	1	49	23780/709	24.50	23.29	0.030	0.151	1.32	0.200	/
Right Edge	Standard	1	49	23780/709	24.50	23.29	0.040	0.040	1.32	0.053	/
Top Edge	Standard	1	49	23780/709	24.50	23.29	-0.030	0.176	1.32	0.233	/
Bottom Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Back Side	Standard	50%	25	23790/710	23.50	22.29	0.170	0.438	1.32	0.579	/
Front Side	Standard	50%	25	23790/710	23.50	22.29	0.060	0.251	1.32	0.332	/
Left Edge	Standard	50%	25	23790/710	23.50	22.29	0.030	0.147	1.32	0.194	/
Right Edge	Standard	50%	25	23790/710	23.50	22.29	0.050	0.040	1.32	0.053	/
Top Edge	Standard	50%	25	23790/710	23.50	22.29	-0.040	0.176	1.32	0.233	/
Bottom Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<p>Note: 1. The value with blue color is the maximum SAR Value of each test band.</p> <p>2. For QPSK with 100% RB allocation, SAR is required when and the highest reported SAR for 1 RB and 50% RB allocation in are ≥ 0.8 W/kg.</p>											

Table 26: LTE Band 26 (Antenna 2)

Test Position	Cover Type	RB size	RB offset	Channel/ Frequency (MHz)	Maximum Allowed Power (dBm)	Conducted Power (dBm)	Drift (dB)	Measured SAR _{1g} (W/kg)	Scaling Factor	Reported SAR _{1g} (W/kg)	Plot No.
Head SAR(Receiver on)											
Left Cheek	Standard	1	38	26775/822.5	21.00	20.08	0.105	0.379	1.24	0.468	/
Left Tilt	Standard	1	38	26775/822.5	21.00	20.08	0.180	0.368	1.24	0.455	/
Right Cheek	Standard	1	38	26775/822.5	21.00	20.08	0.020	0.596	1.24	0.737	/
Right Tilt	Standard	1	38	26775/822.5	21.00	20.08	0.040	0.575	1.24	0.711	/
Left Cheek	Standard	50%	18	26965/841.5	21.00	20.02	0.017	0.448	1.25	0.561	/
Left Tilt	Standard	50%	18	26965/841.5	21.00	20.02	0.170	0.436	1.25	0.546	/
Right Cheek	Standard	50%	18	26965/841.5	21.00	20.02	-0.090	0.660	1.25	0.827	112
	Standard	50%	18	26865/831.5	21.00	19.98	-0.080	0.650	1.26	0.822	/
	Standard	50%	39	26775/822.5	21.00	20.01	-0.050	0.636	1.26	0.799	/
Right Tilt	Standard	50%	18	26965/841.5	21.00	20.02	0.000	0.633	1.25	0.793	/
Right Cheek	Standard	100%	0	26775/822.5	21.00	19.94	-0.021	0.587	1.28	0.749	/
Body-worn SAR (Distance 15mm)(Receiver off)											
Back Side	Standard	1	38	26865/831.5	24.50	23.35	-0.060	0.263	1.30	0.343	113
Front Side	Standard	1	38	26865/831.5	24.50	23.35	-0.044	0.200	1.30	0.261	/
Back Side	Standard	50%	0	26775/822.5	23.50	22.42	0.109	0.198	1.28	0.254	/
Front Side	Standard	50%	0	26775/822.5	23.50	22.42	0.005	0.170	1.28	0.218	/
Hotspot SAR (Distance 10mm)(Receiver off)											
Back Side	Standard	1	38	26865/831.5	24.50	23.35	-0.070	0.538	1.30	0.701	114
Front Side	Standard	1	38	26865/831.5	24.50	23.35	0.120	0.451	1.30	0.588	/
Left Edge	Standard	1	38	26865/831.5	24.50	23.35	0.030	0.303	1.30	0.395	/
Right Edge	Standard	1	38	26865/831.5	24.50	23.35	0.021	0.051	1.30	0.066	/
Top Edge	Standard	1	38	26865/831.5	24.50	23.35	0.090	0.446	1.30	0.581	/
Bottom Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Back Side	Standard	50%	0	26775/822.5	23.50	22.42	-0.060	0.358	1.28	0.459	/
Front Side	Standard	50%	0	26775/822.5	23.50	22.42	0.110	0.297	1.28	0.381	/
Left Edge	Standard	50%	0	26775/822.5	23.50	22.42	0.020	0.210	1.28	0.269	/
Right Edge	Standard	50%	0	26775/822.5	23.50	22.42	0.020	0.032	1.28	0.041	/
Top Edge	Standard	50%	0	26775/822.5	23.50	22.42	0.100	0.287	1.28	0.368	/
Bottom Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<p>Note: 1. The value with blue color is the maximum SAR Value of each test band.</p> <p>2. For QPSK with 100% RB allocation, SAR is required when and the highest reported SAR for 1 RB and 50% RB allocation in are ≥ 0.8 W/kg.</p>											

Table 27: LTE Band 38 (Antenna 2)

Test Position	Cover Type	RB size	RB offset	Channel/ Frequency (MHz)	Maximum Allowed Power (dBm)	Conducted Power (dBm)	Drift (dB)	Measured SAR _{1g} (W/kg)	Scaling Factor	Reported SAR _{1g} (W/kg)	Plot No.
Head SAR(Receiver on)											
Left Cheek	Standard	1	0	38150/2610	20.50	19.46	0.027	0.115	1.27	0.146	/
Left Tilt	Standard	1	0	38150/2610	20.50	19.46	0.080	0.086	1.27	0.110	/
Right Cheek	Standard	1	0	38150/2610	20.50	19.46	0.032	0.538	1.27	0.684	115
Right Tilt	Standard	1	0	38150/2610	20.50	19.46	0.100	0.435	1.27	0.553	/
Left Cheek	Standard	50%	0	38150/2610	20.50	19.49	0.040	0.117	1.26	0.148	/
Left Tilt	Standard	50%	0	38150/2610	20.50	19.49	0.180	0.087	1.26	0.109	/
Right Cheek	Standard	50%	0	38150/2610	20.50	19.49	0.140	0.536	1.26	0.676	/
Right Tilt	Standard	50%	0	38150/2610	20.50	19.49	0.150	0.436	1.26	0.550	/
Body-worn SAR (Distance 15mm)(Receiver off)											
Back Side	Standard	1	0	38150/2610	24.00	22.98	-0.090	0.124	1.26	0.157	116
Front Side	Standard	1	0	38150/2610	24.00	22.98	0.013	0.075	1.26	0.950	/
Back Side	Standard	50%	0	38000/2595	23.00	22.48	-0.007	0.111	1.13	0.125	/
Front Side	Standard	50%	0	38000/2595	23.00	22.48	0.105	0.064	1.13	0.072	/
Hotspot SAR (Distance 10mm)(Receiver off)											
Back Side	Standard	1	0	38150/2610	24.00	22.98	-0.190	0.316	1.26	0.400	/
Front Side	Standard	1	0	38150/2610	24.00	22.98	0.170	0.199	1.26	0.252	/
Left Edge	Standard	1	0	38150/2610	24.00	22.98	-0.010	0.448	1.26	0.567	117
Right Edge	Standard	1	0	38150/2610	24.00	22.98	0.047	0.017	1.26	0.022	/
Top Edge	Standard	1	0	38150/2610	24.00	22.98	0.050	0.154	1.26	0.195	/
Bottom Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Back Side	Standard	50%	0	38000/2595	23.00	22.48	0.020	0.268	1.13	0.302	/
Front Side	Standard	50%	0	38000/2595	23.00	22.48	0.110	0.168	1.13	0.189	/
Left Edge	Standard	50%	0	38000/2595	23.00	22.48	0.070	0.381	1.13	0.429	/
Right Edge	Standard	50%	0	38000/2595	23.00	22.48	0.060	0.014	1.13	0.015	/
Top Edge	Standard	50%	0	38000/2595	23.00	22.48	0.130	0.134	1.13	0.151	/
Bottom Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<p>Note: 1. The value with blue color is the maximum SAR Value of each test band.</p> <p>2. For QPSK with 100% RB allocation, SAR is required when and the highest reported SAR for 1 RB and 50% RB allocation in are ≥ 0.8 W/kg.</p>											

Table 28: LTE Band 41 (Antenna 2)

Test Position	Cover Type	RB size	RB offset	Channel/Frequency (MHz)	Maximum Allowed Power (dBm)	Conducted Power (dBm)	Drift (dB)	Measured SAR _{1g} (W/kg)	Scaling Factor	Reported SAR _{1g} (W/kg)	Plot No.
Head SAR(Receiver on)											
Left Cheek	Standard	1	99	40840/2615	20.50	20.04	-0.015	0.146	1.11	0.162	/
Left Tilt	Standard	1	99	40840/2615	20.50	20.04	0.026	0.101	1.11	0.112	/
Right Cheek	Standard	1	0	41140/2645	20.50	19.90	-0.012	0.472	1.15	0.542	/
		1	99	40840/2615	20.50	20.04	0.030	0.614	1.11	0.683	118
		1	99	40540/2585	20.50	20.02	0.116	0.570	1.12	0.637	/
		1	99	40240/2555	20.50	19.91	-0.050	0.426	1.15	0.488	/
Right Tilt	Standard	1	99	40840/2615	20.50	20.04	0.108	0.527	1.11	0.586	/
Left Cheek	Standard	50%	25	41140/2645	20.50	20.02	0.028	0.138	1.12	0.154	/
Left Tilt	Standard	50%	25	41140/2645	20.50	20.02	0.190	0.098	1.12	0.109	/
Right Cheek	Standard	50%	25	41140/2645	20.50	20.02	0.030	0.591	1.12	0.660	/
		50%	25	40840/2615	20.50	20.00	-0.025	0.510	1.12	0.572	/
		50%	0	40540/2585	20.50	20.01	0.108	0.524	1.12	0.587	/
		50%	0	40240/2555	20.50	19.96	-0.064	0.493	1.13	0.558	/
Right Tilt	Standard	50%	25	41140/2645	20.50	20.02	0.190	0.525	1.12	0.586	/
Body-worn SAR (Distance 15mm)(Receiver off)											
Back Side	Standard	1	99	40540/2585	24.00	23.03	0.080	0.118	1.25	0.148	119
Front Side	Standard	1	99	40540/2585	24.00	23.03	-0.024	0.097	1.25	0.121	/
Back Side	Standard	50%	50	40840/2615	23.00	22.57	-0.108	0.106	1.10	0.117	/
Front Side	Standard	50%	50	40840/2615	23.00	22.57	0.050	0.088	1.10	0.097	/
Hotspot SAR (Distance 10mm)(Receiver off)											
Back Side	Standard	1	99	40540/2585	24.00	23.03	0.038	0.270	1.25	0.338	/
Front Side	Standard	1	99	40540/2585	24.00	23.03	0.026	0.203	1.25	0.254	/
Left Edge	Standard	1	99	40540/2585	24.00	23.03	0.022	0.450	1.25	0.563	120
Right Edge	Standard	1	99	40540/2585	24.00	23.03	0.027	0.011	1.25	0.014	/
Top Edge	Standard	1	99	40540/2585	24.00	23.03	-0.110	0.151	1.25	0.189	/
Bottom Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Back Side	Standard	50%	50	40840/2615	23.00	22.57	-0.010	0.231	1.10	0.255	/
Front Side	Standard	50%	50	40840/2615	23.00	22.57	0.030	0.178	1.10	0.197	/
Left Edge	Standard	50%	50	40840/2615	23.00	22.57	0.138	0.391	1.10	0.432	/
Right Edge	Standard	50%	50	40840/2615	23.00	22.57	0.033	0.006	1.10	0.006	/
Top Edge	Standard	50%	50	40840/2615	23.00	22.57	0.026	0.129	1.10	0.142	/
Bottom Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<p>Note: 1. The value with blue color is the maximum SAR Value of each test band.</p> <p>2. For QPSK with 100% RB allocation, SAR is required when and the highest reported SAR for 1 RB and 50% RB allocation in are ≥ 0.8 W/kg.</p>											

Table 29: Wi-Fi (2.4G)

Test Position	Cover Type	Channel/Frequency (MHz)	Mode	Duty Cycle	Tune-up limit (dBm)	Conducted Power (dBm)	Drift (dB)	Area Scan Max.SAR (W/Kg)	Measured SAR _{1g} (W/kg)	Scaling Factor	Reported SAR _{1g} (W/kg)	Plot No.
Head SAR (Receiver on)												
Left Cheek	standard	6/2437	802.11b	99.51%	14.00	12.80	0.020	0.217	0.224	1.32	0.297	121
Left Tilt	standard	6/2437	802.11b	99.51%	14.00	12.80	0.004	0.150	0.152	1.32	0.201	/
Right Cheek	standard	6/2437	802.11b	99.51%	14.00	12.80	-0.087	0.206	0.210	1.32	0.278	/
Right Tilt	standard	6/2437	802.11b	99.51%	14.00	12.80	0.041	0.114	0.118	1.32	0.156	/
Body-worn (Distance 15mm) (Receiver off)												
Back Side	standard	1/2412	802.11b	99.51%	17.00	16.11	0.025	0.029	0.031	1.23	0.038	/
Front Side	standard	1/2412	802.11b	99.51%	17.00	16.11	0.096	0.033	0.032	1.23	0.039	122
Hotspot (Distance 10mm) (Receiver off)												
Back Side	standard	1/2412	802.11b	99.51%	17.00	16.11	0.010	0.057	0.060	1.23	0.074	/
Front Side	standard	1/2412	802.11b	99.51%	17.00	16.11	0.102	0.060	0.062	1.23	0.076	/
Left Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Right Edge	standard	1/2412	802.11b	99.51%	17.00	16.11	-0.170	0.083	0.096	1.23	0.118	123
Top Edge	standard	1/2412	802.11b	99.51%	17.00	16.11	0.014	0.027	0.031	1.23	0.038	/
Bottom Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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

2. For WIFI 2.4G, when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for the following 2.4 GHz OFDM conditions.

Table 30: Wi-Fi (5G, U-NII-1)

Test Position	Cover Type	Channel/Frequency (MHz)	Mode 802.11a	Duty Cycle	Tune-up limit (dBm)	Conducted Power (dBm)	Drift (dB)	Area Scan Max.SAR (W/Kg)	Measured SAR _{1g} (W/kg)	Scaling Factor	Reported SAR _{1g} (W/kg)	Plot No.
Hotspot SAR (Distance 10mm) (Receiver off)												
Back Side	standard	44/5220	OFDM	97.88%	16.00	14.56	-0.120	0.102	0.107	1.42	0.152	/
Front Side	standard	44/5220	OFDM	97.88%	16.00	14.56	0.016	0.110	0.113	1.42	0.161	/
Left Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Right Edge	standard	44/5220	OFDM	97.88%	16.00	14.56	0.077	0.220	0.225	1.42	0.320	124
Top Edge	standard	44/5220	OFDM	97.88%	16.00	14.56	-0.080	0.094	0.098	1.42	0.139	/
Bottom Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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

2. Initial test configuration is 802.11a mode, since the highest maximum output power.

3. Per 248227, for band U-NII-1 and U-NII-2A, when the same maximum output power is specified for both bands, begin SAR measurement in U-NII-2A band by applying the OFDM SAR requirements. If the highest reported SAR for a test configuration is \leq 1.2 W/kg, SAR is not required for U-NII-1 band for that configuration (802.11 mode and exposure condition); otherwise, each band is tested independently for SAR.

4. Since the band U-NII-2A does not support hotspot function, hotspot SAR for U-NII-1 is required.

Table 31: Wi-Fi (5G, U-NII-2A)

Test Position	Cover Type	Channel/Frequency (MHz)	Mode 802.11a	Duty Cycle	Tune-up limit (dBm)	Conducted Power (dBm)	Drift (dB)	Area Scan Max.SAR (W/Kg)	Measured SAR _{1g} (W/kg)	Scaling Factor	Reported SAR _{1g} (W/kg)	Plot No.
Head SAR(Receiver on)												
Left Cheek	standard	64/5320	OFDM	97.88%	12.00	10.36	0.082	0.348	0.311	1.49	0.464	125
Left Tilt	standard	64/5320	OFDM	97.88%	12.00	10.36	0.053	0.325	0.280	1.49	0.417	/
Right Cheek	standard	64/5320	OFDM	97.88%	12.00	10.36	0.064	0.117	0.141	1.49	0.210	/
Right Tilt	standard	64/5320	OFDM	97.88%	12.00	10.36	0.040	0.076	0.083	1.49	0.124	/
Body-worn (Distance 15mm) (Receiver off)												
Back Side	standard	64/5320	OFDM	97.88%	16.00	14.02	0.010	0.061	0.062	1.61	0.100	126
Front Side	standard	64/5320	OFDM	97.88%	16.00	14.02	0.047	0.054	0.058	1.61	0.093	/

Note: 1. The value with blue color is the maximum SAR Value of each test band.
2. Initial test configuration is 802.11a mode, since the highest maximum output power.
3. For OFDM mode, when the highest reported SAR for the initial test configuration, according to the initial test position or fixed exposure position requirements, is adjusted by the ratio of the subsequent test configuration to initial test configuration specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for that subsequent test configuration.

Test Position	Cover Type	Channel/Frequency (MHz)	Mode 802.11a	Duty Cycle	Tune-up limit (dBm)	Conducted Power (dBm)	Drift (dB)	Area Scan Max.SAR (W/Kg)	Measured SAR _{10g} (W/kg)	Scaling Factor	Reported SAR _{10g} (W/kg)	Plot No.
Product Specific 10-g SAR (Distance 0mm)(Receiver off)												
Back Side	standard	64/5320	OFDM	97.88%	16.00	14.02	0.020	0.148	0.180	1.61	0.290	/
Front Side	standard	64/5320	OFDM	97.88%	16.00	14.02	0.023	0.211	0.216	1.61	0.348	/
Left Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Right Edge	standard	64/5320	OFDM	97.88%	16.00	14.02	0.140	0.380	0.397	1.61	0.640	127
Top Edge	standard	64/5320	OFDM	97.88%	16.00	14.02	0.120	0.134	0.150	1.61	0.242	/
Bottom Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Note: 1. The value with blue color is the maximum SAR Value of each test band.
2. Since the band does not support hotspot function, Product Specific 10-g SAR is required.

Table 32: Wi-Fi (5G, U-NII-2C)

Test Position	Cover Type	Channel/Frequency (MHz)	Mode 802.11a	Duty Cycle	Tune-up limit (dBm)	Conducted Power (dBm)	Drift (dB)	Area Scan Max.SAR (W/Kg)	Measured SAR _{1g} (W/kg)	Scaling Factor	Reported SAR _{1g} (W/kg)	Plot No.
Head SAR(Receiver on)												
Left Cheek	standard	140/5700	OFDM	97.88%	12.00	10.03	0.011	0.273	0.294	1.61	0.473	/
		132/5660	OFDM	97.88%	12.00	10.25	-0.067	0.306	0.318	1.53	0.486	/
		116/5580	OFDM	97.88%	12.00	10.57	0.062	0.397	0.359	1.42	0.510	128
		100/5500	OFDM	97.88%	12.00	10.56	-0.109	0.320	0.341	1.42	0.485	/
Left Tilt	standard	140/5700	OFDM	97.88%	12.00	10.03	-0.004	0.264	0.280	1.61	0.450	/
		132/5660	OFDM	97.88%	12.00	10.25	0.100	0.302	0.305	1.53	0.466	/
		116/5580	OFDM	97.88%	12.00	10.57	0.055	0.361	0.333	1.42	0.473	/
		100/5500	OFDM	97.88%	12.00	10.56	0.016	0.320	0.327	1.42	0.465	/
Right Cheek	standard	116/5580	OFDM	97.88%	12.00	10.57	-0.030	0.181	0.180	1.42	0.256	/
Right Tilt	standard	116/5580	OFDM	97.88%	12.00	10.57	0.029	0.121	0.134	1.42	0.190	/
Body-worn (Distance 15mm) (Receiver off)												
Back Side	standard	100/5500	OFDM	97.88%	16.00	14.29	-0.030	0.074	0.055	1.51	0.083	/
Front Side	standard	100/5500	OFDM	97.88%	16.00	14.29	0.099	0.091	0.063	1.51	0.095	129

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

2. Initial test configuration is 802.11a mode, since the highest maximum output power.

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

Test Position	Cover Type	Channel/Frequency (MHz)	Mode 802.11a	Duty Cycle	Tune-up limit (dBm)	Conducted Power (dBm)	Drift (dB)	Area Scan Max.SAR (W/Kg)	Measured SAR _{10g} (W/kg)	Scaling Factor	Reported SAR _{10g} (W/kg)	Plot No.
Product Specific 10-g SAR (Distance 0mm) (Receiver off)												
Back Side	standard	100/5500	OFDM	97.88%	16.00	14.29	0.030	0.204	0.217	1.51	0.329	/
Front Side	standard	100/5500	OFDM	97.88%	16.00	14.29	0.040	0.226	0.231	1.51	0.350	/
Left Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Right Edge	standard	140/5700	OFDM	97.88%	16.00	14.01	-0.020	0.522	0.530	1.62	0.856	/
		132/5660	OFDM	97.88%	16.00	14.01	0.120	0.571	0.588	1.62	0.950	/
		116/5580	OFDM	97.88%	16.00	14.18	-0.030	0.640	0.661	1.55	1.027	/
		100/5500	OFDM	97.88%	16.00	14.29	0.010	0.728	0.814	1.51	1.233	130
Top Edge	standard	100/5500	OFDM	97.88%	16.00	14.29	-0.020	0.142	0.160	1.51	0.242	/
Bottom Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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

2. Since the band does not support hotspot function, Product Specific 10-g SAR is required.

Table 33: Wi-Fi (5G, U-NII-3)

Test Position	Cover Type	Channel/Frequency (MHz)	Mode 802.11a	Duty Cycle	Tune-up limit (dBm)	Conducted Power (dBm)	Drift (dB)	Area Scan Max.SAR (W/Kg)	Measured SAR _{1g} (W/kg)	Scaling Factor	Reported SAR _{1g} (W/kg)	Plot No.
Head SAR(Receiver on)												
Left Cheek	standard	165/5825	OFDM	97.88%	12.00	10.04	0.061	0.337	0.366	1.60	0.587	131
Left Tilt	standard	165/5825	OFDM	97.88%	12.00	10.04	0.030	0.334	0.346	1.60	0.555	/
Right Cheek	standard	165/5825	OFDM	97.88%	12.00	10.04	-0.120	0.154	0.175	1.60	0.281	/
Right Tilt	standard	165/5825	OFDM	97.88%	12.00	10.04	0.049	0.129	0.155	1.60	0.249	/
Body-worn (Distance 15mm) (Receiver off)												
Back Side	standard	149/5745	OFDM	97.88%	16.00	14.01	-0.011	0.035	0.038	1.62	0.061	/
Front Side	standard	149/5745	OFDM	97.88%	16.00	14.01	0.023	0.016	0.043	1.62	0.070	132
Hotspot SAR (Distance 10mm) (Receiver off)												
Back Side	standard	149/5745	OFDM	97.88%	16.00	14.01	0.020	0.023	0.052	1.62	0.084	/
Front Side	standard	149/5745	OFDM	97.88%	16.00	14.01	0.013	0.086	0.075	1.62	0.121	/
Left Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Right Edge	standard	149/5745	OFDM	97.88%	16.00	14.01	0.038	0.204	0.185	1.62	0.299	133
Top Edge	standard	149/5745	OFDM	97.88%	16.00	14.01	0.000	0.038	0.028	1.62	0.045	/
Bottom Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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

2. Initial test configuration is 802.11a mode, since the highest maximum output power.

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

Table 34: BT

Band	Configuration	Frequency (MHz)	Maximum Power (dBm)	Separation Distance (mm)	Estimated SAR (W/kg)
Bluetooth	Head	2480	9	5	0.334
	Body-worn	2480	9	15	0.111
	Product Specific 10-g SAR	2480	9	5	0.133

For simultaneous transmission analysis, Bluetooth SAR is estimated per KDB 447498 D01 based on the formula below.
 $(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm}) \cdot [\sqrt{f(\text{GHz})/x}] \text{ W/kg}$
 for test separation distances ≤ 50 mm; where $x = 7.5$ for 1-g SAR, and $x = 18.75$ for 10-g SAR.

10.4 Simultaneous Transmission Analysis

Simultaneous Transmission Configurations	Head	Body-worn	Hotspot	Product Specific 10-g SAR
GSM(Voice) + Bluetooth(data)	Yes	Yes	N/A	Yes
GPRS/EDGE(Data) + Bluetooth(data)	N/A	Yes	N/A	Yes
WCDMA(Voice) + Bluetooth(data)	Yes	Yes	N/A	Yes
WCDMA(Data) + Bluetooth(data)	N/A	Yes	N/A	Yes
LTE(Data) + Bluetooth(data)	Yes	Yes	N/A	Yes
GSM(Voice) + Wi-Fi-2.4GHz(data)	Yes	Yes	N/A	Yes
GPRS/EDGE(Data) + Wi-Fi-2.4GHz(data)	N/A	Yes	Yes	Yes
WCDMA(Voice) + Wi-Fi-2.4GHz(data)	Yes	Yes	N/A	Yes
WCDMA(Data) + Wi-Fi-2.4GHz(data)	N/A	Yes	Yes	Yes
LTE(Data) + Wi-Fi-2.4GHz(data)	Yes	Yes	Yes	Yes
GSM(Voice) + Wi-Fi-5GHz(data)	Yes	Yes	N/A	Yes
GPRS/EDGE(Data) + Wi-Fi-5GHz(data)	N/A	Yes	Yes	Yes
WCDMA(Voice) + Wi-Fi-5GHz(data)	Yes	Yes	N/A	Yes
WCDMA(Data) + Wi-Fi-5GHz(data)	N/A	Yes	Yes	Yes
LTE(Data) + Wi-Fi-5GHz(data)	Yes	Yes	Yes	Yes
Wi-Fi-2.4GHz(data) + Wi-Fi-5GHz(data)	N/A	N/A	N/A	N/A
Bluetooth + Wi-Fi-2.4GHz(data)	N/A	N/A	N/A	N/A
Bluetooth + Wi-Fi-5GHz(data)	N/A	N/A	N/A	N/A
Antenna 1 + Antenna 2	N/A	N/A	N/A	N/A

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 < 1.6W/kg, simultaneously transmission SAR measurement is not necessary.
 - ii) $SPLSR = (SAR1 + SAR2)^{1.5} / (\text{min. separation distance, mm})$, 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 $SPLSR \leq 0.04$, simultaneously transmission SAR measurement is not necessary.

The maximum SAR_{1g} Value for Antenna 1

SAR _{1g} (W/kg)		GSM 850	GSM 1900	WCDMA Band II	WCDMA Band IV	WCDMA Band V	LTE FDD 2	LTE FDD 4	LTE FDD 5	LTE FDD 7	LTE FDD 12	LTE FDD 17	LTE FDD 26	LTE TDD 38	LTE TDD 41	MAX. SAR _{1g}
Test Position																
Left Cheek		0.067	0.102	0.237	0.263	0.068	0.181	0.111	0.060	0.287	0.034	0.029	0.061	0.175	0.183	0.287
Left Tilt		0.048	0.055	0.115	0.301	0.045	0.098	0.066	0.044	0.064	0.024	0.023	0.047	0.066	0.067	0.301
Right Cheek		0.073	0.077	0.178	0.639	0.090	0.143	0.119	0.079	0.160	0.046	0.039	0.045	0.089	0.085	0.639
Right Tilt		0.038	0.039	0.102	0.710	0.034	0.098	0.080	0.033	0.132	0.018	0.017	0.029	0.083	0.081	0.710
Body worn	Back Side	0.339	0.157	0.403	0.243	0.399	0.300	0.146	0.350	0.444	0.166	0.139	0.364	0.157	0.163	0.444
	Front Side	0.258	0.136	0.264	0.135	0.294	0.202	0.104	0.244	0.200	0.133	0.108	0.262	0.135	0.114	0.294
Hotspot	Back Side	0.608	0.263	0.532	0.492	0.649	0.380	0.398	0.653	0.766	0.362	0.311	0.679	0.335	0.365	0.766
	Front Side	0.454	0.182	0.390	0.303	0.566	0.314	0.186	0.487	0.386	0.318	0.218	0.477	0.247	0.261	0.566
	Left Edge	0.386	0.109	0.266	0.272	0.388	0.232	0.224	0.422	0.298	0.223	0.185	0.382	0.123	0.127	0.422
	Right Edge	0.104	0.074	0.116	0.180	0.124	0.118	0.024	0.052	0.016	0.084	0.077	0.050	0.034	0.034	0.180
	Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Bottom Edge	0.373	0.615	1.036	1.030	0.348	0.895	0.890	0.368	0.736	0.172	0.145	0.316	0.532	0.541	1.036

The maximum SAR_{1g} Value for Antenna 2

SAR _{1g} (W/kg)		GSM 850	GSM 1900	WCDMA Band II	WCDMA Band IV	WCDMA Band V	LTE FDD 2	LTE FDD 4	LTE FDD 5	LTE FDD 7	LTE FDD 12	LTE FDD 17	LTE FDD 26	LTE TDD 38	LTE TDD 41	MAX. SAR _{1g}
Test Position																
Left Cheek		0.612	0.325	0.411	0.271	0.700	0.500	0.295	0.684	0.217	0.497	0.580	0.561	0.148	0.162	0.700
Left Tilt		0.550	0.303	0.377	0.302	0.641	0.511	0.254	0.614	0.243	0.688	0.564	0.546	0.110	0.112	0.688
Right Cheek		0.727	0.745	1.069	0.864	0.891	0.925	0.623	0.843	0.814	0.707	0.709	0.827	0.684	0.683	1.069
Right Tilt		0.627	0.682	1.070	0.911	0.787	1.048	0.650	0.755	0.609	0.896	0.618	0.793	0.553	0.586	1.070
Body worn	Back Side	0.383	0.158	0.189	0.219	0.325	0.183	0.172	0.356	0.161	0.179	0.185	0.343	0.157	0.148	0.383
	Front Side	0.277	0.108	0.113	0.161	0.264	0.126	0.126	0.277	0.152	0.124	0.098	0.261	0.95	0.121	0.950
Hotspot	Back Side	0.717	0.306	0.423	0.457	0.876	0.416	0.421	0.875	0.320	0.704	0.706	0.701	0.400	0.338	0.876
	Front Side	0.607	0.192	0.247	0.32	0.681	0.236	0.286	0.599	0.297	0.302	0.338	0.588	0.252	0.254	0.681
	Left Edge	0.431	0.214	0.344	0.273	0.390	0.207	0.353	0.400	0.551	0.186	0.200	0.395	0.567	0.563	0.567
	Right Edge	0.045	0.02	0.035	0.055	0.067	0.13	0.086	0.071	0.01	0.052	0.053	0.066	0.022	0.014	0.130
	Top Edge	0.544	0.386	0.424	0.243	0.559	0.442	0.503	0.595	0.236	0.220	0.233	0.581	0.195	0.189	0.595
	Bottom Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

The maximum SAR_{1g} Value for Wi-Fi Antenna

SAR _{1g} (W/kg)		Wi-Fi 2.4G	Wi-Fi (U-NII-1)	Wi-Fi (U-NII-2A)	Wi-Fi (U-NII-2C)	Wi-Fi (U-NII-3)	MAX. ΣSAR _{1g}
Test Position							
Left, Cheek		0.297	N/A	0.464	0.510	0.587	0.587
Left, Tilt		0.201	N/A	0.417	0.473	0.555	0.555
Right, Cheek		0.278	N/A	0.210	0.256	0.281	0.281
Right, Tilt		0.156	N/A	0.124	0.190	0.249	0.249
Body worn 1g	Back Side	0.038	N/A	0.100	0.083	0.061	0.100
	Front Side	0.039	N/A	0.093	0.095	0.070	0.095
Hotspot 1g	Back Side	0.074	0.152	N/A	N/A	0.084	0.152
	Front Side	0.076	0.161	N/A	N/A	0.121	0.161
	Left Edge	N/A	N/A	N/A	N/A	N/A	N/A
	Right Edge	0.118	0.320	N/A	N/A	0.299	0.320
	Top Edge	0.038	0.139	N/A	N/A	0.045	0.139
	Bottom Edge	N/A	N/A	N/A	N/A	N/A	N/A
Product Specific 10-g SAR	Back Side	N/A	N/A	0.290	0.329	N/A	0.329
	Front Side	N/A	N/A	0.348	0.350	N/A	0.350
	Left Edge	N/A	N/A	N/A	N/A	N/A	N/A
	Right Edge	N/A	N/A	0.640	1.233	N/A	1.233
	Top Edge	N/A	N/A	0.242	0.242	N/A	0.242
	Bottom Edge	N/A	N/A	N/A	N/A	N/A	N/A

About BT and Antenna 1

SAR _{1g} (W/kg)		Antenna 1	BT	MAX. Σ SAR _{1g}
Test Position				
Left, Cheek		0.287	0.334	0.621
Left, Tilt		0.301	0.334	0.635
Right, Cheek		0.639	0.334	0.973
Right, Tilt		0.710	0.334	1.044
Body worn 1g	Back Side	0.444	0.111	0.555
	Front Side	0.294	0.111	0.405
Hotspot 1g	Back Side	0.766	N/A	0.766
	Front Side	0.566	N/A	0.566
	Left Edge	0.422	N/A	0.422
	Right Edge	0.180	N/A	0.180
	Top Edge	N/A	N/A	N/A
	Bottom Edge	1.036	N/A	1.036
Product Specific 10-g SAR	Back Side	N/A	0.133	0.133
	Front Side	N/A	0.133	0.133
	Left Edge	N/A	0.133	0.133
	Right Edge	N/A	0.133	0.133
	Top Edge	N/A	0.133	0.133
	Bottom Edge	N/A	0.133	0.133

Note: 1. The value with blue color is the maximum Σ SAR_{1g/10g} Value.
2. MAX. Σ SAR_{1g/10g} = Unlicensed SAR_{MAX} + Licensed SAR_{MAX}

MAX. Σ SAR_{1g} = 1.044 W/kg < 1.6 W/kg and MAX. Σ SAR_{10g} = 0.133 W/kg < 4 W/kg,
so the Simultaneous transimition SAR with volum scan are not required for BT and Antenna 1.

About BT and Antenna 2

SAR _{1g} (W/kg)		Antenna 2	BT	MAX. ΣSAR _{1g}
Test Position				
Left, Cheek		0.700	0.334	1.034
Left, Tilt		0.688	0.334	1.022
Right, Cheek		1.069	0.334	1.403
Right, Tilt		1.070	0.334	1.404
Body worn 1g	Back Side	0.383	0.111	0.494
	Front Side	0.950	0.111	1.061
Hotspot 1g	Back Side	0.876	N/A	0.876
	Front Side	0.681	N/A	0.681
	Left Edge	0.567	N/A	0.567
	Right Edge	0.130	N/A	0.130
	Top Edge	0.595	N/A	0.595
	Bottom Edge	N/A	N/A	N/A
Product Specific 10-g SAR	Back Side	N/A	0.133	0.133
	Front Side	N/A	0.133	0.133
	Left Edge	N/A	0.133	0.133
	Right Edge	N/A	0.133	0.133
	Top Edge	N/A	0.133	0.133
	Bottom Edge	N/A	0.133	0.133

Note: 1. The value with blue color is the maximum ΣSAR_{1g/10g} Value.
 2. MAX. ΣSAR_{1g/10g} = Unlicensed SAR_{MAX} + Licensed SAR_{MAX}

MAX. ΣSAR_{1g} = 1.404 W/kg < 1.6 W/kg and MAX. ΣSAR_{10g} = 0.133 W/kg < 4 W/kg,
 so the Simultaneous transimtion SAR with volum scan are not required for BT and Antenna 2.

About Wi-Fi and Antenna 1

SAR _{1g} (W/kg)		Antenna 1	Wi-Fi	MAX. ΣSAR _{1g}
Test Position				
Left, Cheek		0.287	0.587	0.874
Left, Tilt		0.301	0.555	0.856
Right, Cheek		0.639	0.281	0.920
Right, Tilt		0.710	0.249	0.959
Body worn 1g	Back Side	0.444	0.100	0.544
	Front Side	0.294	0.095	0.389
Hotspot 1g	Back Side	0.766	0.174	0.940
	Front Side	0.566	0.189	0.755
	Left Edge	0.422	N/A	0.422
	Right Edge	0.180	0.739	0.919
	Top Edge	N/A	0.102	0.102
	Bottom Edge	1.036	N/A	1.036
Product Specific 10-g SAR	Back Side	N/A	0.329	0.329
	Front Side	N/A	0.350	0.350
	Left Edge	N/A	N/A	N/A
	Right Edge	N/A	1.233	1.233
	Top Edge	N/A	0.242	0.242
	Bottom Edge	N/A	N/A	N/A

Note: 1. The value with blue color is the maximum ΣSAR_{1g/10g} Value.
2. MAX. ΣSAR_{1g/10g} = Unlicensed SAR_{MAX} + Licensed SAR_{MAX}

MAX. ΣSAR_{1g} = 1.036 W/kg < 1.6 W/kg and MAX. ΣSAR_{10g} = 1.233 W/kg < 4 W/kg,
so the Simultaneous transimition SAR with volum scan are not required for Wi-Fi and Antenna 1.

About Wi-Fi and Antenna 2

SAR _{1g} (W/kg)		Antenna 2	Wi-Fi	MAX. ΣSAR _{1g}
Test Position				
Left, Cheek		0.700	0.587	1.287
Left, Tilt		0.688	0.555	1.243
Right, Cheek		1.069	0.281	1.350
Right, Tilt		1.070	0.249	1.319
Body worn 1g	Back Side	0.383	0.100	0.483
	Front Side	0.950	0.095	1.045
Hotspot 1g	Back Side	0.876	0.174	1.050
	Front Side	0.681	0.189	0.870
	Left Edge	0.567	N/A	0.567
	Right Edge	0.130	0.739	0.869
	Top Edge	0.595	0.102	0.697
	Bottom Edge	N/A	N/A	N/A
Product Specific 10-g SAR	Back Side	N/A	0.329	0.329
	Front Side	N/A	0.350	0.350
	Left Edge	N/A	N/A	N/A
	Right Edge	N/A	1.233	1.233
	Top Edge	N/A	0.242	0.242
	Bottom Edge	N/A	N/A	N/A

Note: 1. The value with blue color is the maximum ΣSAR_{1g/10g} Value.
2. MAX. ΣSAR_{1g/10g} = Unlicensed SAR_{MAX} + Licensed SAR_{MAX}

MAX. ΣSAR_{1g} = 1.350 W/kg < 1.6 W/kg and MAX. ΣSAR_{10g} = 1.233 W/kg < 4 W/kg,
so the Simultaneous transmission SAR with volum scan are not required for Wi-Fi and Antenna 2.

Conclusion:

According to the KDB 690783 D01 section 1) d) i), when the sum of 1-g SAR applies for simultaneous transmission SAR test exclusion, the highest sum of 1-g SAR according to the highest reported stand-alone SAR values is used, and the highest Reported SAR for simultaneous transmission exposure conditions is 1.35 W/kg

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.

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

Plot 1 System Performance Check at 750 MHz Head TSL

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

Date: 7/2/2018

Communication System: CW (0); Frequency: 750 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 750 \text{ MHz}$; $\sigma = 0.89 \text{ S/m}$; $\epsilon_r = 42.6$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: $22.3 \text{ }^\circ\text{C}$ Liquid Temperature: $21.5 \text{ }^\circ\text{C}$

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.40, 9.40, 9.40); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

d=15mm, Pin=250mW/Area Scan (41x121x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$
 Maximum value of SAR (interpolated) = 2.29 W/kg

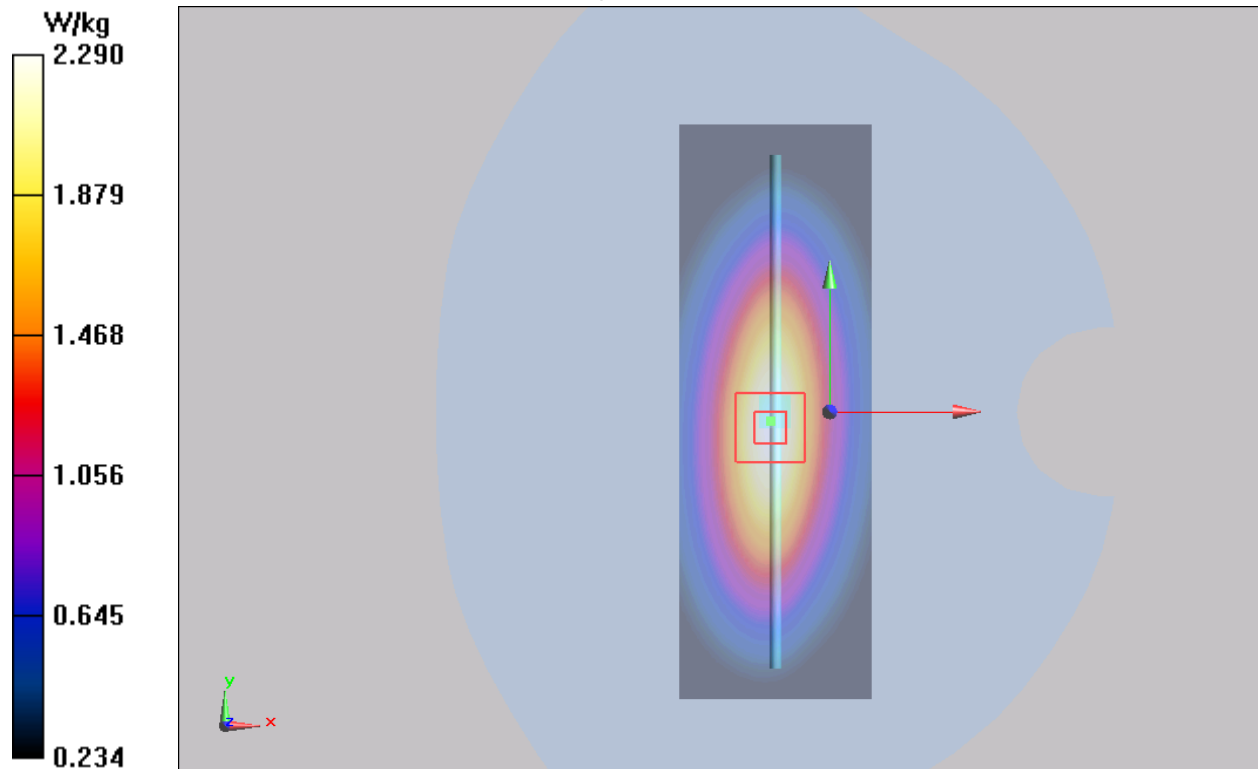
d=15mm, Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 50.653 V/m ; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 3.16 W/kg

SAR(1 g) = 2.13 W/kg ; SAR(10 g) = 1.41 W/kg

Maximum value of SAR (measured) = 2.29 W/kg



Plot 2 System Performance Check at 750 MHz Body TSL

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

Date: 7/3/2018

Communication System: CW (0); Frequency: 750 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 750 \text{ MHz}$; $\sigma = 0.96 \text{ S/m}$; $\epsilon_r = 56.7$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: $22.3 \text{ }^\circ\text{C}$ Liquid Temperature: $21.5 \text{ }^\circ\text{C}$

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.79, 9.79, 9.79); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

d=15mm, Pin=250mW/Area Scan (41x121x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$
 Maximum value of SAR (interpolated) = 2.36 W/kg

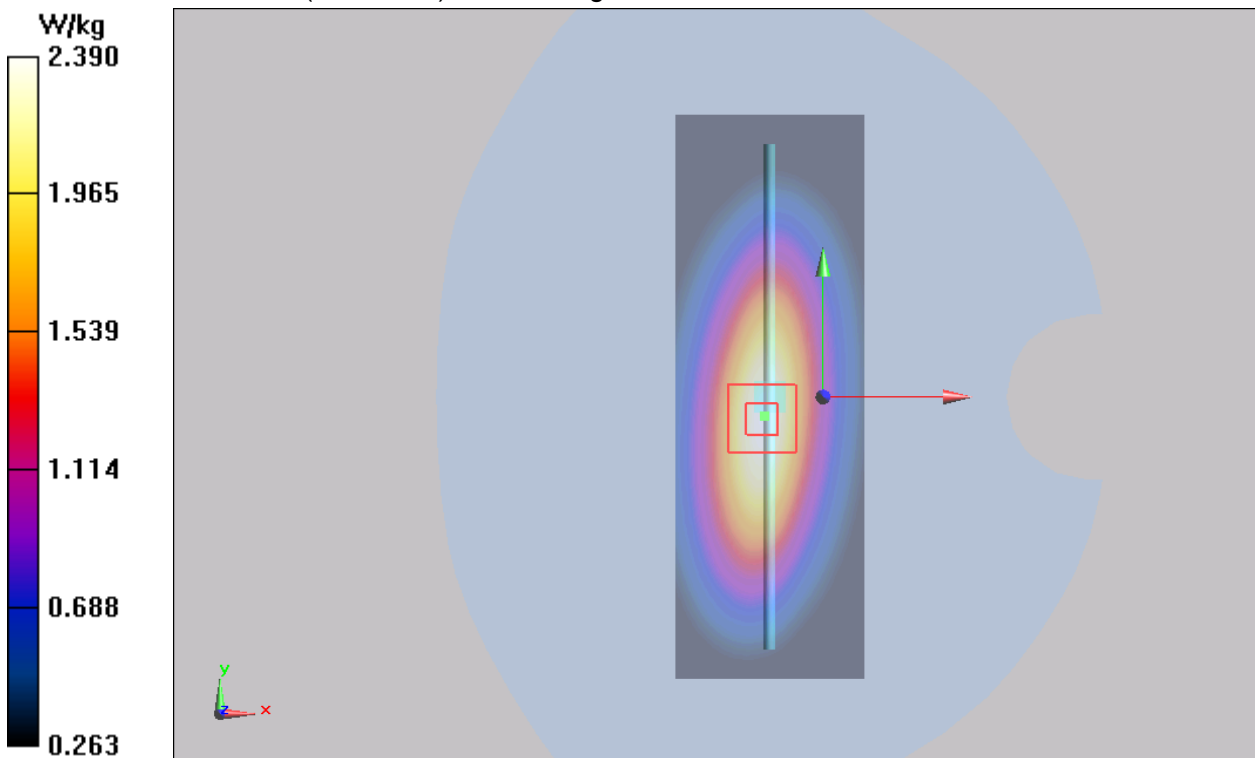
d=15mm, Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 48.998 V/m ; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 3.24 W/kg

SAR(1 g) = 2.22 W/kg ; SAR(10 g) = 1.49 W/kg

Maximum value of SAR (measured) = 2.39 W/kg



Plot 3 System Performance Check at 750 MHz Body TSL

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

Date: 7/6/2018

Communication System: CW (0); Frequency: 750 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 750$ MHz; $\sigma = 0.96$ S/m; $\epsilon_r = 54.5$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.79, 9.79, 9.79); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

d=15mm, Pin=250mW/Area Scan (41x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
 Maximum value of SAR (interpolated) = 2.34 W/kg

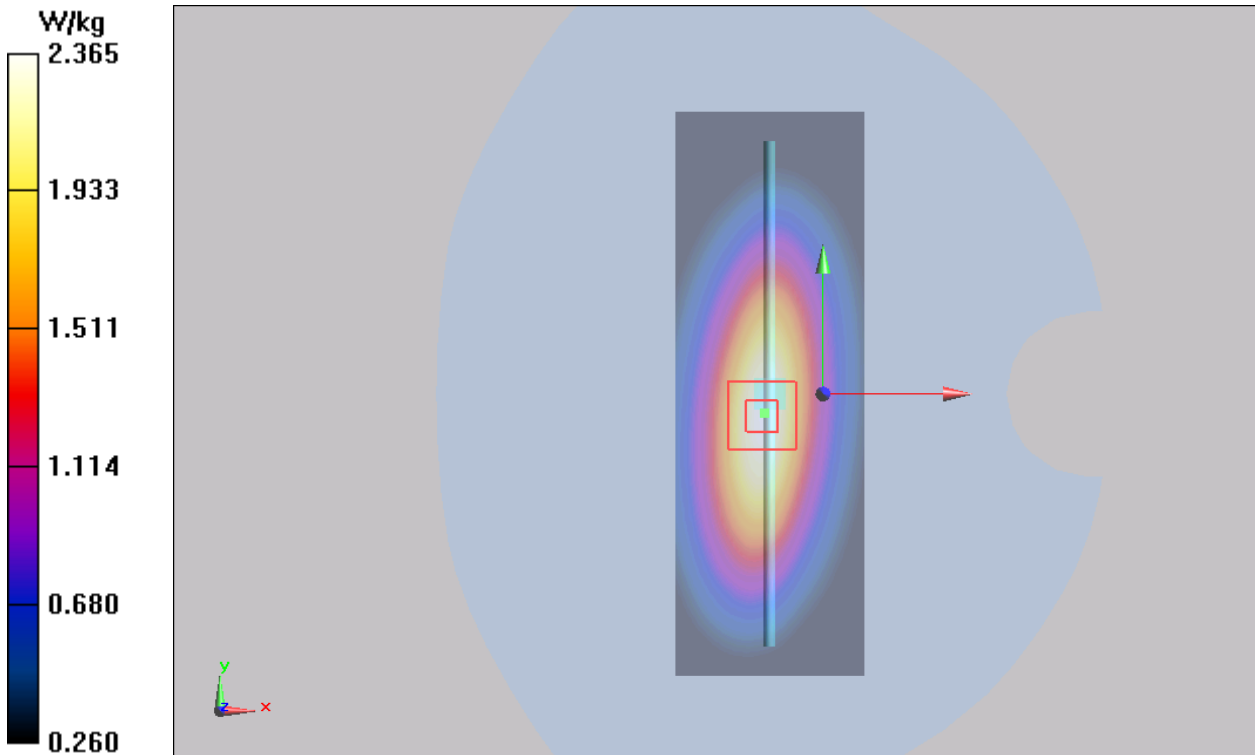
d=15mm, Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 48.971 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 3.24 W/kg

SAR(1 g) = 2.17 W/kg; SAR(10 g) = 1.46 W/kg

Maximum value of SAR (measured) = 2.365 W/kg



Plot 4 System Performance Check at 835 MHz Head TSL

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 4d020

Date: 7/4/2018

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.91 \text{ S/m}$; $\epsilon_r = 41.5$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: $22.3 \text{ }^\circ\text{C}$ Liquid Temperature: $21.5 \text{ }^\circ\text{C}$

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.10, 9.10, 9.10); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

d=15mm, Pin=250mW/Area Scan (41x121x1): Measurement grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 2.64 mW/g

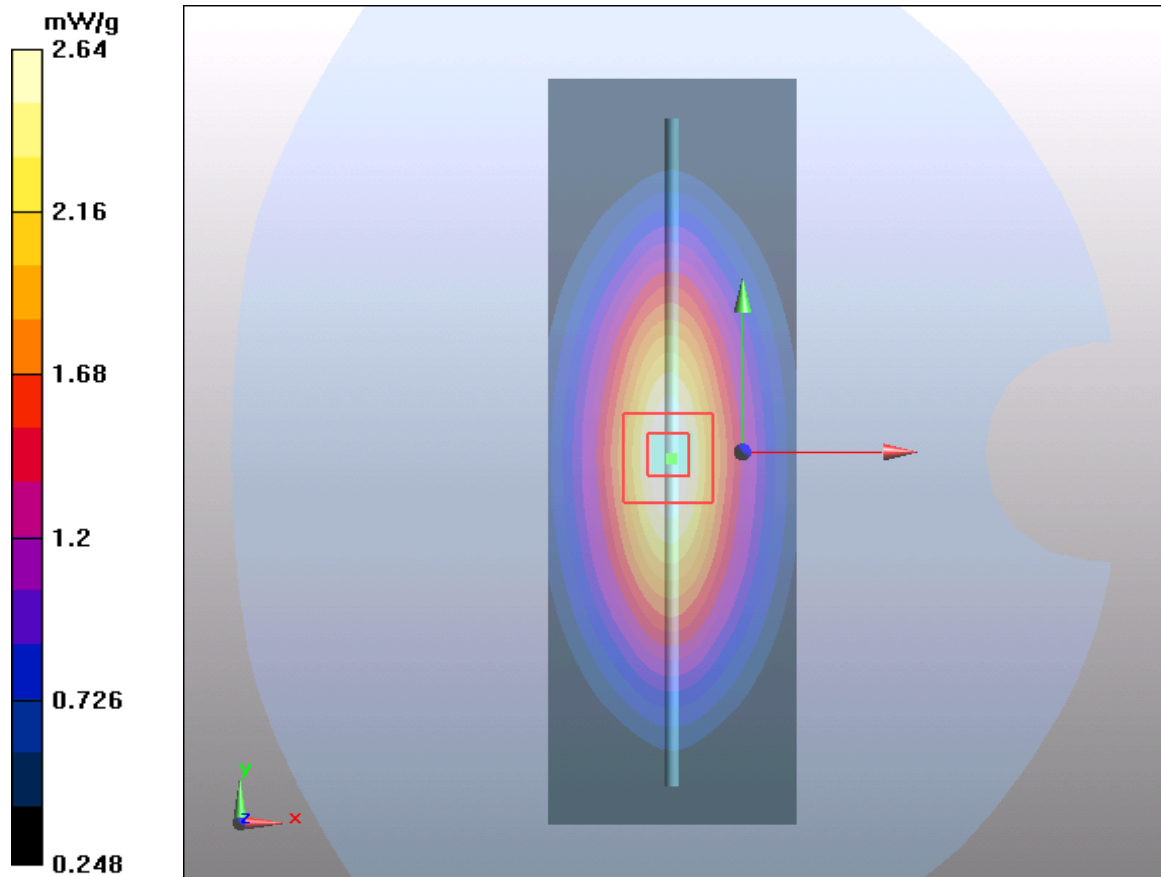
d=15mm, Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 54.4 V/m ; Power Drift = -0.076 dB

Peak SAR (extrapolated) = 3.67 W/kg

SAR(1 g) = 2.44 mW/g ; SAR(10 g) = 1.6 mW/g

Maximum value of SAR (measured) = 2.64 mW/g



Plot 5 System Performance Check at 835 MHz Head TSL

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 4d020

Date: 7/5/2018

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.87 \text{ S/m}$; $\epsilon_r = 41.3$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: $22.3 \text{ }^\circ\text{C}$ Liquid Temperature: $21.5 \text{ }^\circ\text{C}$

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.10, 9.10, 9.10); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

d=15mm, Pin=250mW/Area Scan (41x121x1): Measurement grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 2.59 mW/g

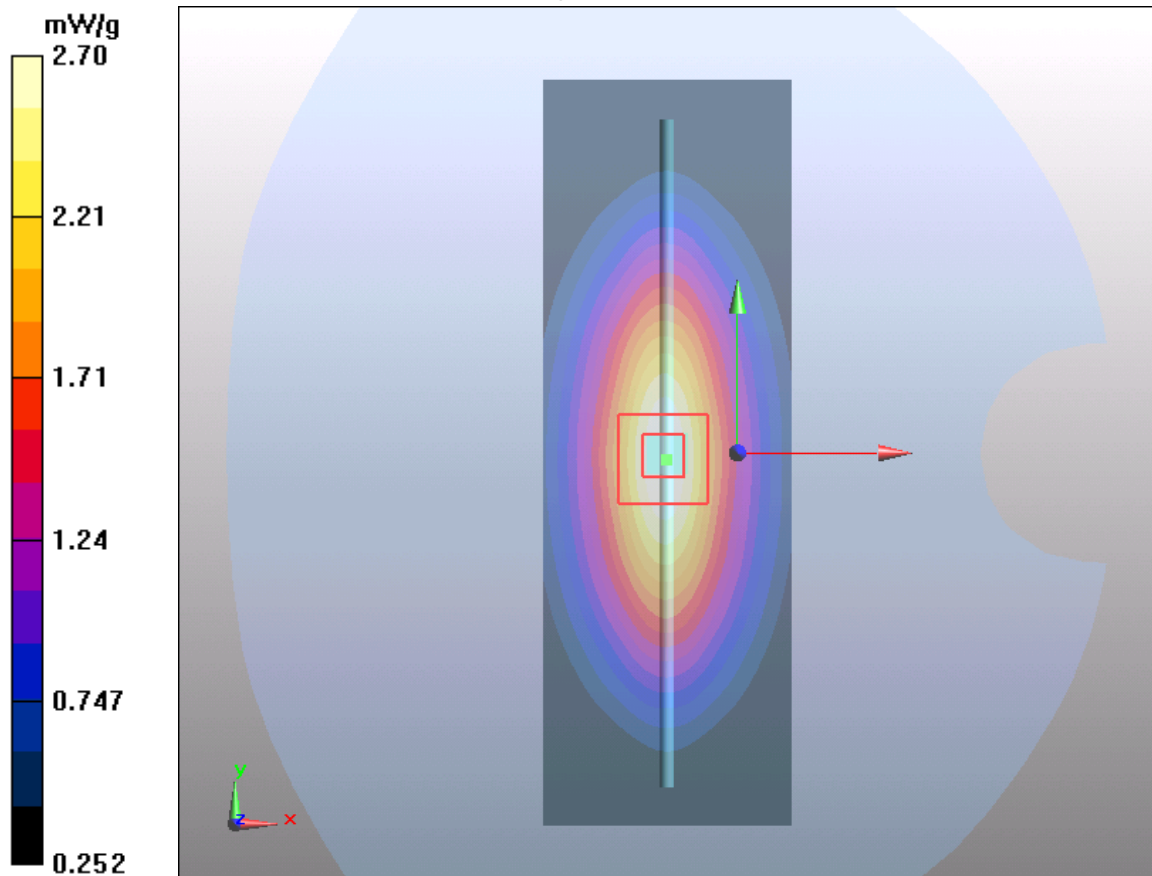
d=15mm, Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 54.3 V/m ; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 3.67 W/kg

SAR(1 g) = 2.46 mW/g ; SAR(10 g) = 1.65 mW/g

Maximum value of SAR (measured) = 2.70 mW/g



Plot 6 System Performance Check at 835 MHz Body TSL

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 4d020

Date: 7/5/2018

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.98 \text{ S/m}$; $\epsilon_r = 53.8$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: $22.3 \text{ }^\circ\text{C}$ Liquid Temperature: $21.5 \text{ }^\circ\text{C}$

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.32, 9.32, 9.32); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

d=15mm, Pin=250mW/Area Scan (41x121x1): Measurement grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 2.58 mW/g

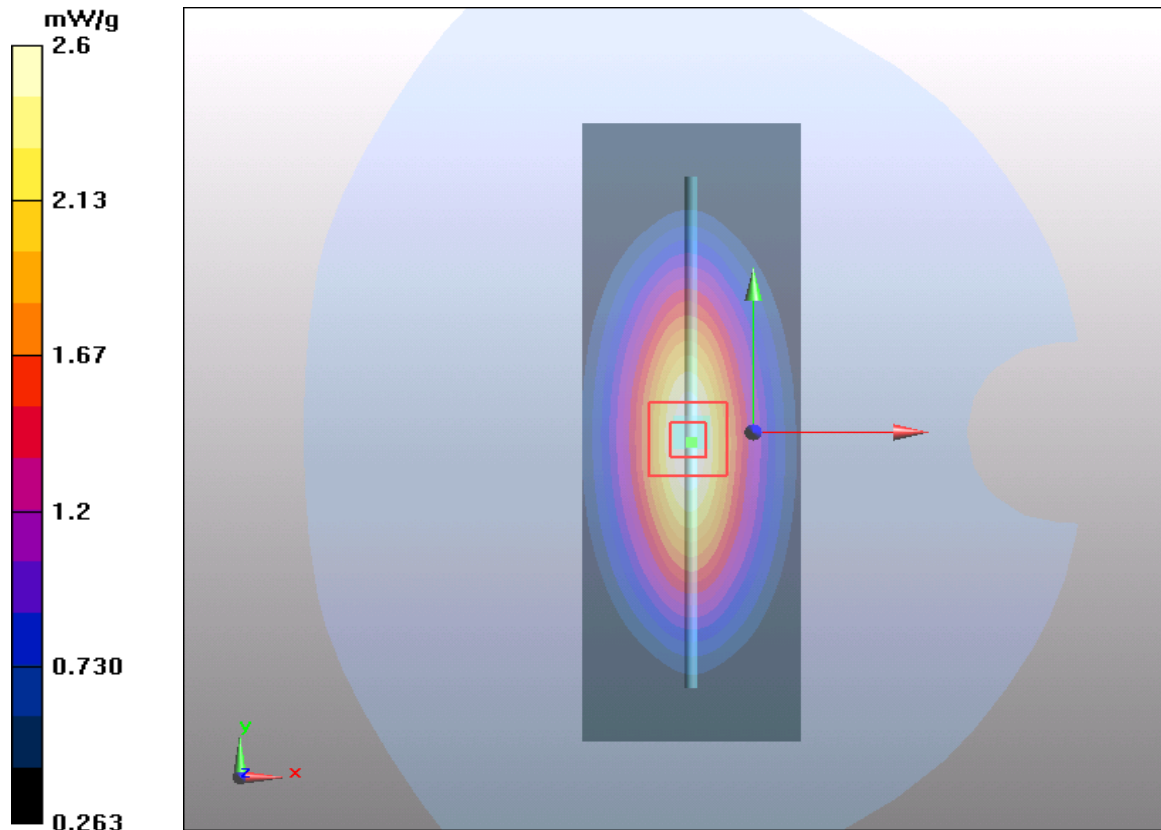
d=15mm, Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 51.9 V/m; Power Drift = -0.058 dB

Peak SAR (extrapolated) = 3.5 W/kg

SAR(1 g) = 2.41 mW/g; SAR(10 g) = 1.6 mW/g

Maximum value of SAR (measured) = 2.6 mW/g



Plot 7 System Performance Check at 835 MHz Body TSL

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 4d020

Date: 7/8/2018

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.95 \text{ S/m}$; $\epsilon_r = 54.6$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: $22.3 \text{ }^\circ\text{C}$ Liquid Temperature: $21.5 \text{ }^\circ\text{C}$

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.32, 9.32, 9.32); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

d=15mm, Pin=250mW/Area Scan (41x121x1): Measurement grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 2.58 mW/g

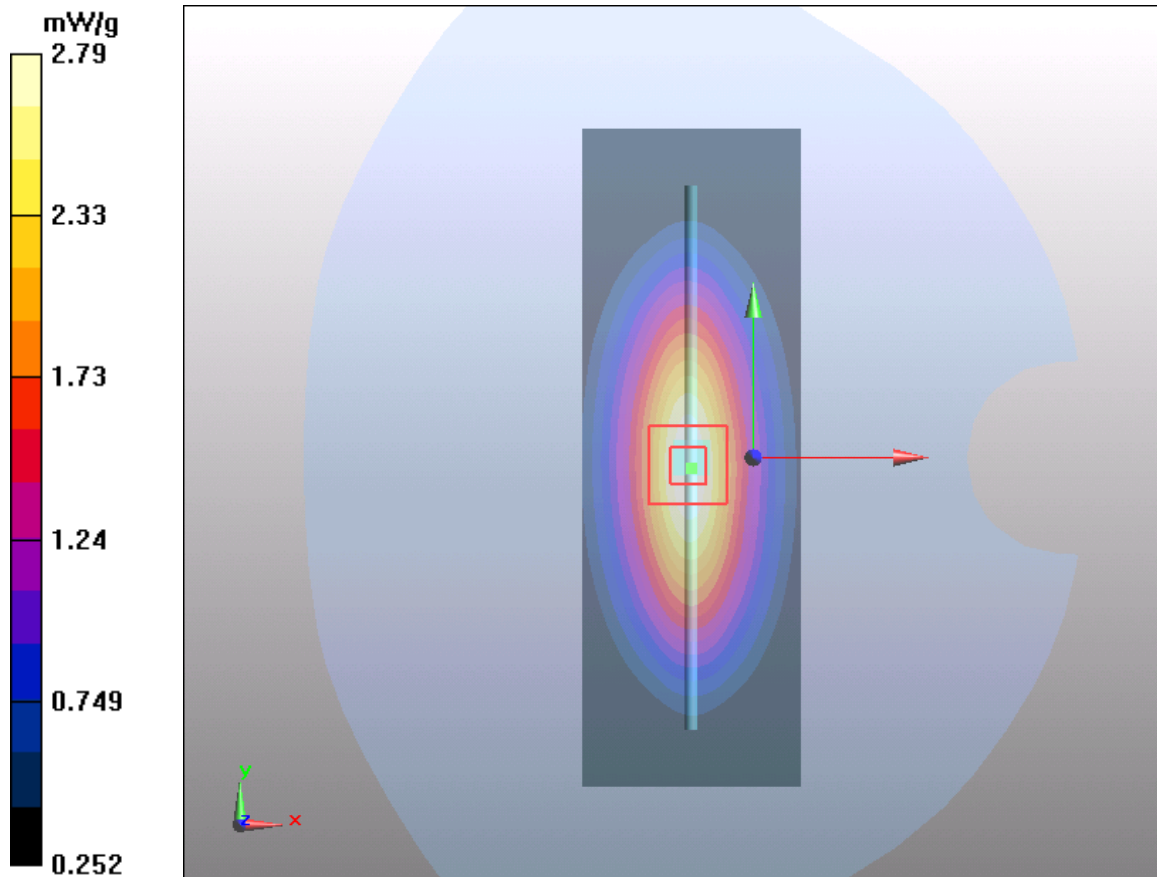
d=15mm, Pin=250mW/Zoom Scan(5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 51.9 V/m ; Power Drift = -0.058 dB

Peak SAR (extrapolated) = 3.5 W/kg

SAR(1 g) = 2.42 mW/g ; SAR(10 g) = 1.63 mW/g

Maximum value of SAR (measured) = 2.79 mW/g



Plot 8 System Performance Check at 835 MHz Body TSL

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 4d020

Date: 7/9/2018

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.98 \text{ S/m}$; $\epsilon_r = 54.5$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: $22.3 \text{ }^\circ\text{C}$ Liquid Temperature: $21.5 \text{ }^\circ\text{C}$

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.32, 9.32, 9.32); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

d=15mm, Pin=250mW/Area Scan (41x121x1): Measurement grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 2.58 mW/g

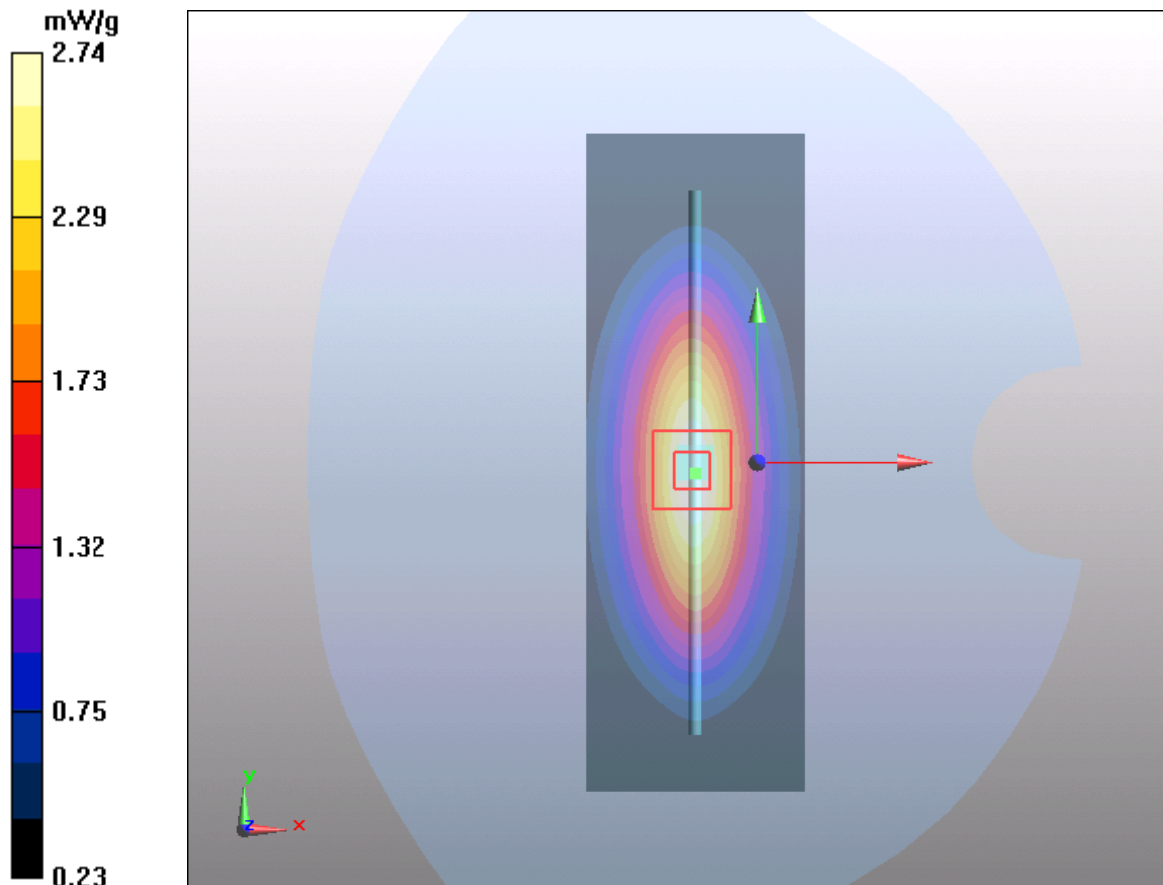
d=15mm, Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 51.9 V/m; Power Drift = -0.058 dB

Peak SAR (extrapolated) = 3.5 W/kg

SAR(1 g) = 2.45 mW/g; SAR(10 g) = 1.63 mW/g

Maximum value of SAR (measured) = 2.74 mW/g



Plot 9 System Performance Check at 1750 MHz Head TSL

DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN: 1033

Date: 7/7/2018

Communication System: CW; Frequency: 1750 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1750$ MHz; $\sigma = 1.33$ S/m; $\epsilon_r = 40.7$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(8.19, 8.19, 8.19); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

d=10mm, Pin=250mW/Area Scan (51x81x1): Measurement grid: dx=1.500 mm, dy=1.500 mm
 Maximum value of SAR (interpolated) = 9.78 mW/g

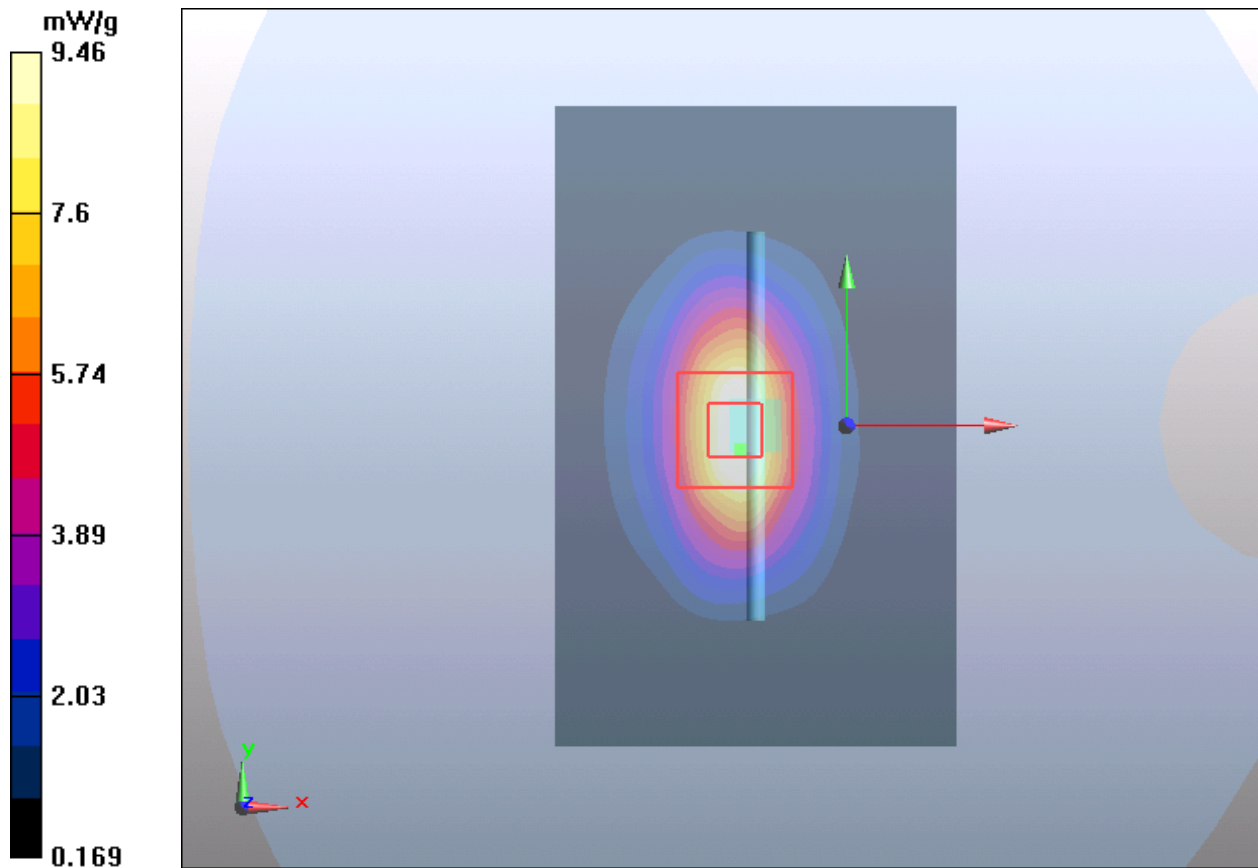
d=10mm, Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 80 V/m; Power Drift = 0.075 dB

Peak SAR (extrapolated) = 15.5 W/kg

SAR(1 g) = 8.95 mW/g; SAR(10 g) = 4.5 mW/g

Maximum value of SAR (measured) = 9.46 mW/g



Plot 10 System Performance Check at 1750 MHz Body TSL

DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN: 1033

Date: 7/10/2018

Communication System: CW; Frequency: 1750 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1750 \text{ MHz}$; $\sigma = 1.50 \text{ S/m}$; $\epsilon_r = 52.9$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: $22.3 \text{ }^\circ\text{C}$ Liquid Temperature: $21.7 \text{ }^\circ\text{C}$

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.91, 7.91, 7.91); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

d=10mm, Pin=250mW/Area Scan (51x81x1): Measurement grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 10.6 mW/g

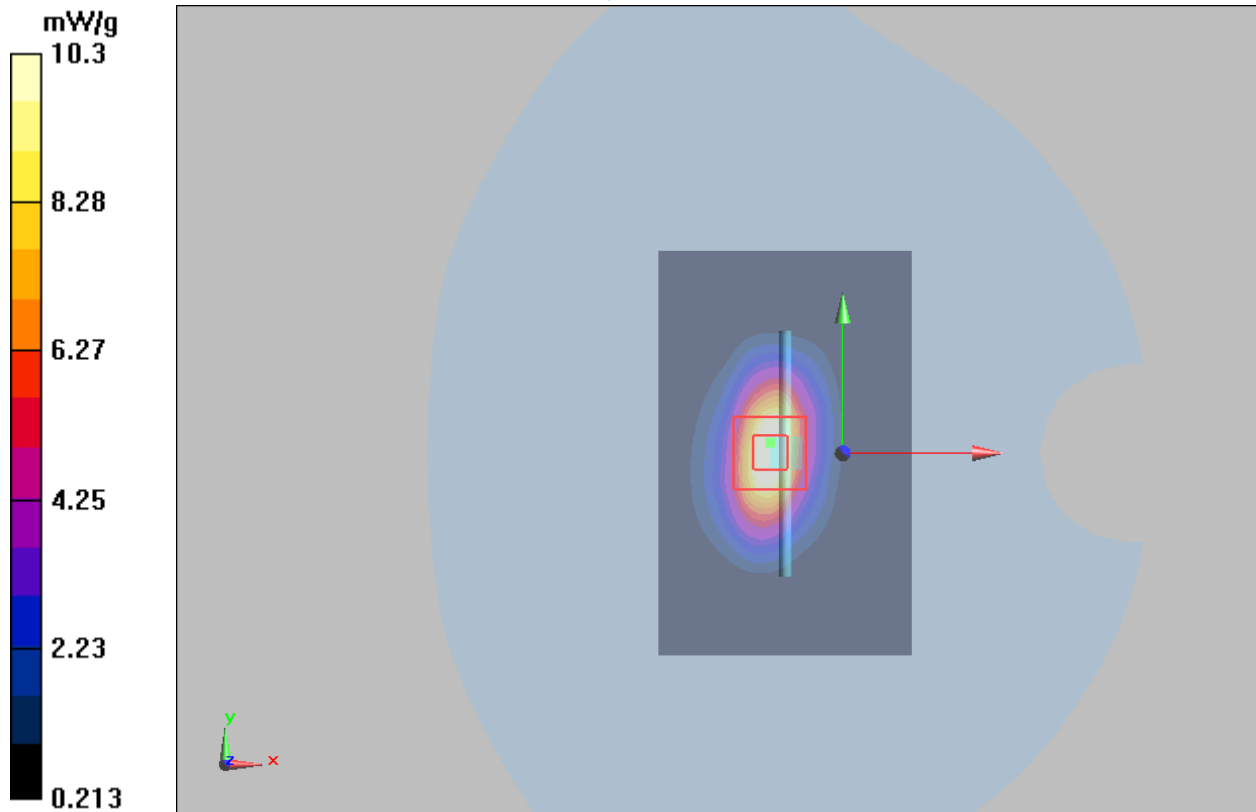
d=10mm, Pin=250mW/Area Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 77.7 V/m; Power Drift = 0.097 dB

Peak SAR (extrapolated) = 16.8 W/kg

SAR(1 g) = 9.24 mW/g; SAR(10 g) = 4.9 mW/g

Maximum value of SAR (measured) = 10.3 mW/g



Plot 11 System Performance Check at 1750 MHz Body TSL

DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN: 1033

Date: 7/11/2018

Communication System: CW; Frequency: 1750 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1750$ MHz; $\sigma = 1.51$ S/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.7 °C

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.91, 7.91, 7.91); Calibrated: 5/29/2018;

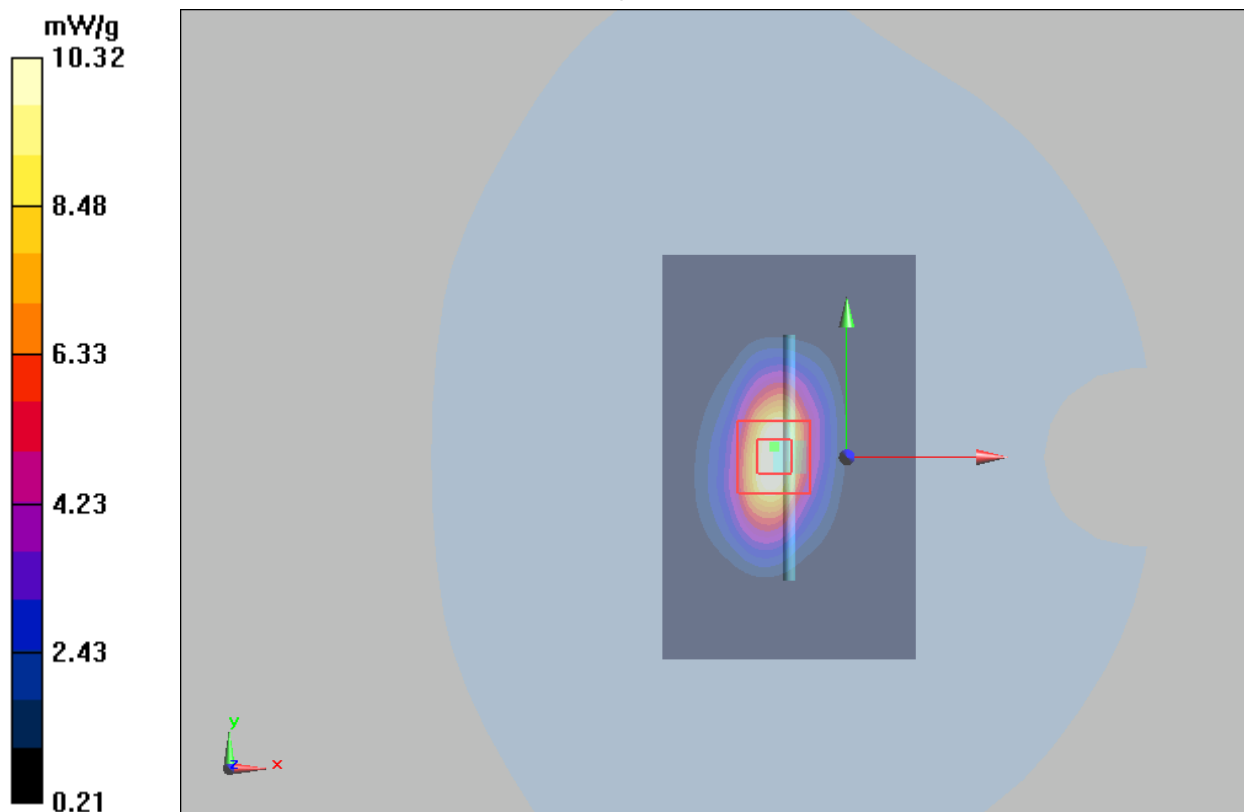
Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

d=10mm, Pin=250mW/Area Scan (51x81x1): Measurement grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 10.65 mW/g

d=10mm, Pin=250mW/Area Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 77.6 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 16.83 W/kg
SAR(1 g) = 9.40 mW/g; SAR(10 g) = 5.22 mW/g
Maximum value of SAR (measured) = 10.32 mW/g



Plot 12 System Performance Check at 1900 MHz Head TSL

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 5d060

Date: 6/30/2018

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.38$ S/m; $\epsilon_r = 39.1$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.96, 7.96, 7.96); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

d=10mm, Pin=250mW/Area Scan (41x71x1): Measurement grid: dx=1.500 mm, dy=1.500 mm
 Maximum value of SAR (interpolated) = 11.3 mW/g

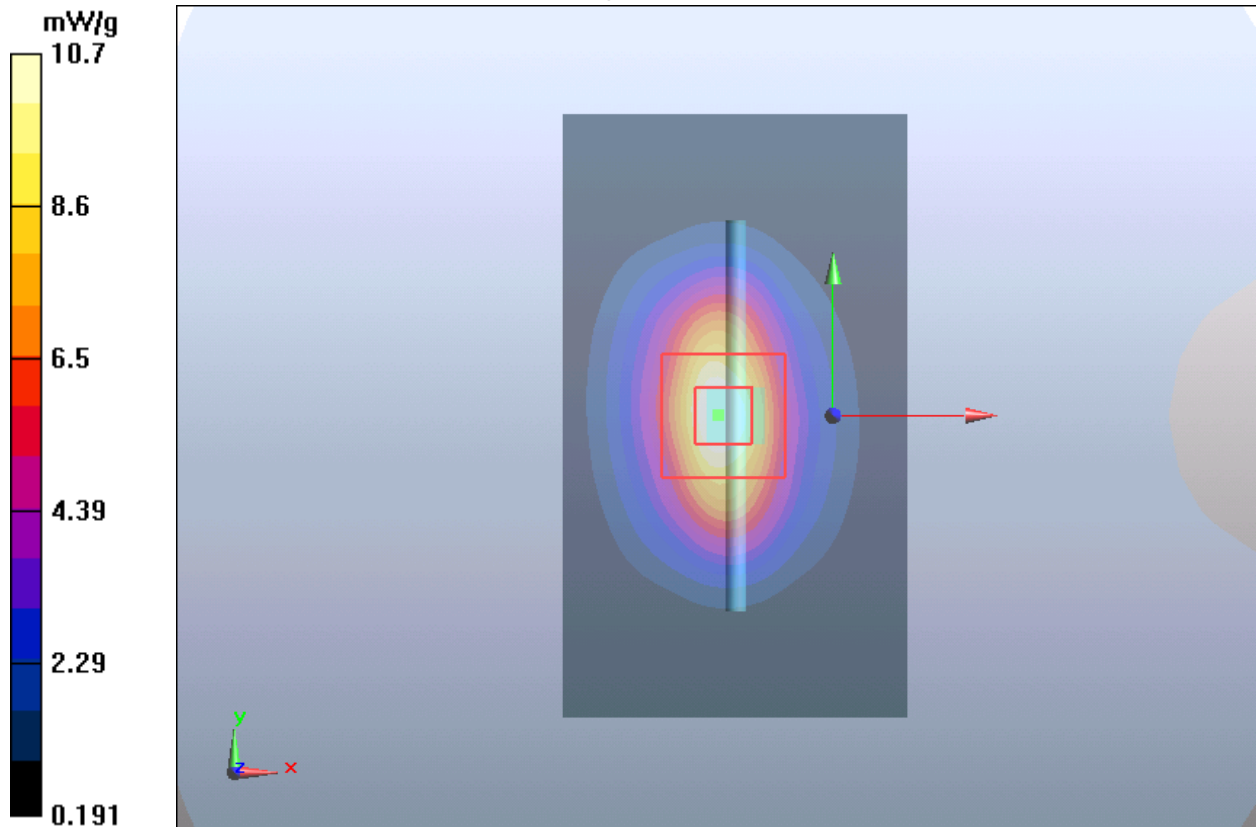
d=10mm, Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 85.5 V/m; Power Drift = 0.028 dB

Peak SAR (extrapolated) = 17.8 W/kg

SAR(1 g) = 9.88 mW/g; SAR(10 g) = 4.9 mW/g

Maximum value of SAR (measured) = 10.7 mW/g



Plot 13 System Performance Check at 1900 MHz Head TSL

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 5d060

Date: 7/1/2018

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.43$ S/m; $\epsilon_r = 40.2$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.96, 7.96, 7.96); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

d=10mm, Pin=250mW/Area Scan (41x71x1): Measurement grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 11.23 mW/g

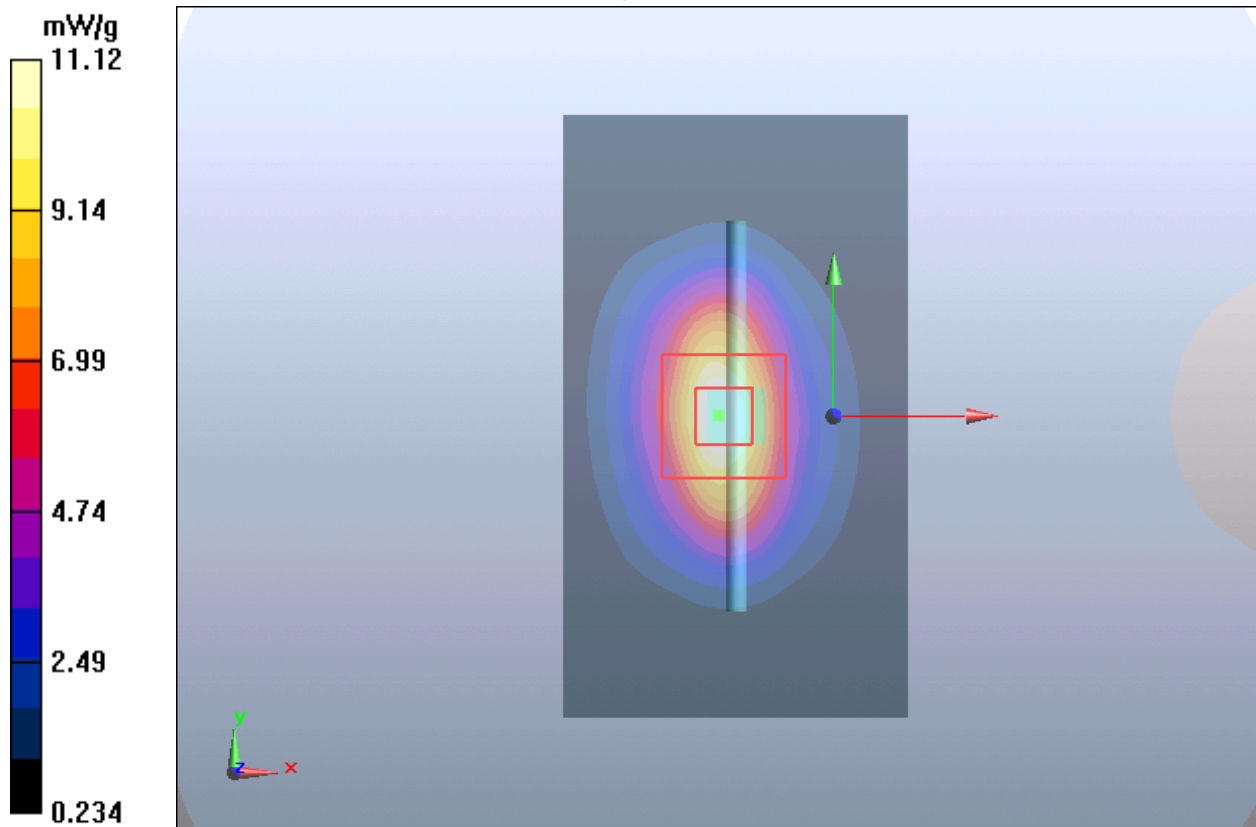
d=10mm, Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 85.0 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 17.8 W/kg

SAR(1 g) = 9.85 mW/g; SAR(10 g) = 4.93 mW/g

Maximum value of SAR (measured) = 11.12 mW/g



Plot 14 System Performance Check at 1900 MHz Body TSL

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 5d060

Date: 6/29/2018

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.51$ S/m; $\epsilon_r = 52.8$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.70, 7.70, 7.70); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

d=10mm, Pin=250mW/Area Scan (41x71x1): Measurement grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 12.2 mW/g

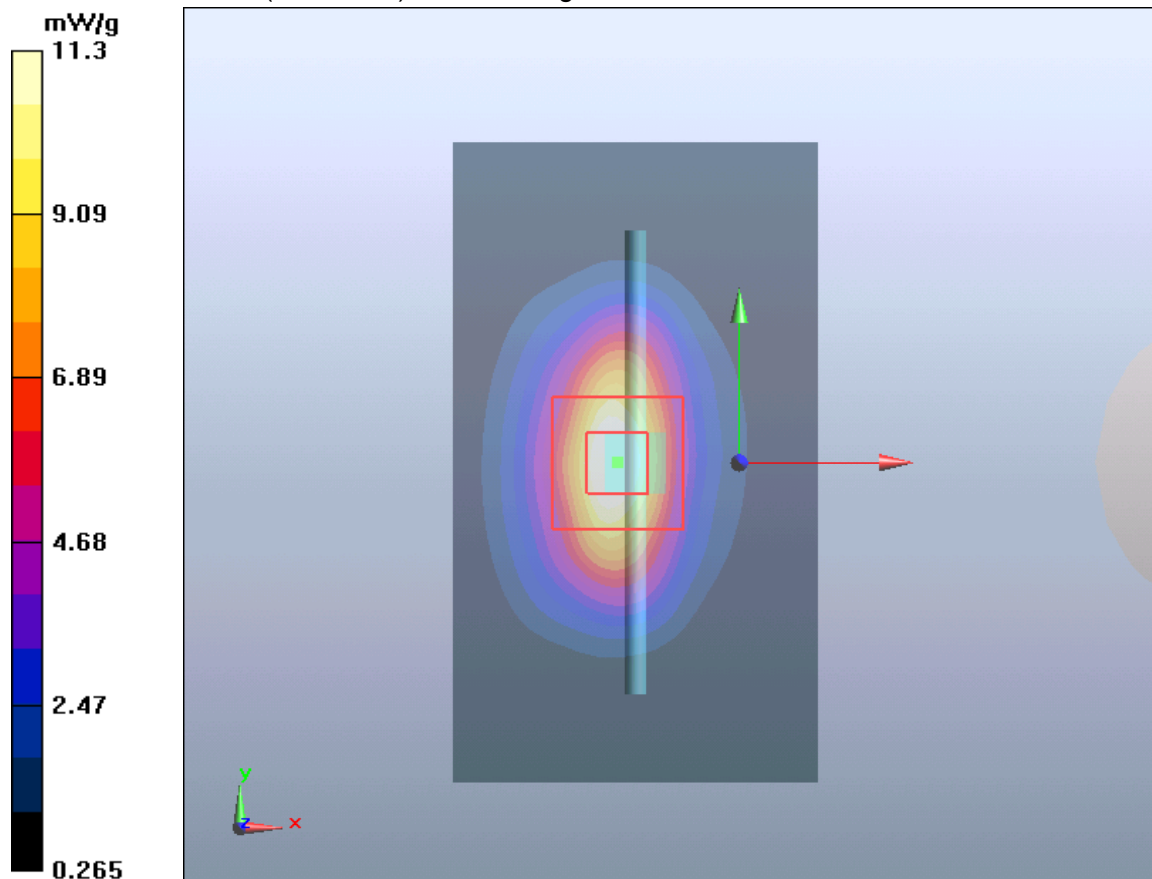
d=10mm, Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 82.3 V/m; Power Drift = 0.068 dB

Peak SAR (extrapolated) = 17.8 W/kg

SAR(1 g) = 9.93 mW/g; SAR(10 g) = 5.25 mW/g

Maximum value of SAR (measured) = 11.3 mW/g



Plot 15 System Performance Check at 1900 MHz Body TSL

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 5d060

Date: 7/1/2018

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.51$ S/m; $\epsilon_r = 51.6$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.70, 7.70, 7.70); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

d=10mm, Pin=250mW/Area Scan (41x71x1): Measurement grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 12.2 mW/g

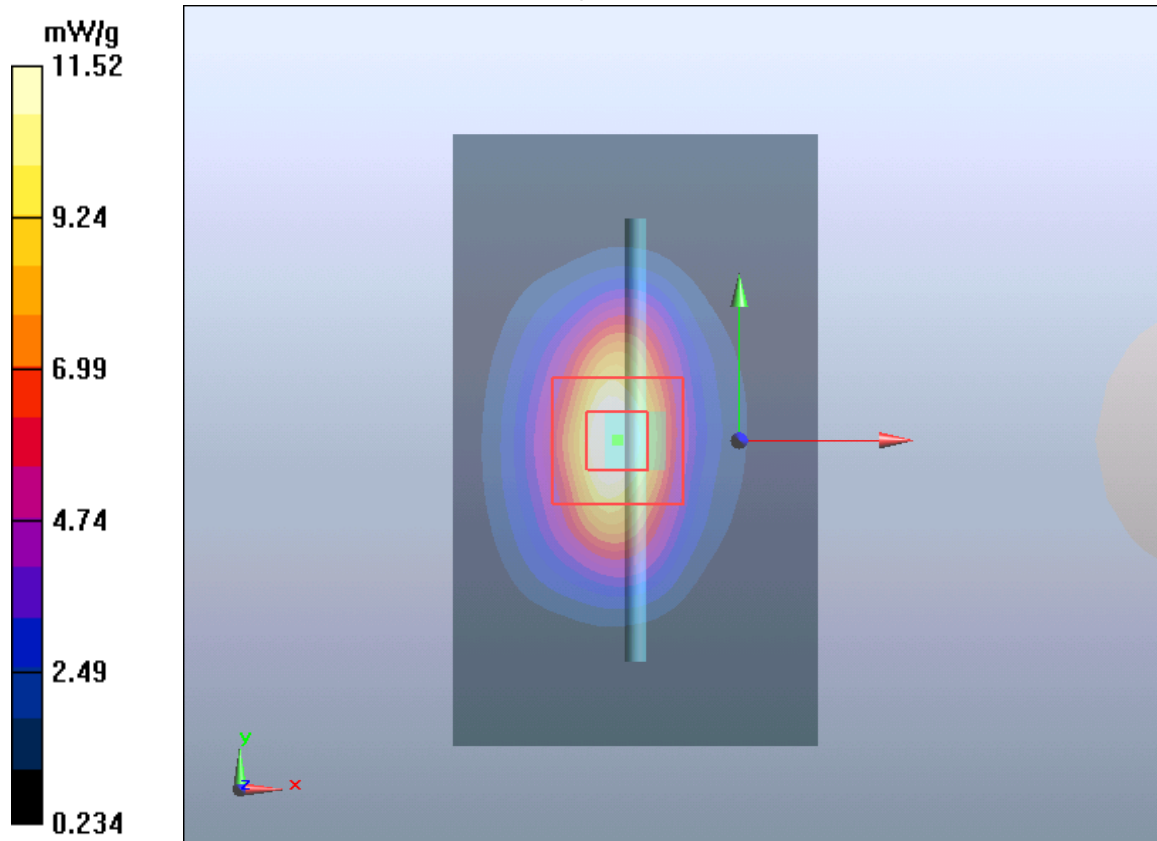
d=10mm, Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 82.3 V/m; Power Drift = 0.068 dB

Peak SAR (extrapolated) = 17.8 W/kg

SAR(1 g) = 9.91 mW/g; SAR(10 g) = 5.23 mW/g

Maximum value of SAR (measured) = 11.52 mW/g



Plot 16 System Performance Check at 2450 MHz Head TSL

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 786

Date: 7/1/2018

Communication System: CW; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.85$ S/m; $\epsilon_r = 39.7$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.57, 7.57, 7.57); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

d=10mm, Pin=250mW/Area Scan (41x71x1): Measurement grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 18.2 mW/g

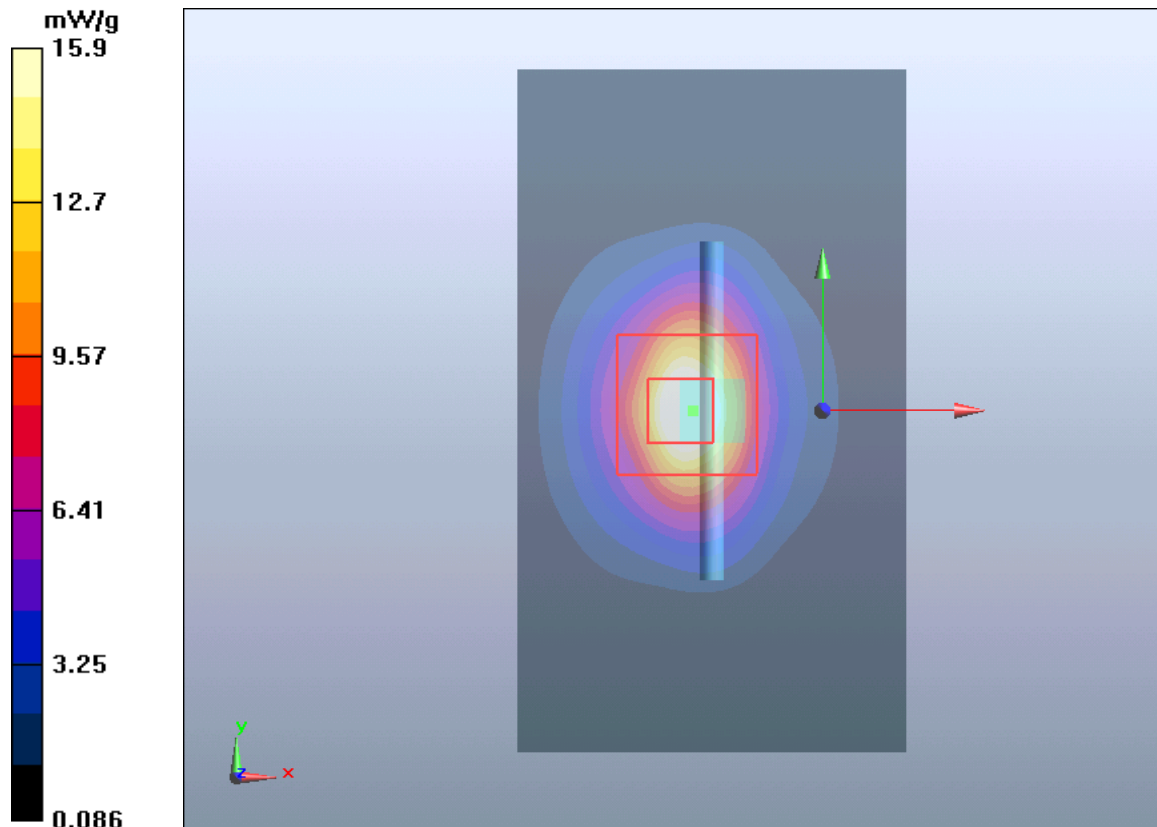
d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 88.8 V/m; Power Drift = 0.075 dB

Peak SAR (extrapolated) = 30 W/kg

SAR(1 g) = 13.7 mW/g; SAR(10 g) = 6.22 mW/g

Maximum value of SAR (measured) = 15.9 mW/g



Plot 17 System Performance Check at 2450 MHz Head TSL

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 786

Date: 7/20/2018

Communication System: CW; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.81$ mho/m; $\epsilon_r = 39.9$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.57, 7.57, 7.57); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

d=10mm, Pin=250mW/Area Scan (41x71x1): Measurement grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 21.0 mW/g

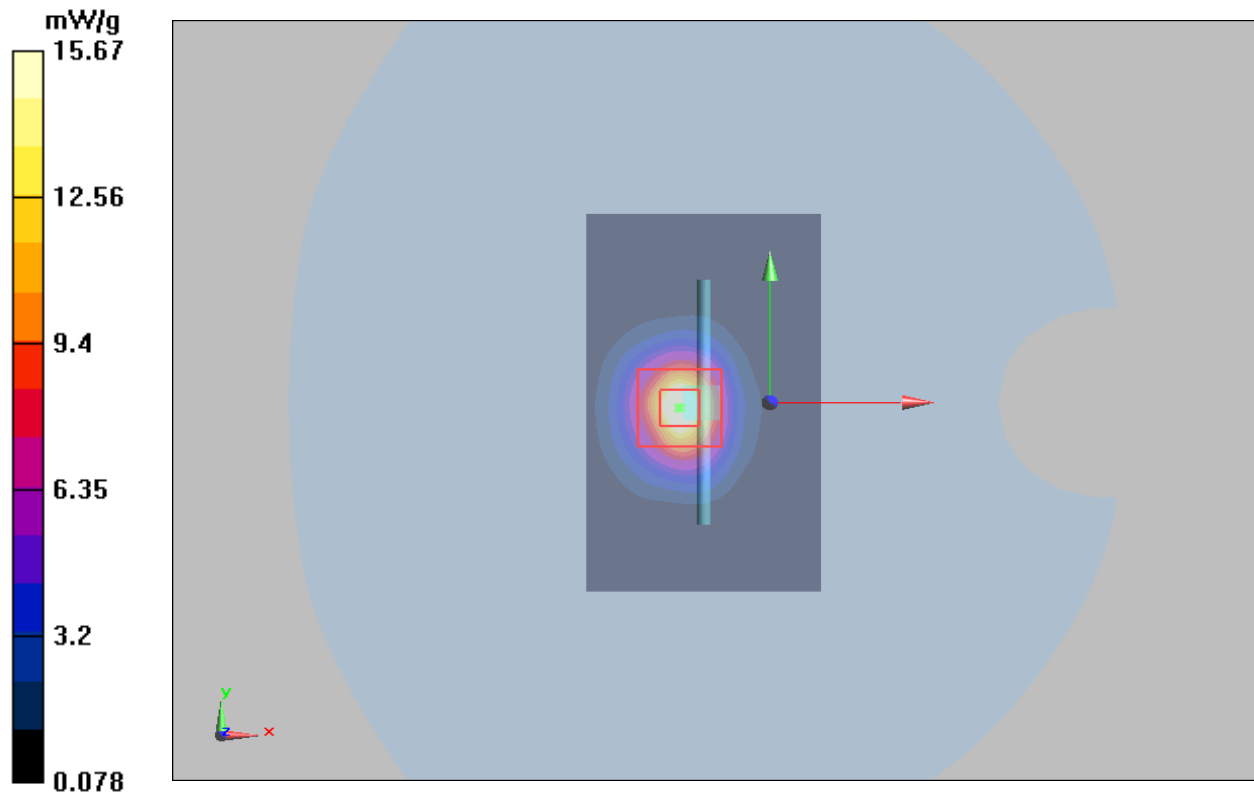
d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 67.0 V/m; Power Drift = 0.104 dB

Peak SAR (extrapolated) = 28.0 W/kg

SAR(1 g) = 13.14 mW/g; SAR(10 g) = 6.55 mW/g

Maximum value of SAR (measured) = 15.67 mW/g



Plot 18 System Performance Check at 2450 MHz Body TSL

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 786

Date: 7/1/2018

Communication System: CW; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.93$ S/m; $\epsilon_r = 51.8$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.53, 7.53, 7.53); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

d=10mm, Pin=250mW/Area Scan (41x71x1): Measurement grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 16 mW/g

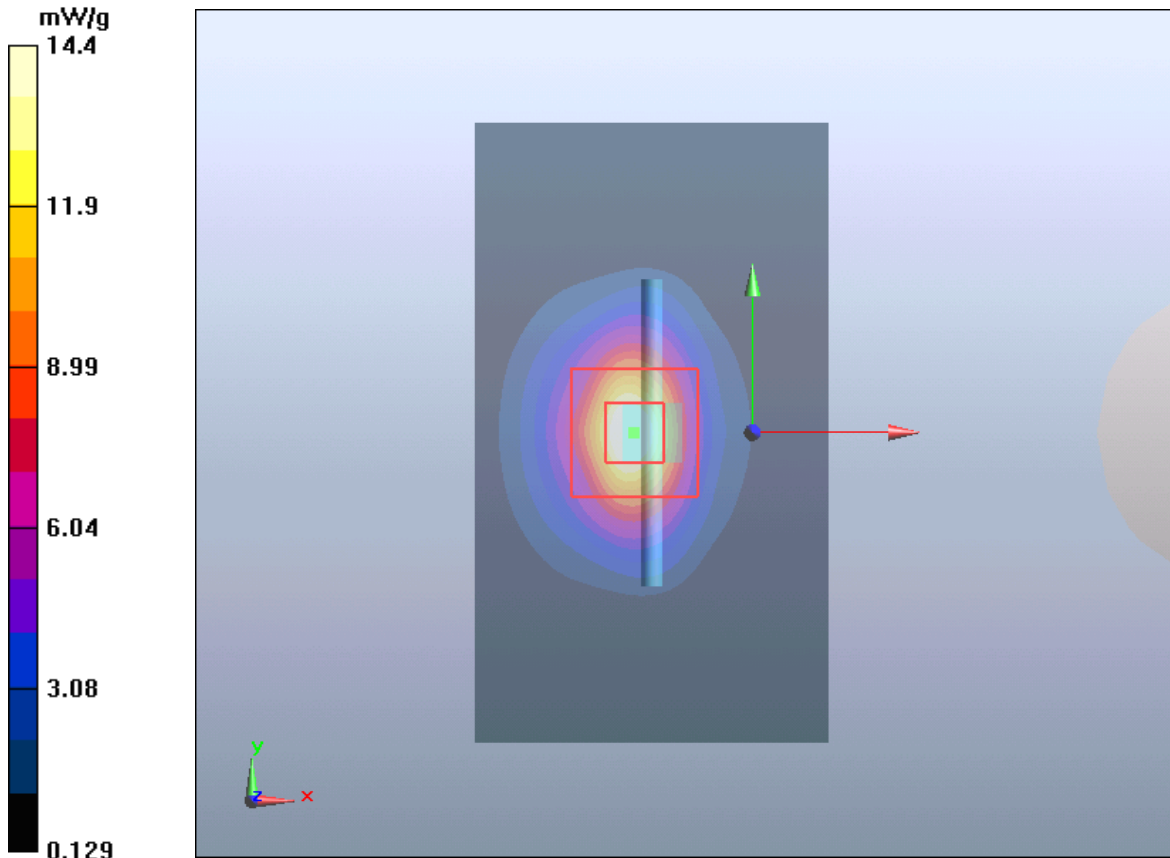
d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 81.2 V/m; Power Drift = 0.003 dB

Peak SAR (extrapolated) = 25.4 W/kg

SAR(1 g) = 12.5 mW/g; SAR(10 g) = 6.20 mW/g

Maximum value of SAR (measured) = 14.4 mW/g



Plot 19 System Performance Check at 2450 MHz Body TSL

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 786

Date: 7/20/2018

Communication System: CW; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.94$ mho/m; $\epsilon_r = 52.9$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.53, 7.53, 7.53); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

d=10mm, Pin=250mW/Area Scan (41x71x1): Measurement grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 16.21 mW/g

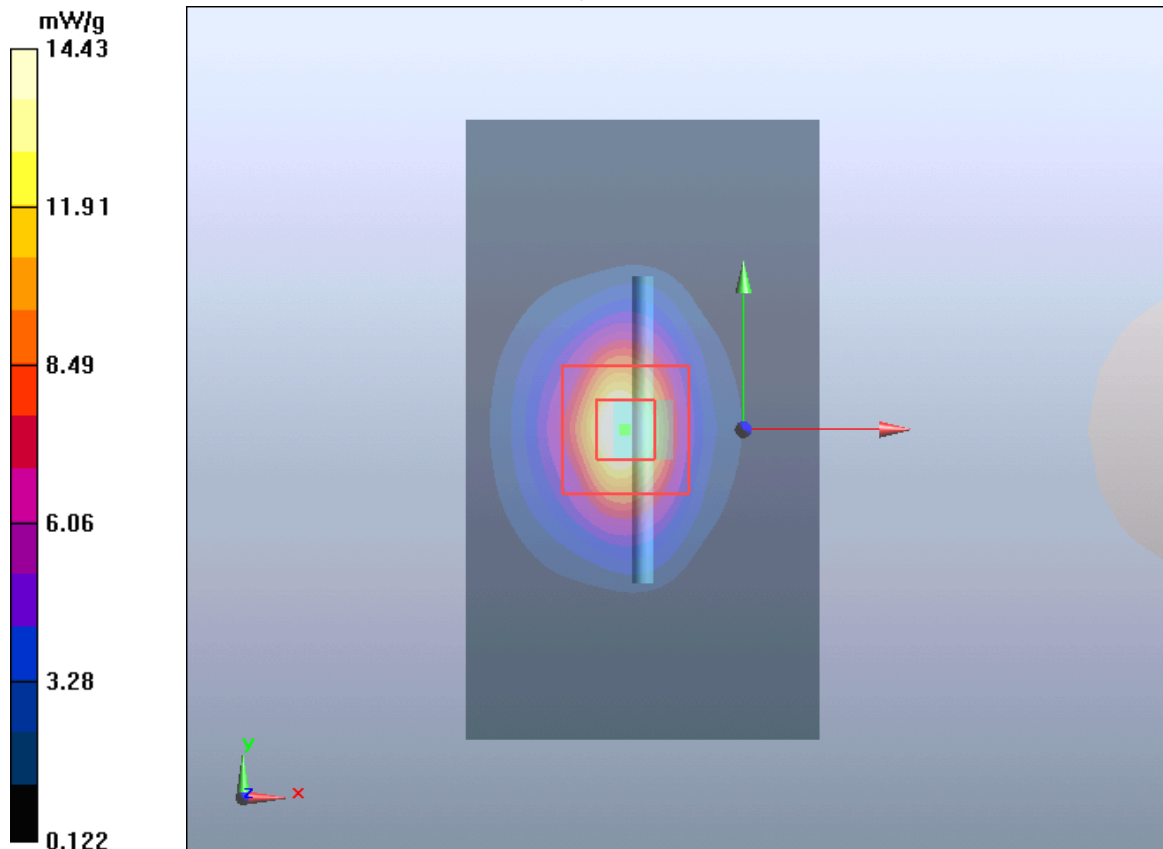
d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 81.2 V/m; Power Drift = 0.031 dB

Peak SAR (extrapolated) = 25.4 W/kg

SAR(1 g) = 13.2 mW/g; SAR(10 g) = 6.27 mW/g

Maximum value of SAR (measured) = 14.43 mW/g



Plot 20 System Performance Check at 2600 MHz Head TSL

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: D2600V2 - SN: 1058

Date: 6/27/2018

Communication System: CW; Frequency: 2600 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2600$ MHz; $\sigma = 2.02$ S/m; $\epsilon_r = 39.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.28, 7.28, 7.28); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

d=10mm, Pin=250mW/Area Scan (41x71x1): Measurement grid: dx=1.200 mm, dy=1.200 mm
 Maximum value of SAR (interpolated) = 17.439 mW/g

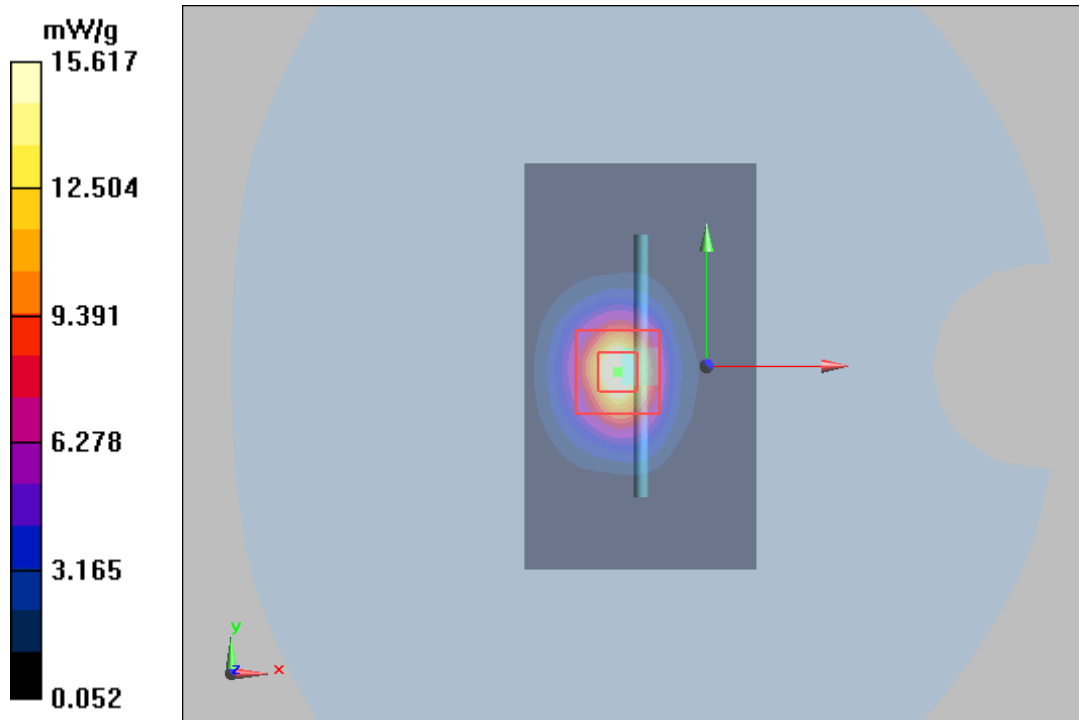
d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 87.998 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 31.858 W/kg

SAR(1 g) = 13.9 mW/g; SAR(10 g) = 6.07 mW/g

Maximum value of SAR (measured) = 15.617 mW/g



Plot 21 System Performance Check at 2600 MHz Head TSL

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: D2600V2 - SN: 1025

Date: 6/28/2018

Communication System: CW; Frequency: 2600 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2600$ MHz; $\sigma = 2.01$ S/m; $\epsilon_r = 38.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.28, 7.28, 7.28); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

d=10mm, Pin=250mW/Area Scan (61x101x1): Measurement grid: dx=1.200mm, dy=1.200mm
 Maximum value of SAR (interpolated) = 17.439 mW/g

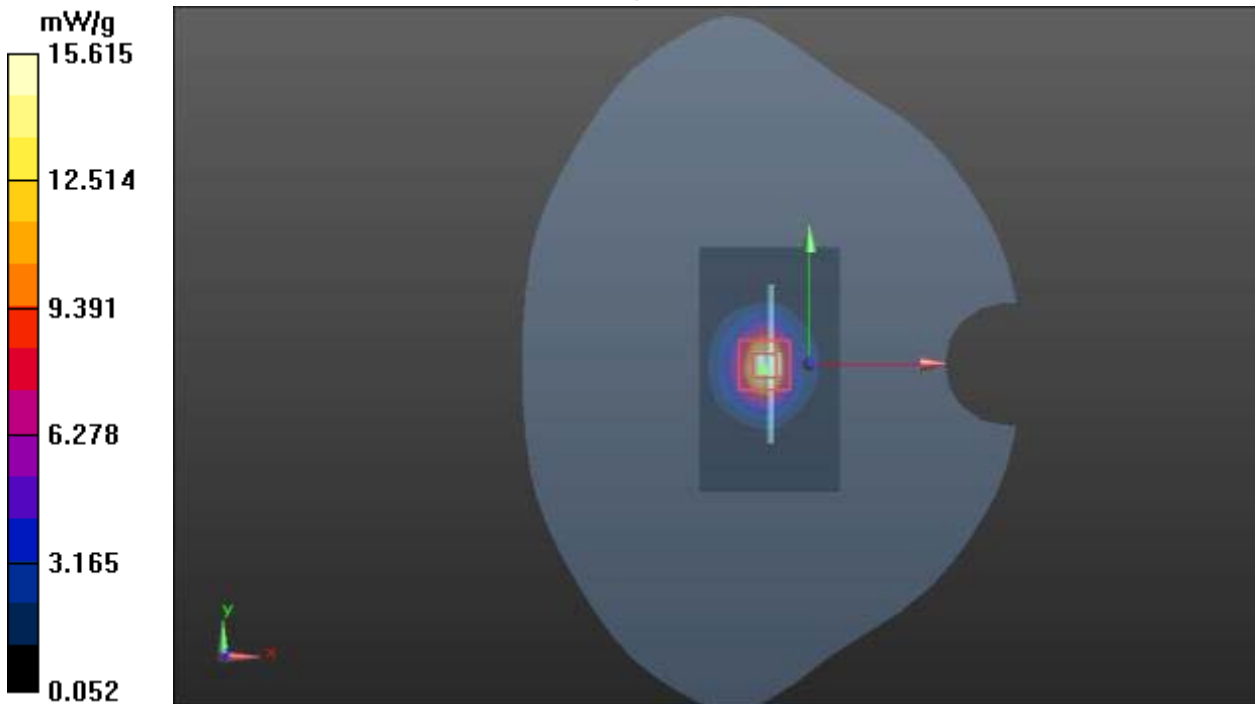
d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 87.998 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 31.858 W/kg

SAR(1 g) = 13.9 mW/g; SAR(10 g) = 6.08 mW/g

Maximum value of SAR (measured) = 15.615 mW/g



Plot 22 System Performance Check at 2600 MHz Head TSL

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: D2600V2 - SN: 1025

Date: 7/19/2018

Communication System: CW; Frequency: 2600 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2600$ MHz; $\sigma = 1.99$ mho/m; $\epsilon_r = 38.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.28, 7.28, 7.28); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

d=10mm, Pin=250mW/Area Scan (61x101x1): Measurement grid: dx=1.200mm, dy=1.200mm
 Maximum value of SAR (interpolated) = 17.32 mW/g

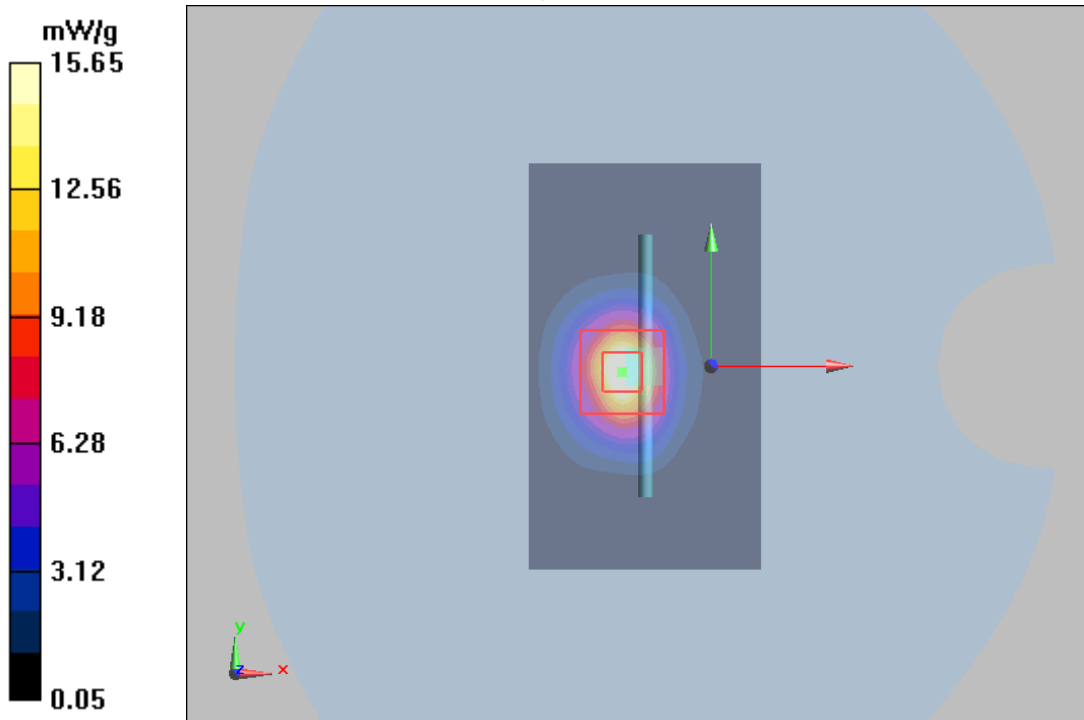
d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 87.465 V/m; Power Drift = 0.146 dB

Peak SAR (extrapolated) = 31.85 W/kg

SAR(1 g) = 13.94 mW/g; SAR(10 g) = 6.11 mW/g

Maximum value of SAR (measured) = 15.65 mW/g



Plot 23 System Performance Check at 2600 MHz Head TSL

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: D2600V2 - SN: 1025

Date: 7/20/2018

Communication System: CW; Frequency: 2600 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2600 \text{ MHz}$; $\sigma = 1.98 \text{ mho/m}$; $\epsilon_r = 38.4$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.28, 7.28, 7.28); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

d=10mm, Pin=250mW/Area Scan (61x101x1): Measurement grid: dx=1.200mm, dy=1.200mm
 Maximum value of SAR (interpolated) = 17.59 mW/g

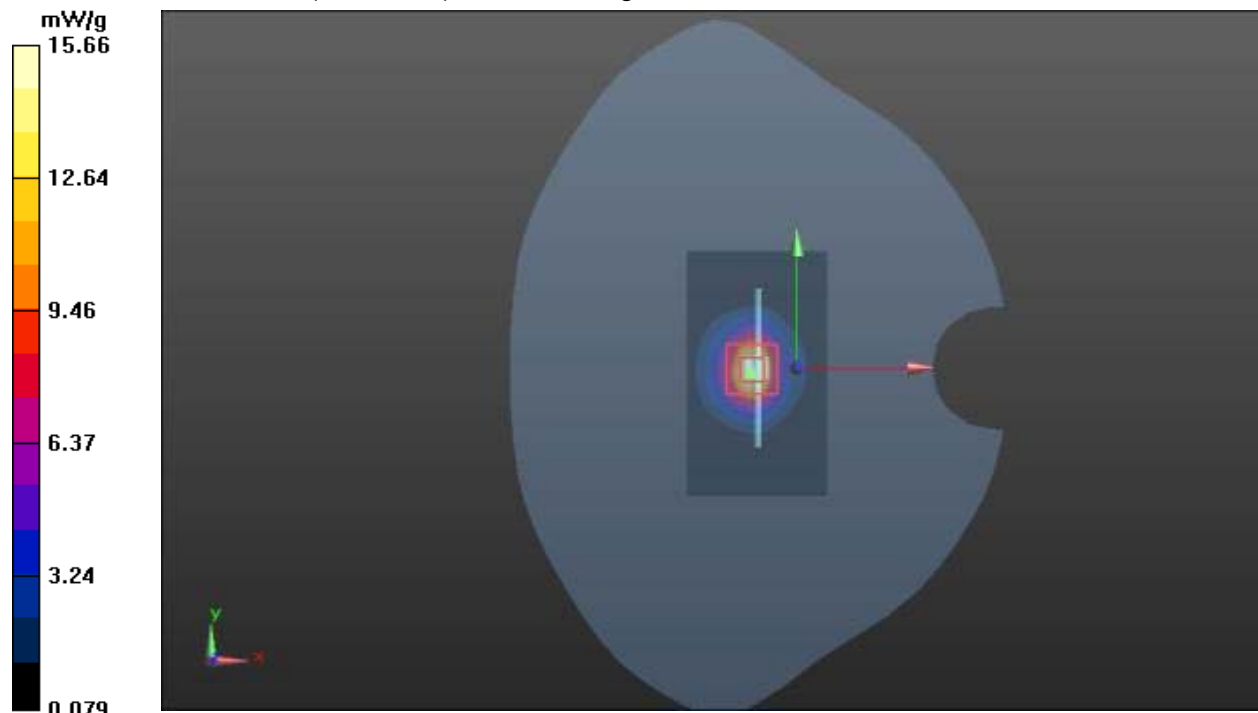
d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 87.998 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 31.858 W/kg

SAR(1 g) = 13.9 mW/g; SAR(10 g) = 6.09 mW/g

Maximum value of SAR (measured) = 15.66 mW/g



Plot 24 System Performance Check at 2600 MHz Body TSL

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: D2600V2 - SN: 1058

Date: 6/25/2018

Communication System: CW; Frequency: 2600 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2600$ MHz; $\sigma = 2.12$ S/m; $\epsilon_r = 51.4$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.16, 7.16, 7.16); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

d=10mm, Pin=250mW /Area Scan (41x71x1): Measurement grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 17.7 mW/g

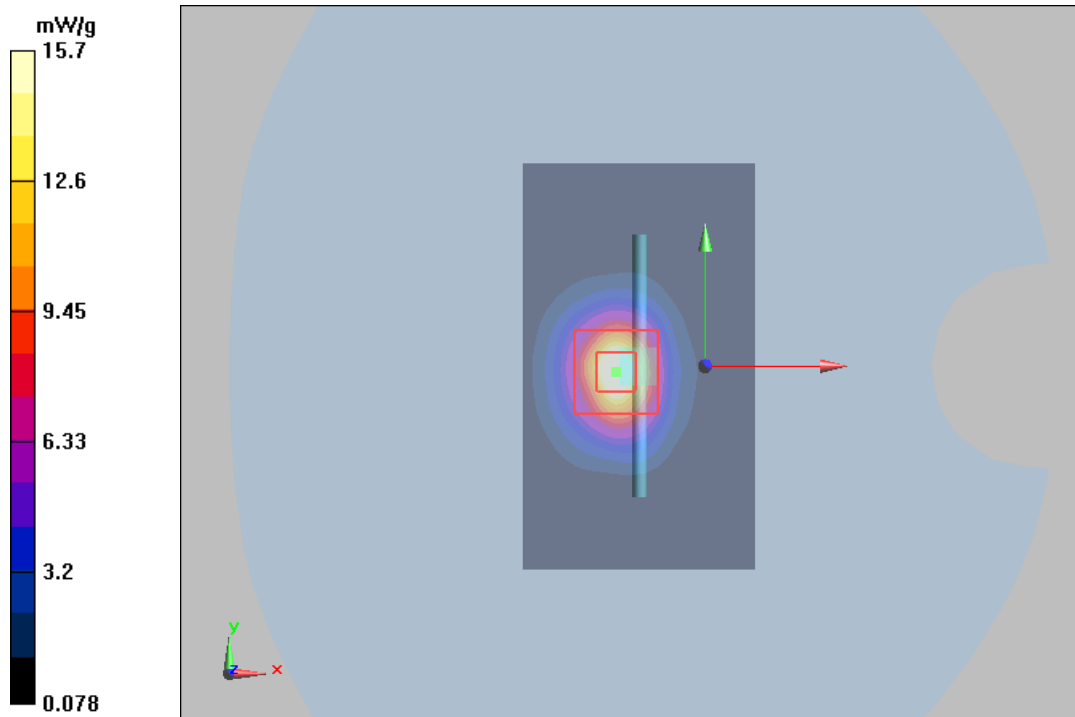
d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 74 V/m; Power Drift = -0.0027 dB

Peak SAR (extrapolated) = 28.5 W/kg

SAR(1 g) = 13.5 mW/g; SAR(10 g) = 5.99 mW/g

Maximum value of SAR (measured) = 15.7 mW/g



Plot 25 System Performance Check at 2600 MHz Body TSL

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: D2600V2 - SN: 1058

Date: 6/26/2018

Communication System: CW; Frequency: 2600 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2600$ MHz; $\sigma = 2.21$ S/m; $\epsilon_r = 51.7$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.16, 7.16, 7.16); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

d=10mm, Pin=250mW /Area Scan (41x71x1): Measurement grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 17.67 mW/g

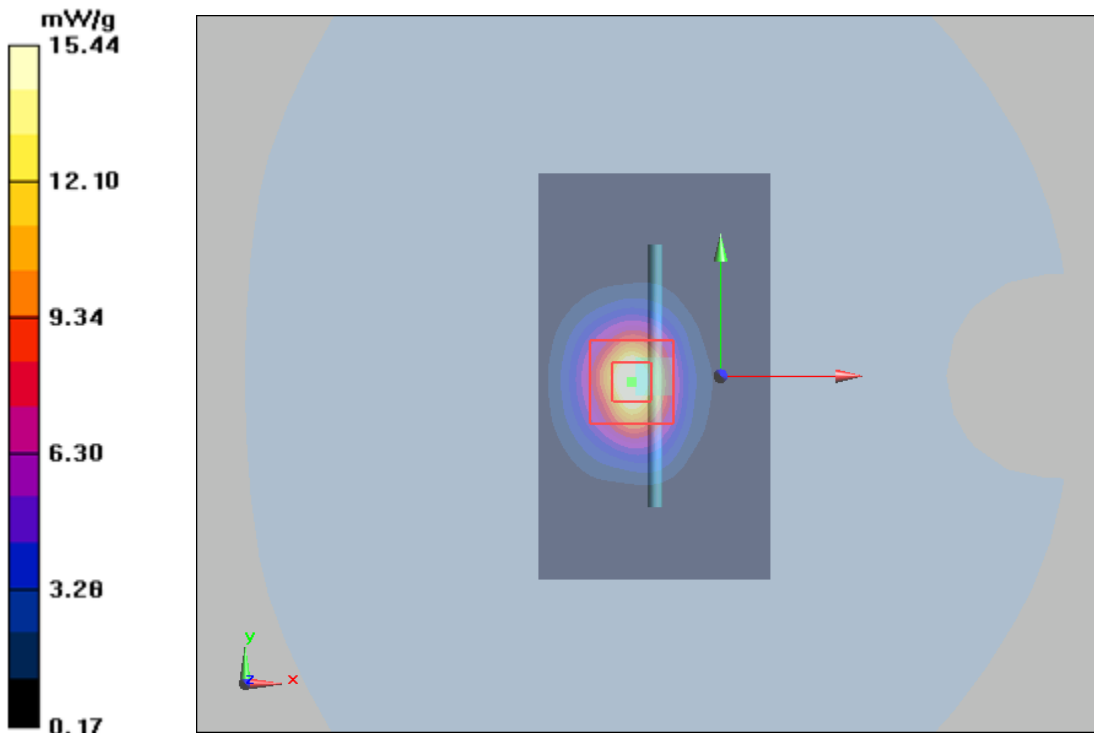
d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 74 V/m; Power Drift = -0.14 dB

Peak SAR (extrapolated) = 28.5 W/kg

SAR(1 g) = 13.55 mW/g; SAR(10 g) = 5.89 mW/g

Maximum value of SAR (measured) = 15.44 mW/g



Plot 26 System Performance Check at 2600 MHz Body TSL

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: D2600V2 - SN: 1058

Date: 7/19/2018

Communication System: CW; Frequency: 2600 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2600$ MHz; $\sigma = 2.20$ mho/m; $\epsilon_r = 51.7$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.16, 7.16, 7.16); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

d=10mm, Pin=250mW /Area Scan (41x71x1): Measurement grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 17.58 mW/g

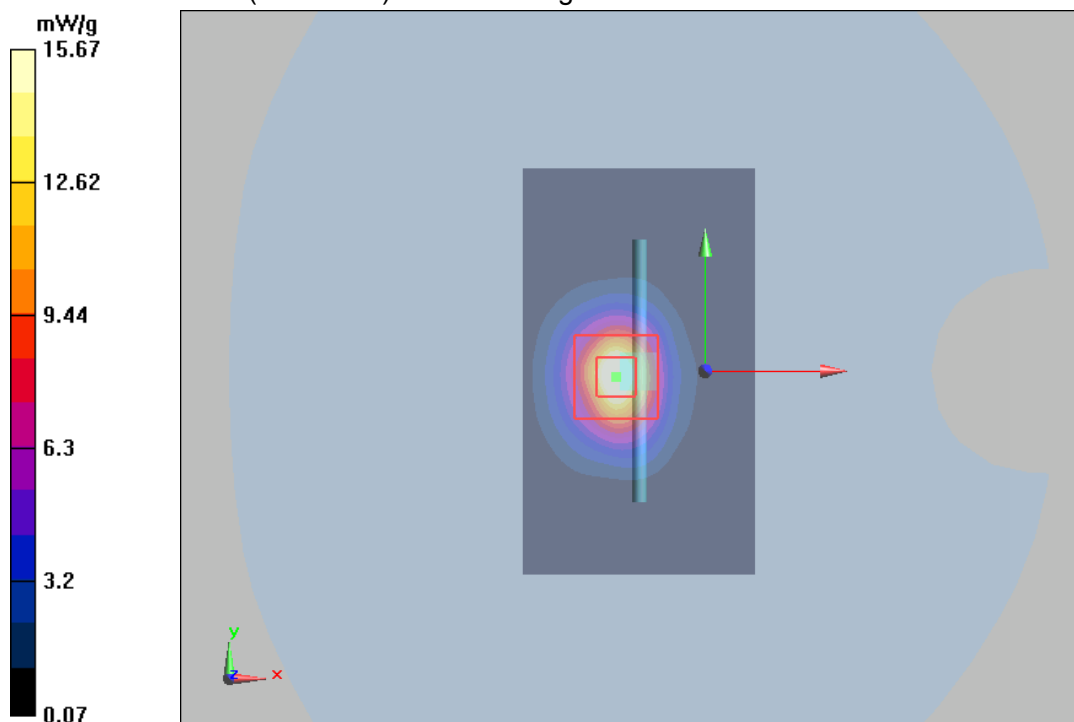
d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 74.40 V/m; Power Drift = -0.101 dB

Peak SAR (extrapolated) = 28.5 W/kg

SAR(1 g) = 13.89 mW/g; SAR(10 g) = 5.94 mW/g

Maximum value of SAR (measured) = 15.67 mW/g



Plot 27 System Performance Check at 5250 MHz Head TSL

DUT: Dipole 5250 MHz; Type: D5GHzV2; Serial: D5GHzV2 - SN: 1151

Date: 6/27/2018

Communication System: CW; Frequency: 5250 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5250$ MHz; $\sigma = 4.75$ S/m; $\epsilon_r = 36.0$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(5.60, 5.60, 5.60); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

d=10mm, Pin=100mW/Area Scan (61x101x1): Measurement grid: dx=1.000mm, dy=1.000mm
 Maximum value of SAR (interpolated) = 9.14 mW/g

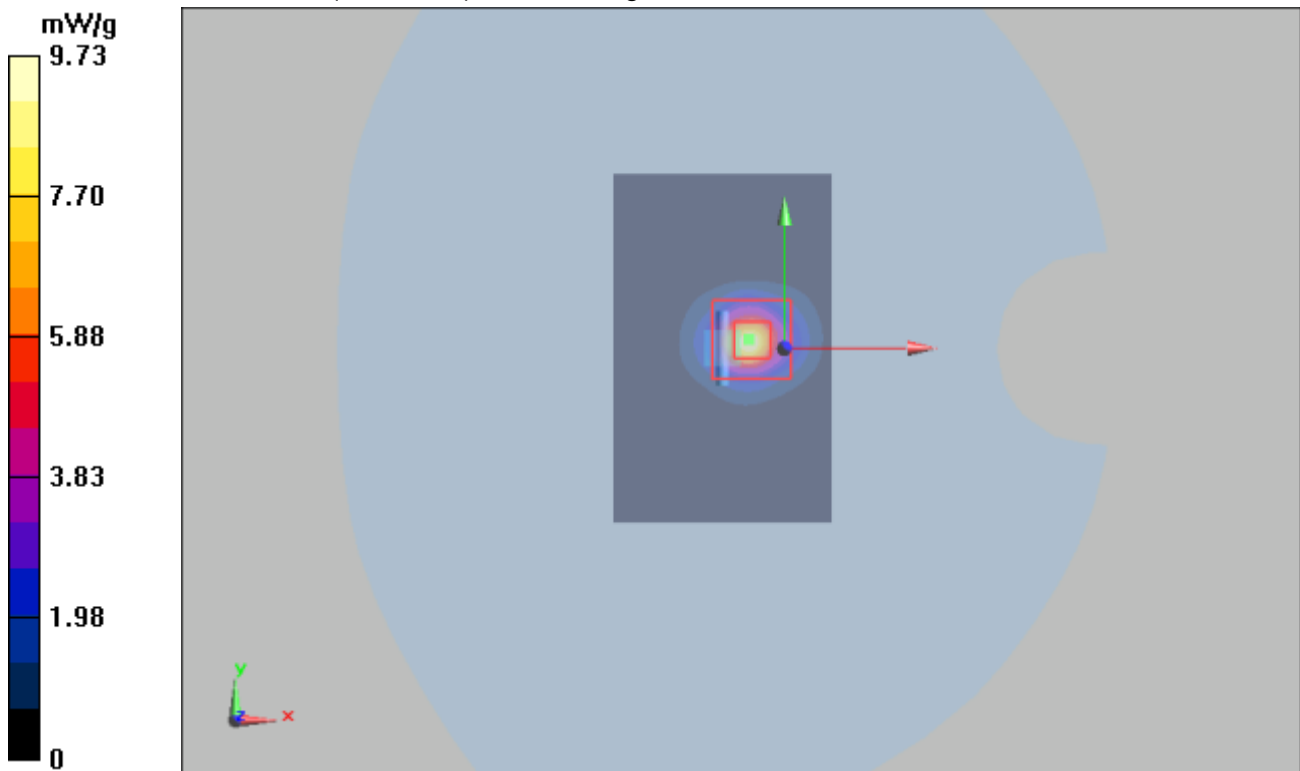
d=10mm, Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 33.6 V/m; Power Drift = -0.095 dB

Peak SAR (extrapolated) = 52.2 W/kg

SAR(1 g) = 7.87 mW/g; SAR(10 g) = 2.25 mW/g

Maximum value of SAR (measured) = 9.73 mW/g



Plot 28 System Performance Check at 5250 MHz Head TSL

DUT: Dipole 5250 MHz; Type: D5GHzV2; Serial: D5GHzV2 - SN: 1151

Date: 7/21/2018

Communication System: CW; Frequency: 5250 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5200$ MHz; $\sigma = 4.74$ mho/m; $\epsilon_r = 35.7$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(5.60, 5.60, 5.60); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

d=10mm, Pin=100mW/Area Scan (61x101x1): Measurement grid: dx=1.000mm, dy=1.000mm
 Maximum value of SAR (interpolated) = 9.4 mW/g

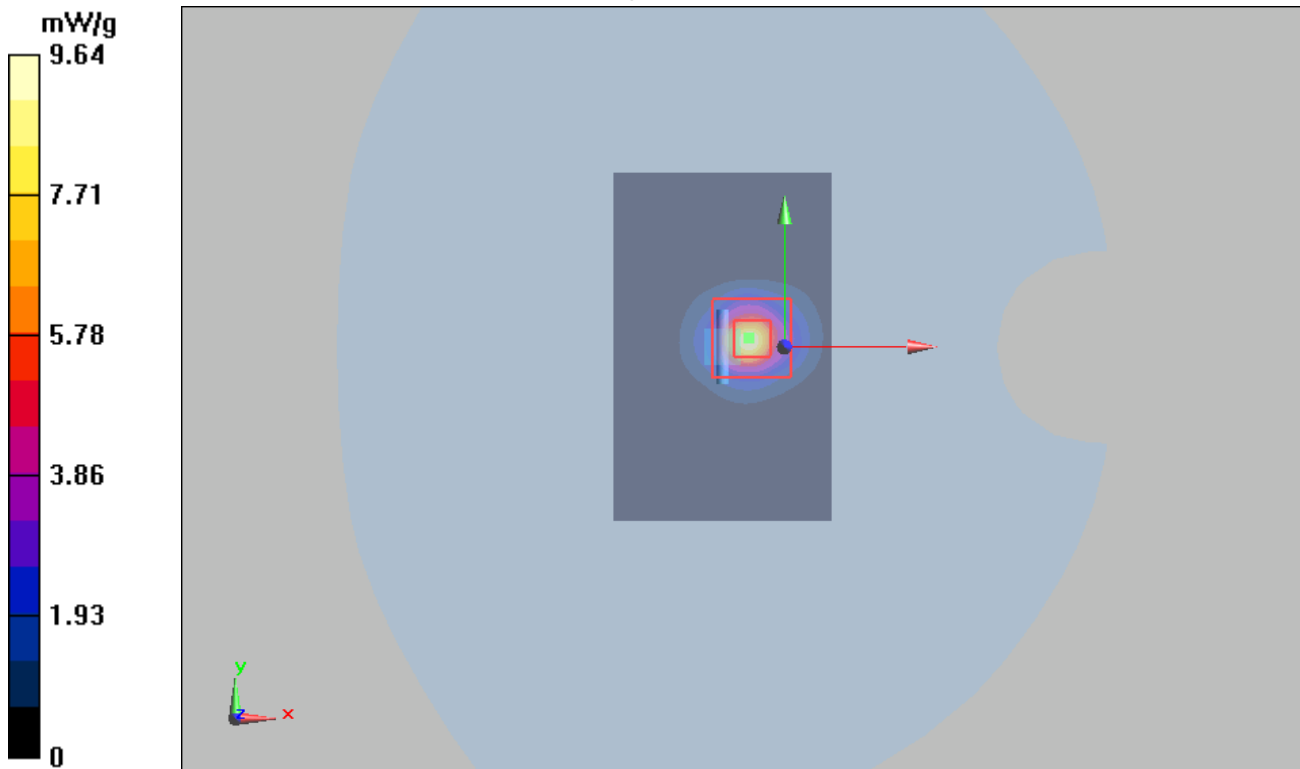
d=10mm, Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 33.6 V/m; Power Drift = -0.15 dB

Peak SAR (extrapolated) = 52.2 W/kg

SAR(1 g) = 7.94 mW/g; SAR(10 g) = 2.27 mW/g

Maximum value of SAR (measured) = 9.64 mW/g



Plot 29 System Performance Check at 5250 MHz Body TSL

DUT: Dipole 5250 MHz; Type: D5GHzV2; Serial: D5GHzV2 - SN: 1151

Date: 7/12/2018

Communication System: CW; Frequency: 5250 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5250$ MHz; $\sigma = 5.42$ S/m; $\epsilon_r = 46.7$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(5.04, 5.04, 5.04); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

d=10mm, Pin=250mW/Area Scan (61x101x1): Measurement grid: dx=1.000mm, dy=1.000mm
 Maximum value of SAR (interpolated) = 7.69 mW/g

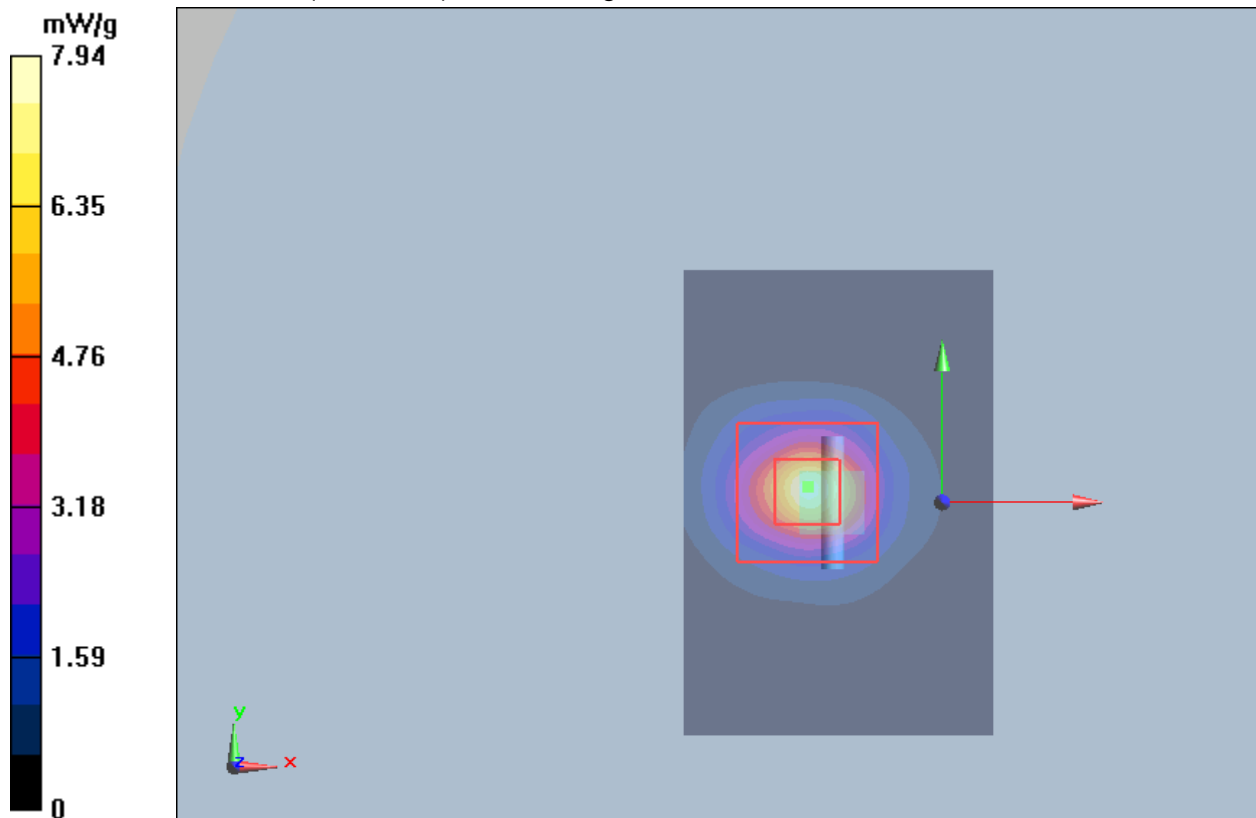
d=10mm, Pin=250mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 36.3 V/m; Power Drift = 0.0277 dB

Peak SAR (extrapolated) = 47.7 W/kg

SAR(1 g) = 7.46 mW/g; SAR(10 g) = 2.26 mW/g

Maximum value of SAR (measured) = 7.94 mW/g



Plot 30 System Performance Check at 5250 MHz Body TSL

DUT: Dipole 5250 MHz; Type: D5GHzV2; Serial: D5GHzV2 - SN: 1151

Date: 7/20/2018

Communication System: CW; Frequency: 5250 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5250$ MHz; $\sigma = 5.40$ S/m; $\epsilon_r = 47.1$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(5.04, 5.04, 5.04); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

d=10mm, Pin=250mW/Area Scan (61x101x1): Measurement grid: dx=1.000mm, dy=1.000mm
 Maximum value of SAR (interpolated) = 7.74 mW/g

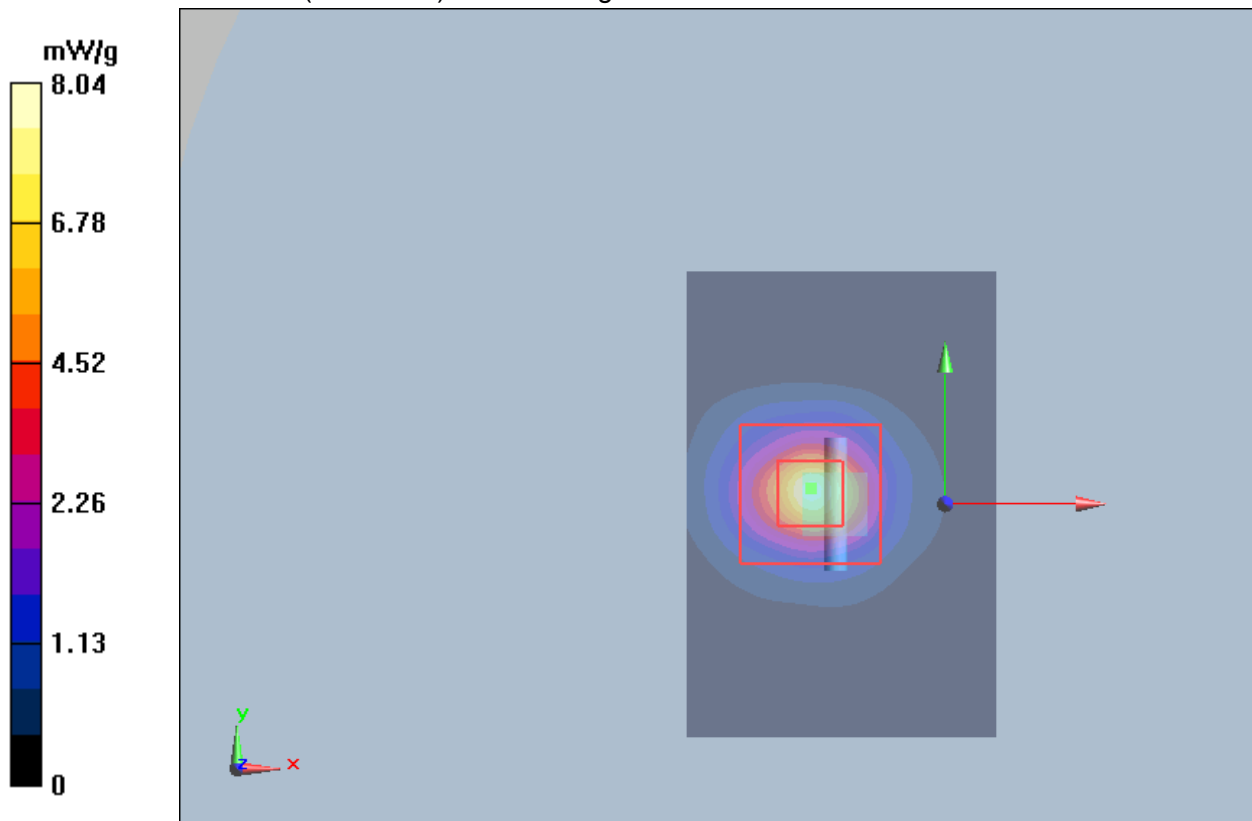
d=10mm, Pin=250mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 36 V/m; Power Drift = 0.012 dB

Peak SAR (extrapolated) = 47.74 W/kg

SAR(1 g) = 7.42 mW/g; SAR(10 g) = 2.28 mW/g

Maximum value of SAR (measured) = 8.04 mW/g



Plot 31 System Performance Check at 5600 MHz Head TSL

DUT: Dipole 5600 MHz; Type: D5GHzV2; Serial: D5GHzV2 - SN: 1151

Date: 6/27/2018

Communication System: CW; Frequency: 5600 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5600$ MHz; $\sigma = 5.20$ S/m; $\epsilon_r = 35.1$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(4.87, 4.87, 4.87); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

d=10mm, Pin=100mW/Area Scan (61x101x1): Measurement grid: dx=1.000mm, dy=1.000mm
 Maximum value of SAR (interpolated) = 8.25 mW/g

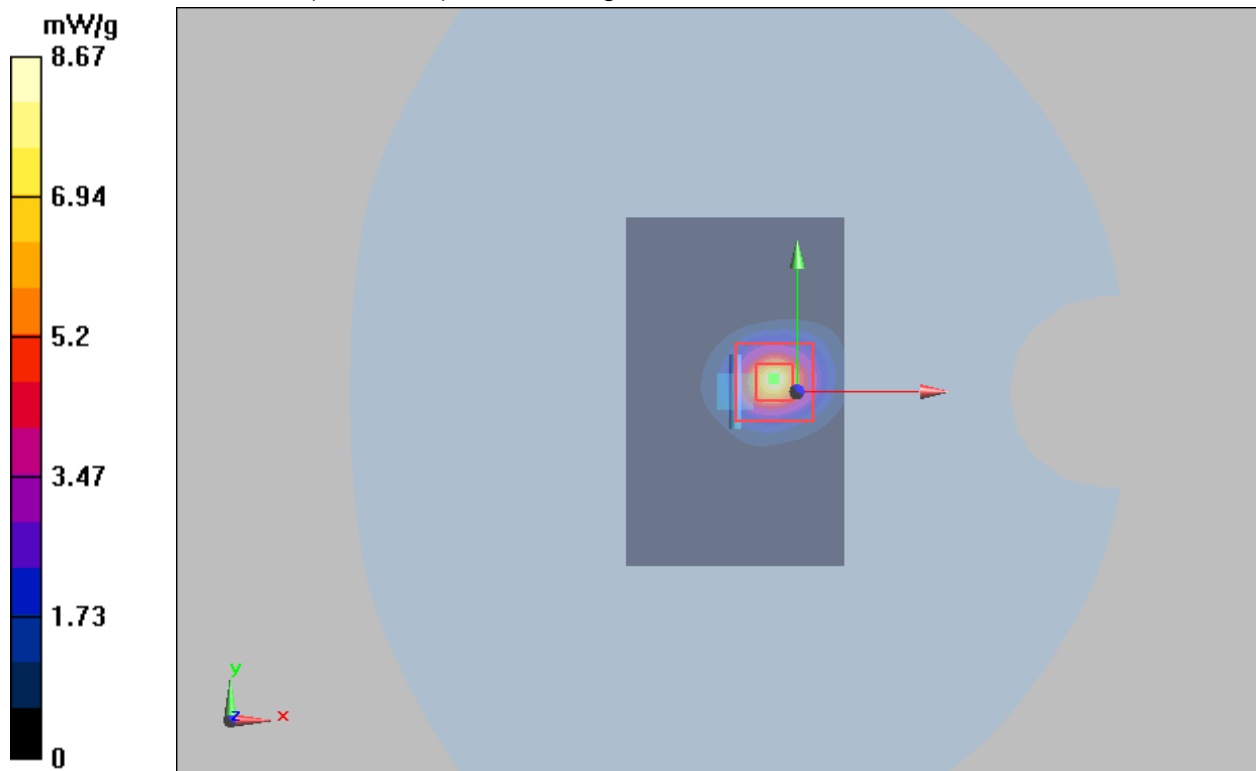
d=10mm, Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 23.1 V/m; Power Drift = -0.028 dB

Peak SAR (extrapolated) = 22.9 W/kg

SAR(1 g) = 7.67 mW/g; SAR(10 g) = 2.27 mW/g

Maximum value of SAR (measured) = 8.67 mW/g



Plot 32 System Performance Check at 5600 MHz Head TSL

DUT: Dipole 5600 MHz; Type: D5GHzV2; Serial: D5GHzV2 - SN: 1151

Date: 7/21/2018

Communication System: CW; Frequency: 5600 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5600$ MHz; $\sigma = 5.17$ mho/m; $\epsilon_r = 35.4$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(4.87, 4.87, 4.87); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

d=10mm, Pin=100mW/Area Scan (61x101x1): Measurement grid: dx=1.000mm, dy=1.000mm
 Maximum value of SAR (interpolated) = 8.30 mW/g

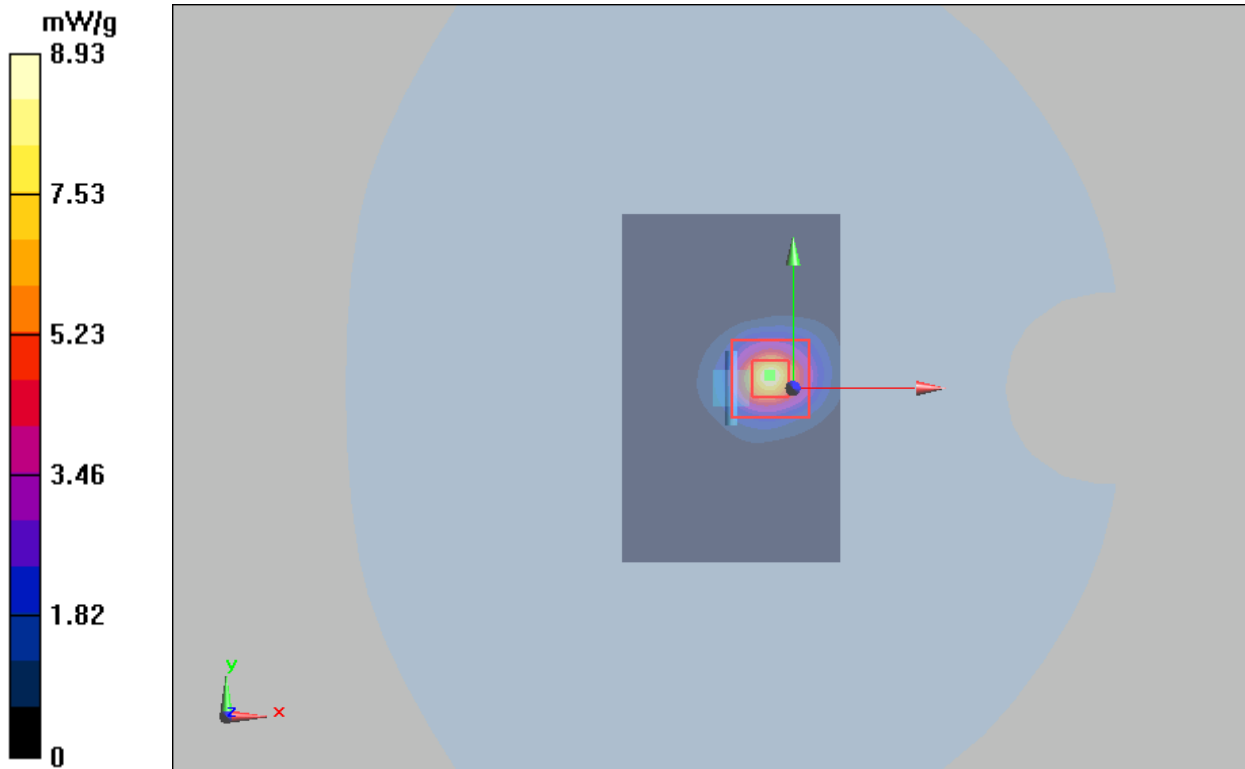
d=10mm, Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 23.13 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 23.0 W/kg

SAR(1 g) = 7.98 mW/g; SAR(10 g) = 2.27 mW/g

Maximum value of SAR (measured) = 8.93 mW/g



Plot 33 System Performance Check at 5600 MHz Body TSL

DUT: Dipole 5600 MHz; Type: D5GHzV2; Serial: D5GHzV2 - SN: 1151

Date: 7/12/2018

Communication System: CW; Frequency: 5600 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5600$ MHz; $\sigma = 6.00$ S/m; $\epsilon_r = 46.7$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(4.27, 4.27, 4.27); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

d=10mm, Pin=250mW/Area Scan (61x101x1): Measurement grid: dx=1.000mm, dy=1.000mm
Maximum value of SAR (interpolated) = 7.84 mW/g

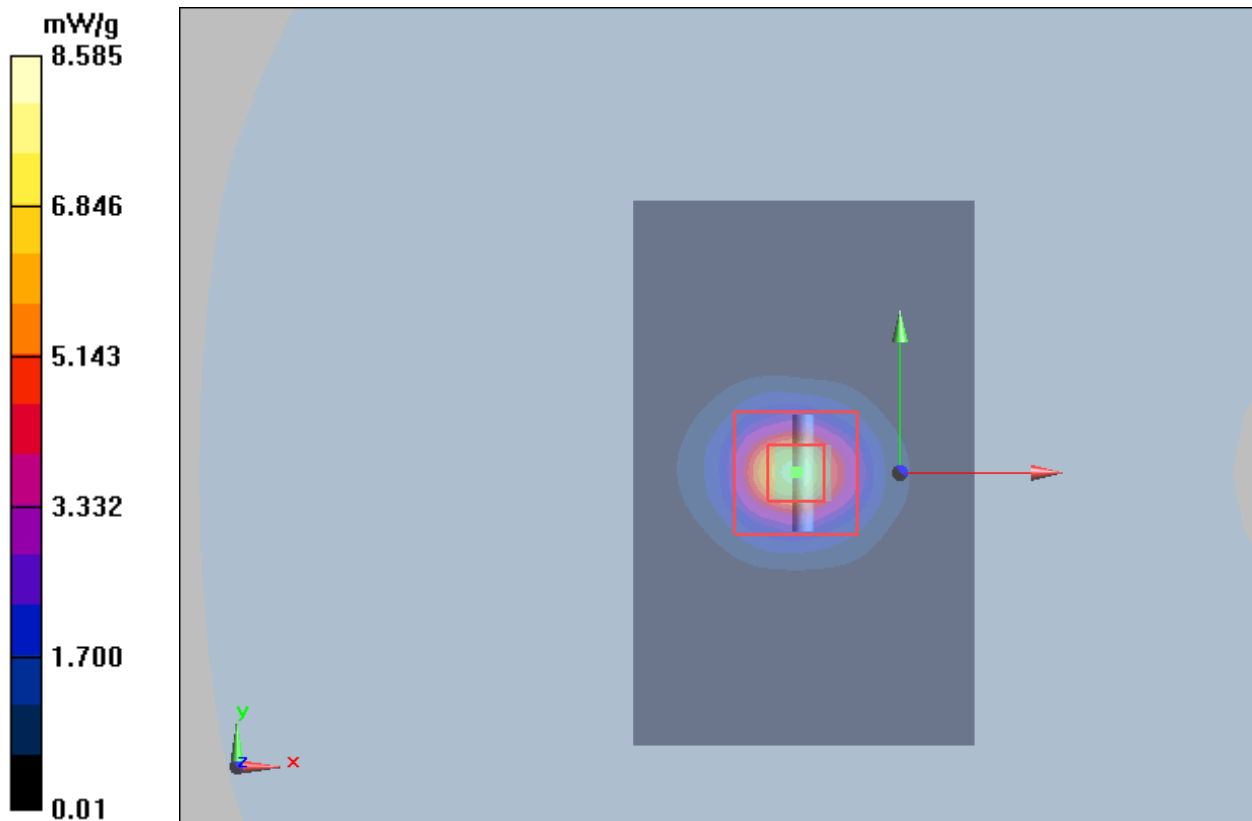
d=10mm, Pin=250mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 38 V/m; Power Drift = -0.018 dB

Peak SAR (extrapolated) = 22.6 W/kg

SAR(1 g) = 8.10 mW/g; SAR(10 g) = 2.11 mW/g

Maximum value of SAR (measured) = 8.585 mW/g



Plot 34 System Performance Check at 5600 MHz Body TSL

DUT: Dipole 5600 MHz; Type: D5GHzV2; Serial: D5GHzV2 - SN: 1151

Date: 7/21/2018

Communication System: CW; Frequency: 5600 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5600$ MHz; $\sigma = 5.88$ mho/m; $\epsilon_r = 47.8$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(4.27, 4.27, 4.27); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

d=10mm, Pin=250mW/Area Scan (61x101x1): Measurement grid: dx=1.000mm, dy=1.000mm
 Maximum value of SAR (interpolated) = 7.8 mW/g

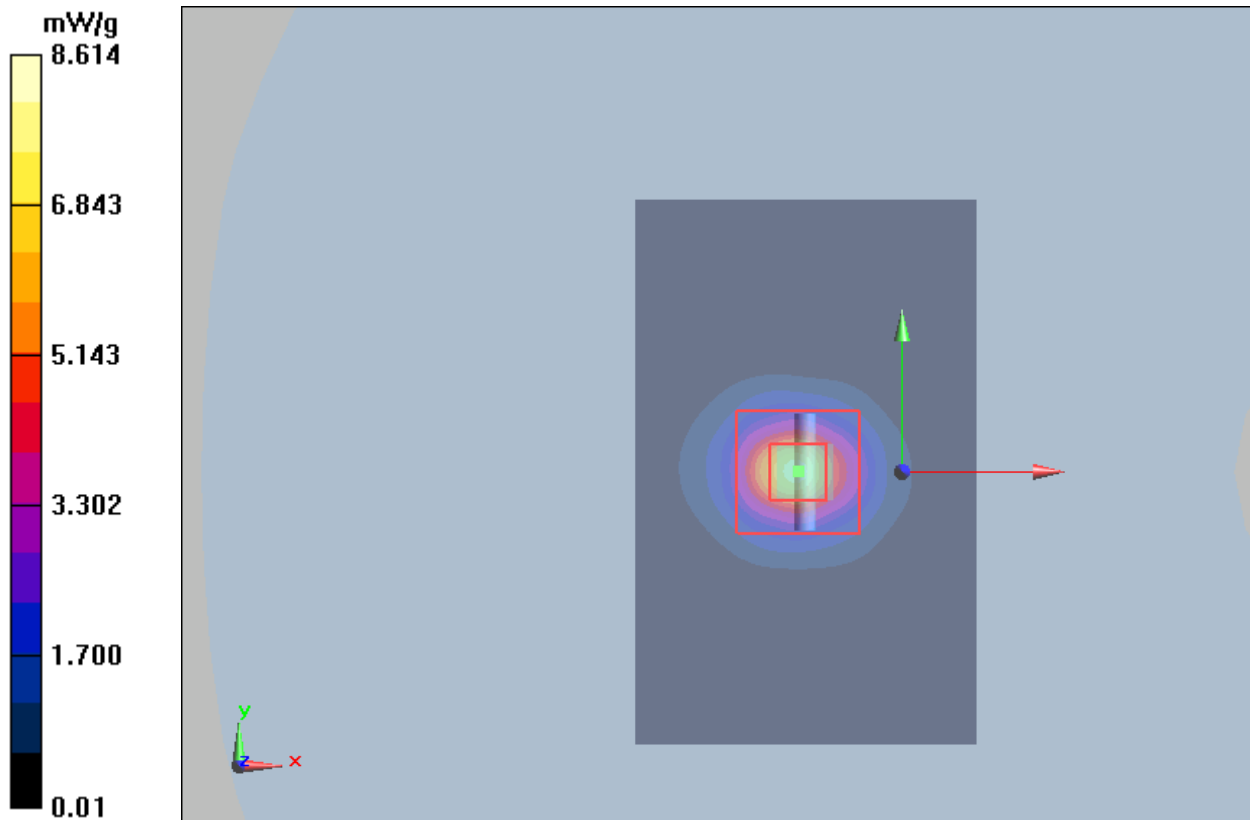
d=10mm, Pin=250mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 38.12 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 22.67 W/kg

SAR(1 g) = 8.04 mW/g; SAR(10 g) = 2.21 mW/g

Maximum value of SAR (measured) = 8.614 mW/g



Plot 35 System Performance Check at 5750 MHz Head TSL

DUT: Dipole 5750 MHz; Type: D5GHzV2; Serial: D5GHzV2 - SN: 1151

Date: 6/27/2018

Communication System: CW; Frequency: 5750 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5750$ MHz; $\sigma = 5.21$ S/m; $\epsilon_r = 34.9$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(4.99, 4.99, 4.99); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

d=10mm, Pin=100mW/Area Scan (61x101x1): Measurement grid: dx=1.000mm, dy=1.000mm
 Maximum value of SAR (interpolated) = 8.31 mW/g

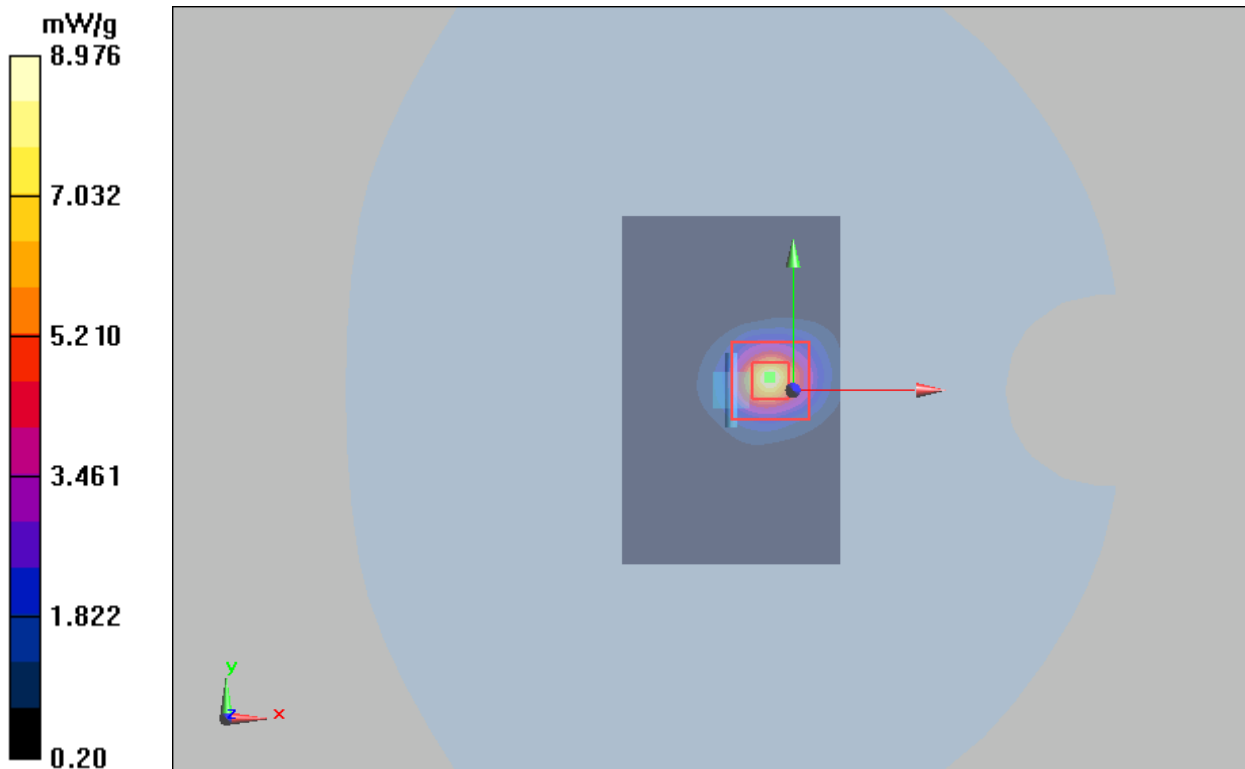
d=10mm, Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 23.1 V/m; Power Drift = 0.044 dB

Peak SAR (extrapolated) = 23.4 W/kg

SAR(1 g) = 7.66 mW/g; SAR(10 g) = 2.27 mW/g

Maximum value of SAR (measured) = 8.976 mW/g



Plot 36 System Performance Check at 5750 MHz Body TSL

DUT: Dipole 5750 MHz; Type: D5GHzV2; Serial: D5GHzV2 - SN: 1151

Date: 7/12/2018

Communication System: CW; Frequency: 5750 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5750$ MHz; $\sigma = 6.14$ S/m; $\epsilon_r = 47.6$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(4.43, 4.43, 4.43); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

d=10mm, Pin=250mW/Area Scan (61x101x1): Measurement grid: dx=1.000mm, dy=1.000mm
 Maximum value of SAR (interpolated) = 7.84 mW/g

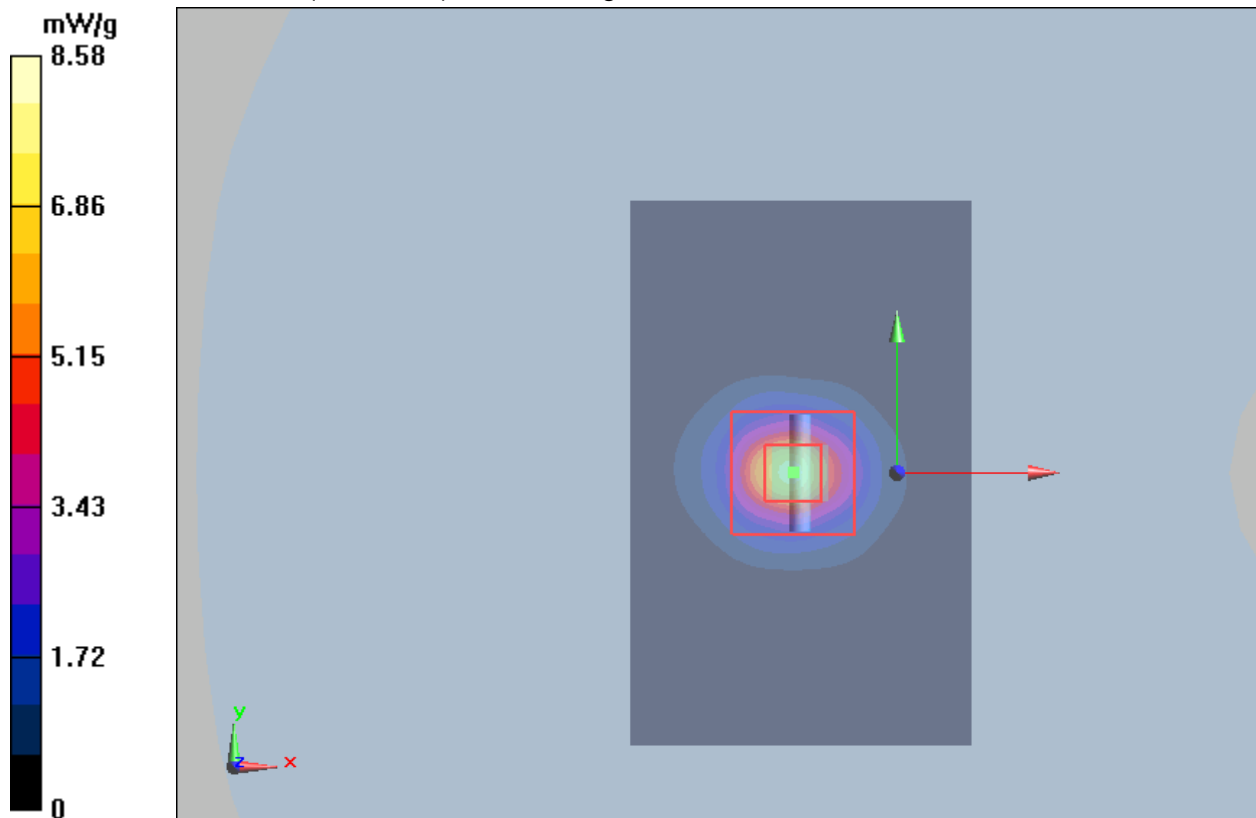
d=10mm, Pin=250mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 38 V/m; Power Drift = -0.018 dB

Peak SAR (extrapolated) = 22.6 W/kg

SAR(1 g) = 7.15 mW/g; SAR(10 g) = 1.99 mW/g

Maximum value of SAR (measured) = 8.58 mW/g



ANNEX C: Highest Graph Results

Antenna 1

Plot 37 GSM 850 Right Cheek Middle

Date: 7/5/2018

Communication System: UID 0, GSM 850 (0); Frequency: 836.6 MHz; Duty Cycle: 1:8.30042

Medium parameters used: $f = 837$ MHz; $\sigma = 0.908$ S/m; $\epsilon_r = 41.317$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Right Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.10, 9.10, 9.10); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

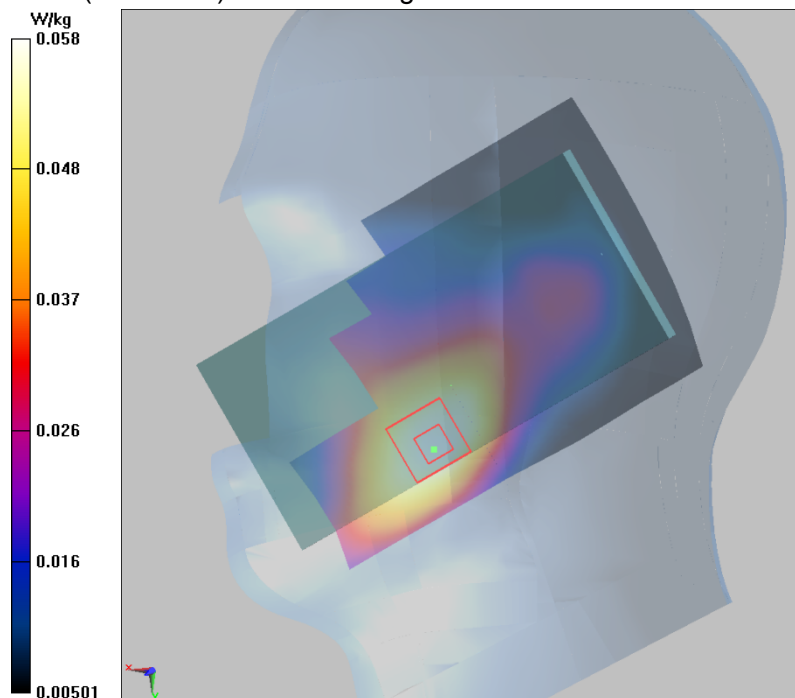
Right Cheek Middle/Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.0591 W/kg

Right Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.836 V/m; Power Drift = 0.021 dB

Peak SAR (extrapolated) = 0.0670 W/kg

SAR(1 g) = 0.056 W/kg; SAR(10 g) = 0.044 W/kg

Maximum value of SAR (measured) = 0.0582 W/kg



Plot 38 GSM 850 Back Side Middle (Distance 15mm)

Date: 7/5/2018

Communication System: UID 0, GSM (0); Frequency: 836.6 MHz; Duty Cycle: 1:8.30042

Medium parameters used: $f = 837$ MHz; $\sigma = 0.974$ S/m; $\epsilon_r = 53.795$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.32, 9.32, 9.32); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Back Side Middle/Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.280 W/kg

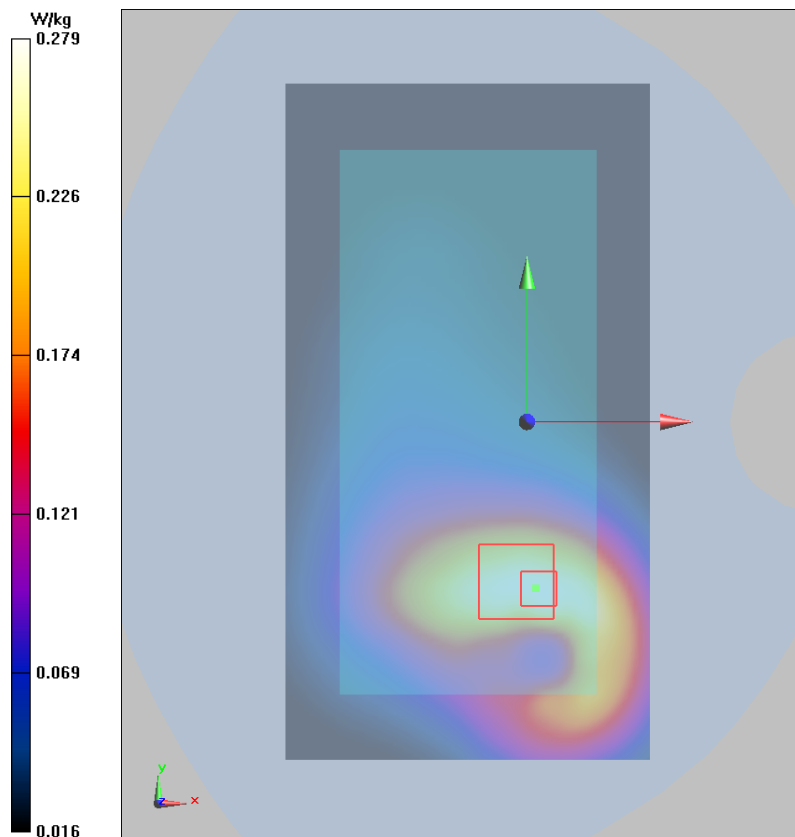
Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.311 V/m; Power Drift = 0.12 dB

Peak SAR (extrapolated) = 0.391 W/kg

SAR(1 g) = 0.259 W/kg; SAR(10 g) = 0.172 W/kg

Maximum value of SAR (measured) = 0.279 W/kg



Plot 39 GSM 850 GPRS (4Txslots) Back Side Middle (Distance 10mm)

Date: 7/8/2018

Communication System: UID 0, 4 slot GPRS (0); Frequency: 836.6 MHz; Duty Cycle: 1:2.07491

Medium parameters used: $f = 837$ MHz; $\sigma = 0.974$ S/m; $\epsilon_r = 53.795$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.32, 9.32, 9.32); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Back Side Middle/Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.485 W/kg

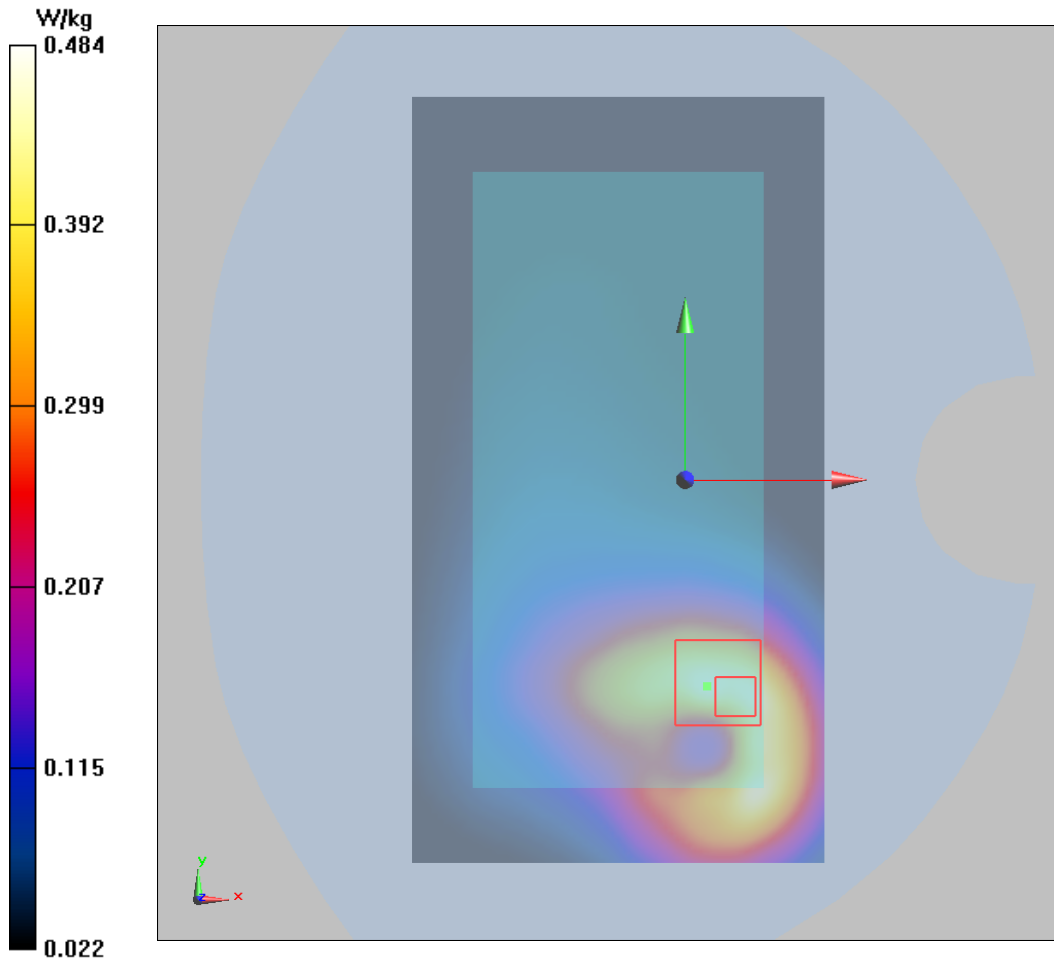
Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.428 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 0.757 W/kg

SAR(1 g) = 0.455 W/kg; SAR(10 g) = 0.276 W/kg

Maximum value of SAR (measured) = 0.484 W/kg



Plot 40 GSM 1900 Left Cheek Middle

Date: 6/30/2018

Communication System: UID 0, GSM (0); Frequency: 1880 MHz; Duty Cycle: 1:8.30042

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.36$ S/m; $\epsilon_r = 39.14$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.96, 7.96, 7.96); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Left Cheek Middle/Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.0797 W/kg

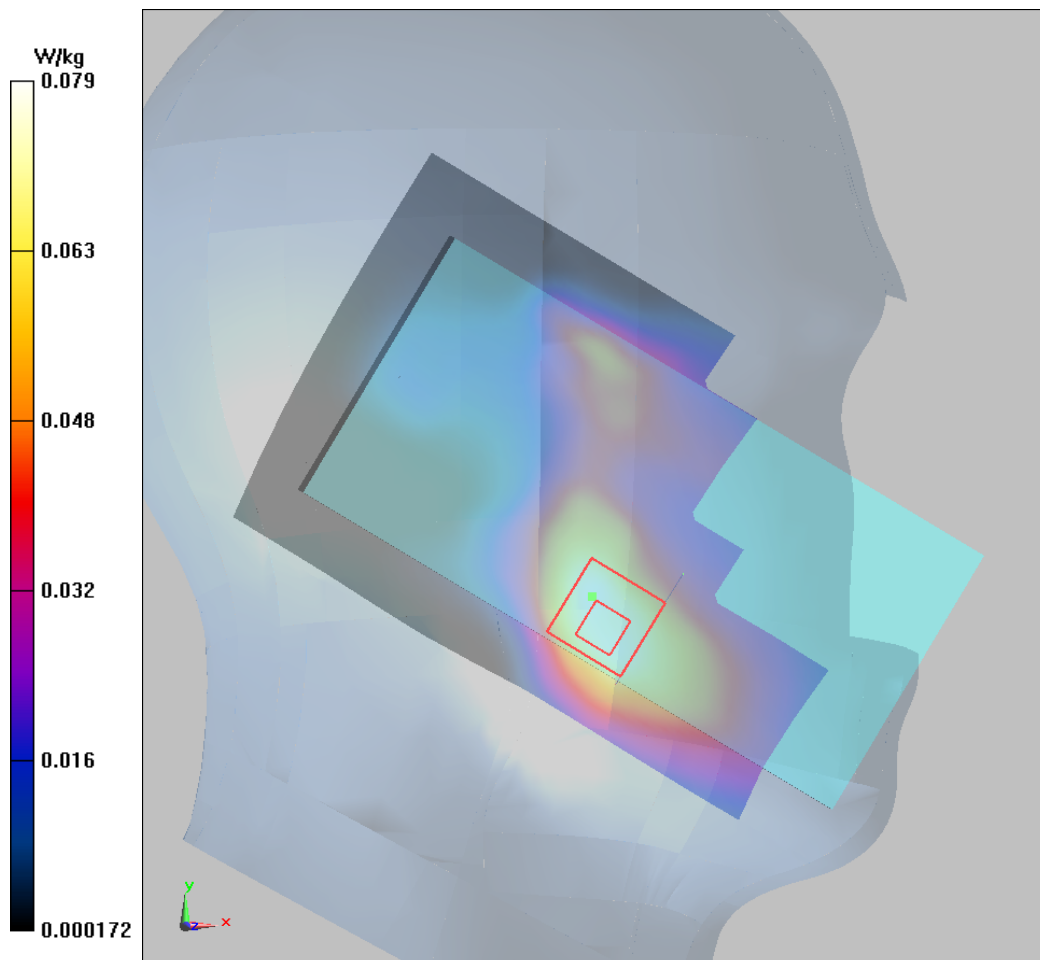
Left Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.152 V/m; Power Drift = -0.044 dB

Peak SAR (extrapolated) = 0.113 W/kg

SAR(1 g) = 0.074 W/kg; SAR(10 g) = 0.046 W/kg

Maximum value of SAR (measured) = 0.0791 W/kg



Plot 41 GSM 1900 Back Side Middle (Distance 15mm)

Date: 6/29/2018

Communication System: UID 0, GSM (0); Frequency: 1880 MHz; Duty Cycle: 1:8.30042

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.489$ S/m; $\epsilon_r = 52.896$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.70, 7.70, 7.70); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Back Side Middle/Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.127 W/kg

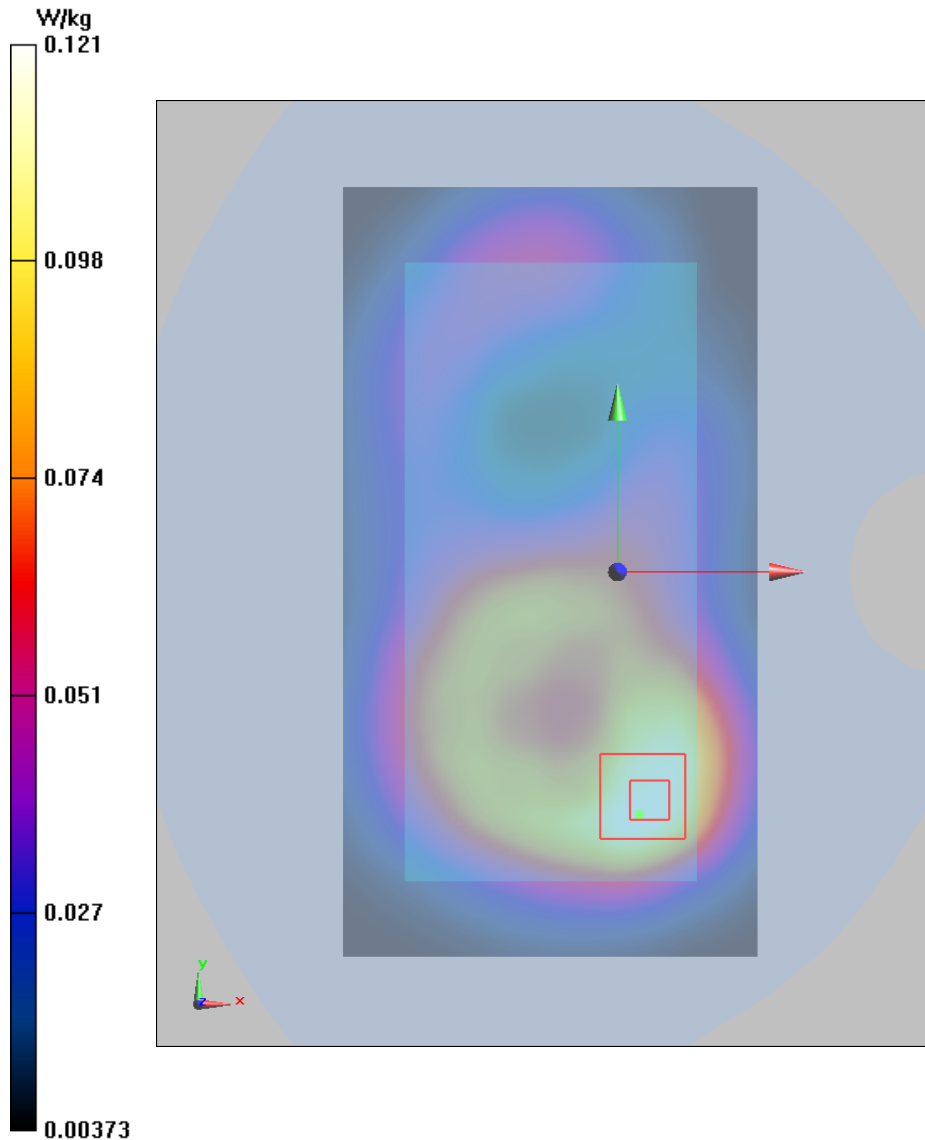
Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.774 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.173 W/kg

SAR(1 g) = 0.113 W/kg; SAR(10 g) = 0.072 W/kg

Maximum value of SAR (measured) = 0.121 W/kg



Plot 42 GSM 1900 GPRS (4Txslots) Bottom Edge Middle (Distance 10mm)

Date: 7/1/2018

Communication System: UID 0, 4 slot GPRS (0); Frequency: 1880 MHz; Duty Cycle: 1:2.07491

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.489$ S/m; $\epsilon_r = 52.896$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.70, 7.70, 7.70); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Bottom Edge Middle/Area Scan (51x111x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.517 W/kg

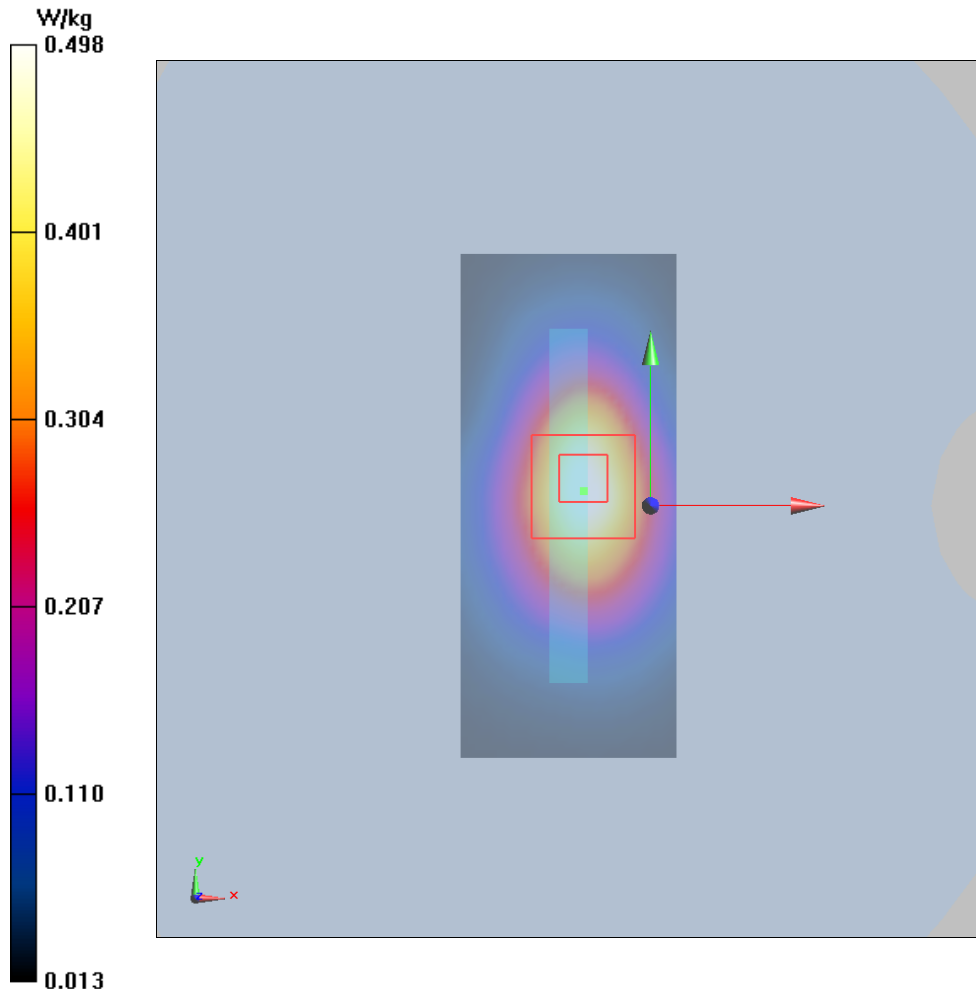
Bottom Edge Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 18.10 V/m; Power Drift = -0.18 dB

Peak SAR (extrapolated) = 0.774 W/kg

SAR(1 g) = 0.452 W/kg; SAR(10 g) = 0.254 W/kg

Maximum value of SAR (measured) = 0.498 W/kg



Plot 43 UMTS Band II Left Cheek Middle

Date: 6/30/2018

Communication System: UID 0, WCDMA (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.36$ S/m; $\epsilon_r = 39.14$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.96, 7.96, 7.96); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Left Cheek Middle/Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.190 W/kg

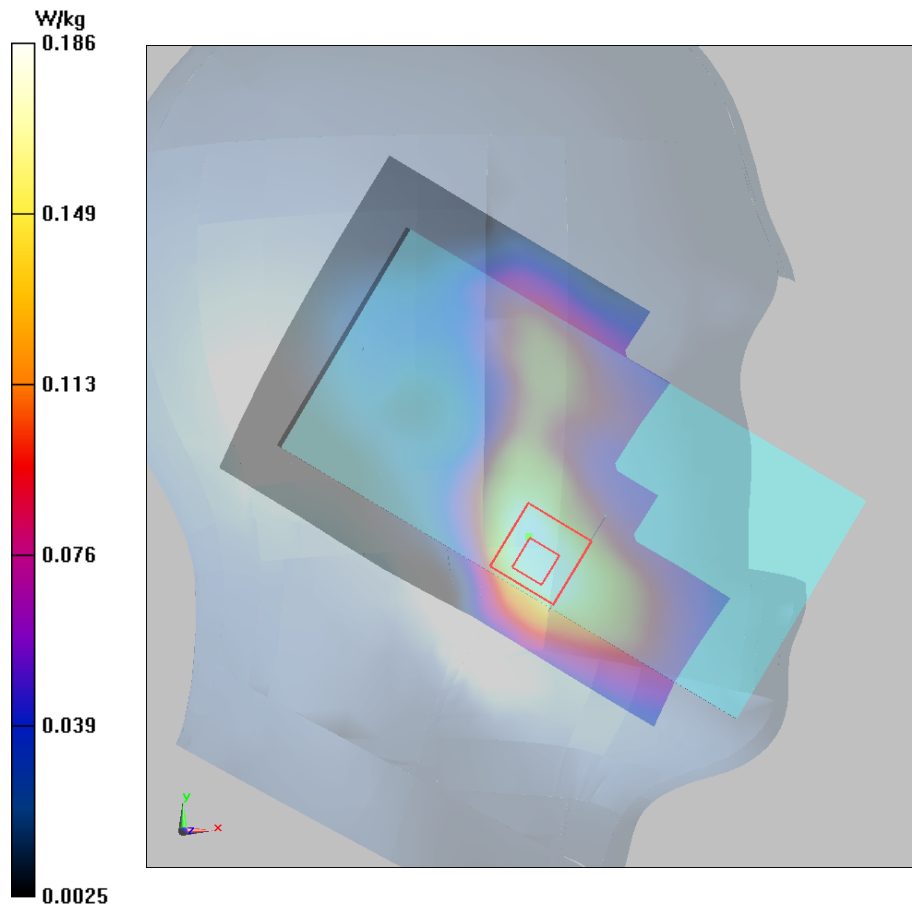
Left Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.979 V/m; Power Drift = 0.20 dB

Peak SAR (extrapolated) = 0.266 W/kg

SAR(1 g) = 0.174 W/kg; SAR(10 g) = 0.111 W/kg

Maximum value of SAR (measured) = 0.186 W/kg



Plot 44 UMTS Band II Back Side Middle (Distance 15mm)

Date: 7/1/2018

Communication System: UID 0, WCDMA (0); Frequency: 1880 MHz; Duty Cycle: 1:1
 Medium parameters used: $f = 1880$ MHz; $\sigma = 1.489$ S/m; $\epsilon_r = 52.896$; $\rho = 1000$ kg/m³
 Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.70, 7.70, 7.70); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

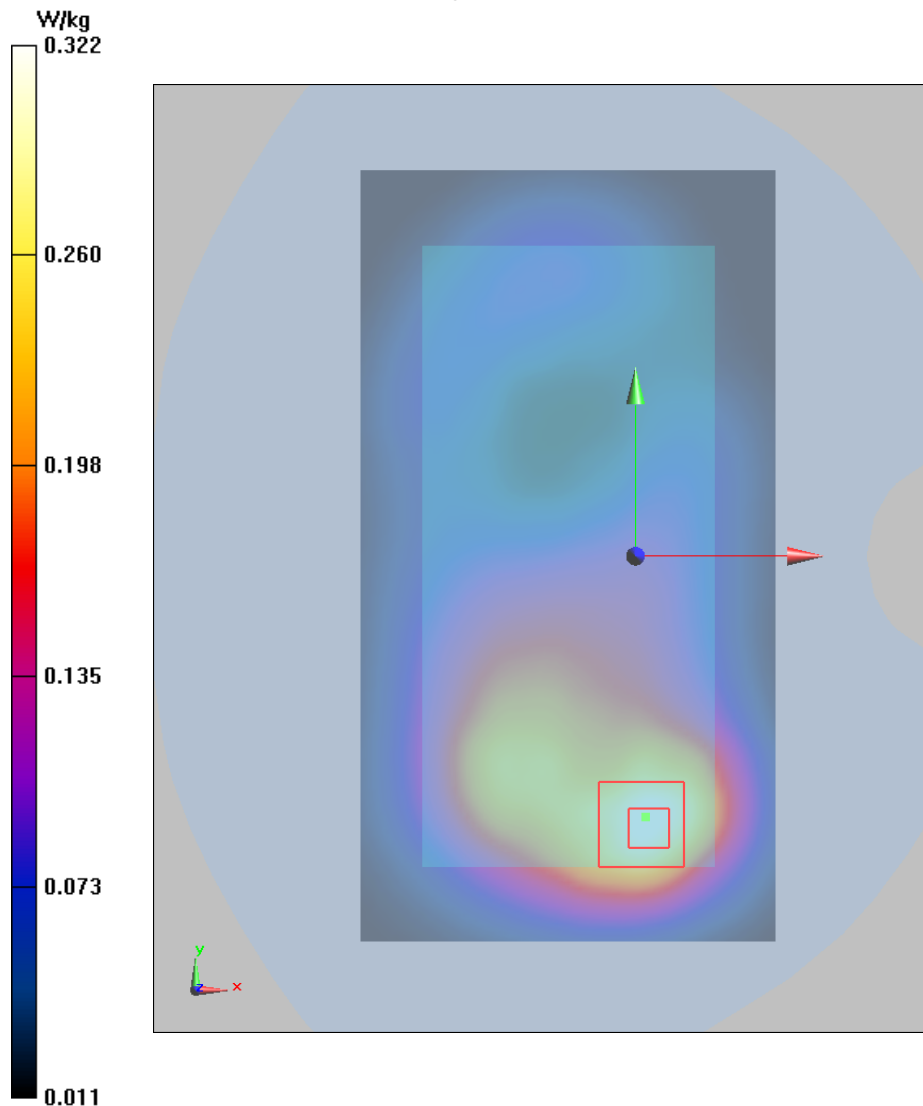
Back Side Middle/Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
 Maximum value of SAR (interpolated) = 0.339 W/kg

Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
 Reference Value = 8.385 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 0.478 W/kg

SAR(1 g) = 0.305 W/kg; SAR(10 g) = 0.187 W/kg

Maximum value of SAR (measured) = 0.322 W/kg



Plot 45 UMTS Band II Bottom Edge Middle (Distance 10mm)

Date: 7/1/2018

Communication System: UID 0, WCDMA (0); Frequency: 1880 MHz; Duty Cycle: 1:1
 Medium parameters used: $f = 1880$ MHz; $\sigma = 1.489$ S/m; $\epsilon_r = 52.896$; $\rho = 1000$ kg/m³
 Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.70, 7.70, 7.70); Calibrated: 5/29/2018;

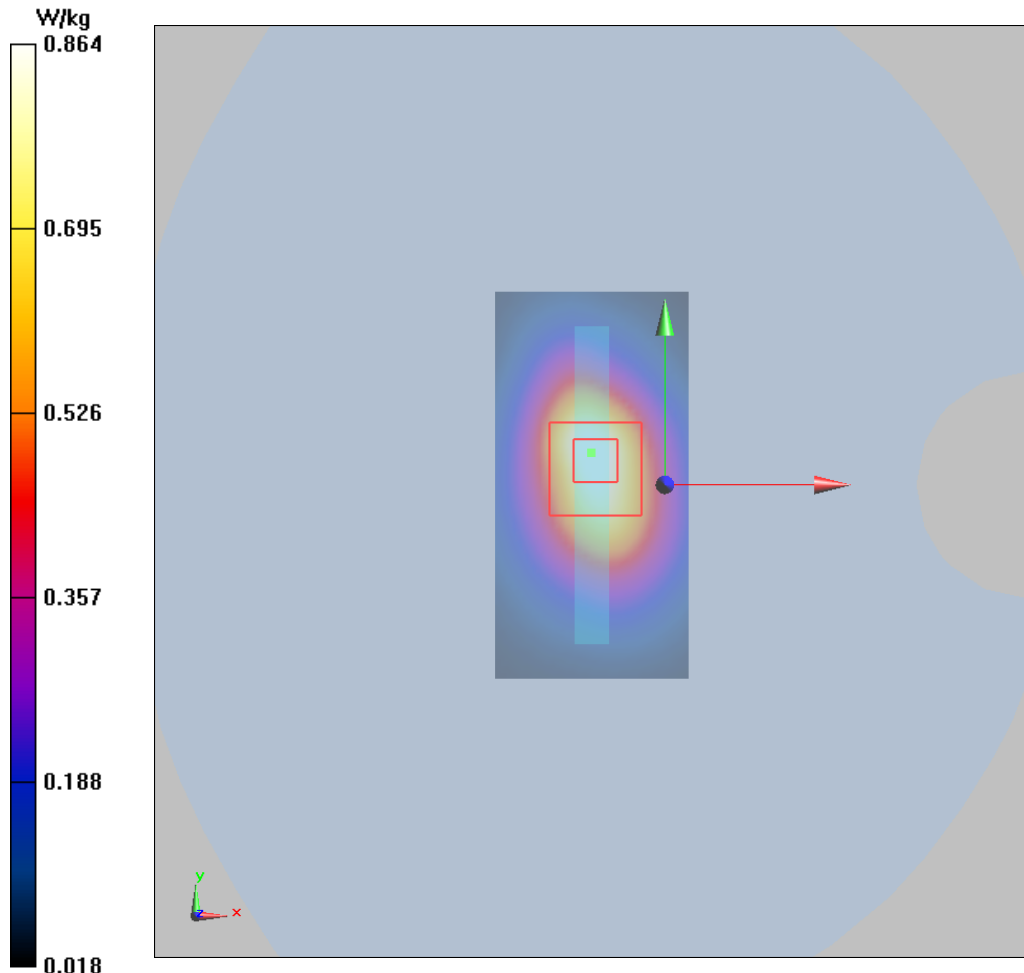
Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Bottom Edge Middle/Area Scan (51x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
 Maximum value of SAR (interpolated) = 0.906 W/kg

Bottom Edge Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
 Reference Value = 24.26 V/m; Power Drift = -0.13 dB
 Peak SAR (extrapolated) = 1.32 W/kg
SAR(1 g) = 0.784 W/kg; SAR(10 g) = 0.447 W/kg
 Maximum value of SAR (measured) = 0.864 W/kg



Plot 46 UMTS Band IV Right Tilt Middle

Date: 7/7/2018

Communication System: UID 0, WCDMA (0); Frequency: 1732.6 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1733 \text{ MHz}$; $\sigma = 1.317 \text{ S/m}$; $\epsilon_r = 40.774$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: $22.3 \text{ }^\circ\text{C}$ Liquid Temperature: $21.5 \text{ }^\circ\text{C}$

Phantom section: Right Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(8.19, 8.19, 8.19); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Right Tilt Middle/Area Scan (71x131x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 0.560 W/kg

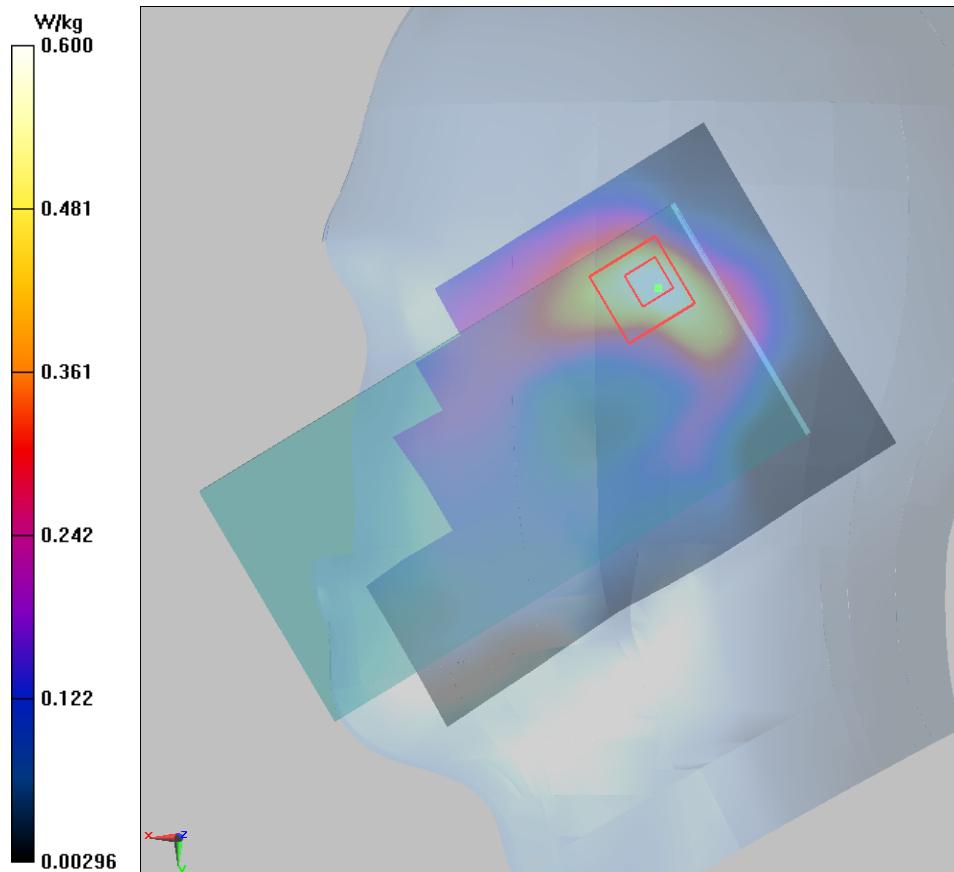
Right Tilt Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 13.64 V/m ; Power Drift = 0.12 dB

Peak SAR (extrapolated) = 1.18 W/kg

SAR(1 g) = 0.489 W/kg ; SAR(10 g) = 0.220 W/kg

Maximum value of SAR (measured) = 0.600 W/kg



Plot 47 UMTS Band IV Back Side Middle (Distance 15mm)

Date: 7/11/2018

Communication System: UID 0, WCDMA (0); Frequency: 1732.6 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1733 \text{ MHz}$; $\sigma = 1.478 \text{ S/m}$; $\epsilon_r = 52.899$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: $22.3 \text{ }^\circ\text{C}$ Liquid Temperature: $21.5 \text{ }^\circ\text{C}$

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.91, 7.91, 7.91); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Back Side Middle/Area Scan (71x131x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 0.187 W/kg

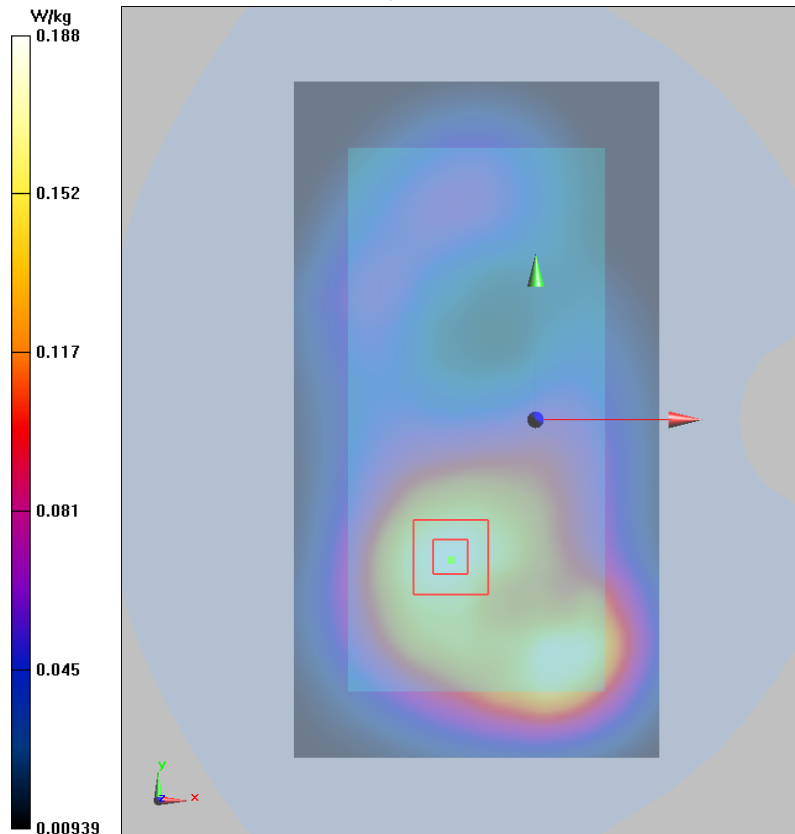
Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 6.279 V/m ; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.260 W/kg

SAR(1 g) = 0.174 W/kg ; SAR(10 g) = 0.114 W/kg

Maximum value of SAR (measured) = 0.188 W/kg



Plot 48 UMTS Band IV Bottom Edge Middle (Distance 10mm)

Date: 7/11/2018

Communication System: UID 0, WCDMA (0); Frequency: 1732.6 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1733 \text{ MHz}$; $\sigma = 1.478 \text{ S/m}$; $\epsilon_r = 52.899$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: $22.3 \text{ }^\circ\text{C}$ Liquid Temperature: $21.5 \text{ }^\circ\text{C}$

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.91, 7.91, 7.91); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Bottom Edge Middle/Area Scan (51x91x1): Interpolated grid: $dx=1.000 \text{ mm}$, $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 0.834 W/kg

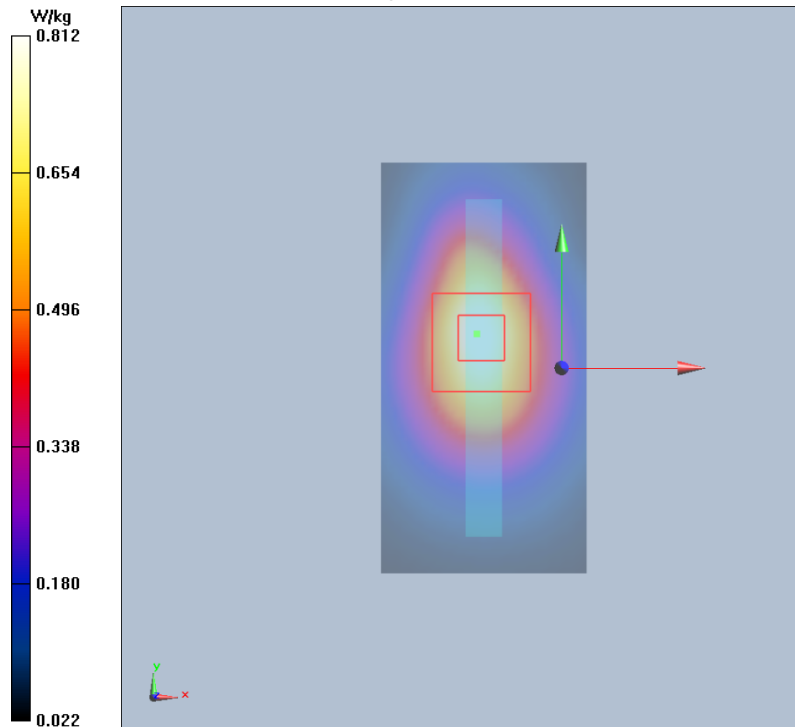
Bottom Edge Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 23.13 V/m ; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 1.23 W/kg

SAR(1 g) = 0.731 W/kg ; SAR(10 g) = 0.413 W/kg

Maximum value of SAR (measured) = 0.812 W/kg



Plot 49 UMTS Band V Right Cheek Middle

Date: 7/5/2018

Communication System: UID 0, WCDMA V (0); Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 837 \text{ MHz}$; $\sigma = 0.908 \text{ S/m}$; $\epsilon_r = 41.317$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: $22.3 \text{ }^\circ\text{C}$ Liquid Temperature: $21.5 \text{ }^\circ\text{C}$

Phantom section: Right Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.10, 9.10, 9.10); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Right Cheek Middle/Area Scan (71x131x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 0.0767 W/kg

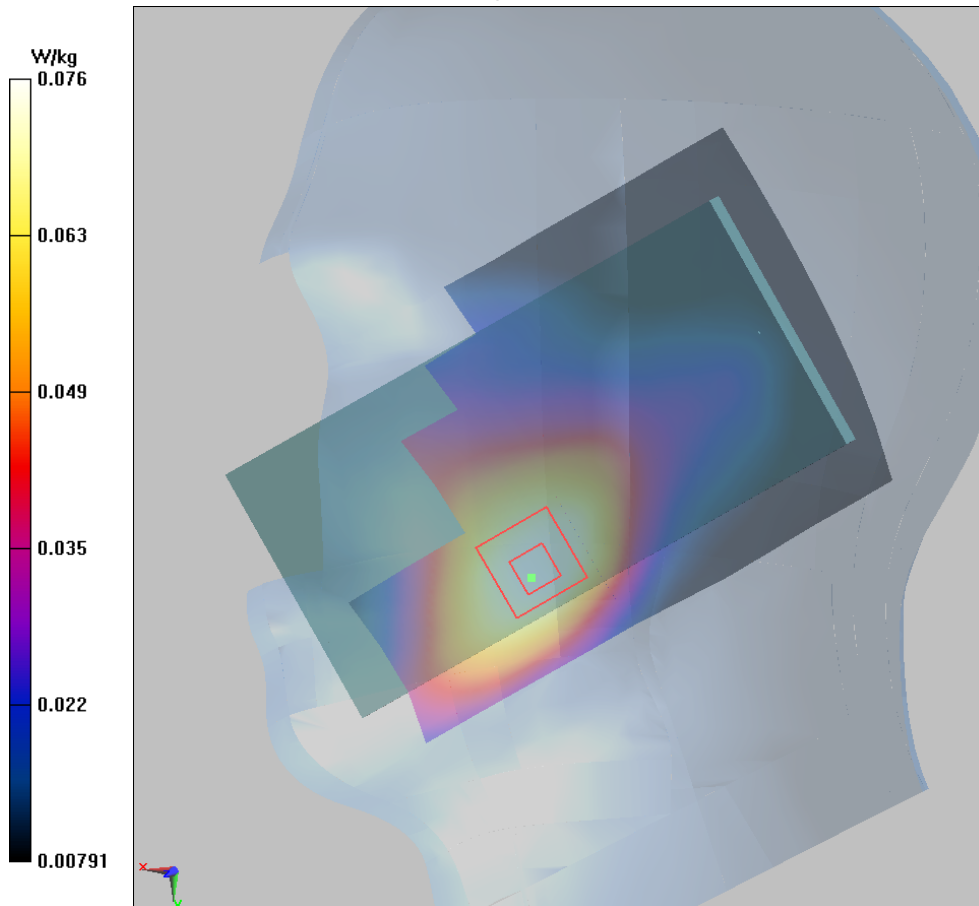
Right Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 4.612 V/m ; Power Drift = -0.049 dB

Peak SAR (extrapolated) = 0.0870 W/kg

SAR(1 g) = 0.073 W/kg ; SAR(10 g) = 0.057 W/kg

Maximum value of SAR (measured) = 0.0765 W/kg



Plot 50 UMTS Band V Back Side Middle (Distance 15mm)

Date: 7/8/2018

Communication System: UID 0, WCDMA (0); Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 837$ MHz; $\sigma = 0.974$ S/m; $\epsilon_r = 53.795$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.32, 9.32, 9.32); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Back Side Middle/Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.351 W/kg

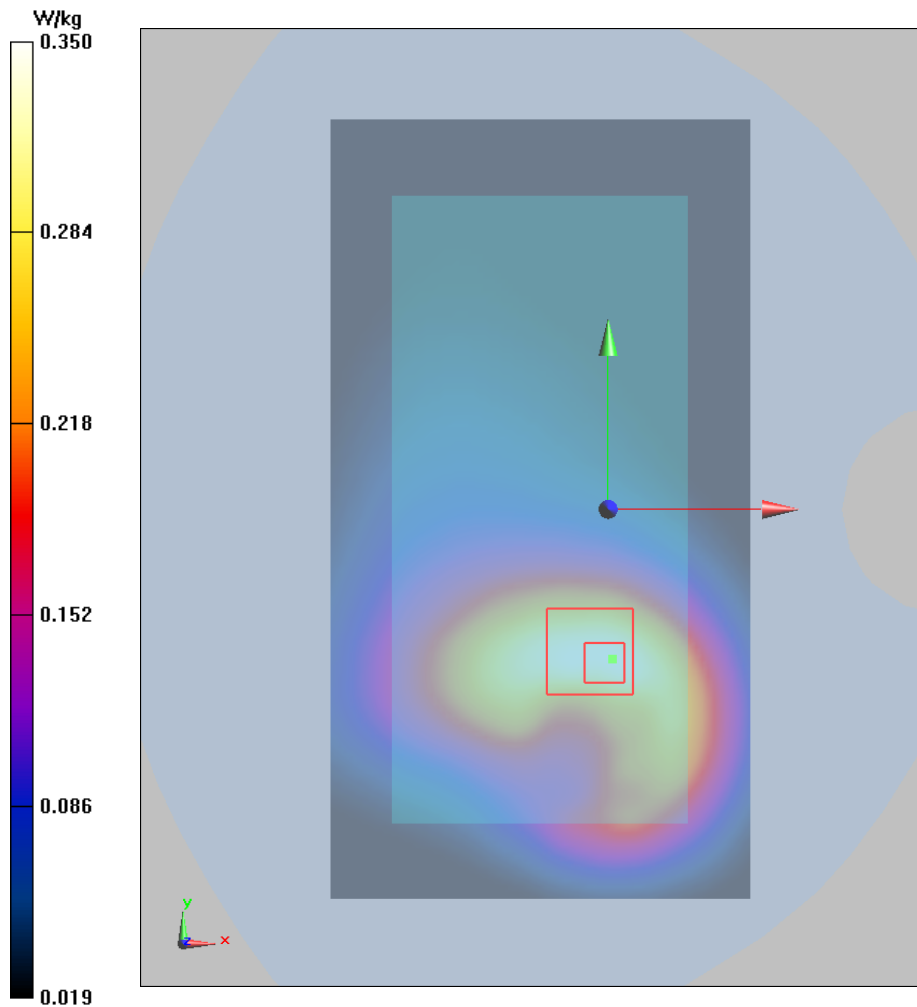
Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.149 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.491 W/kg

SAR(1 g) = 0.326 W/kg; SAR(10 g) = 0.214 W/kg

Maximum value of SAR (measured) = 0.350 W/kg



Plot 51 UMTS Band V Back Side Middle (Distance 10mm)

Date: 7/8/2018

Communication System: UID 0, WCDMA (0); Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 837$ MHz; $\sigma = 0.974$ S/m; $\epsilon_r = 53.795$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.32, 9.32, 9.32); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Back Side Middle/Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.554 W/kg

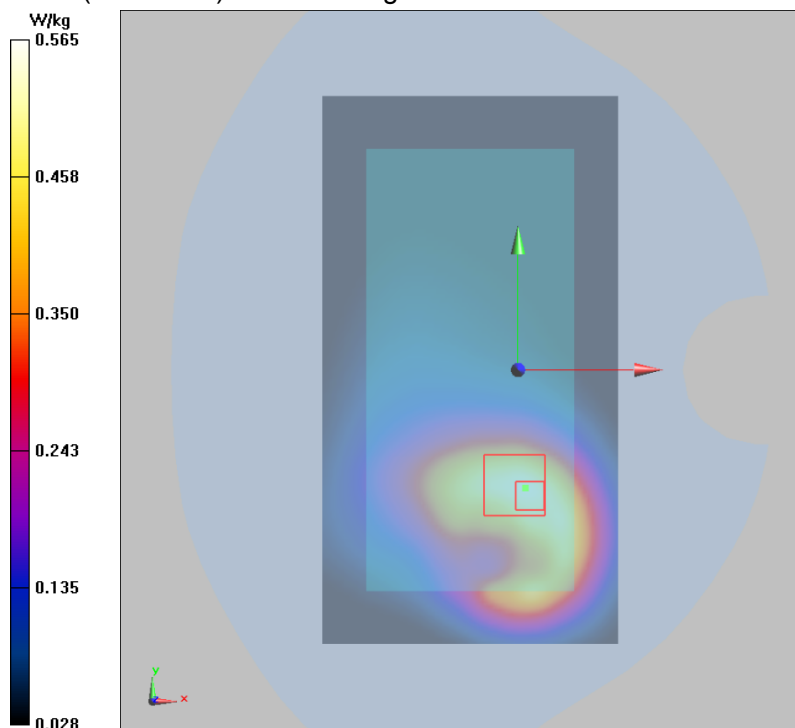
Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.359 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.868 W/kg

SAR(1 g) = 0.530 W/kg; SAR(10 g) = 0.328 W/kg

Maximum value of SAR (measured) = 0.565 W/kg



Plot 52 LTE Band 2 1RB Left Cheek Low

Date: 6/30/2018

Communication System: UID 0, LTE_FDD (0); Frequency: 1860 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1860$ MHz; $\sigma = 1.342$ S/m; $\epsilon_r = 39.202$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.96, 7.96, 7.96); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Left Cheek Low/Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.169 W/kg

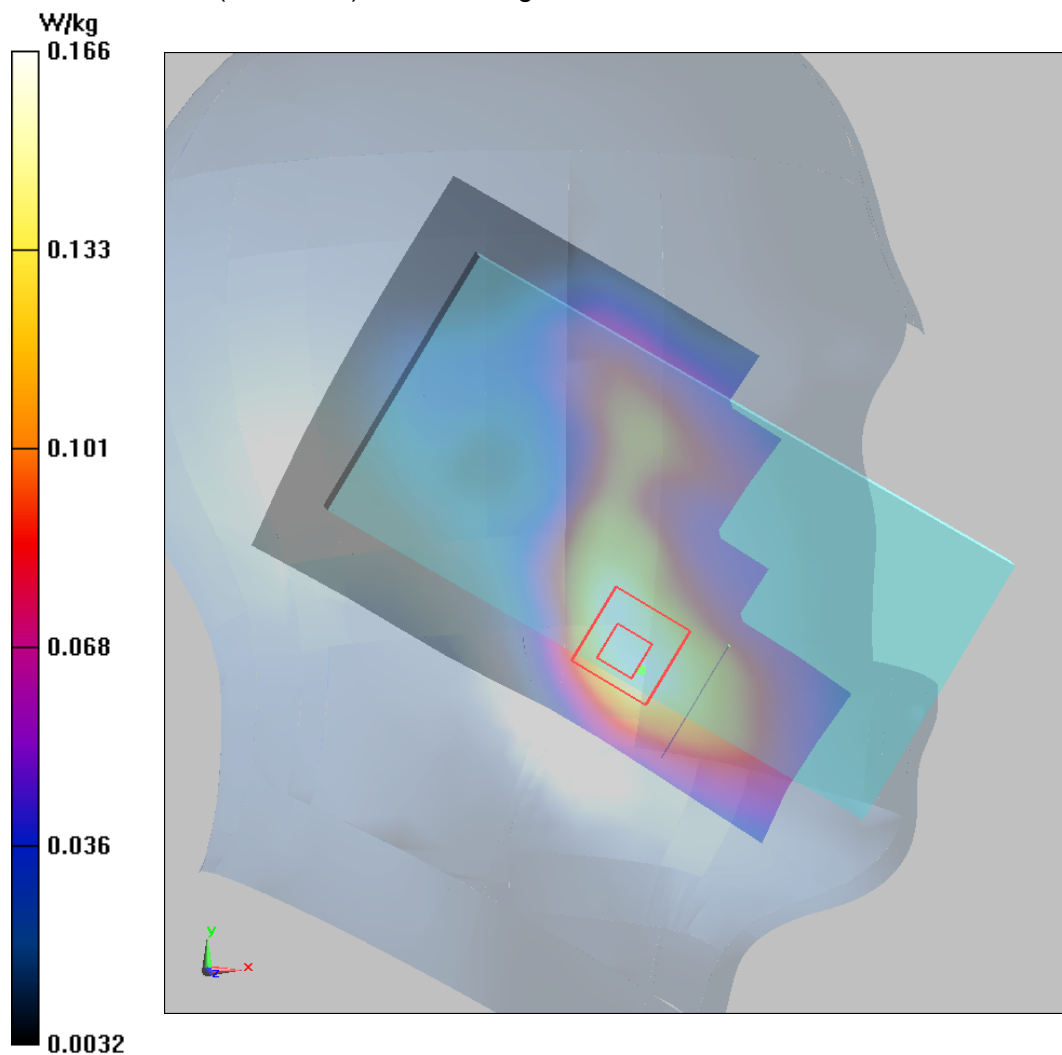
Left Cheek Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.927 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.237 W/kg

SAR(1 g) = 0.156 W/kg; SAR(10 g) = 0.101 W/kg

Maximum value of SAR (measured) = 0.166 W/kg



Plot 53 LTE Band 2 1RB Back Side Low (Distance 15mm)

Date: 6/29/2018

Communication System: UID 0, LTE_FDD (0); Frequency: 1860 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1860$ MHz; $\sigma = 1.474$ S/m; $\epsilon_r = 53.034$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.70, 7.70, 7.70); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Back Side Low/Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.267 W/kg

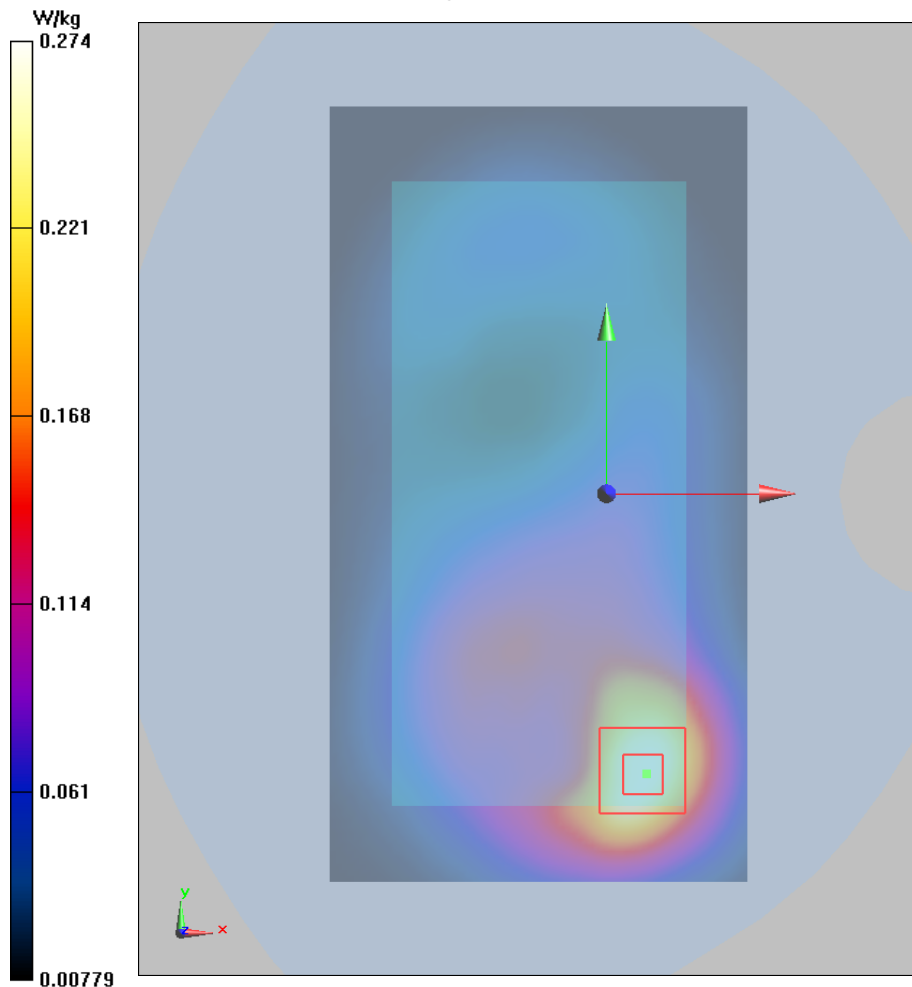
Back Side Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.144 V/m; Power Drift = -0.10 dB

Peak SAR (extrapolated) = 0.388 W/kg

SAR(1 g) = 0.253 W/kg; SAR(10 g) = 0.155 W/kg

Maximum value of SAR (measured) = 0.274 W/kg



Plot 54 LTE Band 2 50%RB Bottom Edge High (Distance 10mm)

Date: 7/1/2018

Communication System: UID 0, LTE_FDD (0); Frequency: 1900 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.508$ S/m; $\epsilon_r = 52.751$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.70, 7.70, 7.70); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Bottom Edge High/Area Scan (51x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.788 W/kg

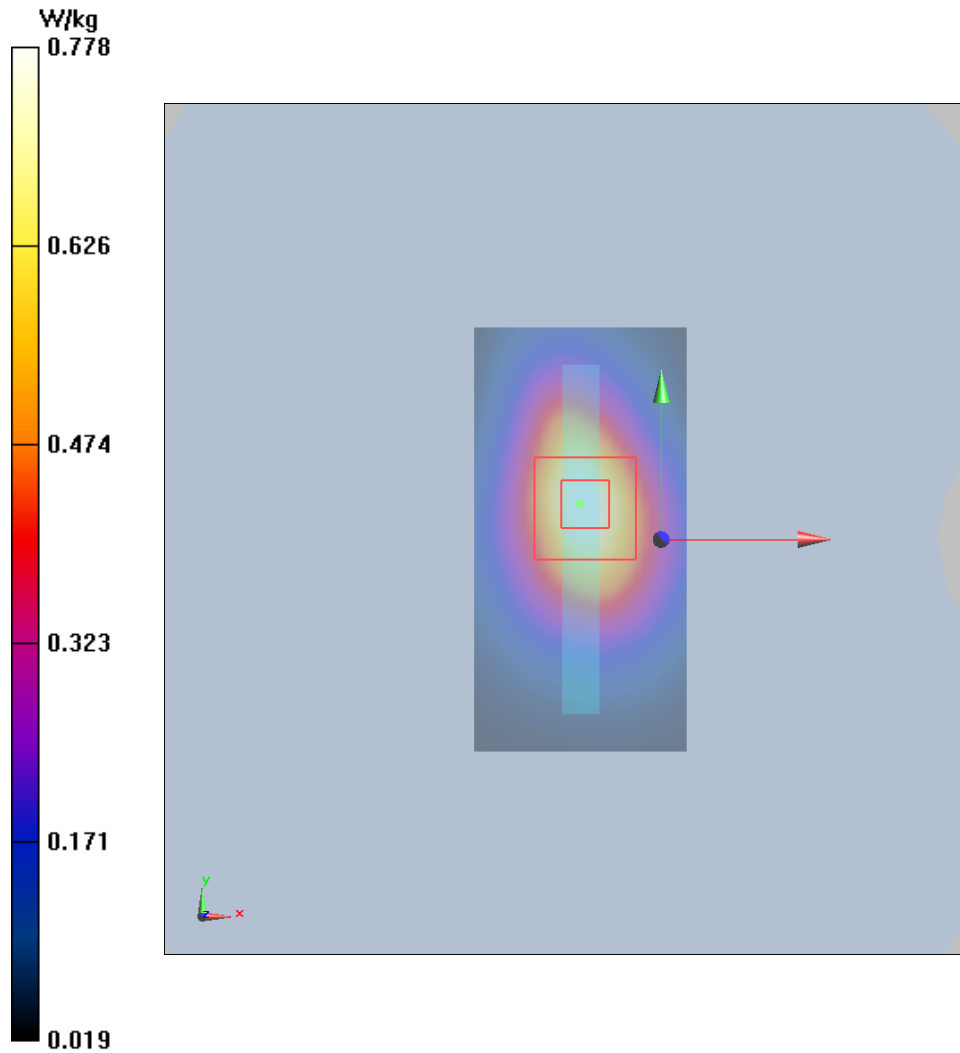
Bottom Edge High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 22.11 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 1.17 W/kg

SAR(1 g) = 0.698 W/kg; SAR(10 g) = 0.391 W/kg

Maximum value of SAR (measured) = 0.778 W/kg



Plot 55 LTE Band 4 1RB Right Cheek High

Date: 7/7/2018

Communication System: UID 0, LTE_FDD (0); Frequency: 1745 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1745$ MHz; $\sigma = 1.329$ S/m; $\epsilon_r = 40.743$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Right Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(8.19, 8.19, 8.19); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Right Cheek High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.538 V/m; Power Drift = 0.046 Db

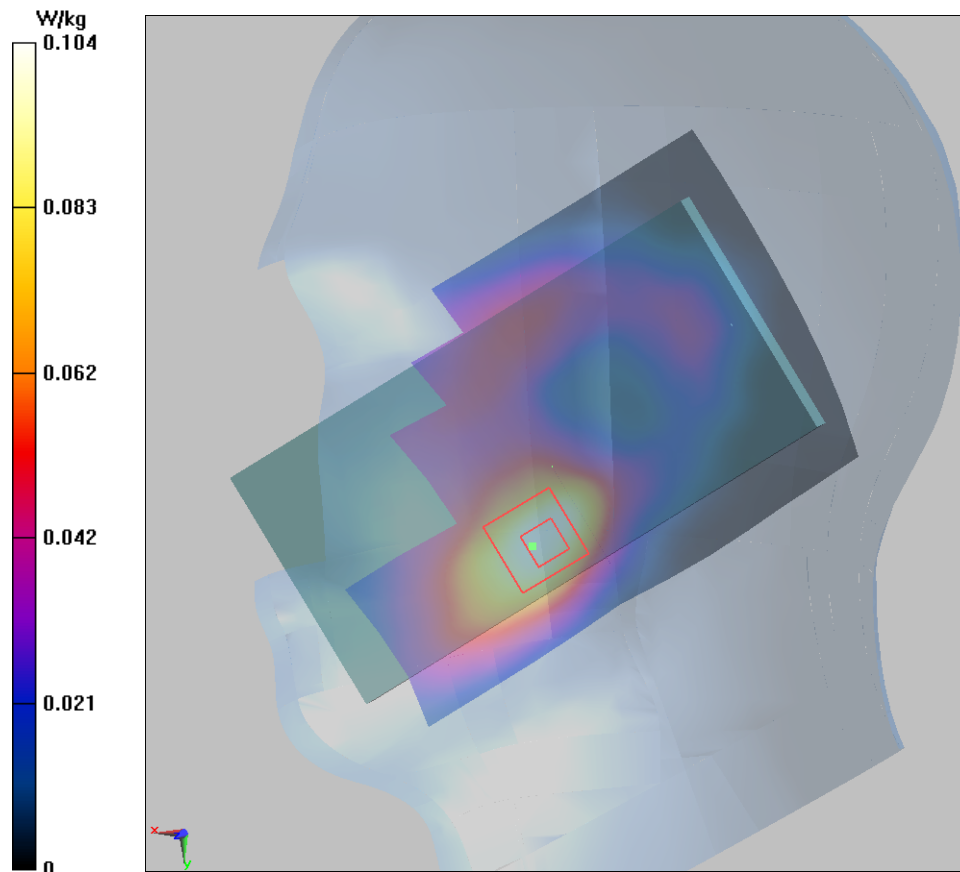
Right Cheek High/Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (measured) = 0.106 W/kg

Peak SAR (extrapolated) = 0.151 W/kg

SAR(1 g) = 0.099 W/kg; SAR(10 g) = 0.062 W/kg

Maximum value of SAR (interpolated) = 0.104 W/kg



Plot 56 LTE Band 4 1RB Back Side High (Distance 15mm)

Date: 7/11/2018

Communication System: UID 0, LTE_FDD (0); Frequency: 1745 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1745$ MHz; $\sigma = 1.491$ S/m; $\epsilon_r = 52.877$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.91, 7.91, 7.91); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Back Side High/Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.130 W/kg

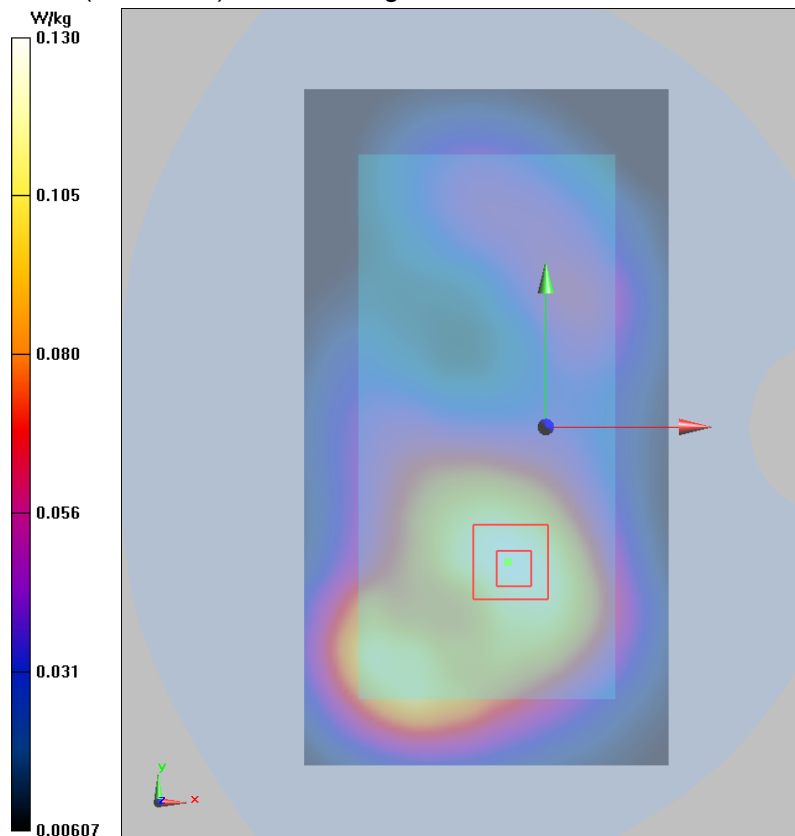
Back Side High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.459 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.178 W/kg

SAR(1 g) = 0.121 W/kg; SAR(10 g) = 0.080 W/kg

Maximum value of SAR (measured) = 0.130 W/kg



Plot 57 LTE Band 4 1RB Bottom Edge High (Distance 10mm)

Date: 7/11/2018

Communication System: UID 0, LTE_FDD (0); Frequency: 1745 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1745$ MHz; $\sigma = 1.491$ S/m; $\epsilon_r = 52.877$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.91, 7.91, 7.91); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Bottom Edge High/Area Scan (51x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.850 W/kg

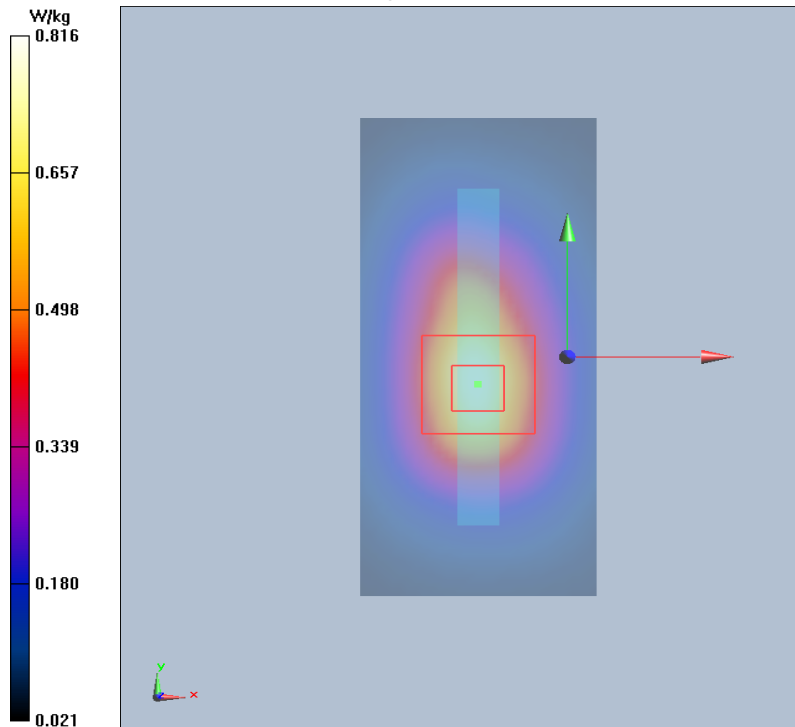
Bottom Edge High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 20.66 V/m; Power Drift = 0.026 dB

Peak SAR (extrapolated) = 1.22 W/kg

SAR(1 g) = 0.734 W/kg; SAR(10 g) = 0.415 W/kg

Maximum value of SAR (measured) = 0.816 W/kg



Plot 58 LTE Band 5 1RB Right Cheek Low

Date: 7/4/2018

Communication System: UID 0, LTE (0); Frequency: 829 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 829 \text{ MHz}$; $\sigma = 0.9 \text{ S/m}$; $\epsilon_r = 41.606$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: $22.3 \text{ }^\circ\text{C}$ Liquid Temperature: $21.5 \text{ }^\circ\text{C}$

Phantom section: Right Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.10, 9.10, 9.10); Calibrated: 5/29/2018;

Electronics: DAE4 SN1317; Calibrated: 3/23/2018

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Right Cheek Low/Area Scan (71x131x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 0.0694 W/kg

Right Cheek Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 3.815 V/m ; Power Drift = 0.050 dB

Peak SAR (extrapolated) = 0.0780 W/kg

SAR(1 g) = 0.066 W/kg ; SAR(10 g) = 0.051 W/kg

Maximum value of SAR (measured) = 0.0690 W/kg

