SAR TEST REPORT

Applicant	HMD Global Oy
FCC ID	2AJOTTA-1223
Product	mobile phone
Brand	Nokia
Model	TA-1223
Report No.	R2001A0040-S1V1
Issue Date	April 3, 2020

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

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Table of Contents

1 Test Laboratory 4
1.1 Notes of the Test Report 4
1.2. Test facility 4
1.3 Testing Location 4
1.4 Laboratory Environment 5
2 Statement of Compliance 6
3 Description of Equipment under Test 7
4 Test Specification, Methods and Procedures 10
5 Operational Conditions during Test 11
5.3 Test Positions 11
5.3.1 Against Phantom Head 11
5.3.2 Body Worn Configuration 11
5.3.3 Phablet SAR test considerations 12
5.4 Measurement Variability 13
5.5 Test Configuration 14
5.5.1 GSM Test Configuration 14
5.5.2 UMTS Test Configuration 14
5.5.3 LTE Test Configuration 17
5.5.4 Wi-Fi Test Configuration 19
5.5.5 BT Test Configuration 20
5.5.6 Proximity sensor& Receiver Power reduction information 20
6 SAR Measurements System Configuration 27
6.3 SAR Measurement Set-up 27
6.4 DASY5 E-field Probe System 28
6.5 SAR Measurement Procedure 29
7 Main Test Equipment 31
8 Tissue Dielectric Parameter Measurements & System Verification 33
8.3 Tissue Verification 33
8.4 System Performance Check 35
8.5 SAR System Validation 38
9 Normal and Maximum Output Power 39
9.3 GSM Mode 39
9.4 WCDMA Mode 42
9.5 LTE Mode 44
9.6 WLAN Mode 95
9.7 Bluetooth Mode 97
10 Measured and Reported (Scaled) SAR Results 98
10.3 EUT Antenna Locations 98
10.4 Measured SAR Results 100
10.5 Simultaneous Transmission Analysis 138
11 Measurement Uncertainty 142

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ANNEX A: Test Layout 143
ANNEX B: System Check Results 145
ANNEX C: Highest Graph Results 162
ANNEX D: Probe Calibration Certificate 235
ANNEX E: D750V3 Dipole Calibration Certificate 246
ANNEX F: D835V2 Dipole Calibration Certificate 254
ANNEX G: D1750V2 Dipole Calibration Certificate 262
ANNEX H: D1900V2 Dipole Calibration Certificate 270
ANNEX I: D2450V2 Dipole Calibration Certificate 278
ANNEX J: D2600V2 Dipole Calibration Certificate 286
ANNEX K: D5GHzV2 Dipole Calibration Certificate 294
ANNEX L:DAE4 Calibration Certificate 302

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1 Test Laboratory

1.1 Notes of the Test Report

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

1.2. Test facility

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

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

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
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1.4 Laboratory Environment

Temperature	Min. = 18°C, Max. = 25 °C
Relative humidity	Min. = 30%, Max. = 70%
Ground system resistance	< 0.5 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.	

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2 Statement of Compliance

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

Table 1: Highest Reported SAR

Mode	Highest Reported SAR (W/kg)		
	1g SAR Head	1g SAR Body-worn	1g SAR Hotspot
GSM 850	1.024	0.222	**0.969**
GSM 1900	0.545	0.148	0.891
WCDMA Band II	0.616	**0.950**	0.950
WCDMA Band IV	0.683	0.644	0.644
WCDMA Band V	0.692	0.218	0.248
LTE FDD 2	0.547	0.648	0.648
LTE FDD 4	0.633	0.597	0.597
LTE FDD 5	0.539	0.292	0.264
LTE FDD 7	**1.027**	0.726	0.906
LTE FDD 12	0.193	0.141	0.180
LTE FDD 13	0.419	0.265	0.275
LTE FDD 66	0.653	0.594	0.594
Wi-Fi (2.4G)	0.685	0.200	0.200
Wi-Fi (5G)	0.479	0.342	0.384
BT	0.316	<0.1	<0.1
Date of Testing:	February 4, 2020~ February 18, 2020		
Note: All indications of Pass/Fail in this report are opinions expressed by TA Technology (Shanghai) Co., Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only.			

Table 2: Highest Simultaneous Transmission SAR

Exposure Configuration	1g SAR Head	1g SAR Body-worn	1g SAR Hotspot
Highest Simultaneous Transmission SAR (W/kg)	1.329	1.150	1.311
Note: 1. The detail for simultaneous transmission consideration is described in chapter 10.5.			

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3 Description of Equipment under Test

Client Information

Applicant	HMD Global Oy
Applicant address	Bertel Jungin aukio 9,02600 ESPOO. FINLAND
Manufacturer	HMD Global Oy
Manufacturer address	Bertel Jungin aukio 9,02600 ESPOO. FINLAND

General Technologies

Application Purpose:	Original Grant
EUT Stage:	Identical Prototype
Model:	TA-1223
IMEI:	IMEI 1: 355795100012570 IMEI 2: 355795100015342
Hardware Version:	LLDM528
Software Version:	LLDB7749
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 2/4/5/7/12/13/17/66:3
Power Level:	GSM 850:level 5 GSM 1900:level 0 UMTS Band II/IV/V:all up bits LTE FDD 2/4/5/7/12/13/17/66:max power
EUT Accessory	
Battery 1	Manufacturer: Jiade Energy Technology (Zhuhai) Co., Ltd. Model: LC-440
Battery 2	Manufacturer: Jiade Energy Technology (Zhuhai) Co., Ltd. Model: LC-440U
Earphone	Manufacturer: Huizhou New Leader Industry Co., Ltd. Model: NLD-EM300M-03SF
Adapter 1	Manufacturer: SHENZHEN TIANYIN ELECTRONICS CO.,LTD. Model: CH-21E
Adapter 2	Manufacturer: Jiangsu Chenyang Electron Co., Ltd. Model: AD-10WE

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Adapter 3	Manufacturer: SHENZHEN TIANYIN ELECTRONICS CO.,LTD. Model: CH-21U
Adapter 4	Manufacturer: SHENZHEN TIANYIN ELECTRONICS CO.,LTD. Model: CH-21N
Adapter 5	Manufacturer: SHENZHEN TIANYIN ELECTRONICS CO.,LTD. Model: CH-21X
Adapter 6	Manufacturer: SHENZHEN TIANYIN ELECTRONICS CO.,LTD. Model: CH-21A
Adapter 7	Manufacturer: DONGGUAN AOHAI POWER TECHNOLOGY CO., LTD. Model: AD-10WR
Adapter 8	Manufacturer: SHENZHEN TIANYIN ELECTRONICS CO.,LTD. Model: CH-21B
USB Cable 1	Manufacturer: Xiamen Li Qi Electronics Co., Ltd. Model: CB-61A
USB Cable 2	Manufacturer: Saibao (Jiangxi) Industrial Co. , Ltd. Model: CB-61A
Note: The EUT is sent from the applicant to TA and the information of the EUT is declared by the applicant.	

Note: This revised report (Report No.: R2001A0040-S1V1) supersedes and replaces the previously issued report (Report No.:R2001A0040-S1). Please discard or destroy the previously issued report and dispose of it accordingly.

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Wireless Technology and Frequency Range

Wireless Technology		Modulation	Operating mode	Tx (MHz)
GSM	850	Voice(GMSK) GPRS(GMSK) EGPRS(GMSK,8PSK)	☐Multi-slot Class:8-1UP ☐Multi-slot Class:10-2UP ☒Multi-slot Class:12-4UP ☐Multi-slot Class:33-4UP	824 ~ 849
	1900			1850 ~ 1910
	Does this device support DTM (Dual Transfer Mode)? ☐Yes ☒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	Category 4	1850 ~ 1910
	FDD 4			1710 ~ 1755
	FDD 5			824 ~ 849
	FDD 7			2500 ~ 2570
	FDD 12			699 ~ 716
	FDD 13			777~ 787
	FDD 17			704 ~ 716
	FDD 66			1710 ~ 1780
	Does this device support Carrier Aggregation (CA) ☐Yes ☒No			
	Does this device support SV-LTE (1xRTT-LTE)? ☐Yes ☒No			
BT	2.4G	Version 5.0 LE		2402 ~2480
Wi-Fi	2.4G	DSSS,OFDM	802.11b/g/n HT20	2412 ~ 2462
		OFDM	802.11n HT40	2422 ~ 2452
	5G	OFDM	802.11a/n HT20/ HT40/ ac VHT20/ VHT40/ VHT80	5150 ~ 5250 5725 ~ 5850
	Does this device support MIMO ☐Yes ☒No			
NFC	13.56MHz			

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4 Test Specification, Methods and Procedures

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

IEC 62209-1
KDB 248227 D01 802.11Wi-Fi SAR v02r02
KDB 447498 D01 General RF Exposure Guidance v06
KDB 648474 D04 Handset SAR v01r03
KDB 690783 D01 SAR Listings on Grants v01r03
KDB 865664 D01 SAR measurement 100 MHz to 6 GHz v01r04
KDB 865664 D02 RF Exposure Reporting v01r02
KDB 941225 D01 3G SAR Procedures v03r01
KDB 941225 D05 SAR for LTE Devices v02r05
KDB 941225 D05A LTE Rel.10 KDB Inquiry Sheet v01r02
KDB 941225 D06 Hotspot Mode v02r01

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5 Operational Conditions during Test

5.3 Test Positions

5.3.1 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".

5.3.2 Body Worn Configuration

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

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

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

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

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5.3.3 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, product specific 10-g SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg; however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold. The normal tablet procedures in KDB Publication 616217 are required when the overall diagonal dimension of the device is > 20.0 cm. Hotspot mode SAR is not required when normal tablet procedures are applied. Product specific 10-g SAR is also not required for the front (top) surface of larger form factor full size tablets. The more conservative normal tablet SAR results can be used to support phablet mode product specific 10-g SAR.

c) The simultaneous transmission operating configurations applicable to voice and data transmissions for both phone and mini-tablet modes must be taken into consideration separately for 1-g and 10-g SAR to determine the simultaneous transmission SAR test exclusion and measurement requirements for the relevant wireless modes and exposure conditions.

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

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5.5 Test Configuration

5.5.1 GSM Test Configuration

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

Output power of reductions:

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

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

SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power specified for production units, including tune-up tolerance. The data mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested. GSM voice and GPRS data use GMSK, which is a constant amplitude modulation with minimal peak to average power difference within the time-slot burst. For EDGE, GMSK is used for MCS 1 – MCS 4 and 8-PSK is used for MCS 5 – MCS 9; where 8-PSK has an inherently higher peak-to-average power ratio. The GMSK and 8-PSK EDGE configurations are considered separately for SAR compliance. The GMSK EDGE configurations are grouped with GPRS and considered with respect to time-averaged maximum output power to determine compliance. The 3G SAR test reduction procedure is applied to 8-PSK EDGE with GMSK GPRS/EDGE as the primary mode.

5.5.2 UMTS Test Configuration

5.5.2.1 3G SAR Test Reduction Procedure

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

5.5.2.2 Head SAR

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

5.5.2.3 Body-worn accessory SAR

SAR for body-worn accessory configurations is measured using a 12.2 kbps RMC with TPC bits

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configured to all “1’s”. The 3G SAR test reduction procedure is applied to other spreading codes and multiple DPDCHn configurations supported by the EUT with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured using an applicable RMC configuration with the corresponding spreading code or DPDCHn, for the highest reported body-worn accessory exposure SAR configuration in 12.2 kbps RMC. When more than 2 DPDCHn are supported by the EUT, it may be necessary to configure additional DPDCHn using FTM (Factory Test Mode) or other chipset based test approaches with parameters similar to those used in 384 kbps and 768 kbps RMC

5.5.2.4 Release 5 HSDPA Test Configuration

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

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

Table 4: Subtests for UMTS Release 5 HSDPA

Sub-set	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 Δ_{CQI}= 8$\Leftrightarrow$$A_{hs}$ = β_{hs}/β_c=30/15$\Leftrightarrow$$\beta_{hs}$=30/15*$\beta_c$

Note2: CM=1 for β_c/β_d =12/15, β_{hs}/β_c=24/15.

Note3: For subtest 2 the $\beta_c\beta_d$ ratio of 12/15 for the TFC during the measurement period(TF1,TF0) is achieved by setting the signaled gain factors for the reference TFC (TFC1,TF1) to β_c=11/15 and β_d=15/15.

5.5.2.5 Release 6 HSUPA Test Configuration

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

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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 EUT and 'Release 5 HSDPA Data Devices' sections of this document

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

Sub-set	β_c	β_d	β_d (SF)	β_c/β_d	β_{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}, ΔNACK and Δ_{CQI} = 8 ⇔ $A_{hs} = \underline{\beta}_{hs}/\underline{\beta}_c$ = 30/15 ⇔$\underline{\beta}_{hs}$= 30/15 *β_c.

Note 2: CM = 1 for βc/βd =12/15, $\underline{\beta}_{hs}/\underline{\beta}_c$ =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 βc/βd 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 βc = 10/15 and βd = 15/15.

Note 4: For subtest 5 the βc/βd 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 βc = 14/15 and βd = 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: βed can not be set directly; it is set by Absolute Grant Value.

Table 6: HSUPA UE category

UE E-DCH Category	Maximum E-DCH Codes Transmitted	Number of HARQ Processes	E-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	4	8	2	2 SF2 & 2 SF4	11484	5.76

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(No DPDCH)	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)

Table 7: 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		
Category 12	5	1	3630	28800			
Category 13	15	1	35280	259200	QPSK, 16QAM, 64QAM		
Category 14	15	1	42192	259200			
Category 15	15	1	23370	345600	QPSK, 16QAM		
Category 16	15	1	27952	345600			
Category 17 NOTE 2	15	1	35280	259200	QPSK, 16QAM, 64QAM	–	
			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			QPSK, 16QAM, 64QAM
Category 24	15	1	42192	518400			

5.5.3 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

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

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5.5.4 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.

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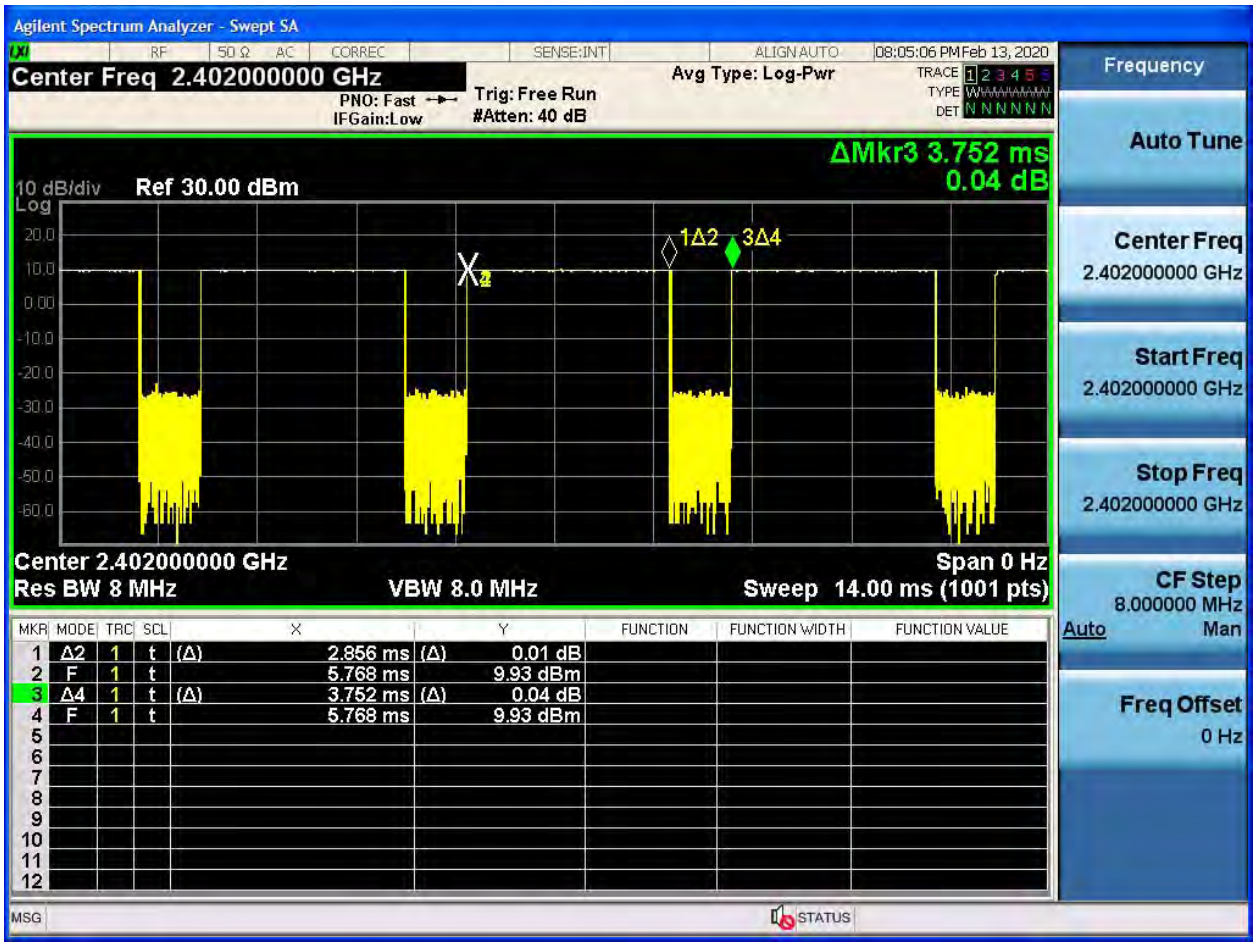
5.5.5 BT Test Configuration

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

The SAR measurement takes full account of the BT duty cycle and is reflected in the report, and the duty factor of the device is as follow:



Note: Duty factor= Ton (ms)/ T(on+off) (ms)=2.856/3.752=76.1%

5.5.6 Proximity sensor& Receiver Power reduction information

In this section, the following list is used to prepare an inquiry seeking SAR test guidance for proximity sensor& receiverpower reduction. The procedures in KDB 616217 isapplied for SAR testing.

General proximity sensor& receiver implementation description

a. This device uses one sensor chip and threesensor pads to reduce the maximum output power in selected wireless mode and operating configurations to ensure SAR compliance. The sensor pad1 is applied to the same diversity antenna, the sensor pad2 is applied to the same main antenna. The two sensor pads share the same sensor. The sensors implementation can identify and facilitate triggering target power when the device is closed to a user's body.

b. We have a mobile phone device supporting the receiver detection mechanism. The main purpose is to minimize triggering associated with power reduction scenarios by receiver detection

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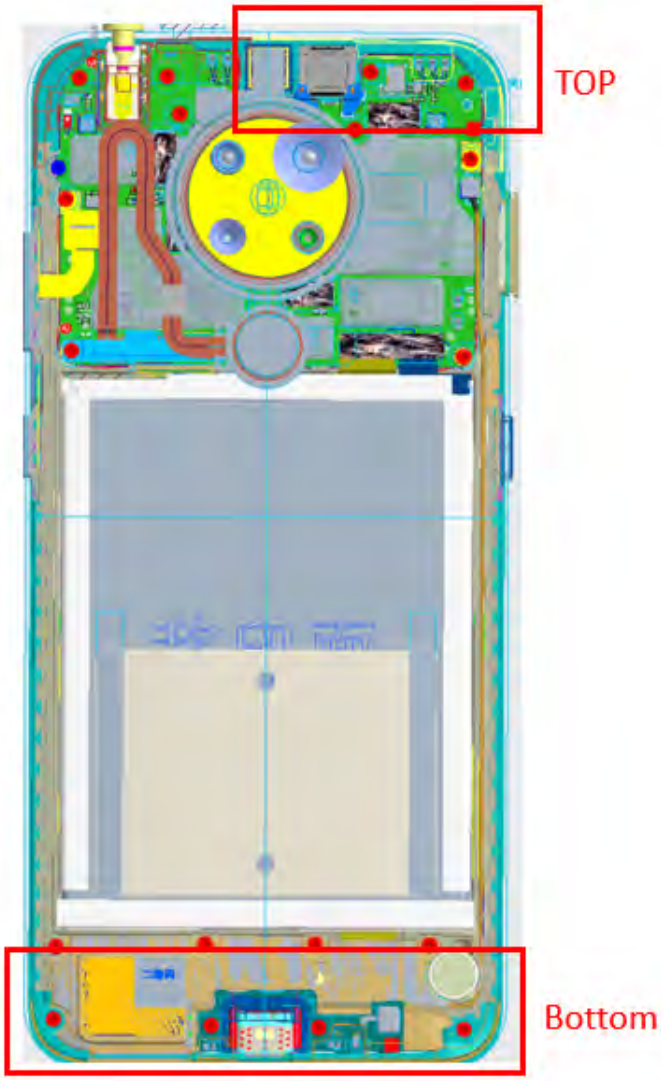
mechanisms and provide enhanced user experience.

This device 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&4Gantenna accordingly.

Table: Summary of Receiver&proximity sensor detection mechanism

Scene	SENSOR	SENSOR	RECEIVER	POWER
	Top	bottom		
Head	/		YES	Power Level A (Sensor on/ Receiver on)
Body/Hotspot	at least one trigger		NO	Power Level A (Sensor on/ Receiver on)
Others				Power Level B (Full Power)

Antennas and sensor placement details



Figue1: The location of the antennas and the proximity sensor

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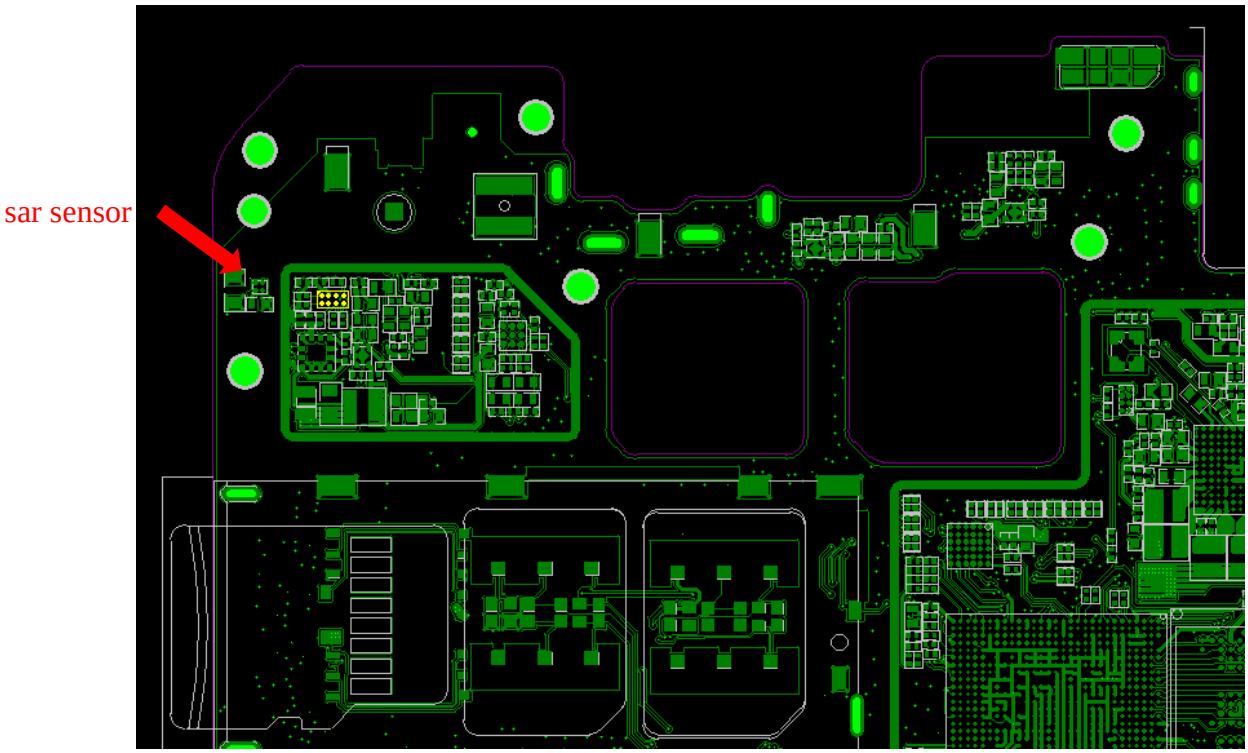
proximity sensor clarification



Figue2: The picture of the Sar sensor

Description of proximity sensor Techniques

The proximity sensor is triggered by capacitance changes due to objects in the vicinity of the sensing element.

As is shown in Figure 1, The two sensor pads use the different sensor channels. The sensor chip work as two sensor pad are closed to a user's body

The proximity sensor or the power reduction implementation cannot be intentionally or unintentionally turned-off by the user.

The expected capacitance trigger values are programmed in each device for each power back-off stage. Capacitance trigger value is C1

When a certain object or human body approaches the DUT, if the measured capacitance is lower than C1, proximity sensor is not triggered. If the measured capacitance is equal to C1 or higher than C1, the power back-off is triggered.

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Power Reduction operation table

The device use Qualcomm platform, which have some special NVs for SAR related max power back off, These NVs are used to set a new max power limit based proximity information and call configuration. When human body are in proximity and is detected by sensor,D NV is triggered and power level is applied, the following is trigger distance of different sensor pads.

	Sensor Trigger Distance (mm)	
	Top sensor	Bottom sensor
Front Side	11	13
Back Side	16	21
Top Side	15	/
Bottom Side	/	20
Left Side	12	/
Right Side	/	/

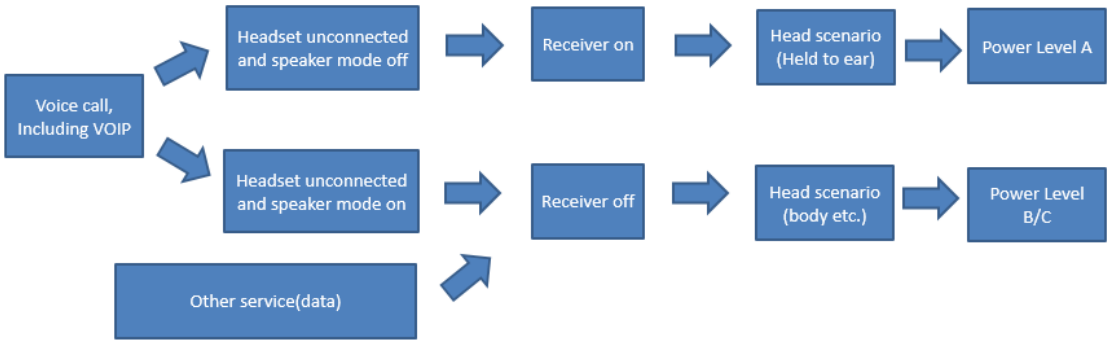
Note:

1) Since the capacitive proximity sensor triggering distance for the front/back/top/ bottom side is N mm , a conservative distance of N-1 mm was requried for addtional SAR test at maximum power level with sensor off.

2) SAR tests with proximity sensor power reduction are only required for the sidesof frequency bands in the table above. For the other sides or other frequency bands of the device, SAR is still tested at the maximum power level with sensor off.

Receiver detection mechanism clarifications

The receiver on detection is accomplished by voice call from the modem as figure below shows:



1) When there is a voice call (including VOIP) and the modem chipdetects that the Headset is unconnected and speaker is off, then the receiver is triggered and it is considered as Held to ear scenario (Head). The power level A is applied.

2) When there is a voice call, but the headset is connected or speaker mode ison, the receiver will not work. It is considered as other scenarios (Body etc.). The power level B is applied.

3) When there is data service only(No voice call, including VOIP), the receiver will not work too. It is considered as other scenarios (Body etc.).The power level B is applied.

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Note: The power level A and B can be set to the same or different.

The device offers 3 sets SAR back off NVs to meet different complicated SAR scenarios. These NVs control max output power of main modem for 2G/3G/4G bands. When certain set NVs works, the processor compare the back off NVs and original ones, and choose the lower output to apply. The receiver only works in voice mode(Headset unconnected and speaker mode off), like GSM, CDMA 1X, VOLTE, WCDMA, and VOIP (VOLTE and VOIP based on the operation of different telecom carriers services .When users take voice services like above, SAR back off will be applied immediately. And if other third party software applications such as VOIP software can trigger receiver,TX power can also be reduced.) If Base station requests the higher output power above the limit, the power control algorithm inside modem chip will limit the power up to the preset power limit. If base station requests a lower output power less than the limit, the out power is controlled by base station.

Based on the summery table of Receiver detection mechanism above,

Band	Position	Power Reduction Status(dBm)																																					
		36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
GSM 1900	Back Side	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86
UMTS Band 2	Back Side	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71
UMTS Band 4	Back Side	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38
LTE Band 2	Back Side	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75
LTE Band 4	Back Side	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02
LTE Band 7	Back Side	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50
LTE Band 66	Back Side	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60

Band	Position	Power Reduction Status(dBm)																																			
		31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
GSM 1900	Front Side	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86
UMTS Band 2	Front Side	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71
UMTS Band 4	Front Side	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38
LTE Band 2	Front Side	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75
LTE Band 4	Front Side	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02
LTE Band 7	Front Side	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50
LTE Band 66	Front Side	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60

Band	Position	Power Reduction Status(dBm)																																			
		35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
GSM 1900	Top Edge	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86
UMTS Band 2	Top Edge	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71
UMTS Band 4	Top Edge	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38
LTE Band 2	Top Edge	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75
LTE Band 4	Top Edge	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02
LTE Band 7	Top Edge	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50
LTE Band 66	Top Edge	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60

Band	Position	Power Reduction Status(dBm)																																			
		32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
GSM 1900	Left Edge	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86
UMTS Band 2	Left Edge	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71
UMTS Band 4	Left Edge	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38
LTE Band 2	Left Edge	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75
LTE Band 4	Left Edge	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02
LTE Band 7	Left Edge	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50
LTE Band 66	Left Edge	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60

Band	Position	Power Reduction Status(dBm)																																			
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
GSM 1900	Back Side	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69
UMTS Band 2	Back Side	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52
UMTS Band 4	Back Side	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70
LTE Band 2	Back Side	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44
LTE Band 4	Back Side	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48
LTE Band 7	Back Side	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00
LTE Band 66	Back Side	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12

Band	Position	Power Reduction Status(dBm)																														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
GSM 1900	Front Side	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69
UMTS Band 2	Front Side	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52
UMTS Band 4	Front Side	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70
LTE Band 2	Front Side	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44
LTE Band 4	Front Side	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48
LTE Band 7	Front Side	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00
LTE Band 66	Front Side	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12

Band	Position	Power Reduction Status(dBm)																																			
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
GSM 1900	Top Edge	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69
UMTS Band 2	Top Edge	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52
UMTS Band 4	Top Edge	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70
LTE Band 2	Top Edge	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44
LTE Band 4	Top Edge	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48
LTE Band 7	Top Edge	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00
LTE Band 66	Top Edge	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12

Band	Position	Power Reduction Status(dBm)																																			
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
GSM 1900	Left Edge	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86	22.86	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69
UMTS Band 2	Left Edge	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71	17.71	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52	23.52
UMTS Band 4	Left Edge	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70
LTE Band 2	Left Edge	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44
LTE Band 4	Left Edge	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02	16.02	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48	23.48
LTE Band 7	Left Edge	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00
LTE Band 66	Left Edge	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	16.60	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12

Note: The power reduction amount in the tables above are just for reference. The final value may be adjusted according to the SAR test results in the final SAR report.

Summary SAR test Plan for Proximity sensor & Receiver power reduction

More details power reduction information followings:

Main Antenna			
Band	Power Level A (dBm)	Power Level B (dBm)	Power Reduce (dB)

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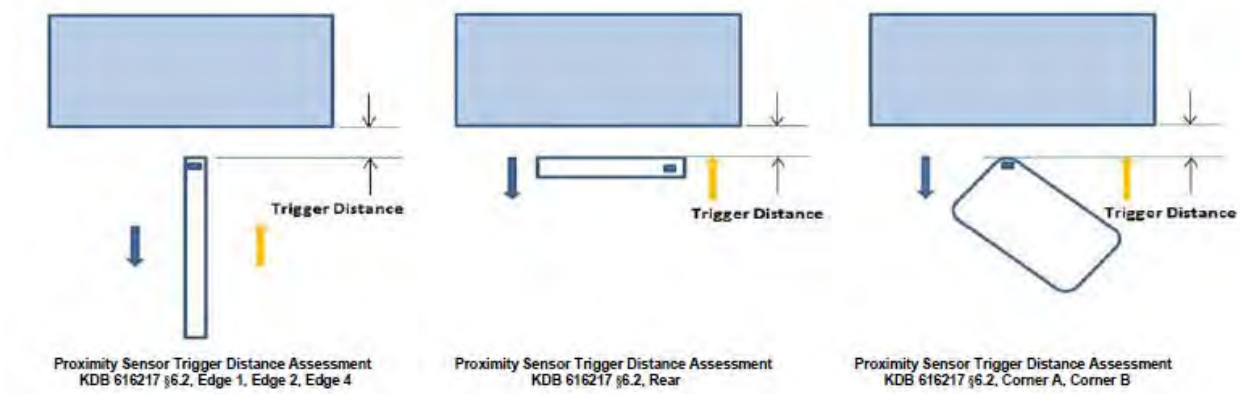
GSM 850	34	34	0
GSM 1900	31.5	31.5	0
UMTS Band 2	24.5	24.5	0
UMTS Band 4	24.5	24.5	0
UMTS Band 5	24.5	24.5	0
LTE Band 2	24	24	0
LTE Band 4	24	24	0
LTE Band 5	24	24	0
LTE Band 7	24	24	0
LTE Band 12	24	24	0
LTE Band 13	24	24	0
LTE Band 17	24	24	0
LTE Band 66	24	24	0

Second Antenna Tune up			
Band	Power Level A (dBm)	Power Level B (dBm)	Power Reduce (dB)
GSM 850	34	34	0
GSM 1900	24	31.5	7.5
UMTS Band 2	18.5	24.5	6
UMTS Band 4	18.5	24.5	6
UMTS Band 5	24.5	24.5	0
LTE Band 2	17.5	24	6.5
LTE Band 4	17	24	7
LTE Band 5	24	24	0
LTE Band 7	16	24	8
LTE Band 12	24	24	0
LTE Band 13	24	24	0
LTE Band 17	24	24	0
LTE Band 66	17	24	7

The proximity sensor triggering distance measurement method are as below:



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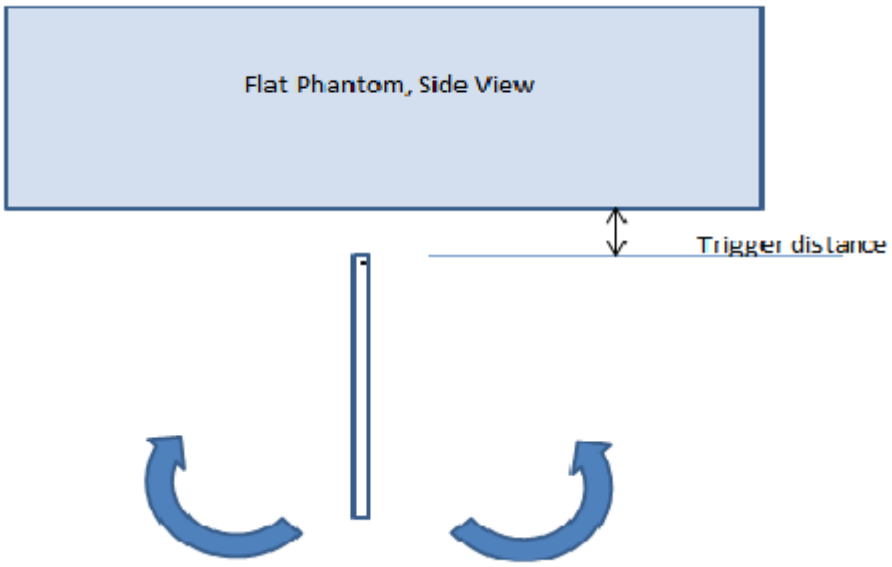
The DUT was positioned directly below the flat phantom at the minimum measured trigger distance for each band.

If the output power increased during the rotation the DUT was moved 1mm toward the phantom and the rotation repeated.

This procedure was repeated until the power remained reduced for all angles up to +/-45°



Proximity sensor tilt angle assessment KDB 616217 § 6.4

Summary of tablet Tilt angle Influence to Proximity Sensor Triggering

Band	Power reduction status										
GSM 850	-45°	-40°	-30°	-20°	-10°	0°	10°	20°	30°	40°	45°
GSM 1900	on	on	on	on	on	on	on	on	on	on	on
UMTS Band 2	on	on	on	on	on	on	on	on	on	on	on
UMTS Band 4	on	on	on	on	on	on	on	on	on	on	on
UMTS Band 5	on	on	on	on	on	on	on	on	on	on	on
LTE Band 2	on	on	on	on	on	on	on	on	on	on	on
LTE Band 4	on	on	on	on	on	on	on	on	on	on	on
LTE Band 5	on	on	on	on	on	on	on	on	on	on	on
LTE Band 7	on	on	on	on	on	on	on	on	on	on	on
LTE Band 12	on	on	on	on	on	on	on	on	on	on	on
LTE Band 13	on	on	on	on	on	on	on	on	on	on	on
LTE Band 17	on	on	on	on	on	on	on	on	on	on	on
LTE Band 66	on	on	on	on	on	on	on	on	on	on	on

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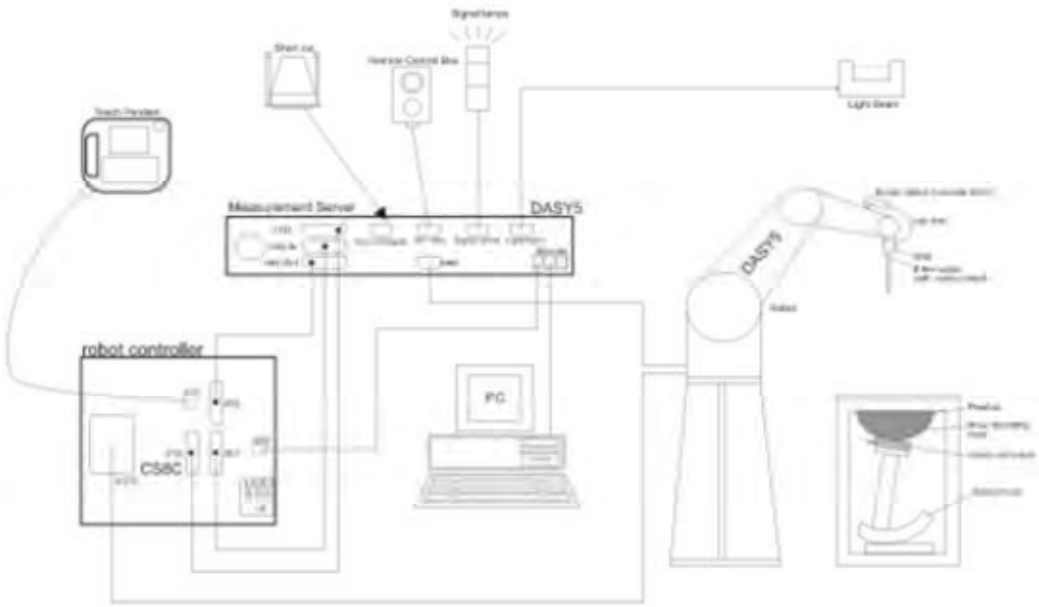
6 SAR Measurements System Configuration

6.3 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.

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6.4 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 µW/g to > 100 mW/g Linearity: ± 0.2dB (noise: typically < 1 µW/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 ± 10%. The spherical isotropy was evaluated and found to be better than ± 0.25dB. 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 bellow 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.

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SAR=C∆T/∆t

Where: ∆t = Exposure time (30 seconds),

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

∆T = Temperature increase due to RF exposure.

Or

SAR=$|E|^2\sigma/\rho$

Where: σ = Simulated tissue conductivity,

ρ = Tissue density (kg/m^3).

6.5 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.	

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Zoom Scan

Zoom scans are used 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 shoes 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: $\triangle x_{zoom} \triangle y_{zoom}$			≤2GHz: ≤8mm 2 – 3GHz: ≤5mm*	3 – 4GHz: ≤5mm* 4 – 6GHz: ≤4mm*
Maximum zoom scan spatial resolution, normal to phantom surface	Uniform grid: $\triangle z_{zoom}(n)$		≤5mm	3 – 4GHz: ≤4mm 4 – 5GHz: ≤3mm 5 – 6GHz: ≤2mm
	Graded grid	$\triangle z_{zoom}(1)$: between 1st two points closest to phantom surface	≤4mm	3 – 4GHz: ≤3mm 4 – 5GHz: ≤2.5mm 5 – 6GHz: ≤2mm
		$\triangle z_{zoom}(n>1)$: between subsequent points	$\leq 1.5 \bullet \triangle z_{zoom}(n-1)$	
Minimum zoom scan volume	X, y, z		≥30mm	3 – 4GHz: ≥28mm 4 – 5GHz: ≥25mm 5 – 6GHz: ≥22mm
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. * When zoom scan is required and the *reported* SAR from the *area scan based 1-g SAR estimation* 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.				

Volume Scan Procedures

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

Power Drift Monitoring

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

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7 Main Test Equipment

Name of Equipment	Manufacturer	Type/Model	Serial Number	Last Cal.	Cal. Due Date
Network analyzer	Agilent	E5071B	MY42404014	2019-05-19	2020-05-18
Dielectric Probe Kit	HP	85070E	US44020115	2019-05-19	2020-05-18
Power meter	Agilent	E4417A	GB41291714	2019-05-19	2020-05-18
Power sensor	Agilent	N8481H	MY50350004	2019-05-19	2020-05-18
Power sensor	Agilent	E9327A	US40441622	2019-05-19	2020-05-18
Dual directional coupler	Agilent	778D-012	50519	2019-05-19	2020-05-18
Dual directional coupler	Agilent	777D	50146	2019-05-19	2020-05-18
Amplifier	INDEXSAR	IXA-020	0401	2019-05-19	2020-05-18
Wireless communication tester	Anritsu	MT8820C	6201342015	2019-05-19	2020-05-18
Wireless communication tester	Key sight	E5515C	MY48360988	2019-12-15	2020-12-14
Wideband radio communication tester	R&S	CMW 500	113645	2019-05-19	2020-05-18
Base Station Simulator	R&S	CMW270	100673	2019-05-19	2020-05-18
E-field Probe	SPEAG	EX3DV4	3677	2019-06-19	2020-06-18
DAE	SPEAG	DAE4	1317	2019-10-23	2020-10-22
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	1023	2019-06-20	2021-06-19
Validation Kit 1900MHz	SPEAG	D1900V2	5d060	2017-08-26	2020-08-25
Validation Kit 2300MHz	SPEAG	D2300V2	1021	2018-11-01	2021-10-31
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	1145	2019-10-16	2022-10-15
Temperature Probe	Tianjin jinming	JM222	AA1009129	2019-05-19	2020-05-18
Hygrothermograph	Anymetr	NT-311	20150731	2019-05-19	2020-05-18
Software for Test	Speag	DASY5	52.10	/	/

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Softwarefor Tissue	Agilent	85070	E06.01.36	/	/

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8 Tissue Dielectric Parameter Measurements & System Verification

8.3 Tissue Verification

The temperature of the tissue-equivalent medium used during measurement must also be within 18°C to 25°C and within ± 2°C of the temperature when the tissue parameters are characterized. The dielectric parameters must be measured before the tissue-equivalent medium is used in a series of SAR measurements. The parameters should be re-measured after each 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	σ(s/m)
750	41.448	1.452	56	0	0.1	1.0	41.9	0.89
835	41.45	1.45	56	0	0.1	1.0	41.5	0.90
1750	55.24	0.31	0	44.45	0	0	40.1	1.37
1900	55.242	0.306	0	44.452	0	0	40.0	1.40
2450	62.7	0.5	0	36.8	0	0	39.2	1.80
2600	55.242	0.306	0	44.452	0	0	39.0	1.96
Frequency (MHz)	**Water (%)**	**Diethylenglycol monohexylether**			**Triton X-100**		**ε_r**	**σ(s/m)**
5250	65.53	17.24			17.23		35.9	4.71
5750	65.53	17.24			17.23		35.4	5.22

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Measurements results

Frequency (MHz)	Test Date	Temp ℃	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	2/4/2020	21.5	42.3	0.88	41.9	0.89	0.95	-1.12
	2/5/2020	21.5	42.0	0.87	41.9	0.89	0.24	-2.25
835	2/7/2020	21.5	41.4	0.88	41.5	0.90	-0.24	-2.22
	2/10/2020	21.5	41.3	0.87	41.5	0.90	-0.48	-3.33
	2/11/2020	21.5	41.4	0.92	41.5	0.90	-0.24	2.22
1750	2/6/2020	21.5	40.2	1.34	40.1	1.37	0.25	-2.19
	2/8/2020	21.5	40.1	1.34	40.1	1.37	0.00	-2.19
	2/9/2020	21.5	40.2	1.36	40.1	1.37	0.25	-0.73
	2/12/2020	21.5	40.0	1.33	40.1	1.37	-0.25	-2.92
1900	2/15/2020	21.5	40.1	1.41	40.0	1.40	0.25	0.71
	2/16/2020	21.5	40.2	1.43	40.0	1.40	0.50	2.14
	2/17/2020	21.5	40.3	1.40	40.0	1.40	0.75	0.00
2450	2/13/2020	21.5	38.6	1.81	39.2	1.80	-1.53	0.56
2600	2/14/2020	21.5	38.2	2.01	39.0	1.96	-2.05	2.55
	2/18/2020	21.5	38.4	1.94	39.0	1.96	-1.54	-1.02
5250	2/14/2020	21.5	35.5	4.80	35.9	4.71	-1.11	1.91
5750	2/18/2020	21.5	34.9	5.21	35.4	5.22	-1.41	-0.19
Note: The depth of tissue-equivalent liquid in a phantom must be ≥ 15.0 cm for SAR measurements ≤ 3 GHz and ≥ 10.0 cm for measurements > 3 GHz.								

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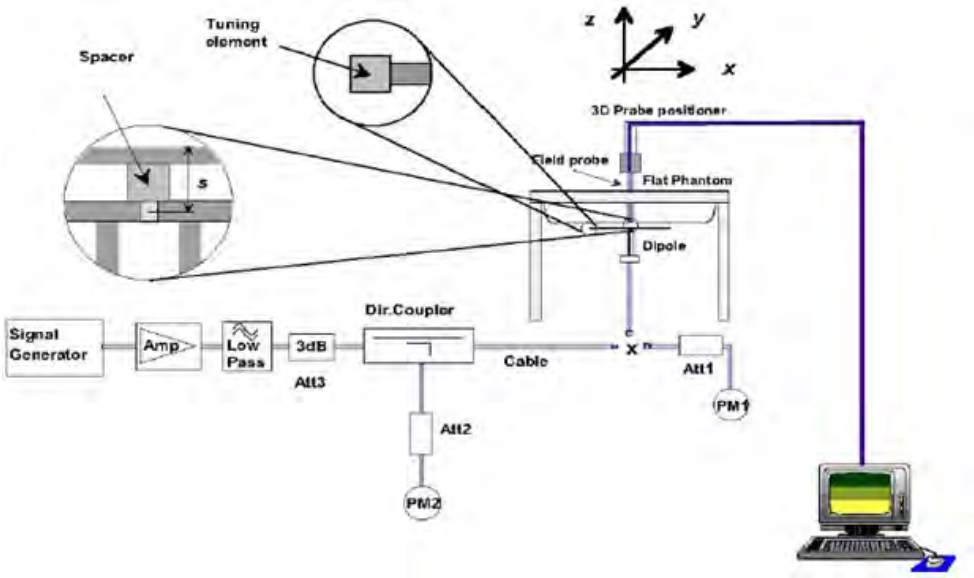
8.4 System Performance Check

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 1System Performance Check setup

Picture 2 Setup Photo

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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)	ΔΩ
Dipole D750V3 SN: 1045	Head Liquid	8/27/2017	-28.5	/	52.5	/
		8/26/2018	-27.6	3.3	53.2	-0.7
		8/25/2019	-27.5	0.4	54.1	-0.9
Dipole D835V2 SN: 4d020	Head Liquid	8/28/2017	-31.9	/	50.3	/
		8/27/2018	-29.0	10.0	46.6	3.7
		8/26/2019	-29.4	-1.4	45.9	0.7
Dipole D1900V2 SN: 5d060	Head Liquid	8/26/2017	-23.4	/	52.0	/
		8/25/2018	-24.7	-5.3	54.4	-2.4
		8/24/2019	-24.9	-0.8	56.2	-1.8
Dipole D2450V2 SN: 786	Head Liquid	8/29/2017	-25.5	/	53.4	/
		8/28/2018	-23.0	10.9	57.2	-3.8
		8/27/2019	-22.2	3.6	56.4	0.8
Dipole D2600V2 SN: 1025	Head Liquid	5/2/2018	-22.0	/	48.1	/
		5/1/2019	-22.5	-2.2	48.7	-0.6

System Check results

Frequency (MHz)	Test Date	Temp ℃	250mW /100mW Measured SAR_{1g} (W/kg)	1W Normalized SAR_{1g} (W/kg)	1W Target SAR_{1g} (W/kg)	Δ % (Limit ±10%)	Plot No.
750	2/4/2020	21.5	2.13	8.52	8.34	2.16	1
	2/5/2020	21.5	2.10	8.40	8.34	0.72	2
835	2/7/2020	21.5	2.44	9.76	9.45	3.28	3
	2/10/2020	21.5	2.46	9.84	9.45	4.13	4
	2/11/2020	21.5	2.43	9.72	9.45	2.86	5
1750	2/6/2020	21.5	8.95	35.80	36.1	-0.83	6
	2/8/2020	21.5	9.11	36.44	36.1	0.94	7
	2/9/2020	21.5	8.92	35.68	36.1	-1.16	8
	2/12/2020	21.5	8.92	35.68	36.1	-1.16	9
1900	2/15/2020	21.5	9.88	39.52	40.1	-1.45	10
	2/16/2020	21.5	9.85	39.40	40.1	-1.75	11
	2/17/2020	21.5	10.55	42.20	40.1	5.24	12
2450	2/13/2020	21.5	13.70	54.80	52.6	4.18	13
2600	2/14/2020	21.5	13.90	55.60	54.1	2.77	14
	2/18/2020	21.5	13.88	55.52	54.1	2.62	15

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5250	2/14/2020	21.5	7.87	78.7	78.8	-0.13	16
5750	2/18/2020	21.5	7.66	76.6	78.8	-2.79	17
Note：Target Values used derive from the calibration certificate Data Storage and Evaluation.							

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8.5 SAR System Validation

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

Frequency [MHz]	Date	Probe SN	Probe Type	Probe Cal Point		PERM (Er)	COND (Σ)	CW Validation			Mod. Validation		
								Sensitivity	Probe Linearity	Probe Isotropy	Mod. Type	Duty Factor	PAR
750	6/25/2019	3677	EX3DV4	750	Head	42.81	0.85	PASS	PASS	PASS	FDD	PASS	N/A
835	6/25/2019	3677	EX3DV4	835	Head	42.22	0.90	PASS	PASS	PASS	GMSK	PASS	N/A
1750	6/25/2019	3677	EX3DV4	1750	Head	39.91	1.32	PASS	PASS	PASS	NA	N/A	N/A
1900	6/25/2019	3677	EX3DV4	1900	Head	39.43	1.42	PASS	PASS	PASS	GMSK	PASS	N/A
2450	6/25/2019	3677	EX3DV4	2450	Head	38.19	1.83	PASS	PASS	PASS	OFDM	PASS	PASS
2600	6/25/2019	3677	EX3DV4	2600	Head	37.60	1.99	PASS	PASS	PASS	TDD	PASS	N/A
5250	6/25/2019	3677	EX3DV4	5250	Head	35.36	4.83	PASS	PASS	PASS	OFDM	N/A	PASS
5600	6/25/2019	3677	EX3DV4	5600	Head	34.43	5.29	PASS	PASS	PASS	OFDM	N/A	PASS
5750	6/25/2019	3677	EX3DV4	5750	Head	34.07	5.47	PASS	PASS	PASS	OFDM	N/A	PASS
750	6/25/2019	3677	EX3DV4	750	Body	55.35	0.99	PASS	PASS	PASS	FDD	PASS	N/A
835	6/25/2019	3677	EX3DV4	835	Body	54.88	0.98	PASS	PASS	PASS	GMSK	PASS	N/A
1750	6/25/2019	3677	EX3DV4	1750	Body	51.24	1.44	PASS	PASS	PASS	NA	N/A	N/A
1900	6/25/2019	3677	EX3DV4	1900	Body	50.98	1.56	PASS	PASS	PASS	GMSK	PASS	N/A
2450	6/25/2019	3677	EX3DV4	2450	Body	50.59	1.95	PASS	PASS	PASS	OFDM	PASS	PASS
2600	6/25/2019	3677	EX3DV4	2600	Body	50.14	2.13	PASS	PASS	PASS	TDD	PASS	N/A
5250	6/25/2019	3677	EX3DV4	5250	Body	47.37	5.44	PASS	PASS	PASS	OFDM	N/A	PASS
5600	6/25/2019	3677	EX3DV4	5600	Body	46.42	5.99	PASS	PASS	PASS	OFDM	N/A	PASS
5750	6/25/2019	3677	EX3DV4	5750	Body	46.02	6.23	PASS	PASS	PASS	OFDM	N/A	PASS

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

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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.

9.3 GSM Mode

Main Antenna

GSM 850 Full Power		Burst-Averaged output power(dBm)				Division Factors	Frame-Averaged output power(dBm)			
		Tune-up	Channel/Frenqucy(MHz)				Tune-up	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	34.00	33.24	33.30	33.12	9.03	24.97	24.21	24.27	24.09
GPRS/ EGPRS (GMSK)	1 Tx Slot	34.00	33.16	33.20	33.06	9.03	24.97	24.13	24.17	24.03
	2 Tx Slots	33.00	32.00	32.06	31.95	6.02	26.98	25.98	26.04	25.93
	3 Tx Slots	32.00	30.85	31.14	30.78	4.26	**27.74**	**26.59**	**26.88**	**26.52**
	4 Tx Slots	30.00	28.64	29.06	28.66	3.01	26.99	25.63	26.05	25.65
EGPRS (8PSK)	1 Tx Slot	28.00	27.12	27.28	27.02	9.03	18.97	18.09	18.25	17.99
	2 Tx Slots	28.00	26.86	27.02	26.75	6.02	21.98	20.84	21.00	20.73
	3 Tx Slots	26.50	26.08	25.96	26.21	4.26	22.24	21.82	21.70	21.95
	4 Tx Slots	24.50	23.66	24.10	23.64	3.01	21.49	20.65	21.09	20.63
GSM 1900 Full Power		Burst-Averaged output power(dBm)				Division Factors	Frame-Averaged output power(dBm)			
		Tune-up	Channel/Frenqucy(MHz)				Tune-up	Channel/Frenqucy(MHz)		
		MAX	512 /1850.2	661 /1880	810 /1909.8		MAX	512 /1850.2	661 /1880	810 /1909.8
GSM	CS	31.50	30.89	30.85	31.01	9.03	22.47	21.86	21.82	21.98
GPRS/ EGPRS (GMSK)	1 Tx Slot	31.50	30.79	30.87	30.84	9.03	22.47	21.76	21.84	21.81
	2 Tx Slots	31.00	30.35	30.25	30.39	6.02	24.98	24.33	24.23	24.37
	3 Tx Slots	30.00	29.59	29.44	29.63	4.26	**25.74**	**25.33**	**25.18**	**25.37**
	4 Tx Slots	28.50	27.91	27.85	28.04	3.01	25.49	24.90	24.84	25.03
EGPRS (8PSK)	1 Tx Slot	28.50	27.34	27.79	27.51	9.03	19.47	18.31	18.76	18.48
	2 Tx Slots	28.50	27.56	27.63	27.76	6.02	22.48	21.54	21.61	21.74
	3 Tx Slots	27.50	26.62	26.74	26.68	4.26	23.24	22.36	22.48	22.42
	4 Tx Slots	25.50	24.97	24.92	24.74	3.01	22.49	21.96	21.91	21.73

Notes:The worst-case configuration and mode for SAR testing is determined to be as follows:
1. Standalone: GSM 850 GMSK (GPRS) mode with 3 time slots for Max power, GSM 1900 GMSK (GPRS) mode with 3 time slots for Max power,based on the output power measurements above.

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Second Antenna

GSM 850 Full Power		Burst-Averaged output power(dBm)				Division Factors	Frame-Averaged output power(dBm)			
		Tune-up	Channel/Frenqucy(MHz)				Tune-up	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	34.00	33.14	33.00	32.80	9.03	24.97	24.11	23.97	23.77
GPRS/ EGPRS (GMSK)	1 Tx Slot	34.00	32.99	33.02	32.65	9.03	24.97	23.96	23.99	23.62
	2 Tx Slots	33.00	31.94	31.92	31.81	6.02	26.98	25.92	25.90	25.79
	3 Tx Slots	32.00	30.88	30.77	30.60	4.26	**27.74**	**26.62**	**26.51**	**26.34**
	4 Tx Slots	30.00	28.80	28.72	28.51	3.01	26.99	25.79	25.71	25.50
EGPRS (8PSK)	1 Tx Slot	28.00	27.02	27.18	27.29	9.03	18.97	17.99	18.15	18.26
	2 Tx Slots	28.00	27.25	27.02	27.05	6.02	21.98	21.23	21.00	21.03
	3 Tx Slots	26.50	25.98	25.86	25.77	4.26	22.24	21.72	21.60	21.51
	4 Tx Slots	24.50	23.60	23.81	23.80	3.01	21.49	20.59	20.80	20.79
GSM 1900 Full Power		Burst-Averaged output power(dBm)				Division Factors	Frame-Averaged output power(dBm)			
		Tune-up	Channel/Frenqucy(MHz)				Tune-up	Channel/Frenqucy(MHz)		
		MAX	512 /1850.2	661 /1880	810 /1909.8		MAX	512 /1850.2	661 /1880	810 /1909.8
GSM	CS	31.50	30.51	30.69	30.93	9.03	22.47	21.48	21.66	21.90
GPRS/ EGPRS (GMSK)	1 Tx Slot	31.50	30.35	30.71	30.82	9.03	22.47	21.32	21.68	21.79
	2 Tx Slots	31.00	29.74	29.82	30.10	6.02	24.98	23.72	23.80	24.08
	3 Tx Slots	30.00	28.86	28.96	29.15	4.26	**25.74**	**24.60**	**24.70**	**24.89**
	4 Tx Slots	28.50	26.98	27.03	27.34	3.01	25.49	23.97	24.02	24.33
EGPRS (8PSK)	1 Tx Slot	28.50	26.98	26.92	27.01	9.03	19.47	17.95	17.89	17.98
	2 Tx Slots	28.50	26.83	26.76	26.80	6.02	22.48	20.81	20.74	20.78
	3 Tx Slots	27.50	25.64	25.75	25.66	4.26	23.24	21.38	21.49	21.40
	4 Tx Slots	25.50	24.04	23.82	23.97	3.01	22.49	21.03	20.81	20.96

Notes:The worst-case configuration and mode for SAR testing is determined to be as follows:
1. Standalone: GSM 850 GMSK (GPRS) mode with 3 time slots for Max power, GSM 1900 GMSK (GPRS) mode with 3 time slots for Max power,based on the output power measurements above.

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GSM 1900 Sensor on/ receiver on		Burst-Averaged output power(dBm)				Division Factors	Frame-Averaged output power(dBm)			
		Tune-up	Channel/Frenqucy(MHz)				Tune-up	Channel/Frenqucy(MHz)		
		MAX	512 /1850.2	661 /1880	810 /1909.8		MAX	512 /1850.2	661 /1880	810 /1909.8
GSM	CS	24.00	23.15	22.86	23.00	9.03	14.97	14.12	13.83	13.97
GPRS/ EGPRS (GMSK)	1 Tx Slot	24.00	23.09	23.00	22.89	9.03	14.97	14.06	13.97	13.86
	2 Tx Slots	22.00	20.92	20.85	20.70	6.02	**15.98**	**14.90**	**14.83**	**14.68**
	3 Tx Slots	20.00	18.94	18.64	18.66	4.26	15.74	14.68	14.38	14.40
	4 Tx Slots	18.00	16.75	16.57	16.51	3.01	14.99	13.74	13.56	13.50
EGPRS (8PSK)	1 Tx Slot	23.50	22.63	22.39	22.23	9.03	14.47	13.60	13.36	13.20
	2 Tx Slots	21.50	20.62	20.32	20.19	6.02	15.48	14.60	14.30	14.17
	3 Tx Slots	19.50	18.49	18.35	18.24	4.26	15.24	14.23	14.09	13.98
	4 Tx Slots	18.00	16.86	16.58	16.51	3.01	14.99	13.85	13.57	13.50

Notes:The worst-case configuration and mode for SAR testing is determined to be as follows:
1. Standalone: GSM 1900 GMSK (GPRS) mode with 3 time slots for Max power,based on the output power measurements above.

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9.4 WCDMA Mode

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

Main Antenna

WCDMA Full Power		Band II(dBm)				Band IV(dBm)				Band V(dBm)			
Tx Channel		9262	9400	9538	Tune-up Limit	1312	1413	1513	Tune-up Limit	4132	4183	4233	Tune-up Limit
Frequency(MHz)		1852.4	1880	1907.6		1712.4	1732.6	1752.6		826.4	836.6	846.6	
RMC	12.2kbps	23.67	23.67	23.62	24.50	23.82	23.90	23.80	24.50	23.47	23.59	23.49	24.50
AMR	12.2kbps	23.51	23.50	23.47	24.50	23.66	23.73	23.65	24.50	23.31	23.42	23.34	24.50
HSDPA	Sub 1	23.09	23.09	23.04	24.00	23.24	23.32	23.22	24.00	22.89	23.01	22.91	24.00
	Sub 2	23.08	23.08	23.03	24.00	23.23	23.31	23.21	24.00	22.88	23.00	22.90	24.00
	Sub 3	22.57	22.57	22.52	23.50	22.72	22.80	22.70	23.50	22.37	22.49	22.39	23.50
	Sub 4	22.56	22.56	22.51	23.50	22.71	22.79	22.69	23.50	22.36	22.48	22.38	23.50
HSUPA	Sub 1	23.05	23.05	23.00	24.00	23.20	23.28	23.18	24.00	22.85	22.97	22.87	24.00
	Sub 2	22.04	22.04	21.99	23.00	22.19	22.27	22.17	23.00	21.84	21.96	21.86	23.00
	Sub 3	22.52	22.53	22.48	23.50	22.67	22.76	22.66	23.50	22.32	22.45	22.35	23.50
	Sub 4	22.01	22.02	21.97	23.00	22.16	22.25	22.15	23.00	21.81	21.94	21.84	23.00
	Sub 5	23.00	23.01	22.96	24.00	23.15	23.24	23.14	24.00	22.80	22.93	22.83	24.00

Note: 1.Per KDB 941225 D01, SAR for each exposure is measured using a 12.2 kbps RMC with TPC bits configured to all “1’s”.

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Second Antenna

WCDMA Full Power		Band II(dBm)				Band IV(dBm)				Band V(dBm)			
Tx Channel		9262	9400	9538	Tune-up Limit	1312	1413	1513	Tune-up Limit	4132	4183	4233	Tune-up Limit
Frequency(MHz)		1852.4	1880	1907.6		1712.4	1732.6	1752.6		826.4	836.6	846.6	
RMC	12.2kbps	23.62	23.52	23.66	24.50	23.61	23.70	23.66	24.50	23.32	23.43	23.34	24.50
AMR	12.2kbps	23.46	23.35	23.30	24.50	23.45	23.53	23.51	24.50	23.16	23.26	23.19	24.50
HSDPA	Sub 1	23.04	22.94	22.87	24.00	23.03	23.12	23.08	24.00	22.74	22.85	22.76	24.00
	Sub 2	23.03	22.93	22.86	24.00	23.02	23.11	23.07	24.00	22.73	22.84	22.75	24.00
	Sub 3	22.52	22.42	22.35	23.50	22.51	22.60	22.56	23.50	22.22	22.33	22.24	23.50
	Sub 4	22.51	22.41	22.34	23.50	22.50	22.59	22.55	23.50	22.21	22.32	22.23	23.50
HSUPA	Sub 1	23.00	22.90	22.83	24.00	22.99	23.08	23.04	24.00	22.70	22.81	22.72	24.00
	Sub 2	21.99	21.89	21.82	23.00	21.98	22.07	22.03	23.00	21.69	21.80	21.71	23.00
	Sub 3	22.47	22.38	22.31	23.50	22.46	22.56	22.52	23.50	22.17	22.29	22.20	23.50
	Sub 4	21.96	21.87	21.80	23.00	21.95	22.05	22.01	23.00	21.66	21.78	21.69	23.00
	Sub 5	22.95	22.86	22.79	24.00	22.94	23.04	23.00	24.00	22.65	22.77	22.68	24.00

Note: 1.Per KDB 941225 D01, SAR for each exposure is measured using a 12.2 kbps RMC with TPC bits configured to all “1’s”.

WCDMA Sensor on/ receiver on		Band II(dBm)				Band IV(dBm)			
Tx Channel		9262	9400	9538	Tune-up Limit	1312	1413	1513	Tune-up Limit
Frequency(MHz)		1852.4	1880	1907.6		1712.4	1732.6	1752.6	
RMC	12.2kbps	17.54	17.71	17.49	18.50	17.43	17.38	17.52	18.50
AMR	12.2kbps	17.44	17.62	17.36	18.50	17.33	17.29	17.39	18.50
HSDPA	Sub 1	16.96	17.13	16.91	18.00	16.85	16.80	16.94	18.00
	Sub 2	16.95	17.12	16.90	18.00	16.84	16.79	16.93	18.00
	Sub 3	16.44	16.61	16.39	17.50	16.33	16.28	16.42	17.50
	Sub 4	16.43	16.60	16.38	17.50	16.32	16.27	16.41	17.50
HSUPA	Sub 1	16.92	17.09	16.87	18.00	16.81	16.76	16.90	18.00
	Sub 2	15.91	16.08	15.86	17.00	15.80	15.75	15.89	17.00
	Sub 3	16.39	16.57	16.35	17.50	16.28	16.24	16.38	17.50
	Sub 4	15.88	16.06	15.84	17.00	15.77	15.73	15.87	17.00
	Sub 5	16.87	17.05	16.83	18.00	16.76	16.72	16.86	18.00

Note: 1.Per KDB 941225 D01, SAR for each exposure is measured using a 12.2 kbps RMC with TPC bits configured to all “1’s”.

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9.5 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

Main- Antenna

LTE FDD Band 2 Full Power				Conducted Power(dBm)			Tune-up Limit
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				18607/1850.7	18900/1880	19193/1909.3	
1.4MHz	QPSK	1	0	23.42	23.55	23.52	24.00
		1	2	23.44	23.55	23.47	24.00
		1	5	23.48	23.51	23.38	24.00
		3	0	23.36	23.47	23.30	24.00
		3	2	23.34	23.43	23.38	24.00
		3	3	23.33	23.44	23.27	24.00
		6	0	22.49	22.47	22.35	23.00
	16QAM	1	0	22.80	22.79	22.64	23.50
		1	2	22.78	22.73	22.58	23.50
		1	5	22.99	22.81	22.85	23.50
		3	0	22.58	22.58	22.53	23.50
		3	2	22.51	22.54	22.54	23.50
		3	3	22.56	22.57	22.42	23.50
		6	0	21.58	21.60	21.63	22.50
	64QAM	1	0	22.53	22.58	22.71	23.50
		1	2	22.76	22.78	22.66	23.50
		1	5	22.78	22.70	22.91	23.50
		3	0	22.56	22.54	22.49	23.50
		3	2	22.61	22.52	22.56	23.50
		3	3	22.54	22.60	22.47	23.50
		6	0	21.64	21.65	21.59	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				18615/1851.5	18900/1880	19185/1908.5	

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3MHz	QPSK	1	0	23.44	23.59	23.55	24.00
		1	7	23.42	23.58	23.51	24.00
		1	14	23.51	23.56	23.42	24.00
		8	0	22.46	22.59	22.43	23.00
		8	4	22.46	22.53	22.50	23.00
		8	7	22.43	22.55	22.37	23.00
		15	0	22.49	22.51	22.38	23.00
	16QAM	1	0	22.83	22.81	22.67	23.50
		1	7	22.81	22.73	22.62	23.50
		1	14	23.01	22.85	22.88	23.50
		8	0	21.69	21.71	21.65	22.50
		8	4	21.62	21.67	21.66	22.50
		8	7	21.66	21.69	21.55	22.50
		15	0	21.61	21.64	21.66	22.50
	64QAM	1	0	22.56	22.60	22.74	23.50
		1	7	22.79	22.78	22.68	23.50
		1	14	22.80	22.69	22.94	23.50
		8	0	21.67	21.67	21.61	22.50
		8	4	21.72	21.65	21.68	22.50
		8	7	21.64	21.72	21.60	22.50
		15	0	21.67	21.69	21.62	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				18625/1852.5	18900/1880	19175/1907.5	
5MHz	QPSK	1	0	23.41	23.57	23.51	24.00
		1	13	23.40	23.54	23.48	24.00
		1	24	23.48	23.51	23.38	24.00
		12	0	22.43	22.54	22.39	23.00
		12	6	22.44	22.49	22.45	23.00
		12	13	22.41	22.53	22.33	23.00
		25	0	22.49	22.50	22.36	23.00
	16QAM	1	0	22.80	22.77	22.64	23.50
		1	13	22.78	22.71	22.59	23.50
		1	24	22.98	22.83	22.84	23.50
		12	0	21.67	21.67	21.62	22.50
		12	6	21.59	21.62	21.62	22.50
		12	13	21.63	21.64	21.51	22.50
		25	0	21.59	21.60	21.61	22.50
	64QAM	1	0	22.53	22.60	22.71	23.50
		1	13	22.76	22.80	22.65	23.50
		1	24	22.81	22.67	22.90	23.50
		12	0	21.65	21.63	21.62	22.50
		12	6	21.69	21.60	21.64	22.50
		12	13	21.61	21.67	21.56	22.50

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		25	0	21.65	21.65	21.57	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				18650/1855	18900/1880	19150/1905	
10MHz	QPSK	1	0	23.43	23.58	23.54	24.00
		1	25	23.43	23.59	23.52	24.00
		1	49	23.50	23.55	23.41	24.00
		25	0	22.46	22.59	22.43	23.00
		25	13	22.47	22.54	22.49	23.00
		25	25	22.43	22.57	22.38	23.00
		50	0	22.53	22.52	22.40	23.00
	16QAM	1	0	22.82	22.80	22.66	23.50
		1	25	22.81	22.75	22.62	23.50
		1	49	23.01	22.85	22.87	23.50
		25	0	21.70	21.72	21.66	22.50
		25	13	21.61	21.66	21.65	22.50
		25	25	21.66	21.69	21.55	22.50
		50	0	21.62	21.65	21.65	22.50
	64QAM	1	0	22.55	22.59	22.73	23.50
		1	25	22.79	22.80	22.68	23.50
		1	49	22.80	22.69	22.93	23.50
		25	0	21.68	21.68	21.62	22.50
		25	13	21.71	21.64	21.67	22.50
		25	25	21.64	21.72	21.60	22.50
		50	0	21.68	21.70	21.61	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				18675/1857.5	18900/1880	19125/1902.5	
15MHz	QPSK	1	0	23.42	23.54	23.52	24.00
		1	38	23.41	23.58	23.49	24.00
		1	74	23.47	23.50	23.37	24.00
		36	0	22.44	22.55	22.40	23.00
		36	18	22.44	22.49	22.45	23.00
		36	39	22.40	22.54	22.34	23.00
		75	0	22.51	22.48	22.35	23.00
	16QAM	1	0	22.77	22.78	22.64	23.50
		1	38	22.79	22.72	22.60	23.50
		1	74	22.98	22.81	22.84	23.50
		36	0	21.67	21.70	21.63	22.50
		36	18	21.58	21.61	21.61	22.50
		36	39	21.64	21.65	21.52	22.50
		75	0	21.59	21.60	21.61	22.50
	64QAM	1	0	22.50	22.57	22.71	23.50
		1	38	22.77	22.77	22.66	23.50
		1	74	22.81	22.68	22.94	23.50

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		36	0	21.67	21.70	21.63	22.50
		36	18	21.69	21.61	21.66	22.50
		36	39	21.62	21.68	21.57	22.50
		75	0	21.65	21.65	21.57	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				18700/1860	18900/1880	19100/1900	
20MHz	QPSK	1	0	23.39	23.50	23.49	24.00
		1	50	23.40	23.54	23.47	24.00
		1	99	23.45	23.49	23.34	24.00
		50	0	22.41	22.50	22.36	23.00
		50	25	22.42	22.45	22.42	23.00
		50	50	22.37	22.49	22.30	23.00
		100	0	22.48	22.43	22.31	23.00
	16QAM	1	0	22.84	22.74	22.59	23.50
		1	50	22.75	22.70	22.56	23.50
		1	99	22.96	22.78	22.82	23.50
		50	0	21.64	21.66	21.60	22.50
		50	25	21.55	21.59	21.58	22.50
		50	50	21.61	21.60	21.48	22.50
		100	0	21.57	21.56	21.58	22.50
	64QAM	1	0	22.48	22.53	22.66	23.50
		1	50	22.73	22.75	22.62	23.50
		1	99	22.75	22.62	22.88	23.50
		50	0	21.62	21.62	21.56	22.50
		50	25	21.65	21.57	21.60	22.50
		50	50	21.59	21.63	21.53	22.50
		100	0	21.63	21.61	21.54	22.50

LTE FDD Band 4 Full Power				**Conducted Power(dBm)**			Tune-up Limit
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				19957/1710.7	20175/1732.5	20393/1754.3	
1.4MHz	QPSK	1	0	23.64	23.22	23.62	24.00
		1	2	23.61	23.64	23.56	24.00
		1	5	23.61	23.45	23.43	24.00
		3	0	23.56	23.60	23.62	24.00
		3	2	23.65	23.64	23.60	24.00
		3	3	23.52	23.52	23.47	24.00
		6	0	22.67	22.72	22.56	23.00
	16QAM	1	0	22.95	23.32	22.89	23.50
		1	2	22.93	22.96	22.90	23.50
		1	5	22.84	22.93	22.88	23.50
		3	0	22.68	22.73	22.64	23.50

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		3	2	22.83	22.71	22.62	23.50
		3	3	22.60	22.63	22.54	23.50
		6	0	21.77	21.69	21.72	22.50
	64QAM	1	0	22.84	22.87	22.79	23.50
		1	2	22.92	22.77	22.71	23.50
		1	5	22.73	22.70	22.61	23.50
		3	0	22.60	22.65	22.67	23.50
		3	2	22.82	22.60	22.69	23.50
		3	3	22.61	22.60	22.57	23.50
		6	0	21.76	21.72	21.64	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				19965/1711.5	20175/1732.5	20385/1753.5	
3MHz	QPSK	1	0	23.66	23.26	23.65	24.00
		1	7	23.59	23.67	23.60	24.00
		1	14	23.64	23.50	23.47	24.00
		8	0	22.66	22.72	22.75	23.00
		8	4	22.77	22.74	22.72	23.00
		8	7	22.62	22.63	22.57	23.00
		15	0	22.67	22.76	22.59	23.00
	16QAM	1	0	22.98	23.34	22.92	23.50
		1	7	22.96	22.96	22.94	23.50
		1	14	22.86	22.97	22.91	23.50
		8	0	21.79	21.86	21.76	22.50
		8	4	21.94	21.84	21.74	22.50
		8	7	21.70	21.75	21.67	22.50
		15	0	21.80	21.73	21.75	22.50
	64QAM	1	0	22.87	22.89	22.82	23.50
		1	7	22.95	22.77	22.73	23.50
		1	14	22.75	22.69	22.64	23.50
		8	0	21.71	21.78	21.79	22.50
		8	4	21.93	21.73	21.81	22.50
		8	7	21.71	21.72	21.70	22.50
		15	0	21.79	21.76	21.67	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				19975/1712.5	20175/1732.5	20375/1752.5	
5MHz	QPSK	1	0	23.63	23.24	23.61	24.00
		1	13	23.57	23.63	23.57	24.00
		1	24	23.61	23.45	23.43	24.00
		12	0	22.63	22.67	22.71	23.00
		12	6	22.75	22.70	22.67	23.00
		12	13	22.60	22.61	22.53	23.00
		25	0	22.67	22.75	22.57	23.00
	16QAM	1	0	22.95	23.30	22.89	23.50

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		1	13	22.93	22.94	22.91	23.50
		1	24	22.83	22.95	22.87	23.50
		12	0	21.77	21.82	21.73	22.50
		12	6	21.91	21.79	21.70	22.50
		12	13	21.67	21.70	21.63	22.50
		25	0	21.78	21.69	21.70	22.50
	64QAM	1	0	22.84	22.89	22.79	23.50
		1	13	22.92	22.79	22.70	23.50
		1	24	22.76	22.67	22.60	23.50
		12	0	21.69	21.74	21.80	22.50
		12	6	21.90	21.68	21.77	22.50
		12	13	21.68	21.67	21.66	22.50
		25	0	21.77	21.72	21.62	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				20000/1715	20175/1732.5	20350/1750	
10MHz	QPSK	1	0	23.65	23.25	23.64	24.00
		1	25	23.60	23.68	23.61	24.00
		1	49	23.63	23.49	23.46	24.00
		25	0	22.66	22.72	22.75	23.00
		25	13	22.78	22.75	22.71	23.00
		25	25	22.62	22.65	22.58	23.00
		50	0	22.71	22.77	22.61	23.00
	16QAM	1	0	22.97	23.33	22.91	23.50
		1	25	22.96	22.98	22.94	23.50
		1	49	22.86	22.97	22.90	23.50
		25	0	21.80	21.87	21.77	22.50
		25	13	21.93	21.83	21.73	22.50
		25	25	21.70	21.75	21.67	22.50
		50	0	21.81	21.74	21.74	22.50
	64QAM	1	0	22.86	22.88	22.81	23.50
		1	25	22.95	22.79	22.73	23.50
		1	49	22.75	22.69	22.63	23.50
		25	0	21.72	21.79	21.80	22.50
		25	13	21.92	21.72	21.80	22.50
		25	25	21.71	21.72	21.70	22.50
		50	0	21.80	21.77	21.66	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				20025/1717.5	20175/1732.5	20325/1747.5	
15MHz	QPSK	1	0	23.64	23.21	23.62	24.00
		1	38	23.58	23.67	23.58	24.00
		1	74	23.60	23.44	23.42	24.00
		36	0	22.64	22.68	22.72	23.00
		36	18	22.75	22.70	22.67	23.00

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		36	39	22.59	22.62	22.54	23.00
		75	0	22.69	22.73	22.56	23.00
	16QAM	1	0	22.92	23.31	22.89	23.50
		1	38	22.94	22.95	22.92	23.50
		1	74	22.83	22.93	22.87	23.50
		36	0	21.77	21.85	21.74	22.50
		36	18	21.90	21.78	21.69	22.50
		36	39	21.68	21.71	21.64	22.50
		75	0	21.78	21.69	21.70	22.50
	64QAM	1	0	22.81	22.86	22.79	23.50
		1	38	22.93	22.76	22.71	23.50
		1	74	22.76	22.68	22.64	23.50
		36	0	21.71	21.81	21.81	22.50
		36	18	21.90	21.69	21.79	22.50
		36	39	21.69	21.68	21.67	22.50
		75	0	21.77	21.72	21.62	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				20050/1720	20175/1732.5	20300/1745	
20MHz	QPSK	1	0	23.61	23.17	23.59	24.00
		1	50	23.57	23.63	23.56	24.00
		1	99	23.58	23.43	23.39	24.00
		50	0	22.61	22.63	22.68	23.00
		50	25	22.73	22.66	22.64	23.00
		50	50	22.56	22.57	22.50	23.00
		100	0	22.66	22.68	22.52	23.00
	16QAM	1	0	22.79	23.27	22.84	23.50
		1	50	22.90	22.93	22.88	23.50
		1	99	22.81	22.90	22.85	23.50
		50	0	21.74	21.81	21.71	22.50
		50	25	21.87	21.76	21.66	22.50
		50	50	21.65	21.66	21.60	22.50
		100	0	21.76	21.65	21.67	22.50
	64QAM	1	0	22.79	22.82	22.74	23.50
		1	50	22.89	22.74	22.67	23.50
		1	99	22.70	22.62	22.58	23.50
		50	0	21.66	21.73	21.74	22.50
		50	25	21.86	21.65	21.73	22.50
		50	50	21.66	21.63	21.63	22.50
		100	0	21.75	21.68	21.59	22.50

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LTE FDD Band 5 Full Power				Conducted Power(dBm)			Tune-up Limit
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				20407/824.7	20525/836.5	20643/848.3	
1.4MHz	QPSK	1	0	23.34	23.10	23.20	24.00
		1	2	23.29	23.18	23.12	24.00
		1	5	23.21	23.16	23.11	24.00
		3	0	23.82	23.71	23.53	24.00
		3	2	23.70	23.74	23.58	24.00
		3	3	23.75	23.67	23.55	24.00
		6	0	22.88	22.75	22.60	23.50
	16QAM	1	0	23.21	23.15	23.11	23.50
		1	2	23.19	23.27	23.15	23.50
		1	5	23.27	23.18	23.01	23.50
		3	0	22.79	22.78	22.61	23.50
		3	2	22.82	22.70	22.68	23.50
		3	3	22.73	22.77	22.72	23.50
		6	0	21.70	21.81	21.69	22.50
	64QAM	1	0	22.87	22.91	22.79	23.50
		1	2	22.86	22.92	22.91	23.50
		1	5	22.82	22.82	22.96	23.50
		3	0	22.72	22.78	22.51	23.50
		3	2	22.80	22.74	22.65	23.50
		3	3	22.76	22.67	22.54	23.50
		6	0	21.74	21.77	21.62	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				20415/825.5	20525/836.5	20635/847.5	
3MHz	QPSK	1	0	23.36	23.14	23.23	24.00
		1	7	23.27	23.21	23.16	24.00
		1	14	23.24	23.21	23.15	24.00
		8	0	22.92	22.83	22.66	23.50
		8	4	22.82	22.84	22.70	23.50
		8	7	22.85	22.78	22.65	23.50
		15	0	22.88	22.79	22.63	23.50
	16QAM	1	0	23.24	23.17	23.14	23.50
		1	7	23.22	23.27	23.19	23.50
		1	14	23.29	23.22	23.04	23.50
		8	0	21.90	21.91	21.73	22.50
		8	4	21.93	21.83	21.80	22.50
		8	7	21.83	21.89	21.85	22.50
		15	0	21.73	21.85	21.72	22.50
	64QAM	1	0	22.90	22.93	22.82	23.50

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		1	7	22.89	22.92	22.93	23.50
		1	14	22.84	22.81	22.99	23.50
		8	0	21.83	21.91	21.63	22.50
		8	4	21.91	21.87	21.77	22.50
		8	7	21.86	21.79	21.67	22.50
		15	0	21.77	21.81	21.65	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				20425/826.5	20525/836.5	20625/846.5	
5MHz	QPSK	1	0	23.33	23.12	23.19	24.00
		1	13	23.25	23.17	23.13	24.00
		1	24	23.21	23.16	23.11	24.00
		12	0	22.89	22.78	22.62	23.50
		12	6	22.80	22.80	22.65	23.50
		12	13	22.83	22.76	22.61	23.50
		25	0	22.88	22.78	22.61	23.50
	16QAM	1	0	23.21	23.13	23.11	23.50
		1	13	23.19	23.25	23.16	23.50
		1	24	23.26	23.20	23.00	23.50
		12	0	21.88	21.87	21.70	22.50
		12	6	21.90	21.78	21.76	22.50
		12	13	21.80	21.84	21.81	22.50
		25	0	21.71	21.81	21.67	22.50
	64QAM	1	0	22.87	22.93	22.79	23.50
		1	13	22.86	22.94	22.90	23.50
		1	24	22.85	22.79	22.95	23.50
		12	0	21.81	21.87	21.64	22.50
		12	6	21.88	21.82	21.73	22.50
		12	13	21.83	21.74	21.63	22.50
		25	0	21.75	21.77	21.60	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				20450/829	20525/836.5	20600/844	
10MHz	QPSK	1	0	23.31	23.05	23.17	24.00
		1	25	23.25	23.17	23.12	24.00
		1	49	23.18	23.14	23.07	24.00
		25	0	22.87	22.74	22.59	23.50
		25	13	22.78	22.76	22.62	23.50
		25	25	22.79	22.72	22.58	23.50
		50	0	22.87	22.71	22.56	23.50
	16QAM	1	0	23.04	23.10	23.06	23.50
		1	25	23.16	23.24	23.13	23.50
		1	49	23.24	23.15	22.98	23.50
		25	0	21.85	21.86	21.68	22.50
		25	13	21.86	21.75	21.72	22.50

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		25	25	21.78	21.80	21.78	22.50
		50	0	21.69	21.77	21.64	22.50
	64QAM	1	0	22.82	22.86	22.74	23.50
		1	25	22.83	22.89	22.87	23.50
		1	49	22.79	22.74	22.93	23.50
		25	0	21.78	21.86	21.58	22.50
		25	13	21.84	21.79	21.69	22.50
		25	25	21.81	21.70	21.60	22.50
		50	0	21.73	21.73	21.57	22.50

LTE FDD Band 7 Full Power				Conducted Power(dBm)			Tune-up Limit
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				20775/2502.5	21100/2535	21425/2567.5	
5MHz	QPSK	1	0	23.21	23.09	22.96	24.00
		1	13	23.25	23.00	23.06	24.00
		1	24	23.14	23.17	23.05	24.00
		12	0	22.27	22.03	22.10	23.00
		12	6	22.24	22.08	22.12	23.00
		12	13	22.18	22.06	22.13	23.00
		25	0	22.21	22.13	22.09	23.00
	16QAM	1	0	22.51	22.42	22.34	23.50
		1	13	22.49	22.51	22.64	23.50
		1	24	22.32	22.52	22.53	23.50
		12	0	21.36	21.05	21.22	22.50
		12	6	21.36	21.15	21.31	22.50
		12	13	21.24	21.22	21.34	22.50
		25	0	21.31	21.17	21.24	22.50
	64QAM	1	0	22.40	22.26	22.28	23.50
		1	13	22.47	22.23	22.68	23.50
		1	24	22.37	22.51	22.48	23.50
		12	0	21.29	21.06	21.22	22.50
		12	6	21.33	21.13	21.27	22.50
		12	13	21.26	21.17	21.35	22.50
		25	0	21.31	21.22	21.23	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				20800/2505	21100/2535	21400/2565	
10MHz	QPSK	1	0	23.23	23.10	22.99	24.00
		1	25	23.28	23.05	23.10	24.00
		1	49	23.16	23.21	23.08	24.00
		25	0	22.30	22.08	22.14	23.00
		25	13	22.27	22.13	22.16	23.00

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		25	25	22.20	22.10	22.18	23.00
		50	0	22.25	22.15	22.13	23.00
	16QAM	1	0	22.53	22.45	22.36	23.50
		1	25	22.52	22.55	22.67	23.50
		1	49	22.35	22.54	22.56	23.50
		25	0	21.39	21.10	21.26	22.50
		25	13	21.38	21.19	21.34	22.50
		25	25	21.27	21.27	21.38	22.50
		50	0	21.34	21.22	21.28	22.50
	64QAM	1	0	22.42	22.25	22.30	23.50
		1	25	22.50	22.23	22.71	23.50
		1	49	22.36	22.53	22.51	23.50
		25	0	21.32	21.11	21.22	22.50
		25	13	21.35	21.17	21.30	22.50
		25	25	21.29	21.22	21.39	22.50
		50	0	21.34	21.27	21.27	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				20825/2507.5	21100/2535	21375/2562.5	
15MHz	QPSK	1	0	23.22	23.06	22.97	24.00
		1	38	23.26	23.04	23.07	24.00
		1	74	23.13	23.16	23.04	24.00
		36	0	22.28	22.04	22.11	23.00
		36	18	22.24	22.08	22.12	23.00
		36	39	22.17	22.07	22.14	23.00
		75	0	22.23	22.11	22.08	23.00
	16QAM	1	0	22.48	22.43	22.34	23.50
		1	38	22.50	22.52	22.65	23.50
		1	74	22.32	22.50	22.53	23.50
		36	0	21.36	21.08	21.23	22.50
		36	18	21.35	21.14	21.30	22.50
		36	39	21.25	21.23	21.35	22.50
		75	0	21.31	21.17	21.24	22.50
	64QAM	1	0	22.37	22.23	22.28	23.50
		1	38	22.48	22.20	22.69	23.50
		1	74	22.37	22.52	22.52	23.50
		36	0	21.31	21.13	21.23	22.50
		36	18	21.33	21.14	21.29	22.50
		36	39	21.27	21.18	21.36	22.50
		75	0	21.31	21.22	21.23	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				20850/2510	21100/2535	21350/2560	
20MHz	QPSK	1	0	23.19	23.02	22.94	24.00
		1	50	23.25	23.00	23.05	24.00

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		1	99	23.11	23.15	23.01	24.00
		50	0	22.25	21.99	22.07	23.00
		50	25	22.22	22.04	22.09	23.00
		50	50	22.14	22.02	22.10	23.00
		100	0	22.20	22.06	22.04	23.00
	16QAM	1	0	22.39	22.39	22.29	23.50
		1	50	22.46	22.50	22.61	23.50
		1	99	22.30	22.47	22.51	23.50
		50	0	21.33	21.04	21.20	22.50
		50	25	21.32	21.12	21.27	22.50
		50	50	21.22	21.18	21.31	22.50
		100	0	21.29	21.13	21.21	22.50
	64QAM	1	0	22.35	22.19	22.23	23.50
		1	50	22.44	22.18	22.65	23.50
		1	99	22.31	22.46	22.46	23.50
		50	0	21.26	21.05	21.16	22.50
		50	25	21.29	21.10	21.23	22.50
		50	50	21.24	21.13	21.32	22.50
		100	0	21.29	21.18	21.20	22.50

LTE FDD Band 12 Full Power				Conducted Power(dBm)			Tune-up Limit
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				23017/699.7	23095/707.5	23173/715.3	
1.4MHz	QPSK	1	0	23.17	23.31	23.15	24.00
		1	2	23.27	23.12	23.18	24.00
		1	5	23.23	23.23	23.21	24.00
		3	0	23.70	23.71	23.68	24.00
		3	2	23.76	23.78	23.73	24.00
		3	3	23.76	23.64	23.68	24.00
		6	0	22.77	22.71	22.74	23.50
	16QAM	1	0	23.06	23.25	23.17	23.50
		1	2	23.04	23.21	23.15	23.50
		1	5	23.15	23.10	23.10	23.50
		3	0	22.70	22.86	22.72	23.50
		3	2	22.81	22.81	22.76	23.50
		3	3	22.84	22.78	22.76	23.50
		6	0	21.85	21.92	21.83	22.50
	64QAM	1	0	22.82	22.81	22.87	23.50
		1	2	22.93	22.90	22.87	23.50
		1	5	22.89	22.94	22.87	23.50
		3	0	22.76	22.71	22.77	23.50

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		3	2	22.80	22.77	22.70	23.50
		3	3	22.81	22.80	22.66	23.50
		6	0	21.84	21.88	21.75	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				23025/700.5	23095/707.5	23165/714.5	
3MHz	QPSK	1	0	23.19	23.35	23.18	24.00
		1	7	23.25	23.15	23.22	24.00
		1	14	23.26	23.28	23.25	24.00
		8	0	22.80	22.83	22.81	23.50
		8	4	22.88	22.88	22.85	23.50
		8	7	22.86	22.75	22.78	23.50
		15	0	22.77	22.75	22.77	23.50
	16QAM	1	0	23.09	23.27	23.20	23.50
		1	7	23.07	23.21	23.19	23.50
		1	14	23.17	23.14	23.13	23.50
		8	0	21.81	21.99	21.84	22.50
		8	4	21.92	21.94	21.88	22.50
		8	7	21.94	21.90	21.89	22.50
		15	0	21.88	21.96	21.86	22.50
	64QAM	1	0	22.85	22.83	22.90	23.50
		1	7	22.96	22.90	22.89	23.50
		1	14	22.91	22.93	22.90	23.50
		8	0	21.87	21.84	21.89	22.50
		8	4	21.91	21.90	21.82	22.50
		8	7	21.91	21.92	21.79	22.50
		15	0	21.87	21.92	21.78	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				23035/701.5	23095/707.5	23155/713.5	
5MHz	QPSK	1	0	23.16	23.33	23.14	24.00
		1	13	23.23	23.11	23.19	24.00
		1	24	23.23	23.23	23.21	24.00
		12	0	22.77	22.78	22.77	23.50
		12	6	22.86	22.84	22.80	23.50
		12	13	22.84	22.73	22.74	23.50
		25	0	22.77	22.74	22.75	23.50
	16QAM	1	0	23.06	23.23	23.17	23.50
		1	13	23.04	23.19	23.16	23.50
		1	24	23.14	23.12	23.09	23.50
		12	0	21.79	21.95	21.81	22.50
		12	6	21.89	21.89	21.84	22.50
		12	13	21.91	21.85	21.85	22.50
		25	0	21.86	21.92	21.81	22.50
	64QAM	1	0	22.82	22.83	22.87	23.50

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		1	13	22.93	22.92	22.86	23.50
		1	24	22.92	22.91	22.86	23.50
		12	0	21.85	21.80	21.90	22.50
		12	6	21.88	21.85	21.78	22.50
		12	13	21.88	21.87	21.75	22.50
		25	0	21.85	21.88	21.73	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				23060/704	23095/707.5	23130/711	
10MHz	QPSK	1	0	23.14	23.26	23.12	24.00
		1	25	23.23	23.11	23.18	24.00
		1	49	23.20	23.21	23.17	24.00
		25	0	22.75	22.74	22.74	23.50
		25	13	22.84	22.80	22.77	23.50
		25	25	22.80	22.69	22.71	23.50
		50	0	22.76	22.67	22.70	23.50
	16QAM	1	0	23.11	23.20	23.12	23.50
		1	25	23.01	23.18	23.13	23.50
		1	49	23.12	23.07	23.07	23.50
		25	0	21.76	21.94	21.79	22.50
		25	13	21.85	21.86	21.80	22.50
		25	25	21.89	21.81	21.82	22.50
		50	0	21.84	21.88	21.78	22.50
	64QAM	1	0	22.77	22.76	22.82	23.50
		1	25	22.90	22.87	22.83	23.50
		1	49	22.86	22.86	22.84	23.50
		25	0	21.82	21.79	21.84	22.50
		25	13	21.84	21.82	21.74	22.50
		25	25	21.86	21.83	21.72	22.50
		50	0	21.83	21.84	21.70	22.50

LTE FDD Band 13 Full Power				**Conducted Power(dBm)**			Tune-up Limit
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				23205/779.5	23230/782	23255/784.5	
5MHz	QPSK	1	0	23.16	23.10	23.14	24.00
		1	13	23.26	23.16	23.26	24.00
		1	24	23.29	23.15	23.26	24.00
		12	0	22.83	22.73	22.81	23.00
		12	6	22.82	22.72	22.80	23.00
		12	13	22.81	22.69	22.77	23.00
		25	0	22.87	22.79	22.86	23.00
	16QAM	1	0	22.99	22.76	22.87	23.50
		1	13	22.97	22.83	22.94	23.50

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		1	24	23.11	23.03	23.09	23.50
		12	0	21.99	21.86	21.96	22.50
		12	6	22.00	21.86	21.96	22.50
		12	13	21.97	21.87	21.95	22.50
		25	0	21.83	21.73	21.81	22.50
	64QAM	1	0	22.94	22.87	22.84	23.50
		1	13	22.66	22.56	22.63	23.50
		1	24	22.90	22.78	22.84	23.50
		12	0	21.96	21.79	21.93	22.50
		12	6	21.90	21.76	21.86	22.50
		12	13	21.88	21.78	21.86	22.50
		25	0	21.89	21.79	21.87	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				/	23230/782	/	
10MHz	QPSK	1	0	/	23.03	/	24.00
		1	25	/	23.16	/	24.00
		1	49	/	23.13	/	24.00
		25	0	/	22.69	/	23.50
		25	13	/	22.68	/	23.50
		25	25	/	22.65	/	23.50
		50	0	/	22.72	/	23.50
	16QAM	1	0	/	22.73	/	23.50
		1	25	/	22.82	/	23.50
		1	49	/	22.98	/	23.50
		25	0	/	21.85	/	22.50
		25	13	/	21.83	/	22.50
		25	25	/	21.83	/	22.50
		50	0	/	21.69	/	22.50
	64QAM	1	0	/	22.80	/	23.50
		1	25	/	22.51	/	23.50
		1	49	/	22.73	/	23.50
		25	0	/	21.78	/	22.50
		25	13	/	21.73	/	22.50
		25	25	/	21.74	/	22.50
		50	0	/	21.75	/	22.50

LTE FDD Band 17 Full Power				**Conducted Power(dBm)**			Tune-up Limit
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				23755/706.5	23790/710	23825/713.5	
5MHz	QPSK	1	0	23.22	23.28	23.24	24.00
		1	13	23.36	23.27	23.25	24.00

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		1	24	23.35	23.27	23.25	24.00
		12	0	22.80	22.86	22.85	23.50
		12	6	22.82	22.89	22.87	23.50
		12	13	22.81	22.75	22.82	23.50
		25	0	22.80	22.87	22.80	23.50
	16QAM	1	0	23.31	23.21	23.20	23.50
		1	13	23.29	23.22	23.03	23.50
		1	24	23.14	23.27	23.17	23.50
		12	0	21.92	21.91	21.92	22.50
		12	6	21.94	21.90	21.91	22.50
		12	13	21.89	21.87	21.85	22.50
		25	0	21.97	21.95	21.82	22.50
	64QAM	1	0	23.04	22.95	23.01	23.50
		1	13	22.90	22.96	23.20	23.50
		1	24	22.98	23.06	23.22	23.50
		12	0	21.89	21.95	22.06	22.50
		12	6	21.89	21.92	21.99	22.50
		12	13	21.89	21.82	21.91	22.50
		25	0	21.97	21.88	21.88	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up
				23780/709	23790/710	23800/711	Limit
10MHz	QPSK	1	0	23.20	23.21	23.22	24.00
		1	25	23.36	23.27	23.24	24.00
		1	49	23.32	23.25	23.21	24.00
		25	0	22.78	22.82	22.82	23.50
		25	13	22.80	22.85	22.84	23.50
		25	25	22.77	22.71	22.79	23.50
		50	0	22.79	22.80	22.75	23.50
	16QAM	1	0	23.02	23.18	23.15	23.50
		1	25	23.26	23.21	23.00	23.50
		1	49	23.12	23.22	23.15	23.50
		25	0	21.89	21.90	21.90	22.50
		25	13	21.90	21.87	21.87	22.50
		25	25	21.87	21.83	21.82	22.50
		50	0	21.95	21.91	21.79	22.50
	64QAM	1	0	22.99	22.88	22.96	23.50
		1	25	22.87	22.91	23.17	23.50
		1	49	22.92	23.01	23.20	23.50
		25	0	21.86	21.94	22.00	22.50
		25	13	21.85	21.89	21.95	22.50
		25	25	21.87	21.78	21.88	22.50
		50	0	21.95	21.84	21.85	22.50

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LTE FDD Band 66 Full Power				Conducted Power(dBm)			Tune-up Limit
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				131979/1710.7	132322/1745	132665/1779.3	
1.4MHz	QPSK	1	0	22.86	22.95	22.92	24.00
		1	2	23.06	23.02	22.91	24.00
		1	5	22.91	22.87	22.85	24.00
		3	0	22.88	22.92	22.83	24.00
		3	2	22.84	22.88	22.71	24.00
		3	3	22.85	22.91	22.74	24.00
		6	0	21.89	21.96	21.90	23.00
	16QAM	1	0	22.45	22.46	22.20	23.50
		1	2	22.43	22.61	22.35	23.50
		1	5	22.24	22.53	22.19	23.50
		3	0	21.97	21.94	21.94	23.50
		3	2	21.90	21.91	22.01	23.50
		3	3	21.90	21.94	21.96	23.50
		6	0	20.99	21.03	21.01	22.50
	64QAM	1	0	22.12	22.32	22.19	23.50
		1	2	22.13	21.99	22.02	23.50
		1	5	22.09	22.17	22.24	23.50
		3	0	21.93	21.85	21.95	23.50
		3	2	21.98	21.79	21.95	23.50
		3	3	21.94	21.91	22.06	23.50
		6	0	21.01	20.94	21.01	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				1319871711.5	132322/1745	132657/1778.5	
3MHz	QPSK	1	0	22.88	22.99	22.95	24.00
		1	7	23.04	23.05	22.95	24.00
		1	14	22.94	22.92	22.89	24.00
		8	0	21.98	22.04	21.96	23.00
		8	4	21.96	21.98	21.83	23.00
		8	7	21.95	22.02	21.84	23.00
		15	0	21.89	22.00	21.93	23.00
	16QAM	1	0	22.48	22.48	22.23	23.50
		1	7	22.46	22.61	22.39	23.50
		1	14	22.26	22.57	22.22	23.50
		8	0	21.08	21.07	21.06	22.50
		8	4	21.01	21.04	21.13	22.50
		8	7	21.00	21.06	21.09	22.50
		15	0	21.02	21.07	21.04	22.50
	64QAM	1	0	22.15	22.34	22.22	23.50
		1	7	22.16	21.99	22.04	23.50

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		1	14	22.11	22.16	22.27	23.50
		8	0	21.04	20.98	21.07	22.50
		8	4	21.09	20.92	21.07	22.50
		8	7	21.04	21.03	21.19	22.50
		15	0	21.04	20.98	21.04	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				131997/1712.5	132322/1745	132647/1777.5	
5MHz	QPSK	1	0	22.85	22.97	22.91	24.00
		1	13	23.02	23.01	22.92	24.00
		1	24	22.91	22.87	22.85	24.00
		12	0	21.95	21.99	21.92	23.00
		12	6	21.94	21.94	21.78	23.00
		12	13	21.93	22.00	21.80	23.00
		25	0	21.89	21.99	21.91	23.00
	16QAM	1	0	22.45	22.44	22.20	23.50
		1	13	22.43	22.59	22.36	23.50
		1	24	22.23	22.55	22.18	23.50
		12	0	21.06	21.03	21.03	22.50
		12	6	20.98	20.99	21.09	22.50
		12	13	20.97	21.01	21.05	22.50
		25	0	21.00	21.03	20.99	22.50
	64QAM	1	0	22.12	22.34	22.19	23.50
		1	13	22.13	22.01	22.01	23.50
		1	24	22.12	22.14	22.23	23.50
		12	0	21.02	20.94	21.08	22.50
		12	6	21.06	20.87	21.03	22.50
		12	13	21.01	20.98	21.15	22.50
		25	0	21.02	20.94	20.99	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				132022/1715	132322/1745	132622/1775	
10MHz	QPSK	1	0	22.87	22.98	22.94	24.00
		1	25	23.05	23.06	22.96	24.00
		1	49	22.93	22.91	22.88	24.00
		25	0	21.98	22.04	21.96	23.00
		25	13	21.97	21.99	21.82	23.00
		25	25	21.95	22.04	21.85	23.00
		50	0	21.93	22.01	21.95	23.00
	16QAM	1	0	22.47	22.47	22.22	23.50
		1	25	22.46	22.63	22.39	23.50
		1	49	22.26	22.57	22.21	23.50
		25	0	21.09	21.08	21.07	22.50
		25	13	21.00	21.03	21.12	22.50
		25	25	21.00	21.06	21.09	22.50

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		50	0	21.03	21.08	21.03	22.50
	64QAM	1	0	22.14	22.33	22.21	23.50
		1	25	22.16	22.01	22.04	23.50
		1	49	22.11	22.16	22.26	23.50
		25	0	21.05	20.99	21.08	22.50
		25	13	21.08	20.91	21.06	22.50
		25	25	21.04	21.03	21.19	22.50
		50	0	21.05	20.99	21.03	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				132047/1717.5	132322/1745	132597/1772.5	
15MHz	QPSK	1	0	22.86	22.94	22.92	24.00
		1	38	23.03	23.05	22.93	24.00
		1	74	22.90	22.86	22.84	24.00
		36	0	21.96	22.00	21.93	23.00
		36	18	21.94	21.94	21.78	23.00
		36	39	21.92	22.01	21.81	23.00
		75	0	21.91	21.97	21.90	23.00
	16QAM	1	0	22.42	22.45	22.20	23.50
		1	38	22.44	22.60	22.37	23.50
		1	74	22.23	22.53	22.18	23.50
		36	0	21.06	21.06	21.04	22.50
		36	18	20.97	20.98	21.08	22.50
		36	39	20.98	21.02	21.06	22.50
		75	0	21.00	21.03	20.99	22.50
	64QAM	1	0	22.09	22.31	22.19	23.50
		1	38	22.14	21.98	22.02	23.50
		1	74	22.12	22.15	22.27	23.50
		36	0	21.04	21.01	21.09	22.50
		36	18	21.06	20.88	21.05	22.50
		36	39	21.02	20.99	21.16	22.50
		75	0	21.02	20.94	20.99	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				132072/1720	132322/1745	132572/1770	
20MHz	QPSK	1	0	22.83	22.90	22.89	24.00
		1	50	23.02	23.01	22.91	24.00
		1	99	22.88	22.85	22.81	24.00
		50	0	21.93	21.95	21.89	23.00
		50	25	21.92	21.90	21.75	23.00
		50	50	21.89	21.96	21.77	23.00
		100	0	21.88	21.92	21.86	23.00
	16QAM	1	0	22.23	22.41	22.15	23.50
		1	50	22.40	22.58	22.33	23.50
		1	99	22.21	22.50	22.16	23.50

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		50	0	21.03	21.02	21.01	22.50
		50	25	20.94	20.96	21.05	22.50
		50	50	20.95	20.97	21.02	22.50
		100	0	20.98	20.99	20.96	22.50
	64QAM	1	0	22.07	22.27	22.14	23.50
		1	50	22.10	21.96	21.98	23.50
		1	99	22.06	22.09	22.21	23.50
		50	0	20.99	20.93	21.02	22.50
		50	25	21.02	20.84	20.99	22.50
		50	50	20.99	20.94	21.12	22.50
		100	0	21.00	20.90	20.96	22.50

Second Antenna

LTE FDD Band 2 Full Power				**Conducted Power(dBm)**			Tune-up Limit
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				18607/1850.7	18900/1880	19193/1909.3	
1.4MHz	QPSK	1	0	23.42	23.37	23.30	24.00
		1	2	23.48	23.20	23.29	24.00
		1	5	23.30	23.33	23.27	24.00
		3	0	23.22	23.29	23.27	24.00
		3	2	23.21	23.36	23.19	24.00
		3	3	23.30	23.30	23.13	24.00
		6	0	22.40	22.33	22.17	23.00
	16QAM	1	0	22.96	22.99	22.96	23.50
		1	2	22.94	23.04	22.97	23.50
		1	5	22.67	22.52	22.80	23.50
		3	0	22.45	22.42	22.38	23.50
		3	2	22.43	22.50	22.46	23.50
		3	3	22.48	22.49	22.42	23.50
		6	0	21.49	21.60	21.59	22.50
	64QAM	1	0	22.59	22.79	22.93	23.50
		1	2	22.93	22.69	22.87	23.50
		1	5	22.88	22.87	22.90	23.50
		3	0	22.37	22.44	22.35	23.50
		3	2	22.41	22.45	22.50	23.50
		3	3	22.42	22.42	22.41	23.50
		6	0	21.50	21.57	21.55	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				18615/1851.5	18900/1880	19185/1908.5	
3MHz	QPSK	1	0	23.44	23.41	23.33	24.00
		1	7	23.46	23.23	23.33	24.00
		1	14	23.33	23.38	23.31	24.00

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		8	0	22.32	22.41	22.40	23.00
		8	4	22.33	22.46	22.31	23.00
		8	7	22.40	22.41	22.23	23.00
		15	0	22.40	22.37	22.20	23.00
	16QAM	1	0	22.99	23.01	22.99	23.50
		1	7	22.97	23.04	23.01	23.50
		1	14	22.69	22.56	22.83	23.50
		8	0	21.56	21.55	21.50	22.50
		8	4	21.54	21.63	21.58	22.50
		8	7	21.58	21.61	21.55	22.50
		15	0	21.52	21.64	21.62	22.50
	64QAM	1	0	22.62	22.81	22.96	23.50
		1	7	22.96	22.69	22.89	23.50
		1	14	22.90	22.86	22.93	23.50
		8	0	21.48	21.57	21.47	22.50
		8	4	21.52	21.58	21.62	22.50
		8	7	21.52	21.54	21.54	22.50
		15	0	21.53	21.61	21.58	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				18625/1852.5	18900/1880	19175/1907.5	
5MHz	QPSK	1	0	23.41	23.39	23.29	24.00
		1	13	23.44	23.19	23.30	24.00
		1	24	23.30	23.33	23.27	24.00
		12	0	22.29	22.36	22.36	23.00
		12	6	22.31	22.42	22.26	23.00
		12	13	22.38	22.39	22.19	23.00
		25	0	22.40	22.36	22.18	23.00
	16QAM	1	0	22.96	22.97	22.96	23.50
		1	13	22.94	23.02	22.98	23.50
		1	24	22.66	22.54	22.79	23.50
		12	0	21.54	21.51	21.47	22.50
		12	6	21.51	21.58	21.54	22.50
		12	13	21.55	21.56	21.51	22.50
		25	0	21.50	21.60	21.57	22.50
	64QAM	1	0	22.59	22.81	22.93	23.50
		1	13	22.93	22.71	22.86	23.50
		1	24	22.91	22.84	22.89	23.50
		12	0	21.46	21.53	21.48	22.50
		12	6	21.49	21.53	21.58	22.50
		12	13	21.49	21.49	21.50	22.50
		25	0	21.51	21.57	21.53	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				18650/1855	18900/1880	19150/1905	

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10MHz	QPSK	1	0	23.43	23.40	23.32	24.00
		1	25	23.47	23.24	23.34	24.00
		1	49	23.32	23.37	23.30	24.00
		25	0	22.32	22.41	22.40	23.00
		25	13	22.34	22.47	22.30	23.00
		25	25	22.40	22.43	22.24	23.00
		50	0	22.44	22.38	22.22	23.00
	16QAM	1	0	22.98	23.00	22.98	23.50
		1	25	22.97	23.06	23.01	23.50
		1	49	22.69	22.56	22.82	23.50
		25	0	21.57	21.56	21.51	22.50
		25	13	21.53	21.62	21.57	22.50
		25	25	21.58	21.61	21.55	22.50
		50	0	21.53	21.65	21.61	22.50
	64QAM	1	0	22.61	22.80	22.95	23.50
		1	25	22.96	22.71	22.89	23.50
		1	49	22.90	22.86	22.92	23.50
		25	0	21.49	21.58	21.48	22.50
		25	13	21.51	21.57	21.61	22.50
		25	25	21.52	21.54	21.54	22.50
		50	0	21.54	21.62	21.57	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				18675/1857.5	18900/1880	19125/1902.5	
15MHz	QPSK	1	0	23.42	23.36	23.30	24.00
		1	38	23.45	23.23	23.31	24.00
		1	74	23.29	23.32	23.26	24.00
		36	0	22.30	22.37	22.37	23.00
		36	18	22.31	22.42	22.26	23.00
		36	39	22.37	22.40	22.20	23.00
		75	0	22.42	22.34	22.17	23.00
	16QAM	1	0	22.93	22.98	22.96	23.50
		1	38	22.95	23.03	22.99	23.50
		1	74	22.66	22.52	22.79	23.50
		36	0	21.54	21.54	21.48	22.50
		36	18	21.50	21.57	21.53	22.50
		36	39	21.56	21.57	21.52	22.50
		75	0	21.50	21.60	21.57	22.50
	64QAM	1	0	22.56	22.78	22.93	23.50
		1	38	22.94	22.68	22.87	23.50
		1	74	22.91	22.85	22.93	23.50
		36	0	21.48	21.60	21.49	22.50
		36	18	21.49	21.54	21.60	22.50
		36	39	21.50	21.50	21.51	22.50

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		75	0	21.51	21.57	21.53	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				18700/1860	18900/1880	19100/1900	
20MHz	QPSK	1	0	23.39	23.32	23.27	24.00
		1	50	23.44	23.19	23.29	24.00
		1	99	23.27	23.31	23.23	24.00
		50	0	22.27	22.32	22.33	23.00
		50	25	22.29	22.38	22.23	23.00
		50	50	22.34	22.35	22.16	23.00
		100	0	22.39	22.29	22.13	23.00
	16QAM	1	0	22.88	22.94	22.91	23.50
		1	50	22.91	23.01	22.95	23.50
		1	99	22.64	22.49	22.77	23.50
		50	0	21.51	21.50	21.45	22.50
		50	25	21.47	21.55	21.50	22.50
		50	50	21.53	21.52	21.48	22.50
		100	0	21.48	21.56	21.54	22.50
	64QAM	1	0	22.54	22.74	22.88	23.50
		1	50	22.90	22.66	22.83	23.50
		1	99	22.85	22.79	22.87	23.50
		50	0	21.43	21.52	21.42	22.50
		50	25	21.45	21.50	21.54	22.50
		50	50	21.47	21.45	21.47	22.50
		100	0	21.49	21.53	21.50	22.50

LTE FDD Band 2 Sensor on/ Receiver on				**Conducted Power(dBm)**			Tune-up Limit
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				18607/1850.7	18900/1880	19193/1909.3	
1.4MHz	QPSK	1	0	16.84	16.70	16.63	17.50
		1	2	16.79	16.67	16.55	17.50
		1	5	16.65	16.56	16.43	17.50
		3	0	16.73	16.72	16.62	17.50
		3	2	16.69	16.66	16.52	17.50
		3	3	16.72	16.56	16.42	17.50
		6	0	15.73	15.67	15.70	16.50
	16QAM	1	0	16.46	16.56	16.50	17.00
		1	2	16.44	16.56	16.49	17.00
		1	5	16.21	16.07	16.36	17.00
		3	0	15.98	15.99	15.93	17.00
		3	2	15.95	16.06	16.02	17.00
		3	3	16.02	16.03	15.97	17.00
		6	0	14.98	15.16	15.14	16.00

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	64QAM	1	0	16.51	16.34	16.49	17.00
		1	2	16.47	16.20	16.41	17.00
		1	5	16.41	16.42	16.44	17.00
		3	0	15.90	15.97	15.88	17.00
		3	2	15.96	16.01	16.06	17.00
		3	3	15.95	15.99	15.96	17.00
		6	0	15.02	15.13	15.11	16.00
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				18615/1851.5	18900/1880	19185/1908.5	
3MHz	QPSK	1	0	16.86	16.74	16.66	17.50
		1	7	16.77	16.70	16.59	17.50
		1	14	16.68	16.61	16.47	17.50
		8	0	15.83	15.84	15.75	16.50
		8	4	15.81	15.76	15.64	16.50
		8	7	15.82	15.67	15.52	16.50
		15	0	15.73	15.71	15.73	16.50
	16QAM	1	0	16.49	16.58	16.53	17.00
		1	7	16.47	16.56	16.53	17.00
		1	14	16.23	16.11	16.39	17.00
		8	0	15.09	15.12	15.05	16.00
		8	4	15.06	15.19	15.14	16.00
		8	7	15.12	15.15	15.10	16.00
		15	0	15.01	15.20	15.17	16.00
	64QAM	1	0	16.54	16.36	16.52	17.00
		1	7	16.50	16.20	16.43	17.00
		1	14	16.43	16.41	16.47	17.00
		8	0	15.01	15.10	15.00	16.00
		8	4	15.07	15.14	15.18	16.00
		8	7	15.05	15.11	15.09	16.00
		15	0	15.05	15.17	15.14	16.00
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				18625/1852.5	18900/1880	19175/1907.5	
5MHz	QPSK	1	0	16.83	16.72	16.62	17.50
		1	13	16.75	16.66	16.56	17.50
		1	24	16.65	16.56	16.43	17.50
		12	0	15.80	15.79	15.71	16.50
		12	6	15.79	15.72	15.59	16.50
		12	13	15.80	15.65	15.48	16.50
		25	0	15.73	15.70	15.71	16.50
	16QAM	1	0	16.46	16.54	16.50	17.00
		1	13	16.44	16.54	16.50	17.00
		1	24	16.20	16.09	16.35	17.00
		12	0	15.07	15.08	15.02	16.00

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		12	6	15.03	15.14	15.10	16.00
		12	13	15.09	15.10	15.06	16.00
		25	0	14.99	15.16	15.12	16.00
	64QAM	1	0	16.51	16.36	16.49	17.00
		1	13	16.47	16.22	16.40	17.00
		1	24	16.44	16.39	16.43	17.00
		12	0	14.99	15.06	15.01	16.00
		12	6	15.04	15.09	15.14	16.00
		12	13	15.02	15.06	15.05	16.00
		25	0	15.03	15.13	15.09	16.00
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				18650/1855	18900/1880	19150/1905	
10MHz	QPSK	1	0	16.85	16.73	16.65	17.50
		1	25	16.78	16.71	16.60	17.50
		1	49	16.67	16.60	16.46	17.50
		25	0	15.83	15.84	15.75	16.50
		25	13	15.82	15.77	15.63	16.50
		25	25	15.82	15.69	15.53	16.50
		50	0	15.77	15.72	15.75	16.50
	16QAM	1	0	16.48	16.57	16.52	17.00
		1	25	16.47	16.58	16.53	17.00
		1	49	16.23	16.11	16.38	17.00
		25	0	15.10	15.13	15.06	16.00
		25	13	15.05	15.18	15.13	16.00
		25	25	15.12	15.15	15.10	16.00
		50	0	15.02	15.21	15.16	16.00
	64QAM	1	0	16.53	16.35	16.51	17.00
		1	25	16.50	16.22	16.43	17.00
		1	49	16.43	16.41	16.46	17.00
		25	0	15.02	15.11	15.01	16.00
		25	13	15.06	15.13	15.17	16.00
		25	25	15.05	15.11	15.09	16.00
		50	0	15.06	15.18	15.13	16.00
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				18675/1857.5	18900/1880	19125/1902.5	
15MHz	QPSK	1	0	16.84	16.69	16.63	17.50
		1	38	16.76	16.70	16.57	17.50
		1	74	16.64	16.55	16.42	17.50
		36	0	15.81	15.80	15.72	16.50
		36	18	15.79	15.72	15.59	16.50
		36	39	15.79	15.66	15.49	16.50
		75	0	15.75	15.68	15.70	16.50
	16QAM	1	0	16.43	16.55	16.50	17.00

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		1	38	16.45	16.55	16.51	17.00
		1	74	16.20	16.07	16.35	17.00
		36	0	15.07	15.11	15.03	16.00
		36	18	15.02	15.13	15.09	16.00
		36	39	15.10	15.11	15.07	16.00
		75	0	14.99	15.16	15.12	16.00
	64QAM	1	0	16.48	16.33	16.49	17.00
		1	38	16.48	16.19	16.41	17.00
		1	74	16.44	16.40	16.47	17.00
		36	0	15.01	15.13	15.02	16.00
		36	18	15.04	15.10	15.16	16.00
		36	39	15.03	15.07	15.06	16.00
		75	0	15.03	15.13	15.09	16.00
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				18700/1860	18900/1880	19100/1900	
20MHz	QPSK	1	0	16.81	16.65	16.60	17.50
		1	50	16.75	16.66	16.55	17.50
		1	99	16.62	16.54	16.39	17.50
		50	0	15.78	15.75	15.68	16.50
		50	25	15.77	15.68	15.56	16.50
		50	50	15.76	15.61	15.45	16.50
		100	0	15.72	15.63	15.66	16.50
	16QAM	1	0	16.41	16.51	16.45	17.00
		1	50	16.41	16.53	16.47	17.00
		1	99	16.18	16.04	16.33	17.00
		50	0	15.04	15.07	15.00	16.00
		50	25	14.99	15.11	15.06	16.00
		50	50	15.07	15.06	15.03	16.00
		100	0	14.97	15.12	15.09	16.00
	64QAM	1	0	16.46	16.29	16.44	17.00
		1	50	16.44	16.17	16.37	17.00
		1	99	16.38	16.34	16.41	17.00
		50	0	14.96	15.05	14.95	16.00
		50	25	15.00	15.06	15.10	16.00
		50	50	15.00	15.02	15.02	16.00
		100	0	15.01	15.09	15.06	16.00

LTE FDD Band 4 Full Power				**Conducted Power(dBm)**			Tune-up Limit
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				19957/1710.7	20175/1732.5	20393/1754.3	
1.4MHz	QPSK	1	0	23.34	23.53	23.37	24.00

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		1	2	23.25	23.36	23.37	24.00
		1	5	23.29	23.41	23.36	24.00
		3	0	23.42	23.44	23.37	24.00
		3	2	23.38	23.52	23.40	24.00
		3	3	23.41	23.39	23.39	24.00
		6	0	22.43	22.50	22.51	23.00
	16QAM	1	0	22.77	23.09	22.70	23.50
		1	2	22.75	22.91	22.90	23.50
		1	5	22.89	22.92	22.87	23.50
		3	0	22.49	22.44	22.56	23.50
		3	2	22.57	22.52	22.58	23.50
		3	3	22.48	22.55	22.39	23.50
		6	0	21.53	21.54	21.68	22.50
	64QAM	1	0	22.55	22.69	22.63	23.50
		1	2	22.68	22.57	22.70	23.50
		1	5	22.54	22.79	22.57	23.50
		3	0	22.44	22.60	22.31	23.50
		3	2	22.55	22.60	22.59	23.50
		3	3	22.49	22.45	22.51	23.50
		6	0	21.60	21.58	21.57	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				19965/1711.5	20175/1732.5	20385/1753.5	
3MHz	QPSK	1	0	23.36	23.57	23.40	24.00
		1	7	23.23	23.39	23.41	24.00
		1	14	23.32	23.46	23.40	24.00
		8	0	22.52	22.56	22.50	23.00
		8	4	22.50	22.62	22.52	23.00
		8	7	22.51	22.50	22.49	23.00
		15	0	22.43	22.54	22.54	23.00
	16QAM	1	0	22.80	23.11	22.73	23.50
		1	7	22.78	22.91	22.94	23.50
		1	14	22.91	22.96	22.90	23.50
		8	0	21.60	21.57	21.68	22.50
		8	4	21.68	21.65	21.70	22.50
		8	7	21.58	21.67	21.52	22.50
		15	0	21.56	21.58	21.71	22.50
	64QAM	1	0	22.58	22.71	22.66	23.50
		1	7	22.71	22.57	22.72	23.50
		1	14	22.56	22.78	22.60	23.50
		8	0	21.55	21.73	21.43	22.50
		8	4	21.66	21.73	21.71	22.50
		8	7	21.59	21.57	21.64	22.50
		15	0	21.63	21.62	21.60	22.50

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Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				19975/1712.5	20175/1732.5	20375/1752.5	
5MHz	QPSK	1	0	23.33	23.55	23.36	24.00
		1	13	23.21	23.35	23.38	24.00
		1	24	23.29	23.41	23.36	24.00
		12	0	22.49	22.51	22.46	23.00
		12	6	22.48	22.58	22.47	23.00
		12	13	22.49	22.48	22.45	23.00
		25	0	22.43	22.53	22.52	23.00
	16QAM	1	0	22.77	23.07	22.70	23.50
		1	13	22.75	22.89	22.91	23.50
		1	24	22.88	22.94	22.86	23.50
		12	0	21.58	21.53	21.65	22.50
		12	6	21.65	21.60	21.66	22.50
		12	13	21.55	21.62	21.48	22.50
		25	0	21.54	21.54	21.66	22.50
	64QAM	1	0	22.55	22.71	22.63	23.50
		1	13	22.68	22.59	22.69	23.50
		1	24	22.57	22.76	22.56	23.50
		12	0	21.53	21.69	21.44	22.50
		12	6	21.63	21.68	21.67	22.50
		12	13	21.56	21.52	21.60	22.50
		25	0	21.61	21.58	21.55	22.50

Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				20000/1715	20175/1732.5	20350/1750	
10MHz	QPSK	1	0	23.35	23.56	23.39	24.00
		1	25	23.24	23.40	23.42	24.00
		1	49	23.31	23.45	23.39	24.00
		25	0	22.52	22.56	22.50	23.00
		25	13	22.51	22.63	22.51	23.00
		25	25	22.51	22.52	22.50	23.00
		50	0	22.47	22.55	22.56	23.00
	16QAM	1	0	22.79	23.10	22.72	23.50
		1	25	22.78	22.93	22.94	23.50
		1	49	22.91	22.96	22.89	23.50
		25	0	21.61	21.58	21.69	22.50
		25	13	21.67	21.64	21.69	22.50
		25	25	21.58	21.67	21.52	22.50
		50	0	21.57	21.59	21.70	22.50
	64QAM	1	0	22.57	22.70	22.65	23.50
		1	25	22.71	22.59	22.72	23.50
		1	49	22.56	22.78	22.59	23.50
		25	0	21.56	21.74	21.44	22.50

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		25	13	21.65	21.72	21.70	22.50
		25	25	21.59	21.57	21.64	22.50
		50	0	21.64	21.63	21.59	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				20025/1717.5	20175/1732.5	20325/1747.5	
15MHz	QPSK	1	0	23.34	23.52	23.37	24.00
		1	38	23.22	23.39	23.39	24.00
		1	74	23.28	23.40	23.35	24.00
		36	0	22.50	22.52	22.47	23.00
		36	18	22.48	22.58	22.47	23.00
		36	39	22.48	22.49	22.46	23.00
		75	0	22.45	22.51	22.51	23.00
	16QAM	1	0	22.74	23.08	22.70	23.50
		1	38	22.76	22.90	22.92	23.50
		1	74	22.88	22.92	22.86	23.50
		36	0	21.58	21.56	21.66	22.50
		36	18	21.64	21.59	21.65	22.50
		36	39	21.56	21.63	21.49	22.50
		75	0	21.54	21.54	21.66	22.50
	64QAM	1	0	22.52	22.68	22.63	23.50
		1	38	22.69	22.56	22.70	23.50
		1	74	22.57	22.77	22.60	23.50
		36	0	21.55	21.76	21.45	22.50
		36	18	21.63	21.69	21.69	22.50
		36	39	21.57	21.53	21.61	22.50
		75	0	21.61	21.58	21.55	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				20050/1720	20175/1732.5	20300/1745	
20MHz	QPSK	1	0	23.31	23.48	23.34	24.00
		1	50	23.21	23.35	23.37	24.00
		1	99	23.26	23.39	23.32	24.00
		50	0	22.47	22.47	22.43	23.00
		50	25	22.46	22.54	22.44	23.00
		50	50	22.45	22.44	22.42	23.00
		100	0	22.42	22.46	22.47	23.00
	16QAM	1	0	22.63	23.04	22.65	23.50
		1	50	22.72	22.88	22.88	23.50
		1	99	22.86	22.89	22.84	23.50
		50	0	21.55	21.52	21.63	22.50
		50	25	21.61	21.57	21.62	22.50
		50	50	21.53	21.58	21.45	22.50
		100	0	21.52	21.50	21.63	22.50
	64QAM	1	0	22.50	22.64	22.58	23.50

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		1	50	22.65	22.54	22.66	23.50
		1	99	22.51	22.71	22.54	23.50
		50	0	21.50	21.68	21.38	22.50
		50	25	21.59	21.65	21.63	22.50
		50	50	21.54	21.48	21.57	22.50
		100	0	21.59	21.54	21.52	22.50

LTE FDD Band 4 Sensor on/ Receiver on				Conducted Power(dBm)			Tune-up Limit
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				19957/1710.7	20175/1732.5	20393/1754.3	
1.4MHz	QPSK	1	0	15.81	16.07	15.96	17.00
		1	2	15.83	15.97	15.87	17.00
		1	5	15.94	15.79	15.75	17.00
		3	0	15.88	16.01	15.90	17.00
		3	2	15.83	15.97	15.87	17.00
		3	3	15.83	15.87	15.79	17.00
		6	0	14.92	14.97	14.93	16.00
	16QAM	1	0	15.16	15.26	15.22	16.50
		1	2	15.14	15.09	15.27	16.50
		1	5	15.13	15.20	15.31	16.50
		3	0	15.03	14.97	15.10	16.50
		3	2	15.04	14.98	15.10	16.50
		3	3	14.97	14.93	14.97	16.50
		6	0	13.96	14.02	14.05	15.50
	64QAM	1	0	15.16	15.10	15.32	16.50
		1	2	15.16	15.07	15.15	16.50
		1	5	15.19	15.08	15.12	16.50
		3	0	15.04	14.99	15.06	16.50
		3	2	14.98	14.99	15.06	16.50
		3	3	15.13	14.97	15.01	16.50
		6	0	14.06	14.02	14.17	15.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				19965/1711.5	20175/1732.5	20385/1753.5	
3MHz	QPSK	1	0	15.83	16.11	15.99	17.00
		1	7	15.81	16.00	15.91	17.00
		1	14	15.97	15.84	15.79	17.00
		8	0	14.98	15.13	15.03	16.00
		8	4	14.95	15.07	14.99	16.00
		8	7	14.93	14.98	14.89	16.00
		15	0	14.92	15.01	14.96	16.00
	16QAM	1	0	15.19	15.28	15.25	16.50
		1	7	15.17	15.09	15.31	16.50

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		1	14	15.15	15.24	15.34	16.50
		8	0	14.14	14.10	14.22	15.50
		8	4	14.15	14.11	14.22	15.50
		8	7	14.07	14.05	14.10	15.50
		15	0	13.99	14.06	14.08	15.50
	64QAM	1	0	15.19	15.12	15.35	16.50
		1	7	15.19	15.07	15.17	16.50
		1	14	15.21	15.07	15.15	16.50
		8	0	14.15	14.12	14.18	15.50
		8	4	14.09	14.12	14.18	15.50
		8	7	14.23	14.09	14.14	15.50
		15	0	14.09	14.06	14.20	15.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				19975/1712.5	20175/1732.5	20375/1752.5	
5MHz	QPSK	1	0	15.80	16.09	15.95	17.00
		1	13	15.79	15.96	15.88	17.00
		1	24	15.94	15.79	15.75	17.00
		12	0	14.95	15.08	14.99	16.00
		12	6	14.93	15.03	14.94	16.00
		12	13	14.91	14.96	14.85	16.00
		25	0	14.92	15.00	14.94	16.00
	16QAM	1	0	15.16	15.24	15.22	16.50
		1	13	15.14	15.07	15.28	16.50
		1	24	15.12	15.22	15.30	16.50
		12	0	14.12	14.06	14.19	15.50
		12	6	14.12	14.06	14.18	15.50
		12	13	14.04	14.00	14.06	15.50
		25	0	13.97	14.02	14.03	15.50
	64QAM	1	0	15.16	15.12	15.32	16.50
		1	13	15.16	15.09	15.14	16.50
		1	24	15.22	15.05	15.11	16.50
		12	0	14.13	14.08	14.19	15.50
		12	6	14.06	14.07	14.14	15.50
		12	13	14.20	14.04	14.10	15.50
		25	0	14.07	14.02	14.15	15.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				20000/1715	20175/1732.5	20350/1750	
10MHz	QPSK	1	0	15.82	16.10	15.98	17.00
		1	25	15.82	16.01	15.92	17.00
		1	49	15.96	15.83	15.78	17.00
		25	0	14.98	15.13	15.03	16.00
		25	13	14.96	15.08	14.98	16.00
		25	25	14.93	15.00	14.90	16.00

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		50	0	14.96	15.02	14.98	16.00
	16QAM	1	0	15.18	15.27	15.24	16.50
		1	25	15.17	15.11	15.31	16.50
		1	49	15.15	15.24	15.33	16.50
		25	0	14.15	14.11	14.23	15.50
		25	13	14.14	14.10	14.21	15.50
		25	25	14.07	14.05	14.10	15.50
		50	0	14.00	14.07	14.07	15.50
	64QAM	1	0	15.18	15.11	15.34	16.50
		1	25	15.19	15.09	15.17	16.50
		1	49	15.21	15.07	15.14	16.50
		25	0	14.16	14.13	14.19	15.50
		25	13	14.08	14.11	14.17	15.50
		25	25	14.23	14.09	14.14	15.50
		50	0	14.10	14.07	14.19	15.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				20025/1717.5	20175/1732.5	20325/1747.5	
15MHz	QPSK	1	0	15.81	16.06	15.96	17.00
		1	38	15.80	16.00	15.89	17.00
		1	74	15.93	15.78	15.74	17.00
		36	0	14.96	15.09	15.00	16.00
		36	18	14.93	15.03	14.94	16.00
		36	39	14.90	14.97	14.86	16.00
		75	0	14.94	14.98	14.93	16.00
	16QAM	1	0	15.13	15.25	15.22	16.50
		1	38	15.15	15.08	15.29	16.50
		1	74	15.12	15.20	15.30	16.50
		36	0	14.12	14.09	14.20	15.50
		36	18	14.11	14.05	14.17	15.50
		36	39	14.05	14.01	14.07	15.50
		75	0	13.97	14.02	14.03	15.50
	64QAM	1	0	15.13	15.09	15.32	16.50
		1	38	15.17	15.06	15.15	16.50
		1	74	15.22	15.06	15.15	16.50
		36	0	14.15	14.15	14.20	15.50
		36	18	14.06	14.08	14.16	15.50
		36	39	14.21	14.05	14.11	15.50
		75	0	14.07	14.02	14.15	15.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				20050/1720	20175/1732.5	20300/1745	
20MHz	QPSK	1	0	15.78	16.02	15.93	17.00
		1	50	15.79	15.96	15.87	17.00
		1	99	15.91	15.77	15.71	17.00

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		50	0	14.93	15.04	14.96	16.00
		50	25	14.91	14.99	14.91	16.00
		50	50	14.87	14.92	14.82	16.00
		100	0	14.91	14.93	14.89	16.00
	16QAM	1	0	15.14	15.21	15.17	16.50
		1	50	15.11	15.06	15.25	16.50
		1	99	15.10	15.17	15.28	16.50
		50	0	14.09	14.05	14.17	15.50
		50	25	14.08	14.03	14.14	15.50
		50	50	14.02	13.96	14.03	15.50
		100	0	13.95	13.98	14.00	15.50
	64QAM	1	0	15.11	15.05	15.27	16.50
		1	50	15.13	15.04	15.11	16.50
		1	99	15.16	15.00	15.09	16.50
		50	0	14.10	14.07	14.13	15.50
		50	25	14.02	14.04	14.10	15.50
		50	50	14.18	14.00	14.07	15.50
		100	0	14.05	13.98	14.12	15.50

LTE FDD Band 5 Full Power				**Conducted Power(dBm)**			Tune-up Limit
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				20407/824.7	20525/836.5	20643/848.3	
1.4MHz	QPSK	1	0	23.04	23.03	22.84	24.00
		1	2	23.08	23.03	22.94	24.00
		1	5	23.10	23.01	22.81	24.00
		3	0	23.46	23.54	23.78	24.00
		3	2	23.52	23.54	23.87	24.00
		3	3	23.55	23.49	23.73	24.00
		6	0	22.57	22.61	22.38	23.50
	16QAM	1	0	22.75	22.72	22.81	23.50
		1	2	22.73	22.83	22.92	23.50
		1	5	22.97	22.90	22.92	23.50
		3	0	22.73	22.67	22.48	23.50
		3	2	22.68	22.67	22.57	23.50
		3	3	22.62	22.58	22.45	23.50
		6	0	21.67	21.77	21.59	22.50
	64QAM	1	0	22.65	22.76	22.59	23.50
		1	2	22.83	22.84	22.68	23.50
		1	5	22.80	22.72	22.60	23.50
		3	0	22.62	22.53	22.48	23.50
		3	2	22.71	22.59	22.42	23.50

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		3	3	22.69	22.65	22.36	23.50
		6	0	21.63	21.73	21.64	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				20415/825.5	20525/836.5	20635/847.5	
3MHz	QPSK	1	0	23.06	23.07	22.87	24.00
		1	7	23.06	23.06	22.98	24.00
		1	14	23.13	23.06	22.85	24.00
		8	0	22.56	22.66	22.91	23.50
		8	4	22.64	22.64	22.99	23.50
		8	7	22.65	22.60	22.83	23.50
		15	0	22.57	22.65	22.41	23.50
	16QAM	1	0	22.78	22.74	22.84	23.50
		1	7	22.76	22.83	22.96	23.50
		1	14	22.99	22.94	22.95	23.50
		8	0	21.84	21.80	21.60	22.50
		8	4	21.79	21.80	21.69	22.50
		8	7	21.72	21.70	21.58	22.50
		15	0	21.70	21.81	21.62	22.50
	64QAM	1	0	22.68	22.78	22.62	23.50
		1	7	22.86	22.84	22.70	23.50
		1	14	22.82	22.71	22.63	23.50
		8	0	21.73	21.66	21.60	22.50
		8	4	21.82	21.72	21.54	22.50
		8	7	21.79	21.77	21.49	22.50
		15	0	21.66	21.77	21.67	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				20425/826.5	20525/836.5	20625/846.5	
5MHz	QPSK	1	0	23.03	23.05	22.83	24.00
		1	13	23.04	23.02	22.95	24.00
		1	24	23.10	23.01	22.81	24.00
		12	0	22.53	22.61	22.87	23.50
		12	6	22.62	22.60	22.94	23.50
		12	13	22.63	22.58	22.79	23.50
		25	0	22.57	22.64	22.39	23.50
	16QAM	1	0	22.75	22.70	22.81	23.50
		1	13	22.73	22.81	22.93	23.50
		1	24	22.96	22.92	22.91	23.50
		12	0	21.82	21.76	21.57	22.50
		12	6	21.76	21.75	21.65	22.50
		12	13	21.69	21.65	21.54	22.50
		25	0	21.68	21.77	21.57	22.50
	64QAM	1	0	22.65	22.78	22.59	23.50
		1	13	22.83	22.86	22.67	23.50

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		1	24	22.83	22.69	22.59	23.50
		12	0	21.71	21.62	21.61	22.50
		12	6	21.79	21.67	21.50	22.50
		12	13	21.76	21.72	21.45	22.50
		25	0	21.64	21.73	21.62	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				20450/829	20525/836.5	20600/844	
10MHz	QPSK	1	0	23.01	22.98	22.81	24.00
		1	25	23.04	23.02	22.94	24.00
		1	49	23.07	22.99	22.77	24.00
		25	0	22.51	22.57	22.84	23.50
		25	13	22.60	22.56	22.91	23.50
		25	25	22.59	22.54	22.76	23.50
		50	0	22.56	22.57	22.34	23.50
	16QAM	1	0	22.88	22.67	22.76	23.50
		1	25	22.70	22.80	22.90	23.50
		1	49	22.94	22.87	22.89	23.50
		25	0	21.79	21.75	21.55	22.50
		25	13	21.72	21.72	21.61	22.50
		25	25	21.67	21.61	21.51	22.50
		50	0	21.66	21.73	21.54	22.50
	64QAM	1	0	22.60	22.71	22.54	23.50
		1	25	22.80	22.81	22.64	23.50
		1	49	22.77	22.64	22.57	23.50
		25	0	21.68	21.61	21.55	22.50
		25	13	21.75	21.64	21.46	22.50
		25	25	21.74	21.68	21.42	22.50
		50	0	21.62	21.69	21.59	22.50

LTE FDD Band 7 Full Power				**Conducted Power(dBm)**			Tune-up Limit
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				20775/2502.5	21100/2535	21425/2567.5	
5MHz	QPSK	1	0	23.02	22.84	22.86	24.00
		1	13	22.92	22.68	22.86	24.00
		1	24	22.92	22.95	22.95	24.00
		12	0	21.90	22.00	21.91	23.00
		12	6	22.00	21.90	21.89	23.00
		12	13	21.91	21.86	22.04	23.00
		25	0	21.98	21.92	22.01	23.00
	16QAM	1	0	22.57	22.06	22.11	23.50
		1	13	22.55	22.28	22.26	23.50

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		1	24	22.57	22.55	22.32	23.50
		12	0	21.06	20.89	21.12	22.50
		12	6	21.24	21.07	20.98	22.50
		12	13	21.14	21.05	21.16	22.50
		25	0	21.13	20.98	21.14	22.50
	64QAM	1	0	22.17	22.35	22.23	23.50
		1	13	22.21	22.07	22.07	23.50
		1	24	22.16	22.17	22.25	23.50
		12	0	21.07	20.95	21.11	22.50
		12	6	21.12	20.89	21.05	22.50
		12	13	21.05	21.02	21.18	22.50
		25	0	21.11	20.96	21.02	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				20800/2505	21100/2535	21400/2565	
10MHz	QPSK	1	0	23.04	22.85	22.89	24.00
		1	25	22.95	22.73	22.90	24.00
		1	49	22.94	22.99	22.98	24.00
		25	0	21.93	22.05	21.95	23.00
		25	13	22.03	21.95	21.93	23.00
		25	25	21.93	21.90	22.09	23.00
		50	0	22.02	21.94	22.05	23.00
	16QAM	1	0	22.59	22.09	22.13	23.50
		1	25	22.58	22.32	22.29	23.50
		1	49	22.60	22.57	22.35	23.50
		25	0	21.09	20.94	21.16	22.50
		25	13	21.26	21.11	21.01	22.50
		25	25	21.17	21.10	21.20	22.50
		50	0	21.16	21.03	21.18	22.50
	64QAM	1	0	22.19	22.34	22.25	23.50
		1	25	22.24	22.07	22.10	23.50
		1	49	22.15	22.19	22.28	23.50
		25	0	21.10	21.00	21.11	22.50
		25	13	21.14	20.93	21.08	22.50
		25	25	21.08	21.07	21.22	22.50
		50	0	21.14	21.01	21.06	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				20825/2507.5	21100/2535	21375/2562.5	
15MHz	QPSK	1	0	23.03	22.81	22.87	24.00
		1	38	22.93	22.72	22.87	24.00
		1	74	22.91	22.94	22.94	24.00
		36	0	21.91	22.01	21.92	23.00
		36	18	22.00	21.90	21.89	23.00
		36	39	21.90	21.87	22.05	23.00

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		75	0	22.00	21.90	22.00	23.00
	16QAM	1	0	22.54	22.07	22.11	23.50
		1	38	22.56	22.29	22.27	23.50
		1	74	22.57	22.53	22.32	23.50
		36	0	21.06	20.92	21.13	22.50
		36	18	21.23	21.06	20.97	22.50
		36	39	21.15	21.06	21.17	22.50
		75	0	21.13	20.98	21.14	22.50
	64QAM	1	0	22.14	22.32	22.23	23.50
		1	38	22.22	22.04	22.08	23.50
		1	74	22.16	22.18	22.29	23.50
		36	0	21.09	21.02	21.12	22.50
		36	18	21.12	20.90	21.07	22.50
		36	39	21.06	21.03	21.19	22.50
		75	0	21.11	20.96	21.02	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				20850/2510	21100/2535	21350/2560	
20MHz	QPSK	1	0	23.00	22.77	22.84	24.00
		1	50	22.92	22.68	22.85	24.00
		1	99	22.89	22.93	22.91	24.00
		50	0	21.88	21.96	21.88	23.00
		50	25	21.98	21.86	21.86	23.00
		50	50	21.87	21.82	22.01	23.00
		100	0	21.97	21.85	21.96	23.00
	16QAM	1	0	22.57	22.03	22.06	23.50
		1	50	22.52	22.27	22.23	23.50
		1	99	22.55	22.50	22.30	23.50
		50	0	21.03	20.88	21.10	22.50
		50	25	21.20	21.04	20.94	22.50
		50	50	21.12	21.01	21.13	22.50
		100	0	21.11	20.94	21.11	22.50
	64QAM	1	0	22.12	22.28	22.18	23.50
		1	50	22.18	22.02	22.04	23.50
		1	99	22.10	22.12	22.23	23.50
		50	0	21.04	20.94	21.05	22.50
		50	25	21.08	20.86	21.01	22.50
		50	50	21.03	20.98	21.15	22.50
		100	0	21.09	20.92	20.99	22.50

LTE FDD Band 7 Sensor on/ Receiver on				**Conducted Power(dBm)**			Tune-up Limit
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				20775/2502.5	21100/2535	21425/2567.5	

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5MHz	QPSK	1	0	15.62	15.38	15.28	16.00
		1	13	15.56	15.26	15.29	16.00
		1	24	15.58	15.32	15.38	16.00
		12	0	14.56	14.28	14.27	15.00
		12	6	14.55	14.32	14.32	15.00
		12	13	14.52	14.31	14.39	15.00
		25	0	14.47	14.28	14.33	15.00
	16QAM	1	0	15.10	14.66	14.68	15.50
		1	13	15.08	14.83	14.81	15.50
		1	24	15.14	15.13	14.91	15.50
		12	0	13.62	13.49	13.70	14.50
		12	6	13.79	13.66	13.57	14.50
		12	13	13.71	13.62	13.74	14.50
		25	0	13.65	13.57	13.72	14.50
	64QAM	1	0	14.82	14.93	14.82	15.50
		1	13	14.78	14.61	14.64	15.50
		1	24	14.72	14.75	14.82	15.50
		12	0	13.63	13.51	13.67	14.50
		12	6	13.70	13.48	13.64	14.50
		12	13	13.61	13.62	13.76	14.50
		25	0	13.66	13.55	13.61	14.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				20800/2505	21100/2535	21400/2565	
10MHz	QPSK	1	0	15.68	15.39	15.31	16.00
		1	25	15.59	15.31	15.33	16.00
		1	49	15.60	15.36	15.41	16.00
		25	0	14.59	14.33	14.31	15.00
		25	13	14.58	14.37	14.36	15.00
		25	25	14.54	14.35	14.44	15.00
		50	0	14.51	14.30	14.37	15.00
	16QAM	1	0	15.12	14.69	14.70	15.50
		1	25	15.11	14.87	14.84	15.50
		1	49	15.17	15.15	14.94	15.50
		25	0	13.65	13.54	13.74	14.50
		25	13	13.81	13.70	13.60	14.50
		25	25	13.74	13.67	13.78	14.50
		50	0	13.68	13.62	13.76	14.50
	64QAM	1	0	14.84	14.92	14.84	15.50
		1	25	14.81	14.61	14.67	15.50
		1	49	14.71	14.77	14.85	15.50
		25	0	13.66	13.56	13.67	14.50
		25	13	13.72	13.52	13.67	14.50
		25	25	13.64	13.67	13.80	14.50

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		50	0	13.69	13.60	13.65	14.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				20825/2507.5	21100/2535	21375/2562.5	
15MHz	QPSK	1	0	15.64	15.35	15.29	16.00
		1	38	15.57	15.30	15.30	16.00
		1	74	15.57	15.31	15.37	16.00
		36	0	14.57	14.29	14.28	15.00
		36	18	14.55	14.32	14.32	15.00
		36	39	14.51	14.32	14.40	15.00
		75	0	14.49	14.26	14.32	15.00
	16QAM	1	0	15.07	14.67	14.68	15.50
		1	38	15.09	14.84	14.82	15.50
		1	74	15.14	15.11	14.91	15.50
		36	0	13.62	13.52	13.71	14.50
		36	18	13.78	13.65	13.56	14.50
		36	39	13.72	13.63	13.75	14.50
		75	0	13.65	13.57	13.72	14.50
	64QAM	1	0	14.79	14.90	14.82	15.50
		1	38	14.79	14.58	14.65	15.50
		1	74	14.72	14.76	14.86	15.50
		36	0	13.65	13.58	13.68	14.50
		36	18	13.70	13.49	13.66	14.50
		36	39	13.62	13.63	13.77	14.50
		75	0	13.66	13.55	13.61	14.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				20850/2510	21100/2535	21350/2560	
20MHz	QPSK	1	0	15.60	15.31	15.26	16.00
		1	50	15.56	15.26	15.28	16.00
		1	99	15.55	15.30	15.34	16.00
		50	0	14.54	14.24	14.24	15.00
		50	25	14.53	14.28	14.29	15.00
		50	50	14.48	14.27	14.36	15.00
		100	0	14.36	14.21	14.34	15.00
	16QAM	1	0	15.13	14.63	14.63	15.50
		1	50	15.05	14.82	14.78	15.50
		1	99	15.12	15.08	14.89	15.50
		50	0	13.59	13.48	13.68	14.50
		50	25	13.75	13.63	13.53	14.50
		50	50	13.69	13.58	13.71	14.50
		100	0	13.63	13.53	13.69	14.50
	64QAM	1	0	14.77	14.86	14.77	15.50
		1	50	14.75	14.56	14.61	15.50
		1	99	14.66	14.70	14.80	15.50

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		50	0	13.60	13.50	13.61	14.50
		50	25	13.66	13.45	13.60	14.50
		50	50	13.59	13.58	13.73	14.50
		100	0	13.64	13.51	13.58	14.50

LTE FDD Band 12 Full Power				Conducted Power(dBm)			Tune-up Limit
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				23017/699.7	23095/707.5	23173/715.3	
1.4MHz	QPSK	1	0	23.05	22.89	22.92	24.00
		1	2	23.16	23.08	22.94	24.00
		1	5	23.09	23.07	23.08	24.00
		3	0	23.58	23.61	23.49	24.00
		3	2	23.59	23.59	23.53	24.00
		3	3	23.60	23.48	23.48	24.00
		6	0	22.69	22.64	22.58	23.50
	16QAM	1	0	22.80	22.78	22.76	23.50
		1	2	22.78	22.68	22.75	23.50
		1	5	22.88	22.82	22.78	23.50
		3	0	22.70	22.78	22.66	23.50
		3	2	22.73	22.82	22.66	23.50
		3	3	22.63	22.85	22.62	23.50
		6	0	21.71	21.85	21.67	22.50
	64QAM	1	0	22.68	22.92	22.81	23.50
		1	2	22.77	22.79	22.76	23.50
		1	5	22.79	23.06	22.76	23.50
		3	0	22.60	22.53	22.53	23.50
		3	2	22.65	22.78	22.68	23.50
		3	3	22.65	22.72	22.59	23.50
		6	0	21.64	21.74	21.72	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				23025/700.5	23095/707.5	23165/714.5	
3MHz	QPSK	1	0	23.07	22.93	22.95	24.00
		1	7	23.14	23.11	22.98	24.00
		1	14	23.12	23.12	23.12	24.00
		8	0	22.68	22.73	22.62	23.50
		8	4	22.71	22.69	22.65	23.50
		8	7	22.70	22.59	22.58	23.50
		15	0	22.69	22.68	22.61	23.50
	16QAM	1	0	22.83	22.80	22.79	23.50
		1	7	22.81	22.68	22.79	23.50
		1	14	22.90	22.86	22.81	23.50

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		8	0	21.81	21.91	21.78	22.50
		8	4	21.84	21.95	21.78	22.50
		8	7	21.73	21.97	21.75	22.50
		15	0	21.74	21.89	21.70	22.50
	64QAM	1	0	22.71	22.94	22.84	23.50
		1	7	22.80	22.79	22.78	23.50
		1	14	22.81	23.05	22.79	23.50
		8	0	21.71	21.66	21.65	22.50
		8	4	21.76	21.91	21.80	22.50
		8	7	21.75	21.84	21.72	22.50
		15	0	21.67	21.78	21.75	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				23035/701.5	23095/707.5	23155/713.5	
5MHz	QPSK	1	0	23.04	22.91	22.91	24.00
		1	13	23.12	23.07	22.95	24.00
		1	24	23.09	23.07	23.08	24.00
		12	0	22.65	22.68	22.58	23.50
		12	6	22.69	22.65	22.60	23.50
		12	13	22.68	22.57	22.54	23.50
		25	0	22.69	22.67	22.59	23.50
	16QAM	1	0	22.80	22.76	22.76	23.50
		1	13	22.78	22.66	22.76	23.50
		1	24	22.87	22.84	22.77	23.50
		12	0	21.79	21.87	21.75	22.50
		12	6	21.81	21.90	21.74	22.50
		12	13	21.70	21.92	21.71	22.50
		25	0	21.72	21.85	21.65	22.50
	64QAM	1	0	22.68	22.94	22.81	23.50
		1	13	22.77	22.81	22.75	23.50
		1	24	22.82	23.03	22.75	23.50
		12	0	21.69	21.62	21.66	22.50
		12	6	21.73	21.86	21.76	22.50
		12	13	21.72	21.79	21.68	22.50
		25	0	21.65	21.74	21.70	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				23060/704	23095/707.5	23130/711	
10MHz	QPSK	1	0	23.02	22.84	22.89	24.00
		1	25	23.12	23.07	22.94	24.00
		1	49	23.06	23.05	23.04	24.00
		25	0	22.63	22.64	22.55	23.50
		25	13	22.67	22.61	22.57	23.50
		25	25	22.64	22.53	22.51	23.50
		50	0	22.68	22.60	22.54	23.50

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	16QAM	1	0	22.90	22.73	22.71	23.50
		1	25	22.75	22.65	22.73	23.50
		1	49	22.85	22.79	22.75	23.50
		25	0	21.76	21.86	21.73	22.50
		25	13	21.77	21.87	21.70	22.50
		25	25	21.68	21.88	21.68	22.50
		50	0	21.70	21.81	21.62	22.50
	64QAM	1	0	22.63	22.87	22.76	23.50
		1	25	22.74	22.76	22.72	23.50
		1	49	22.76	22.98	22.73	23.50
		25	0	21.66	21.61	21.60	22.50
		25	13	21.69	21.83	21.72	22.50
		25	25	21.70	21.75	21.65	22.50
		50	0	21.63	21.70	21.67	22.50

LTE FDD Band 13 Full Power				**Conducted Power(dBm)**			Tune-up Limit
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				23205/779.5	23230/782	23255/784.5	
5MHz	QPSK	1	0	22.87	22.97	22.80	24.00
		1	13	22.96	23.07	22.96	24.00
		1	24	22.82	22.90	22.80	24.00
		12	0	22.50	22.59	22.46	23.00
		12	6	22.49	22.58	22.45	23.00
		12	13	22.44	22.53	22.40	23.00
		25	0	22.51	22.58	22.44	23.00
	16QAM	1	0	22.73	22.80	22.70	23.50
		1	13	22.68	22.77	22.67	23.50
		1	24	22.73	22.83	22.68	23.50
		12	0	21.57	21.67	21.56	22.50
		12	6	21.52	21.60	21.49	22.50
		12	13	21.62	21.71	21.58	22.50
		25	0	21.63	21.72	21.59	22.50
	64QAM	1	0	22.78	22.85	22.71	23.50
		1	13	22.60	22.69	22.55	23.50
		1	24	22.85	22.95	22.80	23.50
		12	0	21.55	21.61	21.54	22.50
		12	6	21.60	21.68	21.57	22.50
		12	13	21.59	21.65	21.52	22.50
		25	0	21.56	21.63	21.55	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				/	23230/782	/	
10MHz	QPSK	1	0	/	22.90	/	24.00

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		1	25	/	23.07	/	24.00
		1	49	/	22.88	/	24.00
		25	0	/	22.55	/	23.50
		25	13	/	22.54	/	23.50
		25	25	/	22.49	/	23.50
		50	0	/	22.51	/	23.50
	16QAM	1	0	/	22.77	/	23.50
		1	25	/	22.76	/	23.50
		1	49	/	22.78	/	23.50
		25	0	/	21.66	/	22.50
		25	13	/	21.57	/	22.50
		25	25	/	21.67	/	22.50
		50	0	/	21.68	/	22.50
	64QAM	1	0	/	22.78	/	23.50
		1	25	/	22.64	/	23.50
		1	49	/	22.90	/	23.50
		25	0	/	21.60	/	22.50
		25	13	/	21.65	/	22.50
		25	25	/	21.61	/	22.50
		50	0	/	21.61	/	22.50

LTE FDD Band 17 Full Power				Conducted Power(dBm)			Tune-up Limit
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				23755/706.5	23790/710	23825/713.5	
5MHz	QPSK	1	0	23.18	23.11	23.03	24.00
		1	13	23.14	23.15	23.13	24.00
		1	24	23.20	23.09	23.13	24.00
		12	0	22.67	22.75	22.64	23.50
		12	6	22.68	22.67	22.69	23.50
		12	13	22.71	22.69	22.62	23.50
		25	0	22.65	22.73	22.66	23.50
	16QAM	1	0	22.83	22.79	22.83	23.50
		1	13	22.81	22.65	22.69	23.50
		1	24	22.52	22.80	22.90	23.50
		12	0	21.66	21.77	21.76	22.50
		12	6	21.74	21.80	21.79	22.50
		12	13	21.77	21.76	21.85	22.50
		25	0	21.74	21.67	21.76	22.50
	64QAM	1	0	22.81	22.87	22.62	23.50
		1	13	22.80	22.88	22.71	23.50
		1	24	22.70	22.73	22.74	23.50

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		12	0	21.76	21.72	21.81	22.50
		12	6	21.75	21.79	21.77	22.50
		12	13	21.74	21.79	21.71	22.50
		25	0	21.76	21.77	21.78	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				23780/709	23790/710	23800/711	
10MHz	QPSK	1	0	23.19	23.07	23.04	24.00
		1	25	23.17	23.18	23.15	24.00
		1	49	23.20	23.10	23.12	24.00
		25	0	22.68	22.74	22.64	23.50
		25	13	22.69	22.66	22.69	23.50
		25	25	22.70	22.68	22.62	23.50
		50	0	22.67	22.69	22.64	23.50
	16QAM	1	0	22.68	22.79	22.81	23.50
		1	25	22.81	22.67	22.69	23.50
		1	49	22.53	22.78	22.91	23.50
		25	0	21.66	21.79	21.77	22.50
		25	13	21.73	21.80	21.78	22.50
		25	25	21.78	21.75	21.85	22.50
		50	0	21.75	21.66	21.76	22.50
	64QAM	1	0	22.79	22.83	22.60	23.50
		1	25	22.80	22.86	22.71	23.50
		1	49	22.67	22.71	22.75	23.50
		25	0	21.76	21.74	21.78	22.50
		25	13	21.74	21.79	21.76	22.50
		25	25	21.75	21.78	21.71	22.50
		50	0	21.77	21.76	21.78	22.50

LTE FDD Band 66 Full Power				**Conducted Power(dBm)**			Tune-up Limit
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				131979/1710.7	132322/1745	132665/1779.3	
1.4MHz	QPSK	1	0	22.83	23.00	22.87	24.00
		1	2	23.03	23.13	22.85	24.00
		1	5	22.84	22.96	22.79	24.00
		3	0	22.83	22.90	22.73	24.00
		3	2	22.81	22.86	22.78	24.00
		3	3	22.87	22.89	22.82	24.00
		6	0	21.90	21.96	21.90	23.00
	16QAM	1	0	22.46	22.16	22.57	23.50
		1	2	22.44	22.30	22.55	23.50
		1	5	22.26	22.19	22.38	23.50
		3	0	21.95	21.87	21.89	23.50

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		3	2	22.01	21.99	21.97	23.50
		3	3	21.93	21.96	21.75	23.50
		6	0	21.07	21.07	21.00	22.50
	64QAM	1	0	22.20	22.44	22.27	23.50
		1	2	22.19	22.07	22.08	23.50
		1	5	22.20	22.29	22.35	23.50
		3	0	22.04	22.00	22.06	23.50
		3	2	22.08	21.93	22.07	23.50
		3	3	22.04	22.01	22.16	23.50
		6	0	21.04	21.05	21.11	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				1319871711.5	132322/1745	132657/1778.5	
3MHz	QPSK	1	0	22.85	23.04	22.90	24.00
		1	7	23.01	23.16	22.89	24.00
		1	14	22.87	23.01	22.83	24.00
		8	0	21.93	22.02	21.86	23.00
		8	4	21.93	21.96	21.90	23.00
		8	7	21.97	22.00	21.92	23.00
		15	0	21.90	22.00	21.93	23.00
	16QAM	1	0	22.49	22.18	22.60	23.50
		1	7	22.47	22.30	22.59	23.50
		1	14	22.28	22.23	22.41	23.50
		8	0	21.06	21.00	21.01	22.50
		8	4	21.12	21.12	21.09	22.50
		8	7	21.03	21.08	20.88	22.50
		15	0	21.10	21.11	21.03	22.50
	64QAM	1	0	22.23	22.46	22.30	23.50
		1	7	22.22	22.07	22.10	23.50
		1	14	22.22	22.28	22.38	23.50
		8	0	21.15	21.13	21.18	22.50
		8	4	21.19	21.06	21.19	22.50
		8	7	21.14	21.13	21.29	22.50
		15	0	21.07	21.09	21.14	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				131997/1712.5	132322/1745	132647/1777.5	
5MHz	QPSK	1	0	22.82	23.02	22.86	24.00
		1	13	22.99	23.12	22.86	24.00
		1	24	22.84	22.96	22.79	24.00
		12	0	21.90	21.97	21.82	23.00
		12	6	21.91	21.92	21.85	23.00
		12	13	21.95	21.98	21.88	23.00
		25	0	21.90	21.99	21.91	23.00
	16QAM	1	0	22.46	22.14	22.57	23.50

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		1	13	22.44	22.28	22.56	23.50
		1	24	22.25	22.21	22.37	23.50
		12	0	21.04	20.96	20.98	22.50
		12	6	21.09	21.07	21.05	22.50
		12	13	21.00	21.03	20.84	22.50
		25	0	21.08	21.07	20.98	22.50
	64QAM	1	0	22.20	22.46	22.27	23.50
		1	13	22.19	22.09	22.07	23.50
		1	24	22.23	22.26	22.34	23.50
		12	0	21.13	21.09	21.19	22.50
		12	6	21.16	21.01	21.15	22.50
		12	13	21.11	21.08	21.25	22.50
		25	0	21.05	21.05	21.09	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				132022/1715	132322/1745	132622/1775	
10MHz	QPSK	1	0	22.84	23.03	22.89	24.00
		1	25	23.02	23.17	22.90	24.00
		1	49	22.86	23.00	22.82	24.00
		25	0	21.93	22.02	21.86	23.00
		25	13	21.94	21.97	21.89	23.00
		25	25	21.97	22.02	21.93	23.00
		50	0	21.94	22.01	21.95	23.00
	16QAM	1	0	22.48	22.17	22.59	23.50
		1	25	22.47	22.32	22.59	23.50
		1	49	22.28	22.23	22.40	23.50
		25	0	21.07	21.01	21.02	22.50
		25	13	21.11	21.11	21.08	22.50
		25	25	21.03	21.08	20.88	22.50
		50	0	21.11	21.12	21.02	22.50
	64QAM	1	0	22.22	22.45	22.29	23.50
		1	25	22.22	22.09	22.10	23.50
		1	49	22.22	22.28	22.37	23.50
		25	0	21.16	21.14	21.19	22.50
		25	13	21.18	21.05	21.18	22.50
		25	25	21.14	21.13	21.29	22.50
		50	0	21.08	21.10	21.13	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				132047/1717.5	132322/1745	132597/1772.5	
15MHz	QPSK	1	0	22.83	22.99	22.87	24.00
		1	38	23.00	23.16	22.87	24.00
		1	74	22.83	22.95	22.78	24.00
		36	0	21.91	21.98	21.83	23.00
		36	18	21.91	21.92	21.85	23.00

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		36	39	21.94	21.99	21.89	23.00
		75	0	21.92	21.97	21.90	23.00
	16QAM	1	0	22.43	22.15	22.57	23.50
		1	38	22.45	22.29	22.57	23.50
		1	74	22.25	22.19	22.37	23.50
		36	0	21.04	20.99	20.99	22.50
		36	18	21.08	21.06	21.04	22.50
		36	39	21.01	21.04	20.85	22.50
		75	0	21.08	21.07	20.98	22.50
	64QAM	1	0	22.17	22.43	22.27	23.50
		1	38	22.20	22.06	22.08	23.50
		1	74	22.23	22.27	22.38	23.50
		36	0	21.15	21.16	21.20	22.50
		36	18	21.16	21.02	21.17	22.50
		36	39	21.12	21.09	21.26	22.50
		75	0	21.05	21.05	21.09	22.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				132072/1720	132322/1745	132572/1770	
20MHz	QPSK	1	0	22.80	22.95	22.84	24.00
		1	50	22.99	23.12	22.85	24.00
		1	99	22.81	22.94	22.75	24.00
		50	0	21.88	21.93	21.79	23.00
		50	25	21.89	21.88	21.82	23.00
		50	50	21.91	21.94	21.85	23.00
		100	0	21.89	21.92	21.86	23.00
	16QAM	1	0	22.23	22.11	22.52	23.50
		1	50	22.41	22.27	22.53	23.50
		1	99	22.23	22.16	22.35	23.50
		50	0	21.01	20.95	20.96	22.50
		50	25	21.05	21.04	21.01	22.50
		50	50	20.98	20.99	20.81	22.50
		100	0	21.06	21.03	20.95	22.50
	64QAM	1	0	22.15	22.39	22.22	23.50
		1	50	22.16	22.04	22.04	23.50
		1	99	22.17	22.21	22.32	23.50
		50	0	21.10	21.08	21.13	22.50
		50	25	21.12	20.98	21.11	22.50
		50	50	21.09	21.04	21.22	22.50
		100	0	21.03	21.01	21.06	22.50

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LTE FDD Band 66 Sensor on/ Receiver on				Conducted Power(dBm)			Tune-up Limit
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			
				131979/1710.7	132322/1745	132665/1779.3	
1.4MHz	QPSK	1	0	16.44	16.49	16.36	17.00
		1	2	16.57	16.61	16.51	17.00
		1	5	16.49	16.52	16.79	17.00
		3	0	16.25	16.40	16.28	17.00
		3	2	16.36	16.46	16.42	17.00
		3	3	16.45	16.45	16.48	17.00
		6	0	15.39	15.50	15.43	16.00
	16QAM	1	0	15.86	16.09	15.92	16.50
		1	2	15.84	16.23	15.82	16.50
		1	5	15.95	16.22	15.93	16.50
		3	0	15.33	15.45	15.39	16.50
		3	2	15.34	15.47	15.51	16.50
		3	3	15.44	15.54	15.56	16.50
		6	0	14.56	14.53	14.53	15.50
	64QAM	1	0	15.81	15.97	15.89	16.50
		1	2	15.77	15.55	15.68	16.50
		1	5	15.70	15.68	15.87	16.50
		3	0	15.53	15.41	15.57	16.50
		3	2	15.56	15.33	15.59	16.50
		3	3	15.54	15.51	15.79	16.50
		6	0	14.61	14.69	14.86	15.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				1319871711.5	132322/1745	132657/1778.5	
3MHz	QPSK	1	0	16.46	16.53	16.39	17.00
		1	7	16.55	16.64	16.55	17.00
		1	14	16.52	16.57	16.83	17.00
		8	0	15.35	15.52	15.41	16.00
		8	4	15.48	15.56	15.54	16.00
		8	7	15.55	15.56	15.58	16.00
		15	0	15.39	15.54	15.46	16.00
	16QAM	1	0	15.89	16.11	15.95	16.50
		1	7	15.87	16.23	15.86	16.50
		1	14	15.97	16.26	15.96	16.50
		8	0	14.44	14.58	14.51	15.50
		8	4	14.45	14.60	14.63	15.50
		8	7	14.54	14.66	14.69	15.50
		15	0	14.59	14.57	14.56	15.50
	64QAM	1	0	15.84	15.99	15.92	16.50

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		1	7	15.80	15.55	15.70	16.50
		1	14	15.72	15.67	15.90	16.50
		8	0	14.64	14.54	14.69	15.50
		8	4	14.67	14.46	14.71	15.50
		8	7	14.64	14.63	14.92	15.50
		15	0	14.64	14.73	14.89	15.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				131997/1712.5	132322/1745	132647/1777.5	
5MHz	QPSK	1	0	16.43	16.51	16.35	17.00
		1	13	16.53	16.60	16.52	17.00
		1	24	16.49	16.52	16.79	17.00
		12	0	15.32	15.47	15.37	16.00
		12	6	15.46	15.52	15.49	16.00
		12	13	15.53	15.54	15.54	16.00
		25	0	15.39	15.53	15.44	16.00
	16QAM	1	0	15.86	16.07	15.92	16.50
		1	13	15.84	16.21	15.83	16.50
		1	24	15.94	16.24	15.92	16.50
		12	0	14.42	14.54	14.48	15.50
		12	6	14.42	14.55	14.59	15.50
		12	13	14.51	14.61	14.65	15.50
		25	0	14.57	14.53	14.51	15.50
	64QAM	1	0	15.81	15.99	15.89	16.50
		1	13	15.77	15.57	15.67	16.50
		1	24	15.73	15.65	15.86	16.50
		12	0	14.62	14.50	14.70	15.50
		12	6	14.64	14.41	14.67	15.50
		12	13	14.61	14.58	14.88	15.50
		25	0	14.62	14.69	14.84	15.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				132022/1715	132322/1745	132622/1775	
10MHz	QPSK	1	0	16.45	16.52	16.38	17.00
		1	25	16.56	16.65	16.56	17.00
		1	49	16.51	16.56	16.82	17.00
		25	0	15.35	15.52	15.41	16.00
		25	13	15.49	15.57	15.53	16.00
		25	25	15.55	15.58	15.59	16.00
		50	0	15.43	15.55	15.48	16.00
	16QAM	1	0	15.88	16.10	15.94	16.50
		1	25	15.87	16.25	15.86	16.50
		1	49	15.97	16.26	15.95	16.50
		25	0	14.45	14.59	14.52	15.50
		25	13	14.44	14.59	14.62	15.50

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		25	25	14.54	14.66	14.69	15.50
		50	0	14.60	14.58	14.55	15.50
	64QAM	1	0	15.83	15.98	15.91	16.50
		1	25	15.80	15.57	15.70	16.50
		1	49	15.72	15.67	15.89	16.50
		25	0	14.65	14.55	14.70	15.50
		25	13	14.66	14.45	14.70	15.50
		25	25	14.64	14.63	14.92	15.50
		50	0	14.65	14.74	14.88	15.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				132047/1717.5	132322/1745	132597/1772.5	
15MHz	QPSK	1	0	16.44	16.48	16.36	17.00
		1	38	16.54	16.64	16.53	17.00
		1	74	16.48	16.51	16.78	17.00
		36	0	15.33	15.48	15.38	16.00
		36	18	15.46	15.52	15.49	16.00
		36	39	15.52	15.55	15.55	16.00
		75	0	15.41	15.51	15.43	16.00
	16QAM	1	0	15.83	16.08	15.92	16.50
		1	38	15.85	16.22	15.84	16.50
		1	74	15.94	16.22	15.92	16.50
		36	0	14.42	14.57	14.49	15.50
		36	18	14.41	14.54	14.58	15.50
		36	39	14.52	14.62	14.66	15.50
		75	0	14.57	14.53	14.51	15.50
	64QAM	1	0	15.78	15.96	15.89	16.50
		1	38	15.78	15.54	15.68	16.50
		1	74	15.73	15.66	15.90	16.50
		36	0	14.64	14.57	14.71	15.50
		36	18	14.64	14.42	14.69	15.50
		36	39	14.62	14.59	14.89	15.50
		75	0	14.62	14.69	14.84	15.50
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)			Tune-up Limit
				132072/1720	132322/1745	132572/1770	
20MHz	QPSK	1	0	16.41	16.44	16.33	17.00
		1	50	16.53	16.60	16.51	17.00
		1	99	16.46	16.50	16.75	17.00
		50	0	15.30	15.43	15.34	16.00
		50	25	15.44	15.48	15.46	16.00
		50	50	15.49	15.50	15.51	16.00
		100	0	15.38	15.46	15.39	16.00
	16QAM	1	0	15.69	16.04	15.87	16.50
		1	50	15.81	16.20	15.80	16.50

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		1	99	15.92	16.19	15.90	16.50
		50	0	14.39	14.53	14.46	15.50
		50	25	14.38	14.52	14.55	15.50
		50	50	14.49	14.57	14.62	15.50
		100	0	14.55	14.49	14.48	15.50
	64QAM	1	0	15.76	15.92	15.84	16.50
		1	50	15.74	15.52	15.64	16.50
		1	99	15.67	15.60	15.84	16.50
		50	0	14.59	14.49	14.64	15.50
		50	25	14.60	14.38	14.63	15.50
		50	50	14.59	14.54	14.85	15.50
		100	0	14.60	14.65	14.81	15.50

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9.6 WLAN Mode

Wi-Fi 2.4G Mode	Channel /Frequency(MHz)	Maximum Output Power (dBm)		
		Tune-up	Meas.	TP Set Level
802.11b (1M)	1/2412	14.00	13.62	14.5
	6/2437	14.00	13.39	14.5
	11/2462	14.00	13.17	14.5
802.11g (6M)	1/2412	14.00	13.32	14.5
	6/2437	14.00	12.64	14.5
	11/2462	14.00	13.19	14.5
802.11n-HT20 (MCS0)	1/2412	14.00	12.50	14
	6/2437	14.00	12.29	14
	11/2462	14.00	12.28	14
802.11n-HT40 (MCS0)	3/2422	14.00	13.16	14
	6/2437	14.00	13.23	14
	9/2452	14.00	13.39	14
Note: Initial test configuration is 802.11b mode.				

Wi-Fi 5G (U-NII-1) Mode	Channel /Frequency(MHz)	Maximum Output Power (dBm)		
		Tune-up	Meas.	TP Set Level
802.11a (6M)	36/5180	16.50	15.33	18
	48/5240	16.50	14.78	18
	52/5260	16.50	14.82	18
	64/5320	16.50	14.51	18
802.11n-HT20 (MCS0)	36/5180	15.50	14.10	17
	48/5240	15.50	13.49	17
	52/5260	15.50	13.57	17
	64/5320	15.50	13.71	17
802.11n-HT40 (MCS0)	38/5190	15.50	14.20	16
	46/5230	15.50	13.80	16
	54/5270	15.50	13.50	16
	62/5310	15.50	13.78	16
802.11ac-VHT20 (6M)	36/5180	14.50	13.10	15.5
	48/5240	14.50	12.51	15.5
	52/5260	14.50	12.54	15.5
	64/5320	14.50	12.70	15.5
802.11ac-VHT40	38/5190	14.50	13.73	15

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(MCS0)	46/5230	14.50	13.33	15
	54/5270	14.50	13.08	15
	62/5310	14.50	13.12	15
802.11ac-VHT80 (MCS0)	42/5210	14.50	13.00	15
	58/5290	14.50	12.60	15
Note. Initial test configuration is 802.11a mode, since the highest maximum output power.				

Wi-Fi 5G (U-NII-3) Mode	Channel /Frequency(MHz)	Maximum Output Power (dBm)		
		Tune-up	Meas.	TP Set Level
802.11a (6M)	149/5745	13.50	12.46	15
	157/5785	13.50	12.61	15
	165/5825	13.50	12.88	15
802.11n-HT20 (MCS0)	149/5745	13.00	11.80	14.5
	157/5785	13.00	11.91	14.5
	165/5825	13.00	12.26	14.5
802.11n-HT40 (MCS0)	151/5755	13.00	11.80	13.5
	159/5795	13.00	11.97	13.5
802.11ac-HT20 (6M)	149/5745	12.50	10.63	13
	157/5785	12.50	10.76	13
	165/5825	12.50	11.00	13
802.11ac-HT40 (MCS0)	151/5755	12.50	10.93	12.5
	159/5795	12.50	11.03	12.5
802.11ac-HT80 (MCS0)	155/5775	12.50	10.61	12.5
Note. Initial test configuration is 802.11a mode, since the highest maximum output power.				

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9.7 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	9.75	10.02	9.52	10.50
π/4DQPSK	7.42	8.04	7.13	9.50
8DPSK	7.43	8.08	7.08	9.50
BLE	**Ch 0/2402 MHz**	**Ch 19/2440 MHz**	**Ch 39/2480 MHz**	**Tune-up Limit (dBm)**
GFSK	-0.70	-0.68	-1.49	1.00

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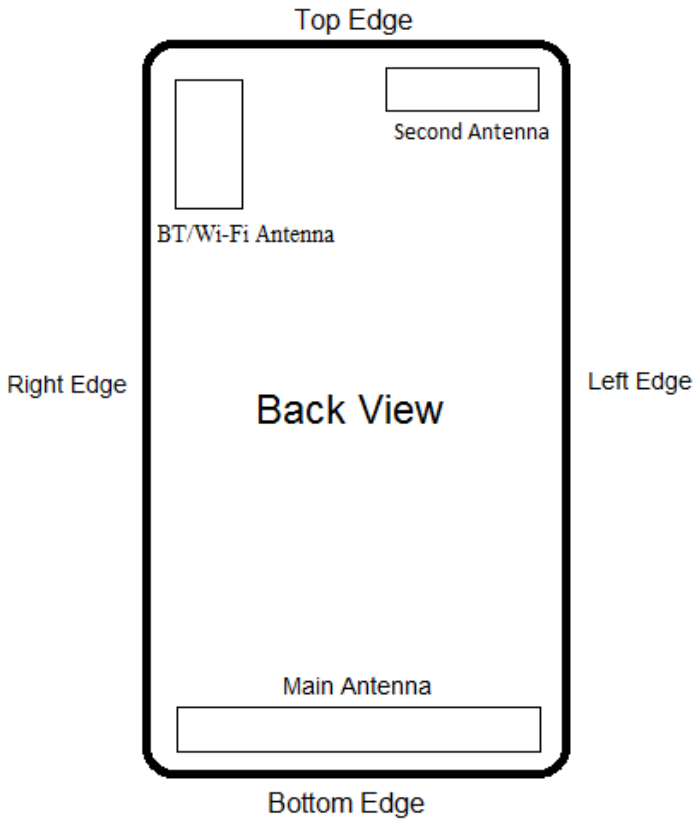
10 Measured and Reported (Scaled) SAR Results

10.3 EUT Antenna Locations



Overall (Length x Width): 164mm x 77mm Overall Diagonal: 170mm/Display Diagonal: 162mm						
Distance of the Antenna to the EUT surface/edge						
Antenna	Back Side	Front side	Left Edge	Right Edge	Top Edge	Bottom Edge
Main Antenna	＜25mm	＜25mm	＜25mm	＜25mm	＞25mm	＜25mm
Second Antenna	＜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	Yes	Yes	Yes	Yes	N/A	Yes
Second Antenna	Yes	Yes	Yes	N/A	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 ≥ 9cm*5cm, 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 170mm.Per KDB 648474 D04, for smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension> 16.0 cm, product specific 10-g SAR must be tested as a phablet to determine SAR compliance.For Phablet, Since hotspot mode 1-g *reported* SAR < 1.2

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W/kg, product specific 10-g SAR is no required.

3. Per FCC KDB 447498 D01,

for each exposure position, testing of other requised channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is:

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

b) ≤0.6 W/kg or 1.5 W/kg, for1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz.

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

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

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

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10.4 Measured SAR Results

Table 8: GSM 850 (Main-antenna)

Test Position	Cover Type	Time slot	Channel/ Frequency (MHz)	Tune-up (dBm)	Measured power (dBm)	Limit of SAR 1.6 W/kg (mW/g)				Plot No.
						Measured SAR1g	Power Drift (dB)	Scaling Factor	Report SAR1g	
Head SAR										
Left Cheek	standard	GSM	190/836.6	34.00	33.30	0.221	0.130	1.17	0.260	18
Left Tilt	standard	GSM	190/836.6	34.00	33.30	0.093	0.090	1.17	0.110	/
Right Cheek	standard	GSM	190/836.6	34.00	33.30	0.220	-0.048	1.17	0.258	/
Right Tilt	standard	GSM	190/836.6	34.00	33.30	0.101	0.010	1.17	0.119	/
Left Cheek	standard	GSM	128/824.2	34.00	33.24	0.215	-0.010	1.19	0.256	/
Left Cheek	standard	GSM	251/848.8	34.00	33.12	0.193	0.020	1.22	0.236	/
Body-worn SAR (Distance 15mm)										
Back Side	standard	GSM	190/836.6	34.00	33.30	0.189	0.030	1.17	0.222	19
Front Side	standard	GSM	190/836.6	34.00	33.30	0.166	-0.040	1.17	0.195	/
Back Side	standard	GSM	128/824.2	34.00	33.24	0.162	-0.034	1.19	0.193	/
Back Side	standard	GSM	251/848.8	34.00	33.12	0.175	0.015	1.22	0.214	/
Hotspot SAR(Distance 10mm)										
Back Side	standard	3Txslots	190/836.6	32.00	31.14	0.704	0.040	1.22	0.858	/
Front Side	standard	3Txslots	190/836.6	32.00	31.14	0.602	-0.040	1.22	0.734	/
Left Edge	standard	3Txslots	190/836.6	32.00	31.14	0.328	0.026	1.22	0.400	/
Right Edge	standard	3Txslots	190/836.6	32.00	31.14	0.449	0.160	1.22	0.547	/
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	standard	3Txslots	190/836.6	32.00	31.14	0.157	0.110	1.22	0.191	/
Back Side	standard	3Txslots	128/824.2	32.00	30.85	0.683	-0.039	1.30	0.890	/
Back Side	standard	3Txslots	251/848.8	32.00	30.78	0.732	-0.040	1.32	0.969	20
Back Side	SIM2	3Txslots	251/848.8	32.00	30.78	0.695	-0.010	1.32	0.920	/
Back Side	Battery2	3Txslots	251/848.8	32.00	30.78	0.712	0.022	1.32	0.943	/
Back Side	Repeated	3Txslots	251/848.8	32.00	30.78	0.716	-0.023	1.32	0.948	/

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.

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Measurement Variability				
Test Position	**Channel/ Frequency(MHz)**	**MAX Measured SAR_{1g} (W/kg)**	**1st Repeated SAR_{1g} (W/kg)**	**Ratio**
Back Side	251/848.8	0.732	0.716	1.02
Note: 1) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit). 2) A third repeated measurement was performed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.				

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Table 9: GSM 1900(Main-antenna)

Test Position	Cover Type	Time slot	Channel/ Frequency (MHz)	Tune-up (dBm)	Measured power (dBm)	Limit of SAR 1.6 W/kg (mW/g)				Plot No.
						Measured SAR1g	Power Drift (dB)	Scaling Factor	Report SAR1g	
Head SAR										
Left Cheek	standard	GSM	661/1880	31.50	30.85	0.080	0.028	1.16	0.093	21
Left Tilt	standard	GSM	661/1880	31.50	30.85	0.047	-0.050	1.16	0.054	/
Right Cheek	standard	GSM	661/1880	31.50	30.85	0.043	0.099	1.16	0.050	/
Right Tilt	standard	GSM	661/1880	31.50	30.85	0.068	0.030	1.16	0.079	/
Left Cheek	standard	GSM	512/1850.2	31.50	30.89	0.076	-0.024	1.15	0.087	/
Left Cheek	standard	GSM	810/1909.8	31.50	31.01	0.080	0.030	1.12	0.090	/
Body-worn SAR (Distance 15mm)										
Back Side	standard	GSM	661/1880	31.50	30.85	0.127	-0.101	1.16	0.148	22
Front Side	standard	GSM	661/1880	31.50	30.85	0.075	0.000	1.16	0.087	/
Back Side	standard	GSM	512/1850.2	31.50	30.89	0.095	-0.012	1.15	0.109	/
Back Side	standard	GSM	810/1909.8	31.50	31.01	0.124	0.033	1.12	0.139	/
Hotspot SAR(Distance 10mm)										
Back Side	standard	3Txslots	661/1880	30.00	29.44	0.382	-0.110	1.14	0.435	/
Front Side	standard	3Txslots	661/1880	30.00	29.44	0.446	0.020	1.14	0.507	/
Left Edge	standard	3Txslots	661/1880	30.00	29.44	0.257	-0.040	1.14	0.292	/
Right Edge	standard	3Txslots	661/1880	30.00	29.44	0.048	0.044	1.14	0.055	/
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	standard	3Txslots	661/1880	30.00	29.44	0.528	0.020	1.14	0.601	/
Bottom Edge	standard	3Txslots	512/1850.2	30.00	29.59	0.409	0.060	1.10	0.449	/
Bottom Edge	standard	3Txslots	810/1909.8	30.00	29.63	0.818	0.070	1.09	0.891	23
Bottom Edge	Repeated	3Txslots	810/1909.8	30.00	29.63	0.812	-0.052	1.09	0.884	/

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.

Measurement Variability				
Test Position	**Channel/ Frequency(MHz)**	**MAX Measured SAR_{1g} (W/kg)**	**1st Repeated SAR_{1g} (W/kg)**	**Ratio**
Bottom Edge	810/1909.8	0.818	0.812	1.01

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

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

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Table 10: UMTS Band II (Main-antenna)

Test Position	Cover Type	Channel Type	Channel/ Frequency (MHz)	Tune-up (dBm)	Measured power (dBm)	Limit of SAR 1.6 W/kg (mW/g)				Plot No.
						Measured SAR1g	Power Drift (dB)	Scaling Factor	Report SAR1g	
Head SAR										
Left Cheek	standard	RMC 12.2K	9400/1880	24.50	23.67	0.130	-0.150	1.21	0.157	/
Left Tilt	standard	RMC 12.2K	9400/1880	24.50	23.67	0.075	0.050	1.21	0.090	/
Right Cheek	standard	RMC 12.2K	9400/1880	24.50	23.67	0.089	-0.087	1.21	0.107	/
Right Tilt	standard	RMC 12.2K	9400/1880	24.50	23.67	0.090	0.130	1.21	0.109	/
Left Cheek	standard	RMC 12.2K	9262/1852.4	24.50	23.67	0.110	0.140	1.21	0.133	/
Left Cheek	standard	RMC 12.2K	9538/1907.6	24.50	23.62	0.163	0.102	1.22	0.200	24
Body-worn SAR (Distance 15mm)										
Back Side	standard	RMC 12.2K	9400/1880	24.50	23.67	0.158	-0.080	1.21	0.191	25
Front Side	standard	RMC 12.2K	9400/1880	24.50	23.67	0.118	0.028	1.21	0.143	/
Back Side	standard	RMC 12.2K	9262/1852.4	24.50	23.67	0.113	-0.016	1.21	0.137	/
Back Side	standard	RMC 12.2K	9538/1907.6	24.50	23.62	0.145	0.020	1.22	0.178	/
Hotspot SAR(Distance 10mm)										
Back Side	standard	RMC 12.2K	9400/1880	24.50	23.67	0.386	0.060	1.21	0.467	/
Front Side	standard	RMC 12.2K	9400/1880	24.50	23.67	0.293	0.100	1.21	0.355	/
Left Edge	standard	RMC 12.2K	9400/1880	24.50	23.67	0.215	-0.100	1.21	0.260	/
Right Edge	standard	RMC 12.2K	9400/1880	24.50	23.67	0.052	-0.023	1.21	0.062	/
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	standard	RMC 12.2K	9400/1880	24.50	23.67	0.434	0.070	1.21	0.525	/
Bottom Edge	standard	RMC 12.2K	9262/1852.4	24.50	23.67	0.290	0.080	1.21	0.351	/
Bottom Edge	standard	RMC 12.2K	9538/1907.6	24.50	23.62	0.662	0.090	1.22	0.811	26
Bottom Edge	Repeated	RMC 12.2K	9538/1907.6	24.50	23.62	0.647	0.033	1.22	0.792	/

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 ≤ ¼ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.

Measurement Variability				
Test Position	**Channel/ Frequency(MHz)**	**MAX Measured SAR_{1g} (W/kg)**	**1st Repeated SAR_{1g} (W/kg)**	**Ratio**
Bottom Edge	9538/1907.6	0.662	0.647	1.02

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

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

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Table 11: UMTS Band IV (Main-antenna)

Test Position	Cover Type	Channel Type	Channel/ Frequency (MHz)	Tune-up (dBm)	Measured power (dBm)	Limit of SAR 1.6 W/kg (mW/g)				Plot No.
						Measured SAR1g	Power Drift (dB)	Scaling Factor	Report SAR1g	
Head SAR										
Left Cheek	standard	RMC 12.2K	1413/1732.6	24.50	23.90	0.051	0.072	1.15	0.059	/
Left Tilt	standard	RMC 12.2K	1413/1732.6	24.50	23.90	0.046	0.079	1.15	0.053	/
Right Cheek	standard	RMC 12.2K	1413/1732.6	24.50	23.90	0.040	0.048	1.15	0.045	/
Right Tilt	standard	RMC 12.2K	1413/1732.6	24.50	23.90	0.038	0.046	1.15	0.044	/
Left Cheek	standard	RMC 12.2K	1312/1712.4	24.50	23.82	0.043	0.038	1.17	0.050	/
Left Cheek	standard	RMC 12.2K	1513/1752.6	24.50	23.80	0.063	0.087	1.17	0.074	27
Body-worn SAR (Distance 15mm)										
Back Side	standard	RMC 12.2K	1413/1732.6	24.50	23.90	0.084	0.020	1.15	0.097	28
Front Side	standard	RMC 12.2K	1413/1732.6	24.50	23.90	0.028	0.021	1.15	0.032	/
Back Side	standard	RMC 12.2K	1312/1712.4	24.50	23.82	0.069	-0.029	1.17	0.081	/
Back Side	standard	RMC 12.2K	1513/1752.6	24.50	23.80	0.072	0.055	1.17	0.085	/
Hotspot SAR(Distance 10mm)										
Back Side	standard	RMC 12.2K	1413/1732.6	24.50	23.90	0.140	-0.020	1.15	0.161	/
Front Side	standard	RMC 12.2K	1413/1732.6	24.50	23.90	0.093	0.060	1.15	0.107	/
Left Edge	standard	RMC 12.2K	1413/1732.6	24.50	23.90	0.053	0.050	1.15	0.061	/
Right Edge	standard	RMC 12.2K	1413/1732.6	24.50	23.90	0.044	0.090	1.15	0.050	/
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	standard	RMC 12.2K	1413/1732.6	24.50	23.90	0.091	0.020	1.15	0.104	/
Back Side	standard	RMC 12.2K	1312/1712.4	24.50	23.82	0.111	-0.020	1.17	0.130	/
Back Side	standard	RMC 12.2K	1513/1752.6	24.50	23.80	0.165	-0.025	1.17	0.194	29

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 ≤ ¼ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.

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Table 12: UMTS Band V (Main-antenna)

Test Position	Cover Type	Channel Type	Channel/ Frequency (MHz)	Tune-up (dBm)	Measured power (dBm)	Limit of SAR 1.6 W/kg (mW/g)				Plot No.
						Measured SAR1g	Power Drift (dB)	Scaling Factor	Report SAR1g	
Head SAR										
Left Cheek	standard	RMC 12.2K	4183/836.6	24.50	23.59	0.200	0.030	1.23	0.247	/
Left Tilt	standard	RMC 12.2K	4183/836.6	24.50	23.59	0.096	0.150	1.23	0.118	/
Right Cheek	standard	RMC 12.2K	4183/836.6	24.50	23.59	0.203	-0.040	1.23	0.250	30
Right Tilt	standard	RMC 12.2K	4183/836.6	24.50	23.59	0.096	0.040	1.23	0.119	/
Right Cheek	standard	RMC 12.2K	4132/826.4	24.50	23.47	0.148	0.033	1.27	0.188	/
Right Cheek	standard	RMC 12.2K	4233/846.6	24.50	23.49	0.192	0.125	1.26	0.242	/
Body-worn SAR (Distance 15mm)										
Back Side	standard	RMC 12.2K	4183/836.6	24.50	23.59	0.174	0.070	1.23	0.215	/
Front Side	standard	RMC 12.2K	4183/836.6	24.50	23.59	0.177	0.040	1.23	0.218	31
Front Side	standard	RMC 12.2K	4132/826.4	24.50	23.47	0.168	-0.060	1.27	0.213	/
Front Side	standard	RMC 12.2K	4233/846.6	24.50	23.49	0.145	0.011	1.26	0.183	/
Hotspot SAR(Distance 10mm)										
Back Side	standard	RMC 12.2K	4183/836.6	24.50	23.59	0.201	0.030	1.23	0.248	32
Front Side	standard	RMC 12.2K	4183/836.6	24.50	23.59	0.187	0.120	1.23	0.231	/
Left Edge	standard	RMC 12.2K	4183/836.6	24.50	23.59	0.097	-0.010	1.23	0.119	/
Right Edge	standard	RMC 12.2K	4183/836.6	24.50	23.59	0.165	0.060	1.23	0.203	/
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	standard	RMC 12.2K	4183/836.6	24.50	23.59	0.085	0.080	1.23	0.105	/
Back Side	standard	RMC 12.2K	4132/826.4	24.50	23.47	0.183	-0.099	1.27	0.232	/
Back Side	standard	RMC 12.2K	4233/846.6	24.50	23.49	0.189	0.036	1.26	0.238	/

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 ≤ ¼ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.

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Table 13: LTE Band 2 (20MHz, Main-antenna)

Test Position	Cover Type	RB allocation	RB offset	Channel/ Frequency (MHz)	Tune-up (dBm)	Measured power (dBm)	Limit of SAR 1.6 W/kg (mW/g)				Plot No.
							Measured SAR1g	Power Drift (dB)	Scaling Factor	Report SAR1g	
Head SAR (QPSK)											
Left Cheek	standard	1	50	18900/1880	24.00	23.54	0.128	-0.087	1.11	0.142	/
Left Tilt	standard	1	50	18900/1880	24.00	23.54	0.069	0.050	1.11	0.076	/
Right Cheek	standard	1	50	18900/1880	24.00	23.54	0.085	0.033	1.11	0.094	/
Right Tilt	standard	1	50	18900/1880	24.00	23.54	0.087	0.034	1.11	0.096	/
Left Cheek	standard	50%	0	18900/1880	23.00	22.50	0.103	0.072	1.12	0.116	/
Left Tilt	standard	50%	0	18900/1880	23.00	22.50	0.053	0.049	1.12	0.059	/
Right Cheek	standard	50%	0	18900/1880	23.00	22.50	0.065	0.170	1.12	0.072	/
Right Tilt	standard	50%	0	18900/1880	23.00	22.50	0.065	0.049	1.12	0.073	/
Left Cheek	standard	1	99	18700/1860	24.00	23.45	0.115	0.124	1.14	0.131	/
Left Cheek	standard	1	0	19100/1900	24.00	23.49	0.136	0.028	1.12	0.153	33
Body-worn SAR (QPSK, Distance 15mm)											
Back Side	standard	1	50	18900/1880	24.00	23.54	0.175	-0.030	1.11	0.195	34
Front Side	standard	1	50	18900/1880	24.00	23.54	0.135	0.150	1.11	0.150	/
Back Side	standard	50%	0	18900/1880	23.00	22.50	0.144	0.010	1.12	0.162	/
Front Side	standard	50%	0	18900/1880	23.00	22.50	0.101	0.130	1.12	0.113	/
Back Side	standard	1	99	18700/1860	24.00	23.45	0.139	0.000	1.14	0.158	/
Back Side	standard	1	0	19100/1900	24.00	23.49	0.162	0.041	1.12	0.182	/
Hotspot SAR(QPSK, Distance 10mm)											
Back Side	standard	1	50	18900/1880	24.00	23.54	0.227	0.022	1.11	0.252	/
Front Side	standard	1	50	18900/1880	24.00	23.54	0.281	0.170	1.11	0.312	/
Left Edge	standard	1	50	18900/1880	24.00	23.54	0.125	-0.010	1.11	0.139	/
Right Edge	standard	1	50	18900/1880	24.00	23.54	0.037	0.110	1.11	0.041	/
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	1	50	18900/1880	24.00	23.54	0.429	-0.023	1.11	0.477	35
Back Side	standard	50%	0	18900/1880	23.00	22.50	0.176	0.090	1.12	0.197	/
Front Side	standard	50%	0	18900/1880	23.00	22.50	0.217	0.150	1.12	0.243	/
Left Edge	standard	50%	0	18900/1880	23.00	22.50	0.156	0.130	1.12	0.175	/
Right Edge	standard	50%	0	18900/1880	23.00	22.50	0.029	0.016	1.12	0.032	/
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%	0	18900/1880	23.00	22.50	0.325	-0.026	1.12	0.365	/
Bottom Edge	standard	1	99	18700/1860	24.00	23.45	0.397	-0.030	1.14	0.451	/
Bottom Edge	standard	1	0	19100/1900	24.00	23.49	0.411	0.028	1.12	0.462	/

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 ⩾ 50% limit(1g).

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Table 14: LTE Band 4 (20MHz, Main-antenna)

Test Position	Cover Type	RB allocation	RB offset	Channel/ Frequency (MHz)	Tune-up (dBm)	Measured power (dBm)	Limit of SAR 1.6 W/kg (mW/g)				Plot No.
							Measured SAR1g	Power Drift (dB)	Scaling Factor	Report SAR1g	
Head SAR (QPSK)											
Left Cheek	standard	1	50	20175/1732.5	24.00	23.63	0.050	0.036	1.09	0.054	36
Left Tilt	standard	1	50	20175/1732.5	24.00	23.63	0.042	0.121	1.09	0.046	/
Right Cheek	standard	1	50	20175/1732.5	24.00	23.63	0.038	0.096	1.09	0.041	/
Right Tilt	standard	1	50	20175/1732.5	24.00	23.63	0.027	0.024	1.09	0.030	/
Left Cheek	standard	50%	25	20050/1720	23.00	22.73	0.039	0.038	1.06	0.042	/
Left Tilt	standard	50%	25	20050/1720	23.00	22.73	0.031	0.020	1.06	0.033	/
Right Cheek	standard	50%	25	20050/1720	23.00	22.73	0.019	0.062	1.06	0.020	/
Right Tilt	standard	50%	25	20050/1720	23.00	22.73	0.024	0.110	1.06	0.026	/
Left Cheek	standard	1	0	20050/1720	24.00	23.61	0.040	0.062	1.09	0.044	/
Left Cheek	standard	1	0	20300/1745	24.00	23.59	0.042	-0.061	1.10	0.046	/
Body-worn SAR (QPSK, Distance 15mm)											
Back Side	standard	1	50	20175/1732.5	24.00	23.63	0.054	0.026	1.09	0.058	/
Front Side	standard	1	50	20175/1732.5	24.00	23.63	0.046	0.035	1.09	0.050	/
Back Side	standard	50%	25	20050/1720	23.00	22.73	0.041	0.024	1.06	0.043	/
Front Side	standard	50%	25	20050/1720	23.00	22.73	0.030	0.050	1.06	0.032	/
Back Side	standard	1	0	20050/1720	24.00	23.61	0.073	0.026	1.09	0.080	/
Back Side	standard	1	0	20300/1745	24.00	23.59	0.089	0.140	1.10	0.098	37
Hotspot SAR(QPSK, Distance 10mm)											
Back Side	standard	1	50	20175/1732.5	24.00	23.63	0.173	-0.010	1.09	0.188	38
Front Side	standard	1	50	20175/1732.5	24.00	23.63	0.090	-0.160	1.09	0.098	/
Left Edge	standard	1	50	20175/1732.5	24.00	23.63	0.064	-0.020	1.09	0.070	/
Right Edge	standard	1	50	20175/1732.5	24.00	23.63	0.038	0.140	1.09	0.042	/
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	1	50	20175/1732.5	24.00	23.63	0.094	0.028	1.09	0.103	/
Back Side	standard	50%	25	20050/1720	23.00	22.73	0.127	-0.120	1.06	0.135	/
Front Side	standard	50%	25	20050/1720	23.00	22.73	0.063	0.030	1.06	0.067	/
Left Edge	standard	50%	25	20050/1720	23.00	22.73	0.042	-0.010	1.06	0.045	/
Right Edge	standard	50%	25	20050/1720	23.00	22.73	0.029	0.028	1.06	0.031	/
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%	25	20050/1720	23.00	22.73	0.066	0.025	1.06	0.070	/
Back Side	standard	1	0	20050/1720	24.00	23.61	0.119	-0.070	1.09	0.130	/
Back Side	standard	1	0	20300/1745	24.00	23.59	0.134	-0.040	1.10	0.147	/

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 ⩾ 50% limit(1g).

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Table 15: LTE Band 5 (10MHz, Main-antenna)

Test Position	Cover Type	RB allocation	RB offset	Channel/ Frequency (MHz)	Tune-up (dBm)	Measured power (dBm)	Limit of SAR 1.6 W/kg (mW/g)				Plot No.
							Measured SAR1g	Power Drift (dB)	Scaling Factor	Report SAR1g	
Head SAR (QPSK)											
Left Cheek	standard	1	0	20450/829	24.00	23.31	0.219	0.080	1.17	0.257	39
Left Tilt	standard	1	0	20450/829	24.00	23.31	0.101	0.130	1.17	0.118	/
Right Cheek	standard	1	0	20450/829	24.00	23.31	0.216	-0.160	1.17	0.253	/
Right Tilt	standard	1	0	20450/829	24.00	23.31	0.103	0.120	1.17	0.121	/
Left Cheek	standard	50%	0	20450/829	23.50	22.87	0.180	0.024	1.16	0.208	/
Left Tilt	standard	50%	0	20450/829	23.50	22.87	0.085	0.140	1.16	0.098	/
Right Cheek	standard	50%	0	20450/829	23.50	22.87	0.183	0.150	1.16	0.212	/
Right Tilt	standard	50%	0	20450/829	23.50	22.87	0.087	0.070	1.16	0.101	/
Left Cheek	standard	1	25	20525/836.5	24.00	23.02	0.204	0.032	1.25	0.256	/
Left Cheek	standard	1	25	20600/844	24.00	22.94	0.187	-0.010	1.28	0.239	/
Left Cheek	SIM2	1	0	20450/829	24.00	23.31	0.202	0.040	1.17	0.237	/
Left Cheek	Battery2	1	0	20450/829	24.00	23.31	0.185	0.152	1.17	0.217	/
Body-worn SAR (QPSK, Distance 15mm)											
Back Side	standard	1	0	20450/829	24.00	23.31	0.249	0.040	1.17	0.292	40
Front Side	standard	1	0	20450/829	24.00	23.31	0.216	0.050	1.17	0.253	/
Back Side	standard	50%	0	20450/829	23.50	22.87	0.203	0.090	1.16	0.235	/
Front Side	standard	50%	0	20450/829	23.50	22.87	0.174	0.010	1.16	0.201	/
Back Side	standard	1	25	20525/836.5	24.00	23.02	0.196	0.010	1.25	0.246	/
Back Side	standard	1	25	20600/844	24.00	22.94	0.207	0.028	1.28	0.264	/
Back Side	SIM2	1	0	20450/829	24.00	23.31	0.215	0.023	1.17	0.252	/
Back Side	Battery2	1	0	20450/829	24.00	23.31	0.194	-0.099	1.17	0.227	/
Hotspot SAR(QPSK, Distance 10mm)											
Back Side	standard	1	0	20450/829	24.00	23.31	0.225	0.080	1.17	0.264	41
Front Side	standard	1	0	20450/829	24.00	23.31	0.180	0.070	1.17	0.211	/
Left Edge	standard	1	0	20450/829	24.00	23.31	0.127	0.010	1.17	0.149	/
Right Edge	standard	1	0	20450/829	24.00	23.31	0.170	0.110	1.17	0.199	/
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	1	0	20450/829	24.00	23.31	0.063	0.100	1.17	0.074	/
Back Side	standard	50%	0	20450/829	23.50	22.87	0.186	0.060	1.16	0.215	/
Front Side	standard	50%	0	20450/829	23.50	22.87	0.150	0.060	1.16	0.173	/
Left Edge	standard	50%	0	20450/829	23.50	22.87	0.103	-0.010	1.16	0.119	/
Right Edge	standard	50%	0	20450/829	23.50	22.87	0.138	0.021	1.16	0.160	/
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%	0	20450/829	23.50	22.87	0.052	0.027	1.16	0.060	/
Back Side	standard	1	25	20525/836.5	24.00	23.02	0.208	0.099	1.25	0.261	/

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Back Side	standard	1	25	20600/844	24.00	22.94	0.195	0.064	1.28	0.249	/

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 ⩾ 50% limit(1g).

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Table 16: LTE Band 7 (20MHz, Main-antenna)

Test Position	Cover Type	RB allocation	RB offset	Channel/ Frequency (MHz)	Tune-up (dBm)	Measured power (dBm)	Limit of SAR 1.6 W/kg (mW/g)				Plot No.
							Measured SAR1g	Power Drift (dB)	Scaling Factor	Report SAR1g	
Head SAR (QPSK)											
Left Cheek	standard	1	50	20850/2510	24.00	23.25	0.075	0.031	1.19	0.089	42
Left Tilt	standard	1	50	20850/2510	24.00	23.25	0.048	0.127	1.19	0.056	/
Right Cheek	standard	1	50	20850/2510	24.00	23.25	0.041	0.123	1.19	0.049	/
Right Tilt	standard	1	50	20850/2510	24.00	23.25	0.029	0.197	1.19	0.035	/
Left Cheek	standard	50%	0	20850/2510	23.00	22.25	0.059	0.076	1.19	0.070	/
Left Tilt	standard	50%	0	20850/2510	23.00	22.25	0.034	0.164	1.19	0.040	/
Right Cheek	standard	50%	0	20850/2510	23.00	22.25	0.038	0.012	1.19	0.046	/
Right Tilt	standard	50%	0	20850/2510	23.00	22.25	0.021	0.031	1.19	0.025	/
Left Cheek	standard	1	99	21100/2535	24.00	23.15	0.064	0.038	1.22	0.078	/
Left Cheek	standard	1	50	21350/2560	24.00	23.05	0.069	-0.022	1.24	0.086	/
Body-worn SAR (QPSK, Distance 15mm)											
Back Side	standard	1	50	20850/2510	24.00	23.25	0.227	-0.066	1.19	0.270	43
Front Side	standard	1	50	20850/2510	24.00	23.25	0.127	0.068	1.19	0.151	/
Back Side	standard	50%	0	20850/2510	23.00	22.25	0.179	0.170	1.19	0.213	/
Front Side	standard	50%	0	20850/2510	23.00	22.25	0.105	-0.090	1.19	0.125	/
Back Side	standard	1	99	21100/2535	24.00	23.15	0.219	0.016	1.22	0.266	/
Back Side	standard	1	50	21350/2560	24.00	23.05	0.204	-0.083	1.24	0.254	/
Hotspot SAR(QPSK, Distance 10mm)											
Back Side	standard	1	50	20850/2510	24.00	23.25	0.435	-0.030	1.19	0.517	/
Front Side	standard	1	50	20850/2510	24.00	23.25	0.234	0.080	1.19	0.278	/
Left Edge	standard	1	50	20850/2510	24.00	23.25	0.119	-0.160	1.19	0.141	/
Right Edge	standard	1	50	20850/2510	24.00	23.25	0.076	-0.033	1.19	0.090	/
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	1	50	20850/2510	24.00	23.25	0.612	-0.060	1.19	0.727	/
Back Side	standard	50%	0	20850/2510	23.00	22.25	0.340	-0.037	1.19	0.404	/
Front Side	standard	50%	0	20850/2510	23.00	22.25	0.189	0.074	1.19	0.225	/
Left Edge	standard	50%	0	20850/2510	23.00	22.25	0.091	0.030	1.19	0.109	/
Right Edge	standard	50%	0	20850/2510	23.00	22.25	0.057	0.070	1.19	0.068	/
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%	0	20850/2510	23.00	22.25	0.483	-0.070	1.19	0.574	/
Bottom Edge	standard	1	99	21100/2535	24.00	23.15	0.680	-0.110	1.22	0.827	/
Bottom Edge	standard	1	50	21350/2560	24.00	23.05	0.693	-0.130	1.24	0.862	44
Bottom Edge	Repeated	1	50	21350/2560	24.00	23.05	0.682	-0.050	1.24	0.849	/

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

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⩾ 50% limit(1g).

Measurement Variability				
Test Position	**Channel/ Frequency(MHz)**	**MAX Measured SAR_{1g} (W/kg)**	**1st Repeated SAR_{1g} (W/kg)**	**Ratio**
Bottom Edge	21350/2560	0.693	0.682	1.02
Note: 1) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit). 2) A third repeated measurement was performed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.				

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Table 17: LTE Band 12 (10MHz, Main-antenna)

Test Position	Cover Type	RB allocation	RB offset	Channel/ Frequency (MHz)	Tune-up (dBm)	Measured power (dBm)	Limit of SAR 1.6 W/kg (mW/g)				Plot No.
							Measured SAR1g	Power Drift (dB)	Scaling Factor	Report SAR1g	
Head SAR (QPSK)											
Left Cheek	standard	1	0	23095/707.5	24.00	23.26	0.113	0.010	1.19	0.134	45
Left Tilt	standard	1	0	23095/707.5	24.00	23.26	0.043	0.020	1.19	0.051	/
Right Cheek	standard	1	0	23095/707.5	24.00	23.26	0.109	0.037	1.19	0.129	/
Right Tilt	standard	1	0	23095/707.5	24.00	23.26	0.041	0.021	1.19	0.049	/
Left Cheek	standard	50%	13	23060/704	23.50	22.84	0.088	0.050	1.16	0.102	/
Left Tilt	standard	50%	13	23060/704	23.50	22.84	0.041	0.090	1.16	0.048	/
Right Cheek	standard	50%	13	23060/704	23.50	22.84	0.087	0.070	1.16	0.101	/
Right Tilt	standard	50%	13	23060/704	23.50	22.84	0.034	0.032	1.16	0.039	/
Left Cheek	standard	1	25	23060/704	24.00	23.23	0.106	0.035	1.19	0.127	/
Left Cheek	standard	1	25	23130/711	24.00	23.18	0.087	0.062	1.21	0.105	/
Body-worn SAR (QPSK, Distance 15mm)											
Back Side	standard	1	0	23095/707.5	24.00	23.26	0.100	0.070	1.19	0.118	/
Front Side	standard	1	0	23095/707.5	24.00	23.26	0.119	-0.020	1.19	0.141	46
Back Side	standard	50%	13	23060/704	23.50	22.84	0.082	0.120	1.16	0.095	/
Front Side	standard	50%	13	23060/704	23.50	22.84	0.099	0.030	1.16	0.115	/
Front Side	standard	1	25	23060/704	24.00	23.23	0.094	0.180	1.19	0.112	/
Front Side	standard	1	25	23130/711	24.00	23.18	0.116	0.024	1.21	0.140	/
Hotspot SAR(QPSK, Distance 10mm)											
Back Side	standard	1	0	23095/707.5	24.00	23.26	0.152	0.060	1.19	0.180	47
Front Side	standard	1	0	23095/707.5	24.00	23.26	0.111	0.030	1.19	0.132	/
Left Edge	standard	1	0	23095/707.5	24.00	23.26	0.136	0.040	1.19	0.161	/
Right Edge	standard	1	0	23095/707.5	24.00	23.26	0.141	0.080	1.19	0.167	/
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	1	0	23095/707.5	24.00	23.26	0.033	0.032	1.19	0.039	/
Back Side	standard	50%	13	23060/704	23.50	22.84	0.123	0.100	1.16	0.143	/
Front Side	standard	50%	13	23060/704	23.50	22.84	0.090	0.071	1.16	0.105	/
Left Edge	standard	50%	13	23060/704	23.50	22.84	0.110	0.010	1.16	0.128	/
Right Edge	standard	50%	13	23060/704	23.50	22.84	0.120	-0.090	1.16	0.140	/
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%	13	23060/704	23.50	22.84	0.028	0.025	1.16	0.032	/
Back Side	standard	1	25	23060/704	24.00	23.23	0.117	0.000	1.19	0.140	/
Back Side	standard	1	25	23130/711	24.00	23.18	0.135	-0.099	1.21	0.163	/

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 ⩾ 50% limit(1g).

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Table 18: LTE Band 13 (10MHz, Main-antenna)

Test Position	Cover Type	RB allocation	RB offset	Channel/ Frequency (MHz)	Tune-up (dBm)	Measured power (dBm)	Limit of SAR 1.6 W/kg (mW/g)				Plot No.
							Measured SAR1g	Power Drift (dB)	Scaling Factor	Report SAR1g	
Head SAR (QPSK)											
Left Cheek	standard	1	25	23230/782	24.00	23.16	0.162	-0.030	1.21	0.197	/
Left Tilt	standard	1	25	23230/782	24.00	23.16	0.073	0.027	1.21	0.088	/
Right Cheek	standard	1	25	23230/782	24.00	23.16	0.175	0.170	1.21	0.212	48
Right Tilt	standard	1	25	23230/782	24.00	23.16	0.075	-0.130	1.21	0.091	/
Left Cheek	standard	50%	0	23230/782	23.50	22.69	0.125	0.140	1.21	0.151	/
Left Tilt	standard	50%	0	23230/782	23.50	22.69	0.057	0.029	1.21	0.069	/
Right Cheek	standard	50%	0	23230/782	23.50	22.69	0.136	0.031	1.21	0.164	/
Right Tilt	standard	50%	0	23230/782	23.50	22.69	0.060	0.130	1.21	0.072	/
Body-worn SAR (QPSK, Distance 15mm)											
Back Side	standard	1	25	23230/782	24.00	23.16	0.218	0.060	1.21	0.265	49
Front Side	standard	1	25	23230/782	24.00	23.16	0.183	0.100	1.21	0.222	/
Back Side	standard	50%	0	23230/782	23.50	22.69	0.176	0.050	1.21	0.212	/
Front Side	standard	50%	0	23230/782	23.50	22.69	0.159	-0.030	1.21	0.192	/
Hotspot SAR(QPSK, Distance 10mm)											
Back Side	standard	1	25	23230/782	24.00	23.16	0.227	0.050	1.21	0.275	50
Front Side	standard	1	25	23230/782	24.00	23.16	0.196	0.030	1.21	0.238	/
Left Edge	standard	1	25	23230/782	24.00	23.16	0.036	0.160	1.21	0.044	/
Right Edge	standard	1	25	23230/782	24.00	23.16	0.137	0.100	1.21	0.166	/
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	1	25	23230/782	24.00	23.16	0.057	0.180	1.21	0.069	/
Back Side	standard	50%	0	23230/782	23.50	22.69	0.185	0.030	1.21	0.223	/
Front Side	standard	50%	0	23230/782	23.50	22.69	0.105	0.100	1.21	0.127	/
Left Edge	standard	50%	0	23230/782	23.50	22.69	0.032	0.170	1.21	0.038	/
Right Edge	standard	50%	0	23230/782	23.50	22.69	0.119	0.070	1.21	0.143	/
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%	0	23230/782	23.50	22.69	0.042	0.023	1.21	0.050	/

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 ⩾ 50% limit(1g).

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Table 19: LTE Band 66 (20MHz, Main-antenna)

Test Position	Cover Type	RB allocation	RB offset	Channel/ Frequency (MHz)	Tune-up (dBm)	Measured power (dBm)	Limit of SAR 1.6 W/kg (mW/g)				Plot No.
							Measured SAR1g	Power Drift (dB)	Scaling Factor	Report SAR1g	
Head SAR (QPSK)											
Left Cheek	standard	1	50	132072/1720	24.00	23.02	0.062	0.022	1.25	0.078	/
Left Tilt	standard	1	50	132072/1720	24.00	23.02	0.064	0.035	1.25	0.080	/
Right Cheek	standard	1	50	132072/1720	24.00	23.02	0.042	0.065	1.25	0.053	/
Right Tilt	standard	1	50	132072/1720	24.00	23.02	0.054	0.040	1.25	0.068	/
Left Cheek	standard	50%	0	132072/1720	23.00	21.93	0.037	0.046	1.28	0.048	/
	standard	50%	50	132322/1745	23.00	21.96	0.083	0.048	1.27	0.106	51
	standard	50%	0	132572/1770	23.00	21.89	0.047	0.052	1.29	0.061	/
Left Tilt	standard	50%	50	132322/1745	23.00	21.96	0.057	0.057	1.27	0.073	/
Right Cheek	standard	50%	50	132322/1745	23.00	21.96	0.037	0.185	1.27	0.047	/
Right Tilt	standard	50%	50	132322/1745	23.00	21.96	0.047	0.055	1.27	0.060	/
Body-worn SAR (QPSK, Distance 15mm)											
Back Side	standard	1	50	132072/1720	24.00	23.02	0.128	0.060	1.25	0.160	/
	standard	1	50	132322/1745	24.00	23.01	0.128	0.060	1.26	0.161	/
	standard	1	50	132572/1770	24.00	22.91	0.140	0.120	1.29	0.180	52
Front Side	standard	1	50	132072/1720	24.00	23.02	0.087	0.140	1.25	0.110	/
Back Side	standard	50%	50	132322/1745	23.00	21.96	0.118	-0.050	1.27	0.150	/
Front Side	standard	50%	50	132322/1745	23.00	21.96	0.090	0.140	1.27	0.115	/
Hotspot SAR(QPSK, Distance 10mm)											
Back Side	standard	1	50	132072/1720	24.00	23.02	0.142	-0.180	1.25	0.178	53
	standard	1	50	132322/1745	24.00	23.01	0.128	0.060	1.26	0.161	/
	standard	1	50	132572/1770	24.00	22.91	0.140	0.120	1.29	0.180	/
Front Side	standard	1	50	132072/1720	24.00	23.02	0.087	0.140	1.25	0.110	/
Left Edge	standard	1	50	132072/1720	24.00	23.02	0.058	-0.130	1.25	0.072	/
Right Edge	standard	1	50	132072/1720	24.00	23.02	0.042	0.020	1.25	0.053	/
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	1	50	132072/1720	24.00	23.02	0.099	-0.025	1.25	0.124	/
Back Side	standard	50%	50	132322/1745	23.00	21.96	0.118	-0.050	1.27	0.150	/
Front Side	standard	50%	50	132322/1745	23.00	21.96	0.090	0.140	1.27	0.115	/
Left Edge	standard	50%	50	132322/1745	23.00	21.96	0.064	-0.030	1.27	0.081	/
Right Edge	standard	50%	50	132322/1745	23.00	21.96	0.030	0.026	1.27	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%	50	132322/1745	23.00	21.96	0.094	-0.080	1.27	0.119	/

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 ⩾ 50% limit(1g).

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Table 20: GSM 850 (Second-antenna)

Test Position	Cover Type	Power Level	Distance (mm)	Time slot	Channel/ Frequency (MHz)	Tune-up (dBm)	Measured power (dBm)	Limit of SAR 1.6 W/kg (mW/g)				Plot No.
								Measured SAR1g	Power Drift (dB)	Scaling Factor	Report SAR1g	
Head SAR												
Left Cheek	standard	Full	0	GSM	190/836.6	34.00	33.00	0.401	0.020	1.26	0.505	/
Left Tilt	standard	Full	0	GSM	190/836.6	34.00	33.00	0.434	-0.010	1.26	0.546	/
Right Cheek	standard	Full	0	GSM	190/836.6	34.00	33.00	0.690	0.070	1.26	0.869	/
Right Tilt	standard	Full	0	GSM	190/836.6	34.00	33.00	0.718	0.050	1.26	0.904	/
Right Tilt	standard	Full	0	GSM	128/824.2	34.00	33.14	0.691	0.000	1.22	0.842	/
Right Tilt	standard	Full	0	GSM	251/848.8	34.00	32.80	0.777	0.010	1.32	1.024	54
Body-worn SAR												
Back Side	standard	Full	15	GSM	190/836.6	34.00	33.00	0.063	0.170	1.26	0.079	/
Front Side	standard	Full	15	GSM	190/836.6	34.00	33.00	0.074	0.060	1.26	0.093	55
Front Side	standard	Full	15	GSM	128/824.2	34.00	33.14	0.058	0.070	1.22	0.070	/
Front Side	standard	Full	15	GSM	251/848.8	34.00	32.80	0.063	-0.010	1.32	0.083	/
Hotspot SAR												
Back Side	standard	Full	10	3Txslots	190/836.6	32.00	30.77	0.158	0.021	1.33	0.210	/
Front Side	standard	Full	10	3Txslots	190/836.6	32.00	30.77	0.113	-0.113	1.33	0.150	/
Left Edge	standard	Full	10	3Txslots	190/836.6	32.00	30.77	0.091	0.070	1.33	0.120	/
Right 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
Top Edge	standard	Full	10	3Txslots	190/836.6	32.00	30.77	0.196	0.036	1.33	0.260	/
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
Back Side	standard	Full	10	3Txslots	128/824.2	32.00	30.88	0.221	0.029	1.29	0.286	/
Back Side	standard	Full	10	3Txslots	251/848.8	32.00	30.60	0.360	0.040	1.38	0.497	56

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.

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Table 21: GSM 1900 (Second-antenna)

Test Position	Cover Type	Power Level	Distance (mm)	Time slot	Channel/ Frequency (MHz)	Tune-up (dBm)	Measured power (dBm)	Limit of SAR 1.6 W/kg (mW/g)				Plot No.
								Measured SAR1g	Power Drift (dB)	Scaling Factor	Report SAR1g	
Head SAR												
Left Cheek	standard	Reduce	0	GSM	661/1880	24.00	22.86	0.201	0.050	1.30	0.261	/
Left Tilt	standard	Reduce	0	GSM	661/1880	24.00	22.86	0.232	0.050	1.30	0.302	/
Right Cheek	standard	Reduce	0	GSM	661/1880	24.00	22.86	0.393	0.024	1.30	0.511	/
Right Tilt	standard	Reduce	0	GSM	661/1880	24.00	22.86	0.293	0.130	1.30	0.381	/
Right Cheek	standard	Reduce	0	GSM	512/1850.2	24.00	23.15	0.448	0.070	1.22	0.545	57
Right Cheek	standard	Reduce	0	GSM	810/1909.8	24.00	23.00	0.357	0.070	1.26	0.449	/
Body-worn SAR												
Back Side	standard	Reduce	15	GSM	661/1880	24.00	22.86	0.089	0.070	1.30	0.116	58
Front Side	standard	Reduce	15	GSM	661/1880	24.00	22.86	0.074	0.040	1.30	0.096	/
Back Side	standard	Reduce	15	GSM	512/1850.2	24.00	23.15	0.082	0.032	1.22	0.100	/
Back Side	standard	Reduce	15	GSM	810/1909.8	24.00	23.00	0.077	0.021	1.26	0.097	/
Hotspot SAR												
Back Side	standard	Reduce	10	2Txslots	661/1880	22.00	20.85	0.182	-0.023	1.30	0.237	/
Front Side	standard	Full	10	3Txslots	661/1880	30.00	28.96	0.371	0.060	1.27	0.471	/
Left Edge	standard	Reduce	10	2Txslots	661/1880	22.00	20.85	0.085	0.027	1.30	0.110	/
Right 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
Top Edge	standard	Reduce	10	2Txslots	661/1880	22.00	20.85	0.176	0.029	1.30	0.229	/
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
Back Side	standard	Full	15	3Txslots	661/1880	30.00	28.96	0.398	-0.060	1.27	0.506	/
Left Edge	standard	Full	11	3Txslots	661/1880	30.00	28.96	0.352	0.040	1.27	0.447	/
Top Edge	standard	Full	14	3Txslots	661/1880	30.00	28.96	0.437	-0.130	1.27	0.555	/
Top Edge	standard	Full	14	3Txslots	512/1850.2	30.00	28.86	0.391	0.100	1.30	0.508	/
Top Edge	standard	Full	14	3Txslots	810/1909.8	30.00	29.15	0.560	0.140	1.22	0.681	59

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.

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Table 22: UMTS Band II (Second-antenna)

Test Position	Cover Type	Power Level	Distance (mm)	Channel Type	Channel/ Frequency (MHz)	Tune-up (dBm)	Measured power (dBm)	Limit of SAR 1.6 W/kg (mW/g)				Plot No.
								Measured SAR1g	Power Drift (dB)	Scaling Factor	Report SAR1g	
Head SAR												
Left Cheek	standard	Reduce	0	RMC 12.2K	9400/1880	18.50	17.71	0.197	0.030	1.20	0.236	/
Left Tilt	standard	Reduce	0	RMC 12.2K	9400/1880	18.50	17.71	0.222	0.020	1.20	0.266	/
Right Cheek	standard	Reduce	0	RMC 12.2K	9400/1880	18.50	17.71	0.373	0.150	1.20	0.447	/
Right Tilt	standard	Reduce	0	RMC 12.2K	9400/1880	18.50	17.71	0.393	0.110	1.20	0.471	/
Right Tilt	standard	Reduce	0	RMC 12.2K	9262/1852.4	18.50	17.54	0.375	0.070	1.25	0.468	/
Right Tilt	standard	Reduce	0	RMC 12.2K	9538/1907.6	18.50	17.49	0.488	0.060	1.26	0.616	60
Body-worn SAR												
Back Side	standard	Reduce	10	RMC 12.2K	9400/1880	18.50	17.71	0.168	0.080	1.20	0.202	/
Front Side	standard	Full	10	RMC 12.2K	9400/1880	24.50	23.52	0.743	0.021	1.25	0.931	/
Front Side	standard	Full	10	RMC 12.2K	9262/1852.4	24.50	23.62	0.665	0.120	1.22	0.814	/
Front Side	standard	Full	10	RMC 12.2K	9538/1907.6	24.50	23.66	0.783	0.110	1.21	0.950	/
Front Side	SIM2	Full	10	RMC 12.2K	9538/1907.6	24.50	23.66	0.742	-0.099	1.21	0.900	/
Front Side	Battery2	Full	10	RMC 12.2K	9538/1907.6	24.50	23.66	0.757	0.030	1.21	0.919	/
Hotspot SAR												
Back Side	standard	Reduce	10	RMC 12.2K	9400/1880	18.50	17.71	0.168	0.080	1.20	0.202	/
Front Side	standard	Full	10	RMC 12.2K	9400/1880	24.50	23.52	0.743	0.021	1.25	0.931	/
Left Edge	standard	Reduce	10	RMC 12.2K	9400/1880	18.50	17.71	0.055	0.036	1.20	0.066	/
Right 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
Top Edge	standard	Reduce	10	RMC 12.2K	9400/1880	18.50	17.71	0.161	0.020	1.20	0.193	/
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
Back Side	standard	Full	15	RMC 12.2K	9400/1880	24.50	23.52	0.272	0.040	1.25	0.341	/
Left Edge	standard	Full	11	RMC 12.2K	9400/1880	24.50	23.52	0.082	0.042	1.25	0.103	/
Top Edge	standard	Full	14	RMC 12.2K	9400/1880	24.50	23.52	0.370	0.041	1.25	0.464	/
Front Side	standard	Full	10	RMC 12.2K	9262/1852.4	24.50	23.62	0.665	0.120	1.22	0.814	/
Front Side	standard	Full	10	RMC 12.2K	9538/1907.6	24.50	23.66	0.783	0.110	1.21	0.950	61
Front Side	SIM2	Full	10	RMC 12.2K	9538/1907.6	24.50	23.66	0.742	-0.099	1.21	0.900	/
Front Side	Battery2	Full	10	RMC 12.2K	9538/1907.6	24.50	23.66	0.757	0.030	1.21	0.919	/
Front Side	Repeated	Full	10	RMC 12.2K	9538/1907.6	24.50	23.66	0.769	0.013	1.21	0.933	/

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.

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Measurement Variability				
Test Position	**Channel/ Frequency(MHz)**	**MAX Measured SAR_{1g} (W/kg)**	**1st Repeated SAR_{1g} (W/kg)**	**Ratio**
Front Side	9538/1907.6	0.783	0.769	1.02
Note: 1) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit). 2) A third repeated measurement was performed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.				

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Table 23: UMTS Band IV (Second-antenna)

Test Position	Cover Type	Power Level	Distance (mm)	Channel Type	Channel/ Frequency (MHz)	Tune-up (dBm)	Measured power (dBm)	Limit of SAR 1.6 W/kg (mW/g)				Plot No.
								Measured SAR1g	Power Drift (dB)	Scaling Factor	Report SAR1g	
Head SAR												
Left Cheek	standard	Reduce	0	RMC 12.2K	1413/1732.6	18.50	17.38	0.261	-0.070	1.29	0.338	/
Left Tilt	standard	Reduce	0	RMC 12.2K	1413/1732.6	18.50	17.38	0.349	-0.010	1.29	0.452	/
Right Cheek	standard	Reduce	0	RMC 12.2K	1413/1732.6	18.50	17.38	0.412	0.070	1.29	0.533	/
Right Tilt	standard	Reduce	0	RMC 12.2K	1413/1732.6	18.50	17.38	0.528	0.060	1.29	0.683	62
Right Tilt	standard	Reduce	0	RMC 12.2K	1312/1712.4	18.50	17.43	0.351	0.140	1.28	0.449	/
Right Tilt	standard	Reduce	0	RMC 12.2K	1513/1752.6	18.50	17.52	0.399	0.100	1.25	0.500	/
Body-worn SAR												
Back Side	standard	Reduce	10	RMC 12.2K	1413/1732.6	18.50	17.38	0.126	0.080	1.29	0.163	/
Front Side	standard	Full	10	RMC 12.2K	1413/1732.6	24.50	23.70	0.536	0.090	1.20	0.644	/
Front Side	standard	Full	10	RMC 12.2K	1312/1712.4	24.50	23.61	0.496	0.070	1.23	0.609	/
Front Side	standard	Full	10	RMC 12.2K	1513/1752.6	24.50	23.66	0.474	0.090	1.21	0.575	/
Hotspot SAR												
Back Side	standard	Reduce	10	RMC 12.2K	1413/1732.6	18.50	17.38	0.126	0.080	1.29	0.163	/
Front Side	standard	Full	10	RMC 12.2K	1413/1732.6	24.50	23.70	0.536	0.090	1.20	0.644	63
Left Edge	standard	Reduce	10	RMC 12.2K	1413/1732.6	18.50	17.38	0.092	-0.024	1.29	0.119	/
Right 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
Top Edge	standard	Reduce	10	RMC 12.2K	1413/1732.6	18.50	17.38	0.166	-0.160	1.29	0.215	/
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
Back Side	standard	Full	15	RMC 12.2K	1413/1732.6	24.50	23.70	0.371	-0.040	1.20	0.446	/
Left Edge	standard	Full	11	RMC 12.2K	1413/1732.6	24.50	23.70	0.423	0.130	1.20	0.509	/
Top Edge	standard	Full	14	RMC 12.2K	1413/1732.6	24.50	23.70	0.410	-0.070	1.20	0.493	/
Front Side	standard	Full	10	RMC 12.2K	1312/1712.4	24.50	23.61	0.496	0.070	1.23	0.609	/
Front Side	standard	Full	10	RMC 12.2K	1513/1752.6	24.50	23.66	0.474	0.090	1.21	0.575	/

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.

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Table 24: UMTS Band V (Second-antenna)

Test Position	Cover Type	Power Level	Distance (mm)	Channel Type	Channel/ Frequency (MHz)	Tune-up (dBm)	Measured power (dBm)	Limit of SAR 1.6 W/kg (mW/g)				Plot No.
								Measured SAR1g	Power Drift (dB)	Scaling Factor	Report SAR1g	
Head SAR												
Left Cheek	standard	Full	0	RMC 12.2K	4183/836.6	24.50	23.43	0.339	-0.020	1.28	0.434	/
Left Tilt	standard	Full	0	RMC 12.2K	4183/836.6	24.50	23.43	0.259	0.100	1.28	0.331	/
Right Cheek	standard	Full	0	RMC 12.2K	4183/836.6	24.50	23.43	0.459	-0.066	1.28	0.587	/
Right Tilt	standard	Full	0	RMC 12.2K	4183/836.6	24.50	23.43	0.483	0.010	1.28	0.618	/
Right Tilt	standard	Full	0	RMC 12.2K	4132/826.4	24.50	23.32	0.418	0.040	1.31	0.548	/
Right Tilt	standard	Full	0	RMC 12.2K	4233/846.6	24.50	23.34	0.530	-0.010	1.31	0.692	64
Body-worn SAR												
Back Side	standard	Full	10	RMC 12.2K	4183/836.6	24.50	23.43	0.092	0.090	1.28	0.117	/
Front Side	standard	Full	10	RMC 12.2K	4183/836.6	24.50	23.43	0.084	0.020	1.28	0.108	/
Back Side	standard	Full	10	RMC 12.2K	4132/826.4	24.50	23.32	0.089	0.030	1.31	0.116	/
Back Side	standard	Full	10	RMC 12.2K	4233/846.6	24.50	23.34	0.111	0.170	1.31	0.145	/
Hotspot SAR												
Back Side	standard	Full	10	RMC 12.2K	4183/836.6	24.50	23.43	0.092	0.090	1.28	0.117	/
Front Side	standard	Full	10	RMC 12.2K	4183/836.6	24.50	23.43	0.084	0.020	1.28	0.108	/
Left Edge	standard	Full	10	RMC 12.2K	4183/836.6	24.50	23.43	0.049	0.033	1.28	0.063	/
Right 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
Top Edge	standard	Full	10	RMC 12.2K	4183/836.6	24.50	23.43	0.065	0.027	1.28	0.083	/
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
Back Side	standard	Full	10	RMC 12.2K	4132/826.4	24.50	23.32	0.089	0.030	1.31	0.116	/
Back Side	standard	Full	10	RMC 12.2K	4233/846.6	24.50	23.34	0.111	0.170	1.31	0.145	65

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.

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Table 25: LTE Band 2 (20MHz, Second-antenna)

Test Position	Cover Type	Power Level	Distance (mm)	RB allocation	RB offset	Channel/ Frequency (MHz)	Tune-up (dBm)	Measured power (dBm)	Limit of SAR 1.6 W/kg (mW/g)				Plot No.
									Measured SAR1g	Power Drift (dB)	Scaling Factor	Report SAR1g	
Head SAR (QPSK)													
Left Cheek	standard	Reduce	0	1	0	18700/1860	17.50	16.81	0.215	-0.010	1.17	0.252	/
Left Tilt	standard	Reduce	0	1	0	18700/1860	17.50	16.81	0.239	0.020	1.17	0.280	/
Right Cheek	standard	Reduce	0	1	0	18700/1860	17.50	16.81	0.447	0.130	1.17	0.524	66
Right Tilt	standard	Reduce	0	1	0	18700/1860	17.50	16.81	0.323	0.040	1.17	0.379	/
Left Cheek	standard	Reduce	0	50%	0	18700/1860	16.50	15.78	0.195	0.080	1.18	0.230	/
Left Tilt	standard	Reduce	0	50%	0	18700/1860	16.50	15.78	0.207	0.010	1.18	0.244	/
Right Cheek	standard	Reduce	0	50%	0	18700/1860	16.50	15.78	0.350	0.040	1.18	0.413	/
Right Tilt	standard	Reduce	0	50%	0	18700/1860	16.50	15.78	0.273	0.050	1.18	0.322	/
Right Cheek	standard	Reduce	0	1	50	18900/1880	17.50	16.66	0.444	0.080	1.21	0.539	/
Right Cheek	standard	Reduce	0	1	0	19100/1900	17.50	16.60	0.445	0.000	1.23	0.547	/
Body-worn SAR (QPSK)													
Back Side	standard	Reduce	10	1	0	18700/1860	17.50	16.81	0.176	0.170	1.17	0.206	/
Front Side	standard	Full	10	1	50	18700/1860	24.00	23.44	0.570	0.028	1.14	0.648	/
Back Side	standard	Reduce	10	50%	0	18700/1860	16.50	15.78	0.147	-0.020	1.18	0.174	/
Front Side	standard	Full	10	50%	25	18900/1880	23.00	22.38	0.488	0.030	1.15	0.563	/
Front Side	standard	Full	10	1	0	18900/1880	24.00	23.32	0.542	-0.040	1.17	0.634	/
Front Side	standard	Full	10	1	50	19100/1900	24.00	23.29	0.526	0.190	1.18	0.619	/
Hotspot SAR(QPSK)													
Back Side	standard	Reduce	10	1	0	18700/1860	17.50	16.81	0.176	0.170	1.17	0.206	/
Front Side	standard	Full	10	1	50	18700/1860	24.00	23.44	0.570	0.028	1.14	0.648	67
Left Edge	standard	Reduce	10	1	0	18700/1860	17.50	16.81	0.060	0.040	1.17	0.071	/
Right 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
Top Edge	Standard	Reduce	10	1	0	18700/1860	17.50	16.81	0.120	0.100	1.17	0.141	/
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
Back Side	Standard	Reduce	10	50%	0	18700/1860	16.50	15.78	0.147	-0.020	1.18	0.174	/
Front Side	Standard	Full	10	50%	25	18900/1880	23.00	22.38	0.488	0.030	1.15	0.563	/
Left Edge	Standard	Reduce	10	50%	0	18700/1860	16.50	15.78	0.051	0.022	1.18	0.060	/
Right 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
Top Edge	Standard	Reduce	10	50%	0	18700/1860	16.50	15.78	0.102	0.040	1.18	0.120	/
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
Back Side	Standard	Full	15	1	50	18700/1860	24.00	23.44	0.426	0.060	1.14	0.485	/
Left Edge	Standard	Full	11	1	50	18700/1860	24.00	23.44	0.302	-0.190	1.14	0.344	/
Top Edge	Standard	Full	14	1	50	18700/1860	24.00	23.44	0.435	-0.130	1.14	0.495	/

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Back Side	Standard	Full	15	50%	25	18900/1880	23.00	22.38	0.377	0.030	1.15	0.435	/
Left Edge	Standard	Full	11	50%	25	18900/1880	23.00	22.38	0.267	-0.020	1.15	0.308	/
Top Edge	Standard	Full	14	50%	25	18900/1880	23.00	22.38	0.402	-0.080	1.15	0.464	/
Front Side	Standard	Full	10	1	0	18900/1880	24.00	23.32	0.542	-0.040	1.17	0.634	/
Front Side	Standard	Full	10	1	50	19100/1900	24.00	23.29	0.526	0.190	1.18	0.619	/

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⩾ 50% limit(1g).

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Table 26: LTE Band 4 (20MHz, Second-antenna)

Test Position	Cover Type	Power Level	Distance (mm)	RB allocation	RB offset	Channel/ Frequency (MHz)	Tune-up (dBm)	Measured power (dBm)	Limit of SAR 1.6 W/kg (mW/g)				Plot No.
									Measured SAR1g	Power Drift (dB)	Scaling Factor	Report SAR1g	
Head SAR (QPSK)													
Left Cheek	standard	Reduce	0	1	0	20175/1732.5	17.00	16.02	0.260	-0.020	1.25	0.326	/
Left Tilt	standard	Reduce	0	1	0	20175/1732.5	17.00	16.02	0.237	0.040	1.25	0.297	/
Right Cheek	standard	Reduce	0	1	0	20175/1732.5	17.00	16.02	0.458	0.024	1.25	0.574	/
Right Tilt	standard	Reduce	0	1	0	20175/1732.5	17.00	16.02	0.310	0.040	1.25	0.388	/
Left Cheek	standard	Reduce	0	50%	0	20175/1732.5	16.00	15.04	0.207	0.020	1.25	0.258	/
Left Tilt	standard	Reduce	0	50%	0	20175/1732.5	16.00	15.04	0.191	0.020	1.25	0.238	/
Right Cheek	standard	Reduce	0	50%	0	20175/1732.5	16.00	15.04	0.371	0.022	1.25	0.463	/
Right Tilt	standard	Reduce	0	50%	0	20175/1732.5	16.00	15.04	0.252	0.090	1.25	0.314	/
Right Cheek	standard	Reduce	0	1	99	20050/1720	17.00	15.91	0.437	0.100	1.29	0.562	/
Right Cheek	standard	Reduce	0	1	0	20300/1745	17.00	15.93	0.495	0.070	1.28	0.633	68
Body-worn SAR (QPSK)													
Back Side	standard	Reduce	10	1	0	20175/1732.5	17.00	16.02	0.164	-0.080	1.25	0.206	/
Front Side	standard	Full	10	1	0	20175/1732.5	24.00	23.48	0.530	-0.020	1.13	0.597	/
Back Side	standard	Reduce	10	50%	0	20175/1732.5	16.00	15.04	0.133	0.025	1.25	0.166	/
Front Side	standard	Full	10	50%	25	20175/1732.5	23.00	22.54	0.432	0.080	1.11	0.480	/
Front Side	standard	Full	10	1	0	20050/1720	24.00	23.31	0.476	0.125	1.17	0.558	/
Front Side	standard	Full	10	1	50	20300/1745	24.00	23.37	0.492	0.013	1.16	0.569	/
Hotspot SAR(QPSK)													
Back Side	standard	Reduce	10	1	0	20175/1732.5	17.00	16.02	0.164	-0.080	1.25	0.206	/
Front Side	standard	Full	10	1	0	20175/1732.5	24.00	23.48	0.530	-0.020	1.13	0.597	69
Left Edge	standard	Reduce	10	1	0	20175/1732.5	17.00	16.02	0.087	0.023	1.25	0.109	/
Right 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
Top Edge	Standard	Reduce	10	1	0	20175/1732.5	17.00	16.02	0.156	0.030	1.25	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	N/A	N/A
Back Side	Standard	Reduce	10	50%	0	20175/1732.5	16.00	15.04	0.133	0.025	1.25	0.166	/
Front Side	Standard	Full	10	50%	25	20175/1732.5	23.00	22.54	0.432	0.080	1.11	0.480	/
Left Edge	Standard	Reduce	10	50%	0	20175/1732.5	16.00	15.04	0.070	0.038	1.25	0.088	/
Right 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
Top Edge	Standard	Reduce	10	50%	0	20175/1732.5	16.00	15.04	0.128	0.024	1.25	0.160	/
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
Back Side	Standard	Full	15	1	0	20175/1732.5	24.00	23.48	0.406	0.011	1.13	0.458	/
Left Edge	Standard	Full	11	1	0	20175/1732.5	24.00	23.48	0.335	0.034	1.13	0.378	/
Top Edge	Standard	Full	14	1	0	20175/1732.5	24.00	23.48	0.434	-0.010	1.13	0.489	/

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Back Side	Standard	Full	15	50%	25	20175/1732.5	23.00	22.54	0.351	-0.030	1.11	0.390	/
Left Edge	Standard	Full	11	50%	25	20175/1732.5	23.00	22.54	0.242	-0.011	1.11	0.269	/
Top Edge	Standard	Full	14	50%	25	20175/1732.5	23.00	22.54	0.276	-0.020	1.11	0.307	/
Front Side	Standard	Full	10	1	0	20050/1720	24.00	23.31	0.476	0.125	1.17	0.558	/
Front Side	Standard	Full	10	1	50	20300/1745	24.00	23.37	0.492	0.013	1.16	0.569	/

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≥ 50% limit(1g).

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Table 27: LTE Band 5 (10MHz, Second-antenna)

Test Position	Cover Type	Power Level	Distance (mm)	RB allocation	RB offset	Channel/ Frequency (MHz)	Tune-up (dBm)	Measured power (dBm)	Limit of SAR 1.6 W/kg (mW/g)				Plot No.
									Measured SAR1g	Power Drift (dB)	Scaling Factor	Report SAR1g	
Head SAR (QPSK)													
Left Cheek	standard	Full	0	1	49	20450/829	24.00	23.07	0.286	-0.080	1.24	0.354	/
Left Tilt	standard	Full	0	1	49	20450/829	24.00	23.07	0.246	0.030	1.24	0.305	/
Right Cheek	standard	Full	0	1	49	20450/829	24.00	23.07	0.380	0.010	1.24	0.471	/
Right Tilt	standard	Full	0	1	49	20450/829	24.00	23.07	0.435	0.020	1.24	0.539	70
Left Cheek	standard	Full	0	50%	13	20600/844	23.50	22.91	0.275	0.000	1.15	0.315	/
Left Tilt	standard	Full	0	50%	13	20600/844	23.50	22.91	0.238	0.000	1.15	0.273	/
Right Cheek	standard	Full	0	50%	13	20600/844	23.50	22.91	0.346	0.040	1.15	0.396	/
Right Tilt	standard	Full	0	50%	13	20600/844	23.50	22.91	0.405	0.050	1.15	0.464	/
Right Tilt	standard	Full	0	1	25	20525/836.5	24.00	23.02	0.387	0.020	1.25	0.485	/
Right Tilt	standard	Full	0	1	25	20600/844	24.00	22.94	0.413	-0.026	1.28	0.527	/
Body-worn SAR (QPSK)													
Back Side	standard	Full	10	1	49	20450/829	24.00	23.07	0.063	0.021	1.24	0.079	/
Front Side	standard	Full	10	1	49	20450/829	24.00	23.07	0.056	0.026	1.24	0.069	/
Back Side	standard	Full	10	50%	13	20600/844	23.50	22.91	0.068	0.031	1.15	0.078	/
Front Side	standard	Full	10	50%	13	20600/844	23.50	22.91	0.050	0.026	1.15	0.058	/
Front Side	standard	Full	10	1	25	20525/836.5	24.00	23.02	0.081	0.090	1.25	0.102	/
Front Side	standard	Full	10	1	25	20600/844	24.00	22.94	0.090	0.023	1.28	0.115	71
Hotspot SAR(QPSK)													
Back Side	standard	Full	10	1	49	20450/829	24.00	23.07	0.063	0.021	1.24	0.079	/
Front Side	standard	Full	10	1	49	20450/829	24.00	23.07	0.056	0.026	1.24	0.069	/
Left Edge	standard	Full	10	1	49	20450/829	24.00	23.07	0.029	0.043	1.24	0.036	/
Right 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
Top Edge	Standard	Full	10	1	49	20450/829	24.00	23.07	0.168	0.150	1.24	0.208	72
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
Back Side	Standard	Full	10	50%	13	20600/844	23.50	22.91	0.068	0.031	1.15	0.078	/
Front Side	Standard	Full	10	50%	13	20600/844	23.50	22.91	0.050	0.026	1.15	0.058	/
Left Edge	Standard	Full	10	50%	13	20600/844	23.50	22.91	0.026	0.045	1.15	0.030	/
Right 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
Top Edge	Standard	Full	10	50%	13	20600/844	23.50	22.91	0.153	0.022	1.15	0.175	/
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
Top Edge	Standard	Full	10	1	25	20525/836.5	24.00	23.02	0.076	0.030	1.25	0.095	/
Top Edge	Standard	Full	10	1	25	20600/844	24.00	22.94	0.085	0.023	1.28	0.108	/

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

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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≥ 50% limit(1g).

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Table 28: LTE Band 7 (20MHz, Second-antenna)

Test Position	Cover Type	Power Level	Distance (mm)	RB allocation	RB offset	Channel/ Frequency (MHz)	Tune-up (dBm)	Measured power (dBm)	Limit of SAR 1.6 W/kg (mW/g)				Plot No.
									Measured SAR1g	Power Drift (dB)	Scaling Factor	Report SAR1g	
Head SAR (QPSK)													
Left Cheek	standard	Reduce	0	1	0	20850/2510	16.00	15.60	0.275	0.035	1.10	0.302	/
Left Tilt	standard	Reduce	0	1	0	20850/2510	16.00	15.60	0.331	0.038	1.10	0.363	/
Right Cheek	standard	Reduce	0	1	0	20850/2510	16.00	15.60	0.662	0.011	1.10	0.726	/
Right Tilt	standard	Reduce	0	1	0	20850/2510	16.00	15.60	0.785	0.024	1.10	0.861	/
Left Cheek	standard	Reduce	0	50%	0	20850/2510	15.00	14.54	0.219	0.049	1.11	0.243	/
Left Tilt	standard	Reduce	0	50%	0	20850/2510	15.00	14.54	0.262	0.100	1.11	0.291	/
Right Cheek	standard	Reduce	0	50%	0	20850/2510	15.00	14.54	0.529	-0.082	1.11	0.588	/
Right Tilt	standard	Reduce	0	50%	0	20850/2510	15.00	14.54	0.635	0.010	1.11	0.706	/
Right Tilt	standard	Reduce	0	100%	0	20850/2510	15.00	14.36	0.886	-0.140	1.16	1.027	73
Right Tilt	standard	Reduce	0	1	0	21100/2535	16.00	15.31	0.716	0.021	1.17	0.839	/
Right Tilt	standard	Reduce	0	1	99	21350/2560	16.00	15.34	0.704	-0.020	1.16	0.820	/
Right Tilt	standard	Reduce	0	100%	0	21100/2535	15.00	14.21	0.775	0.023	1.20	0.930	/
Right Tilt	standard	Reduce	0	100%	0	21350/2560	15.00	14.34	0.776	-0.047	1.16	0.903	/
Right Tilt	SIM2	Reduce	0	100%	0	20850/2510	15.00	14.36	0.797	-0.019	1.16	0.924	/
Right Tilt	Battery2	Reduce	0	100%	0	20850/2510	15.00	14.36	0.823	0.024	1.16	0.954	/
Body-worn SAR (QPSK)													
Back Side	standard	Reduce	10	1	0	20850/2510	17.00	16.50	0.177	-0.180	1.12	0.199	/
Front Side	standard	Full	10	1	0	20850/2510	24.00	23.00	0.514	0.110	1.26	0.647	/
Back Side	standard	Reduce	10	50%	0	20850/2510	16.00	15.44	0.137	0.070	1.14	0.156	/
Front Side	standard	Full	10	50%	50	21350/2560	23.00	22.01	0.578	0.110	1.26	0.726	74
Front Side	standard	Full	10	50%	25	20850/2510	23.00	21.98	0.531	0.100	1.26	0.672	/
Front Side	standard	Full	10	50%	0	21100/2535	23.00	21.96	0.545	-0.030	1.27	0.692	/
Hotspot SAR(QPSK)													
Back Side	standard	Reduce	10	1	0	20850/2510	17.00	16.50	0.177	-0.180	1.12	0.199	/
Front Side	standard	Full	10	1	0	20850/2510	24.00	23.00	0.514	0.110	1.26	0.647	/
Left Edge	standard	Reduce	10	1	0	20850/2510	17.00	16.50	0.074	0.110	1.12	0.083	/
Right 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
Top Edge	Standard	Reduce	10	1	0	20850/2510	17.00	16.50	0.255	-0.021	1.12	0.286	/
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
Back Side	Standard	Reduce	10	50%	0	20850/2510	16.00	15.44	0.137	0.070	1.14	0.156	/
Front Side	Standard	Full	10	50%	50	21350/2560	23.00	22.01	0.578	0.110	1.26	0.726	/
Left Edge	Standard	Reduce	10	50%	0	20850/2510	16.00	15.44	0.057	-0.025	1.14	0.065	/
Right 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

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Top Edge	Standard	Reduce	10	50%	0	20850/2510	16.00	15.44	0.194	-0.180	1.14	0.221	/
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
Back Side	Standard	Full	15	1	0	20850/2510	24.00	23.00	0.298	-0.025	1.26	0.375	/
Left Edge	Standard	Full	11	1	0	20850/2510	24.00	23.00	0.303	-0.110	1.26	0.381	/
Top Edge	Standard	Full	14	1	0	20850/2510	24.00	23.00	0.608	-0.130	1.26	0.765	/
Back Side	Standard	Full	15	50%	50	21350/2560	23.00	22.01	0.315	0.080	1.26	0.396	/
Left Edge	Standard	Full	11	50%	50	21350/2560	23.00	22.01	0.343	-0.080	1.26	0.431	/
Top Edge	Standard	Full	14	50%	50	21350/2560	23.00	22.01	0.721	-0.160	1.26	0.906	75
Top Edge	Standard	Full	14	100%	0	20850/2510	23.00	21.97	0.628	-0.022	1.27	0.796	/
Top Edge	Standard	Full	14	50%	25	20850/2510	23.00	21.98	0.653	0.030	1.26	0.826	/
Top Edge	Standard	Full	14	50%	0	21100/2535	23.00	21.96	0.692	0.121	1.27	0.879	/
Top Edge	Repeated	Full	14	50%	50	21350/2560	23.00	22.01	0.705	0.027	1.26	0.886	/

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⩾ 50% limit(1g).

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

Measurement Variability				
Test Position	**Channel/ Frequency(MHz)**	**MAX Measured SAR_{1g} (W/kg)**	**1st Repeated SAR_{1g} (W/kg)**	**Ratio**
Top Edge	21350/2560	0.721	0.705	1.02

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

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

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Table 29: LTE Band 12 (10MHz, Second-antenna)

Test Position	Cover Type	Power Level	Distance (mm)	RB allocation	RB offset	Channel/ Frequency (MHz)	Tune-up (dBm)	Measured power (dBm)	Limit of SAR 1.6 W/kg (mW/g)				Plot No.
									Measured SAR1g	Power Drift (dB)	Scaling Factor	Report SAR1g	
Head SAR (QPSK)													
Left Cheek	standard	Full	0	1	25	23060/704	24.00	23.12	0.077	0.010	1.22	0.094	/
Left Tilt	standard	Full	0	1	25	23060/704	24.00	23.12	0.056	0.022	1.22	0.068	/
Right Cheek	standard	Full	0	1	25	23060/704	24.00	23.12	0.127	0.110	1.22	0.156	/
Right Tilt	standard	Full	0	1	25	23060/704	24.00	23.12	0.142	0.050	1.22	0.174	/
Left Cheek	standard	Full	0	50%	13	23060/704	23.50	22.67	0.061	0.160	1.21	0.073	/
Left Tilt	standard	Full	0	50%	13	23060/704	23.50	22.67	0.045	0.021	1.21	0.054	/
Right Cheek	standard	Full	0	50%	13	23060/704	23.50	22.67	0.105	0.018	1.21	0.127	/
Right Tilt	standard	Full	0	50%	13	23060/704	23.50	22.67	0.116	0.060	1.21	0.140	/
Right Tilt	standard	Full	0	1	25	23095/707.5	24.00	23.07	0.144	0.160	1.24	0.178	/
Right Tilt	standard	Full	0	1	49	23130/711	24.00	23.04	0.155	0.140	1.25	0.193	76
Body-worn SAR (QPSK)													
Back Side	standard	Full	10	1	25	23060/704	24.00	23.12	0.029	0.000	1.22	0.036	77
Front Side	standard	Full	10	1	25	23060/704	24.00	23.12	0.021	0.060	1.22	0.026	/
Back Side	standard	Full	10	50%	13	23060/704	23.50	22.67	0.029	0.000	1.21	0.035	/
Front Side	standard	Full	10	50%	13	23060/704	23.50	22.67	0.015	0.026	1.21	0.018	/
Back Side	standard	Full	10	1	25	23095/707.5	24.00	23.07	0.016	0.048	1.24	0.020	/
Back Side	standard	Full	10	1	49	23130/711	24.00	23.04	0.017	0.094	1.25	0.021	/
Hotspot SAR(QPSK)													
Back Side	standard	Full	10	1	25	23060/704	24.00	23.12	0.029	0.000	1.22	0.036	/
Front Side	standard	Full	10	1	25	23060/704	24.00	23.12	0.021	0.060	1.22	0.026	/
Left Edge	standard	Full	10	1	25	23060/704	24.00	23.12	0.032	0.021	1.22	0.039	78
Right 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
Top Edge	Standard	Full	10	1	25	23060/704	24.00	23.12	0.029	0.038	1.22	0.035	/
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
Back Side	Standard	Full	10	50%	13	23060/704	23.50	22.67	0.024	0.032	1.21	0.029	/
Front Side	Standard	Full	10	50%	13	23060/704	23.50	22.67	0.015	0.026	1.21	0.018	/
Left Edge	Standard	Full	10	50%	13	23060/704	23.50	22.67	0.029	-0.085	1.21	0.035	/
Right 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
Top Edge	Standard	Full	10	50%	13	23060/704	23.50	22.67	0.023	0.050	1.21	0.028	/
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
Left Edge	Standard	Full	10	1	25	23095/707.5	24.00	23.07	0.024	0.068	1.24	0.030	/
Left Edge	Standard	Full	10	1	49	23130/711	24.00	23.04	0.022	0.014	1.25	0.027	/

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

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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≥ 50% limit(1g).

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Table 30: LTE Band 13 (10MHz, Second-antenna)

Test Position	Cover Type	Power Level	Distance (mm)	RB allocation	RB offset	Channel/ Frequency (MHz)	Tune-up (dBm)	Measured power (dBm)	Limit of SAR 1.6 W/kg (mW/g)				Plot No.
									Measured SAR1g	Power Drift (dB)	Scaling Factor	Report SAR1g	
Head SAR (QPSK)													
Left Cheek	standard	Full	0	1	25	23230/782	24.00	23.07	0.189	0.050	1.24	0.234	/
Left Tilt	standard	Full	0	1	25	23230/782	24.00	23.07	0.149	0.050	1.24	0.185	/
Right Cheek	standard	Full	0	1	25	23230/782	24.00	23.07	0.292	0.000	1.24	0.362	/
Right Tilt	standard	Full	0	1	25	23230/782	24.00	23.07	0.338	0.010	1.24	0.419	79
Left Cheek	standard	Full	0	50%	0	23230/782	23.50	22.55	0.148	0.060	1.24	0.184	/
Left Tilt	standard	Full	0	50%	0	23230/782	23.50	22.55	0.118	0.150	1.24	0.147	/
Right Cheek	standard	Full	0	50%	0	23230/782	23.50	22.55	0.230	0.070	1.24	0.286	/
Right Tilt	standard	Full	0	50%	0	23230/782	23.50	22.55	0.271	0.040	1.24	0.337	/
Body-worn SAR (QPSK)													
Back Side	standard	Full	10	1	25	23230/782	24.00	23.07	0.078	0.022	1.24	0.097	/
Front Side	standard	Full	10	1	25	23230/782	24.00	23.07	0.053	0.042	1.24	0.066	/
Back Side	standard	Full	10	50%	0	23230/782	23.50	22.55	0.063	0.025	1.24	0.078	/
Front Side	standard	Full	10	50%	0	23230/782	23.50	22.55	0.043	0.037	1.24	0.053	/
Hotspot SAR(QPSK)													
Back Side	standard	Full	10	1	25	23230/782	24.00	23.07	0.078	0.022	1.24	0.097	80
Front Side	standard	Full	10	1	25	23230/782	24.00	23.07	0.053	0.042	1.24	0.066	/
Left Edge	standard	Full	10	1	25	23230/782	24.00	23.07	0.021	0.048	1.24	0.026	/
Right 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
Top Edge	Standard	Full	10	1	25	23230/782	24.00	23.07	0.053	0.044	1.24	0.066	/
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
Back Side	Standard	Full	10	50%	0	23230/782	23.50	22.55	0.063	0.025	1.24	0.078	/
Front Side	Standard	Full	10	50%	0	23230/782	23.50	22.55	0.043	0.037	1.24	0.053	/
Left Edge	Standard	Full	10	50%	0	23230/782	23.50	22.55	0.019	0.057	1.24	0.024	/
Right 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
Top Edge	Standard	Full	10	50%	0	23230/782	23.50	22.55	0.038	0.039	1.24	0.047	/
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

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≥ 50% limit(1g).

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Table 31: LTE Band 66 (20MHz, Second-antenna)

Test Position	Cover Type	Power Level	Distance (mm)	RB allocation	RB offset	Channel/ Frequency (MHz)	Tune-up (dBm)	Measured power (dBm)	Limit of SAR 1.6 W/kg (mW/g)				Plot No.
									Measured SAR1g	Power Drift (dB)	Scaling Factor	Report SAR1g	
Head SAR (QPSK)													
Left Cheek	standard	Reduce	0	1	99	132572/1770	17.50	16.75	0.295	0.000	1.19	0.351	/
Left Tilt	standard	Reduce	0	1	99	132572/1770	17.50	16.75	0.293	-0.040	1.19	0.348	/
Right Cheek	standard	Reduce	0	1	99	132572/1770	17.50	16.75	0.501	0.180	1.19	0.595	/
Right Tilt	standard	Reduce	0	1	99	132572/1770	17.50	16.75	0.345	0.070	1.19	0.410	/
Left Cheek	standard	Reduce	0	50%	50	132572/1770	16.50	15.51	0.239	0.040	1.26	0.300	/
Left Tilt	standard	Reduce	0	50%	50	132572/1770	16.50	15.51	0.232	0.020	1.26	0.291	/
Right Cheek	standard	Reduce	0	50%	50	132572/1770	16.50	15.51	0.394	0.160	1.26	0.495	/
Right Tilt	standard	Reduce	0	50%	50	132572/1770	16.50	15.51	0.272	0.080	1.26	0.342	/
Right Cheek	standard	Reduce	0	1	50	132072/1720	17.50	16.53	0.522	0.040	1.25	0.653	81
Right Cheek	standard	Reduce	0	1	50	132322/1745	17.50	16.60	0.507	0.130	1.23	0.624	/
Body-worn SAR (QPSK)													
Back Side	standard	Reduce	10	1	99	132572/1770	17.50	16.75	0.159	-0.030	1.19	0.189	/
Front Side	standard	Full	10	1	50	132322/1745	24.00	23.12	0.485	0.110	1.22	0.594	/
Back Side	standard	Reduce	10	50%	50	132572/1770	16.50	15.51	0.124	0.130	1.26	0.156	/
Front Side	standard	Full	10	50%	50	132322/1745	23.00	21.94	0.372	0.120	1.28	0.475	/
Front Side	standard	Full	10	1	50	132072/1720	24.00	22.99	0.436	0.070	1.26	0.550	/
Front Side	standard	Full	10	1	50	132572/1770	24.00	22.85	0.433	0.150	1.30	0.564	/
Hotspot SAR(QPSK)													
Back Side	standard	Reduce	10	1	99	132572/1770	17.50	16.75	0.159	-0.030	1.19	0.189	/
Front Side	standard	Full	10	1	50	132322/1745	24.00	23.12	0.485	0.110	1.22	0.594	82
Left Edge	standard	Reduce	10	1	99	132572/1770	17.50	16.75	0.089	-0.026	1.19	0.106	/
Right 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
Top Edge	Standard	Reduce	10	1	99	132572/1770	17.50	16.75	0.149	-0.032	1.19	0.177	/
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
Back Side	Standard	Reduce	10	50%	50	132572/1770	16.50	15.51	0.124	0.130	1.26	0.156	/
Front Side	Standard	Full	10	50%	50	132322/1745	23.00	21.94	0.372	0.120	1.28	0.475	/
Left Edge	Standard	Reduce	10	50%	50	132572/1770	16.50	15.51	0.070	-0.033	1.26	0.088	/
Right 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
Top Edge	Standard	Reduce	10	50%	50	132572/1770	16.50	15.51	0.118	-0.028	1.26	0.148	/
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
Back Side	Standard	Full	15	1	50	132322/1745	24.00	23.12	0.340	0.010	1.22	0.416	/
Left Edge	Standard	Full	11	1	50	132322/1745	24.00	23.12	0.300	0.040	1.22	0.367	/
Top Edge	Standard	Full	14	1	50	132322/1745	24.00	23.12	0.406	0.000	1.22	0.497	/

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Back Side	Standard	Full	15	50%	50	132322/1745	23.00	21.94	0.263	0.000	1.28	0.336	/
Left Edge	Standard	Full	11	50%	50	132322/1745	23.00	21.94	0.235	0.070	1.28	0.300	/
Top Edge	Standard	Full	14	50%	50	132322/1745	23.00	21.94	0.317	0.180	1.28	0.405	/
Front Side	Standard	Full	10	1	50	132072/1720	24.00	22.99	0.436	0.070	1.26	0.550	/
Front Side	Standard	Full	10	1	50	132572/1770	24.00	22.85	0.433	0.150	1.30	0.564	/

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≥ 50% limit(1g).

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Table 32: Wi-Fi (2.4G)

Test Position	Cover Type	Mode 802.11b	Duty Cycle	Channel/ Frequency (MHz)	Tune-up dBm)	Measured power (dBm)	Limit of SAR 1.6 W/kg (mW/g)					Plot No.
							Area Scan SAR 1g	Zoom Scan SAR 1g	Power Drift (dB)	Scaling Factor	Report SAR 1g	
Head SAR												
Left Cheek	standard	DSSS	100.0%	1/2412	14.00	13.62	0.473	0.542	-0.030	1.09	0.592	/
	standard	DSSS	100.0%	6/2437	14.00	13.39	0.445	0.517	0.012	1.15	0.595	/
	standard	DSSS	100.0%	11/2462	14.00	13.17	0.490	0.566	0.060	1.21	0.685	83
Left Tilt	standard	DSSS	100.0%	1/2412	14.00	13.62	0.325	0.416	-0.061	1.09	0.454	/
Right Cheek	standard	DSSS	100.0%	1/2412	14.00	13.62	0.227	0.249	-0.035	1.09	0.272	/
Right Tilt	standard	DSSS	100.0%	1/2412	14.00	13.62	0.235	0.277	0.024	1.09	0.302	/
Left Cheek	Battery 2	DSSS	100.0%	11/2462	14.00	13.17	0.516	0.548	-0.100	1.21	0.663	/
Body-worn SAR (Distance 10mm)												
Back Side	standard	DSSS	100.0%	1/2412	14.00	13.62	0.125	0.127	0.080	1.09	0.139	/
Front Side	standard	DSSS	100.0%	1/2412	14.00	13.62	0.139	0.152	0.044	1.09	0.166	/
Front Side	standard	DSSS	100.0%	6/2437	14.00	13.39	0.131	0.135	0.138	1.15	0.155	/
Front Side	standard	DSSS	100.0%	11/2462	14.00	13.17	0.157	0.165	0.025	1.21	0.200	/
Hotspot SAR(Distance 10mm)												
Back Side	standard	DSSS	100.0%	1/2412	14.00	13.62	0.125	0.127	0.080	1.09	0.139	/
Front Side	standard	DSSS	100.0%	1/2412	14.00	13.62	0.139	0.152	0.044	1.09	0.166	/
	standard	DSSS	100.0%	6/2437	14.00	13.39	0.131	0.135	0.138	1.15	0.155	/
	standard	DSSS	100.0%	11/2462	14.00	13.17	0.157	0.165	0.025	1.21	0.200	84
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	DSSS	100.0%	1/2412	14.00	13.62	0.105	0.109	-0.030	1.09	0.119	/
Top Edge	standard	DSSS	100.0%	1/2412	14.00	13.62	0.117	0.119	-0.110	1.09	0.130	/
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. Accessories that do not contain RF transmitters and have been proven to increase the peak SAR by less than 5 %, such as hands-free kits, do not need SAR tests separate from the SAR tests attached to a main EUT configuration.

MAX Adjusted SAR							
Mode	Test Position	Channel/ Frequency (MHz)	MAX Reported SAR_{1g} (W/kg)	802.11b Tune-up limit (dBm)	Tune-up limit (dBm)	Scaling Factor	Adjusted SAR_{1g} (W/kg)
802.11g	Left Cheek	11/2462	0.685	14.00	14.00	1.00	0.685
802.11n HT20	Left Cheek	11/2462	0.685	14.00	14.00	1.00	0.685
802.11n HT40	Left Cheek	11/2462	0.685	14.00	14.00	1.00	0.685

Note: SAR is not required for OFDM 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.

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Table 33: Wi-Fi (5G,U-NII-1)

Test Position	Cover Type	Mode 802.11a	Duty Cycle	Channel/ Frequency (MHz)	Tune-up dBm)	Measured power (dBm)	Limit of SAR 1.6 W/kg (mW/g)					Plot No.
							Area Scan SAR 1g	Zoom Scan SAR 1g	Power Drift (dB)	Scaling Factor	Report SAR 1g	
Head SAR												
Left Cheek	standard	OFDM	100.0%	36/5180	16.50	15.33	0.318	0.366	0.191	1.31	0.479	85
Left Tilt	standard	OFDM	100.0%	36/5180	16.50	15.33	0.213	0.252	0.090	1.31	0.330	/
Right Cheek	standard	OFDM	100.0%	36/5180	16.50	15.33	0.075	0.094	-0.033	1.31	0.123	/
Right Tilt	standard	OFDM	100.0%	36/5180	16.50	15.33	0.079	0.090	0.090	1.31	0.118	/
Left Cheek	standard	OFDM	100.0%	48/5240	16.50	14.78	0.342	0.305	0.027	1.49	0.453	/
Left Cheek	standard	OFDM	100.0%	64/5320	16.50	14.51	0.269	0.294	-0.013	1.58	0.465	/
Hotspot SAR(Distance 10mm)												
Back Side	standard	OFDM	100.0%	36/5180	16.50	15.33	0.268	0.261	0.090	1.31	0.342	/
Front Side	standard	OFDM	100.0%	36/5180	16.50	15.33	0.134	0.119	0.090	1.31	0.156	/
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	OFDM	100.0%	36/5180	16.50	15.33	0.329	0.293	0.021	1.31	0.384	86
Top Edge	standard	OFDM	100.0%	36/5180	16.50	15.33	0.179	0.150	0.027	1.31	0.196	/
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
Right Edge	standard	OFDM	100.0%	48/5240	16.50	14.78	0.265	0.228	-0.020	1.49	0.339	/
Right Edge	standard	OFDM	100.0%	64/5320	16.50	14.51	0.227	0.231	0.022	1.58	0.365	/
Right Edge	Battery 2	OFDM	100.0%	36/5180	16.50	15.33	0.329	0.268	0.012	1.31	0.351	/

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

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

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Table 34: Wi-Fi (5G,U-NII-3)

Test Position	Cover Type	Mode 802.11a	Duty Cycle	Channel/ Frequency (MHz)	Tune-up dBm)	Measured power (dBm)	Limit of SAR 1.6 W/kg (mW/g)					Plot No.
							Area Scan SAR 1g	Zoom Scan SAR 1g	Power Drift (dB)	Scaling Factor	Report SAR 1g	
Head SAR												
Left Cheek	standard	OFDM	100.0%	165/5825	13.50	12.88	0.247	0.292	0.100	1.15	0.337	87
Left Tilt	standard	OFDM	100.0%	165/5825	13.50	12.88	0.150	0.191	0.133	1.15	0.220	/
Right Cheek	standard	OFDM	100.0%	165/5825	13.50	12.88	0.073	0.096	-0.078	1.15	0.111	/
Right Tilt	standard	OFDM	100.0%	165/5825	13.50	12.88	0.093	0.109	0.035	1.15	0.126	/
Left Cheek	standard	OFDM	100.0%	149/5745	13.50	12.46	0.218	0.247	-0.062	1.27	0.314	/
Left Cheek	standard	OFDM	100.0%	157/5785	13.50	12.61	0.242	0.263	0.050	1.23	0.323	/
Hotspot SAR(Distance 10mm)												
Back Side	standard	OFDM	100.0%	165/5825	13.50	12.88	0.331	0.234	0.090	1.15	0.270	88
Front Side	standard	OFDM	100.0%	165/5825	13.50	12.88	0.098	0.089	0.000	1.15	0.103	/
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	OFDM	100.0%	165/5825	13.50	12.88	0.230	0.210	0.066	1.15	0.242	/
Top Edge	standard	OFDM	100.0%	165/5825	13.50	12.88	0.142	0.127	0.027	1.15	0.146	/
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
Left Cheek	standard	OFDM	100.0%	149/5745	13.50	12.46	0.245	0.207	0.015	1.27	0.263	/
Left Cheek	standard	OFDM	100.0%	157/5785	13.50	12.61	0.211	0.193	-0.060	1.23	0.237	/

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

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Table 35: BT

Test Position	Cover Type	Mode	Duty Cycle	Channel/ Frequency (MHz)	Tune-up dBm)	Measured power (dBm)	Limit of SAR 1.6 W/kg (mW/g)				Plot No.
							Measured SAR1g	Power Drift (dB)	Scaling Factor	Report SAR 1g	
Head SAR											
Left Cheek	standard	DH5	100.0%	0/2402	10.50	9.75	0.247	-0.080	1.19	0.294	/
	standard	DH5	100.0%	39/2441	10.50	10.02	0.283	-0.100	1.12	0.316	89
	standard	DH5	100.0%	78/2480	10.50	9.52	0.211	0.130	1.25	0.264	/
Left Tilt	standard	DH5	100.0%	39/2441	10.50	10.02	0.227	0.110	1.12	0.254	/
Right Cheek	standard	DH5	100.0%	39/2441	10.50	10.02	0.098	-0.061	1.12	0.110	/
Right Tilt	standard	DH5	100.0%	39/2441	10.50	10.02	0.109	-0.020	1.12	0.122	/
Body SAR (Distance 10mm)											
Back Side	standard	DH5	100.0%	39/2441	10.50	10.02	0.061	0.122	1.12	0.068	/
Front Side	standard	DH5	100.0%	39/2441	10.50	10.02	0.057	0.180	1.12	0.064	/
Left Edge	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	DH5	100.0%	39/2441	10.50	10.02	0.060	-0.070	1.12	0.067	/
Top Edge	standard	DH5	100.0%	0/2402	10.50	9.75	0.058	0.024	1.19	0.069	/
	standard	DH5	100.0%	39/2441	10.50	10.02	0.072	-0.010	1.12	0.080	90
	standard	DH5	100.0%	78/2480	10.50	9.52	0.048	-0.025	1.25	0.060	/
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. Accessories that do not contain RF transmitters and have been proven to increase the peak SAR by less than 5 %, such as hands-free kits, do not need SAR tests separate from the SAR tests attached to a main EUT configuration.

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10.5 Simultaneous Transmission Analysis

Simultaneous Transmission Configurations	Head	Body-worn	Hotspot
GSM Voice(Main Antenna) + BT	Yes	Yes	Yes
GSM DATA(Main Antenna) + BT	N/A	Yes	Yes
GSM Voice(Second Antenna) + BT	Yes	Yes	Yes
GSM DATA(Second Antenna + BT	N/A	Yes	Yes
GSM Voice(Main Antenna) + Wi-Fi2.4G	Yes	Yes	Yes
GSM DATA(Main Antenna) + Wi-Fi2.4G	N/A	Yes	Yes
GSM Voice(Second Antenna) + Wi-Fi2.4G	Yes	Yes	Yes
GSM DATA(Second Antenna) + Wi-Fi2.4G	N/A	Yes	Yes
WCDMA (Main Antenna) + BT	Yes	Yes	Yes
WCDMA (Second Antenna) + BT	Yes	Yes	Yes
WCDMA (Main Antenna) + Wi-Fi2.4G	Yes	Yes	Yes
WCDMA (Second Antenna) + Wi-Fi2.4G	Yes	Yes	Yes
LTE (Main Antenna) + BT	Yes	Yes	Yes
LTE(Second Antenna) + BT	Yes	Yes	Yes
LTE (Main Antenna) + Wi-Fi2.4G	Yes	Yes	Yes
LTE (Second Antenna) + Wi-Fi2.4G	Yes	Yes	Yes
Note：1. Main antenna and Second antenna can't transmit simultaneously. 2. BT antenna and Wi-Fi antenna can't transmit simultaneously.			

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 / (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 ≤ 0.04, simultaneously transmission SAR measurement is not necessary.

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The maximum SAR_{1g} Value for Main-Antenna

Test Position \ 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 13	LTE FDD 66	MAX. SAR_{1g}
Left Cheek		0.260	0.093	0.200	0.074	0.247	0.153	0.054	0.257	0.089	0.134	0.197	0.106	0.260
Left Tilt		0.110	0.054	0.090	0.053	0.118	0.076	0.046	0.118	0.056	0.051	0.088	0.080	0.118
Right Cheek		0.258	0.050	0.107	0.045	0.250	0.094	0.041	0.253	0.049	0.129	0.212	0.053	0.258
Right Tilt		0.119	0.079	0.109	0.044	0.119	0.096	0.030	0.121	0.035	0.049	0.091	0.068	0.121
Body worn	Back Side	0.222	0.148	0.191	0.097	0.215	0.195	0.098	0.292	0.270	0.118	0.265	0.180	0.292
	Front Side	0.195	0.087	0.143	0.032	0.218	0.150	0.050	0.253	0.151	0.141	0.222	0.115	0.253
Hotspot	Back Side	0.969	0.435	0.467	0.194	0.248	0.252	0.188	0.264	0.517	0.180	0.275	0.180	0.969
	Front Side	0.734	0.507	0.355	0.107	0.231	0.312	0.098	0.211	0.278	0.132	0.238	0.115	0.734
	Left Edge	0.400	0.292	0.260	0.061	0.119	0.175	0.070	0.149	0.141	0.161	0.044	0.081	0.400
	Right Edge	0.547	0.055	0.062	0.050	0.203	0.041	0.042	0.199	0.090	0.167	0.166	0.053	0.547
	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
	Bottom Edge	0.191	0.891	0.811	0.104	0.105	0.477	0.103	0.074	0.862	0.039	0.069	0.124	0.891

The maximum SAR_{1g} Value for Second-Antenna

Test Position \ 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 13	LTE FDD 66	MAX. SAR_{1g}
Left Cheek		0.505	0.261	0.236	0.338	0.434	0.252	0.326	0.354	0.302	0.094	0.234	0.351	0.505
Left Tilt		0.546	0.302	0.266	0.452	0.331	0.280	0.297	0.305	0.363	0.068	0.185	0.348	0.546
Right Cheek		0.869	0.545	0.447	0.533	0.587	0.547	0.633	0.471	0.726	0.156	0.362	0.653	0.869
Right Tilt		1.024	0.381	0.616	0.683	0.692	0.379	0.388	0.539	1.027	0.193	0.419	0.410	1.027
Body worn	Back Side	0.079	0.116	0.202	0.163	0.145	0.206	0.206	0.079	0.199	0.036	0.097	0.189	0.206
	Front Side	0.093	0.096	0.950	0.644	0.108	0.648	0.597	0.115	0.726	0.026	0.066	0.594	0.950
Hotspot	Back Side	0.497	0.237	0.341	0.446	0.145	0.485	0.458	0.079	0.396	0.036	0.097	0.416	0.497
	Front Side	0.150	0.471	0.950	0.644	0.108	0.648	0.597	0.069	0.726	0.026	0.066	0.594	0.950
	Left Edge	0.120	0.110	0.103	0.509	0.063	0.344	0.378	0.036	0.431	0.039	0.026	0.367	0.509
	Right 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
	Top Edge	0.260	0.681	0.464	0.493	0.083	0.495	0.489	0.208	0.906	0.035	0.066	0.497	0.906
	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

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About BT and Main- Antenna

Test Position \ SAR_{1g} (W/kg)		Main-antenna	BT	MAX. ΣSAR_{1g}
Head	Left, Cheek	0.260	0.316	0.576
	Left, Tilt	0.118	0.254	0.372
	Right, Cheek	0.258	0.110	0.368
	Right, Tilt	0.121	0.122	0.243
Body worn	Back Side	0.292	0.068	0.360
	Front Side	0.253	0.064	0.317
Hotspot	Back Side	0.969	0.068	1.037
	Front Side	0.734	0.064	0.798
	Left Edge	0.400	0.008	0.408
	Right Edge	0.547	0.067	0.614
	Top Edge	0.000	0.080	0.080
	Bottom Edge	0.891	0.000	0.891

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

MAX. ΣSAR_{1g} =1.037W/kg<1.6W/kg, so the Simultaneous transimition SAR with volum scan are not required for BT and Main-Antenna.

About Wi-Fi and Main-Antenna

Test Position \ SAR_{1g} (W/kg)		Main-antenna	Wi-Fi 2.4G	Wi-Fi (U-NII-1)	Wi-Fi (U-NII-3)	MAX. ΣSAR_{1g}
Head	Left, Cheek	0.260	**0.685**	0.479	0.337	0.945
	Left, Tilt	0.118	**0.454**	0.330	0.220	0.572
	Right, Cheek	0.258	**0.272**	0.123	0.111	0.530
	Right, Tilt	0.121	**0.302**	0.118	0.126	0.423
Body worn	Back Side	0.292	0.139	**0.342**	0.270	0.634
	Front Side	0.253	**0.200**	0.156	0.103	0.453
Hotspot	Back Side	0.969	0.139	**0.342**	0.270	1.311
	Front Side	0.734	**0.200**	0.156	0.103	0.934
	Left Edge	0.400	0.000	0.000	0.000	0.400
	Right Edge	0.547	0.119	**0.384**	0.242	0.931
	Top Edge	0.000	0.130	**0.196**	0.146	0.196
	Bottom Edge	0.891	0.000	0.000	0.000	0.891

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

MAX. ΣSAR_{1g} = 1.311W/kg<1.6W/kg, so the Simultaneous transimition SAR with volum scan are not required for Wi-Fi and Main-Antenna.

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About BT and Second- Antenna

Test Position \ SAR_{1g} (W/kg)		Second- Antenna	BT	MAX. ΣSAR_{1g}
Head	Left, Cheek	0.505	0.316	0.821
	Left, Tilt	0.546	0.254	0.800
	Right, Cheek	0.869	0.110	0.979
	Right, Tilt	1.027	0.122	1.149
Body worn	Back Side	0.206	0.068	0.274
	Front Side	0.950	0.064	1.014
Hotspot	Back Side	0.497	0.068	0.565
	Front Side	0.950	0.064	1.014
	Left Edge	0.509	0.000	0.509
	Right Edge	0.000	0.067	0.067
	Top Edge	0.906	0.080	0.986
	Bottom Edge	0.000	0.000	0.000

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

MAX. ΣSAR_{1g} = 1.149W/kg<1.6W/kg, so the Simultaneous transimition SAR with volum scan are not required for BT and Second-Antenna.

About Wi-Fi and Second- Antenna

Test Position \ SAR_{1g} (W/kg)		Second- Antenna	Wi-Fi 2.4G	Wi-Fi (U-NII-1)	Wi-Fi (U-NII-3)	MAX. ΣSAR_{1g}
Head	Left, Cheek	0.505	**0.685**	0.479	0.337	1.190
	Left, Tilt	0.546	**0.454**	0.330	0.220	1.000
	Right, Cheek	0.869	**0.272**	0.123	0.111	1.141
	Right, Tilt	1.027	**0.302**	0.118	0.126	1.329
Body worn	Back Side	0.206	0.139	**0.342**	0.270	0.548
	Front Side	0.950	**0.200**	0.156	0.103	1.150
Hotspot	Back Side	0.497	0.139	**0.342**	0.270	0.839
	Front Side	0.950	**0.200**	0.156	0.103	1.150
	Left Edge	0.509	0.000	0.000	0.000	0.509
	Right Edge	0.000	0.119	**0.384**	0.242	0.384
	Top Edge	0.906	0.130	**0.196**	0.146	1.102
	Bottom Edge	0.000	0.000	0.000	0.000	0.000

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

MAX. ΣSAR_{1g} = 1.329W/kg<1.6W/kg, so the Simultaneous transimition SAR with volum scan are not required for Wi-Fi and Second-Antenna.

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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.

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ANNEX A: Test Layout

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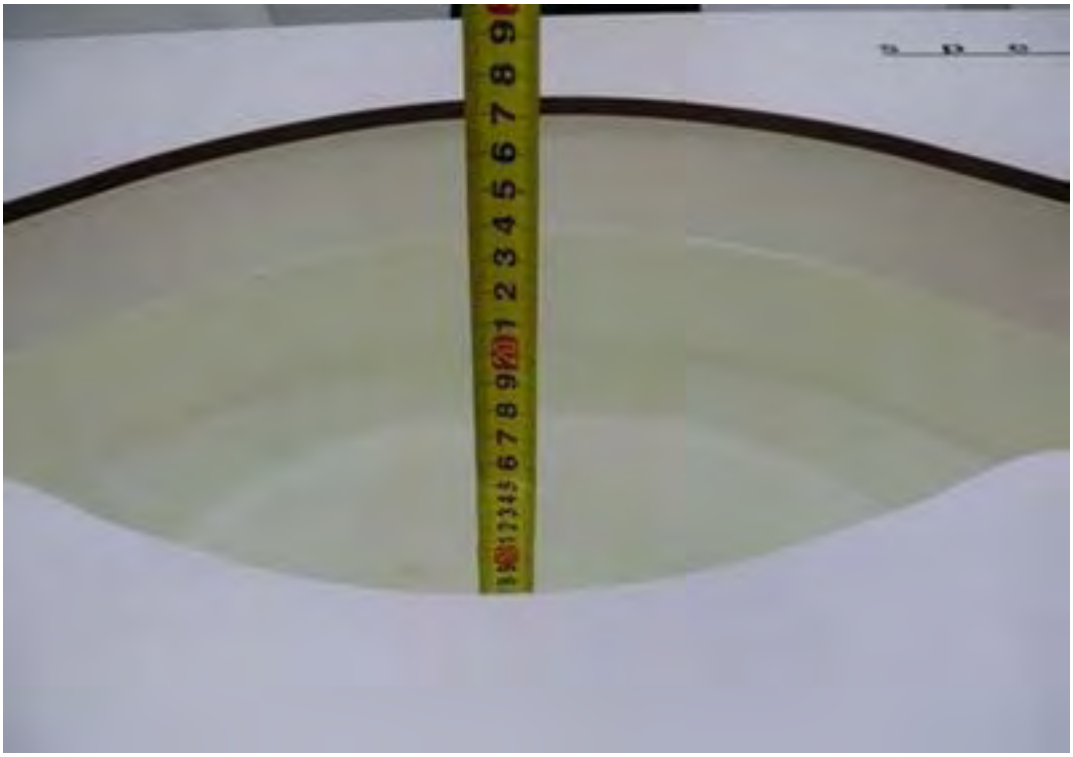
Tissue Simulating Liquids

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

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ANNEX B: System Check Results

Plot 1 System Performance Check at 750 MHz TSL

DUT: Dipole 750 MHz; Type: D750V3; Serial: D750V3

Date: 2/4/2020

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

Medium parameters used: f = 750 MHz; σ = 0.88 S/m; ε_r = 42.3; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.54, 9.54, 9.54); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

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

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

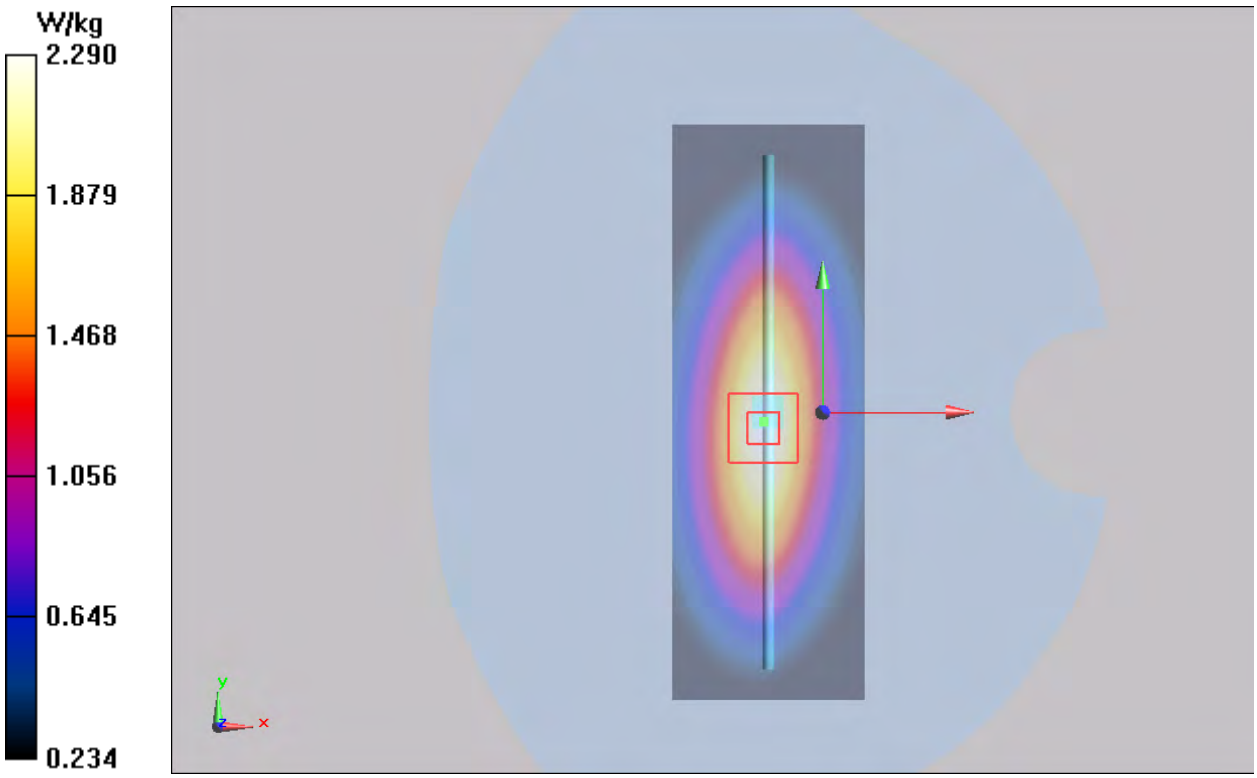
d=15mm,Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

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



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Plot 2 System Performance Check at 750 MHz TSL

DUT: Dipole 750 MHz; Type: D750V3; Serial: D750V3

Date: 2/5/2020

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

Medium parameters used: f = 750 MHz; σ = 0.87 S/m; ε_r = 42.0; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.54, 9.54, 9.54); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

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

Maximum value of SAR (interpolated) = 2.31 W/kg

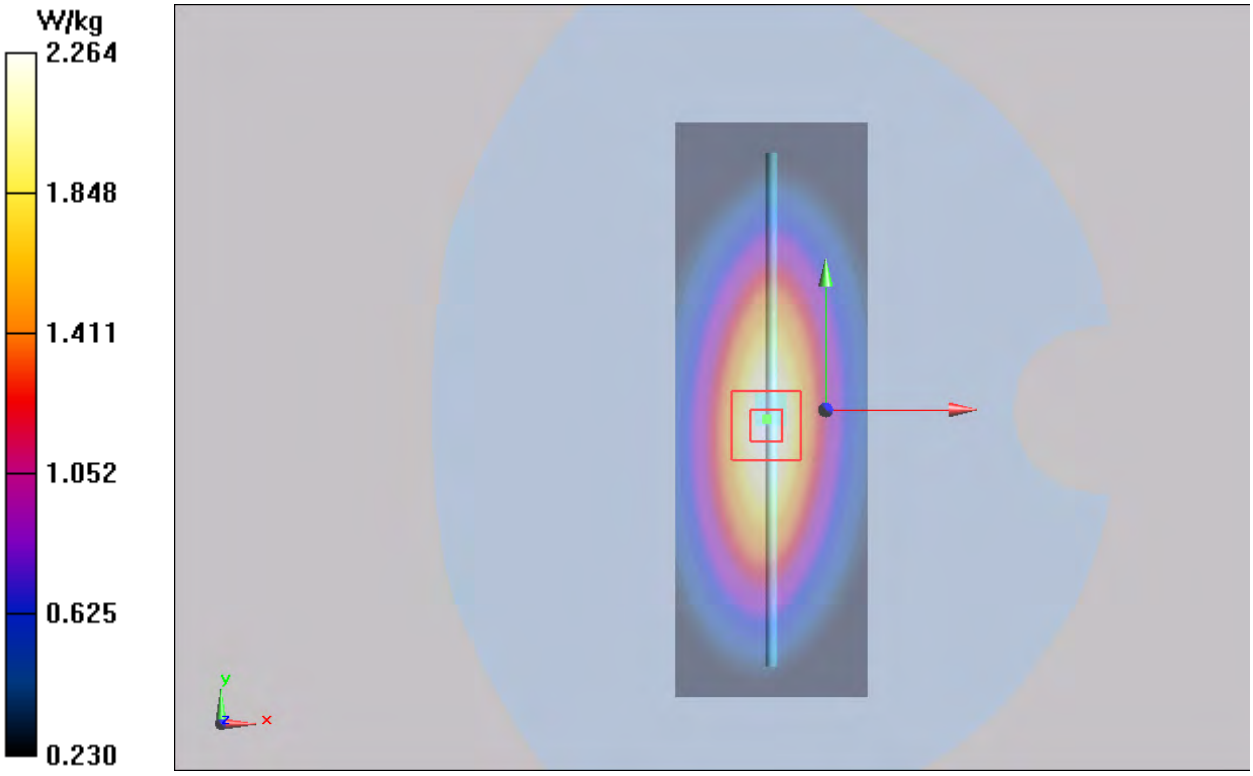
d=15mm,Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 50.557 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 3.14 W/kg

SAR(1 g) = 2.10 W/kg; SAR(10 g) = 1.37 W/kg

Maximum value of SAR (measured) = 2.264 W/kg



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Plot 3 System Performance Check at 835 MHz TSL

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2

Date: 2/7/2020

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

Medium parameters used: f = 835 MHz; σ = 0.88 S/m; ε_r = 41.4; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.20, 9.20, 9.20); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

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

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

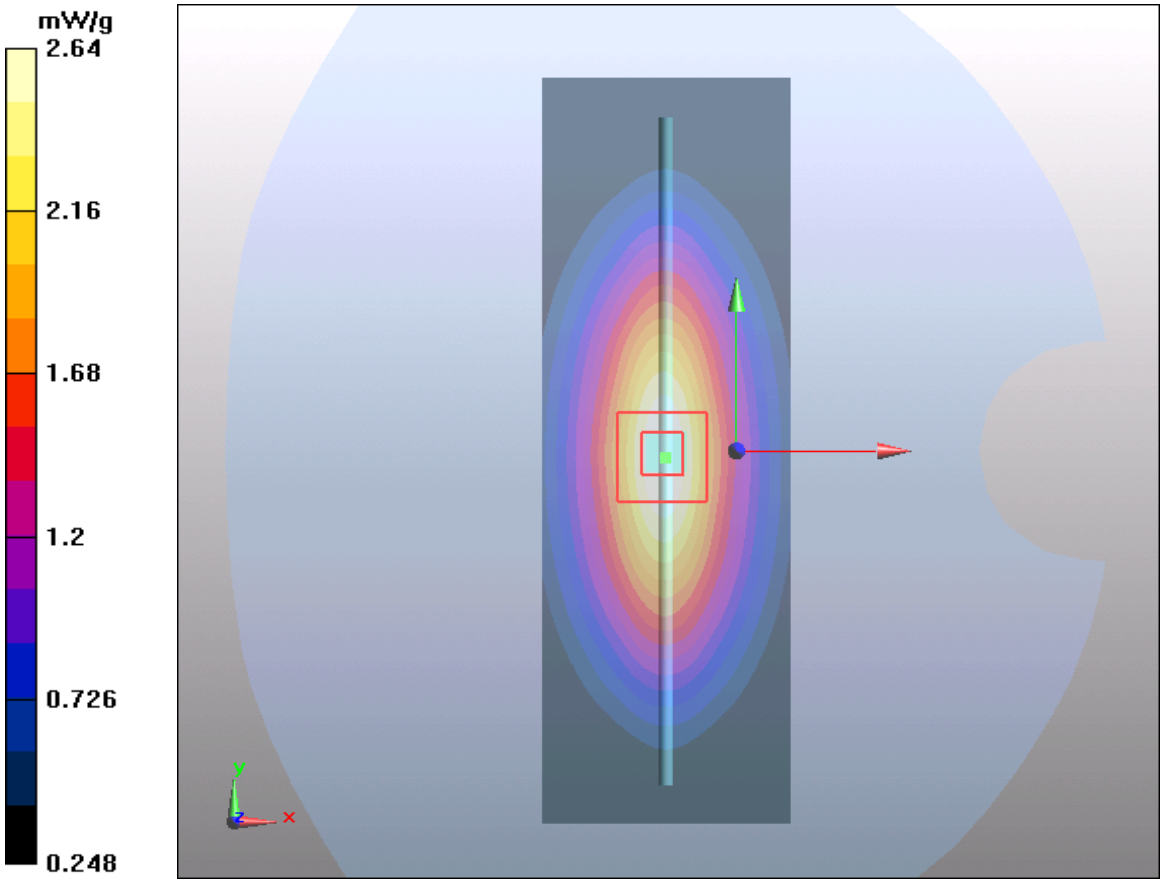
d=15mm, Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

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



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Plot 4 System Performance Check at 835 MHz TSL

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2

Date: 2/10/2020

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

Medium parameters used: f = 835 MHz; σ =0.87 S/m; ε_r = 41.3; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.20, 9.20, 9.20); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

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

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

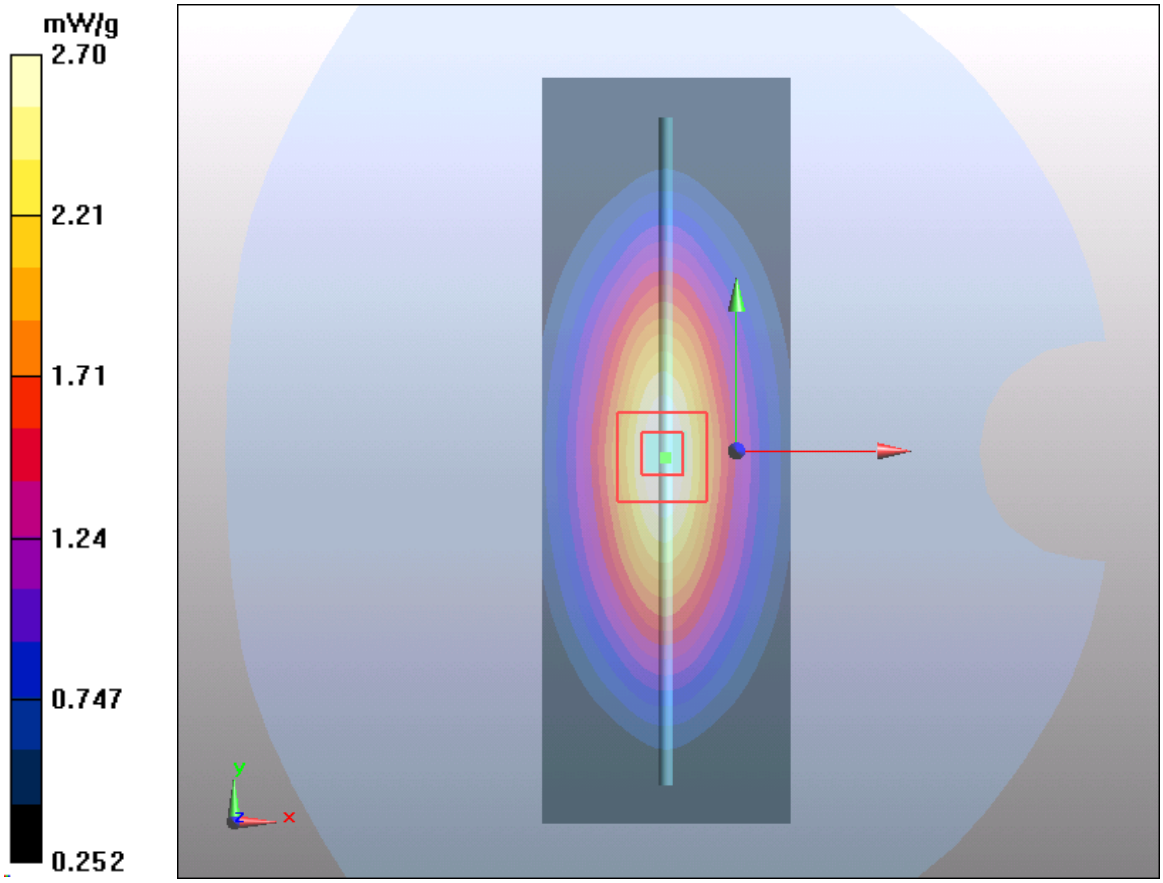
d=15mm, Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

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



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Plot 5 System Performance Check at 835 MHz TSL

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2

Date: 2/11/2020

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

Medium parameters used: f = 835 MHz; σ = 0.92 S/m; ε_r = 41.4; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.20, 9.20, 9.20); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

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

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

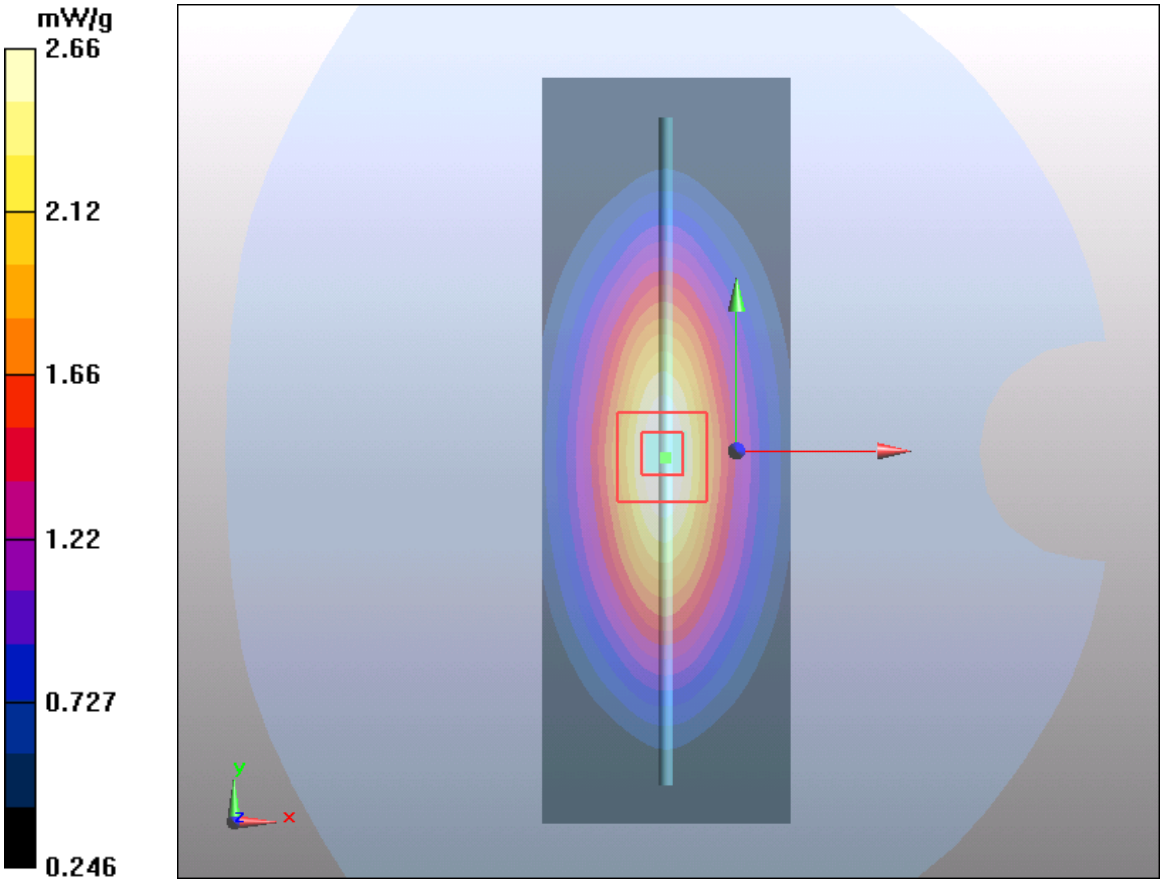
d=15mm, Pin=250mW/Zoom Scan(5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

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

Peak SAR (extrapolated) = 3.67 W/kg

SAR(1 g) = 2.43 mW/g; SAR(10 g) = 1.61 mW/g

Maximum value of SAR (measured) = 2.66 mW/g



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Plot 6 System Performance Check at 1750 MHz TSL

DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2

Date: 2/6/2020

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

Medium parameters used: f = 1750 MHz; σ = 1.34 S/m; ε_r = 40.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(8.21, 8.21, 8.21); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

d=10mm, Pin=250mW/Area Scan (51x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 9.78 mW/g

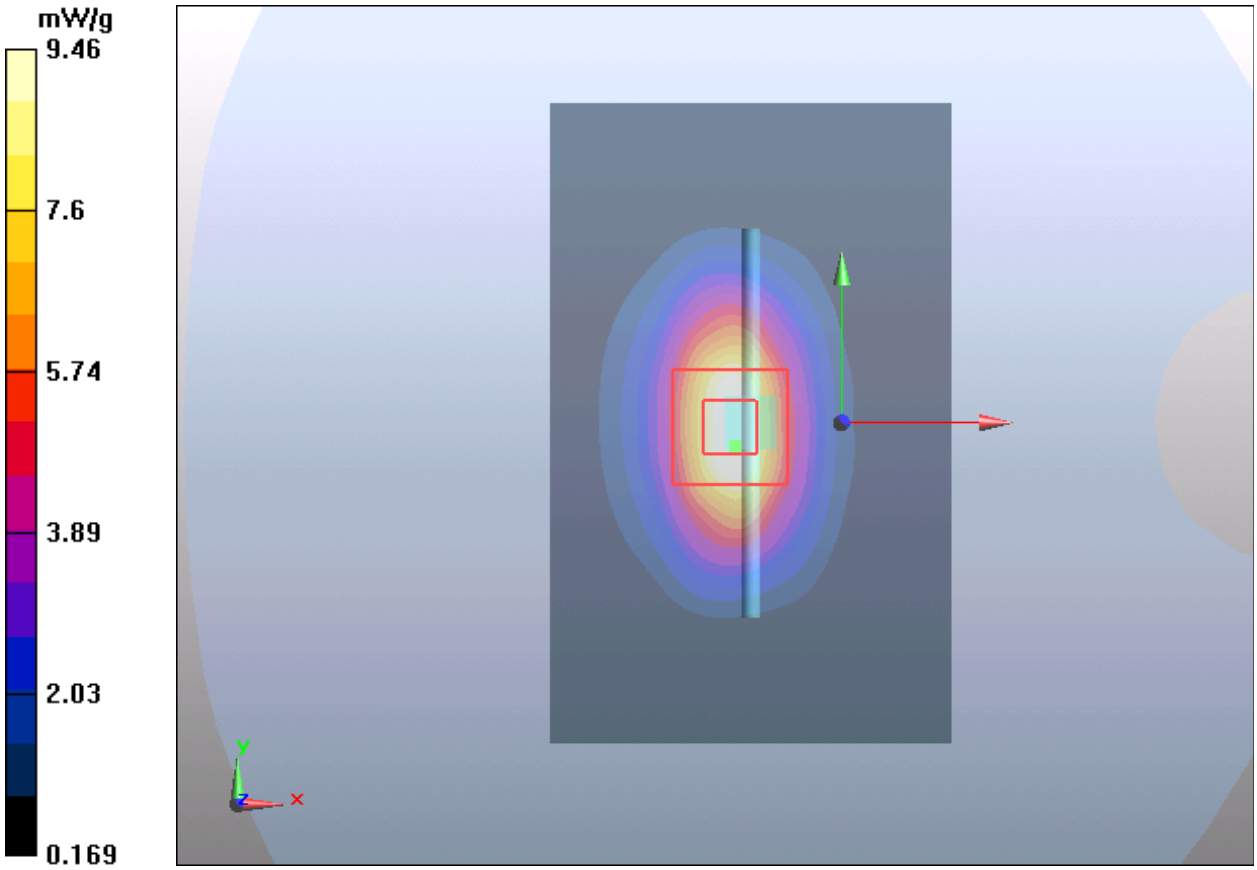
d=10mm, Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

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



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Plot 7 System Performance Check at 1750 MHz TSL

DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2

Date: 2/8/2020

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

Medium parameters used: f = 1750 MHz; σ = 1.34 S/m; ε_r = 40.1; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(8.21, 8.21, 8.21); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

d=10mm, Pin=250mW/Area Scan (51x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 9.77 mW/g

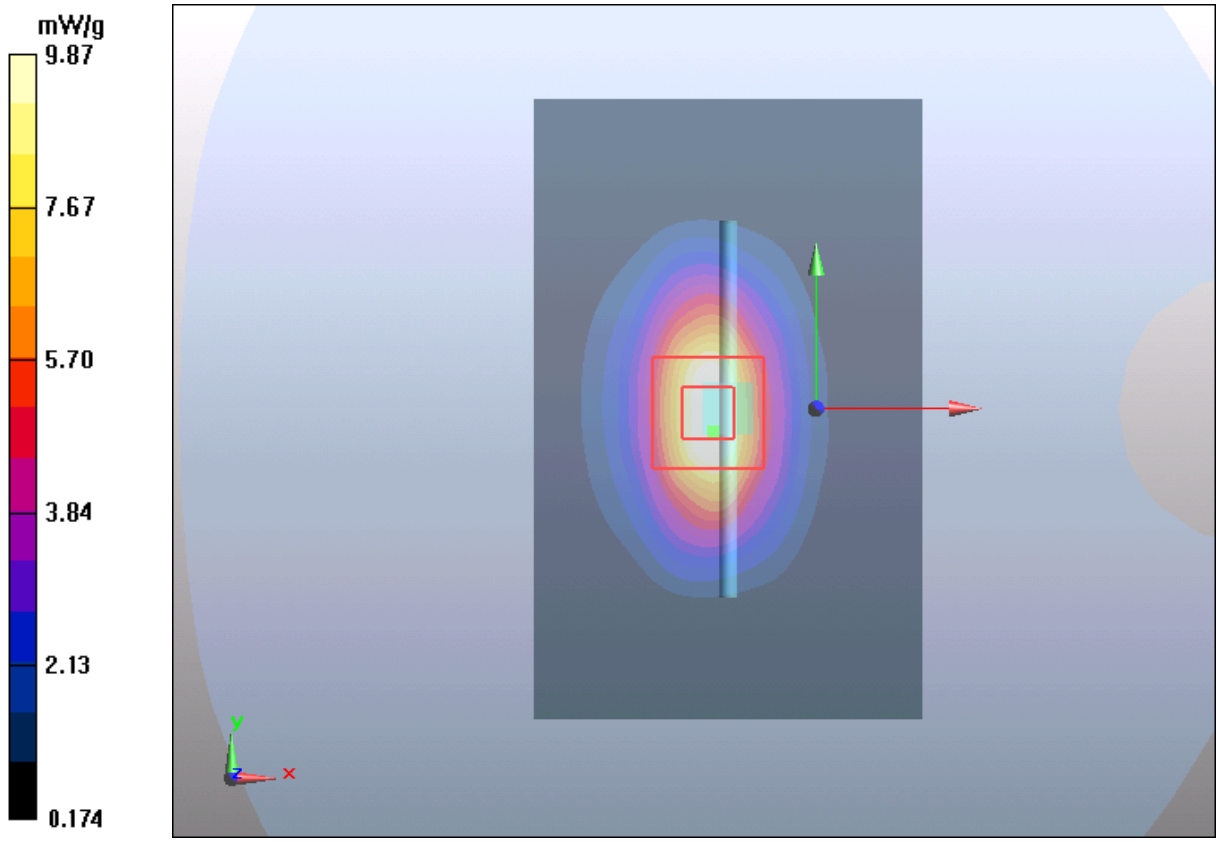
d=10mm, Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 80 V/m; Power Drift = 0.055 dB

Peak SAR (extrapolated) = 15.51 W/kg

SAR(1 g) = 9.11 mW/g; SAR(10 g) = 4.77 mW/g

Maximum value of SAR (measured) = 9.87 mW/g



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Plot 8 System Performance Check at 1750 MHz TSL

DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2

Date: 2/9/2020

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

Medium parameters used: f = 1750 MHz; σ = 1.36 mho/m; ε_r =40.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(8.21, 8.21, 8.21); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

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

Maximum value of SAR (interpolated) = 9.77 mW/g

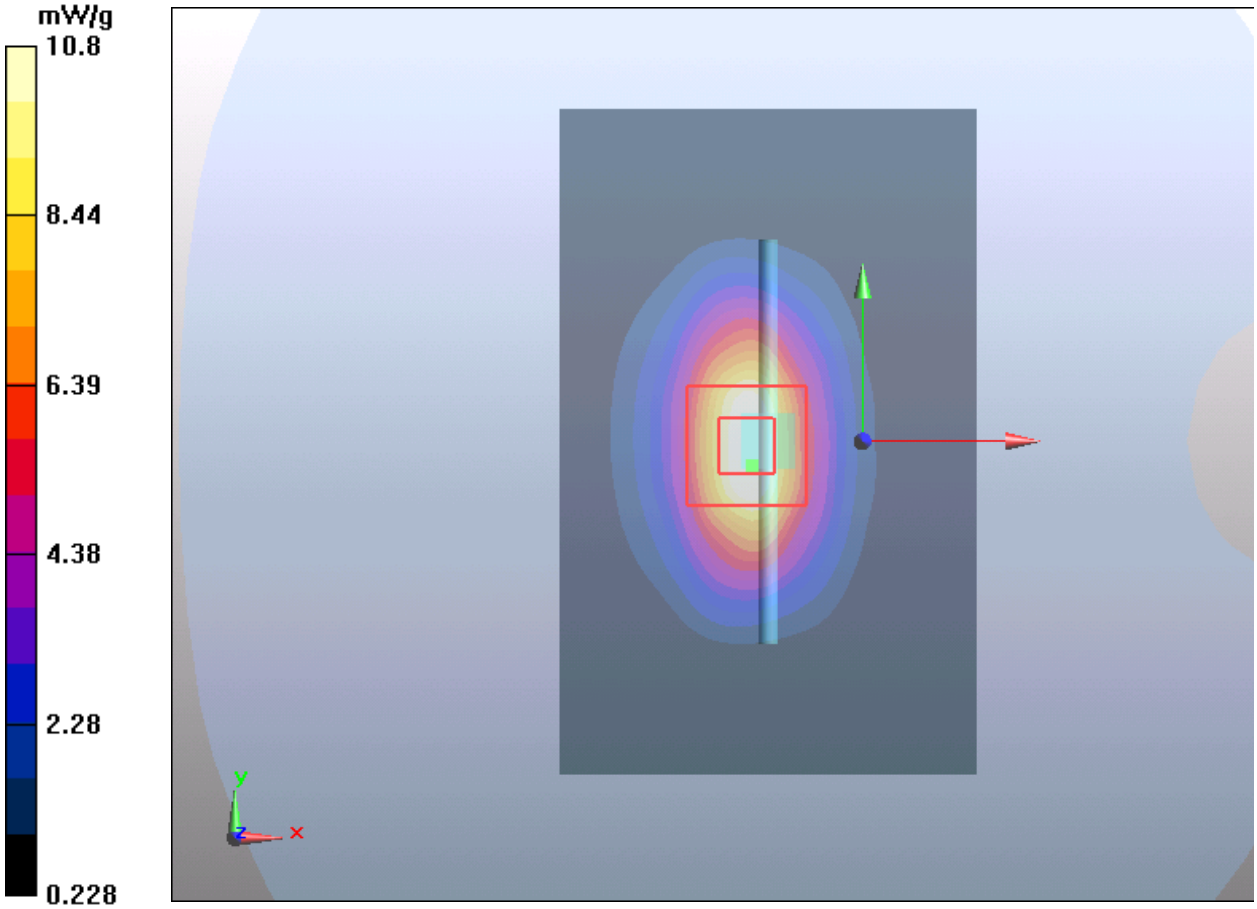
d=10mm, Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 80 V/m; Power Drift = 0.025 dB

Peak SAR (extrapolated) = 15.5 W/kg

SAR(1 g) = 8.92 mW/g; SAR(10 g) = 4.65 mW/g

Maximum value of SAR (measured) = 10.8 mW/g



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Plot 9 System Performance Check at 1750 MHz TSL

DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2

Date: 2/12/2020

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

Medium parameters used: f = 1750 MHz; σ = 1.33 mho/m; ε_r = 40.0; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(8.21, 8.21, 8.21); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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=1.500mm, dy=1.500mm

Maximum value of SAR (interpolated) = 9.7 mW/g

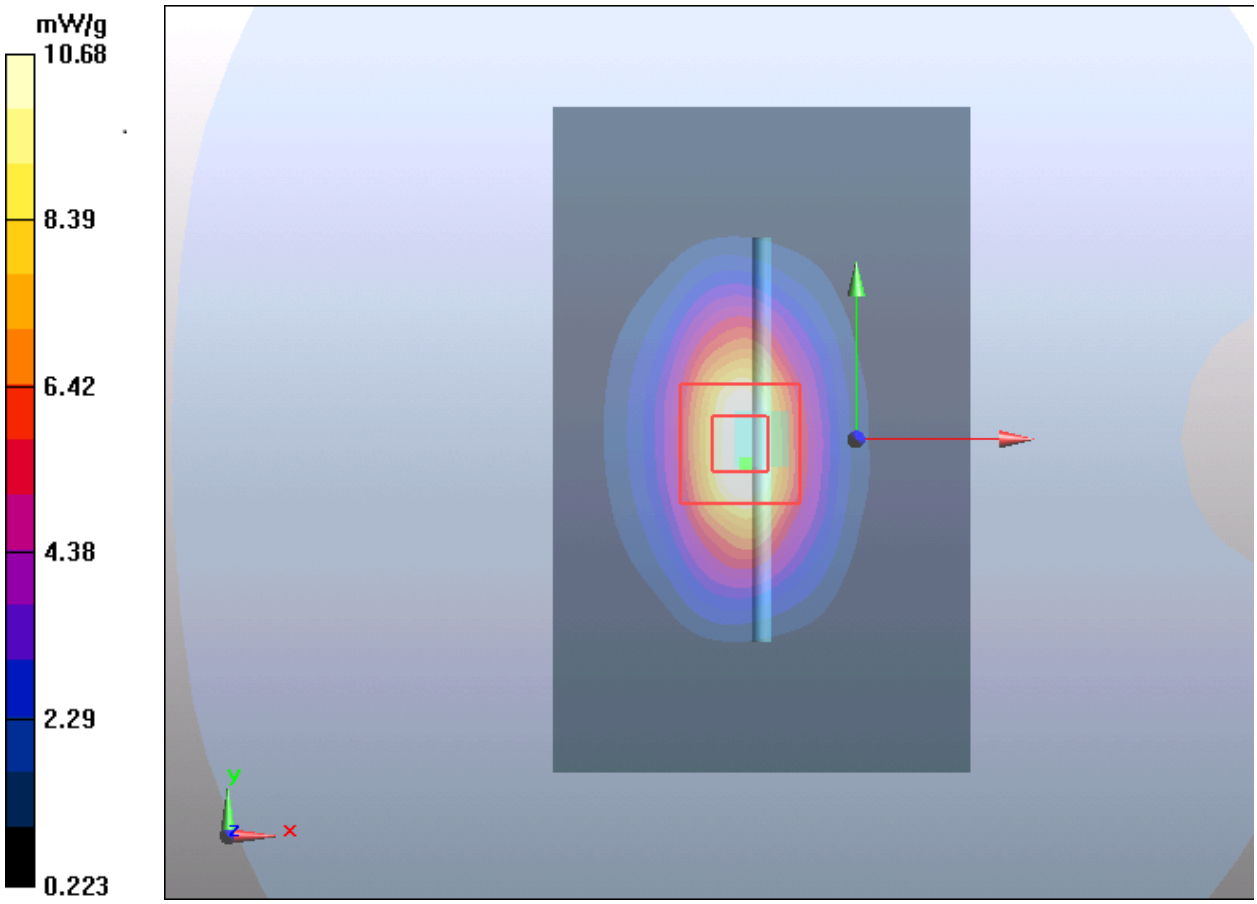
d=10mm, Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 80 V/m; Power Drift = 0.065 dB

Peak SAR (extrapolated) = 14.8 W/kg

SAR(1 g) = 8.92 mW/g; SAR(10 g) = 4.76 mW/g

Maximum value of SAR (measured) = 10.68 mW/g



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Plot 10 System Performance Check at 1900 MHz TSL

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2

Date: 2/15/2020

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

Medium parameters used: f = 1900 MHz; σ = 1.41 S/m; ε_r = 40.1; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.79, 7.79, 7.79); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

d=10mm, Pin=250mW/Area Scan (41x71x1): Measurement grid: dx=15mm, dy=15mm

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

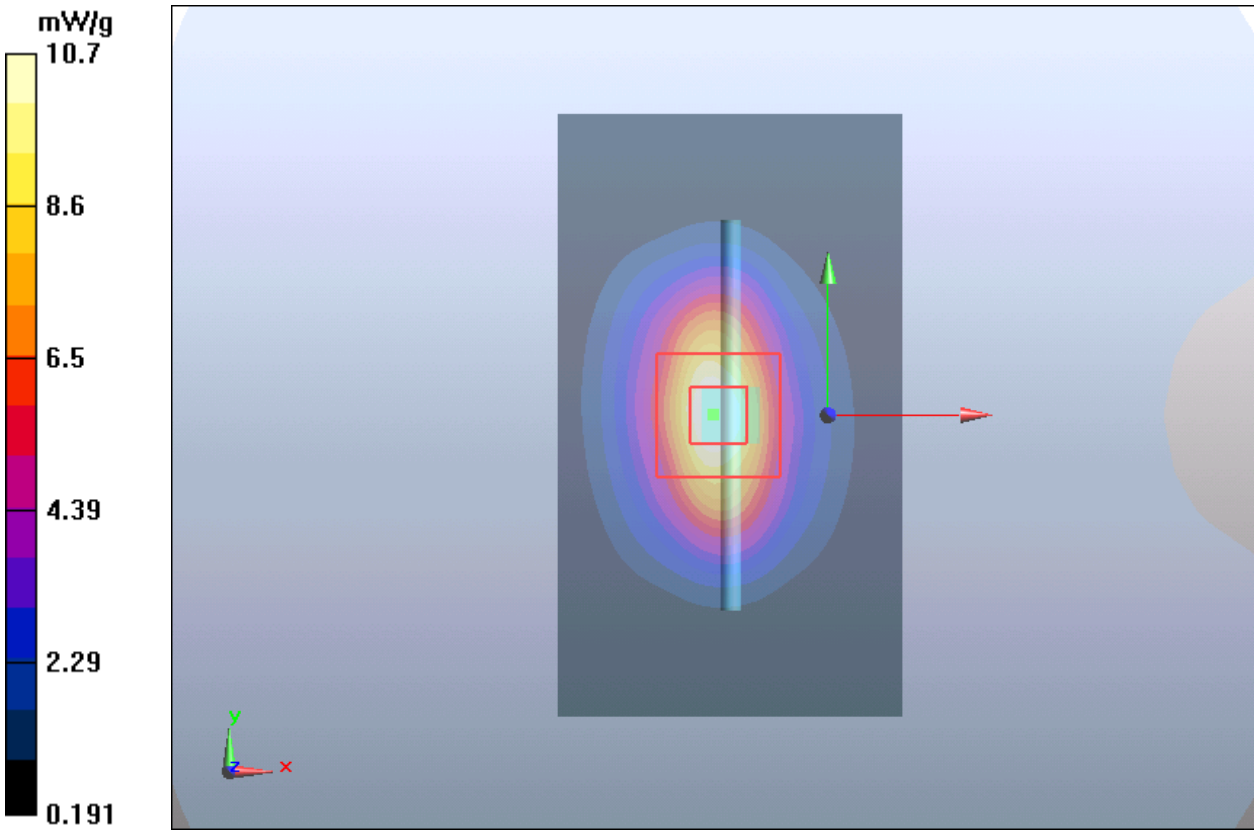
d=10mm, Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

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



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Plot 11 System Performance Check at 1900 MHz TSL

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2

Date: 2/16/2020

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

Medium parameters used: f = 1900 MHz; σ = 1.43 S/m; ε_r = 40.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.79, 7.79, 7.79); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

d=10mm, Pin=250mW/Area Scan (41x71x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 11.23 mW/g

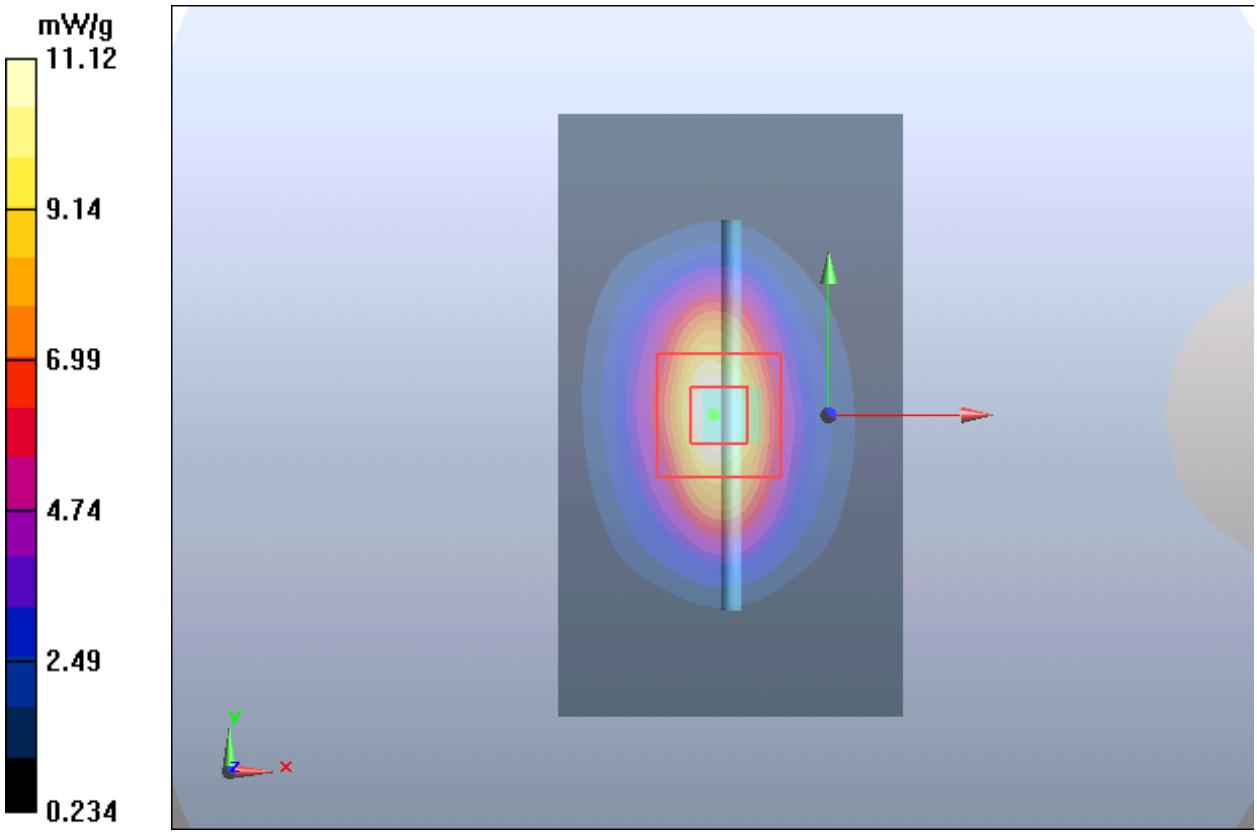
d=10mm, Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

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



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Plot 12 System Performance Check at 1900 MHz

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2

Date: 2/17/2020

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

Medium parameters used: f = 1900 MHz; σ = 1.40 mho/m; ε_r = 40.3; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.79, 7.79, 7.79); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

d=10mm, Pin=250mW/Area Scan (41x71x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 12.9 mW/g

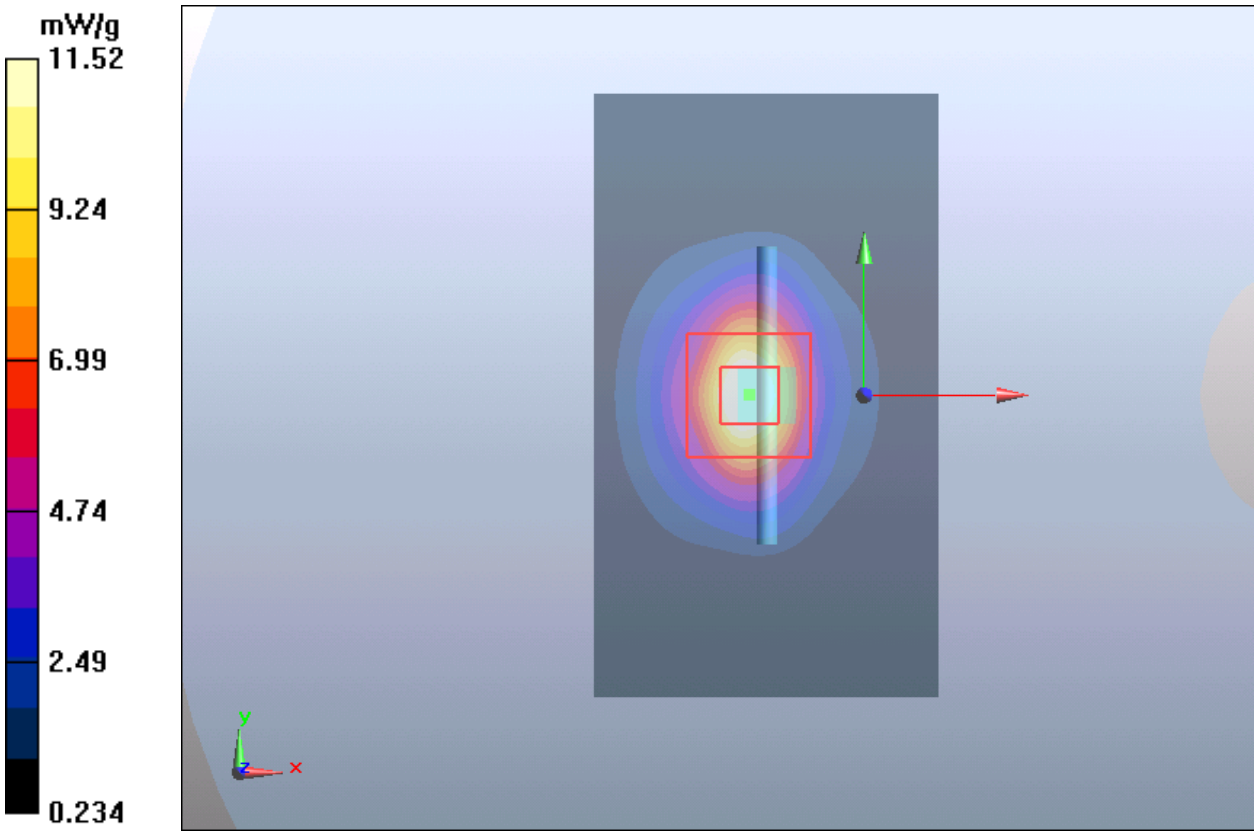
d=10mm, Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 87.8 V/m; Power Drift = 0.030 dB

Peak SAR (extrapolated) = 20.1 W/kg

SAR(1 g) = 10.55 mW/g; SAR(10 g) = 5.39 mW/g

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



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Plot 13 System Performance Check at 2450 MHz TSL

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2

Date: 2/13/2020

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

Medium parameters used: f = 2450 MHz; σ = 1.81 S/m; ε_r = 38.6; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.50, 7.50, 7.50); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

d=10mm, Pin=250mW/Area Scan (41x71x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 18.2 mW/g

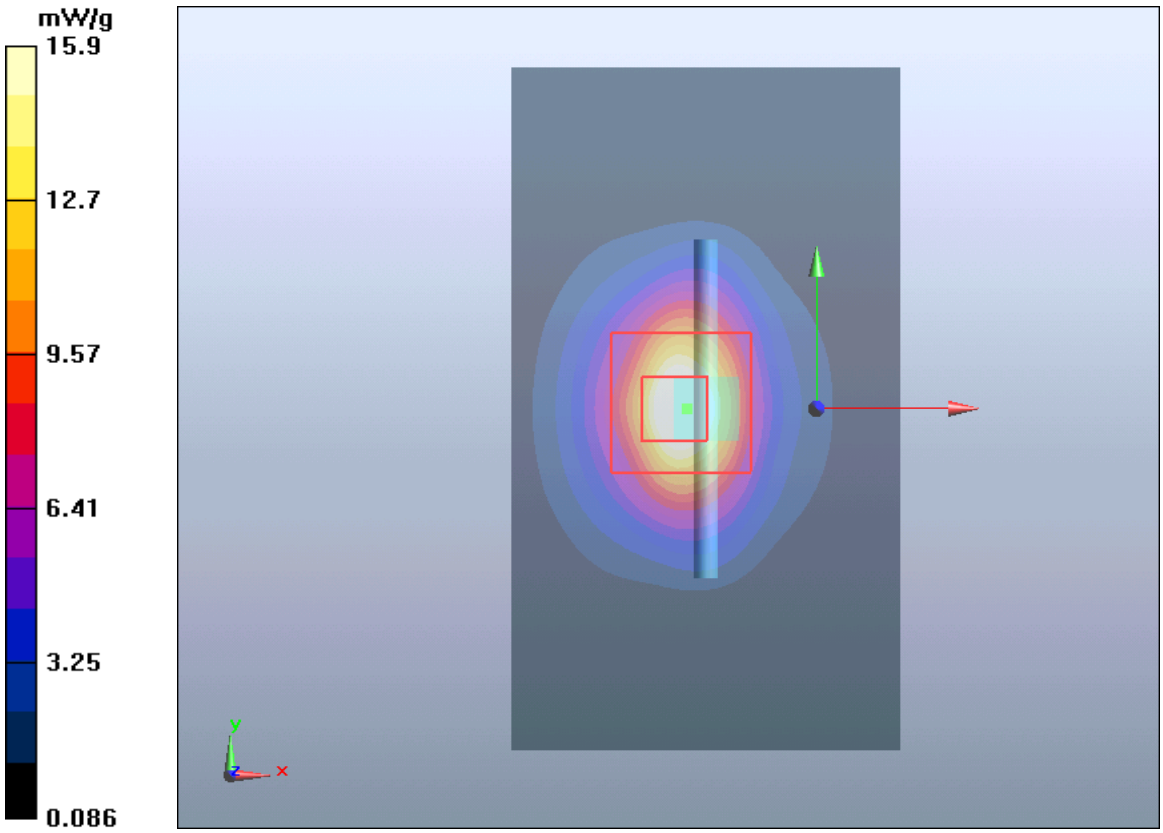
d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

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



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Plot 14 System Performance Check at 2600 MHz TSL

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: D2600V2

Date: 2/14/2020

Communication System: CW; Frequency: 2600 MHz

Medium parameters used: f = 2600 MHz; σ = 2.01 S/m; ε_r = 38.2; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.20, 7.20, 7.20); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

d=10mm, Pin=250mW/Area Scan (41x71x1): Measurement grid:dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 17.439 mW/g

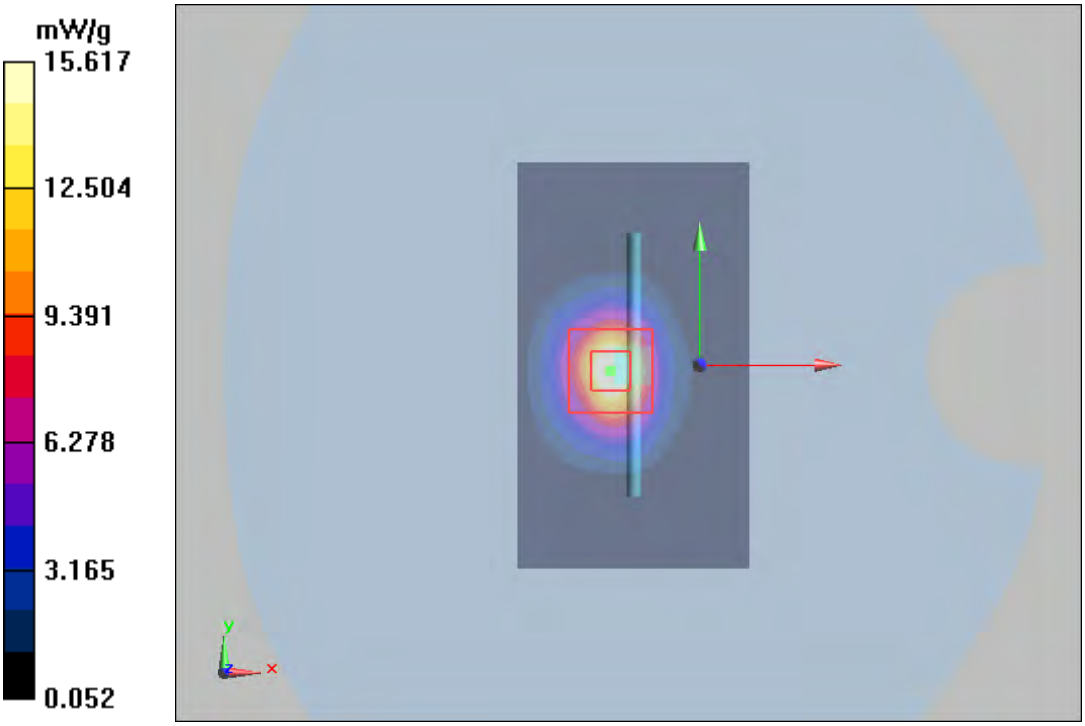
d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

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



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Plot 15 System Performance Check at 2600 MHz TSL

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: D2600V2

Date: 2/18/2020

Communication System: CW; Frequency: 2600 MHz

Medium parameters used: f = 2600 MHz; σ =1.94S/m; ε_r = 38.4; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.20, 7.20, 7.20); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

d=10mm, Pin=250mW/Area Scan (41x71x1): Measurement grid:dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 17.59 mW/g

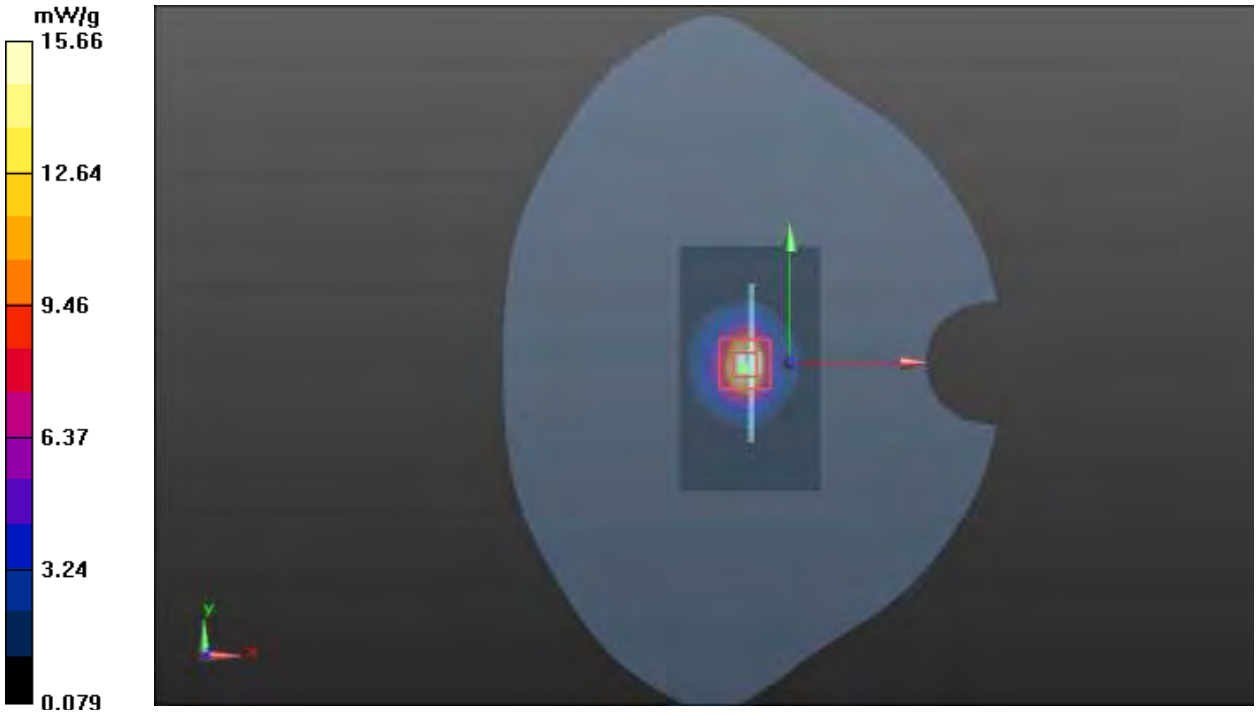
d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

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

Peak SAR (extrapolated) = 31.858 W/kg

SAR(1 g) = 13.88 mW/g; SAR(10 g) = 6.09 mW/g

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



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Plot 16 System Performance Check at 5250 MHz TSL

DUT: Dipole 5250 MHz; Type: D5GHzV2; Serial: D5GHzV2

Date: 2/14/2020

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

Medium parameters used: f = 5250 MHz; σ = 4.80 S/m; ε_r = 35.5; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(5.56, 5.56, 5.56); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

d=10mm, Pin=100mW/Area Scan (61x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 9.14 mW/g

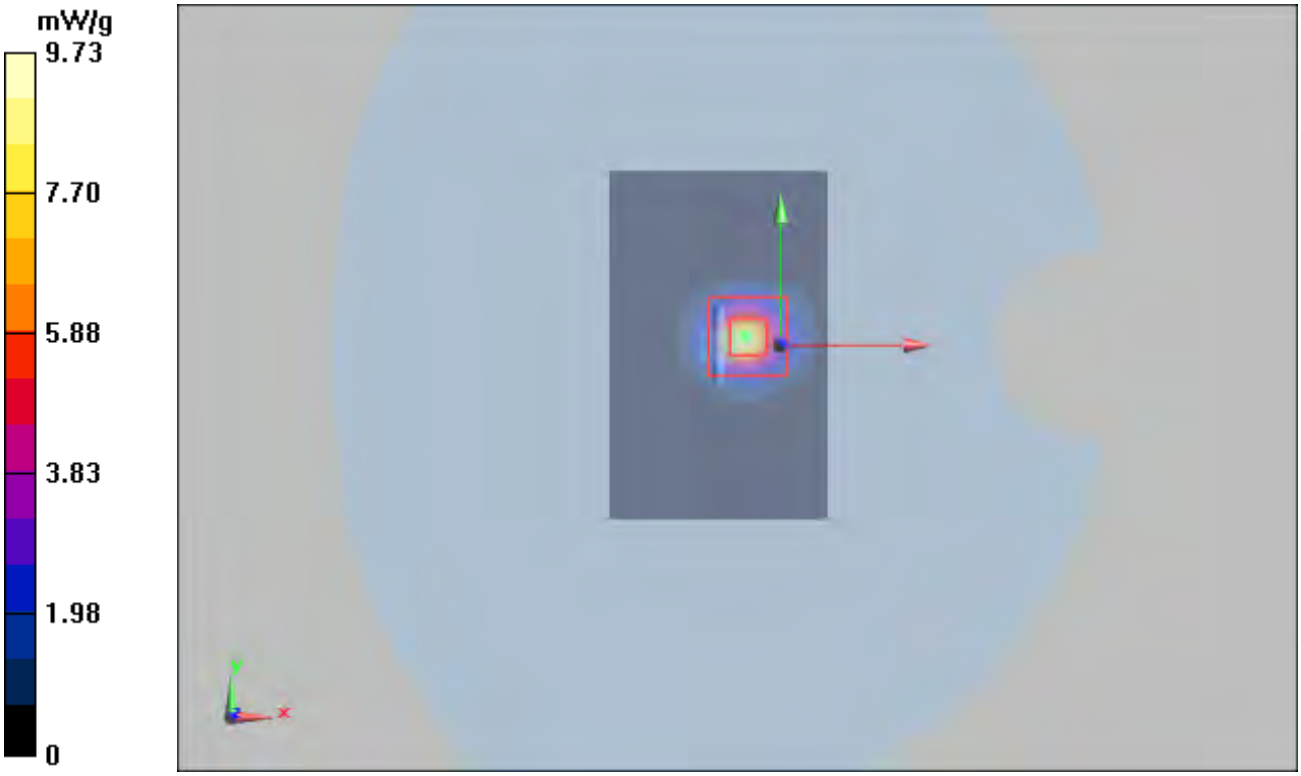
d=10mm, Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

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



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Plot 17 System Performance Check at 5750 MHz TSL

DUT: Dipole 5750 MHz; Type: D5GHzV2; Serial: D5GHzV2

Date: 2/18/2020

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

Medium parameters used: f = 5750 MHz; σ = 5.21 S/m; ε_r = 34.9; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(4.99, 4.99, 4.99); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

d=10mm, Pin=100mW/Area Scan (61x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 8.31 mW/g

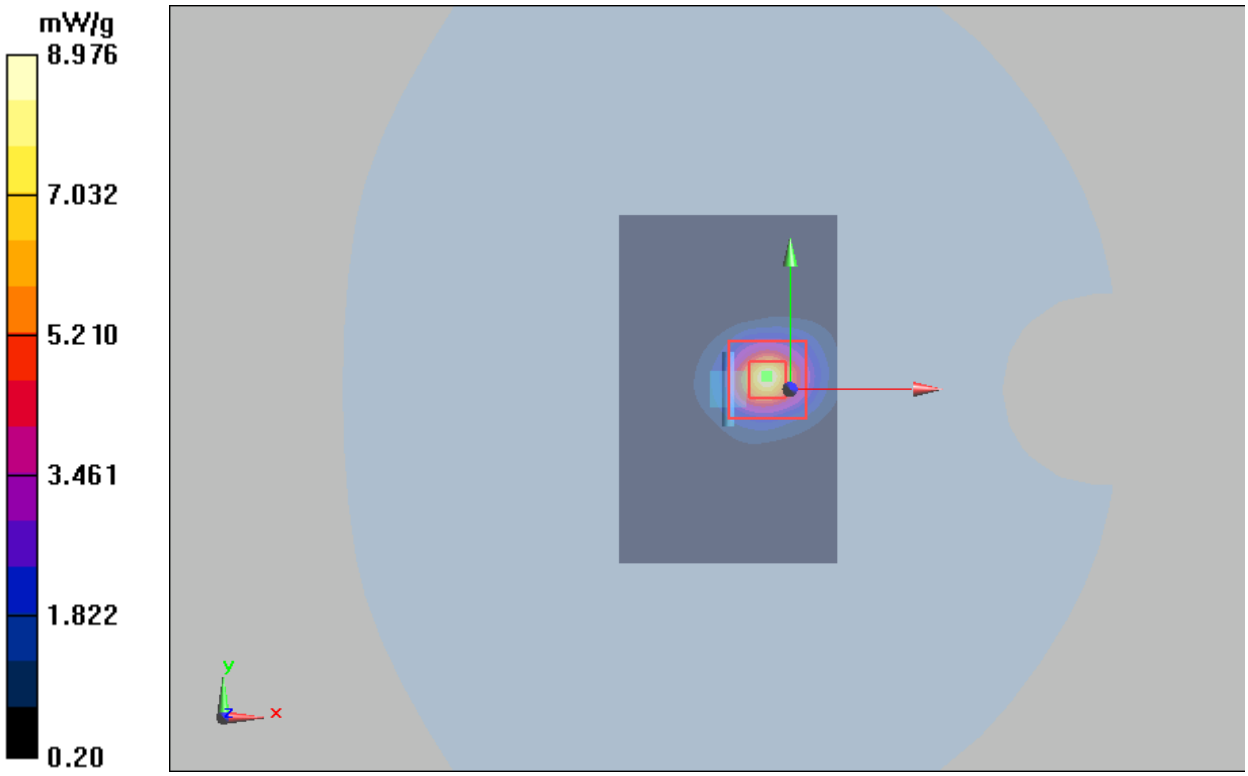
d=10mm, Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

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



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ANNEX C: Highest Graph Results

Main-Antenna

Plot 18 GSM 850 Left Cheek Middle

Date: 2/7/2020

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

Medium parameters used: f = 837 MHz; σ = 0.923 S/m; ε_r = 42.201; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.20, 9.20, 9.20); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Left Cheek Middle/Area Scan (71x131x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.237 W/kg

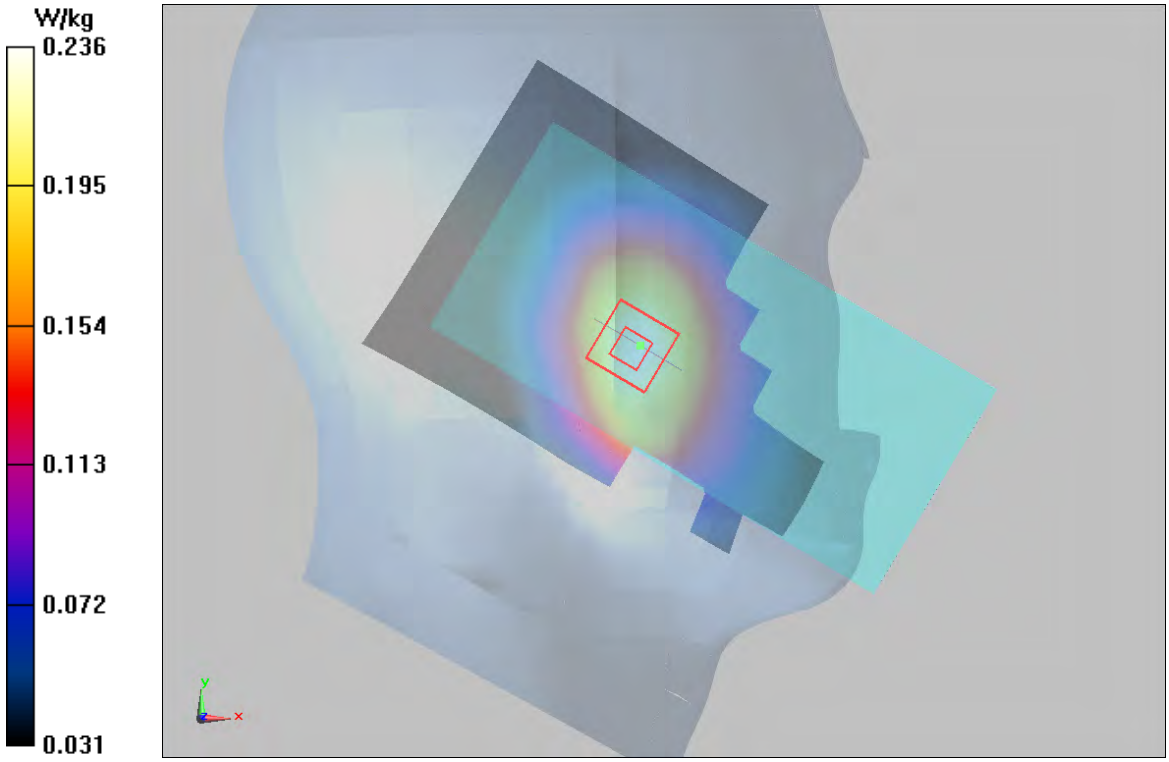
Left Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.255 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 0.280 W/kg

SAR(1 g) = 0.221 W/kg; SAR(10 g) = 0.166 W/kg

Maximum value of SAR (measured) = 0.236 W/kg



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Plot 19 GSM 850 Back Side Middle (Distance 15mm)

Date: 2/7/2020

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

Medium parameters used: f = 837 MHz; σ = 0.923 S/m; ε_r = 42.201; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.20, 9.20, 9.20); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Back Side Middle/Area Scan (71x121x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.201 W/kg

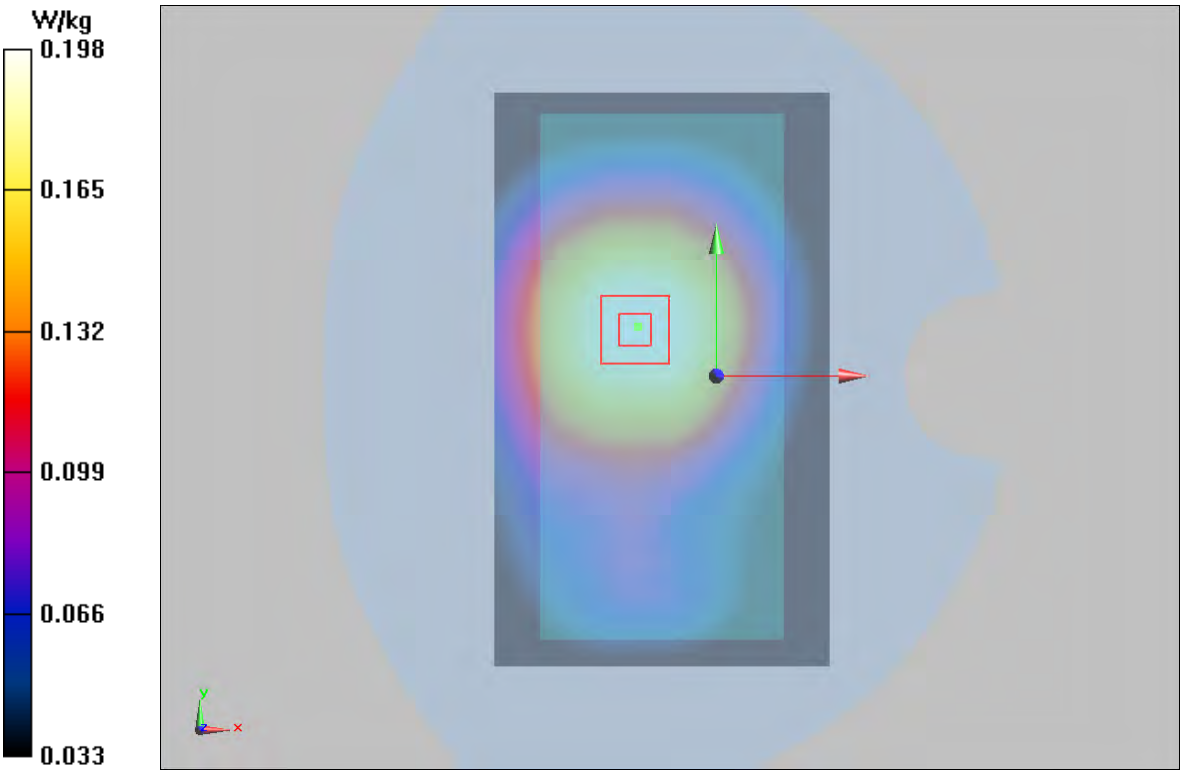
Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.15 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.236 W/kg

SAR(1 g) = 0.189 W/kg; SAR(10 g) = 0.144 W/kg

Maximum value of SAR (measured) = 0.198 W/kg



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Plot 20 GSM 850 GPRS (3Txslots) Back Side High (Distance 10mm)

Date: 2/7/2020

Communication System: UID 0, GPRS 3TX (0); Frequency: 848.8 MHz;Duty Cycle: 1:2.76694

Medium parameters used: f = 849 MHz; σ = 0.932 S/m; ε_r = 42.196; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.20, 9.20, 9.20); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Back Side High/Area Scan (71x121x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.780 W/kg

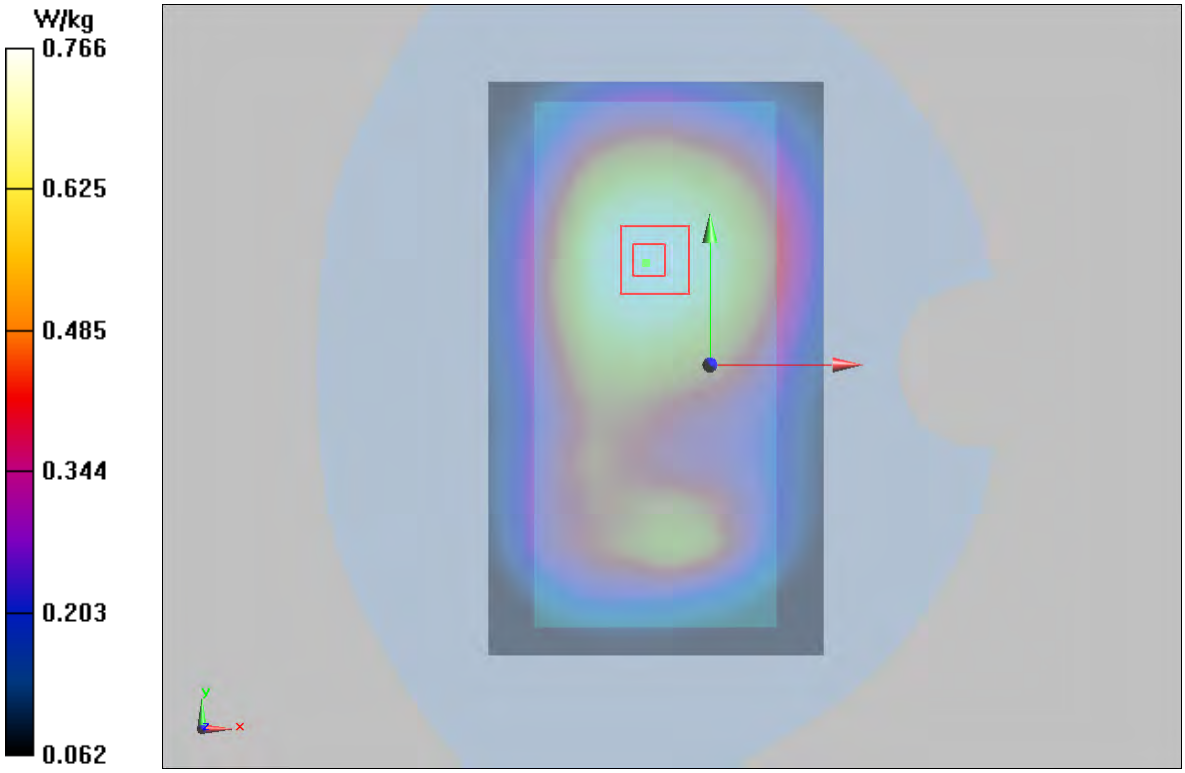
Back Side High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 24.91 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.910 W/kg

SAR(1 g) = 0.732 W/kg; SAR(10 g) = 0.560 W/kg

Maximum value of SAR (measured) = 0.766 W/kg



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Plot 21 GSM 1900 Left Cheek Middle

Date: 2/15/2020

Communication System: UID 0, GSM (0); Frequency: 1880 MHz;Duty Cycle: 1:8.30042

Medium parameters used: f = 1880 MHz; σ = 1.42 S/m; ε_r = 38.948; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.79, 7.79, 7.79); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Left Cheek Middle/Area Scan (71x131x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.085 W/kg

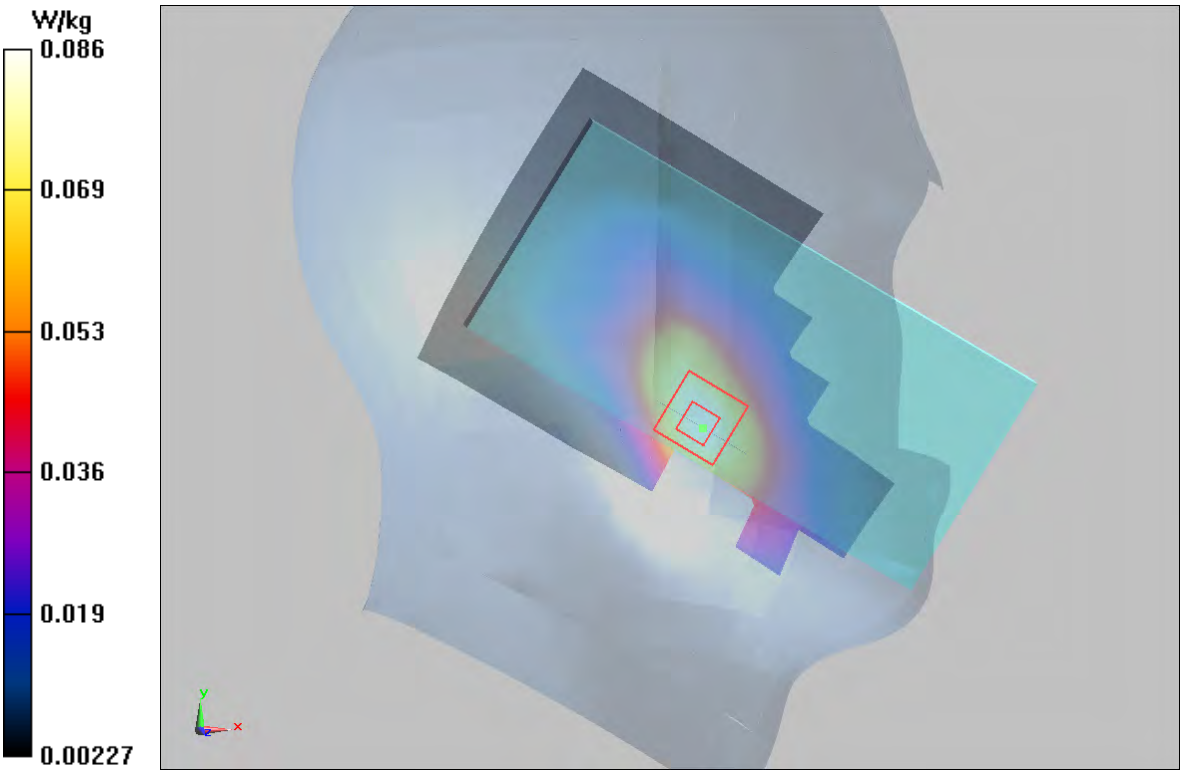
Left Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 1.801 V/m; Power Drift = 0.028 dB

Peak SAR (extrapolated) = 0.126 W/kg

SAR(1 g) = 0.080 W/kg; SAR(10 g) = 0.050 W/kg

Maximum value of SAR (measured) = 0.086 W/kg



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Plot 22 GSM 1900 Back Side Middle (Distance 15mm)

Date: 2/15/2020

Communication System: UID 0, GSM (0); Frequency: 1880 MHz;Duty Cycle: 1:8.30042

Medium parameters used: f = 1880 MHz; σ = 1.42 S/m; ε_r = 38.948; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.79, 7.79, 7.79); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Back Side Middle/Area Scan (71x121x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.163 W/kg

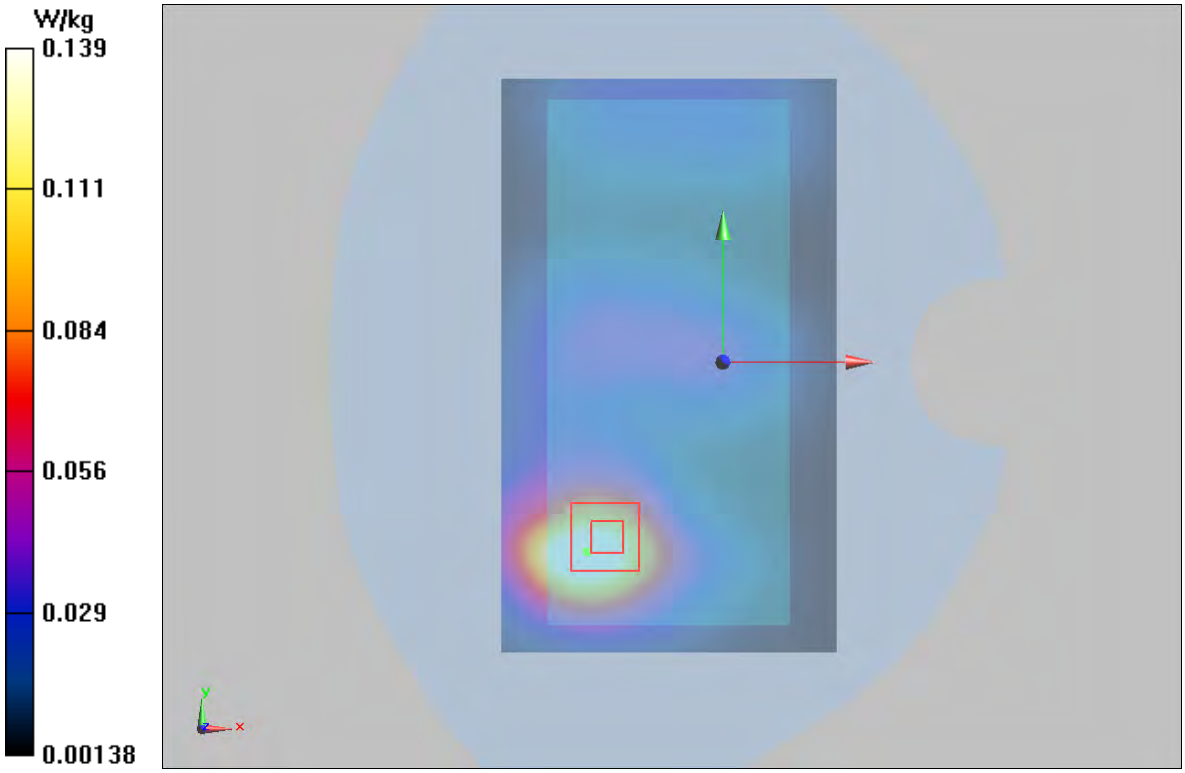
Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.474 V/m; Power Drift = -0.101 dB

Peak SAR (extrapolated) = 0.241 W/kg

SAR(1 g) = 0.127 W/kg; SAR(10 g) = 0.066 W/kg

Maximum value of SAR (measured) = 0.139 W/kg



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Plot 23 GSM 1900 GPRS (3Txslots) Bottom Edge High (Distance 10mm)

Date: 2/15/2020

Communication System: UID 0, GPRS 3TX (0); Frequency: 1909.8 MHz;Duty Cycle: 1:2.76694

Medium parameters used: f = 1910 MHz; σ = 1.417 S/m; ε_r = 38.262; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.79, 7.79, 7.79); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Bottom Edge High/Area Scan (51x111x1): Interpolated grid: dx=10mm, dy=10 mm

Maximum value of SAR (interpolated) = 0.934 W/kg

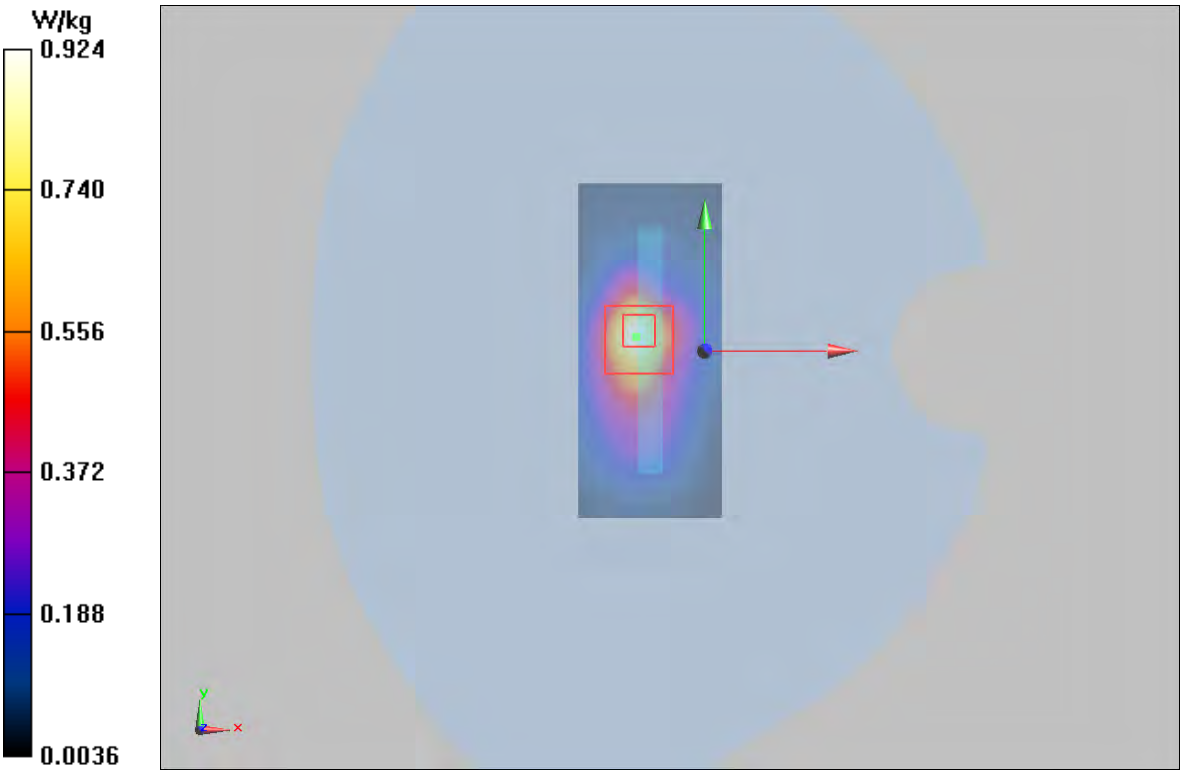
Bottom Edge High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 24.19 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 1.65 W/kg

SAR(1 g) = 0.818 W/kg; SAR(10 g) = 0.396 W/kg

Maximum value of SAR (measured) = 0.924 W/kg



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Plot 24 UMTS Band II Left Cheek High

Date: 2/16/2020

Communication System: UID 0, WCDMA (0); Frequency: 1907.6 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1908 MHz; σ = 1.416 S/m; ε_r = 38.306; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.79, 7.79, 7.79); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Left Cheek High/Area Scan (71x131x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.180 W/kg

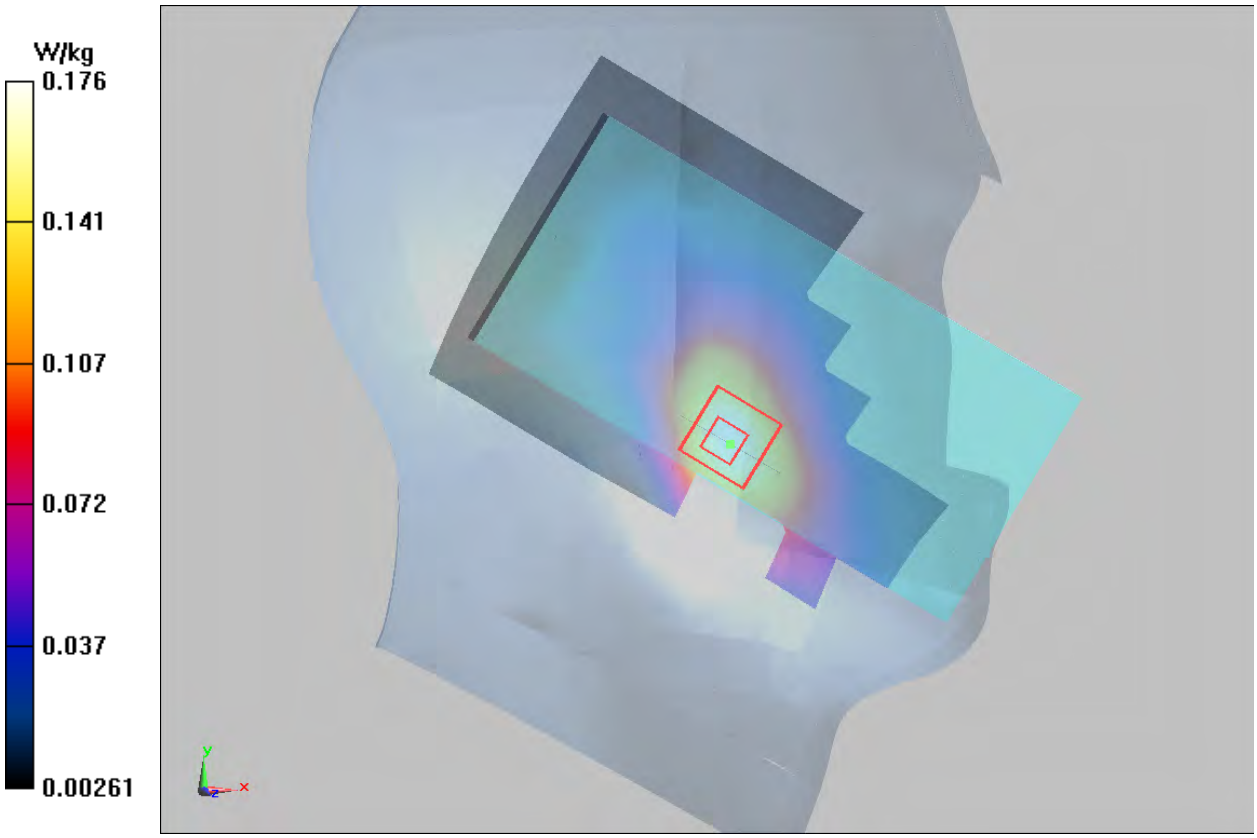
Left Cheek High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 2.239 V/m; Power Drift = 0.102 dB

Peak SAR (extrapolated) = 0.253 W/kg

SAR(1 g) = 0.163 W/kg; SAR(10 g) = 0.101 W/kg

Maximum value of SAR (measured) = 0.176 W/kg



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Plot 25 UMTS Band II Back Side Middle (Distance 15mm)

Date: 2/16/2020

Communication System: UID 0, WCDMA (0); Frequency: 1880 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1880 MHz; σ = 1.42 S/m; ε_r = 38.948; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.79, 7.79, 7.79); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Back Side Middle/Area Scan (71x121x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.177 W/kg

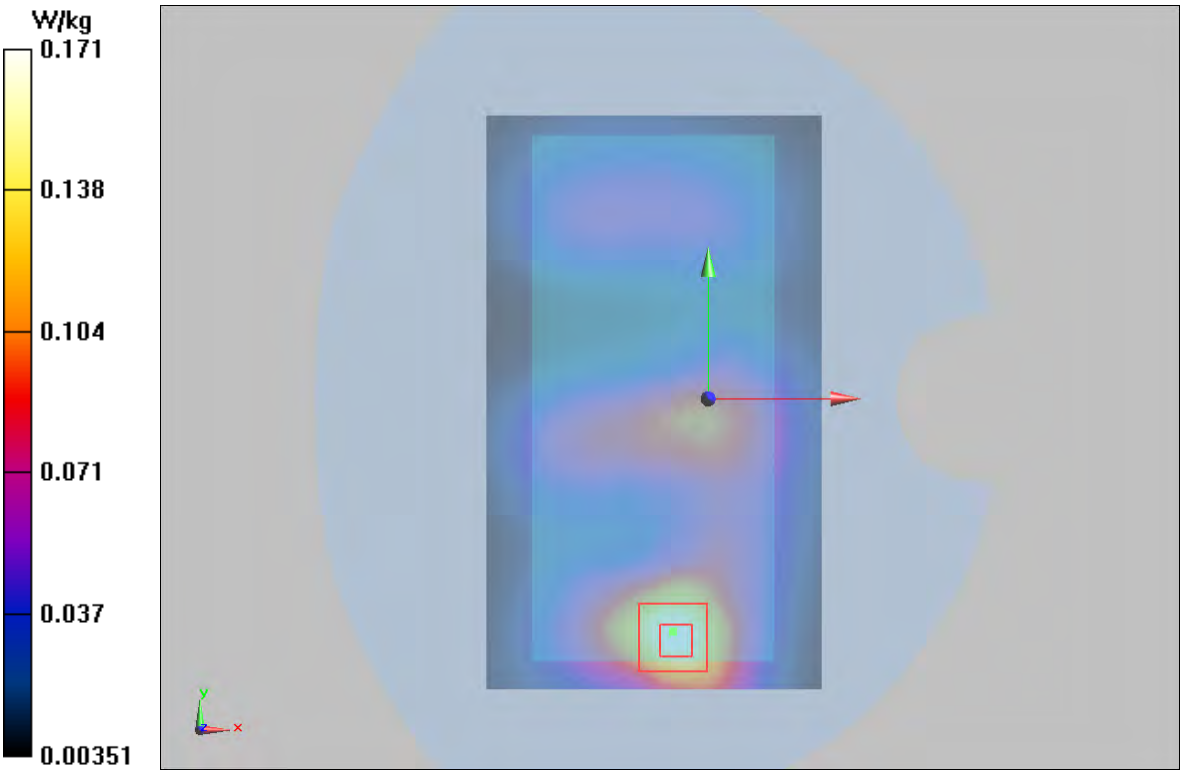
Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.368 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 0.285 W/kg

SAR(1 g) = 0.158 W/kg; SAR(10 g) = 0.087 W/kg

Maximum value of SAR (measured) = 0.171 W/kg



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Plot 26 UMTS Band II Bottom Edge High (Distance 10mm)

Date: 2/16/2020

Communication System: UID 0, WCDMA (0); Frequency: 1907.6 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1908 MHz; σ = 1.416 S/m; ε_r = 38.306; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.79, 7.79, 7.79); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Bottom Edge High/Area Scan (51x111x1): Interpolated grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.753 W/kg

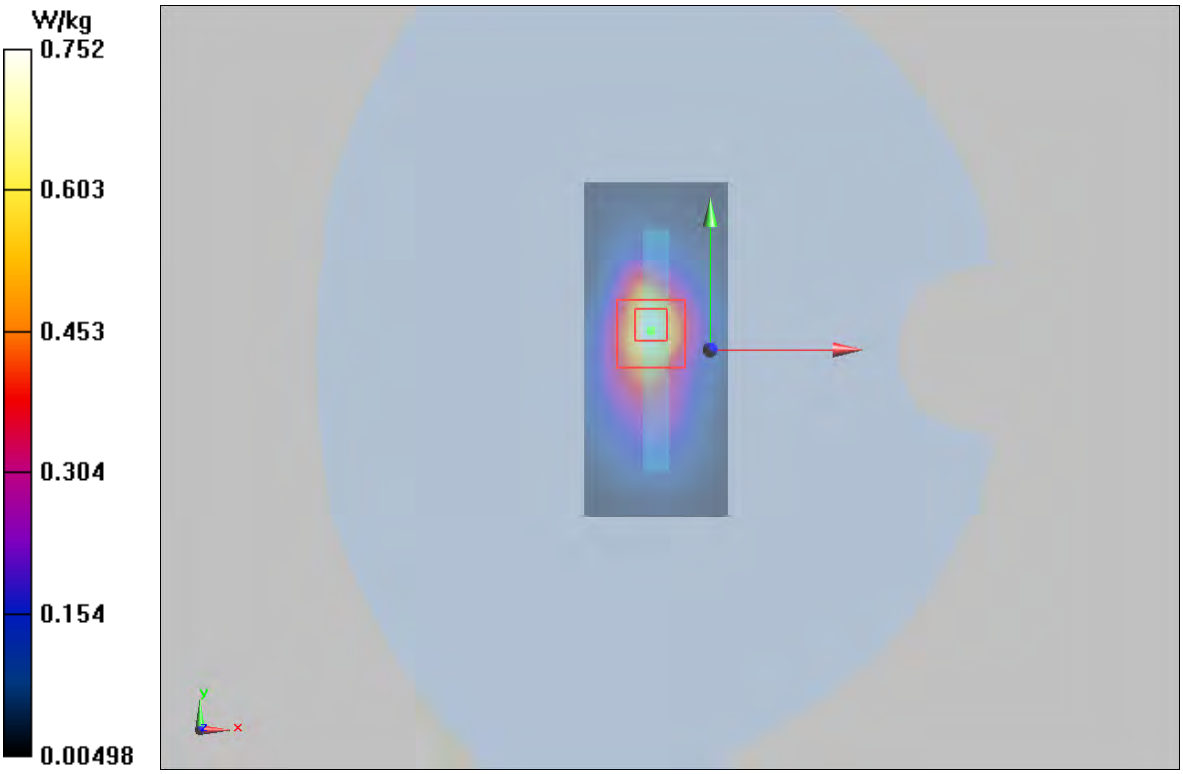
Bottom Edge High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 21.41 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 1.37 W/kg

SAR(1 g) = 0.662 W/kg; SAR(10 g) = 0.315 W/kg

Maximum value of SAR (measured) = 0.752 W/kg



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Plot 27 UMTS Band IV Left Cheek High

Date: 2/6/2020

Communication System: UID 0, WCDMA (0); Frequency: 1752.6 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1753 MHz; σ = 1.307 S/m; ε_r = 38.724; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(8.21, 8.21, 8.21); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Left Cheek High/Area Scan (71x131x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.070 W/kg

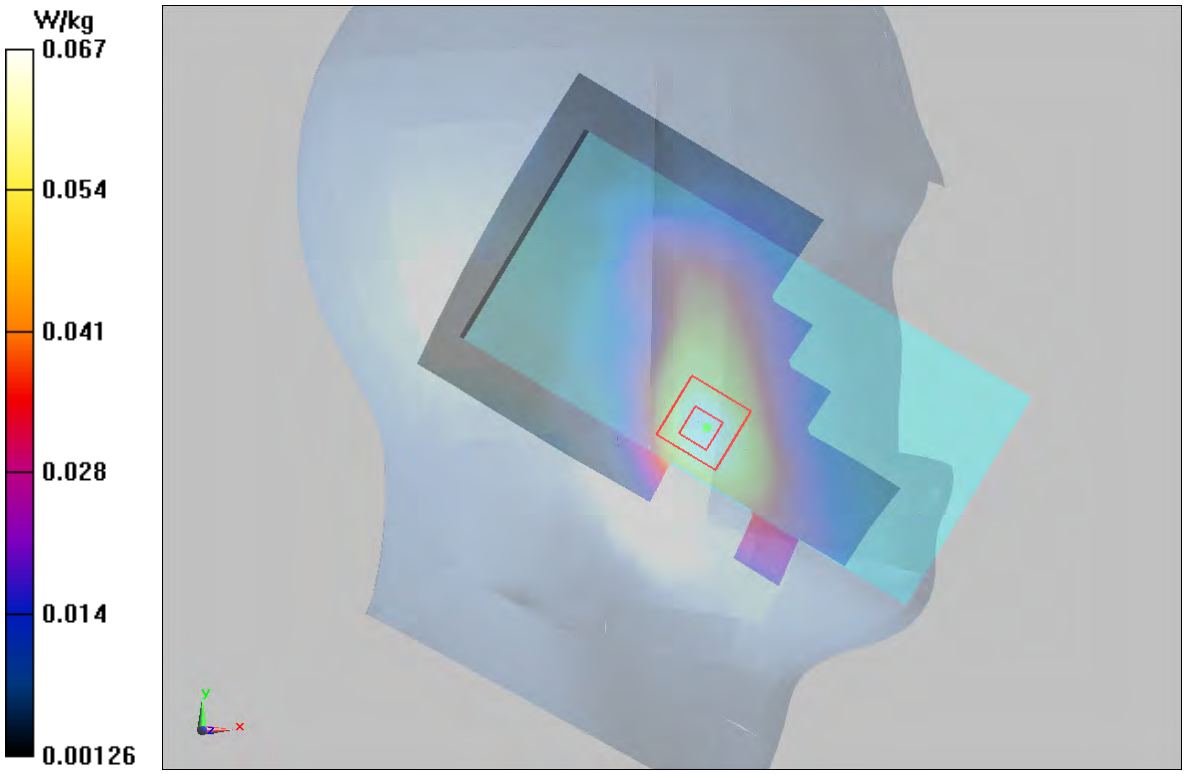
Left Cheek High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 0.5800 V/m; Power Drift = 0.087 dB

Peak SAR (extrapolated) = 0.0970 W/kg

SAR(1 g) = 0.063 W/kg; SAR(10 g) = 0.040 W/kg

Maximum value of SAR (measured) = 0.067 W/kg



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Plot 28 UMTS Band IV Back Side Middle(Distance 15mm)

Date: 2/6/2020

Communication System: UID 0, WCDMA (0); Frequency: 1732.6 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1733 MHz; σ = 1.312 S/m; ε_r = 39.365; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(8.21, 8.21, 8.21); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Back Side Middle/Area Scan (71x121x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.0550 W/kg

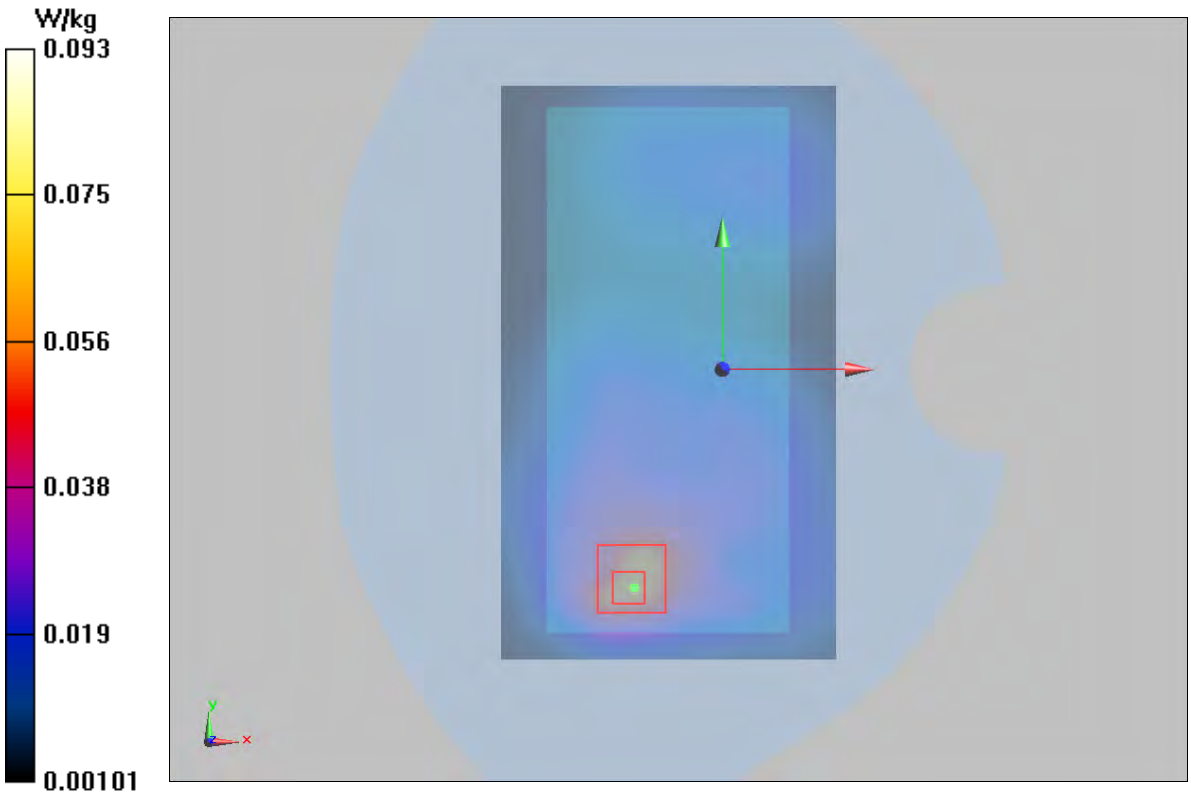
Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.807 V/m; Power Drift = 0.020 dB

Peak SAR (extrapolated) = 0.0890 W/kg

SAR(1 g) = 0.084 W/kg; SAR(10 g) = 0.058 W/kg

Maximum value of SAR (measured) = 0.093 W/kg



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Plot 29 UMTS Band IV Back Side High (Distance 10mm)

Date: 2/6/2020

Communication System: UID 0, WCDMA (0); Frequency: 1752.6 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1753 MHz; σ = 1.307 S/m; ε_r = 38.724; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(8.21, 8.21, 8.21); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Back Side High/Area Scan (71x121x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.185 W/kg

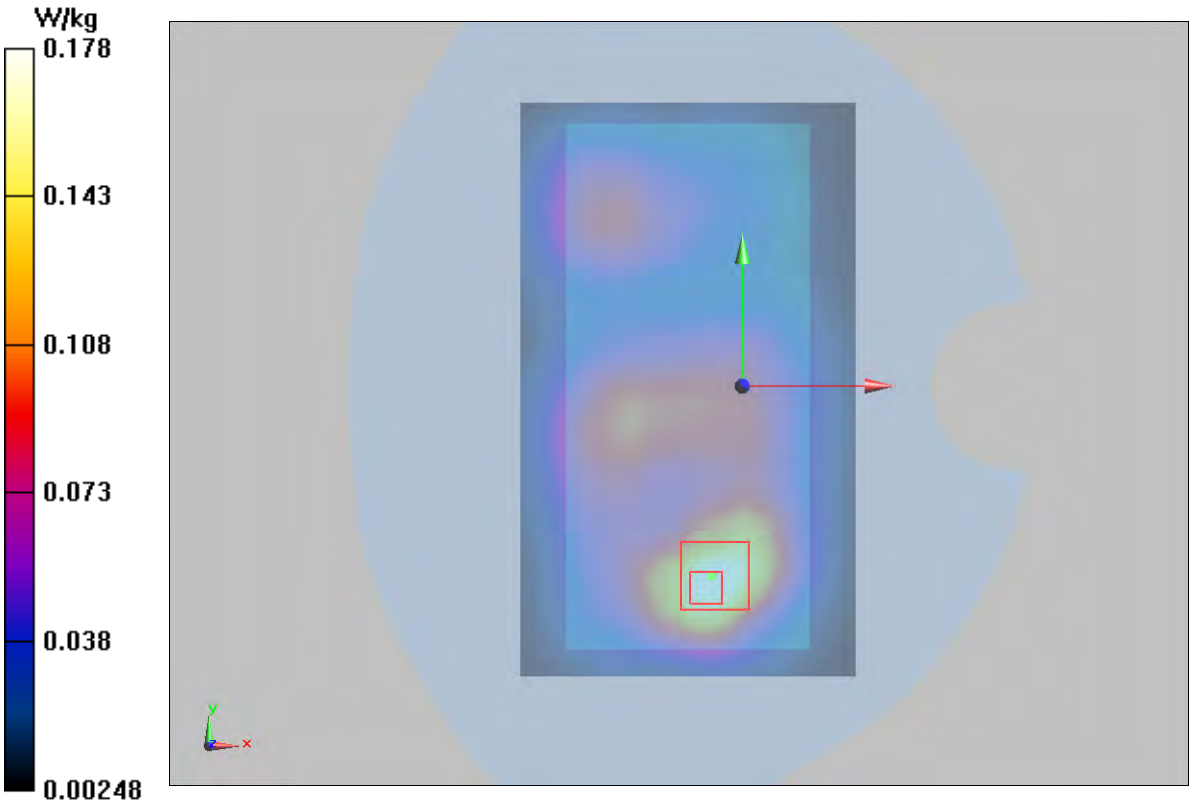
Back Side High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.468 V/m; Power Drift = -0.025 dB

Peak SAR (extrapolated) = 0.305 W/kg

SAR(1 g) = 0.165 W/kg; SAR(10 g) = 0.091 W/kg

Maximum value of SAR (measured) = 0.178 W/kg



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Plot 30 UMTS Band V Right Cheek Middle

Date: 2/10/2020

Communication System: UID 0, WCDMA (0); Frequency: 836.6 MHz;Duty Cycle: 1:1

Medium parameters used: f = 837 MHz; σ = 0.923 S/m; ε_r = 42.201; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Right Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.20, 9.20, 9.20); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Right Cheek Middle/Area Scan (71x131x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.213 W/kg

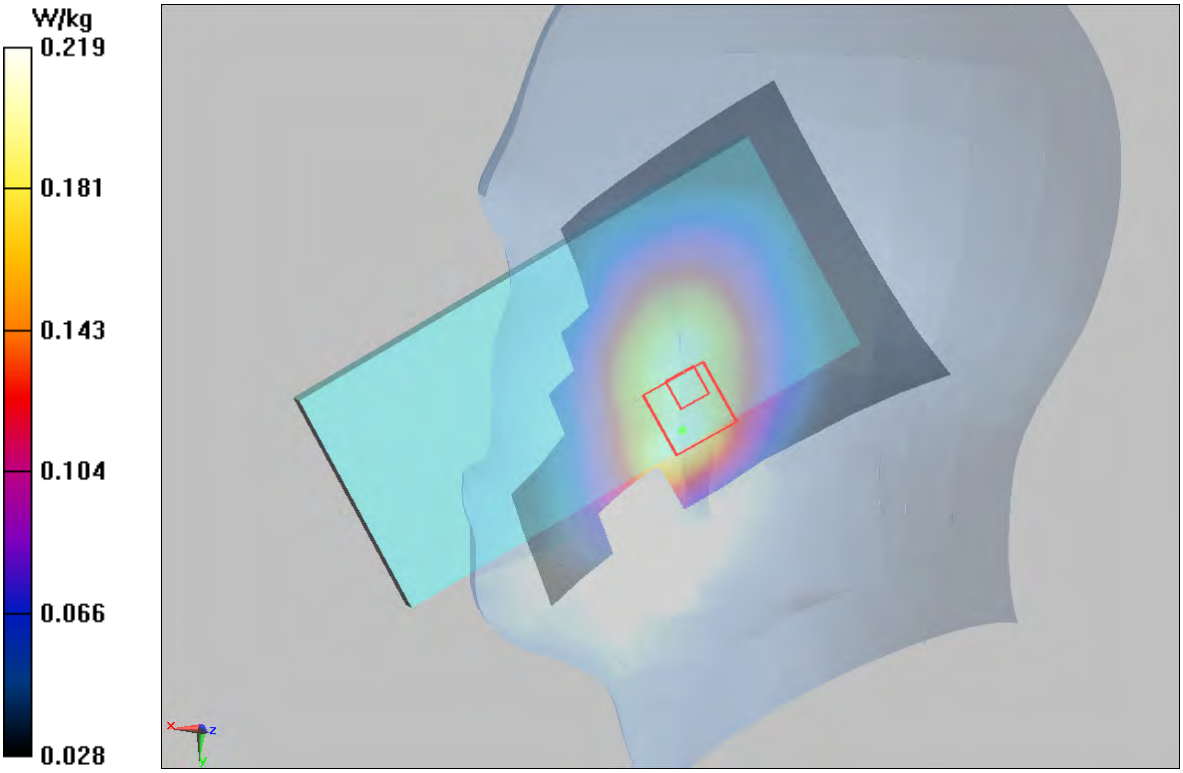
Right Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.789 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.275 W/kg

SAR(1 g) = 0.203 W/kg; SAR(10 g) = 0.150 W/kg

Maximum value of SAR (measured) = 0.219 W/kg



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Plot 31 UMTS Band V Front Side Middle (Distance 15mm)

Date: 2/10/2020

Communication System: UID 0, WCDMA (0); Frequency: 836.6 MHz;Duty Cycle: 1:1

Medium parameters used: f = 837 MHz; σ = 0.923 S/m; ε_r = 42.201; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.20, 9.20, 9.20); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Front Side Middle/Area Scan (71x121x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.186 W/kg

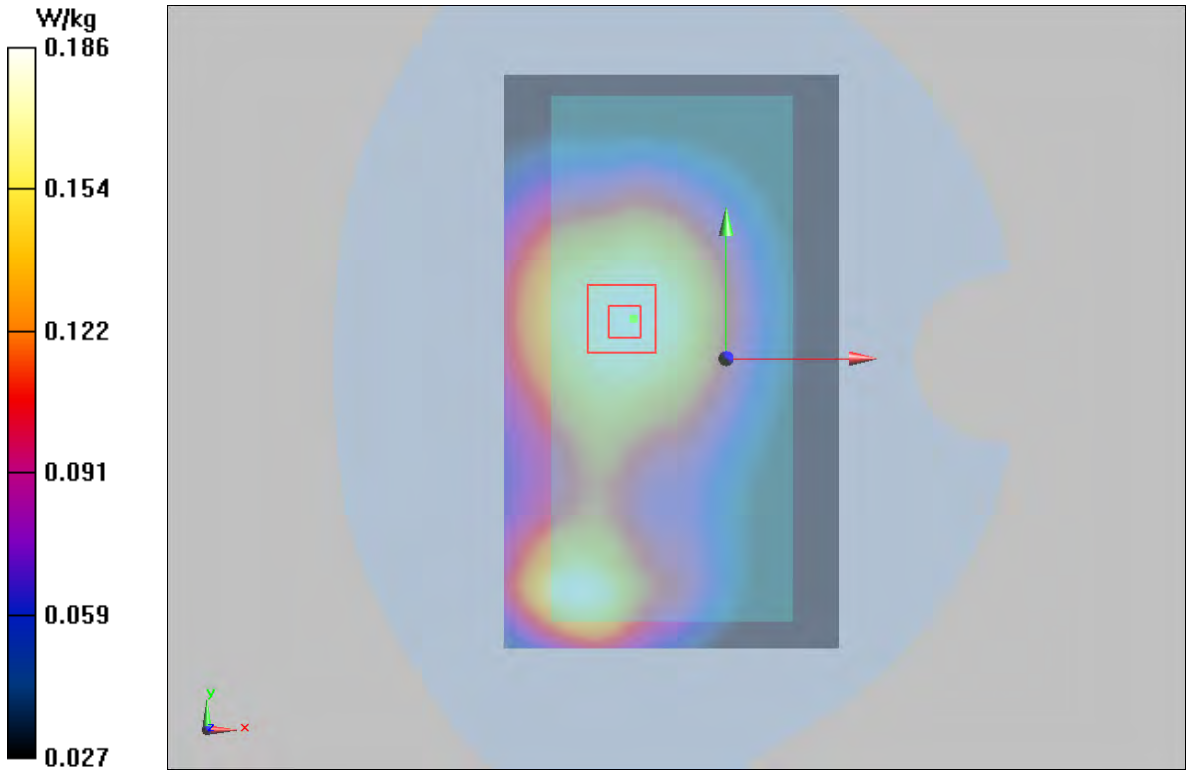
Front Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 13.18 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.220 W/kg

SAR(1 g) = 0.177 W/kg; SAR(10 g) = 0.135 W/kg

Maximum value of SAR (measured) = 0.186 W/kg



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Plot 32 UMTS Band V Back Side Middle (Distance 10mm)

Date: 2/10/2020

Communication System: UID 0, WCDMA (0); Frequency: 836.6 MHz;Duty Cycle: 1:1

Medium parameters used: f = 837 MHz; σ = 0.923 S/m; ε_r = 42.201; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.20, 9.20, 9.20); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Back Side Middle/Area Scan (71x121x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.214 W/kg

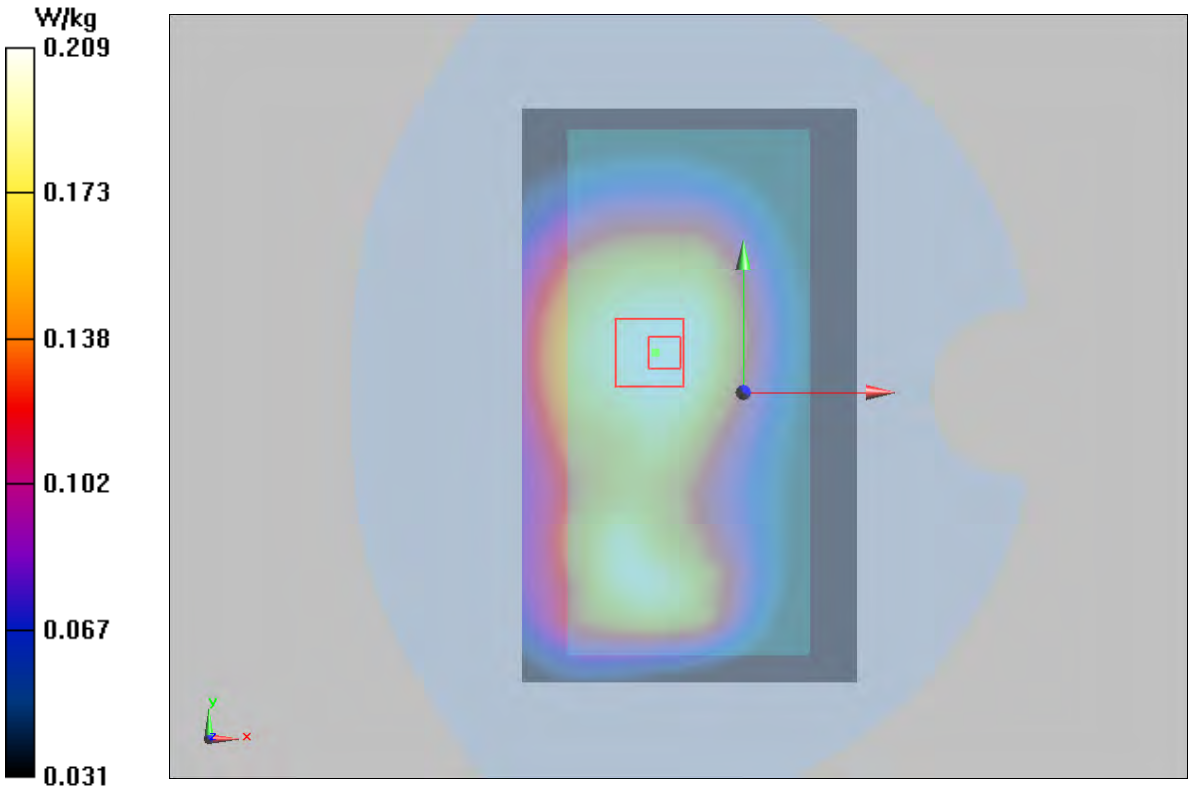
Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.67 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.254 W/kg

SAR(1 g) = 0.201 W/kg; SAR(10 g) = 0.154 W/kg

Maximum value of SAR (measured) = 0.209 W/kg



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Plot 33 LTE Band 2 1RB Left Cheek High

Date: 2/16/2020

Communication System: UID 0, LTE (0); Frequency: 1900 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1900 MHz; σ = 1.408 S/m; ε_r = 38.294; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.79, 7.79, 7.79); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Left Cheek High/Area Scan (71x131x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.147 W/kg

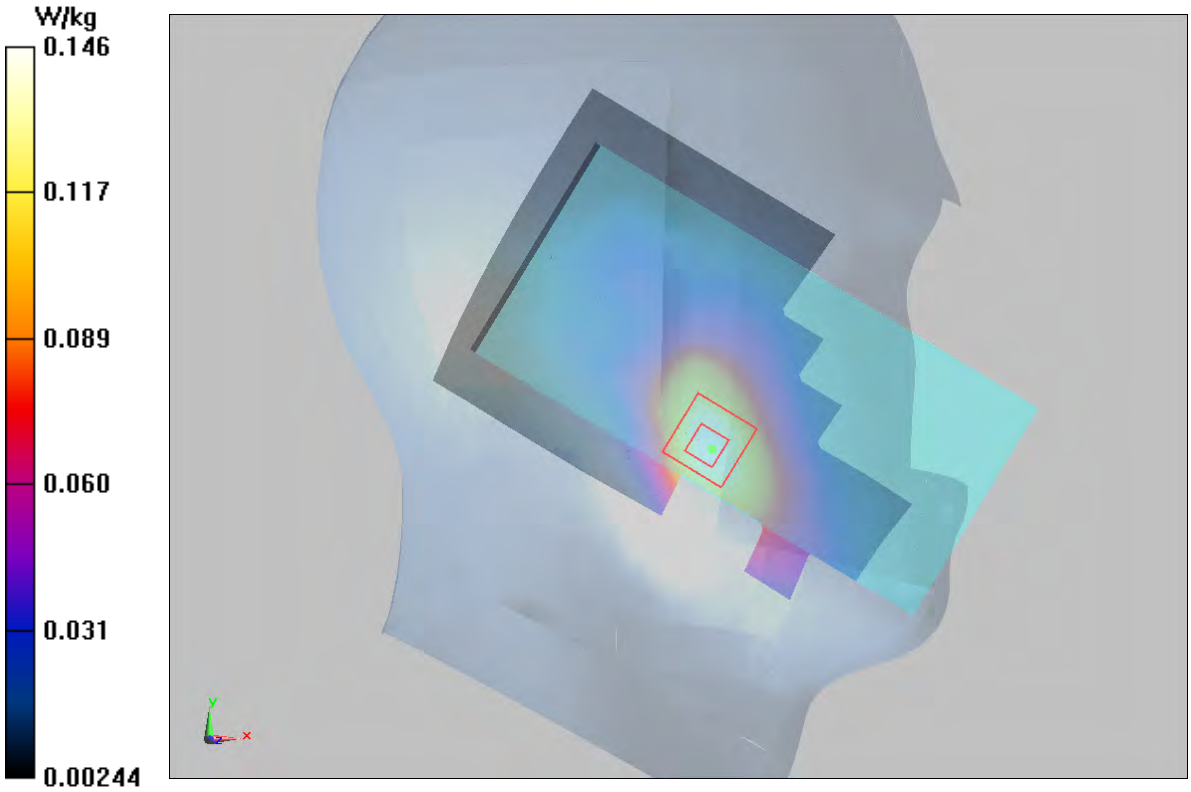
Left Cheek High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.424 V/m; Power Drift = 0.028 dB

Peak SAR (extrapolated) = 0.210 W/kg

SAR(1 g) = 0.136 W/kg; SAR(10 g) = 0.084 W/kg

Maximum value of SAR (measured) = 0.146 W/kg



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Plot 34 LTE Band 2 1RB Back Side Middle (Distance 15mm)

Date: 2/16/2020

Communication System: UID 0, LTE (0); Frequency: 1880 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1880 MHz; σ = 1.42 S/m; ε_r = 38.948; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.79, 7.79, 7.79); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Back Side Middle/Area Scan (71x121x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.183 W/kg

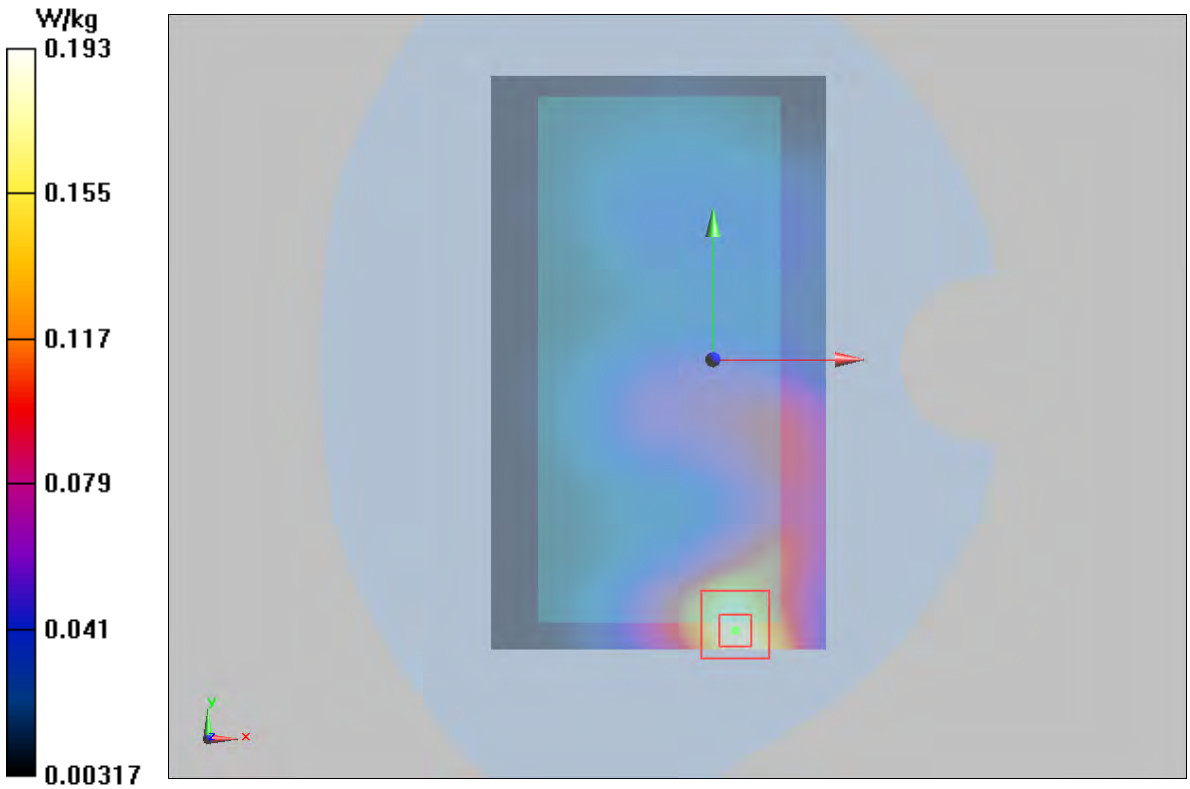
Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.940 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.321 W/kg

SAR(1 g) = 0.175 W/kg; SAR(10 g) = 0.096 W/kg

Maximum value of SAR (measured) = 0.193 W/kg



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Plot 35 LTE Band 2 1RB Bottom Edge Middle (Distance 10mm)

Date: 2/16/2020

Communication System: UID 0, LTE (0); Frequency: 1880 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1880 MHz; σ = 1.42 S/m; ε_r = 38.948; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.79, 7.79, 7.79); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Bottom Edge Middle/Area Scan (51x111x1): Interpolated grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.505 W/kg

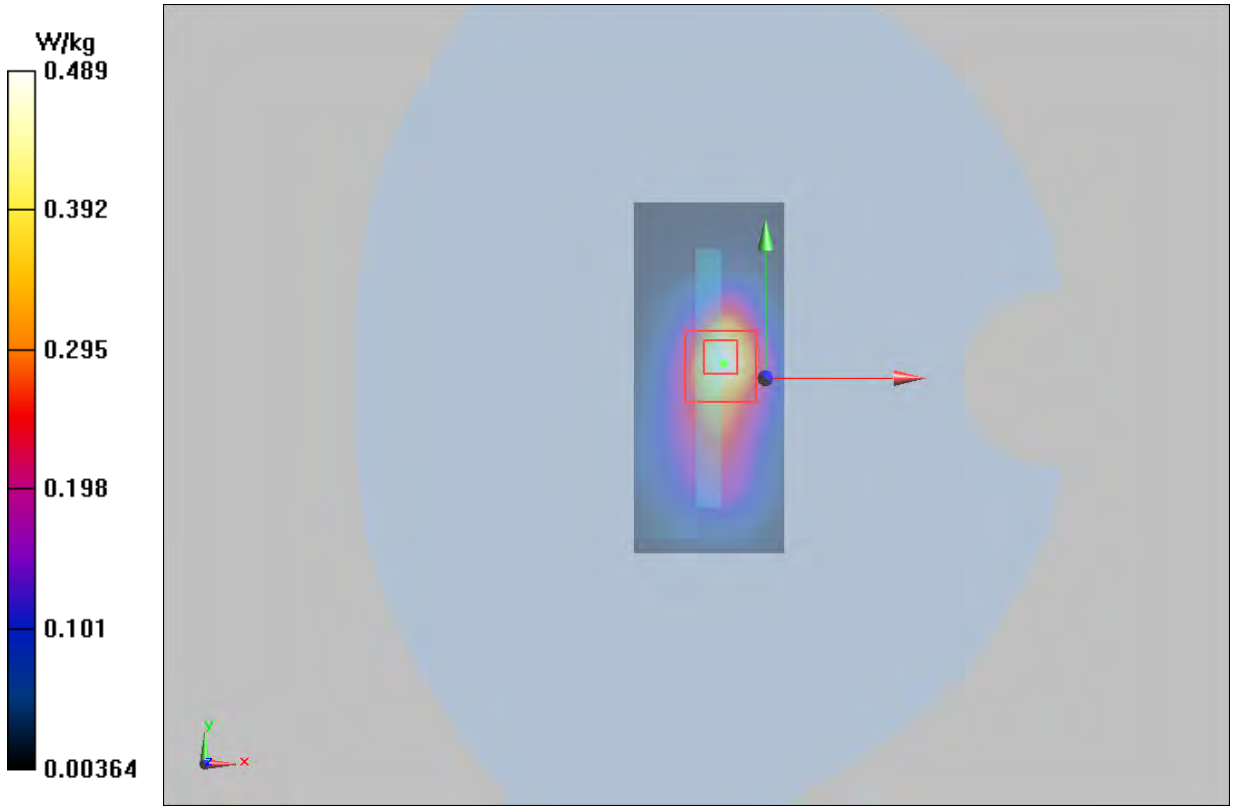
Bottom Edge Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 17.12 V/m; Power Drift = -0.023 dB

Peak SAR (extrapolated) = 0.890 W/kg

SAR(1 g) = 0.429 W/kg; SAR(10 g) = 0.204 W/kg

Maximum value of SAR (measured) = 0.489 W/kg



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Plot 36 LTE Band 4 1RB Left Cheek Middle

Date/Time: 2020/2/12 2:17:01

Communication System: UID 0, LTE (0); Frequency: 1732.5 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.293 S/m; ε_r = 38.785; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(8.21, 8.21, 8.21); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Left Cheek Middle/Area Scan (71x131x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.056 W/kg

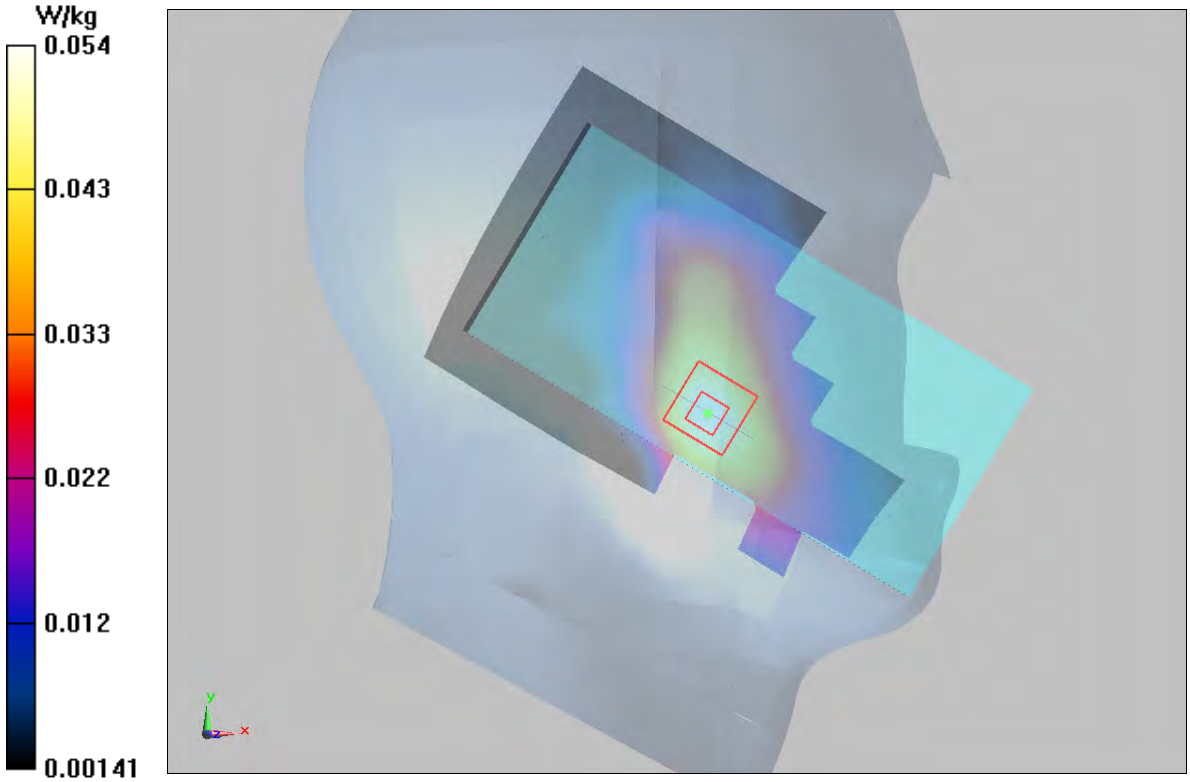
Left Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 1.042 V/m; Power Drift = 0.036 dB

Peak SAR (extrapolated) = 0.0750 W/kg

SAR(1 g) = 0.050 W/kg; SAR(10 g) = 0.032 W/kg

Maximum value of SAR (measured) = 0.054 W/kg



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Plot 37 LTE Band 4 1RB Back Side High (Distance 15mm)

Date: 2/6/2020

Communication System: UID 0, LTE (0); Frequency: 1745 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1745 MHz; σ = 1.301 S/m; ε_r = 38.753; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(8.21, 8.21, 8.21); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Back Side High/Area Scan (71x121x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.098 W/kg

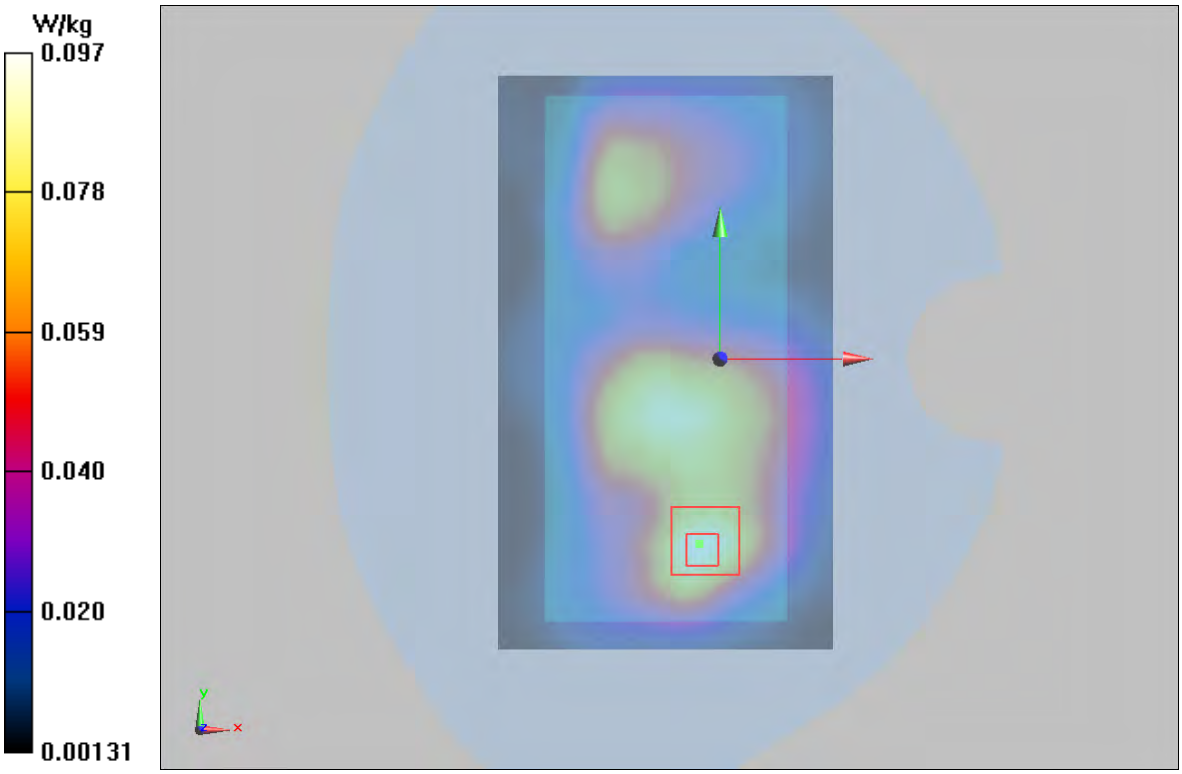
Back Side High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.915 V/m; Power Drift = 0.14 dB

Peak SAR (extrapolated) = 0.158 W/kg

SAR(1 g) = 0.089 W/kg; SAR(10 g) = 0.050 W/kg

Maximum value of SAR (measured) = 0.097 W/kg



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Plot 38 LTE Band 4 1RB Back Side Middle (Distance 10mm)

Date: 2/6/2020

Communication System: UID 0, LTE (0); Frequency: 1732.5 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.293 S/m; ε_r = 38.785; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(8.21, 8.21, 8.21); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Back Side Middle/Area Scan (71x121x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.182 W/kg

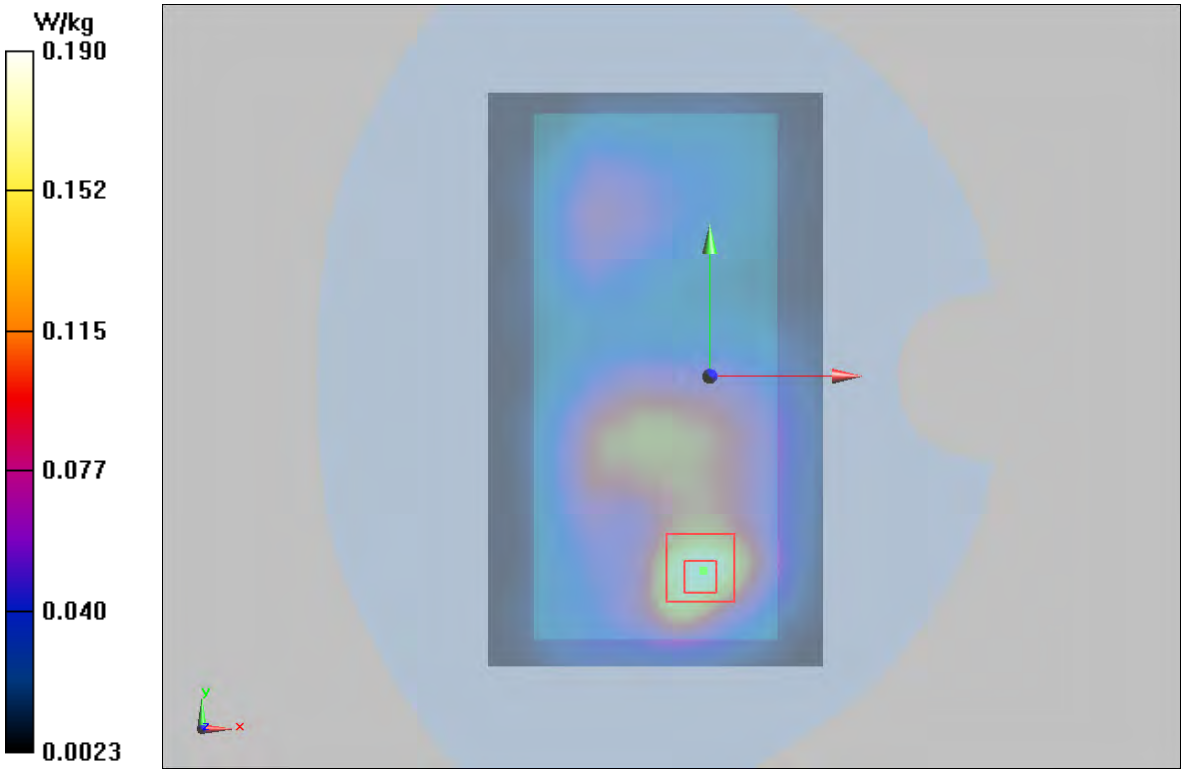
Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.317 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.324 W/kg

SAR(1 g) = 0.173 W/kg; SAR(10 g) = 0.094 W/kg

Maximum value of SAR (measured) = 0.190 W/kg



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Plot 39 LTE Band 5 1RB Left Cheek Low

Date: 2/11/2020

Communication System: UID 0, LTE (0); Frequency: 829 MHz;Duty Cycle: 1:1

Medium parameters used: f = 829 MHz; σ = 0.917 S/m; ε_r = 42.181; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.20, 9.20, 9.20); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Left Cheek Low/Area Scan (71x131x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.232 W/kg

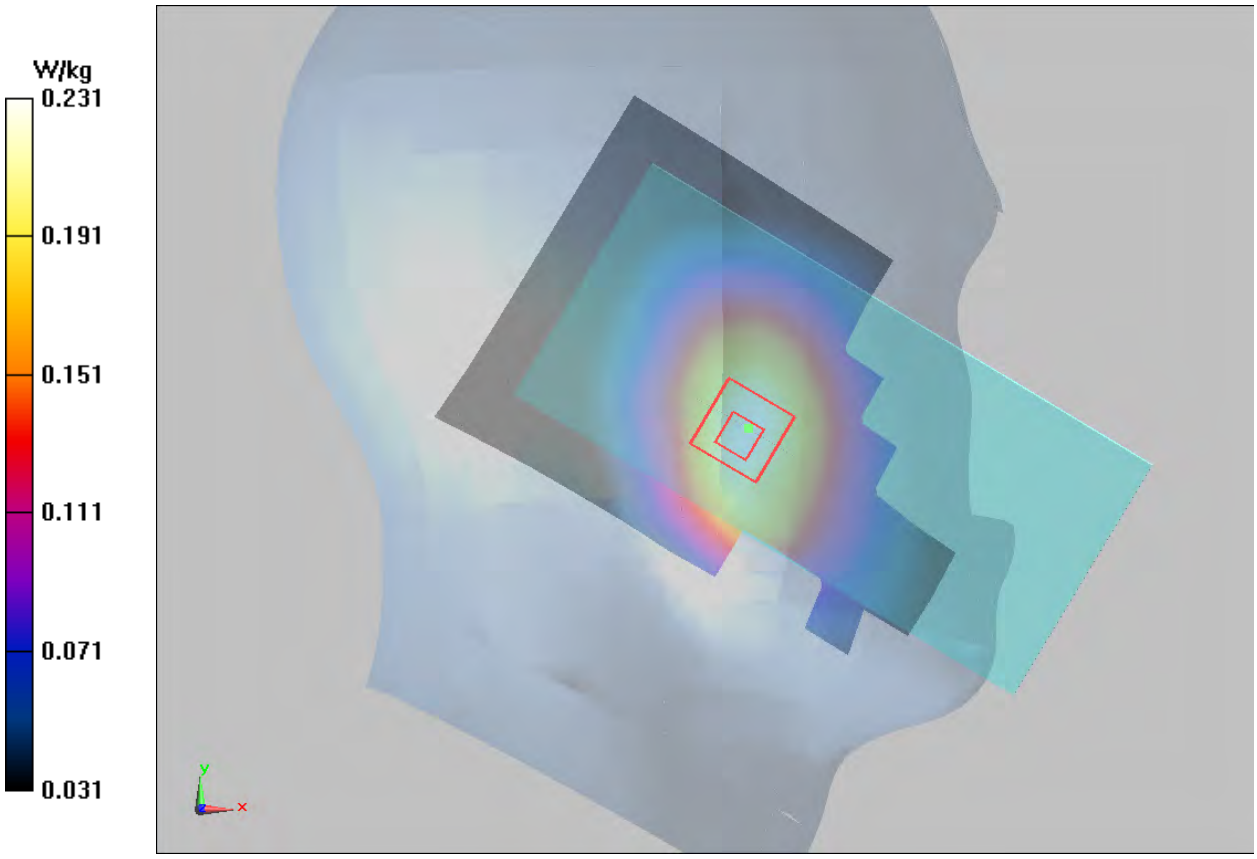
Left Cheek Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.299 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.276 W/kg

SAR(1 g) = 0.219 W/kg; SAR(10 g) = 0.165 W/kg

Maximum value of SAR (measured) = 0.231 W/kg



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Plot 40 LTE Band 5 1RB Back Side Low (Distance 15mm)

Date: 2/11/2020

Communication System: UID 0, LTE (0); Frequency: 829 MHz;Duty Cycle: 1:1

Medium parameters used: f = 829 MHz; σ = 0.917 S/m; ε_r = 42.181; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.20, 9.20, 9.20); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Back Side Low/Area Scan (71x121x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.262 W/kg

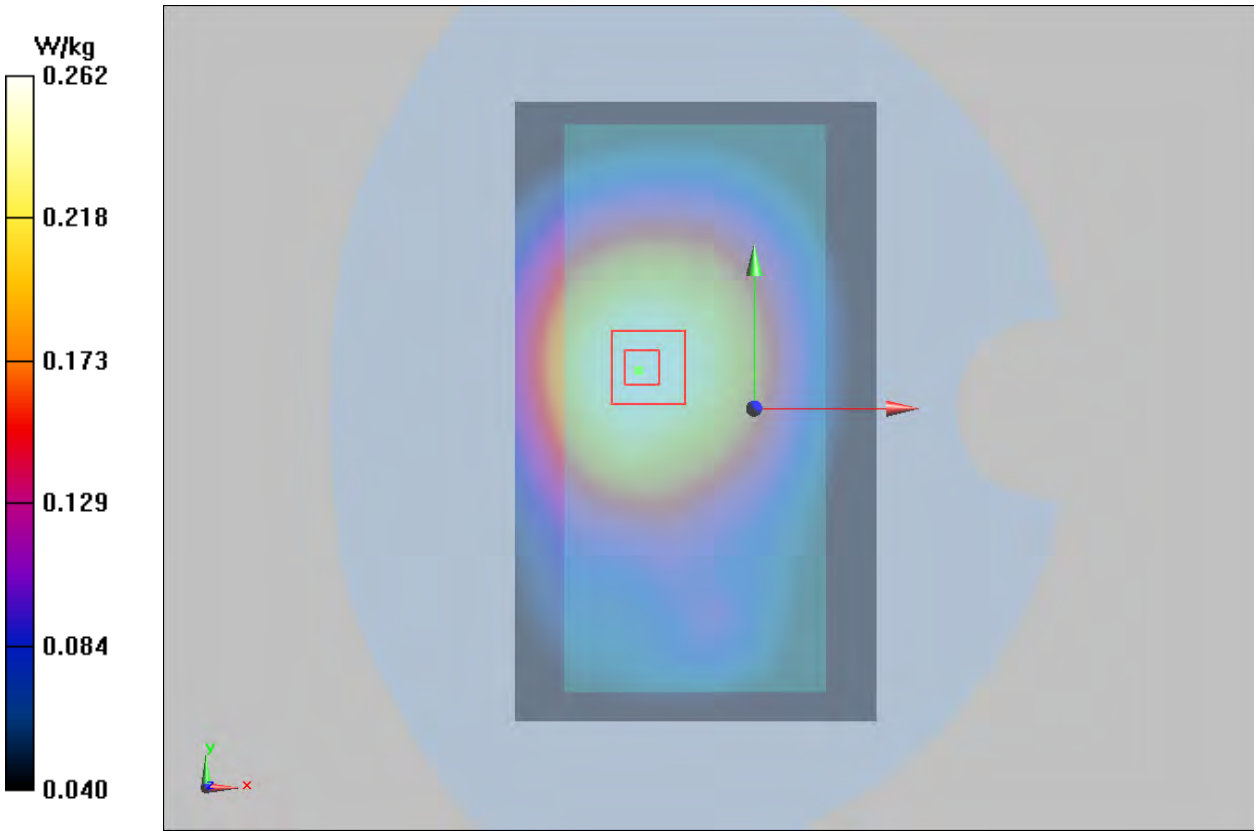
Back Side Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 16.02 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.310 W/kg

SAR(1 g) = 0.249 W/kg; SAR(10 g) = 0.190 W/kg

Maximum value of SAR (measured) = 0.262 W/kg



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Plot 41 LTE Band 5 1RB Back Side Low (Distance 10mm)

Date: 2/11/2020

Communication System: UID 0, LTE (0); Frequency: 829 MHz;Duty Cycle: 1:1

Medium parameters used: f = 829 MHz; σ = 0.917 S/m; ε_r = 42.181; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.20, 9.20, 9.20); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Back Side Low /Area Scan (71x121x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.235 W/kg

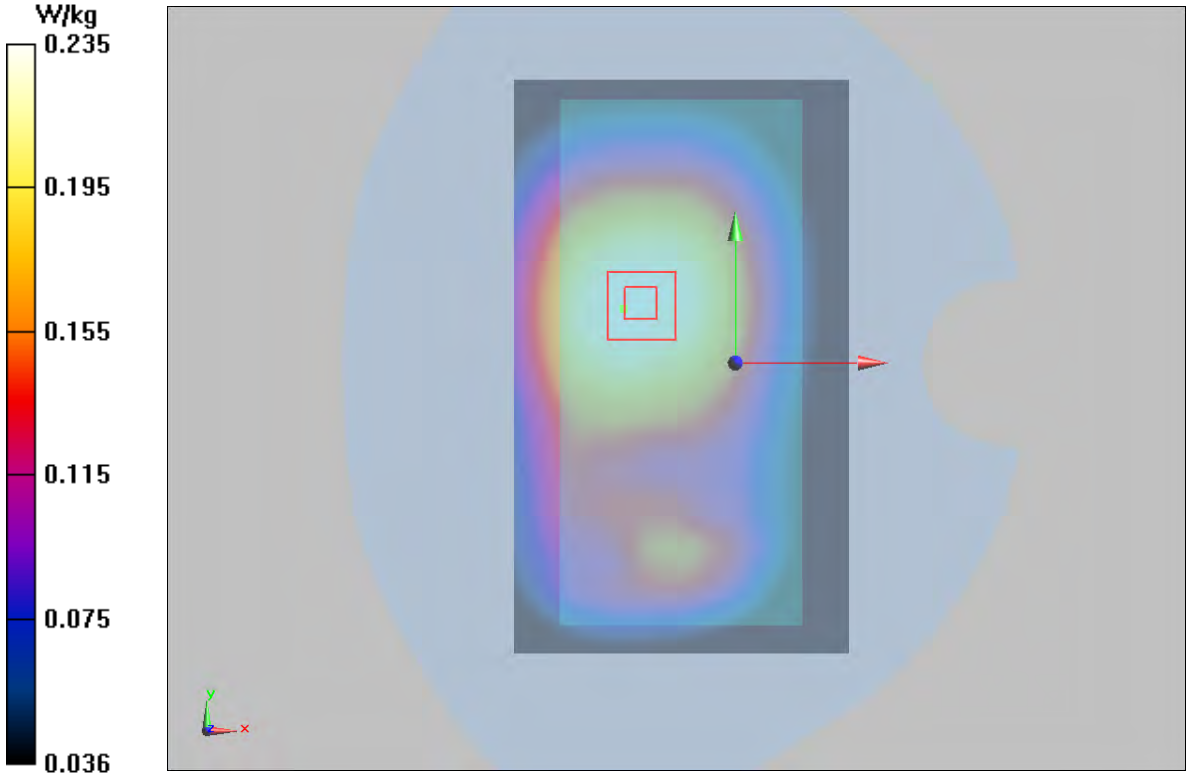
Back Side Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.84 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.277 W/kg

SAR(1 g) = 0.225 W/kg; SAR(10 g) = 0.173 W/kg

Maximum value of SAR (measured) = 0.235 W/kg



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Plot 42 LTE Band 7 1RB Left Cheek Low

Date: 2/14/2020

Communication System: UID 0, LTE (0); Frequency: 2510 MHz;Duty Cycle: 1:1

Medium parameters used: f = 2510 MHz; σ = 1.949 S/m; ε_r = 40.597; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.20, 7.20, 7.20); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Left Cheek Low/Area Scan (91x151x1): Interpolated grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.084 W/kg

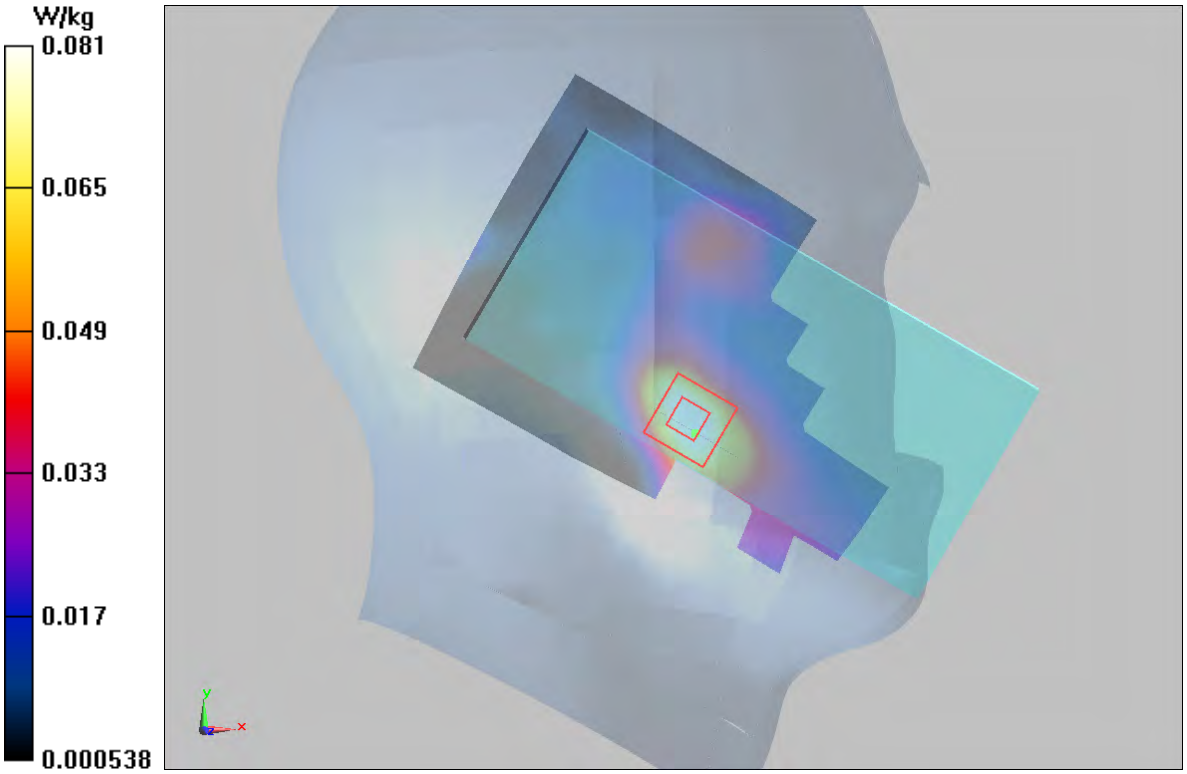
Left Cheek Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 1.285 V/m; Power Drift = 0.031 dB

Peak SAR (extrapolated) = 0.150 W/kg

SAR(1 g) = 0.075 W/kg; SAR(10 g) = 0.039 W/kg

Maximum value of SAR (measured) = 0.081 W/kg



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Plot 43 LTE Band 7 1RB Back Side Low (Distance 15mm)

Date: 2/14/2020

Communication System: UID 0, LTE (0); Frequency: 2510 MHz;Duty Cycle: 1:1

Medium parameters used: f = 2510 MHz; σ = 1.949 S/m; ε_r = 40.597; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.20, 7.20, 7.20); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Back Side Low/Area Scan(91x151x1): Interpolated grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.247 W/kg

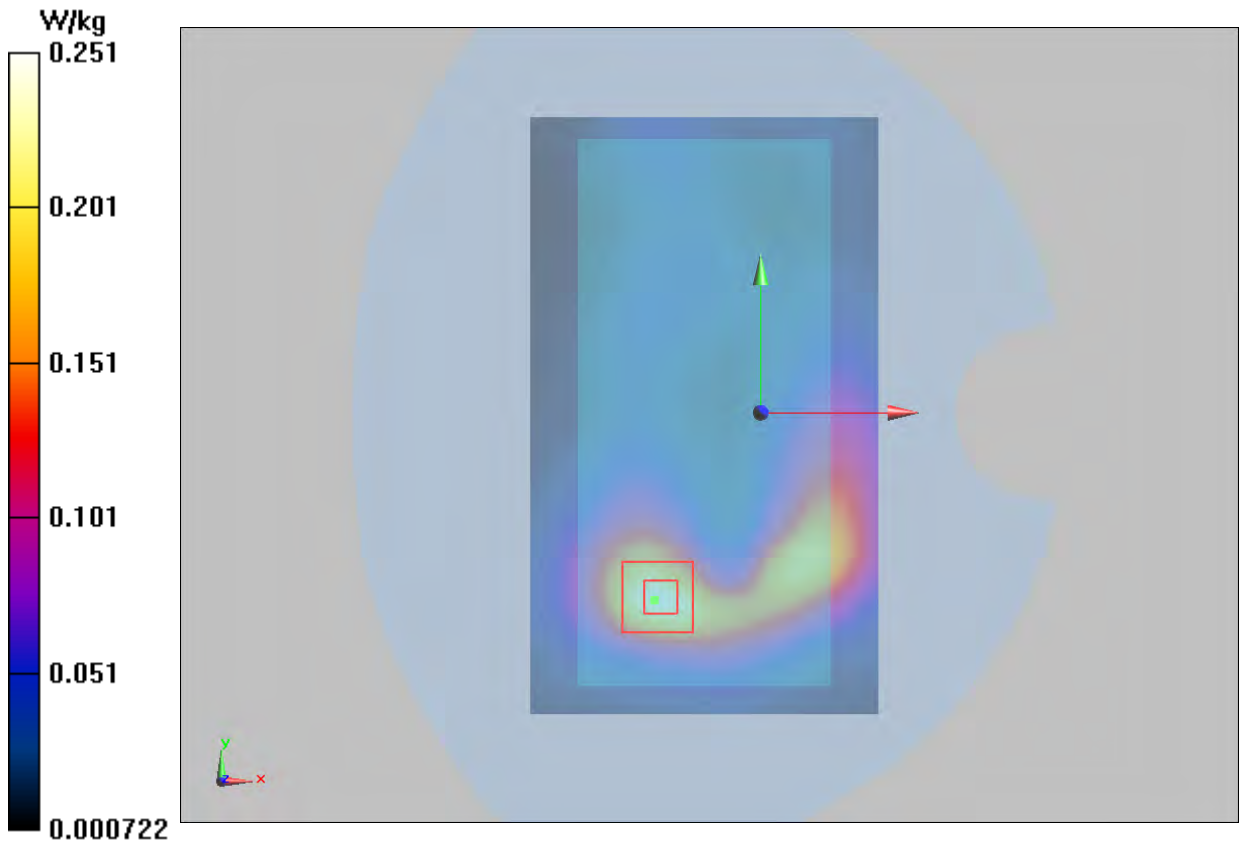
Back Side Low/Zoom Scan(7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.033 V/m; Power Drift = -0.066 dB

Peak SAR (extrapolated) = 0.453 W/kg

SAR(1 g) = 0.227 W/kg; SAR(10 g) = 0.113 W/kg

Maximum value of SAR (measured) = 0.251 W/kg



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Plot 44 LTE Band 7 1RB Bottom Edge High (Distance 10mm)

Date: 2/14/2020

Communication System: UID 0, LTE (0); Frequency: 2560 MHz;Duty Cycle: 1:1

Medium parameters used: f = 2560 MHz; σ = 1.997 S/m; ε_r = 40.391; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.20, 7.20, 7.20); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Bottom Edge High/Area Scan (51x111x1): Interpolated grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.756 W/kg

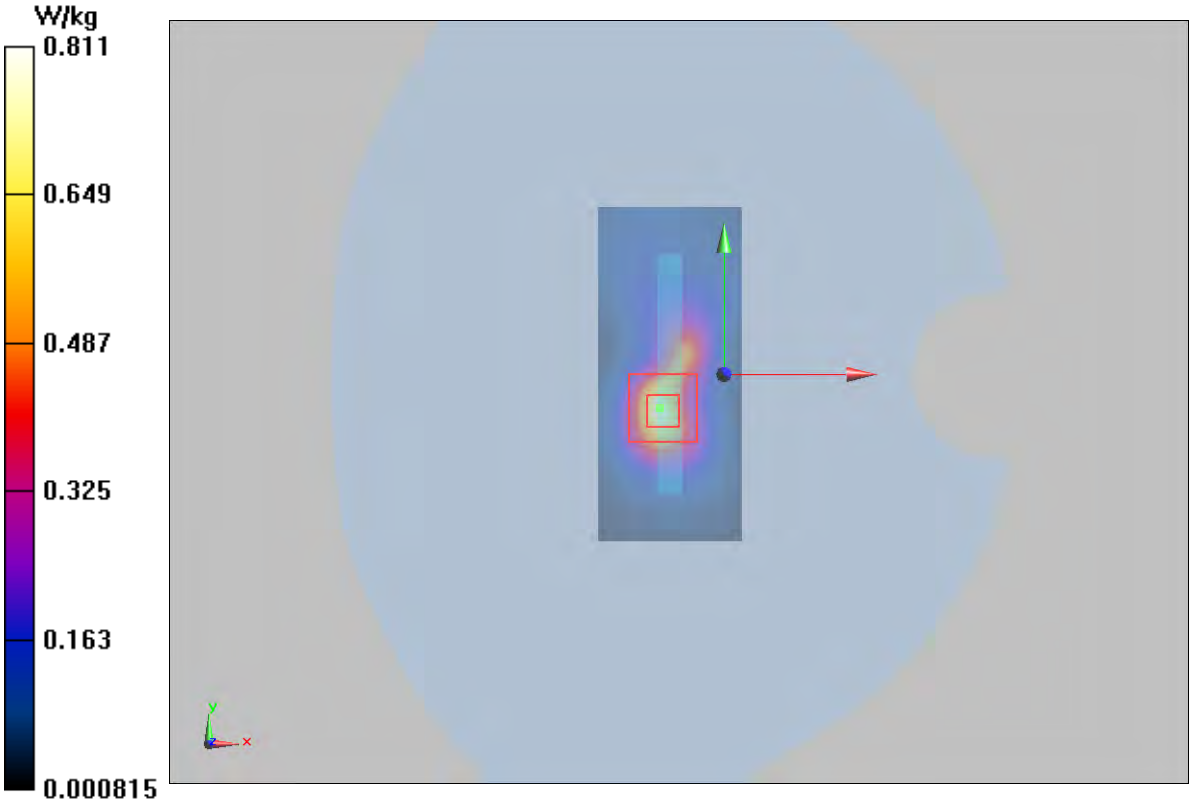
Bottom Edge High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 18.09 V/m; Power Drift = -0.13 dB

Peak SAR (extrapolated) = 1.62 W/kg

SAR(1 g) = 0.693 W/kg; SAR(10 g) = 0.291 W/kg

Maximum value of SAR (measured) = 0.811 W/kg



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Plot 45 LTE Band 12 1RB Left Cheek Middle

Date: 2/4/2020

Communication System: UID 0, LTE (0); Frequency: 707.5 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 707.5 MHz; σ = 0.848 S/m; ε_r = 42.763; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.54, 9.54, 9.54); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Left Cheek Middle/Area Scan (71x131x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.121 W/kg

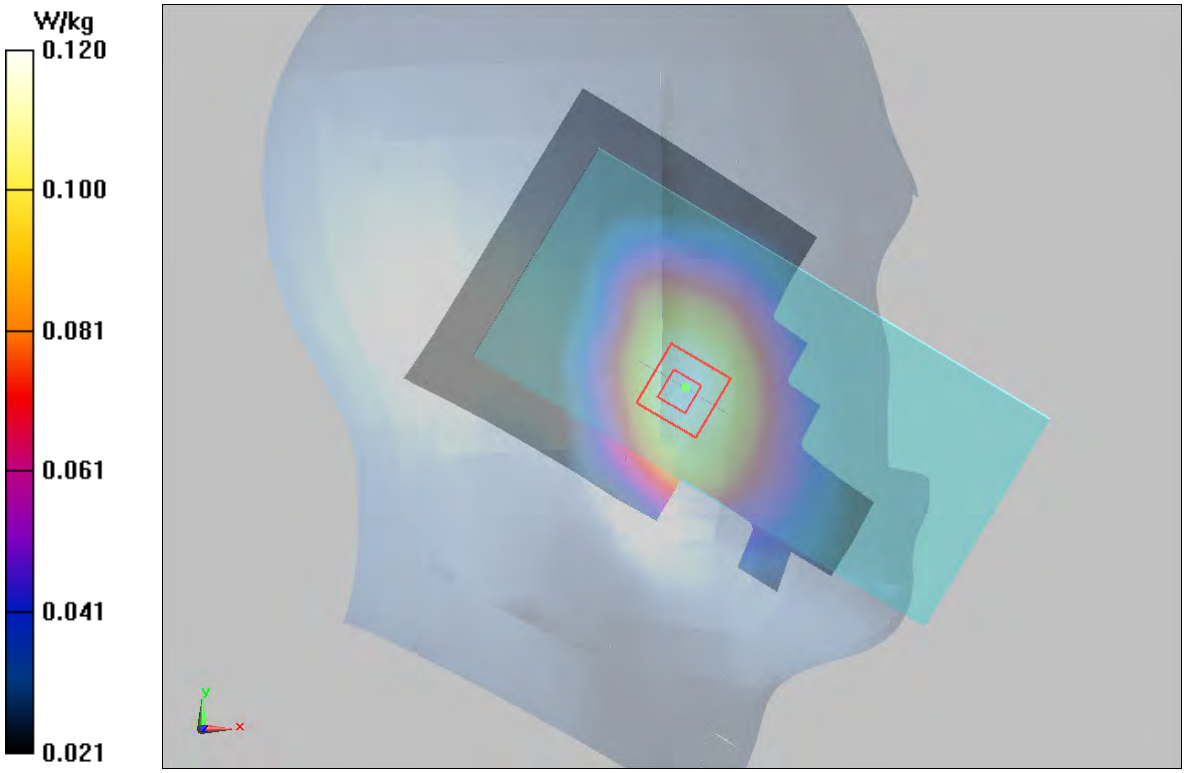
Left Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.669 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.138 W/kg

SAR(1 g) = 0.113 W/kg; SAR(10 g) = 0.089 W/kg

Maximum value of SAR (measured) = 0.120 W/kg



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Plot 46 LTE Band 12 1RB Front Side Middle (Distance 15mm)

Date: 2/4/2020

Communication System: UID 0, LTE (0); Frequency: 707.5 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 707.5 MHz; σ = 0.848 S/m; ε_r = 42.763; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.54, 9.54, 9.54); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Front Side Middle/Area Scan (71x121x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.126 W/kg

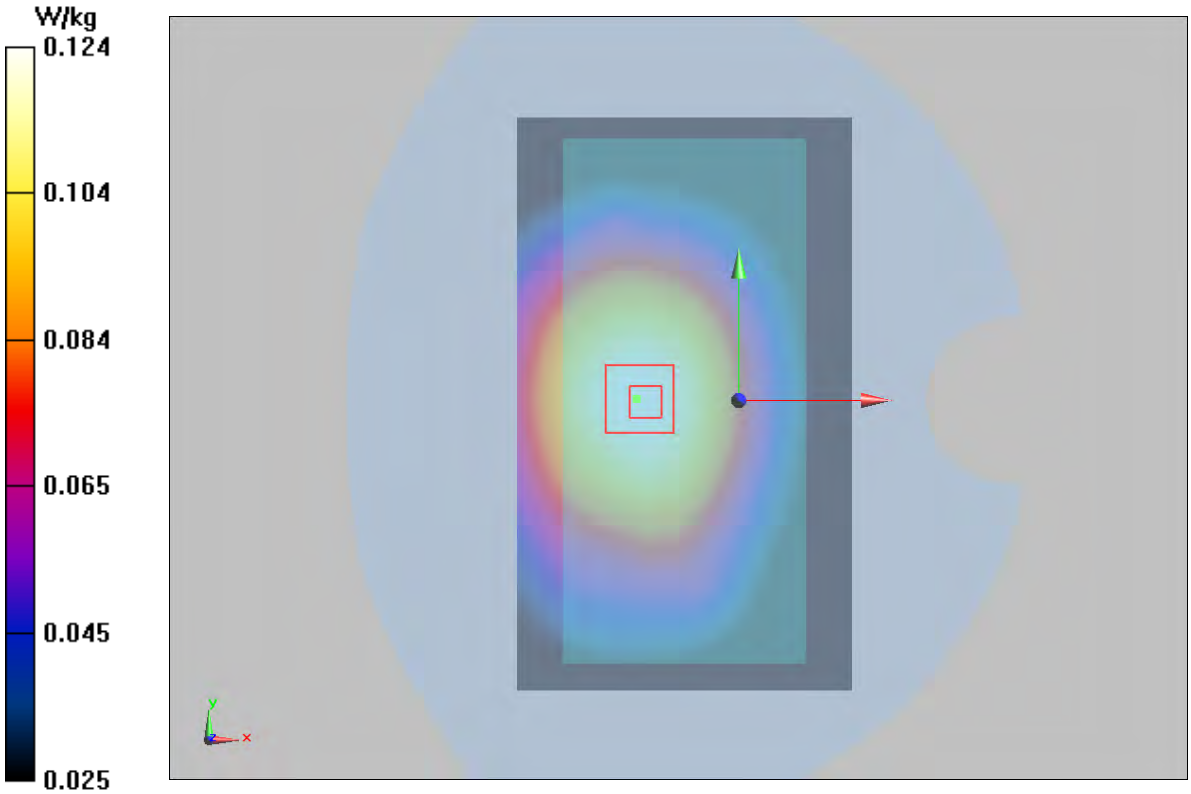
Front Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.86 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.146 W/kg

SAR(1 g) = 0.119 W/kg; SAR(10 g) = 0.093 W/kg

Maximum value of SAR (measured) = 0.124 W/kg



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Plot 47 LTE Band 12 1RB Back Side Middle (Distance 10mm)

Date: 2/4/2020

Communication System: UID 0, LTE (0); Frequency: 707.5 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 707.5 MHz; σ = 0.848 S/m; ε_r = 42.763; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.54, 9.54, 9.54); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Back Side Middle/Area Scan (71x121x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.158 W/kg

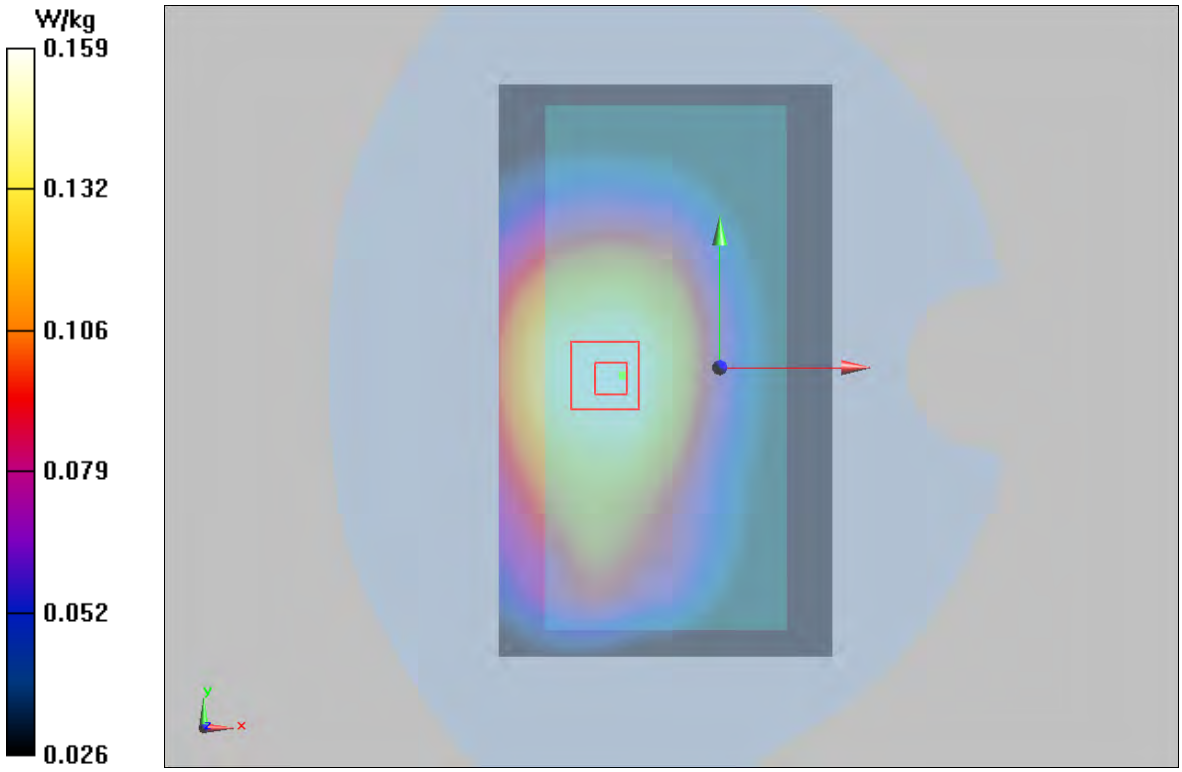
Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 12.88 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.186 W/kg

SAR(1 g) = 0.152 W/kg; SAR(10 g) = 0.120 W/kg

Maximum value of SAR (measured) = 0.159 W/kg



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Plot 48 LTE Band 13 1RB Right Cheek Middle

Date: 2/5/2020

Communication System: UID 0, LTE (0); Frequency: 782 MHz;Duty Cycle: 1:1

Medium parameters used: f = 782 MHz; σ = 0.887 S/m; ε_r = 42.079; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Right Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.54, 9.54, 9.54); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Right Cheek Middle/Area Scan (71x131x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.188 W/kg

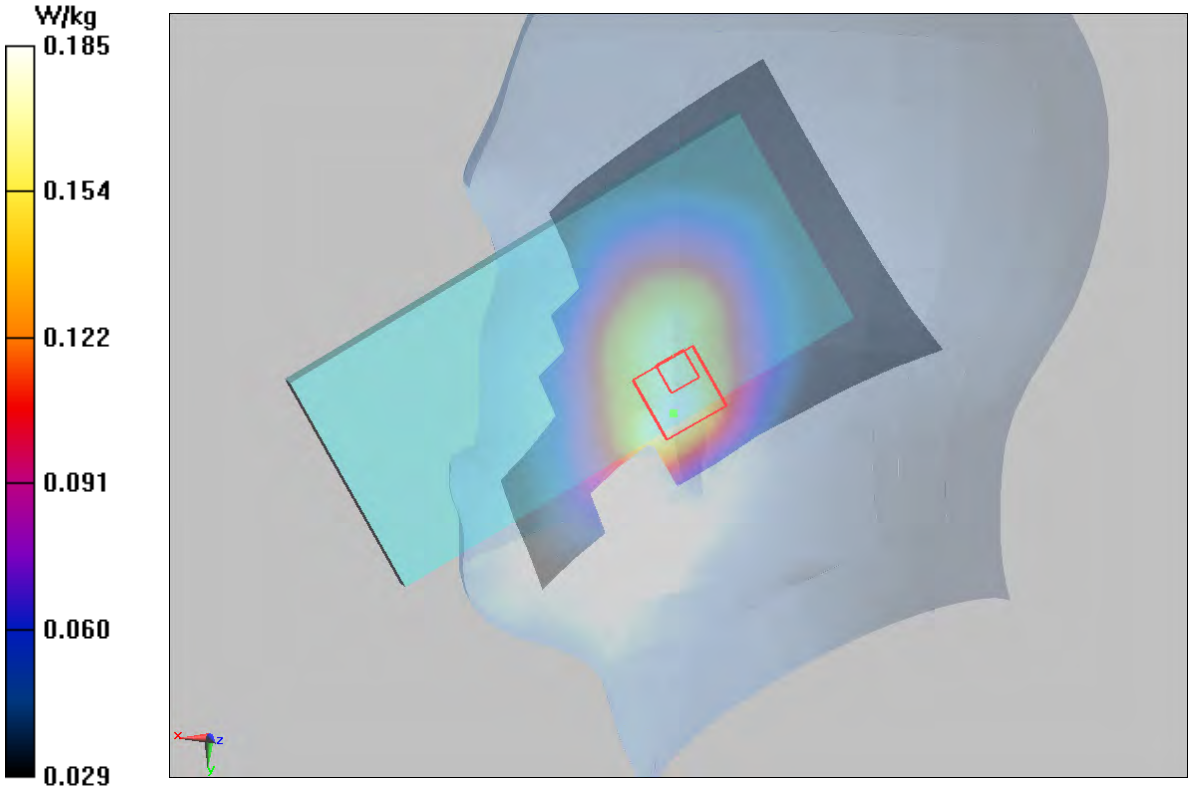
Right Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.082 V/m; Power Drift = 0.17 dB

Peak SAR (extrapolated) = 0.258 W/kg

SAR(1 g) = 0.175 W/kg; SAR(10 g) = 0.131 W/kg

Maximum value of SAR (measured) = 0.185 W/kg



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Plot 49 LTE Band 13 1RB Back Side Middle (Distance 15mm)

Date: 2/5/2020

Communication System: UID 0, LTE (0); Frequency: 782 MHz;Duty Cycle: 1:1

Medium parameters used: f = 782 MHz; σ = 0.887 S/m; ε_r = 42.079; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.54, 9.54, 9.54); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Back Side Middle/Area Scan (71x121x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.228 W/kg

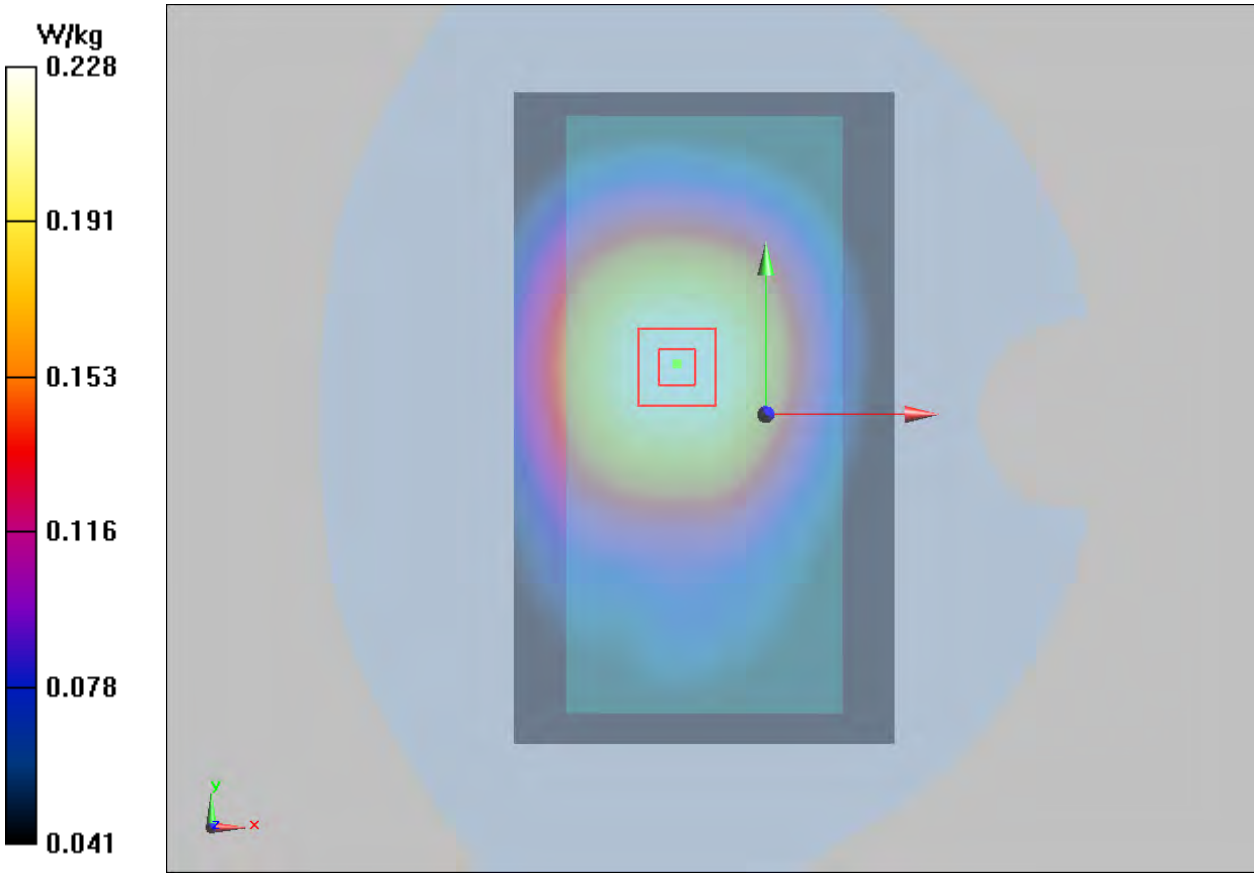
Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.55 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.267 W/kg

SAR(1 g) = 0.218 W/kg; SAR(10 g) = 0.168 W/kg

Maximum value of SAR (measured) = 0.228 W/kg



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Plot 50 LTE Band 13 1RB Back Side Middle (Distance 10mm)

Date: 2/5/2020

Communication System: UID 0, LTE (0); Frequency: 782 MHz;Duty Cycle: 1:1

Medium parameters used: f = 782 MHz; σ = 0.887 S/m; ε_r = 42.079; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.54, 9.54, 9.54); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Back Side Middle /Area Scan (71x121x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.238 W/kg

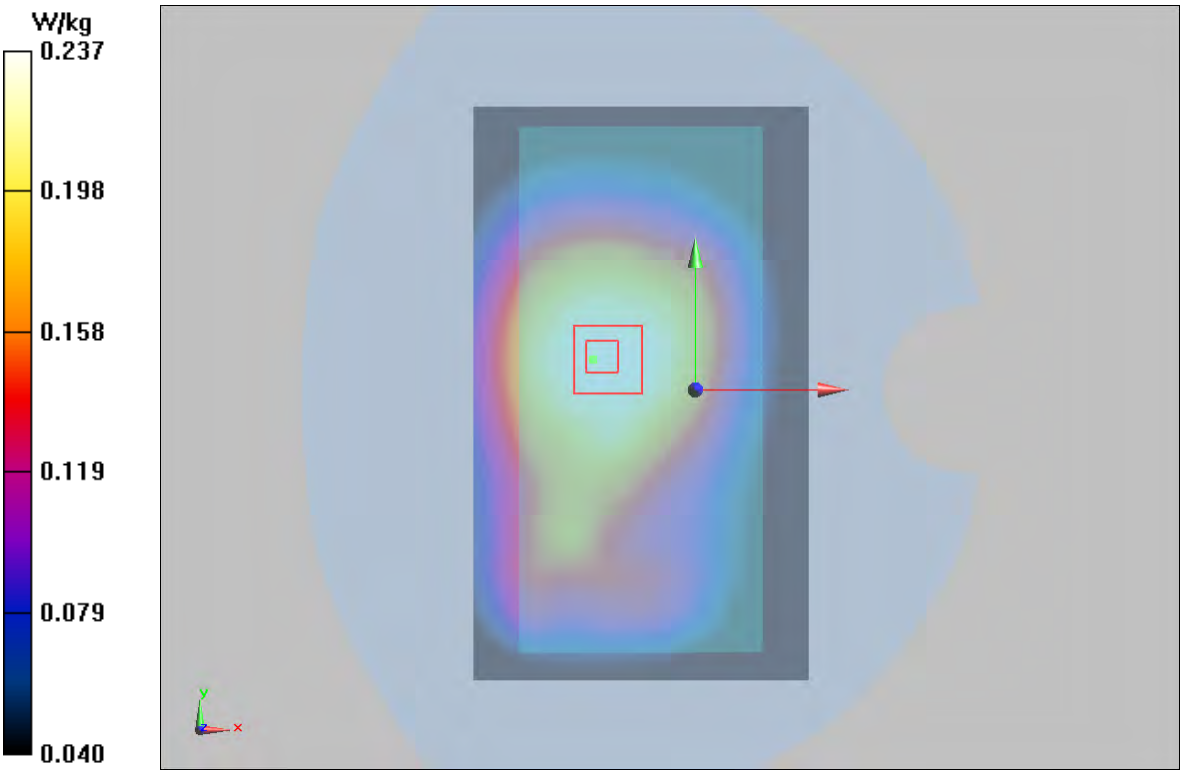
Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 16.23 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.277 W/kg

SAR(1 g) = 0.227 W/kg; SAR(10 g) = 0.178 W/kg

Maximum value of SAR (measured) = 0.237 W/kg



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Plot 51 LTE Band 66 50%RB Left Cheek Middle

Date: 2/9/2020

Communication System: UID 0, LTE (0); Frequency: 1745 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1745 MHz; σ = 1.301 S/m; ε_r = 38.753; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(8.21, 8.21, 8.21); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Left Cheek Middle/Area Scan (71x131x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.0917 W/kg

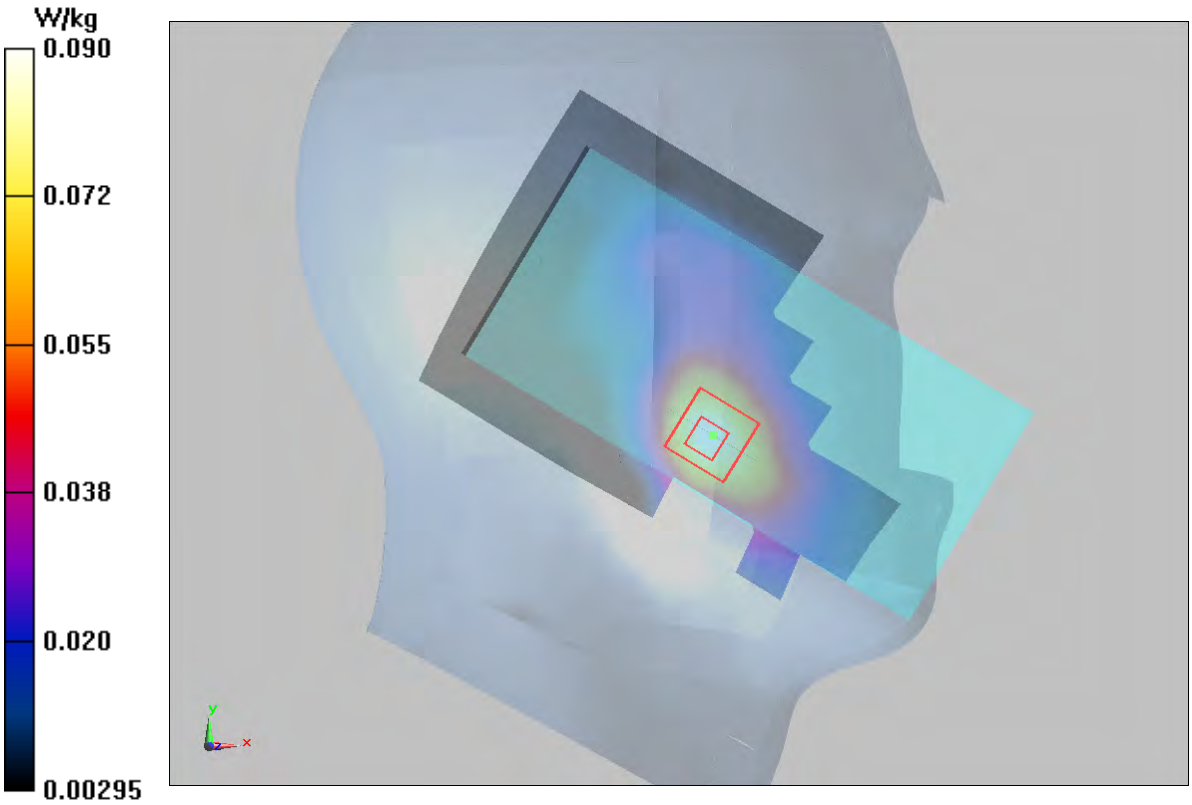
Left Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 1.156 V/m; Power Drift = 0.048 dB

Peak SAR (extrapolated) = 0.130 W/kg

SAR(1 g) = 0.083 W/kg; SAR(10 g) = 0.051 W/kg

Maximum value of SAR (measured) = 0.090 W/kg



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Plot 52 LTE Band 66 1RB Back Side Low (Distance 15mm)

Date: 2/9/2020

Communication System: UID 0, LTE (0); Frequency: 1720 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1720 MHz; σ = 1.284 S/m; ε_r = 38.855; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(8.21, 8.21, 8.21); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Back Side Low/Area Scan (71x121x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.157 W/kg

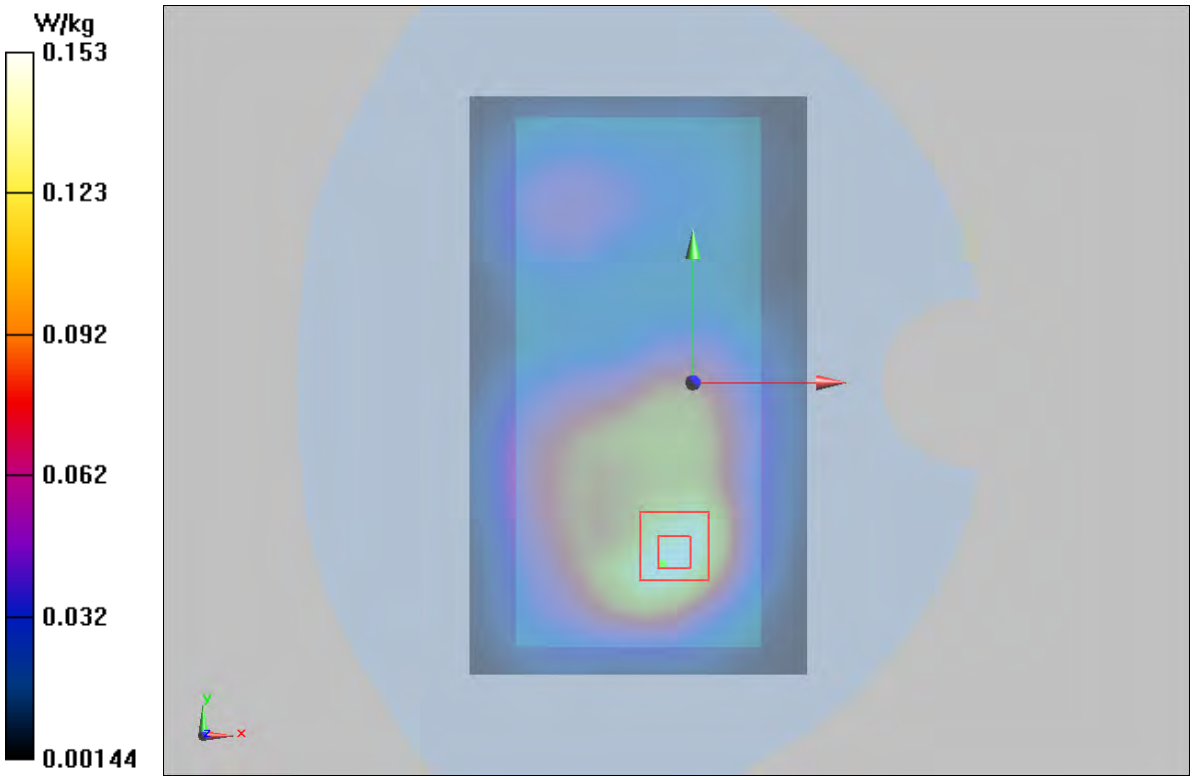
Back Side Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.352 V/m; Power Drift = 0.120 dB

Peak SAR (extrapolated) = 0.244 W/kg

SAR(1 g) = 0.140 W/kg; SAR(10 g) = 0.080 W/kg

Maximum value of SAR (measured) = 0.153 W/kg



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Plot 53 LTE Band 66 1RB Back Side Low (Distance 10mm)

Date: 2/9/2020

Communication System: UID 0, LTE (0); Frequency: 1720 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1720 MHz; σ = 1.284 S/m; ε_r = 38.855; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(8.21, 8.21, 8.21); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Back Side Low/Area Scan (71x121x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.157 W/kg

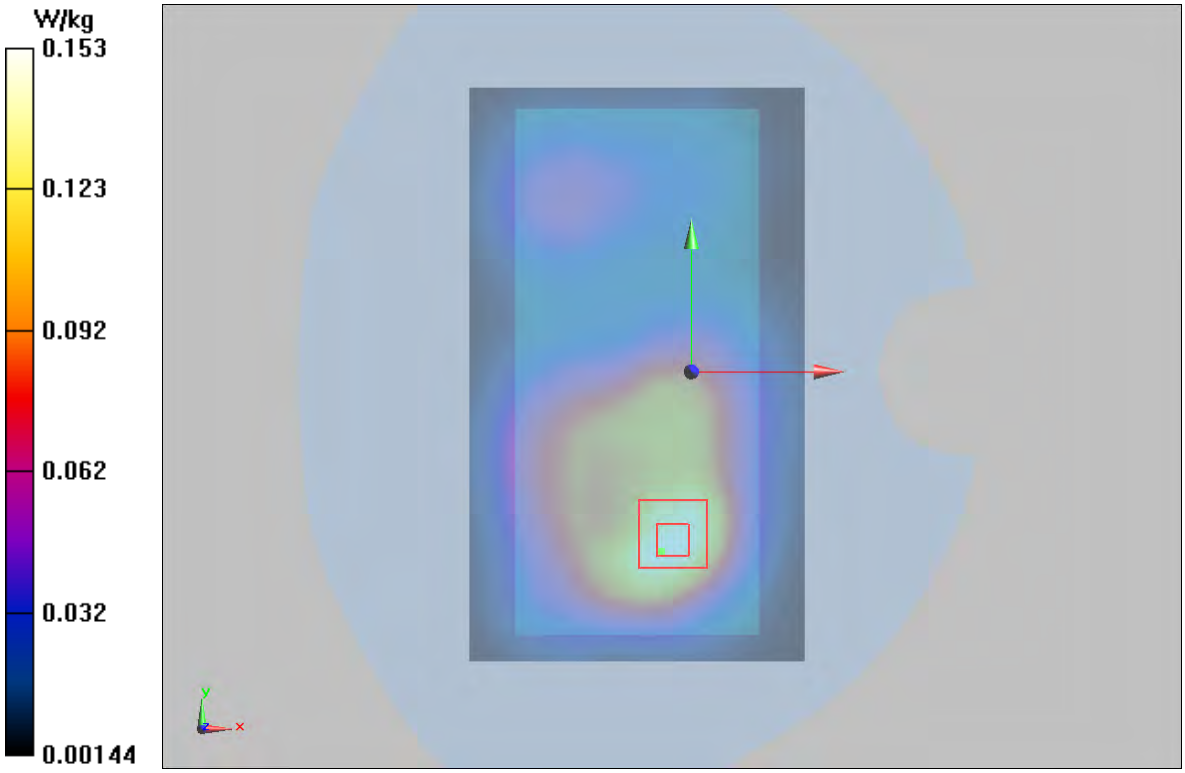
Back Side Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.352 V/m; Power Drift = -0.18 dB

Peak SAR (extrapolated) = 0.244 W/kg

SAR(1 g) = 0.142 W/kg; SAR(10 g) = 0.083 W/kg

Maximum value of SAR (measured) = 0.153 W/kg



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Second-Antenna

Plot 54 GSM 850 Right Tilt High

Date: 2/7/2020

Communication System: UID 0, GSM (0); Frequency: 848.8 MHz;Duty Cycle: 1:8.30042

Medium parameters used: f = 849 MHz; σ = 0.932 S/m; ε_r = 42.196; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Right Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.20, 9.20, 9.20); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.12 (7470)

Right Tilt High/Area Scan (71x131x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.882 W/kg

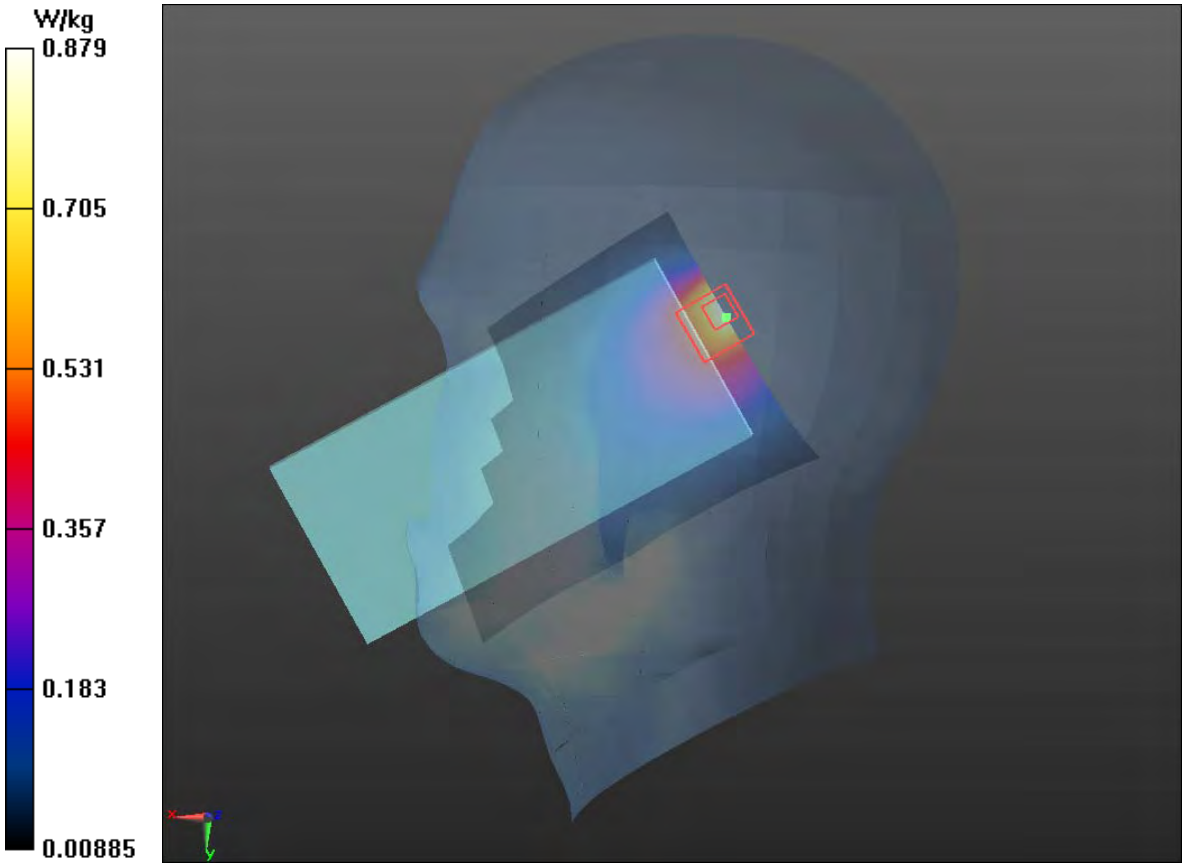
Right Tilt High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 22.02 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 1.90 W/kg

SAR(1 g) = 0.777 W/kg; SAR(10 g) = 0.387 W/kg

Maximum value of SAR (measured) = 0.879 W/kg



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Plot 55 GSM 850 Front Side Middle (Distance 15mm)

Date: 2/7/2020

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

Medium parameters used: f = 837 MHz; σ = 0.923 S/m; ε_r = 42.201; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.20, 9.20, 9.20); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7470)

Front Side Middle/Area Scan (71x121x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.0804 W/kg

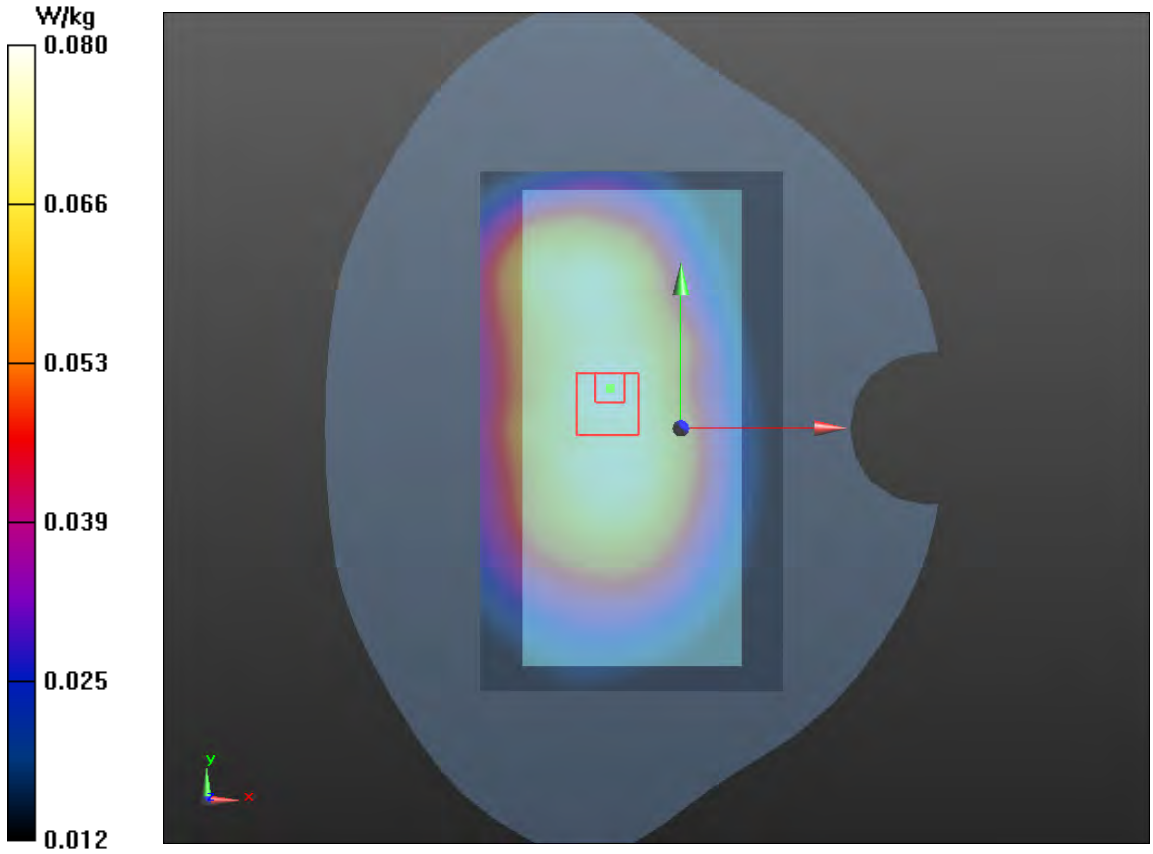
Front Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.015 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.100 W/kg

SAR(1 g) = 0.074 W/kg; SAR(10 g) = 0.056 W/kg

Maximum value of SAR (measured) = 0.080 W/kg



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Plot 56 GSM 850 GPRS (3Txslots) Back Side High (Distance 10mm)

Date: 2/7/2020

Communication System: UID 0, GPRS 3TX (0); Frequency: 848.8 MHz;Duty Cycle: 1:2.76694

Medium parameters used: f = 849 MHz; σ = 0.932 S/m; ε_r = 42.196; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.20, 9.20, 9.20); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.12 (7470)

Back Side High/Area Scan (71x121x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.391 W/kg

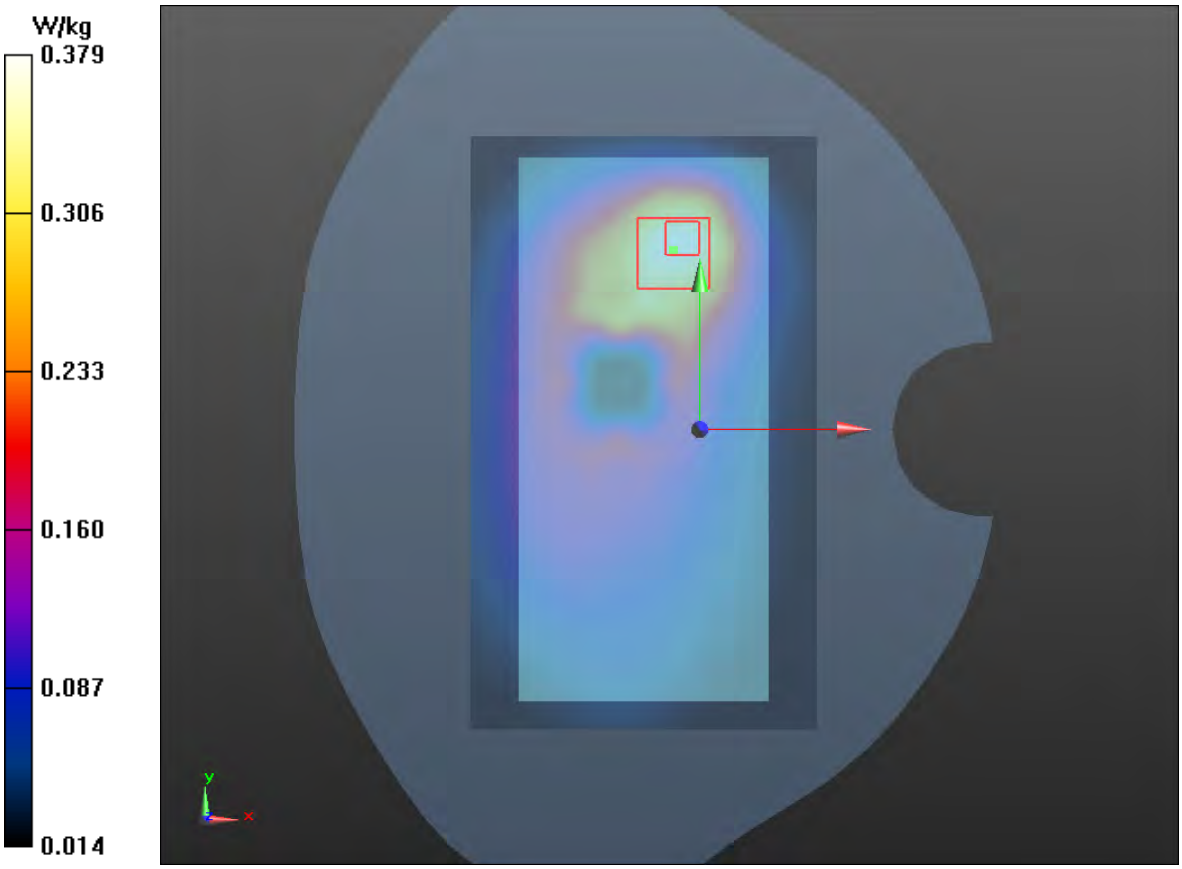
Back Side High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 12.68 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.637 W/kg

SAR(1 g) = 0.360 W/kg; SAR(10 g) = 0.218 W/kg

Maximum value of SAR (measured) = 0.379 W/kg



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Plot 57 GSM 1900 Right Cheek Low

Date: 2/15/2020

Communication System: UID 0, GSM (0); Frequency: 1850.2 MHz;Duty Cycle: 1:8.30042

Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.372 S/m; ε_r = 38.431; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Right Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.79, 7.79, 7.79); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.12 (7470)

Right Cheek Low/Area Scan (71x131x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.486 W/kg

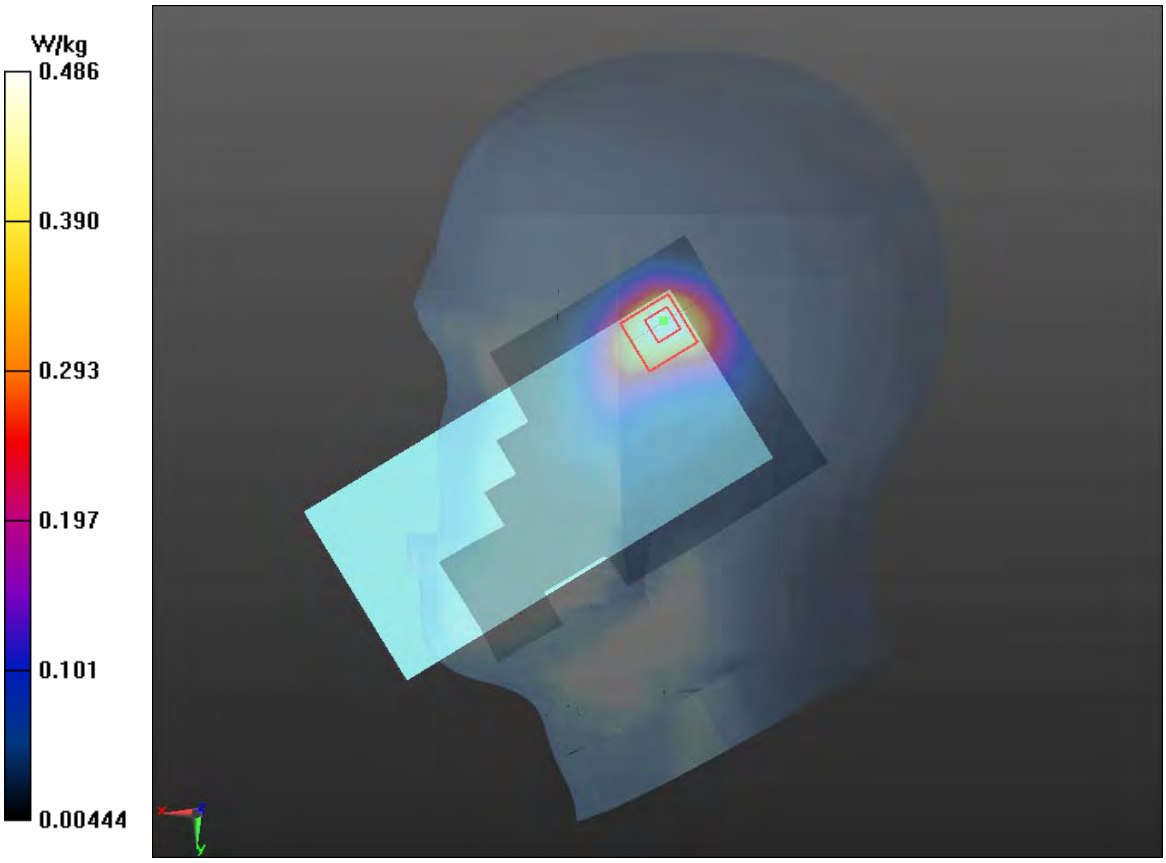
Right Cheek Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.386 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 0.810 W/kg

SAR(1 g) = 0.448 W/kg; SAR(10 g) = 0.254 W/kg

Maximum value of SAR (measured) = 0.486 W/kg



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Plot 58 GSM 1900 Back Side Middle (Distance 15mm)

Date: 2/15/2020

Communication System: UID 0, GSM (0); Frequency: 1880 MHz;Duty Cycle: 1:8.30042

Medium parameters used: f = 1880 MHz; σ = 1.393 S/m; ε_r = 38.344; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.79, 7.79, 7.79); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.12 (7470)

Back Side Middle/Area Scan (71x121x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.0944 W/kg

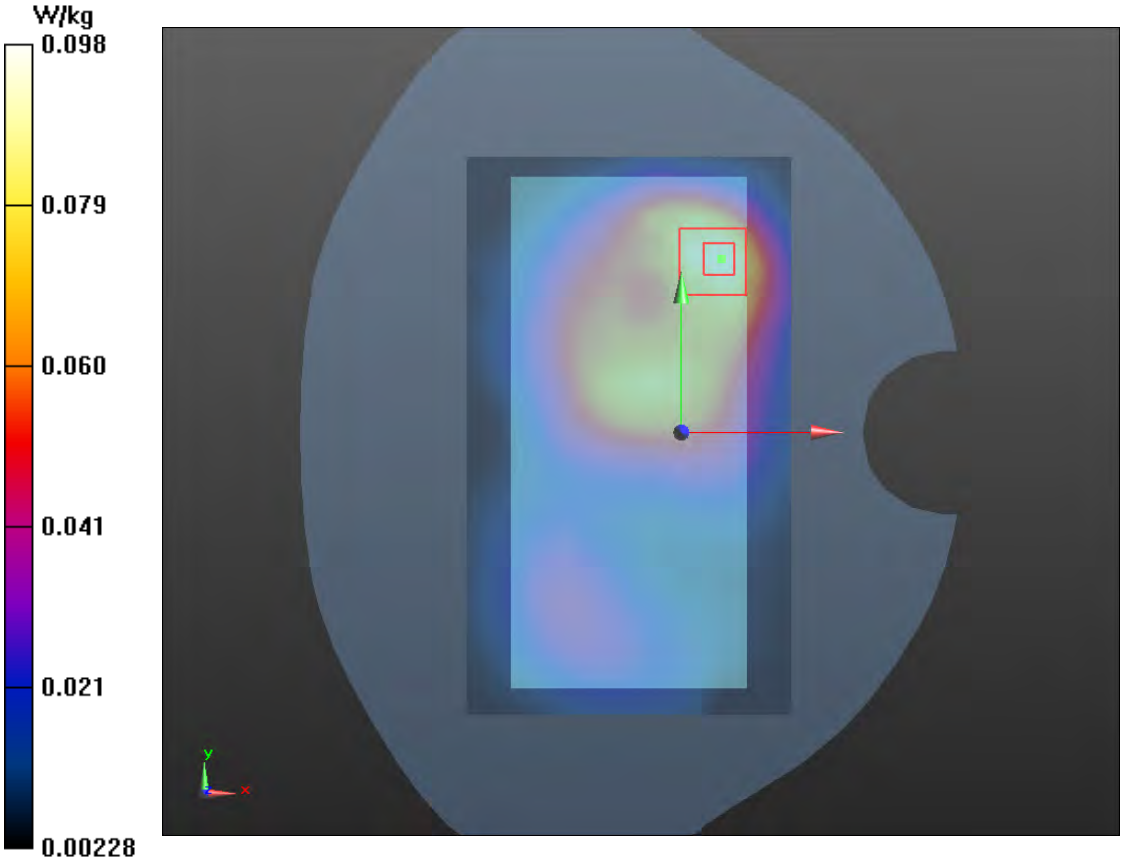
Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.255 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 0.152 W/kg

SAR(1 g) = 0.089 W/kg; SAR(10 g) = 0.052 W/kg

Maximum value of SAR (measured) = 0.0980 W/kg



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Plot 59 GSM 1900 GPRS (3Txslots) Top Edge High (Distance 14mm)

Date: 2/15/2020

Communication System: UID 0, GPRS 3TX (0); Frequency: 1909.8 MHz;Duty Cycle: 1:2.76694

Medium parameters used: f = 1910 MHz; σ = 1.417 S/m; ε_r = 38.262; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.79, 7.79, 7.79); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.12 (7470)

Top Edge High/Area Scan (51x111x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 0.87 W/kg

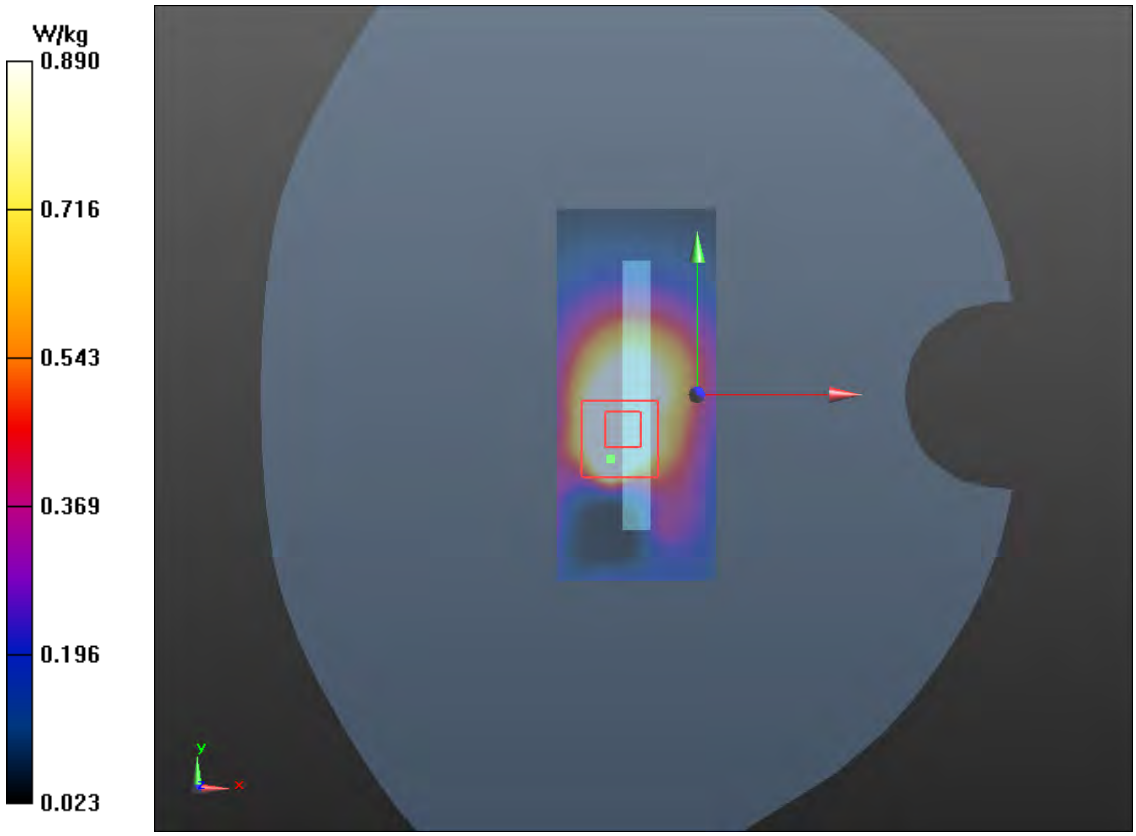
Top Edge High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 28.40 V/m; Power Drift = 0.14 dB

Peak SAR (extrapolated) = 2.00 W/kg

SAR(1 g) = 0.560 W/kg; SAR(10 g) = 0.246 W/kg

Maximum value of SAR (measured) = 0.890 W/kg



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Plot 60 UMTS Band II Right Tilt High

Date: 2/17/2020

Communication System: UID 0, WCDMA (0); Frequency: 1907.6 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1908 MHz; σ = 1.416 S/m; ε_r = 38.306; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Right Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.79, 7.79, 7.79); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.12 (7470)

Right Tilt High/Area Scan (71x131x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.426 W/kg

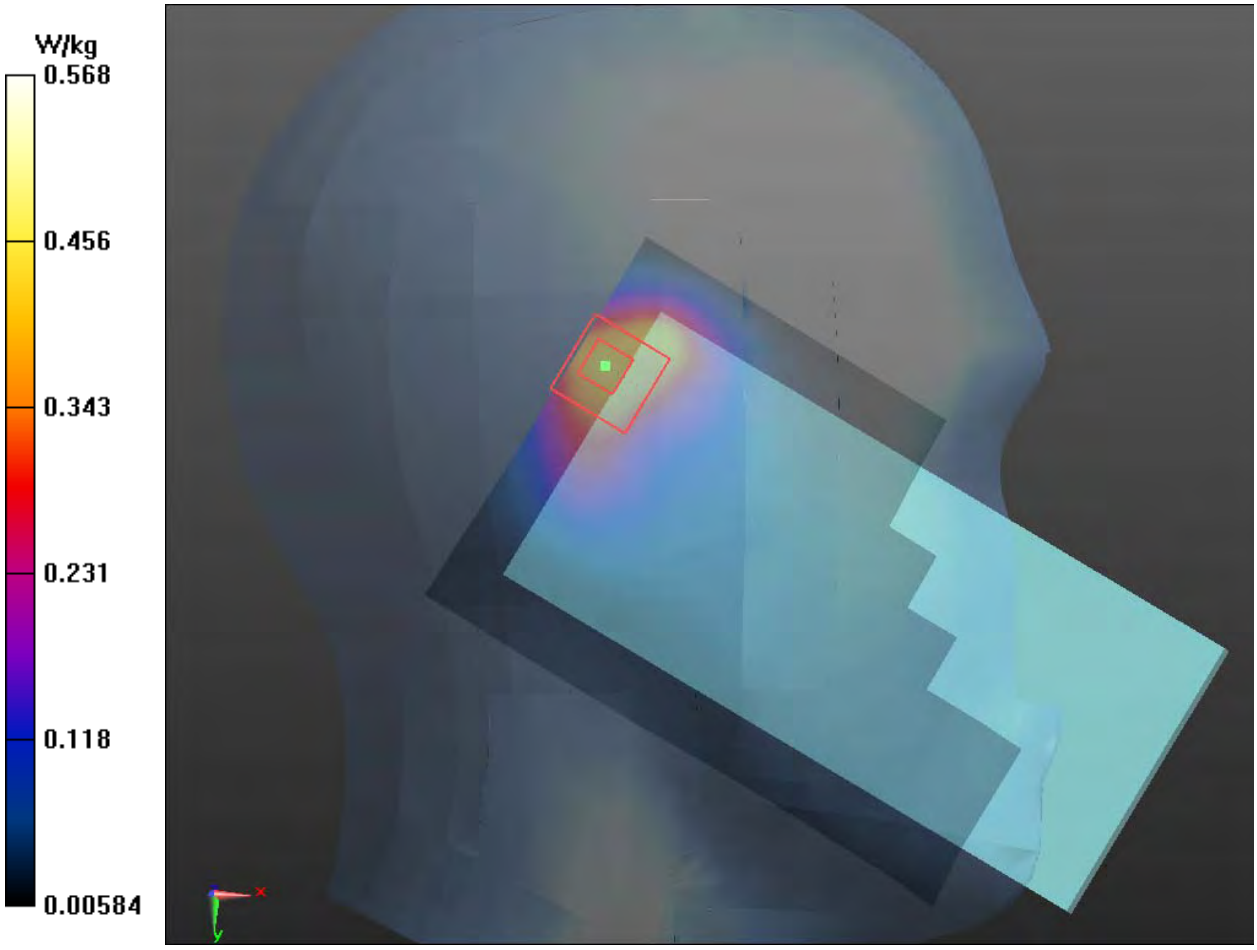
Right Tilt High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 13.33 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 1.02 W/kg

SAR(1 g) = 0.488 W/kg; SAR(10 g) = 0.242 W/kg

Maximum value of SAR (measured) = 0.568 W/kg



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Plot 61 UMTS Band II Front Side High (Distance 10mm)

Date: 2/17/2020

Communication System: UID 0, WCDMA (0); Frequency: 1907.6 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1908 MHz; σ = 1.416 S/m; ε_r = 38.306; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.79, 7.79, 7.79); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.12 (7470)

Front Side High/Area Scan (71x121x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.858 W/kg

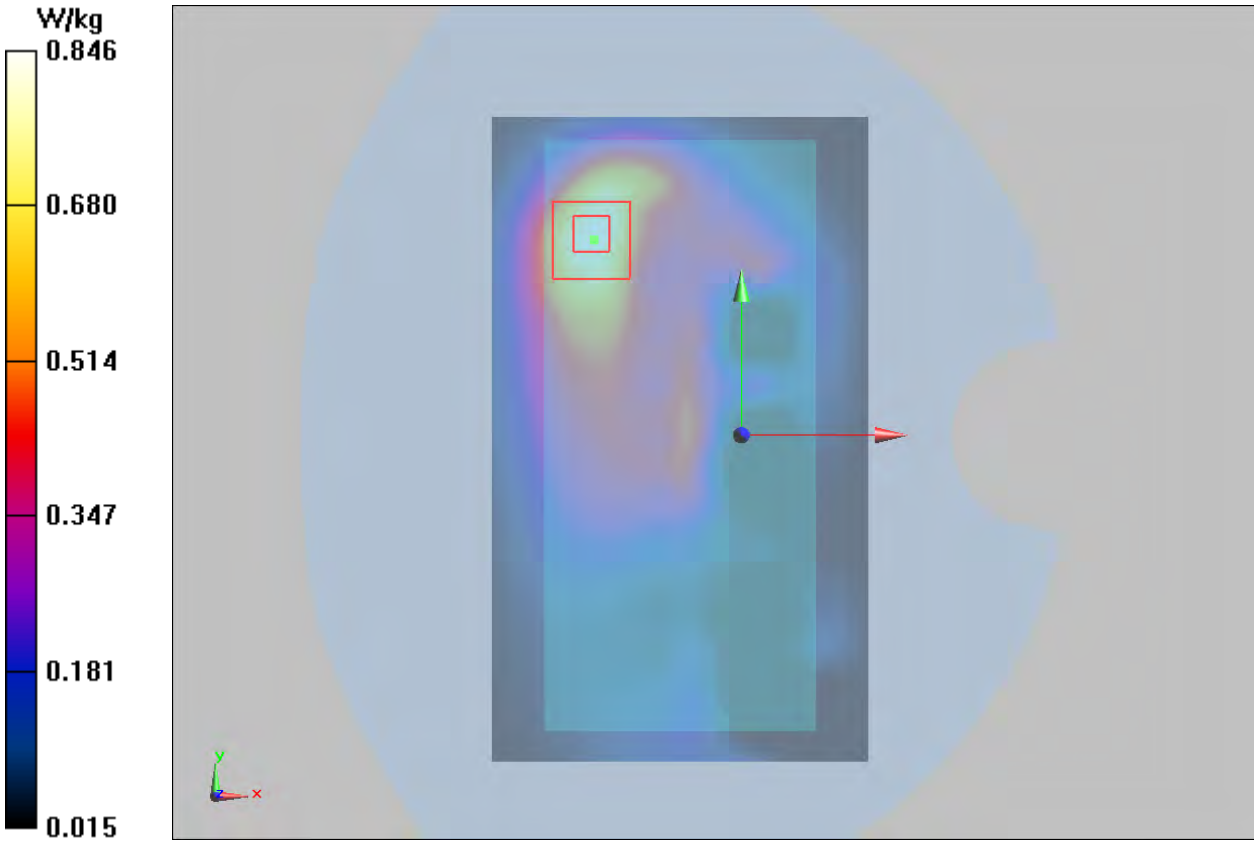
Front Side High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 16.00 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 1.41 W/kg

SAR(1 g) = 0.783 W/kg; SAR(10 g) = 0.434 W/kg

Maximum value of SAR (measured) = 0.846 W/kg



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Plot 62 UMTS Band IV Right Tilt Middle

Date: 2/8/2020

Communication System: UID 0, WCDMA (0); Frequency: 1732.6 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1733 MHz; σ = 1.293 S/m; ε_r = 38.782; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Right Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(8.21, 8.21, 8.21); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.12 (7470)

Right Tilt Middle/Area Scan (71x131x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.645 W/kg

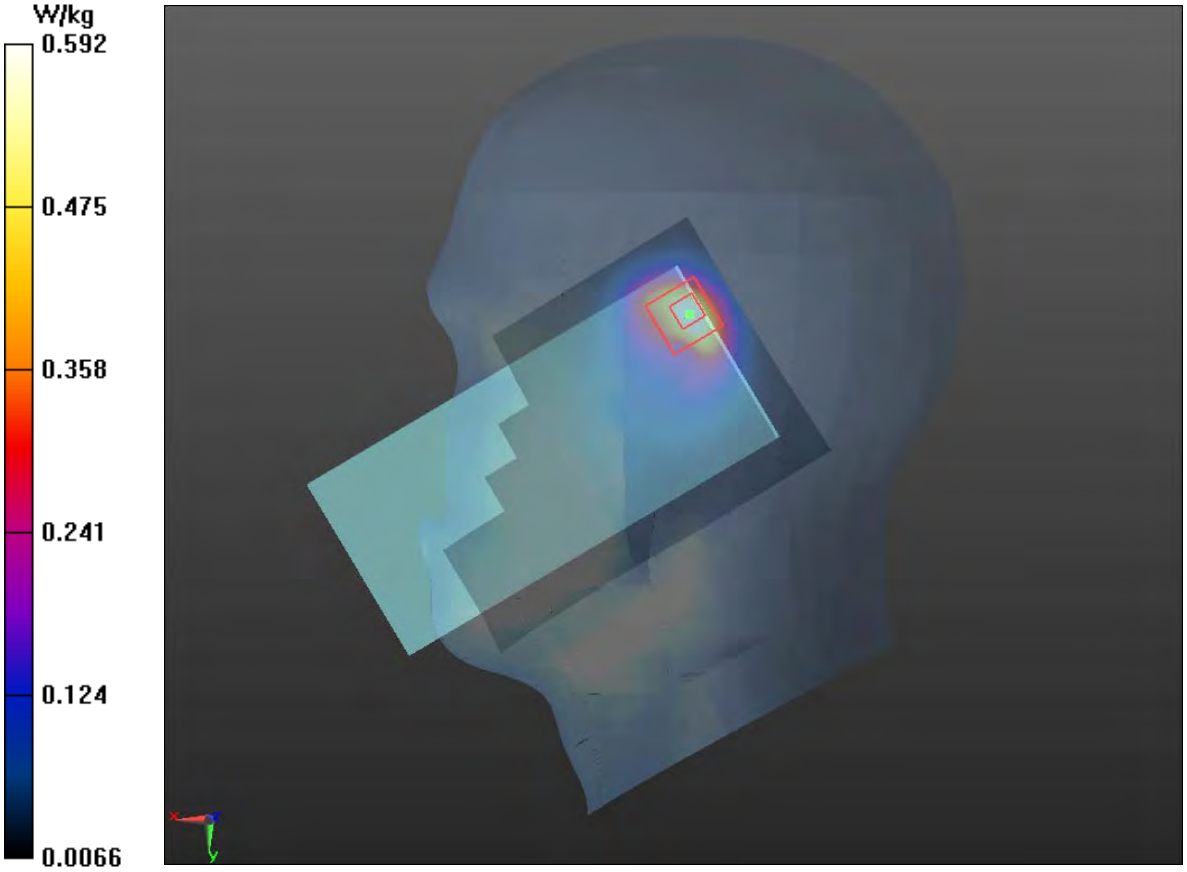
Right Tilt Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.21 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 1.18 W/kg

SAR(1 g) = 0.528 W/kg; SAR(10 g) = 0.255 W/kg

Maximum value of SAR (measured) = 0.592 W/kg



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Plot 63 UMTS Band IV Front Side Middle (Distance 10mm)

Date: 2/8/2020

Communication System: UID 0, WCDMA (0); Frequency: 1732.6 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1733 MHz; σ = 1.312 S/m; ε_r = 39.365; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(8.21, 8.21, 8.21); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.12 (7470)

Front Side Middle/Area Scan (71x121x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.604 W/kg

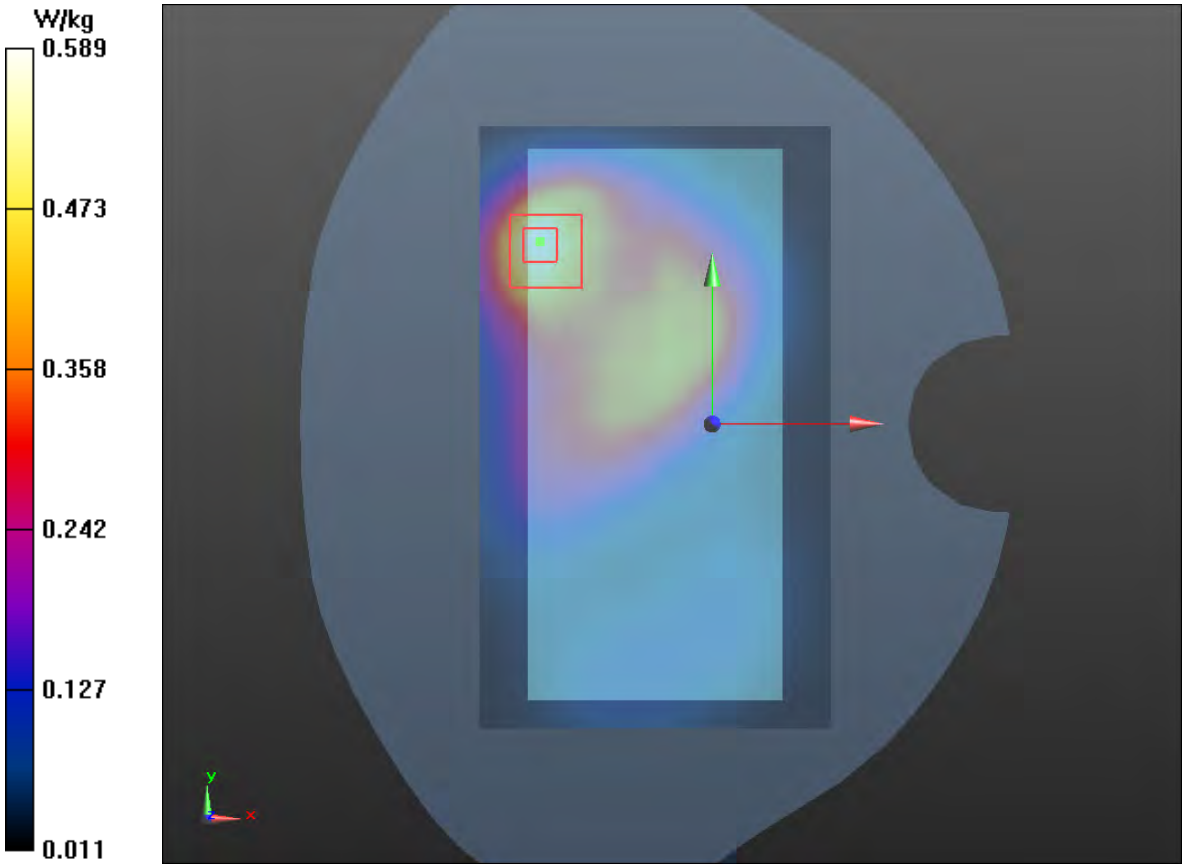
Front Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.76 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.939 W/kg

SAR(1 g) = 0.536 W/kg; SAR(10 g) = 0.306 W/kg

Maximum value of SAR (measured) = 0.589 W/kg



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Plot 64 UMTS Band V Right Tilt High

Date: 2/10/2020

Communication System: UID 0, WCDMA (0); Frequency: 846.6 MHz;Duty Cycle: 1:1

Medium parameters used: f = 847 MHz; σ = 0.93 S/m; ε_r = 42.203; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Right Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.20, 9.20, 9.20); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.12 (7470)

Right Tilt High/Area Scan (71x131x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.557 W/kg

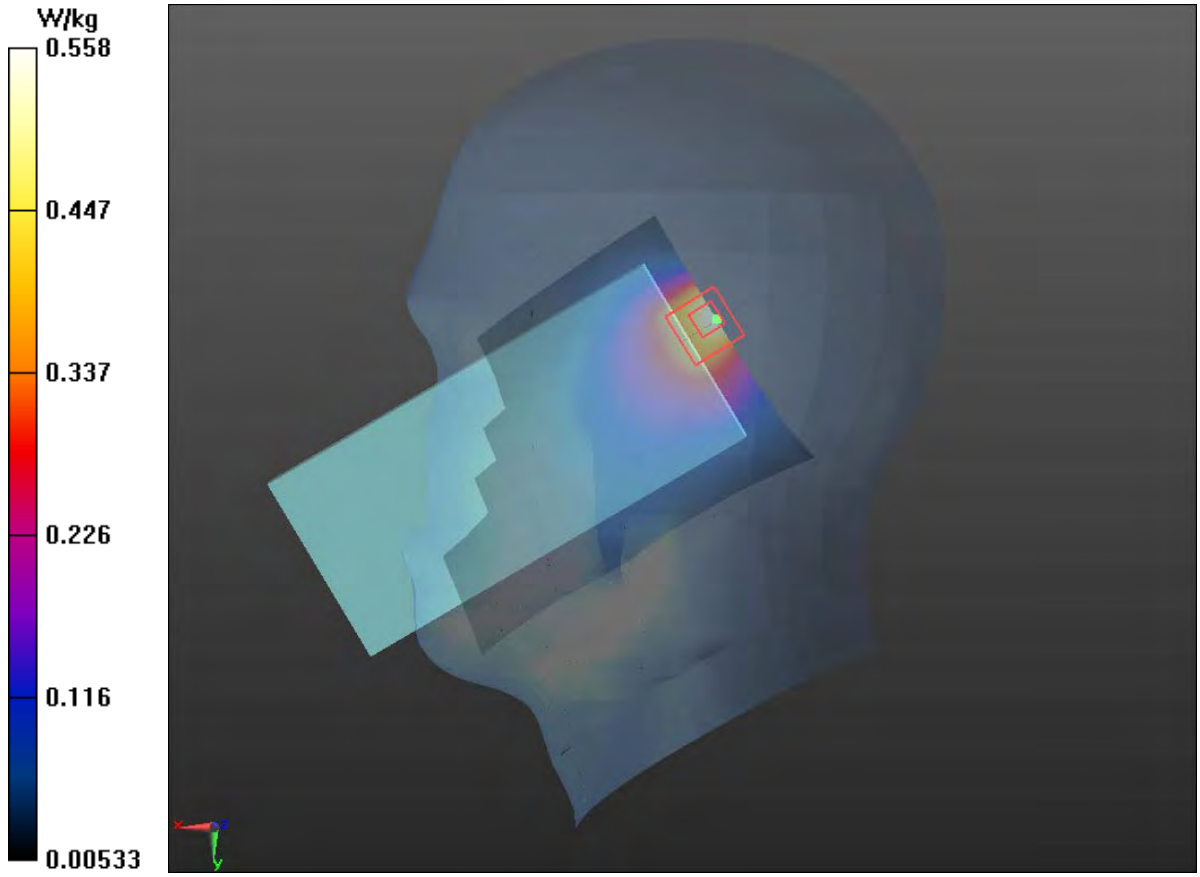
Right Tilt High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 18.78 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 1.28 W/kg

SAR(1 g) = 0.530 W/kg; SAR(10 g) = 0.264 W/kg

Maximum value of SAR (measured) = 0.558 W/kg



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Plot 65 UMTS Band V Back Side High (Distance 10mm)

Date: 2/10/2020

Communication System: UID 0, WCDMA (0); Frequency: 846.6 MHz;Duty Cycle: 1:1

Medium parameters used: f = 847 MHz; σ = 0.93 S/m; ε_r = 42.203; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.20, 9.20, 9.20); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.12 (7470)

Back Side High/Area Scan (71x121x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.118 W/kg

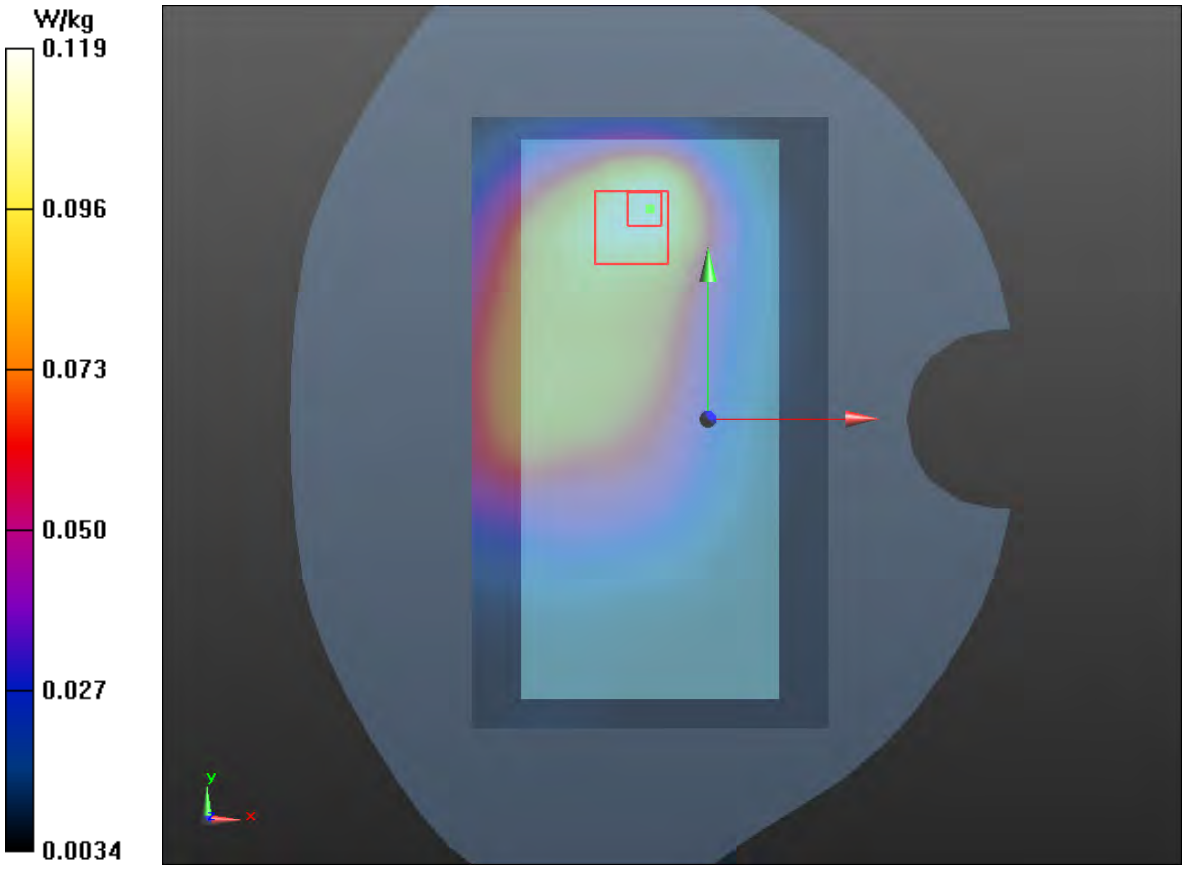
Back Side High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.335 V/m; Power Drift = 0.17 dB

Peak SAR (extrapolated) = 0.194 W/kg

SAR(1 g) = 0.111 W/kg; SAR(10 g) = 0.070 W/kg

Maximum value of SAR (measured) = 0.119 W/kg



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Plot 66 LTE Band 2 1RB Right Cheek Low

Date: 2/17/2020

Communication System: UID 0, LTE (0); Frequency: 1860 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1860 MHz; σ = 1.407 S/m; ε_r = 39.071; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Right Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.79, 7.79, 7.79); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.12 (7470)

Right Cheek Low/Area Scan (71x131x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.495 W/kg

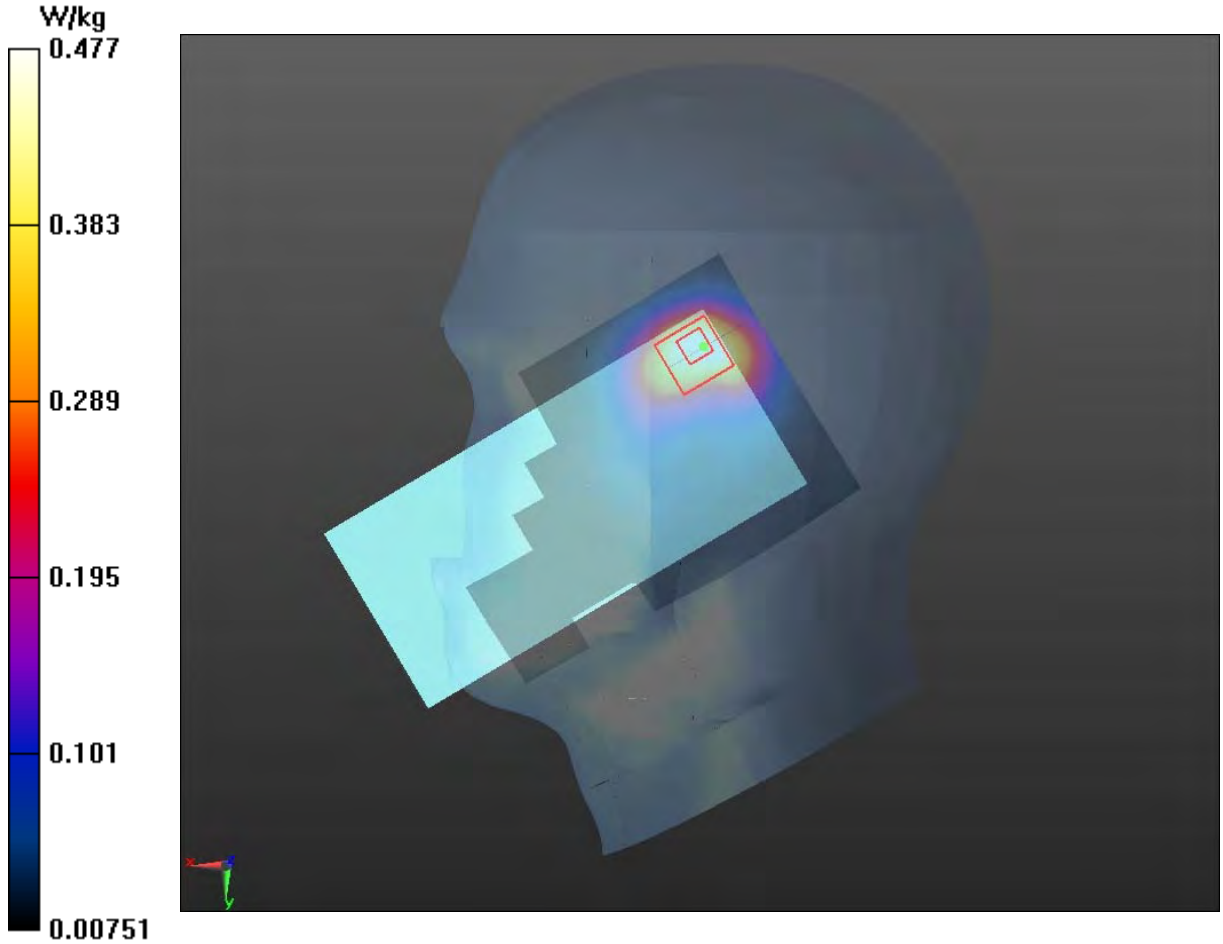
Right Cheek Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 10.33 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 0.845 W/kg

SAR(1 g) = 0.447 W/kg; SAR(10 g) = 0.245 W/kg

Maximum value of SAR (measured) = 0.477 W/kg



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Plot 67 LTE Band 2 1RB Front Side Low (Distance 10mm)

Date: 2/17/2020

Communication System: UID 0, LTE (0); Frequency: 1860 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1860 MHz; σ = 1.379 S/m; ε_r = 38.4; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.79, 7.79, 7.79); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.12 (7470)

Front Side Low/Area Scan (71x121x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.636 W/kg

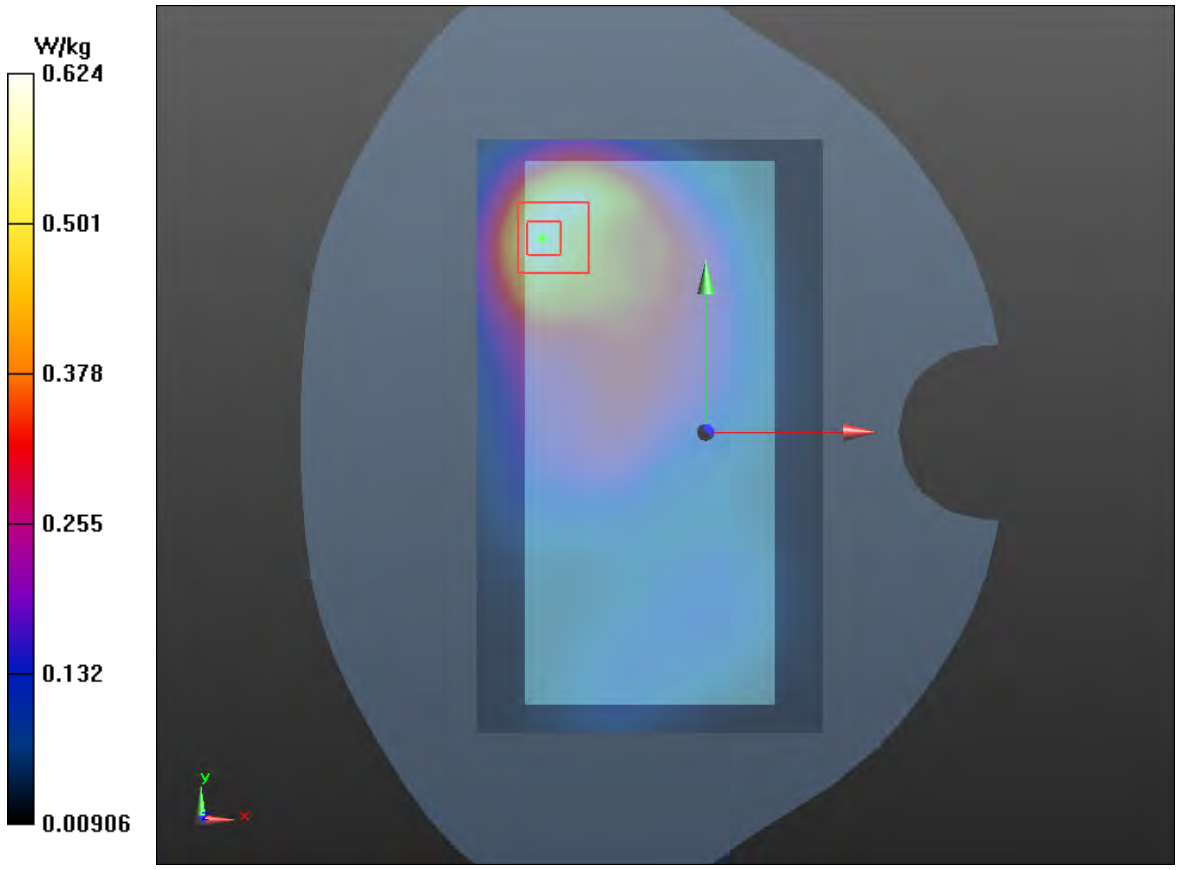
Front Side Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 13.07 V/m; Power Drift = 0.028 dB

Peak SAR (extrapolated) = 1.02 W/kg

SAR(1 g) = 0.570 W/kg; SAR(10 g) = 0.324 W/kg

Maximum value of SAR (measured) = 0.624 W/kg



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Plot 68 LTE Band 4 1RB Right Cheek High

Date: 2/8/2020

Communication System: UID 0, LTE (0); Frequency: 1745 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1745 MHz; σ = 1.301 S/m; ε_r = 38.753; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Right Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(8.21, 8.21, 8.21); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.12 (7470)

Right Cheek High/Area Scan (71x131x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.525 W/kg

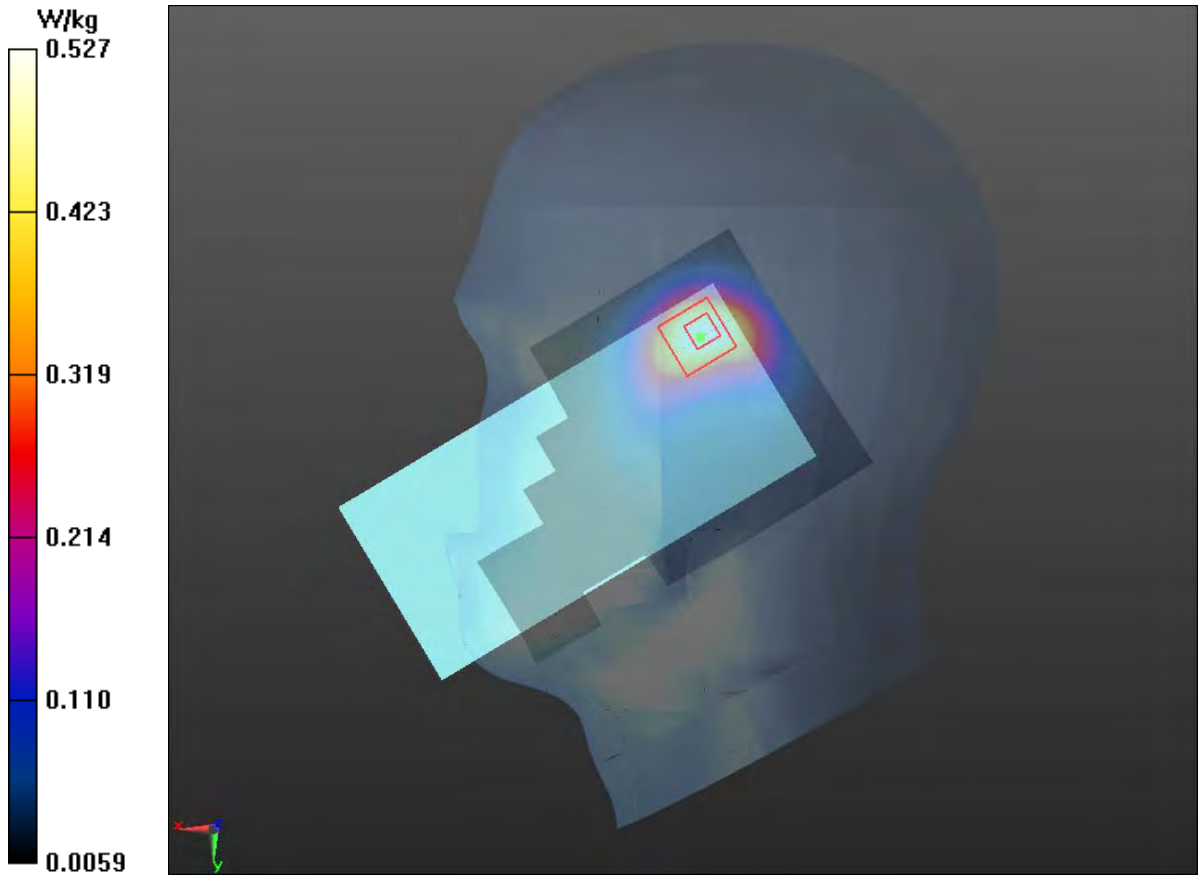
Right Cheek High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.50 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 0.901 W/kg

SAR(1 g) = 0.495 W/kg; SAR(10 g) = 0.273 W/kg

Maximum value of SAR (measured) = 0.527 W/kg



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Plot 69 LTE Band 4 1RB Front Side Middle (Distance 10mm)

Date: 2/8/2020

Communication System: UID 0, LTE (0); Frequency: 1732.5 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.293 S/m; ε_r = 38.785; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(8.21, 8.21, 8.21); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.12 (7470)

Front Side Middle/Area Scan (71x121x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.591 W/kg

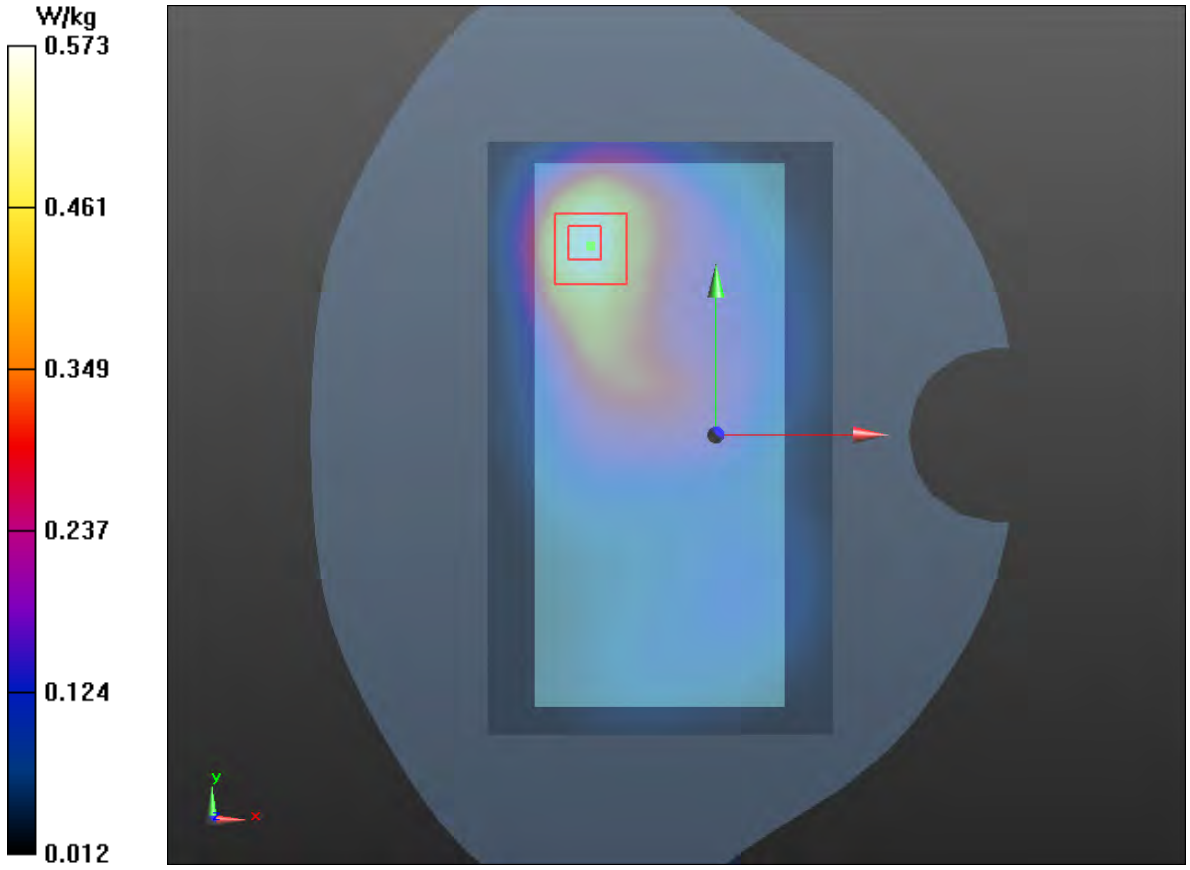
Front Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 13.33 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.869 W/kg

SAR(1 g) = 0.530 W/kg; SAR(10 g) = 0.314 W/kg

Maximum value of SAR (measured) = 0.573 W/kg



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Plot 70 LTE Band 5 1RB Right Tilt Low

Date: 2/11/2020

Communication System: UID 0, LTE (0); Frequency: 829 MHz;Duty Cycle: 1:1

Medium parameters used: f = 829 MHz; σ = 0.917 S/m; ε_r = 42.181; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Right Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.20, 9.20, 9.20); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.12 (7470)

Right Tilt Low/Area Scan (71x131x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.472 W/kg

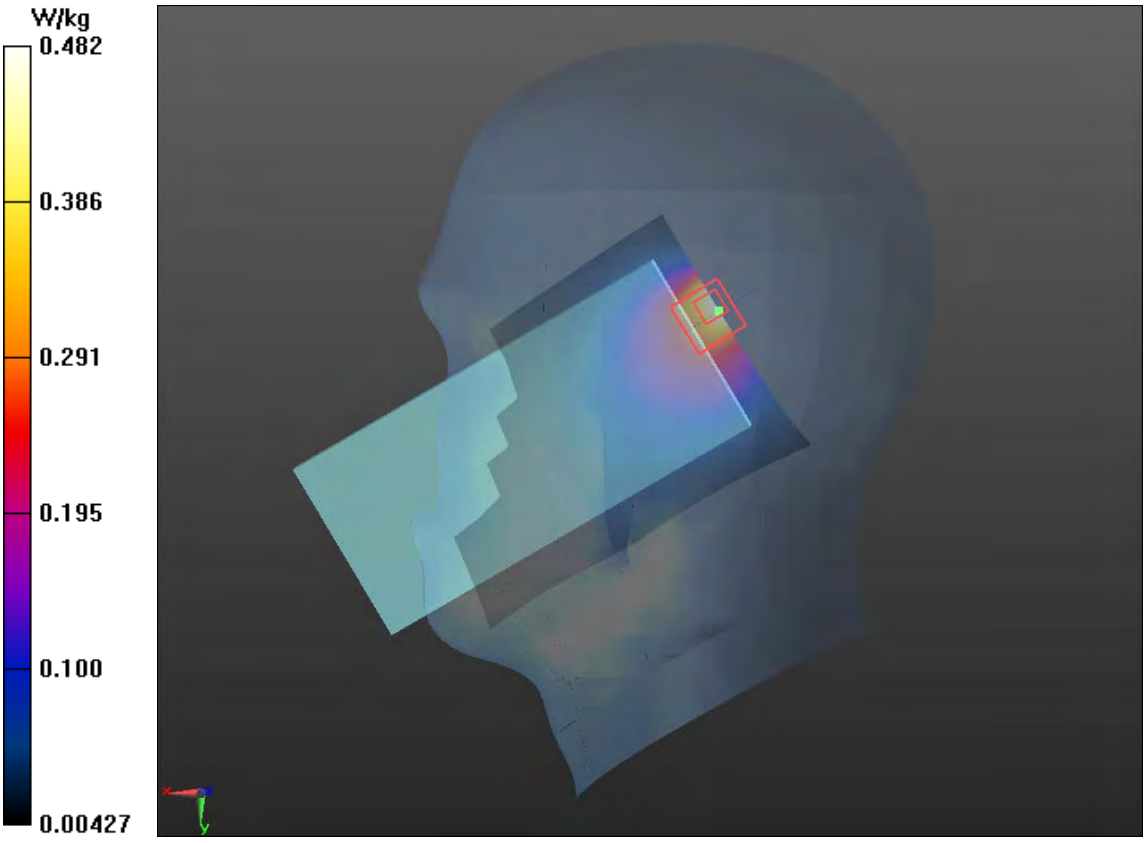
Right Tilt Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 16.52 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 1.09 W/kg

SAR(1 g) = 0.435 W/kg; SAR(10 g) = 0.214 W/kg

Maximum value of SAR (measured) = 0.482 W/kg



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Plot 71 LTE Band 5 1RB Back Side High (Distance 10mm)

Date: 2/11/2020

Communication System: UID 0, LTE (0); Frequency: 844 MHz;Duty Cycle: 1:1

Medium parameters used: f = 844 MHz; σ = 0.928 S/m; ε_r = 42.206; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.20, 9.20, 9.20); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.12 (7470)

Back Side High/Area Scan (71x121x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.0976 W/kg

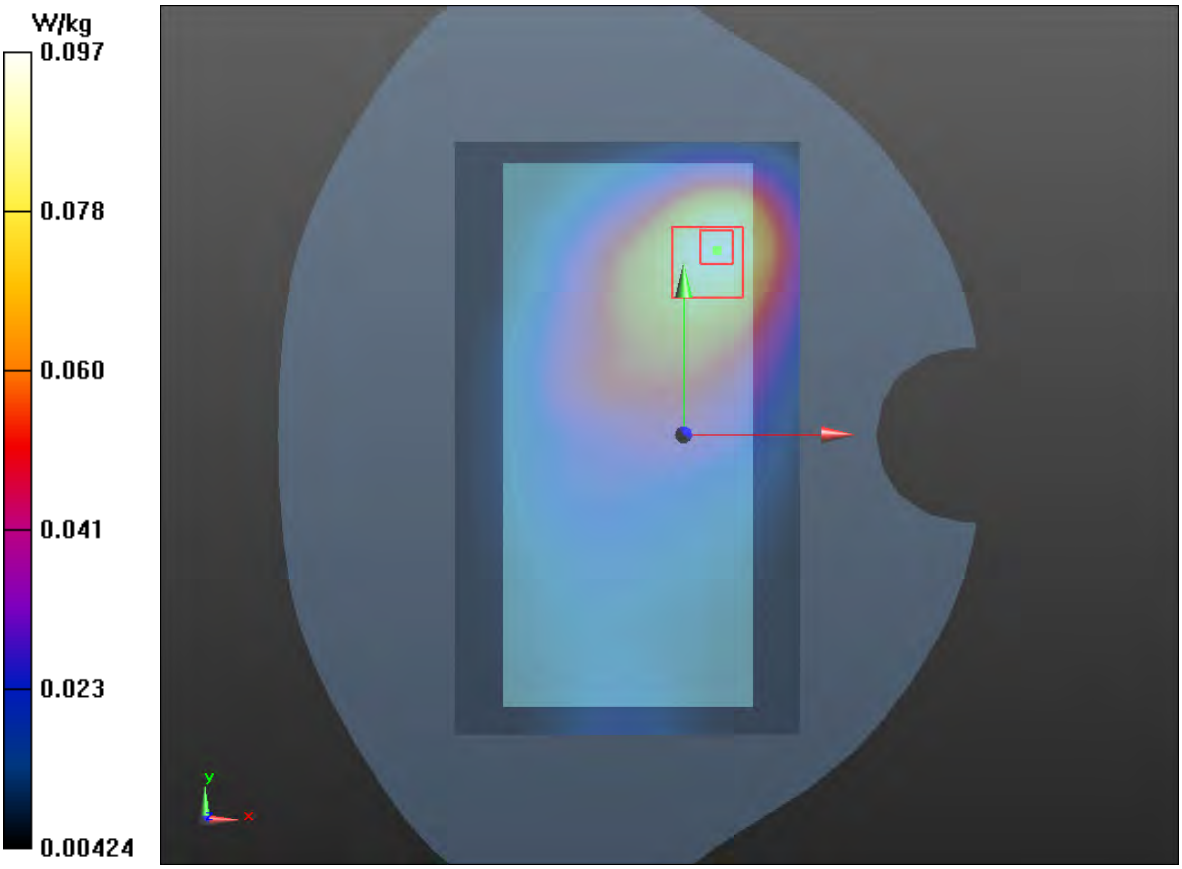
Back Side High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.478 V/m; Power Drift = 0.023 dB

Peak SAR (extrapolated) = 0.142 W/kg

SAR(1 g) = 0.090 W/kg; SAR(10 g) = 0.058 W/kg

Maximum value of SAR (measured) = 0.097 W/kg



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Plot 72 LTE Band 5 1RB Top Edge Low (Distance 10mm)

Date: 2/11/2020

Communication System: UID 0, LTE (0); Frequency: 829 MHz;Duty Cycle: 1:1

Medium parameters used: f = 829 MHz; σ = 0.917 S/m; ε_r = 42.181; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.20, 9.20, 9.20); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.12 (7470)

Top Edge Low/Area Scan (51x111x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 0.179 W/kg

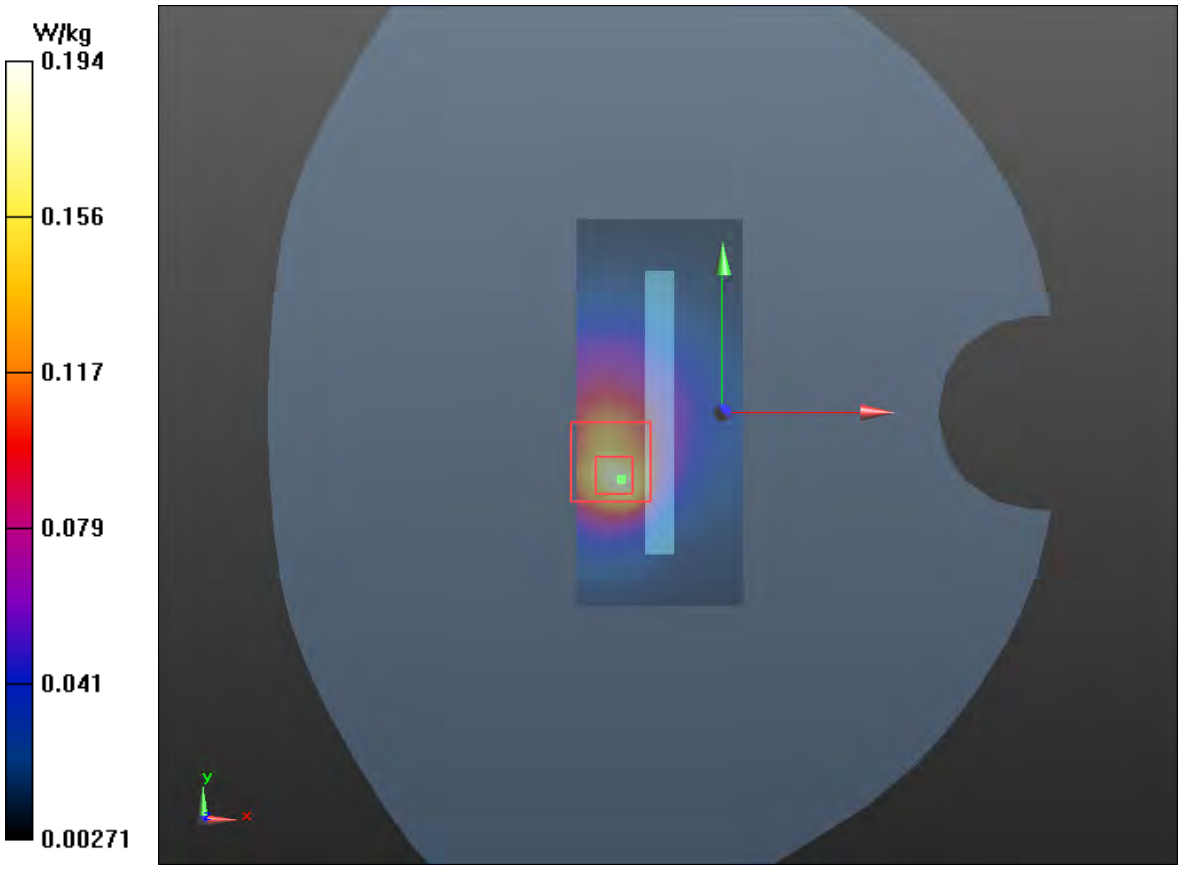
Top Edge Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.224 V/m; Power Drift = 0.15 dB

Peak SAR (extrapolated) = 0.380 W/kg

SAR(1 g) = 0.168 W/kg; SAR(10 g) = 0.085 W/kg

Maximum value of SAR (measured) = 0.194 W/kg



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Plot 73 LTE Band 7 1RB Right Tilt Low

Date: 2/18/2020

Communication System: UID 0, LTE (0); Frequency: 2510 MHz;Duty Cycle: 1:1

Medium parameters used: f = 2510 MHz; σ = 1.949 S/m; ε_r = 40.597; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Right Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.20, 7.20, 7.20); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Right Tilt Low/Area Scan (91x151x1): Interpolated grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 1.12 W/kg

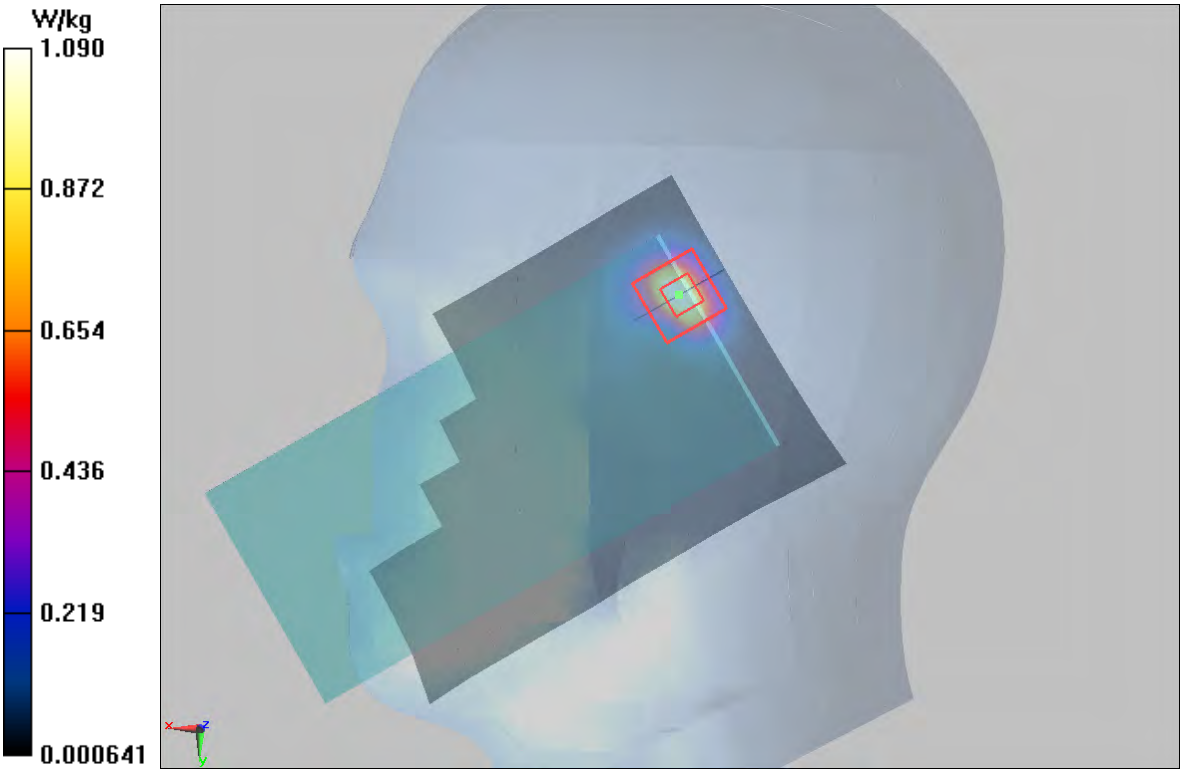
Right Tilt Low/Zoom Scan(7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 12.14 V/m; Power Drift = -0.14 dB

Peak SAR (extrapolated) = 2.62 W/kg

SAR(1 g) = 0.886 W/kg; SAR(10 g) = 0.318 W/kg

Maximum value of SAR (measured) = 1.090 W/kg



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Plot 74 LTE Band 7 50%RB Front Side High (Distance 10mm)

Date: 2/18/2020

Communication System: UID 0, LTE (0); Frequency: 2560 MHz;Duty Cycle: 1:1

Medium parameters used: f = 2560 MHz; σ = 1.997 S/m; ε_r = 40.391; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.20, 7.20, 7.20); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.12 (7470)

Front Side High/Area Scan(91x151x1): Interpolated grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.615 W/kg

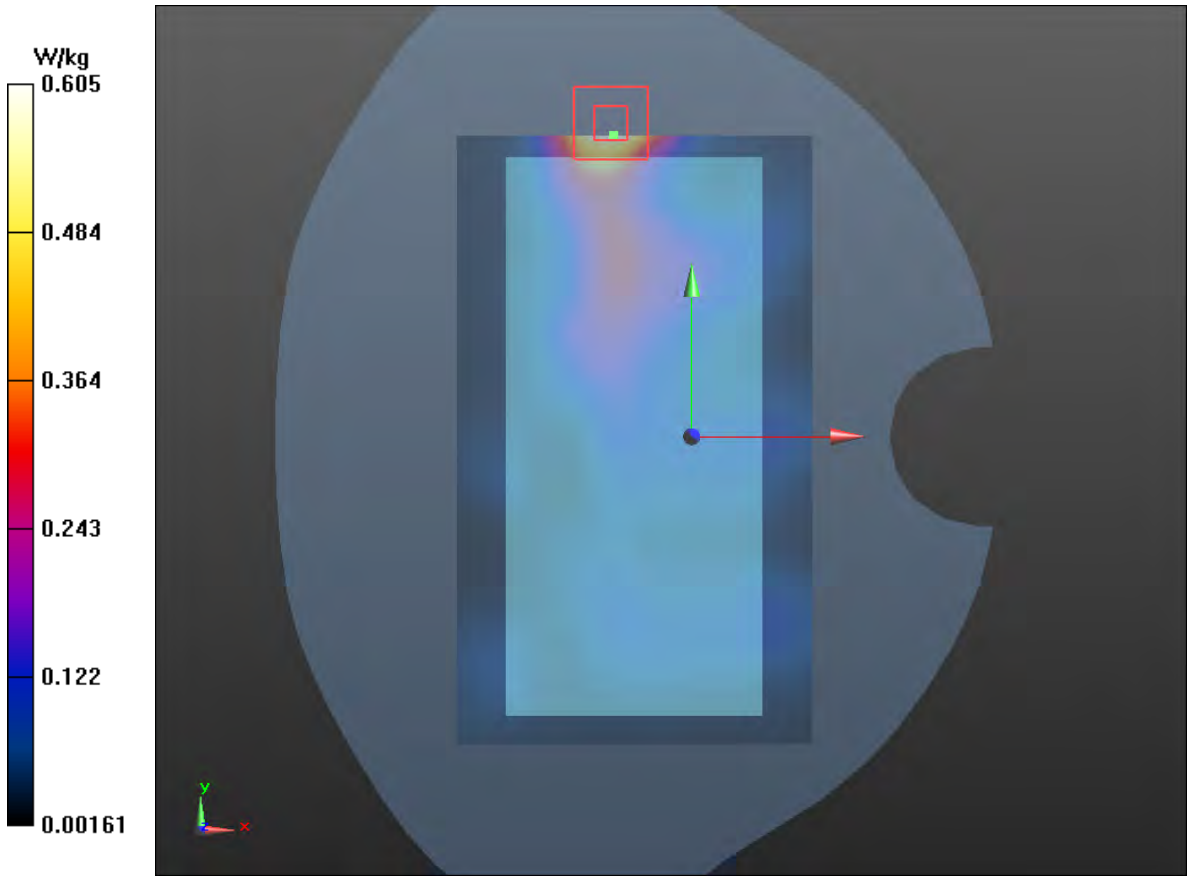
Front Side High/Zoom Scan(7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 7.696 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 1.32 W/kg

SAR(1 g) = 0.578 W/kg; SAR(10 g) = 0.261 W/kg

Maximum value of SAR (measured) = 0.605 W/kg



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Plot 75 LTE Band 7 50%RB Top Edge High (Distance 14mm)

Date: 2/18/2020

Communication System: UID 0, LTE (0); Frequency: 2560 MHz;Duty Cycle: 1:1

Medium parameters used: f = 2560 MHz; σ = 1.997 S/m; ε_r = 40.391; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.20, 7.20, 7.20); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.12 (7470)

Top Edge High/Area Scan (51x111x1): Interpolated grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.827 W/kg

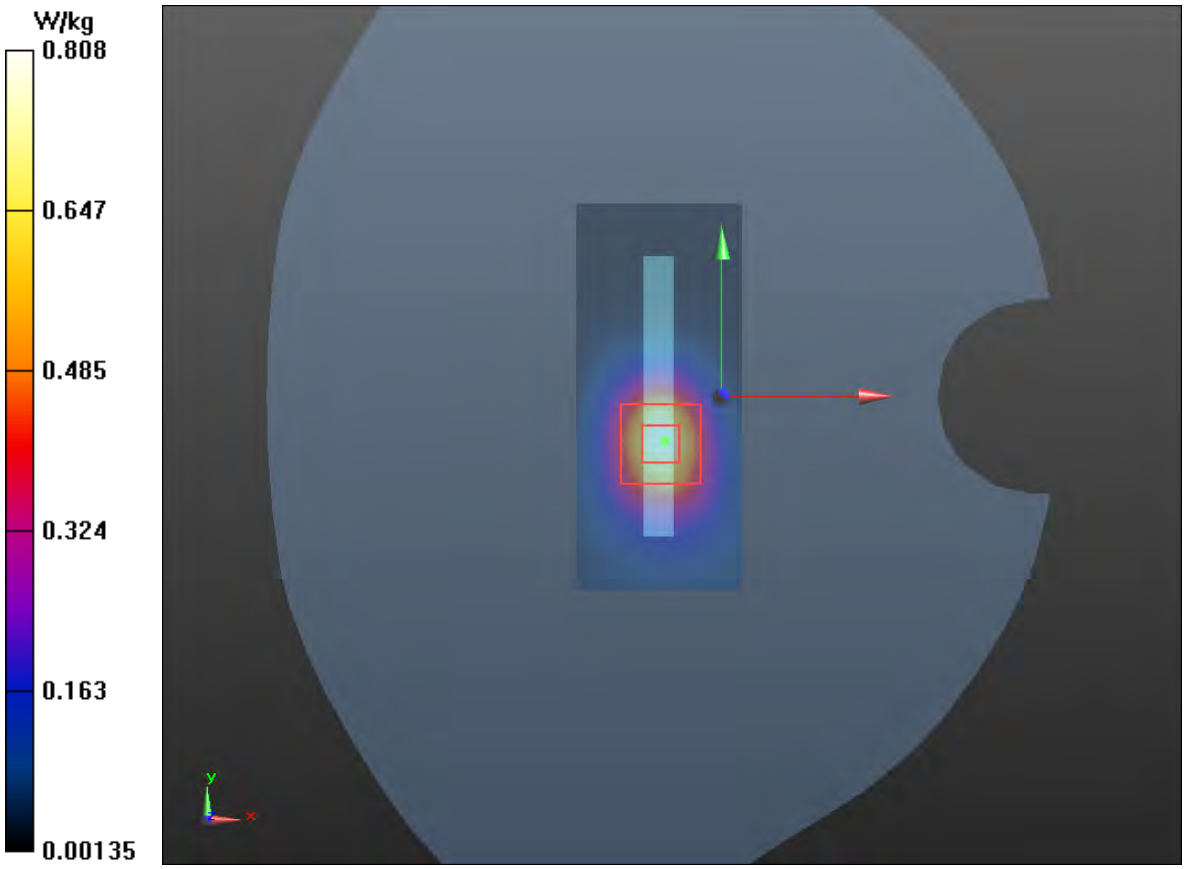
Top Edge High/Zoom Scan(7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 15.66 V/m; Power Drift = -0.16 dB

Peak SAR (extrapolated) = 1.63 W/kg

SAR(1 g) = 0.721 W/kg; SAR(10 g) = 0.318 W/kg

Maximum value of SAR (measured) = 0.808 W/kg



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Plot 76 LTE Band 12 1RB Right Tilt High

Date: 2/5/2020

Communication System: UID 0, LTE (0); Frequency: 711 MHz;Duty Cycle: 1:1

Medium parameters used: f = 711 MHz; σ = 0.87 S/m; ε_r = 43.041; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Right Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.54, 9.54, 9.54); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.12 (7470)

Right Tilt High/Area Scan (71x131x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.162 W/kg

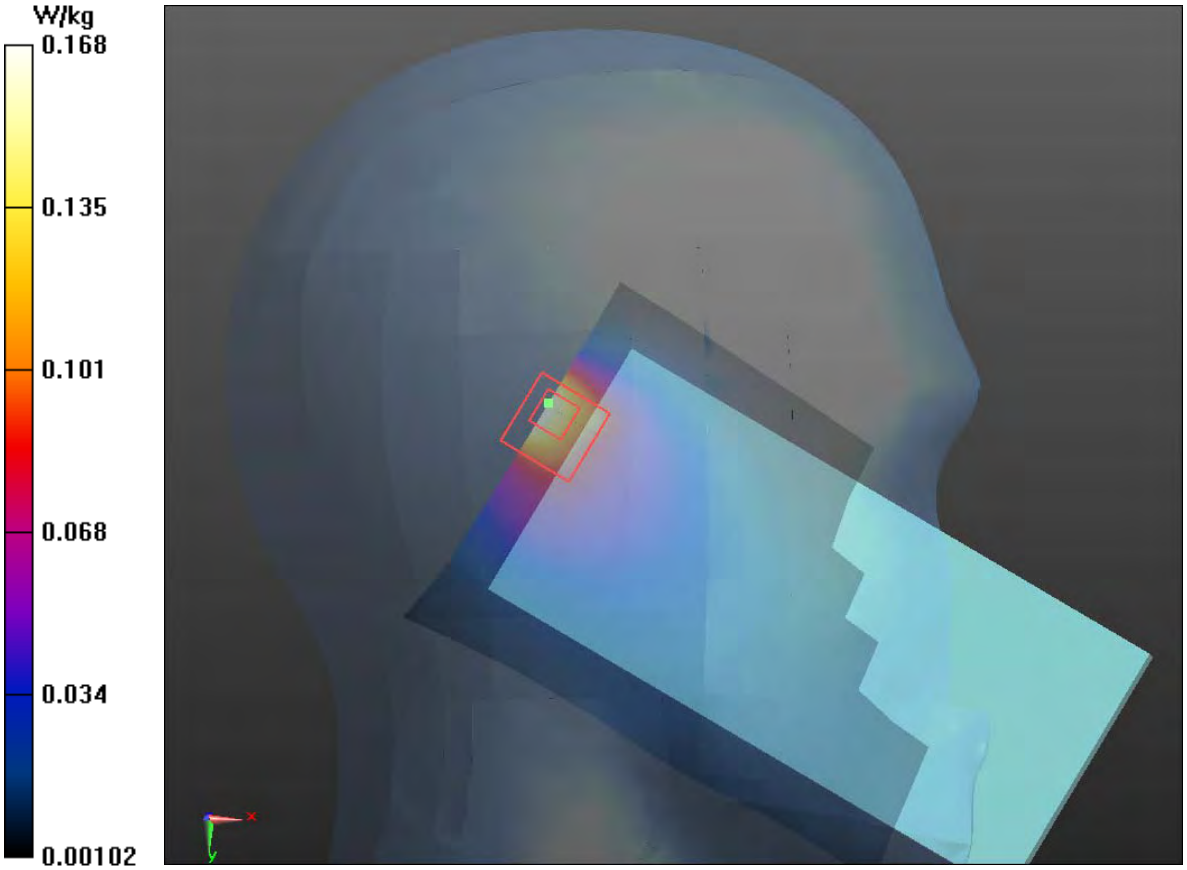
Right Tilt High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.577 V/m; Power Drift = 0.14 dB

Peak SAR (extrapolated) = 0.418 W/kg

SAR(1 g) = 0.155 W/kg; SAR(10 g) = 0.074 W/kg

Maximum value of SAR (measured) = 0.168 W/kg



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Plot 77 LTE Band 12 1RB Back Side Low (Distance 10mm)

Date: 2/5/2020

Communication System: UID 0, LTE (0); Frequency: 704 MHz;Duty Cycle: 1:1

Medium parameters used: f = 704 MHz; σ = 0.864 S/m; ε_r = 43.132; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.54, 9.54, 9.54); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.12 (7470)

Back Side Low/Area Scan (71x121x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.0325 W/kg

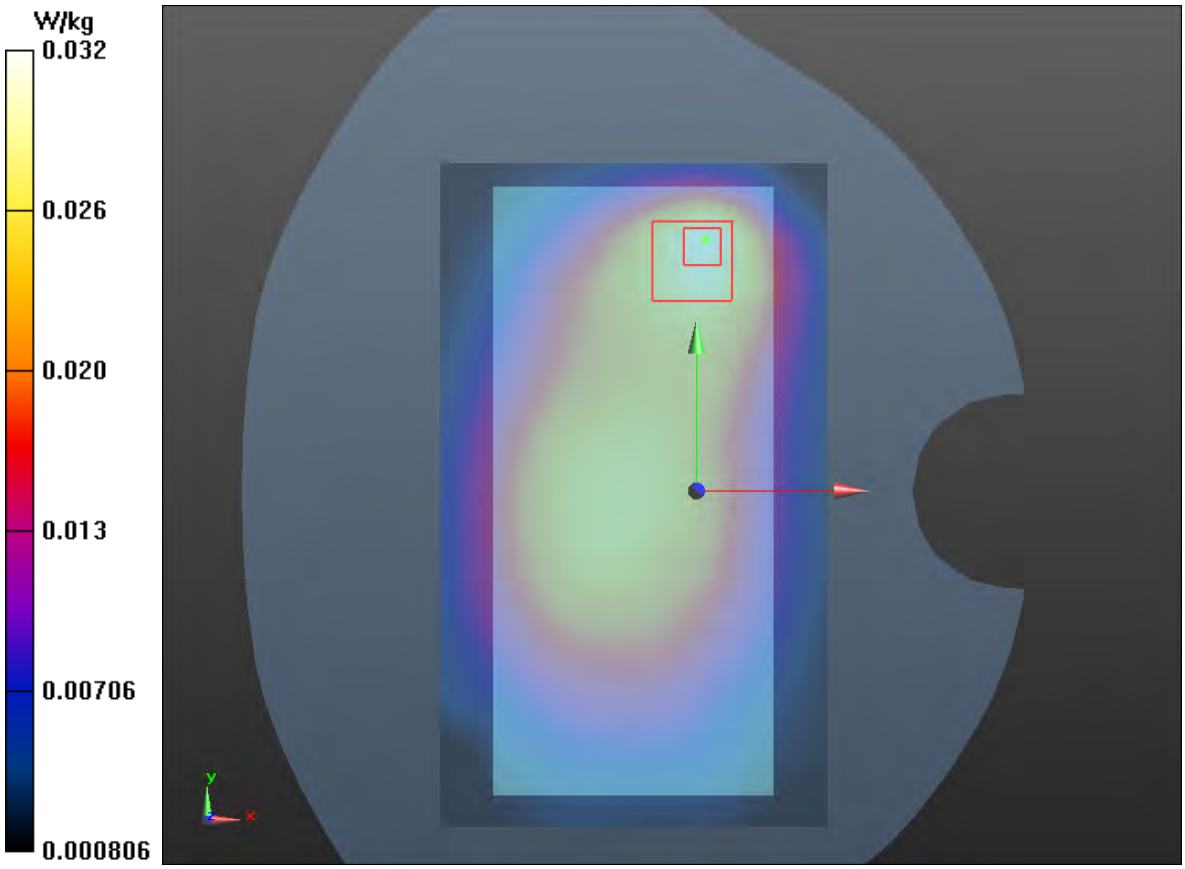
Back Side Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.650 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 0.0560 W/kg

SAR(1 g) = 0.029 W/kg; SAR(10 g) = 0.018 W/kg

Maximum value of SAR (measured) = 0.032 W/kg



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Plot 78 LTE Band 12 1RB Left Edge Low (Distance 10mm)

Date: 2/5/2020

Communication System: UID 0, LTE (0); Frequency: 704 MHz;Duty Cycle: 1:1

Medium parameters used: f = 704 MHz; σ = 0.864 S/m; ε_r = 43.132; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.54, 9.54, 9.54); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.12 (7470)

Left Edge Low/Area Scan (51x201x1): Interpolated grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.0795 W/kg

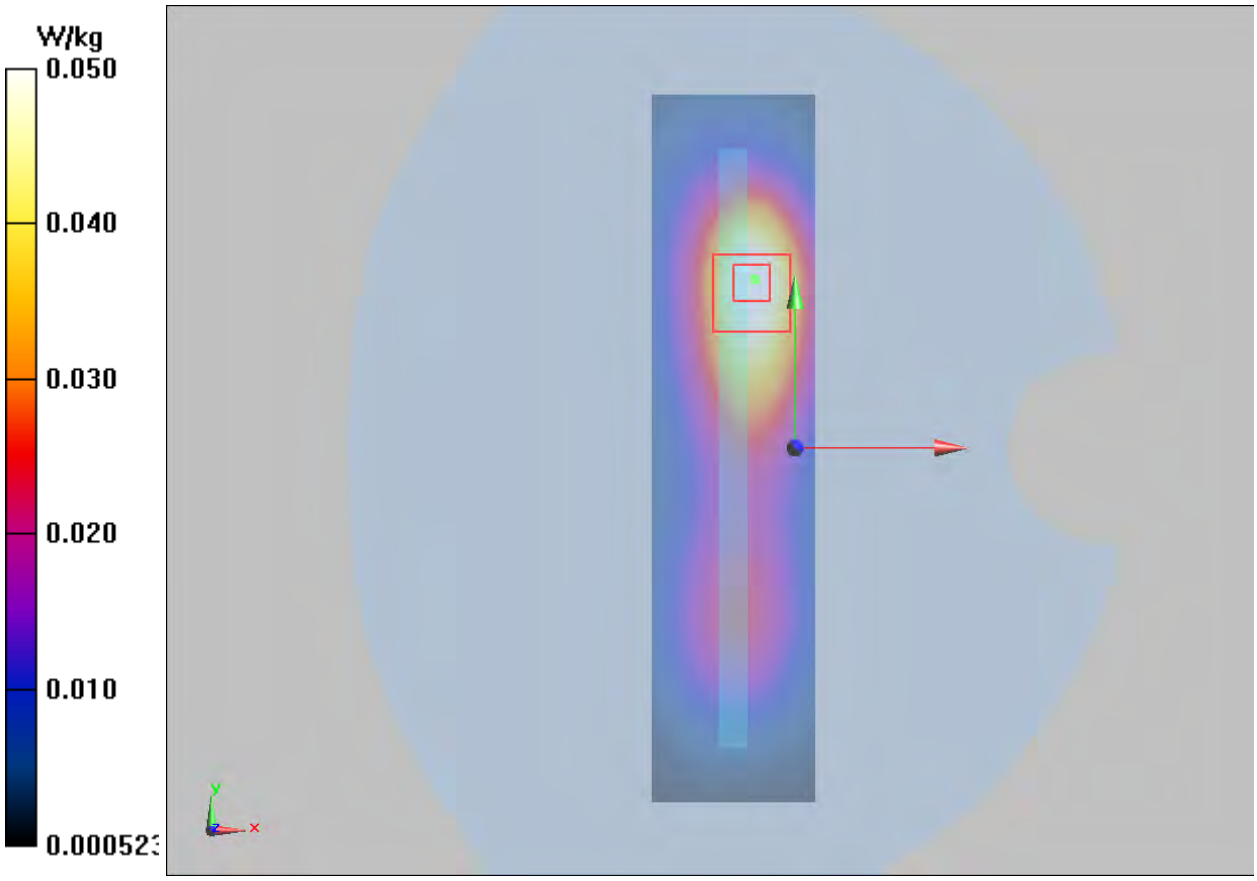
Left Edge Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.484 V/m; Power Drift = 0.021 dB

Peak SAR (extrapolated) = 0.182 W/kg

SAR(1 g) = 0.032 W/kg; SAR(10 g) = 0.018 W/kg

Maximum value of SAR (measured) = 0.050 W/kg



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Plot 79 LTE Band 13 1RB Right Tilt Middle

Date: 2/4/2020

Communication System: UID 0, LTE (0); Frequency: 782 MHz;Duty Cycle: 1:1

Medium parameters used: f = 782 MHz; σ = 0.935 S/m; ε_r = 41.912; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Right Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.54, 9.54, 9.54); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.12 (7470)

Right Tilt Middle/Area Scan (71x131x1): Interpolated grid: dx=15mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.401 W/kg

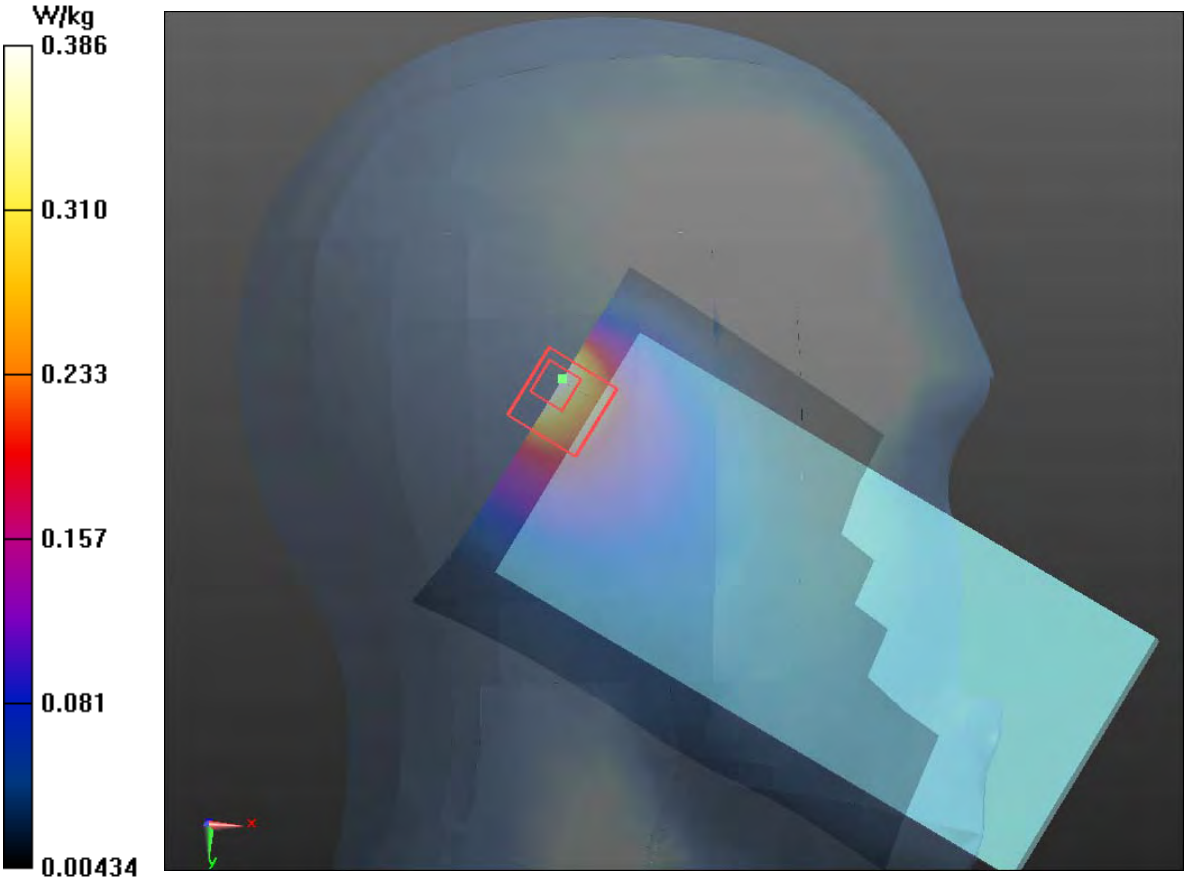
Right Tilt Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.15 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.826 W/kg

SAR(1 g) = 0.338 W/kg; SAR(10 g) = 0.171 W/kg

Maximum value of SAR (measured) = 0.386 W/kg



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Plot 80 LTE Band 13 1RB Back Side Middle (Distance 10mm)

Date: 2/4/2020

Communication System: UID 0, LTE (0); Frequency: 782 MHz;Duty Cycle: 1:1

Medium parameters used: f = 782 MHz; σ = 0.935 S/m; ε_r = 41.912; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.54, 9.54, 9.54); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.12 (7470)

Back Side Middle/Area Scan (71x121x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.0859 W/kg

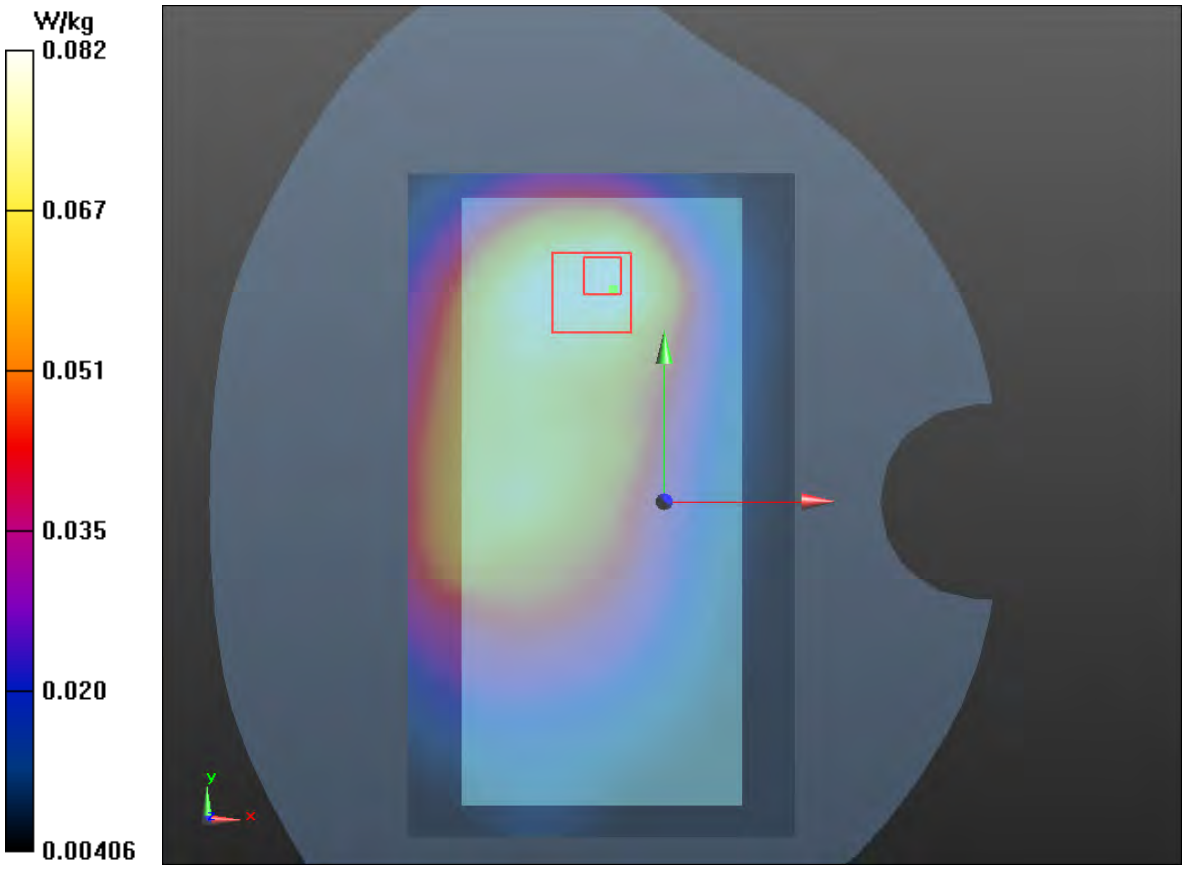
Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.638 V/m; Power Drift = 0.022 dB

Peak SAR (extrapolated) = 0.131 W/kg

SAR(1 g) = 0.078 W/kg; SAR(10 g) = 0.052 W/kg

Maximum value of SAR (measured) = 0.082 W/kg



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Plot 81 LTE Band 66 1RB Right Cheek Low

Date: 2/12/2020

Communication System: UID 0, LTE (0); Frequency: 1720 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1720 MHz; σ = 1.38 S/m; ε_r = 40.103; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Right Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(8.21, 8.21, 8.21); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.12 (7470)

Right Cheek Low/Area Scan (71x131x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.563 W/kg

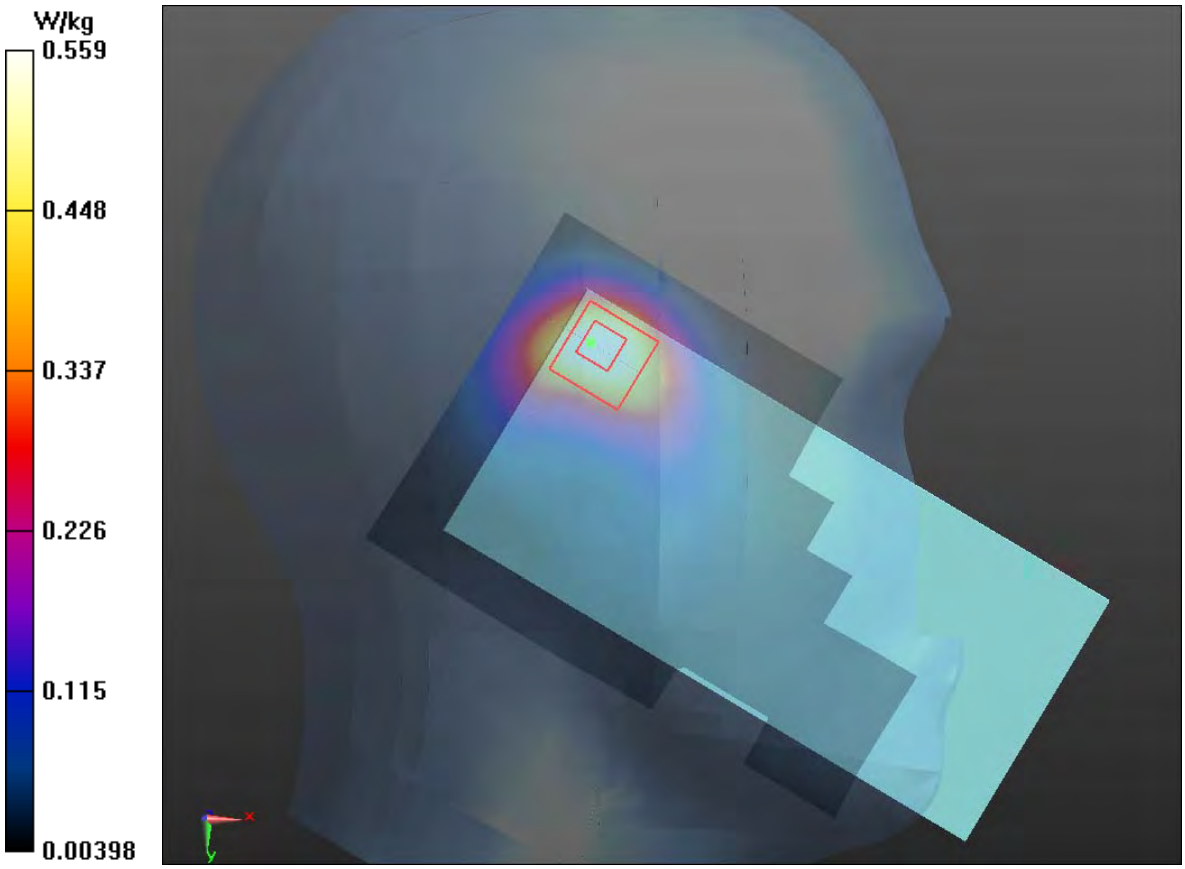
Right Cheek Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 10.58 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.943 W/kg

SAR(1 g) = 0.522 W/kg; SAR(10 g) = 0.291 W/kg

Maximum value of SAR (measured) = 0.559 W/kg



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Plot 82 LTE Band 66 1RB Front Side Middle (Distance 10mm)

Date: 2/12/2020

Communication System: UID 0, LTE (0); Frequency: 1745 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1745 MHz; σ = 1.403 S/m; ε_r = 40.003; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(8.21, 8.21, 8.21); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.12 (7470)

Front Side Middle/Area Scan (71x121x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.528 W/kg

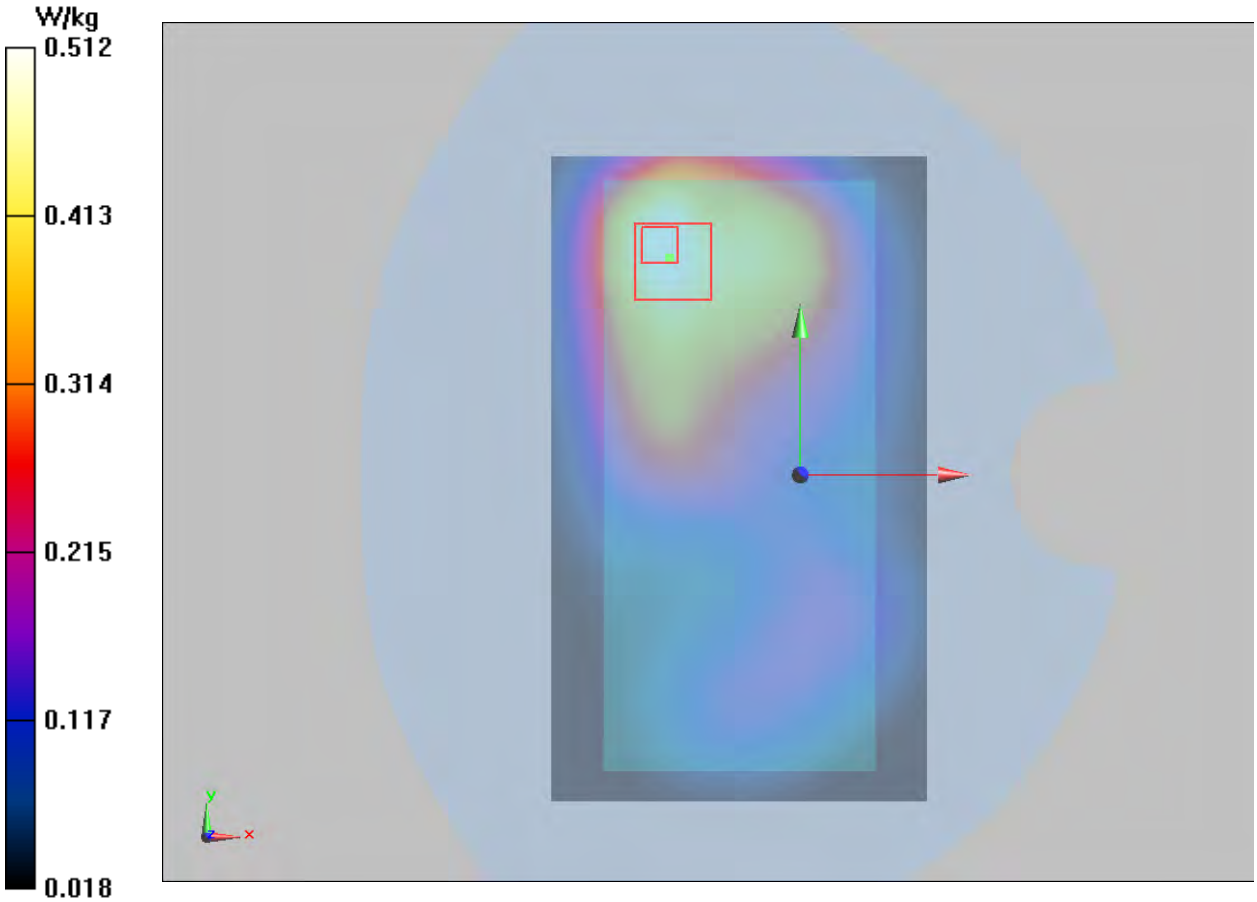
Front Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.89 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 0.792 W/kg

SAR(1 g) = 0.485 W/kg; SAR(10 g) = 0.302 W/kg

Maximum value of SAR (measured) = 0.512 W/kg



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Wi-Fi-Antenna

Plot 83 802.11b Left Cheek High

Date: 2/13/2020

Communication System: UID 0, 802.11b (0); Frequency: 2472 MHz;Duty Cycle: 1:1

Medium parameters used: f = 2472 MHz; σ = 1.9 S/m; ε_r = 40.691; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.50, 7.50, 7.50); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Left Cheek High/Area Scan (91x151x1): Interpolated grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.989 W/kg

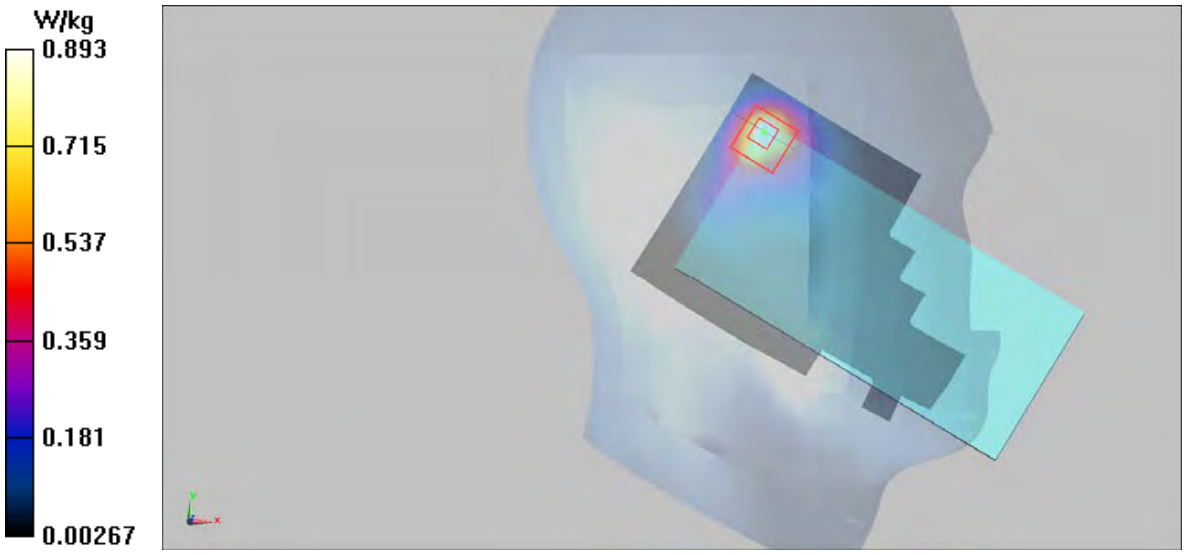
Left Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.91 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 1.84 W/kg

SAR(1 g) = 0.566 W/kg; SAR(10 g) = 0.228 W/kg

Maximum value of SAR (measured) = 0.893 W/kg



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Plot 84 802.11b Front Side High (Distance 10mm)

Date: 2/13/2020

Communication System: UID 0, 802.11b (0); Frequency: 2472 MHz;Duty Cycle: 1:1

Medium parameters used: f = 2472 MHz; σ = 1.9 S/m; ε_r = 40.691; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.50, 7.50, 7.50); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Front Side High/Area Scan (91x151x1): Interpolated grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.254 W/kg

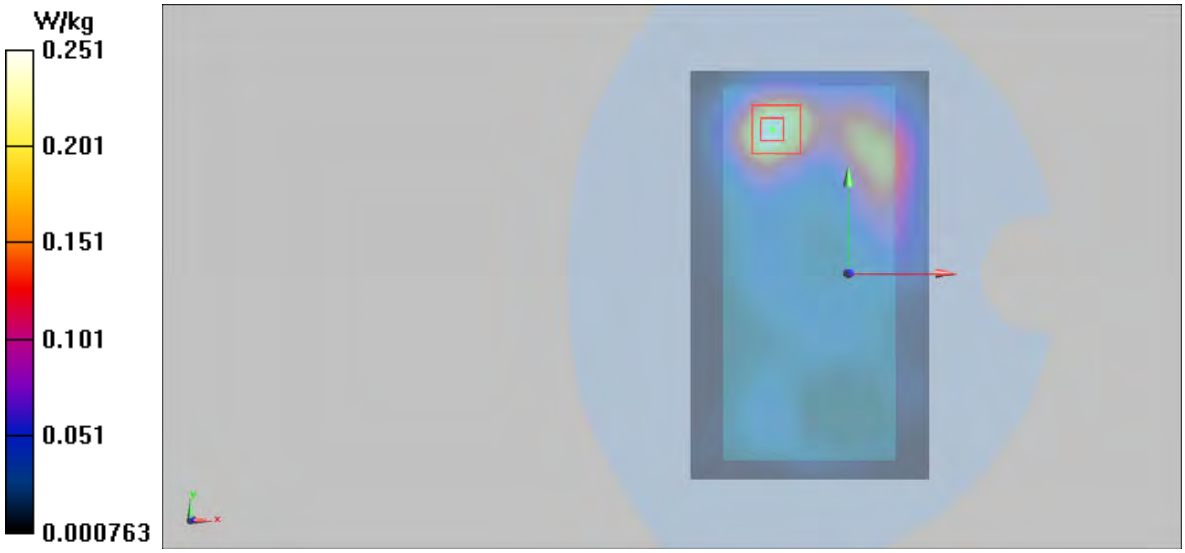
Front Side High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.764 V/m; Power Drift = 0.025 dB

Peak SAR (extrapolated) = 0.506 W/kg

SAR(1 g) = 0.165 W/kg; SAR(10 g) = 0.081 W/kg

Maximum value of SAR (measured) = 0.251 W/kg



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Plot 85 802.11a U-NII-1 Left Cheek Low

Date: 2/14/2020

Communication System: UID 0, 802.11a (0); Frequency: 5180 MHz;Duty Cycle: 1:1

Medium parameters used: f = 5180 MHz; σ = 4.75 S/m; ε_r = 36.766; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(5.56, 5.56, 5.56); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Left Cheek Low/Area Scan (111x201x1): Interpolated grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.404 W/kg

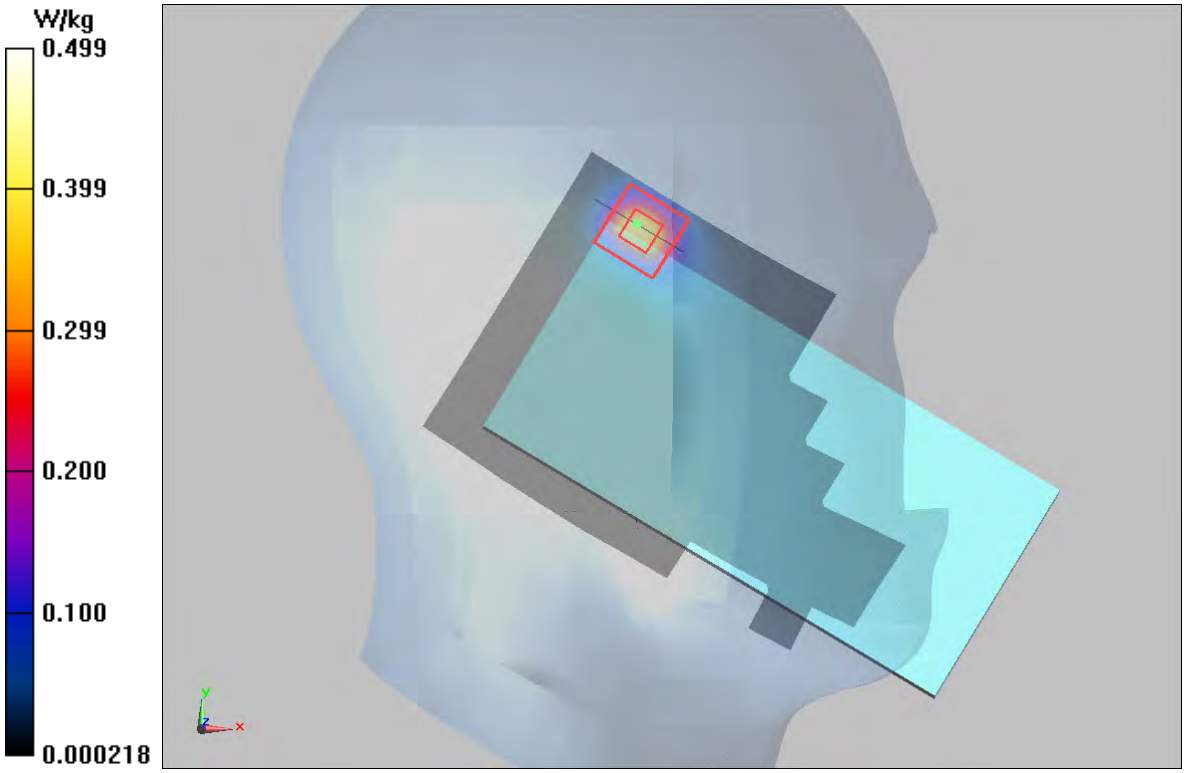
Left Cheek Low/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 1.071 V/m; Power Drift = 0.191 dB

Peak SAR (extrapolated) = 1.09 W/kg

SAR(1 g) = 0.366 W/kg; SAR(10 g) = 0.110 W/kg

Maximum value of SAR (measured) = 0.499 W/kg



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Plot 86 802.11a U-NII-1 Right Edge Low (Distance 10mm)

Date: 2/14/2020

Communication System: UID 0, 802.11a (0); Frequency: 5180 MHz;Duty Cycle: 1:1

Medium parameters used: f = 5180 MHz; σ = 4.75 S/m; ε_r = 36.766; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(5.56, 5.56, 5.56); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Right Edge Low/Area Scan (51x201x1): Interpolated grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.359 W/kg

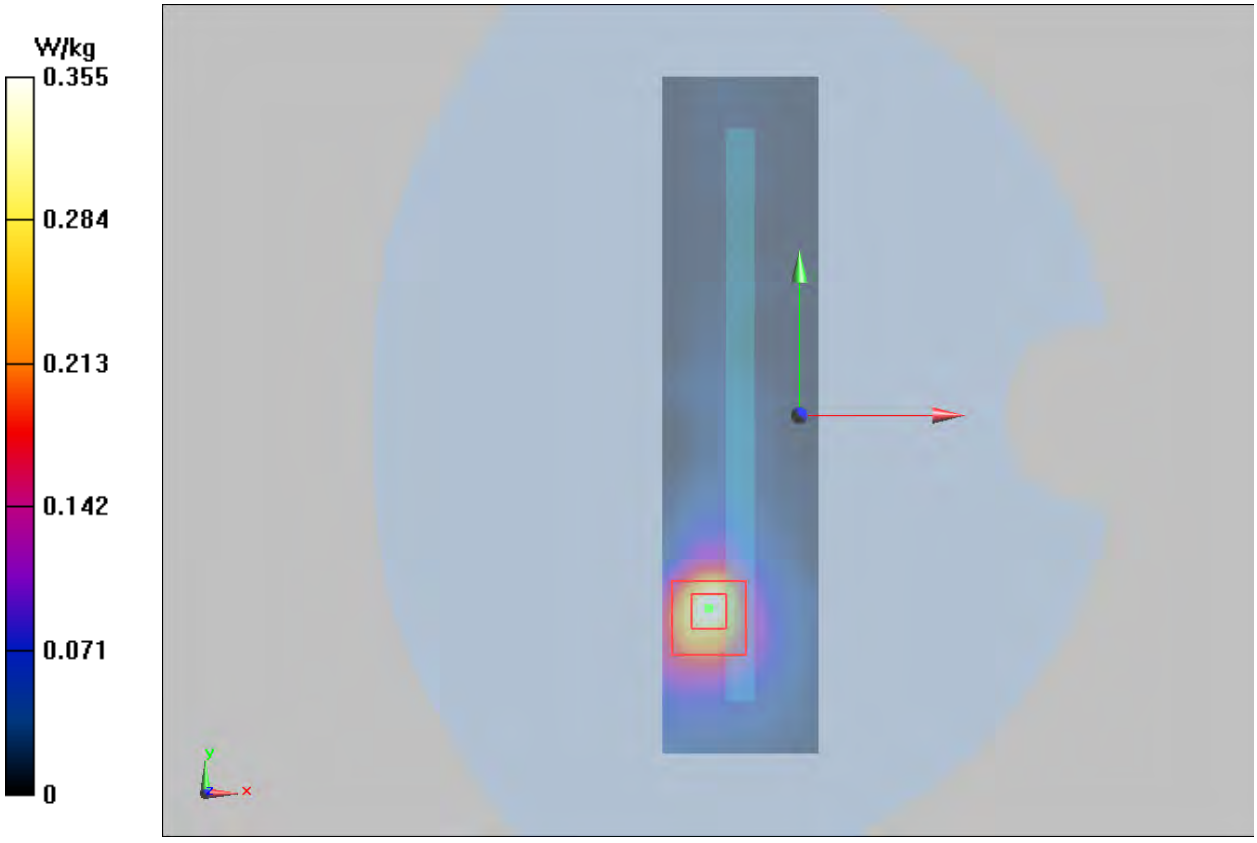
Right Edge Low/Zoom Scan(7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 1.631 V/m; Power Drift = 0.021 dB

Peak SAR (extrapolated) = 0.811 W/kg

SAR(1 g) = 0.293 W/kg; SAR(10 g) = 0.108 W/kg

Maximum value of SAR (measured) = 0.355 W/kg



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Plot 87 802.11a U-NII-3 Left Cheek High

Date: 2/18/2020

Communication System: UID 0, 802.11a (0); Frequency: 5825 MHz;Duty Cycle: 1:1

Medium parameters used: f = 5825 MHz; σ = 5.48 S/m; ε_r = 35.186; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(4.99, 4.99, 4.99); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Left Cheek High/Area Scan (111x201x1): Interpolated grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.543 W/kg

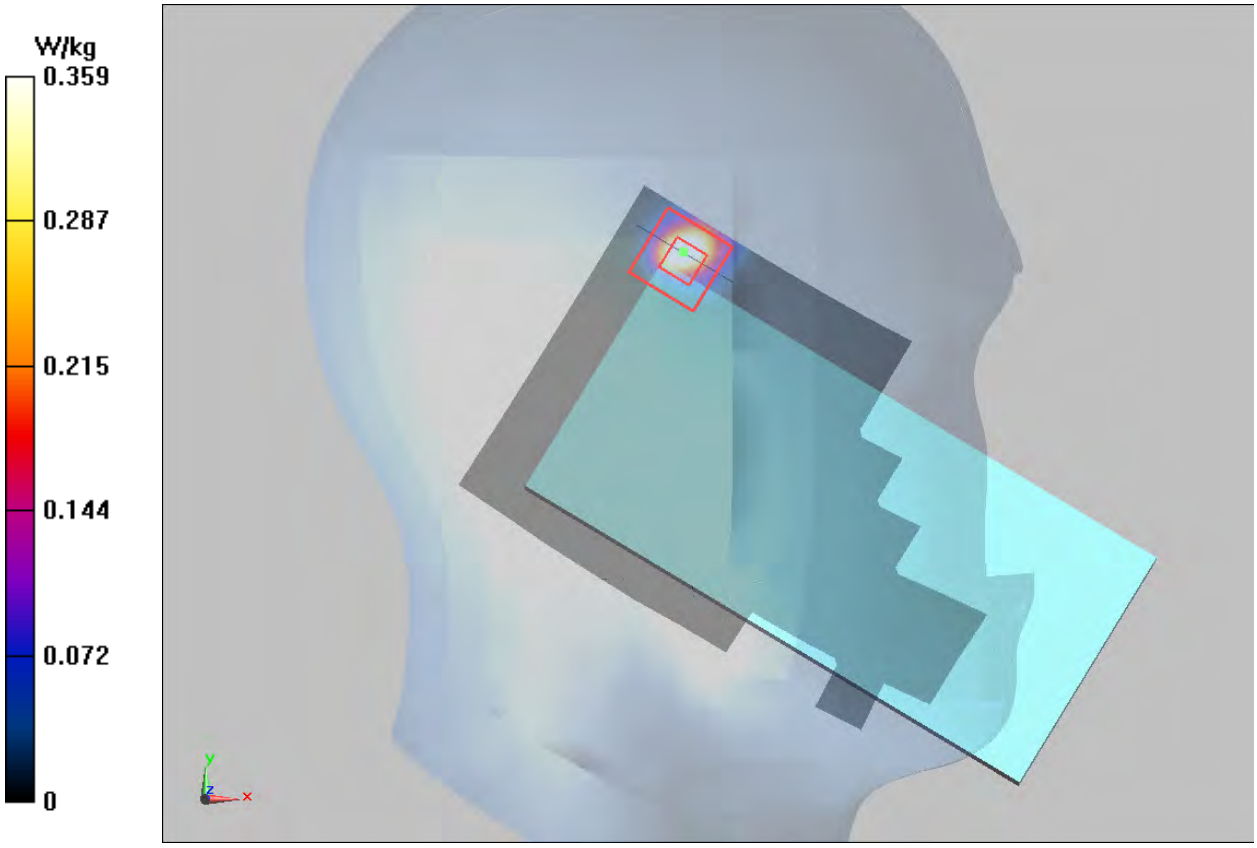
Left Cheek High/Zoom Scan(7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 0.4920 V/m; Power Drift = 0.100dB

Peak SAR (extrapolated) = 1.10 W/kg

SAR(1 g) = 0.292 W/kg; SAR(10 g) = 0.085 W/kg

Maximum value of SAR (measured) = 0.359 W/kg



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Plot 88 802.11a U-NII-3 Back Side High (Distance 10mm)

Date: 2/18/2020

Communication System: UID 0, 802.11a (0); Frequency: 5825 MHz;Duty Cycle: 1:1

Medium parameters used: f = 5825 MHz; σ = 5.48 S/m; ε_r = 35.186; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(4.99, 4.99, 4.99); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Back Side High/Area Scan (111x201x1): Interpolated grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.408 W/kg

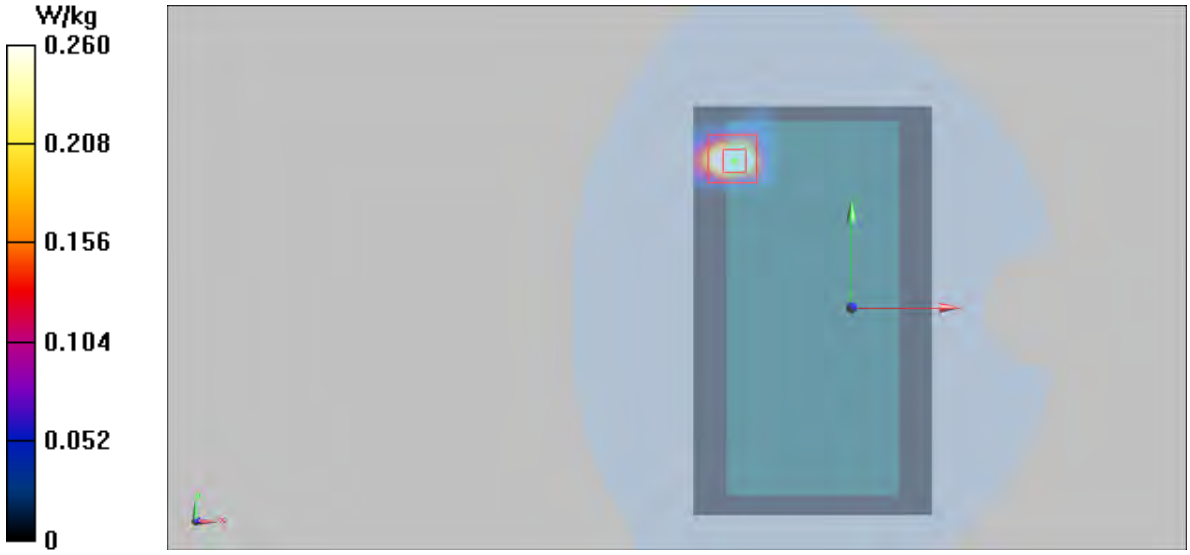
Back Side High/Zoom Scan(7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 0 V/m; Power Drift = 0.090 dB

Peak SAR (extrapolated) = 0.876 W/kg

SAR(1 g) = 0.234 W/kg; SAR(10 g) = 0.079 W/kg

Maximum value of SAR (measured) = 0.260 W/kg



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Plot 89 BT Left Cheek Middle

Date: 2/13/2020

Communication System: UID 0, BT (0); Frequency: 2441 MHz;Duty Cycle: 1:1

Medium parameters used: f = 2441 MHz; σ = 1.861 S/m; ε_r = 40.871; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.50, 7.50, 7.50); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Left Cheek Middle/Area Scan (91x151x1): Interpolated grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.346 W/kg

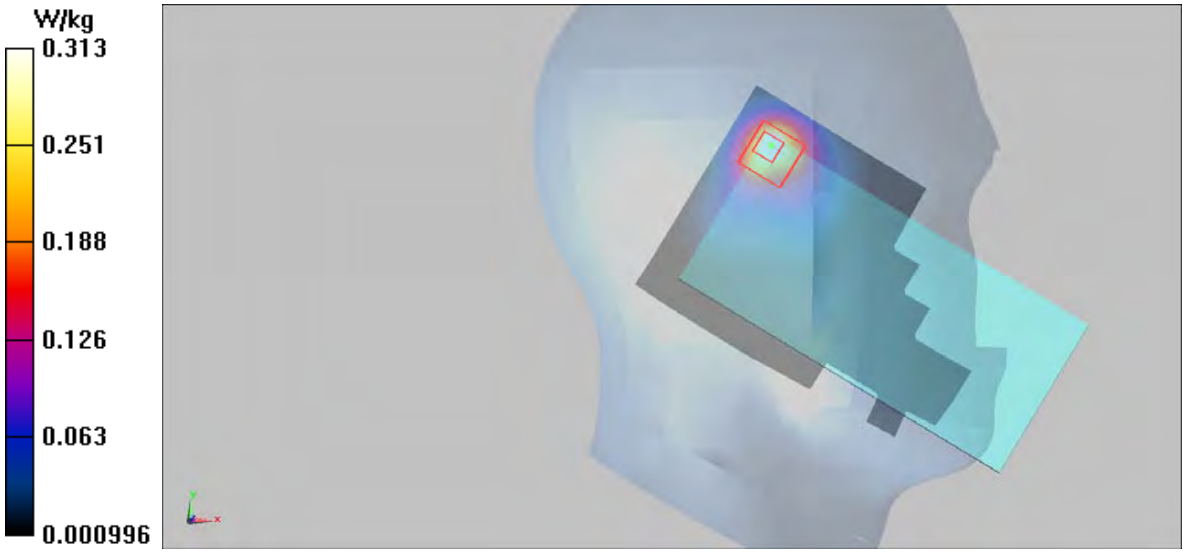
Left Cheek Middle/Zoom Scan(7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.109 V/m; Power Drift = -0.10 dB

Peak SAR (extrapolated) = 0.626 W/kg

SAR(1 g) = 0.283 W/kg; SAR(10 g) = 0.133 W/kg

Maximum value of SAR (measured) = 0.313 W/kg



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Plot 90 BT Top Edge Middle

Date: 2/13/2020

Communication System: UID 0, BT (0); Frequency: 2441 MHz;Duty Cycle: 1:1

Medium parameters used: f = 2441 MHz; σ = 1.861 S/m; ε_r = 40.871; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.50, 7.50, 7.50); Calibrated: 6/19/2019;

Electronics: DAE4 SN1317; Calibrated: 10/23/2019

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

Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Top Edge Middle/Area Scan (51x111x1): Interpolated grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.0771 W/kg

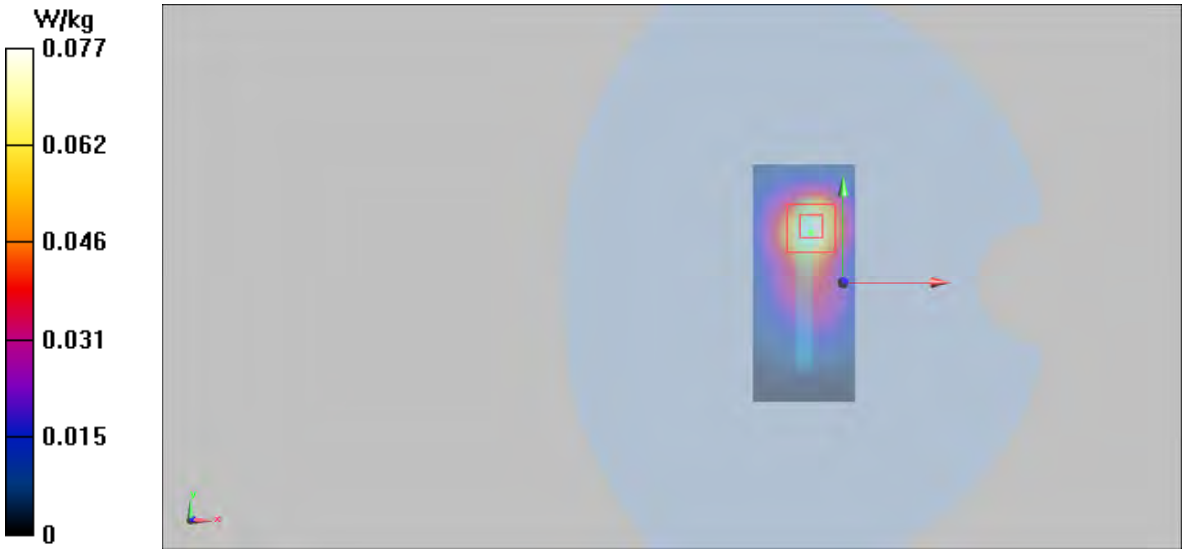
Top Edge Middle/Zoom Scan(7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.501 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.164 W/kg

SAR(1 g) = 0.072 W/kg; SAR(10 g) = 0.034 W/kg

Maximum value of SAR (measured) = 0.077W/kg



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ANNEX D: Probe Calibration Certificate

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中国认可
国际互认
校准
CALIBRATION
CNAS L0570

Client TA(Shanghai) Certificate No: Z19-60169

CALIBRATION CERTIFICATE

Object	EX3DV4 - SN:3677
Calibration Procedure(s)	FF-Z11-004-01 Calibration Procedures for Dosimetric E-field Probes
Calibration date:	June 19, 2019

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date(Calibrated by, Certificate No.)	Scheduled Calibration
Power Meter NRP2	101919	20-Jun-18 (CTTL, No.J18X05032)	Jun-19
Power sensor NRP-Z91	101547	20-Jun-18 (CTTL, No.J18X05032)	Jun-19
Power sensor NRP-Z91	101548	20-Jun-18 (CTTL, No.J18X05032)	Jun-19
Reference10dBAttenuator	18N50W-10dB	09-Feb-18(CTTL, No.J18X01133)	Feb-20
Reference20dBAttenuator	18N50W-20dB	09-Feb-18(CTTL, No.J18X01132)	Feb-20
Reference Probe EX3DV4	SN 3617	31-Jan-19(SPEAG,No.EX3-3617_Jan19)	Jan-20
DAE4	SN 1331	06-Feb-19(SPEAG, No.DAE4-1331_Feb19)	Feb -20
Secondary Standards	**ID #**	**Cal Date(Calibrated by, Certificate No.)**	**Scheduled Calibration**
SignalGeneratorMG3700A	6201052605	21-Jun-18 (CTTL, No.J18X05033)	Jun-19
Network Analyzer E5071C	MY46110673	24-Jan-19 (CTTL, No.J19X00547)	Jan -20

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

Issued: June 20, 2019

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Certificate No: Z19-60169 Page 1 of 11

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Glossary:

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConvF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A,B,C,D	modulation dependent linearization parameters
Polarization Φ	Φ rotation around probe axis
Polarization θ	θ rotation around an axis that is in the plane normal to probe axis (at measurement center), i θ=0 is normal to probe axis
Connector Angle	information used in DASY system to align probe sensor X to the robot coordinate system

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013

b) IEC 62209-1, "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016

c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010

d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Methods Applied and Interpretation of Parameters:

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

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Probe EX3DV4

SN: 3677

Calibrated: June 19, 2019

Calibrated for DASY/EASY Systems

(Note: non-compatible with DASY2 system!)

Certificate No: Z19-60169 Page 3 of 11

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

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm(μV/(V/m)²)[A]	0.41	0.46	0.40	±10.0%
DCP(mV)[B]	101.1	102.9	101.9	

Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB√μV	C	D dB	VR mV	Unc[E] (k=2)
0	CW	X	0.0	0.0	1.0	0.00	152.0	±2.6%
		Y	0.0	0.0	1.0		170.1	
		Z	0.0	0.0	1.0		147.7	

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

[A] The uncertainties of Norm X, Y, Z do not affect the E^2-field uncertainty inside TSL (see Page 5 and Page 6).
[B] Numerical linearization parameter: uncertainty not required.
[E] Uncertainly is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

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

Calibration Parameter Determined in Head Tissue Simulating Media

f [MHz][C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha[G]	Depth[G] (mm)	Unct. (k=2)
750	41.9	0.89	9.54	9.54	9.54	0.11	1.56	±12.1%
835	41.5	0.90	9.20	9.20	9.20	0.11	1.61	±12.1%
1750	40.1	1.37	8.21	8.21	8.21	0.22	1.11	±12.1%
1900	40.0	1.40	7.79	7.79	7.79	0.22	1.04	±12.1%
2300	39.5	1.67	7.66	7.66	7.66	0.57	0.72	±12.1%
2450	39.2	1.80	7.50	7.50	7.50	0.59	0.71	±12.1%
2600	39.0	1.96	7.20	7.20	7.20	0.65	0.68	±12.1%
5250	35.9	4.71	5.56	5.56	5.56	0.40	1.40	±13.3%
5600	35.5	5.07	4.90	4.90	4.90	0.45	1.40	±13.3%
5750	35.4	5.22	4.99	4.99	4.99	0.50	1.35	±13.3%

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

[F] At frequency below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ±10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ±5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

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

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

Calibration Parameter Determined in Body Tissue Simulating Media

f [MHz][C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha[G]	Depth[G] (mm)	Unct. (k=2)
750	55.5	0.96	9.75	9.75	9.75	0.40	0.75	±12.1%
835	55.2	0.97	9.40	9.40	9.40	0.18	1.38	±12.1%
1750	53.4	1.49	7.86	7.86	7.86	0.23	1.09	±12.1%
1900	53.3	1.52	7.62	7.62	7.62	0.22	1.15	±12.1%
2300	52.9	1.81	7.67	7.67	7.67	0.55	0.81	±12.1%
2450	52.7	1.95	7.57	7.57	7.57	0.59	0.75	±12.1%
2600	52.5	2.16	7.33	7.33	7.33	0.74	0.65	±12.1%
5250	48.9	5.36	4.93	4.93	4.93	0.45	1.55	±13.3%
5600	48.5	5.77	4.24	4.24	4.24	0.50	1.45	±13.3%
5750	48.3	5.94	4.35	4.35	4.35	0.50	1.50	±13.3%

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

[F] At frequency below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ±10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ±5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

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

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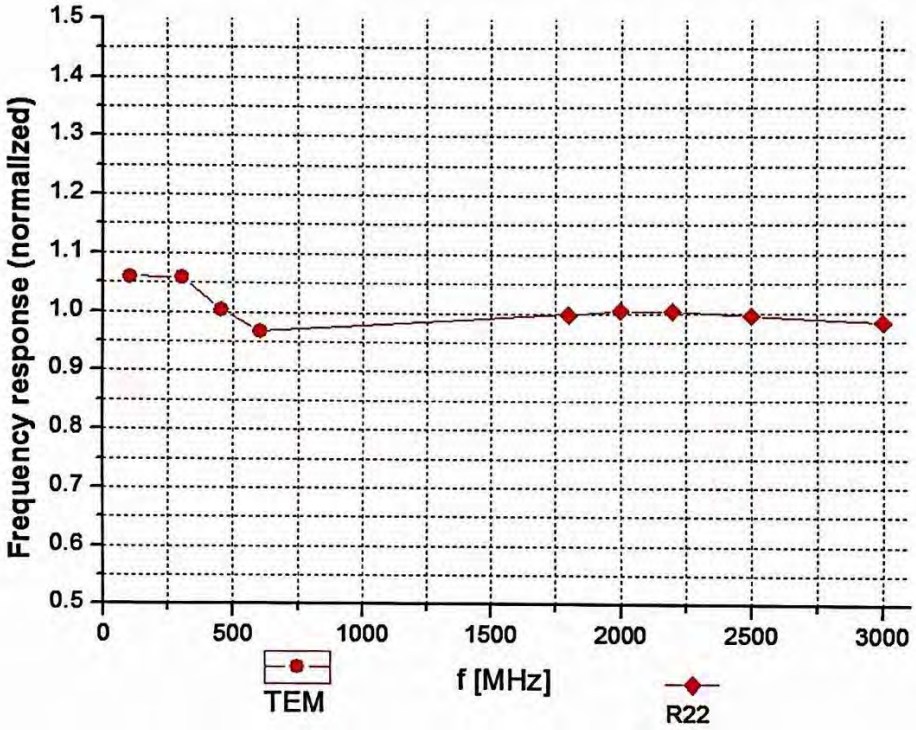
Frequency Response of E-Field
(TEM-Cell: ifi110 EXX, Waveguide: R22)



Uncertainty of Frequency Response of E-field: ±7.4% (k=2)

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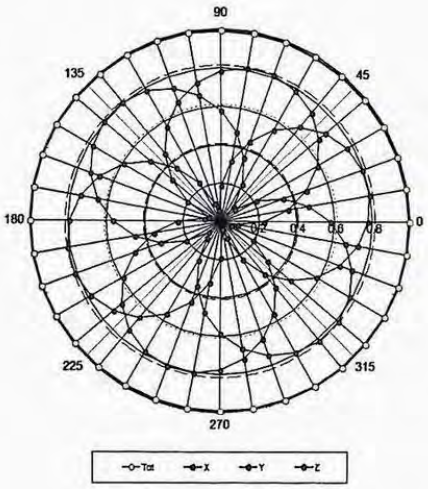
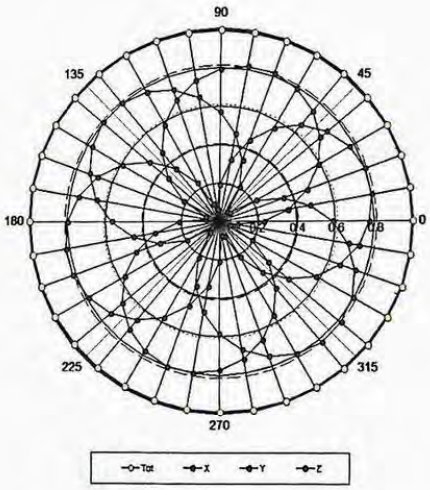
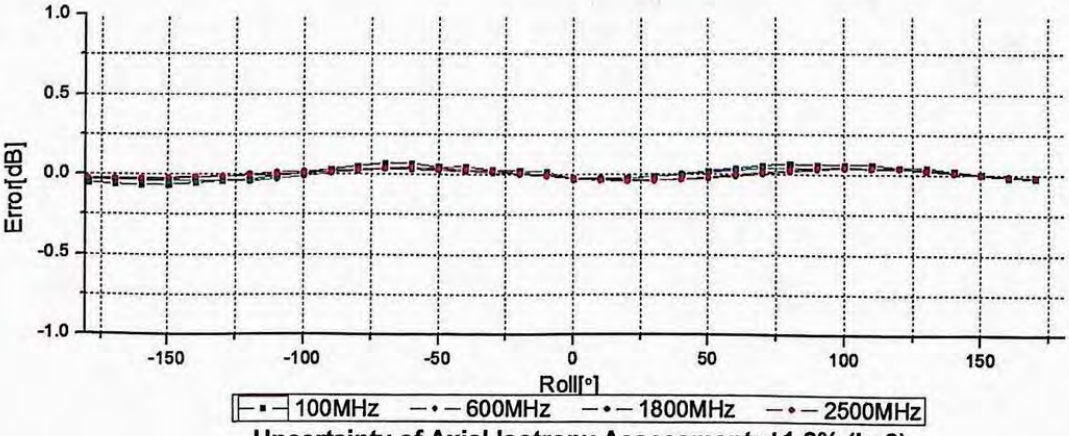
Receiving Pattern (Φ), θ=0°

f=600 MHz, TEM



f=1800 MHz, R22





Uncertainty of Axial Isotropy Assessment: ±1.2% (k=2)

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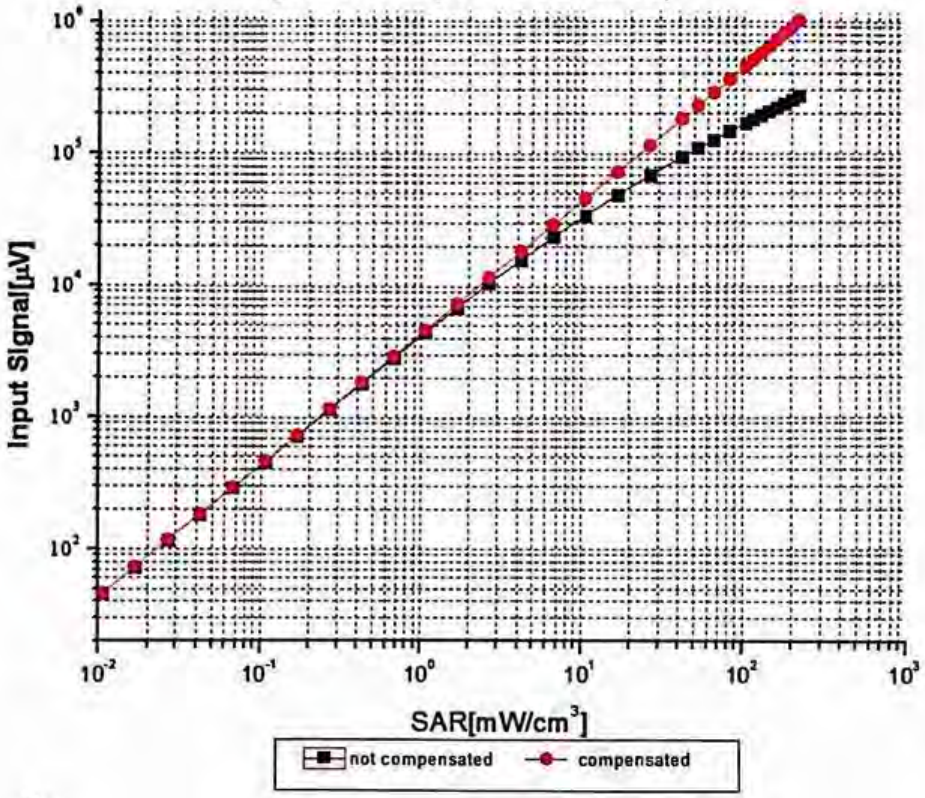
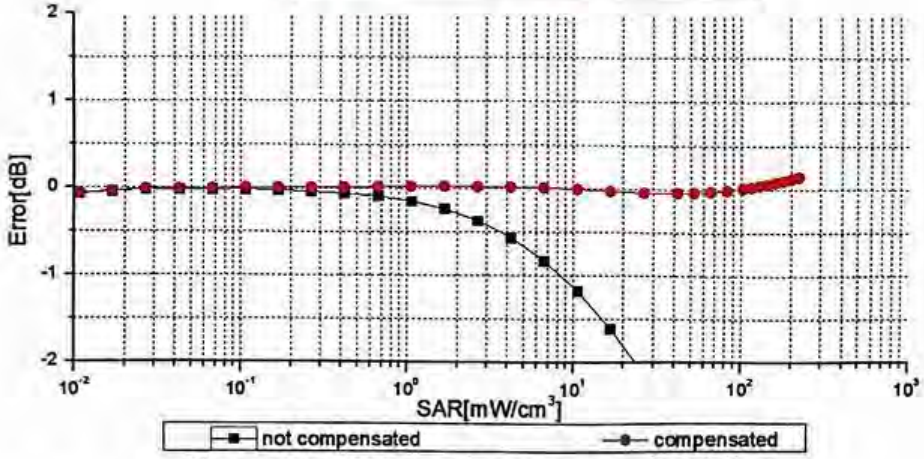
Dynamic Range f(SAR$_{head}$)
(TEM cell, f = 900 MHz)





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

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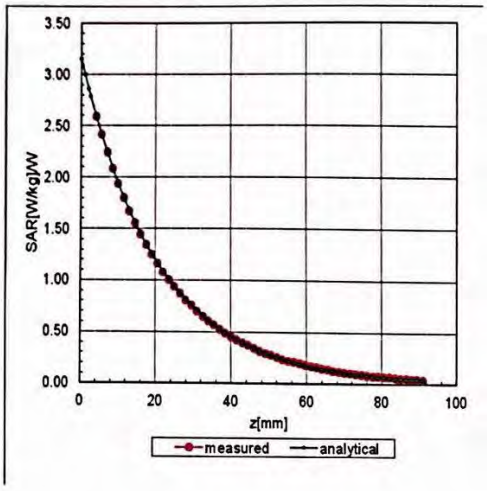
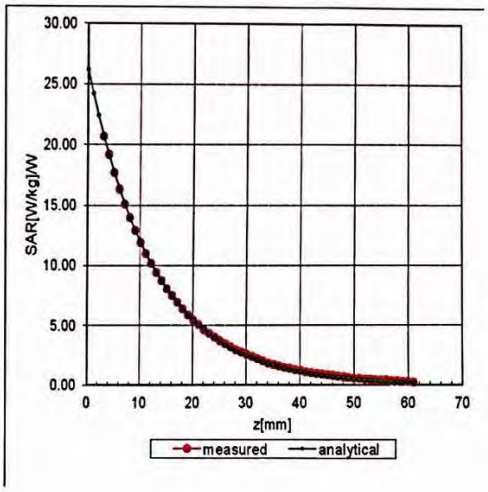
Conversion Factor Assessment

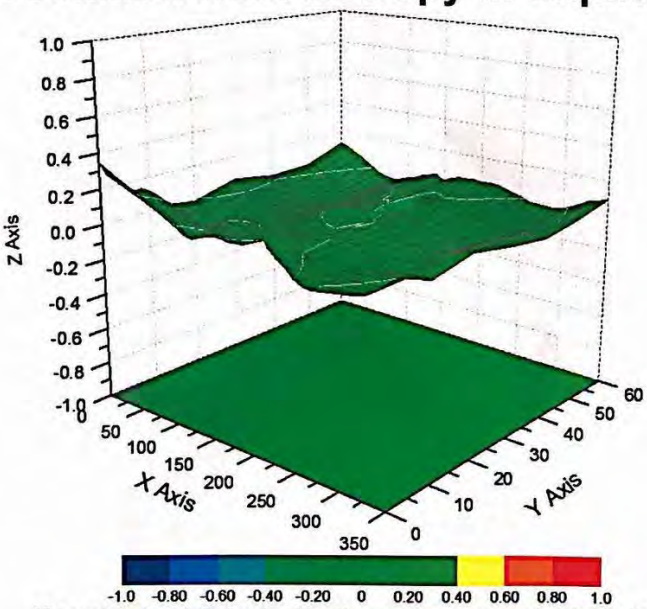
f=750 MHz, WGLS R9(H_convF)



f=1750 MHz, WGLS R22(H_convF)



Deviation from Isotropy in Liquid



Uncertainty of Spherical Isotropy Assessment: ±3.2% (K=2)

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

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	117.9
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disable
Probe Overall Length	337mm
Probe Body Diameter	10mm
Tip Length	9mm
Tip Diameter	2.5mm
Probe Tip to Sensor X Calibration Point	1mm
Probe Tip to Sensor Y Calibration Point	1mm
Probe Tip to Sensor Z Calibration Point	1mm
Recommended Measurement Distance from Surface	1.4mm

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ANNEX E: D750V3 Dipole Calibration Certificate

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校准
CALIBRATION
CNAS L0570

Client TA(Shanghai) Certificate No: Z17-97113

CALIBRATION CERTIFICATE

Object	D750V3 - SN: 1045
Calibration Procedure(s)	FF-Z11-003-01 Calibration Procedures for dipole validation kits
Calibration date:	August 27, 2017

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date(Calibrated by, Certificate No.)	Scheduled Calibration
Power Meter NRVD	102083	22-Sep-16 (CTTL, No.J16X06809)	Sep-17
Power sensor NRV-Z5	100595	22-Sep-16 (CTTL, No.J16X06809)	Sep-17
Reference Probe EX3DV4	SN 3617	23-Jan-17(SPEAG,No.EX3-3617_Jan17)	Jan-18
DAE4	SN 1331	19-Jan-17(CTTL-SPEAG,No.Z17-97015)	Jan-18
Secondary Standards	**ID #**	**Cal Date(Calibrated by, Certificate No.)**	**Scheduled Calibration**
Signal Generator E4438C	MY49071430	13-Jan-17 (CTTL, No.J17X00286)	Jan-18
Network Analyzer E5071C	MY46110673	13-Jan-17 (CTTL, No.J17X00285)	Jan-18

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

Issued: August 30, 2017

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Certificate No: Z17-97113 Page 1 of 8

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Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORMx,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013

b) IEC 62209-1, "Measurement procedure for assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices- Part 1: Device used next to the ear (Frequency range of 300MHz to 6GHz)", July 2016

c) IEC 62209-2, "Procedure to measure the Specific Absorption Rate (SAR) For wireless communication devices used in close proximity to the human body (frequency range of 30MHz to 6GHz)", March 2010

d) KDB865664, SAR Measurement Requirements for 100 MHz to 6 GHz

Additional Documentation:

e) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

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Measurement Conditions

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

DASY Version	DASY52	52.10.0.1446
Extrapolation	Advanced Extrapolation	
Phantom	Triple Flat Phantom 5.1C	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	750 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	41.9	0.89 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	41.7 ± 6 %	0.89 mho/m ± 6 %
Head TSL temperature change during test	<1.0 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.08 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	**8.34 mW /g ± 18.8 % (k=2)**
SAR averaged over 10 cm^3 (10 g) of Head TSL	Condition	
SAR measured	250 mW input power	1.36 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	**5.45 mW /g ± 18.7 % (k=2)**

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Body TSL parameters	22.0 °C	55.5	0.96 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	55.7 ± 6 %	0.95 mho/m ± 6 %
Body TSL temperature change during test	<1.0 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm^3 (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	2.18 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	**8.78 mW /g ± 18.8 % (k=2)**
SAR averaged over 10 cm^3 (10 g) of Body TSL	Condition	
SAR measured	250 mW input power	1.46 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	**5.87 mW /g ±18.7 % (k=2)**

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Appendix (Additional assessments outside the scope of CNAS L0570)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	52.5Ω- 2.95jΩ
Return Loss	- 28.5dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	47.5Ω- 5.53jΩ
Return Loss	- 24.2dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.140 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

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

Additional EUT Data

Manufactured by	SPEAG

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DASY5 Validation Report for Head TSL Date: 08.27.2017

Test Laboratory: CTTL, Beijing, China

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

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

Medium parameters used: f = 750 MHz; σ = 0.886 S/m; ε_r = 41.66; ρ = 1000 kg/m^3

Phantom section: Left Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: EX3DV4 - SN3617; ConvF(10.05, 10.05, 10.05); Calibrated: 1/23/2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1331; Calibrated: 1/19/2017
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: 1161/1
- Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

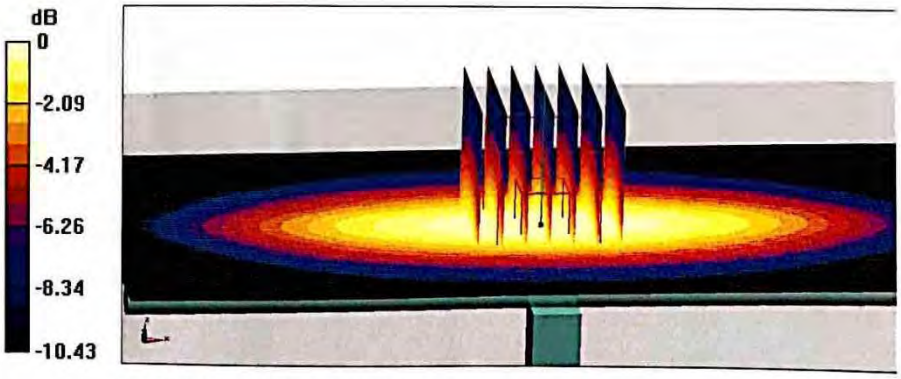
Dipole Calibration/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 54.59 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 3.20 W/kg

SAR(1 g) = 2.08 W/kg; SAR(10 g) = 1.36 W/kg

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



0 dB = 2.80 W/kg = 4.47 dBW/kg

Certificate No: Z17-97113 Page 5 of 8

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