SAR TEST REPORT

Applicant	Xiaomi Communications Co., Ltd.
FCC ID	2AFZZJ20CG
Product	Mobile Phone
Brand	POCO
Model	M2007J20CG, M2007J20CT
Report No.	R2007A0451-S1
Issue Date	August 14, 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.

Yu Wang　　Guangchang Fan

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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.
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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.	

2 Statement of Compliance

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

Table 1: Highest Reported SAR

Mode	Highest Reported SAR (W/kg)			
	1g SAR Head	1g SAR Body-worn (Separation 10mm)	1g SAR Hotspot (Separation 10mm)	Product Specific 10-g SAR (Separation 0mm)
GSM 850	0.490	0.243	0.295	NA
GSM 1900	0.055	0.374	0.516	NA
WCDMA Band II	0.116	0.309	0.532	NA
WCDMA Band IV	0.117	0.346	0.482	1.571
WCDMA Band V	0.575	0.212	0.222	NA
LTE FDD 2	0.257	0.442	0.634	1.876
LTE FDD 4	0.075	0.457	0.557	1.694
LTE FDD 5	0.571	0.376	0.376	NA
LTE FDD 7	0.124	0.612	0.996	1.458
LTE TDD 38	0.057	0.571	0.642	0.878
LTE TDD 41	0.05	0.515	0.735	0.812
Wi-Fi (2.4G)	0.773	0.174	0.174	NA
Wi-Fi (5G)	0.770	0.321	0.321	0.506
BT	0.130	0.029	0.029	NA
Date of Testing:	July 13, 2020 ~ July 28, 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 (Separation 10mm)	1g SAR Hotspot (Separation 10mm)	Product Specific 10-g SAR (Separation 0mm)
Highest Simultaneous Transmission SAR (W/kg)	1.463	1.068	1.068	3.639
Note: 1. The detail for simultaneous transmission consideration is described in chapter 10.3.				

3 Description of Equipment under Test

Client Information

Applicant	Xiaomi Communications Co., Ltd.
Applicant address	#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085
Manufacturer	Xiaomi Communications Co., Ltd.
Manufacturer address	#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085

General Technologies

Application Purpose:	Original Gran
EUT Stage:	Identical Prototype
Model:	M2007J20CG, M2007J20CT
IMEI:	IMEI 1:869236050033661 IMEI 2:869236050033679
Hardware Version:	P2
Software Version:	MIUI 12
Antenna Type:	PIFA 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 2/4/5/7:3 LTE TDD 38/41:3
Power Level:	GSM 850:level 5 GSM 1900:level 0 UMTS Band II/IV/V:all up bits LTE FDD 2/4/5/7:max power LTE TDD 38/41:max power
EUT Accessory	
Adapter	Manufacturer: Xiaomi Communications Co., Ltd. Model: MDY-12-EA
Battery	Manufacturer: NVT Model: BN57
Earphone	Manufacturer: Tiinlab Acoustic Technology Model: EM023
USB Cable	Manufacturer: LUXSHARE Precision Industry Co., Ltd.

	Model: L63312
Note: The EUT is sent from the applicant to TA and the information of the EUT is declared by the applicant.	

Item	M2007J20CG	M2007J20CT
LTE Band 41	Support	Not Support
Note: Customer declaration, two models are the same, except for the model. There are more than one Model, each one should be applied throughout the compliance test respectively, however, only the worst case (M2007J20CG) will be recorded in this report.		

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, 16QAM	HSDPA UE Category:24 HSUPA UE Category:6	1850 ~ 1910
	Band IV			1710 ~ 1755
	Band V			824 ~ 849
LTE	FDD 2	QPSK, 16QAM, 64QAM,	Rel.12	1850 ~ 1910
	FDD 4			1710 ~ 1755
	FDD 5			824 ~ 849
	FDD 7			2500 ~ 2570
	TDD 38			2570 ~ 2620
	TDD 41			2496 ~ 2690
	Does this device support Carrier Aggregation (CA) ☒Yes ☐No			
	Does this device support SV-LTE (1xRTT-LTE)? ☐Yes ☒No			
BT	2.4G	Version 5.1LE		2402 ~2480
Wi-Fi	2.4G	DSSS,OFDM	802.11b/g/n HT20	2412 ~ 2462
	5G	OFDM	802.11a/n HT20/ HT40/ ac VHT20/ VHT40/ VHT80	5150 ~ 5350 5470 ~ 5850
	Does this device support MIMO ☒Yes (2TX,2RX)☐No			
NFC	13.56MHz			

4 Test Specification, Methods and Procedures

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

IEC 62209-1

Reference Standards

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

5 Operational Conditions during Test

5.3 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.

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.

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.

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

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.

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 (No DPDCH)	4	8	2	2 SF2 & 2 SF4	11484	5.76
	4	4	10		20000	2.00
7 (No DPDCH)	4	8	2	2 SF2 & 2 SF4	22996	?
	4	4	10		20000	?
NOTE: When 4 codes are transmitted in parallel, two codes shall be transmitted with SF2 and two with SF4. UE Categories 1 to 6 supports QPSK only. UE Category 7 supports QPSK and 16QAM. (TS25.306-7.3.0)						

5.5.2.6 HSPA, HSPA+ and DC-HSDPA Test Configuration

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

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

1) The HSPA procedures are applied to configure 3GPP Rel. 6 HSPA devices in the required sub-test mode(s) to determine SAR test exclusion.

2) SAR is required for Rel. 7 HSPA+ when SAR is required for Rel. 6 HSPA; otherwise, the 3G SAR test reduction procedure is applied to (uplink) HSPA+ with 12.2 kbps RMC as the primary mode.36 Power is measured for HSPA+ that supports uplink 16 QAM according to configurations in Table C.11.1.4 of 3GPP TS 34.121-1 to determine SAR test reduction.

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

4) Regardless of whether a PBA is required, the following information must be verified and included in the SAR report for devices supporting HSPA, HSPA+ or DC-HSDPA: a) The output power measurement results and applicable release version(s) of 3GPP TS 34.121.

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

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

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

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

Table 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 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.

5.5.4 Additional requirements for TDD LTE specification

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

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

Figure 1: Frame structure type 2

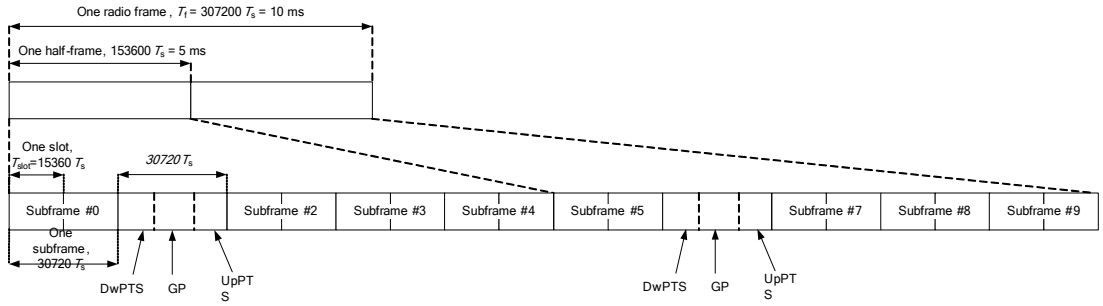


Table 8: Configuration of special subframe (lengths of DwPTS/GP/UpPTS)

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

Table 9: Uplink-downlink configurations

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

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

Duty cycle =(30720Ts*Ups+Uplink Component*Specials)/(307200Ts)

About the uplink component of Special subframes, we can figure out by Table: Configuration of

special subframe (lengths of DwPTS/GP/UpPTS):

Uplink Component=UpPTS

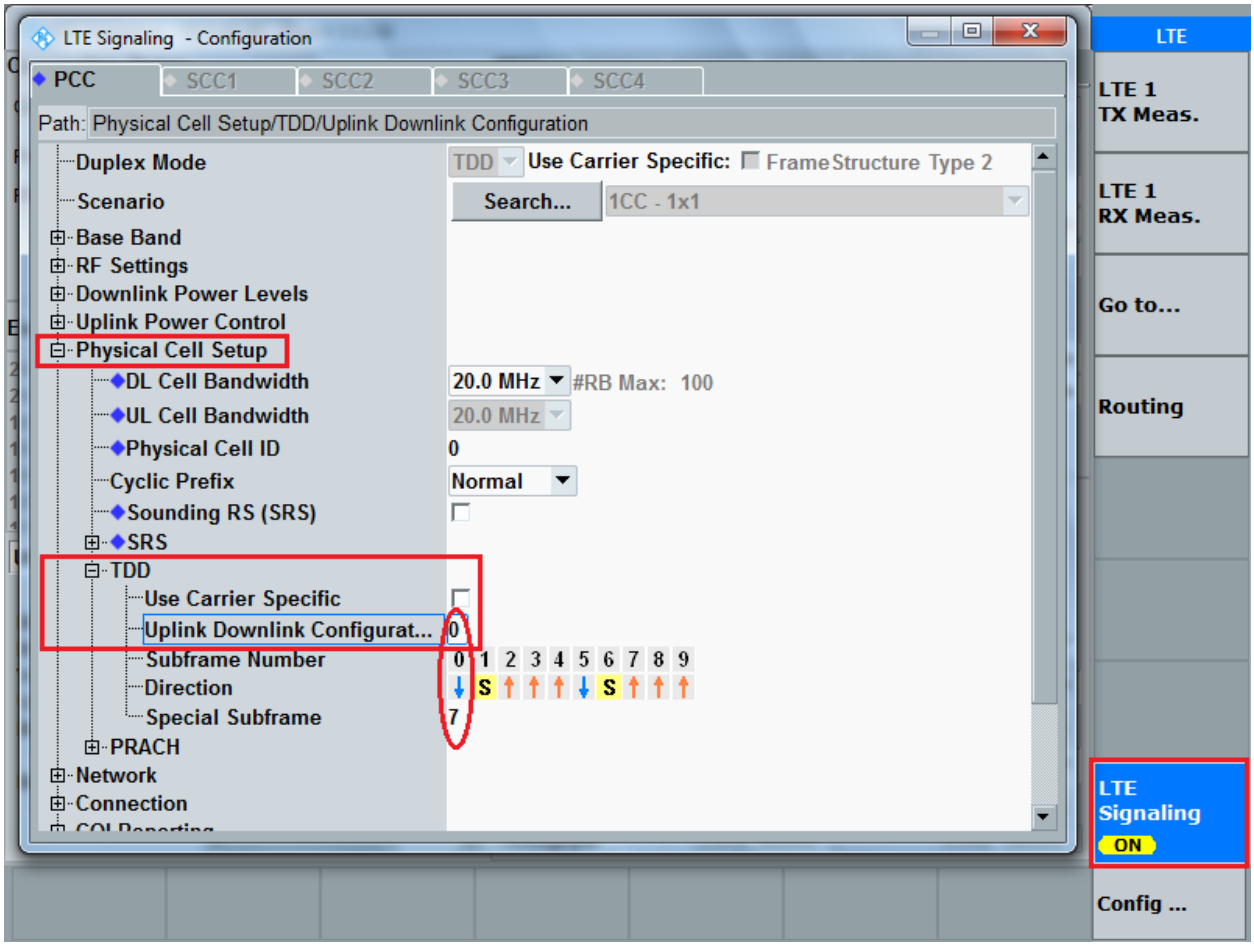
In conclusion, for the TDD LTE Band, Duty Cycle can be calculated with formula as below .all these sets are ok when we test, or we can set as below.

Duty cycle =[(30720Ts*Ups)+ UpPTS *Specials]/(307200Ts)

And we can get different Duty cycles under different configurations:

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

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



5.2.3 LTE CA specification

The device supports LTE advanced Rel. 12, Carrier Aggregation (CA) on downlink for Intra band and inter-band. Uplink CA is supported for Intra band only, more details information is provided in tables below:

1) Up CA Intra band contiguous

E-UTRA CA configuration / Bandwidth combination set						
E-UTRA CA configuration	Uplink CA configurations	Component carriers in order of increasing carrier frequency			Bandwidth combination set	
		Channel bandwidths for carrier [MHz]	Channel bandwidths for carrier [MHz]	Channel bandwidths for carrier [MHz]		
CA_7C	NA	15	15		40	0
		20	20			
		10	20		40	1
		15	15, 20			
		20	10, 15, 20			
		15	10, 15		40	2
		20	15, 20			
		15	15			
		20	10, 15, 20			
CA_38C	NA	15	15		40	0
		20	20			
NOTE 1: The CA configuration refers to an operating band and a CA bandwidth class specified in Table 5.6A-1 (the indexing letter). Absence of a CA bandwidth class for an operating band implies support of all classes.						

5.5.5 Wi-Fi Test Configuration

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

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

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

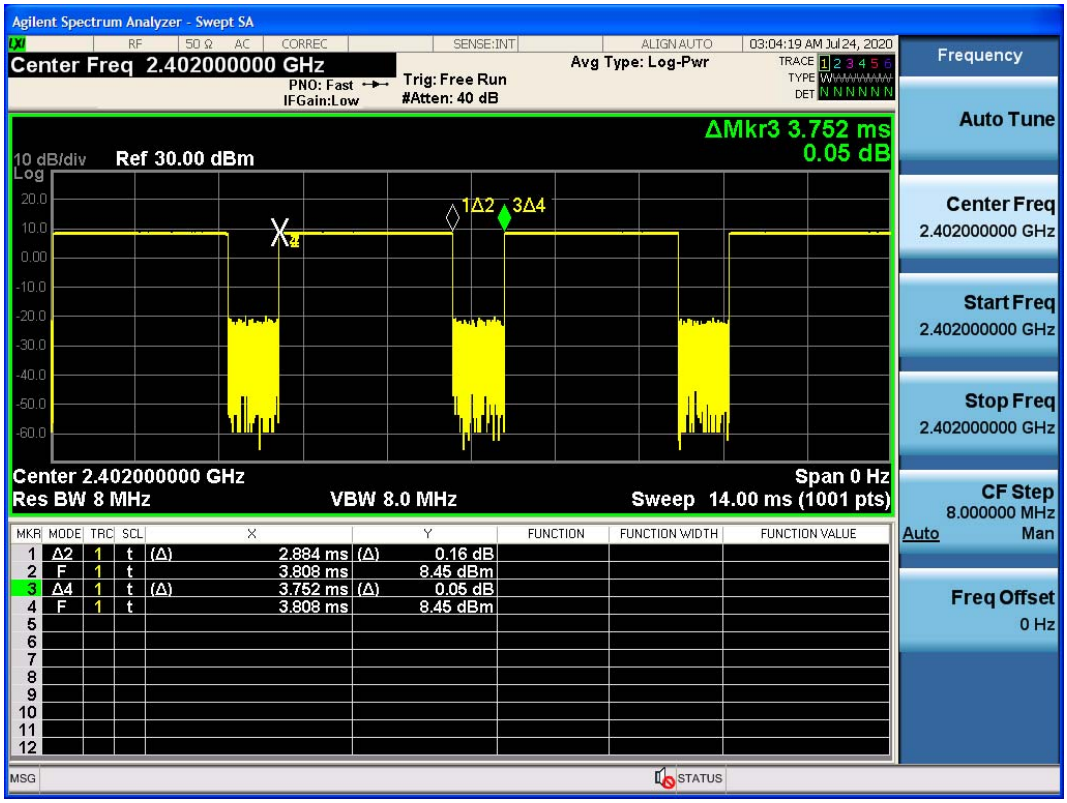
To determine the initial test position, Area Scans were performed to determine the position with the Maximum Value of SAR (measured). The position that produced the highest Maximum Value of SAR is considered the worst case position; thus used as the initial test position.

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

5.5.6 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)=2.884/3.752=76.8%

5.2.4 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 mechanisms and provide enhanced user experience.

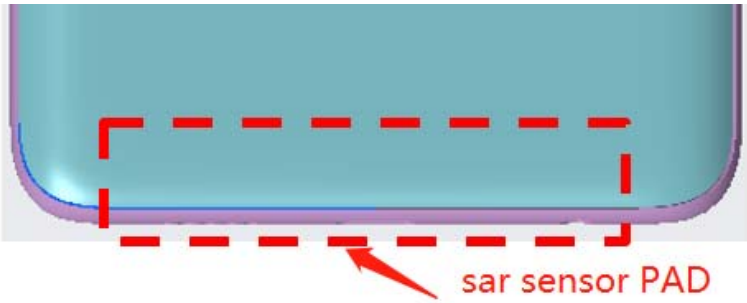
   This device uses the receiver to indicate whether the user is making a call in head scenario or not. The selection between head and body power levels is based on the receiver detection mechanism. It can determine proximity to head or body and set the relevant power level for

2G&3G&4Gantenna accordingly.

Table: Summary of proximity sensor detection mechanism

position	Receiver	sensor	TX Power reduce
Body	Off	Near	Yes_dsi2
	Off	Far	No_dsi3（defultpower）
Head	On	Near	No_dsi1（defult power）
	On	Far	No_dsi1（defult power）

proximity sensor clarification



Description of proximity sensor Techniques

Proximity sensor configuration

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.

Power Reduction operation table

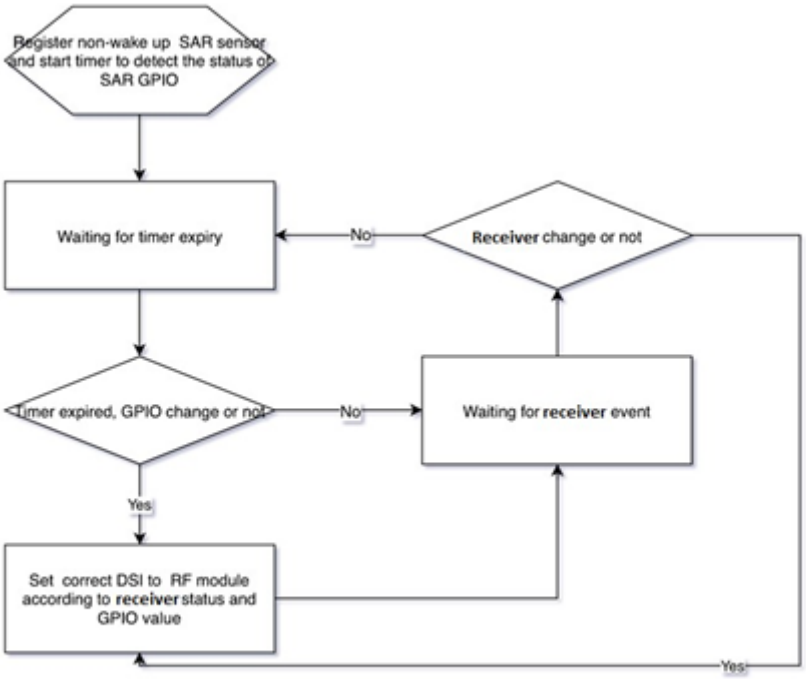
SAR Sensor Detect	Near	Far_>17mm
Back	<=17mm	>17mm
front	<=12mm	>12mm
bottom	<=17mm	>17mm
top	Not Detect	Not Detect
right	Not Detect	Not Detect
left	Not Detect	Not Detect

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.

The Scenario detection



The scenario detection

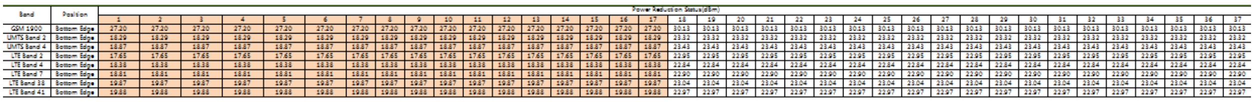
ThedevicesupportstheAudioreceiverdetectionmechanism.Theaudioreceiverisusedto determine head. When operating in a call at the head, the relevant power levels are set for 2G&3G&4Gaccordingly, inordertocomply with SAR requirement.for WWAN transmitter

When operating in a call at the head, the LAT Antenna simultaneous transmission with WLAN antenna or in standalone operations, the WWAN will be enter to the WWAN Power table1.

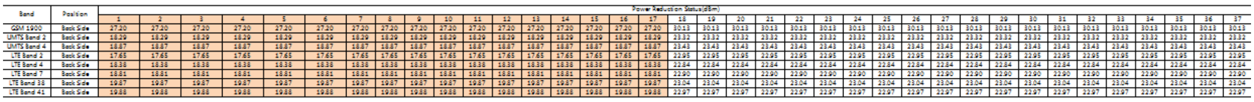
The device offers 3 sets SAR back off NVs to meet different complicated SAR scenarios. These NVs control max output power of main modem for 2G/3G/4G bands. When certain set NVs works, the processor compare the back off NVs and original ones, and choose the lower output to apply. The receiver only works 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.

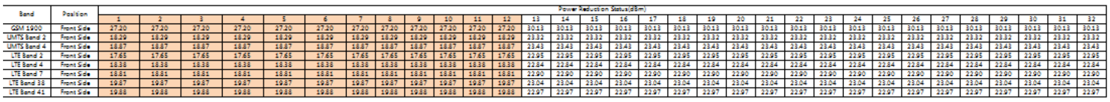
Based on the summery table of Receiver detection mechanism above,



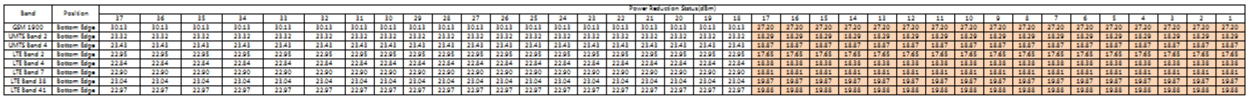
Band	Position	Power Reduction Status(dBm)																																				
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
GSM 1900	Bottom Edge	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13
UMTS Band 2	Bottom Edge	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32
UMTS Band 4	Bottom Edge	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43
LTE Band 2	Bottom Edge	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95
LTE Band 4	Bottom Edge	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84
LTE Band 7	Bottom Edge	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90
LTE Band 38	Bottom Edge	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04
LTE Band 41	Bottom Edge	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97



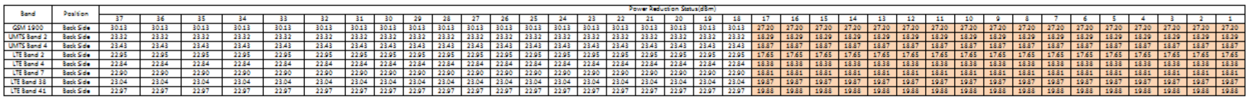
Band	Position	Power Reduction Status(dBm)																																				
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
GSM 1900	Back Side	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13
UMTS Band 2	Back Side	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32
UMTS Band 4	Back Side	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43
LTE Band 2	Back Side	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95
LTE Band 4	Back Side	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84
LTE Band 7	Back Side	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90
LTE Band 38	Back Side	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04
LTE Band 41	Back Side	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97



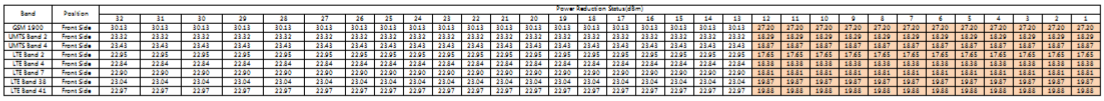
Band	Position	Power Reduction Status(dBm)																															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
GSM 1900	Front Side	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13
UMTS Band 2	Front Side	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32
UMTS Band 4	Front Side	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43
LTE Band 2	Front Side	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95
LTE Band 4	Front Side	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84
LTE Band 7	Front Side	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90
LTE Band 38	Front Side	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04
LTE Band 41	Front Side	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97



Band	Position	Power Reduction Status(dBm)																																				
		37	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	Bottom Edge	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20
UMTS Band 2	Bottom Edge	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29
UMTS Band 4	Bottom Edge	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87
LTE Band 2	Bottom Edge	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65
LTE Band 4	Bottom Edge	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38
LTE Band 7	Bottom Edge	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81
LTE Band 38	Bottom Edge	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87
LTE Band 41	Bottom Edge	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88

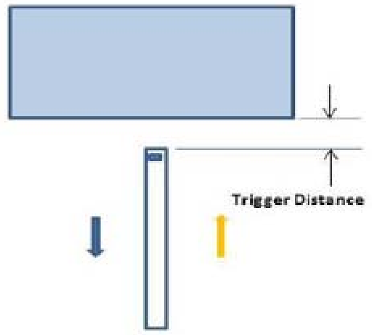


Band	Position	Power Reduction Status(dBm)																																				
		37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
GSM 1900	Back Side	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20
UMTS Band 2	Back Side	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29
UMTS Band 4	Back Side	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87
LTE Band 2	Back Side	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65
LTE Band 4	Back Side	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38
LTE Band 7	Back Side	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81
LTE Band 38	Back Side	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87
LTE Band 41	Back Side	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88

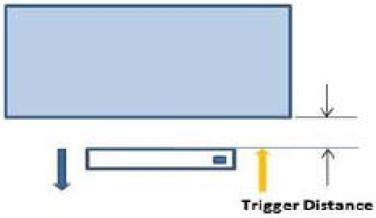


Band	Position	Power Reduction Status(dBm)																															
		32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
GSM 1900	Front Side	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20	27.20
UMTS Band 2	Front Side	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	23.32	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29	18.29
UMTS Band 4	Front Side	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	23.43	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87	18.87
LTE Band 2	Front Side	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65	17.65
LTE Band 4	Front Side	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	22.84	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38	18.38
LTE Band 7	Front Side	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81
LTE Band 38	Front Side	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	23.04	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87
LTE Band 41	Front Side	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88

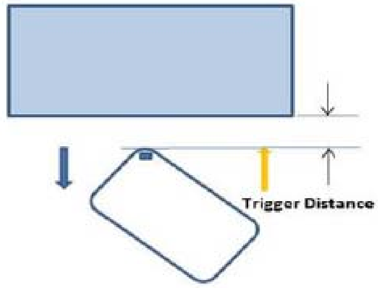
The proximity sensor triggering distance measurement method are as below:



Proximity Sensor Trigger Distance Assessment
KDB 616217 §6.2, Edge 1, Edge 2, Edge 4



Proximity Sensor Trigger Distance Assessment
KDB 616217 §6.2, Rear

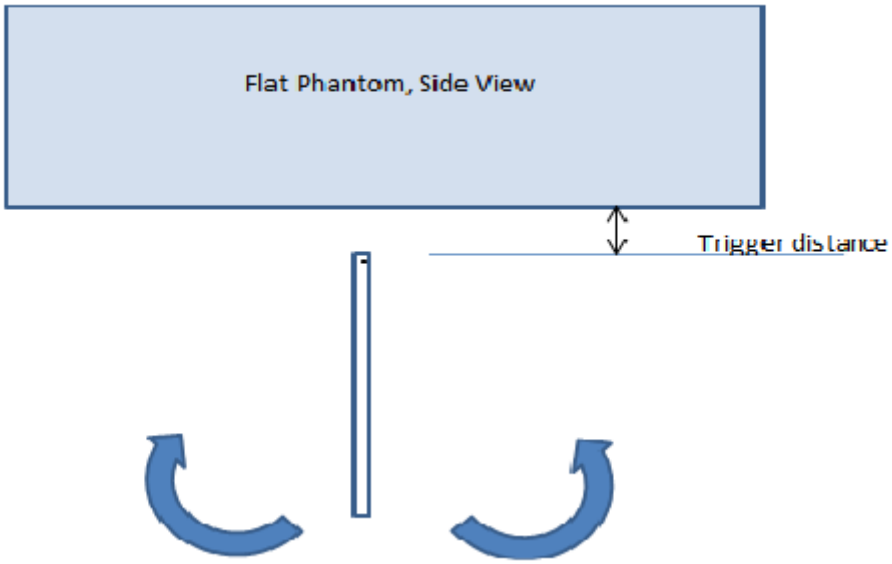


Proximity Sensor Trigger Distance Assessment
KDB 616217 §6.2, Corner A, Corner B

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

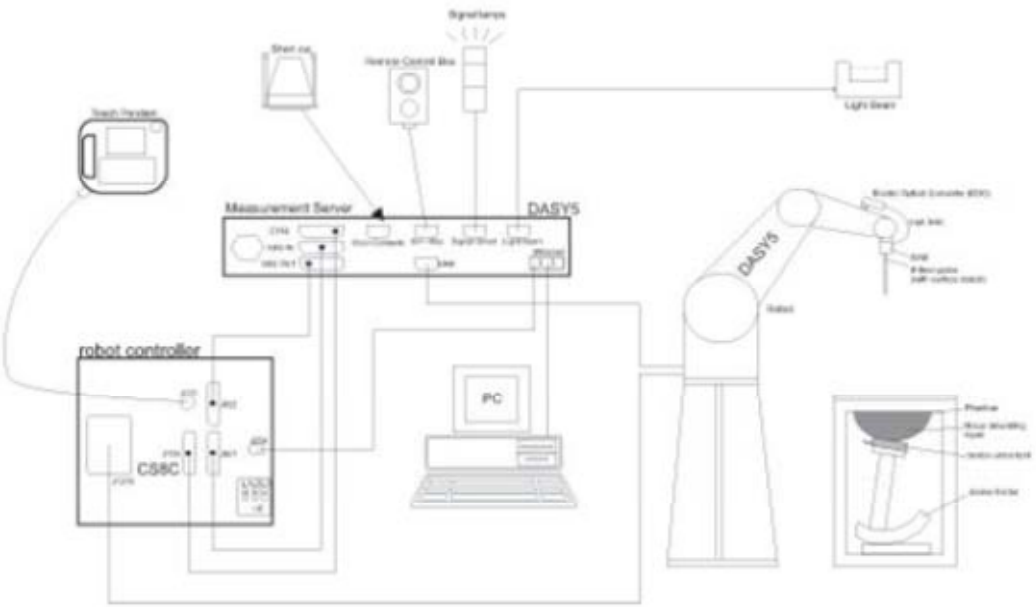
Summary of tablet Tilt angle Influence to Proximity Sensor Triggering(Bottom Edge)

Band	Power reduction status										
	-45°	-40°	-30°	-20°	-10°	0°	10°	20°	30°	40°	45°
DCS 1900	on	on	on	on	on	on	on	on	on	on	on
WCDMA B2	on	on	on	on	on	on	on	on	on	on	on
WCDMA B4	on	on	on	on	on	on	on	on	on	on	on
LTE B2	on	on	on	on	on	on	on	on	on	on	on
LTE B4	on	on	on	on	on	on	on	on	on	on	on
LTE B7	on	on	on	on	on	on	on	on	on	on	on
LTE B38	on	on	on	on	on	on	on	on	on	on	on
LTE B41	on	on	on	on	on	on	on	on	on	on	on

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.

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.

$SAR=C\Delta T/\Delta t$

Where: Δt = Exposure time (30 seconds),

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

ΔT = Temperature increase due to RF exposure.

Or

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

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.	

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	$\leq 1.5 \cdot \triangle z_{zoom}(n-1)$	
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.

7 Main Test Equipment

Name of Equipment	Manufacturer	Type/Model	Serial Number	Last Cal.	Cal. Due Date
Network analyzer	Agilent	E5071B	MY42404014	2020-05-18	2021-05-17
Dielectric Probe Kit	HP	85070E	US44020115	2020-05-18	2021-05-17
Power meter	Agilent	E4417A	GB41291714	2020-05-18	2021-05-17
Power sensor	Agilent	N8481H	MY50350004	2020-05-18	2021-05-17
Power sensor	Agilent	E9327A	US40441622	2020-05-18	2021-05-17
Dual directional coupler	Agilent	778D-012	50519	/	/
Dual directional coupler	Agilent	777D	50146	/	/
Amplifier	INDEXSAR	IXA-020	0401	2020-05-18	2021-05-17
Wireless communication tester	Anritsu	MT8820C	6201342015	2020-05-18	2021-05-17
Wideband radio communication tester	R&S	CMW 500	113645	2020-05-18	2021-05-17
Base Station Simulator	R&S	CMW270	100673	2020-05-18	2021-05-17
E-field Probe	SPEAG	EX3DV4	3677	2020-07-06	2021-07-05
DAE	SPEAG	DAE4	1317	2019-10-23	2020-10-22
Validation Kit 835MHz	SPEAG	D835V2	4d020	2017-08-28	2020-08-27
Validation Kit 1750MHz	SPEAG	D1750V2	1033	2020-02-25	2023-02-24
Validation Kit 1900MHz	SPEAG	D1900V2	5d060	2017-08-26	2020-08-25
Validation Kit 2450MHz	SPEAG	D2450V2	786	2017-08-29	2020-08-28
Validation Kit 2600MHz	SPEAG	D2600V2	1025	2018-05-02	2021-05-01
Validation Kit 5GHz	SPEAG	D5GHzV2	1151	2020-02-27	2023-02-26
Temperature Probe	Tianjin jinming	JM222	381	2020-05-25	2021-05-24
Hygrothermograph	Anymetr	NT-311	20150731	2020-05-18	2021-05-17
Software for Test	Speag	DASY52	/	/	/
Softwarefor Tissue	Agilent	85070	/	/	/

8 Tissue Dielectric Parameter Measurements & System Verification

8.1 Tissue Verification

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

Target values

Frequency (MHz)	Water (%)	Salt (%)	Sugar (%)	Glycol (%)	Preventol (%)	Cellulose (%)	ε_r	σ(s/m)
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
5600	65.53	17.24	17.23	35.5	5.07
5750	65.53	17.24	17.23	35.4	5.22

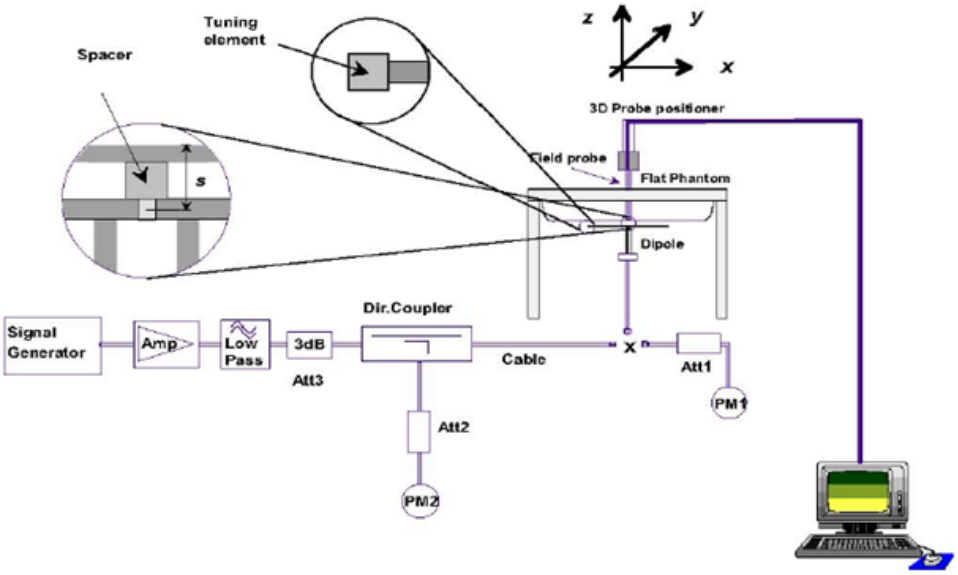
Measurements results

Frequency (MHz)	Test Date	Temp ℃	Measured Dielectric Parameters		Target Dielectric Parameters		Limit (Within ±5%)	
			ε_r	σ(s/m)	ε_r	σ(s/m)	Dev ε_r(%)	Dev σ(%)
835	7/21/2020	21.5	41.4	0.88	41.5	0.90	-0.24	-2.22
	7/22/2020	21.5	41.3	0.87	41.5	0.90	-0.48	-3.33
	7/23/2020	21.5	41.4	0.92	41.5	0.90	-0.24	2.22
1750	7/27/2020	21.5	40.2	1.34	40.1	1.37	0.25	-2.19
1900	7/13/2020	21.5	40.1	1.41	40.0	1.40	0.25	0.71
2450	7/13/2020	21.5	38.6	1.81	39.2	1.80	-1.53	0.56
2600	7/15/2020	21.5	38.2	2.01	39.0	1.96	-2.05	2.55
	7/16/2020	21.5	38.4	1.94	39.0	1.96	-1.54	-1.02
	7/17/2020	21.5	38.3	1.99	39.0	1.96	-1.79	1.53
5250	7/27/2020	21.5	35.5	4.80	35.9	4.71	-1.11	1.91
5600	7/28/2020	21.5	34.2	5.21	35.5	5.07	-3.66	2.76
5750	7/28/2020	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.								

8.2 System Performance Check

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

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



Picture 1System Performance Check setup

Picture 2 Setup Photo

Justification for Extended SAR Dipole Calibrations

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

Dipole		Date of Measurement	Return Loss(dB)	Δ %	Impedance (Ω)	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.
835	7/21/2020	21.5	2.44	9.76	9.45	3.28	1
	7/22/2020	21.5	2.46	9.84	9.45	4.13	2
	7/23/2020	21.5	2.43	9.72	9.45	2.86	3
1750	7/27/2020	21.5	8.95	35.80	35.90	-0.28	4
1900	7/13/2020	21.5	9.88	39.52	40.10	-1.45	5
2450	7/13/2020	21.5	13.70	54.80	52.60	4.18	6
2600	7/15/2020	21.5	13.90	55.60	54.10	2.77	7
	7/16/2020	21.5	13.88	55.52	54.10	2.62	8
	7/17/2020	21.5	13.94	55.76	54.10	3.07	9
5250	7/27/2020	21.5	7.87	78.70	78.00	0.90	10
5600	7/28/2020	21.5	7.67	76.70	80.50	-4.72	11
5750	7/28/2020	21.5	7.66	76.60	77.40	-1.03	12
Note：Target Values used derive from the calibration certificate Data Storage and Evaluation.							

8.3 SAR System Validation

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

Frequency [MHz]	Date	Probe SN	Probe Type	Probe Cal Point		PERM (Er)	COND (Σ)	CW Validation			Mod. Validation		
								Sensitivity	Probe Linearity	Probe Isotropy	Mod. Type	Duty Factor	PAR
750	7/6/2020	3677	EX3DV4	750	Head	42.81	0.85	PASS	PASS	PASS	FDD	PASS	N/A
835	7/6/2020	3677	EX3DV4	835	Head	42.22	0.90	PASS	PASS	PASS	GMSK	PASS	N/A
1750	7/6/2020	3677	EX3DV4	1750	Head	39.91	1.32	PASS	PASS	PASS	NA	N/A	N/A
1900	7/6/2020	3677	EX3DV4	1900	Head	39.43	1.42	PASS	PASS	PASS	GMSK	PASS	N/A
2450	7/6/2020	3677	EX3DV4	2450	Head	38.19	1.83	PASS	PASS	PASS	OFDM	PASS	PASS
2600	7/6/2020	3677	EX3DV4	2600	Head	37.60	1.99	PASS	PASS	PASS	TDD	PASS	N/A
5250	7/6/2020	3677	EX3DV4	5250	Head	35.36	4.83	PASS	PASS	PASS	OFDM	N/A	PASS
5600	7/6/2020	3677	EX3DV4	5600	Head	34.43	5.29	PASS	PASS	PASS	OFDM	N/A	PASS
5750	7/6/2020	3677	EX3DV4	5750	Head	34.07	5.47	PASS	PASS	PASS	OFDM	N/A	PASS
750	7/6/2020	3677	EX3DV4	750	Body	55.35	0.99	PASS	PASS	PASS	FDD	PASS	N/A
835	7/6/2020	3677	EX3DV4	835	Body	54.88	0.98	PASS	PASS	PASS	GMSK	PASS	N/A
1750	7/6/2020	3677	EX3DV4	1750	Body	51.24	1.44	PASS	PASS	PASS	NA	N/A	N/A
1900	7/6/2020	3677	EX3DV4	1900	Body	50.98	1.56	PASS	PASS	PASS	GMSK	PASS	N/A
2450	7/6/2020	3677	EX3DV4	2450	Body	50.59	1.95	PASS	PASS	PASS	OFDM	PASS	PASS
2600	7/6/2020	3677	EX3DV4	2600	Body	50.14	2.13	PASS	PASS	PASS	TDD	PASS	N/A
5250	7/6/2020	3677	EX3DV4	5250	Body	47.37	5.44	PASS	PASS	PASS	OFDM	N/A	PASS
5600	7/6/2020	3677	EX3DV4	5600	Body	46.42	5.99	PASS	PASS	PASS	OFDM	N/A	PASS
5750	7/6/2020	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.

9 Normal and Maximum Output Power

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

9.1 GSM Mode

Main- Antenna

GSM 850		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	33.38	33.44	33.34	9.03	24.97	24.35	24.41	24.31
GPRS/ EGPRS (GMSK)	1 Tx Slot	34.00	33.30	33.39	33.32	9.03	24.97	24.27	24.36	24.29
	2 Tx Slots	31.00	30.04	30.33	30.36	6.02	24.98	24.02	24.31	24.34
	3 Tx Slots	29.00	27.72	28.02	28.06	4.26	24.74	23.46	23.76	23.80
	4 Tx Slots	28.00	26.72	26.95	27.10	3.01	**24.99**	**23.71**	**23.94**	**24.09**
EGPRS (8PSK)	1 Tx Slot	28.00	26.80	26.62	26.54	9.03	18.97	17.77	17.59	17.51
	2 Tx Slots	25.50	24.65	24.41	24.35	6.02	19.48	18.63	18.39	18.33
	3 Tx Slots	24.00	22.62	22.69	22.72	4.26	19.74	18.36	18.43	18.46
	4 Tx Slots	23.50	21.88	21.97	21.83	3.01	20.49	18.87	18.96	18.82
GSM 1900 Rec on /Rec off + sensor off		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	30.50	30.13	30.05	29.95	9.03	21.47	21.10	21.02	20.92
GPRS/ EGPRS (GMSK)	1 Tx Slot	30.50	30.02	30.04	30.15	9.03	21.47	20.99	21.01	21.12
	2 Tx Slots	27.50	26.53	26.58	26.73	6.02	21.48	20.51	20.56	20.71
	3 Tx Slots	25.50	24.35	24.34	24.62	4.26	21.24	20.09	20.08	20.36
	4 Tx Slots	24.50	23.90	23.17	23.43	3.01	**21.49**	**20.89**	**20.16**	**20.42**
EGPRS (8PSK)	1 Tx Slot	26.50	25.34	25.30	21.46	9.03	17.47	16.31	16.27	12.43
	2 Tx Slots	24.50	23.15	23.10	23.38	6.02	18.48	17.13	17.08	17.36
	3 Tx Slots	22.50	21.39	21.45	21.37	4.26	18.24	17.13	17.19	17.11
	4 Tx Slots	21.50	20.38	20.29	20.44	3.01	18.49	17.37	17.28	17.43
GSM 1900 Rec off + sensor 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	28.00	27.20	27.23	27.36	9.03	18.97	18.17	18.20	18.33
GPRS/	1 Tx Slot	28.00	27.14	27.31	27.43	9.03	18.97	18.11	18.28	18.40

EGPRS (GMSK)	2 Tx Slots	25.00	24.52	24.57	24.75	6.02	18.98	18.50	18.55	18.73
	3 Tx Slots	23.00	22.36	21.86	22.11	4.26	18.74	18.10	17.60	17.85
	4 Tx Slots	22.00	20.86	20.73	21.05	3.01	**18.99**	**17.85**	**17.72**	**18.04**
EGPRS (8PSK)	1 Tx Slot	26.50	25.18	25.36	25.26	9.03	17.47	16.15	16.33	16.23
	2 Tx Slots	24.50	23.06	23.18	23.13	6.02	18.48	17.04	17.16	17.11
	3 Tx Slots	22.50	21.46	21.42	21.39	4.26	18.24	17.20	17.16	17.13
	4 Tx Slots	21.50	20.25	20.32	20.26	3.01	18.49	17.24	17.31	17.25

Notes: The worst-case configuration and mode for SAR testing is determined to be as follows:
1. Standalone: GSM 850 GMSK (GPRS) mode with 4 time slots for Max power, GSM 1900 GMSK (GPRS) mode with 4 time slots for Max power,based on the output power measurements above.

Second – Antenna

GSM 850		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	32.50	31.79	31.95	31.90	9.03	23.47	22.76	22.92	22.87
GPRS/ EGPRS (GMSK)	1 Tx Slot	32.50	31.80	32.05	31.85	9.03	23.47	22.77	23.02	22.82
	2 Tx Slots	30.00	29.05	29.39	29.17	6.02	23.98	23.03	23.37	23.15
	3 Tx Slots	28.00	26.87	27.10	26.91	4.26	23.74	22.61	22.84	22.65
	4 Tx Slots	27.00	25.52	25.92	25.96	3.01	**23.99**	**22.51**	**22.91**	**22.95**
EGPRS (8PSK)	1 Tx Slot	28.00	26.72	26.95	26.87	9.03	18.97	17.69	17.92	17.84
	2 Tx Slots	25.50	24.10	23.91	24.32	6.02	19.48	18.08	17.89	18.30
	3 Tx Slots	24.00	22.43	22.35	22.17	4.26	19.74	18.17	18.09	17.91
	4 Tx Slots	23.50	21.30	21.34	21.39	3.01	20.49	18.29	18.33	18.38

Notes: The worst-case configuration and mode for SAR testing is determined to be as follows:
1. Standalone: GSM 850 GMSK (GPRS) mode with 4 time slots for Max power. based on the output power measurements above.

9.2 WCDMA Mode

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

Main- Antenna

WCDMA		Band II(dBm) Rec on / Rec off + sensor off				Band IV(dBm) Rec on / Rec off + sensor off				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	23.32	23.25	23.28	24.00	23.43	23.30	23.37	24.00	24.52	24.44	24.47	25.00
AMR	12.2kbps	23.22	23.16	23.15	24.00	23.33	23.21	23.24	24.00	24.42	24.35	24.34	25.00
HSDPA	Sub 1	21.74	21.67	21.70	22.50	21.85	21.72	21.79	22.50	22.94	22.86	22.89	23.50
	Sub 2	21.73	21.66	21.69	22.50	21.84	21.71	21.78	22.50	22.93	22.85	22.88	23.50
	Sub 3	21.72	21.65	21.68	22.50	21.83	21.70	21.77	22.50	22.92	22.84	22.87	23.50
	Sub 4	21.71	21.64	21.67	22.50	21.82	21.69	21.76	22.50	22.91	22.83	22.86	23.50
HSUPA	Sub 1	20.20	20.13	20.16	21.00	20.31	20.18	20.25	21.00	21.40	21.32	21.35	22.00
	Sub 2	20.19	20.12	20.15	21.00	20.30	20.17	20.24	21.00	21.39	21.31	21.34	22.00
	Sub 3	21.17	21.11	21.14	22.00	21.28	21.16	21.23	22.00	22.37	22.30	22.33	23.00
	Sub 4	20.16	20.10	20.13	21.00	20.27	20.15	20.22	21.00	21.36	21.29	21.32	22.00
	Sub 5	21.15	21.09	21.12	22.00	21.26	21.14	21.21	22.00	22.35	22.28	22.31	23.00
DC-HSDPA	Sub 1	21.66	21.61	21.62	22.50	21.77	21.66	21.71	22.50	22.86	22.80	22.81	23.50
	Sub 2	21.65	21.60	21.61	22.50	21.76	21.65	21.70	22.50	22.85	22.79	22.80	23.50
	Sub 3	21.73	21.59	21.62	22.50	21.84	21.64	21.71	22.50	22.93	22.78	22.81	23.50
	Sub 4	21.72	21.58	21.61	22.50	21.83	21.63	21.70	22.50	22.92	22.77	22.80	23.50
HSPA+	16QAM	21.90	21.86	21.84	22.50	21.95	21.95	21.84	22.50	22.99	22.83	22.88	23.50

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		Band II(dBm) Rec off + sensor on				Band IV(dBm) Rec off + sensor on			
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	18.29	18.24	18.25	19.00	18.87	18.81	18.79	19.50
AMR	12.2kbps	18.19	18.15	18.12	19.00	18.77	18.72	18.66	19.50
HSDPA	Sub 1	18.21	18.16	18.17	19.00	18.79	18.73	18.71	19.50
	Sub 2	18.20	18.15	18.16	19.00	18.78	18.72	18.70	19.50
	Sub 3	18.19	18.14	18.15	19.00	18.77	18.71	18.69	19.50
	Sub 4	18.18	18.13	18.14	19.00	18.76	18.70	18.68	19.50
HSUPA	Sub 1	18.17	18.12	18.13	19.00	18.75	18.69	18.67	19.50
	Sub 2	18.16	18.11	18.12	19.00	18.74	18.68	18.66	19.50
	Sub 3	18.14	18.10	18.11	19.00	18.72	18.67	18.65	19.50
	Sub 4	18.13	18.09	18.10	19.00	18.71	18.66	18.64	19.50
	Sub 5	18.12	18.08	18.09	19.00	18.70	18.65	18.63	19.50
DC-HSDPA	Sub 1	18.13	18.10	18.09	19.00	18.71	18.67	18.63	19.50
	Sub 2	18.12	18.09	18.08	19.00	18.70	18.66	18.62	19.50
	Sub 3	18.20	18.08	18.09	19.00	18.78	18.65	18.63	19.50
	Sub 4	18.19	18.07	18.08	19.00	18.77	18.64	18.62	19.50
HSPA+	16QAM	18.26	18.13	18.19	19.00	18.93	18.86	18.79	19.50

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”.

Second - Antenna

WCDMA		Band V(dBm)			
Tx Channel		4132	4183	4233	Tune-up Limit
Frequency(MHz)		826.4	836.6	846.6	
RMC	12.2kbps	22.36	22.26	22.23	23.00
AMR	12.2kbps	22.26	22.17	22.10	23.00
HSDPA	Sub 1	20.78	20.68	20.65	21.50
	Sub 2	20.77	20.67	20.64	21.50
	Sub 3	20.76	20.66	20.63	21.50
	Sub 4	20.75	20.65	20.62	21.50
HSUPA	Sub 1	19.24	19.14	19.11	20.00
	Sub 2	19.23	19.13	19.10	20.00
	Sub 3	20.21	20.12	20.09	21.00
	Sub 4	19.20	19.11	19.08	20.00
	Sub 5	20.19	20.10	20.07	21.00
DC-HSDPA	Sub 1	20.70	20.62	20.57	21.50
	Sub 2	20.69	20.61	20.56	21.50
	Sub 3	20.77	20.60	20.57	21.50
	Sub 4	20.76	20.59	20.56	21.50
HSPA+	16QAM	20.98	20.79	20.72	21.50
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”.					

9.3 LTE Mode

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

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

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

Main- Antenna

LTE FDD Band 2 Rec on / Rec off + sensor off				Conducted Power(dBm)			
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			Tune-up Limit
				18607/1850.7	18900/1880	19193/1909.3	
1.4MHz	QPSK	1	0	22.83	22.65	22.69	24.00
		1	2	22.99	22.77	22.58	24.00
		1	5	22.76	22.55	22.47	24.00
		3	0	22.74	22.68	22.58	24.00
		3	2	22.67	22.75	22.64	24.00
		3	3	22.79	22.58	22.63	24.00
		6	0	21.87	21.72	21.64	23.00
	16QAM	1	0	21.99	21.97	21.89	23.00
		1	2	21.97	21.85	21.82	23.00
		1	5	21.93	21.83	21.78	23.00
		3	0	21.91	21.69	21.65	23.00
		3	2	21.81	21.76	21.72	23.00
		3	3	21.93	21.81	21.63	23.00
		6	0	20.98	20.84	20.67	22.00
	64QAM	1	0	22.01	21.96	21.90	23.00
		1	2	21.99	21.93	21.95	23.00
		1	5	21.88	21.80	21.82	23.00
		3	0	21.79	21.75	21.73	23.00
		3	2	21.87	21.81	21.80	23.00
		3	3	21.71	21.66	21.64	23.00
		6	0	20.87	20.80	20.82	22.00
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			Tune-up Limit
				18615/1851.5	18900/1880	19185/1908.5	
3MHz	QPSK	1	0	22.85	22.69	22.72	24.00

		1	7	22.84	22.80	22.62	24.00
		1	14	22.79	22.60	22.51	24.00
		8	0	21.84	21.80	21.71	23.00
		8	4	21.79	21.85	21.76	23.00
		8	7	21.89	21.69	21.73	23.00
		15	0	21.87	21.76	21.67	23.00
	16QAM	1	0	22.02	21.99	21.92	23.00
		1	7	22.00	21.85	21.86	23.00
		1	14	21.95	21.87	21.81	23.00
		8	0	21.02	20.82	20.77	22.00
		8	4	20.92	20.89	20.84	22.00
		8	7	21.03	20.93	20.76	22.00
		15	0	21.01	20.88	20.70	22.00
	64QAM	1	0	21.95	21.98	21.93	23.00
		1	7	21.89	21.93	21.97	23.00
		1	14	21.90	21.79	21.85	23.00
		8	0	20.90	20.88	20.85	22.00
		8	4	20.98	20.94	20.92	22.00
		8	7	20.81	20.78	20.77	22.00
		15	0	20.90	20.84	20.85	22.00
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			Tune-up Limit
				18625/1852.5	18900/1880	19175/1907.5	
5MHz	QPSK	1	0	22.82	22.67	22.68	24.00
		1	13	22.82	22.76	22.59	24.00
		1	24	22.76	22.55	22.47	24.00
		12	0	21.81	21.75	21.67	23.00
		12	6	21.77	21.81	21.71	23.00
		12	13	21.87	21.67	21.69	23.00
		25	0	21.87	21.75	21.65	23.00
	16QAM	1	0	21.99	21.95	21.89	23.00
		1	13	21.97	21.83	21.83	23.00
		1	24	21.92	21.85	21.77	23.00
		12	0	21.00	20.78	20.74	22.00
		12	6	20.89	20.84	20.80	22.00
		12	13	21.00	20.88	20.72	22.00
		25	0	20.99	20.84	20.65	22.00
	64QAM	1	0	21.95	21.98	21.90	23.00
		1	13	21.99	21.95	21.94	23.00
		1	24	21.91	21.77	21.81	23.00
		12	0	20.88	20.84	20.86	22.00
		12	6	20.95	20.89	20.88	22.00
		12	13	20.78	20.73	20.73	22.00
		25	0	20.88	20.80	20.80	22.00

Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			Tune-up Limit
				18650/1855	18900/1880	19150/1905	
10MHz	QPSK	1	0	22.84	22.68	22.71	24.00
		1	25	22.85	22.81	22.63	24.00
		1	49	22.78	22.59	22.50	24.00
		25	0	21.84	21.80	21.71	23.00
		25	13	21.80	21.86	21.75	23.00
		25	25	21.89	21.71	21.74	23.00
		50	0	21.91	21.77	21.69	23.00
	16QAM	1	0	22.01	21.98	21.91	23.00
		1	25	22.00	21.87	21.86	23.00
		1	49	21.95	21.87	21.80	23.00
		25	0	21.03	20.83	20.78	22.00
		25	13	20.91	20.88	20.83	22.00
		25	25	21.03	20.93	20.76	22.00
		50	0	21.02	20.89	20.69	22.00
	64QAM	1	0	21.96	21.97	21.92	23.00
		1	25	21.93	21.95	21.97	23.00
		1	49	21.90	21.79	21.84	23.00
		25	0	20.91	20.89	20.86	22.00
		25	13	20.97	20.93	20.91	22.00
		25	25	20.81	20.78	20.77	22.00
		50	0	20.91	20.85	20.84	22.00
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			Tune-up Limit
				18675/1857.5	18900/1880	19125/1902.5	
15MHz	QPSK	1	0	22.83	22.64	22.69	24.00
		1	38	22.83	22.80	22.60	24.00
		1	74	22.75	22.54	22.46	24.00
		36	0	21.82	21.76	21.68	23.00
		36	18	21.77	21.81	21.71	23.00
		36	39	21.86	21.68	21.70	23.00
		75	0	21.89	21.73	21.64	23.00
	16QAM	1	0	21.96	21.96	21.89	23.00
		1	38	21.98	21.84	21.84	23.00
		1	74	21.92	21.83	21.77	23.00
		36	0	21.00	20.81	20.75	22.00
		36	18	20.88	20.83	20.79	22.00
		36	39	21.01	20.89	20.73	22.00
		75	0	20.99	20.84	20.65	22.00
	64QAM	1	0	21.98	21.95	21.90	23.00
		1	38	22.00	21.92	21.95	23.00
		1	74	21.91	21.78	21.85	23.00
		36	0	20.90	20.91	20.87	22.00

		36	18	20.95	20.90	20.90	22.00
		36	39	20.79	20.74	20.74	22.00
		75	0	20.88	20.80	20.80	22.00
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			Tune-up Limit
				18700/1860	18900/1880	19100/1900	
20MHz	QPSK	1	0	22.80	22.60	22.66	24.00
		1	50	**22.95**	22.76	22.58	24.00
		1	99	22.73	22.53	22.43	24.00
		50	0	21.79	21.71	21.64	23.00
		50	25	21.75	21.77	21.68	23.00
		50	50	21.83	21.63	21.66	23.00
		100	0	**21.86**	21.68	21.60	23.00
	16QAM	1	0	21.99	21.92	21.84	23.00
		1	50	21.94	21.82	21.80	23.00
		1	99	21.90	21.80	21.75	23.00
		50	0	20.97	20.77	20.72	22.00
		50	25	20.85	20.81	20.76	22.00
		50	50	20.98	20.84	20.69	22.00
		100	0	20.97	20.80	20.62	22.00
	64QAM	1	0	21.96	21.91	21.85	23.00
		1	50	21.96	21.90	21.91	23.00
		1	99	21.85	21.72	21.79	23.00
		50	0	20.85	20.83	20.80	22.00
		50	25	20.91	20.86	20.84	22.00
		50	50	20.76	20.69	20.70	22.00
		100	0	20.86	20.76	20.77	22.00

LTE FDD Band 2 Rec off + sensor on				**Conducted Power(dBm)**			
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			Tune-up Limit
				18607/1850.7	18900/1880	19193/1909.3	
1.4MHz	QPSK	1	0	17.87	17.96	17.74	19.00
		1	2	17.69	17.78	17.56	19.00
		1	5	17.74	17.65	17.73	19.00
		3	0	17.79	17.97	17.83	19.00
		3	2	17.82	17.93	17.79	19.00
		3	3	17.88	17.82	17.73	19.00
		6	0	17.78	17.87	17.79	19.00
	16QAM	1	0	18.15	17.80	17.91	19.00
		1	2	18.13	18.04	18.14	19.00
		1	5	18.15	17.97	18.04	19.00
		3	0	17.89	17.90	17.81	19.00
		3	2	17.92	18.00	17.84	19.00

		3	3	17.86	17.97	17.79	19.00
		6	0	17.88	17.92	17.85	19.00
	64QAM	1	0	17.84	17.95	17.87	19.00
		1	2	17.78	17.79	17.75	19.00
		1	5	17.71	17.83	17.62	19.00
		3	0	17.81	17.85	17.77	19.00
		3	2	17.89	17.93	17.85	19.00
		3	3	17.80	17.97	17.81	19.00
		6	0	17.86	17.96	17.93	19.00
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			Tune-up Limit
				18615/1851.5	18900/1880	19185/1908.5	
3MHz	QPSK	1	0	17.82	17.87	17.68	19.00
		1	7	17.67	17.74	17.52	19.00
		1	14	17.68	17.58	17.65	19.00
		8	0	17.74	17.88	17.76	19.00
		8	4	17.78	17.85	17.71	19.00
		8	7	17.82	17.76	17.66	19.00
		15	0	17.77	17.79	17.72	19.00
	16QAM	1	0	18.02	17.73	17.83	19.00
		1	7	18.07	18.01	18.08	19.00
		1	14	18.10	17.90	17.98	19.00
		8	0	17.84	17.85	17.76	19.00
		8	4	17.85	17.92	17.76	19.00
		8	7	17.81	17.88	17.72	19.00
		15	0	17.84	17.84	17.77	19.00
	64QAM	1	0	17.76	17.88	17.79	19.00
		1	7	17.72	17.76	17.69	19.00
		1	14	17.66	17.76	17.56	19.00
		8	0	17.76	17.80	17.72	19.00
		8	4	17.82	17.85	17.77	19.00
		8	7	17.75	17.88	17.74	19.00
		15	0	17.82	17.88	17.85	19.00
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			Tune-up Limit
				18625/1852.5	18900/1880	19175/1907.5	
5MHz	QPSK	1	0	17.79	17.85	17.64	19.00
		1	13	17.65	17.70	17.49	19.00
		1	24	17.65	17.53	17.61	19.00
		12	0	17.71	17.83	17.72	19.00
		12	6	17.76	17.81	17.66	19.00
		12	13	17.80	17.74	17.62	19.00
		25	0	17.75	17.78	17.70	19.00
	16QAM	1	0	17.99	17.69	17.80	19.00
		1	13	18.04	17.99	18.05	19.00

		1	24	18.07	17.88	17.94	19.00
		12	0	17.82	17.81	17.73	19.00
		12	6	17.82	17.87	17.72	19.00
		12	13	17.78	17.83	17.68	19.00
		25	0	17.82	17.80	17.72	19.00
	64QAM	1	0	17.73	17.84	17.76	19.00
		1	13	17.69	17.74	17.66	19.00
		1	24	17.63	17.74	17.52	19.00
		12	0	17.74	17.76	17.69	19.00
		12	6	17.79	17.80	17.73	19.00
		12	13	17.72	17.83	17.70	19.00
		25	0	17.80	17.84	17.80	19.00
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			Tune-up Limit
				18650/1855	18900/1880	19150/1905	
10MHz	QPSK	1	0	17.80	17.84	17.66	19.00
		1	25	17.66	17.74	17.51	19.00
		1	49	17.66	17.55	17.63	19.00
		25	0	17.72	17.87	17.74	19.00
		25	13	17.78	17.84	17.69	19.00
		25	25	17.80	17.74	17.66	19.00
		50	0	17.75	17.79	17.71	19.00
	16QAM	1	0	17.98	17.67	17.80	19.00
		1	25	18.06	18.02	18.03	19.00
		1	49	18.08	17.86	17.96	19.00
		25	0	17.80	17.85	17.74	19.00
		25	13	17.81	17.86	17.73	19.00
		25	25	17.80	17.87	17.67	19.00
		50	0	17.81	17.82	17.72	19.00
	64QAM	1	0	17.73	17.83	17.77	19.00
		1	25	17.71	17.76	17.66	19.00
		1	49	17.63	17.71	17.53	19.00
		25	0	17.76	17.80	17.68	19.00
		25	13	17.77	17.81	17.72	19.00
		25	25	17.73	17.84	17.73	19.00
		50	0	17.82	17.87	17.81	19.00
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			Tune-up Limit
				18675/1857.5	18900/1880	19125/1902.5	
15MHz	QPSK	1	0	17.80	17.82	17.65	19.00
		1	38	17.66	17.74	17.50	19.00
		1	74	17.64	17.52	17.60	19.00
		36	0	17.72	17.84	17.73	19.00
		36	18	17.76	17.81	17.66	19.00
		36	39	17.79	17.75	17.63	19.00

		75	0	17.78	17.76	17.69	19.00
	16QAM	1	0	17.96	17.70	17.80	19.00
		1	38	18.05	18.00	18.06	19.00
		1	74	18.07	17.86	17.94	19.00
		36	0	17.82	17.84	17.74	19.00
		36	18	17.81	17.86	17.71	19.00
		36	39	17.79	17.84	17.69	19.00
		75	0	17.82	17.80	17.72	19.00
	64QAM	1	0	17.70	17.85	17.76	19.00
		1	38	17.70	17.75	17.67	19.00
		1	74	17.63	17.72	17.52	19.00
		36	0	17.74	17.79	17.70	19.00
		36	18	17.78	17.79	17.72	19.00
		36	39	17.73	17.84	17.71	19.00
		75	0	17.80	17.84	17.80	19.00
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			Tune-up Limit
				18700/1860	18900/1880	19100/1900	
20MHz	QPSK	1	0	17.77	**17.78**	17.62	19.00
		1	50	17.65	17.70	17.48	19.00
		1	99	17.62	17.51	17.57	19.00
		50	0	17.69	**17.79**	17.69	19.00
		50	25	17.74	17.77	17.63	19.00
		50	50	17.76	17.70	17.59	19.00
		100	0	17.75	17.71	17.65	19.00
	16QAM	1	0	17.94	17.66	17.75	19.00
		1	50	18.01	17.98	18.02	19.00
		1	99	18.05	17.83	17.92	19.00
		50	0	17.79	17.80	17.71	19.00
		50	25	17.78	17.84	17.68	19.00
		50	50	17.76	17.79	17.65	19.00
		100	0	17.80	17.76	17.69	19.00
	64QAM	1	0	17.68	17.81	17.71	19.00
		1	50	17.66	17.73	17.63	19.00
		1	99	17.61	17.69	17.50	19.00
		50	0	17.71	17.75	17.67	19.00
		50	25	17.75	17.77	17.69	19.00
		50	50	17.70	17.79	17.67	19.00
		100	0	17.78	17.80	17.77	19.00

LTE TDD Band 4 Rec on / Rec off + sensor off				**Conducted Power(dBm)**			Tune-up Limit
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			
				19957/1710.7	20175/1732.5	20393/1754.3	

1.4MHz	QPSK	1	0	22.68	22.89	22.79	24.00
		1	2	22.75	22.69	22.56	24.00
		1	5	22.71	22.62	22.55	24.00
		3	0	22.77	22.84	22.71	24.00
		3	2	22.76	22.82	22.81	24.00
		3	3	22.72	22.67	22.68	24.00
		6	0	21.84	21.78	21.78	23.00
	16QAM	1	0	21.96	22.15	22.19	23.00
		1	2	21.94	22.10	22.17	23.00
		1	5	21.85	22.06	22.13	23.00
		3	0	21.75	21.86	21.82	23.00
		3	2	21.90	21.83	21.88	23.00
		3	3	21.84	21.79	21.73	23.00
		6	0	20.96	20.90	20.93	22.00
	64QAM	1	0	21.95	22.00	21.98	23.00
		1	2	21.87	21.93	21.91	23.00
		1	5	21.72	21.86	21.71	23.00
		3	0	21.83	21.90	21.88	23.00
		3	2	21.91	21.96	21.96	23.00
		3	3	21.75	21.89	21.76	23.00
		6	0	20.86	20.93	20.88	22.00
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			Tune-up Limit
				19965/1711.5	20175/1732.5	20385/1753.5	
3MHz	QPSK	1	0	22.70	22.93	22.82	24.00
		1	7	22.73	22.72	22.60	24.00
		1	14	22.74	22.67	22.59	24.00
		8	0	21.87	21.96	21.84	23.00
		8	4	21.88	21.92	21.93	23.00
		8	7	21.82	21.78	21.78	23.00
		15	0	21.84	21.82	21.81	23.00
	16QAM	1	0	21.99	22.17	22.22	23.00
		1	7	21.97	22.10	22.21	23.00
		1	14	21.87	22.10	22.16	23.00
		8	0	20.86	20.99	20.94	22.00
		8	4	21.01	20.96	21.00	22.00
		8	7	20.94	20.91	20.86	22.00
		15	0	20.99	20.94	20.96	22.00
	64QAM	1	0	21.98	21.94	21.96	23.00
		1	7	21.90	21.93	21.93	23.00
		1	14	21.74	21.85	21.74	23.00
		8	0	20.84	20.93	20.90	22.00
		8	4	20.92	20.99	20.98	22.00

		8	7	20.75	20.91	20.79	22.00
		15	0	20.89	20.97	20.91	22.00
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			Tune-up Limit
				19975/1712.5	20175/1732.5	20375/1752.5	
5MHz	QPSK	1	0	22.67	22.91	22.78	24.00
		1	13	22.71	22.68	22.57	24.00
		1	24	22.71	22.62	22.55	24.00
		12	0	21.84	21.91	21.80	23.00
		12	6	21.86	21.88	21.88	23.00
		12	13	21.80	21.76	21.74	23.00
		25	0	21.84	21.81	21.79	23.00
	16QAM	1	0	21.96	22.13	22.19	23.00
		1	13	21.94	22.08	22.18	23.00
		1	24	21.84	22.08	22.12	23.00
		12	0	20.84	20.95	20.91	22.00
		12	6	20.98	20.91	20.96	22.00
		12	13	20.91	20.86	20.82	22.00
		25	0	20.97	20.90	20.91	22.00
	64QAM	1	0	21.95	21.95	21.98	23.00
		1	13	21.87	21.95	21.90	23.00
		1	24	21.75	21.83	21.70	23.00
		12	0	20.82	20.89	20.91	22.00
		12	6	20.89	20.94	20.94	22.00
		12	13	20.72	20.86	20.75	22.00
		25	0	20.87	20.93	20.86	22.00
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			Tune-up Limit
				20000/1715	20175/1732.5	20350/1750	
10MHz	QPSK	1	0	22.69	22.92	22.81	24.00
		1	25	22.74	22.73	22.61	24.00
		1	49	22.73	22.66	22.58	24.00
		25	0	21.87	21.96	21.84	23.00
		25	13	21.89	21.93	21.92	23.00
		25	25	21.82	21.80	21.79	23.00
		50	0	21.88	21.83	21.83	23.00
	16QAM	1	0	21.98	22.16	22.21	23.00
		1	25	21.97	22.12	22.21	23.00
		1	49	21.87	22.10	22.15	23.00
		25	0	20.87	21.00	20.95	22.00
		25	13	21.00	20.95	20.99	22.00
		25	25	20.94	20.91	20.86	22.00
		50	0	21.00	20.95	20.95	22.00
	64QAM	1	0	21.97	21.96	21.98	23.00

		1	25	21.90	21.95	21.93	23.00
		1	49	21.74	21.85	21.73	23.00
		25	0	20.85	20.94	20.91	22.00
		25	13	20.91	20.98	20.97	22.00
		25	25	20.75	20.91	20.79	22.00
		50	0	20.90	20.98	20.90	22.00
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			Tune-up Limit
				20025/1717.5	20175/1732.5	20325/1747.5	
15MHz	QPSK	1	0	22.68	22.88	22.79	24.00
		1	38	22.72	22.72	22.58	24.00
		1	74	22.70	22.61	22.54	24.00
		36	0	21.85	21.92	21.81	23.00
		36	18	21.86	21.88	21.88	23.00
		36	39	21.79	21.77	21.75	23.00
		75	0	21.86	21.79	21.78	23.00
	16QAM	1	0	21.93	22.14	22.19	23.00
		1	38	21.95	22.09	22.19	23.00
		1	74	21.84	22.06	22.12	23.00
		36	0	20.84	20.98	20.92	22.00
		36	18	20.97	20.90	20.95	22.00
		36	39	20.92	20.87	20.83	22.00
		75	0	20.97	20.90	20.91	22.00
	64QAM	1	0	21.92	21.99	21.98	23.00
		1	38	21.88	21.92	21.91	23.00
		1	74	21.75	21.84	21.74	23.00
		36	0	20.84	20.96	20.92	22.00
		36	18	20.89	20.95	20.96	22.00
		36	39	20.73	20.87	20.76	22.00
		75	0	20.87	20.93	20.86	22.00
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			Tune-up Limit
				20050/1720	20175/1732.5	20300/1745	
20MHz	QPSK	1	0	22.65	**22.84**	22.76	24.00
		1	50	22.71	22.68	22.56	24.00
		1	99	22.68	22.60	22.51	24.00
		50	0	21.82	**21.87**	21.77	23.00
		50	25	21.84	21.84	21.85	23.00
		50	50	21.76	21.72	21.71	23.00
		100	0	21.83	21.74	21.74	23.00
	16QAM	1	0	21.89	22.10	22.14	23.00
		1	50	21.91	22.07	22.15	23.00
		1	99	21.82	22.03	22.10	23.00
		50	0	20.81	20.94	20.89	22.00

		50	25	20.94	20.88	20.92	22.00
		50	50	20.89	20.82	20.79	22.00
		100	0	20.95	20.86	20.88	22.00
	64QAM	1	0	21.90	21.95	21.93	23.00
		1	50	21.84	21.90	21.87	23.00
		1	99	21.69	21.78	21.68	23.00
		50	0	20.79	20.88	20.85	22.00
		50	25	20.85	20.91	20.90	22.00
		50	50	20.70	20.82	20.72	22.00
		100	0	20.85	20.89	20.83	22.00

LTE TDD Band 4 Rec off + sensor off				Conducted Power(dBm)			Tune-up Limit
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			
				19957/1710.7	20175/1732.5	20393/1754.3	
1.4MHz	QPSK	1	0	18.27	18.43	18.34	19.50
		1	2	18.29	18.25	18.14	19.50
		1	5	18.20	18.18	18.05	19.50
		3	0	18.36	18.35	18.22	19.50
		3	2	18.34	18.28	18.26	19.50
		3	3	18.30	18.18	18.14	19.50
		6	0	18.37	18.30	18.25	19.50
	16QAM	1	0	18.82	18.61	18.46	19.50
		1	2	18.56	18.70	18.34	19.50
		1	5	18.29	18.32	18.52	19.50
		3	0	18.38	18.33	18.36	19.50
		3	2	18.46	18.40	18.38	19.50
		3	3	18.40	18.34	18.21	19.50
		6	0	18.43	18.36	18.32	19.50
	64QAM	1	0	18.56	18.63	18.60	19.50
		1	2	18.45	18.39	18.41	19.50
		1	5	18.36	18.52	18.47	19.50
		3	0	18.51	18.40	18.49	19.50
		3	2	18.41	18.36	18.43	19.50
		3	3	18.34	18.29	18.34	19.50
		6	0	18.44	18.42	18.39	19.50
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			Tune-up Limit
				19965/1711.5	20175/1732.5	20385/1753.5	
3MHz	QPSK	1	0	18.29	18.47	18.37	19.50
		1	7	18.29	18.27	18.18	19.50
		1	14	18.23	18.23	18.09	19.50
		8	0	18.40	18.42	18.29	19.50

		8	4	18.37	18.36	18.32	19.50
		8	7	18.34	18.23	18.18	19.50
		15	0	18.39	18.34	18.28	19.50
	16QAM	1	0	18.85	18.63	18.49	19.50
		1	7	18.59	18.72	18.38	19.50
		1	14	18.31	18.36	18.55	19.50
		8	0	18.43	18.37	18.39	19.50
		8	4	18.51	18.47	18.44	19.50
		8	7	18.44	18.40	18.28	19.50
		15	0	18.46	18.40	18.35	19.50
	64QAM	1	0	18.59	18.65	18.63	19.50
		1	7	18.48	18.41	18.45	19.50
		1	14	18.38	18.56	18.50	19.50
		8	0	18.56	18.44	18.52	19.50
		8	4	18.46	18.43	18.49	19.50
		8	7	18.38	18.35	18.41	19.50
		15	0	18.46	18.48	18.44	19.50
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			Tune-up Limit
				19975/1712.5	20175/1732.5	20375/1752.5	
5MHz	QPSK	1	0	18.26	18.45	18.33	19.50
		1	13	18.27	18.23	18.15	19.50
		1	24	18.20	18.18	18.05	19.50
		12	0	18.37	18.37	18.25	19.50
		12	6	18.35	18.32	18.27	19.50
		12	13	18.32	18.21	18.14	19.50
		25	0	18.37	18.33	18.26	19.50
	16QAM	1	0	18.82	18.59	18.46	19.50
		1	13	18.56	18.70	18.35	19.50
		1	24	18.28	18.34	18.51	19.50
		12	0	18.41	18.33	18.36	19.50
		12	6	18.48	18.42	18.40	19.50
		12	13	18.41	18.35	18.24	19.50
		25	0	18.44	18.36	18.30	19.50
	64QAM	1	0	18.56	18.61	18.60	19.50
		1	13	18.45	18.39	18.42	19.50
		1	24	18.35	18.54	18.46	19.50
		12	0	18.54	18.40	18.49	19.50
		12	6	18.43	18.38	18.45	19.50
		12	13	18.35	18.30	18.37	19.50
		25	0	18.44	18.44	18.39	19.50
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			Tune-up Limit
				20000/1715	20175/1732.5	20350/1750	

10MHz	QPSK	1	0	18.27	18.44	18.35	19.50
		1	25	18.28	18.27	18.17	19.50
		1	49	18.21	18.20	18.07	19.50
		25	0	18.38	18.41	18.27	19.50
		25	13	18.37	18.35	18.30	19.50
		25	25	18.32	18.21	18.18	19.50
		50	0	18.37	18.34	18.27	19.50
	16QAM	1	0	18.81	18.57	18.46	19.50
		1	25	18.58	18.73	18.33	19.50
		1	49	18.29	18.32	18.53	19.50
		25	0	18.39	18.37	18.37	19.50
		25	13	18.47	18.41	18.41	19.50
		25	25	18.43	18.39	18.23	19.50
		50	0	18.43	18.38	18.30	19.50
	64QAM	1	0	18.56	18.60	18.61	19.50
		1	25	18.47	18.41	18.42	19.50
		1	49	18.35	18.51	18.47	19.50
		25	0	18.56	18.44	18.48	19.50
		25	13	18.41	18.39	18.44	19.50
		25	25	18.36	18.31	18.40	19.50
		50	0	18.46	18.47	18.40	19.50
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			Tune-up Limit
				20025/1717.5	20175/1732.5	20325/1747.5	
15MHz	QPSK	1	0	18.24	18.38	18.31	19.50
		1	38	18.27	18.23	18.14	19.50
		1	74	18.17	18.16	18.01	19.50
		36	0	18.35	18.33	18.22	19.50
		36	18	18.33	18.28	18.24	19.50
		36	39	18.28	18.17	18.11	19.50
		75	0	18.37	18.26	18.21	19.50
	16QAM	1	0	18.77	18.56	18.41	19.50
		1	38	18.53	18.69	18.32	19.50
		1	74	18.26	18.29	18.49	19.50
		36	0	18.38	18.32	18.34	19.50
		36	18	18.44	18.39	18.36	19.50
		36	39	18.39	18.31	18.21	19.50
		75	0	18.42	18.32	18.27	19.50
	64QAM	1	0	18.51	18.58	18.55	19.50
		1	38	18.42	18.38	18.39	19.50
		1	74	18.33	18.49	18.44	19.50
		36	0	18.51	18.39	18.47	19.50
		36	18	18.39	18.35	18.41	19.50

		36	39	18.33	18.26	18.34	19.50
		75	0	18.42	18.40	18.36	19.50
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			Tune-up Limit
				20050/1720	20175/1732.5	20300/1745	
20MHz	QPSK	1	0	18.24	**18.38**	18.31	19.50
		1	50	18.27	18.23	18.14	19.50
		1	99	18.17	18.16	18.01	19.50
		50	0	**18.35**	18.33	18.22	19.50
		50	25	18.33	18.28	18.24	19.50
		50	50	18.28	18.17	18.11	19.50
		100	0	18.37	18.26	18.21	19.50
	16QAM	1	0	18.77	18.56	18.41	19.50
		1	50	18.53	18.69	18.32	19.50
		1	99	18.26	18.29	18.49	19.50
		50	0	18.38	18.32	18.34	19.50
		50	25	18.44	18.39	18.36	19.50
		50	50	18.39	18.31	18.21	19.50
		100	0	18.42	18.32	18.27	19.50
	64QAM	1	0	18.51	18.58	18.55	19.50
		1	50	18.42	18.38	18.39	19.50
		1	99	18.33	18.49	18.44	19.50
		50	0	18.51	18.39	18.47	19.50
		50	25	18.39	18.35	18.41	19.50
		50	50	18.33	18.26	18.34	19.50
		100	0	18.42	18.40	18.36	19.50

LTE FDD Band 5				**Conducted Power(dBm)**			
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			Tune-up Limit
				20407/824.7	20525/836.5	20643/848.3	
1.4MHz	QPSK	1	0	23.70	23.55	23.75	25.00
		1	2	23.58	23.67	23.77	25.00
		1	5	23.67	23.58	23.73	25.00
		3	0	23.66	23.69	23.68	25.00
		3	2	23.65	23.79	23.82	25.00
		3	3	23.77	23.63	23.74	25.00
		6	0	22.75	22.76	22.69	24.00
	16QAM	1	0	22.95	22.76	22.81	24.00
		1	2	22.93	22.95	22.98	24.00
		1	5	22.81	22.84	22.86	24.00
		3	0	22.78	22.80	22.84	24.00
		3	2	22.87	22.88	22.92	24.00
		3	3	22.66	22.73	22.74	24.00

		6	0	21.80	21.87	21.91	23.00
	64QAM	1	0	22.62	22.66	22.71	24.00
		1	2	22.87	22.89	22.94	24.00
		1	5	22.70	22.78	22.75	24.00
		3	0	22.74	22.76	22.80	24.00
		3	2	22.81	22.82	22.86	24.00
		3	3	22.76	22.83	22.84	24.00
		6	0	21.75	21.82	21.86	23.00
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			Tune-up Limit
				20415/825.5	20525/836.5	20635/847.5	
3MHz	QPSK	1	0	23.72	23.59	23.78	25.00
		1	7	23.56	23.70	23.81	25.00
		1	14	23.70	23.63	23.77	25.00
		8	0	22.76	22.81	22.81	24.00
		8	4	22.77	22.89	22.94	24.00
		8	7	22.87	22.74	22.84	24.00
		15	0	22.75	22.80	22.72	24.00
	16QAM	1	0	22.98	22.78	22.84	24.00
		1	7	22.96	22.95	23.02	24.00
		1	14	22.83	22.88	22.89	24.00
		8	0	21.89	21.93	21.96	23.00
		8	4	21.98	22.01	22.04	23.00
		8	7	21.76	21.85	21.87	23.00
		15	0	21.83	21.91	21.94	23.00
	64QAM	1	0	22.65	22.68	22.74	24.00
		1	7	22.90	22.89	22.96	24.00
		1	14	22.72	22.77	22.78	24.00
		8	0	21.85	21.89	21.92	23.00
		8	4	21.92	21.95	21.98	23.00
		8	7	21.86	21.95	21.97	23.00
		15	0	21.78	21.86	21.89	23.00
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			Tune-up Limit
				20425/826.5	20525/836.5	20625/846.5	
5MHz	QPSK	1	0	23.70	23.54	23.75	25.00
		1	13	23.55	23.70	23.79	25.00
		1	24	23.66	23.57	23.72	25.00
		12	0	22.74	22.77	22.78	24.00
		12	6	22.75	22.85	22.89	24.00
		12	13	22.84	22.73	22.81	24.00
		25	0	22.77	22.77	22.69	24.00
	16QAM	1	0	22.92	22.75	22.81	24.00
		1	13	22.94	22.94	23.00	24.00
		1	24	22.80	22.84	22.85	24.00

		12	0	21.87	21.92	21.94	23.00
		12	6	21.94	21.95	21.99	23.00
		12	13	21.74	21.81	21.84	23.00
		25	0	21.81	21.87	21.89	23.00
	64QAM	1	0	22.59	22.65	22.71	24.00
		1	13	22.88	22.88	22.94	24.00
		1	24	22.73	22.76	22.78	24.00
		12	0	21.85	21.92	21.94	23.00
		12	6	21.89	21.91	21.96	23.00
		12	13	21.84	21.91	21.94	23.00
		25	0	21.76	21.82	21.84	23.00
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			Tune-up Limit
				20450/829	20525/836.5	20600/844	
10MHz	QPSK	1	0	23.67	23.50	23.72	25.00
		1	25	23.54	23.66	**23.77**	25.00
		1	49	23.64	23.56	23.69	25.00
		25	0	22.71	22.72	22.74	24.00
		25	13	22.73	22.81	**22.86**	24.00
		25	25	22.81	22.68	22.77	24.00
		50	0	22.74	22.72	22.65	24.00
	16QAM	1	0	22.67	22.71	22.76	24.00
		1	25	22.90	22.92	22.96	24.00
		1	49	22.78	22.81	22.83	24.00
		25	0	21.84	21.88	21.91	23.00
		25	13	21.91	21.93	21.96	23.00
		25	25	21.71	21.76	21.80	23.00
		50	0	21.79	21.83	21.86	23.00
	64QAM	1	0	22.57	22.61	22.66	24.00
		1	25	22.84	22.86	22.90	24.00
		1	49	22.67	22.70	22.72	24.00
		25	0	21.80	21.84	21.87	23.00
		25	13	21.85	21.87	21.90	23.00
		25	25	21.81	21.86	21.90	23.00
		50	0	21.74	21.78	21.81	23.00

LTE FDD Band 7 Rec on / Rec off + sensor off				**Conducted Power(dBm)**			
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			Tune-up Limit
				20775/2502.5	21100/2535	21425/2567.5	
5MHz	QPSK	1	0	22.86	22.92	22.82	24.00
		1	13	22.88	22.95	22.83	24.00
		1	24	22.94	22.92	22.93	24.00
		12	0	21.88	21.95	21.95	23.00

		12	6	22.00	21.97	21.96	23.00
		12	13	22.03	21.95	22.08	23.00
		25	0	22.03	22.02	21.96	23.00
	16QAM	1	0	22.09	22.34	22.30	23.00
		1	13	22.08	22.09	22.14	23.00
		1	24	22.15	22.21	22.12	23.00
		12	0	21.03	20.98	21.00	22.00
		12	6	20.95	21.05	21.08	22.00
		12	13	21.13	21.04	21.26	22.00
		25	0	21.16	20.99	21.02	22.00
	64QAM	1	0	21.92	21.97	21.96	23.00
		1	13	21.87	21.93	21.96	23.00
		1	24	21.77	21.87	21.90	23.00
		12	0	20.99	20.98	20.97	22.00
		12	6	20.97	20.99	20.96	22.00
		12	13	20.93	21.00	21.00	22.00
		25	0	20.84	20.96	20.94	22.00
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			Tune-up Limit
				20800/2505	21100/2535	21400/2565	
10MHz	QPSK	1	0	22.84	22.91	22.79	24.00
		1	25	22.85	22.90	22.79	24.00
		1	49	22.92	22.88	22.90	24.00
		25	0	21.85	21.90	21.91	23.00
		25	13	21.97	21.92	21.92	23.00
		25	25	22.01	21.91	22.03	23.00
		50	0	21.99	22.00	21.92	23.00
	16QAM	1	0	22.07	22.31	22.28	23.00
		1	25	22.05	22.05	22.11	23.00
		1	49	22.12	22.19	22.09	23.00
		25	0	21.00	20.93	20.96	22.00
		25	13	20.93	21.01	21.05	22.00
		25	25	21.10	20.99	21.22	22.00
		50	0	21.13	20.94	20.98	22.00
	64QAM	1	0	21.90	21.98	21.94	23.00
		1	25	21.84	21.93	21.93	23.00
		1	49	21.78	21.85	21.87	23.00
		25	0	20.96	20.93	21.01	22.00
		25	13	20.95	21.00	20.99	22.00
		25	25	20.90	20.95	20.96	22.00
		50	0	20.81	20.98	20.90	22.00
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			Tune-up Limit
				20825/2507.5	21100/2535	21375/2562.5	
15MHz	QPSK	1	0	22.85	22.88	22.80	24.00

		1	38	22.86	22.94	22.80	24.00
		1	74	22.91	22.87	22.89	24.00
		36	0	21.86	21.91	21.92	23.00
		36	18	21.97	21.92	21.92	23.00
		36	39	22.00	21.92	22.04	23.00
		75	0	22.01	21.98	21.91	23.00
	16QAM	1	0	22.04	22.32	22.28	23.00
		1	38	22.06	22.06	22.12	23.00
		1	74	22.12	22.17	22.09	23.00
		36	0	21.00	20.96	20.97	22.00
		36	18	20.92	21.00	21.04	22.00
		36	39	21.11	21.00	21.23	22.00
		75	0	21.13	20.94	20.98	22.00
	64QAM	1	0	21.87	21.95	21.94	23.00
		1	38	21.85	21.90	21.94	23.00
		1	74	21.78	21.86	21.91	23.00
		36	0	20.98	21.00	20.99	22.00
		36	18	20.95	20.98	20.94	22.00
		36	39	20.91	20.96	20.97	22.00
		75	0	20.81	20.98	20.90	22.00
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			Tune-up Limit
				20850/2510	21100/2535	21350/2560	
20MHz	QPSK	1	0	22.82	22.84	22.77	24.00
		1	50	22.85	**23.10**	22.78	24.00
		1	99	22.89	22.86	22.86	24.00
		50	0	21.83	21.86	21.88	23.00
		50	25	21.95	21.88	21.89	23.00
		50	50	21.97	21.87	**22.00**	23.00
		100	0	21.98	21.93	21.87	23.00
	16QAM	1	0	22.16	22.28	22.23	23.00
		1	50	22.02	22.04	22.08	23.00
		1	99	22.10	22.14	22.07	23.00
		50	0	20.97	20.92	20.94	22.00
		50	25	20.89	20.98	21.01	22.00
		50	50	21.08	20.95	21.19	22.00
		100	0	21.11	20.90	20.95	22.00
	64QAM	1	0	21.85	21.91	21.89	23.00
		1	50	21.81	21.88	21.90	23.00
		1	99	21.72	21.80	21.85	23.00
		50	0	20.93	20.92	20.95	22.00
		50	25	20.91	20.97	20.95	22.00
		50	50	20.88	20.91	20.93	22.00
		100	0	20.79	20.94	20.87	22.00

LTE FDD Band 7 Rec off + sensor off				Conducted Power(dBm)			
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			Tune-up Limit
				20775/2502.5	21100/2535	21425/2567.5	
5MHz	QPSK	1	0	18.80	18.95	18.84	20.00
		1	13	18.85	18.81	18.93	20.00
		1	24	18.93	18.96	18.94	20.00
		12	0	18.94	18.95	18.87	20.00
		12	6	18.97	18.96	18.93	20.00
		12	13	18.95	18.88	19.00	20.00
		25	0	18.99	18.94	18.98	20.00
	16QAM	1	0	19.36	19.28	19.34	20.00
		1	13	19.24	19.22	19.22	20.00
		1	24	19.17	19.27	19.22	20.00
		12	0	18.98	19.02	18.93	20.00
		12	6	18.84	18.94	18.92	20.00
		12	13	19.12	19.21	19.18	20.00
		25	0	18.99	19.04	19.05	20.00
	64QAM	1	0	18.94	19.01	19.02	20.00
		1	13	19.08	19.12	19.13	20.00
		1	24	19.10	19.15	19.04	20.00
		12	0	19.00	19.02	18.94	20.00
		12	6	18.93	19.02	19.01	20.00
		12	13	19.03	19.19	19.12	20.00
		25	0	19.01	19.06	19.01	20.00
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			Tune-up Limit
				20800/2505	21100/2535	21400/2565	
10MHz	QPSK	1	0	18.83	18.97	18.88	20.00
		1	25	18.87	18.85	18.96	20.00
		1	49	18.96	19.01	18.98	20.00
		25	0	18.97	19.00	18.91	20.00
		25	13	18.99	19.00	18.98	20.00
		25	25	18.97	18.90	19.04	20.00
		50	0	19.01	18.95	19.00	20.00
	16QAM	1	0	19.39	19.32	19.37	20.00
		1	25	19.27	19.24	19.25	20.00
		1	49	19.20	19.29	19.26	20.00
		25	0	19.00	19.06	18.96	20.00
		25	13	18.87	18.99	18.96	20.00
		25	25	19.15	19.26	19.22	20.00
		50	0	19.01	19.08	19.10	20.00
	64QAM	1	0	18.97	19.05	19.05	20.00

		1	25	19.11	19.14	19.16	20.00
		1	49	19.13	19.17	19.08	20.00
		25	0	19.02	19.06	18.97	20.00
		25	13	18.96	19.07	19.05	20.00
		25	25	19.06	19.24	19.16	20.00
		50	0	19.03	19.10	19.06	20.00
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			Tune-up Limit
				20825/2507.5	21100/2535	21375/2562.5	
15MHz	QPSK	1	0	18.81	18.92	18.85	20.00
		1	38	18.86	18.85	18.94	20.00
		1	74	18.92	18.95	18.93	20.00
		36	0	18.95	18.96	18.88	20.00
		36	18	18.97	18.96	18.93	20.00
		36	39	18.94	18.89	19.01	20.00
		75	0	19.02	18.92	18.97	20.00
	16QAM	1	0	19.33	19.29	19.34	20.00
		1	38	19.25	19.23	19.23	20.00
		1	74	19.17	19.25	19.22	20.00
		36	0	18.98	19.05	18.94	20.00
		36	18	18.83	18.93	18.91	20.00
		36	39	19.13	19.22	19.19	20.00
		75	0	18.99	19.04	19.05	20.00
	64QAM	1	0	18.91	19.02	19.02	20.00
		1	38	19.09	19.13	19.14	20.00
		1	74	19.10	19.13	19.04	20.00
		36	0	19.00	19.05	18.95	20.00
		36	18	18.92	19.01	19.00	20.00
		36	39	19.04	19.20	19.13	20.00
		75	0	19.01	19.06	19.01	20.00
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			Tune-up Limit
				20850/2510	21100/2535	21350/2560	
20MHz	QPSK	1	0	18.78	18.88	18.82	20.00
		1	50	18.85	18.81	18.92	20.00
		1	99	18.90	**18.94**	18.90	20.00
		50	0	18.92	18.91	18.84	20.00
		50	25	18.95	18.92	18.90	20.00
		50	50	18.91	18.84	**18.97**	20.00
		100	0	18.99	18.87	18.93	20.00
	16QAM	1	0	19.31	19.25	19.29	20.00
		1	50	19.21	19.21	19.19	20.00
		1	99	19.15	19.22	19.20	20.00
		50	0	18.95	19.01	18.91	20.00
		50	25	18.80	18.91	18.88	20.00

		50	50	19.10	19.17	19.15	20.00
		100	0	18.97	19.00	19.02	20.00
	64QAM	1	0	18.89	18.98	18.97	20.00
		1	50	19.05	19.11	19.10	20.00
		1	99	19.08	19.10	19.02	20.00
		50	0	18.97	19.01	18.92	20.00
		50	25	18.89	18.99	18.97	20.00
		50	50	19.01	19.15	19.09	20.00
		100	0	18.99	19.02	18.98	20.00

LTE TDD Band 38 Rec on / Rec + sensor off				**Conducted Power(dBm)**			
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			Tune-up Limit
				37775/2572.5	38000/2595	38225/2617.5	
5MHz	QPSK	1	0	22.57	22.50	22.53	24.00
		1	13	22.40	22.33	22.40	24.00
		1	24	22.51	22.43	22.53	24.00
		12	0	21.47	21.55	21.57	23.00
		12	6	21.59	21.60	21.60	23.00
		12	13	21.58	21.62	21.64	23.00
		25	0	21.60	21.76	21.52	23.00
	16QAM	1	0	21.74	21.72	21.84	23.00
		1	13	21.72	21.64	21.76	23.00
		1	24	21.82	21.77	21.85	23.00
		12	0	21.79	21.73	21.82	22.00
		12	6	21.81	21.75	21.85	22.00
		12	13	21.55	21.50	21.61	22.00
		25	0	21.85	21.81	21.92	22.00
	64QAM	1	0	21.72	21.65	21.77	23.00
		1	13	21.92	21.84	21.96	23.00
		1	24	21.64	21.59	21.67	23.00
		12	0	20.77	20.71	20.80	22.00
		12	6	20.76	20.70	20.80	22.00
		12	13	20.81	20.76	20.87	22.00
		25	0	20.84	20.82	20.91	22.00
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			Tune-up Limit
				37800/2575	38000/2595	38200/2615	
10MHz	QPSK	1	0	22.54	22.48	22.49	24.00
		1	25	22.38	22.29	22.37	24.00
		1	49	22.48	22.38	22.49	24.00
		25	0	21.44	21.50	21.53	23.00
		25	13	21.57	21.56	21.55	23.00
		25	25	21.56	21.60	21.60	23.00

		50	0	21.60	21.75	21.50	23.00
	16QAM	1	0	21.71	21.68	21.81	23.00
		1	25	21.69	21.62	21.73	23.00
		1	49	21.79	21.75	21.81	23.00
		25	0	21.77	21.69	21.79	22.00
		25	13	21.78	21.70	21.81	22.00
		25	25	21.52	21.45	21.57	22.00
		50	0	21.83	21.77	21.87	22.00
	64QAM	1	0	21.69	21.65	21.74	23.00
		1	25	21.89	21.86	21.93	23.00
		1	49	21.65	21.57	21.63	23.00
		25	0	20.75	20.67	20.81	22.00
		25	13	20.73	20.65	20.76	22.00
		25	25	20.78	20.71	20.83	22.00
		50	0	20.82	20.78	20.86	22.00
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			Tune-up Limit
				37825/2577.5	38000/2595	38175/2612.5	
15MHz	QPSK	1	0	22.56	22.49	22.52	24.00
		1	38	22.41	22.34	22.41	24.00
		1	74	22.50	22.42	22.52	24.00
		36	0	21.47	21.55	21.57	23.00
		36	18	21.60	21.61	21.59	23.00
		36	39	21.58	21.64	21.65	23.00
		75	0	21.64	21.77	21.54	23.00
	16QAM	1	0	21.73	21.71	21.83	23.00
		1	38	21.72	21.66	21.76	23.00
		1	74	21.82	21.77	21.84	23.00
		36	0	21.80	21.74	21.83	22.00
		36	18	21.80	21.74	21.84	22.00
		36	39	21.55	21.50	21.61	22.00
		75	0	21.86	21.82	21.91	22.00
	64QAM	1	0	21.71	21.64	21.76	23.00
		1	38	21.92	21.86	21.96	23.00
		1	74	21.64	21.59	21.66	23.00
		36	0	20.78	20.72	20.81	22.00
		36	18	20.75	20.69	20.79	22.00
		36	39	20.81	20.76	20.87	22.00
		75	0	20.85	20.83	20.90	22.00
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			Tune-up Limit
				37850/2580	38000/2595	38150/2610	
20MHz	QPSK	1	0	22.87	22.69	22.65	24.00
		1	50	22.61	22.83	22.79	24.00
		1	99	22.71	22.74	**23.04**	24.00

		50	0	21.77	21.78	21.80	23.00
		50	25	21.88	21.85	21.93	23.00
		50	50	**21.96**	21.82	21.92	23.00
		100	0	22.02	21.93	21.88	23.00
	16QAM	1	0	22.05	22.10	22.01	23.00
		1	50	22.06	22.14	22.10	23.00
		1	99	21.99	22.05	22.06	23.00
		50	0	21.26	21.31	21.25	22.00
		50	25	21.15	21.12	21.18	22.00
		50	50	21.05	21.09	21.11	22.00
		100	0	21.08	21.07	21.11	22.00
	64QAM	1	0	21.86	21.88	21.90	23.00
		1	50	21.87	21.92	21.95	23.00
		1	99	21.84	21.91	21.92	23.00
		50	0	20.88	20.89	20.91	22.00
		50	25	20.95	20.97	20.91	22.00
		50	50	20.93	20.94	20.95	22.00
		100	0	20.96	20.98	20.97	22.00

LTE TDD Band 38 Rec + sensor off				**Conducted Power(dBm)**			
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			Tune-up Limit
				37775/2572.5	38000/2595	38225/2617.5	
5MHz	QPSK	1	0	19.42	19.71	19.47	21.00
		1	13	19.36	19.45	19.66	21.00
		1	24	19.44	19.55	19.51	21.00
		12	0	19.47	19.56	19.51	21.00
		12	6	19.67	19.61	19.61	21.00
		12	13	19.65	19.66	19.57	21.00
		25	0	19.55	19.52	19.68	21.00
	16QAM	1	0	19.75	19.79	19.86	21.00
		1	13	19.72	19.75	19.81	21.00
		1	24	19.73	19.83	19.82	21.00
		12	0	19.57	19.61	19.65	21.00
		12	6	19.68	19.74	19.78	21.00
		12	13	19.65	19.76	19.79	21.00
		25	0	19.78	19.88	19.90	21.00
	64QAM	1	0	19.63	19.67	19.74	21.00
		1	13	19.51	19.54	19.60	21.00
		1	24	19.36	19.46	19.45	21.00
		12	0	19.53	19.57	19.61	21.00
		12	6	19.68	19.74	19.78	21.00

		12	13	19.64	19.75	19.78	21.00
		25	0	19.56	19.64	19.66	21.00
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			Tune-up Limit
				37800/2575	38000/2595	38200/2615	
10MHz	QPSK	1	0	19.43	19.70	19.49	21.00
		1	25	19.37	19.49	19.68	21.00
		1	49	19.45	19.57	19.53	21.00
		25	0	19.48	19.60	19.53	21.00
		25	13	19.69	19.64	19.64	21.00
		25	25	19.65	19.66	19.61	21.00
		50	0	19.55	19.53	19.69	21.00
	16QAM	1	0	19.74	19.77	19.86	21.00
		1	25	19.74	19.78	19.79	21.00
		1	49	19.74	19.81	19.84	21.00
		25	0	19.55	19.65	19.66	21.00
		25	13	19.67	19.73	19.79	21.00
		25	25	19.67	19.80	19.78	21.00
		50	0	19.77	19.90	19.90	21.00
	64QAM	1	0	19.63	19.66	19.75	21.00
		1	25	19.53	19.56	19.60	21.00
		1	49	19.36	19.43	19.46	21.00
		25	0	19.55	19.61	19.60	21.00
		25	13	19.66	19.75	19.77	21.00
		25	25	19.65	19.76	19.81	21.00
		50	0	19.58	19.67	19.67	21.00
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			Tune-up Limit
				37825/2577.5	38000/2595	38175/2612.5	
15MHz	QPSK	1	0	19.43	19.68	19.48	21.00
		1	38	19.37	19.49	19.67	21.00
		1	74	19.43	19.54	19.50	21.00
		36	0	19.48	19.57	19.52	21.00
		36	18	19.67	19.61	19.61	21.00
		36	39	19.64	19.67	19.58	21.00
		75	0	19.58	19.50	19.67	21.00
	16QAM	1	0	19.72	19.80	19.86	21.00
		1	38	19.73	19.76	19.82	21.00
		1	74	19.73	19.81	19.82	21.00
		36	0	19.57	19.64	19.66	21.00
		36	18	19.67	19.73	19.77	21.00
		36	39	19.66	19.77	19.80	21.00
		75	0	19.78	19.88	19.90	21.00
	64QAM	1	0	19.60	19.68	19.74	21.00
		1	38	19.52	19.55	19.61	21.00

		1	74	19.36	19.44	19.45	21.00
		36	0	19.53	19.60	19.62	21.00
		36	18	19.67	19.73	19.77	21.00
		36	39	19.65	19.76	19.79	21.00
		75	0	19.56	19.64	19.66	21.00
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			Tune-up Limit
				37850/2580	38000/2595	38150/2610	
20MHz	QPSK	1	0	19.78	**19.91**	19.90	21.00
		1	50	19.73	19.84	19.80	21.00
		1	99	19.86	19.86	19.87	21.00
		50	0	19.94	19.90	19.90	21.00
		50	25	**19.96**	19.88	19.82	21.00
		50	50	19.86	19.92	19.91	21.00
		100	0	19.92	19.91	19.87	21.00
	16QAM	1	0	20.05	20.07	20.01	21.00
		1	50	20.01	20.09	20.05	21.00
		1	99	20.07	20.12	20.06	21.00
		50	0	19.99	19.98	19.88	21.00
		50	25	19.98	20.05	19.91	21.00
		50	50	19.95	20.01	19.93	21.00
		100	0	19.89	19.99	19.86	21.00
	64QAM	1	0	20.00	20.03	19.97	21.00
		1	50	19.99	19.96	19.96	21.00
		1	99	19.89	19.97	19.81	21.00
		50	0	19.98	20.01	19.95	21.00
		50	25	19.96	19.92	19.89	21.00
		50	50	19.94	19.99	19.84	21.00
		100	0	19.98	20.03	19.95	21.00

LTE TDD Band 41 Rec on / Rec off + sensor off				**Conducted Power(dBm)**				
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)				Tune-up Limit
				40165/ 2547.5	40515/ 2582.5	40865/ 2617.5	41215/ 2652.5	
5MHz	QPSK	1	0	22.65	22.92	22.73	22.85	24.00
		1	13	22.64	22.74	22.70	22.77	24.00
		1	24	22.81	22.98	23.01	22.62	24.00
		12	0	21.91	21.77	21.95	21.69	23.00
		12	6	21.90	21.94	22.00	21.66	23.00
		12	13	21.90	21.84	21.97	21.70	23.00
		25	0	21.95	21.95	21.98	21.81	23.00
	16QAM	1	0	22.23	22.05	22.17	22.15	23.00
		1	13	22.21	22.04	22.15	22.13	23.00

		1	24	22.04	22.09	22.08	22.07	23.00
		12	0	20.98	20.91	21.00	20.91	22.00
		12	6	21.11	21.00	20.97	21.00	22.00
		12	13	21.06	21.00	20.94	20.92	22.00
		25	0	21.11	20.97	20.98	20.99	22.00
	64QAM	1	0	21.88	21.95	21.94	21.89	23.00
		1	13	21.93	22.00	21.88	21.91	23.00
		1	24	21.87	21.92	21.98	21.99	23.00
		12	0	20.93	20.92	20.93	20.83	22.00
		12	6	20.95	20.99	20.98	20.93	22.00
		12	13	20.79	20.84	20.84	20.78	22.00
		25	0	20.91	20.98	20.92	20.93	22.00
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)				Tune-up Limit
				40190/ 2550	40523/ 2583.3	40856/ 2616.6	41190/ 2650	
10MHz	QPSK	1	0	22.67	22.93	22.76	22.87	24.00
		1	25	22.67	22.79	22.74	22.80	24.00
		1	49	22.83	23.02	23.04	22.64	24.00
		25	0	21.94	21.82	21.99	21.72	23.00
		25	13	21.93	21.99	22.04	21.69	23.00
		25	25	21.92	21.88	22.02	21.72	23.00
		50	0	21.99	21.97	22.02	21.85	23.00
	16QAM	1	0	22.25	22.08	22.19	22.17	23.00
		1	25	22.24	22.08	22.18	22.16	23.00
		1	49	22.07	22.11	22.11	22.10	23.00
		25	0	21.01	20.96	21.04	20.94	22.00
		25	13	21.13	21.04	21.00	21.02	22.00
		25	25	21.09	21.05	20.98	20.95	22.00
		50	0	21.14	21.02	21.02	21.02	22.00
	64QAM	1	0	21.90	21.94	21.96	21.90	23.00
		1	25	21.96	22.00	21.91	21.94	23.00
		1	49	21.90	21.94	21.93	21.98	23.00
		25	0	20.96	20.97	20.93	20.86	22.00
		25	13	20.97	20.91	20.95	20.95	22.00
		25	25	20.82	20.89	20.88	20.81	22.00
		50	0	20.94	20.89	20.96	20.96	22.00
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)				Tune-up Limit
				40215/ 2552.5	40531/ 2584.1	40848/ 2615.8	41165/ 2647.5	
15MHz	QPSK	1	0	22.66	22.89	22.74	22.86	24.00
		1	38	22.65	22.78	22.71	22.78	24.00
		1	74	22.80	22.97	23.00	22.61	24.00
		36	0	21.92	21.78	21.96	21.70	23.00

		36	18	21.90	21.94	22.00	21.66	23.00
		36	39	21.89	21.85	21.98	21.69	23.00
		75	0	21.97	21.93	21.97	21.83	23.00
	16QAM	1	0	22.20	22.06	22.17	22.12	23.00
		1	38	22.22	22.05	22.16	22.14	23.00
		1	74	22.04	22.07	22.08	22.07	23.00
		36	0	20.98	20.94	21.01	20.91	22.00
		36	18	21.10	20.99	20.96	20.99	22.00
		36	39	21.07	21.01	20.95	20.93	22.00
		75	0	21.11	20.97	20.98	20.99	22.00
	64QAM	1	0	21.85	21.92	21.94	21.97	23.00
		1	38	21.94	21.97	21.89	21.92	23.00
		1	74	21.92	21.95	21.93	21.99	23.00
		36	0	20.95	20.99	20.94	20.85	22.00
		36	18	20.95	20.88	20.91	20.93	22.00
		36	39	20.80	20.85	20.85	20.79	22.00
		75	0	20.91	20.98	20.92	20.93	22.00
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)				Tune-up Limit
				40240/ 2555	40540/ 2585	40840/ 2615	41140/ 2645	
20MHz	QPSK	1	0	22.63	22.85	22.71	22.83	24.00
		1	50	22.64	22.74	22.69	22.77	24.00
		1	99	22.78	22.96	**22.97**	22.59	24.00
		50	0	21.89	21.73	21.92	21.67	23.00
		50	25	21.88	21.90	**21.97**	21.64	23.00
		50	50	21.86	21.80	21.94	21.66	23.00
		100	0	21.94	21.88	21.93	21.80	23.00
	16QAM	1	0	21.93	22.02	22.12	22.11	23.00
		1	50	22.18	22.03	22.12	22.10	23.00
		1	99	22.02	22.04	22.06	22.05	23.00
		50	0	20.95	20.90	20.98	20.88	22.00
		50	25	21.07	20.97	20.93	20.96	22.00
		50	50	21.04	20.96	20.91	20.90	22.00
		100	0	21.09	20.93	20.95	20.97	22.00
	64QAM	1	0	21.83	21.88	21.89	21.95	23.00
		1	50	21.90	21.95	21.85	21.88	23.00
		1	99	22.00	21.98	21.96	21.93	23.00
		50	0	20.90	20.91	20.87	20.80	22.00
		50	25	20.91	20.96	20.94	20.89	22.00
		50	50	20.77	20.80	20.81	20.76	22.00
		100	0	20.89	20.94	20.89	20.91	22.00

LTE TDD Band 41 Rec off + sensor off				Conducted Power(dBm)				
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)				Tune-up Limit
				40165/ 2547.5	40515/ 2582.5	40865/ 2617.5	41215/ 2652.5	
5MHz	QPSK	1	0	19.82	19.84	19.83	19.87	21.00
		1	13	19.70	19.83	19.80	19.80	21.00
		1	24	19.91	19.91	19.92	19.90	21.00
		12	0	19.85	19.89	19.97	19.77	21.00
		12	6	19.87	19.87	19.92	19.90	21.00
		12	13	19.96	19.97	19.79	19.77	21.00
		25	0	19.91	19.88	19.91	19.76	21.00
	16QAM	1	0	19.97	19.98	19.89	20.05	21.00
		1	13	19.95	19.99	19.86	20.03	21.00
		1	24	19.97	20.04	19.93	20.03	21.00
		12	0	19.91	19.81	19.83	19.91	21.00
		12	6	19.95	19.91	19.96	19.87	21.00
		12	13	19.88	19.96	20.02	19.91	21.00
		25	0	19.86	19.83	19.84	19.89	21.00
	64QAM	1	0	19.88	19.89	19.91	19.80	21.00
		1	13	19.94	20.04	20.06	19.99	21.00
		1	24	19.87	19.88	19.91	19.83	21.00
		12	0	19.73	19.84	19.82	19.94	21.00
		12	6	19.92	19.92	19.90	19.91	21.00
		12	13	19.85	19.89	19.86	19.94	21.00
		25	0	19.87	19.90	19.89	19.83	21.00
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)				Tune-up Limit
				40190/ 2550	40523/ 2583.3	40856/ 2616.6	41190/2650	
10MHz	QPSK	1	0	19.84	19.85	19.86	19.89	21.00
		1	25	19.73	19.88	19.84	19.83	21.00
		1	49	19.93	19.95	19.95	19.92	21.00
		25	0	19.88	19.94	20.01	19.80	21.00
		25	13	19.90	19.92	19.96	19.93	21.00
		25	25	19.98	20.01	19.84	19.79	21.00
		50	0	19.95	19.90	19.95	19.80	21.00
	16QAM	1	0	19.99	20.01	19.91	20.07	21.00
		1	25	19.98	20.03	19.89	20.06	21.00
		1	49	20.00	20.06	19.96	20.06	21.00
		25	0	19.94	19.86	19.87	19.94	21.00
		25	13	19.97	19.95	19.99	19.89	21.00
		25	25	19.91	20.01	20.06	19.94	21.00

		50	0	19.89	19.88	19.88	19.92	21.00
	64QAM	1	0	19.90	19.88	19.93	19.82	21.00
		1	25	19.97	20.04	20.09	20.02	21.00
		1	49	19.86	19.90	19.94	19.82	21.00
		25	0	19.76	19.89	19.82	19.97	21.00
		25	13	19.94	19.96	19.93	19.93	21.00
		25	25	19.88	19.94	19.90	19.97	21.00
		50	0	19.90	19.95	19.93	19.86	21.00
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)				Tune-up Limit
				40215/ 2552.5	40531/ 2584.1	40848/ 2615.8	41165/ 2647.5	
15MHz	QPSK	1	0	19.83	19.81	19.84	19.88	21.00
		1	38	19.71	19.87	19.81	19.81	21.00
		1	74	19.90	19.90	19.91	19.89	21.00
		36	0	19.86	19.90	19.98	19.78	21.00
		36	18	19.87	19.87	19.92	19.90	21.00
		36	39	19.95	19.98	19.80	19.76	21.00
		75	0	19.93	19.86	19.90	19.78	21.00
	16QAM	1	0	19.94	19.99	19.89	20.02	21.00
		1	38	19.96	20.00	19.87	20.04	21.00
		1	74	19.97	20.02	19.93	20.03	21.00
		36	0	19.91	19.84	19.84	19.91	21.00
		36	18	19.94	19.90	19.95	19.86	21.00
		36	39	19.89	19.97	20.03	19.92	21.00
		75	0	19.86	19.83	19.84	19.89	21.00
	64QAM	1	0	19.85	19.86	19.91	19.77	21.00
		1	38	19.95	20.01	20.07	20.00	21.00
		1	74	19.87	19.89	19.95	19.83	21.00
		36	0	19.75	19.91	19.83	19.96	21.00
		36	18	19.92	19.93	19.92	19.91	21.00
		36	39	19.86	19.90	19.87	19.95	21.00
		75	0	19.87	19.90	19.89	19.83	21.00
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)				Tune-up Limit
				40240/ 2555	40540/ 2585	40840/ 2615	41140/ 2645	
20MHz	QPSK	1	0	19.80	19.77	19.81	19.85	21.00
		1	50	19.70	19.83	19.79	19.80	21.00
		1	99	19.88	**19.89**	19.88	19.87	21.00
		50	0	19.83	19.85	**19.94**	19.75	21.00
		50	25	19.85	19.83	19.89	19.88	21.00
		50	50	19.92	19.93	19.76	19.73	21.00
		100	0	19.90	19.81	19.86	19.75	21.00
	16QAM	1	0	19.91	19.95	19.84	19.98	21.00

		1	50	19.92	19.98	19.83	20.00	21.00
		1	99	19.95	19.99	19.91	20.01	21.00
		50	0	19.88	19.80	19.81	19.88	21.00
		50	25	19.91	19.88	19.92	19.83	21.00
		50	50	19.86	19.92	19.99	19.89	21.00
		100	0	19.84	19.79	19.81	19.87	21.00
	64QAM	1	0	19.83	19.82	19.86	19.75	21.00
		1	50	19.91	19.99	20.03	19.96	21.00
		1	99	19.81	19.83	19.89	19.77	21.00
		50	0	19.70	19.83	19.76	19.91	21.00
		50	25	19.88	19.89	19.86	19.87	21.00
		50	50	19.83	19.85	19.83	19.92	21.00
		100	0	19.85	19.86	19.86	19.81	21.00

Second - Antenna

LTE FDD Band 5				Conducted Power(dBm)			
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			Tune-up Limit
				20407/824.7	20525/836.5	20643/848.3	
1.4MHz	QPSK	1	0	22.00	22.06	22.13	23.00
		1	2	21.91	22.00	22.08	23.00
		1	5	22.01	21.93	22.15	23.00
		3	0	22.01	22.13	22.09	23.00
		3	2	21.98	22.08	22.13	23.00
		3	3	22.09	22.04	22.08	23.00
		6	0	21.98	22.02	22.10	23.00
	16QAM	1	0	22.61	22.63	22.68	23.00
		1	2	22.63	22.60	22.65	23.00
		1	5	22.39	22.38	22.42	23.00
		3	0	22.23	22.21	22.25	23.00
		3	2	22.21	22.18	22.24	23.00
		3	3	22.13	22.12	22.17	23.00
		6	0	22.19	22.18	22.22	22.50
	64QAM	1	0	22.28	22.57	22.36	23.00
		1	2	22.32	22.26	22.34	23.00
		1	5	22.28	22.26	22.31	23.00
		3	0	22.17	22.17	22.22	23.00
		3	2	22.14	22.11	22.19	23.00
		3	3	22.08	22.07	22.11	23.00
		6	0	22.09	22.09	22.13	22.50
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			Tune-up Limit
				20415/825.5	20525/836.5	20635/847.5	
3MHz	QPSK	1	0	22.02	22.11	22.16	23.00
		1	7	21.92	22.00	22.10	23.00
		1	14	22.05	21.99	22.20	23.00
		8	0	22.03	22.17	22.12	23.00
		8	4	22.00	22.12	22.18	23.00
		8	7	22.12	22.05	22.11	23.00
		15	0	21.96	22.05	22.13	23.00
	16QAM	1	0	22.67	22.66	22.71	23.00
		1	7	22.65	22.61	22.67	23.00
		1	14	22.42	22.42	22.46	23.00
		8	0	22.25	22.22	22.27	22.50
		8	4	22.25	22.24	22.29	22.50
		8	7	22.15	22.16	22.20	22.50
		15	0	22.21	22.22	22.27	22.50
	64QAM	1	0	22.34	22.60	22.39	23.00
		1	7	22.34	22.27	22.36	23.00

		1	14	22.27	22.27	22.31	23.00
		8	0	22.17	22.14	22.20	22.50
		8	4	22.17	22.15	22.21	22.50
		8	7	22.10	22.11	22.14	22.50
		15	0	22.11	22.13	22.18	22.50
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			Tune-up Limit
				20425/826.5	20525/836.5	20625/846.5	
5MHz	QPSK	1	0	21.99	22.09	22.12	23.00
		1	13	21.90	21.96	22.07	23.00
		1	24	22.02	21.94	22.16	23.00
		12	0	22.00	22.12	22.08	23.00
		12	6	21.98	22.08	22.13	23.00
		12	13	22.10	22.03	22.07	23.00
		25	0	21.96	22.04	22.11	23.00
	16QAM	1	0	22.64	22.62	22.68	23.00
		1	13	22.62	22.59	22.64	23.00
		1	24	22.39	22.40	22.42	23.00
		12	0	22.23	22.18	22.24	22.50
		12	6	22.22	22.19	22.25	22.50
		12	13	22.12	22.11	22.16	22.50
		25	0	22.19	22.18	22.22	22.50
	64QAM	1	0	22.31	22.60	22.36	23.00
		1	13	22.31	22.29	22.33	23.00
		1	24	22.28	22.25	22.27	23.00
		12	0	22.15	22.10	22.21	22.50
		12	6	22.14	22.10	22.17	22.50
		12	13	22.07	22.06	22.10	22.50
		25	0	22.09	22.09	22.13	22.50
Bandwidth	Modulation	RB allocation	offset	Channel/Frequency(MHz)			Tune-up Limit
				20450/829	20525/836.5	20600/844	
10MHz	QPSK	1	0	21.97	22.02	22.10	23.00
		1	25	21.90	21.96	22.06	23.00
		1	49	21.99	21.92	**22.12**	23.00
		25	0	21.98	22.08	22.05	23.00
		25	13	21.96	22.04	**22.10**	23.00
		25	25	22.06	21.99	22.04	23.00
		50	0	21.95	21.97	22.06	23.00
	16QAM	1	0	22.62	22.59	22.63	23.00
		1	25	22.59	22.58	22.61	23.00
		1	49	22.37	22.35	22.40	23.00
		25	0	22.20	22.17	22.22	22.50
		25	13	22.18	22.16	22.21	22.50
		25	25	22.10	22.07	22.13	22.50

		50	0	22.17	22.14	22.19	22.50
	64QAM	1	0	22.26	22.53	22.31	23.00
		1	25	22.28	22.24	22.30	23.00
		1	49	22.22	22.20	22.25	23.00
		25	0	22.12	22.09	22.15	22.50
		25	13	22.10	22.07	22.13	22.50
		25	25	22.05	22.02	22.07	22.50
		50	0	22.07	22.05	22.10	22.50

CA Combination	Test Scenario	Modulation	PCC (UL)						SCC1 (UL)					Conducted Power (dbm)	Tune up (dbm)
			PCC Band	PCC BW (MHz)	PCC UL RB size	PCC UL RB offset	PCC UL Channel	PCC DL Channel	SCC Band	SCC BW (MHz)	SCC UL Channel	SCC UL RB size	SCC UL RB offset		
CA_7C	Sensor off / Receiver on	QPSK	7	20	1	99	20850	2850	7	20	21048	1	0	22.87	24.00
		QPSK	7	20	1	99	21100	3100	7	20	21298	1	0	22.69	24.00
		QPSK	7	20	1	0	21100	3100	7	20	20902	1	99	22.72	24.00
		QPSK	7	20	1	0	21350	3350	7	20	21152	1	99	22.75	24.00
	Sensor on	16QAM	7	20	1	99	20850	2850	7	20	21048	1	0	18.92	20.00
		16QAM	7	20	1	99	21100	3100	7	20	21298	1	0	18.96	20.00
		16QAM	7	20	1	0	21100	3100	7	20	20902	1	99	18.88	20.00
		16QAM	7	20	1	0	21350	3350	7	20	21152	1	99	18.91	20.00
CA_38C	Sensor off / Receiver on	QPSK	38	20	1	99	37850	37850	38	20	38048	1	0	22.75	24.00
		QPSK	38	20	1	0	38150	38150	38	20	37952	1	99	22.79	24.00
	Sensor on	16QAM	38	20	1	99	37850	37850	38	20	38048	1	0	19.82	21.00
		16QAM	38	20	1	0	38150	38150	38	20	37952	1	99	19.77	21.00

9.4 WLAN Mode

Wi-Fi 2.4G Ant 1	Channel /Frequency(MHz)	Maximum Output Power (dBm)		
		Tune-up	Meas.	TP Set Level
802.11b (1M)	1/2412	18.50	16.98	17
	6/2437	18.50	**18.01**	17
	11/2462	18.50	16.78	17
802.11g (6M)	1/2412	17.50	15.72	16
	6/2437	17.50	16.71	16
	11/2462	17.50	15.11	16
802.11n-HT20 (MCS0)	1/2412	13.50	12.06	12
	6/2437	13.50	12.87	12
	11/2462	13.50	11.26	12
Note: Initial test configuration is 802.11b mode.				

Wi-Fi 2.4G Ant 2	Channel /Frequency(MHz)	Maximum Output Power (dBm)		
		Tune-up	Meas.	TP Set Level
802.11b (1M)	1/2412	17.50	16.09	17
	6/2437	17.50	16.33	17
	11/2462	17.50	**16.40**	17
802.11g (6M)	1/2412	16.50	15.12	16
	6/2437	16.50	15.18	16
	11/2462	16.50	15.08	16
802.11n-HT20 (MCS0)	1/2412	12.50	11.08	12
	6/2437	12.50	11.13	12
	11/2462	12.50	11.02	12
Note: Initial test configuration is 802.11b mode.				

Wi-Fi 2.4G MIMO	Channel /Frequency(MHz)	Maximum Output Power (dBm)					
		Tune-up	Meas.	TP Set Level	Ant 1	TP Set Level	Ant 2
802.11b (1M)	1/2412	22.01	19.40	17.00	16.61	17.00	16.16
	6/2437	22.01	**20.05**	17.00	17.82	17.00	16.09
	11/2462	22.01	19.28	17.00	16.31	17.00	16.23
802.11g (6M)	1/2412	21.01	18.35	16.00	15.58	16.00	15.09
	6/2437	21.01	18.54	16.00	16.19	16.00	14.76
	11/2462	20.01	16.91	15.00	14.12	15.00	13.66

802.11n-HT20 (MCS0)	1/2412	17.01	14.21	12.00	11.32	12.00	11.07
	6/2437	17.01	14.87	12.00	12.56	12.00	11.02
	11/2462	17.01	14.13	12.00	11.24	12.00	10.99
Note: Initial test configuration is 802.11b mode.							

Wi-Fi 5G (U-NII-1) Ant1	Channel /Frequency(MHz)	Maximum Output Power (dBm)		
		Tune-up	Meas.	TP Set Level
802.11a (6M)	36/5180	15.50	13.72	14
	40/5200	15.50	13.45	14
	44/5220	15.50	13.21	14
	48/5240	15.50	13.52	14
802.11n-HT20 (MCS0)	36/5180	15.50	13.76	14
	40/5200	15.50	13.54	14
	44/5220	15.50	13.68	14
	48/5240	15.50	13.28	14
802.11n-HT40 (MCS0)	38/5190	15.50	**14.32**	14
	46/5230	15.50	13.97	14
802.11ac-VHT20 (MCS0)	36/5180	14.00	12.18	12
	40/5200	14.00	12.09	12
	44/5220	14.00	11.87	12
	48/5240	14.00	11.30	12
802.11ac-VHT40 (MCS0)	38/5190	14.00	12.93	12
	46/5230	14.00	11.94	12
802.11ac-VHT80 (MCS0)	42/5210	14.00	12.35	12
Note. Initial test configuration is 802.11n-HT40 mode, since the highest maximum output power.				

Wi-Fi 5G (U-NII-2A) Ant1	Channel /Frequency(MHz)	Maximum Output Power (dBm)		
		Tune-up	Meas.	TP Set Level
802.11a (6M)	52/5260	16.00	13.72	14
	56/5280	16.00	13.97	14
	60/5300	16.00	14.18	14
	64/5320	16.00	14.27	14
802.11n-HT20 (MCS0)	52/5260	16.00	13.32	14
	56/5280	16.00	14.02	14
	60/5300	16.00	13.92	14
	64/5320	16.00	14.12	14

802.11n-HT40 (MCS0)	54/5270	16.00	14.31	14
	62/5310	16.00	**14.84**	14
802.11ac-HT20 (MCS0)	52/5260	14.00	11.77	12
	56/5280	14.00	11.62	12
	60/5300	14.00	11.19	12
	64/5320	14.00	10.95	12
802.11ac-HT40 (MCS0)	54/5270	14.00	13.33	12
	62/5310	14.00	11.98	12
802.11ac-HT80 (MCS0)	58/5290	14.00	12.12	12
Note. Initial test configuration is 802.11n-HT40 mode, since the highest maximum output power.				

Wi-Fi 5G (U-NII-2C) Ant1	Channel /Frequency(MHz)	Maximum Output Power (dBm)		
		Tune-up	Meas.	TP Set Level
802.11a (6M)	100/5500	16.00	14.15	14
	116/5580	16.00	14.02	14
	132/5660	16.00	13.98	14
	140/5700	16.00	14.26	14
802.11n-HT20 (MCS0)	100/5500	16.00	14.17	14
	116/5580	16.00	13.95	14
	132/5660	16.00	14.02	14
	140/5700	16.00	14.25	14
802.11n-HT40 (MCS0)	102/5510	16.00	**14.84**	14
	110/5550	16.00	14.53	14
	118/5590	16.00	14.74	14
	134/5670	16.00	14.60	14
802.11ac-HT20 (MCS0)	100/5500	14.00	11.96	12
	116/5580	14.00	12.05	12
	132/5660	14.00	11.87	12
	140/5700	14.00	12.09	12
802.11ac-HT40 (MCS0)	102/5510	14.00	13.00	12
	110/5550	14.00	12.90	12
	118/5590	14.00	12.83	12
	134/5670	14.00	12.82	12
802.11ac-HT80 (MCS0)	106/5530	14.00	13.17	12
	122/5610	14.00	12.67	12
Note. Initial test configuration is 802.11n-HT40 mode, since the highest maximum output power.				

Wi-Fi 5G	Channel	Maximum Output Power (dBm)

Ant1 Mode	/Frequency(MHz)	Tune-up	Meas.	TP Set Level
802.11a (6M)	149/5745	16.00	14.12	14
	157/5785	16.00	14.05	14
	165/5825	16.00	13.96	14
802.11n-HT20 (MCS0)	149/5745	16.00	13.97	14
	157/5785	16.00	13.92	14
	165/5825	16.00	13.82	14
802.11n-HT40 (MCS0)	151/5755	16.00	**15.02**	14
	159/5795	16.00	14.72	14
802.11ac-HT20 (MCS0)	149/5745	14.00	12.36	12
	157/5785	14.00	12.29	12
	165/5825	14.00	12.06	12
802.11ac-HT40 (MCS0)	151/5755	14.00	12.98	12
	159/5795	14.00	12.87	12
802.11ac-HT80 (MCS0)	155/5775	14.00	12.57	12
Note. Initial test configuration is 802.11n-HT40 mode, since the highest maximum output power.				

Wi-Fi 5G (U-NII-1) Ant2	Channel /Frequency(MHz)	Maximum Output Power (dBm)		
		Tune-up	Meas.	TP Set Level
802.11a (6M)	36/5180	16.00	14.30	14
	40/5200	16.00	14.32	14
	44/5220	16.00	14.15	14
	48/5240	16.00	14.33	14
802.11n-HT20 (MCS0)	36/5180	16.00	14.16	14
	40/5200	16.00	14.06	14
	44/5220	16.00	14.20	14
	48/5240	16.00	14.17	14
802.11n-HT40 (MCS0)	38/5190	16.00	14.87	14
	46/5230	16.00	**14.93**	14
802.11ac-VHT20 (MCS0)	36/5180	14.00	11.08	12
	40/5200	14.00	10.57	12
	44/5220	14.00	11.12	12
	48/5240	14.00	11.34	12
802.11ac-VHT40 (MCS0)	38/5190	14.00	11.39	12
	46/5230	14.00	11.65	12
802.11ac-VHT80 (MCS0)	42/5210	14.00	11.49	12
Note. Initial test configuration is 802.11n-HT40 mode, since the highest maximum output power.				

Wi-Fi 5G (U-NII-2A) Ant2	Channel /Frequency(MHz)	Maximum Output Power (dBm)		
		Tune-up	Meas.	TP Set Level
802.11a (6M)	52/5260	16.00	14.38	14
	56/5280	16.00	14.55	14
	60/5300	16.00	14.56	14
	64/5320	16.00	14.68	14
802.11n-HT20 (MCS0)	52/5260	16.00	14.32	14
	56/5280	16.00	14.29	14
	60/5300	16.00	14.36	14
	64/5320	16.00	14.61	14
802.11n-HT40 (MCS0)	54/5270	16.00	14.98	14
	62/5310	16.00	**15.13**	14
802.11ac-HT20 (MCS0)	52/5260	14.00	11.68	12
	56/5280	14.00	11.71	12
	60/5300	14.00	11.46	12

	64/5320	14.00	11.52	12
802.11ac-HT40 (MCS0)	54/5270	14.00	12.27	12
	62/5310	14.00	12.02	12
802.11ac-HT80 (MCS0)	58/5290	14.00	11.91	12
Note. Initial test configuration is 802.11n-HT40 mode, since the highest maximum output power.				

Wi-Fi 5G (U-NII-2C) Ant2	Channel /Frequency(MHz)	Maximum Output Power (dBm)		
		Tune-up	Meas.	TP Set Level
802.11a (6M)	100/5500	16.00	15.07	14
	116/5580	16.00	14.90	14
	132/5660	16.00	14.71	14
	140/5700	16.00	14.65	14
802.11n-HT20 (MCS0)	100/5500	16.00	15.05	14
	116/5580	16.00	14.78	14
	132/5660	16.00	14.69	14
	140/5700	16.00	14.48	14
802.11n-HT40 (MCS0)	102/5510	16.00	**15.70**	14
	110/5550	16.00	15.54	14
	118/5590	16.00	15.37	14
	134/5670	16.00	15.17	14
802.11ac-HT20 (MCS0)	100/5500	14.00	13.03	12
	116/5580	14.00	12.81	12
	132/5660	14.00	12.60	12
	140/5700	14.00	12.74	12
802.11ac-HT40 (MCS0)	102/5510	14.00	13.58	12
	110/5550	14.00	13.31	12
	118/5590	14.00	13.45	12
	134/5670	14.00	13.31	12
802.11ac-HT80 (MCS0)	106/5530	14.00	13.67	12
	122/5610	14.00	13.16	12
Note. Initial test configuration is 802.11n-HT40 mode, since the highest maximum output power.				

Wi-Fi 5G (U-NII-3) Ant2	Channel /Frequency(MHz)	Maximum Output Power (dBm)		
		Tune-up	Meas.	TP Set Level
802.11a (6M)	149/5745	16.00	14.56	14
	157/5785	16.00	14.83	14
	165/5825	16.00	14.72	14

802.11n-HT20 (MCS0)	149/5745	16.00	14.43	14
	157/5785	16.00	14.79	14
	165/5825	16.00	14.58	14
802.11n-HT40 (MCS0)	151/5755	16.00	**15.07**	14
	159/5795	16.00	15.05	14
802.11ac-HT20 (MCS0)	149/5745	14.00	12.67	12
	157/5785	14.00	12.93	12
	165/5825	14.00	12.92	12
802.11ac-HT40 (MCS0)	151/5755	14.00	13.08	12
	159/5795	14.00	13.39	12
802.11ac-HT80 (MCS0)	155/5775	14.00	12.89	12
Note. Initial test configuration is 802.11n-HT40 mode, since the highest maximum output power.				

Wi-Fi 5G (U-NII-1) MIMO	Channel /Frequency(MHz)	Maximum Output Power (dBm)					
		Tune-up	Meas.	TP Set Level	Ant1	TP Set Level	Ant2
802.11a (6M)	36/5180	18.51	16.47	14	13.72	14	13.18
	40/5200	18.51	16.23	14	13.45	14	12.97
	44/5220	18.51	16.15	14	13.21	14	13.06
	48/5240	18.51	16.10	14	12.67	14	13.47
802.11n-HT20 (MCS0)	36/5180	18.51	16.79	14	14.35	14	13.12
	40/5200	18.51	16.48	14	14.07	14	12.77
	44/5220	18.51	16.32	14	13.68	14	12.90
	48/5240	18.51	16.27	14	13.28	14	13.23
802.11n-HT40 (MCS0)	38/5190	17.51	15.69	13	13.26	13	12.00
	46/5230	18.51	**16.87**	14	13.97	14	13.74
802.11ac-VHT20 (MCS0)	36/5180	16.51	14.68	12	12.18	12	11.08
	40/5200	16.51	14.41	12	12.09	12	10.57
	44/5220	16.51	14.52	12	11.87	12	11.12
	48/5240	16.51	14.33	12	11.30	12	11.34
802.11ac-VHT40 (MCS0)	38/5190	16.51	15.24	12	12.93	12	11.39
	46/5230	16.51	14.81	12	11.94	12	11.65
802.11ac-VHT80 (MCS0)	42/5210	16.51	14.95	12	12.35	12	11.49
Note. Initial test configuration is 802.11n-HT40 mode, since the highest maximum output power.							

Wi-Fi 5G (U-NII-2A) MIMO	Channel /Frequency(MHz)	Maximum Output Power (dBm)					
		Tune-up	Meas.	TP Set Level	Ant1	TP Set Level	Ant2
802.11a (6M)	52/5260	18.51	16.35	14	13.11	14	13.55
	56/5280	18.51	16.33	14	12.99	14	13.62
	60/5300	18.51	15.98	14	12.50	14	13.40
	64/5320	18.51	16.17	14	12.27	14	13.89
802.11n-HT20 (MCS0)	52/5260	18.51	16.49	14	13.32	14	13.64
	56/5280	18.51	16.40	14	13.28	14	13.49
	60/5300	18.51	16.22	14	13.01	14	13.41
	64/5320	18.51	16.21	14	12.62	14	13.71
802.11n-HT40 (MCS0)	54/5270	18.51	**17.05**	14	13.86	14	14.21
	62/5310	17.51	15.24	13	11.96	13	12.48
802.11ac-HT20 (MCS0)	52/5260	16.51	14.74	12	11.77	12	11.68
	56/5280	16.51	14.68	12	11.62	12	11.71
	60/5300	16.51	14.34	12	11.19	12	11.46
	64/5320	16.51	14.25	12	10.95	12	11.52
802.11ac-HT40 (MCS0)	54/5270	16.51	15.84	12	13.33	12	12.27
	62/5310	16.51	15.01	12	11.98	12	12.02
802.11ac-HT80 (MCS0)	58/5290	16.51	15.03	12	12.12	12	11.91
Note. Initial test configuration is 802.11n-HT40 mode, since the highest maximum output power.							

Wi-Fi 5G (U-NII-2C) MIMO	Channel /Frequency(MHz)	Maximum Output Power (dBm)					
		Tune-up	Meas.	TP Set Level	Ant1	TP Set Level	Ant2
802.11a (6M)	100/5500	18.51	14.75	14	12.12	14	11.32
	116/5580	18.51	15.64	14	12.10	14	13.10
	132/5660	18.51	15.37	14	11.69	14	12.94
	140/5700	18.51	15.28	14	11.54	14	12.89
802.11n-HT20 (MCS0)	100/5500	18.51	16.21	14	12.19	14	14.02
	116/5580	18.51	15.69	14	12.03	14	13.25
	132/5660	18.51	15.31	14	11.74	14	12.80
	140/5700	18.51	15.25	14	11.82	14	12.62
802.11n-HT40 (MCS0)	102/5510	17.51	15.51	13	11.62	13	13.23
	110/5550	18.51	**16.66**	14	12.85	14	14.32
	118/5590	18.51	16.12	14	12.34	14	13.77
	134/5670	18.51	15.30	14	11.81	14	12.72
802.11ac-HT20	100/5500	16.51	14.35	12	10.47	12	12.06

(MCS0)	116/5580	16.51	14.02	12	10.23	12	11.67
	132/5660	16.51	13.52	12	10.15	12	10.85
	140/5700	16.51	13.38	12	9.93	12	10.76
802.11ac-HT40 (MCS0)	102/5510	16.51	15.07	12	11.40	12	12.63
	110/5550	16.51	14.79	12	11.28	12	12.22
	118/5590	16.51	14.33	12	10.58	12	11.95
	134/5670	16.51	13.55	12	10.23	12	10.82
802.11ac-HT80 (MCS0)	106/5530	16.51	14.75	12	11.07	12	12.33
	122/5610	16.51	13.74	12	10.07	12	11.30
Note. Initial test configuration is 802.11n-HT40 mode, since the highest maximum output power.							

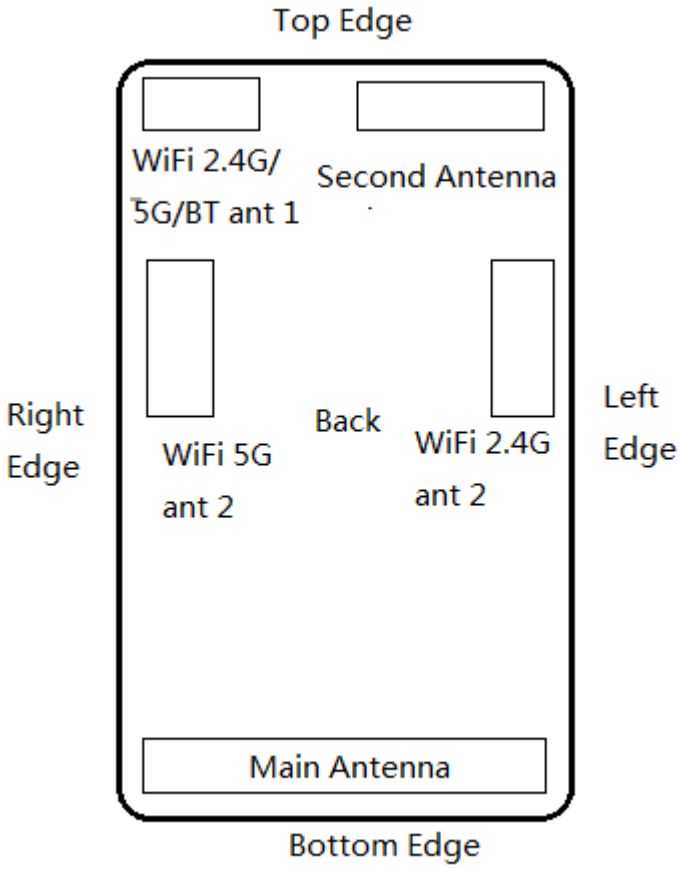
Wi-Fi 5G (U-NII-3) MIMO	Channel /Frequency(MHz)	Maximum Output Power (dBm)					
		Tune-up	Meas.	TP Set Level	Ant1	TP Set Level	Ant2
802.11a (6M)	149/5745	18.51	15.27	14	12.01	14	12.50
	157/5785	18.51	15.33	14	11.81	14	12.77
	165/5825	18.51	15.13	14	11.84	14	12.38
802.11n-HT20 (MCS0)	149/5745	18.51	15.14	14	11.94	14	12.31
	157/5785	18.51	15.26	14	11.87	14	12.60
	165/5825	18.51	14.90	14	11.72	14	12.06
802.11n-HT40 (MCS0)	151/5755	18.51	**15.88**	14	12.81	14	12.92
	159/5795	18.51	15.58	14	12.43	14	12.71
802.11ac-HT20 (MCS0)	149/5745	16.51	13.21	12	10.07	12	10.32
	157/5785	16.51	13.48	12	10.09	12	10.81
	165/5825	16.51	13.14	12	9.73	12	10.50
802.11ac-HT40 (MCS0)	151/5755	16.51	14.18	12	11.18	12	11.15
	159/5795	16.51	13.81	12	10.67	12	10.92
802.11ac-HT80 (MCS0)	155/5775	16.51	13.81	12	10.69	12	10.90
Note. Initial test configuration is 802.11n-HT40 mode, since the highest maximum output power.							

9.5 Bluetooth Mode

BT	Conducted Power(dBm)			Tune-up Limit (dBm)
	Channel/Frequency(MHz)			
	Ch 0/2402 MHz	Ch 39/2441 MHz	Ch 78/2480 MHz	
GFSK	9.74	10.18	9.83	11.00
π/4DQPSK	9.25	9.55	9.32	10.00
8DPSK	9.14	9.54	9.37	10.00
BLE	**Ch 0/2402 MHz**	**Ch 19/2440 MHz**	**Ch 39/2480 MHz**	**Tune-up Limit (dBm)**
GFSK(1M)	-2.82	-2.80	-4.09	0.50
GFSK(2M)	-5.74	-5.77	-6.86	0.50
GFSK(125k)	-2.07	-1.60	-2.94	0.50
GFSK(500K)	-3.35	-3.18	-4.36	0.50

10 Measured and Reported (Scaled) SAR Results

10.1 EUT Antenna Locations



Overall (Length x Width): 165 mm x 77 mm Overall Diagonal: 175 mm/Display Diagonal: 165mm						
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
Wi-Fi 2.4G/5G/BT Ant 1	<25mm	<25mm	>25mm	<25mm	<25mm	>25mm
Wi-Fi 2.4G Ant 2	<25mm	<25mm	<25mm	>25mm	<25mm	>25mm
Wi-Fi 5G Ant 2	<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
Wi-Fi 2.4G/5G/BT Ant 1	Yes	Yes	N/A	Yes	Yes	N/A
Wi-Fi 2.4G Ant 2	Yes	Yes	Yes	N/A	Yes	N/A

Wi-Fi 5G Ant 2	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 175mm.Per KDB 648474 D04, for smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension> 16.0 cm, product specific 10-g SAR must be tested as a phablet to determine SAR compliance. For Phablet, Since hotspot mode 1-g *reported* SAR < 1.2 W/kg, product specific 10-g SAR is no required.

3. Per FCC KDB 447498 D01,

for each exposure position, testing of other 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.

10.2 Measured SAR Results

Table 10: GSM 850 (Main-antenna)

Test Position	Cover Type	Dist. (mm)	sensor	Time slot	Duty Cycle	Channel/ Frequency (MHz)	Tune-up (dBm)	Measured power (dBm)	Limit of SAR 1.6 W/kg (mW/g)				Plot No.
									Measure dSAR1g	Power Drift (dB)	Scaling Factor	Report SAR1g	
Head SAR													
Left Cheek	standard	0	NA	GSM	1:8.3	190/836.6	34.00	33.44	0.081	0.059	1.14	0.092	/
Left Tilt	standard	0	NA	GSM	1:8.3	190/836.6	34.00	33.44	0.051	-0.100	1.14	0.058	/
Right Cheek	standard	0	NA	GSM	1:8.3	190/836.6	34.00	33.44	0.089	0.032	1.14	0.101	13
Right Tilt	standard	0	NA	GSM	1:8.3	190/836.6	34.00	33.44	0.049	0.061	1.14	0.055	/
Right Cheek	SIM2	0	NA	GSM	1:8.3	190/836.6	34.00	33.44	0.062	0.024	1.14	0.071	/
Body-worn SAR													
Back Side	standard	10	NA	4Txslots	1:2.07	190/836.6	28.00	26.95	0.191	0.080	1.27	0.243	14
Front Side	standard	10	NA	4Txslots	1:2.07	190/836.6	28.00	26.95	0.125	0.030	1.27	0.159	/
Hotspot SAR													
Back Side	standard	10	NA	4Txslots	1:2.07	190/836.6	28.00	26.95	0.191	0.080	1.27	0.243	/
Front Side	standard	10	NA	4Txslots	1:2.07	190/836.6	28.00	26.95	0.125	0.030	1.27	0.159	/
Left Edge	standard	10	NA	4Txslots	1:2.07	190/836.6	28.00	26.95	0.103	0.100	1.27	0.131	/
Right Edge	standard	10	NA	4Txslots	1:2.07	190/836.6	28.00	26.95	0.016	0.020	1.27	0.020	/
Top Edge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bottom Edge	standard	10	NA	4Txslots	1:2.07	190/836.6	28.00	26.95	0.166	0.170	1.27	0.211	/
Back Side	SIM2	10	NA	4Txslots	1:2.07	190/836.6	28.00	26.95	0.232	0.024	1.27	0.295	15

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

2.When multiple slots are used, SAR should be tested to account for the maximum source-based time-averaged output power.

Table 11: GSM 1900(Main-antenna)

Test Position	Cover Type	Dist. (mm)	sensor	Time slot	Duty Cycle	Channel/ Frequency (MHz)	Tune-up (dBm)	Measured power (dBm)	Limit of SAR 1.6 W/kg (mW/g)				Plot No.
									Measure dSAR1g	Power Drift (dB)	Scaling Factor	Report SAR1g	
Head SAR													
Left Cheek	standard	0	NA	GSM	1:8.3	661/1880	30.50	30.05	0.049	0.038	1.11	0.054	/
Left Tilt	standard	0	NA	GSM	1:8.3	661/1880	30.50	30.05	0.049	0.109	1.11	0.055	16
Right Cheek	standard	0	NA	GSM	1:8.3	661/1880	30.50	30.05	0.022	0.010	1.11	0.024	/
Right Tilt	standard	0	NA	GSM	1:8.3	661/1880	30.50	30.05	0.015	0.062	1.11	0.017	/
Left Tilt	SIM2	0	NA	GSM	1:8.3	661/1880	30.50	30.05	0.032	0.000	1.11	0.035	/
Body-worn SAR													
Back Side	standard	10	on	4Txslots	1:2.07	661/1880	22.00	20.73	0.279	0.035	1.34	0.374	17
Front Side	standard	10	on	4Txslots	1:2.07	661/1880	22.00	20.73	0.155	-0.080	1.34	0.208	/
Hotspot SAR													
Back Side	standard	10	on	4Txslots	1:2.07	661/1880	22.00	20.73	0.279	0.035	1.34	0.374	/
Front Side	standard	10	on	4Txslots	1:2.07	661/1880	22.00	20.73	0.155	-0.080	1.34	0.208	/
Left Edge	standard	10	off	4Txslots	1:2.07	661/1880	24.50	23.17	0.058	-0.080	1.36	0.079	/
Right Edge	standard	10	off	4Txslots	1:2.07	661/1880	24.50	23.17	0.065	0.050	1.36	0.088	/
Top Edge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bottom Edge	standard	10	on	4Txslots	1:2.07	661/1880	22.00	20.73	0.385	0.024	1.34	0.516	18
Bottom Edge	SIM2	10	on	4Txslots	1:2.07	661/1880	22.00	20.73	0.349	0.060	1.34	0.468	/
Additional SAR test at a conserative distance (triggering distance minus 1mm)													
Back Side	standard	16	off	4Txslots	1:2.07	661/1880	24.50	23.17	0.229	0.090	1.36	0.311	/
Front Side	standard	11	off	4Txslots	1:2.07	661/1880	24.50	23.17	0.238	0.050	1.36	0.323	/
Bottom Edge	standard	16	off	4Txslots	1:2.07	661/1880	24.50	23.17	0.319	0.150	1.36	0.433	/

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.

MAX Adjusted SAR								
Test Position	Cover Type	Channel/ Frequency (MHz)	Full power (dBm)	Tune-up (dBm)	Report SAR10g (mW/g)	Scaling Factor	Full power Report SAR10g (mW/g)	0mm SAR
Back Side	standard	661/1880	24.50	22.00	0.374	1.78	0.665	No
Front Side	standard	661/1880	24.50	22.00	0.208	1.78	0.369	No
Bottom Edge	standard	661/1880	24.50	22.00	0.516	1.78	0.917	No

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

Table 12: UMTS Band II (Main-antenna)

Test Position	Cover Type	Dist. (mm)	sensor	Channel Type	Duty Cycle	Channel/ Frequency (MHz)	Tune-up (dBm)	Measured power (dBm)	Limit of SAR 1.6 W/kg (mW/g)				Plot No.
									Measure dSAR1g	Power Drift (dB)	Scaling Factor	Report SAR1g	
Head SAR													
Left Cheek	standard	0	NA	RMC12.2K	1:1	9400/1880	24.00	23.25	0.098	0.092	1.19	0.116	19
Left Tilt	standard	0	NA	RMC12.2K	1:1	9400/1880	24.00	23.25	0.052	0.028	1.19	0.061	/
Right Cheek	standard	0	NA	RMC12.2K	1:1	9400/1880	24.00	23.25	0.069	0.070	1.19	0.081	/
Right Tilt	standard	0	NA	RMC12.2K	1:1	9400/1880	24.00	23.25	0.085	-0.110	1.19	0.100	/
Left Cheek	SIM2	0	NA	RMC12.2K	1:1	9400/1880	24.00	23.25	0.075	0.034	1.19	0.089	/
Body-worn SAR													
Back Side	standard	10	on	RMC12.2K	1:1	9400/1880	19.00	18.24	0.259	0.140	1.19	0.309	20
Front Side	standard	10	on	RMC12.2K	1:1	9400/1880	19.00	18.24	0.168	0.110	1.19	0.200	/
Hotspot SAR													
Back Side	standard	10	on	RMC12.2K	1:1	9400/1880	19.00	18.24	0.259	0.140	1.19	0.309	/
Front Side	standard	10	on	RMC12.2K	1:1	9400/1880	19.00	18.24	0.168	0.110	1.19	0.200	/
Left Edge	standard	10	off	RMC12.2K	1:1	9400/1880	24.00	23.25	0.065	-0.060	1.19	0.077	/
Right Edge	standard	10	off	RMC12.2K	1:1	9400/1880	24.00	23.25	0.072	-0.022	1.19	0.086	/
Top Edge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bottom Edge	standard	10	on	RMC12.2K	1:1	9400/1880	19.00	18.24	0.447	-0.090	1.19	0.532	21
Additional SAR test at a conserative distance (triggering distance minus 1mm)													
Back Side	standard	16	off	RMC12.2K	1:1	9400/1880	24.00	23.25	0.469	0.151	1.19	0.557	/
Front Side	standard	11	off	RMC12.2K	1:1	9400/1880	24.00	23.25	0.464	0.110	1.19	0.551	/
Bottom Edge	standard	16	off	RMC12.2K	1:1	9400/1880	24.00	23.25	0.458	0.024	1.19	0.544	/
Back Side	SIM2	16	off	RMC12.2K	1:1	9400/1880	24.00	23.25	0.454	0.090	1.19	0.540	/
Test Position	Cover Type	Dist. (mm)	sensor	Channel Type	Duty Cycle	Channel/ Frequency (MHz)	Tune-up (dBm)	Measured power (dBm)	Limit of SAR 4W/kg (mW/g)				Plot No.
									Measure dSAR1g	Power Drift (dB)	Scaling Factor	Report SAR1g	
Product Specific 10-g SAR (Distance 0mm)													
Bottom Edge	standard	0	on	RMC12.2K	1:1	9400/1880	19.00	18.24	2.940	-0.080	1.19	1.561	22
Bottom Edge	SIM2	0	on	RMC12.2K	1:1	9400/1880	19.00	18.24	2.770	0.094	1.19	1.489	/

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.

MAX Adjusted SAR								
Test Position	Cover Type	Channel/ Frequency (MHz)	Full power (dBm)	Tune-up (dBm)	Report SAR10g (mW/g)	Scaling Factor	Full power Report SAR10g (mW/g)	0mm SAR
Back Side	standard	9400/1880	24.00	19.00	0.309	3.16	0.976	No
Front Side	standard	9400/1880	24.00	19.00	0.200	3.16	0.633	No
Bottom Edge	standard	9400/1880	24.00	19.00	0.532	3.16	1.684	Yes
Note: According to 648474 D04 Handset SAR v01r03, For Phablet, Since hotspot mode 1-g reported SAR < 1.2 W/kg, Product Specific 10-g SAR is not required.								

Table 13: UMTS Band IV (Main-antenna)

Test Position	Cover Type	Dist. (mm)	sensor	Channel Type	Duty Cycle	Channel/ Frequency (MHz)	Tune-up (dBm)	Measured power (dBm)	Limit of SAR 1.6 W/kg (mW/g)				Plot No.
									Measure dSAR1g	Power Drift (dB)	Scaling Factor	Report SAR1g	
Head SAR													
Left Cheek	standard	0	NA	RMC12.2K	1:1	1413/1732.6	24.00	23.30	0.100	0.121	1.17	0.117	23
Left Tilt	standard	0	NA	RMC12.2K	1:1	1413/1732.6	24.00	23.30	0.044	0.190	1.17	0.052	/
Right Cheek	standard	0	NA	RMC12.2K	1:1	1413/1732.6	24.00	23.30	0.023	0.018	1.17	0.027	/
Right Tilt	standard	0	NA	RMC12.2K	1:1	1413/1732.6	24.00	23.30	0.010	-0.056	1.17	0.012	/
Left Cheek	SIM2	0	NA	RMC12.2K	1:1	1413/1732.6	24.00	23.30	0.087	0.028	1.17	0.102	/
Body-worn SAR													
Back Side	standard	10	on	RMC12.2K	1:1	1413/1732.6	19.50	18.81	0.295	0.051	1.17	0.346	24
Front Side	standard	10	on	RMC12.2K	1:1	1413/1732.6	19.50	18.81	0.181	-0.010	1.17	0.212	/
Hotspot SAR													
Back Side	standard	10	on	RMC12.2K	1:1	1413/1732.6	19.50	18.81	0.295	0.051	1.17	0.346	/
Front Side	standard	10	on	RMC12.2K	1:1	1413/1732.6	19.50	18.81	0.181	-0.010	1.17	0.212	/
Left Edge	standard	10	off	RMC12.2K	1:1	1413/1732.6	24.00	23.30	0.093	-0.040	1.17	0.110	/
Right Edge	standard	10	off	RMC12.2K	1:1	1413/1732.6	24.00	18.81	0.121	0.100	3.30	0.400	/
Top Edge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bottom Edge	standard	10	on	RMC12.2K	1:1	1413/1732.6	19.50	18.81	0.411	-0.021	1.17	0.482	25
Additional SAR test at a conserative distance (triggering distance minus 1mm)													
Back Side	standard	16	off	RMC12.2K	1:1	1413/1732.6	24.00	23.30	0.384	-0.020	1.17	0.451	/
Front Side	standard	11	off	RMC12.2K	1:1	1413/1732.6	24.00	23.30	0.395	0.130	1.17	0.464	/
Bottom Edge	standard	16	off	RMC12.2K	1:1	1413/1732.6	24.00	23.30	0.473	-0.060	1.17	0.556	/
Bottom Edge	SIM2	16	off	RMC12.2K	1:1	1413/1732.6	24.00	23.30	0.452	0.094	1.17	0.531	/
Test Position	**Cover Type**	**Dist. (mm)**	**sensor**	**Channel Type**	**Duty Cycle**	**Channel/ Frequency (MHz)**	**Tune-up (dBm)**	**Measured power (dBm)**	**Limit of SAR 4W/kg (mW/g)**				**Plot No.**
									Mea. SAR10g	**Power Drift (dB)**	**Scaling Factor**	**Report SAR1g**	
Product Specific 10-g SAR (Distance 0mm)													
Bottom Edge	standard	0	on	RMC12.2K	1:1	1413/1732.6	19.50	18.81	1.340	0.160	1.17	1.571	26
Bottom Edge	SIM2	0	on	RMC12.2K	1:1	1413/1732.6	19.50	18.81	1.220	0.030	1.17	1.430	/

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.

MAX Adjusted SAR								
Test Position	Cover Type	Channel/ Frequency (MHz)	Full power (dBm)	Tune-up (dBm)	Report SAR10g (mW/g)	Scaling Factor	Full power Report SAR10g (mW/g)	0mm SAR
Back Side	standard	1413/1732.6	24.00	19.50	0.346	2.82	0.975	No
Front Side	standard	1413/1732.6	24.00	19.50	0.212	2.82	0.598	No
Bottom Edge	standard	1413/1732.6	24.00	19.50	0.482	2.82	1.358	Yes
Note: According to 648474 D04 Handset SAR v01r03, For Phablet, Since hotspot mode 1-g reported SAR < 1.2 W/kg, Product Specific 10-g SAR is not required.								

Table 14: UMTS Band V (Main-antenna)

Test Position	Cover Type	Dist. (mm)	sensor	Channel Type	Duty Cycle	Channel/ Frequency (MHz)	Tune-up (dBm)	Measured power (dBm)	Limit of SAR 1.6 W/kg (mW/g)				Plot No.
									Measure dSAR1g	Power Drift (dB)	Scaling Factor	Report SAR1g	
Head SAR													
Left Cheek	standard	0	NA	RMC12.2K	1:1	4183/836.6	25.00	24.44	0.085	0.030	1.14	0.096	/
Left Tilt	standard	0	NA	RMC12.2K	1:1	4183/836.6	25.00	24.44	0.054	0.065	1.14	0.061	/
Right Cheek	standard	0	NA	RMC12.2K	1:1	4183/836.6	25.00	24.44	0.098	0.134	1.14	0.111	27
Right Tilt	standard	0	NA	RMC12.2K	1:1	4183/836.6	25.00	24.44	0.048	-0.021	1.14	0.054	/
Right Cheek	SIM2	0	NA	RMC12.2K	1:1	4183/836.6	25.00	24.44	0.084	0.015	1.14	0.096	/
Body-worn SAR													
Back Side	standard	10	on	RMC12.2K	1:1	4183/836.6	25.00	24.44	0.186	0.040	1.14	0.212	28
Front Side	standard	10	on	RMC12.2K	1:1	4183/836.6	25.00	24.44	0.140	0.020	1.14	0.159	/
Hotspot SAR													
Back Side	standard	10	NA	RMC12.2K	1:1	4183/836.6	25.00	24.44	0.186	0.040	1.14	0.212	/
Front Side	standard	10	NA	RMC12.2K	1:1	4183/836.6	25.00	24.44	0.140	0.020	1.14	0.159	/
Left Edge	standard	10	NA	RMC12.2K	1:1	4183/836.6	25.00	24.44	0.103	0.030	1.14	0.117	/
Right Edge	standard	10	NA	RMC12.2K	1:1	4183/836.6	25.00	24.44	0.013	0.025	1.14	0.014	/
Top Edge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bottom Edge	standard	10	NA	RMC12.2K	1:1	4183/836.6	25.00	24.44	0.195	-0.029	1.14	0.222	29
Bottom Edge	SIM2	10	NA	RMC12.2K	1:1	4183/836.6	25.00	24.44	0.188	0.062	1.14	0.214	/

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.

Table 15: LTE Band 2 (20MHz, Main-antenna)

Test Position	Cover Type	Dist. (mm)	sensor	Duty Cycle	RB allocation	RB offset	Channel/ Frequency (MHz)	Tune-up (dBm)	Measured power (dBm)	Limit of SAR 1.6 W/kg (mW/g)				Plot No.
										Mea. SAR1g	Power Drift (dB)	Scaling Factor	Report SAR1g	
Head SAR (QPSK)														
Left Cheek	standard	0	NA	1:1	1	50	18700/1860	24.00	22.95	0.160	0.090	1.27	0.204	/
Left Tilt	standard	0	NA	1:1	1	50	18700/1860	24.00	22.95	0.163	0.026	1.27	0.208	/
Right Cheek	standard	0	NA	1:1	1	50	18700/1860	24.00	22.95	0.093	0.030	1.27	0.118	/
Right Tilt	standard	0	NA	1:1	1	50	18700/1860	24.00	22.95	0.141	0.152	1.27	0.180	/
Left Cheek	standard	0	NA	1:1	50%	50	18700/1860	23.00	21.83	0.169	0.162	1.31	0.221	/
Left Tilt	standard	0	NA	1:1	50%	50	18700/1860	23.00	21.83	0.159	-0.073	1.31	0.208	/
Right Cheek	standard	0	NA	1:1	50%	50	18700/1860	23.00	21.83	0.196	-0.042	1.31	0.257	30
Right Tilt	standard	0	NA	1:1	50%	50	18700/1860	23.00	21.83	0.101	0.047	1.31	0.132	/
Right Cheek	SIM2	0	NA	1:1	50%	50	18700/1860	23.00	21.83	0.182	0.010	1.31	0.238	/
Body-worn SAR														
Back Side	standard	10	on	1:1	1	0	18900/1880	19.00	17.78	0.334	0.180	1.32	0.442	31
Front Side	standard	10	on	1:1	1	0	18900/1880	19.00	17.78	0.169	0.030	1.32	0.224	/
Back Side	standard	10	on	1:1	50%	0	18900/1880	19.00	17.79	0.331	0.020	1.32	0.437	/
Front Side	standard	10	on	1:1	50%	0	18900/1880	19.00	17.79	0.173	0.010	1.32	0.229	/
Hotspot SAR														
Back Side	standard	10	on	1:1	1	0	18900/1880	19.00	17.78	0.334	0.180	1.32	0.442	/
Front Side	standard	10	on	1:1	1	0	18900/1880	19.00	17.78	0.169	0.030	1.32	0.224	/
Left Edge	standard	10	off	1:1	1	50	18700/1860	24.00	22.95	0.080	0.160	1.27	0.102	/
Right Edge	standard	10	off	1:1	1	50	18700/1860	24.00	22.95	0.096	-0.020	1.27	0.122	/
Top Edge	N/A	NA	NA	1:1	NA	NA	NA	NA	NA	NA	NA	NA	NA	N/A
Bottom Edge	standard	10	on	1:1	1	0	18900/1880	19.00	17.78	0.479	-0.170	1.32	0.634	32
Back Side	standard	10	on	1:1	50%	0	18900/1880	19.00	17.79	0.331	0.020	1.32	0.437	/
Front Side	standard	10	on	1:1	50%	0	18900/1880	19.00	17.79	0.173	0.010	1.32	0.229	/
Left Edge	standard	10	off	1:1	50%	50	18700/1860	23.00	21.83	0.070	0.060	1.31	0.091	/
Right Edge	standard	10	off	1:1	50%	50	18700/1860	23.00	21.83	0.083	-0.020	1.31	0.108	/
Top Edge	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	N/A
Bottom Edge	standard	10	on	1:1	50%	0	18900/1880	19.00	17.79	0.479	-0.170	1.32	0.633	/
Additional SAR test at a conserative distance (triggering distance minus 1mm)														
Back Side	standard	16	off	1:1	1	50	18700/1860	24.00	22.95	0.409	-0.090	1.27	0.521	/
Front Side	standard	11	off	1:1	1	50	18700/1860	24.00	22.95	0.540	0.055	1.27	0.688	/
Left Edge	standard	16	off	1:1	1	50	18700/1860	24.00	22.95	0.624	0.060	1.27	0.795	/
Right Edge	standard	16	off	1:1	50%	50	18700/1860	23.00	21.83	0.344	-0.060	1.31	0.450	/
Top Edge	standard	11	off	1:1	50%	50	18700/1860	23.00	21.83	0.443	0.020	1.31	0.580	/

Bottom Edge	standard	16	off	1:1	50%	50	18700/1860	23.00	21.83	0.506	0.030	1.31	0.662	/
Bottom Edge	SIM2	16	off	1:1	1	50	18700/1860	24.00	22.95	0.589	0.018	1.27	0.750	/
Test Position	**Cover Type**	**Dist. (mm)**	**sensor**	**Duty Cycle**	**RB allocation**	**RB offset**	**Channel/ Frequency (MHz)**	**Tune-up (dBm)**	**Measured power (dBm)**	**Limit of SAR 4 W/kg (mW/g)**				**Plot No.**
										Mea. SAR10g	**Power Drift (dB)**	**Scaling Factor**	**Report SAR1g**	
Product Specific 10-g SAR (Distance 0mm)														
Back Side	standard	0	on	1:1	1	0	18900/1880	19.00	17.78	0.991	0.029	1.32	1.312	/
Bottom Edge	standard	0	on	1:1	1	0	18900/1880	19.00	17.78	1.300	0.100	1.32	1.722	/
Bottom Edge	standard	0	on	1:1	50%	0	18900/1880	19.00	17.79	1.420	0.021	1.32	1.876	33
Bottom Edge	SIM2	0	on	1:1	50%	0	18900/1880	19.00	17.79	1.350	0.054	1.32	1.784	/

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).

MAX Adjusted SAR												
Test Position	**Cover Type**	**Dist. (mm)**	**P-Sensor**	**RB allocation**	**RB offset**	**Channel/ Frequency (MHz)**	**Full power (dBm)**	**Tune-up (dBm)**	**Report SAR10g (mW/g)**	**Scaling Factor**	**Full power Report SAR10g (mW/g)**	**0mm SAR**
Back Side	standard	10	on	1	0	18900/1880	24.00	19.00	0.442	3.16	1.399	Yes
Front Side	standard	10	on	1	0	18900/1880	24.00	19.00	0.224	3.16	0.708	No
Bottom Edge	standard	10	on	1	0	18900/1880	24.00	19.00	0.634	3.16	2.006	Yes
Back Side	standard	10	on	50%	0	18900/1880	23.00	19.00	0.437	2.51	1.099	No
Front Side	standard	10	on	50%	0	18900/1880	23.00	19.00	0.229	2.51	0.574	No
Bottom Edge	standard	10	on	50%	0	18900/1880	23.00	19.00	0.633	2.51	1.590	Yes

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

Table 16: LTE Band 4 (20MHz, Main-antenna)

Test Position	Cover Type	Dist. (mm)	sensor	Duty Cycle	RB allocation	RB offset	Channel/ Frequency (MHz)	Tune-up (dBm)	Measured power (dBm)	Limit of SAR 1.6 W/kg (mW/g)				Plot No.
										Mea. SAR1g	Power Drift (dB)	Scaling Factor	Report SAR1g	
Head SAR (QPSK)														
Left Cheek	standard	0	NA	1:1	1	0	20175/1732.5	24.00	22.84	0.057	0.112	1.31	0.075	34
Left Tilt	standard	0	NA	1:1	1	0	20175/1732.5	24.00	22.84	0.033	-0.085	1.31	0.043	/
Right Cheek	standard	0	NA	1:1	1	0	20175/1732.5	24.00	22.84	0.013	-0.029	1.31	0.017	/
Right Tilt	standard	0	NA	1:1	1	0	20175/1732.5	24.00	22.84	0.021	-0.140	1.31	0.027	/
Left Cheek	standard	0	NA	1:1	50%	0	20175/1732.5	23.00	21.87	0.046	0.081	1.30	0.059	/
Left Tilt	standard	0	NA	1:1	50%	0	20175/1732.5	23.00	21.87	0.029	0.061	1.30	0.037	/
Right Cheek	standard	0	NA	1:1	50%	0	20175/1732.5	23.00	21.87	0.013	0.079	1.30	0.017	/
Right Tilt	standard	0	NA	1:1	50%	0	20175/1732.5	23.00	21.87	0.019	-0.057	1.30	0.025	/
Left Cheek	SIM2	0	NA	1:1	1	0	20175/1732.5	24.00	22.84	0.049	0.022	1.31	0.064	/
Body-worn SAR (QPSK)														
Back Side	standard	10	on	1:1	1	0	20175/1732.5	19.50	18.38	0.353	0.140	1.29	0.457	35
Front Side	standard	10	on	1:1	1	0	20175/1732.5	19.50	18.38	0.183	0.040	1.29	0.237	/
Back Side	standard	10	on	1:1	50%	0	20050/1720	19.50	18.35	0.339	0.110	1.30	0.442	/
Front Side	standard	10	on	1:1	50%	0	20050/1720	19.50	18.35	0.181	-0.050	1.30	0.236	/
Hotspot SAR(QPSK)														
Back Side	standard	10	on	1:1	1	0	20175/1732.5	19.50	18.38	0.353	0.140	1.29	0.457	/
Front Side	standard	10	on	1:1	1	0	20175/1732.5	19.50	18.38	0.183	0.040	1.29	0.237	/
Left Edge	standard	10	off	1:1	1	0	20175/1732.5	24.00	22.84	0.083	0.090	1.31	0.108	/
Right Edge	standard	10	off	1:1	1	0	20175/1732.5	24.00	22.84	0.104	0.060	1.31	0.136	/
Top Edge	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	N/A
Bottom Edge	standard	10	on	1:1	1	0	20175/1732.5	19.50	18.38	0.430	-0.010	1.29	0.557	36
Back Side	standard	10	on	1:1	50%	0	20050/1720	19.50	18.35	0.339	0.110	1.30	0.442	/
Front Side	standard	10	on	1:1	50%	0	20050/1720	19.50	18.35	0.181	-0.050	1.30	0.236	/
Left Edge	standard	10	off	1:1	50%	0	20175/1732.5	23.00	21.87	0.072	0.110	1.30	0.093	/
Right Edge	standard	10	off	1:1	50%	0	20175/1732.5	23.00	21.87	0.087	0.080	1.30	0.113	/
Top Edge	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	N/A
Bottom Edge	standard	10	on	1:1	50%	0	20050/1720	19.50	18.35	0.425	-0.040	1.30	0.554	/
Additional SAR test at a conserative distance (triggering distance minus 1mm)														
Back Side	standard	16	off	1:1	1	0	20175/1732.5	24.00	22.84	0.410	0.030	1.31	0.536	/
Front Side	standard	11	off	1:1	1	0	20175/1732.5	24.00	22.84	0.409	-0.070	1.31	0.534	/
Left Edge	standard	16	off	1:1	1	0	20175/1732.5	24.00	22.84	0.507	0.000	1.31	0.662	/
Right Edge	standard	16	off	1:1	50%	0	20175/1732.5	23.00	21.87	0.340	0.030	1.30	0.441	/
Top Edge	standard	11	off	1:1	50%	0	20175/1732.5	23.00	21.87	0.339	-0.160	1.30	0.440	/
Bottom Edge	standard	16	off	1:1	50%	0	20175/1732.5	23.00	21.87	0.416	0.020	1.30	0.540	/

Bottom Edge	SIM2	16	off	1:1	1	0	20175/1732.5	24.00	22.84	0.485	0.016	1.31	0.633	/
Test Position	**Cover Type**	**Dist. (mm)**	**sensor**	**Duty Cycle**	**RB allocation**	**RB offset**	**Channel/ Frequency (MHz)**	**Tune-up (dBm)**	**Measured power (dBm)**	**Limit of SAR 4 W/kg (mW/g)**				**Plot No.**
										Mea. SAR10g	**Power Drift (dB)**	**Scaling Factor**	**Report SAR1g**	
Product Specific 10-g SAR (Distance 0mm)														
Back Side	standard	0	on	1:1	1	0	20175/1732.5	19.50	18.38	0.916	0.045	1.29	1.185	/
Bottom Edge	standard	0	on	1:1	1	0	20175/1732.5	19.50	18.38	1.300	0.060	1.29	1.682	/
Bottom Edge	standard	0	on	1:1	50%	0	20050/1720	19.50	18.35	1.300	0.021	1.30	1.694	37
Bottom Edge	SIM2	0	on	1:1	50%	0	20050/1720	19.50	18.35	1.250	0.030	1.30	1.629	/

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).

MAX Adjusted SAR												
Test Position	**Cover Type**	**Dist. (mm)**	**P-Sensor**	**RB allocation**	**RB offset**	**Channel/ Frequency (MHz)**	**Full power (dBm)**	**Tune-up (dBm)**	**Report SAR10g (mW/g)**	**Scaling Factor**	**Full power Report SAR10g (mW/g)**	**0mm SAR**
Back Side	standard	10	on	1	0	20175/1732.5	24.00	19.50	0.457	2.82	1.288	Yes
Front Side	standard	10	on	1	0	20175/1732.5	24.00	19.50	0.237	2.82	0.667	No
Bottom Edge	standard	10	on	1	0	20175/1732.5	24.00	19.50	0.557	2.82	1.568	Yes
Back Side	standard	10	on	50%	0	20050/1720	23.00	19.50	0.442	2.24	0.989	No
Front Side	standard	10	on	50%	0	20050/1720	23.00	19.50	0.236	2.24	0.528	No
Bottom Edge	standard	10	on	50%	0	20050/1720	23.00	19.50	0.554	2.24	1.240	Yes

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

Table 17: LTE Band 5 (10MHz, Main-antenna)

Test Position	Cover Type	Dist. (mm)	sensor	Duty Cycle	RB allocation	RB offset	Channel/ Frequency (MHz)	Tune-up (dBm)	Measured power (dBm)	Limit of SAR 1.6 W/kg (mW/g)				Plot No.
										Mea. SAR1g	Power Drift (dB)	Scaling Factor	Report SAR1g	
Head SAR (QPSK)														
Left Cheek	standard	0	NA	1:1	1	25	20600/844	25.00	23.77	0.092	0.059	1.33	0.122	/
Left Tilt	standard	0	NA	1:1	1	25	20600/844	25.00	23.77	0.054	0.026	1.33	0.071	/
Right Cheek	standard	0	NA	1:1	1	25	20600/844	25.00	23.77	0.101	0.090	1.33	0.134	38
Right Tilt	standard	0	NA	1:1	1	25	20600/844	25.00	23.77	0.045	0.090	1.33	0.060	/
Left Cheek	standard	0	NA	1:1	50%	13	20600/844	24.00	22.86	0.075	0.102	1.30	0.097	/
Left Tilt	standard	0	NA	1:1	50%	13	20600/844	24.00	22.86	0.043	-0.026	1.30	0.056	/
Right Cheek	standard	0	NA	1:1	50%	13	20600/844	24.00	22.86	0.082	0.021	1.30	0.107	/
Right Tilt	standard	0	NA	1:1	50%	13	20600/844	24.00	22.86	0.043	0.042	1.30	0.056	/
Right Cheek	SIM2	0	NA	1:1	1	25	20600/844	25.00	23.77	0.097	0.064	1.33	0.129	/
Body-worn SAR (QPSK)														
Back Side	standard	10	NA	1:1	1	25	20600/844	25.00	23.77	0.283	0.021	1.33	0.376	/
Front Side	standard	10	NA	1:1	1	25	20600/844	25.00	23.77	0.148	0.090	1.33	0.196	/
Back Side	standard	10	NA	1:1	50%	13	20600/844	24.00	22.86	0.217	0.100	1.30	0.282	/
Front Side	standard	10	NA	1:1	50%	13	20600/844	24.00	22.86	0.120	0.090	1.30	0.156	/
Hotspot SAR(QPSK)														
Back Side	standard	10	NA	1:1	1	25	20600/844	25.00	23.77	0.267	0.040	1.33	0.354	/
Front Side	standard	10	NA	1:1	1	25	20600/844	25.00	23.77	0.148	0.090	1.33	0.196	/
Left Edge	standard	10	NA	1:1	1	25	20600/844	25.00	23.77	0.097	0.100	1.33	0.129	/
Right Edge	standard	10	NA	1:1	1	25	20600/844	25.00	23.77	0.035	0.070	1.33	0.046	/
Top Edge	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	N/A
Bottom Edge	standard	10	NA	1:1	1	25	20600/844	25.00	23.77	0.194	-0.048	1.33	0.258	/
Back Side	standard	10	NA	1:1	50%	13	20600/844	24.00	22.86	0.217	0.100	1.30	0.282	/
Front Side	standard	10	NA	1:1	50%	13	20600/844	24.00	22.86	0.120	0.090	1.30	0.156	/
Left Edge	standard	10	NA	1:1	50%	13	20600/844	24.00	22.86	0.078	0.010	1.30	0.101	/
Right Edge	standard	10	NA	1:1	50%	13	20600/844	24.00	22.86	0.029	0.080	1.30	0.038	/
Top Edge	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	N/A
Bottom Edge	standard	10	NA	1:1	50%	13	20600/844	24.00	22.86	0.158	-0.037	1.30	0.205	/
Back Side	SIM2	10	NA	1:1	1	25	20600/844	25.00	23.77	0.283	0.021	1.33	0.376	39

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).

Table 18: LTE Band 7 (20MHz, Main-antenna)

Test Position	Cover Type	Dist. (mm)	sensor	Duty Cycle	RB allocation	RB offset	Channel/ Frequency (MHz)	Tune-up (dBm)	Measured power (dBm)	Limit of SAR 1.6 W/kg (mW/g)				Plot No.
										Mea. SAR1g	Power Drift (dB)	Scaling Factor	Report SAR1g	
Head SAR (QPSK)														
Left Cheek	standard	0	NA	1:1	1	50	21100/2535	24.00	23.10	0.066	0.095	1.23	0.081	/
Left Tilt	standard	0	NA	1:1	1	50	21100/2535	24.00	23.10	0.037	0.025	1.23	0.045	/
Right Cheek	standard	0	NA	1:1	1	50	21100/2535	24.00	23.10	0.101	0.054	1.23	0.124	40
Right Tilt	standard	0	NA	1:1	1	50	21100/2535	24.00	23.10	0.076	0.136	1.23	0.093	/
Left Cheek	standard	0	NA	1:1	50%	50	21350/2560	20.00	18.97	0.036	0.038	1.27	0.045	/
Left Tilt	standard	0	NA	1:1	50%	50	21350/2560	20.00	18.97	0.031	0.020	1.27	0.039	/
Right Cheek	standard	0	NA	1:1	50%	50	21350/2560	20.00	18.97	0.043	0.042	1.27	0.055	/
Right Tilt	standard	0	NA	1:1	50%	50	21350/2560	20.00	18.97	0.058	0.052	1.27	0.074	/
Right Cheek	standard	0	NA	1:1	1 1	99 0	20850/2510 (PCC) 21048/2529.8 (SCC)	24.00	22.87	0.068	-0.024	1.30	0.088	/
Right Cheek	SIM2	0	NA	1:1	1	50	21100/2535	24.00	23.10	0.088	0.029	1.23	0.108	/
Body-worn SAR (QPSK)														
Back Side	standard	10	on	1:1	1	99	21100/2535	20.00	18.94	0.472	0.022	1.28	0.602	/
Front Side	standard	10	on	1:1	1	99	21100/2535	20.00	18.94	0.236	0.031	1.28	0.301	/
Back Side	standard	10	on	1:1	50%	50	21350/2560	20.00	18.97	0.483	0.010	1.27	0.612	41
Front Side	standard	10	on	1:1	50%	50	21350/2560	20.00	18.97	0.242	0.000	1.27	0.307	/
Hotspot SAR(QPSK)														
Back Side	standard	10	on	1:1	1	99	21100/2535	20.00	18.94	0.472	0.022	1.28	0.602	/
Front Side	standard	10	on	1:1	1	99	21100/2535	20.00	18.94	0.236	0.031	1.28	0.301	/
Left Edge	standard	10	off	1:1	1	50	21100/2535	24.00	23.10	0.090	0.010	1.23	0.111	/
Right Edge	standard	10	off	1:1	1	50	21100/2535	24.00	23.10	0.206	-0.028	1.23	0.253	/
Top Edge	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	N/A
Bottom Edge	standard	10	on	1:1	1	99	20850/2510	20.00	18.90	0.726	0.030	1.29	0.935	/
	standard	10	on	1:1	1	99	21100/2535	20.00	18.94	0.780	0.083	1.28	0.996	42
	standard	10	on	1:1	1	50	21350/2560	20.00	18.92	0.754	-0.041	1.28	0.967	
Back Side	standard	10	on	1:1	50%	50	21350/2560	20.00	18.97	0.483	0.010	1.27	0.612	/
Front Side	standard	10	on	1:1	50%	50	21350/2560	20.00	18.97	0.242	0.000	1.27	0.307	/
Left Edge	standard	10	off	1:1	50%	50	21350/2560	23.00	22.00	0.153	0.015	1.26	0.193	/
Right Edge	standard	10	off	1:1	50%	50	21350/2560	23.00	22.00	0.154	0.120	1.26	0.194	/
Top Edge	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	N/A
Bottom Edge	standard	10	on	1:1	50%	25	20850/2510	20.00	18.95	0.758	0.013	1.27	0.965	/
	standard	10	on	1:1	50%	25	21100/2535	20.00	18.92	0.719	0.090	1.28	0.922	/

	standard	10	on	1:1	50%	50	21350/2560	20.00	18.97	0.762	0.038	1.27	0.966	/
Additional SAR test at a conserative distance (triggering distance minus 1mm)														
Back Side	standard	16	off	1:1	1	99	20850/2510	24.00	22.89	0.603	-0.080	1.29	0.779	/
	standard	16	off	1:1	1	50	21100/2535	24.00	23.10	0.659	0.011	1.23	0.811	/
	standard	16	off	1:1	1	99	21350/2560	24.00	22.86	0.624	0.043	1.30	0.811	/
Front Side	standard	11	off	1:1	1	50	21100/2535	24.00	23.10	0.578	-0.012	1.23	0.711	/
Bottom Edge	standard	16	off	1:1	1	99	20850/2510	24.00	22.89	0.795	0.091	1.29	1.027	/
	standard	16	off	1:1	1	50	21100/2535	24.00	23.10	0.881	0.040	1.23	1.084	/
	standard	16	off	1:1	1	99	21350/2560	24.00	22.86	0.764	0.024	1.30	0.993	/
Back Side	standard	16	off	1:1	50%	50	21350/2560	23.00	22.00	0.494	0.013	1.26	0.622	/
Front Side	standard	11	off	1:1	50%	50	21350/2560	23.00	22.00	0.440	0.120	1.26	0.554	/
Bottom Edge	standard	16	off	1:1	50%	50	21350/2560	23.00	22.00	0.547	0.130	1.26	0.689	/
Bottom Edge	standard	16	off	1:1	1	99	20850/2510 (PCC)	24.00	22.87	0.672	0.012	1.30	0.872	/
					1	0	21048/2529.8 (SCC)							
Bottom Edge	SIM2	16	off	1:1	1	50	21100/2535	24.00	23.10	0.836	0.035	1.23	1.029	/
Bottom Edge	Repeated	16	off	1:1	1	50	21100/2535	24.00	23.10	0.878	0.060	1.23	1.080	/
Test Position	**Cover Type**	**Dist. (mm)**	**sensor**	**Duty Cycle**	**RB allocation**	**RB offset**	**Channel/ Frequency (MHz)**	**Tune-up (dBm)**	**Measured power (dBm)**	**Limit of SAR 4 W/kg (mW/g)**				**Plot No.**
										Mea. SAR10g	**Power Drift (dB)**	**Scaling Factor**	**Report SAR1g**	
Product Specific 10-g SAR (Distance 0mm)														
Back Side	standard	0	on	1:1	1	99	21100/2535	20.00	18.94	1.030	-0.060	1.28	1.315	/
Bottom Edge	standard	0	on	1:1	1	99	21100/2535	20.00	18.94	0.948	0.038	1.28	1.210	/
Back Side	standard	0	on	1:1	50%	50	21350/2560	20.00	18.97	1.150	-0.022	1.27	1.458	43
Bottom Edge	standard	0	on	1:1	50%	50	21350/2560	20.00	18.97	0.966	0.037	1.27	1.225	/
Back Side	standard	0	on	1:1	50%	50	21350/2560	20.00	18.97	1.020	0.033	1.27	1.293	/
Back Side	standard	0	on	1:1	1	99	21100/2535 (PCC)	20.00	18.96	0.997	0.081	1.27	1.267	/
							21298/2554.8 (SCC)							

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).

Measurement Variability				
Test Position	Channel/ Frequency(MHz)	MAX Measured SAR_{1g} (W/kg)	1st Repeated SAR_{1g} (W/kg)	Ratio
Bottom Edge	21100/2535	0.881	0.878	1.00

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.

MAX Adjusted SAR												
Test Position	Cover Type	Dist. (mm)	P-Sensor	RB allocation	RB offset	Channel/ Frequency (MHz)	Full power (dBm)	Tune-up (dBm)	Report SAR10g (mW/g)	Scaling Factor	Full power Report SAR10g (mW/g)	0mm SAR
Back Side	standard	10	on	1	99	21100/2535	24.00	20.00	0.602	2.51	1.513	Yes
Front Side	standard	10	on	1	99	21100/2535	24.00	20.00	0.301	2.51	0.757	No
Bottom Edge	standard	10	on	1	99	21100/2535	24.00	20.00	0.996	2.51	2.501	Yes
Back Side	standard	10	on	50%	50	21350/2560	23.00	20.00	0.612	2.00	1.222	Yes
Front Side	standard	10	on	50%	50	21350/2560	23.00	20.00	0.307	2.00	0.612	No
Bottom Edge	standard	10	on	50%	50	21350/2560	23.00	20.00	0.966	2.00	1.927	Yes

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

Table 19: LTE Band 38 (20MHz, Main-antenna)

Test Position	Cover Type	Dist. (mm)	sensor	Duty Cycle	RB allocation	RB offset	Channel/ Frequency (MHz)	Tune-up (dBm)	Measured power (dBm)	Limit of SAR 1.6 W/kg (mW/g)				Plot No.
										Mea. SAR1g	Power Drift (dB)	Scaling Factor	Report SAR1g	
Head SAR (QPSK)														
Left Cheek	standard	0	NA	1:1.58	1	99	38150/2610	24.00	23.04	0.035	0.145	1.25	0.043	/
Left Tilt	standard	0	NA	1:1.58	1	99	38150/2610	24.00	23.04	0.011	-0.075	1.25	0.014	/
Right Cheek	standard	0	NA	1:1.58	1	99	38150/2610	24.00	23.04	0.041	0.073	1.25	0.051	/
Right Tilt	standard	0	NA	1:1.58	1	99	38150/2610	24.00	23.04	0.040	0.024	1.25	0.050	/
Left Cheek	standard	0	NA	1:1.58	50%	50	37850/2580	23.00	21.96	0.018	0.079	1.27	0.023	/
Left Tilt	standard	0	NA	1:1.58	50%	50	37850/2580	23.00	21.96	0.015	-0.085	1.27	0.019	/
Right Cheek	standard	0	NA	1:1.58	50%	50	37850/2580	23.00	21.96	0.045	0.030	1.27	0.057	44
Right Tilt	standard	0	NA	1:1.58	50%	50	37850/2580	23.00	21.96	0.035	0.123	1.27	0.045	/
Right Cheek	standard	0	NA	1:1.58	1 1	0 99	38150/2610 (PCC) 37952/2590.2 (SCC)	24.00	22.79	0.032	0.010	1.32	0.042	/
Right Cheek	SIM2	0	NA	1:1.58	50%	50	37850/2580	23.00	21.96	0.032	0.084	1.27	0.041	/
Body-worn SAR (QPSK)														
Back Side	standard	10	on	1:1.58	1	0	38000/2595	21.00	19.91	0.444	0.021	1.29	0.571	45
Front Side	standard	10	on	1:1.58	1	0	38000/2595	21.00	19.91	0.238	-0.038	1.29	0.306	/
Back Side	standard	10	on	1:1.58	50%	25	37850/2580	21.00	19.96	0.383	-0.018	1.27	0.487	/
Front Side	standard	10	on	1:1.58	50%	25	37850/2580	21.00	19.96	0.196	0.011	1.27	0.249	/
Hotspot SAR(QPSK)														
Back Side	standard	10	on	1:1.58	1	0	38000/2595	21.00	19.91	0.444	0.021	1.29	0.571	/
Front Side	standard	10	on	1:1.58	1	0	38000/2595	21.00	19.91	0.238	-0.038	1.29	0.306	/
Left Edge	standard	10	off	1:1.58	1	99	38150/2610	24.00	23.04	0.069	-0.059	1.25	0.086	/
Right Edge	standard	10	off	1:1.58	1	99	38150/2610	24.00	23.04	0.071	0.047	1.25	0.089	/
Top Edge	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	N/A
Bottom Edge	standard	10	on	1:1.58	1	0	38000/2595	21.00	19.91	0.496	0.026	1.29	0.638	/
Back Side	standard	10	on	1:1.58	50%	25	37850/2580	21.00	19.96	0.383	-0.018	1.27	0.487	/
Front Side	standard	10	on	1:1.58	50%	25	37850/2580	21.00	19.96	0.196	0.011	1.27	0.249	/
Left Edge	standard	10	off	1:1.58	50%	50	37850/2580	23.00	21.96	0.053	-0.026	1.27	0.067	/
Right Edge	standard	10	off	1:1.58	50%	50	37850/2580	23.00	21.96	0.065	0.100	1.27	0.083	/
Top Edge	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	N/A
Bottom Edge	standard	10	on	1:1.58	50%	25	37850/2580	21.00	19.96	0.505	0.048	1.27	0.642	46
Additional SAR test at a conserative distance (triggering distance minus 1mm)														
Back Side	standard	16	off	1:1.58	1	99	38150/2610	24.00	23.04	0.452	0.011	1.25	0.564	/
Front Side	standard	11	off	1:1.58	1	99	38150/2610	24.00	23.04	0.384	-0.020	1.25	0.479	/

Bottom Edge	standard	16	off	1:1.58	1	99	38150/2610	24.00	23.04	0.515	-0.070	1.25	0.642	/
Back Side	standard	16	off	1:1.58	50%	50	37850/2580	23.00	21.96	0.348	0.035	1.27	0.442	/
Front Side	standard	11	off	1:1.58	50%	50	37850/2580	23.00	21.96	0.302	0.104	1.27	0.384	/
Bottom Edge	standard	16	off	1:1.58	50%	50	37850/2580	23.00	21.96	0.462	0.021	1.27	0.587	/
Bottom Edge	standard	0	NA	1:1.58	1	0	38150/2610 (PCC)	24.00	22.79	0.393	0.060	1.32	0.519	/
					1	99	37952/2590.2 (SCC)							
Bottom Edge	SIM2	16	off	1:1.58	1	99	38150/2610	24.00	23.04	0.512	0.038	1.25	0.639	/
Test Position	**Cover Type**	**Dist. (mm)**	**sensor**	**Duty Cycle**	**RB allocation**	**RB offset**	**Channel/ Frequency (MHz)**	**Tune-up (dBm)**	**Measured power (dBm)**	**Limit of SAR 4 W/kg (mW/g)**				**Plot No.**
										Mea. SAR10g	**Power Drift (dB)**	**Scaling Factor**	**Report SAR1g**	
Product Specific 10-g SAR (Distance 0mm)														
Bottom Edge	standard	0	on	1:1.58	1	0	38000/2595	21.00	19.91	0.683	0.065	1.29	0.878	47
Bottom Edge	standard	0	on	1:1.58	1	99	37850/2580 (PCC)	21.00	19.82	0.604	-0.090	1.31	0.793	
					1	0	38048/2599.8 (SCC)							
Bottom Edge	standard	0	on	1:1.58	1	0	38000/2595	21.00	19.91	0.662	0.041	1.29	0.851	

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).

MAX Adjusted SAR												
Test Position	**Cover Type**	**Dist. (mm)**	**P-Sensor**	**RB allocation**	**RB offset**	**Channel/ Frequency (MHz)**	**Full power (dBm)**	**Tune-up (dBm)**	**Report SAR10g (mW/g)**	**Scaling Factor**	**Full power Report SAR10g (mW/g)**	**0mm SAR**
Back Side	standard	10	on	1	0	38000/2595	24.00	21.00	0.571	2.00	1.139	No
Front Side	standard	10	on	1	0	38000/2595	24.00	21.00	0.306	2.00	0.610	No
Bottom Edge	standard	10	on	1	0	38000/2595	24.00	21.00	0.638	2.00	1.272	Yes
Back Side	standard	10	on	50%	25	37850/2580	23.00	21.00	0.487	1.58	0.771	No
Front Side	standard	10	on	50%	25	37850/2580	23.00	21.00	0.249	1.58	0.395	No
Bottom Edge	standard	10	on	50%	25	37850/2580	23.00	21.00	0.642	1.58	1.017	No

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

Table 20: LTE Band 41 (20MHz, Main-antenna)

Test Position	Cover Type	Dist. (mm)	sensor	Duty Cycle	RB allocation	RB offset	Channel/ Frequency (MHz)	Tune-up (dBm)	Measured power (dBm)	Limit of SAR 1.6 W/kg (mW/g)				Plot No.
										Mea. SAR1g	Power Drift (dB)	Scaling Factor	Report SAR1g	
Head SAR (QPSK)														
Left Cheek	standard	0	NA	1:1.58	1	99	40840/2615	24.00	22.97	0.037	0.021	1.27	0.047	/
Left Tilt	standard	0	NA	1:1.58	1	99	40840/2615	24.00	22.97	0.024	0.048	1.27	0.030	/
Right Cheek	standard	0	NA	1:1.58	1	99	40840/2615	24.00	22.97	0.039	0.090	1.27	0.050	48
Right Tilt	standard	0	NA	1:1.58	1	99	40840/2615	24.00	22.97	0.038	0.026	1.27	0.049	/
Left Cheek	standard	0	NA	1:1.58	50%	25	40840/2615	23.00	21.97	0.022	0.043	1.27	0.028	/
Left Tilt	standard	0	NA	1:1.58	50%	25	40840/2615	23.00	21.97	0.021	-0.038	1.27	0.026	/
Right Cheek	standard	0	NA	1:1.58	50%	25	40840/2615	23.00	21.97	0.036	0.050	1.27	0.045	/
Right Tilt	standard	0	NA	1:1.58	50%	25	40840/2615	23.00	21.97	0.038	0.026	1.27	0.049	/
Right Cheek	SIM2	0	NA	1:1.58	1	99	40840/2615	24.00	22.97	0.033	0.014	1.27	0.042	/
Body-worn SAR (QPSK)														
Back Side	standard	10	on	1:1.58	1	99	40540/2585	21.00	19.89	0.399	0.022	1.29	0.515	49
Front Side	standard	10	on	1:1.58	1	99	40540/2585	21.00	19.89	0.193	0.038	1.29	0.249	/
Back Side	standard	10	on	1:1.58	50%	0	40840/2615	21.00	19.94	0.389	0.024	1.28	0.497	/
Front Side	standard	10	on	1:1.58	50%	0	40840/2615	21.00	19.94	0.114	-0.030	1.28	0.146	/
Hotspot SAR(QPSK)														
Back Side	standard	10	on	1:1.58	1	99	40540/2585	21.00	19.89	0.399	0.022	1.29	0.515	/
Front Side	standard	10	on	1:1.58	1	99	40540/2585	21.00	19.89	0.193	0.038	1.29	0.249	/
Left Edge	standard	10	off	1:1.58	1	99	40840/2615	24.00	22.97	0.055	-0.035	1.27	0.070	/
Right Edge	standard	10	off	1:1.58	1	99	40840/2615	24.00	22.97	0.066	0.019	1.27	0.084	/
Top Edge	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	N/A
Bottom Edge	standard	10	on	1:1.58	1	99	40540/2585	21.00	19.89	0.569	-0.010	1.29	0.735	/
Back Side	standard	10	on	1:1.58	50%	0	40840/2615	21.00	19.94	0.389	0.024	1.28	0.497	/
Front Side	standard	10	on	1:1.58	50%	0	40840/2615	21.00	19.94	0.114	-0.030	1.28	0.146	/
Left Edge	standard	10	off	1:1.58	50%	25	40840/2615	23.00	21.97	0.044	0.019	1.27	0.056	/
Right Edge	standard	10	off	1:1.58	50%	25	40840/2615	23.00	21.97	0.053	0.011	1.27	0.067	/
Top Edge	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	N/A
Bottom Edge	standard	10	on	1:1.58	50%	0	40840/2615	21.00	19.94	0.571	0.032	1.28	0.729	50
Bottom Edge	SIM2	10	on	1:1.58	1	99	40540/2585	21.00	19.89	0.528	0.020	1.29	0.682	/
Additional SAR test at a conserative distance (triggering distance minus 1mm)														
Back Side	standard	16	off	1:1.58	1	99	40840/2615	24.00	22.97	0.432	0.010	1.27	0.548	/
Front Side	standard	11	off	1:1.58	1	99	40840/2615	24.00	22.97	0.346	-0.050	1.27	0.439	/
Bottom Edge	standard	16	off	1:1.58	1	99	40840/2615	24.00	22.97	0.509	-0.060	1.27	0.645	/
Back Side	standard	16	off	1:1.58	50%	25	40840/2615	23.00	21.97	0.348	0.041	1.27	0.441	/
Front Side	standard	11	off	1:1.58	50%	25	40840/2615	23.00	21.97	0.277	0.012	1.27	0.351	/

Bottom Edge	standard	16	off	1:1.58	50%	25	40840/2615	23.00	21.97	0.379	-0.030	1.27	0.480	/
Test Position	**Cover Type**	**Dist. (mm)**	**sensor**	**Duty Cycle**	**RB allocation**	**RB offset**	**Channel/ Frequency (MHz)**	**Tune-up (dBm)**	**Measured power (dBm)**	**Limit of SAR 4 W/kg (mW/g)**				**Plot No.**
										Mea. SAR10g	**Power Drift (dB)**	**Scaling Factor**	**Report SAR1g**	
Product Specific 10-g SAR (Distance 0mm)														
Bottom Edge	standard	0	on	1:1.58	1	99	40540/2585	21.00	19.89	0.629	0.044	1.29	0.812	51
Bottom Edge	SIM2	0	on	1:1.58	1	99	40540/2585	21.00	19.89	0.624	0.028	1.29	0.806	

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).

MAX Adjusted SAR												
Test Position	**Cover Type**	**Dist. (mm)**	**P-Sensor**	**RB allocation**	**RB offset**	**Channel/ Frequency (MHz)**	**Full power (dBm)**	**Tune-up (dBm)**	**Report SAR10g (mW/g)**	**Scaling Factor**	**Full power Report SAR10g (mW/g)**	**0mm SAR**
Back Side	standard	10	on	1	99	40540/2585	24.00	21.00	0.515	2.00	1.028	No
Front Side	standard	10	on	1	99	40540/2585	24.00	21.00	0.249	2.00	0.497	No
Bottom Edge	standard	10	on	1	99	40540/2585	24.00	21.00	0.735	2.00	1.466	Yes
Back Side	standard	10	on	50%	0	40840/2615	23.00	21.00	0.497	1.58	0.787	No
Front Side	standard	10	on	50%	0	40840/2615	23.00	21.00	0.146	1.58	0.231	No
Bottom Edge	standard	10	on	50%	0	40840/2615	23.00	21.00	0.724	1.58	1.147	No

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

Table 21: GSM 850 (Second-antenna)

Test Position	Cover Type	Dist. (mm)	sensor	Time slot	Duty Cycle	Channel/ Frequency (MHz)	Tune-up (dBm)	Measured power (dBm)	Limit of SAR 1.6 W/kg (mW/g)				Plot No.
									Measure dSAR1g	Power Drift (dB)	Scaling Factor	Report SAR1g	
Head SAR													
Left Cheek	standard	0	NA	GSM	1:8.3	190/836.6	32.50	31.95	0.362	0.130	1.14	0.411	/
Left Tilt	standard	0	NA	GSM	1:8.3	190/836.6	32.50	31.95	0.310	-0.030	1.14	0.352	/
Right Cheek	standard	0	NA	GSM	1:8.3	190/836.6	32.50	31.95	0.432	0.020	1.14	0.490	52
Right Tilt	standard	0	NA	GSM	1:8.3	190/836.6	32.50	31.95	0.371	-0.030	1.14	0.421	/
Right Cheek	SIM2	0	NA	GSM	1:8.3	190/836.6	32.50	31.95	0.428	0.062	1.14	0.486	/
Body-worn SAR													
Back Side	standard	10	NA	4Txslots	1:2.07	190/836.6	27.00	25.92	0.183	0.027	1.28	0.235	/
Front Side	standard	10	NA	4Txslots	1:2.07	190/836.6	27.00	25.92	0.118	-0.039	1.28	0.151	/
Hotspot SAR													
Back Side	standard	10	NA	4Txslots	1:2.07	190/836.6	27.00	25.92	0.145	0.070	1.28	0.186	/
Front Side	standard	10	NA	4Txslots	1:2.07	190/836.6	27.00	25.92	0.118	-0.039	1.28	0.151	/
Left Edge	standard	10	NA	4Txslots	1:2.07	190/836.6	27.00	25.92	0.045	0.026	1.28	0.058	/
Right Edge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Top Edge	standard	10	NA	4Txslots	1:2.07	190/836.6	27.00	25.92	0.114	-0.140	1.28	0.146	/
Bottom Edge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Back Side	SIM2	10	NA	4Txslots	1:2.07	190/836.6	27.00	25.92	0.183	0.027	1.28	0.235	53

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

2.When multiple slots are used, SAR should be tested to account for the maximum source-based time-averaged output power.

Table 22: UMTS Band V (Second-antenna)

Test Position	Cover Type	Dist. (mm)	sensor	Channel Type	Duty Cycle	Channel/ Frequency (MHz)	Tune-up (dBm)	Measured power (dBm)	Limit of SAR 1.6 W/kg (mW/g)				Plot No.
									Measure dSAR1g	Power Drift (dB)	Scaling Factor	Report SAR1g	
Head SAR													
Left Cheek	standard	0	NA	RMC12.2K	1:1	4183/836.6	23.00	22.26	0.386	0.030	1.19	0.458	/
Left Tilt	standard	0	NA	RMC12.2K	1:1	4183/836.6	23.00	22.26	0.331	0.060	1.19	0.392	/
Right Cheek	standard	0	NA	RMC12.2K	1:1	4183/836.6	23.00	22.26	0.485	0.010	1.19	0.575	54
Right Tilt	standard	0	NA	RMC12.2K	1:1	4183/836.6	23.00	22.26	0.423	0.000	1.19	0.502	/
Right Cheek	SIM2	0	NA	RMC12.2K	1:1	4183/836.6	23.00	22.26	0.439	0.012	1.19	0.521	/
Body-worn SAR													
Back Side	standard	10	on	RMC12.2K	1:1	4183/836.6	23.00	22.26	0.171	0.100	1.19	0.203	/
Front Side	standard	10	on	RMC12.2K	1:1	4183/836.6	23.00	22.26	0.128	-0.020	1.19	0.152	/
Hotspot SAR													
Back Side	standard	10	on	RMC12.2K	1:1	4183/836.6	23.00	22.26	0.171	0.100	1.19	0.203	55
Front Side	standard	10	on	RMC12.2K	1:1	4183/836.6	23.00	22.26	0.128	-0.020	1.19	0.152	/
Left Edge	standard	10	off	RMC12.2K	1:1	4183/836.6	23.00	22.26	0.061	-0.070	1.19	0.072	/
Right Edge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Top Edge	standard	10	off	RMC12.2	1:1	4183/836.6	23.00	22.26	0.126	0.070	1.19	0.149	/
Bottom Edge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Back Side	SIM2	10	on	RMC12.2K	1:1	4183/836.6	23.00	22.26	0.153	0.021	1.19	0.181	/

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.

Table 23: LTE Band 5 (10MHz, Second-antenna)

Test Position	Cover Type	Dist. (mm)	sensor	Duty Cycle	RB allocation	RB offset	Channel/ Frequency (MHz)	Tune-up (dBm)	Measured power (dBm)	Limit of SAR 1.6 W/kg (mW/g)				Plot No.
										Mea. SAR1g	Power Drift (dB)	Scaling Factor	Report SAR1g	
Head SAR (QPSK)														
Left Cheek	standard	0	NA	1:1	1	49	20600/844	23.00	22.12	0.315	0.090	1.22	0.386	/
Left Tilt	standard	0	NA	1:1	1	49	20600/844	23.00	22.12	0.296	0.080	1.22	0.362	/
Right Cheek	standard	0	NA	1:1	1	49	20600/844	23.00	22.12	0.436	-0.020	1.22	0.534	/
Right Tilt	standard	0	NA	1:1	1	49	20600/844	23.00	22.12	0.366	0.070	1.22	0.448	/
Left Cheek	standard	0	NA	1:1	50%	13	20600/844	23.00	22.10	0.325	0.030	1.23	0.400	/
Left Tilt	standard	0	NA	1:1	50%	13	20600/844	23.00	22.10	0.307	-0.010	1.23	0.378	/
Right Cheek	standard	0	NA	1:1	50%	13	20600/844	23.00	22.10	0.464	-0.100	1.23	0.571	56
Right Tilt	standard	0	NA	1:1	50%	13	20600/844	23.00	22.10	0.380	0.060	1.23	0.468	/
Right Cheek	SIM2	0	NA	1:1	50%	13	20600/844	23.00	22.10	0.438	0.010	1.23	0.539	/
Body-worn SAR (QPSK)														
Back Side	standard	10	NA	1:1	1	49	20600/844	23.00	22.12	0.171	0.040	1.22	0.209	/
Front Side	standard	10	NA	1:1	1	49	20600/844	23.00	22.12	0.125	0.040	1.22	0.153	/
Back Side	standard	10	NA	1:1	50%	13	20600/844	23.00	22.10	0.172	0.100	1.23	0.212	/
Front Side	standard	10	NA	1:1	50%	13	20600/844	23.00	22.10	0.126	0.020	1.23	0.155	/
Hotspot SAR(QPSK)														
Back Side	standard	10	NA	1:1	1	49	20600/844	23.00	22.12	0.171	0.040	1.22	0.209	/
Front Side	standard	10	NA	1:1	1	49	20600/844	23.00	22.12	0.125	0.040	1.22	0.153	/
Left Edge	standard	10	NA	1:1	1	49	20600/844	23.00	22.12	0.078	0.000	1.22	0.096	/
Right Edge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Top Edge	standard	10	NA	1:1	1	49	20600/844	23.00	22.12	0.123	-0.090	1.22	0.151	/
Bottom Edge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Back Side	standard	10	NA	1:1	50%	13	20600/844	23.00	22.10	0.172	0.100	1.23	0.212	57
Front Side	standard	10	NA	1:1	50%	13	20600/844	23.00	22.10	0.126	0.020	1.23	0.155	/
Left Edge	standard	10	NA	1:1	50%	13	20600/844	23.00	22.10	0.083	-0.030	1.23	0.102	/
Right Edge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Top Edge	standard	NA	NA	NA	50%	13	20600/844	23.00	22.10	0.126	-0.110	1.23	0.155	/
Bottom Edge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Back Side	SIM2	10	NA	1:1	50%	13	20600/844	23.00	22.10	0.170	0.038	1.23	0.209	/

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).

Table 24: Wi-Fi (2.4G ANT 1)

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.
							Mea. SAR1g	Power Drift (dB)	Scaling Factor	Report SAR 1g	
Head SAR											
Left Cheek	standard	802.11b	99.0%	6/2437	18.50	18.01	0.399	0.090	1.13	0.451	/
Left Tilt	standard	802.11b	99.0%	6/2437	18.50	18.01	0.467	0.090	1.13	0.528	58
Right Cheek	standard	802.11b	99.0%	6/2437	18.50	18.01	0.177	0.080	1.13	0.200	/
Right Tilt	standard	802.11b	99.0%	6/2437	18.50	18.01	0.276	-0.030	1.13	0.312	/
Body-worn SAR & Hotspot SAR(Distance 10mm)											
Back Side	standard	802.11b	99.0%	6/2437	18.50	18.01	0.077	0.024	1.13	0.087	/
Front Side	standard	802.11b	99.0%	6/2437	18.50	18.01	0.067	0.010	1.13	0.076	/
Left Edge	standard	802.11b	99.0%	6/2437	18.50	18.01	0.032	0.069	1.13	0.036	/
Right Edge	standard	802.11b	99.0%	6/2437	18.50	18.01	0.015	-0.025	1.13	0.017	/
Top Edge	standard	802.11b	99.0%	6/2437	18.50	18.01	0.154	0.160	1.13	0.174	59
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.											

Table 25: Wi-Fi (2.4G ANT 2)

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.
							Mea. SAR1g	Power Drift (dB)	Scaling Factor	Report SAR 1g	
Head SAR											
Left Cheek	standard	802.11b	99.0%	11/2462	17.50	16.40	0.116	0.061	1.30	0.151	/
Left Tilt	standard	802.11b	99.0%	11/2462	17.50	16.40	0.080	0.090	1.30	0.104	/
Right Cheek	standard	802.11b	99.0%	11/2462	17.50	16.40	0.594	0.078	1.30	0.773	60
Right Tilt	standard	802.11b	99.0%	11/2462	17.50	16.40	0.260	0.029	1.30	0.338	/
Body-worn SAR &Hotspot SAR(Distance 10mm)											
Back Side	standard	802.11b	99.0%	11/2462	17.50	16.40	0.028	0.031	1.30	0.036	/
Front Side	standard	802.11b	99.0%	11/2462	17.50	16.40	0.015	-0.090	1.30	0.020	/
Left Edge	standard	802.11b	99.0%	11/2462	17.50	16.40	0.024	0.010	1.30	0.031	/
Right Edge	standard	802.11b	99.0%	11/2462	17.50	16.40	0.006	0.000	1.30	0.008	/
Top Edge	standard	802.11b	99.0%	11/2462	17.50	16.40	0.037	0.018	1.30	0.048	61
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.											

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	Right Cheek	11/2462	0.773	18.5	17.5	0.79	0.614
802.11n HT20	Right Cheek	11/2462	0.773	18.5	13.5	0.32	0.244
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.							

Table 26: Wi-Fi (5G,U-NII-1 ANT 1)

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.
							Mea. SAR1g	Power Drift (dB)	Scaling Factor	Report SAR 1g	
Head SAR											
Left Cheek	standard	802.11nHT40	96.0%	38/5190	15.50	14.83	0.458	-0.098	1.22	0.557	/
Left Tilt	standard	802.11nHT40	96.0%	38/5190	15.50	14.83	0.417	-0.031	1.22	0.507	/
Right Cheek	standard	802.11nHT40	96.0%	38/5190	15.50	14.83	0.327	-0.070	1.22	0.397	/
Right Tilt	standard	802.11nHT40	96.0%	38/5190	15.50	14.83	0.503	-0.038	1.22	0.611	62
Body-worn SAR & Hotspot SAR(Distance 10mm)											
Back Side	standard	802.11nHT40	96.0%	38/5190	15.50	14.83	0.172	0.016	1.22	0.209	/
Front Side	standard	802.11nHT40	96.0%	38/5190	15.50	14.83	0.091	0.021	1.22	0.111	/
Left Edge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Right Edge	standard	802.11nHT40	96.0%	38/5190	15.50	14.83	0.144	0.038	1.22	0.175	/
Top Edge	standard	802.11nHT40	96.0%	38/5190	15.50	14.83	0.264	0.042	1.22	0.321	63
Bottom Edge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Note: 1. The value with blue color is the maximum SAR Value of each test band.											

Table 27: Wi-Fi (5G,U-NII-2A ANT 1)

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.
							Mea. SAR1g	Power Drift (dB)	Scaling Factor	Report SAR 1g	
Head SAR											
Left Cheek	standard	802.11nHT40	96.0%	62/5310	16.00	14.84	0.445	0.044	1.36	0.605	/
Left Tilt	standard	802.11nHT40	96.0%	62/5310	16.00	14.84	0.531	0.060	1.36	0.722	/
Right Cheek	standard	802.11nHT40	96.0%	62/5310	16.00	14.84	0.357	0.042	1.36	0.486	/
Right Tilt	standard	802.11nHT40	96.0%	62/5310	16.00	14.84	0.566	0.150	1.36	0.770	64
Test Position	**Cover Type**	**Mode**	**Duty Cycle**	**Channel/ Frequency (MHz)**	**Tune-up dBm)**	**Measured power (dBm)**	**Limit of SAR 4 W/kg (mW/g)**				**Plot No.**
							Mea. SAR10g	**Power Drift (dB)**	**Scaling Factor**	**Report SAR 1g**	
Limbs SAR (Distance 0mm)											
Back Side	standard	802.11nHT40	96.0%	62/5310	16.00	14.84	0.733	-0.040	1.36	0.351	/
Front Side	standard	802.11nHT40	96.0%	62/5310	16.00	14.84	0.584	0.010	1.36	0.261	/
Left Edge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Right Edge	standard	802.11nHT40	96.0%	62/5310	16.00	14.84	0.521	0.062	1.36	0.229	/
Top Edge	standard	802.11nHT40	96.0%	62/5310	16.00	14.84	1.270	0.070	1.36	0.491	65
Bottom Edge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

Table 28: Wi-Fi (5G,U-NII-2C ANT 1)

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.
							Mea. SAR1g	Power Drift (dB)	Scaling Factor	Report SAR 1g	
Head SAR											
Left Cheek	standard	802.11nHT40	96.0%	102/5510	16.00	14.84	0.516	-0.051	1.36	0.702	/
Left Tilt	standard	802.11nHT40	96.0%	102/5510	16.00	14.84	0.536	-0.124	1.36	0.729	66
Right Cheek	standard	802.11nHT40	96.0%	102/5510	16.00	14.84	0.349	0.089	1.36	0.475	/
Right Tilt	standard	802.11nHT40	96.0%	102/5510	16.00	14.84	0.371	-0.069	1.36	0.505	/
Test Position	**Cover Type**	**Mode**	**Duty Cycle**	**Channel/ Frequency (MHz)**	**Tune-up dBm)**	**Measured power (dBm)**	**Limit of SAR 4 W/kg (mW/g)**				**Plot No.**
							Mea. SAR10g	**Power Drift (dB)**	**Scaling Factor**	**Report SAR 1g**	
Limbs SAR (Distance 0mm)											
Back Side	standard	802.11nHT40	96.0%	102/5510	16.00	14.84	0.601	0.020	1.36	0.253	/
Front Side	standard	802.11nHT40	96.0%	102/5510	16.00	14.84	0.935	0.018	1.36	0.350	/
Left Edge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Right Edge	standard	802.11nHT40	96.0%	102/5510	16.00	14.84	0.642	-0.033	1.36	0.264	/
Top Edge	standard	802.11nHT40	96.0%	102/5510	16.00	14.84	1.010	0.115	1.36	0.411	67
Bottom Edge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

Table 29: Wi-Fi (5G,U-NII-3 ANT 1)

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.
							Mea. SAR1g	Power Drift (dB)	Scaling Factor	Report SAR 1g	
Head SAR											
Left Cheek	standard	802.11nHT40	96.0%	151/5755	16.00	15.02	0.494	-0.030	1.31	0.645	/
Left Tilt	standard	802.11nHT40	96.0%	151/5755	16.00	15.02	0.556	0.180	1.31	0.726	68
Right Cheek	standard	802.11nHT40	96.0%	151/5755	16.00	15.02	0.438	0.090	1.31	0.572	/
Right Tilt	standard	802.11nHT40	96.0%	151/5755	16.00	15.02	0.450	-0.059	1.31	0.587	/
Body-worn SAR & Hotspot SAR(Distance 10mm)											
Back Side	standard	802.11nHT40	96.0%	151/5755	16.00	15.02	0.123	-0.026	1.31	0.161	/
Front Side	standard	802.11nHT40	96.0%	151/5755	16.00	15.02	0.130	0.013	1.31	0.170	/
Left Edge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Right Edge	standard	802.11nHT40	96.0%	151/5755	16.00	15.02	0.098	0.058	1.31	0.128	/
Top Edge	standard	802.11nHT40	96.0%	151/5755	16.00	15.02	0.150	0.135	1.31	0.196	69
Bottom Edge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Note: 1. The value with blue color is the maximum SAR Value of each test band.											

Table 30: Wi-Fi (5G,U-NII-1 ANT 2)

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.
							Mea. SAR1g	Power Drift (dB)	Scaling Factor	Report SAR 1g	
Head SAR											
Left Cheek	standard	802.11nHT40	96.0%	46/5230	16.00	14.93	0.104	-0.110	1.33	0.139	70
Left Tilt	standard	802.11nHT40	96.0%	46/5230	16.00	14.93	0.056	-0.058	1.33	0.074	/
Right Cheek	standard	802.11nHT40	96.0%	46/5230	16.00	14.93	0.055	0.040	1.33	0.073	/
Right Tilt	standard	802.11nHT40	96.0%	46/5230	16.00	14.93	0.061	-0.042	1.33	0.082	/
Body-worn SAR &Hotspot SAR(Distance 10mm)											
Back Side	standard	802.11nHT40	96.0%	46/5230	16.00	14.93	0.087	0.024	1.33	0.116	/
Front Side	standard	802.11nHT40	96.0%	46/5230	16.00	14.93	0.168	0.031	1.33	0.224	/
Left Edge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Right Edge	standard	802.11nHT40	96.0%	46/5230	16.00	14.93	0.182	-0.060	1.33	0.243	71
Top Edge	standard	802.11nHT40	96.0%	46/5230	16.00	14.93	0.166	0.025	1.33	0.221	/
Bottom Edge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Note: 1. The value with blue color is the maximum SAR Value of each test band.											

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

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.
							Mea. SAR1g	Power Drift (dB)	Scaling Factor	Report SAR 1g	
Head SAR											
Left Cheek	standard	802.11nHT40	96.0%	62/5310	16.00	15.13	0.130	0.028	1.27	0.165	72
Left Tilt	standard	802.11nHT40	96.0%	62/5310	16.00	15.13	0.066	-0.025	1.27	0.084	/
Right Cheek	standard	802.11nHT40	96.0%	62/5310	16.00	15.13	0.062	-0.030	1.27	0.079	/
Right Tilt	standard	802.11nHT40	96.0%	62/5310	16.00	15.13	0.071	-0.161	1.27	0.090	/
Test Position	**Cover Type**	**Mode**	**Duty Cycle**	**Channel/ Frequency (MHz)**	**Tune-up dBm)**	**Measured power (dBm)**	**Limit of SAR 4 W/kg (mW/g)**				**Plot No.**
							Mea. SAR10g	**Power Drift (dB)**	**Scaling Factor**	**Report SAR 1g**	
Limbs SAR (Distance 0mm)											
Back Side	standard	802.11nHT40	96.0%	62/5310	16.00	15.13	0.737	0.112	1.27	0.410	73
Front Side	standard	802.11nHT40	96.0%	62/5310	16.00	15.13	0.481	0.062	1.27	0.220	/
Left Edge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Right Edge	standard	802.11nHT40	96.0%	62/5310	16.00	15.13	0.642	-0.010	1.27	0.363	/
Top Edge	standard	802.11nHT40	96.0%	62/5310	16.00	15.13	0.429	0.096	1.27	0.183	/
Bottom Edge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

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

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.
							Mea. SAR1g	Power Drift (dB)	Scaling Factor	Report SAR 1g	
Head SAR											
Left Cheek	standard	802.11nHT40	96.0%	102/5510	16.00	15.70	0.171	-0.196	1.12	0.191	74
Left Tilt	standard	802.11nHT40	96.0%	102/5510	16.00	15.70	0.130	-0.117	1.12	0.145	/
Right Cheek	standard	802.11nHT40	96.0%	102/5510	16.00	15.70	0.080	0.090	1.12	0.089	/
Right Tilt	standard	802.11nHT40	96.0%	102/5510	16.00	15.70	0.089	-0.089	1.12	0.099	/
Test Position	**Cover Type**	**Mode**	**Duty Cycle**	**Channel/ Frequency (MHz)**	**Tune-up dBm)**	**Measured power (dBm)**	**Limit of SAR 4 W/kg (mW/g)**				**Plot No.**
							Mea. SAR10g	**Power Drift (dB)**	**Scaling Factor**	**Report SAR 1g**	
Limbs SAR (Distance 0mm)											
Back Side	standard	802.11nHT40	96.0%	102/5510	16.00	15.70	1.680	0.028	1.12	0.493	75
Front Side	standard	802.11nHT40	96.0%	102/5510	16.00	15.70	0.242	0.032	1.12	0.097	/
Left Edge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Right Edge	standard	802.11nHT40	96.0%	102/5510	16.00	15.70	1.530	0.050	1.12	0.506	/
Top Edge	standard	802.11nHT40	96.0%	102/5510	16.00	15.70	0.807	-0.016	1.12	0.256	/
Bottom Edge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

Table 33: Wi-Fi (5G,U-NII-3 ANT 2)

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.
							Mea. SAR1g	Power Drift (dB)	Scaling Factor	Report SAR 1g	
Head SAR											
Left Cheek	standard	802.11nHT40	96.0%	151/5755	16.00	15.07	0.121	0.077	1.29	0.156	76
Left Tilt	standard	802.11nHT40	96.0%	151/5755	16.00	15.07	0.085	0.148	1.29	0.109	/
Right Cheek	standard	802.11nHT40	96.0%	151/5755	16.00	15.07	0.017	0.077	1.29	0.022	/
Right Tilt	standard	802.11nHT40	96.0%	151/5755	16.00	15.07	0.035	-0.042	1.29	0.046	/
Body-worn SAR &Hotspot SAR(Distance 10mm)											
Back Side	standard	802.11nHT40	96.0%	151/5755	16.00	15.07	0.175	-0.152	1.29	0.226	77
Front Side	standard	802.11nHT40	96.0%	151/5755	16.00	15.07	0.024	0.029	1.29	0.031	/
Left Edge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Right Edge	standard	802.11nHT40	96.0%	151/5755	16.00	15.07	0.158	0.034	1.29	0.204	/
Top Edge	standard	802.11nHT40	96.0%	151/5755	16.00	15.07	0.097	0.014	1.29	0.125	/
Bottom Edge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Note: 1. The value with blue color is the maximum SAR Value of each test band.											

Table 34: 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.
							Mea. SAR1g	Power Drift (dB)	Scaling Factor	Report SAR 1g	
Head SAR											
Left Cheek	standard	DH5	76.0%	39/2441	11.00	10.18	0.082	-0.036	1.59	0.130	78
Left Tilt	standard	DH5	76.0%	39/2441	11.00	10.18	0.063	-0.187	1.59	0.100	/
Right Cheek	standard	DH5	76.0%	39/2441	11.00	10.18	0.035	-0.069	1.59	0.055	/
Right Tilt	standard	DH5	76.0%	39/2441	11.00	10.18	0.029	0.031	1.59	0.046	/
Body-worn SAR &Hotspot SAR(Distance 10mm)											
Back Side	standard	DH5	76.0%	39/2441	11.00	10.18	0.013	-0.092	1.59	0.021	/
Front Side	standard	DH5	76.0%	39/2441	11.00	10.18	0.010	-0.039	1.59	0.016	/
Left Edge	standard	DH5	76.0%	39/2441	11.00	10.18	0.005	-0.114	1.59	0.008	/
Right Edge	standard	DH5	76.0%	39/2441	11.00	10.18	0.007	0.056	1.59	0.010	/
Top Edge	standard	DH5	76.0%	39/2441	11.00	10.18	0.018	-0.023	1.59	0.029	79
Bottom Edge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Note: 1. The value with blue color is the maximum SAR Value of each test band.											

10.3 Simultaneous Transmission Analysis

Simultaneous Transmission Configurations	Head	Body-worn	Hotspot	Product Specific 10-g SAR
WLAN2.4G Ant1+WLAN 2.4G Ant2	Yes	Yes	Yes	Yes
WLAN2.4G Ant1+WLAN5G Ant2	Yes	Yes	Yes	Yes
WLAN5G Ant1+WLAN5G Ant2	Yes	Yes	Yes	Yes
WLAN5G Ant1+WLAN5G Ant2+BT	Yes	Yes	Yes	Yes
WLAN5G Ant1+BT	Yes	Yes	Yes	Yes
WLAN5G Ant2+BT	Yes	Yes	Yes	Yes
WWAN + WLAN2.4GHz SISO/MIMO	Yes	Yes	Yes	Yes
WWAN+ WLAN5GHz SISO/MIMO	Yes	Yes	Yes	Yes
WWAN + WLAN2.4GHz Ant.1 + WLAN5GHz Ant.2	Yes	Yes	Yes	Yes
WWAN+ Bluetooth + WLAN5GHz Ant.1	Yes	Yes	Yes	Yes
WWAN + Bluetooth + WLAN5GHz Ant.2	Yes	Yes	Yes	Yes
WWAN+ Bluetooth + WLAN5GHz MIMO	Yes	Yes	Yes	Yes

General Note:

1. The Scaled SAR summation is calculated based on the same configuration and test position.
2. Per KDB 447498 D01, simultaneous transmission SAR is compliant if,

i) Scalar SAR summation < 1.6W/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.

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

Test Position \ SAR_{1g}(W/kg)		GSM 850	GSM 1900	WCDMA II	WCDMA IV	WCDMA V	LTE 2	LTE 4	LTE 5	LTE 7	LTE 38	LTE 41	MAX. SAR_{1g}
Left Cheek		0.092	0.054	0.116	0.117	0.096	0.221	0.075	0.122	0.081	0.043	0.047	0.221
Left Tilt		0.058	0.055	0.061	0.052	0.061	0.208	0.043	0.071	0.045	0.019	0.030	0.208
Right Cheek		0.101	0.024	0.081	0.027	0.111	0.257	0.017	0.134	0.124	0.057	0.050	0.257
Right Tilt		0.055	0.017	0.100	0.012	0.054	0.180	0.027	0.060	0.093	0.050	0.049	0.180
Body worn	Back Side	0.243	0.374	0.309	0.346	0.212	0.442	0.457	0.376	0.612	0.571	0.515	0.612
	Front Side	0.159	0.208	0.200	0.212	0.159	0.229	0.237	0.196	0.307	0.306	0.249	0.307
Hotspot	Back Side	0.295	0.374	0.309	0.346	0.212	0.442	0.457	0.376	0.612	0.571	0.515	0.612
	Front Side	0.159	0.208	0.200	0.212	0.159	0.229	0.237	0.196	0.307	0.306	0.249	0.307
	Left Edge	0.131	0.079	0.077	0.110	0.117	0.102	0.108	0.129	0.193	0.086	0.070	0.193
	Right Edge	0.020	0.088	0.086	0.400	0.014	0.122	0.136	0.046	0.253	0.089	0.084	0.400
	Top Edge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Bottom Edge	0.211	0.516	0.532	0.482	0.222	0.634	0.557	0.258	0.996	0.642	0.735	0.996
Product Specific 10-g SAR	Back Side	NA	NA	NA	NA	NA	1.312	1.185	NA	1.458	NA	NA	1.458
	Front Side	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Left Edge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Right Edge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Top Edge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Bottom Edge	NA	NA	NA	1.571	NA	1.876	1.694	NA	1.225	0.878	0.812	1.876

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

Test Position \ SAR_{1g}(W/kg)		GSM 850	WCDMA V	LTE 5	MAX. SAR_{1g}
Left Cheek		0.411	0.458	0.400	0.458
Left Tilt		0.352	0.392	0.378	0.392
Right Cheek		0.490	0.575	0.571	0.575
Right Tilt		0.421	0.502	0.468	0.502
Body worn	Back Side	0.235	0.203	0.212	0.235
	Front Side	0.151	0.152	0.155	0.155
Hotspot	Back Side	0.235	0.203	0.212	0.235
	Front Side	0.151	0.152	0.155	0.155
	Left Edge	0.058	0.072	0.102	0.102
	Right Edge	NA	NA	NA	NA
	Top Edge	0.146	0.149	0.155	0.155
	Bottom Edge	NA	NA	NA	NA

SAR Simultaneous Tx Combination of Main-Antenna with Wi-Fi/BT Scenario

Test Position		Main-Antenna MaxSAR	WiFi 2.4G Ant1	WiFi 2.4G Ant2	WiFi 2.4G MIMO	WiFi 5G Ant1	WiFi 5G Ant2	WiFi 5G MIMO	BT	Simultaneously Transmission SAR							
		1	2	3	4	5	6	7	8	1+max (2,3,4)	1+max (5,6,7)	2+6	7+8	5+8	6+8	1+2+6	1+8+7
Left cheek		0.221	0.451	0.151	0.602	0.702	0.191	0.893	0.130	0.823	1.114	0.642	1.023	0.832	0.321	0.863	1.244
Left tilt		0.208	0.528	0.104	0.632	0.729	0.145	0.874	0.100	0.840	1.082	0.673	0.974	0.829	0.245	0.881	1.182
Right cheek		0.257	0.200	0.773	0.973	0.572	0.089	0.661	0.055	1.230	0.918	0.289	0.716	0.627	0.144	0.546	0.973
Right tilt		0.180	0.312	0.338	0.65	0.770	0.099	0.869	0.046	0.830	1.049	0.411	0.915	0.816	0.145	0.591	1.095
Body worn	Back Side	0.612	0.087	0.036	0.123	0.209	0.226	0.435	0.021	0.735	1.047	0.313	0.456	0.230	0.247	0.925	1.068
	Front Side	0.307	0.076	0.020	0.096	0.170	0.224	0.394	0.016	0.403	0.701	0.300	0.410	0.186	0.240	0.607	0.717
Hotspot	Back Side	0.612	0.087	0.036	0.123	0.209	0.226	0.435	0.021	0.735	1.047	0.313	0.456	0.230	0.247	0.925	1.068
	Front Side	0.307	0.076	0.020	0.096	0.170	0.224	0.394	0.016	0.403	0.701	0.300	0.410	0.186	0.240	0.607	0.717
	Left Edge	0.193	0.036	0.031	0.067	N/A	N/A	N/A	0.008	0.260	0.193	0.036	0.008	0.008	0.008	0.229	0.201
	Right Edge	0.400	0.017	0.008	0.025	0.175	0.243	0.418	0.010	0.425	0.818	0.260	0.428	0.185	0.253	0.660	0.828
	Top Edge	NA	0.174	0.048	0.222	0.321	0.221	0.542	0.029	0.222	0.542	0.395	0.571	0.350	0.250	0.395	0.571
	Bottom Edge	0.996	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.996	0.996	N/A	N/A	N/A	N/A	0.996	0.996
Product Specific 10-g SAR	Back Side	1.458	N/A	N/A	N/A	0.351	0.493	0.844	N/A	1.458	2.302	0.493	2.181	1.688	1.830	1.951	3.639
	Front Side	NA	N/A	N/A	N/A	0.350	0.220	0.57	N/A	N/A	0.570	0.220	1.360	1.140	1.010	0.220	1.360
	Left Edge	NA	N/A	N/A	N/A	0.000	0.000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Right Edge	NA	N/A	N/A	N/A	0.264	0.506	0.77	N/A	N/A	0.770	0.506	2.046	1.540	1.782	0.506	2.046
	Top Edge	NA	N/A	N/A	N/A	0.491	0.256	0.747	N/A	N/A	0.747	0.256	1.750	1.494	1.259	0.256	1.750
	Bottom Edge	1.876	N/A	N/A	N/A	0.000	0.000	N/A	N/A	1.876	1.876	N/A	N/A	N/A	N/A	1.876	1.876

SAR Simultaneous Tx Combination of Second-Antenna with Wi-Fi/BT Scenario

Test Position		Second-Antenna MaxSAR	WiFi 2.4G Ant1	WiFi 2.4G Ant2	WiFi 2.4G MIMO	WiFi 5G Ant1	WiFi 5G Ant2	WiFi 5G MIMO	BT	Simultaneously Transmission SAR							
		1	2	3	4	5	6	7	8	1+max (2,3,4)	1+max (5,6,7)	2+6	7+8	5+8	6+8	1+2+6	1+8+7
Left cheek		0.411	0.451	0.151	0.602	0.702	0.191	0.893	0.130	1.013	1.304	0.642	1.023	0.832	0.321	1.053	1.434
Left tilt		0.352	0.528	0.104	0.632	0.729	0.145	0.874	0.100	0.984	1.226	0.673	0.974	0.829	0.245	1.025	1.326
Right cheek		0.490	0.200	0.773	0.973	0.572	0.089	0.661	0.055	1.463	1.151	0.289	0.716	0.627	0.144	0.779	1.206
Right tilt		0.421	0.312	0.338	0.65	0.770	0.099	0.869	0.046	1.071	1.290	0.411	0.915	0.816	0.145	0.832	1.336
Body worn	Back Side	0.235	0.087	0.036	0.123	0.209	0.226	0.435	0.021	0.358	0.670	0.313	0.456	0.230	0.247	0.548	0.691
	Front Side	0.151	0.076	0.020	0.096	0.170	0.224	0.394	0.016	0.247	0.545	0.300	0.410	0.186	0.240	0.451	0.561
Hotspot	Back Side	0.235	0.087	0.036	0.123	0.209	0.226	0.435	0.021	0.358	0.670	0.313	0.456	0.230	0.247	0.548	0.691
	Front Side	0.151	0.076	0.020	0.096	0.170	0.224	0.394	0.016	0.247	0.545	0.300	0.410	0.186	0.240	0.451	0.561
	Left Edge	0.058	0.036	0.031	0.067	N/A	N/A	N/A	0.008	0.125	0.058	0.036	0.008	0.008	0.008	0.094	0.066
	Right Edge	NA	0.017	0.008	0.025	0.175	0.243	0.418	0.010	0.025	0.418	0.260	0.428	0.185	0.253	0.260	0.428
	Top Edge	0.146	0.174	0.048	0.222	0.321	0.221	0.542	0.029	0.368	0.688	0.395	0.571	0.350	0.250	0.541	0.717
	Bottom Edge	NA	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

11 Measurement Uncertainty

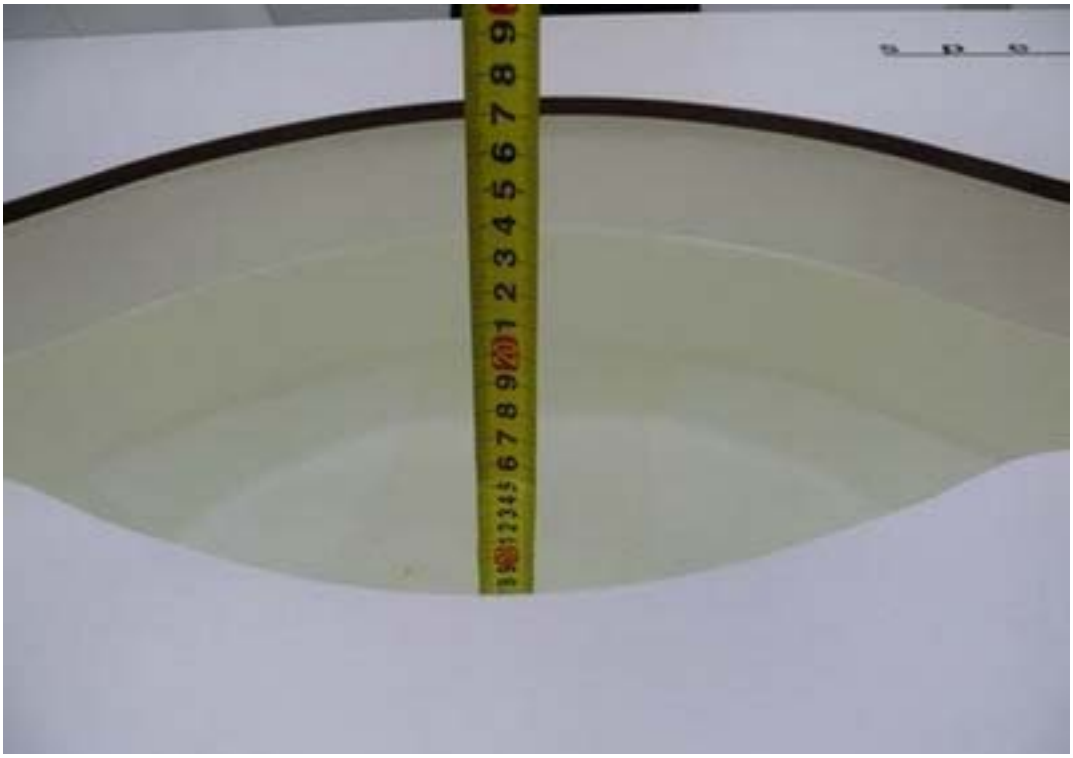
Per KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg, the extensive SAR measurement uncertainty analysis described in IEEE Std 1528- 2013 is not required in SAR reports submitted for equipment approval. This also applies to the 10-g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

ANNEX A: Test Layout

Tissue Simulating Liquids

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

Picture 3: liquid depth in the head Phantom



Picture 4: Liquid depth in the flat Phantom

ANNEX B: System Check Results

Plot 1 System Performance Check at 835 MHz TSL

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

Date: 7/21/2020

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(9.38, 9.38, 9.38); Calibrated:7/6/2020;

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 (4x12x1): Measurement grid: dx=15mm, dy=15mm

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

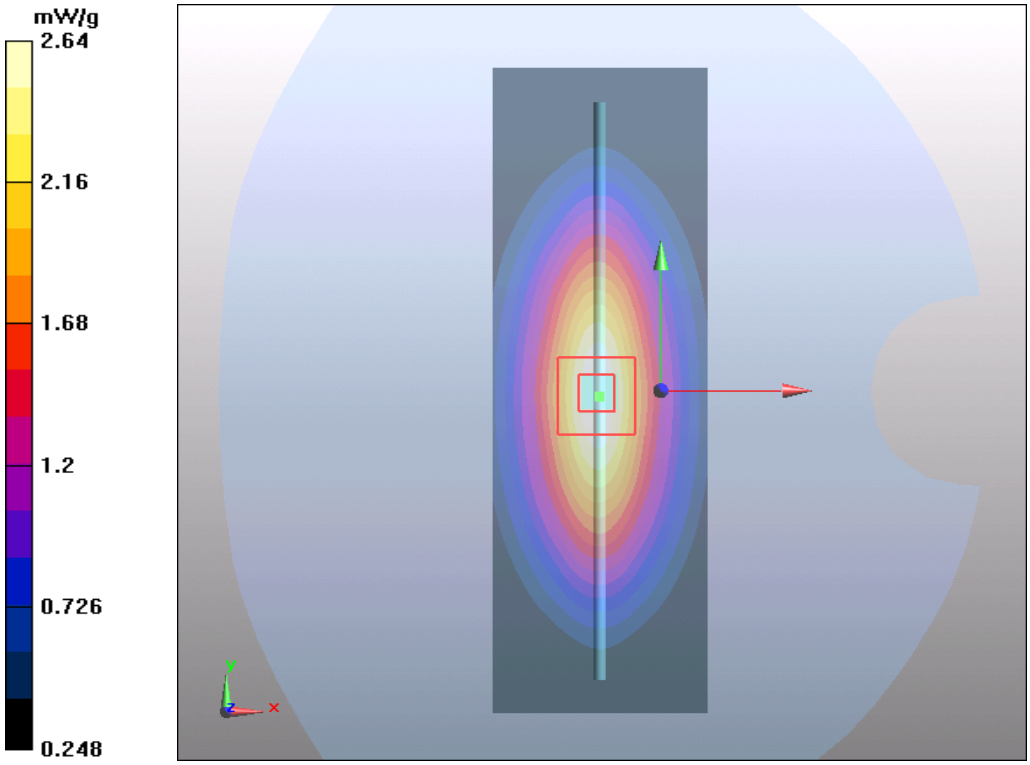
d=15mm, Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

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



Plot 2 System Performance Check at 835 MHz TSL

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

Date: 7/22/2020

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(9.38, 9.38, 9.38); Calibrated:7/6/2020;

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 (4x12x1): Measurement grid: dx=15mm, dy=15mm

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

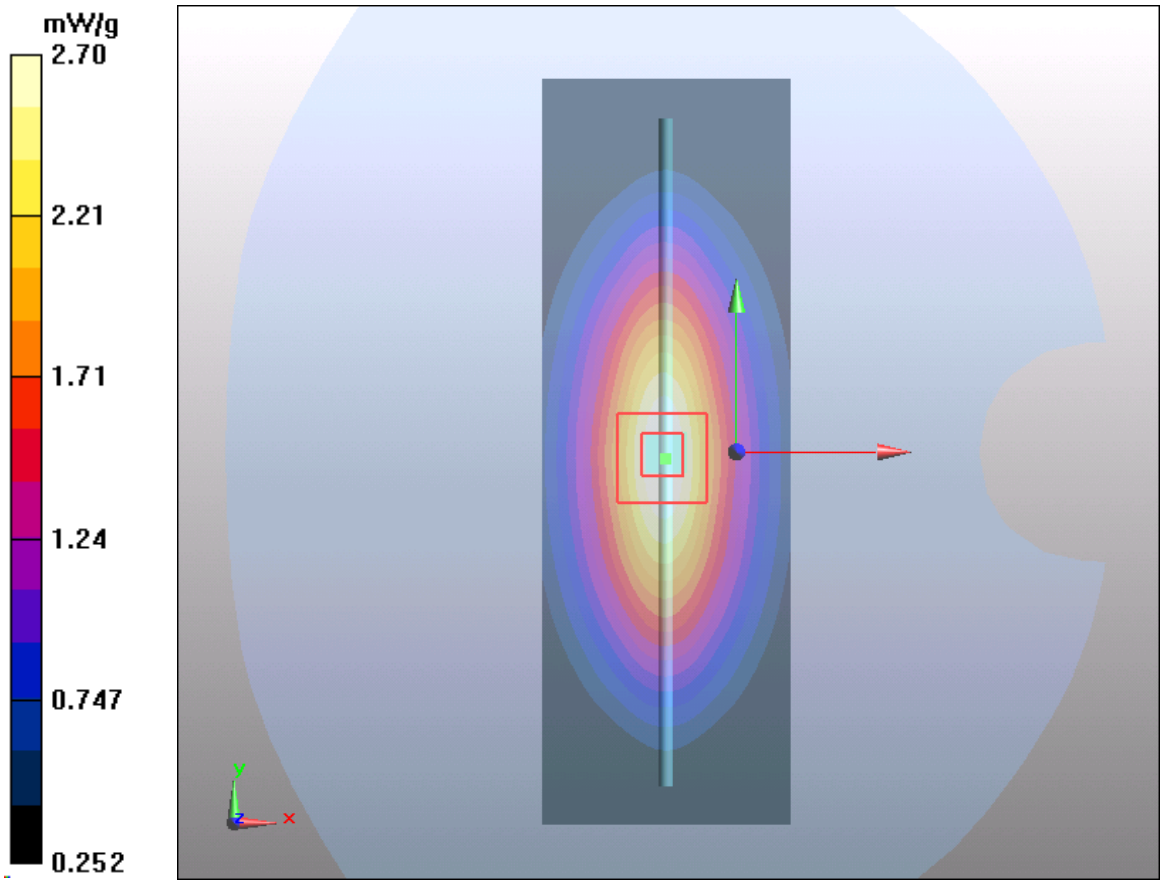
d=15mm, Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

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



Plot 3 System Performance Check at 835 MHz TSL

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

Date: 7/23/2020

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(9.38, 9.38, 9.38); Calibrated:7/6/2020;

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 (4x12x1): Measurement grid: dx=15mm, dy=15mm

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

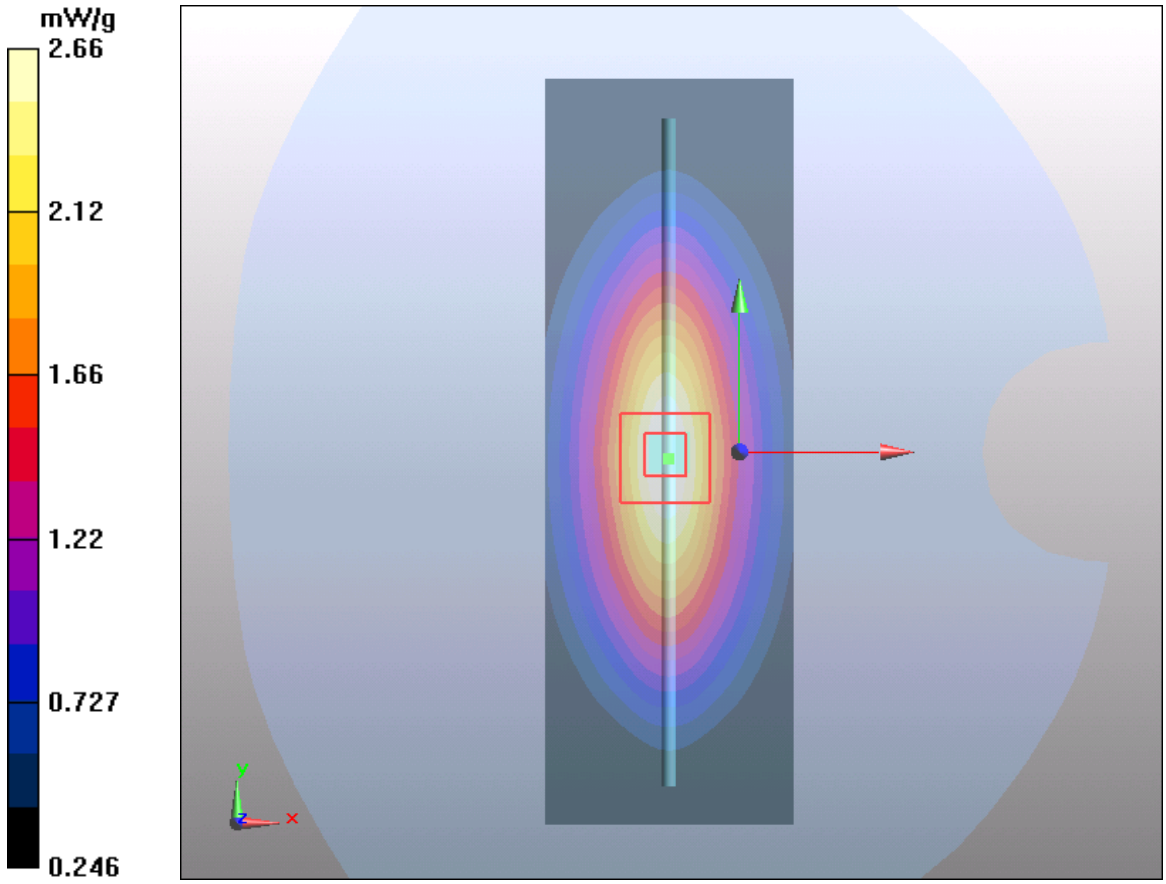
d=15mm, Pin=250mW/Zoom Scan(5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

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



Plot 4 System Performance Check at 1750 MHz TSL

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

Date: 7/27/2020

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(8.25, 8.25, 8.25); Calibrated: 7/6/2020;

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 (5x8x1): Measurement grid: dx=15mm, dy=15mm

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

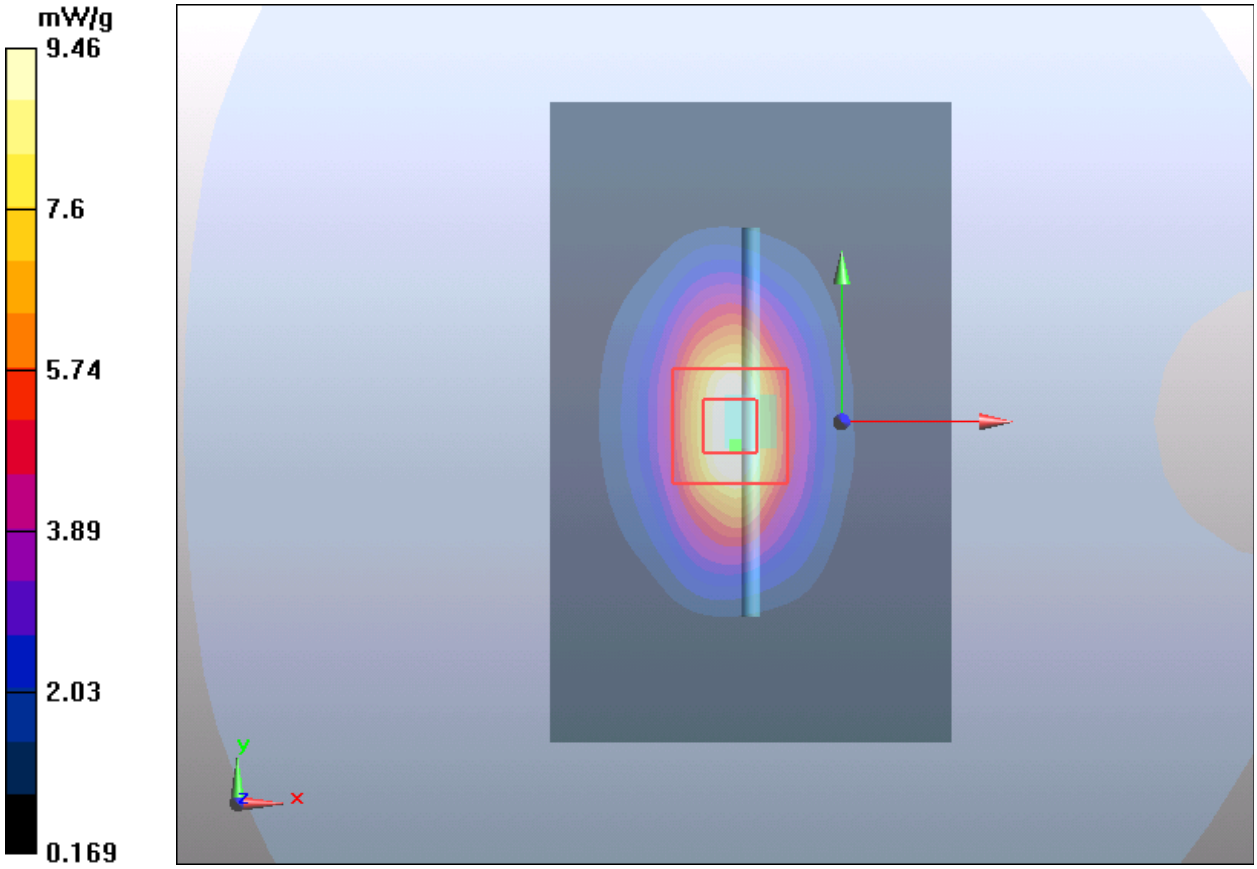
d=10mm, Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

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

Peak SAR (extrapolated) = 15.5 W/kg

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

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



Plot 5 System Performance Check at 1900 MHz TSL

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

Date: 7/13/2020

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(7.90, 7.90, 7.90); Calibrated: 7/6/2020;

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 (4x7x1): Measurement grid: dx=15mm, dy=15mm

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

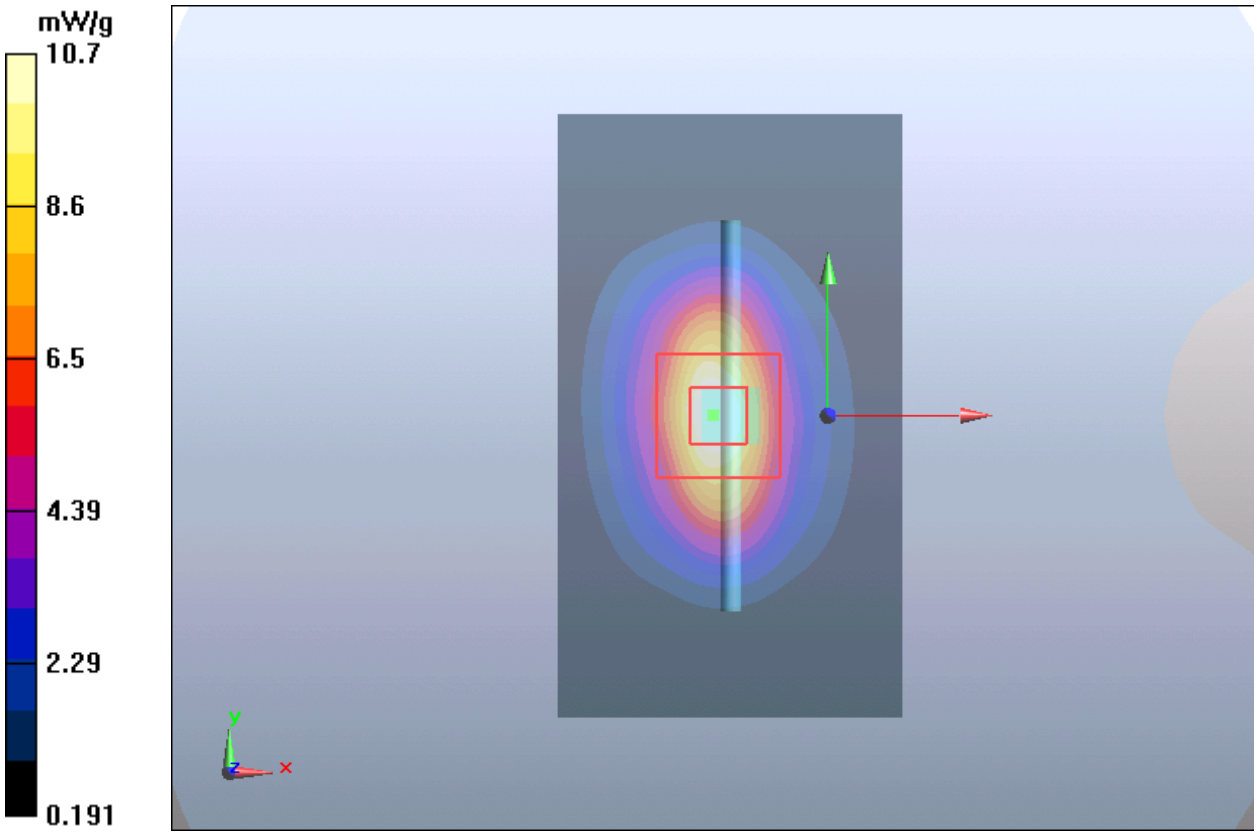
d=10mm, Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

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

Peak SAR (extrapolated) = 17.8 W/kg

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

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



Plot 6 System Performance Check at 2450 MHz TSL

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

Date: 7/13/2020

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(7.54, 7.54, 7.54); Calibrated: 7/6/2020;

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 (4x7x1): Measurement grid: dx=12mm, dy=12mm

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

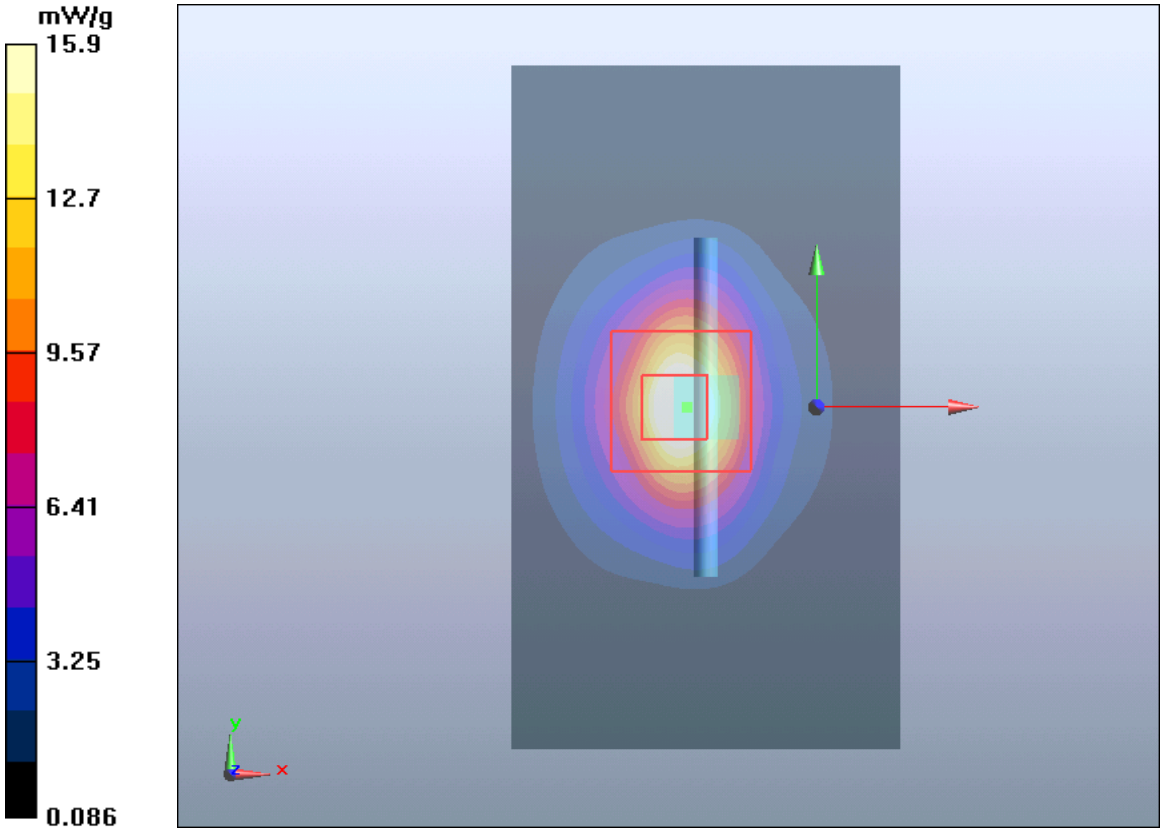
d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

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

Peak SAR (extrapolated) = 30 W/kg

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

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



Plot 7 System Performance Check at 2600 MHz TSL

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

Date: 7/15/2020

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(7.26, 7.26, 7.26); Calibrated: 7/6/2020;

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 (4x7x1): Measurement grid:dx=12mm, dy=12mm

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

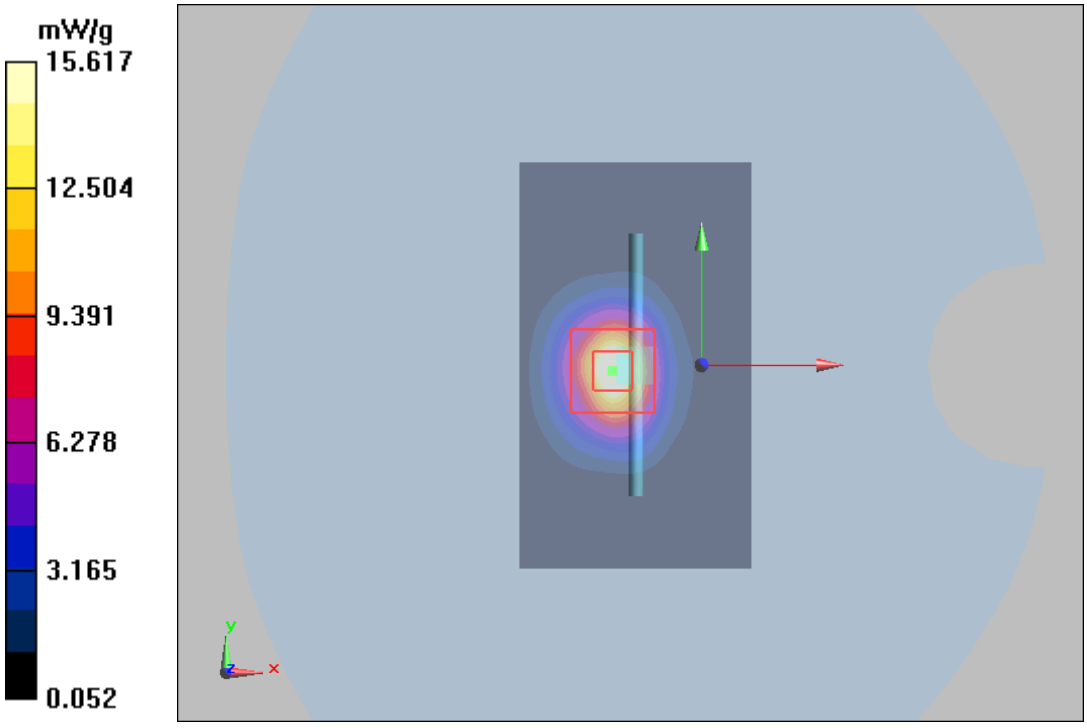
d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

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

Peak SAR (extrapolated) = 31.858 W/kg

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

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



Plot 8 System Performance Check at 2600 MHz TSL

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

Date: 7/16/2020

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(7.26, 7.26, 7.26); Calibrated: 7/6/2020;

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 (4x7x1): Measurement grid:dx=12mm, dy=12mm

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

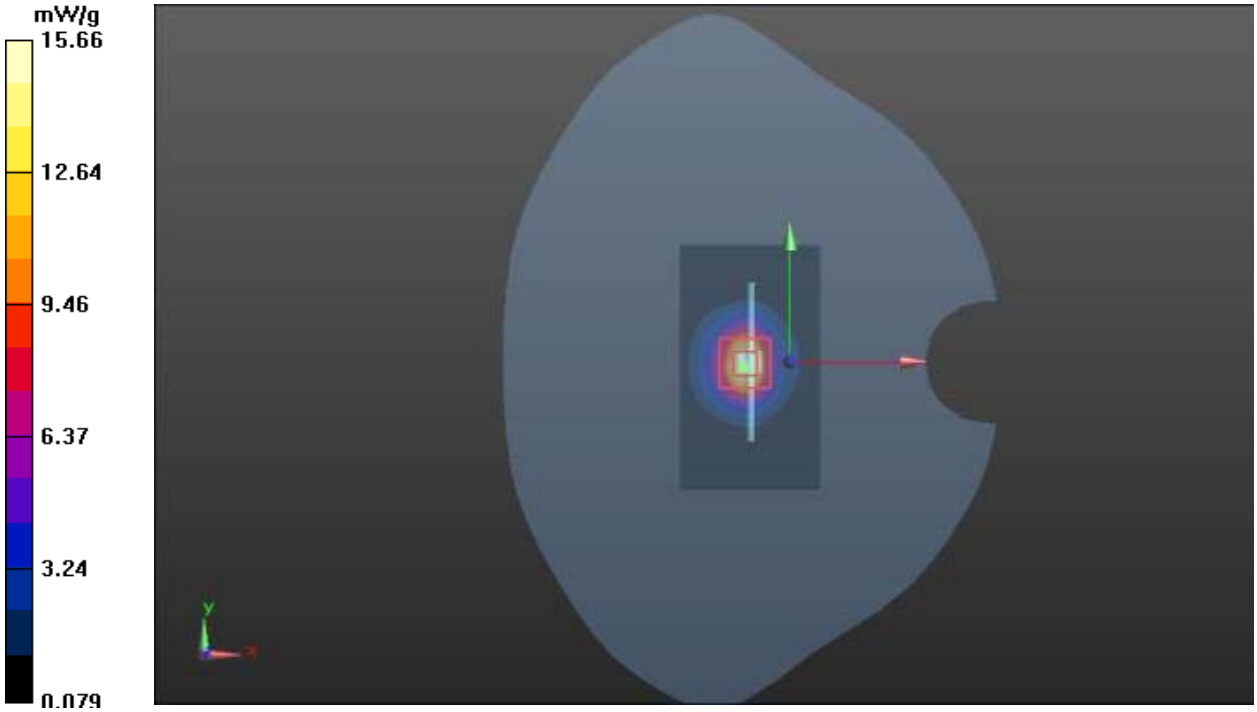
d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

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



Plot 9 System Performance Check at 2600 MHz TSL

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

Date: 7/17/2020

Communication System: CW; Frequency: 2600 MHz

Medium parameters used: f = 2600 MHz; σ = 1.99 mho/m; ε_r = 38.3; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.26, 7.26, 7.26); Calibrated: 7/6/2020;

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 (4x7x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 17.32 mW/g

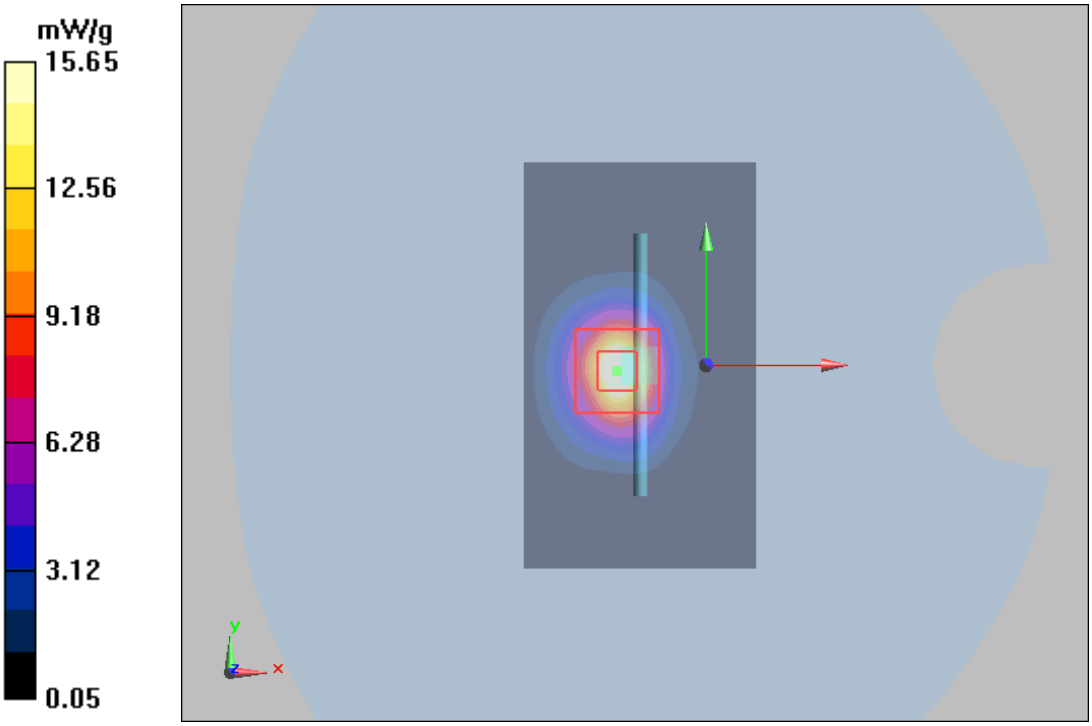
d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

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

Peak SAR (extrapolated) = 31.85 W/kg

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

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



Plot 10 System Performance Check at 5250 MHz TSL

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

Date: 7/27/2020

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(5.55, 5.55, 5.55); Calibrated: 7/6/2020;

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 (6x10x1): Measurement grid: dx=10mm, dy=10mm

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

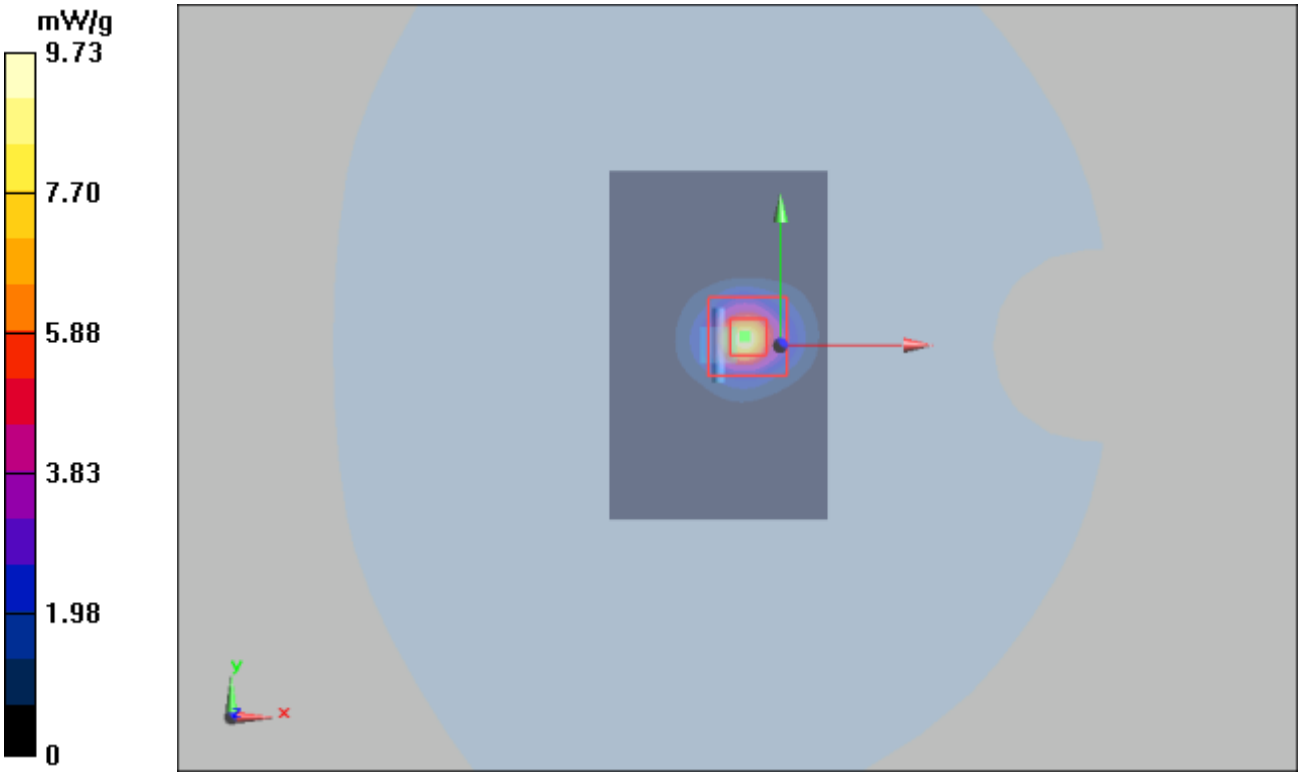
d=10mm, Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

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

Peak SAR (extrapolated) = 52.2 W/kg

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

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



Plot 11 System Performance Check at 5600 MHz TSL

DUT: Dipole 5600 MHz; Type: D5GHzV2; Serial: D5GHzV2

Date: 7/28/2020

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

Medium parameters used: f = 5600 MHz; σ = 5.21 S/m; ε_r = 34.2; 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(4.97, 4.97, 4.97); Calibrated: 7/6/2020;

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 (6x10x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 8.25 mW/g

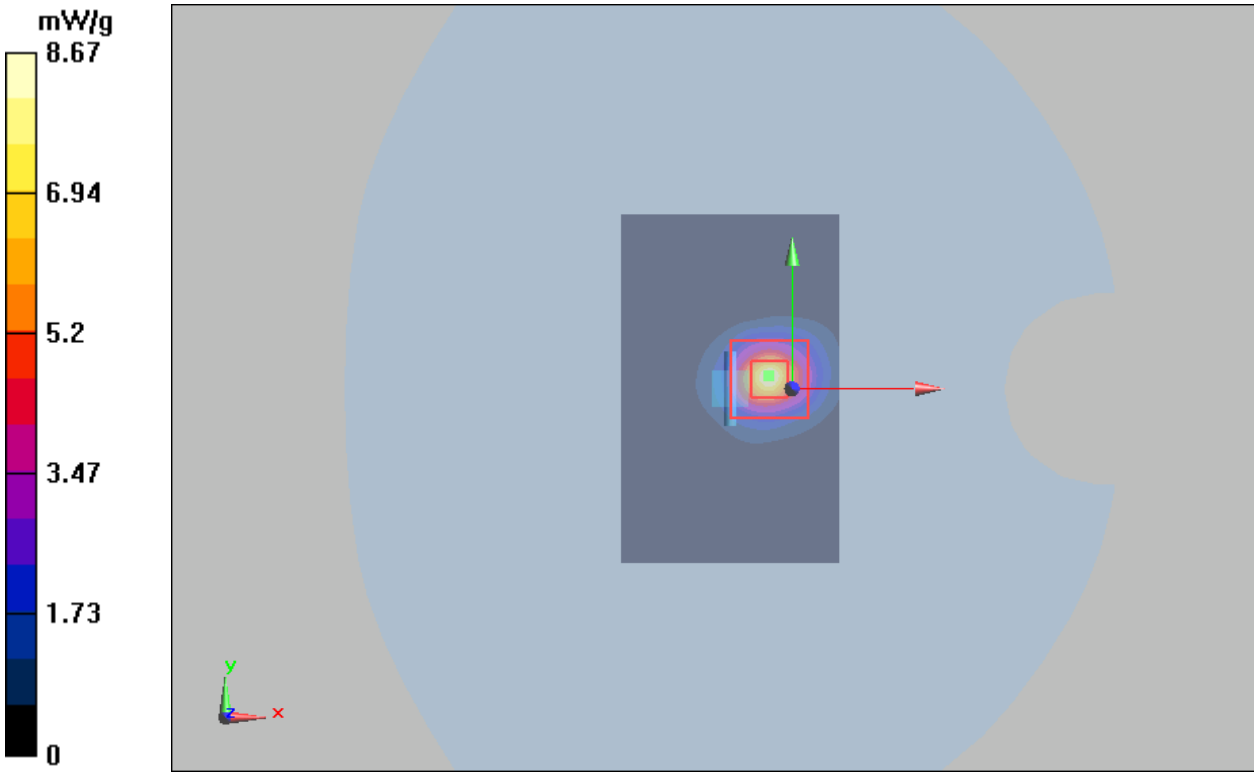
d=10mm, Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

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

Peak SAR (extrapolated) = 22.9 W/kg

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

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



Plot 12 System Performance Check at 5750 MHz TSL

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

Date: 7/28/2020

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(5.00, 5.00, 5.00); Calibrated: 7/6/2020;

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 (6x10x1): Measurement grid: dx=10mm, dy=10mm

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

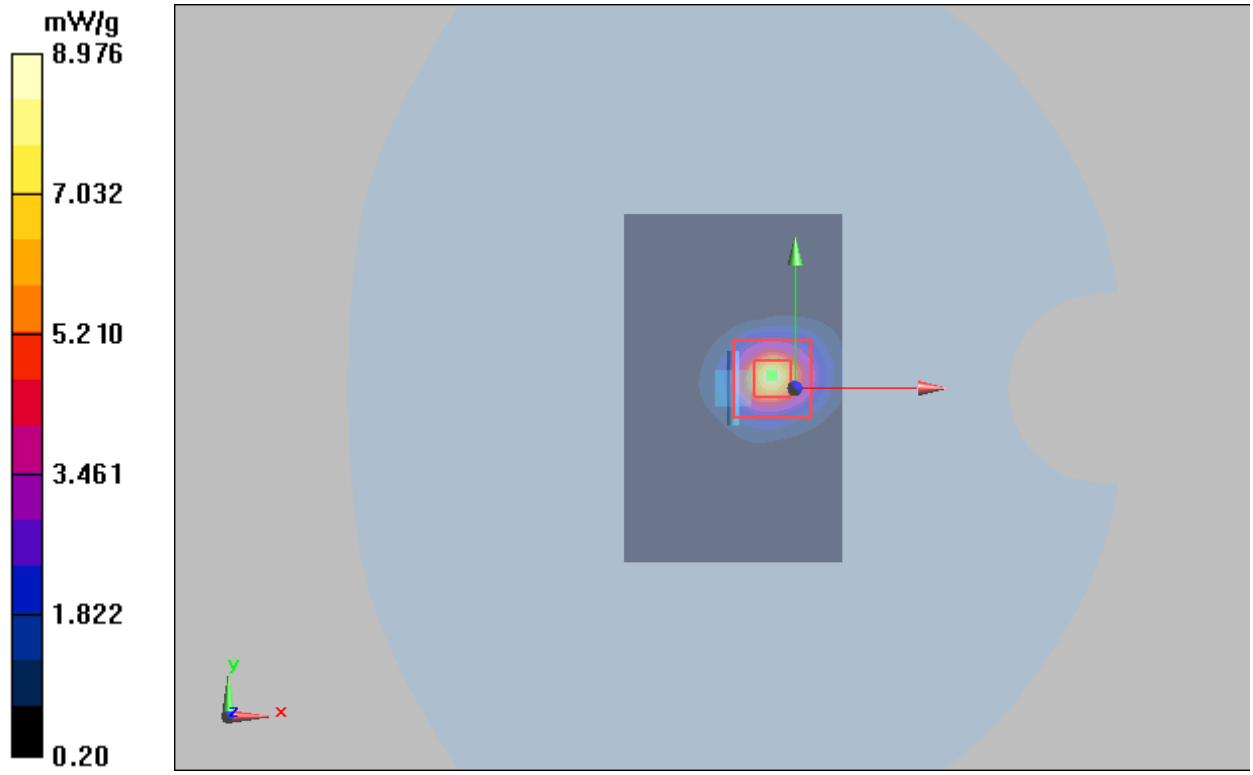
d=10mm, Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

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



ANNEX C: Highest Graph Results

Main-Antenna

Plot 13 GSM 850 Right Cheek Middle

Date: 7/21/2020

Communication System: UID 0, GSM 850 (class 12) (0); Frequency: 836.6 MHz;Duty Cycle: 1:8.3

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(9.38, 9.38, 9.38); Calibrated:7/6/2020;

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

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

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.11 (7439)

Right Cheek Middle/Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.0868 W/kg

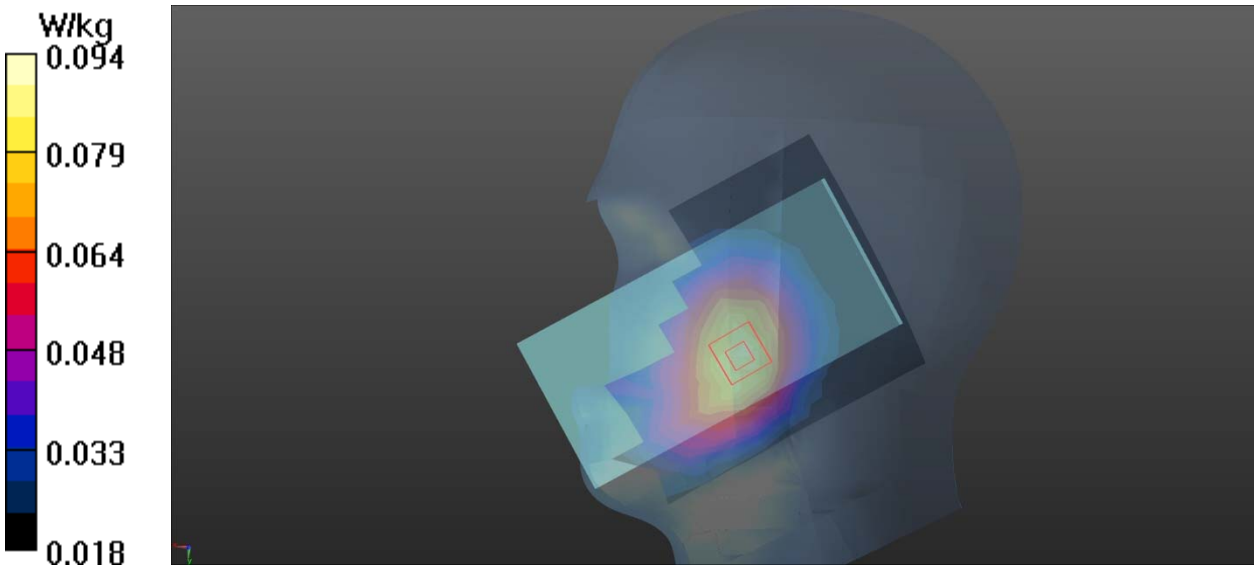
Right Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.737 V/m; Power Drift = 0.032 dB

Peak SAR (extrapolated) = 0.108 W/kg

SAR(1 g) = 0.089 W/kg; SAR(10 g) = 0.070 W/kg

Maximum value of SAR (measured) = 0.0940 W/kg



Plot 14 GSM 850 Back Side Middle (Distance 10mm)

Date: 7/21/2020

Communication System: UID 0, GPRS-4UP (0); Frequency: 836.6 MHz;Duty Cycle: 1:2.07

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(9.38, 9.38, 9.38); Calibrated:7/6/2020;

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

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

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.11 (7439)

Back Side Middle/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.187 W/kg

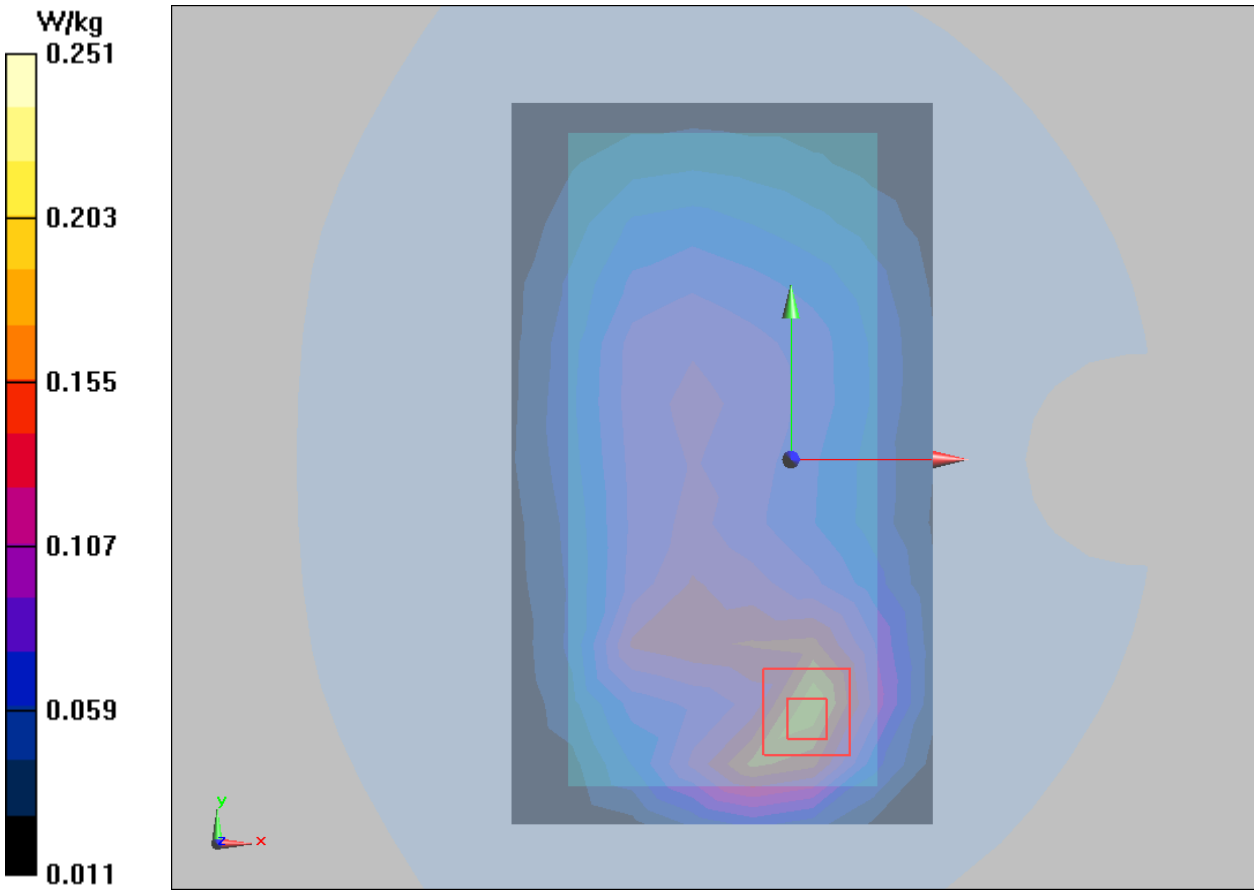
Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 10.92 V/m; Power Drift = 0.080 dB

Peak SAR (extrapolated) = 0.352 W/kg

SAR(1 g) = 0.191 W/kg; SAR(10 g) = 0.108 W/kg

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



Plot 15 GSM 850 GPRS (4Txslots) Back Side Middle (Distance 10mm)

Date: 7/21/2020

Communication System: UID 0, GPRS-4UP (0); Frequency: 836.6 MHz;Duty Cycle: 1:2.07

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(9.38, 9.38, 9.38); Calibrated:7/6/2020;

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

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

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.11 (7439)

Back Side Middle/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.187 W/kg

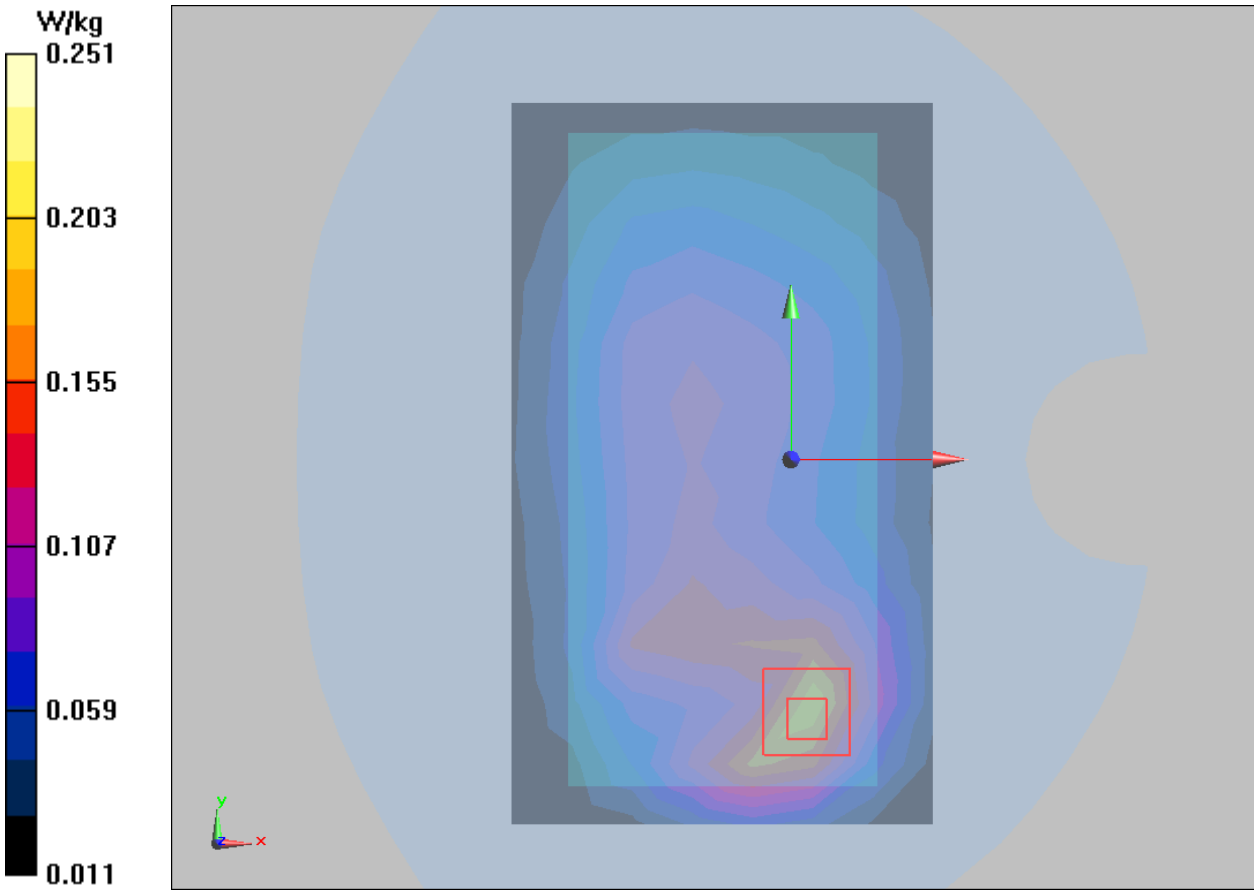
Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 10.92 V/m; Power Drift = 0.024 dB

Peak SAR (extrapolated) = 0.352 W/kg

SAR(1 g) = 0.232 W/kg; SAR(10 g) = 0.137 W/kg

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



Plot 16 GSM 1900 Left Tilt Middle

Date: 7/13/2020

Communication System: UID 0, GSM1900 (0); Frequency: 1880 MHz;Duty Cycle: 1:8.3

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(7.90, 7.90, 7.90); Calibrated: 7/6/2020;

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

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

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.11 (7439)

Left Tilt Middle/Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.0804 W/kg

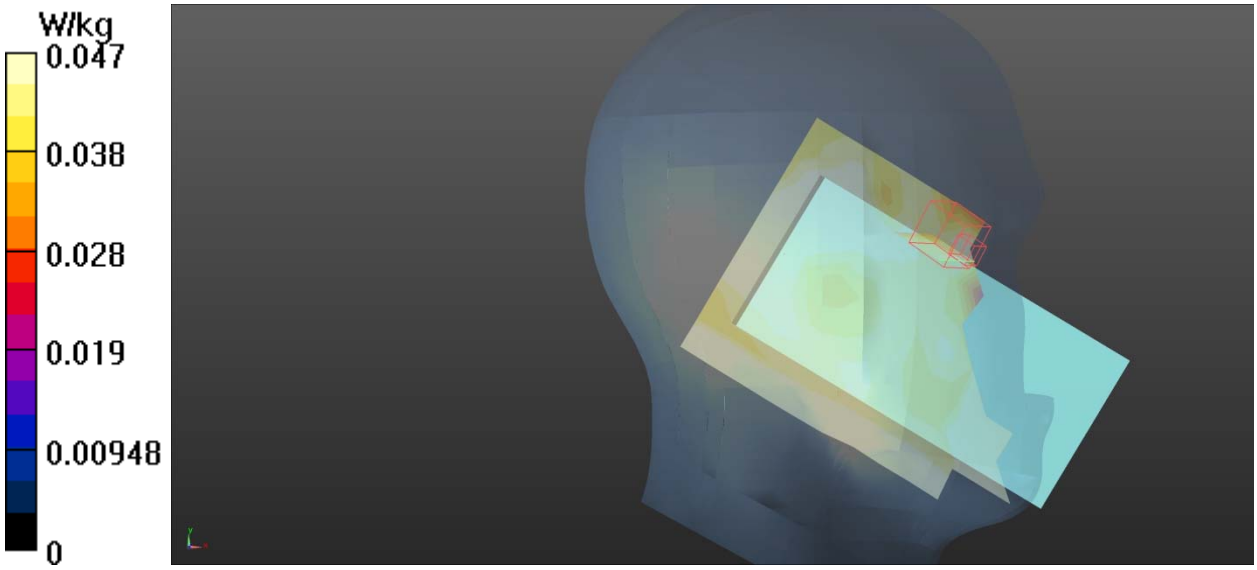
Left Tilt Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.601 V/m; Power Drift = 0.109dB

Peak SAR (extrapolated) = 0.0660 W/kg

SAR(1 g) = 0.049 W/kg; SAR(10 g) = 0.040 W/kg

Maximum value of SAR (measured) = 0.0474 W/kg



Plot 17 GSM 1900 Back Side Middle (Distance 10mm)

Date: 7/13/2020

Communication System: UID 0, GPRS-4UP (0); Frequency: 1880 MHz;Duty Cycle: 1:8.3

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(7.90, 7.90, 7.90); Calibrated: 7/6/2020;

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

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

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.11 (7439)

Back Side Middle/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.246 W/kg

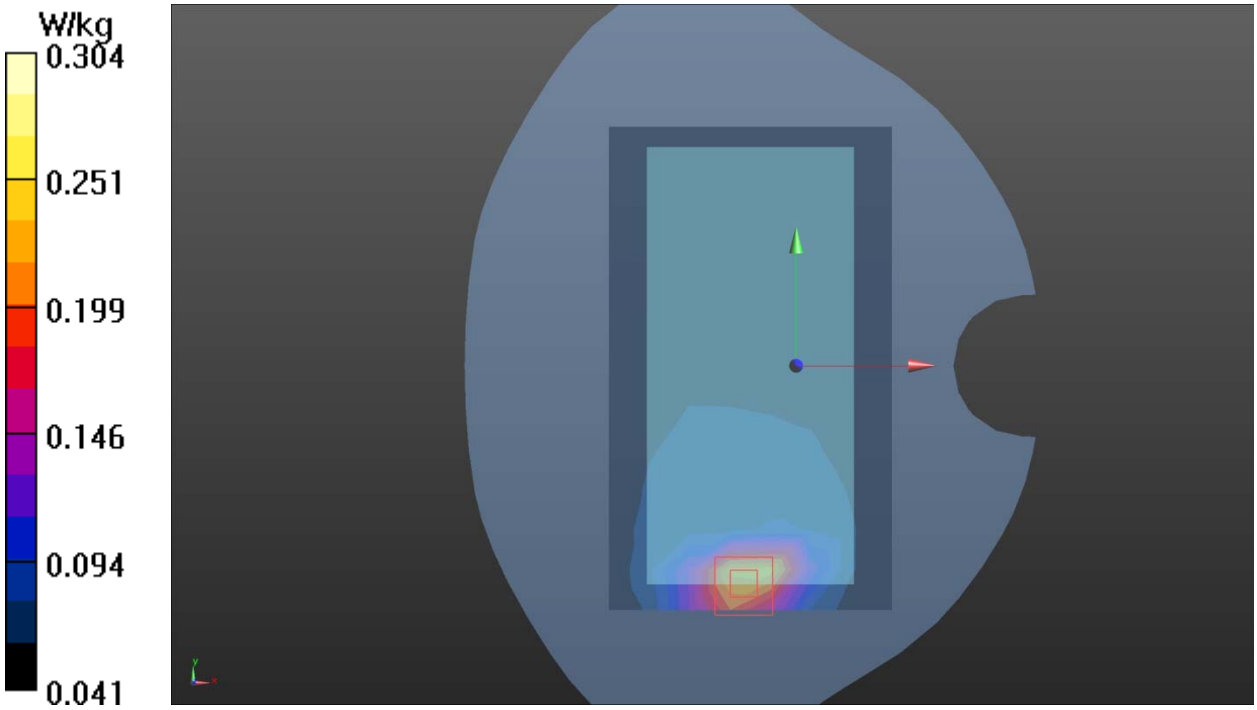
Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.079 V/m; Power Drift = 0.035 dB

Peak SAR (extrapolated) = 0.479 W/kg

SAR(1 g) = 0.279 W/kg; SAR(10 g) = 0.163 W/kg

Maximum value of SAR (measured) = 0.304 W/kg



Plot 18 GSM 1900 GPRS (4Txslots) Bottom Edge Middle (Distance 10mm)

Date: 7/13/2020

Communication System: UID 0, GPRS-4UP (0); Frequency: 1880 MHz;Duty Cycle: 1:8.3

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(7.90, 7.90, 7.90); Calibrated: 7/6/2020;

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

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

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.11 (7439)

Bottom Edge Middle/Area Scan (4x8x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.365 W/kg

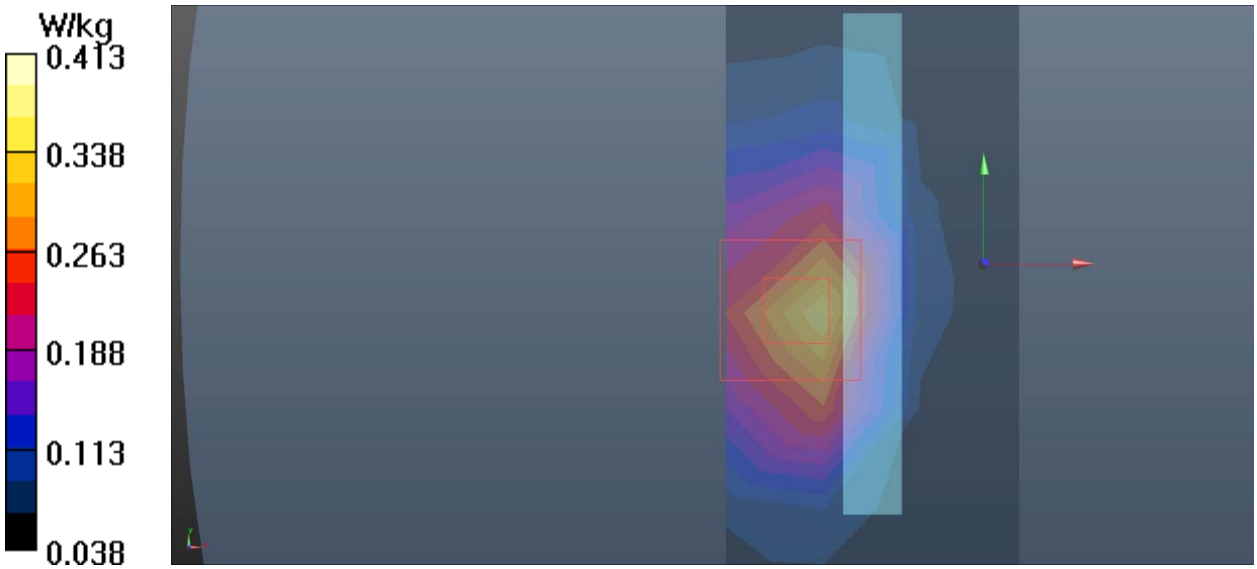
Bottom Edge Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.06 V/m; Power Drift = 0.024 dB

Peak SAR (extrapolated) = 1.63 W/kg

SAR(1 g) = 0.385 W/kg; SAR(10 g) = 0.216 W/kg

Maximum value of SAR (measured) = 0.413 W/kg



Plot 19 UMTS Band II Left Cheek Middle

Date: 7/13/2020

Communication System: UID 0, WCDMA 1900 (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: Left Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.90, 7.90, 7.90); Calibrated: 7/6/2020;

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

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

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.11 (7439)

Left Cheek Middle/Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.0954 W/kg

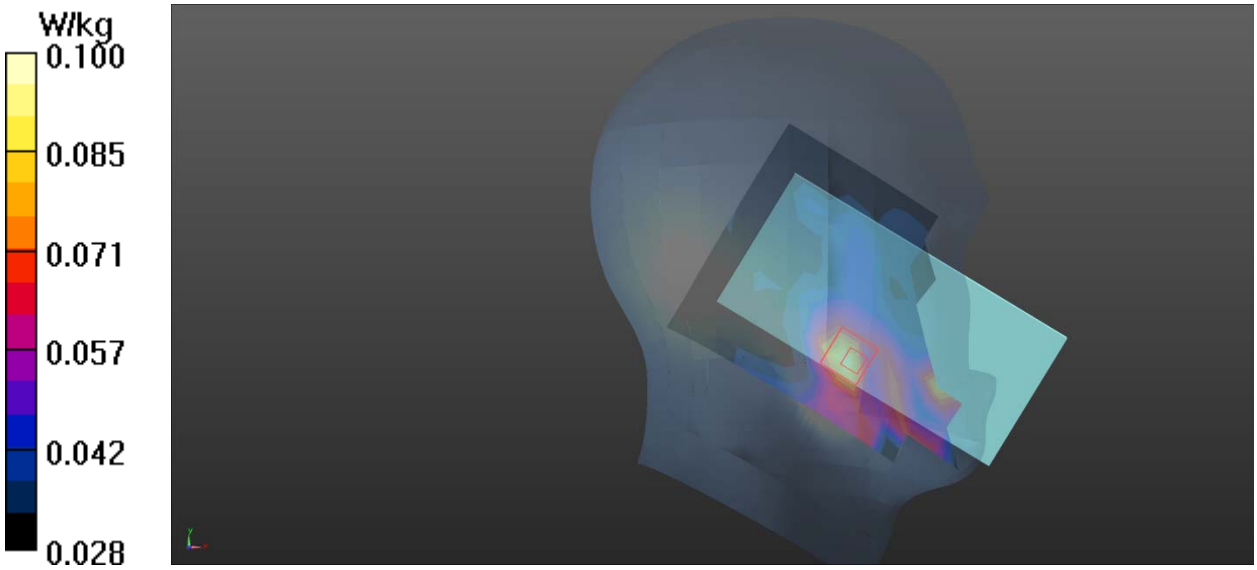
Left Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.365 V/m; Power Drift = 0.092 dB

Peak SAR (extrapolated) = 0.137 W/kg

SAR(1 g) = 0.098 W/kg; SAR(10 g) = 0.071 W/kg

Maximum value of SAR (measured) = 0.0997 W/kg



Plot 20 UMTS Band II Back Side Middle (Distance 10mm)

Date: 7/13/2020

Communication System: UID 0, WCDMA 1900 (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(7.90, 7.90, 7.90); Calibrated: 7/6/2020;

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

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

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.11 (7439)

Back Side Middle/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.242 W/kg

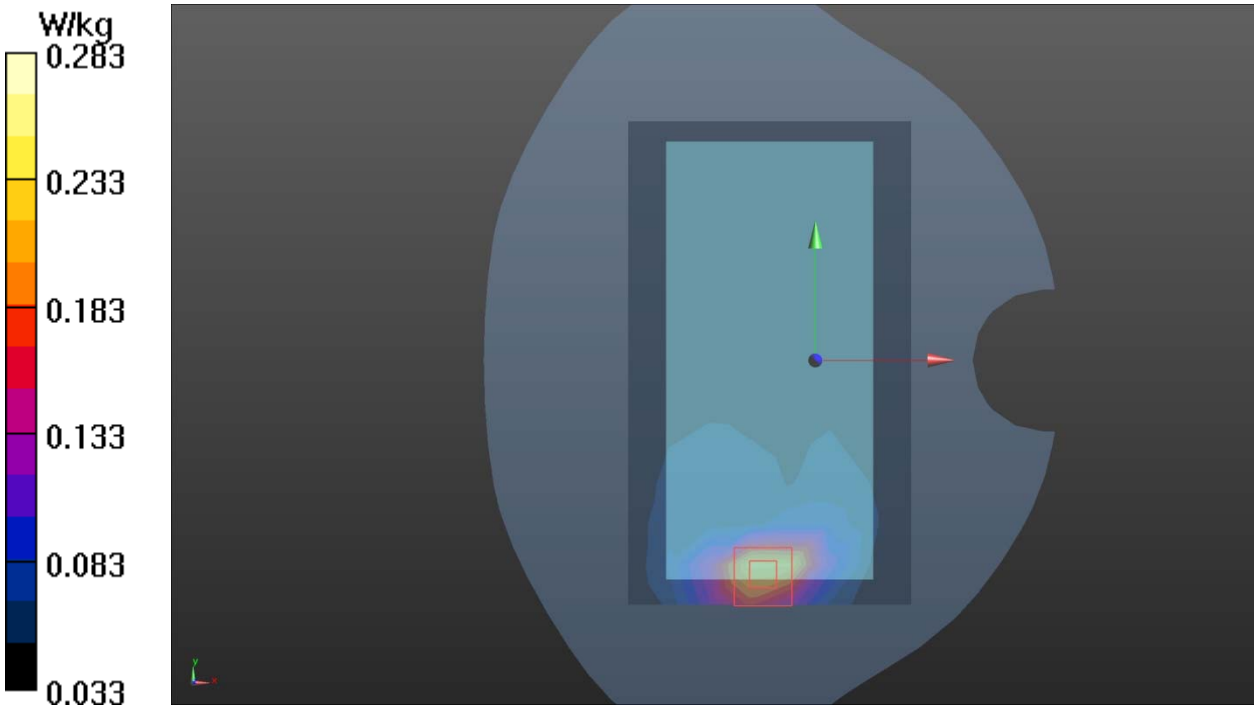
Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.435 V/m; Power Drift = 0.14 dB

Peak SAR (extrapolated) = 0.439 W/kg

SAR(1 g) = 0.259 W/kg; SAR(10 g) = 0.151 W/kg

Maximum value of SAR (measured) = 0.283 W/kg



Plot 21 UMTS Band II Bottom Edge Middle (Distance 0mm)

Date: 7/13/2020

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(7.90, 7.90, 7.90); Calibrated: 7/6/2020;

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 (4x8x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 2.34 W/kg

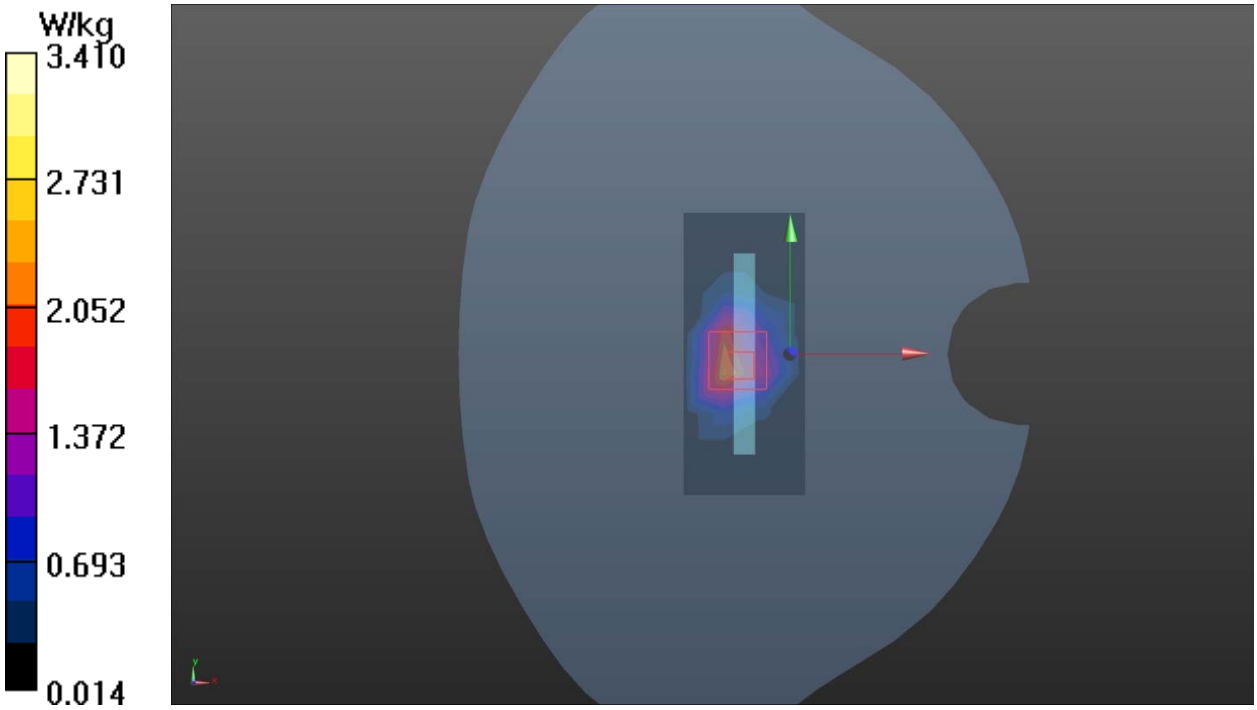
Bottom Edge Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 48.65 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 6.36 W/kg

SAR(1 g) = 2.94 W/kg; SAR(10 g) = 1.31 W/kg

Maximum value of SAR (measured) = 3.41 W/kg



Plot 22 UMTS Band II Bottom Edge Middle (Distance 10mm)

Date: 7/13/2020

Communication System: UID 0, WCDMA 1900 (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(7.90, 7.90, 7.90); Calibrated: 7/6/2020;

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

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

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.11 (7439)

Bottom Edge Middle/Area Scan (4x8x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.441 W/kg

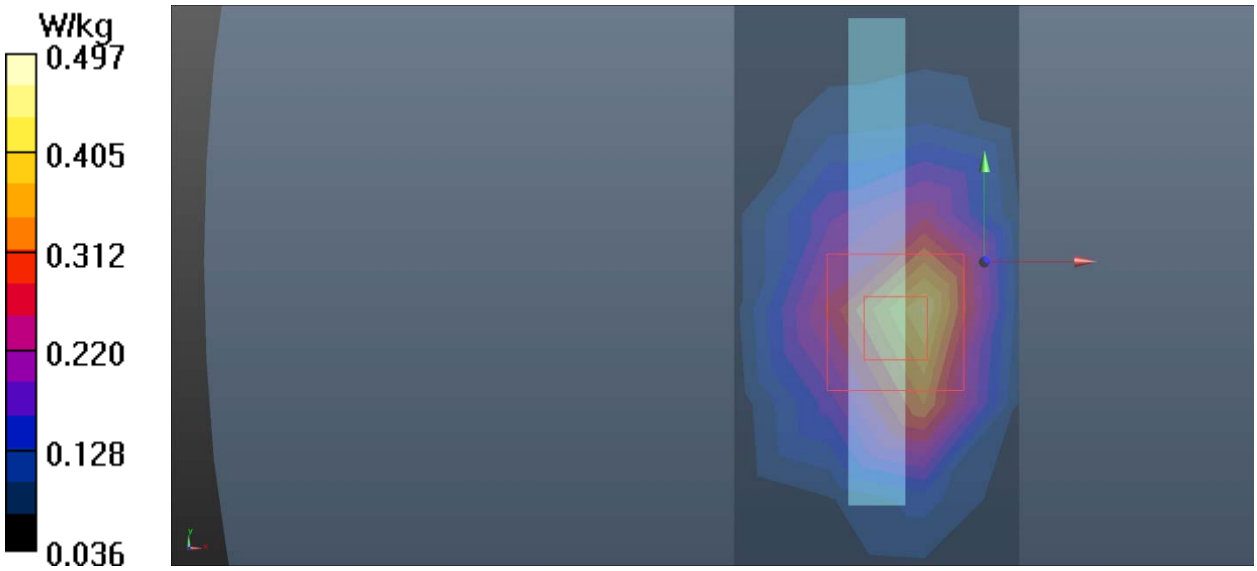
Bottom Edge Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 16.75 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 0.797 W/kg

SAR(1 g) = 0.447 W/kg; SAR(10 g) = 0.244 W/kg

Maximum value of SAR (measured) = 0.497 W/kg



Plot 23 UMTS Band IV Left Cheek Middle

Date: 7/27/2020

Communication System: UID 0, WCDMA-1700 (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: Left Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(8.25, 8.25, 8.25); Calibrated: 7/6/2020;

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

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

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.11 (7439)

Left Cheek Middle/Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.0950 W/kg

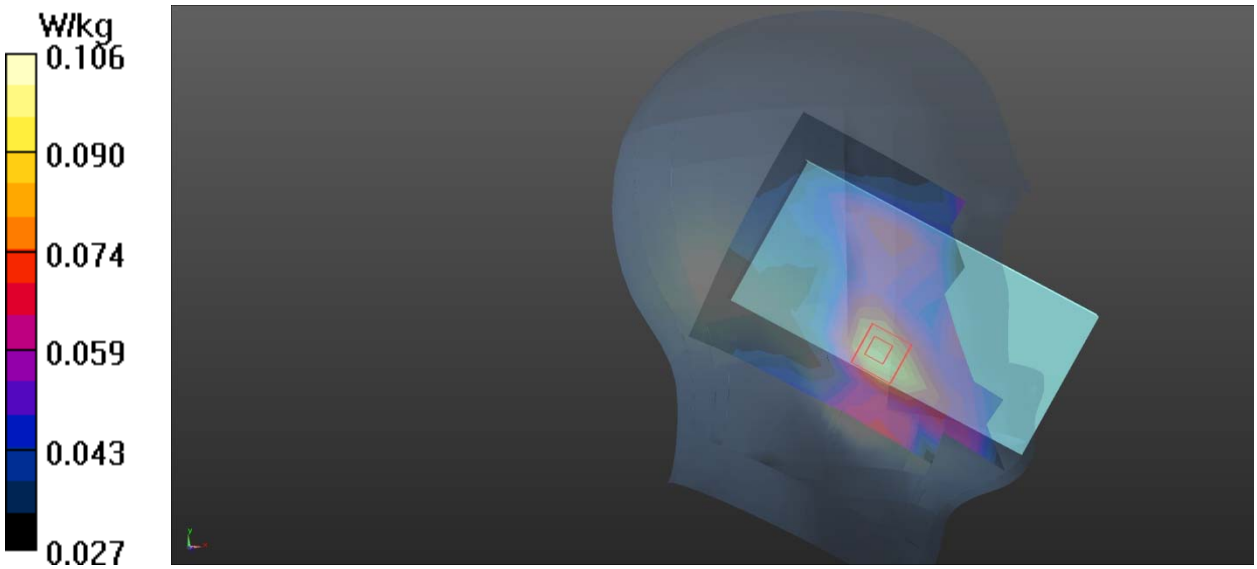
Left Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.207 V/m; Power Drift = 0.121dB

Peak SAR (extrapolated) = 0.135 W/kg

SAR(1 g) = 0.100 W/kg; SAR(10 g) = 0.072 W/kg

Maximum value of SAR (measured) = 0.106 W/kg



Plot 24 UMTS Band IV Back Side Middle(Distance 10mm)

Date: 7/27/2020

Communication System: UID 0, WCDMA-1700 (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(8.25, 8.25, 8.25); Calibrated: 7/6/2020;

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

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

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.11 (7439)

Back Side Middle/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.314 W/kg

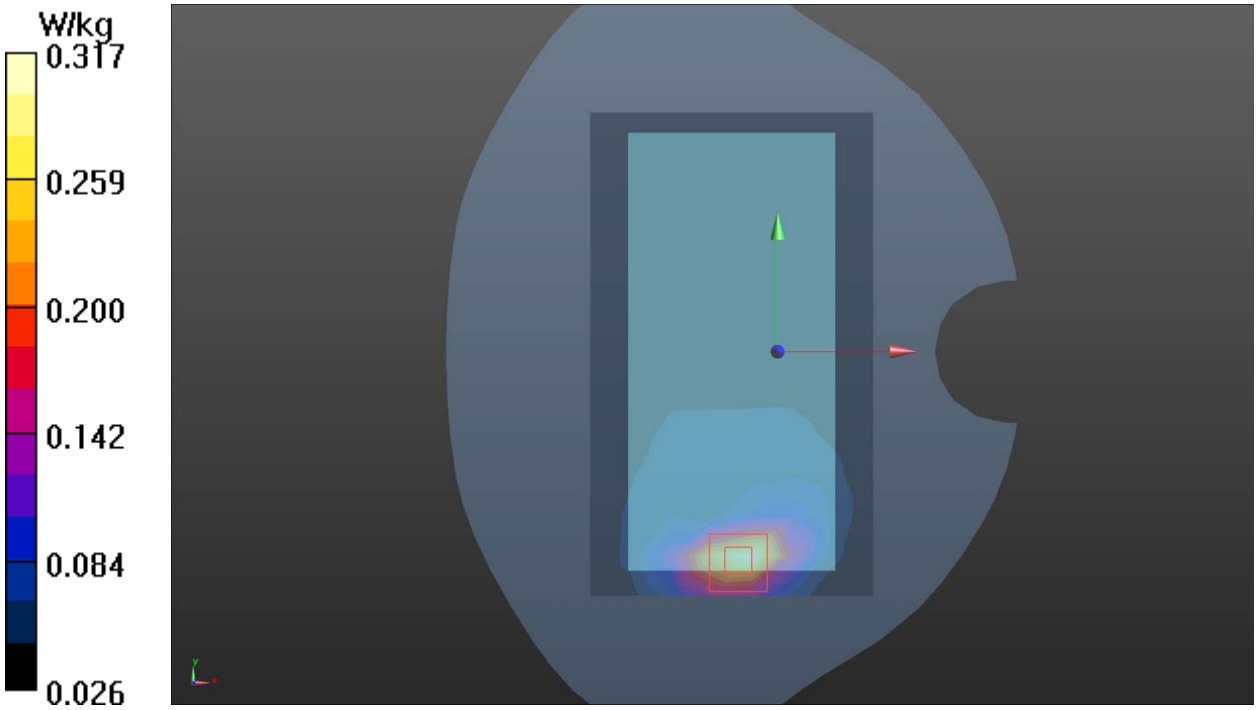
Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.705 V/m; Power Drift = 0.051 dB

Peak SAR (extrapolated) = 0.502 W/kg

SAR(1 g) = 0.295 W/kg; SAR(10 g) = 0.165 W/kg

Maximum value of SAR (measured) = 0.317 W/kg



Plot 25 UMTS Band IV Back Side Middle(Distance 10mm)

Date: 7/27/2020

Communication System: UID 0, WCDMA-1700 (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(8.25, 8.25, 8.25); Calibrated: 7/6/2020;

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

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

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.11 (7439)

Bottom Edge Middle/Area Scan (4x8x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.451 W/kg

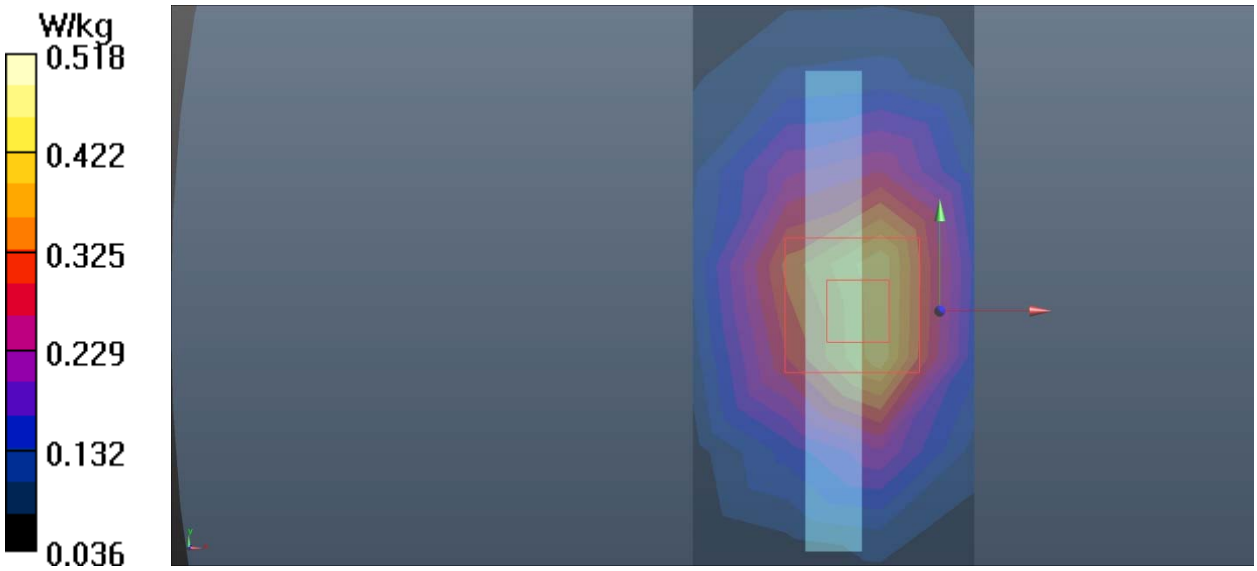
Bottom Edge Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 19.68 V/m; Power Drift = -0.021 dB

Peak SAR (extrapolated) = 0.745 W/kg

SAR(1 g) = 0.411 W/kg; SAR(10 g) = 0.284 W/kg

Maximum value of SAR (measured) = 0.518 W/kg



Plot 26 UMTS Band V Right Cheek Middle

Date: 7/22/2020

Communication System: UID 0, WCDMA 850 (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(9.38, 9.38, 9.38); Calibrated:7/6/2020;

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

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

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.11 (7439)

Right Cheek Middle/Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.101 W/kg

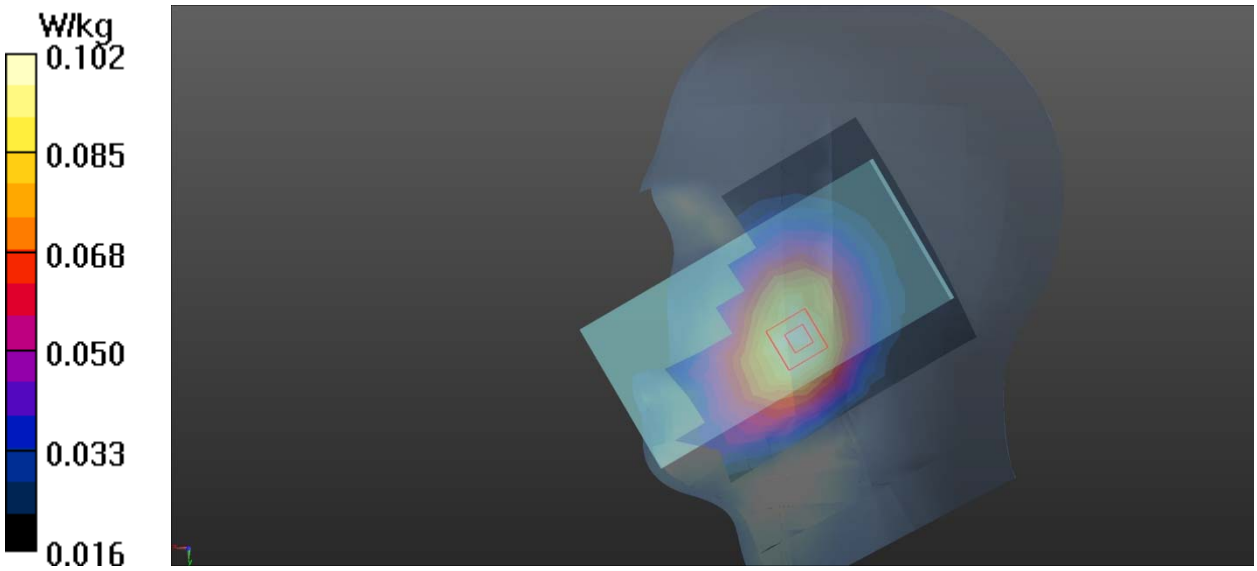
Right Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.575 V/m; Power Drift = 0.134dB

Peak SAR (extrapolated) = 0.120 W/kg

SAR(1 g) = 0.098 W/kg; SAR(10 g) = 0.077 W/kg

Maximum value of SAR (measured) = 0.102 W/kg



Plot 27 UMTS Band V Back Side Middle(Distance 10mm)

Date: 7/22/2020

Communication System: UID 0, WCDMA 850 (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(9.38, 9.38, 9.38); Calibrated:7/6/2020;

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

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

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.11 (7439)

Back Side Middle/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.195 W/kg

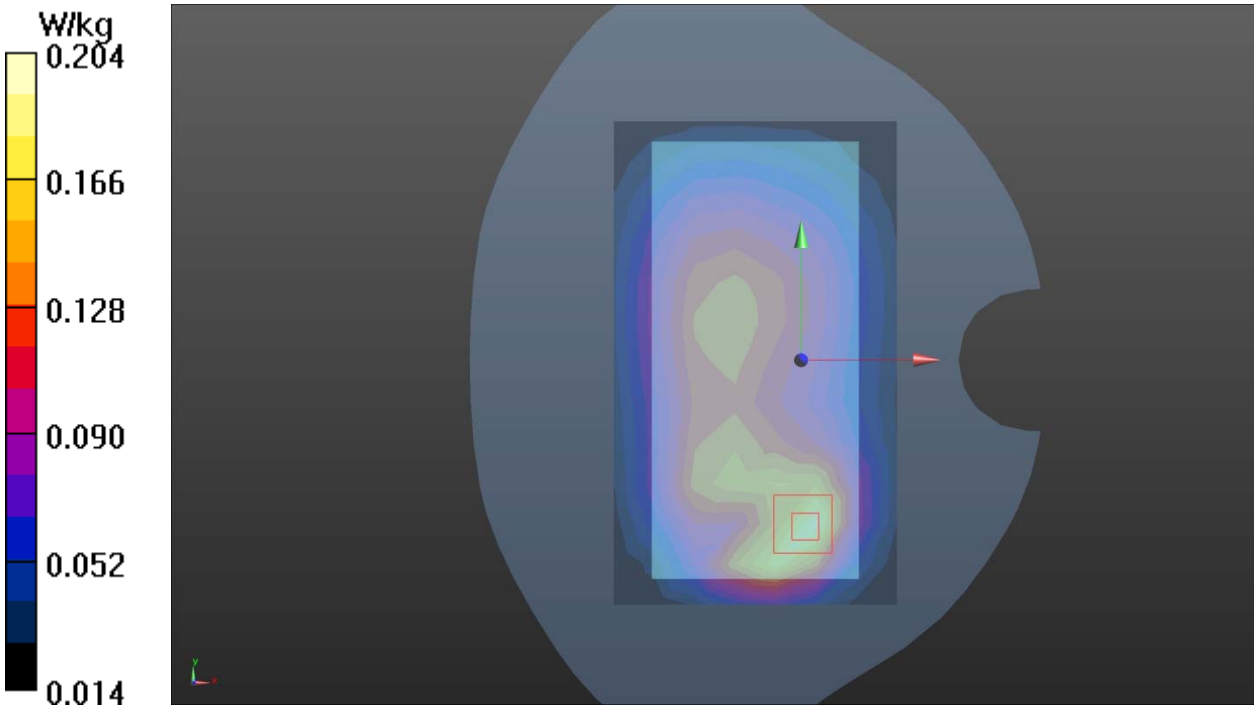
Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.74 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.325 W/kg

SAR(1 g) = 0.186 W/kg; SAR(10 g) = 0.111 W/kg

Maximum value of SAR (measured) = 0.204 W/kg



Plot 28 UMTS Band V Bottom Edge Middle (Distance 10mm)

Date: 7/22/2020

Communication System: UID 0, WCDMA 850 (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(9.38, 9.38, 9.38); Calibrated:7/6/2020;

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

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

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.11 (7439)

Bottom Edge Middle/Area Scan (4x8x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.195 W/kg

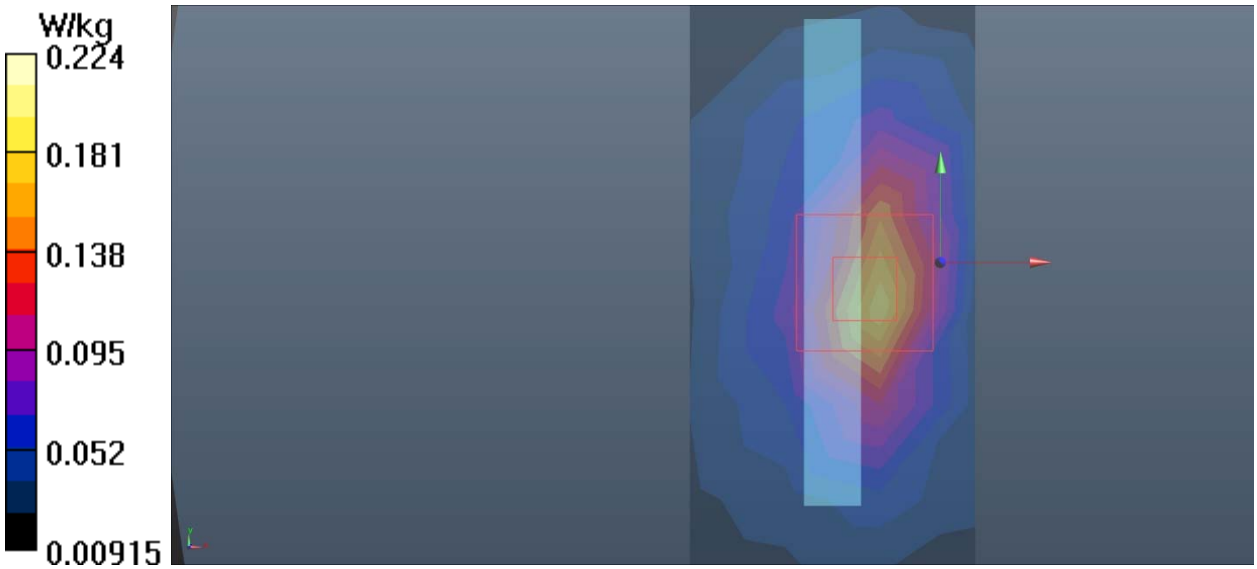
Bottom Edge Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 13.40 V/m; Power Drift = -0.029 dB

Peak SAR (extrapolated) = 0.450 W/kg

SAR(1 g) = 0.195 W/kg; SAR(10 g) = 0.092 W/kg

Maximum value of SAR (measured) = 0.224 W/kg



Plot 29 LTE Band 2 50%RB Right Cheek Low

Date: 7/23/2020

Communication System: UID 0, LTE-FDD (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(9.38, 9.38, 9.38); Calibrated:7/6/2020;

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

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

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.11 (7439)

Right Cheek Low/Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.191 W/kg

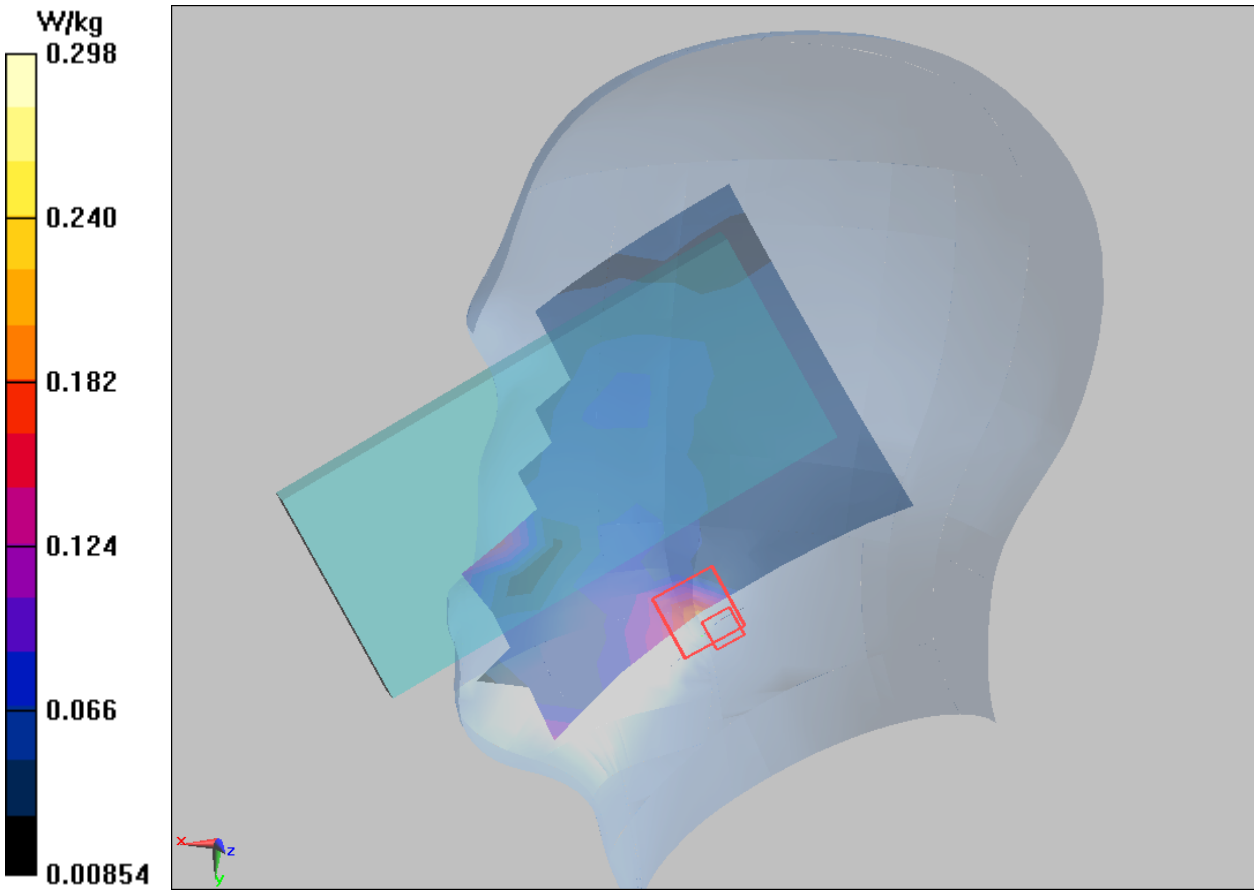
Right Cheek Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.531 V/m; Power Drift = -0.042 dB

Peak SAR (extrapolated) = 0.924 W/kg

SAR(1 g) = 0.196 W/kg; SAR(10 g) = 0.052 W/kg

Maximum value of SAR (measured) = 0.298 W/kg



Plot 30 LTE Band 2 1RB Back Side Middle (Distance 10mm)

Date: 7/23/2020

Communication System: UID 0, LTE-FDD (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(9.38, 9.38, 9.38); Calibrated:7/6/2020;

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

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

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.11 (7439)

Back Side Middle/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.307 W/kg

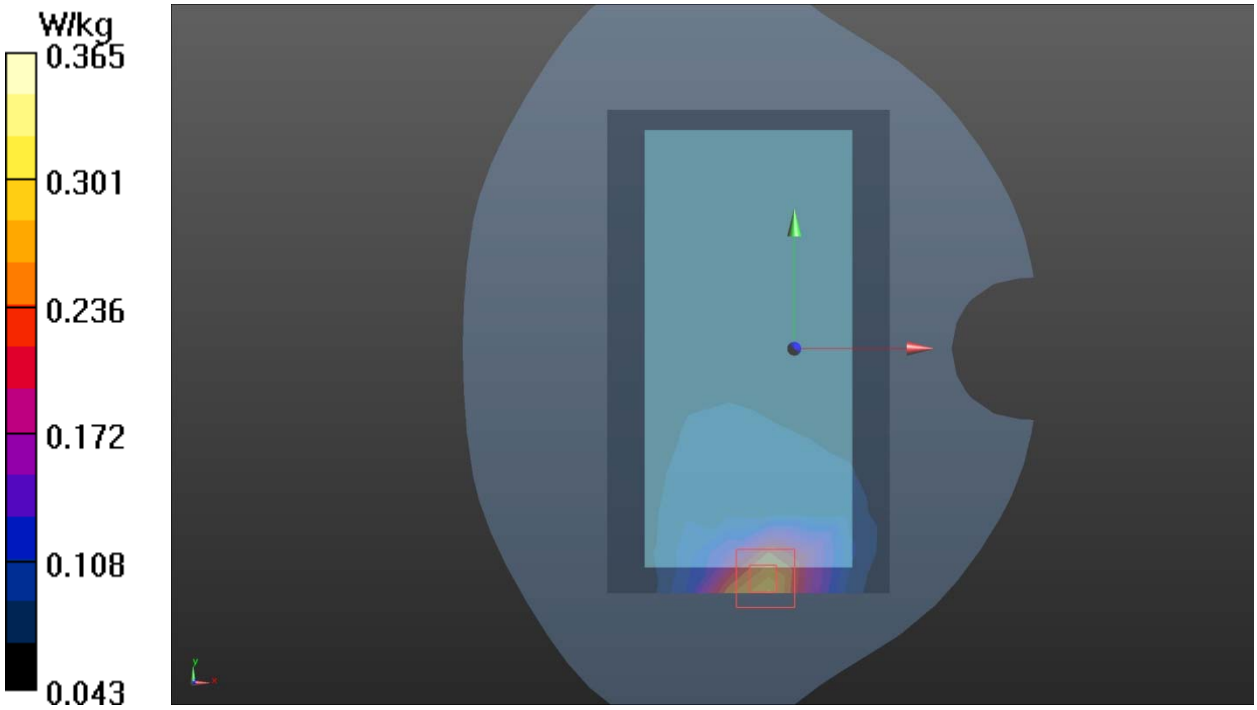
Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.152 V/m; Power Drift = 0.18 dB

Peak SAR (extrapolated) = 0.571 W/kg

SAR(1 g) = 0.334 W/kg; SAR(10 g) = 0.195 W/kg

Maximum value of SAR (measured) = 0.365 W/kg



Plot 31 LTE Band 2 1RB Bottom Edge Middle (Distance 10mm)

Date: 7/23/2020

Communication System: UID 0, LTE-FDD (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(9.38, 9.38, 9.38); Calibrated:7/6/2020;

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

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

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.11 (7439)

Bottom Edge Middle/Area Scan (4x8x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.519 W/kg

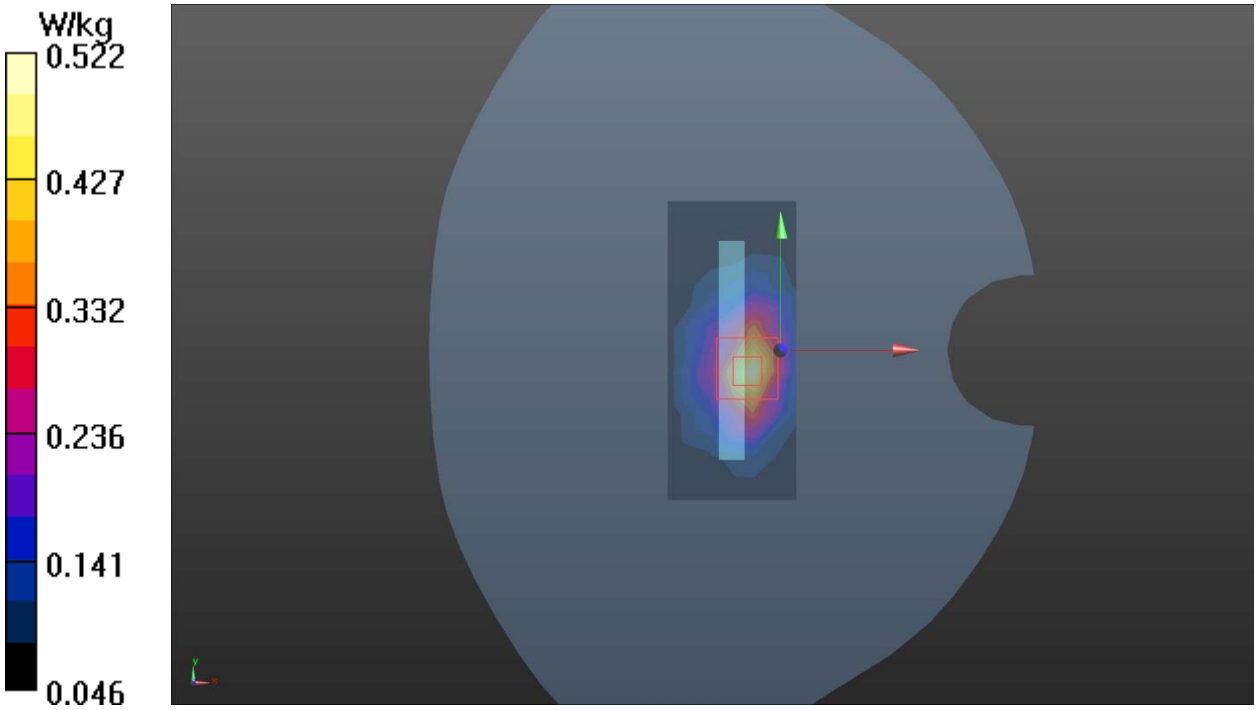
Bottom Edge Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 17.35 V/m; Power Drift = -0.17 dB

Peak SAR (extrapolated) = 0.850 W/kg

SAR(1 g) = 0.479 W/kg; SAR(10 g) = 0.267 W/kg

Maximum value of SAR (measured) = 0.522 W/kg



Plot 32 LTE Band 2 50%RB Bottom Edge Middle (Distance 0mm)

Date: 7/23/2020

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(9.38, 9.38, 9.38); Calibrated:7/6/2020;

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 (4x8x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 3.17 W/kg

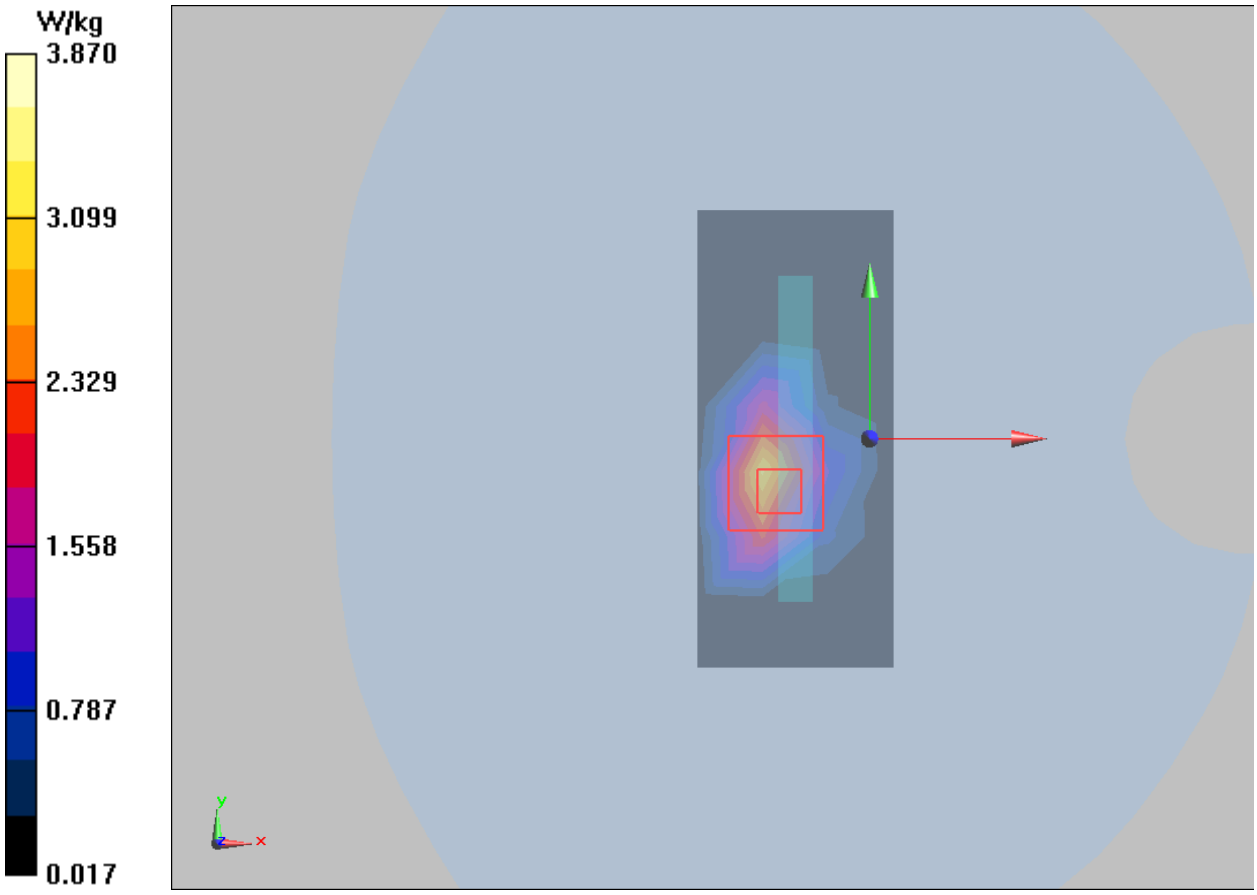
Bottom Edge Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 40.43 V/m; Power Drift = 0.021 dB

Peak SAR (extrapolated) = 6.93 W/kg

SAR(1 g) = 3.22 W/kg; SAR(10 g) = 1.42 W/kg

Maximum value of SAR (measured) = 3.87 W/kg



Plot 33 LTE Band 4 1RB Left Cheek Middle

Date: 7/27/2020

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

Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.313 S/m; ε_r = 39.384; 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(8.25, 8.25, 8.25); Calibrated: 7/6/2020;

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

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

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.11 (7439)

Left Cheek Middle/Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.116 W/kg

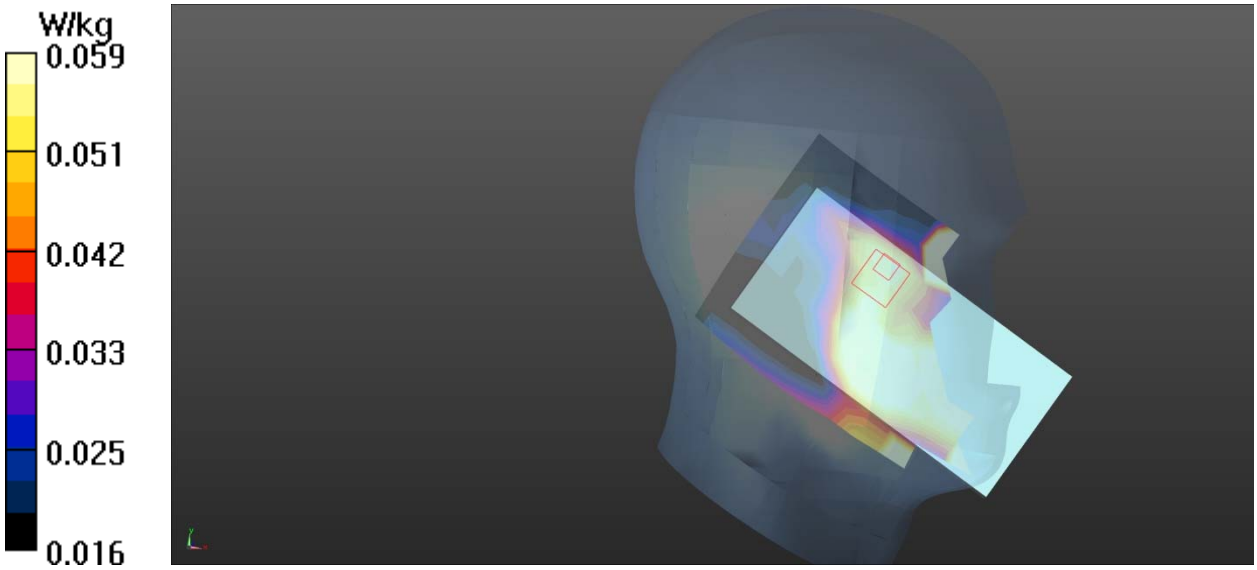
Left Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.861 V/m; Power Drift = 0.112 dB

Peak SAR (extrapolated) = 0.0750 W/kg

SAR(1 g) = 0.057 W/kg; SAR(10 g) = 0.044 W/kg

Maximum value of SAR (measured) = 0.0593 W/kg



Plot 34 LTE Band 4 1RB Back Side Middle (Distance 10mm)

Date: 7/27/2020

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

Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.313 S/m; ε_r = 39.384; 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(8.25, 8.25, 8.25); Calibrated: 7/6/2020;

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

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

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.11 (7439)

Back Side Middle/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.389 W/kg

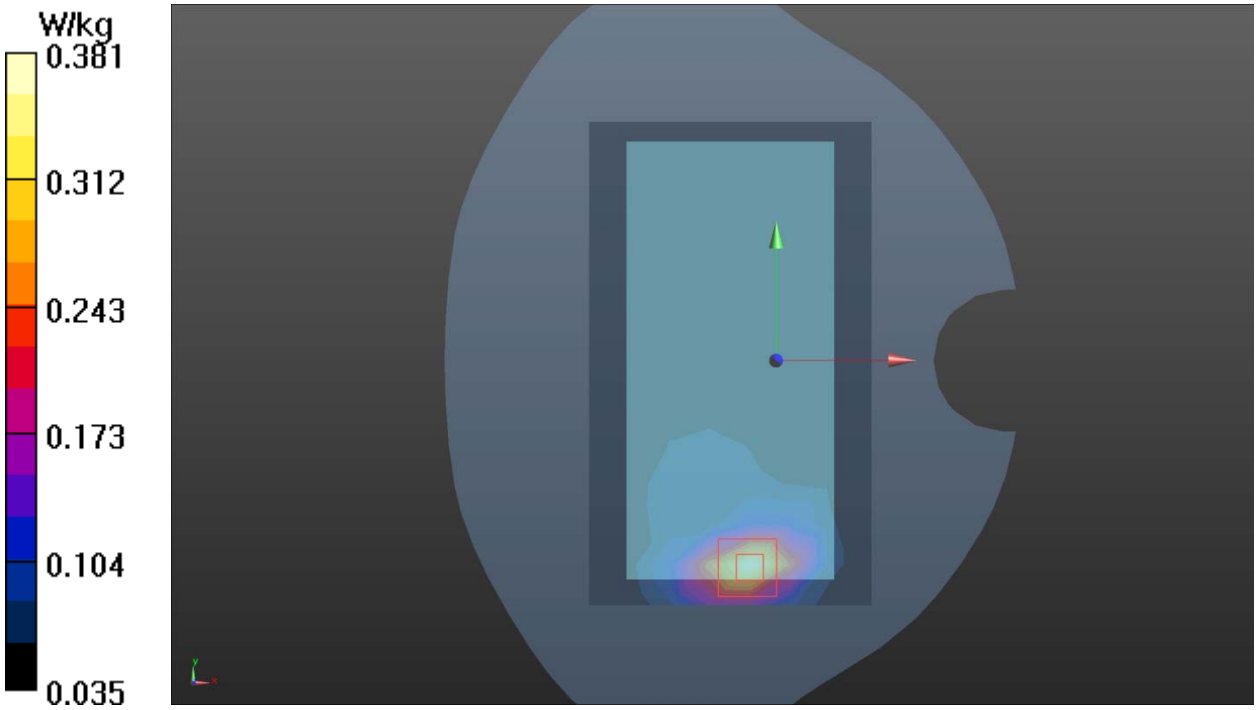
Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.685 V/m; Power Drift = 0.14 dB

Peak SAR (extrapolated) = 0.585 W/kg

SAR(1 g) = 0.353 W/kg; SAR(10 g) = 0.204 W/kg

Maximum value of SAR (measured) = 0.381 W/kg



Plot 35 LTE Band 4 1RB Bottom Edge Middle (Distance 10mm)

Date: 7/27/2020

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

Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.313 S/m; ε_r = 39.384; 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(8.25, 8.25, 8.25); Calibrated: 7/6/2020;

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

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

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.11 (7439)

Bottom Edge Middle/Area Scan (4x8x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.326 W/kg

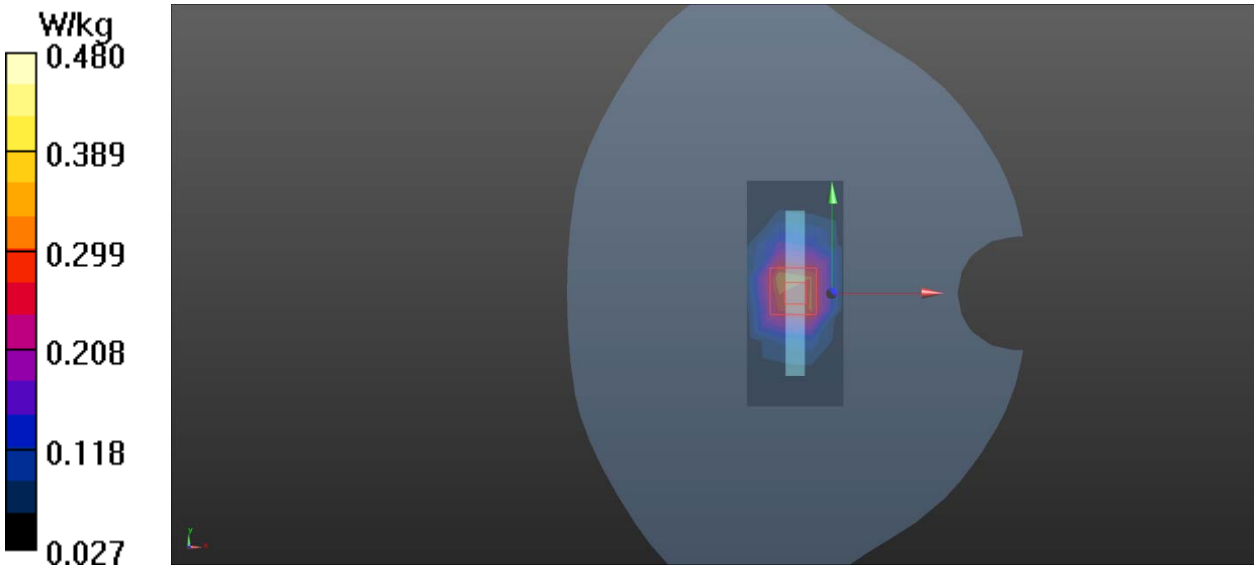
Bottom Edge Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 19.34 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.740 W/kg

SAR(1 g) = 0.430 W/kg; SAR(10 g) = 0.235 W/kg

Maximum value of SAR (measured) = 0.480 W/kg



Plot 36 LTE Band 4 50%RB Bottom Edge Low (Distance 0mm)

Date: 7/27/2020

Communication System: UID 0, LTE (0); Frequency: 1720 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1720 MHz; σ = 1.303 S/m; ε_r = 39.467; 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(8.25, 8.25, 8.25); Calibrated: 7/6/2020;

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 Low/Area Scan (4x8x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 2.88 W/kg

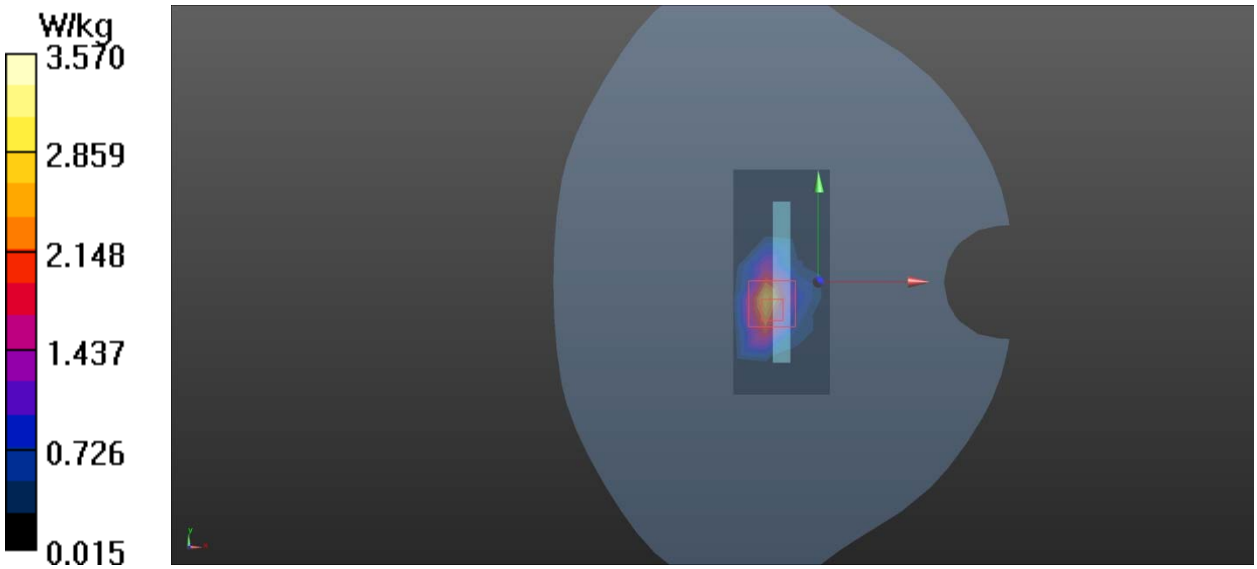
Bottom Edge Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 39.49 V/m; Power Drift = 0.021 dB

Peak SAR (extrapolated) = 6.33 W/kg

SAR(1 g) = 2.93 W/kg; SAR(10 g) = 1.3 W/kg

Maximum value of SAR (measured) = 3.57 W/kg



Plot 37 LTE Band 5 1RB Right Cheek High

Date: 7/21/2020

Communication System: UID 0, LTE-FDD (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: Right Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.38, 9.38, 9.38); Calibrated:7/6/2020;

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

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

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.11 (7439)

Right Cheek High/Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.100 W/kg

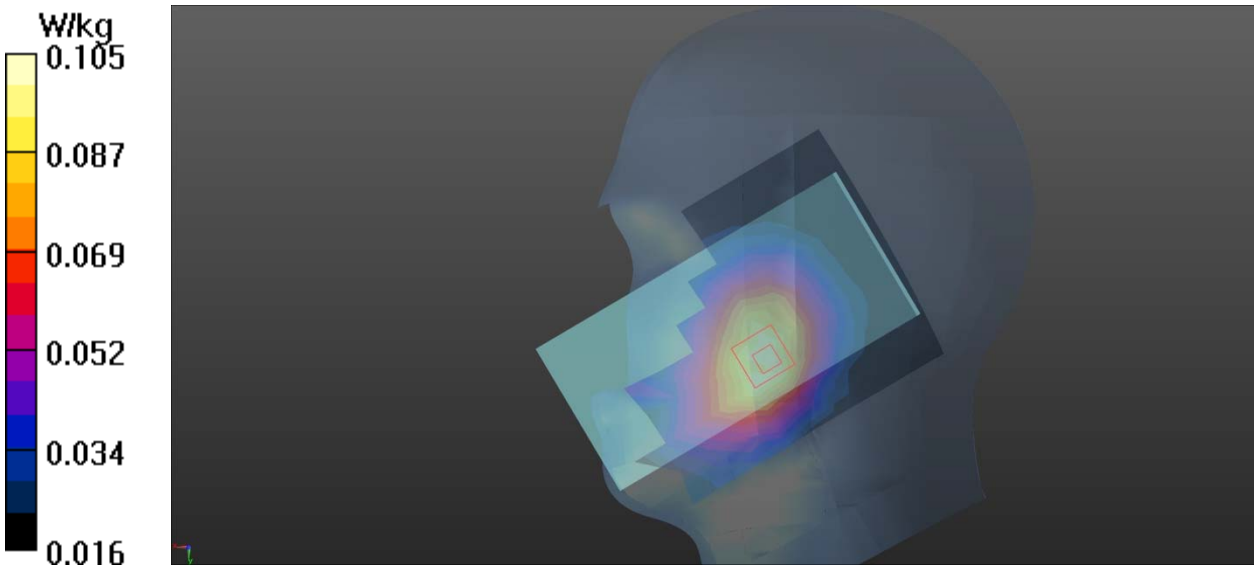
Right Cheek High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.103 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.126 W/kg

SAR(1 g) = 0.101 W/kg; SAR(10 g) = 0.078 W/kg

Maximum value of SAR (measured) = 0.105 W/kg



Plot 38 LTE Band 5 1RB Back Side High (Distance 10mm)

Date: 7/21/2020

Communication System: UID 0, LTE-FDD (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(9.38, 9.38, 9.38); Calibrated:7/6/2020;

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

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

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.11 (7439)

Back Side High/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.273 W/kg

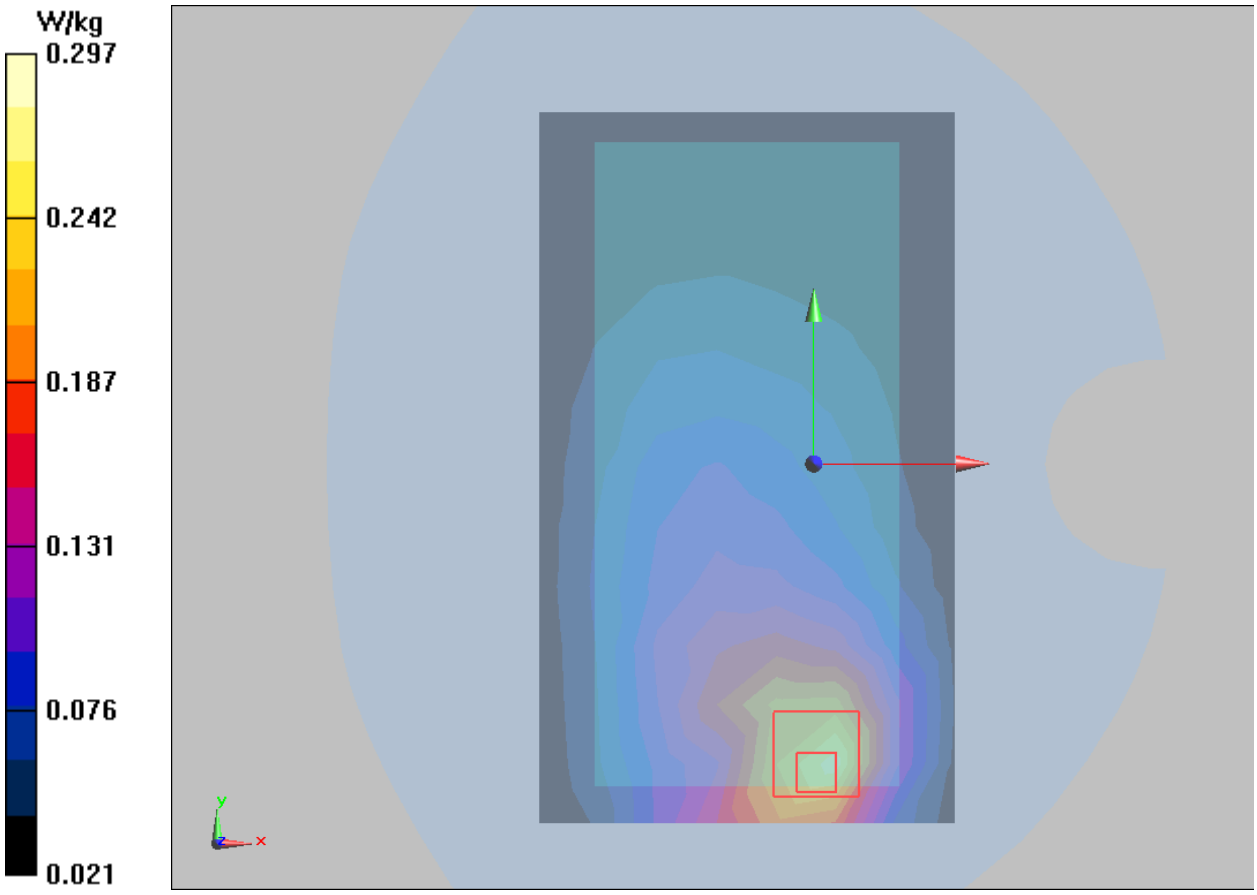
Back Side High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 10.17 V/m; Power Drift = 0.021 dB

Peak SAR (extrapolated) = 0.481 W/kg

SAR(1 g) = 0.283 W/kg; SAR(10 g) = 0.159 W/kg

Maximum value of SAR (measured) = 0.297 W/kg



Plot 39 LTE Band 7 1RB Right Cheek Middle

Date: 7/15/2020

Communication System: UID 0, LTE-FDD (0); Frequency: 2535 MHz;Duty Cycle: 1:1

Medium parameters used: f = 2535 MHz; σ = 1.894 S/m; ε_r = 40.308; 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(7.26, 7.26, 7.26); Calibrated: 7/6/2020;

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

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

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.11 (7439)

Right Cheek Middle/Area Scan (10x18x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 0.105 W/kg

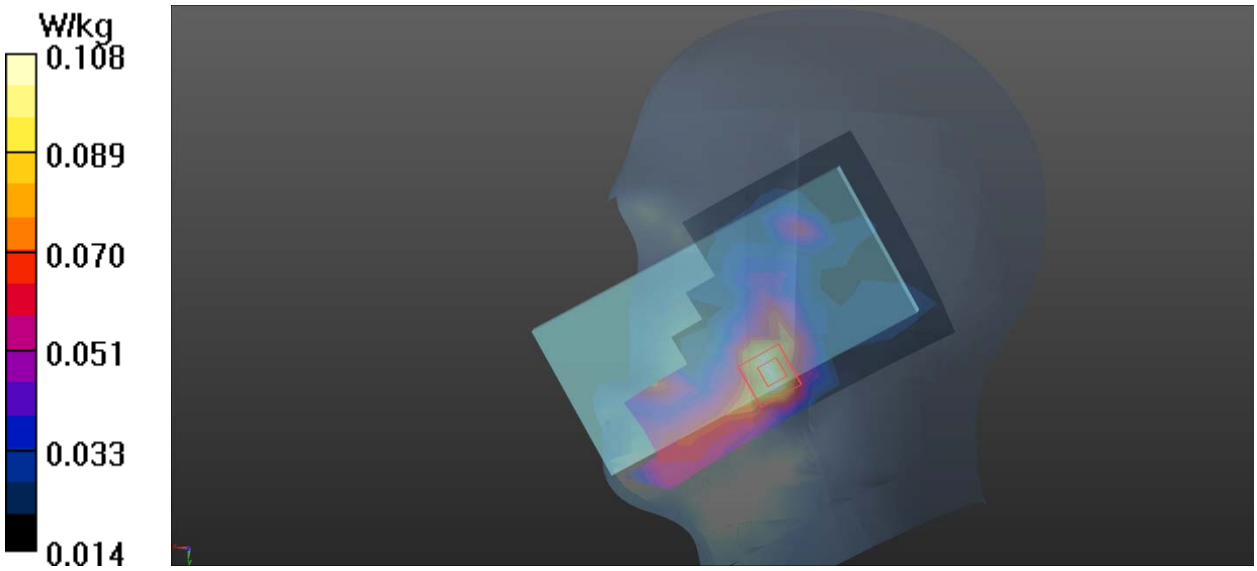
Right Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.287 V/m; Power Drift = 0.054 dB

Peak SAR (extrapolated) = 0.194 W/kg

SAR(1 g) = 0.101 W/kg; SAR(10 g) = 0.054 W/kg

Maximum value of SAR (measured) = 0.108 W/kg



Plot 40 LTE Band 7 1RB Back Side Middle(Distance 10mm)

Date: 7/15/2020

Communication System: UID 0, LTE (0); Frequency: 2560 MHz;Duty Cycle: 1:1

Medium parameters used: f = 2560 MHz; σ = 1.894 S/m; ε_r = 40.308; 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(7.26, 7.26, 7.26); Calibrated: 7/6/2020;

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 (10x18x1): Measurement grid: dx=12mm, dy=12mm

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

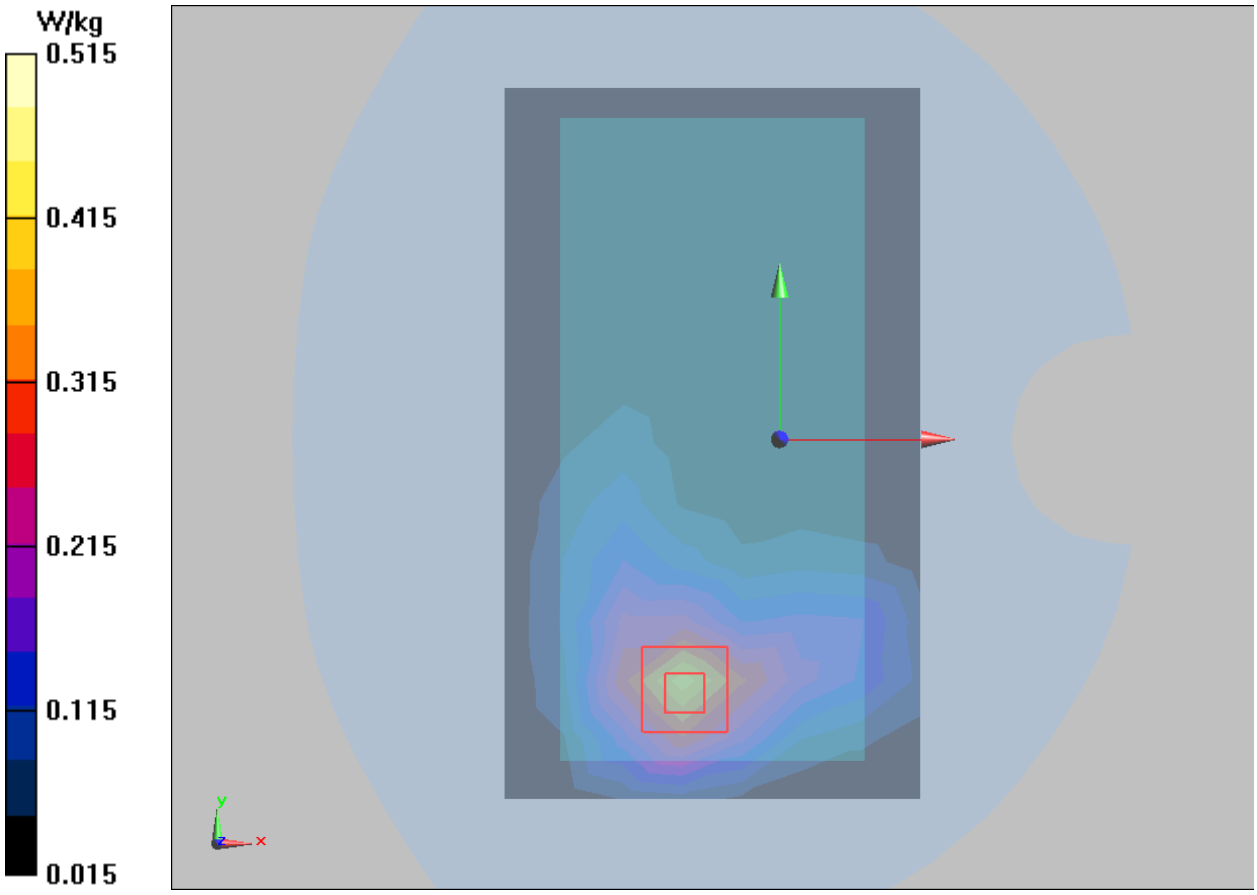
Back Side Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.606 V/m; Power Drift = 0.010 dB

Peak SAR (extrapolated) = 0.752 W/kg

SAR(1 g) = 0.483 W/kg; SAR(10 g) = 0.249 W/kg

Maximum value of SAR (measured) = 0.515 W/kg



Plot 41 LTE Band 7 1RB Bottom Edge Middle (Distance 10mm)

Date: 7/15/2020

Communication System: UID 0, LTE (0); Frequency: 2535 MHz;Duty Cycle: 1:1

Medium parameters used: f = 2535 MHz; σ = 1.904 S/m; ε_r = 39.093; 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(7.26, 7.26, 7.26); Calibrated: 7/6/2020;

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 (10x18x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 0.880 W/kg

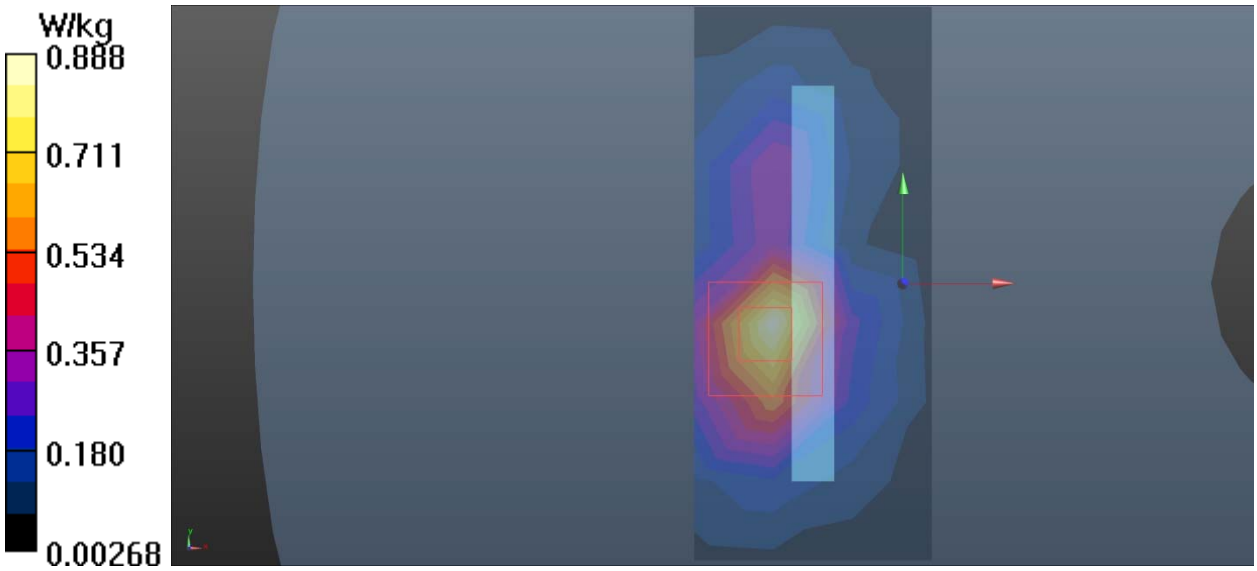
Bottom Edge Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 13.95 V/m; Power Drift = 0.083 dB

Peak SAR (extrapolated) = 1.55 W/kg

SAR(1 g) = 0.780 W/kg; SAR(10 g) = 0.376 W/kg

Maximum value of SAR (measured) = 0.888 W/kg



Plot 42 LTE Band 7 50%RB Back Side High (Distance 0mm)

Date: 7/15/2020

Communication System: UID 0, LTE (0); Frequency: 2560 MHz;Duty Cycle: 1:1

Medium parameters used: f = 2560 MHz; σ = 1.932 S/m; ε_r = 38.175; 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(7.26, 7.26, 7.26); Calibrated: 7/6/2020;

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 (10x18x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 2.75 W/kg

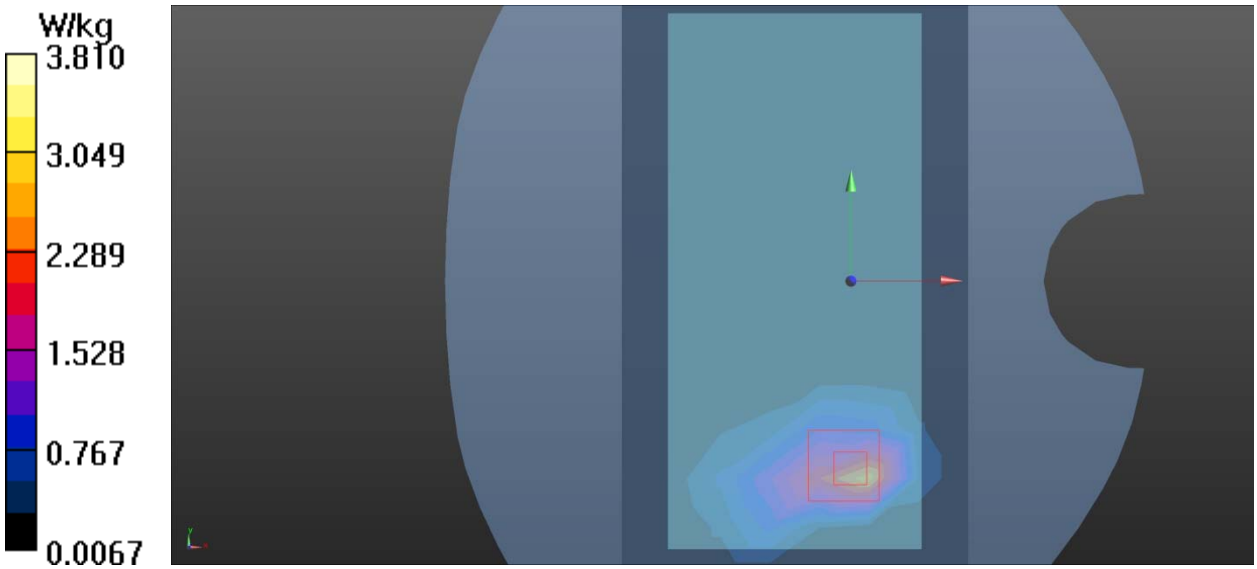
Back Side High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 1.779 V/m; Power Drift = -0.022 dB

Peak SAR (extrapolated) = 9.59 W/kg

SAR(1 g) = 3.19 W/kg; SAR(10 g) = 1.15 W/kg

Maximum value of SAR (measured) = 3.81 W/kg



Plot 43 LTE Band 38 50%RB Right Cheek Low

Date: 7/16/2020

Communication System: UID 0, LTE-TDD (0); Frequency: 2580 MHz;Duty Cycle: 1:1.58

Medium parameters used: f = 2580 MHz; σ = 1.945 S/m; ε_r = 40.144; 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(7.26, 7.26, 7.26); Calibrated: 7/6/2020;

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

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

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.11 (7439)

Right Cheek Low/Area Scan (10x18x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 0.0739 W/kg

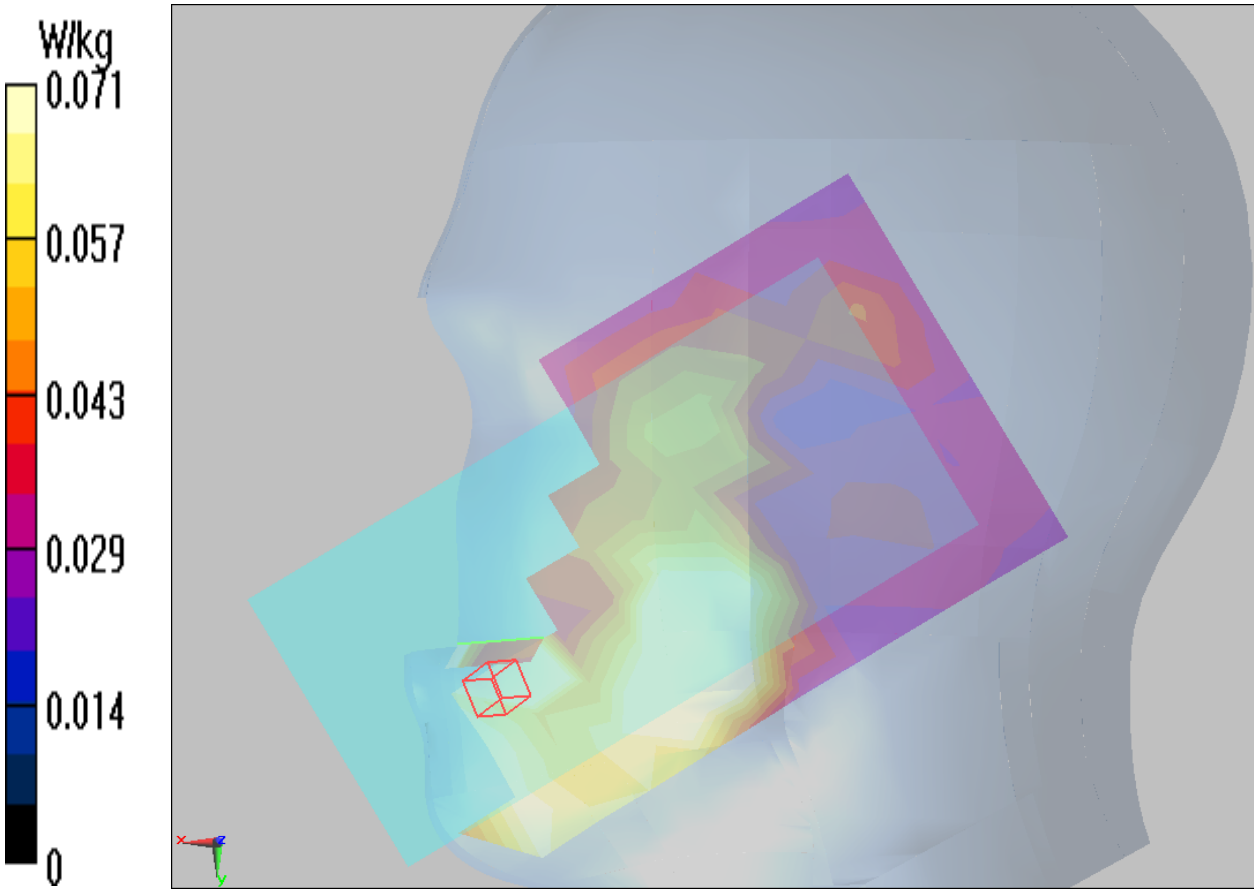
Right Cheek Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.182 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.186 W/kg

SAR(1 g) = 0.045 W/kg; SAR(10 g) = 0.023 W/kg

Maximum value of SAR (measured) = 0.0713 W/kg



Plot 44 LTE Band 38 1RB Back Side Middle (Distance 10mm)

Date: 7/16/2020

Communication System: UID 0, LTE-TDD (0); Frequency: 2595 MHz;Duty Cycle: 1:1.58

Medium parameters used: f = 2595 MHz; σ = 1.963 S/m; ε_r = 40.087; 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(7.26, 7.26, 7.26); Calibrated: 7/6/2020;

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

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

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.11 (7439)

Back Side Middle/Area Scan (10x18x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 0.423 W/kg

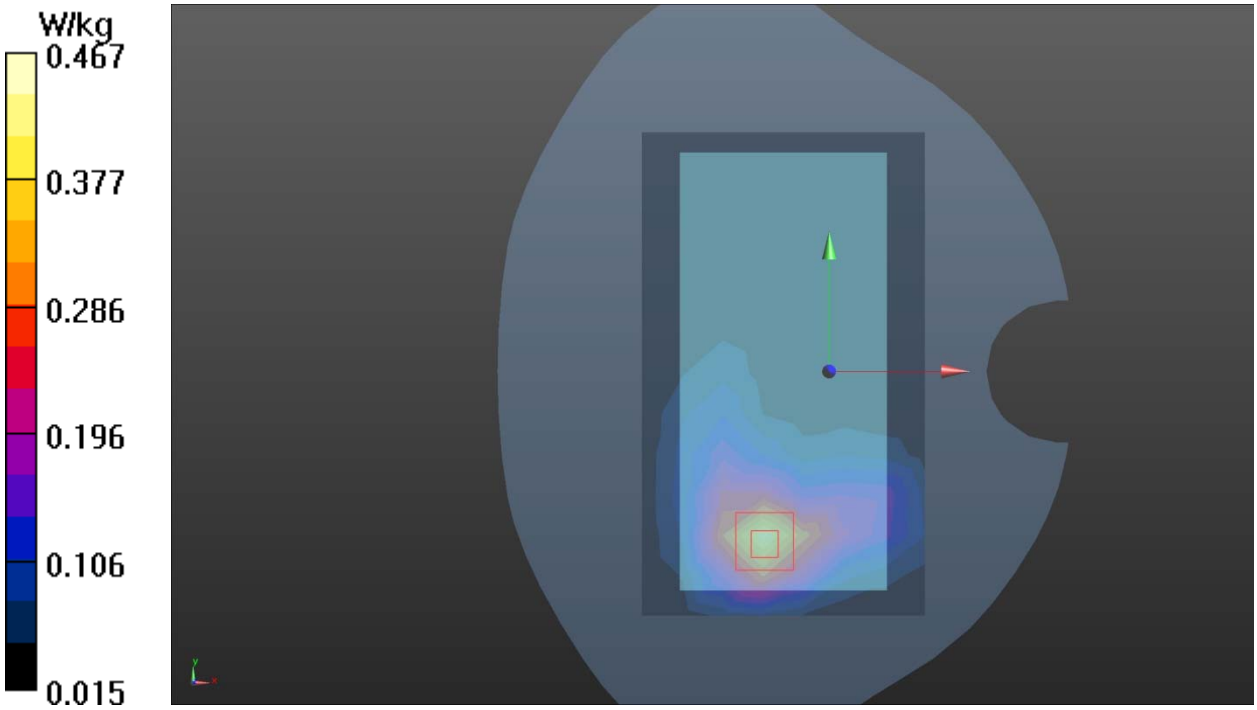
Back Side Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.622 V/m; Power Drift = 0.021 dB

Peak SAR (extrapolated) = 0.780 W/kg

SAR(1 g) = 0.444 W/kg; SAR(10 g) = 0.233 W/kg

Maximum value of SAR (measured) = 0.467 W/kg



Plot 45 LTE Band 38 1RB Bottom Edge Middle (Distance 10mm)

Date: 7/16/2020

Communication System: UID 0, LTE (0); Frequency: 2580 MHz;Duty Cycle: 1:1.58

Medium parameters used: f = 2580 MHz; σ = 1.963 S/m; ε_r = 40.087; 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(7.26, 7.26, 7.26); Calibrated: 7/6/2020;

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 (10x18x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 0.492 W/kg

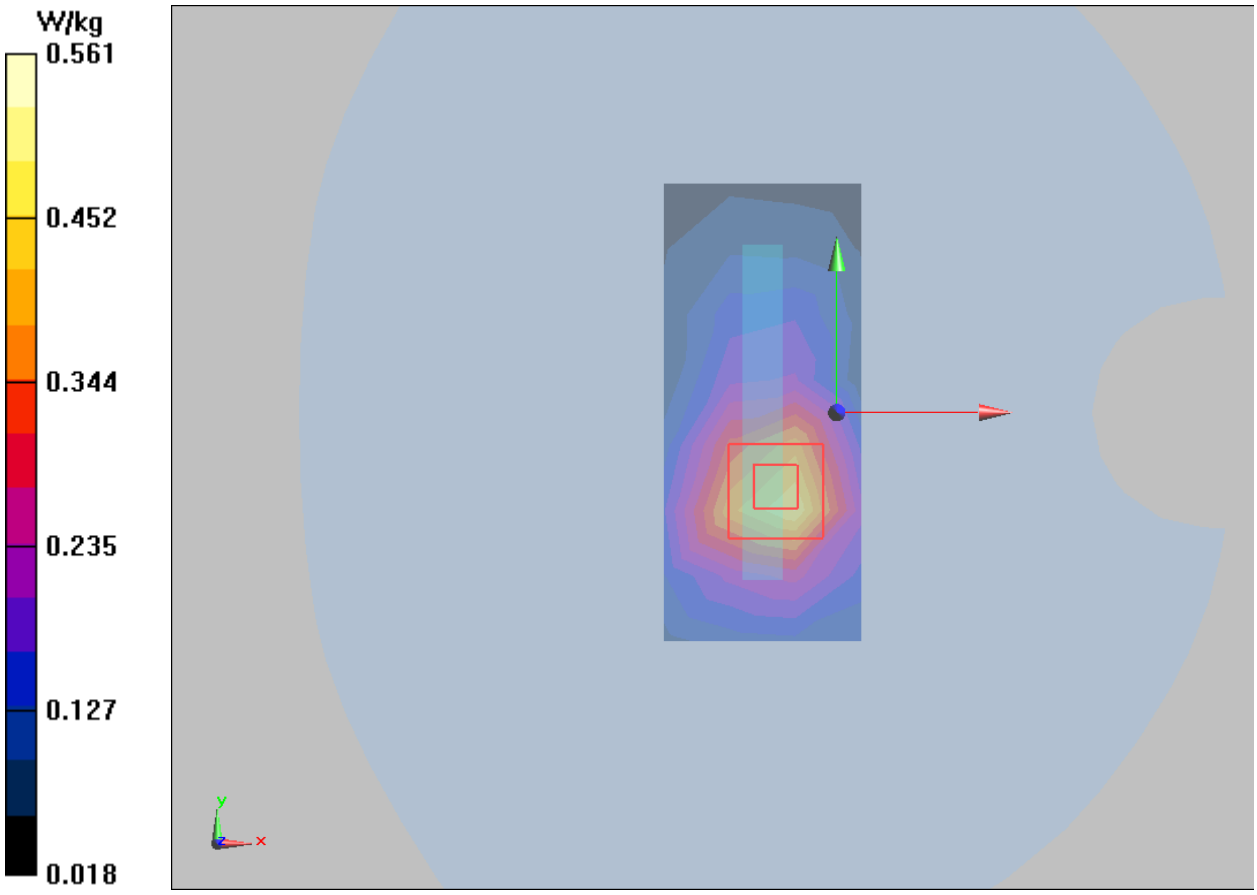
Bottom Edge Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 12.81 V/m; Power Drift = 0.048 dB

Peak SAR (extrapolated) = 0.992 W/kg

SAR(1 g) = 0.505 W/kg; SAR(10 g) = 0.242 W/kg

Maximum value of SAR (measured) = 0.561 W/kg



Plot 46 LTE Band 38 1RB Bottom Edge Middle (Distance 0mm)

Date: 7/16/2020

Communication System: UID 0, LTE (0); Frequency: 2595 MHz;Duty Cycle: 1:1.58

Medium parameters used: f = 2595 MHz; σ = 1.973 S/m; ε_r = 38.008; 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(7.26, 7.26, 7.26); Calibrated: 7/6/2020;

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 (10x18x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 1.93 W/kg

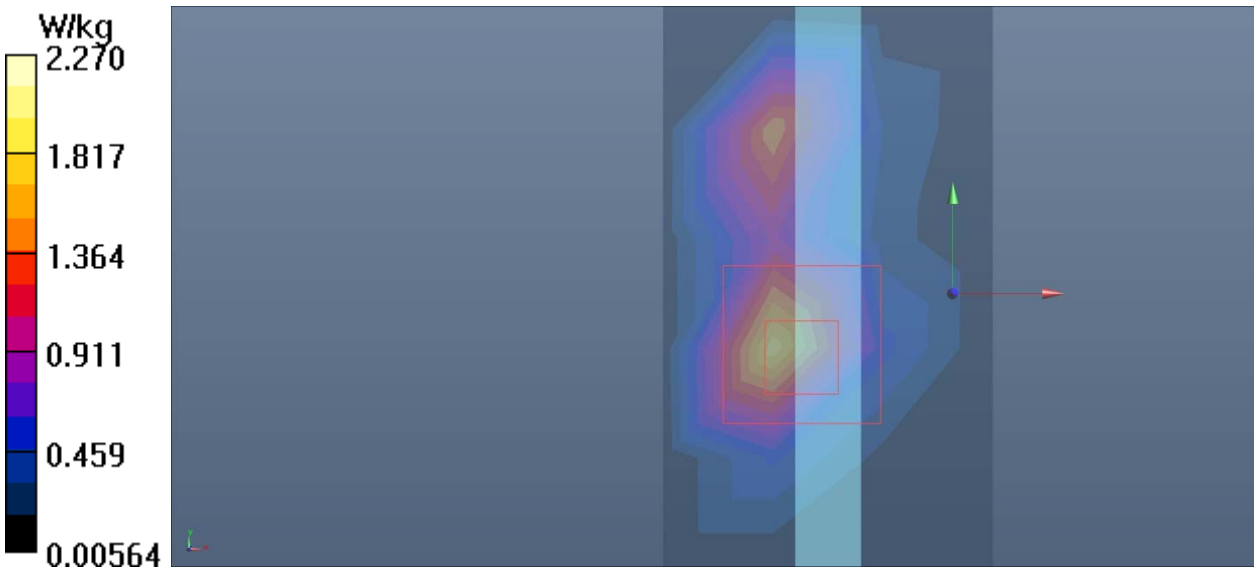
Bottom Edge Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 25.09 V/m; Power Drift = 0.065 dB

Peak SAR (extrapolated) = 5.44 W/kg

SAR(1 g) = 1.92 W/kg; SAR(10 g) = 0.683 W/kg

Maximum value of SAR (measured) = 2.27 W/kg



Plot 47 LTE Band 41 1RB Right Cheek Middle

Date: 7/17/2020

Communication System: UID 0, LTE-TDD (0); Frequency: 2615 MHz;Duty Cycle: 1:1.58

Medium parameters used: f = 2615 MHz; σ = 1.987 S/m; ε_r = 40.032; 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(7.26, 7.26, 7.26); Calibrated: 7/6/2020;

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

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

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.11 (7439)

Right Cheek Middle/Area Scan (10x18x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 0.0716 W/kg

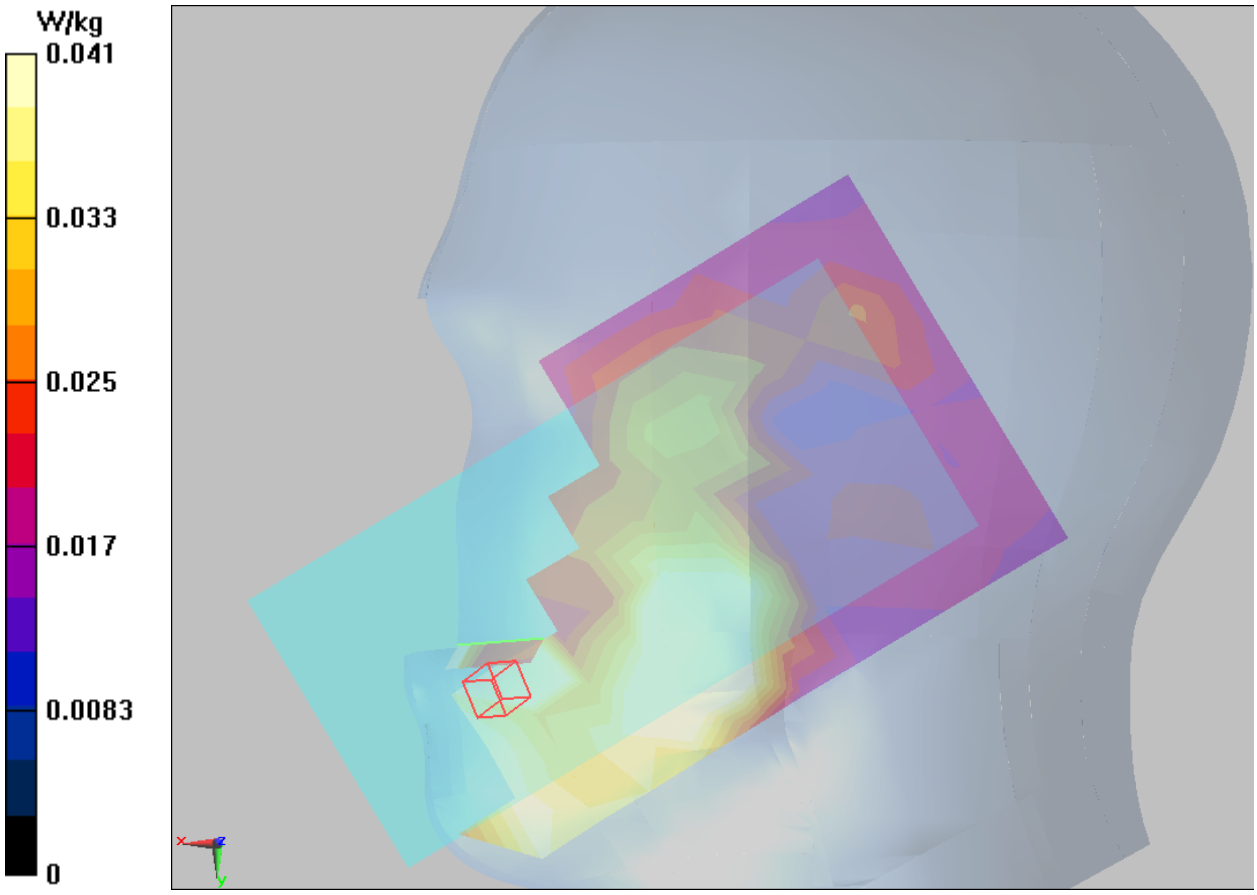
Right Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.029 V/m; Power Drift = 0.090 dB

Peak SAR (extrapolated) = 0.180 W/kg

SAR(1 g) = 0.039 W/kg; SAR(10 g) =0.019 W/kg

Maximum value of SAR (measured) = 0.041 W/kg



Plot 48 LTE Band 41 1RB Back Side Low (Distance 10mm)

Date: 7/17/2020

Communication System: UID 0, LTE (0); Frequency: 2585 MHz;Duty Cycle: 1:1.58

Medium parameters used: f = 2585 MHz; σ = 1.951 S/m; ε_r = 40.123; 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(7.26, 7.26, 7.26); Calibrated: 7/6/2020;

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 (10x18x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 0.409 W/kg

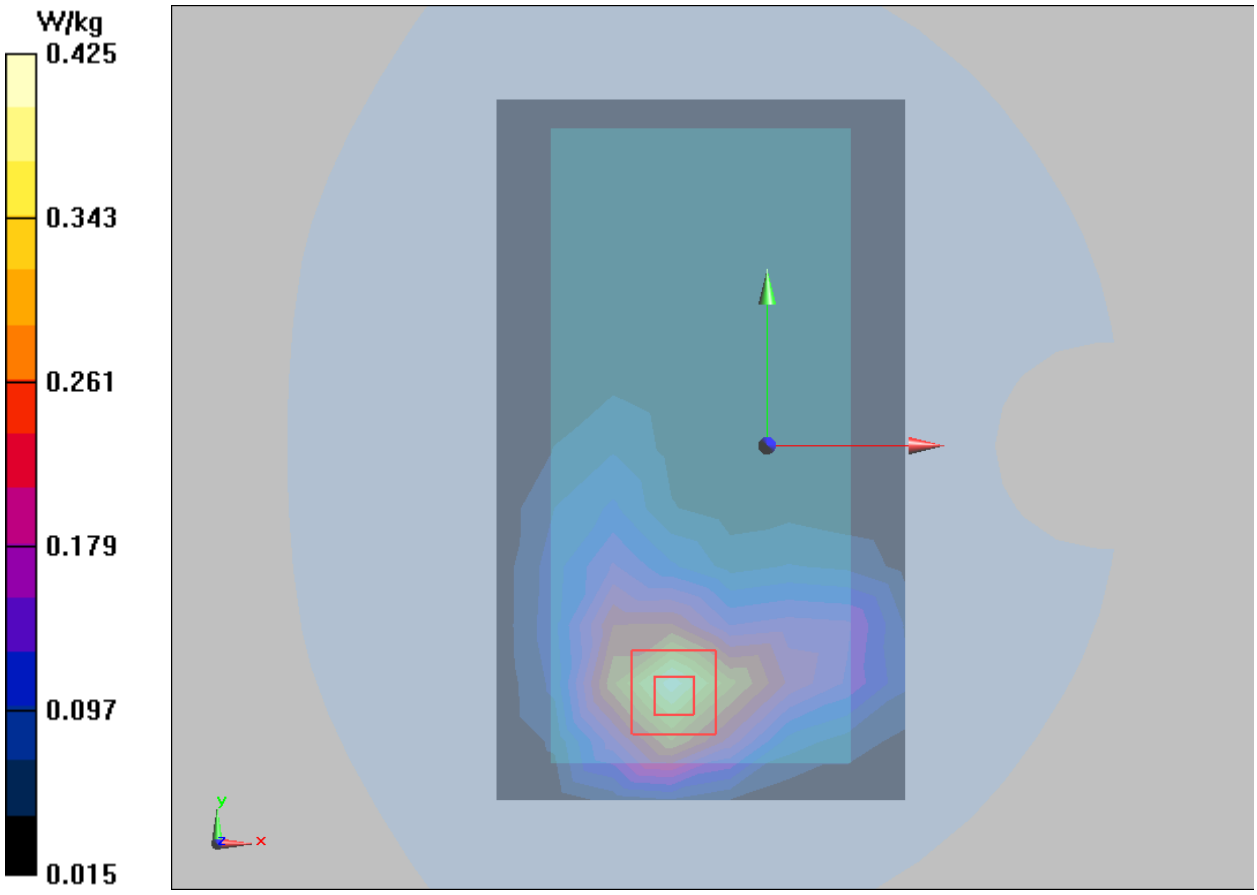
Back Side Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.616 V/m; Power Drift = 0.022 dB

Peak SAR (extrapolated) = 0.765 W/kg

SAR(1 g) = 0.399 W/kg; SAR(10 g) = 0.191 W/kg

Maximum value of SAR (measured) = 0.425 W/kg



Plot 49 LTE Band 41 1RB Bottom Edge Middle (Distance 10mm)

Date: 7/17/2020

Communication System: UID 0, LTE-TDD (0); Frequency: 2615 MHz;Duty Cycle: 1:1.58

Medium parameters used: f = 2615 MHz; σ = 1.951 S/m; ε_r = 40.123; 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(7.26, 7.26, 7.26); Calibrated: 7/6/2020;

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 (10x18x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 0.490 W/kg

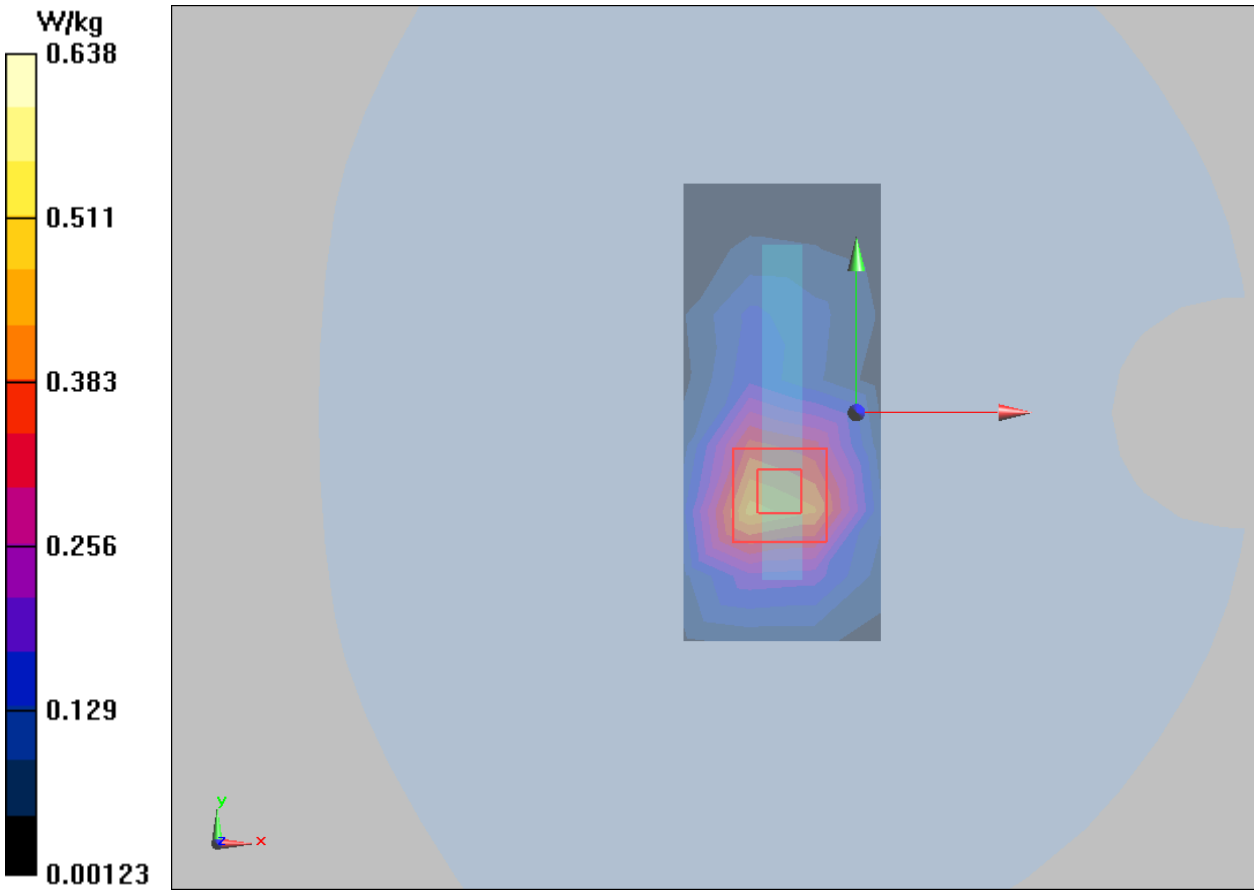
Bottom Edge Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 11.13 V/m; Power Drift = -0.031 dB

Peak SAR (extrapolated) = 1.18 W/kg

SAR(1 g) = 0.571 W/kg; SAR(10 g) = 0.270 W/kg

Maximum value of SAR (measured) = 0.638 W/kg



Plot 50 LTE Band 41 1RB Bottom Edge Middle (Distance 0mm)

Date: 7/17/2020

Communication System: UID 0, LTE (0); Frequency: 2593 MHz;Duty Cycle: 1:1.58

Medium parameters used: f = 2593 MHz; σ = 1.969 S/m; ε_r = 38.05; 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(7.26, 7.26, 7.26); Calibrated: 7/6/2020;

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 (10x18x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 1.64 W/kg

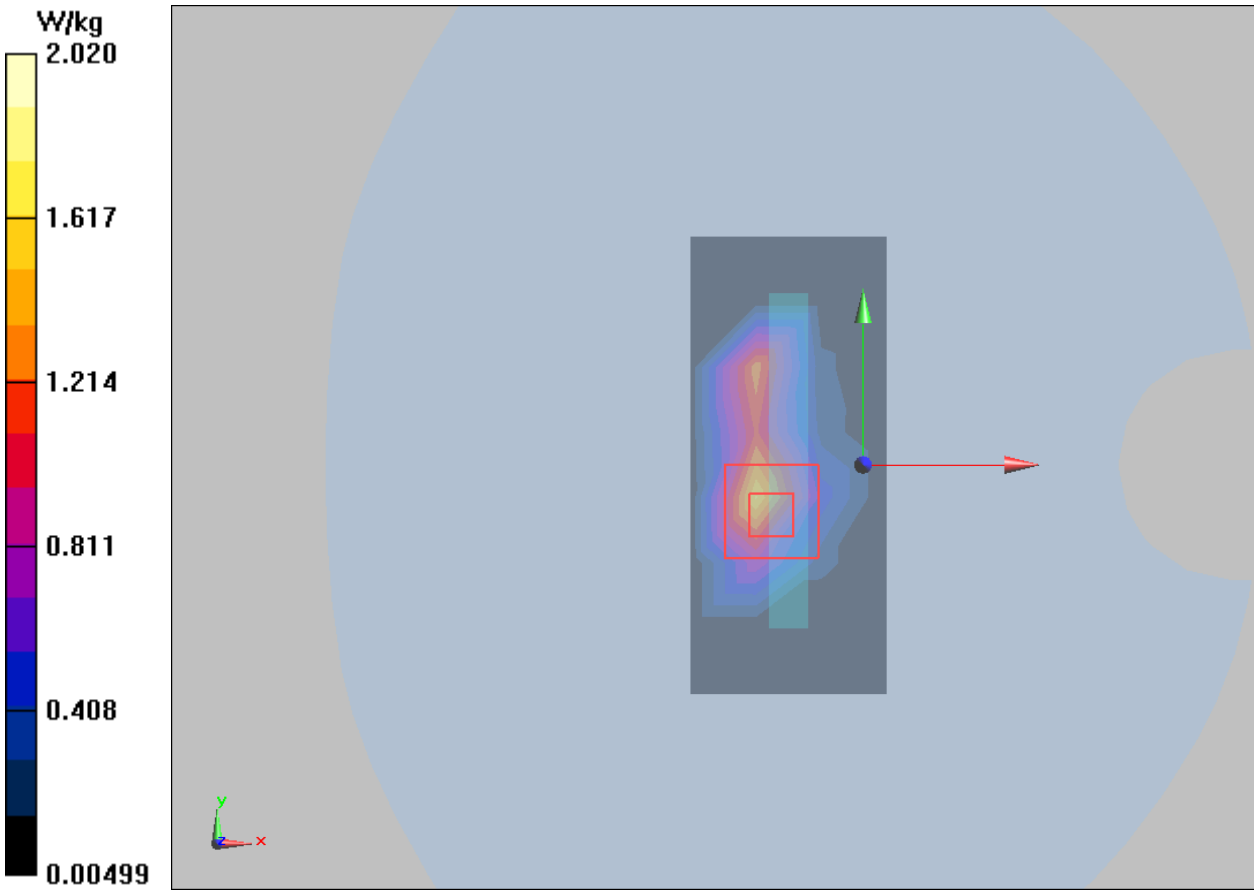
Bottom Edge Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 21.29 V/m; Power Drift = 0.044 dB

Peak SAR (extrapolated) = 4.89 W/kg

SAR(1 g) = 1.76 W/kg; SAR(10 g) = 0.629 W/kg

Maximum value of SAR (measured) = 2.02 W/kg



Second-Antenna

Plot 51 GSM 850 Right Cheek Middle

Date: 7/22/2020

Communication System: UID 0, GSM 850 (class 12) (0); Frequency: 836.6 MHz;Duty Cycle: 1:8.3

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(9.38, 9.38, 9.38); Calibrated:7/6/2020;

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

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

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.11 (7439)

Right Cheek Middle/Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.428 W/kg

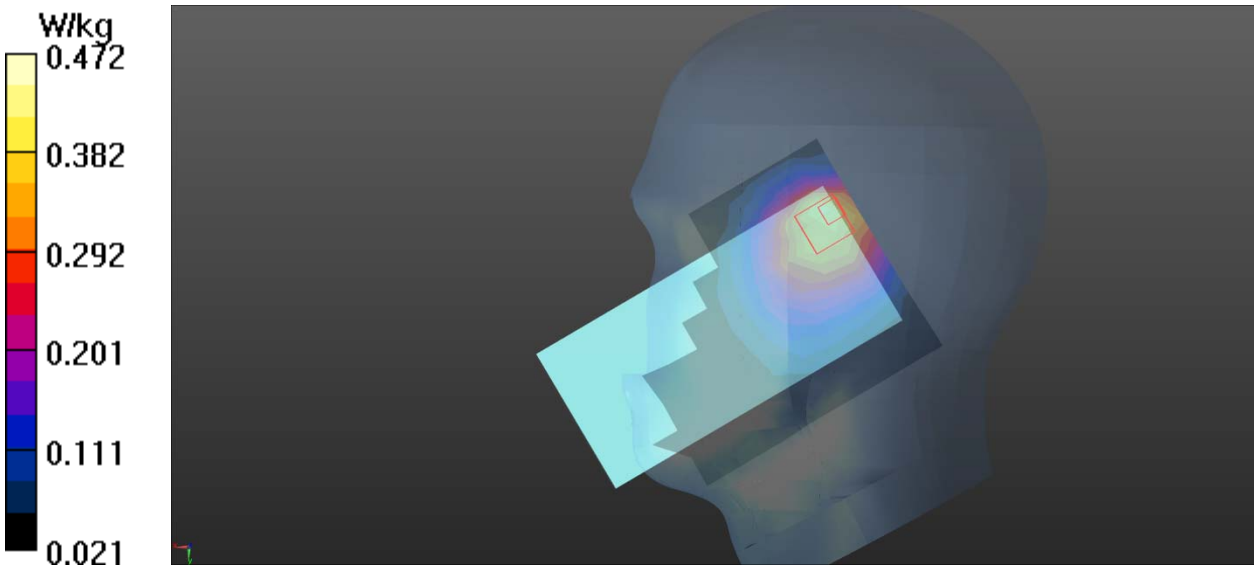
Right Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 18.70 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.804 W/kg

SAR(1 g) = 0.432 W/kg; SAR(10 g) = 0.264 W/kg

Maximum value of SAR (measured) = 0.472 W/kg



Plot 52 GSM 850 GPRS (4Txslots) Back Side Middle (Distance 10mm)

Date: 7/22/2020

Communication System: UID 0, GPRS-4UP (0); Frequency: 836.6 MHz;Duty Cycle: 1:8.3

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(9.38, 9.38, 9.38); Calibrated:7/6/2020;

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

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

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.11 (7439)

Back Side Middle/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.150 W/kg

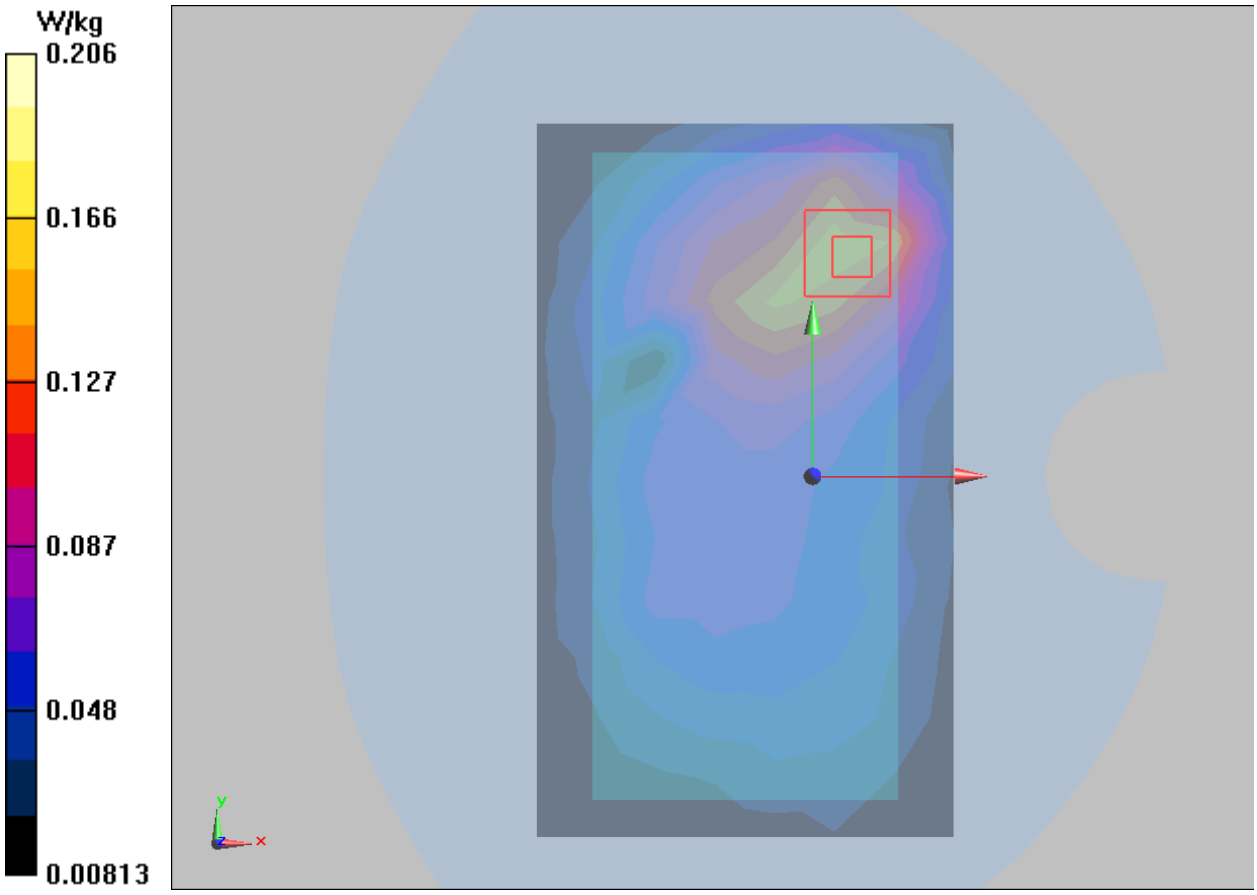
Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.485 V/m; Power Drift = 0.027 dB

Peak SAR (extrapolated) = 0.243 W/kg

SAR(1 g) = 0.183 W/kg; SAR(10 g) = 0.105 W/kg

Maximum value of SAR (measured) = 0.206 W/kg



Plot 53 UMTS Band V Right Cheek Middle

Date: 7/22/2020

Communication System: UID 0, WCDMA 850 (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(9.38, 9.38, 9.38); Calibrated:7/6/2020;

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

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

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.11 (7439)

Right Cheek Middle/Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.460 W/kg

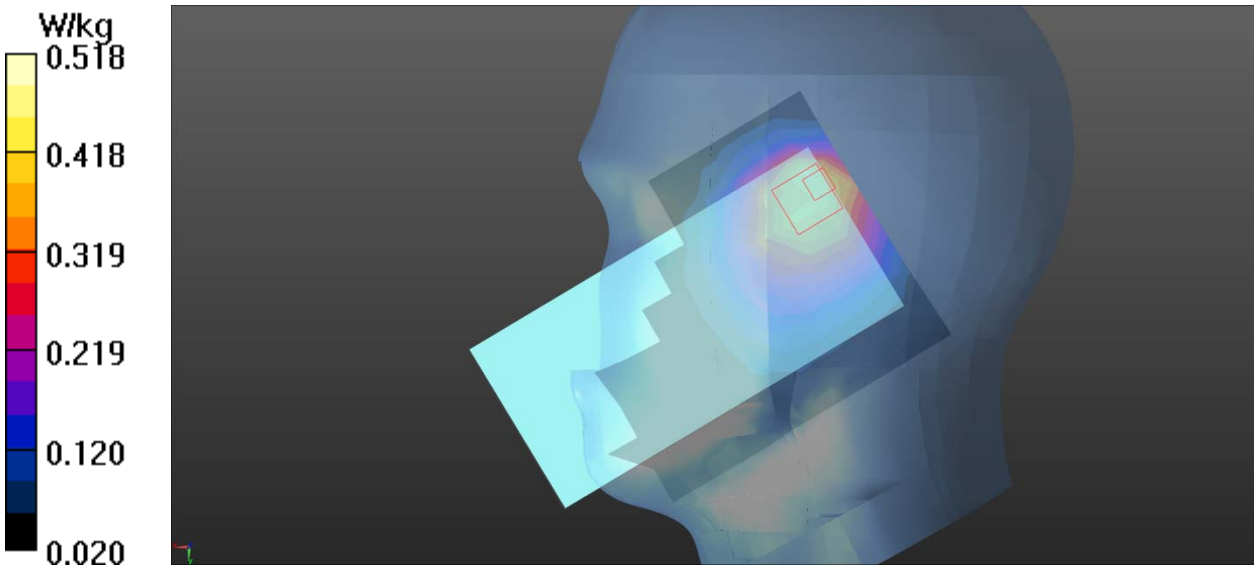
Right Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 19.53 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.953 W/kg

SAR(1 g) = 0.485 W/kg; SAR(10 g) = 0.294 W/kg

Maximum value of SAR (measured) = 0.518 W/kg



Plot 54 UMTS Band V Back Side Middle (Distance 10mm)

Date: 7/22/2020

Communication System: UID 0, WCDMA 850 (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(9.38, 9.38, 9.38); Calibrated:7/6/2020;

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

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

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.11 (7439)

Back Side Middle/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.184 W/kg

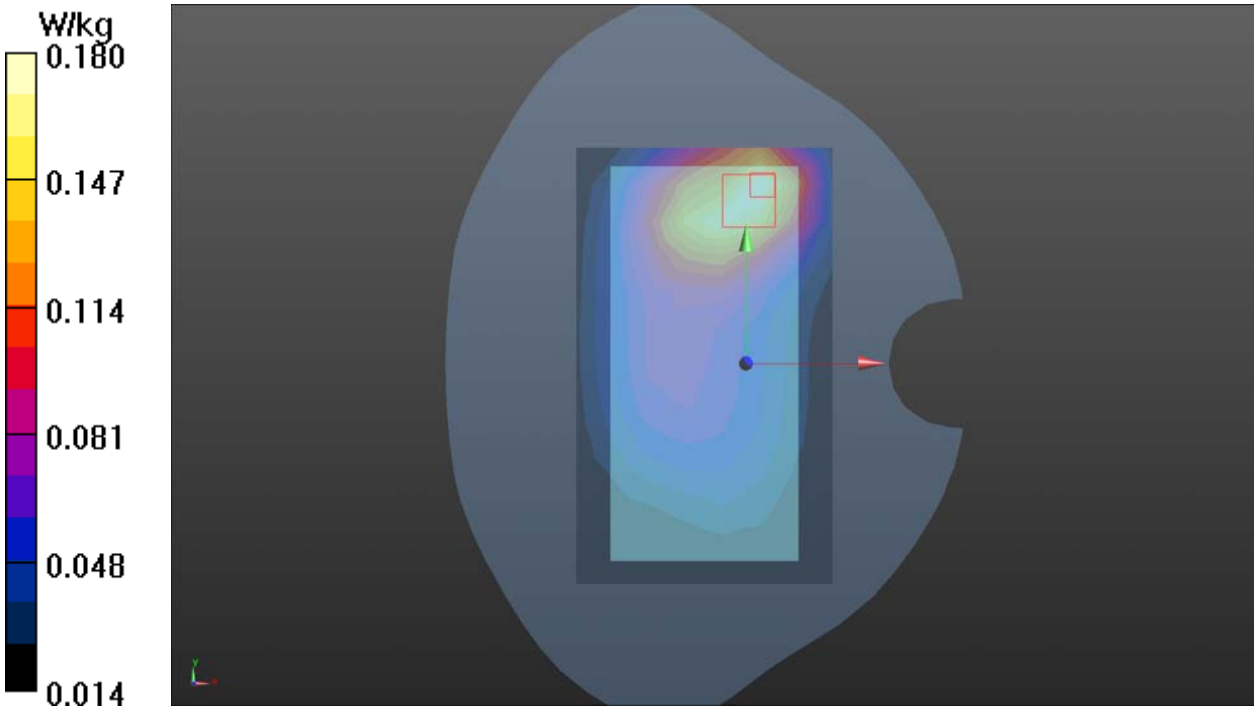
Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.929 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 0.286 W/kg

SAR(1 g) = 0.171 W/kg; SAR(10 g) = 0.109 W/kg

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



Plot 55 LTE Band 5 50%RB Right Cheek High

Date: 7/23/2020

Communication System: UID 0, LTE-FDD (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: Right Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.38, 9.38, 9.38); Calibrated:7/6/2020;

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

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

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.11 (7439)

Right Cheek High/Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.471 W/kg

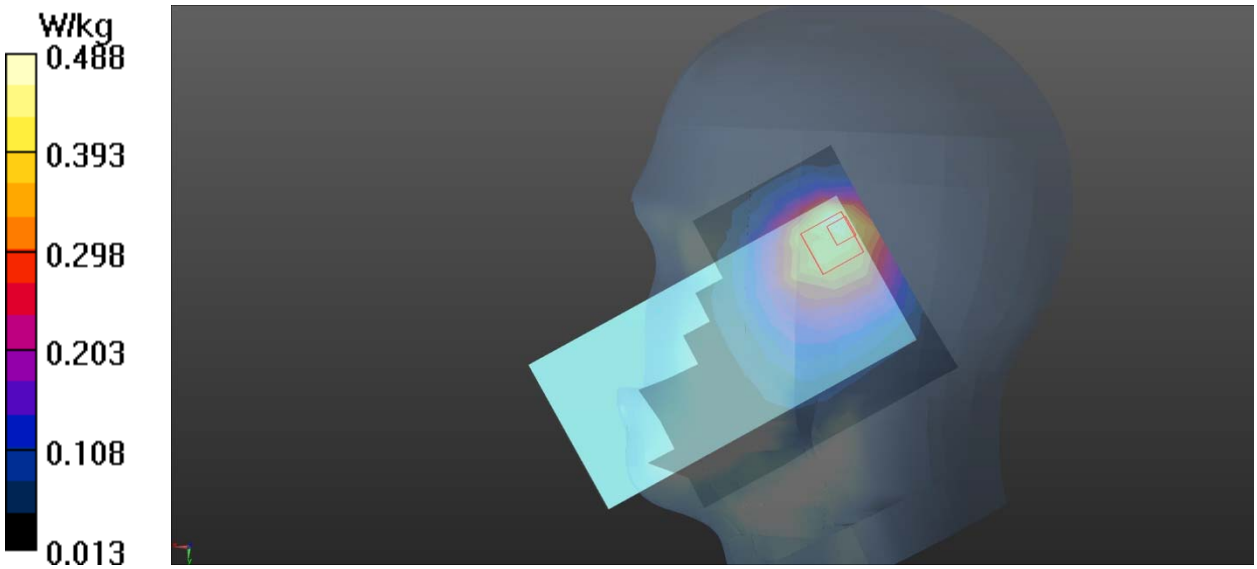
Right Cheek High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 18.75 V/m; Power Drift = -0.10 dB

Peak SAR (extrapolated) = 0.933 W/kg

SAR(1 g) = 0.464 W/kg; SAR(10 g) = 0.277 W/kg

Maximum value of SAR (measured) = 0.488 W/kg



Plot 56 LTE Band 5 50%RB Back Side High (Distance 10mm)

Date: 7/23/2020

Communication System: UID 0, LTE-FDD (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(9.38, 9.38, 9.38); Calibrated:7/6/2020;

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

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

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.11 (7439)

Back Side High/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.172 W/kg

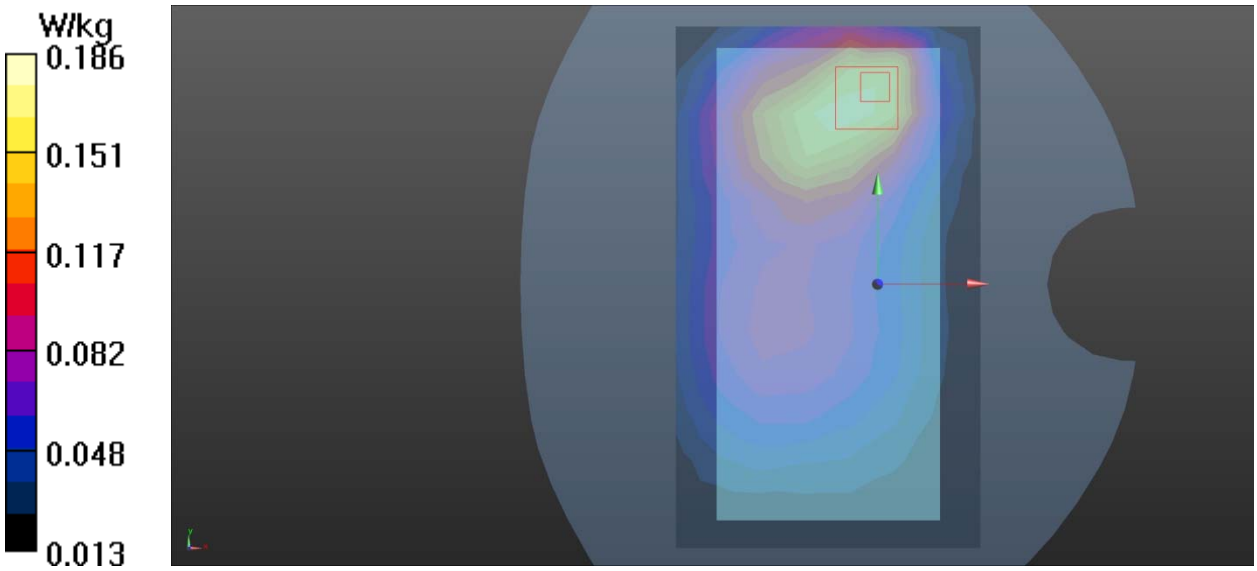
Back Side High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.322 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 0.301 W/kg

SAR(1 g) = 0.172 W/kg; SAR(10 g) = 0.106 W/kg

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



Wi-Fi-Antenna

Plot 57 802.11b Left Tilt Middle (ANT 1)

Date: 7/13/2020

Communication System: UID 0, 802.11b (0); Frequency: 2437 MHz;Duty Cycle: 1:1.01

Medium parameters used: f = 2437 MHz; σ = 1.791 S/m; ε_r = 39.401; 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(7.54, 7.54, 7.54); Calibrated: 7/6/2020;

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 Tilt Middle/Area Scan(10x18x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 0.403 W/kg

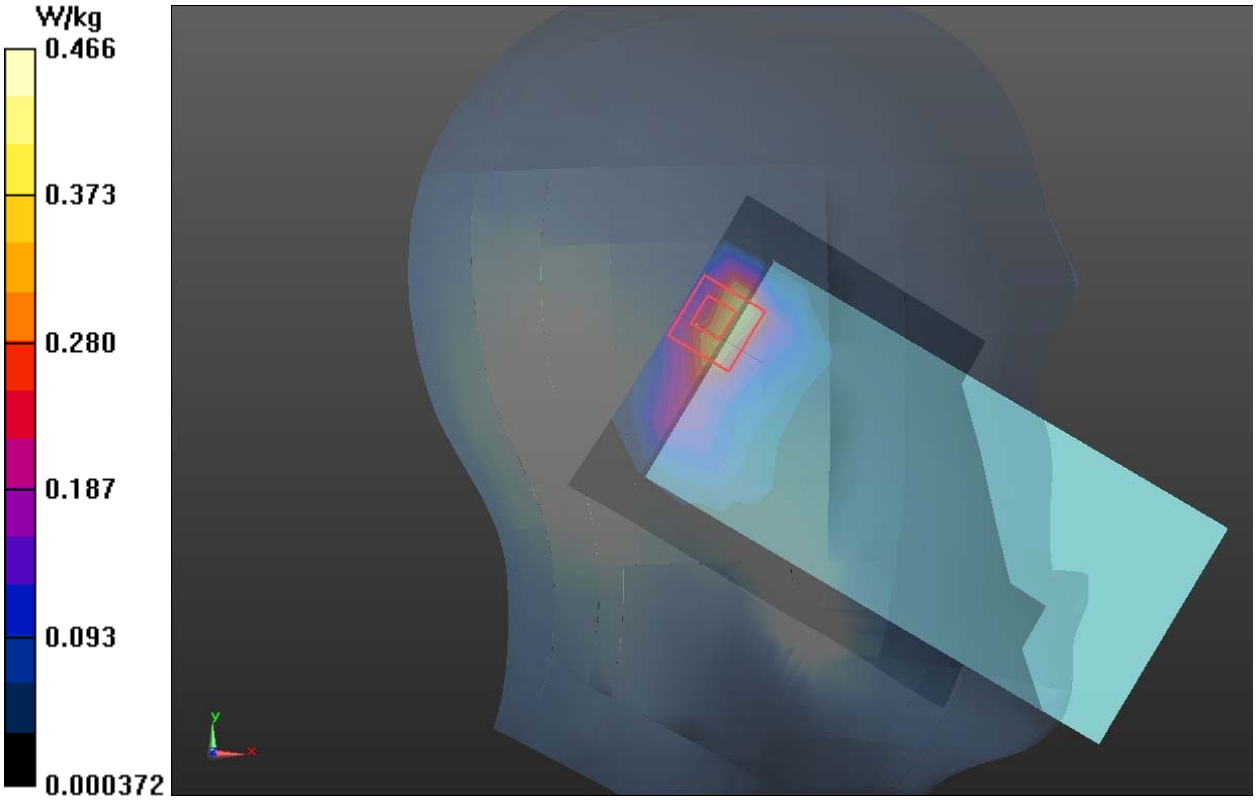
Left Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.96 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 1.20 W/kg

SAR(1 g) = 0.467 W/kg; SAR(10 g) = 0.189 W/kg

Maximum value of SAR (measured) = 0.466 W/kg



Plot 58 802.11b Top Edge Middle (Distance 10mm, ANT 1)

Date: 7/13/2020

Communication System: UID 0, 802.11b (0); Frequency: 2437 MHz;Duty Cycle: 1:1.01

Medium parameters used: f = 2437 MHz; σ = 1.791 S/m; ε_r = 39.401; 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(7.54, 7.54, 7.54); Calibrated: 7/6/2020;

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 Middle/Area Scan (10x18x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 0.153 W/kg

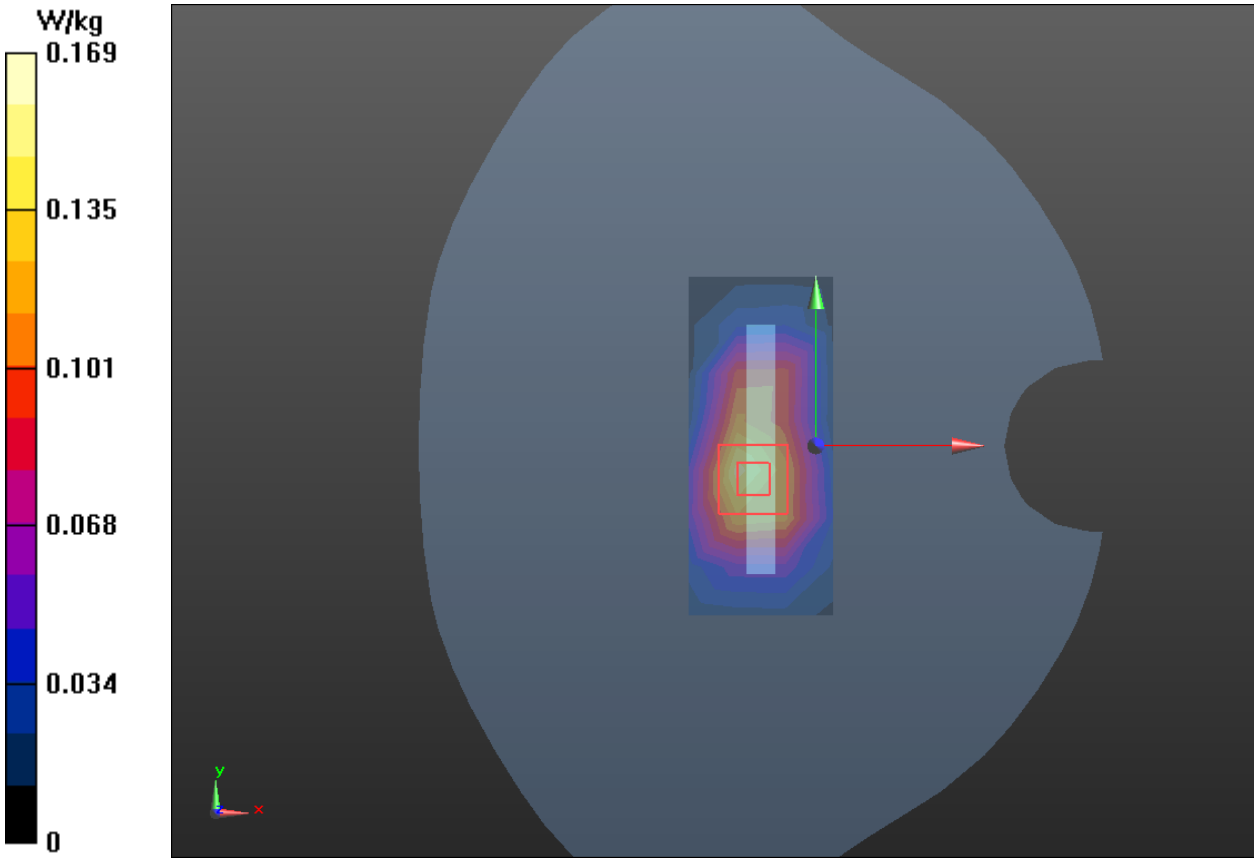
Top Edge Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.441 V/m; Power Drift = 0.16 dB

Peak SAR (extrapolated) = 0.305 W/kg

SAR(1 g) = 0.154 W/kg; SAR(10 g) = 0.083 W/kg

Maximum value of SAR (measured) = 0.169 W/kg



Plot 59 802.11b Right Cheek High (ANT 2)

Date: 7/13/2020

Communication System: UID 0, 802.11b (0); Frequency: 2462 MHz;Duty Cycle: 1:1.01

Medium parameters used: f = 2462 MHz; σ = 1.819 S/m; ε_r = 39.309; 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(7.54, 7.54, 7.54); Calibrated: 7/6/2020;

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)

Right Cheek High/Area Scan (10x18x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 0.661 W/kg

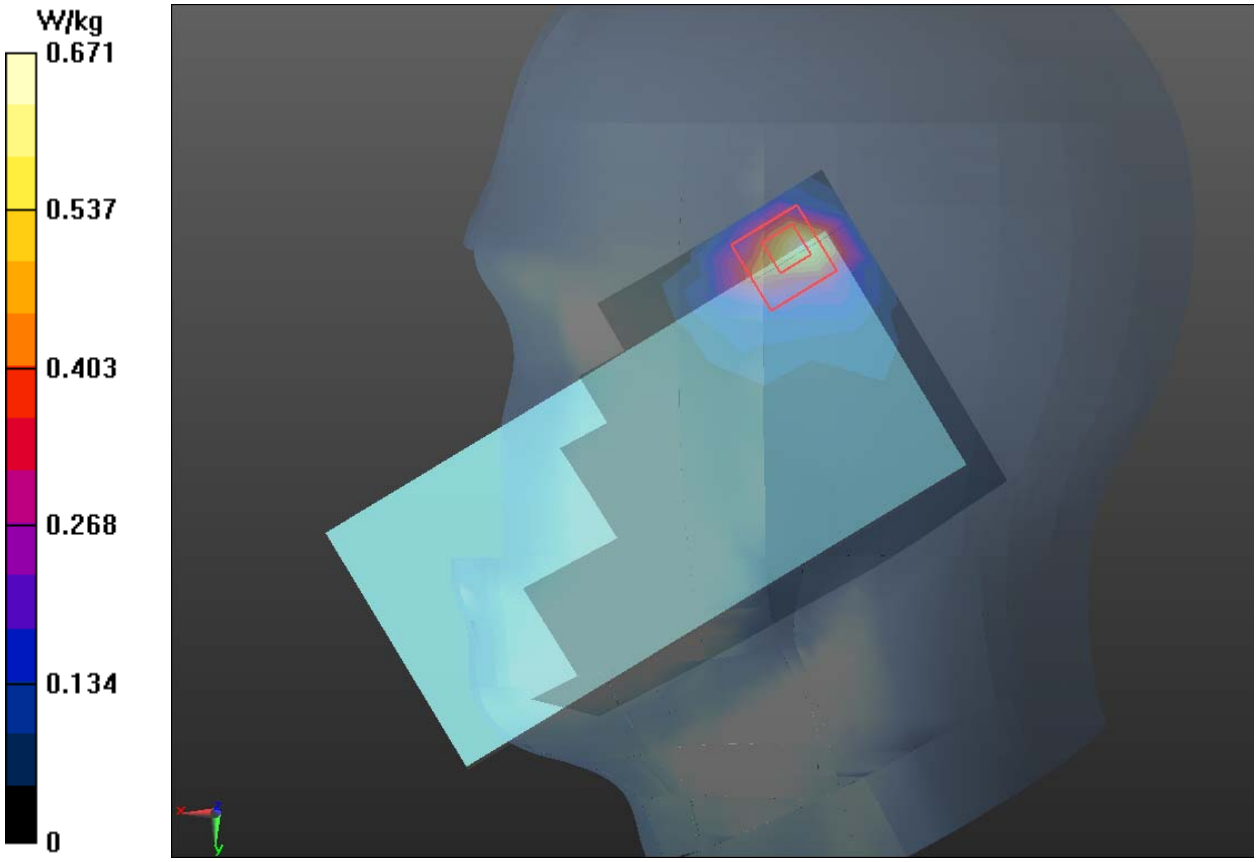
Right Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.252 V/m; Power Drift = 0.078 dB

Peak SAR (extrapolated) = 1.62 W/kg

SAR(1 g) = 0.594 W/kg; SAR(10 g) = 0.244 W/kg

Maximum value of SAR (measured) = 0.671 W/kg



Plot 60 802.11b Top Edge Middle (Distance 10mm, ANT 2)

Date: 7/13/2020

Communication System: UID 0, 802.11b (0); Frequency: 2437 MHz;Duty Cycle: 1:1.01

Medium parameters used: f = 2437 MHz; σ = 1.791 S/m; ε_r = 39.401; 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(7.54, 7.54, 7.54); Calibrated: 7/6/2020;

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)

Top Edge Middle/Area Scan (10x18x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 0.0369 W/kg

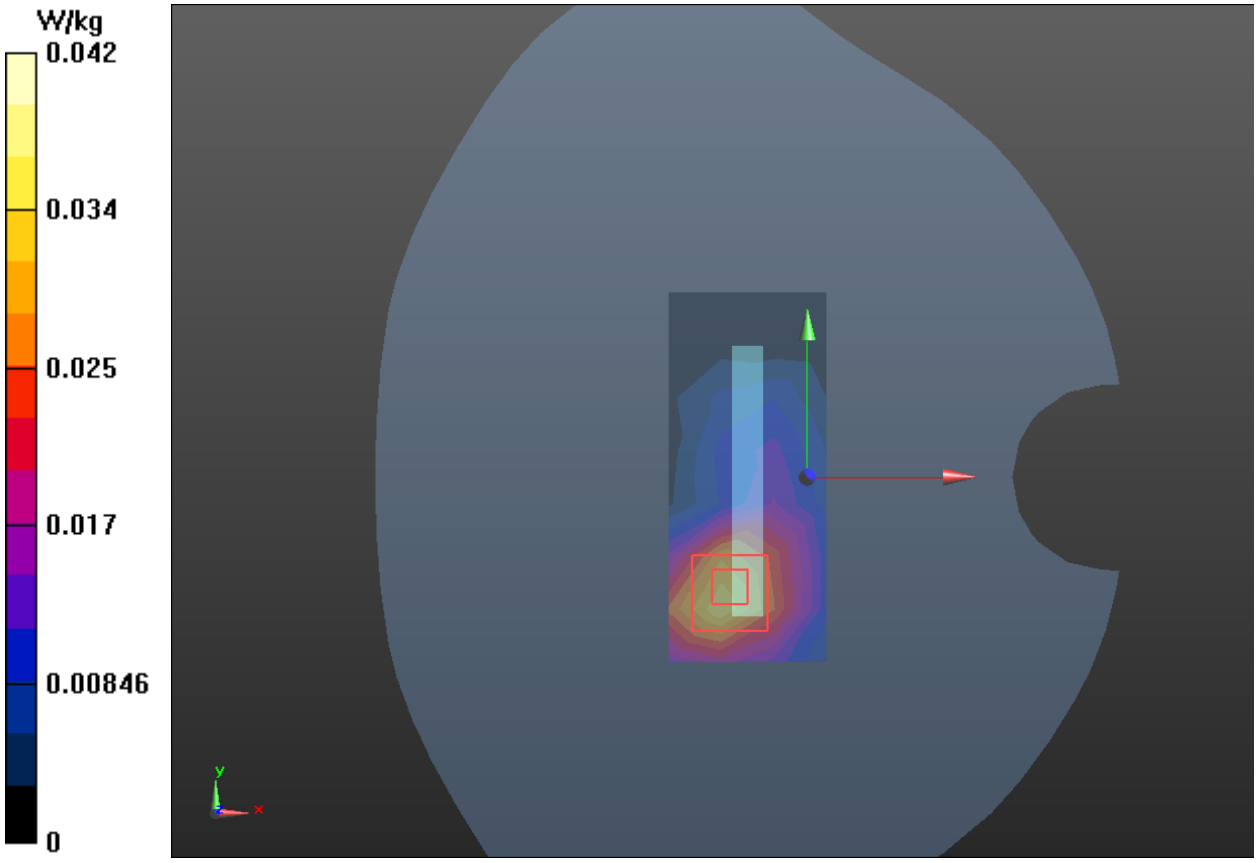
Top Edge Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 2.457 V/m; Power Drift = 0.018 dB

Peak SAR (extrapolated) = 0.0700 W/kg

SAR(1 g) = 0.037 W/kg; SAR(10 g) = 0.019 W/kg

Maximum value of SAR (measured) = 0.042 W/kg



Plot 61 802.11nHT40 U-NII-1 Right Tilt Middle (ANT 1)

Date: 7/27/2020

Communication System: UID 0, 802.11n HT40 (0); Frequency: 5190 MHz;Duty Cycle: 1:1.04

Medium parameters used: f = 5190 MHz; σ = 4.7 S/m; ε_r = 37.068; 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(5.55, 5.55, 5.55); Calibrated: 7/6/2020;

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)

Right Tilt Middle/Area Scan (12x21x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.349 W/kg

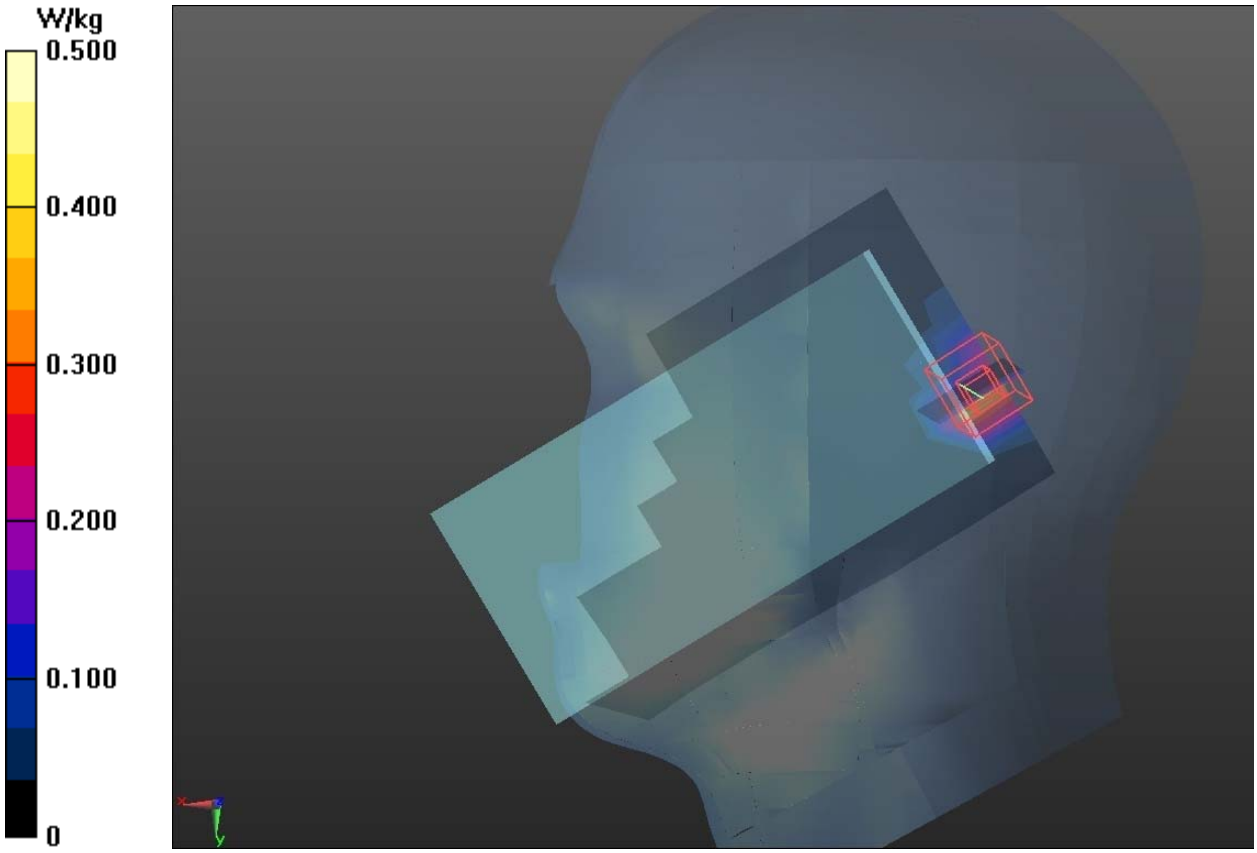
Right Tilt Middle/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 3.420 V/m; Power Drift = -0.038 dB

Peak SAR (extrapolated) = 2.39 W/kg

SAR(1 g) = 0.503 W/kg; SAR(10 g) = 0.166 W/kg

Maximum value of SAR (measured) = 0.500 W/kg



Plot 62 802.11nHT40 U-NII-1 Top Edge Middle (Distance 10mm, ANT 1)

Date: 7/27/2020

Communication System: UID 0, 802.11n HT40 (0); Frequency: 5190 MHz;Duty Cycle: 1:1.04

Medium parameters used: f = 5190 MHz; σ = 4.7 S/m; ε_r = 37.068; 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(5.55, 5.55, 5.55); Calibrated: 7/6/2020;

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)

Top Edge Middle/Area Scan (12x21x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.293 W/kg

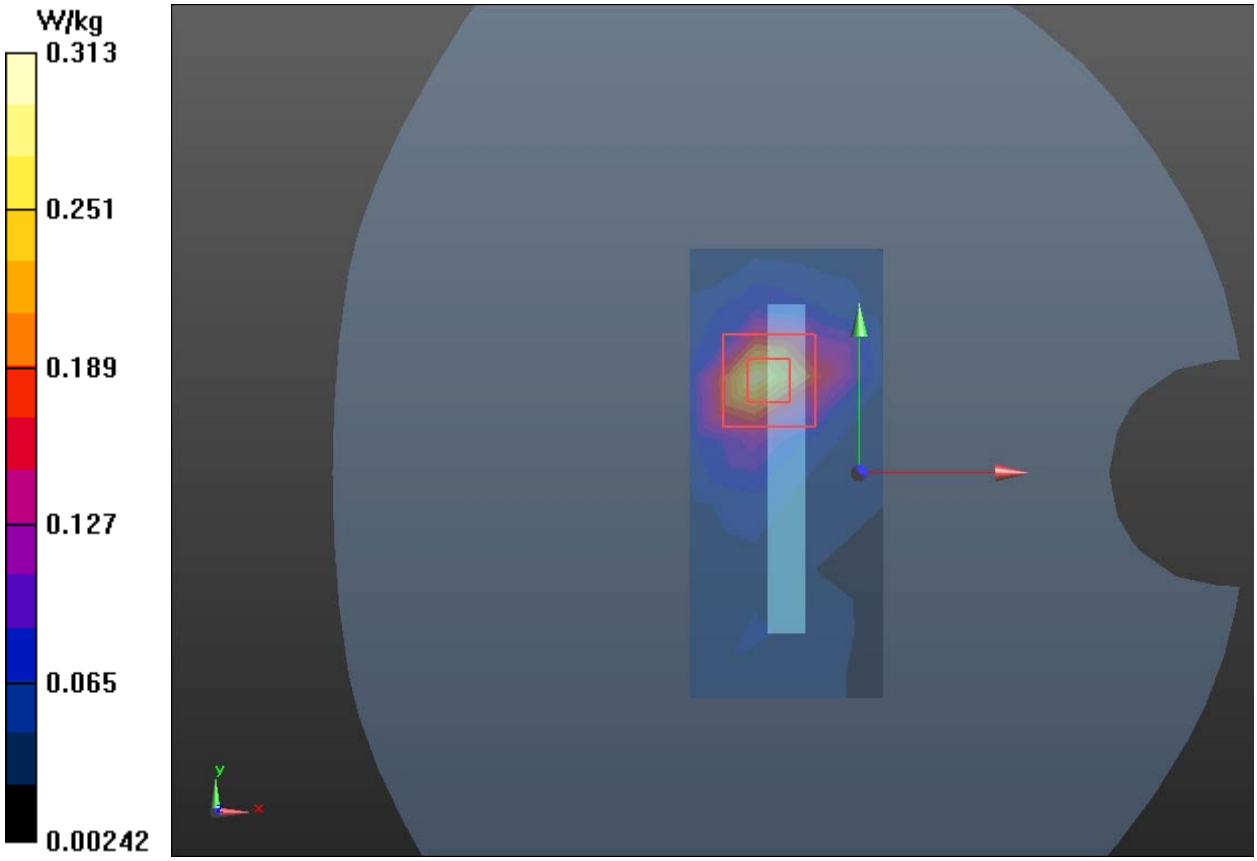
Top Edge Middle/Zoom Scan(7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 3.636 V/m; Power Drift = 0.042 dB

Peak SAR (extrapolated) = 0.737 W/kg

SAR(1 g) = 0.264 W/kg; SAR(10 g) = 0.101 W/kg

Maximum value of SAR (measured) = 0.313 W/kg



Plot 63 802.11nHT40 U-NII-2A Right Tilt Middle (ANT 1)

Date: 7/27/2020

Communication System: UID 0, 802.11n HT40 (0); Frequency: 5270 MHz;Duty Cycle: 1:1.04

Medium parameters used: f = 5270 MHz; σ = 4.81 S/m; ε_r = 36.845; 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(5.55, 5.55, 5.55); Calibrated: 7/6/2020;

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 (12x21x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.438 W/kg

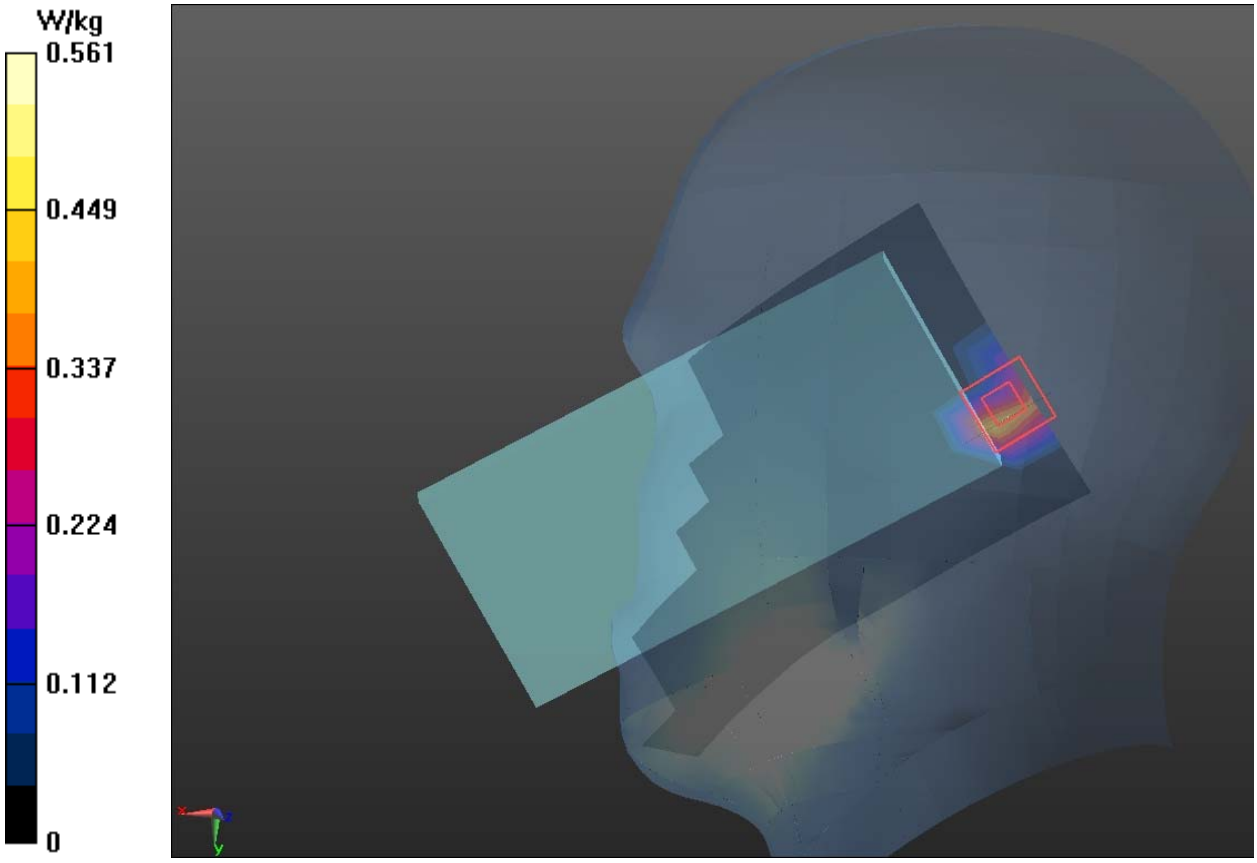
Right Tilt Middle/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 3.150 V/m; Power Drift = 0.15 dB

Peak SAR (extrapolated) = 2.82 W/kg

SAR(1 g) = 0.566 W/kg; SAR(10 g) = 0.188 W/kg

Maximum value of SAR (measured) = 0.561 W/kg



Plot 64 802.11nHT40 U-NII-2A Top Edge Middle (Distance 10mm, ANT 1)

Date: 7/27/2020

Communication System: UID 0, 802.11n HT40 (0); Frequency: 5270 MHz;Duty Cycle: 1:1.04

Medium parameters used: f = 5270 MHz; σ = 4.81 S/m; ε_r = 36.845; 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(5.55, 5.55, 5.55); Calibrated: 7/6/2020;

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 Middle/Area Scan (12x21x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 1.06 W/kg

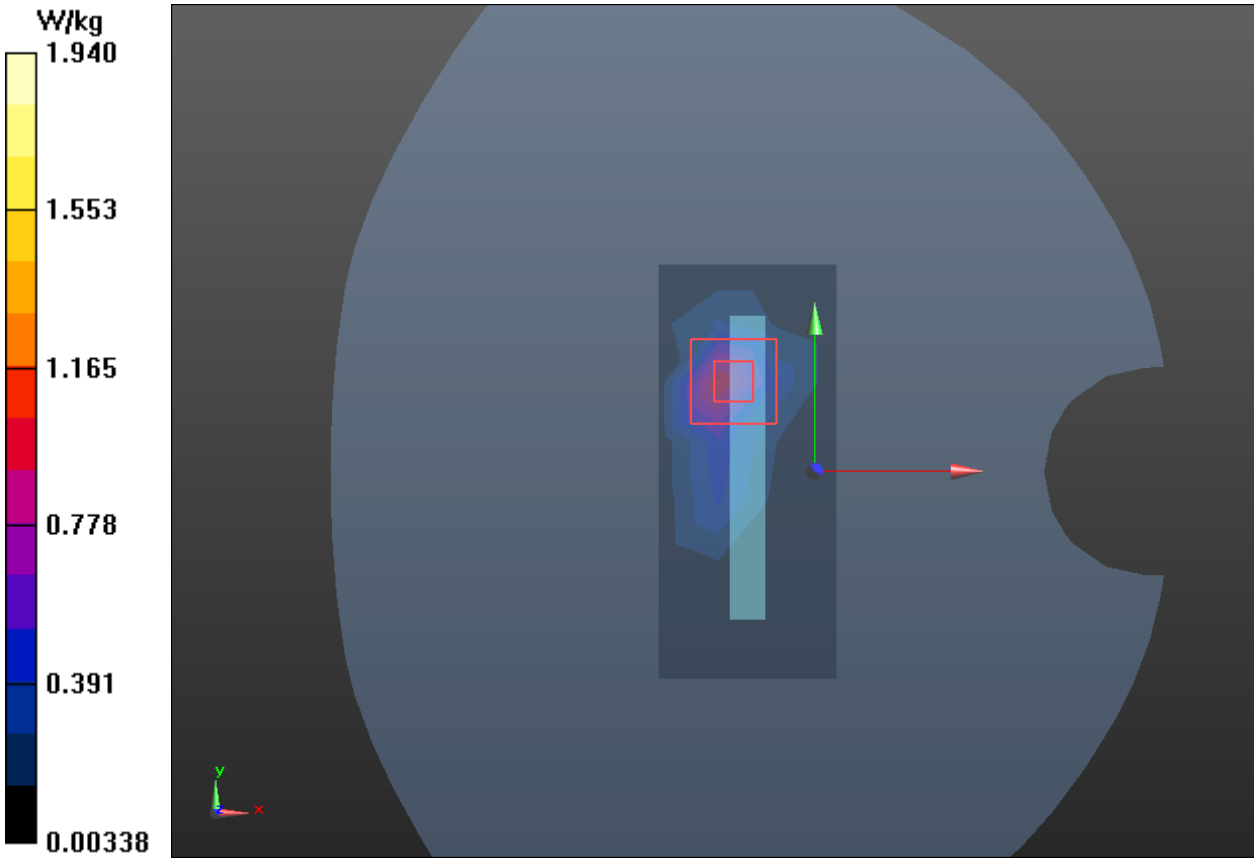
Top Edge Middle/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 9.548 V/m; Power Drift = 0.070 dB

Peak SAR (extrapolated) = 3.84 W/kg

SAR(1 g) = 1.27 W/kg; SAR(10 g) = 0.361 W/kg

Maximum value of SAR (measured) = 1.94 W/kg



Plot 65 802.11nHT40 U-NII-2C Left Tilt Middle (ANT 1)

Date: 7/28/2020

Communication System: UID 0, 802.11n HT40 (0); Frequency: 5510 MHz;Duty Cycle: 1:1.04

Medium parameters used: f = 5510 MHz; σ = 5.13 S/m; ε_r = 36.216; 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(4.97, 4.97, 4.97); Calibrated: 7/6/2020;

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 Tilt Middle/Area Scan (12x21x1): Measurement grid: dx=10mm, dy=10mm Maximum value of SAR (measured) = 0.616 W/kg

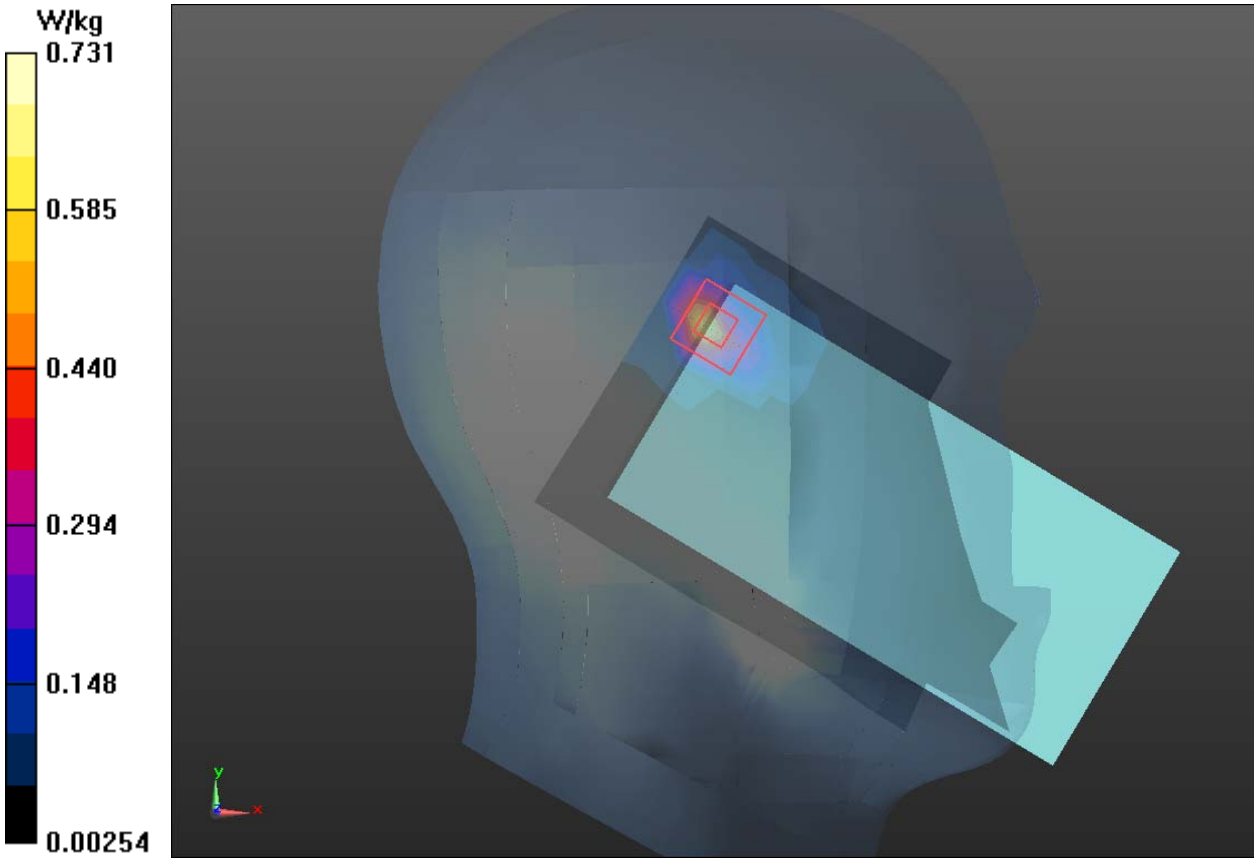
Left Tilt Middle/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 2.773 V/m; Power Drift = -0.124 dB

Peak SAR (extrapolated) = 1.62 W/kg

SAR(1 g) = 0.536 W/kg; SAR(10 g) = 0.170 W/kg

Maximum value of SAR (measured) = 0.731 W/kg



Plot 66 802.11nHT40 U-NII-2C Top Edge Middle (Distance 10mm, ANT 1)

Date: 7/28/2020

Communication System: UID 0, 802.11n HT40 (0); Frequency: 5510 MHz;Duty Cycle: 1:1.04

Medium parameters used: f = 5510 MHz; σ = 5.13 S/m; ε_r = 36.216; 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(4.97, 4.97, 4.97); Calibrated: 7/6/2020;

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 Middle/Area Scan (12x21x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.535 W/kg

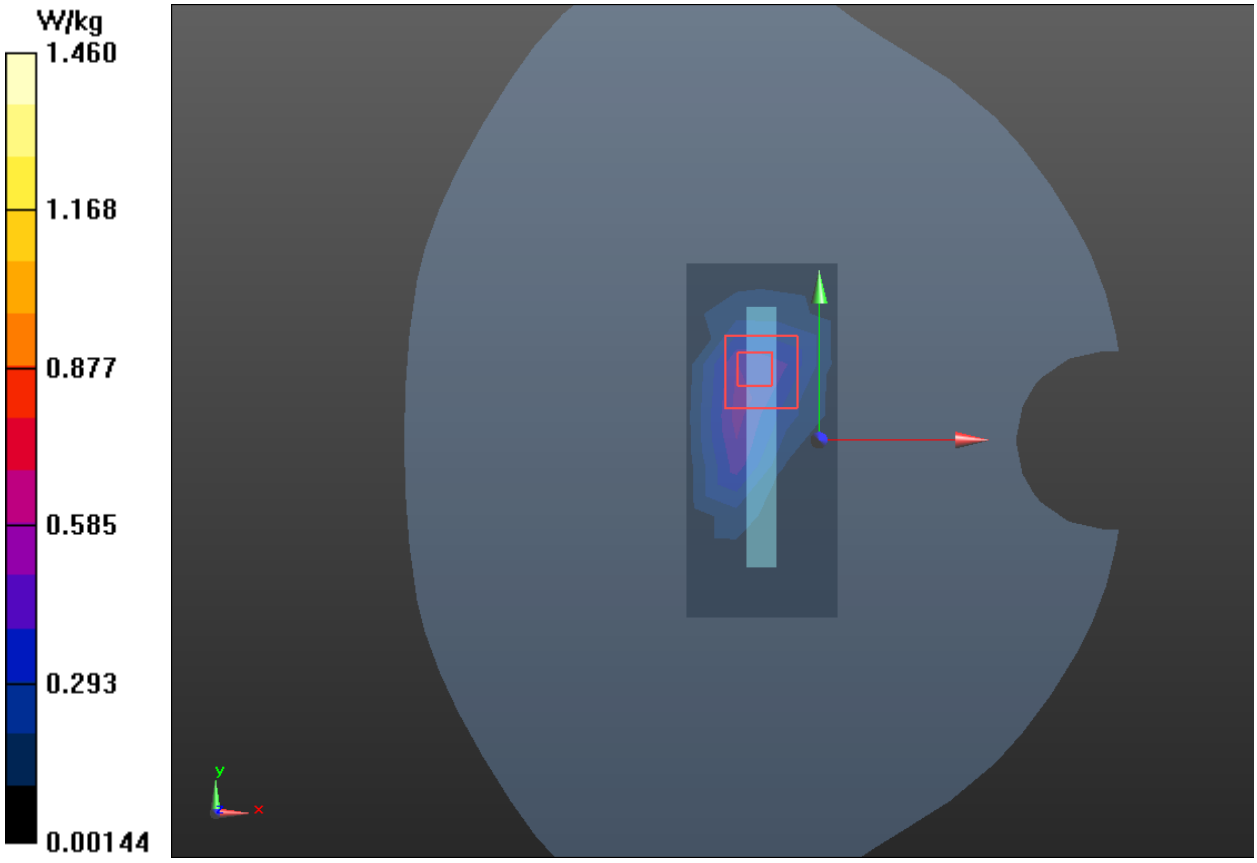
Top Edge Middle/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 8.081 V/m; Power Drift = 0.115 dB

Peak SAR (extrapolated) = 3.08 W/kg

SAR(1 g) = 1.01 W/kg; SAR(10 g) = 0.302 W/kg

Maximum value of SAR (measured) = 1.46 W/kg



Plot 67 802.11nHT40 U-NII-3 Left Cheek Middle (ANT 1)

Date: 7/28/2020

Communication System: UID 0, 802.11n HT40 (0); Frequency: 5755 MHz;Duty Cycle: 1:1.04

Medium parameters used: f = 5755 MHz; σ = 5.455 S/m; ε_r = 35.589; 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(5.00, 5.00, 5.00); Calibrated: 7/6/2020;

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 Cheek Middle/Area Scan (12x21x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.644 W/kg

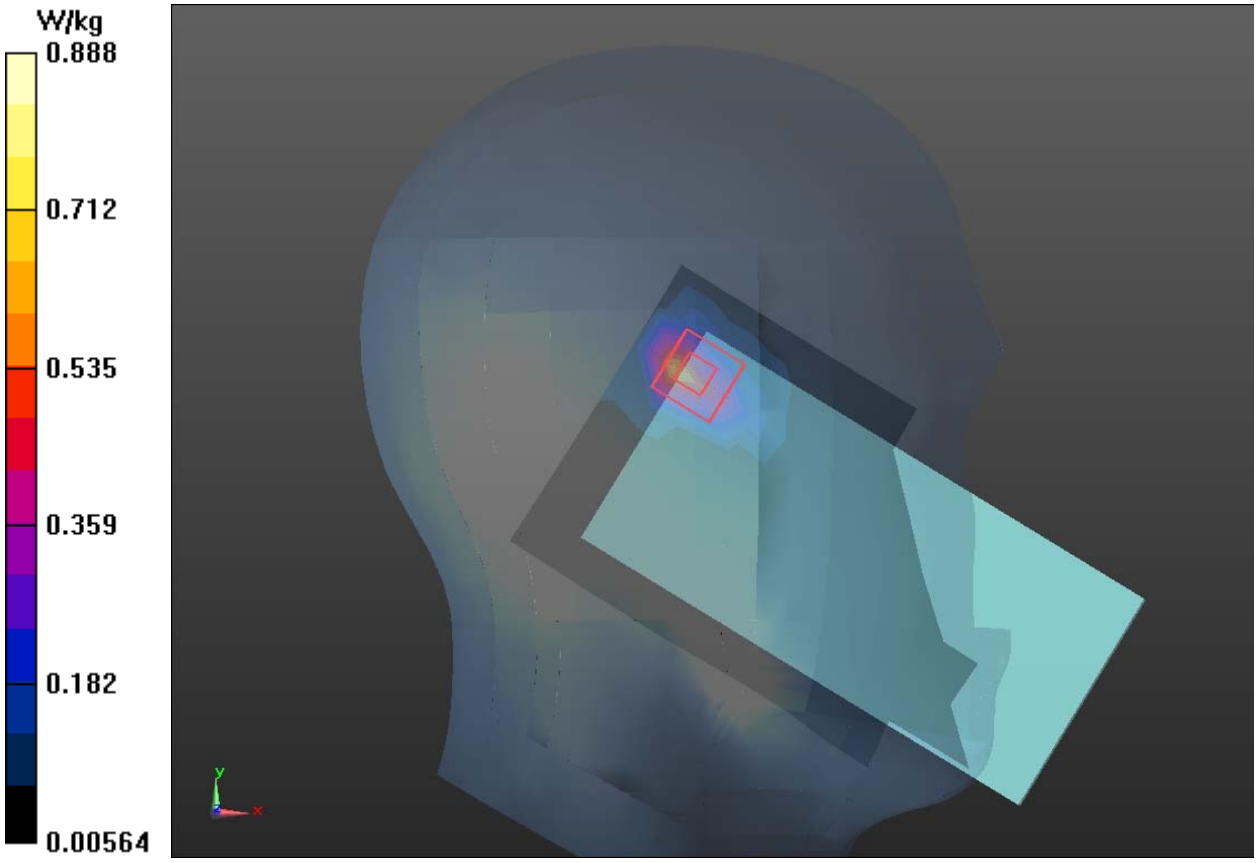
Left Cheek Middle/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 1.504 V/m; Power Drift = 0.180 dB

Peak SAR (extrapolated) = 2.04 W/kg

SAR(1 g) = 0.556 W/kg; SAR(10 g) = 0.185 W/kg

Maximum value of SAR (measured) = 0.888 W/kg



Plot 68 802.11nHT40 U-NII-3 Top Edge Middle (Distance 10mm, ANT 1)

Date: 7/28/2020

Communication System: UID 0, 802.11n HT40 (0); Frequency: 5755 MHz;Duty Cycle: 1:1.04

Medium parameters used: f = 5755 MHz; σ = 5.455 S/m; ε_r = 35.589; 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(5.00, 5.00, 5.00); Calibrated: 7/6/2020;

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 Middle/Area Scan (12x21x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.149 W/kg

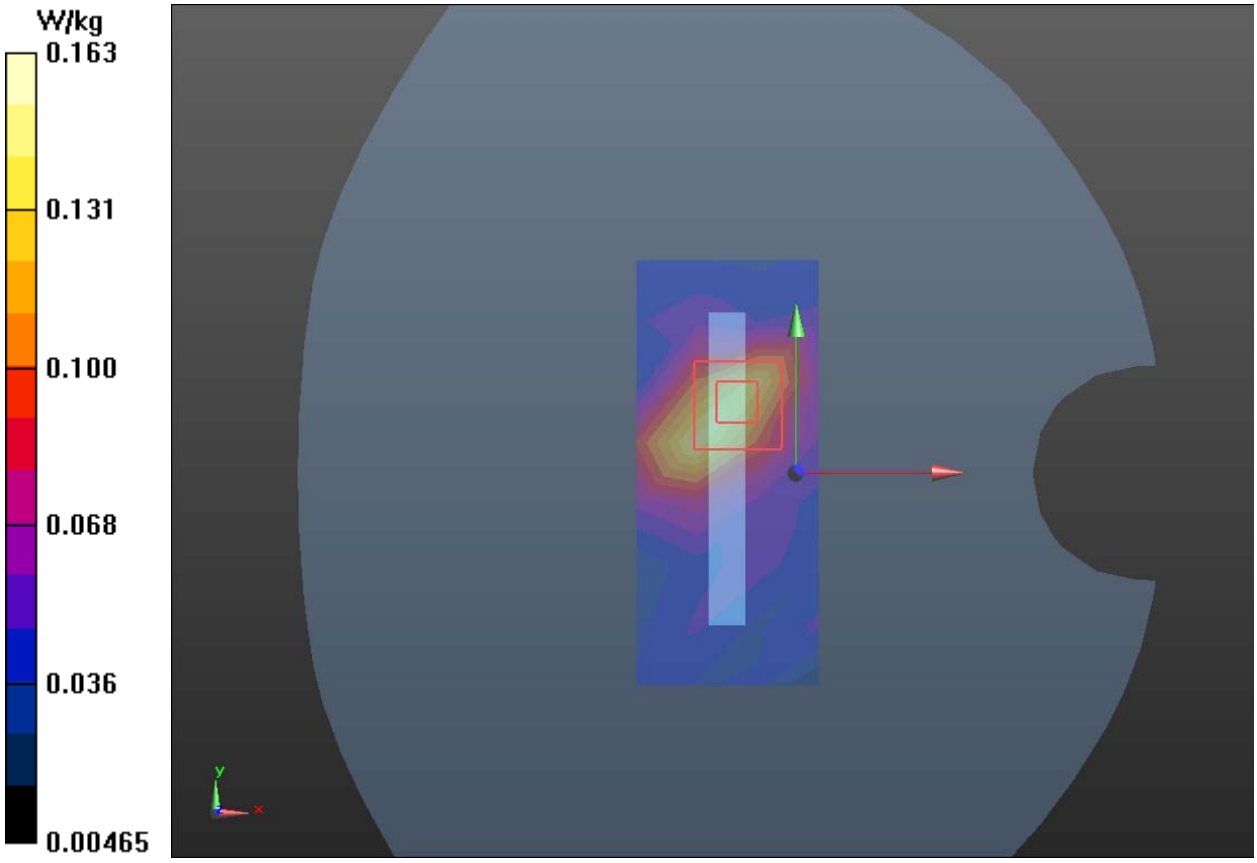
Top Edge Middle/Zoom Scan(7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 2.688 V/m; Power Drift = 0.135 dB

Peak SAR (extrapolated) = 0.419 W/kg

SAR(1 g) = 0.150 W/kg; SAR(10 g) = 0.067 W/kg

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



Plot 69 802.11nHT40 U-NII-1 Left Cheek Middle (ANT 2)

Date: 7/27/2020

Communication System: UID 0, 802.11n HT40 (0); Frequency: 5230 MHz;Duty Cycle: 1:1.04

Medium parameters used: f = 5230 MHz; σ = 4.754 S/m; ε_r = 36.956; 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(5.55, 5.55, 5.55); Calibrated: 7/6/2020;

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 Cheek Middle/Area Scan (12x21x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.0830 W/kg

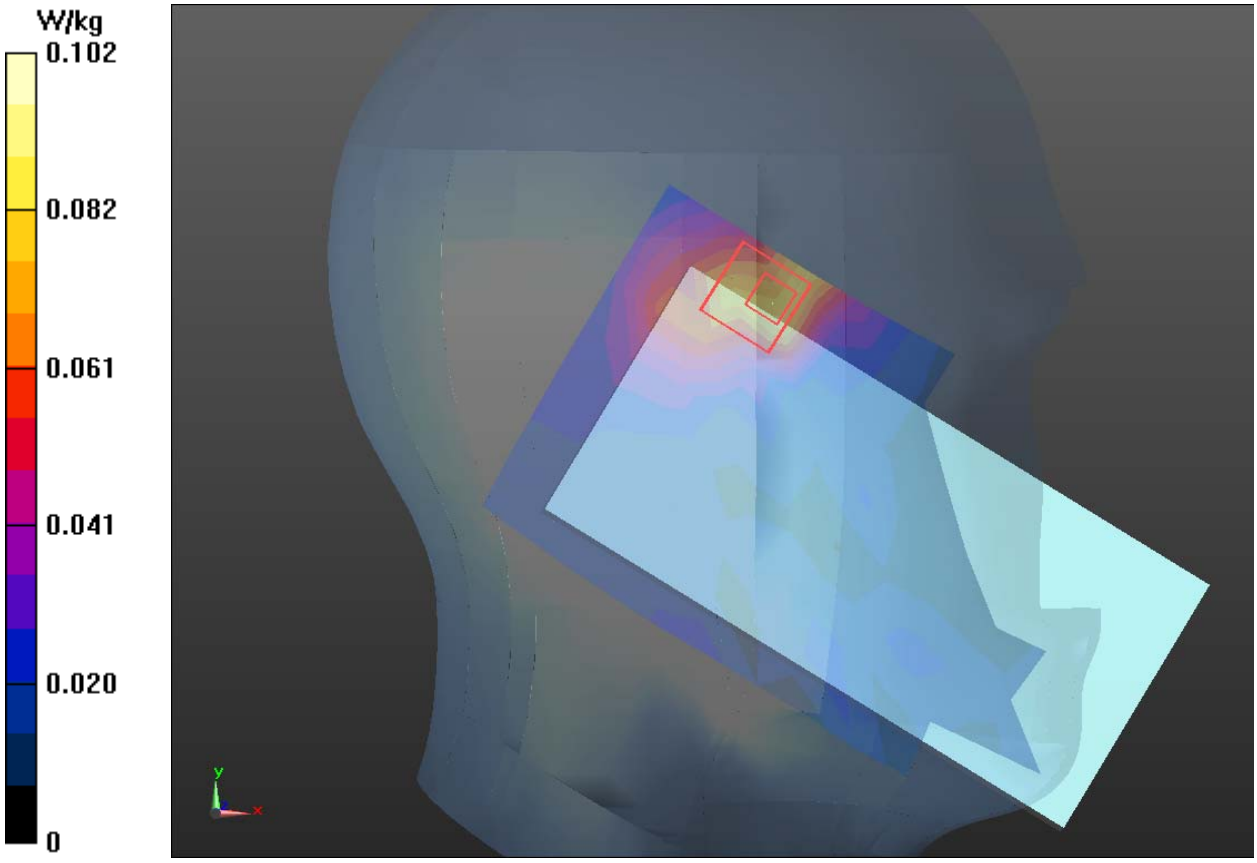
Left Cheek Middle/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 1.890 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 0.390 W/kg

SAR(1 g) = 0.104 W/kg; SAR(10 g) = 0.044 W/kg

Maximum value of SAR (measured) = 0.102 W/kg



Plot 70 802.11nHT40 U-NII-1 Right Edge Middle (Distance 10mm, ANT 2)

Date: 7/27/2020

Communication System: UID 0, 802.11n HT40 (0); Frequency: 5240 MHz;Duty Cycle: 1:1.04

Medium parameters used: f = 5240 MHz; σ = 4.768 S/m; ε_r = 36.927; 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(5.55, 5.55, 5.55); Calibrated: 7/6/2020;

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 Edge Middle/Area Scan (12x21x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.100 W/kg

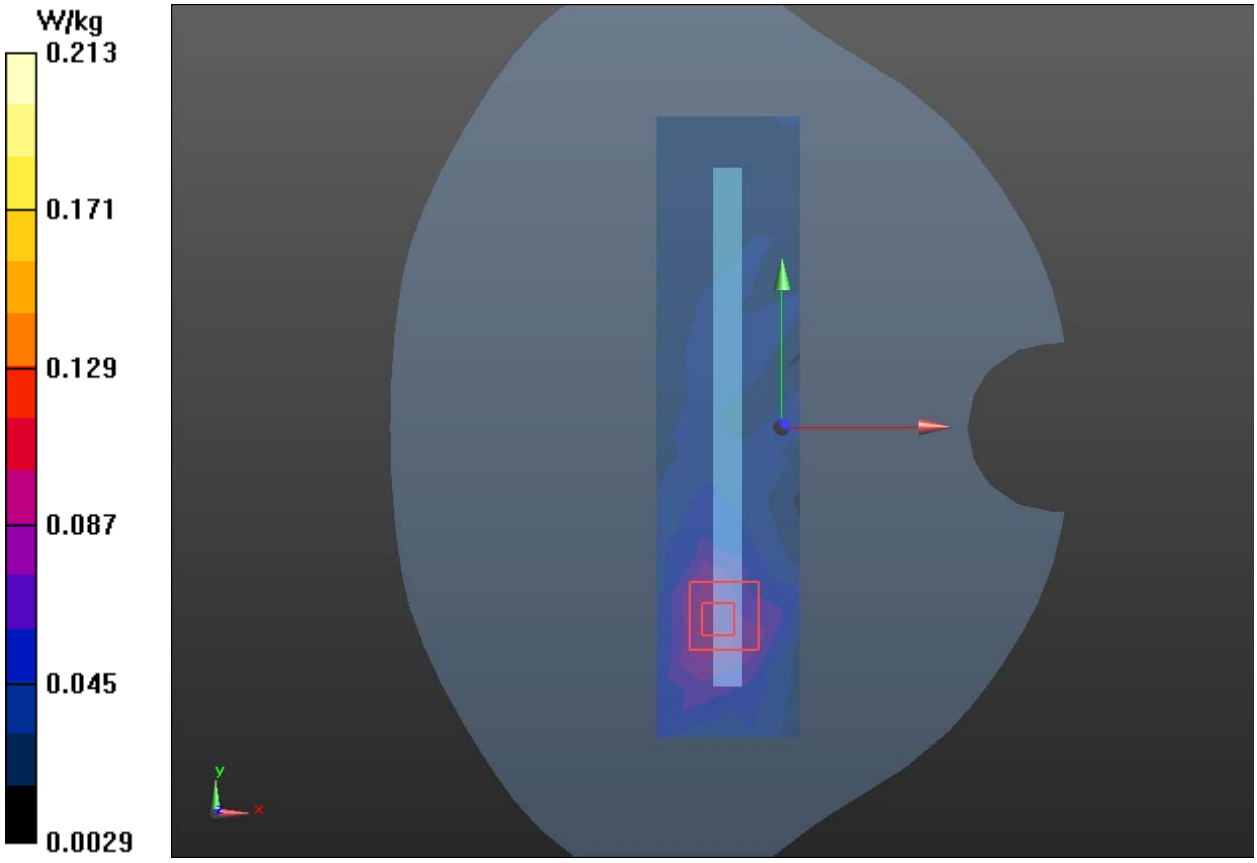
Right Edge Middle/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 3.016 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 0.468 W/kg

SAR(1 g) = 0.182 W/kg; SAR(10 g) = 0.069 W/kg

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



Plot 71 802.11nHT40 U-NII-2A Left Cheek Middle (ANT 2)

Date: 7/27/2020

Communication System: UID 0, 802.11n HT40 (0); Frequency: 5270 MHz;Duty Cycle: 1:1.04

Medium parameters used: f = 5270 MHz; σ = 4.81 S/m; ε_r = 36.845; 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(5.55, 5.55, 5.55); Calibrated: 7/6/2020;

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 Cheek Middle/Area Scan(12x21x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.0793 W/kg

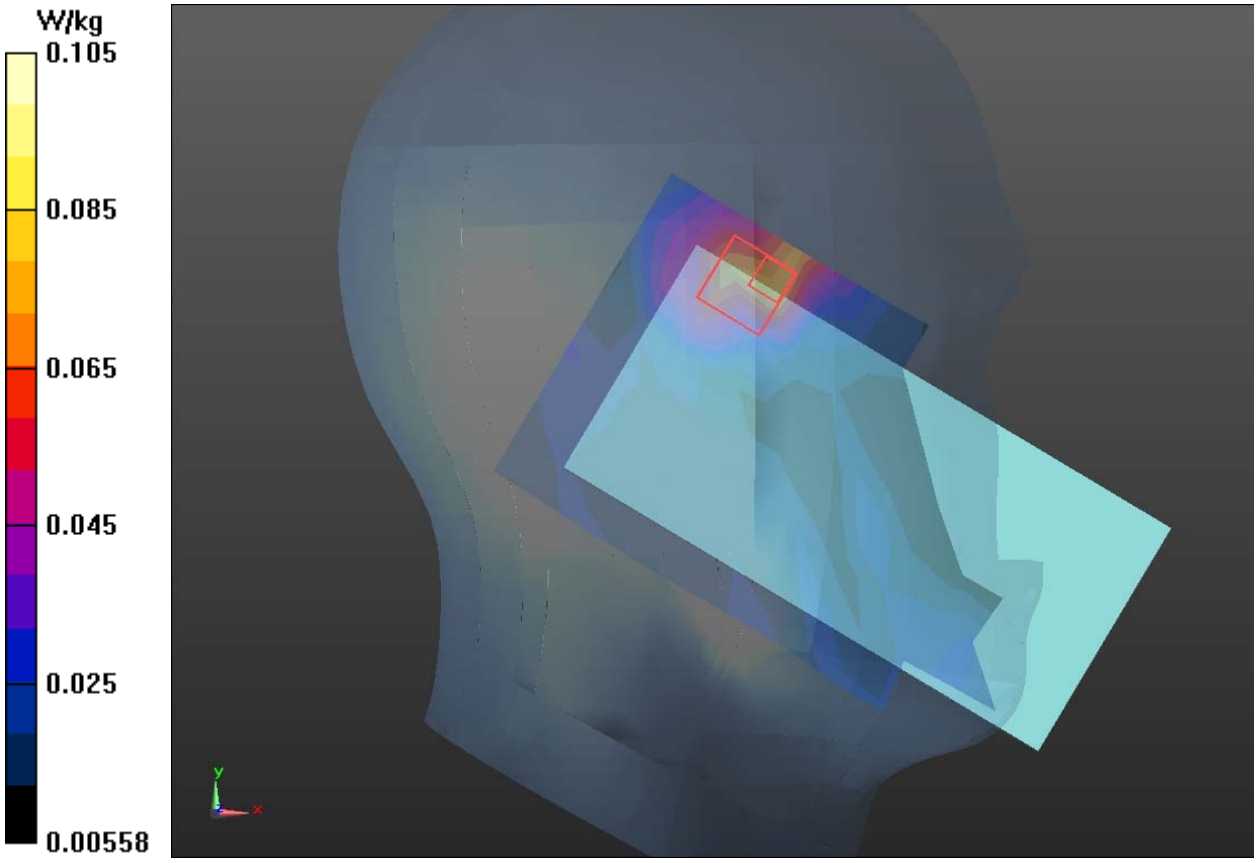
Left Cheek Middle/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 1.789 V/m; Power Drift = 0.028 dB

Peak SAR (extrapolated) = 0.695 W/kg

SAR(1 g) = 0.130 W/kg; SAR(10 g) = 0.055 W/kg

Maximum value of SAR (measured) = 0.105 W/kg



Plot 72 802.11nHT40 U-NII-2A Back Side Middle (Distance 10mm, ANT 2)

Date: 7/27/2020

Communication System: UID 0, 802.11n HT40 (0); Frequency: 5270 MHz;Duty Cycle: 1:1.04

Medium parameters used: f = 5270 MHz; σ = 4.81 S/m; ε_r = 36.845; 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(5.55, 5.55, 5.55); Calibrated: 7/6/2020;

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 (12x21x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.703 W/kg

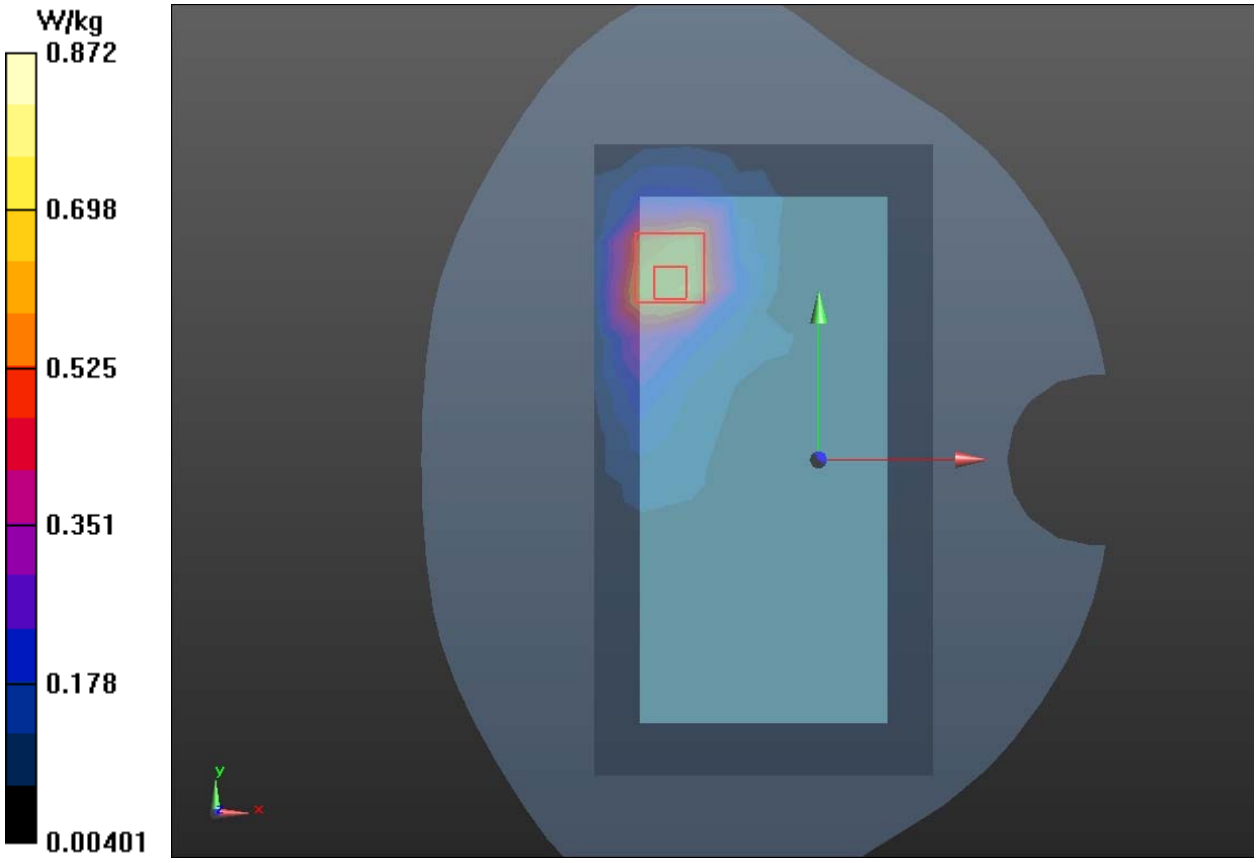
Back Side Middle/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 2.078 V/m; Power Drift = 0.112 dB

Peak SAR (extrapolated) = 2.07 W/kg

SAR(1 g) = 0.737 W/kg; SAR(10 g) = 0.322 W/kg

Maximum value of SAR (measured) = 0.872 W/kg



Plot 73 802.11nHT40 U-NII-2C Left Cheek Middle (ANT 2)

Date: 7/28/2020

Communication System: UID 0, 802.11n HT40 (0); Frequency: 5510 MHz;Duty Cycle: 1:1.04

Medium parameters used: f = 5510 MHz; σ = 5.13 S/m; ε_r = 36.216; 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(4.97, 4.97, 4.97); Calibrated: 7/6/2020;

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)

Left Cheek Middle/Area Scan(12x21x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.154 W/kg

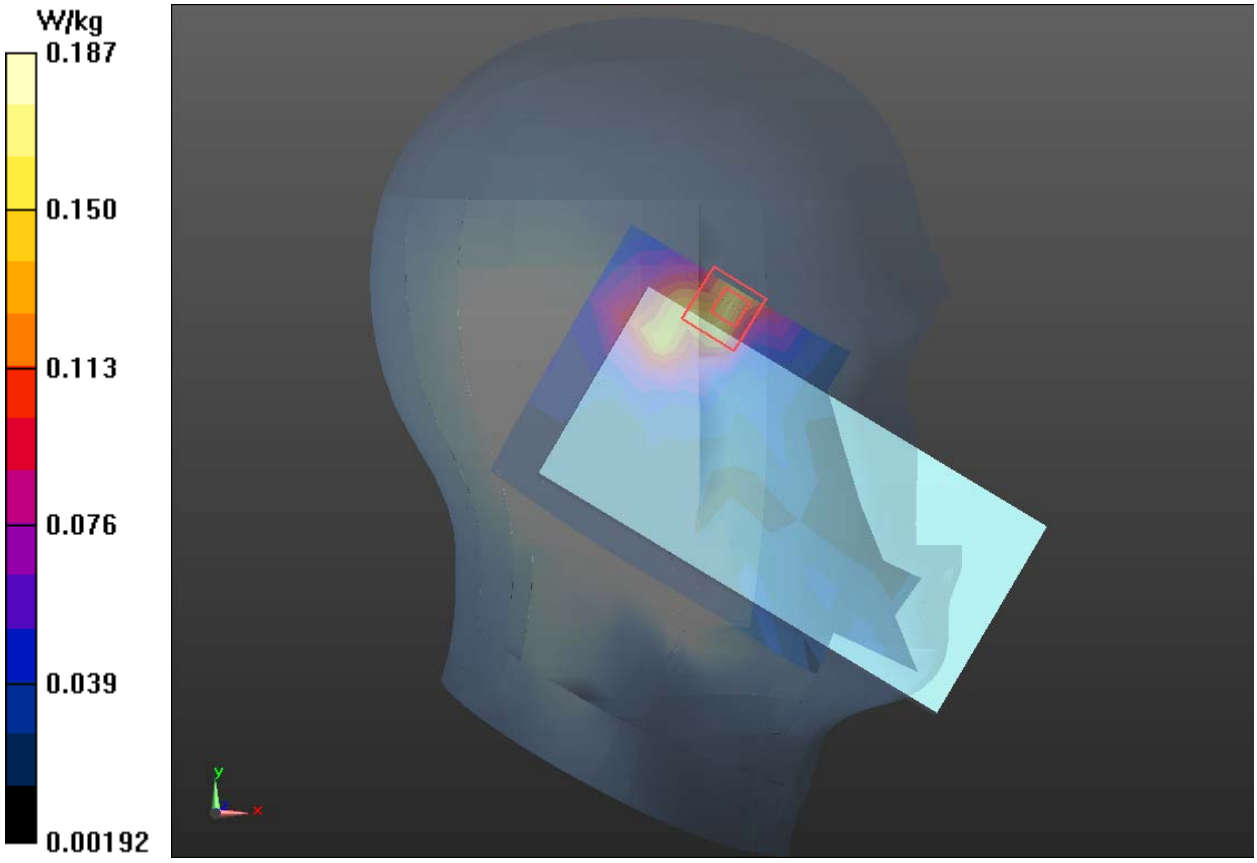
Left Cheek Middle/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 2.691 V/m; Power Drift = -0.196 dB

Peak SAR (extrapolated) = 0.470 W/kg

SAR(1 g) = 0.171 W/kg; SAR(10 g) = 0.072 W/kg

Maximum value of SAR (measured) = 0.187 W/kg



Plot 74 802.11nHT40 U-NII-2C Right Edge Middle (Distance 10mm, ANT 2)

Date: 7/28/2020

Communication System: UID 0, 802.11n HT40 (0); Frequency: 5510 MHz;Duty Cycle: 1:1.04

Medium parameters used: f = 5510 MHz; σ = 5.13 S/m; ε_r = 36.216; 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(4.97, 4.97, 4.97); Calibrated: 7/6/2020;

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)

Right Edge Middle/Area Scan (12x21x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 2.34 W/kg

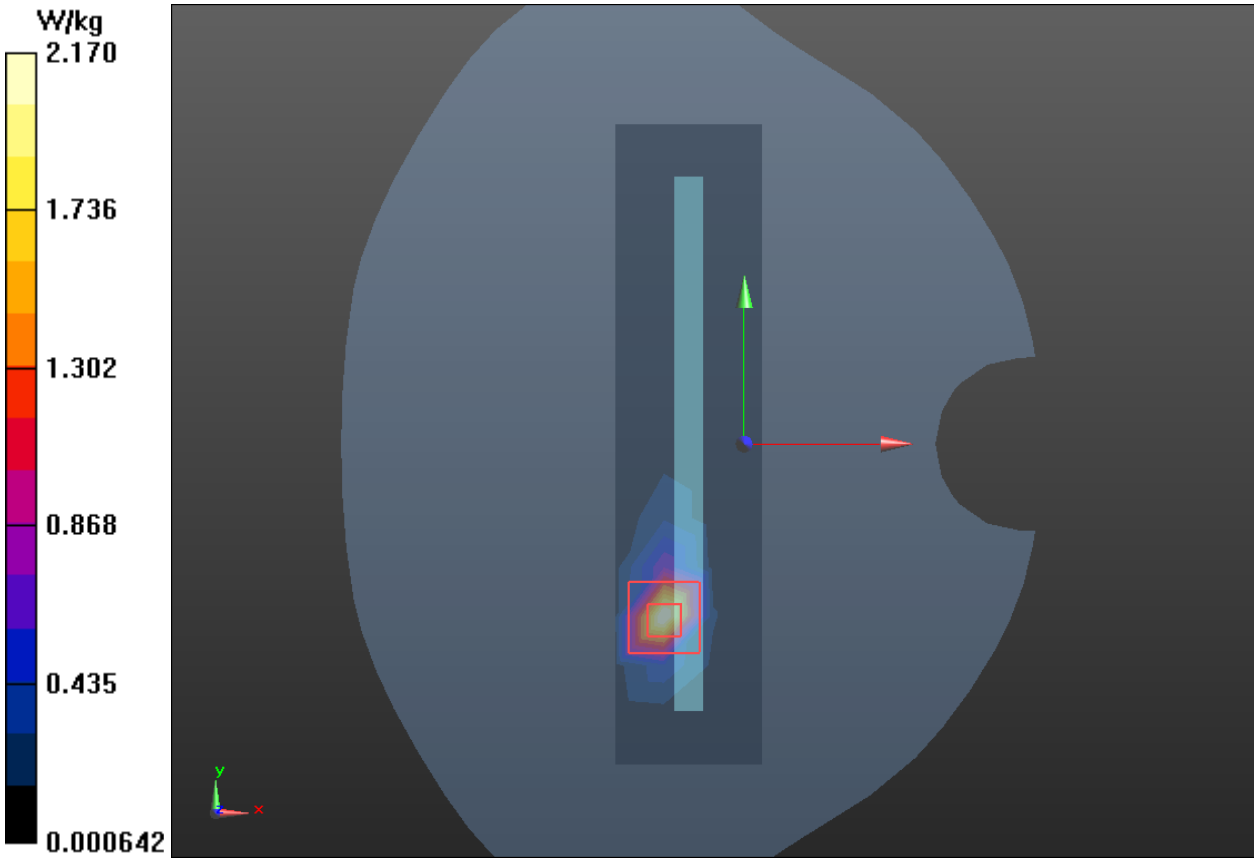
Right Edge Middle/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 4.421 V/m; Power Drift = 0.028 dB

Peak SAR (extrapolated) = 4.68 W/kg

SAR(1 g) = 1.680 W/kg; SAR(10 g) = 0.442 W/kg

Maximum value of SAR (measured) = 2.17 W/kg



Plot 75 802.11nHT40 U-NII-3 Left Cheek Middle (ANT 2)

Date: 7/28/2020

Communication System: UID 0, 802.11n HT40 (0); Frequency: 5755 MHz;Duty Cycle: 1:1.04

Medium parameters used: f = 5755 MHz; σ = 5.455 S/m; ε_r = 35.589; 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(5.00, 5.00, 5.00); Calibrated: 7/6/2020;

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 Cheek Middle/Area Scan(12x21x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.0999 W/kg

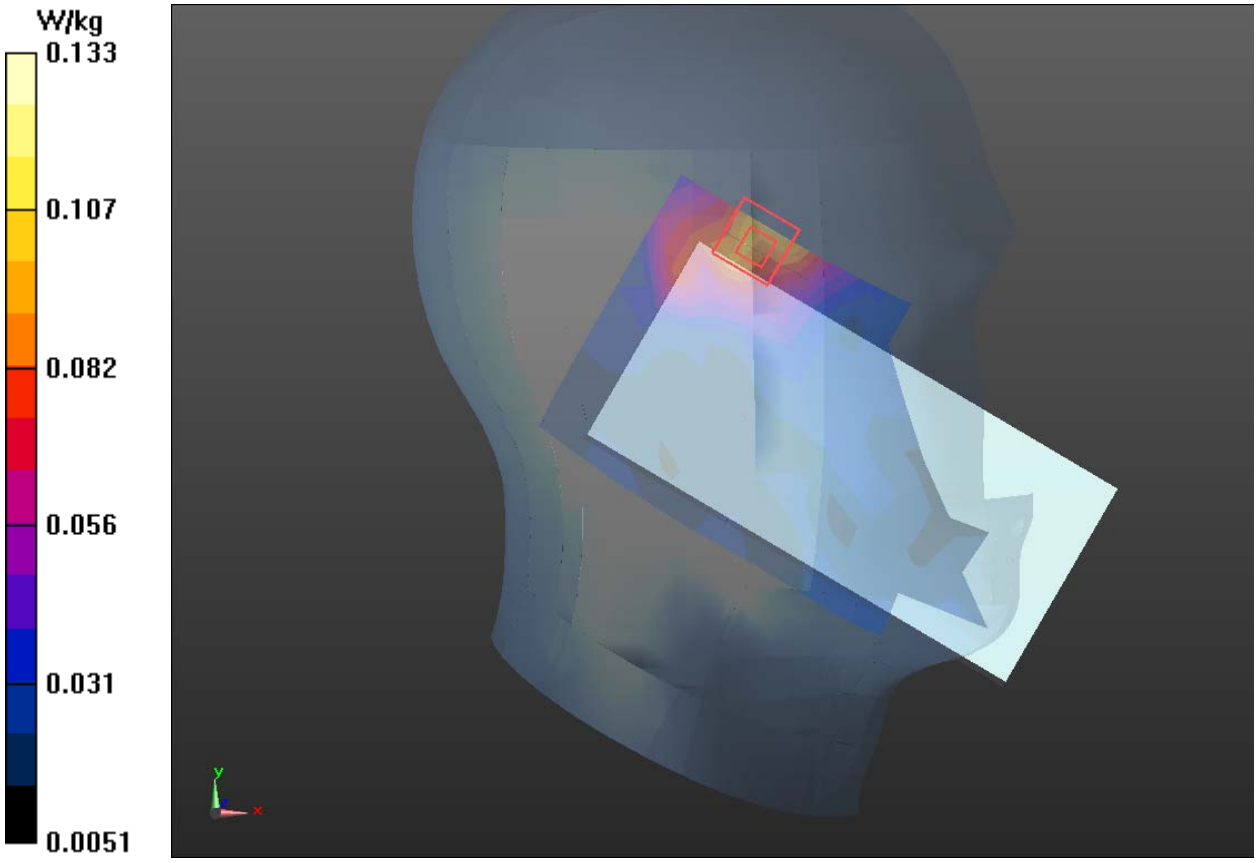
Left Cheek Middle/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 2.251 V/m; Power Drift = 0.077 dB

Peak SAR (extrapolated) = 0.315 W/kg

SAR(1 g) = 0.121 W/kg; SAR(10 g) = 0.056 W/kg

Maximum value of SAR (measured) = 0.133 W/kg



Plot 76 802.11nHT40 U-NII-3 Back Side Middle (Distance 10mm, ANT 2)

Date: 7/28/2020

Communication System: UID 0, 802.11n HT40 (0); Frequency: 5755 MHz;Duty Cycle: 1:1.04

Medium parameters used: f = 5755 MHz; σ = 5.455 S/m; ε_r = 35.589; 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(5.00, 5.00, 5.00); Calibrated: 7/6/2020;

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 (12x21x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.204 W/kg

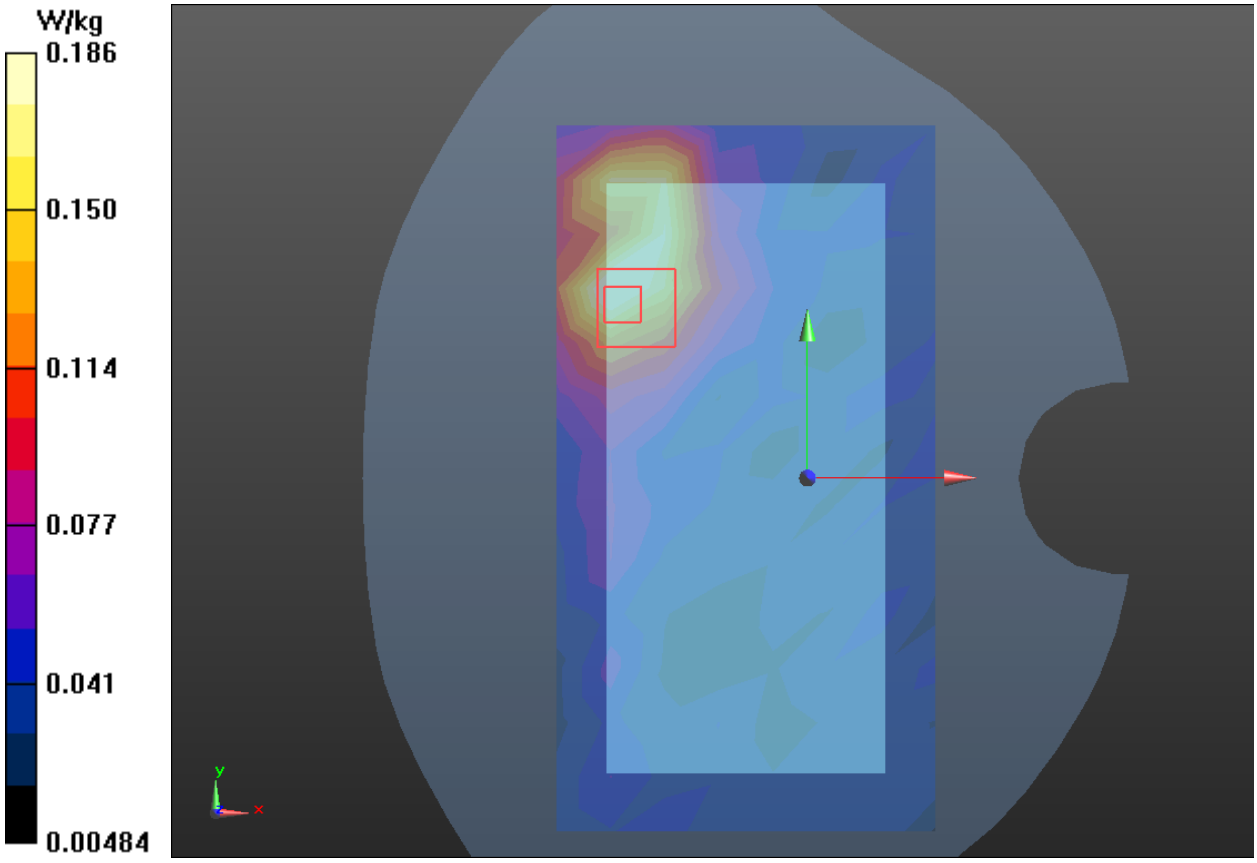
Back Side Middle/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 2.399 V/m; Power Drift = -0.152 dB

Peak SAR (extrapolated) = 0.498 W/kg

SAR(1 g) = 0.175 W/kg; SAR(10 g) = 0.081 W/kg

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



Plot 77 BT Left Cheek Middle

Date: 7/13/2020

Communication System: UID 0, BT (0); Frequency: 2441 MHz;Duty Cycle: 1:1.31

Medium parameters used: f = 2441 MHz; σ = 1.801 S/m; ε_r = 38.617; 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(7.54, 7.54, 7.54); Calibrated: 7/6/2020;

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 (10x18x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 0.0789 W/kg

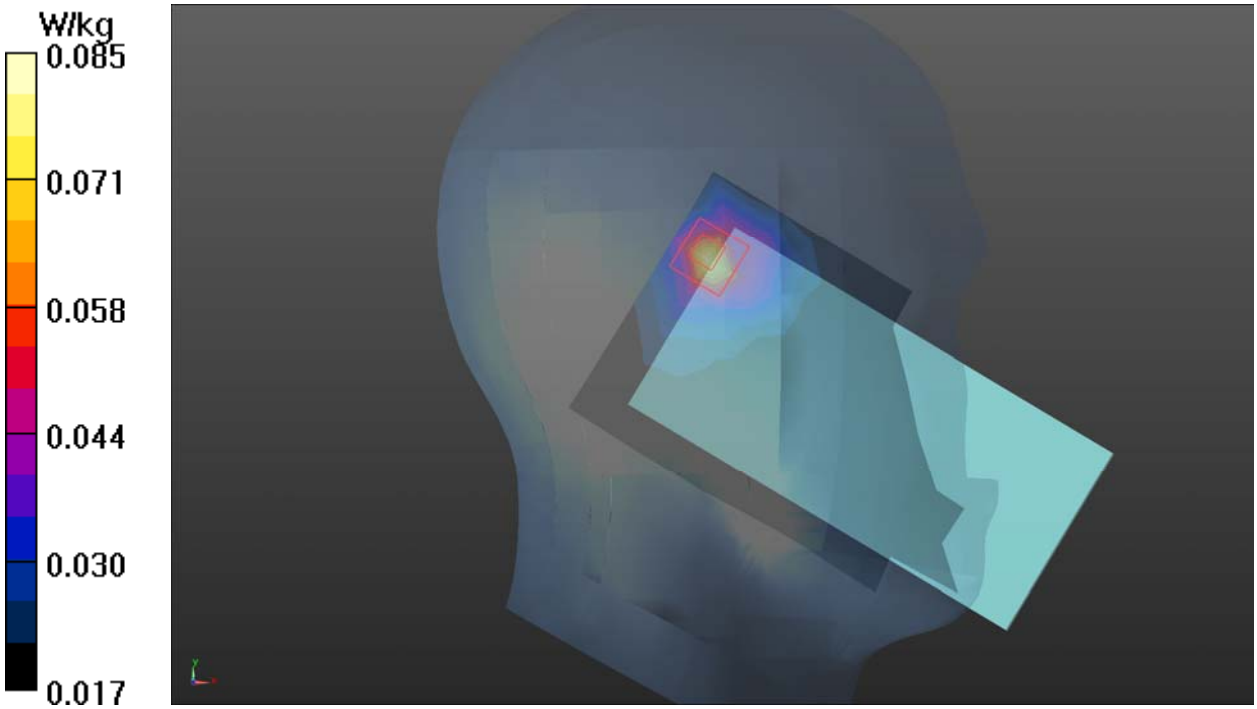
Left Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.244 V/m; Power Drift = -0.036 dB

Peak SAR (extrapolated) = 0.254 W/kg

SAR(1 g) = 0.082 W/kg; SAR(10 g) = 0.043 W/kg

Maximum value of SAR (measured) = 0.0849 W/kg



Plot 78 BT Top Edge Middle(Distance 10mm)

Date: 7/13/2020

Communication System: UID 0, BT (0); Frequency: 2441 MHz;Duty Cycle: 1:1.31

Medium parameters used: f = 2441 MHz; σ = 1.801 S/m; ε_r = 38.617; 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(7.54, 7.54, 7.54); Calibrated: 7/6/2020;

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 (10x18x1): Measurement grid: dx=12mm, dy=12mm dy=15mm

Maximum value of SAR (measured) = 0.0185 W/kg

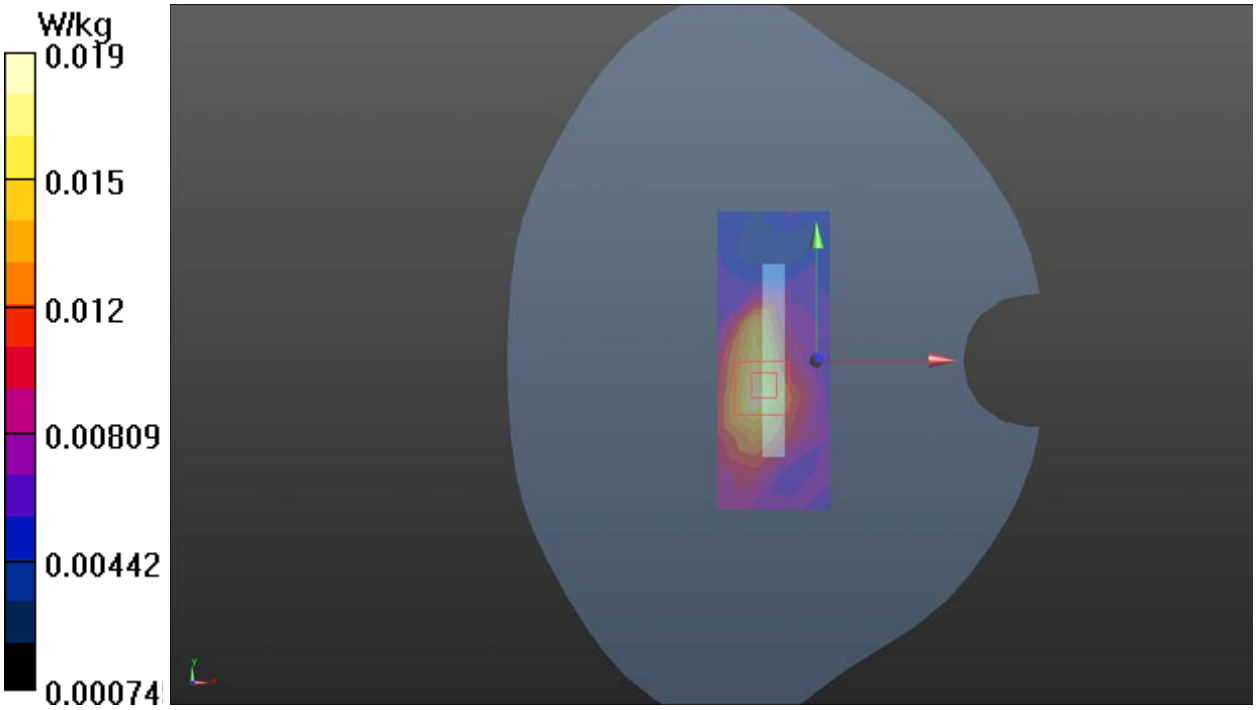
Top Edge Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.257 V/m; Power Drift = -0.023 dB

Peak SAR (extrapolated) = 0.0330 W/kg

SAR(1 g) = 0.018 W/kg; SAR(10 g) = 0.011 W/kg

Maximum value of SAR (measured) = 0.0191 W/kg



ANNEX D: Probe Calibration Certificate

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校准
CALIBRATION
CNAS L0570

Client TA(Shanghai) Certificate No: Z20-60218

CALIBRATION CERTIFICATE

Object	EX3DV4 - SN : 3677
Calibration Procedure(s)	FF-Z11-004-01 Calibration Procedures for Dosimetric E-field Probes
Calibration date:	July 06, 2020

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

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

Calibration Equipment used (M&TE critical for calibration)

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

Secondary Standards	ID #	Cal Date(Calibrated by, Certificate No.)	Scheduled Calibration
SignalGenerator MG3700A	6201052605	23-Jun-20(CTTL, No.J20X04343)	Jun-21
Network Analyzer E5071C	MY46110673	10-Feb-20(CTTL, No.J20X00515)	Feb-21

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

Issued: July 08, 2020

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

Certificate No: Z20-60218 Page 1 of 9

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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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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]	100.7	102.6	102.1	

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	174.8	±2.0%
		Y	0.0	0.0	1.0		186.9	
		Z	0.0	0.0	1.0		173.5	

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

[A] The uncertainties of Norm X, Y, Z do not affect the E^2-field uncertainty inside TSL (see Page 4).
[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	9.78	9.78	9.78	0.40	0.75	±12.1%
835	41.5	0.90	9.38	9.38	9.38	0.21	1.11	±12.1%
1750	40.1	1.37	8.25	8.25	8.25	0.26	1.05	±12.1%
1900	40.0	1.40	7.90	7.90	7.90	0.28	1.06	±12.1%
2000	40.0	1.40	7.97	7.97	7.97	0.23	1.17	±12.1%
2300	39.5	1.67	7.69	7.69	7.69	0.66	0.68	±12.1%
2450	39.2	1.80	7.54	7.54	7.54	0.66	0.70	±12.1%
2600	39.0	1.96	7.26	7.26	7.26	0.74	0.67	±12.1%
3300	38.2	2.71	7.07	7.07	7.07	0.48	0.97	±13.3%
3500	37.9	2.91	7.03	7.03	7.03	0.49	0.93	±13.3%
3700	37.7	3.12	6.83	6.83	6.83	0.49	0.97	±13.3%
3900	37.5	3.32	6.76	6.76	6.76	0.40	1.20	±13.3%
4100	37.2	3.53	6.78	6.78	6.78	0.40	1.15	±13.3%
4400	36.9	3.84	6.47	6.47	6.47	0.40	1.20	±13.3%
4600	36.7	4.04	6.42	6.42	6.42	0.50	1.13	±13.3%
4800	36.4	4.25	6.35	6.35	6.35	0.45	1.25	±13.3%
4950	36.3	4.40	6.22	6.22	6.22	0.45	1.25	±13.3%
5250	35.9	4.71	5.55	5.55	5.55	0.50	1.15	±13.3%
5600	35.5	5.07	4.97	4.97	4.97	0.55	1.22	±13.3%
5750	35.4	5.22	5.00	5.00	5.00	0.55	1.27	±13.3%

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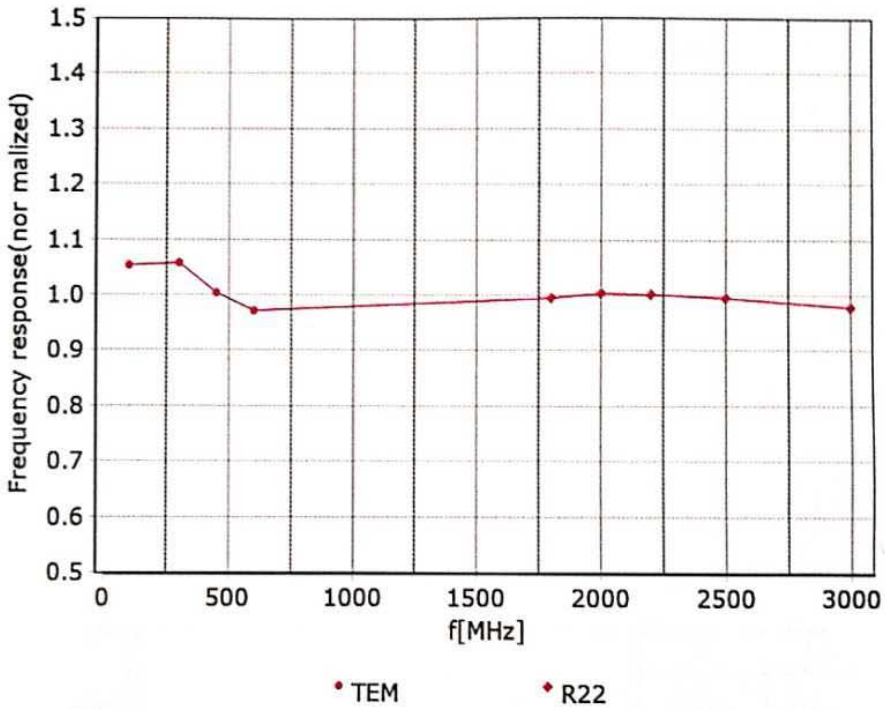
Frequency Response of E-Field
(TEM-Cell: ifi110 EXX, Waveguide: R22)



Uncertainty of Frequency Response of E-field: ±7.4% (*k*=2)

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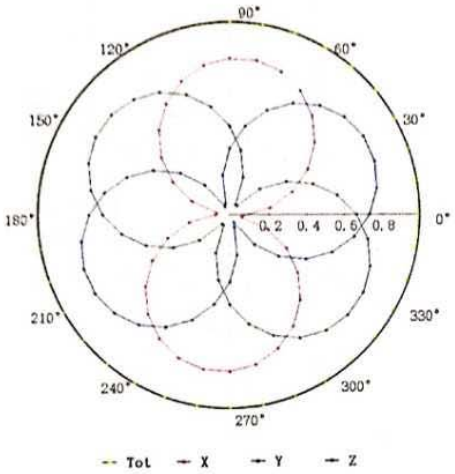
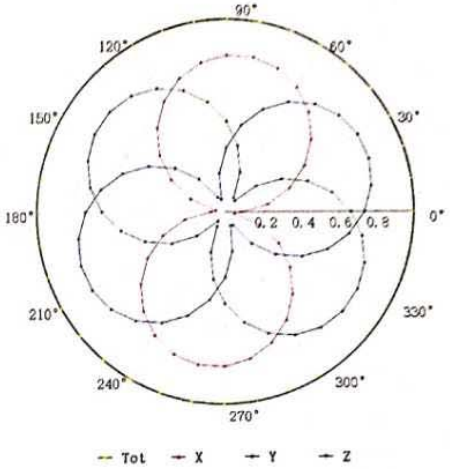
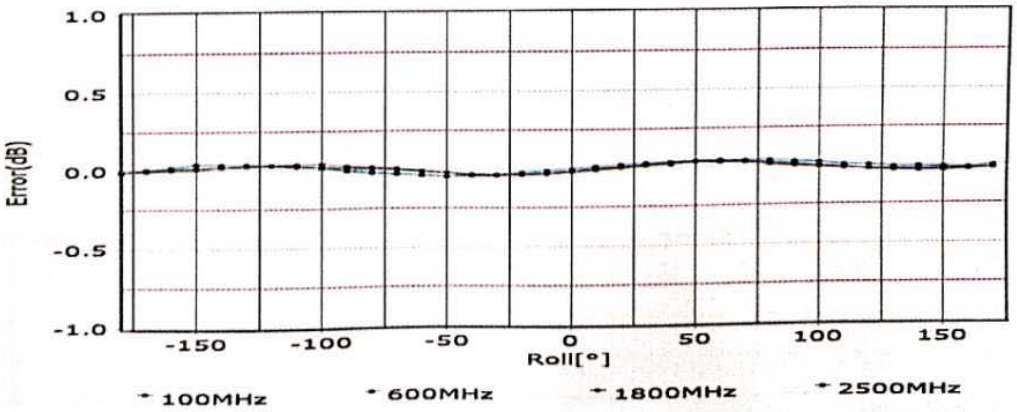
Receiving Pattern (Φ), θ=0°

f=600 MHz, TEM



f=1800 MHz, R22





Uncertainty of Axial Isotropy Assessment: ±1.2% (*k*=2)

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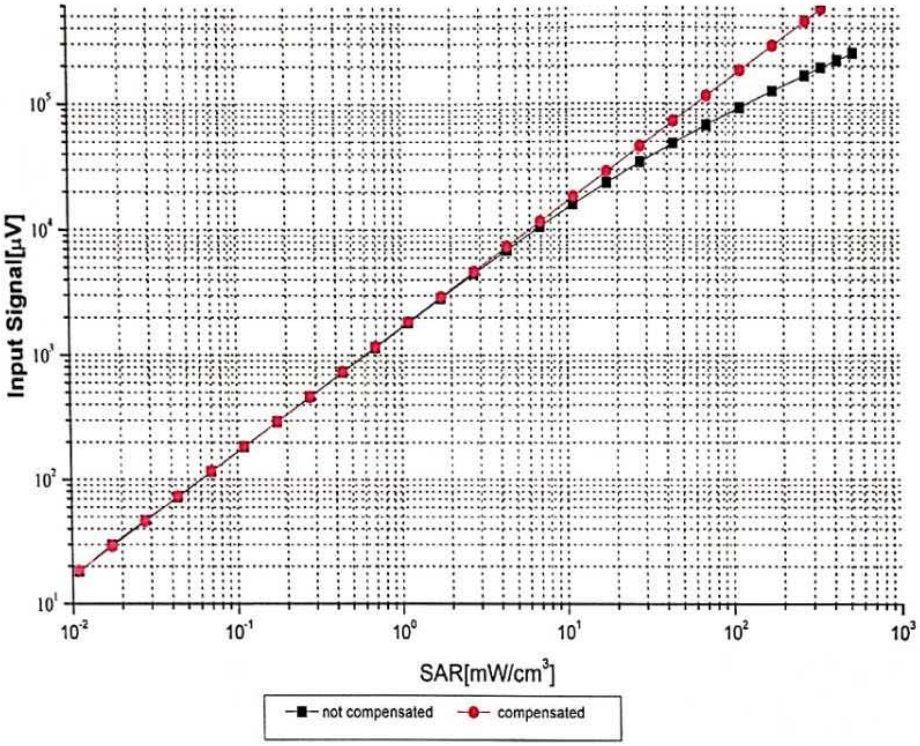
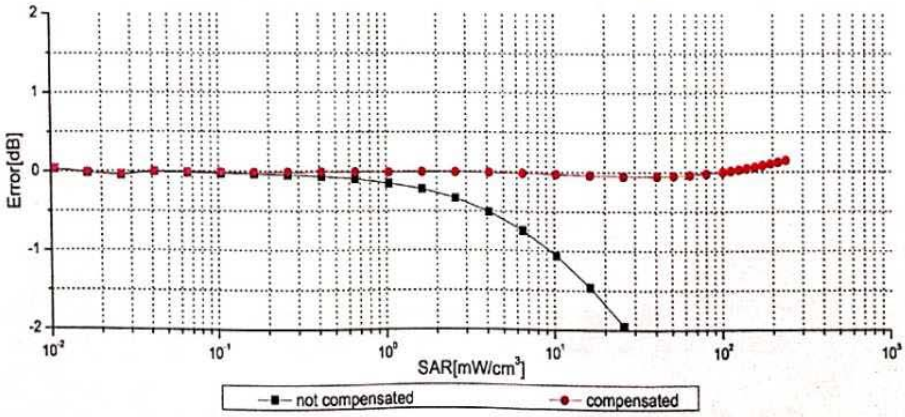
Dynamic Range f(SAR$_{head}$)
(TEM cell, f = 900 MHz)





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

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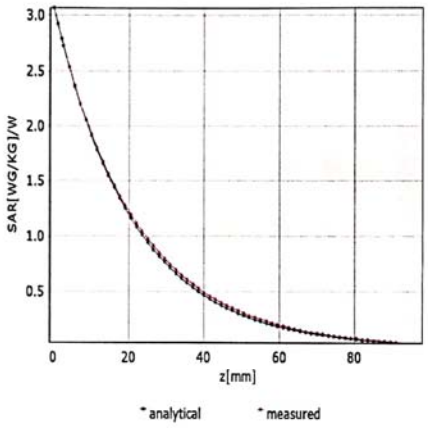
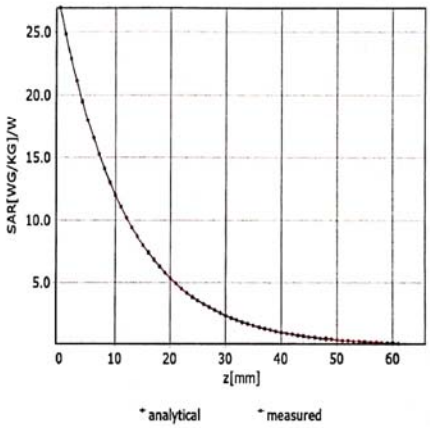
Conversion Factor Assessment

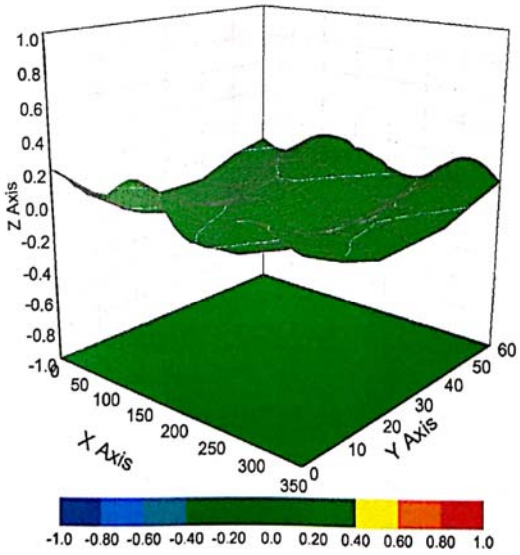
f=750 MHz,WGLS R9(H_convF)



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

ANNEX E: D835V2 Dipole Calibration Certificate

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CTTL

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Client TA(Shanghai) Certificate No: Z17-97114

CALIBRATION CERTIFICATE

Object	D835V2 - SN: 4d020
Calibration Procedure(s)	FF-Z11-003-01 Calibration Procedures for dipole validation kits
Calibration date:	August 28, 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 31, 2017

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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%.