# SAR TEST REPORT

| | |
|---|---|
| **Applicant** | Bluebird Inc. |
| **FCC ID** | SS4CF550 |
| **Product** | Cost-Effective Full Touch Handheld Computer |
| **Brand** | BLUEBIRD |
| **Model** | CF550 |
| **Report No.** | R2111A0957-S1 |
| **Issue Date** | January 7, 2022 |

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

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# 1 Test Laboratory

## 1.1 Notes of the Test Report

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

## 1.2 Test facility

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

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

**A2LA (Certificate Number: 3857.01)**

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

## 1.3 Testing Location

| | |
|---|---|
| Company: | TA Technology (Shanghai) Co., Ltd. |
| Address: | No.145, Jintang Rd, Tangzhen Industry Park, Pudong Shanghai, China |
| City: | Shanghai |
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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 15mm) | 1g SAR Hotspot (Separation 10mm) | Product Specific 10-g SAR (Separation 0mm) |
| GSM 850 | 0.14 | 0.27 | 0.67 | NA |
| GSM 1900 | 0.22 | 0.18 | 0.72 | NA |
| WCDMA Band II | 0.35 | 0.34 | 0.73 | NA |
| WCDMA Band IV | 0.24 | 0.48 | 0.91 | NA |
| WCDMA Band V | 0.11 | 0.25 | 0.50 | NA |
| LTE FDD 2 | 0.38 | 0.37 | 0.72 | NA |
| LTE FDD 4 | 0.24 | 0.46 | 0.73 | NA |
| LTE FDD 5 | 0.16 | 0.31 | 0.42 | NA |
| LTE FDD 7 | ＜0.1 | ＜0.1 | 0.20 | NA |
| LTE FDD 19 | 0.16 | 0.32 | 0.44 | NA |
| LTE FDD 26 | 0.23 | 0.30 | 0.45 | NA |
| LTE FDD 28A | ＜0.1 | ＜0.1 | ＜0.1 | NA |
| LTE FDD 28B | ＜0.1 | ＜0.1 | ＜0.1 | NA |
| LTE TDD 38 | ＜0.1 | ＜0.1 | 0.13 | NA |
| LTE TDD 40 | ＜0.1 | ＜0.1 | ＜0.1 | NA |
| LTE TDD 41 | ＜0.1 | ＜0.1 | 0.14 | NA |
| Wi-Fi (2.4G) | 1.11 | 0.15 | NA | 1.08 |
| Wi-Fi (5G) | 0.56 | 0.36 | NA | 0.64 |
| BT | 0.17 | NA | NA | 0.10 |
| Date of Testing: November 14, 2021 ~December 27, 2021<br>Date of Sample Received: November 9, 2021 | | | | |
| Note: 1. The device is in compliance with SAR for Uncontrolled Environment /General Population exposure limits (1.6 W/kg and 4.0 W/kg) specified in ANSI C95.1: 1992/IEEE C95.1: 1991, and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528-2013.<br>2.All indications of Pass/Fail in this report are opinions expressed by TA Technology (Shanghai) Co., Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. | | | | |

Table 2: Highest Simultaneous Transmission SAR

| Exposure Configuration | 1g SAR Head | 1g SAR Body-worn (Separation 15mm) | 1g SAR Hotspot (Separation 10mm) | Product Specific 10-g SAR (Separation 0mm) |
|---|---|---|---|---|
| Highest Simultaneous Transmission SAR (W/kg) | 1.490 | 0.838 | 0.913 | 1.083 |
| Note: The detail for simultaneous transmission consideration is described in chapter 10.4. | | | | |

# 3 Description of Equipment under Test

**Client Information**

| | |
|---|---|
| Applicant | Bluebird Inc. |
| Applicant address | 3F, 115, Irwon-ro, Gangnam-gu, Seoul, Republic of Korea |
| Manufacturer | Bluebird Inc. |
| Manufacturer address | 3F, 115, Irwon-ro, Gangnam-gu, Seoul, Republic of Korea |

**General Technologies**

| | |
|---|---|
| Application Purpose | Original Grant |
| EUT Stage | Identical Prototype |
| Model | CF550 |
| IMEI | IMEI 1: 358671240002572<br>IMEI 2: 358671240002580 |
| Hardware Version | V1.0 |
| Software Version | 20211026_R1.00 |
| Antenna Type | Coupling type (LDS) |
| Device Class | B |
| Wi-Fi Hotspot | Wi-Fi 2.4G<br>Wi-Fi 5G U-NII-1&U-NII-3 |
| Power Class | GSM 850: 4<br>GSM 1900: 1<br>UMTS Band II/IV/V: 3<br>LTE FDD 2/4/5/7/19/26/28A/28B: 3<br>LTE TDD 38/40/41: 3 |
| Power Level | GSM 850: level 5<br>GSM 1900: level 0<br>UMTS Band II/IV/V: all up bits<br>LTE FDD 2/4/5/7/19/26/28A/28B: max power<br>LTE TDD 38/40/41: max power |
| EUT Accessory | |
| Battery | Manufacturer: Ningbo Veken Battery Co.,Ltd.<br>Model: BAT-435001B |
| Note: The EUT is sent from the applicant to TA and the information of the EUT is declared by the applicant. | |

**Wireless Technology and Frequency Range**

| Wireless Technology | | Modulation | Operating mode | Tx (MHz) |
|---|---|---|---|---|
| GSM | 850 | Voice(GMSK)<br>GPRS(GMSK)<br>EGPRS(GMSK,8PSK) | ☐Multi-slot Class:8-1UP<br>☐Multi-slot Class:10-2UP<br>☒Multi-slot Class:12-4UP<br>☐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 Category 24<br>HSUPA Category 7<br>HSPA+ Category:6 | 1850 ~ 1910 |
| | Band IV | | | 1710 ~ 1755 |
| | Band V | | | 824 ~ 849 |
| LTE | FDD 2 | QPSK, 16QAM,<br>64QAM | Category 6 | 1850 ~ 1910 |
| | FDD 4 | | | 1710 ~ 1755 |
| | FDD 5 | | | 824 ~ 849 |
| | FDD 7 | | | 2500 ~ 2570 |
| | FDD 19 | | | 830~845 |
| | FDD 26 | | | 814 ~ 849 |
| | FDD 28A | | | 704 ~ 716 |
| | FDD 28B | | | 728 ~ 746 |
| | TDD 38 | | | 2570 ~ 2620 |
| | TDD 40 | | | 2300~2400 |
| | TDD 41 | | | 2555 ~ 2655 |
| | Does this device support Carrier Aggregation (CA) ☐Yes ☒No | | | |
| | Does this device support SV-LTE (1xRTT-LTE)? ☐Yes ☒No | | | |
| BT | 2.4G | Version 5.0 BR/EDR + LE | | 2402 ~2480 |
| Wi-Fi | 2.4G | DSSS, OFDM | 802.11b/g/n HT20 | 2412 ~ 2462 |
| | 5G | OFDM | 802.11a/n HT20/ HT40/<br>ac VHT20/ VHT40/ VHT80 | 5150 ~ 5250<br>5250 ~ 5350<br>5725 ~ 5850 |
| | Does this device support MIMO ☐Yes ☒No | | | |
| NFC | 13.56MHz | | | |

# 4 Test Specification, Methods and Procedures

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

IEC 62209-1

**Reference Standards**

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

# 5 Operational Conditions during Test

## 5.1 Test Positions

### 5.1.1 Against Phantom Head

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

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

### 5.1.2 Body Worn Configuration

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

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

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

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

## 5.2 Measurement Variability

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

SAR Measurement Variability was assessed using the following procedures for each frequency band:
1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.
2) A second repeated measurement was 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.

## 5.3 Test Configuration

### 5.3.1 GSM Test Configuration

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

Output power of reductions:

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

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

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

### 5.3.2 UMTS Test Configuration

#### 5.3.2.1 3G SAR Test Reduction Procedure

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

#### 5.3.2.2 Head SAR

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

#### 5.3.2.3 Body-worn accessory SAR

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

#### 5.3.2.4 Release 5 HSDPA Test Configuration

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

HSDPA should be configured according to the UE category of a test device. The number of HSDSCH/HS-PDSCHs, HARQ processes, minimum inter-TTI interval, transport block sizes and RV coding sequence are defined by the H-set. To maintain a consistent test configuration and stable transmission conditions, QPSK is used in the H-set for SAR testing. HS-DPCCH should be configured with a CQI feedback cycle of 4 ms with a CQI repetition factor of 2 to maintain a constant rate of active CQI slots. DPCCH and DPDCH gain factors (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 | $\beta_c$ | $\beta_d$ | $\beta_d$ (SF) | $\beta_c/\beta_d$ | $\beta_{hs}$ (note 1, note 2) | CM(dB) (note 3) | MPR(dB) |
|---|---|---|---|---|---|---|---|
| 1 | 2/15 | 15/15 | 64 | 2/15 | 4/15 | 0.0 | 0.0 |
| 2 | 12/15 (note 4) | 15/15 (note 4) | 64 | 12/15 (note 4) | 24/15 | 1.0 | 0.0 |
| 3 | 15/15 | 8/15 | 64 | 15/8 | 30/15 | 1.5 | 0.5 |
| 4 | 15/15 | 4/15 | 64 | 15/4 | 30/15 | 1.5 | 0.5 |

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

Note 2: CM=1 for $\beta_c/\beta_d$ =12/15, $\beta_{hs}/\beta_c$=24/15.

Note 3: For subtest 2 the $\beta_c/\beta_d$ ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TFC1, TF1) to $\beta_c$=11/15 and $\beta_d$=15/15.

### 5.3.2.5 Release 6 HSUPA Test Configuration

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

Due to inner loop power control requirements in HSPA, a communication test set is required for output power and SAR tests. The 12.2 kbps RMC, FRC H-set 1 and E-DCH configurations for HSPA are configured according to the 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 | $\beta_c$ | $\beta_d$ | $\beta_d$ (SF) | $\beta_c/\beta_d$ | $\beta_{hs}$ (1) | $\beta_{ec}$ | $\beta_{ed}$ | $\beta_{ed}$ (SF) | $\beta_{ed}$ (codes) | CM (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 | $\beta_{ed1}$:47/15<br>$\beta_{ed2}$:47/15 | 4 | 2 | 2.0 | 1.0 | 15 | 92 |
| 4 | 2/15 | 15/15 | 64 | 2/15 | 4/15 | 2/15 | 56/75 | 4 | 1 | 3.0 | 2.0 | 17 | 71 |
| 5 | 15/15 (4) | 15/15 (4) | 64 | 15/15 (4) | 30/15 | 24/15 | 134/15 | 4 | 1 | 1.0 | 0.0 | 21 | 81 |

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

**Table 6: HSUPA UE category**

| UE E-DCH Category | Maximum E-DCH Codes Transmitted | Number of HARQ Processes | E-DCHTTI (ms) | Minimum Spreading Factor | Maximum E-DCH Transport Block Bits | Max Rate (Mbps) |
|---|---|---|---|---|---|---|
| 1 | 1 | 4 | 10 | 4 | 7110 | 0.7296 |
| 2 | 2 | 8 | 2 | 4 | 2798 | 1.4592 |
| | 2 | 4 | 10 | 4 | 14484 | |
| 3 | 2 | 4 | 10 | 4 | 14484 | 1.4592 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 4 | 2 | 8 | 2 | 2 | 5772 | 2.9185 |
| | 2 | 4 | 10 | 2 | 20000 | 2.00 |
| 5 | 2 | 4 | 10 | 2 | 20000 | 2.00 |
| 6 (No DPDCH) | 4 | 8 | 2 | 2 SF2 & 2 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) | | | | | | |

### 5.3.2.6 HSPA, HSPA+ Test Configuration

SAR test exclusion may apply to 3GPP Rel. 6 HSPA. When SAR measurement is required for HSPA, 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+ 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. 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. 5 HSDPA; otherwise. 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+:

a) The output power measurement results and applicable release version(s) of 3GPP TS 34.121. Power measurement difficulties due to test equipment setup or availability must be resolved between the grantee and its test lab.

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

c) The UE category, operating parameters, such as the β and Δ values used to configure the device for testing, power setback procedures described in 3GPP TS 34.121 for the power measurements, and HSPA/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**

| 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 | | | |

### 5.3.3 LTE Test Configuration

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

**A) Spectrum Plots for RB Configurations**

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

**B) MPR**

MPR is permanently implemented for this device by the manufacturer. The specific manufacturer target MPR is indicated alongside the SAR results. MPR is enabled for this device, according to

3GPP TS36.101 Section 6.2.3 – 6.2.5 under Table 6.2.3-1.

**C) A-MPR**

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

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

1) QPSK with 1 RB allocation

Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel. When the reported SAR is ≤ 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.

### 5.3.4 Additional requirements for TDD LTE specification

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

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

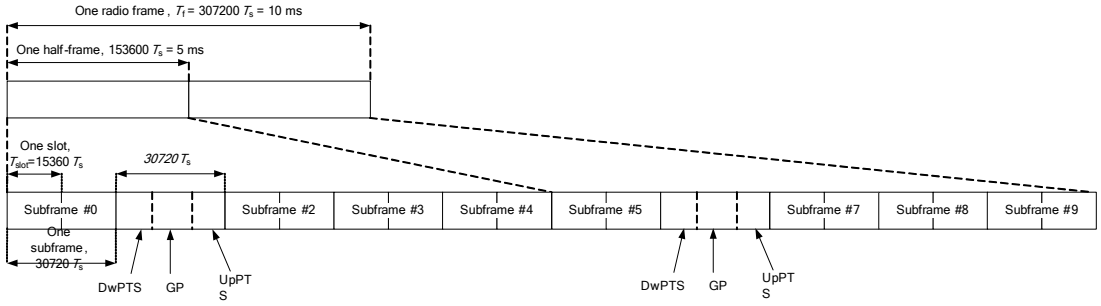



Figure 1: Frame structure type 2

**Table 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

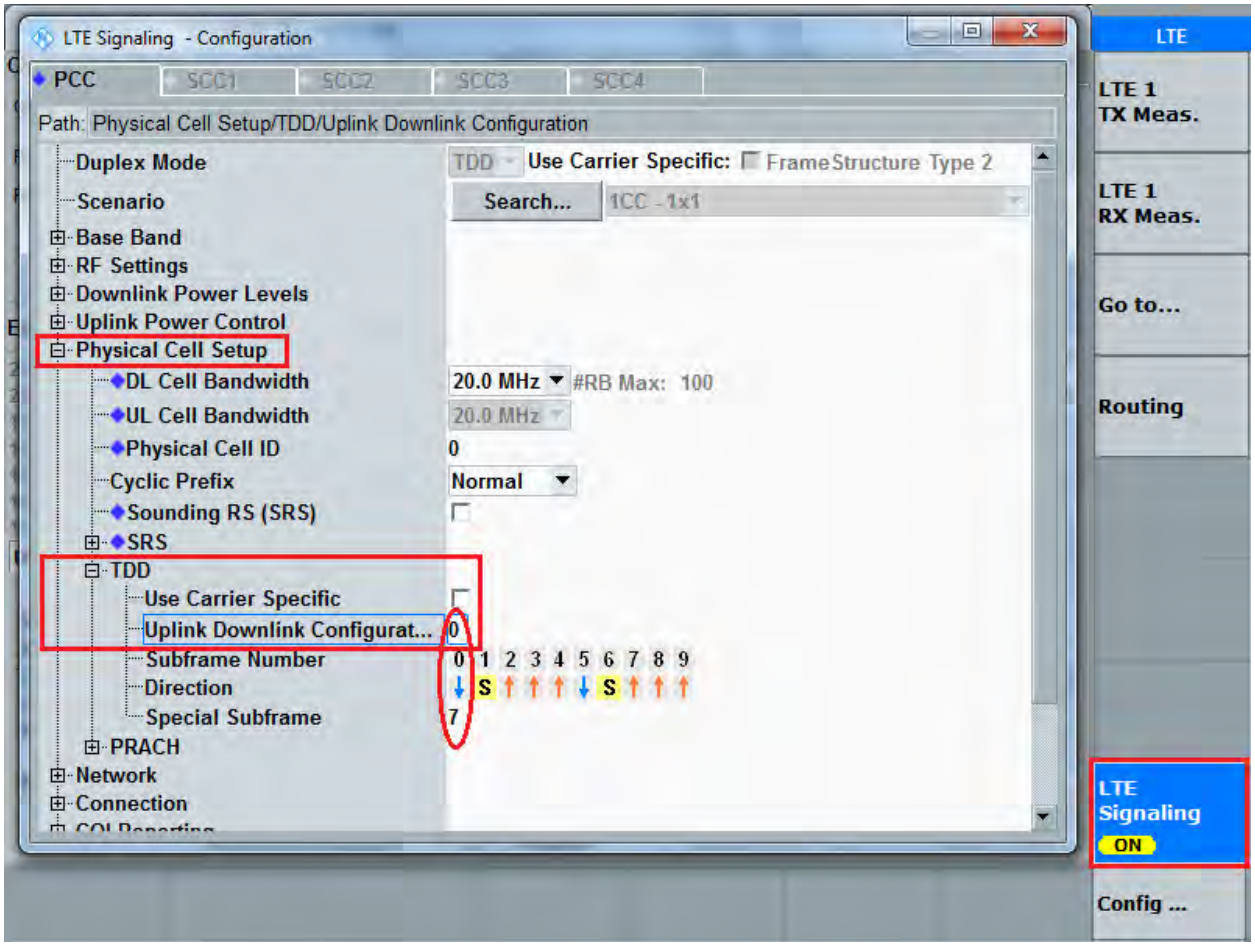
In conclusion, for the TDD LTE Band, Duty Cycle can be calculated with formula as below. All these sets are ok when we test, or we can set as below.

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



### 5.3.5 Wi-Fi Test Configuration

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

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

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

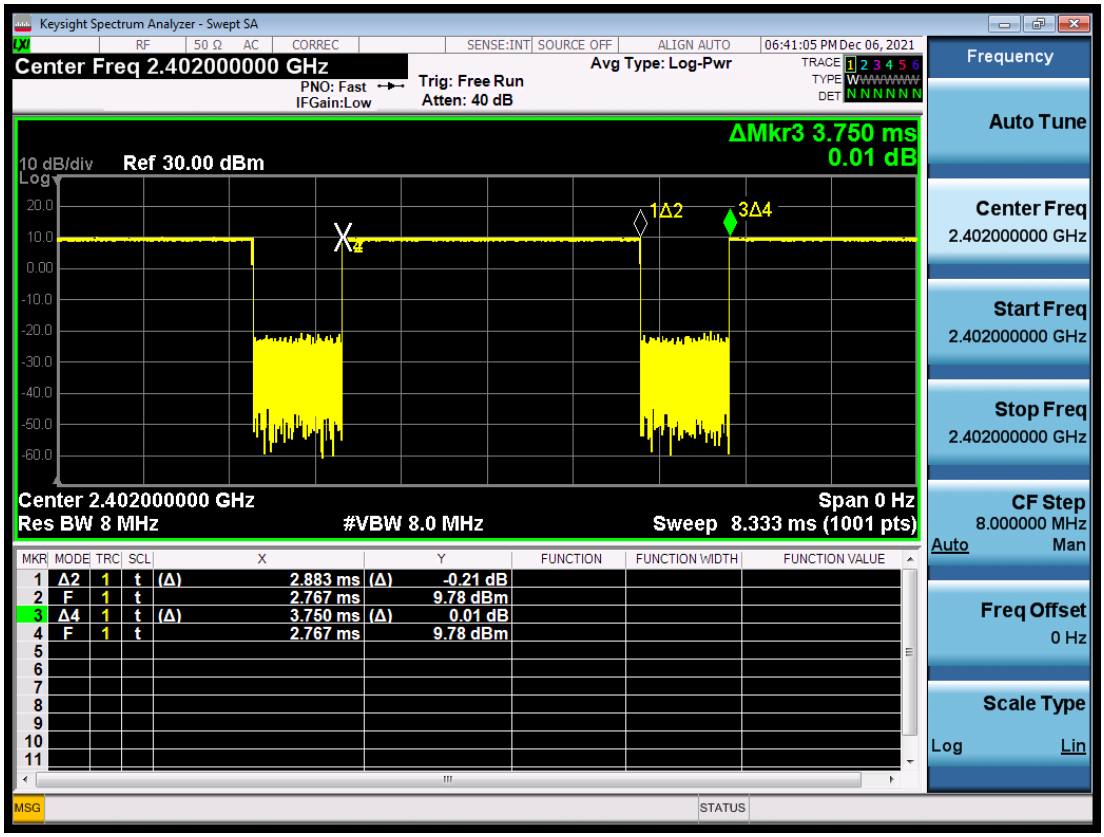
To determine the initial test position, Area Scans were performed to determine the position with the Maximum Value of SAR (measured). The position that produced the highest Maximum Value of SAR is considered the worst case position; thus used as the initial test position.

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

### 5.3.6 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:

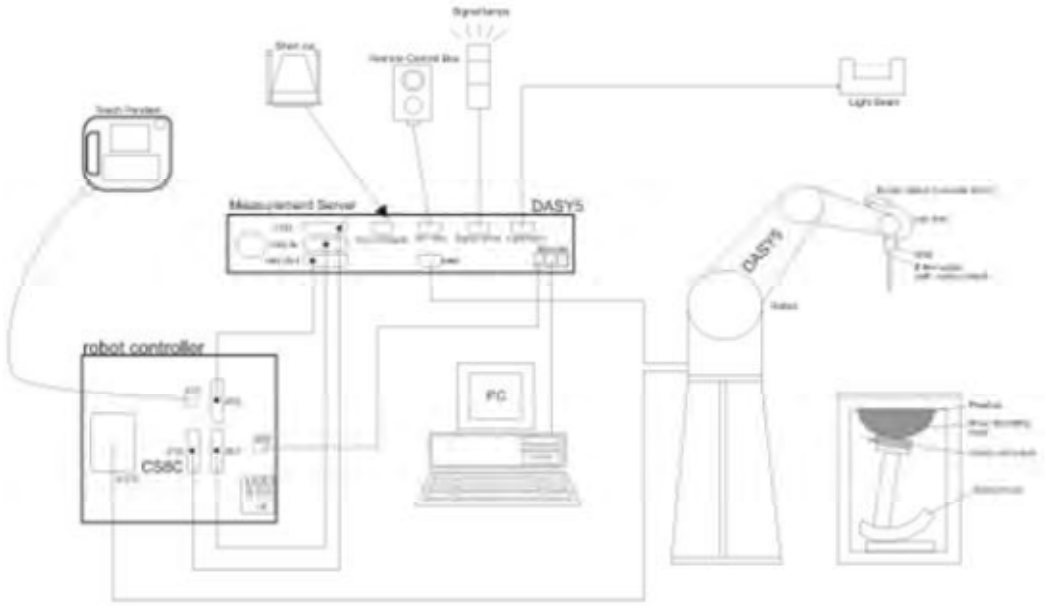



Note: Duty factor= Ton (ms)/ T(on+off) (ms)=2.883/3.750=76.9%

# 6 SAR Measurements System Configuration

## 6.1 SAR Measurement Set-up

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




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

## 6.2 DASY5 E-field Probe System

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

**EX3DV4 Probe Specification**

| | |
|---|---|
| Construction | Symmetrical design with triangular core<br>Built-in shielding against static charges<br>PEEK enclosure material (resistant to organic solvents, e.g., DGBE) |
| Calibration | ISO/IEC 17025 calibration service available |
| Frequency | 10 MHz to > 6 GHz<br>Linearity: ± 0.2 dB<br>(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)<br>Tip diameter: 2.5 mm (Body: 12 mm)<br>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: $\Delta t$ = Exposure time (30 seconds),

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

$\Delta T$ = Temperature increase due to RF exposure.

Or

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

Where: $\sigma$ = Simulated tissue conductivity,

$\rho$ = Tissue density (kg/m$^3$).

## 6.3 SAR Measurement Procedure

**Power Reference Measurement**

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

**Area Scan**

The area scan is used as a fast scan in two dimensions to find the area of high field values, before doing a fine measurement around the hot spot. The sophisticated interpolation routines implemented in DASY software can find the maximum found in the scanned area, within a range of the global maximum. The range (in dB) is specified in the standards for compliance testing. For example, a 2 dB range is required in IEEE standard 1528 and IEC 62209 standards, whereby 3 dB is a requirement when compliance is assessed in accordance with the ARIB standard (Japan), if only one zoom scan follows the area scan, then only the absolute maximum will be taken as reference. For cases where multiple maximums are detected, the number of zoom scans has to be increased accordingly.
Area scan parameters extracted from FCC KDB 865664 D01 SAR measurement 100 MHz to 6 GHz.

| | ≤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<br>2 – 3 GHz: ≤ 12 mm | 3 – 4 GHz: ≤ 12 mm<br>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<br>2 – 3GHz: ≤5mm* | 3 – 4GHz: ≤5mm*<br>4 – 6GHz: ≤4mm* |
| Maximum zoom scan spatial resolution, normal to phantom surface | Uniform grid: $\triangle z_{zoom}(n)$ | | ≤5mm | 3 – 4GHz: ≤4mm<br>4 – 5GHz: ≤3mm<br>5 – 6GHz: ≤2mm |
| | Graded grid | $\triangle z_{zoom}(1)$: between 1st two points closest to phantom surface | ≤4mm | 3 – 4GHz: ≤3mm<br>4 – 5GHz: ≤2.5mm<br>5 – 6GHz: ≤2mm |
| | | $\triangle z_{zoom}(n>1)$: between subsequent points | ≤1.5•$\triangle z_{zoom}(n-1)$ | |
| Minimum zoom scan volume | X, y, z | | ≥30mm | 3 – 4GHz: ≥28mm<br>4 – 5GHz: ≥25mm<br>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.<br>* 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 | 2021-05-15 | 2022-05-14 |
| Dielectric Probe Kit | Agilent | 85070E | US44020115 | / | / |
| Power meter | Agilent | E4417A | GB41291714 | 2021-05-15 | 2022-05-14 |
| Power sensor | Agilent | N8481H | MY50350004 | 2021-05-15 | 2022-05-14 |
| Power sensor | Agilent | E9327A | US40441622 | 2021-05-15 | 2022-05-14 |
| Dual directional coupler | Agilent | 778D-012 | 50519 | / | / |
| Dual directional coupler | Agilent | 777D | 50146 | / | / |
| Dual directional coupler | UCL | UCL-DDC056G-S | 20010600118 | / | / |
| Amplifier | INDEXSAR | TPA-005060G01 | 13030502 | 2021-05-15 | 2022-05-14 |
| Wireless communication tester | Anritsu | MT8820C | 6201342015 | 2020-12-13 | 2021-12-12 |
| | | | | 2021-12-12 | 2022-12-11 |
| Wireless communication tester | Key sight | E5515C | MY48360988 | 2020-12-13 | 2021-12-12 |
| | | | | 2021-12-12 | 2022-12-11 |
| Wideband radio communication tester | R&S | CMW 500 | 113645 | 2021-05-15 | 2022-05-14 |
| Base Station Simulator | R&S | CMW270 | 100673 | 2021-05-15 | 2022-05-14 |
| E-field Probe | SPEAG | EX3DV4 | 3677 | 2021-08-12 | 2022-08-11 |
| DAE | SPEAG | DAE4 | 1317 | 2021-02-23 | 2022-02-22 |
| Validation Kit 750MHz | SPEAG | D750V3 | 1045 | 2020-08-28 | 2023-08-27 |
| Validation Kit 835MHz | SPEAG | D835V2 | 4d020 | 2020-08-28 | 2023-08-27 |
| Validation Kit 1750MHz | SPEAG | D1750V2 | 1033 | 2020-02-25 | 2023-02-24 |
| Validation Kit 1900MHz | SPEAG | D1900V2 | 5d060 | 2020-08-27 | 2023-08-26 |
| Validation Kit 2300MHz | SPEAG | D2300V2 | 1110 | 2020-09-28 | 2023-09-27 |
| Validation Kit 2450MHz | SPEAG | D2450V2 | 786 | 2020-08-27 | 2023-08-26 |
| Validation Kit 2600MHz | SPEAG | D2600V2 | 1025 | 2021-04-23 | 2024-04-22 |
| Validation Kit 5GHz | SPEAG | D5GHzV2 | 1151 | 2020-02-27 | 2023-02-26 |

| | | | | | |
|---|---|---|---|---|---|
| Temperature Probe | Tianjin jinming | JM222 | 381 | 2021-05-15 | 2022-05-14 |
| Hygrothermograph | Anymetr | HTC - 1 | TY2020A001 | 2021-05-15 | 2022-05-14 |
| Twin SAM Phantom | Speag | SAM 2 | 1524 | / | / |
| 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 (%) | $\varepsilon_r$ | σ(s/m) |
|---|---|---|---|---|---|---|---|---|
| 750 | 41.448 | 1.452 | 56 | 0 | 0.1 | 1.0 | 41.9 | 0.89 |
| 835 | 41.45 | 1.45 | 56 | 0 | 0.1 | 1.0 | 41.5 | 0.90 |
| 1750 | 55.24 | 0.31 | 0 | 44.45 | 0 | 0 | 40.1 | 1.37 |
| 1900 | 55.242 | 0.306 | 0 | 44.452 | 0 | 0 | 40.0 | 1.40 |
| 2300 | 55.242 | 0.306 | 0 | 44.452 | 0 | 0 | 39.5 | 1.67 |
| 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** | | **$\varepsilon_r$** | **σ(s/m)** |
| 5250 | 65.53 | 17.24 | | | 17.23 | | 35.9 | 4.71 |
| 5750 | 65.53 | 17.24 | | | 17.23 | | 35.4 | 5.22 |

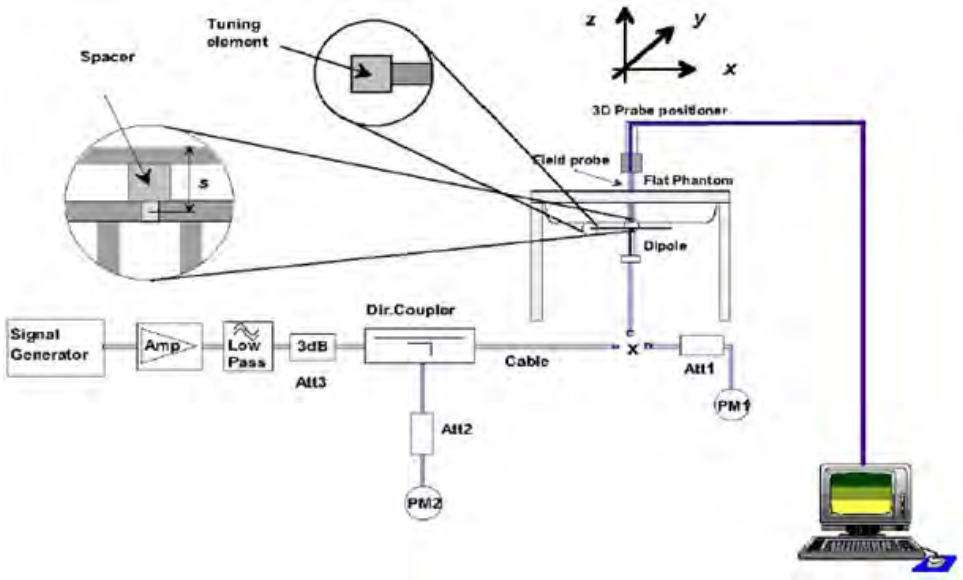
**Measurements results**

| Frequency (MHz) | Test Date | Temp ℃ | Measured Dielectric Parameters | | Target Dielectric Parameters | | Limit (Within ±5%) | |
|---|---|---|---|---|---|---|---|---|
| | | | $\varepsilon_r$ | σ(s/m) | $\varepsilon_r$ | σ(s/m) | Dev $\varepsilon_r$(%) | Dev σ(%) |
| 750 | 2021/11/15 | 21.5 | 42.3 | 0.88 | 41.9 | 0.89 | 0.95 | -1.12 |
| 835 | 2021/11/16 | 21.5 | 41.3 | 0.87 | 41.5 | 0.90 | -0.48 | -3.33 |
| | 2021/11/17 | 21.5 | 41.4 | 0.92 | 41.5 | 0.90 | -0.24 | 2.22 |
| 1750 | 2021/11/14 | 21.5 | 40.2 | 1.34 | 40.1 | 1.37 | 0.25 | -2.19 |
| 1900 | 2021/11/18 | 21.5 | 40.1 | 1.41 | 40.0 | 1.40 | 0.25 | 0.71 |
| 2300 | 2021/11/19 | 21.5 | 40.0 | 1.65 | 39.5 | 1.67 | 1.27 | -1.20 |
| 2450 | 2021/12/27 | 21.5 | 38.6 | 1.81 | 39.2 | 1.80 | -1.53 | 0.56 |
| 2600 | 2021/12/01 | 21.5 | 38.2 | 2.01 | 39.0 | 1.96 | -2.05 | 2.55 |
| | 2021/12/02 | 21.5 | 38.4 | 1.94 | 39.0 | 1.96 | -1.54 | -1.02 |
| 5250 | 2021/12/20 | 21.5 | 35.5 | 4.80 | 35.9 | 4.71 | -1.11 | 1.91 |
| 5750 | 2021/12/21 | 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 D750V2 SN: 1045 | Head Liquid | 8/28/2020 | -26.6 | / | 54.3 | / |
| | | 8/27/2021 | -26.2 | 1.5 | 53.9 | 0.4 |
| Dipole D835V2 SN: 4d020 | Head Liquid | 8/28/2020 | -26.2 | / | 54.8 | / |
| | | 8/27/2021 | -26.5 | -1.1 | 55.2 | -0.4 |
| Dipole D1750V2 SN: 1033 | Head Liquid | 2/25/2020 | -38.3 | / | 48.8 | / |
| | | 2/26/2021 | -40.0 | -1.7 | 49.9 | 1.1 |
| Dipole D1900V2 SN: 5d060 | Head Liquid | 8/27/2020 | -23.3 | / | 52.5 | / |
| | | 8/26/2021 | -23.0 | 1.3 | 51.9 | 0.6 |
| Dipole D2450V2 SN: 786 | Head Liquid | 8/27/2020 | -26.9 | / | 54.5 | / |
| | | 8/26/2021 | -27.1 | -0.7 | 53.8 | 0.7 |
| Dipole D5GHzV2 SN: 1151 (5250MHz) | Head Liquid | 2/27/2020 | -23.4 | / | 52.4 | / |
| | | 2/26/2021 | -23.8 | -0.4 | 50.0 | -2.4 |
| Dipole D5GHzV2 SN: 1151 (5750MHz) | Head Liquid | 2/27/2020 | -25.0 | / | 55.9 | / |
| | | 2/26/2021 | -26.8 | -1.8 | 52.5 | -3.4 |

**System Check results**

| Frequency (MHz) | Test Date | Temp ℃ | 250mW /100mW Measured $SAR_{1g}$ (W/kg) | 1W Normalized $SAR_{1g}$ (W/kg) | 1W Target $SAR_{1g}$ (W/kg) | Δ % (Limit ±10%) | Plot No. |
|---|---|---|---|---|---|---|---|
| 750 | 2021/11/15 | 21.5 | 2.13 | 8.52 | 8.37 | 1.79 | 1 |
| 835 | 2021/11/16 | 21.5 | 2.46 | 9.84 | 9.65 | 1.97 | 2 |
| | 2021/11/17 | 21.5 | 2.43 | 9.72 | 9.65 | 0.73 | 3 |
| 1750 | 2021/11/14 | 21.5 | 8.95 | 35.80 | 35.90 | -0.28 | 4 |
| 1900 | 2021/11/18 | 21.5 | 9.88 | 39.52 | 39.50 | 0.05 | 5 |
| 2300 | 2021/11/19 | 21.5 | 12.60 | 50.40 | 47.70 | 5.66 | 6 |
| 2450 | 2021/12/27 | 21.5 | 13.70 | 54.80 | 52.30 | 4.78 | 7 |
| 2600 | 2021/12/01 | 21.5 | 13.90 | 55.60 | 56.10 | -0.89 | 8 |
| | 2021/12/02 | 21.5 | 13.88 | 55.52 | 56.10 | -1.03 | 9 |
| 5250 | 2021/12/20 | 21.5 | 7.87 | 78.70 | 78.00 | 0.90 | 10 |
| 5750 | 2021/12/21 | 21.5 | 7.66 | 76.60 | 77.40 | -1.03 | 11 |
| 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 | 8/12/2021 | 3677 | EX3DV4 | 750 | Head | 42.81 | 0.85 | PASS | PASS | PASS | FDD | PASS | N/A |
| 835 | 8/12/2021 | 3677 | EX3DV4 | 835 | Head | 42.22 | 0.90 | PASS | PASS | PASS | GMSK | PASS | N/A |
| 1750 | 8/12/2021 | 3677 | EX3DV4 | 1750 | Head | 39.91 | 1.32 | PASS | PASS | PASS | NA | N/A | N/A |
| 1900 | 8/12/2021 | 3677 | EX3DV4 | 1900 | Head | 39.43 | 1.42 | PASS | PASS | PASS | GMSK | PASS | N/A |
| 2450 | 8/12/2021 | 3677 | EX3DV4 | 2450 | Head | 38.19 | 1.83 | PASS | PASS | PASS | OFDM | PASS | PASS |
| 2600 | 8/12/2021 | 3677 | EX3DV4 | 2600 | Head | 37.60 | 1.99 | PASS | PASS | PASS | TDD | PASS | N/A |
| 5250 | 8/12/2021 | 3677 | EX3DV4 | 5250 | Head | 35.36 | 4.83 | PASS | PASS | PASS | OFDM | N/A | PASS |
| 5600 | 8/12/2021 | 3677 | EX3DV4 | 5600 | Head | 34.43 | 5.29 | PASS | PASS | PASS | OFDM | N/A | PASS |
| 5750 | 8/12/2021 | 3677 | EX3DV4 | 5750 | Head | 34.07 | 5.47 | PASS | PASS | PASS | OFDM | N/A | PASS |
| 750 | 8/12/2021 | 3677 | EX3DV4 | 750 | Body | 55.35 | 0.99 | PASS | PASS | PASS | FDD | PASS | N/A |
| 835 | 8/12/2021 | 3677 | EX3DV4 | 835 | Body | 54.88 | 0.98 | PASS | PASS | PASS | GMSK | PASS | N/A |
| 1750 | 8/12/2021 | 3677 | EX3DV4 | 1750 | Body | 51.24 | 1.44 | PASS | PASS | PASS | NA | N/A | N/A |
| 1900 | 8/12/2021 | 3677 | EX3DV4 | 1900 | Body | 50.98 | 1.56 | PASS | PASS | PASS | GMSK | PASS | N/A |
| 2450 | 8/12/2021 | 3677 | EX3DV4 | 2450 | Body | 50.59 | 1.95 | PASS | PASS | PASS | OFDM | PASS | PASS |
| 2600 | 8/12/2021 | 3677 | EX3DV4 | 2600 | Body | 50.14 | 2.13 | PASS | PASS | PASS | TDD | PASS | N/A |
| 5250 | 8/12/2021 | 3677 | EX3DV4 | 5250 | Body | 47.37 | 5.44 | PASS | PASS | PASS | OFDM | N/A | PASS |
| 5750 | 8/12/2021 | 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

| 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 | 33.50 | 32.45 | 32.45 | 32.40 | 9.03 | 24.47 | 23.42 | 23.42 | 23.37 |
| GPRS/ EGPRS (GMSK) | 1 Tx Slot | 33.50 | 32.42 | 32.46 | 32.38 | 9.03 | 24.47 | 23.39 | 23.43 | 23.35 |
| | 2 Tx Slots | 32.50 | 31.71 | 31.77 | 31.69 | 6.02 | 26.48 | 25.69 | 25.75 | 25.67 |
| | 3 Tx Slots | 30.50 | 29.98 | 30.06 | 30.01 | 4.26 | 26.24 | 25.72 | 25.80 | 25.75 |
| | 4 Tx Slots | 29.50 | 28.73 | 28.85 | 28.86 | 3.01 | **26.49** | 25.72 | 25.84 | 25.85 |
| EGPRS (8PSK) | 1 Tx Slot | 26.50 | 25.35 | 25.31 | 25.44 | 9.03 | 17.47 | 16.32 | 16.28 | 16.41 |
| | 2 Tx Slots | 25.50 | 24.71 | 24.59 | 24.72 | 6.02 | 19.48 | 18.69 | 18.57 | 18.70 |
| | 3 Tx Slots | 23.50 | 22.64 | 22.74 | 22.65 | 4.26 | 19.24 | 18.38 | 18.48 | 18.39 |
| | 4 Tx Slots | 22.50 | 21.64 | 21.65 | 21.55 | 3.01 | 19.49 | 18.63 | 18.64 | 18.54 |
| GSM 1900 | | 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 | 30.00 | 29.22 | 29.21 | 29.11 | 9.03 | 20.97 | 20.19 | 20.18 | 20.08 |
| GPRS/ EGPRS (GMSK) | 1 Tx Slot | 30.00 | 29.21 | 29.12 | 29.10 | 9.03 | 20.97 | 20.18 | 20.09 | 20.07 |
| | 2 Tx Slots | 29.00 | 28.53 | 28.44 | 28.41 | 6.02 | 22.98 | 22.51 | 22.42 | 22.39 |
| | 3 Tx Slots | 27.50 | 26.92 | 26.78 | 26.76 | 4.26 | 23.24 | 22.66 | 22.52 | 22.50 |
| | 4 Tx Slots | 26.50 | 25.80 | 25.64 | 25.61 | 3.01 | **23.49** | 22.79 | 22.63 | 22.60 |
| EGPRS (8PSK) | 1 Tx Slot | 27.00 | 26.48 | 26.32 | 26.57 | 9.03 | 17.97 | 17.45 | 17.29 | 17.54 |
| | 2 Tx Slots | 26.00 | 25.63 | 25.44 | 25.22 | 6.02 | 19.98 | 19.61 | 19.42 | 19.20 |
| | 3 Tx Slots | 24.50 | 23.64 | 23.91 | 23.68 | 4.26 | 20.24 | 19.38 | 19.65 | 19.42 |
| | 4 Tx Slots | 23.50 | 22.82 | 22.75 | 22.70 | 3.01 | 20.49 | 19.81 | 19.74 | 19.69 |
| 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. | | | | | | | | | | |

## 9.2 WCDMA Mode

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

| WCDMA | | Band II(dBm) | | | | Band IV(dBm) | | | | Band V(dBm) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tx Channel | | 9262 | 9400 | 9538 | Tune-up Limit | 1312 | 1413 | 1513 | Tune-up Limit | 4132 | 4183 | 4233 | Tune-up Limit |
| Frequency(MHz) | | 1852.4 | 1880 | 1907.6 | | 1712.4 | 1732.6 | 1752.6 | | 826.4 | 836.6 | 846.6 | |
| RMC | 12.2kbps | 21.97 | 21.99 | **22.02** | 23.50 | 22.03 | **22.04** | 22.04 | 22.03 | 22.25 | **22.26** | 22.19 | 23.50 |
| AMR | 12.2kbps | 21.85 | 22.03 | 22.02 | 23.50 | 21.99 | 21.90 | 21.92 | 21.99 | 22.31 | 22.40 | 22.13 | 23.50 |
| HSDPA | Sub 1 | 21.85 | 21.91 | 22.14 | 23.50 | 21.89 | 22.10 | 22.18 | 23.50 | 22.25 | 22.14 | 22.23 | 23.50 |
| | Sub 2 | 22.03 | 21.95 | 22.06 | 23.50 | 22.01 | 21.94 | 22.06 | 23.50 | 22.39 | 22.34 | 22.09 | 23.50 |
| | Sub 3 | 21.35 | 21.49 | 21.48 | 23.00 | 21.43 | 21.54 | 21.70 | 23.00 | 21.59 | 21.66 | 21.79 | 23.00 |
| | Sub 4 | 21.39 | 21.63 | 21.40 | 23.00 | 21.55 | 21.70 | 21.66 | 23.00 | 21.81 | 21.74 | 21.53 | 23.00 |
| HSUPA | Sub 1 | 20.01 | 20.07 | 20.18 | 21.50 | 19.89 | 20.18 | 20.14 | 21.50 | 20.29 | 20.20 | 20.19 | 21.50 |
| | Sub 2 | 20.09 | 20.05 | 19.90 | 21.50 | 19.97 | 20.18 | 20.20 | 21.50 | 20.17 | 20.24 | 20.05 | 21.50 |
| | Sub 3 | 21.11 | 21.01 | 21.02 | 22.50 | 21.13 | 21.18 | 21.06 | 22.50 | 21.27 | 21.24 | 21.27 | 22.50 |
| | Sub 4 | 19.37 | 19.57 | 19.38 | 21.00 | 19.41 | 19.68 | 19.48 | 21.00 | 19.85 | 19.86 | 19.57 | 21.00 |
| | Sub 5 | 20.87 | 20.97 | 20.86 | 22.50 | 20.87 | 21.08 | 21.18 | 22.50 | 21.15 | 21.16 | 21.13 | 22.50 |
| HSPA+ | 16QAM | 20.87 | 20.79 | 20.66 | 22.00 | 20.73 | 21.00 | 20.74 | 22.00 | 20.97 | 20.96 | 20.85 | 22.00 |
| Note: 1.Per KDB 941225 D01, SAR for each exposure is measured using a 12.2 kbps RMC with TPC bits configured to all “1’s”. | | | | | | | | | | | | | |

## 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 |

| LTE FDD Band 2 | | | | Conducted Power(dBm) | | | Tune-up Limit |
|---|---|---|---|---|---|---|---|
| Bandwidth | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | |
| | | | | 18607/1850.7 | 18900/1880 | 19193/1909.3 | |
| 1.4MHz | QPSK | 1 | 0 | 22.07 | 22.14 | 22.12 | 23.50 |
| | | 1 | 2 | 22.37 | 22.36 | 22.61 | 23.50 |
| | | 1 | 5 | 22.02 | 22.10 | 22.19 | 23.50 |
| | | 3 | 0 | 22.32 | 22.42 | 22.26 | 23.50 |
| | | 3 | 2 | 22.33 | 22.36 | 22.37 | 23.50 |
| | | 3 | 3 | 22.40 | 22.31 | 22.29 | 23.50 |
| | | 6 | 0 | 21.40 | 21.39 | 21.38 | 22.50 |
| | 16QAM | 1 | 0 | 21.72 | 21.51 | 21.51 | 22.50 |
| | | 1 | 2 | 21.70 | 21.77 | 21.73 | 22.50 |
| | | 1 | 5 | 21.38 | 21.51 | 21.40 | 22.50 |
| | | 3 | 0 | 21.33 | 21.35 | 21.27 | 22.50 |
| | | 3 | 2 | 21.40 | 21.30 | 21.39 | 22.50 |
| | | 3 | 3 | 21.40 | 21.29 | 21.24 | 22.50 |
| | | 6 | 0 | 20.39 | 20.42 | 20.44 | 21.50 |
| | 64QAM | 1 | 0 | 20.60 | 20.52 | 20.62 | 21.50 |
| | | 1 | 2 | 20.96 | 20.76 | 20.89 | 21.00 |
| | | 1 | 5 | 20.53 | 20.52 | 20.57 | 21.50 |
| | | 3 | 0 | 20.72 | 20.63 | 20.52 | 21.50 |
| | | 3 | 2 | 20.68 | 20.64 | 20.67 | 21.50 |
| | | 3 | 3 | 20.71 | 20.54 | 20.51 | 21.50 |
| | | 6 | 0 | 19.78 | 19.73 | 19.62 | 20.50 |
| Bandwidth | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | Tune-up Limit |
| | | | | 18615/1851.5 | 18900/1880 | 19185/1908.5 | |
| 3MHz | QPSK | 1 | 0 | 22.09 | 22.18 | 22.15 | 23.50 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | 1 | 7 | 22.35 | 22.39 | 22.65 | 23.50 |
| | | 1 | 14 | 22.05 | 22.15 | 22.23 | 23.50 |
| | | 8 | 0 | 21.42 | 21.54 | 21.39 | 22.50 |
| | | 8 | 4 | 21.45 | 21.46 | 21.49 | 22.50 |
| | | 8 | 7 | 21.50 | 21.42 | 21.39 | 22.50 |
| | | 15 | 0 | 21.40 | 21.43 | 21.41 | 22.50 |
| | 16QAM | 1 | 0 | 21.75 | 21.53 | 21.54 | 22.50 |
| | | 1 | 7 | 21.73 | 21.77 | 21.77 | 22.50 |
| | | 1 | 14 | 21.40 | 21.55 | 21.43 | 22.50 |
| | | 8 | 0 | 20.44 | 20.48 | 20.39 | 21.50 |
| | | 8 | 4 | 20.51 | 20.43 | 20.51 | 21.50 |
| | | 8 | 7 | 20.50 | 20.41 | 20.37 | 21.50 |
| | | 15 | 0 | 20.42 | 20.46 | 20.47 | 21.50 |
| | 64QAM | 1 | 0 | 20.63 | 20.54 | 20.65 | 21.50 |
| | | 1 | 7 | 20.99 | 20.76 | 20.91 | 21.50 |
| | | 1 | 14 | 20.55 | 20.51 | 20.60 | 21.50 |
| | | 8 | 0 | 19.83 | 19.76 | 19.64 | 20.50 |
| | | 8 | 4 | 19.79 | 19.77 | 19.79 | 20.50 |
| | | 8 | 7 | 19.81 | 19.66 | 19.64 | 20.50 |
| | | 15 | 0 | 19.81 | 19.77 | 19.65 | 20.50 |

| **Bandwidth** | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | Tune-up Limit |
|---|---|---|---|---|---|---|---|
| | | | | 18625/1852.5 | 18900/1880 | 19175/1907.5 | |
| **5MHz** | QPSK | 1 | 0 | 22.06 | 22.16 | 22.11 | 23.50 |
| | | 1 | 13 | 22.33 | 22.35 | 22.62 | 23.50 |
| | | 1 | 24 | 22.02 | 22.10 | 22.19 | 23.50 |
| | | 12 | 0 | 21.39 | 21.49 | 21.35 | 22.50 |
| | | 12 | 6 | 21.43 | 21.42 | 21.44 | 22.50 |
| | | 12 | 13 | 21.48 | 21.40 | 21.35 | 22.50 |
| | | 25 | 0 | 21.40 | 21.42 | 21.39 | 22.50 |
| | 16QAM | 1 | 0 | 21.72 | 21.49 | 21.51 | 22.50 |
| | | 1 | 13 | 21.70 | 21.75 | 21.74 | 22.50 |
| | | 1 | 24 | 21.37 | 21.53 | 21.39 | 22.50 |
| | | 12 | 0 | 20.42 | 20.44 | 20.36 | 21.50 |
| | | 12 | 6 | 20.48 | 20.38 | 20.47 | 21.50 |
| | | 12 | 13 | 20.47 | 20.36 | 20.33 | 21.50 |
| | | 25 | 0 | 20.40 | 20.42 | 20.42 | 21.50 |
| | 64QAM | 1 | 0 | 20.60 | 20.54 | 20.62 | 21.50 |
| | | 1 | 13 | 20.96 | 20.78 | 20.88 | 21.50 |
| | | 1 | 24 | 20.56 | 20.49 | 20.56 | 21.50 |
| | | 12 | 0 | 19.81 | 19.72 | 19.65 | 20.50 |
| | | 12 | 6 | 19.76 | 19.72 | 19.75 | 20.50 |
| | | 12 | 13 | 19.78 | 19.61 | 19.60 | 20.50 |
| | | 25 | 0 | 19.79 | 19.73 | 19.60 | 20.50 |

| Bandwidth | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | Tune-up Limit |
|---|---|---|---|---|---|---|---|
| | | | | 18650/1855 | 18900/1880 | 19150/1905 | |
| 10MHz | QPSK | 1 | 0 | 22.08 | 22.17 | 22.14 | 23.50 |
| | | 1 | 25 | 22.36 | 22.40 | 22.66 | 23.50 |
| | | 1 | 49 | 22.04 | 22.14 | 22.22 | 23.50 |
| | | 25 | 0 | 21.42 | 21.54 | 21.39 | 22.50 |
| | | 25 | 13 | 21.46 | 21.47 | 21.48 | 22.50 |
| | | 25 | 25 | 21.50 | 21.44 | 21.40 | 22.50 |
| | | 50 | 0 | 21.44 | 21.44 | 21.43 | 22.50 |
| | 16QAM | 1 | 0 | 21.74 | 21.52 | 21.53 | 22.50 |
| | | 1 | 25 | 21.73 | 21.79 | 21.77 | 22.50 |
| | | 1 | 49 | 21.40 | 21.55 | 21.42 | 22.50 |
| | | 25 | 0 | 20.45 | 20.49 | 20.40 | 21.50 |
| | | 25 | 13 | 20.50 | 20.42 | 20.50 | 21.50 |
| | | 25 | 25 | 20.50 | 20.41 | 20.37 | 21.50 |
| | | 50 | 0 | 20.43 | 20.47 | 20.46 | 21.50 |
| | 64QAM | 1 | 0 | 20.62 | 20.53 | 20.64 | 21.50 |
| | | 1 | 25 | 20.99 | 20.78 | 20.91 | 21.50 |
| | | 1 | 49 | 20.55 | 20.51 | 20.59 | 21.50 |
| | | 25 | 0 | 19.84 | 19.77 | 19.65 | 20.50 |
| | | 25 | 13 | 19.78 | 19.76 | 19.78 | 20.50 |
| | | 25 | 25 | 19.81 | 19.66 | 19.64 | 20.50 |
| | | 50 | 0 | 19.82 | 19.78 | 19.64 | 20.50 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | Tune-up Limit |
| | | | | 18675/1857.5 | 18900/1880 | 19125/1902.5 | |
| 15MHz | QPSK | 1 | 0 | 22.07 | 22.13 | 22.12 | 23.50 |
| | | 1 | 38 | 22.34 | 22.39 | 22.63 | 23.50 |
| | | 1 | 74 | 22.01 | 22.09 | 22.18 | 23.50 |
| | | 36 | 0 | 21.40 | 21.50 | 21.36 | 22.50 |
| | | 36 | 18 | 21.43 | 21.42 | 21.44 | 22.50 |
| | | 36 | 39 | 21.47 | 21.41 | 21.36 | 22.50 |
| | | 75 | 0 | 21.42 | 21.40 | 21.38 | 22.50 |
| | 16QAM | 1 | 0 | 21.69 | 21.50 | 21.51 | 22.50 |
| | | 1 | 38 | 21.71 | 21.76 | 21.75 | 22.50 |
| | | 1 | 74 | 21.37 | 21.51 | 21.39 | 22.50 |
| | | 36 | 0 | 20.42 | 20.47 | 20.37 | 21.50 |
| | | 36 | 18 | 20.47 | 20.37 | 20.46 | 21.50 |
| | | 36 | 39 | 20.48 | 20.37 | 20.34 | 21.50 |
| | | 75 | 0 | 20.40 | 20.42 | 20.42 | 21.50 |
| | 64QAM | 1 | 0 | 20.57 | 20.51 | 20.62 | 21.50 |
| | | 1 | 38 | 20.97 | 20.75 | 20.89 | 21.50 |
| | | 1 | 74 | 20.56 | 20.50 | 20.60 | 21.50 |
| | | 36 | 0 | 19.83 | 19.79 | 19.66 | 20.50 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | 36 | 18 | 19.76 | 19.73 | 19.77 | 20.50 |
| | | 36 | 39 | 19.79 | 19.62 | 19.61 | 20.50 |
| | | 75 | 0 | 19.79 | 19.73 | 19.60 | 20.50 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | Tune-up Limit |
| | | | | 18700/1860 | 18900/1880 | 19100/1900 | |
| **20MHz** | QPSK | 1 | 0 | 22.04 | 22.09 | 22.09 | 23.50 |
| | | 1 | 50 | **22.33** | **22.35** | **22.61** | 23.50 |
| | | 1 | 99 | 21.99 | 22.08 | 22.15 | 23.50 |
| | | 50 | 0 | 21.37 | **21.45** | 21.32 | 22.50 |
| | | 50 | 25 | 21.41 | 21.38 | **21.41** | 22.50 |
| | | 50 | 50 | **21.44** | 21.36 | 21.32 | 22.50 |
| | | 100 | 0 | **21.39** | 21.35 | 21.34 | 22.50 |
| | 16QAM | 1 | 0 | 21.36 | 21.46 | 21.46 | 22.50 |
| | | 1 | 50 | 21.67 | 21.74 | 21.71 | 22.50 |
| | | 1 | 99 | 21.35 | 21.48 | 21.37 | 22.50 |
| | | 50 | 0 | 20.39 | 20.43 | 20.34 | 21.50 |
| | | 50 | 25 | 20.44 | 20.35 | 20.43 | 21.50 |
| | | 50 | 50 | 20.45 | 20.32 | 20.30 | 21.50 |
| | | 100 | 0 | 20.38 | 20.38 | 20.39 | 21.50 |
| | 64QAM | 1 | 0 | 20.55 | 20.47 | 20.57 | 21.50 |
| | | 1 | 50 | 20.93 | 20.73 | 20.85 | 21.50 |
| | | 1 | 99 | 20.50 | 20.44 | 20.54 | 21.50 |
| | | 50 | 0 | 19.78 | 19.71 | 19.59 | 20.50 |
| | | 50 | 25 | 19.72 | 19.69 | 19.71 | 20.50 |
| | | 50 | 50 | 19.76 | 19.57 | 19.57 | 20.50 |
| | | 100 | 0 | 19.77 | 19.69 | 19.57 | 20.50 |

| **LTE FDD Band 4** | | | | **Conducted Power(dBm)** | | | Tune-up Limit |
|---|---|---|---|---|---|---|---|
| **Bandwidth** | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | |
| | | | | 19957/1710.7 | 20175/1732.5 | 20393/1754.3 | |
| **1.4MHz** | QPSK | 1 | 0 | 22.32 | 22.35 | 22.36 | 23.50 |
| | | 1 | 2 | 22.68 | 22.59 | 22.65 | 23.50 |
| | | 1 | 5 | 22.21 | 22.24 | 22.20 | 23.50 |
| | | 3 | 0 | 22.65 | 22.66 | 22.61 | 23.50 |
| | | 3 | 2 | 22.61 | 22.65 | 22.64 | 23.50 |
| | | 3 | 3 | 22.55 | 22.61 | 22.53 | 23.50 |
| | | 6 | 0 | 21.66 | 21.73 | 21.68 | 22.50 |
| | 16QAM | 1 | 0 | 22.01 | 21.76 | 21.71 | 22.50 |
| | | 1 | 2 | 21.99 | 22.06 | 22.11 | 22.50 |
| | | 1 | 5 | 21.66 | 21.65 | 21.61 | 22.50 |
| | | 3 | 0 | 21.60 | 21.60 | 21.64 | 22.50 |
| | | 3 | 2 | 21.62 | 21.63 | 21.71 | 22.50 |
| | | 3 | 3 | 21.55 | 21.65 | 21.51 | 22.50 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | 6 | 0 | 20.62 | 20.71 | 20.73 | 21.50 |
| | 64QAM | 1 | 0 | 20.81 | 20.94 | 20.97 | 21.50 |
| | | 1 | 2 | 21.17 | 21.26 | 21.27 | 21.50 |
| | | 1 | 5 | 20.83 | 20.92 | 20.83 | 21.50 |
| | | 3 | 0 | 20.90 | 20.90 | 20.91 | 21.50 |
| | | 3 | 2 | 20.82 | 20.89 | 20.94 | 21.50 |
| | | 3 | 3 | 20.80 | 20.91 | 20.72 | 21.50 |
| | | 6 | 0 | 19.86 | 19.95 | 19.94 | 20.50 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | Tune-up Limit |
| | | | | 19965/1711.5 | 20175/1732.5 | 20385/1753.5 | |
| **3MHz** | QPSK | 1 | 0 | 22.34 | 22.39 | 22.39 | 23.50 |
| | | 1 | 7 | 22.66 | 22.62 | 22.69 | 23.50 |
| | | 1 | 14 | 22.24 | 22.29 | 22.24 | 23.50 |
| | | 8 | 0 | 21.75 | 21.78 | 21.74 | 22.50 |
| | | 8 | 4 | 21.73 | 21.75 | 21.76 | 22.50 |
| | | 8 | 7 | 21.65 | 21.72 | 21.63 | 22.50 |
| | | 15 | 0 | 21.66 | 21.77 | 21.71 | 22.50 |
| | 16QAM | 1 | 0 | 22.04 | 21.78 | 21.74 | 22.50 |
| | | 1 | 7 | 22.02 | 22.06 | 22.15 | 22.50 |
| | | 1 | 14 | 21.68 | 21.69 | 21.64 | 22.50 |
| | | 8 | 0 | 20.71 | 20.73 | 20.76 | 21.50 |
| | | 8 | 4 | 20.73 | 20.76 | 20.83 | 21.50 |
| | | 8 | 7 | 20.65 | 20.77 | 20.64 | 21.50 |
| | | 15 | 0 | 20.65 | 20.75 | 20.76 | 21.50 |
| | 64QAM | 1 | 0 | 20.84 | 20.96 | 21.00 | 21.50 |
| | | 1 | 7 | 21.20 | 21.26 | 21.29 | 21.50 |
| | | 1 | 14 | 20.85 | 20.91 | 20.86 | 21.50 |
| | | 8 | 0 | 20.01 | 20.03 | 20.03 | 20.50 |
| | | 8 | 4 | 19.93 | 20.02 | 20.06 | 20.50 |
| | | 8 | 7 | 19.90 | 20.03 | 19.85 | 20.50 |
| | | 15 | 0 | 19.89 | 19.99 | 19.97 | 20.50 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | Tune-up Limit |
| | | | | 19975/1712.5 | 20175/1732.5 | 20375/1752.5 | |
| **5MHz** | QPSK | 1 | 0 | 22.31 | 22.37 | 22.35 | 23.50 |
| | | 1 | 13 | 22.64 | 22.58 | 22.66 | 23.50 |
| | | 1 | 24 | 22.21 | 22.24 | 22.20 | 23.50 |
| | | 12 | 0 | 21.72 | 21.73 | 21.70 | 22.50 |
| | | 12 | 6 | 21.71 | 21.71 | 21.71 | 22.50 |
| | | 12 | 13 | 21.63 | 21.70 | 21.59 | 22.50 |
| | | 25 | 0 | 21.66 | 21.76 | 21.69 | 22.50 |
| | 16QAM | 1 | 0 | 22.01 | 21.74 | 21.71 | 22.50 |
| | | 1 | 13 | 21.99 | 22.04 | 22.12 | 22.50 |
| | | 1 | 24 | 21.65 | 21.67 | 21.60 | 22.50 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | 12 | 0 | 20.69 | 20.69 | 20.73 | 21.50 |
| | | 12 | 6 | 20.70 | 20.71 | 20.79 | 21.50 |
| | | 12 | 13 | 20.62 | 20.72 | 20.60 | 21.50 |
| | | 25 | 0 | 20.63 | 20.71 | 20.71 | 21.50 |
| | 64QAM | 1 | 0 | 20.81 | 20.96 | 20.97 | 21.50 |
| | | 1 | 13 | 21.17 | 21.28 | 21.26 | 21.50 |
| | | 1 | 24 | 20.86 | 20.89 | 20.82 | 21.50 |
| | | 12 | 0 | 19.99 | 19.99 | 20.04 | 20.50 |
| | | 12 | 6 | 19.90 | 19.97 | 20.02 | 20.50 |
| | | 12 | 13 | 19.87 | 19.98 | 19.81 | 20.50 |
| | | 25 | 0 | 19.87 | 19.95 | 19.92 | 20.50 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | Tune-up Limit |
| | | | | 20000/1715 | 20175/1732.5 | 20350/1750 | |
| **10MHz** | QPSK | 1 | 0 | 22.33 | 22.38 | 22.38 | 23.50 |
| | | 1 | 25 | 22.67 | 22.63 | 22.70 | 23.50 |
| | | 1 | 49 | 22.23 | 22.28 | 22.23 | 23.50 |
| | | 25 | 0 | 21.75 | 21.78 | 21.74 | 22.50 |
| | | 25 | 13 | 21.74 | 21.76 | 21.75 | 22.50 |
| | | 25 | 25 | 21.65 | 21.74 | 21.64 | 22.50 |
| | | 50 | 0 | 21.70 | 21.78 | 21.73 | 22.50 |
| | 16QAM | 1 | 0 | 22.03 | 21.77 | 21.73 | 22.50 |
| | | 1 | 25 | 22.02 | 22.08 | 22.15 | 22.50 |
| | | 1 | 49 | 21.68 | 21.69 | 21.63 | 22.50 |
| | | 25 | 0 | 20.72 | 20.74 | 20.77 | 21.50 |
| | | 25 | 13 | 20.72 | 20.75 | 20.82 | 21.50 |
| | | 25 | 25 | 20.65 | 20.77 | 20.64 | 21.50 |
| | | 50 | 0 | 20.66 | 20.76 | 20.75 | 21.50 |
| | 64QAM | 1 | 0 | 20.83 | 20.95 | 20.99 | 21.50 |
| | | 1 | 25 | 21.20 | 21.28 | 21.29 | 21.50 |
| | | 1 | 49 | 20.85 | 20.91 | 20.85 | 21.50 |
| | | 25 | 0 | 20.02 | 20.04 | 20.04 | 20.50 |
| | | 25 | 13 | 19.92 | 20.01 | 20.05 | 20.50 |
| | | 25 | 25 | 19.90 | 20.03 | 19.85 | 20.50 |
| | | 50 | 0 | 19.90 | 20.00 | 19.96 | 20.50 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | Tune-up Limit |
| | | | | 20025/1717.5 | 20175/1732.5 | 20325/1747.5 | |
| **15MHz** | QPSK | 1 | 0 | 22.32 | 22.34 | 22.36 | 23.50 |
| | | 1 | 38 | 22.65 | 22.62 | 22.67 | 23.50 |
| | | 1 | 74 | 22.20 | 22.23 | 22.19 | 23.50 |
| | | 36 | 0 | 21.73 | 21.74 | 21.71 | 22.50 |
| | | 36 | 18 | 21.71 | 21.71 | 21.71 | 22.50 |
| | | 36 | 39 | 21.62 | 21.71 | 21.60 | 22.50 |
| | | 75 | 0 | 21.68 | 21.74 | 21.68 | 22.50 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | 16QAM | 1 | 0 | 21.98 | 21.75 | 21.71 | 22.50 |
| | | 1 | 38 | 22.00 | 22.05 | 22.13 | 22.50 |
| | | 1 | 74 | 21.65 | 21.65 | 21.60 | 22.50 |
| | | 36 | 0 | 20.69 | 20.72 | 20.74 | 21.50 |
| | | 36 | 18 | 20.69 | 20.70 | 20.78 | 21.50 |
| | | 36 | 39 | 20.63 | 20.73 | 20.61 | 21.50 |
| | | 75 | 0 | 20.63 | 20.71 | 20.71 | 21.50 |
| | 64QAM | 1 | 0 | 20.78 | 20.93 | 20.97 | 21.50 |
| | | 1 | 38 | 21.18 | 21.25 | 21.27 | 21.50 |
| | | 1 | 74 | 20.86 | 20.90 | 20.86 | 21.50 |
| | | 36 | 0 | 20.01 | 20.06 | 20.05 | 20.50 |
| | | 36 | 18 | 19.90 | 19.98 | 20.04 | 20.50 |
| | | 36 | 39 | 19.88 | 19.99 | 19.82 | 20.50 |
| | | 75 | 0 | 19.87 | 19.95 | 19.92 | 20.50 |

| **Bandwidth** | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | Tune-up Limit |
|---|---|---|---|---|---|---|---|
| | | | | 20050/1720 | 20175/1732.5 | 20300/1745 | |
| **20MHz** | QPSK | 1 | 0 | 22.29 | 22.30 | 22.33 | 23.50 |
| | | 1 | 50 | **22.64** | **22.58** | **22.65** | 23.50 |
| | | 1 | 99 | 22.18 | 22.22 | 22.16 | 23.50 |
| | | 50 | 0 | **21.70** | **21.69** | 21.67 | 22.50 |
| | | 50 | 25 | 21.69 | 21.67 | **21.68** | 22.50 |
| | | 50 | 50 | 21.59 | 21.66 | 21.56 | 22.50 |
| | | 100 | 0 | 21.65 | **21.69** | 21.64 | 22.50 |
| | 16QAM | 1 | 0 | 21.61 | 21.71 | 21.66 | 22.50 |
| | | 1 | 50 | 21.96 | 22.03 | 22.09 | 22.50 |
| | | 1 | 99 | 21.63 | 21.62 | 21.58 | 22.50 |
| | | 50 | 0 | 20.66 | 20.68 | 20.71 | 21.50 |
| | | 50 | 25 | 20.66 | 20.68 | 20.75 | 21.50 |
| | | 50 | 50 | 20.60 | 20.68 | 20.57 | 21.50 |
| | | 100 | 0 | 20.61 | 20.67 | 20.68 | 21.50 |
| | 64QAM | 1 | 0 | 20.76 | 20.89 | 20.92 | 21.50 |
| | | 1 | 50 | 21.14 | 21.23 | 21.23 | 21.50 |
| | | 1 | 99 | 20.80 | 20.84 | 20.80 | 21.50 |
| | | 50 | 0 | 19.96 | 19.98 | 19.98 | 20.50 |
| | | 50 | 25 | 19.86 | 19.94 | 19.98 | 20.50 |
| | | 50 | 50 | 19.85 | 19.94 | 19.78 | 20.50 |
| | | 100 | 0 | 19.85 | 19.91 | 19.89 | 20.50 |

| **LTE FDD Band 5** | | | | **Conducted Power(dBm)** | | | Tune-up Limit |
|---|---|---|---|---|---|---|---|
| **Bandwidth** | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | |
| | | | | 20407/824.7 | 20525/836.5 | 20643/848.3 | |
| **1.4MHz** | QPSK | 1 | 0 | 22.63 | 22.72 | 22.66 | 23.50 |
| | | 1 | 2 | 22.83 | 22.82 | 22.71 | 23.50 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | 1 | 5 | 22.67 | 22.72 | 22.64 | 23.50 |
| | | 3 | 0 | 22.64 | 22.80 | 22.68 | 23.50 |
| | | 3 | 2 | 22.72 | 22.70 | 22.66 | 23.50 |
| | | 3 | 3 | 22.67 | 22.71 | 22.70 | 23.50 |
| | | 6 | 0 | 21.69 | 21.83 | 21.77 | 22.50 |
| | 16QAM | 1 | 0 | 22.07 | 21.91 | 22.00 | 22.50 |
| | | 1 | 2 | 22.05 | 22.15 | 22.07 | 22.50 |
| | | 1 | 5 | 21.95 | 21.90 | 21.94 | 22.50 |
| | | 3 | 0 | 21.70 | 21.79 | 21.68 | 22.50 |
| | | 3 | 2 | 21.74 | 21.76 | 21.74 | 22.50 |
| | | 3 | 3 | 21.68 | 21.78 | 21.71 | 22.50 |
| | | 6 | 0 | 20.73 | 20.89 | 20.83 | 21.50 |
| | 64QAM | 1 | 0 | 20.97 | 20.92 | 20.94 | 21.50 |
| | | 1 | 2 | 21.08 | 21.05 | 21.06 | 21.50 |
| | | 1 | 5 | 21.05 | 20.97 | 20.88 | 21.50 |
| | | 3 | 0 | 20.77 | 20.91 | 20.73 | 21.50 |
| | | 3 | 2 | 20.83 | 20.85 | 20.83 | 21.50 |
| | | 3 | 3 | 20.77 | 20.84 | 20.77 | 21.50 |
| | | 6 | 0 | 19.79 | 19.97 | 19.90 | 20.50 |

| **Bandwidth** | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | Tune-up Limit |
|---|---|---|---|---|---|---|---|
| | | | | 20415/825.5 | 20525/836.5 | 20635/847.5 | |
| **3MHz** | QPSK | 1 | 0 | 22.65 | 22.76 | 22.69 | 23.50 |
| | | 1 | 7 | 22.81 | 22.85 | 22.75 | 23.50 |
| | | 1 | 14 | 22.70 | 22.77 | 22.68 | 23.50 |
| | | 8 | 0 | 21.74 | 21.92 | 21.81 | 22.50 |
| | | 8 | 4 | 21.84 | 21.80 | 21.78 | 22.50 |
| | | 8 | 7 | 21.77 | 21.82 | 21.80 | 22.50 |
| | | 15 | 0 | 21.69 | 21.87 | 21.80 | 22.50 |
| | 16QAM | 1 | 0 | 22.10 | 21.93 | 22.03 | 22.50 |
| | | 1 | 7 | 22.08 | 22.15 | 22.11 | 22.50 |
| | | 1 | 14 | 21.97 | 21.94 | 21.97 | 22.50 |
| | | 8 | 0 | 20.81 | 20.92 | 20.80 | 21.50 |
| | | 8 | 4 | 20.85 | 20.89 | 20.86 | 21.50 |
| | | 8 | 7 | 20.78 | 20.90 | 20.84 | 21.50 |
| | | 15 | 0 | 20.76 | 20.93 | 20.86 | 21.50 |
| | 64QAM | 1 | 0 | 21.00 | 20.94 | 20.97 | 21.50 |
| | | 1 | 7 | 21.11 | 21.05 | 21.08 | 21.50 |
| | | 1 | 14 | 21.07 | 20.96 | 20.91 | 21.50 |
| | | 8 | 0 | 19.88 | 20.04 | 19.85 | 20.50 |
| | | 8 | 4 | 19.94 | 19.98 | 19.95 | 20.50 |
| | | 8 | 7 | 19.87 | 19.96 | 19.90 | 20.50 |
| | | 15 | 0 | 19.82 | 20.01 | 19.93 | 20.50 |

| Bandwidth | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | Tune-up Limit |
|---|---|---|---|---|---|---|---|
| | | | | 20425/826.5 | 20525/836.5 | 20625/846.5 | |
| 5MHz | QPSK | 1 | 0 | 22.62 | 22.74 | 22.65 | 23.50 |
| | | 1 | 13 | 22.79 | 22.81 | 22.72 | 23.50 |
| | | 1 | 24 | 22.67 | 22.72 | 22.64 | 23.50 |
| | | 12 | 0 | 21.71 | 21.87 | 21.77 | 22.50 |
| | | 12 | 6 | 21.82 | 21.76 | 21.73 | 22.50 |
| | | 12 | 13 | 21.75 | 21.80 | 21.76 | 22.50 |
| | | 25 | 0 | 21.69 | 21.86 | 21.78 | 22.50 |
| | 16QAM | 1 | 0 | 22.07 | 21.89 | 22.00 | 22.50 |
| | | 1 | 13 | 22.05 | 22.13 | 22.08 | 22.50 |
| | | 1 | 24 | 21.94 | 21.92 | 21.93 | 22.50 |
| | | 12 | 0 | 20.79 | 20.88 | 20.77 | 21.50 |
| | | 12 | 6 | 20.82 | 20.84 | 20.82 | 21.50 |
| | | 12 | 13 | 20.75 | 20.85 | 20.80 | 21.50 |
| | | 25 | 0 | 20.74 | 20.89 | 20.81 | 21.50 |
| | 64QAM | 1 | 0 | 20.97 | 20.94 | 20.94 | 21.50 |
| | | 1 | 13 | 21.08 | 21.07 | 21.05 | 21.50 |
| | | 1 | 24 | 21.08 | 20.94 | 20.87 | 21.50 |
| | | 12 | 0 | 19.86 | 20.00 | 19.86 | 20.50 |
| | | 12 | 6 | 19.91 | 19.93 | 19.91 | 20.50 |
| | | 12 | 13 | 19.84 | 19.91 | 19.86 | 20.50 |
| | | 25 | 0 | 19.80 | 19.97 | 19.88 | 20.50 |

| Bandwidth | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | Tune-up Limit |
|---|---|---|---|---|---|---|---|
| | | | | 20450/829 | 20525/836.5 | 20600/844 | |
| 10MHz | QPSK | 1 | 0 | 22.60 | 22.67 | 22.63 | 23.50 |
| | | 1 | 25 | **22.79** | **22.81** | **22.71** | 23.50 |
| | | 1 | 49 | 22.64 | 22.70 | 22.60 | 23.50 |
| | | 25 | 0 | 21.69 | **21.83** | **21.74** | 22.50 |
| | | 25 | 13 | **21.80** | 21.72 | 21.70 | 22.50 |
| | | 25 | 25 | 21.71 | 21.76 | 21.73 | 22.50 |
| | | 50 | 0 | 21.68 | **21.79** | 21.73 | 22.50 |
| | 16QAM | 1 | 0 | 21.93 | 21.86 | 21.95 | 22.50 |
| | | 1 | 25 | 22.02 | 22.12 | 22.05 | 22.50 |
| | | 1 | 49 | 21.92 | 21.87 | 21.91 | 22.50 |
| | | 25 | 0 | 20.76 | 20.87 | 20.75 | 21.50 |
| | | 25 | 13 | 20.78 | 20.81 | 20.78 | 21.50 |
| | | 25 | 25 | 20.73 | 20.81 | 20.77 | 21.50 |
| | | 50 | 0 | 20.72 | 20.85 | 20.78 | 21.50 |
| | 64QAM | 1 | 0 | 20.92 | 20.87 | 20.89 | 21.50 |
| | | 1 | 25 | 21.05 | 21.02 | 21.02 | 21.50 |
| | | 1 | 49 | 21.02 | 20.89 | 20.85 | 21.50 |
| | | 25 | 0 | 19.83 | 19.99 | 19.80 | 20.50 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | 25 | 13 | 19.87 | 19.90 | 19.87 | 20.50 |
| | | 25 | 25 | 19.82 | 19.87 | 19.83 | 20.50 |
| | | 50 | 0 | 19.78 | 19.93 | 19.85 | 20.50 |

| LTE FDD Band 7 | | | | Conducted Power(dBm) | | | Tune-up Limit |
|---|---|---|---|---|---|---|---|
| Bandwidth | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | |
| | | | | 20775/2502.5 | 21100/2535 | 21425/2567.5 | |
| 5MHz | QPSK | 1 | 0 | 22.03 | 22.11 | 22.13 | 23.50 |
| | | 1 | 13 | 22.51 | 22.55 | 22.52 | 23.50 |
| | | 1 | 24 | 22.25 | 22.23 | 22.29 | 23.50 |
| | | 12 | 0 | 21.33 | 21.49 | 21.58 | 22.50 |
| | | 12 | 6 | 21.51 | 21.56 | 21.55 | 22.50 |
| | | 12 | 13 | 21.59 | 21.62 | 21.59 | 22.50 |
| | | 25 | 0 | 21.43 | 21.56 | 21.55 | 22.50 |
| | 16QAM | 1 | 0 | 21.74 | 21.26 | 21.39 | 22.50 |
| | | 1 | 13 | 21.72 | 21.78 | 21.81 | 22.50 |
| | | 1 | 24 | 21.40 | 21.44 | 21.56 | 22.50 |
| | | 12 | 0 | 20.37 | 20.48 | 20.54 | 21.50 |
| | | 12 | 6 | 20.49 | 20.57 | 20.59 | 21.50 |
| | | 12 | 13 | 20.59 | 20.60 | 20.53 | 21.50 |
| | | 25 | 0 | 20.44 | 20.54 | 20.50 | 21.50 |
| | 64QAM | 1 | 0 | 20.28 | 20.34 | 20.48 | 21.50 |
| | | 1 | 13 | 20.66 | 20.78 | 21.00 | 21.50 |
| | | 1 | 24 | 20.48 | 20.57 | 20.74 | 21.50 |
| | | 12 | 0 | 19.34 | 19.50 | 19.74 | 20.50 |
| | | 12 | 6 | 19.49 | 19.62 | 19.81 | 20.50 |
| | | 12 | 13 | 19.54 | 19.71 | 19.80 | 20.50 |
| | | 25 | 0 | 19.44 | 19.62 | 19.78 | 20.50 |
| Bandwidth | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | Tune-up Limit |
| | | | | 20800/2505 | 21100/2535 | 21400/2565 | |
| 10MHz | QPSK | 1 | 0 | 22.05 | 22.12 | 22.16 | 23.50 |
| | | 1 | 25 | 22.54 | 22.60 | 22.56 | 23.50 |
| | | 1 | 49 | 22.27 | 22.27 | 22.32 | 23.50 |
| | | 25 | 0 | 21.36 | 21.54 | 21.62 | 22.50 |
| | | 25 | 13 | 21.54 | 21.61 | 21.59 | 22.50 |
| | | 25 | 25 | 21.61 | 21.66 | 21.64 | 22.50 |
| | | 50 | 0 | 21.47 | 21.58 | 21.59 | 22.50 |
| | 16QAM | 1 | 0 | 21.76 | 21.29 | 21.41 | 22.50 |
| | | 1 | 25 | 21.75 | 21.82 | 21.84 | 22.50 |
| | | 1 | 49 | 21.43 | 21.46 | 21.59 | 22.50 |
| | | 25 | 0 | 20.40 | 20.53 | 20.58 | 21.50 |
| | | 25 | 13 | 20.51 | 20.61 | 20.62 | 21.50 |
| | | 25 | 25 | 20.62 | 20.65 | 20.57 | 21.50 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | 50 | 0 | 20.47 | 20.59 | 20.54 | 21.50 |
| | 64QAM | 1 | 0 | 20.30 | 20.33 | 20.50 | 21.50 |
| | | 1 | 25 | 20.69 | 20.78 | 21.03 | 21.50 |
| | | 1 | 49 | 20.47 | 20.59 | 20.77 | 21.50 |
| | | 25 | 0 | 19.37 | 19.55 | 19.74 | 20.50 |
| | | 25 | 13 | 19.51 | 19.66 | 19.84 | 20.50 |
| | | 25 | 25 | 19.57 | 19.76 | 19.84 | 20.50 |
| | | 50 | 0 | 19.47 | 19.67 | 19.82 | 20.50 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | Tune-up Limit |
| | | | | 20825/2507.5 | 21100/2535 | 21375/2562.5 | |
| **15MHz** | QPSK | 1 | 0 | 22.04 | 22.08 | 22.14 | 23.50 |
| | | 1 | 38 | 22.52 | 22.59 | 22.53 | 23.50 |
| | | 1 | 74 | 22.24 | 22.22 | 22.28 | 23.50 |
| | | 36 | 0 | 21.34 | 21.50 | 21.59 | 22.50 |
| | | 36 | 18 | 21.51 | 21.56 | 21.55 | 22.50 |
| | | 36 | 39 | 21.58 | 21.63 | 21.60 | 22.50 |
| | | 75 | 0 | 21.45 | 21.54 | 21.54 | 22.50 |
| | 16QAM | 1 | 0 | 21.71 | 21.27 | 21.39 | 22.50 |
| | | 1 | 38 | 21.73 | 21.79 | 21.82 | 22.50 |
| | | 1 | 74 | 21.40 | 21.42 | 21.56 | 22.50 |
| | | 36 | 0 | 20.37 | 20.51 | 20.55 | 21.50 |
| | | 36 | 18 | 20.48 | 20.56 | 20.58 | 21.50 |
| | | 36 | 39 | 20.60 | 20.61 | 20.54 | 21.50 |
| | | 75 | 0 | 20.44 | 20.54 | 20.50 | 21.50 |
| | 64QAM | 1 | 0 | 20.25 | 20.31 | 20.48 | 21.50 |
| | | 1 | 38 | 20.67 | 20.75 | 21.01 | 21.50 |
| | | 1 | 74 | 20.48 | 20.58 | 20.78 | 21.50 |
| | | 36 | 0 | 19.36 | 19.57 | 19.75 | 20.50 |
| | | 36 | 18 | 19.49 | 19.63 | 19.83 | 20.50 |
| | | 36 | 39 | 19.55 | 19.72 | 19.81 | 20.50 |
| | | 75 | 0 | 19.44 | 19.62 | 19.78 | 20.50 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | Tune-up Limit |
| | | | | 20850/2510 | 21100/2535 | 21350/2560 | |
| **20MHz** | QPSK | 1 | 0 | 22.01 | 22.04 | 22.11 | 23.50 |
| | | 1 | 50 | **22.51** | **22.55** | **22.51** | 23.50 |
| | | 1 | 99 | 22.22 | 22.21 | 22.25 | 23.50 |
| | | 50 | 0 | 21.31 | 21.45 | 21.55 | 22.50 |
| | | 50 | 25 | 21.49 | 21.52 | 21.52 | 22.50 |
| | | 50 | 50 | **21.55** | **21.58** | **21.56** | 22.50 |
| | | 100 | 0 | 21.42 | 21.49 | **21.50** | 22.50 |
| | 16QAM | 1 | 0 | 21.20 | 21.23 | 21.34 | 22.50 |
| | | 1 | 50 | 21.69 | 21.77 | 21.78 | 22.50 |
| | | 1 | 99 | 21.38 | 21.39 | 21.54 | 22.50 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | 50 | 0 | 20.34 | 20.47 | 20.52 | 21.50 |
| | | 50 | 25 | 20.45 | 20.54 | 20.55 | 21.50 |
| | | 50 | 50 | 20.57 | 20.56 | 20.50 | 21.50 |
| | | 100 | 0 | 20.42 | 20.50 | 20.47 | 21.50 |
| | 64QAM | 1 | 0 | 20.23 | 20.27 | 20.43 | 21.50 |
| | | 1 | 50 | 20.63 | 20.73 | 20.97 | 21.50 |
| | | 1 | 99 | 20.42 | 20.52 | 20.72 | 21.50 |
| | | 50 | 0 | 19.31 | 19.49 | 19.68 | 20.50 |
| | | 50 | 25 | 19.45 | 19.59 | 19.77 | 20.50 |
| | | 50 | 50 | 19.52 | 19.67 | 19.77 | 20.50 |
| | | 100 | 0 | 19.42 | 19.58 | 19.75 | 20.50 |

| LTE FDD Band 19 | | | | Conducted Power(dBm) | | | Tune-up Limit |
|---|---|---|---|---|---|---|---|
| Bandwidth | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | |
| | | | | 24025/832.5 | 24075/837.5 | 24125/842.5 | |
| 5MHz | QPSK | 1 | 0 | 22.72 | 22.77 | 22.72 | 23.50 |
| | | 1 | 13 | 22.81 | 22.81 | 22.82 | 23.50 |
| | | 1 | 24 | 22.76 | 22.75 | 22.77 | 23.50 |
| | | 12 | 0 | 21.89 | 21.91 | 21.90 | 22.50 |
| | | 12 | 6 | 21.88 | 21.90 | 21.89 | 22.50 |
| | | 12 | 13 | 21.94 | 21.94 | 21.93 | 22.50 |
| | | 25 | 0 | 21.93 | 21.99 | 21.97 | 22.50 |
| | 16QAM | 1 | 0 | 22.18 | 21.99 | 22.01 | 22.50 |
| | | 1 | 13 | 22.16 | 22.14 | 22.16 | 22.50 |
| | | 1 | 24 | 22.03 | 22.06 | 22.03 | 22.50 |
| | | 12 | 0 | 20.96 | 20.94 | 20.95 | 21.50 |
| | | 12 | 6 | 20.91 | 20.90 | 20.91 | 21.50 |
| | | 12 | 13 | 20.96 | 20.98 | 20.97 | 21.50 |
| | | 25 | 0 | 20.98 | 21.00 | 20.99 | 21.50 |
| | 64QAM | 1 | 0 | 21.03 | 21.05 | 21.03 | 21.50 |
| | | 1 | 13 | 21.13 | 21.15 | 21.13 | 21.50 |
| | | 1 | 24 | 21.15 | 21.14 | 21.11 | 21.50 |
| | | 12 | 0 | 20.04 | 20.02 | 20.07 | 20.50 |
| | | 12 | 6 | 20.03 | 20.02 | 20.03 | 20.50 |
| | | 12 | 13 | 19.99 | 20.01 | 20.00 | 20.50 |
| | | 25 | 0 | 19.99 | 20.01 | 20.00 | 20.50 |
| Bandwidth | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | Tune-up Limit |
| | | | | 24050/835 | 24075/837.5 | 24100/840 | |
| 10MHz | QPSK | 1 | 0 | 22.74 | 22.78 | 22.75 | 23.50 |
| | | 1 | 25 | 22.84 | 22.86 | 22.86 | 23.50 |
| | | 1 | 49 | 22.78 | 22.79 | 22.80 | 23.50 |
| | | 25 | 0 | 21.92 | 21.96 | 21.94 | 22.50 |
| | | 25 | 13 | 21.91 | 21.95 | 21.93 | 22.50 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | 25 | 25 | 21.96 | 21.98 | 21.98 | 22.50 |
| | | 50 | 0 | 21.97 | 22.01 | 22.01 | 22.50 |
| | 16QAM | 1 | 0 | 22.20 | 22.02 | 22.03 | 22.50 |
| | | 1 | 25 | 22.19 | 22.18 | 22.19 | 22.50 |
| | | 1 | 49 | 22.06 | 22.08 | 22.06 | 22.50 |
| | | 25 | 0 | 20.99 | 20.99 | 20.99 | 21.50 |
| | | 25 | 13 | 20.93 | 20.94 | 20.94 | 21.50 |
| | | 25 | 25 | 20.99 | 21.03 | 21.01 | 21.50 |
| | | 50 | 0 | 21.01 | 21.05 | 21.03 | 21.50 |
| | 64QAM | 1 | 0 | 21.05 | 21.04 | 21.05 | 21.50 |
| | | 1 | 25 | 21.16 | 21.15 | 21.16 | 21.50 |
| | | 1 | 49 | 21.14 | 21.16 | 21.14 | 21.50 |
| | | 25 | 0 | 20.07 | 20.07 | 20.07 | 20.50 |
| | | 25 | 13 | 20.05 | 20.06 | 20.06 | 20.50 |
| | | 25 | 25 | 20.02 | 20.06 | 20.04 | 20.50 |
| | | 50 | 0 | 20.02 | 20.06 | 20.04 | 20.50 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | Tune-up Limit |
| | | | | / | 24075/837.5 | / | |
| **15MHz** | QPSK | 1 | 0 | / | 22.70 | / | 23.50 |
| | | 1 | 38 | / | **22.81** | / | 23.50 |
| | | 1 | 74 | / | 22.73 | / | 23.50 |
| | | 36 | 0 | / | 21.87 | / | 22.50 |
| | | 36 | 18 | / | 21.86 | / | 22.50 |
| | | 36 | 39 | / | **21.90** | / | 22.50 |
| | | 75 | 0 | / | **21.92** | / | 22.50 |
| | 16QAM | 1 | 0 | / | 21.96 | / | 22.50 |
| | | 1 | 38 | / | 22.13 | / | 22.50 |
| | | 1 | 74 | / | 22.01 | / | 22.50 |
| | | 36 | 0 | / | 20.93 | / | 21.50 |
| | | 36 | 18 | / | 20.87 | / | 21.50 |
| | | 36 | 39 | / | 20.94 | / | 21.50 |
| | | 75 | 0 | / | 20.96 | / | 21.50 |
| | 64QAM | 1 | 0 | / | 20.98 | / | 21.50 |
| | | 1 | 38 | / | 21.10 | / | 21.50 |
| | | 1 | 74 | / | 21.09 | / | 21.50 |
| | | 36 | 0 | / | 20.01 | / | 20.50 |
| | | 36 | 18 | / | 19.99 | / | 20.50 |
| | | 36 | 39 | / | 19.97 | / | 20.50 |
| | | 75 | 0 | / | 19.97 | / | 20.50 |

| LTE FDD Band 26 | | | | Conducted Power(dBm) | | | Tune-up Limit |
|---|---|---|---|---|---|---|---|
| Bandwidth | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | |
| | | | | 26697/814.7 | 26865/831.5 | 27033/848.3 | |
| 1.4MHz | QPSK | 1 | 0 | 22.55 | 22.60 | 22.51 | 23.50 |
| | | 1 | 2 | 22.68 | 22.63 | 22.62 | 23.50 |
| | | 1 | 5 | 22.62 | 22.57 | 22.56 | 23.50 |
| | | 3 | 0 | 21.72 | 21.72 | 21.69 | 23.50 |
| | | 3 | 2 | 21.76 | 21.77 | 21.73 | 23.50 |
| | | 3 | 3 | 21.87 | 21.65 | 21.65 | 23.50 |
| | | 6 | 0 | 21.75 | 21.68 | 21.66 | 22.50 |
| | 16QAM | 1 | 0 | 22.02 | 21.87 | 21.87 | 22.50 |
| | | 1 | 2 | 22.00 | 21.92 | 21.96 | 22.50 |
| | | 1 | 5 | 21.95 | 21.93 | 21.90 | 22.50 |
| | | 3 | 0 | 20.74 | 20.72 | 20.72 | 22.50 |
| | | 3 | 2 | 20.82 | 20.77 | 20.77 | 22.50 |
| | | 3 | 3 | 20.89 | 20.71 | 20.72 | 22.50 |
| | | 6 | 0 | 20.84 | 20.73 | 20.77 | 21.50 |
| | 64QAM | 1 | 0 | 20.86 | 20.84 | 20.82 | 21.50 |
| | | 1 | 2 | 20.96 | 20.84 | 20.96 | 21.50 |
| | | 1 | 5 | 20.89 | 20.85 | 20.84 | 21.50 |
| | | 3 | 0 | 19.83 | 19.78 | 19.83 | 21.50 |
| | | 3 | 2 | 19.94 | 19.86 | 19.83 | 21.50 |
| | | 3 | 3 | 19.99 | 19.77 | 19.78 | 21.50 |
| | | 6 | 0 | 19.89 | 19.82 | 19.82 | 20.50 |
| Bandwidth | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | Tune-up Limit |
| | | | | 26705/815.5 | 26865/831.5 | 27025/847.5 | |
| 3MHz | QPSK | 1 | 0 | 22.52 | 22.58 | 22.47 | 23.50 |
| | | 1 | 7 | 22.66 | 22.59 | 22.59 | 23.50 |
| | | 1 | 14 | 22.59 | 22.52 | 22.52 | 23.50 |
| | | 8 | 0 | 21.69 | 21.67 | 21.65 | 22.50 |
| | | 8 | 4 | 21.74 | 21.73 | 21.68 | 22.50 |
| | | 8 | 7 | 21.85 | 21.63 | 21.61 | 22.50 |
| | | 15 | 0 | 21.75 | 21.67 | 21.64 | 22.50 |
| | 16QAM | 1 | 0 | 21.99 | 21.83 | 21.84 | 22.50 |
| | | 1 | 7 | 21.97 | 21.90 | 21.93 | 22.50 |
| | | 1 | 14 | 21.92 | 21.91 | 21.86 | 22.50 |
| | | 8 | 0 | 20.72 | 20.68 | 20.69 | 21.50 |
| | | 8 | 4 | 20.79 | 20.72 | 20.73 | 21.50 |
| | | 8 | 7 | 20.86 | 20.66 | 20.68 | 21.50 |
| | | 15 | 0 | 20.82 | 20.69 | 20.72 | 21.50 |
| | 64QAM | 1 | 0 | 20.83 | 20.84 | 20.79 | 21.50 |
| | | 1 | 7 | 20.93 | 20.86 | 20.93 | 21.50 |
| | | 1 | 14 | 20.90 | 20.83 | 20.80 | 21.50 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | 8 | 0 | 19.81 | 19.74 | 19.84 | 20.50 |
| | | 8 | 4 | 19.91 | 19.81 | 19.79 | 20.50 |
| | | 8 | 7 | 19.96 | 19.72 | 19.74 | 20.50 |
| | | 15 | 0 | 19.87 | 19.78 | 19.77 | 20.50 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | Tune-up Limit |
| | | | | 26715/816.5 | 26865/831.5 | 27015/846.5 | |
| **5MHz** | QPSK | 1 | 0 | 22.54 | 22.59 | 22.50 | 23.50 |
| | | 1 | 13 | 22.69 | 22.64 | 22.63 | 23.50 |
| | | 1 | 24 | 22.61 | 22.56 | 22.55 | 23.50 |
| | | 12 | 0 | 21.72 | 21.72 | 21.69 | 22.50 |
| | | 12 | 6 | 21.77 | 21.78 | 21.72 | 22.50 |
| | | 12 | 13 | 21.87 | 21.67 | 21.66 | 22.50 |
| | | 25 | 0 | 21.79 | 21.69 | 21.68 | 22.50 |
| | 16QAM | 1 | 0 | 22.01 | 21.86 | 21.86 | 22.50 |
| | | 1 | 13 | 22.00 | 21.94 | 21.96 | 22.50 |
| | | 1 | 24 | 21.95 | 21.93 | 21.89 | 22.50 |
| | | 12 | 0 | 20.75 | 20.73 | 20.73 | 21.50 |
| | | 12 | 6 | 20.81 | 20.76 | 20.76 | 21.50 |
| | | 12 | 13 | 20.89 | 20.71 | 20.72 | 21.50 |
| | | 25 | 0 | 20.85 | 20.74 | 20.76 | 21.50 |
| | 64QAM | 1 | 0 | 20.85 | 20.83 | 20.81 | 21.50 |
| | | 1 | 13 | 20.96 | 20.86 | 20.96 | 21.50 |
| | | 1 | 24 | 20.89 | 20.85 | 20.83 | 21.50 |
| | | 12 | 0 | 19.84 | 19.79 | 19.84 | 20.50 |
| | | 12 | 6 | 19.93 | 19.85 | 19.82 | 20.50 |
| | | 12 | 13 | 19.99 | 19.77 | 19.78 | 20.50 |
| | | 25 | 0 | 19.90 | 19.83 | 19.81 | 20.50 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | Tune-up Limit |
| | | | | 26740/819 | 26865/831.5 | 26990/844 | |
| **10MHz** | QPSK | 1 | 0 | 22.53 | 22.55 | 22.48 | 23.50 |
| | | 1 | 25 | 22.67 | 22.63 | 22.60 | 23.50 |
| | | 1 | 49 | 22.58 | 22.51 | 22.51 | 23.50 |
| | | 25 | 0 | 21.70 | 21.68 | 21.66 | 22.50 |
| | | 25 | 13 | 21.74 | 21.73 | 21.68 | 22.50 |
| | | 25 | 25 | 21.84 | 21.64 | 21.62 | 22.50 |
| | | 50 | 0 | 21.77 | 21.65 | 21.63 | 22.50 |
| | 16QAM | 1 | 0 | 21.96 | 21.84 | 21.84 | 22.50 |
| | | 1 | 25 | 21.98 | 21.91 | 21.94 | 22.50 |
| | | 1 | 49 | 21.92 | 21.89 | 21.86 | 22.50 |
| | | 25 | 0 | 20.72 | 20.71 | 20.70 | 21.50 |
| | | 25 | 13 | 20.78 | 20.71 | 20.72 | 21.50 |
| | | 25 | 25 | 20.87 | 20.67 | 20.69 | 21.50 |
| | | 50 | 0 | 20.82 | 20.69 | 20.72 | 21.50 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | 64QAM | 1 | 0 | 20.80 | 20.81 | 20.79 | 21.50 |
| | | 1 | 25 | 20.94 | 20.83 | 20.94 | 21.50 |
| | | 1 | 49 | 20.90 | 20.84 | 20.84 | 21.50 |
| | | 25 | 0 | 19.83 | 19.81 | 19.85 | 20.50 |
| | | 25 | 13 | 19.91 | 19.82 | 19.81 | 20.50 |
| | | 25 | 25 | 19.97 | 19.73 | 19.75 | 20.50 |
| | | 50 | 0 | 19.87 | 19.78 | 19.77 | 20.50 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | Tune-up Limit |
| | | | | 26765/821.5 | 26865/831.5 | 26965/841.5 | |
| **15MHz** | QPSK | 1 | 0 | 22.50 | 22.51 | 22.45 | 23.50 |
| | | 1 | 38 | **22.66** | **22.59** | **22.58** | 23.50 |
| | | 1 | 74 | 22.56 | 22.50 | 22.48 | 23.50 |
| | | 36 | 0 | 21.67 | 21.63 | 21.62 | 22.50 |
| | | 36 | 18 | 21.72 | **21.69** | **21.65** | 22.50 |
| | | 36 | 39 | **21.81** | 21.59 | 21.58 | 22.50 |
| | | 75 | 0 | **21.74** | 21.60 | 21.59 | 22.50 |
| | 16QAM | 1 | 0 | 21.76 | 21.80 | 21.79 | 22.50 |
| | | 1 | 38 | 21.94 | 21.89 | 21.90 | 22.50 |
| | | 1 | 74 | 21.90 | 21.86 | 21.84 | 22.50 |
| | | 36 | 0 | 20.69 | 20.67 | 20.67 | 21.50 |
| | | 36 | 18 | 20.75 | 20.69 | 20.69 | 21.50 |
| | | 36 | 39 | 20.84 | 20.62 | 20.65 | 21.50 |
| | | 75 | 0 | 20.80 | 20.65 | 20.69 | 21.50 |
| | 64QAM | 1 | 0 | 20.78 | 20.77 | 20.74 | 21.50 |
| | | 1 | 38 | 20.90 | 20.81 | 20.90 | 21.50 |
| | | 1 | 74 | 20.84 | 20.78 | 20.78 | 21.50 |
| | | 36 | 0 | 19.78 | 19.73 | 19.78 | 20.50 |
| | | 36 | 18 | 19.87 | 19.78 | 19.75 | 20.50 |
| | | 36 | 39 | 19.94 | 19.68 | 19.71 | 20.50 |
| | | 75 | 0 | 19.85 | 19.74 | 19.74 | 20.50 |

| **LTE FDD Band 28A** | | | | **Conducted Power(dBm)** | | | Tune-up Limit |
|---|---|---|---|---|---|---|---|
| **Bandwidth** | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | |
| | | | | 27225/704.5 | 27360/718 | 27495/731.5 | |
| **3MHz** | QPSK | 1 | 0 | 22.56 | 22.99 | 22.11 | 24.00 |
| | | 1 | 7 | 22.99 | 23.61 | 22.36 | 24.00 |
| | | 1 | 14 | 22.79 | 23.09 | 23.05 | 24.00 |
| | | 8 | 0 | 21.98 | 22.41 | 22.36 | 23.00 |
| | | 8 | 4 | 22.07 | 22.43 | 22.52 | 23.00 |
| | | 8 | 7 | 22.19 | 22.44 | 22.44 | 23.00 |
| | | 15 | 0 | 22.04 | 22.37 | 22.44 | 23.00 |
| | 16QAM | 1 | 0 | 22.30 | 21.92 | 21.90 | 23.00 |
| | | 1 | 7 | 22.28 | 22.27 | 22.29 | 23.00 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | 1 | 14 | 21.99 | 22.07 | 22.04 | 23.00 |
| | | 8 | 0 | 20.99 | 21.05 | 21.02 | 22.00 |
| | | 8 | 4 | 21.04 | 21.10 | 21.08 | 22.00 |
| | | 8 | 7 | 21.08 | 21.18 | 21.13 | 22.00 |
| | | 15 | 0 | 21.03 | 21.15 | 21.12 | 22.00 |
| | 64QAM | 1 | 0 | 21.14 | 21.04 | 21.06 | 22.00 |
| | | 1 | 7 | 21.53 | 21.42 | 21.42 | 22.00 |
| | | 1 | 14 | 21.30 | 21.23 | 21.24 | 22.00 |
| | | 8 | 0 | 20.21 | 20.23 | 20.24 | 21.00 |
| | | 8 | 4 | 20.25 | 20.22 | 20.24 | 21.00 |
| | | 8 | 7 | 20.39 | 20.37 | 20.33 | 21.00 |
| | | 15 | 0 | 20.27 | 20.32 | 20.31 | 21.00 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | Tune-up Limit |
| | | | | 27235/705.5 | 27360/718 | 27485/730.5 | |
| **5MHz** | QPSK | 1 | 0 | 22.53 | 22.97 | 22.07 | 24.00 |
| | | 1 | 13 | 22.97 | 23.57 | 22.33 | 24.00 |
| | | 1 | 24 | 22.76 | 23.04 | 23.01 | 24.00 |
| | | 12 | 0 | 21.95 | 22.36 | 22.32 | 23.00 |
| | | 12 | 6 | 22.05 | 22.39 | 22.47 | 23.00 |
| | | 12 | 13 | 22.17 | 22.42 | 22.40 | 23.00 |
| | | 25 | 0 | 22.04 | 22.36 | 22.42 | 23.00 |
| | 16QAM | 1 | 0 | 22.27 | 21.88 | 21.87 | 23.00 |
| | | 1 | 13 | 22.25 | 22.25 | 22.26 | 23.00 |
| | | 1 | 24 | 21.96 | 22.05 | 22.00 | 23.00 |
| | | 12 | 0 | 20.97 | 21.01 | 20.99 | 22.00 |
| | | 12 | 6 | 21.01 | 21.05 | 21.04 | 22.00 |
| | | 12 | 13 | 21.05 | 21.13 | 21.09 | 22.00 |
| | | 25 | 0 | 21.01 | 21.11 | 21.07 | 22.00 |
| | 64QAM | 1 | 0 | 21.11 | 21.04 | 21.03 | 22.00 |
| | | 1 | 13 | 21.50 | 21.44 | 21.39 | 22.00 |
| | | 1 | 24 | 21.31 | 21.21 | 21.20 | 22.00 |
| | | 12 | 0 | 20.19 | 20.19 | 20.25 | 21.00 |
| | | 12 | 6 | 20.22 | 20.17 | 20.20 | 21.00 |
| | | 12 | 13 | 20.36 | 20.32 | 20.29 | 21.00 |
| | | 25 | 0 | 20.25 | 20.28 | 20.26 | 21.00 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | Tune-up Limit |
| | | | | 27260/708 | 27360/718 | 27460/728 | |
| **10MHz** | QPSK | 1 | 0 | 22.55 | 22.98 | 22.10 | 24.00 |
| | | 1 | 25 | 23.00 | 23.62 | 22.37 | 24.00 |
| | | 1 | 49 | 22.78 | 23.08 | 23.04 | 24.00 |
| | | 25 | 0 | 21.98 | 22.41 | 22.36 | 23.00 |
| | | 25 | 13 | 22.08 | 22.44 | 22.51 | 23.00 |
| | | 25 | 25 | 22.19 | 22.46 | 22.45 | 23.00 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | 50 | 0 | 22.08 | 22.38 | 22.46 | 23.00 |
| | 16QAM | 1 | 0 | 22.29 | 21.91 | 21.89 | 23.00 |
| | | 1 | 25 | 22.28 | 22.29 | 22.29 | 23.00 |
| | | 1 | 49 | 21.99 | 22.07 | 22.03 | 23.00 |
| | | 25 | 0 | 21.00 | 21.06 | 21.03 | 22.00 |
| | | 25 | 13 | 21.03 | 21.09 | 21.07 | 22.00 |
| | | 25 | 25 | 21.08 | 21.18 | 21.13 | 22.00 |
| | | 50 | 0 | 21.04 | 21.16 | 21.11 | 22.00 |
| | 64QAM | 1 | 0 | 21.13 | 21.03 | 21.05 | 22.00 |
| | | 1 | 25 | 21.53 | 21.44 | 21.42 | 22.00 |
| | | 1 | 49 | 21.30 | 21.23 | 21.23 | 22.00 |
| | | 25 | 0 | 20.22 | 20.24 | 20.25 | 21.00 |
| | | 25 | 13 | 20.24 | 20.21 | 20.23 | 21.00 |
| | | 25 | 25 | 20.39 | 20.37 | 20.33 | 21.00 |
| | | 50 | 0 | 20.28 | 20.33 | 20.30 | 21.00 |

| **Bandwidth** | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | Tune-up Limit |
|---|---|---|---|---|---|---|---|
| | | | | 27285/710.5 | 27360/718 | 27435/725.5 | |
| **15MHz** | QPSK | 1 | 0 | 22.54 | 22.94 | 22.08 | 24.00 |
| | | 1 | 38 | 22.98 | 23.61 | 22.34 | 24.00 |
| | | 1 | 74 | 22.75 | 23.03 | 23.00 | 24.00 |
| | | 36 | 0 | 21.96 | 22.37 | 22.33 | 23.00 |
| | | 36 | 18 | 22.05 | 22.39 | 22.47 | 23.00 |
| | | 36 | 39 | 22.16 | 22.43 | 22.41 | 23.00 |
| | | 75 | 0 | 22.06 | 22.34 | 22.41 | 23.00 |
| | 16QAM | 1 | 0 | 22.24 | 21.89 | 21.87 | 23.00 |
| | | 1 | 38 | 22.26 | 22.26 | 22.27 | 23.00 |
| | | 1 | 74 | 21.96 | 22.03 | 22.00 | 23.00 |
| | | 36 | 0 | 20.97 | 21.04 | 21.00 | 22.00 |
| | | 36 | 18 | 21.00 | 21.04 | 21.03 | 22.00 |
| | | 36 | 39 | 21.06 | 21.14 | 21.10 | 22.00 |
| | | 75 | 0 | 21.01 | 21.11 | 21.07 | 22.00 |
| | 64QAM | 1 | 0 | 21.08 | 21.01 | 21.03 | 22.00 |
| | | 1 | 38 | 21.51 | 21.41 | 21.40 | 22.00 |
| | | 1 | 74 | 21.31 | 21.22 | 21.24 | 22.00 |
| | | 36 | 0 | 20.21 | 20.26 | 20.26 | 21.00 |
| | | 36 | 18 | 20.22 | 20.18 | 20.22 | 21.00 |
| | | 36 | 39 | 20.37 | 20.33 | 20.30 | 21.00 |
| | | 75 | 0 | 20.25 | 20.28 | 20.26 | 21.00 |

| **Bandwidth** | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | Tune-up Limit |
|---|---|---|---|---|---|---|---|
| | | | | 27310/713 | 27360/718 | 27410/723 | |
| **20MHz** | QPSK | 1 | 0 | 22.51 | 22.90 | 22.05 | 24.00 |
| | | 1 | 50 | **22.97** | **23.57** | 22.32 | 24.00 |
| | | 1 | 99 | 22.73 | 23.02 | **22.97** | 24.00 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | 50 | 0 | 21.93 | 22.32 | 22.29 | 23.00 |
| | | 50 | 25 | 22.03 | 22.35 | **22.44** | 23.00 |
| | | 50 | 50 | **22.13** | **22.38** | 22.37 | 23.00 |
| | | 100 | 0 | 22.03 | 22.29 | **22.37** | 23.00 |
| | 16QAM | 1 | 0 | 21.80 | 21.85 | 21.82 | 23.00 |
| | | 1 | 50 | 22.22 | 22.24 | 22.23 | 23.00 |
| | | 1 | 99 | 21.94 | 22.00 | 21.98 | 23.00 |
| | | 50 | 0 | 20.94 | 21.00 | 20.97 | 22.00 |
| | | 50 | 25 | 20.97 | 21.02 | 21.00 | 22.00 |
| | | 50 | 50 | 21.03 | 21.09 | 21.06 | 22.00 |
| | | 100 | 0 | 20.99 | 21.07 | 21.04 | 22.00 |
| | 64QAM | 1 | 0 | 21.06 | 20.97 | 20.98 | 22.00 |
| | | 1 | 50 | 21.47 | 21.39 | 21.36 | 22.00 |
| | | 1 | 99 | 21.25 | 21.16 | 21.18 | 22.00 |
| | | 50 | 0 | 20.16 | 20.18 | 20.19 | 21.00 |
| | | 50 | 25 | 20.18 | 20.14 | 20.16 | 21.00 |
| | | 50 | 50 | 20.34 | 20.28 | 20.26 | 21.00 |
| | | 100 | 0 | 20.23 | 20.24 | 20.23 | 21.00 |

| LTE FDD Band 28B | | | | Conducted Power(dBm) | | | Tune-up Limit |
|---|---|---|---|---|---|---|---|
| Bandwidth | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | |
| | | | | 27225/704.5 | 27375/719.5 | 27645/746.5 | |
| **3MHz** | QPSK | 1 | 0 | 22.56 | 23.07 | 22.56 | 24.00 |
| | | 1 | 7 | 22.99 | 23.45 | 23.00 | 24.00 |
| | | 1 | 14 | 22.79 | 23.09 | 22.64 | 24.00 |
| | | 8 | 0 | 21.98 | 22.39 | 22.03 | 23.00 |
| | | 8 | 4 | 22.07 | 22.36 | 22.01 | 23.00 |
| | | 8 | 7 | 22.19 | 22.43 | 22.12 | 23.00 |
| | | 15 | 0 | 22.04 | 22.38 | 22.05 | 23.00 |
| | 16QAM | 1 | 0 | 22.30 | 21.92 | 21.91 | 23.00 |
| | | 1 | 7 | 22.28 | 22.26 | 22.29 | 23.00 |
| | | 1 | 14 | 21.99 | 22.01 | 21.97 | 23.00 |
| | | 8 | 0 | 20.99 | 20.94 | 20.92 | 22.00 |
| | | 8 | 4 | 21.04 | 21.00 | 20.98 | 22.00 |
| | | 8 | 7 | 21.08 | 21.16 | 21.10 | 22.00 |
| | | 15 | 0 | 21.03 | 21.10 | 21.06 | 22.00 |
| | 64QAM | 1 | 0 | 21.14 | 21.06 | 21.02 | 22.00 |
| | | 1 | 7 | 21.53 | 21.54 | 21.40 | 22.00 |
| | | 1 | 14 | 21.30 | 21.25 | 21.12 | 22.00 |
| | | 8 | 0 | 20.21 | 20.23 | 20.17 | 21.00 |
| | | 8 | 4 | 20.25 | 20.25 | 20.22 | 21.00 |
| | | 8 | 7 | 20.39 | 20.31 | 20.31 | 21.00 |
| | | 15 | 0 | 20.27 | 20.24 | 20.29 | 21.00 |

| Bandwidth | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | Tune-up Limit |
|---|---|---|---|---|---|---|---|
| | | | | 27235/705.5 | 27385/720.5 | 27635/745.5 | |
| 5MHz | QPSK | 1 | 0 | 22.53 | 23.05 | 22.52 | 24.00 |
| | | 1 | 13 | 22.97 | 23.41 | 22.97 | 24.00 |
| | | 1 | 24 | 22.76 | 23.04 | 22.60 | 24.00 |
| | | 12 | 0 | 21.95 | 22.34 | 21.99 | 23.00 |
| | | 12 | 6 | 22.05 | 22.32 | 21.96 | 23.00 |
| | | 12 | 13 | 22.17 | 22.41 | 22.08 | 23.00 |
| | | 25 | 0 | 22.04 | 22.37 | 22.03 | 23.00 |
| | 16QAM | 1 | 0 | 22.27 | 21.88 | 21.88 | 23.00 |
| | | 1 | 13 | 22.25 | 22.24 | 22.26 | 23.00 |
| | | 1 | 24 | 21.96 | 21.99 | 21.93 | 23.00 |
| | | 12 | 0 | 20.97 | 20.90 | 20.89 | 22.00 |
| | | 12 | 6 | 21.01 | 20.95 | 20.94 | 22.00 |
| | | 12 | 13 | 21.05 | 21.11 | 21.06 | 22.00 |
| | | 25 | 0 | 21.01 | 21.06 | 21.01 | 22.00 |
| | 64QAM | 1 | 0 | 21.11 | 21.06 | 20.99 | 22.00 |
| | | 1 | 13 | 21.50 | 21.56 | 21.37 | 22.00 |
| | | 1 | 24 | 21.31 | 21.23 | 21.08 | 22.00 |
| | | 12 | 0 | 20.19 | 20.19 | 20.18 | 21.00 |
| | | 12 | 6 | 20.22 | 20.20 | 20.18 | 21.00 |
| | | 12 | 13 | 20.36 | 20.26 | 20.27 | 21.00 |
| | | 25 | 0 | 20.25 | 20.20 | 20.24 | 21.00 |

| Bandwidth | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | Tune-up Limit |
|---|---|---|---|---|---|---|---|
| | | | | 27260/708 | 27410/723 | 27610/743 | |
| 10MHz | QPSK | 1 | 0 | 22.55 | 23.06 | 22.55 | 24.00 |
| | | 1 | 25 | 23.00 | 23.46 | 23.01 | 24.00 |
| | | 1 | 49 | 22.78 | 23.08 | 22.63 | 24.00 |
| | | 25 | 0 | 21.98 | 22.39 | 22.03 | 23.00 |
| | | 25 | 13 | 22.08 | 22.37 | 22.00 | 23.00 |
| | | 25 | 25 | 22.19 | 22.45 | 22.13 | 23.00 |
| | | 50 | 0 | 22.08 | 22.39 | 22.07 | 23.00 |
| | 16QAM | 1 | 0 | 22.29 | 21.91 | 21.90 | 23.00 |
| | | 1 | 25 | 22.28 | 22.28 | 22.29 | 23.00 |
| | | 1 | 49 | 21.99 | 22.01 | 21.96 | 23.00 |
| | | 25 | 0 | 21.00 | 20.95 | 20.93 | 22.00 |
| | | 25 | 13 | 21.03 | 20.99 | 20.97 | 22.00 |
| | | 25 | 25 | 21.08 | 21.16 | 21.10 | 22.00 |
| | | 50 | 0 | 21.04 | 21.11 | 21.05 | 22.00 |
| | 64QAM | 1 | 0 | 21.13 | 21.05 | 21.01 | 22.00 |
| | | 1 | 25 | 21.53 | 21.56 | 21.40 | 22.00 |
| | | 1 | 49 | 21.30 | 21.25 | 21.11 | 22.00 |
| | | 25 | 0 | 20.22 | 20.24 | 20.18 | 21.00 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | 25 | 13 | 20.24 | 20.24 | 20.21 | 21.00 |
| | | 25 | 25 | 20.39 | 20.31 | 20.31 | 21.00 |
| | | 50 | 0 | 20.28 | 20.25 | 20.28 | 21.00 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | Tune-up Limit |
| | | | | 27285/710.5 | 27435/725.5 | 27585/740.5 | |
| **15MHz** | QPSK | 1 | 0 | 22.54 | 23.02 | 22.53 | 24.00 |
| | | 1 | 38 | 22.98 | 23.45 | 22.98 | 24.00 |
| | | 1 | 74 | 22.75 | 23.03 | 22.59 | 24.00 |
| | | 36 | 0 | 21.96 | 22.35 | 22.00 | 23.00 |
| | | 36 | 18 | 22.05 | 22.32 | 21.96 | 23.00 |
| | | 36 | 39 | 22.16 | 22.42 | 22.09 | 23.00 |
| | | 75 | 0 | 22.06 | 22.35 | 22.02 | 23.00 |
| | 16QAM | 1 | 0 | 22.24 | 21.89 | 21.88 | 23.00 |
| | | 1 | 38 | 22.26 | 22.25 | 22.27 | 23.00 |
| | | 1 | 74 | 21.96 | 21.97 | 21.93 | 23.00 |
| | | 36 | 0 | 20.97 | 20.93 | 20.90 | 22.00 |
| | | 36 | 18 | 21.00 | 20.94 | 20.93 | 22.00 |
| | | 36 | 39 | 21.06 | 21.12 | 21.07 | 22.00 |
| | | 75 | 0 | 21.01 | 21.06 | 21.01 | 22.00 |
| | 64QAM | 1 | 0 | 21.08 | 21.03 | 20.99 | 22.00 |
| | | 1 | 38 | 21.51 | 21.53 | 21.38 | 22.00 |
| | | 1 | 74 | 21.31 | 21.24 | 21.12 | 22.00 |
| | | 36 | 0 | 20.21 | 20.26 | 20.19 | 21.00 |
| | | 36 | 18 | 20.22 | 20.21 | 20.20 | 21.00 |
| | | 36 | 39 | 20.37 | 20.27 | 20.28 | 21.00 |
| | | 75 | 0 | 20.25 | 20.20 | 20.24 | 21.00 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | Tune-up Limit |
| | | | | 27310/713 | 27460/728 | 27560/738 | |
| **20MHz** | QPSK | 1 | 0 | 22.51 | 22.98 | 22.50 | 24.00 |
| | | 1 | 50 | **22.97** | **23.41** | **22.96** | 24.00 |
| | | 1 | 99 | 22.73 | 23.02 | 22.56 | 24.00 |
| | | 50 | 0 | 21.93 | 22.30 | 21.96 | 23.00 |
| | | 50 | 25 | 22.03 | 22.28 | 21.93 | 23.00 |
| | | 50 | 50 | **22.13** | **22.37** | **22.05** | 23.00 |
| | | 100 | 0 | 22.03 | **22.30** | 21.98 | 23.00 |
| | 16QAM | 1 | 0 | 21.80 | 21.85 | 21.83 | 23.00 |
| | | 1 | 50 | 22.22 | 22.23 | 22.23 | 23.00 |
| | | 1 | 99 | 21.94 | 21.94 | 21.91 | 23.00 |
| | | 50 | 0 | 20.94 | 20.89 | 20.87 | 22.00 |
| | | 50 | 25 | 20.97 | 20.92 | 20.90 | 22.00 |
| | | 50 | 50 | 21.03 | 21.07 | 21.03 | 22.00 |
| | | 100 | 0 | 20.99 | 21.02 | 20.98 | 22.00 |
| | 64QAM | 1 | 0 | 21.06 | 20.99 | 20.94 | 22.00 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | 1 | 50 | 21.47 | 21.51 | 21.34 | 22.00 |
| | | 1 | 99 | 21.25 | 21.18 | 21.06 | 22.00 |
| | | 50 | 0 | 20.16 | 20.18 | 20.12 | 21.00 |
| | | 50 | 25 | 20.18 | 20.17 | 20.14 | 21.00 |
| | | 50 | 50 | 20.34 | 20.22 | 20.24 | 21.00 |
| | | 100 | 0 | 20.23 | 20.16 | 20.21 | 21.00 |

| LTE TDD Band 38 | | | | Conducted Power(dBm) | | | Tune-up Limit |
|---|---|---|---|---|---|---|---|
| Bandwidth | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | |
| | | | | 37775/2572.5 | 38000/2595 | 38225/2617.5 | |
| 5MHz | QPSK | 1 | 0 | 22.39 | 22.49 | 22.48 | 23.50 |
| | | 1 | 13 | 22.75 | 22.77 | 22.79 | 23.50 |
| | | 1 | 24 | 22.51 | 22.47 | 22.43 | 23.50 |
| | | 12 | 0 | 21.61 | 21.61 | 21.61 | 22.50 |
| | | 12 | 6 | 21.65 | 21.73 | 21.78 | 22.50 |
| | | 12 | 13 | 21.70 | 21.74 | 21.70 | 22.50 |
| | | 25 | 0 | 21.64 | 21.71 | 21.68 | 22.50 |
| | 16QAM | 1 | 0 | 22.01 | 21.68 | 21.66 | 22.50 |
| | | 1 | 13 | 21.99 | 21.99 | 22.06 | 22.50 |
| | | 1 | 24 | 21.68 | 21.69 | 21.70 | 22.50 |
| | | 12 | 0 | 20.66 | 20.67 | 20.64 | 21.50 |
| | | 12 | 6 | 20.70 | 20.68 | 20.78 | 21.50 |
| | | 12 | 13 | 20.73 | 20.79 | 20.78 | 21.50 |
| | | 25 | 0 | 20.69 | 20.78 | 20.74 | 21.50 |
| | 64QAM | 1 | 0 | 20.73 | 20.77 | 20.78 | 21.50 |
| | | 1 | 13 | 21.05 | 21.14 | 21.05 | 21.50 |
| | | 1 | 24 | 20.80 | 20.77 | 20.77 | 21.50 |
| | | 12 | 0 | 19.86 | 19.90 | 19.94 | 20.50 |
| | | 12 | 6 | 20.00 | 19.96 | 20.03 | 20.50 |
| | | 12 | 13 | 19.95 | 20.04 | 19.96 | 20.50 |
| | | 25 | 0 | 19.90 | 19.99 | 20.02 | 20.50 |
| Bandwidth | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | Tune-up Limit |
| | | | | 37800/2575 | 38000/2595 | 38200/2615 | |
| 10MHz | QPSK | 1 | 0 | 22.41 | 22.50 | 22.51 | 23.50 |
| | | 1 | 25 | 22.78 | 22.82 | 22.83 | 23.50 |
| | | 1 | 49 | 22.53 | 22.51 | 22.46 | 23.50 |
| | | 25 | 0 | 21.64 | 21.66 | 21.65 | 22.50 |
| | | 25 | 13 | 21.68 | 21.78 | 21.82 | 22.50 |
| | | 25 | 25 | 21.72 | 21.78 | 21.75 | 22.50 |
| | | 50 | 0 | 21.68 | 21.73 | 21.72 | 22.50 |
| | 16QAM | 1 | 0 | 22.03 | 21.71 | 21.68 | 22.50 |
| | | 1 | 25 | 22.02 | 22.03 | 22.09 | 22.50 |
| | | 1 | 49 | 21.71 | 21.71 | 21.73 | 22.50 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | 25 | 0 | 20.69 | 20.72 | 20.68 | 21.50 |
| | | 25 | 13 | 20.72 | 20.72 | 20.81 | 21.50 |
| | | 25 | 25 | 20.76 | 20.84 | 20.82 | 21.50 |
| | | 50 | 0 | 20.72 | 20.83 | 20.78 | 21.50 |
| | | 1 | 0 | 20.75 | 20.76 | 20.80 | 21.50 |
| | | 1 | 25 | 21.08 | 21.14 | 21.08 | 21.50 |
| | | 1 | 49 | 20.79 | 20.79 | 20.80 | 21.50 |
| | 64QAM | 25 | 0 | 19.89 | 19.95 | 19.94 | 20.50 |
| | | 25 | 13 | 20.02 | 20.00 | 20.06 | 20.50 |
| | | 25 | 25 | 19.98 | 20.09 | 20.00 | 20.50 |
| | | 50 | 0 | 19.93 | 20.04 | 20.06 | 20.50 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | Tune-up Limit |
| | | | | 37825/2577.5 | 38000/2595 | 38175/2612.5 | |
| | | 1 | 0 | 22.40 | 22.46 | 22.49 | 23.50 |
| | | 1 | 38 | 22.76 | 22.81 | 22.80 | 23.50 |
| | | 1 | 74 | 22.50 | 22.46 | 22.42 | 23.50 |
| | QPSK | 36 | 0 | 21.62 | 21.62 | 21.62 | 22.50 |
| | | 36 | 18 | 21.65 | 21.73 | 21.78 | 22.50 |
| | | 36 | 39 | 21.69 | 21.75 | 21.71 | 22.50 |
| | | 75 | 0 | 21.66 | 21.69 | 21.67 | 22.50 |
| | | 1 | 0 | 21.98 | 21.69 | 21.66 | 22.50 |
| | | 1 | 38 | 22.00 | 22.00 | 22.07 | 22.50 |
| | | 1 | 74 | 21.68 | 21.67 | 21.70 | 22.50 |
| **15MHz** | 16QAM | 36 | 0 | 20.66 | 20.70 | 20.65 | 21.50 |
| | | 36 | 18 | 20.69 | 20.67 | 20.77 | 21.50 |
| | | 36 | 39 | 20.74 | 20.80 | 20.79 | 21.50 |
| | | 75 | 0 | 20.69 | 20.78 | 20.74 | 21.50 |
| | | 1 | 0 | 20.70 | 20.74 | 20.78 | 21.50 |
| | | 1 | 38 | 21.06 | 21.11 | 21.06 | 21.50 |
| | | 1 | 74 | 20.80 | 20.78 | 20.81 | 21.50 |
| | 64QAM | 36 | 0 | 19.88 | 19.97 | 19.95 | 20.50 |
| | | 36 | 18 | 20.00 | 19.97 | 20.05 | 20.50 |
| | | 36 | 39 | 19.96 | 20.05 | 19.97 | 20.50 |
| | | 75 | 0 | 19.90 | 19.99 | 20.02 | 20.50 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | Tune-up Limit |
| | | | | 37850/2580 | 38000/2595 | 38150/2610 | |
| | | 1 | 0 | 22.37 | 22.42 | 22.46 | 23.50 |
| | | 1 | 50 | **22.75** | **22.77** | **22.78** | 23.50 |
| | | 1 | 99 | 22.48 | 22.45 | 22.39 | 23.50 |
| **20MHz** | QPSK | 50 | 0 | 21.59 | 21.57 | 21.58 | 22.50 |
| | | 50 | 25 | 21.63 | 21.69 | **21.75** | 22.50 |
| | | 50 | 50 | **21.66** | **21.70** | 21.67 | 22.50 |
| | | 100 | 0 | 21.63 | **21.64** | 21.63 | 22.50 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | 16QAM | 1 | 0 | 21.61 | 21.65 | 21.61 | 22.50 |
| | | 1 | 50 | 21.96 | 21.98 | 22.03 | 22.50 |
| | | 1 | 99 | 21.66 | 21.64 | 21.68 | 22.50 |
| | | 50 | 0 | 20.63 | 20.66 | 20.62 | 21.50 |
| | | 50 | 25 | 20.66 | 20.65 | 20.74 | 21.50 |
| | | 50 | 50 | 20.71 | 20.75 | 20.75 | 21.50 |
| | | 100 | 0 | 20.67 | 20.74 | 20.71 | 21.50 |
| | 64QAM | 1 | 0 | 20.68 | 20.70 | 20.73 | 21.50 |
| | | 1 | 50 | 21.02 | 21.09 | 21.02 | 21.50 |
| | | 1 | 99 | 20.74 | 20.72 | 20.75 | 21.50 |
| | | 50 | 0 | 19.83 | 19.89 | 19.88 | 20.50 |
| | | 50 | 25 | 19.96 | 19.93 | 19.99 | 20.50 |
| | | 50 | 50 | 19.93 | 20.00 | 19.93 | 20.50 |
| | | 100 | 0 | 19.88 | 19.95 | 19.99 | 20.50 |

| LTE TDD Band 40 | | | | Conducted Power(dBm) | | | Tune-up Limit |
|---|---|---|---|---|---|---|---|
| **Bandwidth** | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | |
| | | | | 38675/2302.5 | 39150/2350 | 39625/2397.5 | |
| **5MHz** | QPSK | 1 | 0 | 23.41 | 23.29 | 23.28 | 24.00 |
| | | 1 | 13 | 23.28 | 23.27 | 23.17 | 24.00 |
| | | 1 | 24 | 23.18 | 23.28 | 23.05 | 24.00 |
| | | 12 | 0 | 22.30 | 22.23 | 22.11 | 23.00 |
| | | 12 | 6 | 22.29 | 22.29 | 22.20 | 23.00 |
| | | 12 | 13 | 22.27 | 22.26 | 21.83 | 23.00 |
| | | 25 | 0 | 22.31 | 22.27 | 22.23 | 23.00 |
| | 16QAM | 1 | 0 | 22.52 | 22.45 | 22.49 | 23.00 |
| | | 1 | 13 | 22.50 | 22.48 | 22.53 | 23.00 |
| | | 1 | 24 | 22.34 | 22.40 | 22.39 | 23.00 |
| | | 12 | 0 | 21.42 | 21.42 | 21.46 | 22.00 |
| | | 12 | 6 | 21.42 | 21.43 | 21.47 | 22.00 |
| | | 12 | 13 | 21.41 | 21.47 | 21.48 | 22.00 |
| | | 25 | 0 | 21.40 | 21.43 | 21.46 | 22.00 |
| | 64QAM | 1 | 0 | 21.10 | 21.00 | 20.89 | 22.00 |
| | | 1 | 13 | 21.14 | 21.02 | 20.87 | 22.00 |
| | | 1 | 24 | 21.02 | 20.84 | 20.73 | 22.00 |
| | | 12 | 0 | 20.12 | 19.91 | 19.97 | 21.00 |
| | | 12 | 6 | 20.17 | 20.01 | 19.93 | 21.00 |
| | | 12 | 13 | 20.11 | 19.95 | 19.83 | 21.00 |
| | | 25 | 0 | 20.07 | 19.88 | 19.86 | 21.00 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | Tune-up Limit |
| | | | | 38700/2305 | 39150/2350 | 39600/2395 | |
| **10MHz** | QPSK | 1 | 0 | **23.39** | 23.22 | **23.26** | 24.00 |
| | | 1 | 25 | 23.28 | **23.27** | 23.16 | 24.00 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | 1 | 49 | 23.15 | 23.26 | 23.01 | 24.00 |
| | | 25 | 0 | **22.28** | 22.19 | 22.08 | 23.00 |
| | | 25 | 13 | 22.27 | **22.25** | **22.17** | 23.00 |
| | | 25 | 25 | 22.23 | 22.22 | 21.80 | 23.00 |
| | | 50 | 0 | **22.30** | 22.20 | 22.18 | 23.00 |
| | 16QAM | 1 | 0 | 22.40 | 22.42 | 22.44 | 23.00 |
| | | 1 | 25 | 22.47 | 22.47 | 22.50 | 23.00 |
| | | 1 | 49 | 22.32 | 22.35 | 22.37 | 23.00 |
| | | 25 | 0 | 21.39 | 21.41 | 21.44 | 22.00 |
| | | 25 | 13 | 21.38 | 21.40 | 21.43 | 22.00 |
| | | 25 | 25 | 21.39 | 21.43 | 21.45 | 22.00 |
| | | 50 | 0 | 21.38 | 21.39 | 21.43 | 22.00 |
| | 64QAM | 1 | 0 | 21.05 | 20.93 | 20.84 | 22.00 |
| | | 1 | 25 | 21.11 | 20.97 | 20.84 | 22.00 |
| | | 1 | 49 | 20.96 | 20.79 | 20.71 | 22.00 |
| | | 25 | 0 | 20.09 | 19.90 | 19.91 | 21.00 |
| | | 25 | 13 | 20.13 | 19.98 | 19.89 | 21.00 |
| | | 25 | 25 | 20.09 | 19.91 | 19.80 | 21.00 |
| | | 50 | 0 | 20.05 | 19.84 | 19.83 | 21.00 |

| LTE TDD Band 41 | | | | Conducted Power(dBm) | | | | Tune-up Limit |
|---|---|---|---|---|---|---|---|---|
| Bandwidth | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | | |
| | | | | 40065/2537.5 | 40515/2582.5 | 40965/2627.5 | 41415/2672.5 | |
| 5MHz | QPSK | 1 | 0 | 22.41 | 22.51 | 22.44 | 22.59 | 24.00 |
| | | 1 | 13 | 22.84 | 22.78 | 22.90 | 22.87 | 24.00 |
| | | 1 | 24 | 22.59 | 22.64 | 22.64 | 22.68 | 24.00 |
| | | 12 | 0 | 21.65 | 21.66 | 21.77 | 21.97 | 23.00 |
| | | 12 | 6 | 21.79 | 21.81 | 21.87 | 22.05 | 23.00 |
| | | 12 | 13 | 21.83 | 21.82 | 21.81 | 22.17 | 23.00 |
| | | 25 | 0 | 21.63 | 21.72 | 21.76 | 21.79 | 23.00 |
| | 16QAM | 1 | 0 | 22.01 | 21.68 | 21.84 | 22.02 | 23.00 |
| | | 1 | 13 | 21.99 | 21.94 | 22.02 | 22.00 | 23.00 |
| | | 1 | 24 | 21.90 | 21.88 | 21.90 | 21.87 | 23.00 |
| | | 12 | 0 | 20.73 | 20.66 | 20.73 | 20.71 | 22.00 |
| | | 12 | 6 | 20.85 | 20.79 | 20.86 | 20.83 | 22.00 |
| | | 12 | 13 | 20.90 | 20.86 | 20.90 | 20.87 | 22.00 |
| | | 25 | 0 | 20.85 | 20.82 | 20.86 | 20.82 | 22.00 |
| | 64QAM | 1 | 0 | 20.77 | 20.73 | 20.82 | 20.78 | 22.00 |
| | | 1 | 13 | 21.12 | 21.13 | 21.12 | 21.10 | 22.00 |
| | | 1 | 24 | 20.74 | 20.75 | 20.77 | 20.79 | 22.00 |
| | | 12 | 0 | 19.89 | 19.95 | 19.99 | 20.11 | 21.00 |
| | | 12 | 6 | 20.06 | 20.01 | 20.03 | 20.09 | 21.00 |
| | | 12 | 13 | 20.02 | 20.02 | 20.08 | 20.00 | 21.00 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 25 | 0 | 20.01 | 20.00 | 19.98 | 20.04 | 21.00 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | | Tune-up Limit |
| | | | | 40090/2540 | 40523/2583.3 | 40957/2626.7 | 41390/2670 | |
| **10MHz** | QPSK | 1 | 0 | 22.43 | 22.52 | 22.47 | 22.61 | 24.00 |
| | | 1 | 25 | 22.87 | 22.83 | 22.94 | 22.90 | 24.00 |
| | | 1 | 49 | 22.61 | 22.68 | 22.67 | 22.70 | 24.00 |
| | | 25 | 0 | 21.68 | 21.71 | 21.81 | 22.00 | 23.00 |
| | | 25 | 13 | 21.82 | 21.86 | 21.91 | 22.08 | 23.00 |
| | | 25 | 25 | 21.85 | 21.86 | 21.86 | 22.19 | 23.00 |
| | | 50 | 0 | 21.67 | 21.74 | 21.80 | 21.83 | 23.00 |
| | 16QAM | 1 | 0 | 22.03 | 21.71 | 21.86 | 22.04 | 23.00 |
| | | 1 | 25 | 22.02 | 21.98 | 22.05 | 22.03 | 23.00 |
| | | 1 | 49 | 21.93 | 21.90 | 21.93 | 21.90 | 23.00 |
| | | 25 | 0 | 20.76 | 20.71 | 20.77 | 20.74 | 22.00 |
| | | 25 | 13 | 20.87 | 20.83 | 20.89 | 20.85 | 22.00 |
| | | 25 | 25 | 20.93 | 20.91 | 20.94 | 20.90 | 22.00 |
| | | 50 | 0 | 20.88 | 20.87 | 20.90 | 20.85 | 22.00 |
| | 64QAM | 1 | 0 | 20.79 | 20.72 | 20.84 | 20.80 | 22.00 |
| | | 1 | 25 | 21.15 | 21.13 | 21.15 | 21.13 | 22.00 |
| | | 1 | 49 | 20.73 | 20.77 | 20.80 | 20.78 | 22.00 |
| | | 25 | 0 | 19.92 | 20.00 | 19.99 | 20.14 | 21.00 |
| | | 25 | 13 | 20.08 | 20.05 | 20.06 | 20.11 | 21.00 |
| | | 25 | 25 | 20.05 | 20.07 | 20.12 | 20.03 | 21.00 |
| | | 50 | 0 | 20.04 | 20.05 | 20.02 | 20.07 | 21.00 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | | Tune-up Limit |
| | | | | 40115/2542.5 | 40532/2584.2 | 40948/2625.8 | 41365/2667.5 | |
| **15MHz** | QPSK | 1 | 0 | 22.42 | 22.48 | 22.45 | 22.60 | 24.00 |
| | | 1 | 38 | 22.85 | 22.82 | 22.91 | 22.88 | 24.00 |
| | | 1 | 74 | 22.58 | 22.63 | 22.63 | 22.67 | 24.00 |
| | | 36 | 0 | 21.66 | 21.67 | 21.78 | 21.98 | 23.00 |
| | | 36 | 18 | 21.79 | 21.81 | 21.87 | 22.05 | 23.00 |
| | | 36 | 39 | 21.82 | 21.83 | 21.82 | 22.16 | 23.00 |
| | | 75 | 0 | 21.65 | 21.70 | 21.75 | 21.81 | 23.00 |
| | 16QAM | 1 | 0 | 21.98 | 21.69 | 21.84 | 21.99 | 23.00 |
| | | 1 | 38 | 22.00 | 21.95 | 22.03 | 22.01 | 23.00 |
| | | 1 | 74 | 21.90 | 21.86 | 21.90 | 21.87 | 23.00 |
| | | 36 | 0 | 20.73 | 20.69 | 20.74 | 20.71 | 22.00 |
| | | 36 | 18 | 20.84 | 20.78 | 20.85 | 20.82 | 22.00 |
| | | 36 | 39 | 20.91 | 20.87 | 20.91 | 20.88 | 22.00 |
| | | 75 | 0 | 20.85 | 20.82 | 20.86 | 20.82 | 22.00 |
| | 64QAM | 1 | 0 | 20.74 | 20.70 | 20.82 | 20.75 | 22.00 |
| | | 1 | 38 | 21.13 | 21.10 | 21.13 | 21.11 | 22.00 |
| | | 1 | 74 | 20.74 | 20.76 | 20.81 | 20.79 | 22.00 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 36 | 0 | 19.91 | 20.02 | 20.00 | 20.13 | 21.00 |
| | | 36 | 18 | 20.06 | 20.02 | 20.05 | 20.09 | 21.00 |
| | | 36 | 39 | 20.03 | 20.03 | 20.09 | 20.01 | 21.00 |
| | | 75 | 0 | 20.01 | 20.00 | 19.98 | 20.04 | 21.00 |
| **Bandwidth** | Modulation | RB size | RB offset | Channel/Frequency (MHz) | | | | Tune-up Limit (dBm) |
| | | | | 40140/2545 | 40540/2585 | 40940/2625 | 41340/2665 | |
| **20MHz** | QPSK | 1 | 0 | 22.39 | 22.44 | 22.42 | 22.57 | 24.00 |
| | | 1 | 50 | **22.84** | **22.78** | **22.89** | **22.87** | 24.00 |
| | | 1 | 99 | 22.56 | 22.62 | 22.60 | 22.65 | 24.00 |
| | | 50 | 0 | 21.63 | 21.62 | 21.74 | 21.95 | 23.00 |
| | | 50 | 25 | 21.77 | 21.77 | **21.84** | 22.03 | 23.00 |
| | | 50 | 50 | **21.79** | **21.78** | 21.78 | **22.13** | 23.00 |
| | | 100 | 0 | 21.62 | 21.65 | 21.71 | **21.78** | 23.00 |
| | 16QAM | 1 | 0 | 21.69 | 21.65 | 21.79 | 21.73 | 23.00 |
| | | 1 | 50 | 21.96 | 21.93 | 21.99 | 21.97 | 23.00 |
| | | 1 | 99 | 21.88 | 21.83 | 21.88 | 21.85 | 23.00 |
| | | 50 | 0 | 20.70 | 20.65 | 20.71 | 20.68 | 22.00 |
| | | 50 | 25 | 20.81 | 20.76 | 20.82 | 20.79 | 22.00 |
| | | 50 | 50 | 20.88 | 20.82 | 20.87 | 20.85 | 22.00 |
| | | 100 | 0 | 20.83 | 20.78 | 20.83 | 20.80 | 22.00 |
| | 64QAM | 1 | 0 | 20.72 | 20.66 | 20.77 | 20.73 | 22.00 |
| | | 1 | 50 | 21.09 | 21.08 | 21.09 | 21.07 | 22.00 |
| | | 1 | 99 | 20.68 | 20.70 | 20.75 | 20.73 | 22.00 |
| | | 50 | 0 | 19.86 | 19.94 | 19.93 | 20.08 | 21.00 |
| | | 50 | 25 | 20.02 | 19.98 | 19.99 | 20.05 | 21.00 |
| | | 50 | 50 | 20.00 | 19.98 | 20.05 | 19.98 | 21.00 |
| | | 100 | 0 | 19.99 | 19.96 | 19.95 | 20.02 | 21.00 |

## 9.4 WLAN Mode

| Wi-Fi 2.4G<br>Mode | Channel /Frequency(MHz) | Maximum Output Power (dBm) | |
|---|---|---|---|
| | | Tune-up | Meas. |
| 802.11b (1M) | 1/2412 | 18.00 | **17.64** |
| | 2/2417 | 18.00 | 17.22 |
| | 6/2437 | 15.00 | 13.77 |
| | 11/2462 | 18.00 | 16.82 |
| 802.11g (6M) | 1/2412 | 16.00 | 15.28 |
| | 6/2437 | 16.00 | 15.32 |
| | 11/2462 | 16.00 | 15.38 |
| 802.11n-HT20 (MCS0) | 1/2412 | 16.00 | 14.80 |
| | 6/2437 | 16.00 | 14.77 |
| | 11/2462 | 16.00 | 14.63 |
| Note: Initial test configuration is 802.11b mode. | | | |

| Wi-Fi 5G (U-NII-1)<br>Mode | Channel /Frequency(MHz) | Maximum Output Power (dBm) | |
|---|---|---|---|
| | | Tune-up | Meas. |
| 802.11a (6M) | 36/5180 | 15.0 | 13.38 |
| | 40/5200 | 16.0 | 15.11 |
| | 48/5240 | 16.0 | 15.22 |
| 802.11n-HT20 (MCS0) | 36/5180 | 16.0 | 15.12 |
| | 40/5200 | 16.0 | 15.18 |
| | 48/5240 | 16.0 | **15.47** |
| 802.11n-HT40 (MCS0) | 38/5190 | 13.0 | 12.04 |
| | 46/5230 | 16.0 | 15.11 |
| 802.11ac-VHT20 (MCS0) | 36/5180 | 16.0 | 15.34 |
| | 40/5200 | 16.0 | 15.22 |
| | 48/5240 | 16.0 | 15.25 |
| 802.11ac-VHT40 (MCS0) | 38/5190 | 16.0 | 15.23 |
| | 46/5230 | 16.0 | 15.22 |
| 802.11ac-VHT80 (MCS0) | 42/5210 | 13.0 | 11.38 |
| Note. Initial test configuration is 802.11n-HT20 mode, since the highest maximum output power. | | | |

| Wi-Fi 5G (U-NII-2A) Mode | Channel /Frequency(MHz) | Maximum Output Power (dBm) | |
|---|---|---|---|
| | | Tune-up | Meas. |
| 802.11a (6M) | 52/5260 | 16.0 | 15.23 |
| | 60/5300 | 16.0 | 15.38 |
| | 64/5320 | 16.0 | 15.33 |
| 802.11n-HT20 (MCS0) | 52/5260 | 16.0 | 15.47 |
| | 60/5300 | 16.0 | 15.34 |
| | 64/5320 | 16.0 | 15.26 |
| 802.11n-HT40 (MCS0) | 54/5270 | 16.0 | 15.31 |
| | 62/5310 | 16.0 | 15.27 |
| 802.11ac-HT20 (MCS0) | 52/5260 | 16.0 | **15.62** |
| | 60/5300 | 16.0 | 15.59 |
| | 64/5320 | 16.0 | 15.32 |
| 802.11ac-HT40 (MCS0) | 54/5270 | 16.0 | 15.23 |
| | 62/5310 | 16.0 | 15.32 |
| 802.11ac-HT80 (MCS0) | 58/5290 | 12.0 | 10.66 |
| Note. Initial test configuration is 802.11ac-HT20 mode, since the highest maximum output power. | | | |

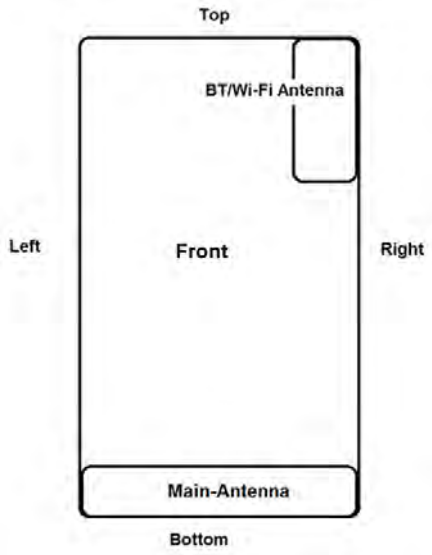
| Wi-Fi 5G (U-NII-3) Mode | Channel /Frequency(MHz) | Maximum Output Power (dBm) | |
|---|---|---|---|
| | | Tune-up | Meas. |
| 802.11a (6M) | 149/5745 | 16.0 | 14.91 |
| | 157/5785 | 16.0 | 14.92 |
| | 165/5825 | 16.0 | 14.95 |
| 802.11n-HT20 (MCS0) | 149/5745 | 16.0 | 14.79 |
| | 157/5785 | 16.0 | 14.85 |
| | 165/5825 | 16.0 | **15.08** |
| 802.11n-HT40 (MCS0) | 151/5755 | 16.0 | 14.88 |
| | 159/5795 | 16.0 | 14.72 |
| 802.11ac-HT20 (MCS0) | 149/5745 | 16.0 | 14.71 |
| | 157/5785 | 16.0 | 14.77 |
| | 165/5825 | 16.0 | 14.94 |
| 802.11ac-HT40 (MCS0) | 151/5755 | 16.0 | 14.81 |
| | 159/5795 | 16.0 | 14.68 |
| 802.11ac-HT80 (MCS0) | 155/5775 | 16.0 | 14.64 |
| Note. Initial test configuration is 802.11n-HT20 mode, since the highest maximum output powe. | | | |

## 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 | 10.88 | 10.65 | 11.39 | 12.00 |
| π/4DQPSK | 10.15 | 10.08 | 10.58 | 11.00 |
| 8DPSK | 10.11 | 9.85 | 10.50 | 11.00 |
| BLE | Ch 0/2402 MHz | Ch 19/2440 MHz | Ch 39/2480 MHz | Tune-up Limit (dBm) |
| GFSK(1M) | -1.50 | 2.59 | 2.39 | 3.00 |
| GFSK(2M) | 0.52 | 0.86 | 0.69 | 3.00 |

# 10 Measured and Reported (Scaled) SAR Results

## 10.1 EUT Antenna Locations




| Overall (Length x Width): 158 mm x 74 mm<br>Overall Diagonal: 167 mm/Display Diagonal: 140mm | | | | | | |
|---|---|---|---|---|---|---|
| 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 |
| BT/Wi-Fi Antenna | ＜25mm | ＜25mm | ＞25mm | ＜25mm | ＜25mm | ＞25mm |
| Body-worn SAR, 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 |
| BT/Wi-Fi Antenna | Yes | Yes | N/A | Yes | Yes | N/A |

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

2.For smart phones with an overall diagonal dimension is 167mm. 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.

## 10.2 Standalone SAR test exclusion considerations

Per KDB 447498 D01, the 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:
[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] ·[√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for product specific 10-g SAR

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

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

| Bluetooth | Distance (mm) | MAXPower (dBm) | Frequency (MHz) | Ratio | Evaluation |
|---|---|---|---|---|---|
| Head | 5 | 12.000 | 2480 | 4.99 | Yes |
| Body-worn | 15 | 12.000 | 2480 | 1.66 | No |
| Hotspot | 10 | 12.000 | 2480 | 2.50 | No |
| Product Specific 10-g SAR | 5 | 12.000 | 2480 | 4.99 | No |

## 10.3 Measured SAR Results

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

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

3. For WCDMA, 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.

4. For LTE, 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).

### Head SAR

| Band | Test Position | Dist. (mm) | Mode | Power Reduction | RB | offset | Ch./Freq. (MHz) | Tune-up (dBm) | Measured power (dBm) | Measured SAR1g (W/Kg) | Power Drift (dB) | Scaling Factor | Report SAR1g (W/Kg) | Plot No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GSM 850 | Left cheek | 0 | GSM | Full Power | - | - | 190/836.6 | 33.50 | 32.45 | 0.112 | -0.050 | 1.27 | 0.143 | 12 |
| | Left Tilt | 0 | GSM | Full Power | - | - | 190/836.6 | 33.50 | 32.45 | 0.056 | 0.100 | 1.27 | 0.071 | / |
| | Right cheek | 0 | GSM | Full Power | - | - | 190/836.6 | 33.50 | 32.45 | 0.084 | -0.050 | 1.27 | 0.107 | / |
| | Right Tilt | 0 | GSM | Full Power | - | - | 190/836.6 | 33.50 | 32.45 | 0.062 | 0.105 | 1.27 | 0.078 | / |
| GSM 1900 | Left cheek | 0 | GSM | Full Power | - | - | 661/1880 | 30.00 | 29.21 | 0.080 | 0.039 | 1.20 | 0.096 | / |
| | Left Tilt | 0 | GSM | Full Power | - | - | 661/1880 | 30.00 | 29.21 | 0.048 | 0.110 | 1.20 | 0.057 | / |
| | Right cheek | 0 | GSM | Full Power | - | - | 661/1880 | 30.00 | 29.21 | 0.180 | 0.078 | 1.20 | 0.216 | 13 |
| | Right Tilt | 0 | GSM | Full Power | - | - | 661/1880 | 30.00 | 29.21 | 0.043 | 0.040 | 1.20 | 0.052 | / |
| WCDMA II | Left cheek | 0 | RMC 12.2K | Full Power | - | - | 9400/1880 | 23.50 | 21.99 | 0.123 | -0.058 | 1.42 | 0.174 | / |
| | Left Tilt | 0 | RMC 12.2K | Full Power | - | - | 9400/1880 | 23.50 | 21.99 | 0.076 | 0.043 | 1.42 | 0.107 | / |
| | Right cheek | 0 | RMC 12.2K | Full Power | - | - | 9400/1880 | 23.50 | 21.99 | 0.249 | 0.041 | 1.42 | 0.353 | 14 |
| | Right Tilt | 0 | RMC 12.2K | Full Power | - | - | 9400/1880 | 23.50 | 21.99 | 0.068 | 0.070 | 1.42 | 0.097 | / |
| WCDMA IV | Left cheek | 0 | RMC 12.2K | Full Power | - | - | 1413/1732.6 | 23.50 | 22.04 | 0.090 | 0.061 | 1.40 | 0.127 | / |
| | Left Tilt | 0 | RMC 12.2K | Full Power | - | - | 1413/1732.6 | 23.50 | 22.04 | 0.033 | -0.190 | 1.40 | 0.046 | / |
| | Right cheek | 0 | RMC 12.2K | Full Power | - | - | 1413/1732.6 | 23.50 | 22.04 | 0.174 | 0.076 | 1.40 | 0.244 | 15 |
| | Right Tilt | 0 | RMC 12.2K | Full Power | - | - | 1413/1732.6 | 23.50 | 22.04 | 0.036 | 0.039 | 1.40 | 0.050 | / |
| WCDMA V | Left cheek | 0 | RMC 12.2K | Full Power | - | - | 4183/836.6 | 23.50 | 22.26 | 0.085 | 0.080 | 1.33 | 0.113 | 16 |
| | Left Tilt | 0 | RMC 12.2K | Full Power | - | - | 4183/836.6 | 23.50 | 22.26 | 0.043 | 0.130 | 1.33 | 0.057 | / |
| | Right cheek | 0 | RMC 12.2K | Full Power | - | - | 4183/836.6 | 23.50 | 22.26 | 0.070 | 0.030 | 1.33 | 0.093 | / |
| | Right Tilt | 0 | RMC 12.2K | Full Power | - | - | 4183/836.6 | 23.50 | 22.26 | 0.052 | 0.034 | 1.33 | 0.069 | / |
| LTE 2 | Left cheek | 0 | QPSK | Full Power | 1 | 50 | 19100/1900 | 23.50 | 22.61 | 0.159 | 0.170 | 1.23 | 0.195 | / |
| | | 0 | QPSK | Full Power | 50% | 0 | 18900/1880 | 22.50 | 21.45 | 0.114 | 0.092 | 1.27 | 0.145 | / |
| | Left Tilt | 0 | QPSK | Full Power | 1 | 50 | 19100/1900 | 23.50 | 22.61 | 0.107 | 0.034 | 1.23 | 0.131 | / |
| | | 0 | QPSK | Full Power | 50% | 0 | 18900/1880 | 22.50 | 21.45 | 0.058 | 0.058 | 1.27 | 0.073 | / |
| | Right cheek | 0 | QPSK | Full Power | 1 | 50 | 19100/1900 | 23.50 | 22.61 | 0.311 | 0.047 | 1.23 | 0.382 | 17 |
| | | 0 | QPSK | Full Power | 50% | 0 | 18900/1880 | 22.50 | 21.45 | 0.225 | 0.056 | 1.27 | 0.287 | / |
| | Right Tilt | 0 | QPSK | Full Power | 1 | 50 | 19100/1900 | 23.50 | 22.61 | 0.090 | 0.034 | 1.23 | 0.111 | / |
| | | 0 | QPSK | Full Power | 50% | 0 | 18900/1880 | 22.50 | 21.45 | 0.061 | 0.064 | 1.27 | 0.077 | / |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LTE 4 | Left cheek | 0 | QPSK | Full Power | 1 | 50 | 20300/1745 | 23.50 | 22.65 | 0.095 | 0.020 | 1.22 | 0.116 | / |
| | | 0 | QPSK | Full Power | 50% | 0 | 20050/1720 | 22.50 | 21.70 | 0.082 | 0.184 | 1.20 | 0.099 | / |
| | Left Tilt | 0 | QPSK | Full Power | 1 | 50 | 20300/1745 | 23.50 | 22.65 | 0.057 | 0.069 | 1.22 | 0.070 | / |
| | | 0 | QPSK | Full Power | 50% | 0 | 20050/1720 | 22.50 | 21.70 | 0.047 | 0.115 | 1.20 | 0.056 | / |
| | Right cheek | 0 | QPSK | Full Power | 1 | 50 | 20300/1745 | 23.50 | 22.65 | 0.193 | 0.191 | 1.22 | 0.235 | 18 |
| | | 0 | QPSK | Full Power | 50% | 0 | 20050/1720 | 22.50 | 21.70 | 0.159 | 0.104 | 1.20 | 0.191 | / |
| | Right Tilt | 0 | QPSK | Full Power | 1 | 50 | 20300/1745 | 23.50 | 22.65 | 0.045 | 0.061 | 1.22 | 0.054 | / |
| | | 0 | QPSK | Full Power | 50% | 0 | 20050/1720 | 22.50 | 21.70 | 0.037 | 0.089 | 1.20 | 0.044 | / |
| LTE 5 | Left cheek | 0 | QPSK | Full Power | 1 | 25 | 20525/836.5 | 23.50 | 22.81 | 0.134 | 0.126 | 1.17 | 0.157 | 19 |
| | | 0 | QPSK | Full Power | 50% | 0 | 20525/836.5 | 22.50 | 21.83 | 0.120 | 0.025 | 1.17 | 0.140 | / |
| | Left Tilt | 0 | QPSK | Full Power | 1 | 25 | 20525/836.5 | 23.50 | 22.81 | 0.059 | 0.025 | 1.17 | 0.069 | / |
| | | 0 | QPSK | Full Power | 50% | 0 | 20525/836.5 | 22.50 | 21.83 | 0.059 | 0.070 | 1.17 | 0.069 | / |
| | Right cheek | 0 | QPSK | Full Power | 1 | 25 | 20525/836.5 | 23.50 | 22.81 | 0.108 | 0.033 | 1.17 | 0.127 | / |
| | | 0 | QPSK | Full Power | 50% | 0 | 20525/836.5 | 22.50 | 21.83 | 0.104 | 0.126 | 1.17 | 0.121 | / |
| | Right Tilt | 0 | QPSK | Full Power | 1 | 25 | 20525/836.5 | 23.50 | 22.81 | 0.071 | 0.027 | 1.17 | 0.084 | / |
| | | 0 | QPSK | Full Power | 50% | 0 | 20525/836.5 | 22.50 | 21.83 | 0.066 | 0.020 | 1.17 | 0.077 | / |
| LTE 7 | Left cheek | 0 | QPSK | Full Power | 1 | 50 | 21100/2535 | 23.50 | 22.55 | 0.034 | 0.101 | 1.24 | 0.042 | / |
| | | 0 | QPSK | Full Power | 50% | 50 | 21100/2535 | 22.50 | 21.58 | 0.022 | 0.052 | 1.24 | 0.028 | / |
| | Left Tilt | 0 | QPSK | Full Power | 1 | 50 | 21100/2535 | 23.50 | 22.55 | 0.040 | 0.188 | 1.24 | 0.050 | / |
| | | 0 | QPSK | Full Power | 50% | 50 | 21100/2535 | 22.50 | 21.58 | 0.032 | 0.037 | 1.24 | 0.039 | / |
| | Right cheek | 0 | QPSK | Full Power | 1 | 50 | 21100/2535 | 23.50 | 22.55 | 0.046 | -0.035 | 1.24 | 0.057 | 20 |
| | | 0 | QPSK | Full Power | 50% | 50 | 21100/2535 | 22.50 | 21.58 | 0.033 | 0.158 | 1.24 | 0.041 | / |
| | Right Tilt | 0 | QPSK | Full Power | 1 | 50 | 21100/2535 | 23.50 | 22.55 | 0.016 | 0.197 | 1.24 | 0.020 | / |
| | | 0 | QPSK | Full Power | 50% | 50 | 21100/2535 | 22.50 | 21.58 | 0.010 | 0.192 | 1.24 | 0.013 | / |
| LTE 19 | Left cheek | 0 | QPSK | Full Power | 1 | 38 | 24075/837.5 | 23.50 | 22.81 | 0.134 | 0.116 | 1.17 | 0.157 | 21 |
| | | 0 | QPSK | Full Power | 50% | 39 | 24075/837.5 | 22.50 | 21.90 | 0.119 | 0.068 | 1.15 | 0.137 | / |
| | Left Tilt | 0 | QPSK | Full Power | 1 | 38 | 24075/837.5 | 23.50 | 22.81 | 0.059 | 0.160 | 1.17 | 0.069 | / |
| | | 0 | QPSK | Full Power | 50% | 39 | 24075/837.5 | 22.50 | 21.90 | 0.049 | 0.190 | 1.15 | 0.056 | / |
| | Right cheek | 0 | QPSK | Full Power | 1 | 38 | 24075/837.5 | 23.50 | 22.81 | 0.082 | 0.084 | 1.17 | 0.096 | / |
| | | 0 | QPSK | Full Power | 50% | 39 | 24075/837.5 | 22.50 | 21.90 | 0.066 | 0.099 | 1.15 | 0.076 | / |
| | Right Tilt | 0 | QPSK | Full Power | 1 | 38 | 24075/837.5 | 23.50 | 22.81 | 0.056 | 0.022 | 1.17 | 0.066 | / |
| | | 0 | QPSK | Full Power | 50% | 39 | 24075/837.5 | 22.50 | 21.90 | 0.045 | 0.025 | 1.15 | 0.051 | / |
| LTE 26 | Left cheek | 0 | QPSK | Full Power | 1 | 38 | 26765/821.5 | 23.50 | 22.66 | 0.190 | -0.150 | 1.21 | 0.231 | 22 |
| | | 0 | QPSK | Full Power | 50% | 39 | 26765/821.5 | 22.50 | 21.81 | 0.158 | 0.092 | 1.17 | 0.185 | / |
| | Left Tilt | 0 | QPSK | Full Power | 1 | 38 | 26765/821.5 | 23.50 | 22.66 | 0.096 | 0.031 | 1.21 | 0.116 | / |
| | | 0 | QPSK | Full Power | 50% | 39 | 26765/821.5 | 22.50 | 21.81 | 0.081 | 0.031 | 1.17 | 0.094 | / |
| | Right cheek | 0 | QPSK | Full Power | 1 | 38 | 26765/821.5 | 23.50 | 22.66 | 0.167 | 0.067 | 1.21 | 0.203 | / |
| | | 0 | QPSK | Full Power | 50% | 39 | 26765/821.5 | 22.50 | 21.81 | 0.141 | 0.095 | 1.17 | 0.165 | / |
| | Right Tilt | 0 | QPSK | Full Power | 1 | 38 | 26765/821.5 | 23.50 | 22.66 | 0.113 | 0.021 | 1.21 | 0.137 | / |
| | | 0 | QPSK | Full Power | 50% | 39 | 26765/821.5 | 22.50 | 21.81 | 0.096 | -0.127 | 1.17 | 0.112 | / |
| LTE 28A | Left cheek | 0 | QPSK | Full Power | 1 | 50 | 27360/718 | 24.00 | 23.57 | 0.019 | 0.031 | 1.10 | 0.021 | 23 |
| | | 0 | QPSK | Full Power | 50% | 25 | 27410/723 | 23.00 | 22.44 | 0.016 | 0.087 | 1.14 | 0.018 | / |
| | Left Tilt | 0 | QPSK | Full Power | 1 | 50 | 27360/718 | 24.00 | 23.57 | 0.008 | 0.020 | 1.10 | 0.009 | / |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0 | QPSK | Full Power | 50% | 25 | 27410/723 | 23.00 | 22.44 | 0.006 | 0.030 | 1.14 | 0.007 | / |
| | Right cheek | 0 | QPSK | Full Power | 1 | 50 | 27360/718 | 24.00 | 23.57 | 0.018 | 0.070 | 1.10 | 0.020 | / |
| | | 0 | QPSK | Full Power | 50% | 25 | 27410/723 | 23.00 | 22.44 | 0.015 | 0.098 | 1.14 | 0.017 | / |
| | Right Tilt | 0 | QPSK | Full Power | 1 | 50 | 27360/718 | 24.00 | 23.57 | 0.009 | 0.040 | 1.10 | 0.010 | / |
| | | 0 | QPSK | Full Power | 50% | 25 | 27410/723 | 23.00 | 22.44 | 0.007 | 0.038 | 1.14 | 0.008 | / |
| LTE 28B | Left cheek | 0 | QPSK | Full Power | 1 | 50 | 27460/728 | 24.00 | 23.41 | 0.022 | 0.092 | 1.15 | 0.025 | 24 |
| | | 0 | QPSK | Full Power | 50% | 50 | 27460/728 | 23.00 | 22.37 | 0.021 | 0.055 | 1.16 | 0.024 | / |
| | Left Tilt | 0 | QPSK | Full Power | 1 | 50 | 27460/728 | 24.00 | 23.41 | 0.008 | 0.117 | 1.15 | 0.010 | / |
| | | 0 | QPSK | Full Power | 50% | 50 | 27460/728 | 23.00 | 22.37 | 0.009 | 0.127 | 1.16 | 0.010 | / |
| | Right cheek | 0 | QPSK | Full Power | 1 | 50 | 27460/728 | 24.00 | 23.41 | 0.019 | 0.107 | 1.15 | 0.022 | / |
| | | 0 | QPSK | Full Power | 50% | 50 | 27460/728 | 23.00 | 22.37 | 0.018 | 0.100 | 1.16 | 0.021 | / |
| | Right Tilt | 0 | QPSK | Full Power | 1 | 50 | 27460/728 | 24.00 | 23.41 | 0.011 | 0.027 | 1.15 | 0.012 | / |
| | | 0 | QPSK | Full Power | 50% | 50 | 27460/728 | 23.00 | 22.37 | 0.011 | 0.022 | 1.16 | 0.012 | / |
| LTE 38 | Left cheek | 0 | QPSK | Full Power | 1 | 50 | 38150/2610 | 23.50 | 22.78 | 0.026 | 0.131 | 1.18 | 0.030 | / |
| | | 0 | QPSK | Full Power | 50% | 25 | 38150/2610 | 22.50 | 21.75 | 0.016 | 0.084 | 1.19 | 0.019 | / |
| | Left Tilt | 0 | QPSK | Full Power | 1 | 50 | 38150/2610 | 23.50 | 22.78 | 0.031 | 0.164 | 1.18 | 0.037 | / |
| | | 0 | QPSK | Full Power | 50% | 25 | 38150/2610 | 22.50 | 21.75 | 0.025 | 0.031 | 1.19 | 0.030 | / |
| | Right cheek | 0 | QPSK | Full Power | 1 | 50 | 38150/2610 | 23.50 | 22.78 | 0.035 | 0.149 | 1.18 | 0.041 | 25 |
| | | 0 | QPSK | Full Power | 50% | 25 | 38150/2610 | 22.50 | 21.75 | 0.028 | 0.130 | 1.19 | 0.034 | / |
| | Right Tilt | 0 | QPSK | Full Power | 1 | 50 | 38150/2610 | 23.50 | 22.78 | 0.017 | 0.146 | 1.18 | 0.021 | / |
| | | 0 | QPSK | Full Power | 50% | 25 | 38150/2610 | 22.50 | 21.75 | 0.014 | 0.042 | 1.19 | 0.016 | / |
| LTE 40 | Left cheek | 0 | QPSK | Full Power | 1 | 0 | 38700/2305 | 24.00 | 23.39 | 0.009 | 0.100 | 1.15 | 0.010 | / |
| | | 0 | QPSK | Full Power | 50% | 0 | 38700/2305 | 23.00 | 22.28 | 0.004 | 0.000 | 1.18 | 0.005 | / |
| | Left Tilt | 0 | QPSK | Full Power | 1 | 0 | 38700/2305 | 24.00 | 23.39 | 0.006 | 0.100 | 1.15 | 0.007 | / |
| | | 0 | QPSK | Full Power | 50% | 0 | 38700/2305 | 23.00 | 22.28 | 0.003 | 0.121 | 1.18 | 0.003 | / |
| | Right cheek | 0 | QPSK | Full Power | 1 | 0 | 38700/2305 | 24.00 | 23.39 | 0.020 | 0.040 | 1.15 | 0.023 | 26 |
| | | 0 | QPSK | Full Power | 50% | 0 | 38700/2305 | 23.00 | 22.28 | 0.019 | 0.100 | 1.18 | 0.022 | / |
| | Right Tilt | 0 | QPSK | Full Power | 1 | 0 | 38700/2305 | 24.00 | 23.39 | 0.001 | 0.174 | 1.15 | 0.001 | / |
| | | 0 | QPSK | Full Power | 50% | 0 | 38700/2305 | 23.00 | 22.28 | 0.000 | 0.095 | 1.18 | 0.000 | / |
| LTE 41 | Left cheek | 0 | QPSK | Full Power | 1 | 50 | 40940/2625 | 24.00 | 22.89 | 0.033 | 0.061 | 1.31 | 0.043 | / |
| | | 0 | QPSK | Full Power | 50% | 50 | 41340/2665 | 23.00 | 22.13 | 0.039 | 0.100 | 1.32 | 0.048 | / |
| | Left Tilt | 0 | QPSK | Full Power | 1 | 50 | 40940/2625 | 24.00 | 22.89 | 0.040 | 0.170 | 1.31 | 0.051 | / |
| | | 0 | QPSK | Full Power | 50% | 50 | 41340/2665 | 23.00 | 22.13 | 0.034 | 0.037 | 1.32 | 0.042 | / |
| | Right cheek | 0 | QPSK | Full Power | 1 | 50 | 40940/2625 | 24.00 | 22.89 | 0.061 | 0.056 | 1.31 | 0.079 | 27 |
| | | 0 | QPSK | Full Power | 50% | 50 | 41340/2665 | 23.00 | 22.13 | 0.053 | 0.100 | 1.32 | 0.065 | / |
| | Right Tilt | 0 | QPSK | Full Power | 1 | 50 | 40940/2625 | 24.00 | 22.89 | 0.012 | 0.065 | 1.31 | 0.016 | / |
| | | 0 | QPSK | Full Power | 50% | 50 | 41340/2665 | 23.00 | 22.13 | 0.007 | 0.186 | 1.32 | 0.009 | / |

| Band | Antenna | Test Position | Dist. (mm) | Mode | Duty Cycle | Power Reduction | Ch./Freq. (MHz) | Tune-up (dBm) | Measured power (dBm) | Measured SAR1g | Power Drift (dB) | Scaling Factor | Report SAR1g | Plot No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Wi-Fi 2.4G | Wi-Fi Antenna | Left cheek | 0 | 802.11b | 100.0% | Full Power | 1/2412 | 18.00 | 17.64 | 0.376 | 0.024 | 1.09 | 0.408 | / |
| | | Left Tilt | 0 | 802.11b | 100.0% | Full Power | 1/2412 | 18.00 | 17.64 | 0.291 | 0.180 | 1.09 | 0.316 | / |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Right cheek | 0 | 802.11b | 100.0% | Full Power | 1/2412 | 18.00 | 17.64 | 1.020 | 0.031 | 1.09 | 1.108 | 28 |
| | | | 0 | 802.11b | 100.0% | Full Power | 2/2417 | 18.00 | 17.22 | 0.918 | 0.180 | 1.20 | 1.099 | / |
| | | | 0 | 802.11b | 100.0% | Full Power | 11/2462 | 18.00 | 16.82 | 0.764 | 0.022 | 1.31 | 1.003 | / |
| | | Right Tilt | 0 | 802.11b | 100.0% | Full Power | 1/2412 | 18.00 | 17.64 | 0.569 | 0.170 | 1.09 | 0.618 | / |
| | | Right cheek repeat | 0 | 802.11b | 100.0% | Full Power | 1/2412 | 18.00 | 17.64 | 0.997 | -0.019 | 1.09 | 1.083 | / |
| U-NII-1 | Wi-Fi Antenna | Left cheek | 0 | 802.11nHT20 | 96.0% | Full Power | 48/5240 | 16.00 | 15.47 | 0.432 | 0.057 | 1.18 | 0.508 | / |
| | | Left Tilt | 0 | 802.11nHT20 | 96.0% | Full Power | 48/5240 | 16.00 | 15.47 | 0.477 | 0.086 | 1.18 | 0.561 | 29 |
| | | Right cheek | 0 | 802.11nHT20 | 96.0% | Full Power | 48/5240 | 16.00 | 15.47 | 0.342 | 0.100 | 1.18 | 0.402 | / |
| | | Right Tilt | 0 | 802.11nHT20 | 96.0% | Full Power | 48/5240 | 16.00 | 15.47 | 0.317 | 0.070 | 1.18 | 0.373 | / |
| U-NII-2A | Wi-Fi Antenna | Left cheek | 0 | 802.11ac-VHT20 | 97.0% | Full Power | 52/5260 | 16.00 | 15.62 | 0.271 | 0.047 | 1.13 | 0.305 | / |
| | | Left Tilt | 0 | 802.11ac-VHT20 | 97.0% | Full Power | 52/5260 | 16.00 | 15.62 | 0.282 | 0.026 | 1.13 | 0.317 | / |
| | | Right cheek | 0 | 802.11ac-VHT20 | 97.0% | Full Power | 52/5260 | 16.00 | 15.62 | 0.293 | 0.173 | 1.13 | 0.330 | / |
| | | Right Tilt | 0 | 802.11ac-VHT20 | 97.0% | Full Power | 52/5260 | 16.00 | 15.62 | 0.328 | 0.010 | 1.13 | 0.369 | / |
| U-NII-3 | Wi-Fi Antenna | Left cheek | 0 | 802.11ac-VHT20 | 96.0% | Full Power | 165/5825 | 16.00 | 15.08 | 0.175 | -0.108 | 1.29 | 0.225 | / |
| | | Left Tilt | 0 | 802.11ac-VHT20 | 96.0% | Full Power | 165/5825 | 16.00 | 15.08 | 0.215 | 0.091 | 1.29 | 0.277 | / |
| | | Right cheek | 0 | 802.11ac-VHT20 | 96.0% | Full Power | 165/5825 | 16.00 | 15.08 | 0.199 | 0.121 | 1.29 | 0.256 | / |
| | | Right Tilt | 0 | 802.11ac-VHT20 | 96.0% | Full Power | 165/5825 | 16.00 | 15.08 | 0.199 | 0.025 | 1.29 | 0.256 | / |
| Bluetooth | BT Antenna | Left cheek | 0 | GFSK | 76.9% | - | 78/2480 | 12.00 | 11.39 | 0.061 | 0.027 | 1.50 | 0.092 | / |
| | | Left Tilt | 0 | GFSK | 76.9% | - | 78/2480 | 12.00 | 11.39 | 0.046 | 0.140 | 1.50 | 0.068 | / |
| | | Right cheek | 0 | GFSK | 76.9% | - | 78/2480 | 12.00 | 11.39 | 0.111 | 0.033 | 1.50 | 0.166 | 30 |
| | | Right Tilt | 0 | GFSK | 76.9% | - | 78/2480 | 12.00 | 11.39 | 0.080 | -0.031 | 1.50 | 0.120 | / |

## Body-Worn SAR

| Band | Test Position | Dist. (mm) | Mode | Power Reduction | RB | offset | Ch./Freq. (MHz) | Tune-up (dBm) | Measured power (dBm) | Measured SAR1g | Power Drift (dB) | Scaling Factor | Report SAR1g | Plot No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GSM 850 | Back Side | 15 | GSM | Full Power | - | - | 190/836.6 | 33.50 | 32.45 | 0.213 | -0.080 | 1.27 | 0.271 | 31 |
| | Front Side | 15 | GSM | Full Power | - | - | 190/836.6 | 33.50 | 32.45 | 0.115 | 0.054 | 1.27 | 0.146 | / |
| GSM 1900 | Back Side | 15 | GSM | Full Power | - | - | 661/1880 | 30.00 | 29.21 | 0.146 | 0.023 | 1.20 | 0.175 | 32 |
| | Front Side | 15 | GSM | Full Power | - | - | 661/1880 | 30.00 | 29.21 | 0.073 | -0.032 | 1.20 | 0.088 | / |
| WCDMA II | Back Side | 15 | RMC | Full Power | - | - | 9400/1880 | 23.50 | 21.99 | 0.239 | 0.090 | 1.42 | 0.338 | 33 |
| | Front Side | 15 | RMC | Full Power | - | - | 9400/1880 | 23.50 | 21.99 | 0.133 | -0.010 | 1.42 | 0.188 | / |
| WCDMA IV | Back Side | 15 | RMC | Full Power | - | - | 1413/1732.6 | 23.50 | 22.04 | 0.343 | 0.050 | 1.40 | 0.480 | 34 |
| | Front Side | 15 | RMC | Full Power | - | - | 1413/1732.6 | 23.50 | 22.04 | 0.080 | 0.120 | 1.40 | 0.112 | / |
| WCDMA V | Back Side | 15 | RMC | Full Power | - | - | 4183/836.6 | 23.50 | 22.26 | 0.189 | -0.050 | 1.33 | 0.251 | 35 |
| | Front Side | 15 | RMC | Full Power | - | - | 4183/836.6 | 23.50 | 22.26 | 0.086 | 0.033 | 1.33 | 0.114 | / |
| LTE 2 | Back Side | 15 | QPSK | Full Power | 1 | 50 | 19100/1900 | 23.50 | 22.41 | 0.287 | 0.090 | 1.29 | 0.369 | 36 |
| | | 15 | QPSK | Full Power | 50% | 0 | 18900/1880 | 22.50 | 21.45 | 0.233 | -0.020 | 1.27 | 0.297 | / |
| | Front Side | 15 | QPSK | Full Power | 1 | 50 | 19100/1900 | 23.50 | 22.41 | 0.127 | 0.058 | 1.29 | 0.163 | / |
| | | 15 | QPSK | Full Power | 50% | 0 | 18900/1880 | 22.50 | 21.45 | 0.091 | 0.034 | 1.27 | 0.116 | / |
| LTE 4 | Back Side | 15 | QPSK | Full Power | 1 | 50 | 20300/1745 | 23.50 | 22.65 | 0.369 | 0.057 | 1.22 | 0.449 | / |
| | | 15 | QPSK | Full Power | 50% | 0 | 20050/1720 | 22.50 | 21.70 | 0.380 | 0.010 | 1.20 | 0.457 | 37 |
| | Front Side | 15 | QPSK | Full Power | 1 | 50 | 20300/1745 | 23.50 | 22.65 | 0.089 | 0.017 | 1.22 | 0.108 | / |
| | | 15 | QPSK | Full Power | 50% | 0 | 20050/1720 | 22.50 | 21.70 | 0.081 | 0.150 | 1.20 | 0.097 | / |
| LTE 5 | Back Side | 15 | QPSK | Full Power | 1 | 25 | 20525/836.5 | 23.50 | 22.81 | 0.261 | 0.030 | 1.17 | 0.306 | 38 |
| | | 15 | QPSK | Full Power | 50% | 0 | 20525/836.5 | 22.50 | 21.83 | 0.194 | -0.020 | 1.17 | 0.226 | / |
| | Front Side | 15 | QPSK | Full Power | 1 | 25 | 20525/836.5 | 23.50 | 22.81 | 0.202 | 0.019 | 1.17 | 0.237 | / |
| | | 15 | QPSK | Full Power | 50% | 0 | 20525/836.5 | 22.50 | 21.83 | 0.149 | 0.000 | 1.17 | 0.174 | / |
| LTE 7 | Back Side | 15 | QPSK | Full Power | 1 | 50 | 21100/2535 | 23.50 | 22.55 | 0.074 | 0.073 | 1.24 | 0.092 | 39 |
| | | 15 | QPSK | Full Power | 50% | 50 | 21100/2535 | 22.50 | 21.58 | 0.067 | 0.021 | 1.24 | 0.083 | / |
| | Front Side | 15 | QPSK | Full Power | 1 | 50 | 21100/2535 | 23.50 | 22.55 | 0.000 | 0.019 | 1.24 | 0.000 | / |
| | | 15 | QPSK | Full Power | 50% | 50 | 21100/2535 | 22.50 | 21.58 | 0.000 | 0.021 | 1.24 | 0.000 | / |
| LTE 19 | Back Side | 15 | QPSK | Full Power | 1 | 38 | 24075/837.5 | 23.50 | 22.81 | 0.276 | -0.011 | 1.17 | 0.324 | 40 |
| | | 15 | QPSK | Full Power | 50% | 39 | 24075/837.5 | 22.50 | 21.90 | 0.233 | 0.040 | 1.15 | 0.268 | / |
| | Front Side | 15 | QPSK | Full Power | 1 | 38 | 24075/837.5 | 23.50 | 22.81 | 0.224 | 0.069 | 1.17 | 0.263 | / |
| | | 15 | QPSK | Full Power | 50% | 39 | 24075/837.5 | 22.50 | 21.90 | 0.177 | -0.067 | 1.15 | 0.203 | / |
| LTE 26 | Back Side | 15 | QPSK | Full Power | 1 | 38 | 26765/821.5 | 23.50 | 22.66 | 0.249 | 0.010 | 1.21 | 0.302 | 41 |
| | | 15 | QPSK | Full Power | 50% | 39 | 26765/821.5 | 22.50 | 21.81 | 0.164 | 0.000 | 1.17 | 0.192 | / |
| | Front Side | 15 | QPSK | Full Power | 1 | 38 | 26765/821.5 | 23.50 | 22.66 | 0.139 | 0.030 | 1.21 | 0.169 | / |
| | | 15 | QPSK | Full Power | 50% | 39 | 26765/821.5 | 22.50 | 21.81 | 0.125 | 0.055 | 1.17 | 0.147 | / |
| LTE 28A | Back Side | 15 | QPSK | Full Power | 1 | 50 | 27360/718 | 24.00 | 23.57 | 0.057 | 0.090 | 1.10 | 0.063 | 42 |
| | | 15 | QPSK | Full Power | 50% | 25 | 27410/723 | 23.00 | 22.44 | 0.049 | 0.039 | 1.14 | 0.056 | / |
| | Front Side | 15 | QPSK | Full Power | 1 | 50 | 27360/718 | 24.00 | 23.57 | 0.000 | 0.110 | 1.10 | 0.000 | / |
| | | 15 | QPSK | Full Power | 50% | 25 | 27410/723 | 23.00 | 22.44 | 0.000 | 0.025 | 1.14 | 0.000 | / |
| LTE 28B | Back Side | 15 | QPSK | Full Power | 1 | 50 | 27460/728 | 24.00 | 23.41 | 0.054 | -0.037 | 1.15 | 0.062 | 43 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 15 | QPSK | Full Power | 50% | 50 | 27460/728 | 23.00 | 22.37 | 0.049 | 0.027 | 1.16 | 0.057 | / |
| | Front Side | 15 | QPSK | Full Power | 1 | 50 | 27460/728 | 24.00 | 23.41 | 0.000 | 0.058 | 1.15 | 0.000 | / |
| | | 15 | QPSK | Full Power | 50% | 50 | 27460/728 | 23.00 | 22.37 | 0.000 | 0.034 | 1.16 | 0.000 | / |
| LTE 38 | Back Side | 15 | QPSK | Full Power | 1 | 50 | 38150/2610 | 23.50 | 22.78 | 0.054 | 0.046 | 1.18 | 0.063 | 44 |
| | | 15 | QPSK | Full Power | 50% | 25 | 38150/2610 | 22.50 | 21.75 | 0.047 | 0.090 | 1.19 | 0.056 | / |
| | Front Side | 15 | QPSK | Full Power | 1 | 50 | 38150/2610 | 23.50 | 22.78 | 0.000 | 0.024 | 1.18 | 0.000 | / |
| | | 15 | QPSK | Full Power | 50% | 25 | 38150/2610 | 22.50 | 21.75 | 0.000 | -0.090 | 1.19 | 0.000 | / |
| LTE 40 | Back Side | 15 | QPSK | Full Power | 1 | 0 | 38700/2305 | 24.00 | 23.39 | 0.000 | 0.011 | 1.15 | 0.000 | 45 |
| | | 15 | QPSK | Full Power | 50% | 0 | 38700/2305 | 23.00 | 22.28 | 0.000 | 0.018 | 1.18 | 0.000 | / |
| | Front Side | 15 | QPSK | Full Power | 1 | 0 | 38700/2305 | 24.00 | 23.39 | 0.000 | 0.052 | 1.15 | 0.000 | / |
| | | 15 | QPSK | Full Power | 50% | 0 | 38700/2305 | 23.00 | 22.28 | 0.000 | 0.037 | 1.18 | 0.000 | / |
| LTE 41 | Back Side | 15 | QPSK | Full Power | 1 | 50 | 40940/2625 | 24.00 | 22.89 | 0.061 | 0.133 | 1.31 | 0.079 | 46 |
| | | 15 | QPSK | Full Power | 50% | 50 | 41340/2665 | 23.00 | 22.13 | 0.053 | 0.055 | 1.32 | 0.065 | / |
| | Front Side | 15 | 0.130 | Full Power | 1 | 50 | 40940/2625 | 24.00 | 22.89 | 0.000 | 0.014 | 1.31 | 0.000 | / |
| | | 15 | QPSK | Full Power | 50% | 50 | 41340/2665 | 23.00 | 22.13 | 0.000 | 0.000 | 1.32 | 0.000 | / |

| Band | Antenna | Test Position | Dist. (mm) | Mode | Duty Cycle | Power Reduction | Ch./Freq. (MHz) | Tune-up (dBm) | Measured power (dBm) | Measured SAR1g | Power Drift (dB) | Scaling Factor | Report SAR1g | Plot No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Wi-Fi 2.4G | Wi-Fi Antenna | Back Side | 15 | 802.11b | 100.0% | Full Power | 1/2412 | 18.00 | 17.64 | 0.098 | -0.020 | 1.09 | 0.106 | / |
| | | Front Side | 15 | 802.11b | 100.0% | Full Power | 1/2412 | 18.00 | 17.64 | 0.135 | 0.049 | 1.09 | 0.147 | 47 |
| U-NII-1 | Wi-Fi Antenna | Back Side | 15 | 802.11nHT20 | 96.0% | Full Power | 48/5240 | 16.00 | 15.47 | 0.304 | 0.100 | 1.18 | 0.358 | 48 |
| | | Front Side | 15 | 802.11nHT20 | 96.0% | Full Power | 48/5240 | 16.00 | 15.47 | 0.190 | 0.040 | 1.18 | 0.224 | / |
| U-NII-2A | Wi-Fi Antenna | Back Side | 15 | 802.11ac-VHT20 | 97.0% | Full Power | 52/5260 | 16.00 | 15.62 | 0.298 | 0.123 | 1.13 | 0.335 | / |
| | | Front Side | 15 | 802.11ac-VHT20 | 97.0% | Full Power | 52/5260 | 16.00 | 15.62 | 0.188 | -0.060 | 1.13 | 0.212 | / |
| U-NII-3 | Wi-Fi Antenna | Back Side | 15 | 802.11nHT20 | 96.0% | Full Power | 165/5825 | 16.00 | 15.08 | 0.217 | 0.091 | 1.29 | 0.279 | / |
| | | Front Side | 15 | 802.11nHT20 | 96.0% | Full Power | 165/5825 | 16.00 | 15.08 | 0.054 | 0.100 | 1.29 | 0.070 | / |

## Hotspot SAR

| Band | Test Position | Dist. (mm) | Mode | Power Reduction | RB | offset | Ch./Freq. (MHz) | Tune-up (dBm) | Measured power (dBm) | Measured SAR1g | Power Drift (dB) | Scaling Factor | Report SAR1g | Plot No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GSM850 | Back Side | 10 | 4TX Slots | Full Power | - | - | 190/836.6 | 29.50 | 28.85 | 0.577 | -0.140 | 1.16 | 0.670 | 49 |
| | Front Side | 10 | 4TX Slots | Full Power | - | - | 190/836.6 | 29.50 | 28.85 | 0.343 | 0.037 | 1.16 | 0.398 | / |
| | Left Edge | 10 | 4TX Slots | Full Power | - | - | 190/836.6 | 29.50 | 28.85 | 0.103 | 0.020 | 1.16 | 0.120 | / |
| | Right Edge | 10 | 4TX Slots | Full Power | - | - | 190/836.6 | 29.50 | 28.85 | 0.150 | 0.000 | 1.16 | 0.174 | / |
| | Bottom Edge | 10 | 4TX Slots | Full Power | - | - | 190/836.6 | 29.50 | 28.85 | 0.255 | -0.028 | 1.16 | 0.296 | / |
| GSM1900 | Back Side | 10 | 4TX Slots | Full Power | - | - | 661/1880 | 26.50 | 25.64 | 0.594 | 0.100 | 1.22 | 0.724 | 50 |
| | Front Side | 10 | 4TX Slots | Full Power | - | - | 661/1880 | 26.50 | 25.64 | 0.261 | 0.012 | 1.22 | 0.318 | / |
| | Left Edge | 10 | 4TX Slots | Full Power | - | - | 661/1880 | 26.50 | 25.64 | 0.000 | 0.033 | 1.22 | 0.000 | / |
| | Right Edge | 10 | 4TX Slots | Full Power | - | - | 661/1880 | 26.50 | 25.64 | 0.422 | -0.010 | 1.22 | 0.514 | / |
| | Bottom Edge | 10 | 4TX Slots | Full Power | - | - | 661/1880 | 26.50 | 25.64 | 0.189 | 0.018 | 1.22 | 0.230 | / |
| WCDMA II | Back Side | 10 | RMC | Full Power | - | - | 9400/1880 | 23.50 | 21.99 | 0.515 | -0.090 | 1.42 | 0.729 | 51 |
| | Front Side | 10 | RMC | Full Power | - | - | 9400/1880 | 23.50 | 21.99 | 0.234 | 0.030 | 1.42 | 0.331 | / |
| | Left Edge | 10 | RMC | Full Power | - | - | 9400/1880 | 23.50 | 21.99 | 0.000 | 0.100 | 1.42 | 0.000 | / |
| | Right Edge | 10 | RMC | Full Power | - | - | 9400/1880 | 23.50 | 21.99 | 0.318 | 0.080 | 1.42 | 0.450 | / |
| | Bottom Edge | 10 | RMC | Full Power | - | - | 9400/1880 | 23.50 | 21.99 | 0.318 | -0.024 | 1.42 | 0.450 | / |
| WCDMA IV | Back Side | 10 | RMC | Full Power | - | - | 1413/1732.6 | 23.50 | 22.04 | 0.652 | 0.030 | 1.40 | 0.913 | 52 |
| | | 10 | RMC | Full Power | - | - | 1312/1712.4 | 23.50 | 22.03 | 0.584 | 0.040 | 1.40 | 0.819 | / |
| | | 10 | RMC | Full Power | - | - | 1513/1752.6 | 23.50 | 22.04 | 0.611 | 0.060 | 1.40 | 0.855 | / |
| | Front Side | 10 | RMC | Full Power | - | - | 1413/1732.6 | 23.50 | 22.04 | 0.151 | 0.011 | 1.40 | 0.211 | / |
| | Left Edge | 10 | RMC | Full Power | - | - | 1413/1732.6 | 23.50 | 22.04 | 0.000 | 0.000 | 1.40 | 0.000 | / |
| | Right Edge | 10 | RMC | Full Power | - | - | 1413/1732.6 | 23.50 | 22.04 | 0.263 | 0.027 | 1.40 | 0.368 | / |
| | Bottom Edge | 10 | RMC | Full Power | - | - | 1413/1732.6 | 23.50 | 22.04 | 0.437 | 0.012 | 1.40 | 0.612 | / |
| WCDMA V | Back Side | 10 | RMC | Full Power | - | - | 4183/836.6 | 23.50 | 22.26 | 0.377 | 0.080 | 1.33 | 0.502 | 53 |
| | Front Side | 10 | RMC | Full Power | - | - | 4183/836.6 | 23.50 | 22.26 | 0.197 | 0.027 | 1.33 | 0.262 | / |
| | Left Edge | 10 | RMC | Full Power | - | - | 4183/836.6 | 23.50 | 22.26 | 0.000 | -0.010 | 1.33 | 0.000 | / |
| | Right Edge | 10 | RMC | Full Power | - | - | 4183/836.6 | 23.50 | 22.26 | 0.051 | 0.050 | 1.33 | 0.068 | / |
| | Bottom Edge | 10 | RMC | Full Power | - | - | 4183/836.6 | 23.50 | 22.26 | 0.163 | -0.022 | 1.33 | 0.217 | / |
| LTE 2 | Back Side | 10 | QPSK | Full Power | 1 | 50 | 19100/1900 | 23.50 | 22.41 | 0.560 | 0.180 | 1.29 | 0.720 | 54 |
| | | 10 | QPSK | Full Power | 50% | 0 | 18900/1880 | 22.50 | 21.45 | 0.425 | 0.100 | 1.27 | 0.541 | / |
| | Front Side | 10 | QPSK | Full Power | 1 | 50 | 19100/1900 | 23.50 | 22.41 | 0.228 | 0.036 | 1.29 | 0.293 | / |
| | | 10 | QPSK | Full Power | 50% | 0 | 18900/1880 | 22.50 | 21.45 | 0.173 | 0.017 | 1.27 | 0.220 | / |
| | Left Edge | 10 | QPSK | Full Power | 1 | 50 | 19100/1900 | 23.50 | 22.41 | 0.000 | -0.100 | 1.29 | 0.000 | / |
| | | 10 | QPSK | Full Power | 50% | 0 | 18900/1880 | 22.50 | 21.45 | 0.000 | -0.035 | 1.27 | 0.000 | / |
| | Right Edge | 10 | QPSK | Full Power | 1 | 50 | 19100/1900 | 23.50 | 22.41 | 0.436 | 0.022 | 1.29 | 0.560 | / |
| | | 10 | QPSK | Full Power | 50% | 0 | 18900/1880 | 22.50 | 21.45 | 0.276 | -0.020 | 1.27 | 0.351 | / |
| | Bottom Edge | 10 | QPSK | Full Power | 1 | 50 | 19100/1900 | 23.50 | 22.41 | 0.344 | 0.050 | 1.29 | 0.442 | / |
| | | 10 | QPSK | Full Power | 50% | 0 | 18900/1880 | 22.50 | 21.45 | 0.311 | 0.100 | 1.27 | 0.396 | / |
| LTE4 | Back Side | 10 | QPSK | Full Power | 1 | 50 | 20300/1745 | 23.50 | 22.65 | 0.587 | -0.040 | 1.22 | 0.714 | / |
| | | 10 | QPSK | Full Power | 50% | 0 | 20050/1720 | 22.50 | 21.70 | 0.604 | 0.150 | 1.20 | 0.726 | 55 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Front Side | 10 | QPSK | Full Power | 1 | 50 | 20300/1745 | 23.50 | 22.65 | 0.147 | 0.037 | 1.22 | 0.179 | / |
| | | 10 | QPSK | Full Power | 50% | 0 | 20050/1720 | 22.50 | 21.70 | 0.133 | 0.036 | 1.20 | 0.160 | / |
| | Left Edge | 10 | QPSK | Full Power | 1 | 50 | 20300/1745 | 23.50 | 22.65 | 0.000 | 0.014 | 1.22 | 0.000 | / |
| | | 10 | QPSK | Full Power | 50% | 0 | 20050/1720 | 22.50 | 21.70 | 0.000 | -0.018 | 1.20 | 0.000 | / |
| | Right Edge | 10 | QPSK | Full Power | 1 | 50 | 20300/1745 | 23.50 | 22.65 | 0.333 | 0.020 | 1.22 | 0.405 | / |
| | | 10 | QPSK | Full Power | 50% | 0 | 20050/1720 | 22.50 | 21.70 | 0.262 | 0.028 | 1.20 | 0.315 | / |
| | Bottom Edge | 10 | QPSK | Full Power | 1 | 50 | 20300/1745 | 23.50 | 22.65 | 0.457 | -0.013 | 1.22 | 0.556 | / |
| | | 10 | QPSK | Full Power | 50% | 0 | 20050/1720 | 22.50 | 21.70 | 0.500 | 0.011 | 1.20 | 0.601 | / |
| LTE 5 | Back Side | 10 | QPSK | Full Power | 1 | 25 | 20525/836.5 | 23.50 | 22.81 | 0.360 | 0.027 | 1.17 | 0.422 | 56 |
| | | 10 | QPSK | Full Power | 50% | 0 | 20525/836.5 | 22.50 | 21.83 | 0.326 | 0.000 | 1.17 | 0.380 | / |
| | Front Side | 10 | QPSK | Full Power | 1 | 25 | 20525/836.5 | 23.50 | 22.81 | 0.225 | 0.000 | 1.17 | 0.264 | / |
| | | 10 | QPSK | Full Power | 50% | 0 | 20525/836.5 | 22.50 | 21.83 | 0.164 | 0.019 | 1.17 | 0.191 | / |
| | Left Edge | 10 | QPSK | Full Power | 1 | 25 | 20525/836.5 | 23.50 | 22.81 | 0.000 | 0.024 | 1.17 | 0.000 | / |
| | | 10 | QPSK | Full Power | 50% | 0 | 20525/836.5 | 22.50 | 21.83 | 0.154 | -0.020 | 1.17 | 0.180 | / |
| | Right Edge | 10 | QPSK | Full Power | 1 | 25 | 20525/836.5 | 23.50 | 22.81 | 0.046 | -0.018 | 1.17 | 0.054 | / |
| | | 10 | QPSK | Full Power | 50% | 0 | 20525/836.5 | 22.50 | 21.83 | 0.062 | 0.000 | 1.17 | 0.072 | / |
| | Bottom Edge | 10 | QPSK | Full Power | 1 | 25 | 20525/836.5 | 23.50 | 22.81 | 0.192 | 0.018 | 1.17 | 0.225 | / |
| | | 10 | QPSK | Full Power | 50% | 0 | 20525/836.5 | 22.50 | 21.83 | 0.152 | -0.132 | 1.17 | 0.177 | / |
| LTE 7 | Back Side | 10 | QPSK | Full Power | 1 | 50 | 21100/2535 | 23.50 | 22.55 | 0.057 | 0.040 | 1.24 | 0.071 | / |
| | | 10 | QPSK | Full Power | 50% | 50 | 21100/2535 | 22.50 | 21.58 | 0.107 | 0.060 | 1.24 | 0.132 | / |
| | Front Side | 10 | QPSK | Full Power | 1 | 50 | 21100/2535 | 23.50 | 22.55 | 0.075 | 0.120 | 1.24 | 0.093 | / |
| | | 10 | QPSK | Full Power | 50% | 50 | 21100/2535 | 22.50 | 21.58 | 0.052 | 0.032 | 1.24 | 0.064 | / |
| | Left Edge | 10 | QPSK | Full Power | 1 | 50 | 21100/2535 | 23.50 | 22.55 | 0.000 | 0.028 | 1.24 | 0.000 | / |
| | | 10 | QPSK | Full Power | 50% | 50 | 21100/2535 | 22.50 | 21.58 | 0.000 | -0.013 | 1.24 | 0.000 | / |
| | Right Edge | 10 | QPSK | Full Power | 1 | 50 | 21100/2535 | 23.50 | 22.55 | 0.159 | 0.170 | 1.24 | 0.198 | 57 |
| | | 10 | QPSK | Full Power | 50% | 50 | 21100/2535 | 22.50 | 21.58 | 0.131 | 0.130 | 1.24 | 0.162 | / |
| | Bottom Edge | 10 | QPSK | Full Power | 1 | 50 | 21100/2535 | 23.50 | 22.55 | 0.000 | 0.027 | 1.24 | 0.000 | / |
| | | 10 | QPSK | Full Power | 50% | 50 | 21100/2535 | 22.50 | 21.58 | 0.000 | 0.000 | 1.24 | 0.000 | / |
| LTE 19 | Back Side | 10 | QPSK | Full Power | 1 | 38 | 24075/837.5 | 23.50 | 22.81 | 0.378 | 0.000 | 1.17 | 0.443 | 58 |
| | | 10 | QPSK | Full Power | 50% | 39 | 24075/837.5 | 22.50 | 21.90 | 0.351 | 0.019 | 1.15 | 0.403 | / |
| | Front Side | 10 | QPSK | Full Power | 1 | 38 | 24075/837.5 | 23.50 | 22.81 | 0.236 | 0.024 | 1.17 | 0.277 | / |
| | | 10 | QPSK | Full Power | 50% | 39 | 24075/837.5 | 22.50 | 21.90 | 0.196 | -0.020 | 1.15 | 0.225 | / |
| | Left Edge | 10 | QPSK | Full Power | 1 | 38 | 24075/837.5 | 23.50 | 22.81 | 0.079 | -0.018 | 1.17 | 0.093 | / |
| | | 10 | QPSK | Full Power | 50% | 39 | 24075/837.5 | 22.50 | 21.90 | 0.249 | 0.000 | 1.15 | 0.286 | / |
| | Right Edge | 10 | QPSK | Full Power | 1 | 38 | 24075/837.5 | 23.50 | 22.81 | 0.073 | 0.120 | 1.17 | 0.086 | / |
| | | 10 | QPSK | Full Power | 50% | 39 | 24075/837.5 | 22.50 | 21.90 | 0.177 | 0.032 | 1.15 | 0.203 | / |
| | Bottom Edge | 10 | QPSK | Full Power | 1 | 38 | 24075/837.5 | 23.50 | 22.81 | 0.209 | 0.025 | 1.17 | 0.245 | / |
| | | 10 | QPSK | Full Power | 50% | 39 | 24075/837.5 | 22.50 | 21.90 | 0.190 | 0.012 | 1.15 | 0.218 | / |
| LTE 26 | Back Side | 10 | QPSK | Full Power | 1 | 38 | 26765/821.5 | 23.50 | 22.66 | 0.371 | -0.090 | 1.21 | 0.450 | 59 |
| | | 10 | QPSK | Full Power | 50% | 39 | 26765/821.5 | 22.50 | 21.81 | 0.276 | 0.120 | 1.17 | 0.324 | / |
| | Front Side | 10 | QPSK | Full Power | 1 | 38 | 26765/821.5 | 23.50 | 22.66 | 0.144 | 0.038 | 1.21 | 0.175 | / |
| | | 10 | QPSK | Full Power | 50% | 39 | 26765/821.5 | 22.50 | 21.81 | 0.133 | -0.011 | 1.17 | 0.156 | / |
| | Left Edge | 10 | QPSK | Full Power | 1 | 38 | 26765/821.5 | 23.50 | 22.66 | 0.110 | 0.050 | 1.21 | 0.133 | / |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 10 | QPSK | Full Power | 50% | 39 | 26765/821.5 | 22.50 | 21.81 | 0.103 | 0.032 | 1.17 | 0.121 | / |
| | Right Edge | 10 | QPSK | Full Power | 1 | 38 | 26765/821.5 | 23.50 | 22.66 | 0.168 | -0.099 | 1.21 | 0.204 | / |
| | | 10 | QPSK | Full Power | 50% | 39 | 26765/821.5 | 22.50 | 21.81 | 0.132 | 0.017 | 1.17 | 0.155 | / |
| | Bottom Edge | 10 | QPSK | Full Power | 1 | 38 | 26765/821.5 | 23.50 | 22.66 | 0.125 | 0.022 | 1.21 | 0.152 | / |
| | | 10 | QPSK | Full Power | 50% | 39 | 26765/821.5 | 22.50 | 21.81 | 0.111 | 0.100 | 1.17 | 0.130 | / |
| LTE 28A | Back Side | 10 | QPSK | Full Power | 1 | 50 | 27360/718 | 24.00 | 23.57 | 0.064 | 0.050 | 1.10 | 0.070 | 60 |
| | | 10 | QPSK | Full Power | 50% | 25 | 27410/723 | 23.00 | 22.44 | 0.055 | 0.020 | 1.14 | 0.063 | / |
| | Front Side | 10 | QPSK | Full Power | 1 | 50 | 27360/718 | 24.00 | 23.57 | 0.018 | 0.180 | 1.10 | 0.020 | / |
| | | 10 | QPSK | Full Power | 50% | 25 | 27410/723 | 23.00 | 22.44 | 0.015 | 0.070 | 1.14 | 0.017 | / |
| | Left Edge | 10 | QPSK | Full Power | 1 | 50 | 27360/718 | 24.00 | 23.57 | 0.000 | 0.000 | 1.10 | 0.000 | / |
| | | 10 | QPSK | Full Power | 50% | 25 | 27410/723 | 23.00 | 22.44 | 0.000 | 0.000 | 1.14 | 0.000 | / |
| | Right Edge | 10 | QPSK | Full Power | 1 | 50 | 27360/718 | 24.00 | 23.57 | 0.055 | 0.000 | 1.10 | 0.061 | / |
| | | 10 | QPSK | Full Power | 50% | 25 | 27410/723 | 23.00 | 22.44 | 0.049 | 0.000 | 1.14 | 0.056 | / |
| | Bottom Edge | 10 | QPSK | Full Power | 1 | 50 | 27360/718 | 24.00 | 23.57 | 0.000 | 0.000 | 1.10 | 0.000 | / |
| | | 10 | QPSK | Full Power | 50% | 25 | 27410/723 | 23.00 | 22.44 | 0.000 | 0.000 | 1.14 | 0.000 | / |
| LTE 28B | Back Side | 10 | QPSK | Full Power | 1 | 50 | 27460/728 | 24.00 | 23.41 | 0.076 | 0.024 | 1.15 | 0.087 | 61 |
| | | 10 | QPSK | Full Power | 50% | 50 | 27460/728 | 23.00 | 22.37 | 0.070 | 0.049 | 1.16 | 0.081 | / |
| | Front Side | 10 | QPSK | Full Power | 1 | 50 | 27460/728 | 24.00 | 23.41 | 0.026 | 0.090 | 1.15 | 0.030 | / |
| | | 10 | QPSK | Full Power | 50% | 50 | 27460/728 | 23.00 | 22.37 | 0.021 | -0.031 | 1.16 | 0.024 | / |
| | Left Edge | 10 | QPSK | Full Power | 1 | 50 | 27460/728 | 24.00 | 23.41 | 0.000 | 0.000 | 1.15 | 0.000 | / |
| | | 10 | QPSK | Full Power | 50% | 50 | 27460/728 | 23.00 | 22.37 | 0.000 | 0.000 | 1.16 | 0.000 | / |
| | Right Edge | 10 | QPSK | Full Power | 1 | 50 | 27460/728 | 24.00 | 23.41 | 0.066 | 0.110 | 1.15 | 0.076 | / |
| | | 10 | QPSK | Full Power | 50% | 50 | 27460/728 | 23.00 | 22.37 | 0.054 | 0.012 | 1.16 | 0.062 | / |
| | Bottom Edge | 10 | QPSK | Full Power | 1 | 50 | 27460/728 | 24.00 | 23.41 | 0.000 | 0.000 | 1.15 | 0.000 | / |
| | | 10 | QPSK | Full Power | 50% | 50 | 27460/728 | 23.00 | 22.37 | 0.000 | 0.000 | 1.16 | 0.000 | / |
| LTE 38 | Back Side | 10 | QPSK | Full Power | 1 | 50 | 38150/2610 | 23.50 | 22.78 | 0.106 | -0.020 | 1.18 | 0.125 | / |
| | | 10 | QPSK | Full Power | 50% | 25 | 38150/2610 | 22.50 | 21.75 | 0.084 | -0.168 | 1.19 | 0.100 | / |
| | Front Side | 10 | QPSK | Full Power | 1 | 50 | 38150/2610 | 23.50 | 22.78 | 0.045 | 0.020 | 1.18 | 0.053 | / |
| | | 10 | QPSK | Full Power | 50% | 25 | 38150/2610 | 22.50 | 21.75 | 0.032 | 0.000 | 1.19 | 0.038 | / |
| | Left Edge | 10 | QPSK | Full Power | 1 | 50 | 38150/2610 | 23.50 | 22.78 | 0.000 | 0.000 | 1.18 | 0.000 | / |
| | | 10 | QPSK | Full Power | 50% | 25 | 38150/2610 | 22.50 | 21.75 | 0.000 | 0.082 | 1.19 | 0.000 | / |
| | Right Edge | 10 | QPSK | Full Power | 1 | 50 | 38150/2610 | 23.50 | 22.78 | 0.109 | 0.070 | 1.18 | 0.129 | 62 |
| | | 10 | QPSK | Full Power | 50% | 25 | 38150/2610 | 22.50 | 21.75 | 0.088 | 0.120 | 1.19 | 0.105 | / |
| | Bottom Edge | 10 | QPSK | Full Power | 1 | 50 | 38150/2610 | 23.50 | 22.78 | 0.000 | 0.023 | 1.18 | 0.000 | / |
| | | 10 | QPSK | Full Power | 50% | 25 | 38150/2610 | 22.50 | 21.75 | 0.000 | 0.098 | 1.19 | 0.000 | / |
| LTE 40 | Back Side | 10 | QPSK | Full Power | 1 | 0 | 38700/2305 | 24.00 | 23.39 | 0.000 | 0.000 | 1.15 | 0.000 | / |
| | | 10 | QPSK | Full Power | 50% | 0 | 38700/2305 | 23.00 | 22.28 | 0.000 | 0.000 | 1.18 | 0.000 | / |
| | Front Side | 10 | QPSK | Full Power | 1 | 0 | 38700/2305 | 24.00 | 23.39 | 0.000 | 0.000 | 1.15 | 0.000 | / |
| | | 10 | QPSK | Full Power | 50% | 0 | 38700/2305 | 23.00 | 22.28 | 0.000 | 0.000 | 1.18 | 0.000 | / |
| | Left Edge | 10 | QPSK | Full Power | 1 | 0 | 38700/2305 | 24.00 | 23.39 | 0.000 | 0.000 | 1.15 | 0.000 | / |
| | | 10 | QPSK | Full Power | 50% | 0 | 38700/2305 | 23.00 | 22.28 | 0.000 | 0.000 | 1.18 | 0.000 | / |
| | Right Edge | 10 | QPSK | Full Power | 1 | 0 | 38700/2305 | 24.00 | 23.39 | 0.030 | 0.074 | 1.15 | 0.035 | / |
| | | 10 | QPSK | Full Power | 50% | 0 | 38700/2305 | 23.00 | 22.28 | 0.026 | -0.093 | 1.18 | 0.031 | / |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Bottom Edge | 10 | QPSK | Full Power | 1 | 0 | 38700/2305 | 24.00 | 23.39 | 0.000 | 0.000 | 1.15 | 0.000 | / |
| | | 10 | QPSK | Full Power | 50% | 0 | 38700/2305 | 23.00 | 22.28 | 0.000 | 0.000 | 1.18 | 0.000 | / |
| LTE 41 | Back Side | 10 | QPSK | Full Power | 1 | 50 | 40940/2625 | 24.00 | 22.89 | 0.108 | 0.020 | 1.31 | 0.139 | / |
| | | 10 | QPSK | Full Power | 50% | 50 | 41340/2665 | 23.00 | 22.13 | 0.097 | -0.130 | 1.32 | 0.119 | / |
| | Front Side | 10 | QPSK | Full Power | 1 | 50 | 40940/2625 | 24.00 | 22.89 | 0.054 | -0.050 | 1.31 | 0.070 | / |
| | | 10 | QPSK | Full Power | 50% | 50 | 41340/2665 | 23.00 | 22.13 | 0.044 | -0.020 | 1.32 | 0.054 | / |
| | Left Edge | 10 | QPSK | Full Power | 1 | 50 | 40940/2625 | 24.00 | 22.89 | 0.000 | -0.080 | 1.31 | 0.000 | / |
| | | 10 | QPSK | Full Power | 50% | 50 | 41340/2665 | 23.00 | 22.13 | 0.000 | -0.050 | 1.32 | 0.000 | / |
| | Right Edge | 10 | QPSK | Full Power | 1 | 50 | 40940/2625 | 24.00 | 22.89 | 0.111 | 0.062 | 1.31 | 0.143 | 63 |
| | | 10 | QPSK | Full Power | 50% | 50 | 41340/2665 | 23.00 | 22.13 | 0.100 | -0.030 | 1.32 | 0.122 | / |
| | Bottom Edge | 10 | QPSK | Full Power | 1 | 50 | 40940/2625 | 24.00 | 22.89 | 0.000 | 0.010 | 1.31 | 0.000 | / |
| | | 10 | QPSK | Full Power | 50% | 50 | 41340/2665 | 23.00 | 22.13 | 0.000 | -0.030 | 1.32 | 0.000 | / |

## Product Specific 10-g SAR

| Band | Test Position | Dist. (mm) | Mode | Power Reduction | RB | offset | Ch./Freq. (MHz) | Tune-up (dBm) | Measured power (dBm) | Measured SAR10g | Power Drift (dB) | Scaling Factor | Report SAR10g | Plot No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Wi-Fi 2.4G | Wi-Fi | Back Side | 0 | 802.11b | 100.0% | Full Power | 1/2412 | 18.00 | 17.64 | 0.512 | -0.030 | 1.09 | 0.556 | / |
| | | Front Side | 0 | 802.11b | 100.0% | Full Power | 1/2412 | 18.00 | 17.64 | 0.671 | 0.020 | 1.09 | 0.729 | / |
| | | Left Edge | 0 | 802.11b | 100.0% | Full Power | 1/2412 | 18.00 | 17.64 | 0.997 | 0.046 | 1.09 | 1.083 | 64 |
| | | Right Edge | 0 | 802.11b | 100.0% | Full Power | 1/2412 | 18.00 | 17.64 | 0.008 | -0.160 | 1.09 | 0.009 | / |
| | | Top Edge | 0 | 802.11b | 100.0% | Full Power | 1/2412 | 18.00 | 17.64 | 0.317 | -0.010 | 1.09 | 0.344 | / |
| U-NII-1 | Wi-Fi | Back Side | 0 | 802.11n HT20 | 96.0% | Full Power | 48/5240 | 16.00 | 15.47 | 0.546 | 0.143 | 1.18 | 0.643 | 65 |
| | | Front Side | 0 | 802.11n HT20 | 96.0% | Full Power | 48/5240 | 16.00 | 15.47 | 0.141 | 0.036 | 1.18 | 0.166 | / |
| | | Left Edge | 0 | 802.11n HT20 | 96.0% | Full Power | 48/5240 | 16.00 | 15.47 | 0.363 | -0.090 | 1.18 | 0.427 | / |
| | | Right Edge | 0 | 802.11n HT20 | 96.0% | Full Power | 48/5240 | 16.00 | 15.47 | 0.005 | 0.000 | 1.18 | 0.006 | / |
| | | Top Edge | 0 | 802.11n HT20 | 96.0% | Full Power | 48/5240 | 16.00 | 15.47 | 0.375 | -0.090 | 1.18 | 0.441 | / |
| U-NII-2A | Wi-Fi | Back Side | 0 | 802.11ac-VHT20 | 97.0% | Full Power | 52/5260 | 16.00 | 15.62 | 0.290 | 0.170 | 1.13 | 0.326 | / |
| | | Front Side | 0 | 802.11ac-VHT20 | 97.0% | Full Power | 52/5260 | 16.00 | 15.62 | 0.071 | 0.022 | 1.13 | 0.080 | / |
| | | Left Edge | 0 | 802.11ac-VHT20 | 97.0% | Full Power | 52/5260 | 16.00 | 15.62 | 0.225 | -0.050 | 1.13 | 0.253 | / |
| | | Right Edge | 0 | 802.11ac-VHT20 | 97.0% | Full Power | 52/5260 | 16.00 | 15.62 | 0.000 | 0.000 | 1.13 | 0.000 | / |
| | | Top Edge | 0 | 802.11ac-VHT20 | 97.0% | Full Power | 52/5260 | 16.00 | 15.62 | 0.174 | -0.050 | 1.13 | 0.196 | / |
| U-NII-3 | Wi-Fi | Back Side | 0 | 802.11n HT20 | 96.0% | Full Power | 165/5825 | 16.00 | 15.08 | 0.466 | 0.037 | 1.29 | 0.600 | / |
| | | Front Side | 0 | 802.11n HT20 | 96.0% | Full Power | 165/5825 | 16.00 | 15.08 | 0.100 | 0.095 | 1.29 | 0.129 | / |
| | | Left Edge | 0 | 802.11n HT20 | 96.0% | Full Power | 165/5825 | 16.00 | 15.08 | 0.274 | -0.150 | 1.29 | 0.353 | / |
| | | Right Edge | 0 | 802.11n HT20 | 96.0% | Full Power | 165/5825 | 16.00 | 15.08 | 0.001 | -0.081 | 1.29 | 0.001 | / |
| | | Top Edge | 0 | 802.11n HT20 | 96.0% | Full Power | 165/5825 | 16.00 | 15.08 | 0.261 | -0.100 | 1.29 | 0.336 | / |
| Bluetooth | BT | Back Side | 0 | GFSK | 76.9% | Full Power | 78/2480 | 12.00 | 11.39 | 0.039 | 0.168 | 1.50 | 0.058 | / |
| | | Front Side | 0 | GFSK | 76.9% | Full Power | 78/2480 | 12.00 | 11.39 | 0.044 | 0.023 | 1.50 | 0.066 | / |
| | | Left Edge | 0 | GFSK | 76.9% | Full Power | 78/2480 | 12.00 | 11.39 | 0.064 | 0.108 | 1.50 | 0.096 | 66 |
| | | Right Edge | 0 | GFSK | 76.9% | Full Power | 78/2480 | 12.00 | 11.39 | 0.000 | 0.070 | 1.50 | 0.000 | / |
| | | Top Edge | 0 | GFSK | 76.9% | Full Power | 78/2480 | 12.00 | 11.39 | 0.034 | -0.070 | 1.50 | 0.051 | / |

### BT

| Band | Configuration | Frequency (MHz) | Maximum Power (dBm) | Separation Distance (mm) | Estimated SAR (W/kg) |
|---|---|---|---|---|---|
| Bluetooth | Body-worn | 2480 | 12.00 | 15 | 0.222 |

For simultaneous transmission analysis, Bluetooth SAR is estimated per KDB 447498 D01 based on the formula below.

(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)]·[√f(GHz)/x] W/kg

for test separation distances ≤ 50 mm; where x = 7.5 for 1-g SAR, and x = 18.75 for 10-g SAR.

## 10.4 Simultaneous Transmission Analysis

| Simultaneous Transmission Configurations | Head | Body-worn | Hotspot | Product Specific 10-g SAR |
|---|---|---|---|---|
| WWAN + Bluetooth | Yes | Yes | Yes | Yes |
| WWAN + WLAN | 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**

| $SAR_{1g}$(W/kg) Test Position | | GSM 850 | GSM 1900 | WCDMA Band II | WCDMA Band IV | WCDMA Band V | LTE FDD 2 | LTE FDD 4 | LTE FDD 5 | LTE FDD 7 | LTE FDD 19 | LTE FDD 26 | LTE FDD 28A | LTE FDD 28B | LTE TDD 38 | LTE TDD 40 | LTE TDD 41 | MAX. $SAR_{1g}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Head | Left Cheek | 0.143 | 0.096 | 0.174 | 0.127 | 0.113 | 0.195 | 0.116 | 0.157 | 0.042 | 0.157 | 0.231 | 0.021 | 0.025 | 0.030 | 0.010 | 0.048 | 0.231 |
| | Left Tilt | 0.071 | 0.057 | 0.107 | 0.046 | 0.057 | 0.131 | 0.070 | 0.069 | 0.050 | 0.069 | 0.116 | 0.009 | 0.010 | 0.037 | 0.007 | 0.051 | 0.131 |
| | Right Cheek | 0.107 | 0.216 | 0.353 | 0.244 | 0.093 | 0.382 | 0.235 | 0.127 | 0.057 | 0.096 | 0.203 | 0.020 | 0.022 | 0.041 | 0.023 | 0.079 | 0.382 |
| | Right Tilt | 0.078 | 0.052 | 0.097 | 0.050 | 0.069 | 0.111 | 0.054 | 0.084 | 0.020 | 0.066 | 0.137 | 0.010 | 0.012 | 0.021 | 0.001 | 0.016 | 0.137 |
| Body worn | Back Side | 0.271 | 0.175 | 0.338 | 0.480 | 0.251 | 0.369 | 0.457 | 0.306 | 0.092 | 0.324 | 0.302 | 0.063 | 0.062 | 0.063 | 0.000 | 0.079 | 0.480 |
| | Front Side | 0.146 | 0.088 | 0.188 | 0.112 | 0.114 | 0.163 | 0.108 | 0.237 | 0.000 | 0.263 | 0.169 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.263 |
| Hotspot | Back Side | 0.670 | 0.724 | 0.729 | 0.913 | 0.502 | 0.720 | 0.726 | 0.422 | 0.132 | 0.443 | 0.450 | 0.070 | 0.087 | 0.125 | 0.000 | 0.139 | 0.913 |
| | Front Side | 0.398 | 0.318 | 0.331 | 0.211 | 0.262 | 0.293 | 0.179 | 0.264 | 0.093 | 0.277 | 0.175 | 0.020 | 0.030 | 0.053 | 0.000 | 0.070 | 0.398 |
| | Left Edge | 0.120 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.180 | 0.000 | 0.286 | 0.133 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.286 |
| | Right Edge | 0.174 | 0.514 | 0.450 | 0.368 | 0.068 | 0.560 | 0.405 | 0.072 | 0.198 | 0.203 | 0.204 | 0.061 | 0.076 | 0.129 | 0.035 | 0.143 | 0.560 |
| | Bottom Edge | 0.296 | 0.230 | 0.450 | 0.612 | 0.217 | 0.442 | 0.601 | 0.225 | 0.000 | 0.245 | 0.152 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.612 |

**About BT and Main- Antenna**

| $SAR_{1g/10g}$(W/kg) Test Position | | Main-antenna | BT | MAX. $\Sigma SAR_{1g/10g}$ |
|---|---|---|---|---|
| Head | Left, Cheek | 0.231 | 0.092 | 0.323 |
| | Left, Tilt | 0.131 | 0.068 | 0.199 |
| | Right, Cheek | 0.382 | 0.166 | 0.548 |
| | Right, Tilt | 0.137 | 0.120 | 0.257 |
| Body worn | Back Side | 0.480 | 0.222 | 0.702 |
| | Front Side | 0.263 | 0.222 | 0.485 |
| Hotspot | Back Side | 0.913 | NA | 0.913 |
| | Front Side | 0.398 | NA | 0.398 |
| | Left Edge | 0.286 | NA | 0.286 |
| | Right Edge | 0.560 | NA | 0.560 |
| | Bottom Edge | 0.612 | NA | 0.612 |
| Product Specific 10-g SAR | Back Side | NA | 0.058 | 0.058 |
| | Front Side | NA | 0.066 | 0.066 |
| | Left Edge | NA | 0.096 | 0.096 |
| | Right Edge | NA | 0.000 | 0.000 |
| | Top Edge | NA | 0.051 | 0.051 |

Note: 1.The value with blue color is the maximum $\Sigma SAR_{1g/10g}$ Value.

2.MAX. $\Sigma SAR_{1g/10g}$ =Unlicensed $SAR_{MAX}$ +Licensed $SAR_{MAX}$

MAX. $\Sigma SAR_{1g}$ =0.913W/kg<1.6W/kg and MAX. $\Sigma SAR_{10g}$ =0.096W/kg<4 W/kg, so the Simultaneous transimition SAR with volum scan are not required for BT and Main-Antenna.

**About Wi-Fi and Main-Antenna**

| Test Position \ $SAR_{1g/10g}$(W/kg) | | Main-antenna | Wi-Fi 2.4G | Wi-Fi (U-NII-1) | Wi-Fi (U-NII-2A) | Wi-Fi (U-NII-3) | MAX. $\Sigma SAR_{1g}$ |
|---|---|---|---|---|---|---|---|
| Head | Left, Cheek | 0.231 | 0.408 | **0.508** | 0.305 | 0.225 | 0.739 |
| | Left, Tilt | 0.131 | 0.316 | **0.561** | 0.317 | 0.277 | 0.692 |
| | Right, Cheek | 0.382 | **1.108** | 0.402 | 0.330 | 0.256 | 1.490 |
| | Right, Tilt | 0.137 | **0.618** | 0.373 | 0.369 | 0.256 | 0.755 |
| Body worn | Back Side | 0.480 | 0.106 | **0.358** | 0.335 | 0.279 | 0.838 |
| | Front Side | 0.263 | 0.147 | **0.224** | 0.212 | 0.070 | 0.487 |
| Hotspot | Back Side | 0.913 | NA | NA | NA | NA | 0.913 |
| | Front Side | 0.398 | NA | NA | NA | NA | 0.398 |
| | Left Edge | 0.286 | NA | NA | NA | NA | 0.286 |
| | Right Edge | 0.560 | NA | NA | NA | NA | 0.560 |
| | Bottom Edge | 0.612 | NA | NA | NA | NA | 0.612 |
| Product Specific 10-g SAR | Back Side | NA | 0.556 | **0.643** | 0.326 | 0.600 | 0.643 |
| | Front Side | NA | **0.729** | 0.166 | 0.080 | 0.129 | 0.729 |
| | Left Edge | NA | **1.083** | 0.427 | 0.253 | 0.353 | 1.083 |
| | Right Edge | NA | **0.009** | 0.006 | 0.000 | 0.001 | 0.009 |
| | Top Edge | NA | 0.344 | **0.441** | 0.196 | 0.336 | 0.441 |

Note: 1.The value with blue color is the maximum $\Sigma SAR_{1g/10g}$ Value.

2.MAX. $\Sigma SAR_{1g/10g}$ =Unlicensed $SAR_{MAX}$ +Licensed $SAR_{MAX}$

MAX. $\Sigma SAR_{1g}$ = 1.490W/kg<1.6W/kg and MAX. $\Sigma SAR_{10g}$ = 1.083W/kg<4 W/kg, so the Simultaneous transimition SAR with volum scan are not required for Wi-Fi and Main-Antenna.

# 11 Measurement Uncertainty

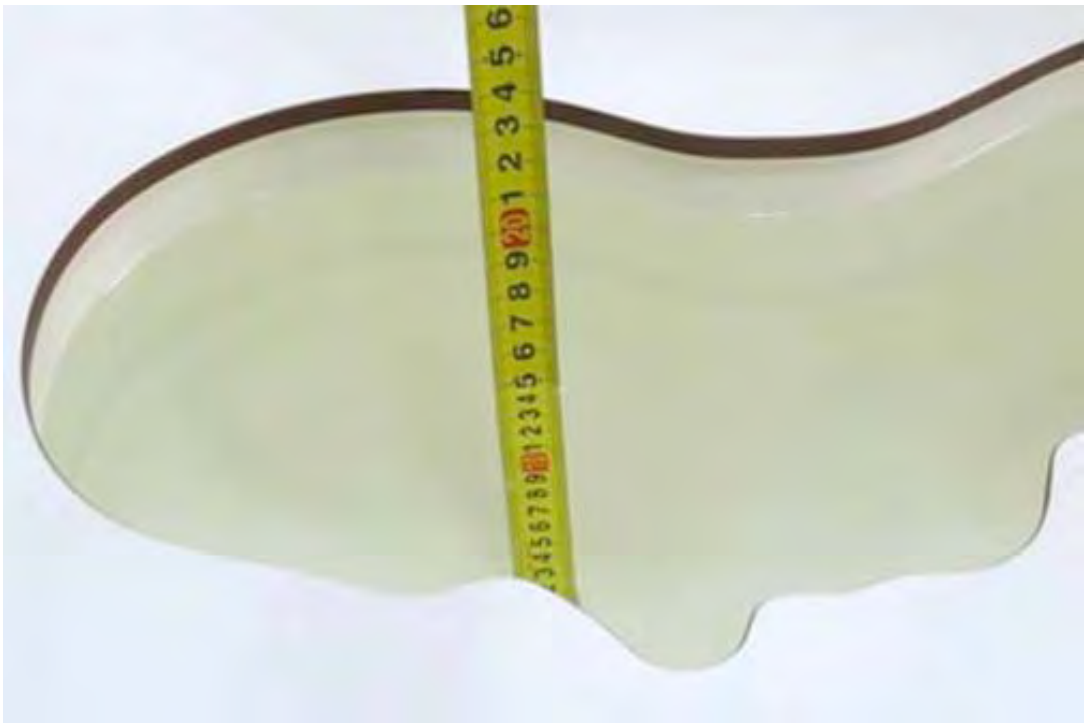
Per KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg, the extensive SAR measurement uncertainty analysis described in IEEE Std 1528- 2013 is not required in SAR reports submitted for equipment approval. This also applies to the 10-g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

********END OF REPORT ********

# 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.



Picture 3: liquid depth in the head Phantom

# ANNEX B: System Check Results

## Plot 1 System Performance Check at 750 MHz TSL

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

Date: 2021/11/15

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

Medium parameters used: f = 750 MHz; $\sigma$ = 0.88 S/m; $\varepsilon_r$ = 42.3; $\rho$ = 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(9.64, 9.64, 9.64); Calibrated:2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**d=15mm,Pin=250mW/Area Scan (4x12x1):** Measurement grid: dx=15mm, dy=15mm

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

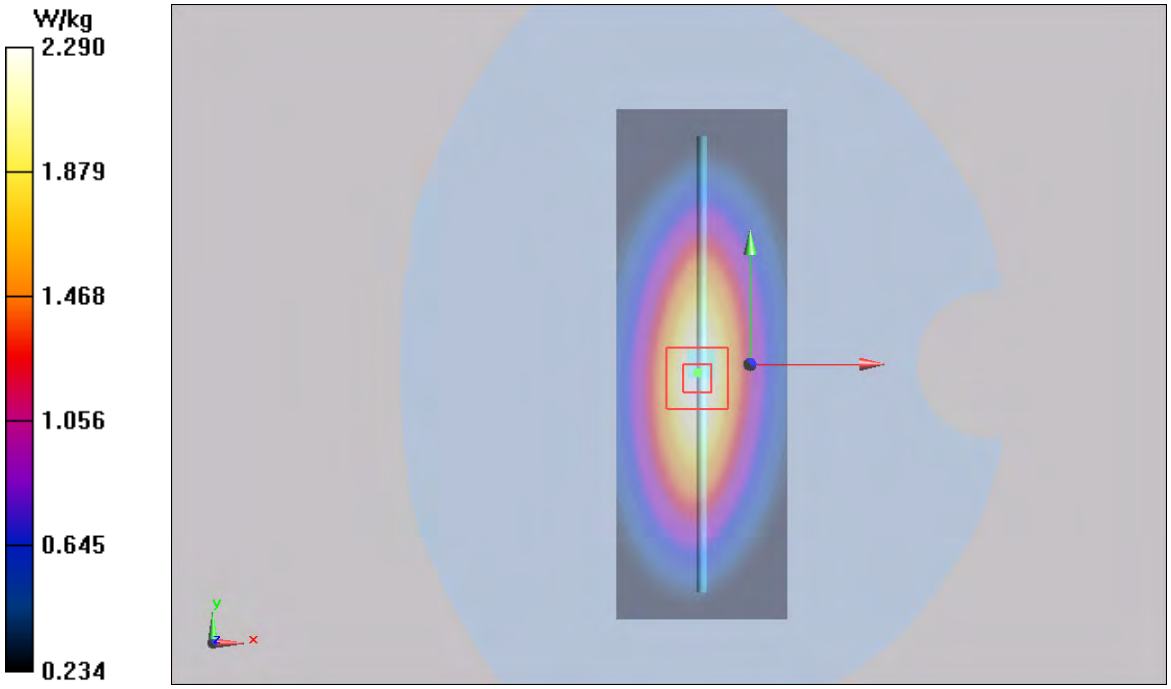
**d=15mm,Pin=250mW/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

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

Peak SAR (extrapolated) = 3.16 W/kg

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

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



## Plot 2 System Performance Check at 835 MHz TSL

**DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d020**

Date: 2021/11/16

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

Medium parameters used: f = 835 MHz; $\sigma$ =0.87 S/m; $\varepsilon_r$ = 41.3; $\rho$ = 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(9.30, 9.30, 9.30); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**d=15mm, Pin=250mW/Area Scan (4x12x1):** Measurement grid: dx=15mm, dy=15mm

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

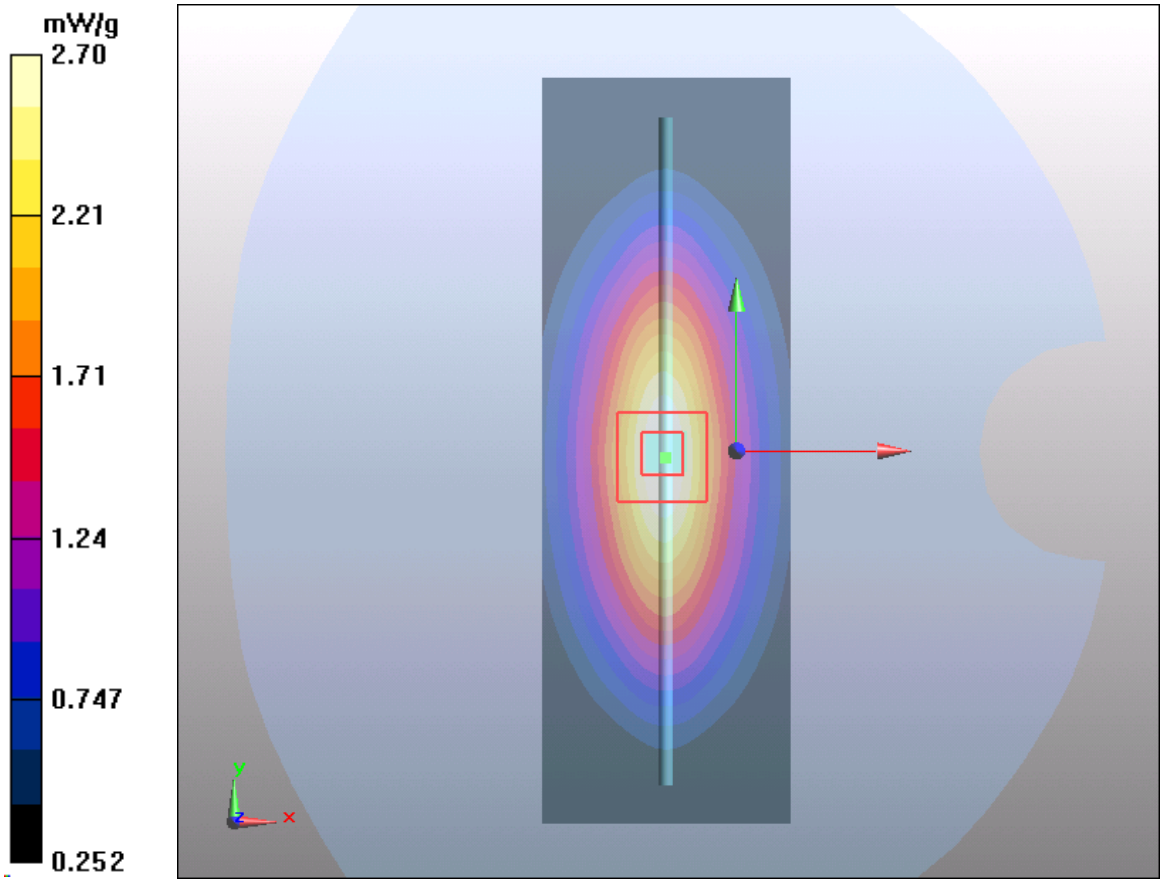
**d=15mm, Pin=250mW/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

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: 4d020**

Date: 2021/11/17

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

Medium parameters used: f = 835 MHz; $\sigma$ = 0.92 S/m; $\varepsilon_r$ = 41.4; $\rho$ = 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(9.30, 9.30, 9.30); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**d=15mm, Pin=250mW/Area Scan (4x12x1):** Measurement grid: dx=15mm, dy=15mm

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

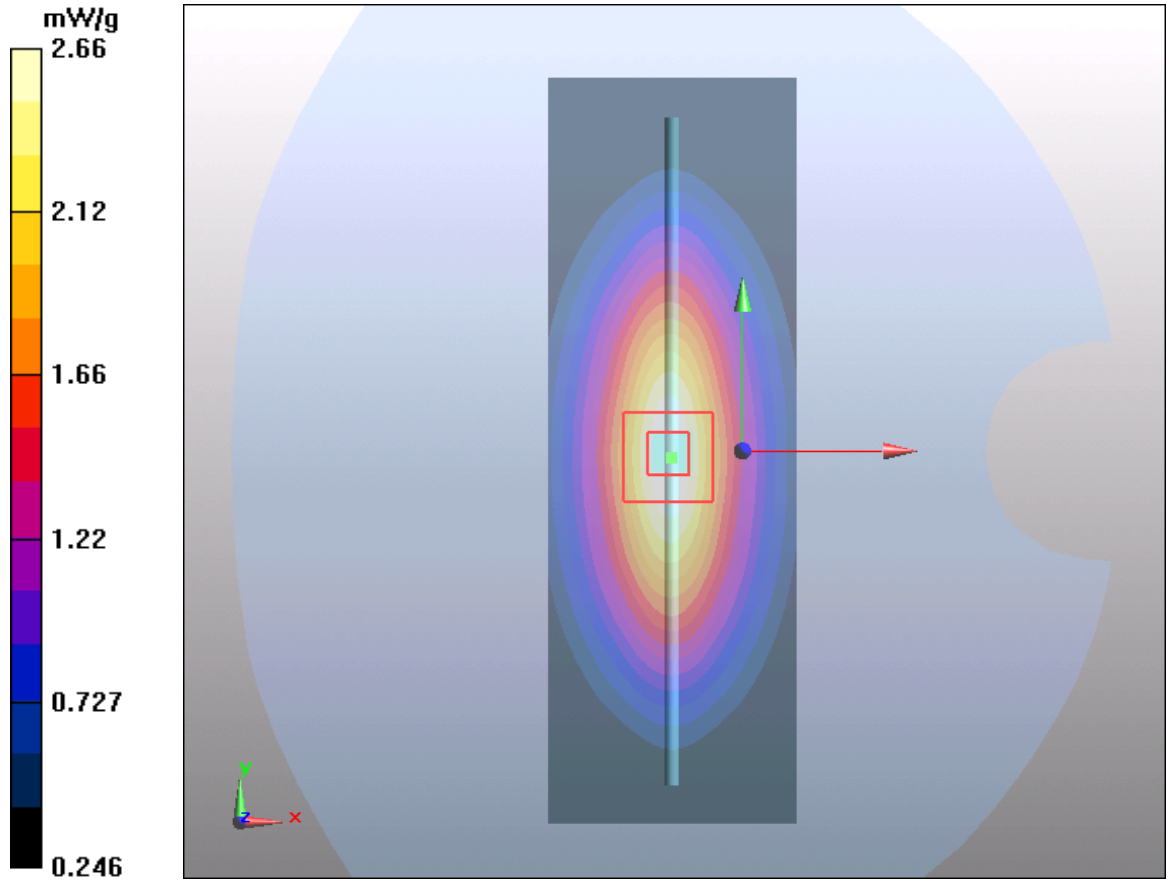
**d=15mm, Pin=250mW/Zoom Scan(5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

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: 1033**

Date: 2021/11/14

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

Medium parameters used: f = 1750 MHz; $\sigma$ = 1.34 S/m; $\varepsilon_r$ = 40.2; $\rho$ = 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(8.22, 8.22, 8.22); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**d=10mm, Pin=250mW/Area Scan (5x8x1):** Measurement grid: dx=15mm, dy=15mm

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

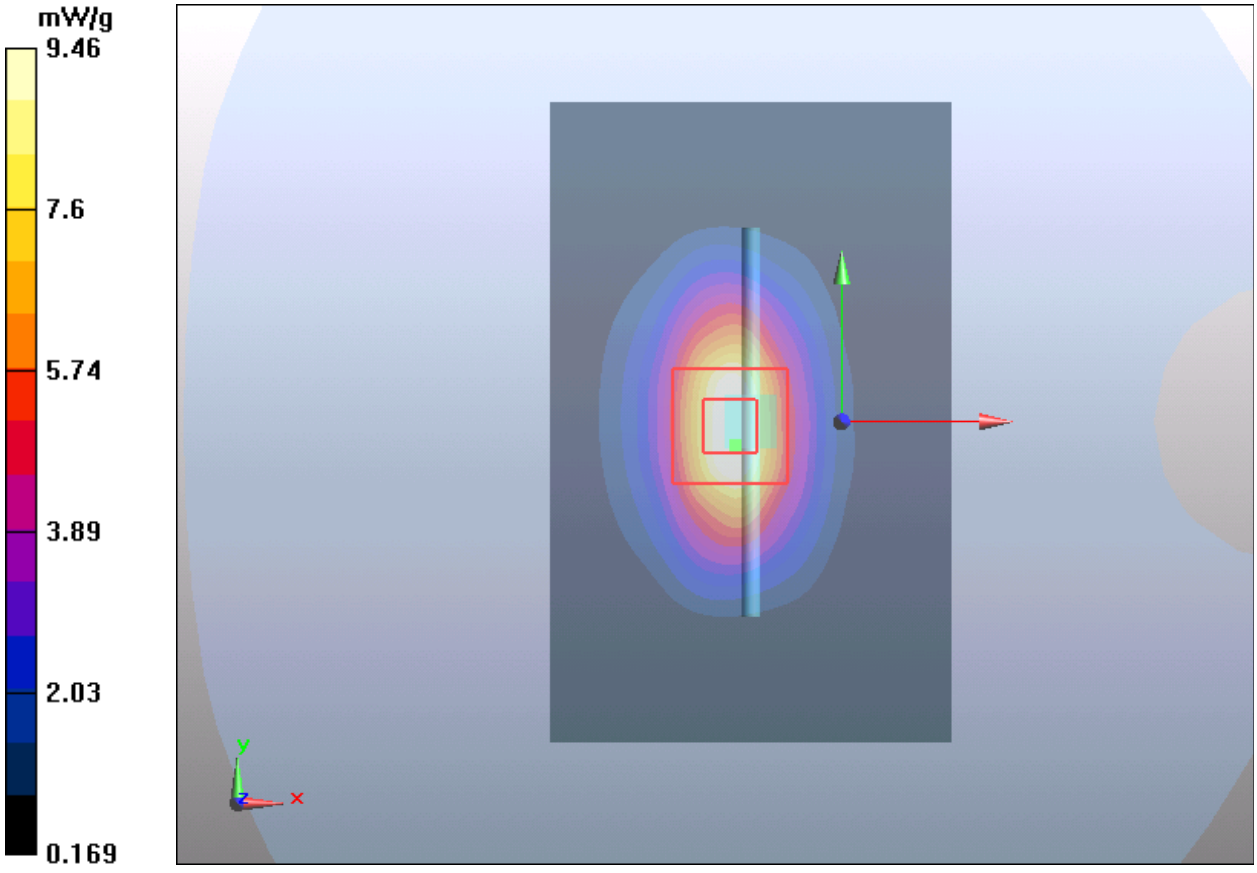
**d=10mm, Pin=250mW/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

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: 5d060**

Date: 2021/11/18

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

Medium parameters used: f = 1900 MHz; $\sigma$ = 1.41 S/m; $\varepsilon_r$ = 40.1; $\rho$ = 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(7.88, 7.88, 7.88); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**d=10mm, Pin=250mW/Area Scan (4x7x1):** Measurement grid: dx=15mm, dy=15mm

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

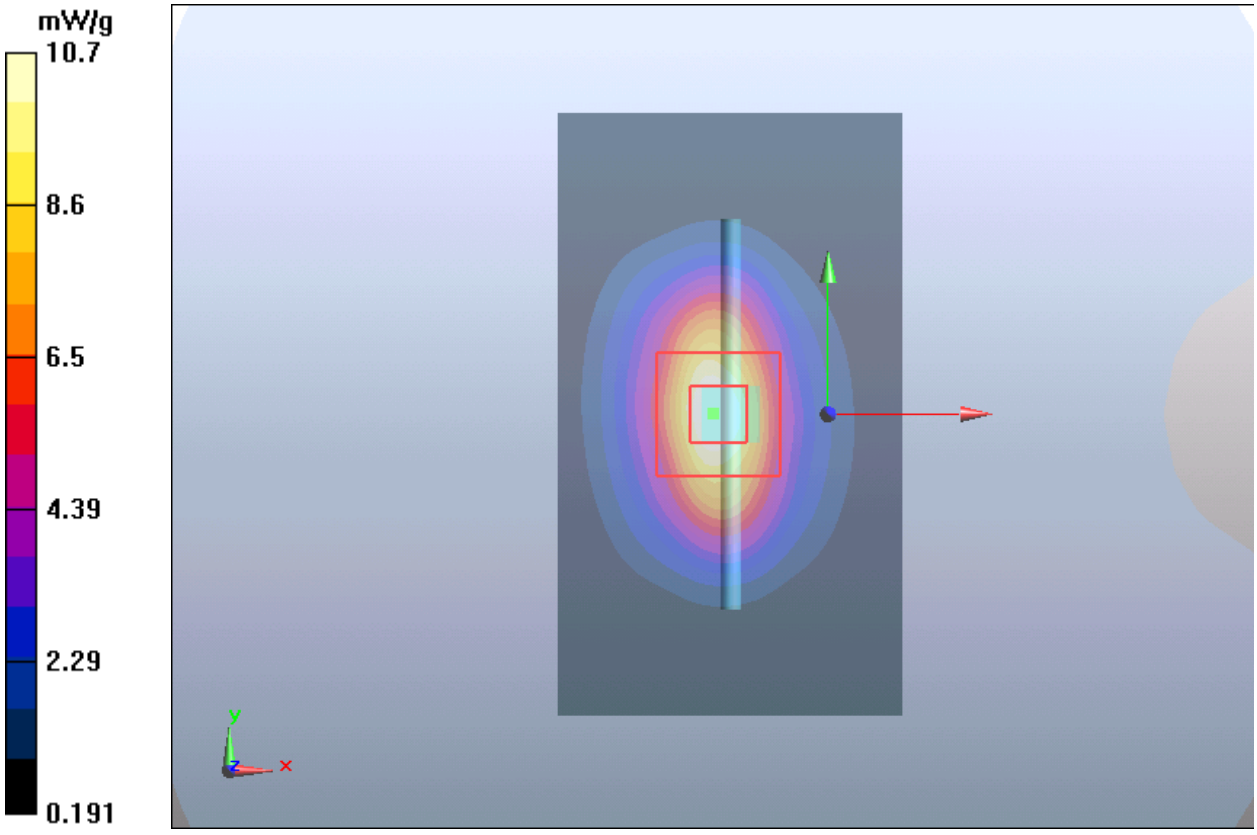
**d=10mm, Pin=250mW/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

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 2300 MHz TSL

**DUT: Dipole 2300 MHz; Type: D2300V2; Serial: 1110**

Date: 2021/11/19

Communication System: CW Frequency: 2300 MHz;Duty Cycle: 1:1

Medium parameters used: f = 2300 MHz; $\sigma$ = 1.65 S/m; $\varepsilon_r$ = 40.0; $\rho$ = 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(7.67, 7.67, 7.67); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**d=10mm, Pin=250mW/Area Scan (6x10x1):** Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 16.0 W/kg

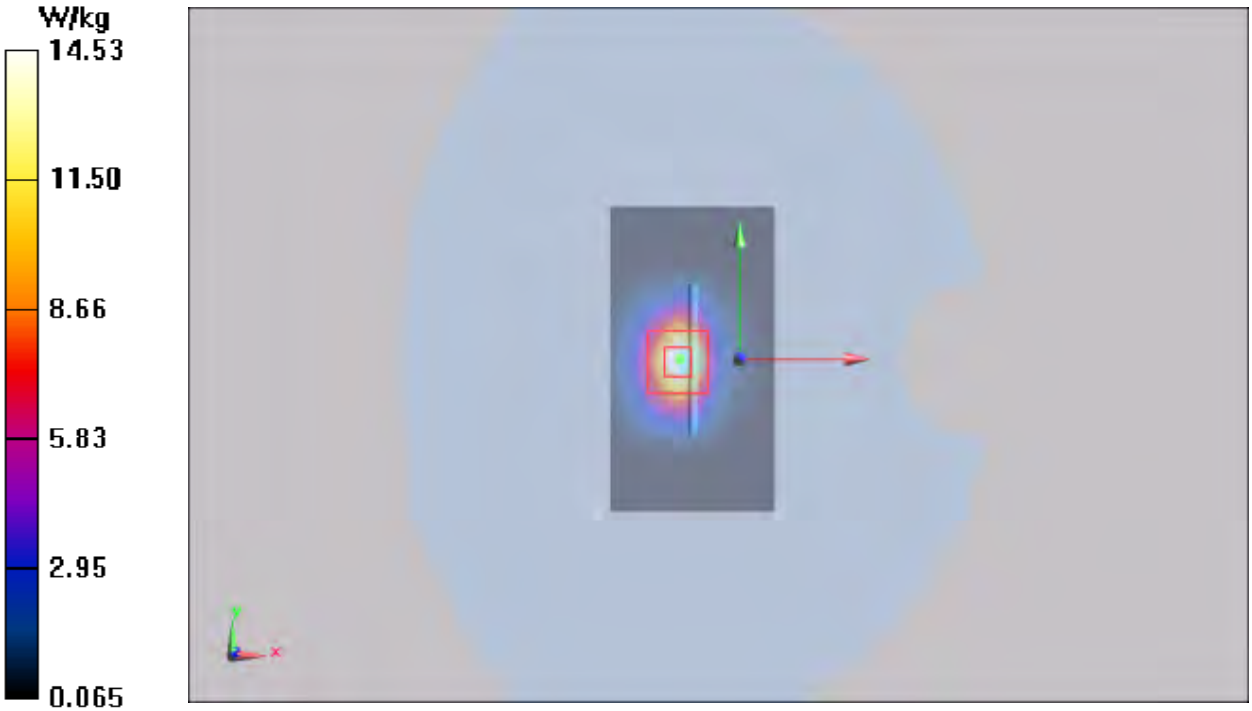
**d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 85.188 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 26.4 W/kg

**SAR(1 g) = 12.6 W/kg; SAR(10 g) = 5.80 W/kg**

Maximum value of SAR (measured) = 14.53 W/kg



## Plot 7 System Performance Check at 2450 MHz TSL

**DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 786**

Date: 2021/12/27

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

Medium parameters used: f = 2450 MHz; $\sigma$ = 1.81 S/m; $\varepsilon_r$ = 38.6; $\rho$ = 1000 kg/m$^3$

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.50, 7.50, 7.50); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**d=10mm, Pin=250mW/Area Scan (4x7x1):** Measurement grid: dx=12mm, dy=12mm

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

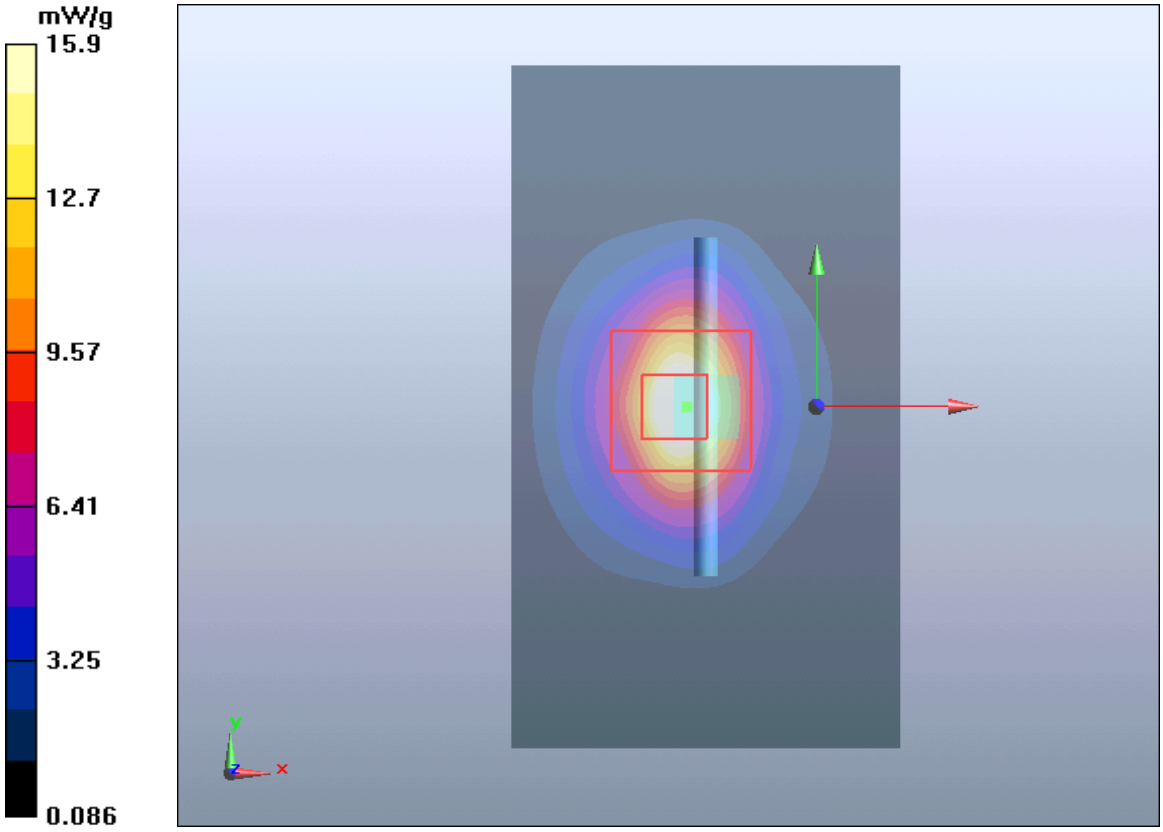
**d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

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 8 System Performance Check at 2600 MHz TSL

**DUT: Dipole 2600 MHz; Type: D2600V2; Serial: 1025**

Date: 2021/12/01

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

Medium parameters used: f = 2600 MHz; $\sigma$ = 2.01 S/m; $\varepsilon_r$ = 38.2; $\rho$ = 1000 kg/m$^3$

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.25, 7.25, 7.25); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**d=10mm, Pin=250mW/Area Scan (4x7x1):** Measurement grid:dx=12mm, dy=12mm

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

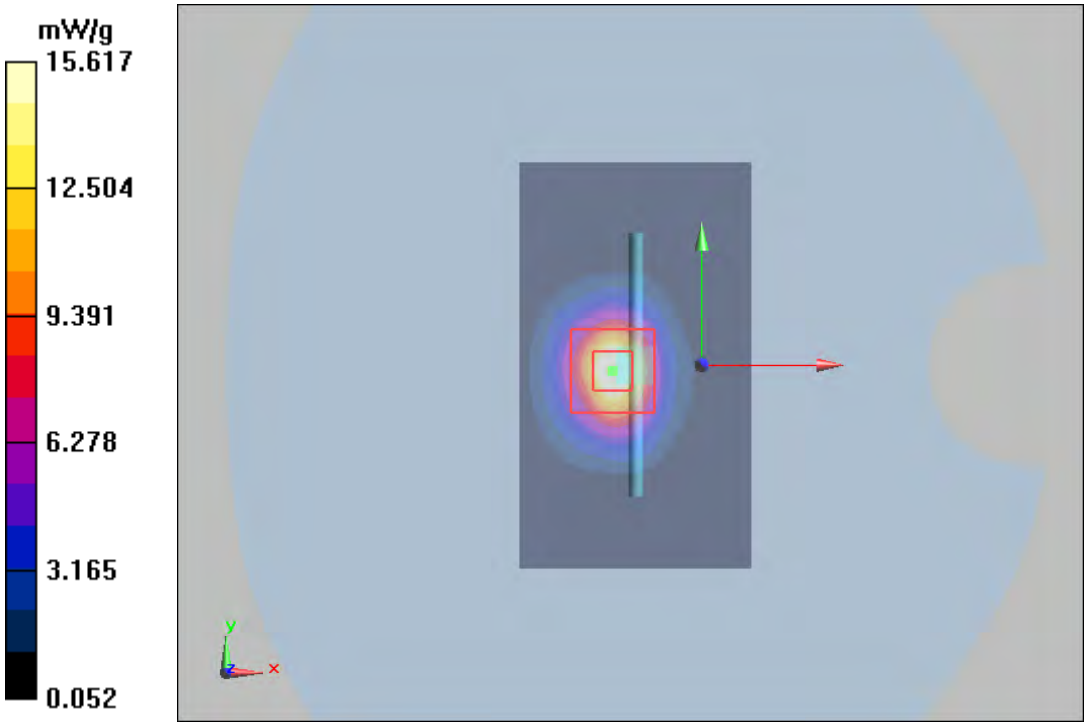
**d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

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 9 System Performance Check at 2600 MHz TSL

**DUT: Dipole 2600 MHz; Type: D2600V2; Serial: 1025**

Date: 2021/12/02

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

Medium parameters used: f = 2600 MHz; $\sigma$ =1.94S/m; $\varepsilon_r$ = 38.4; $\rho$ = 1000 kg/m$^3$

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.25, 7.25, 7.25); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**d=10mm, Pin=250mW/Area Scan (4x7x1):** Measurement grid:dx=12mm, dy=12mm

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

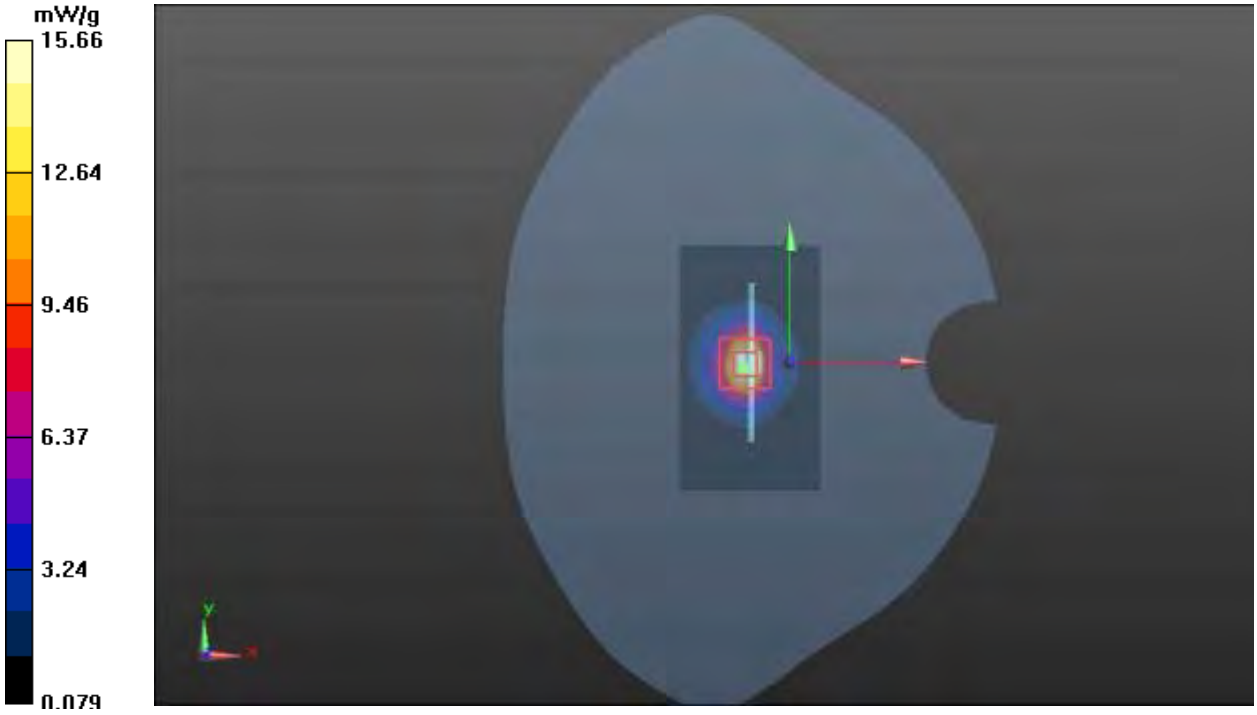
**d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

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 10 System Performance Check at 5250 MHz TSL

**DUT: Dipole 5250 MHz; Type: D5GHzV2; Serial: 1151**

Date: 2021/12/20

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

Medium parameters used: f = 5250 MHz; $\sigma$ = 4.80 S/m; $\varepsilon_r$ = 35.5; $\rho$ = 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(5.45, 5.45, 5.45); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**d=10mm, Pin=100mW/Area Scan (6x10x1):** Measurement grid: dx=10mm, dy=10mm

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

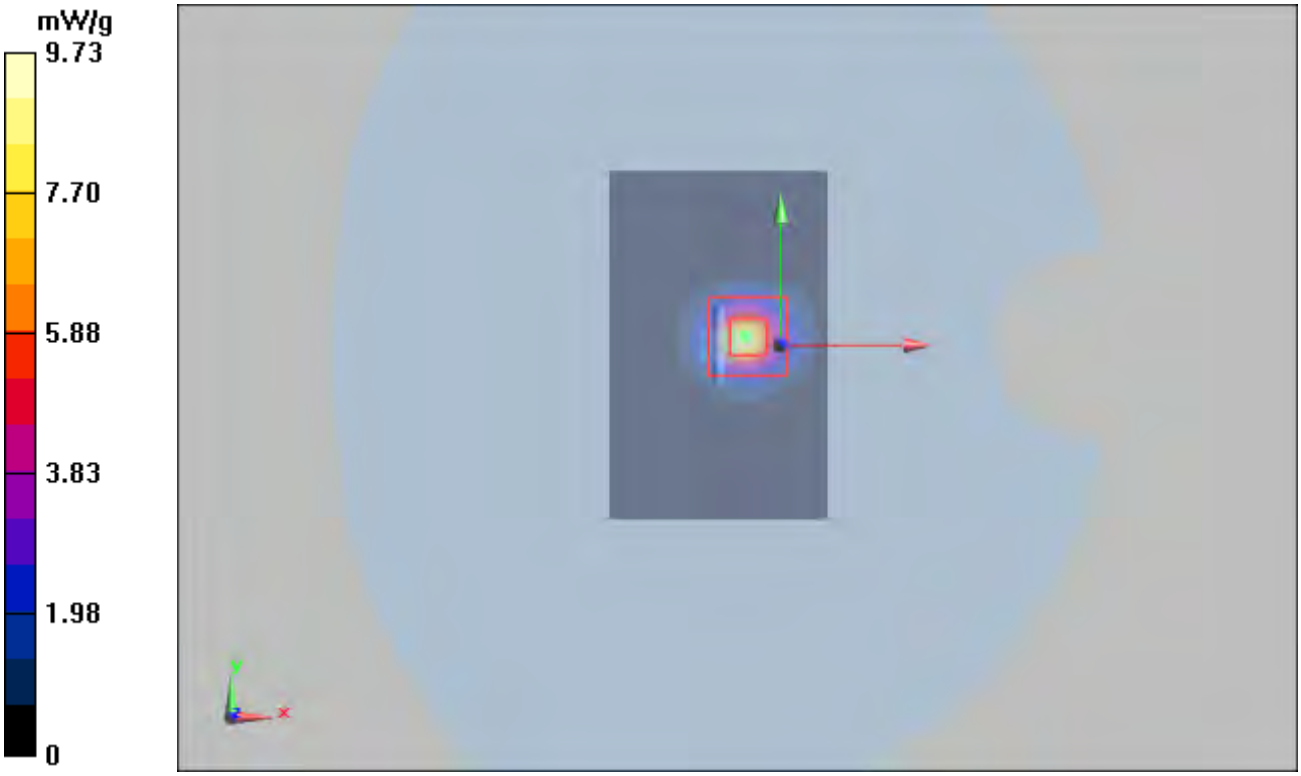
**d=10mm, Pin=100mW/Zoom Scan (7x7x12)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=2mm

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 5750 MHz TSL

**DUT: Dipole 5750 MHz; Type: D5GHzV2; Serial: 1151**

Date: 2021/12/21

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

Medium parameters used: f = 5750 MHz; $\sigma$ = 5.21 S/m; $\varepsilon_r$ = 34.9; $\rho$ = 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(5.04, 5.04, 5.04); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**d=10mm, Pin=100mW/Area Scan (6x10x1):** Measurement grid: dx=10mm, dy=10mm

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

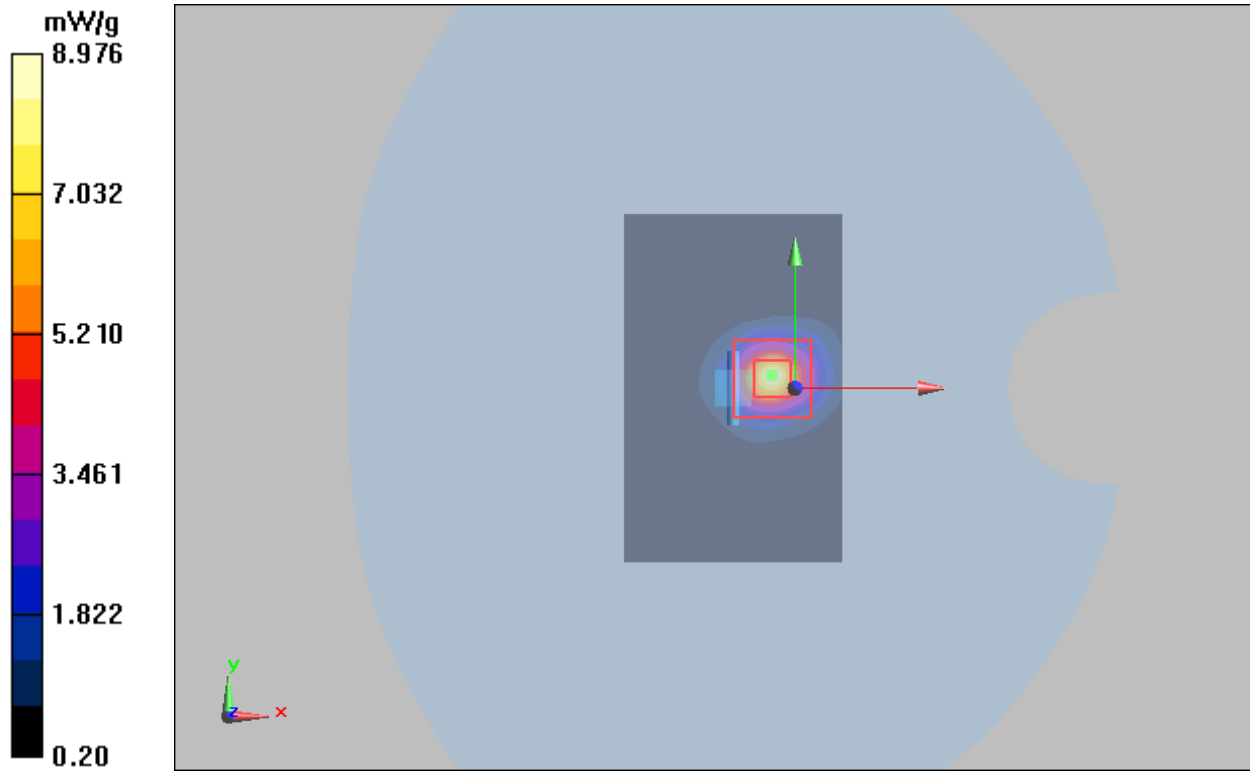
**d=10mm, Pin=100mW/Zoom Scan (7x7x12)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=2mm

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

## Plot 12 GSM 850 Left Cheek Middle

Date: 2021/11/16

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

Medium parameters used: f = 837 MHz; $\sigma$ = 0.953 S/m; $\varepsilon_r$ = 39.762; $\rho$ = 1000 kg/m$^3$

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.30, 9.30, 9.30); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Left Cheek Middle/Area Scan (8x14x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.114W/kg

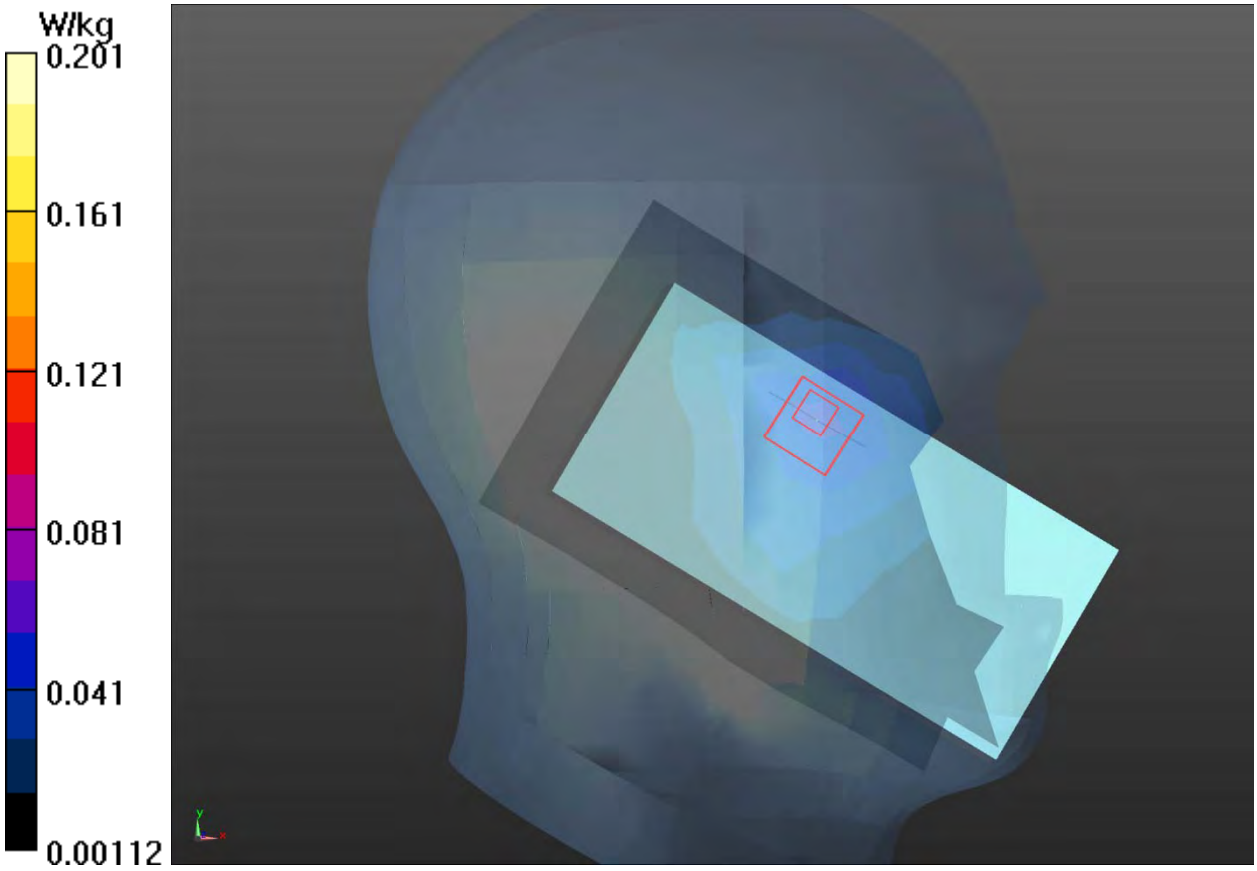
**Left Cheek Middle/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 0.235 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 0.0730 W/kg

**SAR(1 g) = 0.112 W/kg; SAR(10 g) = 0.081 W/kg**

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



## Plot 13 GSM 1900 Right Cheek Middle

Date: 2021/11/18

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

Medium parameters used: f = 1880 MHz; $\sigma$ = 1.42 S/m; $\varepsilon_r$ = 38.948; $\rho$ = 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(7.88, 7.88, 7.88); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Right Cheek Middle/Area Scan (8x14x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.221 W/kg

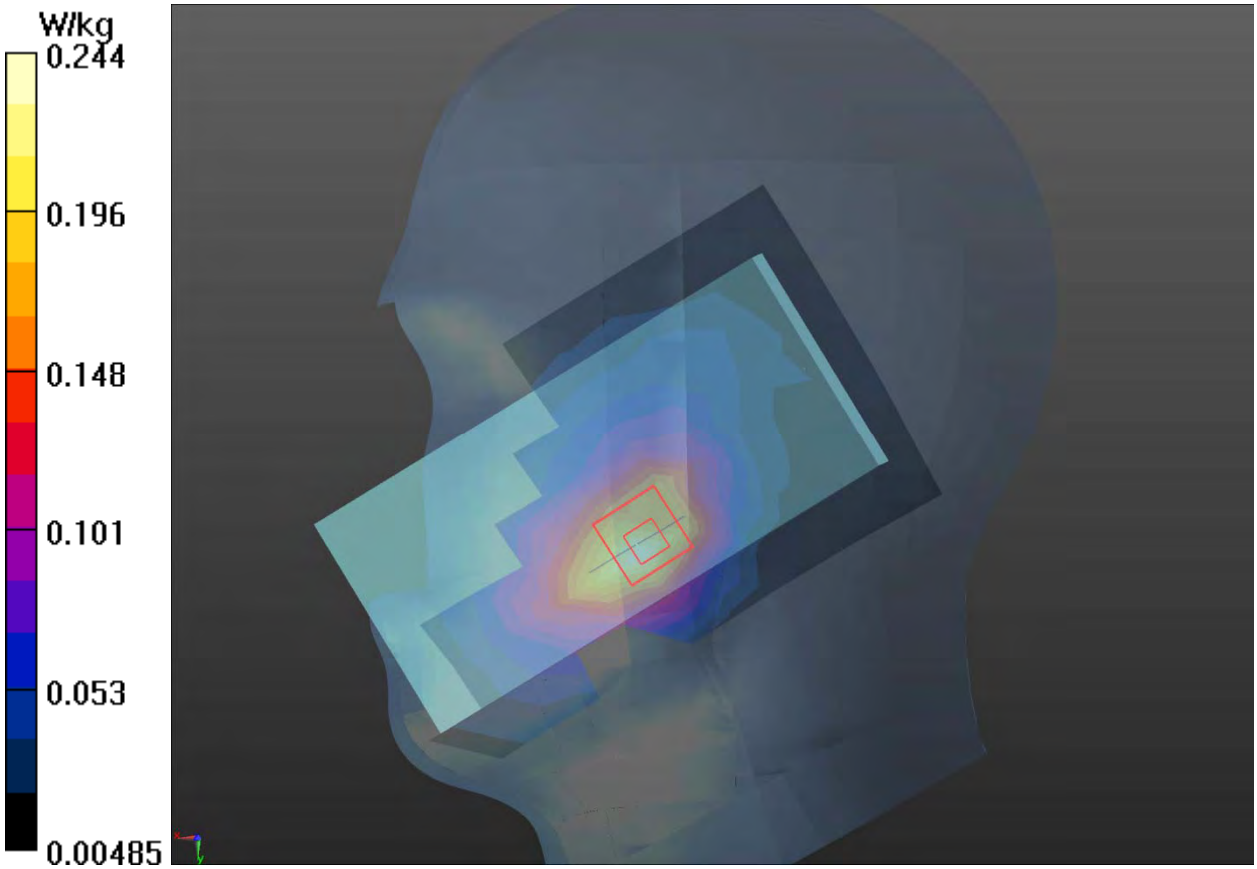
**Right Cheek Middle/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.335 V/m; Power Drift = 0.078 dB

Peak SAR (extrapolated) = 0.288 W/kg

**SAR(1 g) = 0.180 W/kg; SAR(10 g) = 0.111 W/kg**

Maximum value of SAR (measured) = 0.244 W/kg



## Plot 14 UMTS Band II Right Cheek Middle

Date: 2021/11/18

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

Medium parameters used: f = 1880 MHz; $\sigma$ = 1.42 S/m; $\varepsilon_r$ = 38.948; $\rho$ = 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(7.88, 7.88, 7.88); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Right Cheek Middle/Area Scan (8x14x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.323 W/kg

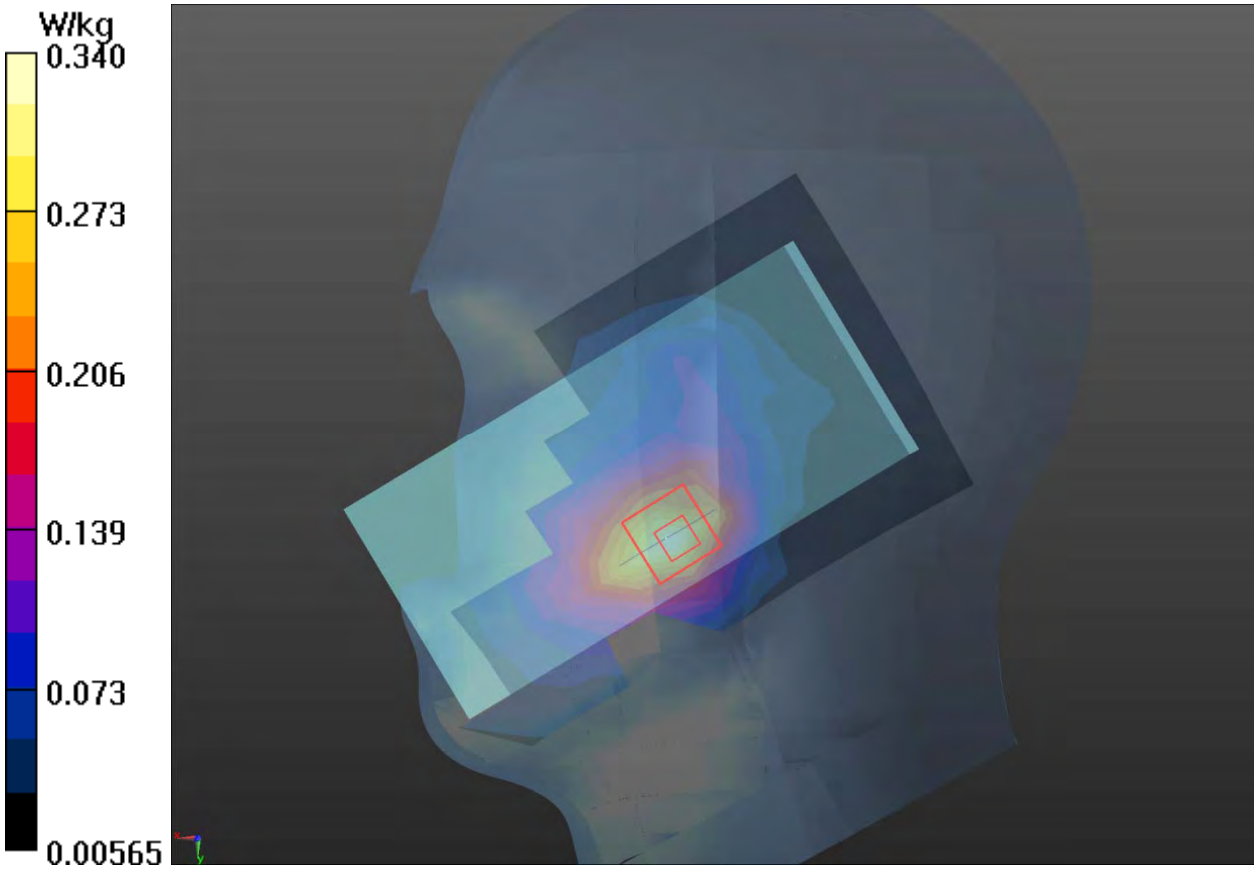
**Right Cheek Middle/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 2.860 V/m; Power Drift = 0.041 dB

Peak SAR (extrapolated) = 0.413 W/kg

**SAR(1 g) = 0.249 W/kg; SAR(10 g) = 0.152 W/kg**

Maximum value of SAR (measured) = 0.340 W/kg

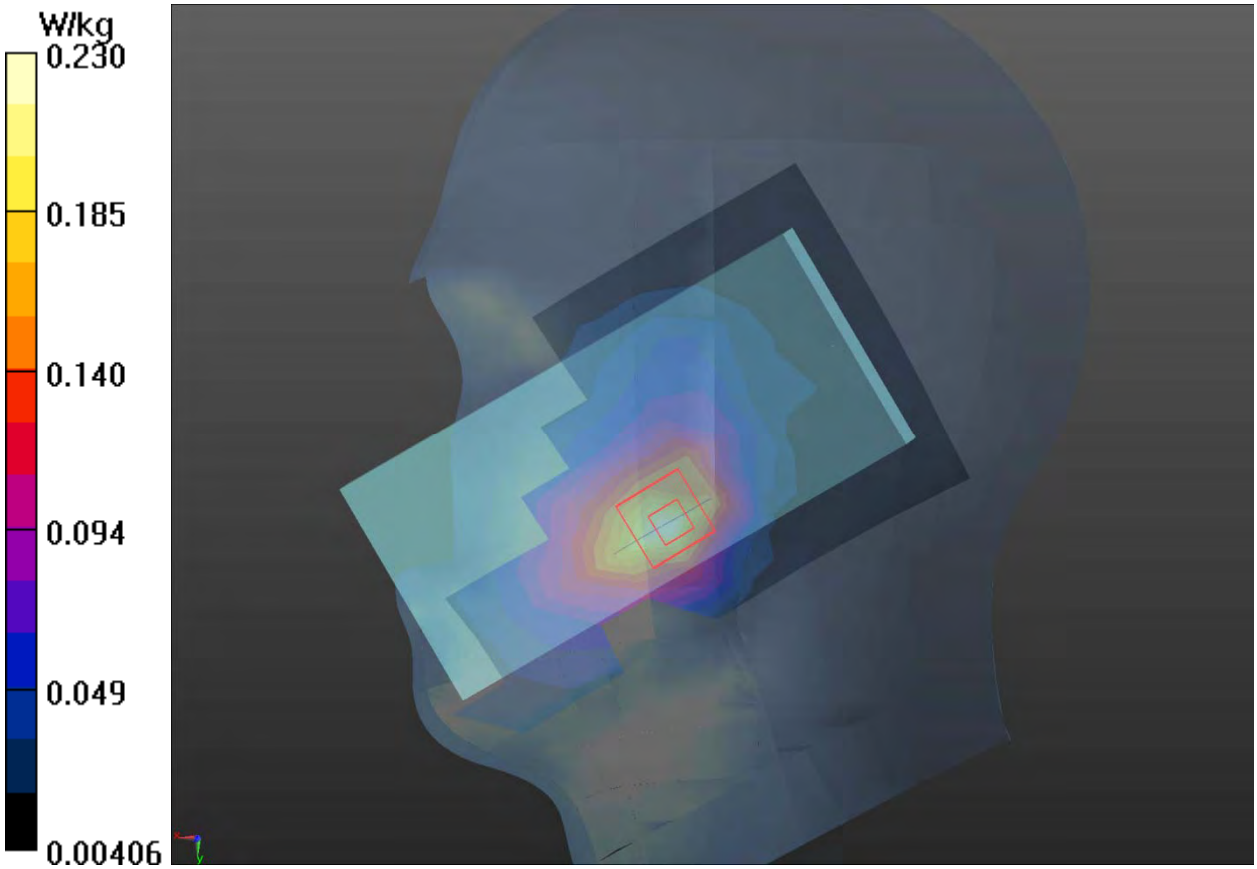


## Plot 15 UMTS Band IV Right Cheek Middle

Date: 2021/11/14
Communication System: UID 0, WCDMA (0); Frequency: 1732.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1733 MHz; $\sigma$ = 1.312 S/m; $\varepsilon_r$ = 39.365; $\rho$ = 1000 kg/m$^3$
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Right Section
DASY5 Configuration:
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Probe: EX3DV4 - SN3677; ConvF(8.22, 8.22, 8.22); Calibrated: 2021/8/12
Electronics: DAE4 SN1317; Calibrated: 2021/2/23
Phantom: SAM 2; Type: SAM
Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Right Cheek Middle/Area Scan (8x14x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.209 W/kg

**Right Cheek Middle/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.243 V/m; Power Drift = 0.076 dB
Peak SAR (extrapolated) = 0.280 W/kg
**SAR(1 g) = 0.174 W/kg; SAR(10 g) = 0.109 W/kg**
Maximum value of SAR (measured) = 0.230 W/kg



## Plot 16 UMTS Band V Left Cheek Middle

Date: 2021/11/16

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

Medium parameters used: f = 836.6MHz; $\sigma$ = 0.923 S/m; $\varepsilon_r$ = 42.201; $\rho$ = 1000 kg/$m^3$

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.30, 9.30, 9.30); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Left Cheek Middle/Area Scan (8x14x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.089 W/kg

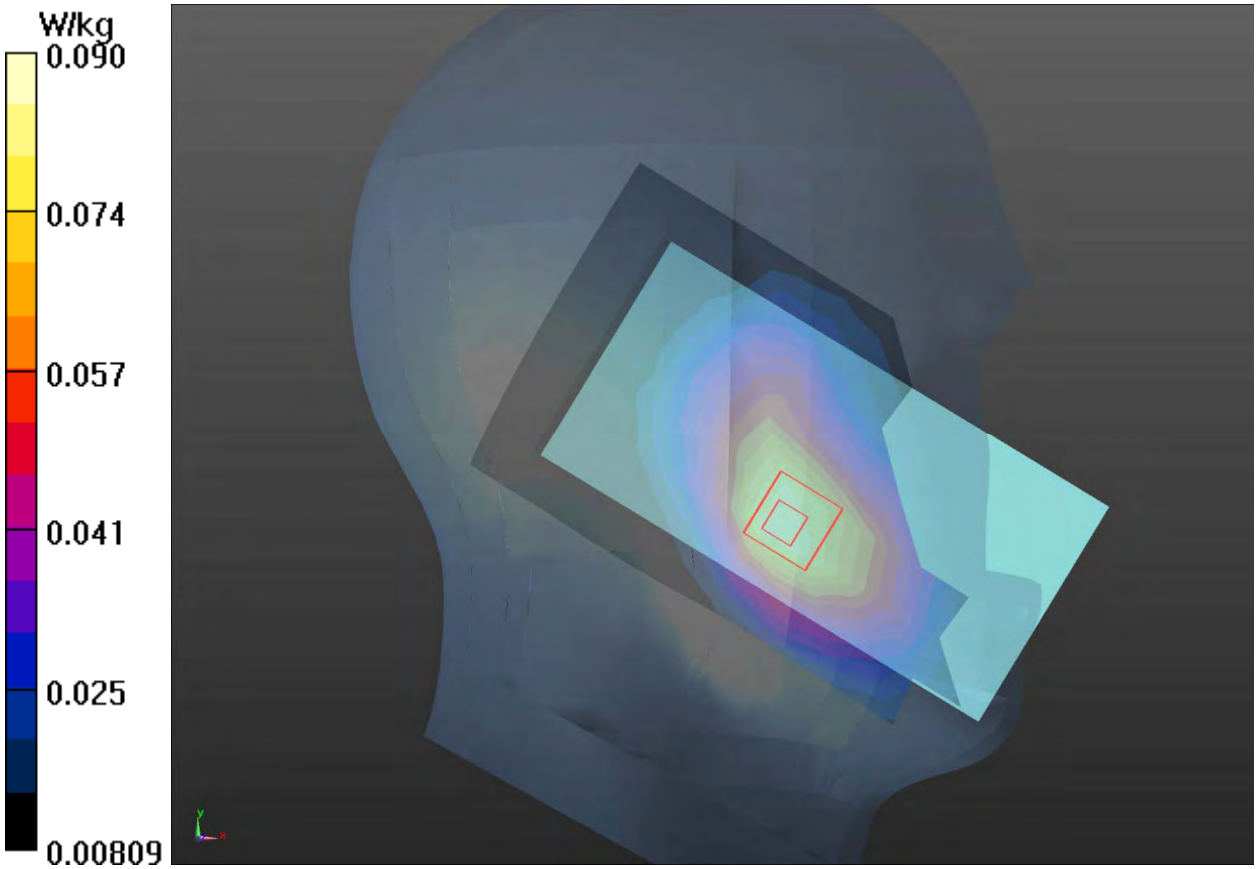
**Left Cheek Middle/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 2.314 V/m; Power Drift = 0.080 dB

Peak SAR (extrapolated) = 0.117 W/kg

**SAR(1 g) = 0.085 W/kg; SAR(10 g) = 0.061 W/kg**

Maximum value of SAR (measured) = 0.090 W/kg



## Plot 17 LTE Band 2 1RB Right Cheek High

Date: 2021/11/18

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

Medium parameters used: f = 1900 MHz; $\sigma$ = 1.434 S/m; $\varepsilon_r$ = 38.861; $\rho$ = 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(7.88, 7.88, 7.88); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Right Cheek High/Area Scan (8x14x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.410 W/kg

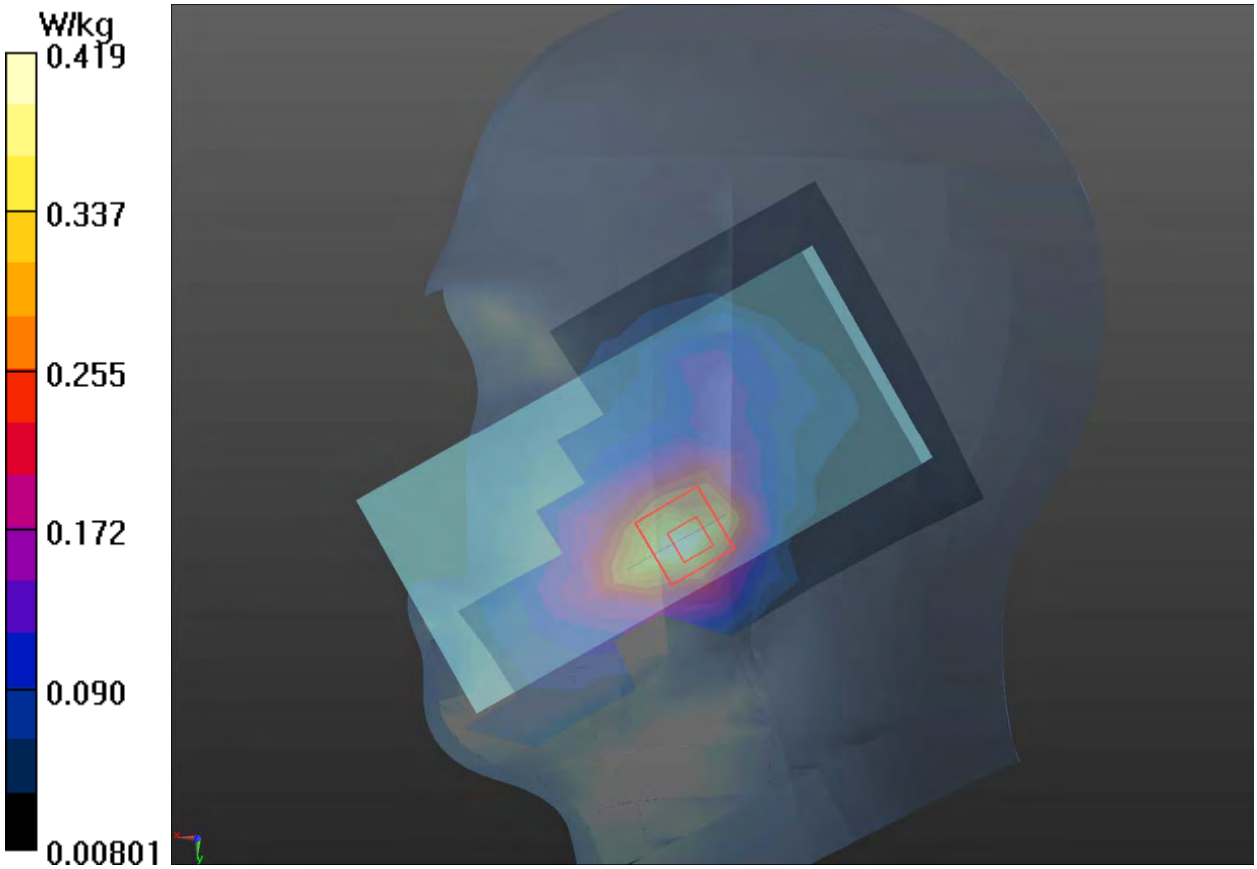
**Right Cheek High/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.948 V/m; Power Drift = 0.047 dB

Peak SAR (extrapolated) = 0.516 W/kg

**SAR(1 g) = 0.311 W/kg; SAR(10 g) = 0.190 W/kg**

Maximum value of SAR (measured) = 0.419 W/kg



## Plot 18 LTE Band 4 1RB Right Cheek High

Date: 2021/11/14

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

Medium parameters used: f = 1745 MHz; $\sigma$ = 1.323 S/m; $\varepsilon_r$ = 39.378; $\rho$ = 1000 kg/m$^3$

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Right Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(8.22, 8.22, 8.22); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Right Cheek High/Area Scan (8x14x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.257 W/kg

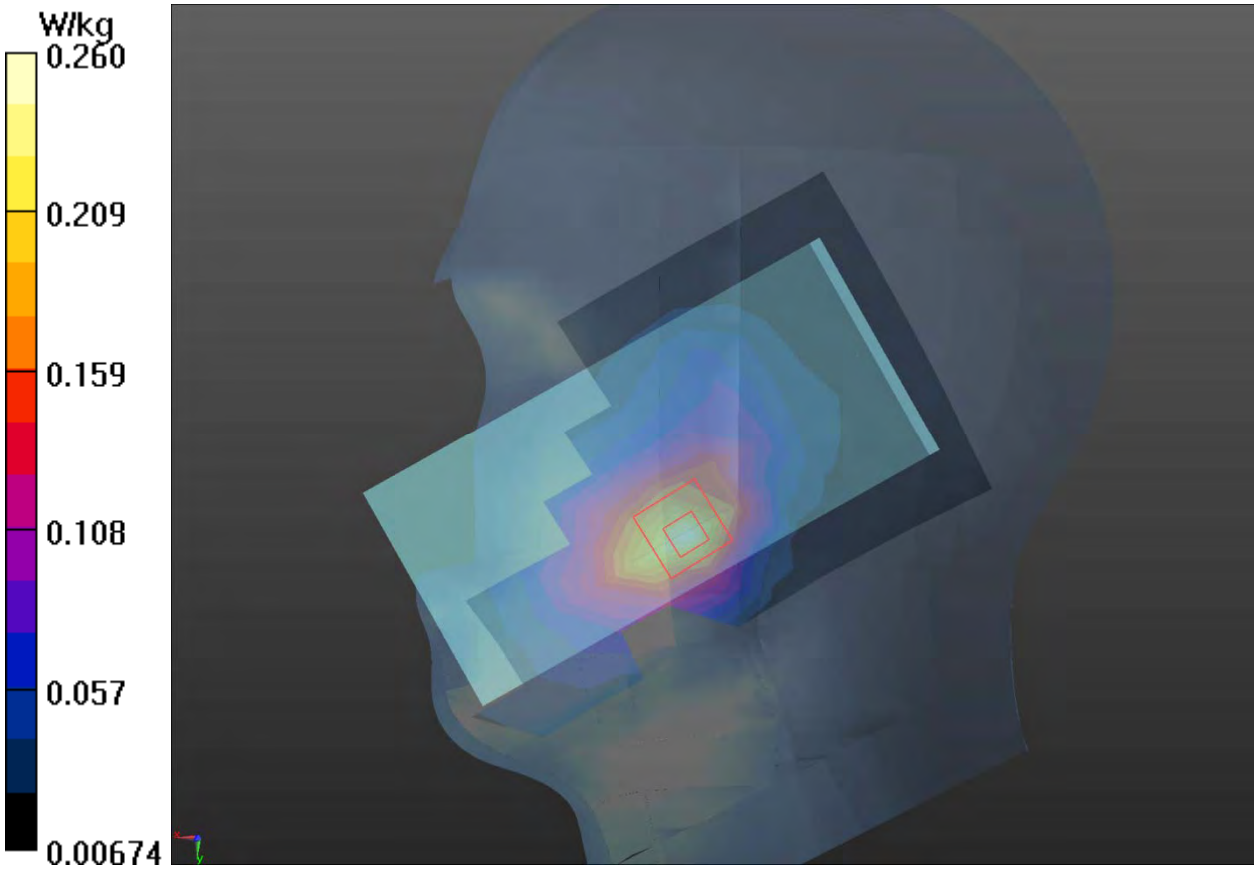
**Right Cheek High/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 2.132 V/m; Power Drift = 0.191dB

Peak SAR (extrapolated) = 0.309 W/kg

**SAR(1 g) = 0.193 W/kg; SAR(10 g) = 0.120 W/kg**

Maximum value of SAR (measured) = 0.260 W/kg



## Plot 19 LTE Band 5 1RB Left Cheek Middle

Date: 2021/11/16

Communication System: UID 0, LTE (0); Frequency: 836.5 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 836.5 MHz; $\sigma$ = 0.923 S/m; $\varepsilon_r$ = 42.199; $\rho$ = 1000 kg/m$^3$

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.30, 9.30, 9.30); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Left Cheek Middle/Area Scan (8x14x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.135 W/kg

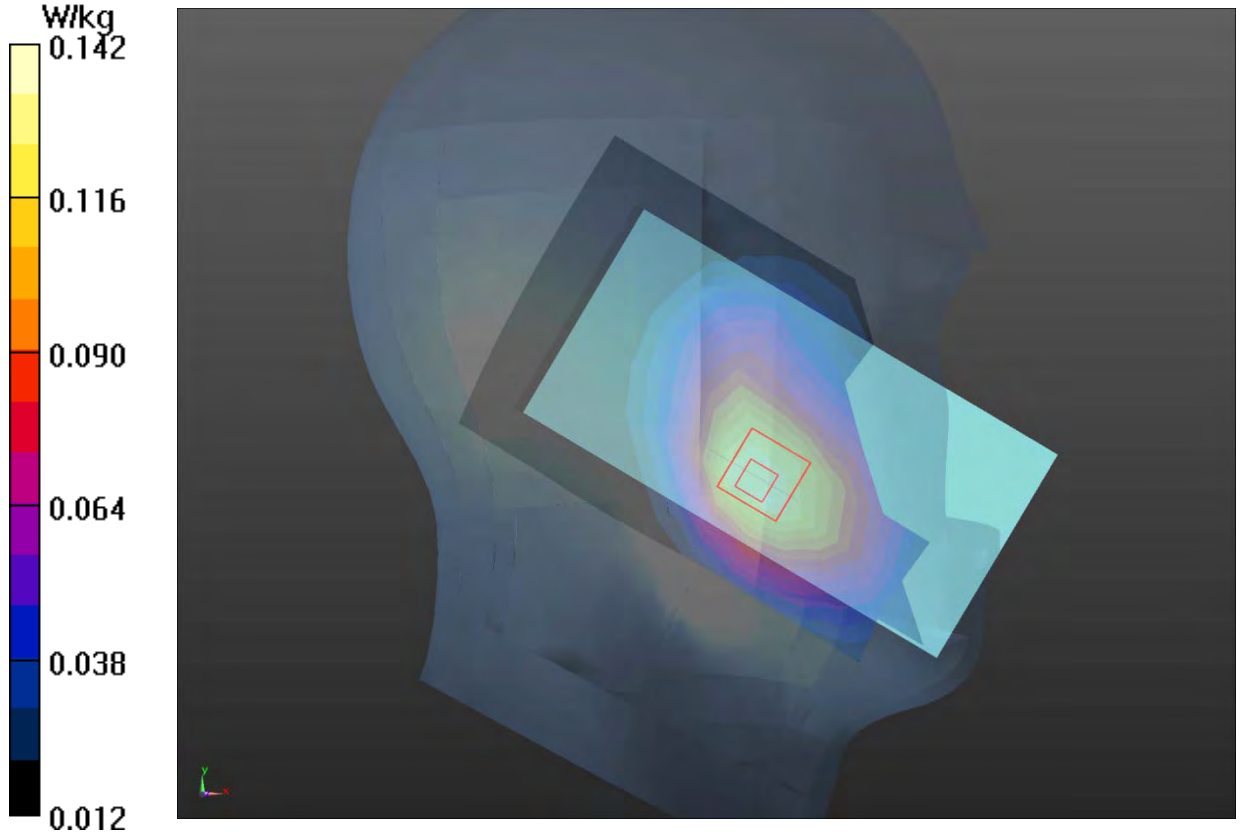
**Left Cheek Middle/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 2.292 V/m; Power Drift = 0.126 dB

Peak SAR (extrapolated) = 0.180 W/kg

**SAR(1 g) = 0.134 W/kg; SAR(10 g) = 0.098 W/kg**

Maximum value of SAR (measured) = 0.142 W/kg



## Plot 20 LTE Band 7 1RB Right Cheek Middle

Date: 2021/12/01

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

Medium parameters used: f = 2535 MHz; $\sigma$ = 1.94 S/m; $\varepsilon_r$ = 37.31; $\rho$ = 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(7.50, 7.50, 7.50); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

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

Maximum value of SAR (measured) = 0.0616 W/kg

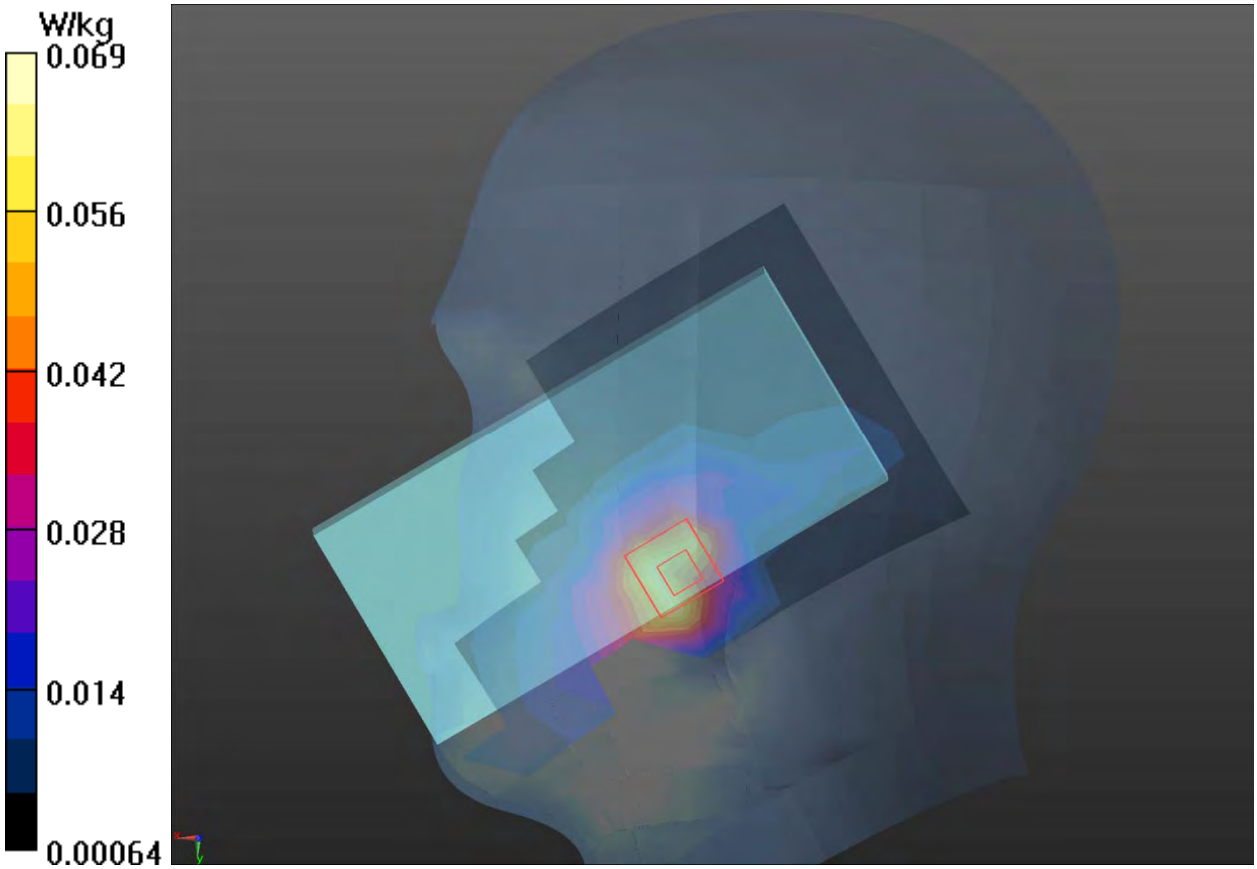
**Right Cheek Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 1.110 V/m; Power Drift = -0.035 dB

Peak SAR (extrapolated) = 0.0940 W/kg

**SAR(1 g) = 0.046 W/kg; SAR(10 g) = 0.024 W/kg**

Maximum value of SAR (measured) = 0.0695 W/kg



## Plot 21 LTE Band 19 1RB Left Cheek Middle

Date: 2021/11/16

Communication System: UID 0, LTE (0); Frequency: 837.5 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 837.5 MHz; $\sigma$ = 0.924 S/m; $\varepsilon_r$ = 42.202; $\rho$ = 1000 kg/m$^3$

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.30, 9.30, 9.30); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Left Cheek Middle/Area Scan (8x14x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.138 W/kg

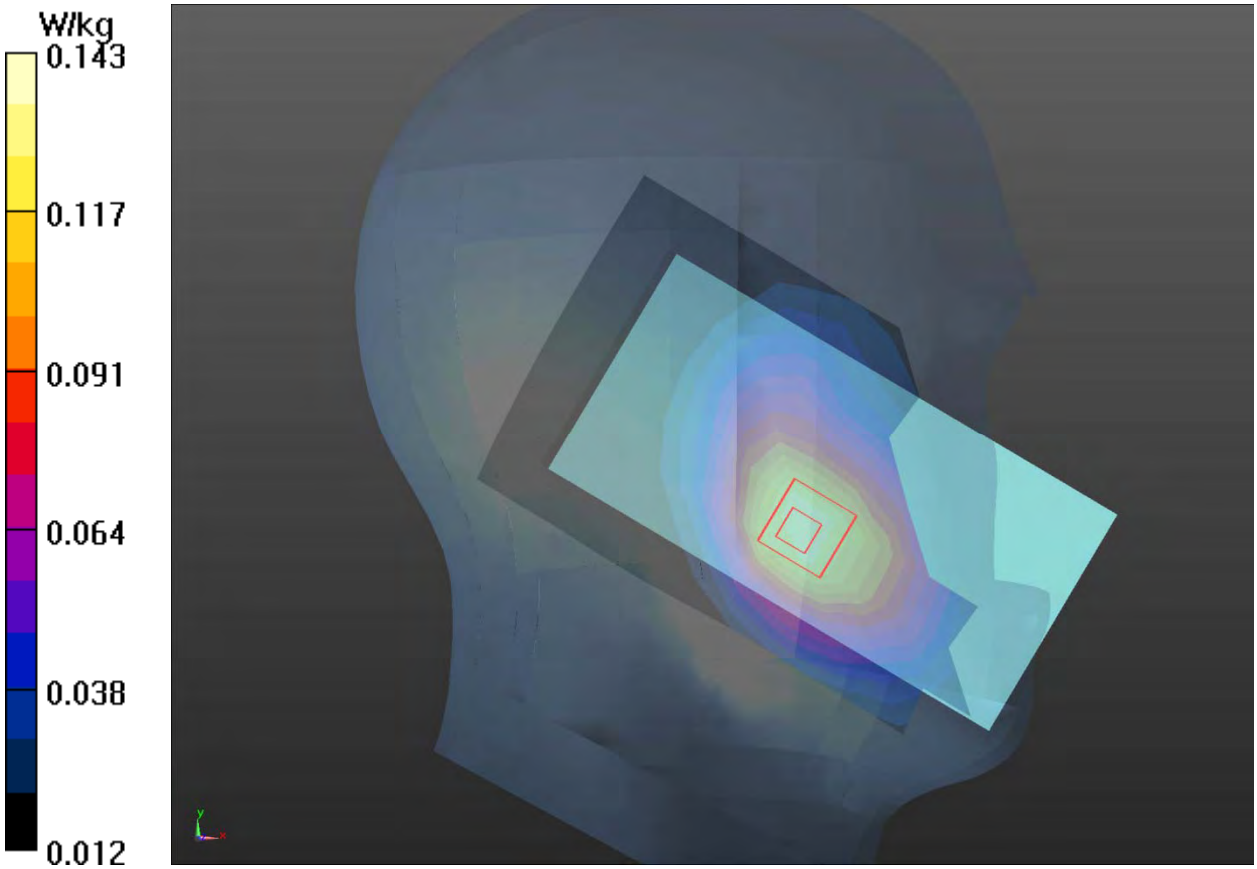
**Left Cheek Middle/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 2.397 V/m; Power Drift = 0.116 dB

Peak SAR (extrapolated) = 0.182 W/kg

**SAR(1 g) = 0.134 W/kg; SAR(10 g) = 0.969 W/kg**

Maximum value of SAR (measured) = 0.143 W/kg



## Plot 22 LTE Band 26 1RB Left Cheek Low

Date: 2021/11/16

Communication System: UID 0, LTE (0); Frequency: 821.5 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 821.5 MHz; $\sigma$ = 0.912 S/m; $\varepsilon_r$ = 42.152; $\rho$ = 1000 kg/m$^3$

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.30, 9.30, 9.30); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Left Cheek Low/Area Scan (8x13x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.199 W/kg

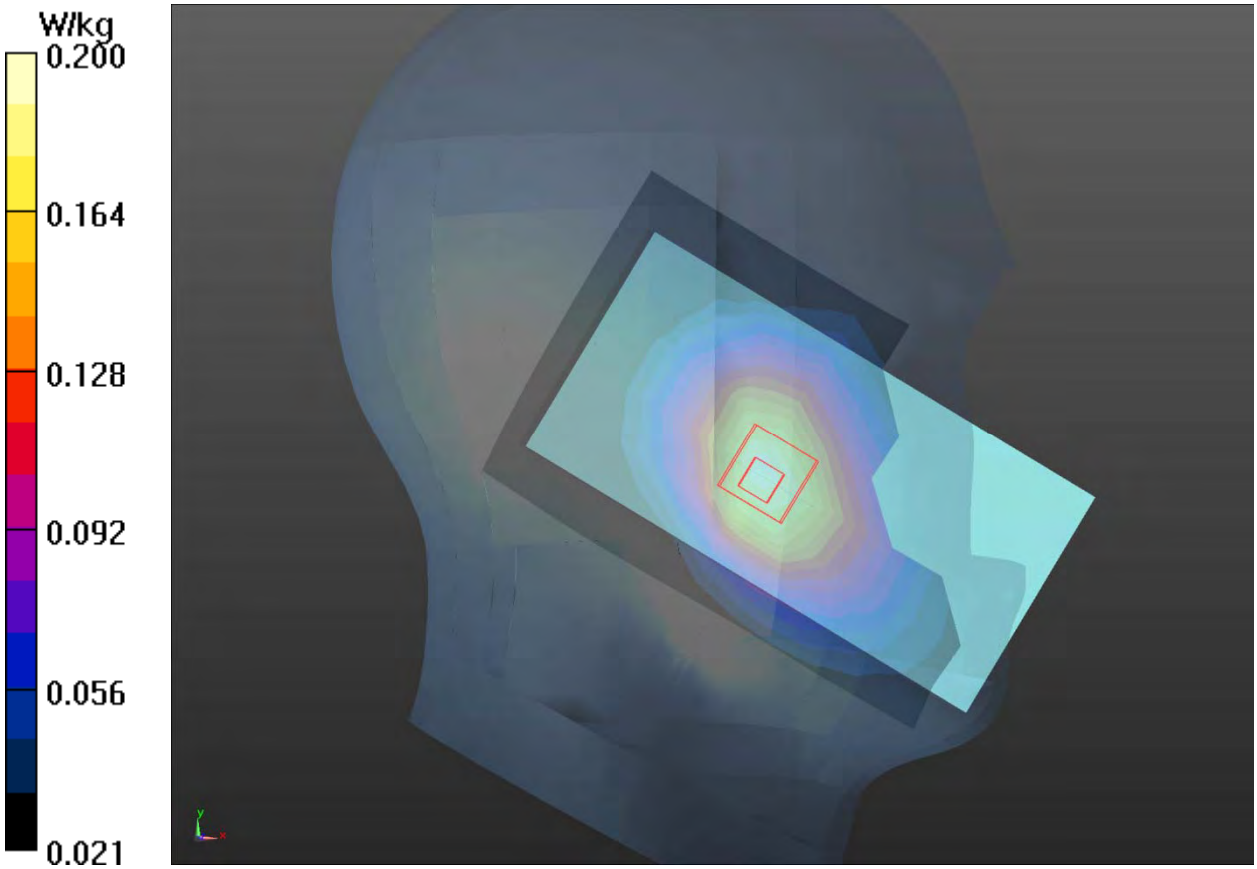
**Left Cheek Low/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.214 V/m; Power Drift = -0.15 dB

Peak SAR (extrapolated) = 0.254 W/kg

**SAR(1 g) = 0.190 W/kg; SAR(10 g) = 0.139 W/kg**

Maximum value of SAR (measured) = 0.200 W/kg



## Plot 23 LTE Band 28A 1RB Left Cheek Middle

Date: 2021/11/15

Communication System: UID 0, LTE (0); Frequency: 718 MHz;Duty Cycle: 1:1

Medium parameters used: f = 718 MHz; $\sigma$ = 0.855 S/m; $\varepsilon_r$ = 42.721; $\rho$ = 1000 kg/m$^3$

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.64, 9.64, 9.64); Calibrated:2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Left Cheek Middle/Area Scan (8x13x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.0193 W/kg

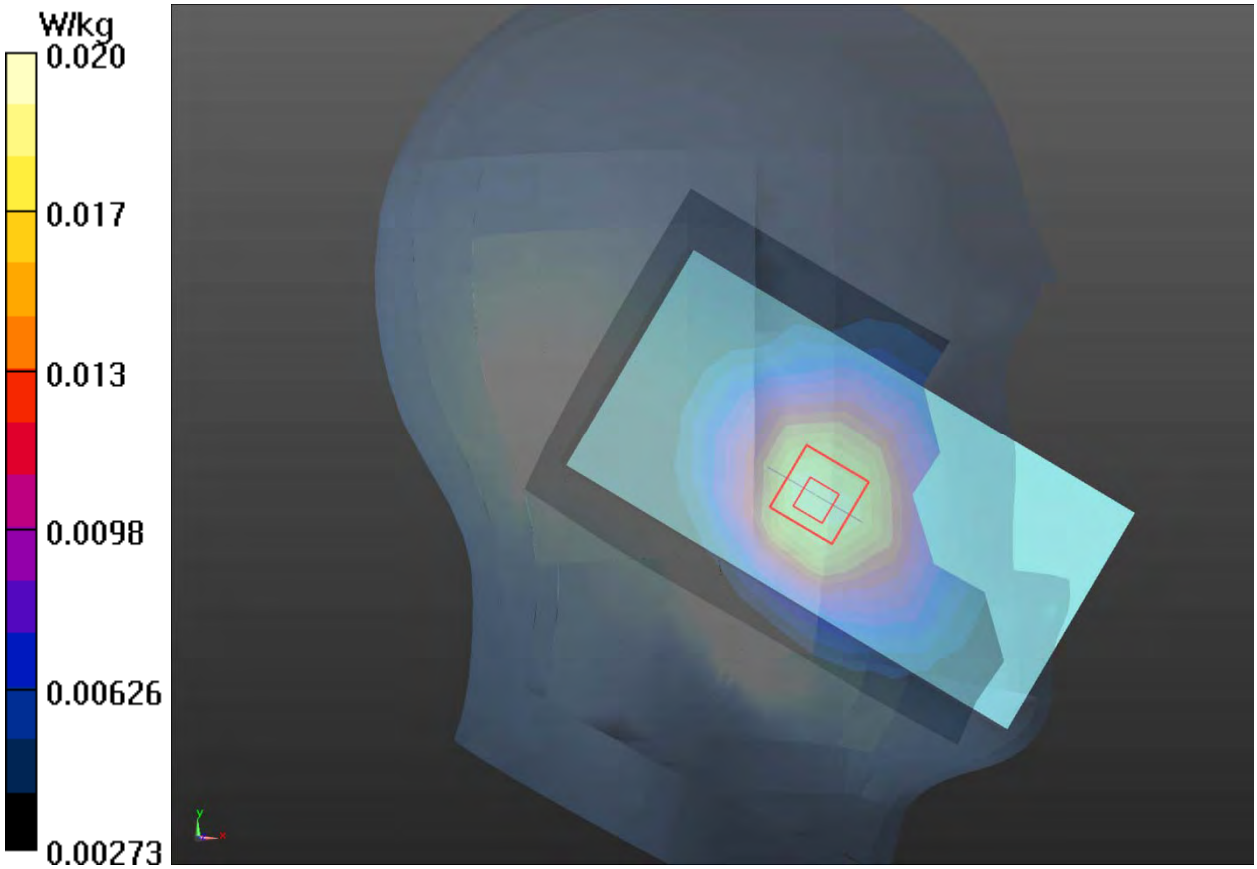
**Left Cheek Middle/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 1.108 V/m; Power Drift = 0.031dB

Peak SAR (extrapolated) = 0.0250 W/kg

**SAR(1 g) = 0.019 W/kg; SAR(10 g) = 0.015 W/kg**

Maximum value of SAR (measured) = 0.0204 W/kg



## Plot 24 LTE Band 28B 1RB Left Cheek Low

Date: 2021/11/15

Communication System: UID 0, LTE (0); Frequency: 728 MHz;Duty Cycle: 1:1

Medium parameters used: f = 728 MHz; $\sigma$ = 0.861 S/m; $\varepsilon_r$ = 42.637; $\rho$ = 1000 kg/m$^3$

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(9.64, 9.64, 9.64); Calibrated:2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Left Cheek Low/Area Scan (8x13x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.0223 W/kg

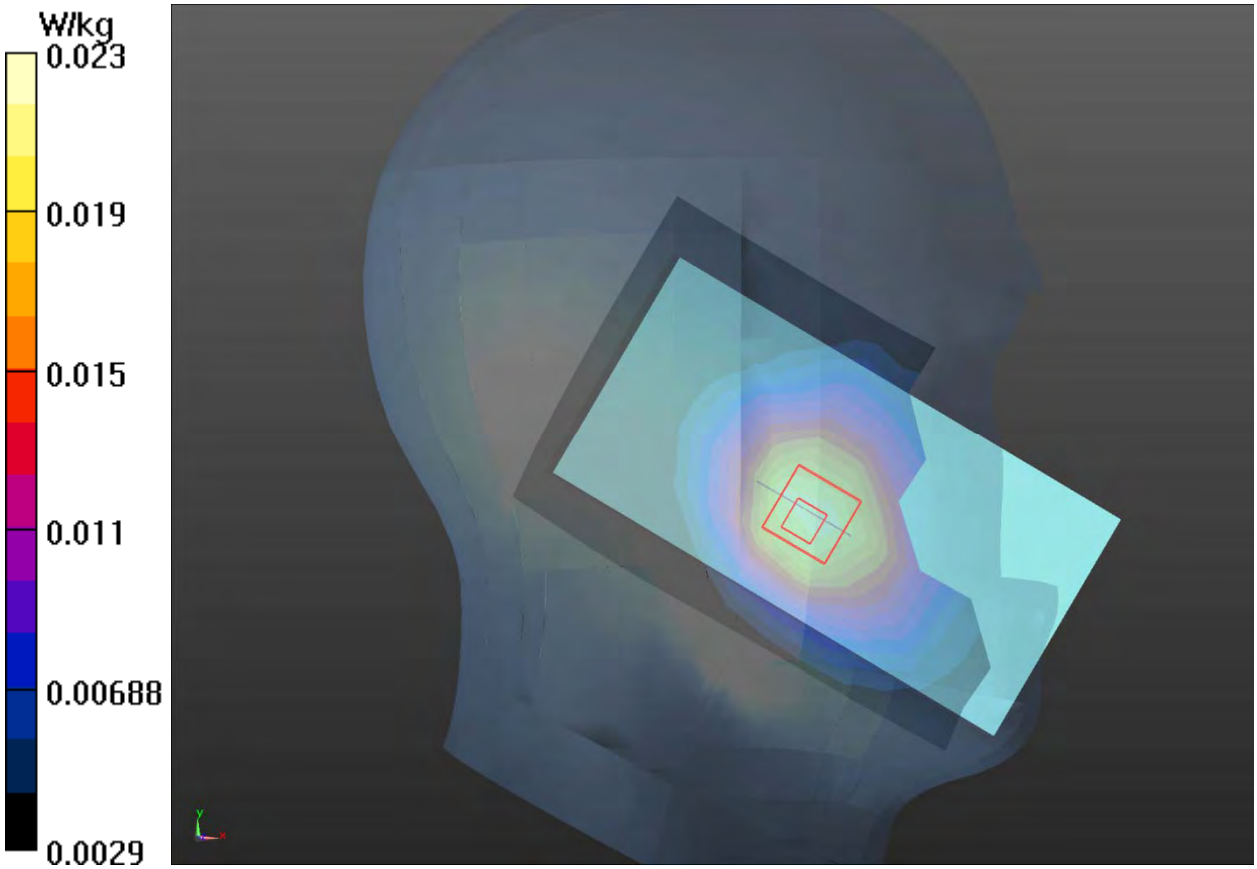
**Left Cheek Low/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 0.3790 V/m; Power Drift = 0.092 dB

Peak SAR (extrapolated) = 0.0300 W/kg

**SAR(1 g) = 0.022 W/kg; SAR(10 g) = 0.016 W/kg**

Maximum value of SAR (measured) = 0.023 W/kg



## Plot 25 LTE Band 38 1RB Right Cheek High

Date: 2021/12/01

Communication System: UID 0, LTE (0); Frequency: 2610 MHz;Duty Cycle: 1:1.58

Medium parameters used: f = 2610 MHz; $\sigma$ = 2.027 S/m; $\varepsilon_r$ = 37.056; $\rho$ = 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(7.50, 7.50, 7.50); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

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

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

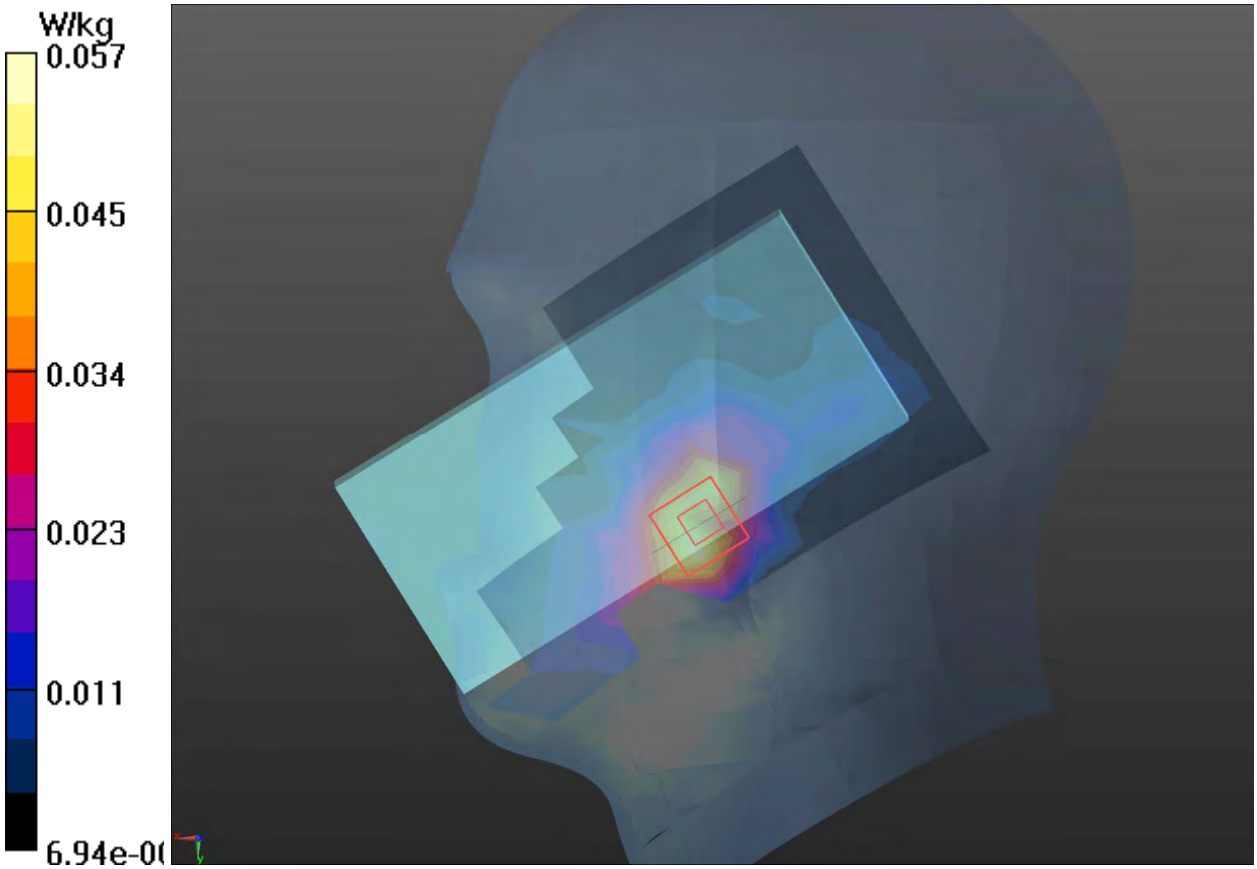
**Right Cheek High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 1.328 V/m; Power Drift = 0.149 dB

Peak SAR (extrapolated) = 0.0690 W/kg

**SAR(1 g) = 0.035 W/kg; SAR(10 g) = 0.017 W/kg**

Maximum value of SAR (measured) = 0.057 W/kg



## Plot 26 LTE Band 40 1RB Right Cheek Low

Date: 2021/11/19

Communication System: UID 0, LTE (0); Frequency: 2305 MHz;Duty Cycle: 1:1.58

Medium parameters used: f = 2305 MHz; $\sigma$ = 1.687 S/m; $\varepsilon_r$ = 38.123; $\rho$ = 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(7.67, 7.67, 7.67); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

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

Maximum value of SAR (measured) = 0.028 W/kg

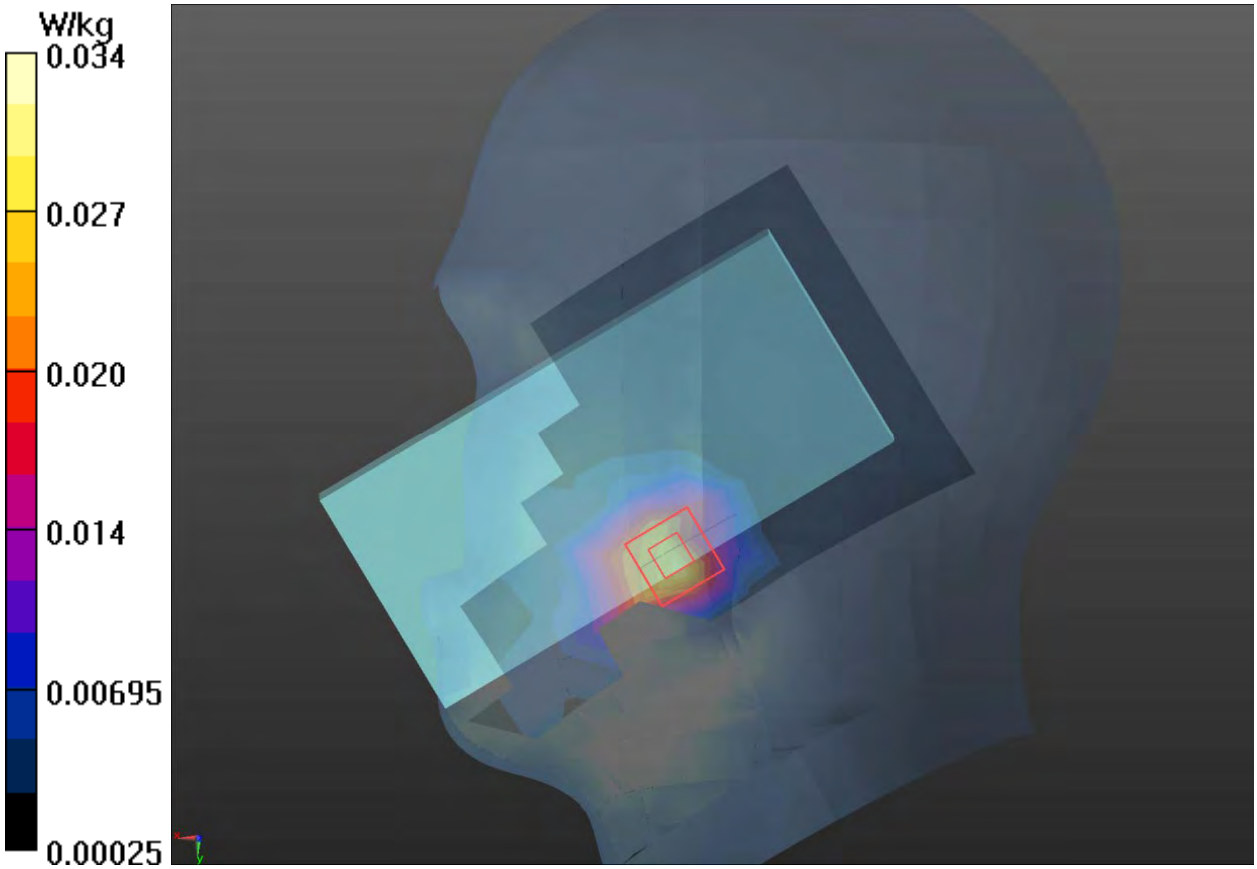
**Right Cheek Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 0.7250 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.0350 W/kg

**SAR(1 g) = 0.020 W/kg; SAR(10 g) = 0.009 W/kg**

Maximum value of SAR (measured) = 0.034 W/kg



## Plot 27 LTE Band 41 1RB Right Cheek High

Date: 2021/12/01

Communication System: UID 0, LTE (0); Frequency: 2625 MHz;Duty Cycle: 1:1.58

Medium parameters used: f = 2625 MHz; $\sigma$ = 2.063 S/m; $\varepsilon_r$ = 36.918; $\rho$ = 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(7.50, 7.50, 7.50); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

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

Maximum value of SAR (measured) = 0.0867 W/kg

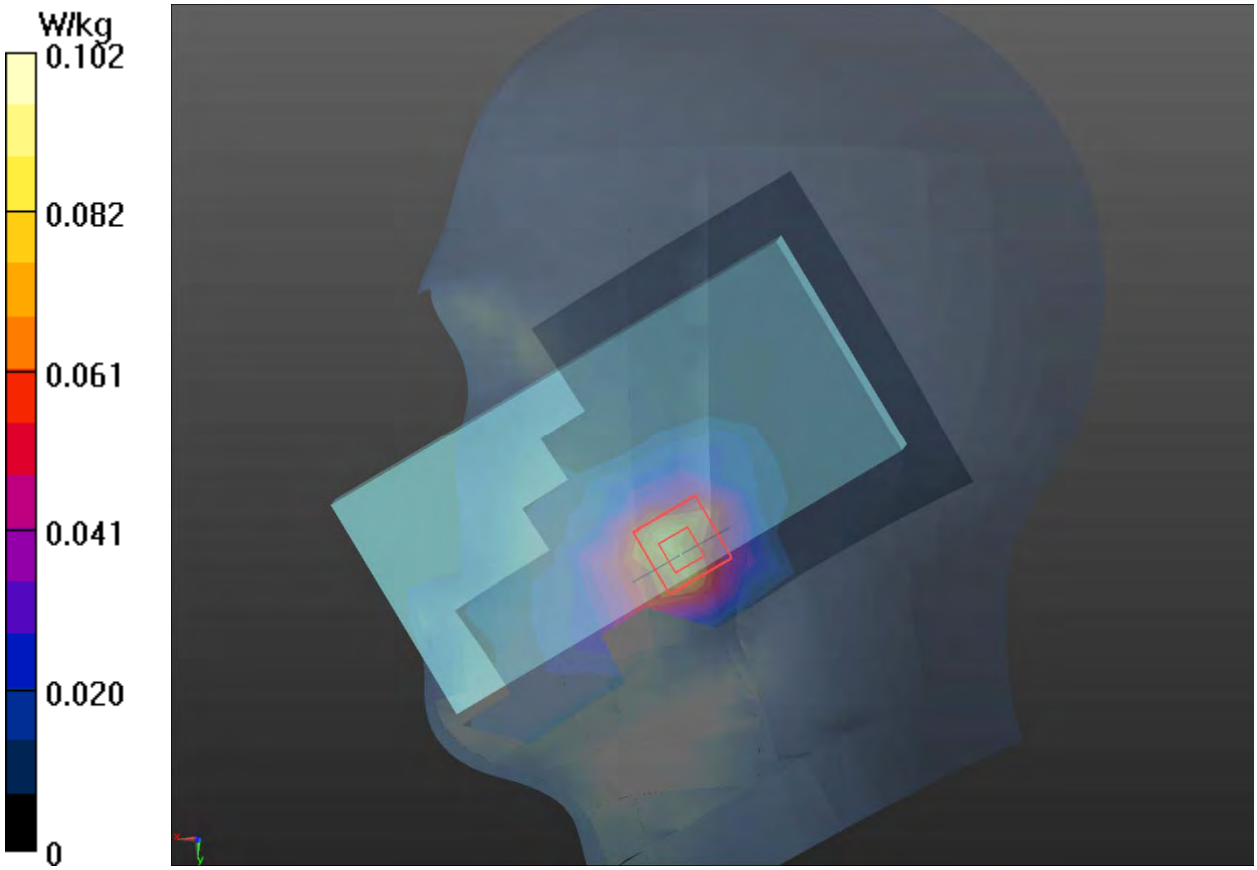
**Right Cheek High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 0.7870 V/m; Power Drift = 0.056 dB

Peak SAR (extrapolated) = 0.132 W/kg

**SAR(1 g) = 0.061 W/kg; SAR(10 g) = 0.029 W/kg**

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



## Plot 28 802.11b Right Cheek Low

Date: 2021/12/27

Communication System: UID 0, 802.11b (0); Frequency: 2412 MHz;Duty Cycle: 1:1

Medium parameters used: f = 2412 MHz; $\sigma$ = 1.801 S/m; $\varepsilon_r$ = 37.737; $\rho$ = 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(7.50, 7.50, 7.50); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

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

Maximum value of SAR (measured) = 1.29 W/kg

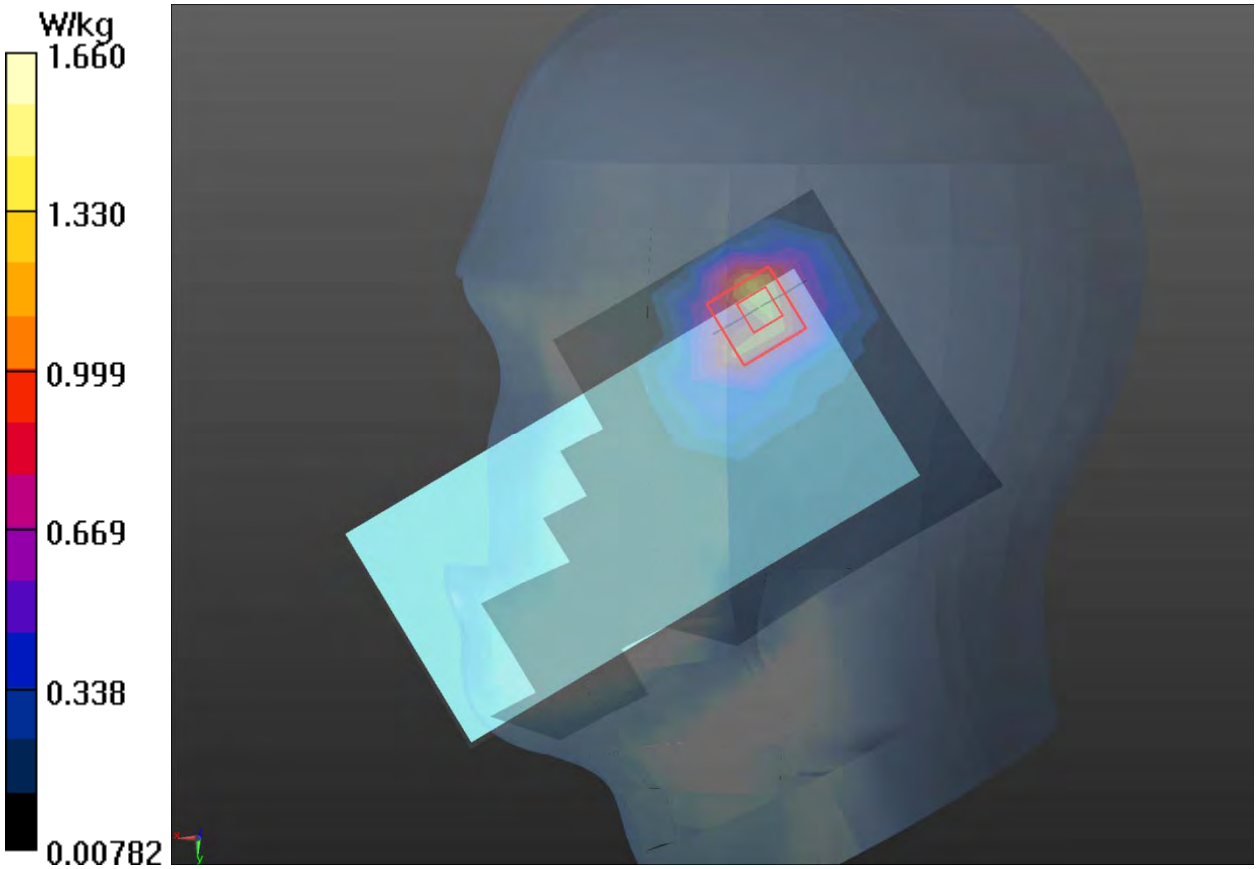
**Right Cheek Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.254 V/m; Power Drift = 0.031 dB

Peak SAR (extrapolated) = 2.07 W/kg

**SAR(1 g) = 1.02 W/kg; SAR(10 g) = 0.490 W/kg**

Maximum value of SAR (measured) = 1.66 W/kg



## Plot 29 802.11nHT20 U-NII-1 Left Tilt High

Date: 2021/12/20

Communication System: UID 0, 802.11n HT20 (0); Frequency: 5240 MHz;Duty Cycle: 1:1.04

Medium parameters used: f = 5240 MHz; $\sigma$ = 4.768 S/m; $\varepsilon_r$ = 36.927; $\rho$ = 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(5.45, 5.45, 5.45); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Left Tilt High/Area Scan (12x21x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 1.00 W/kg

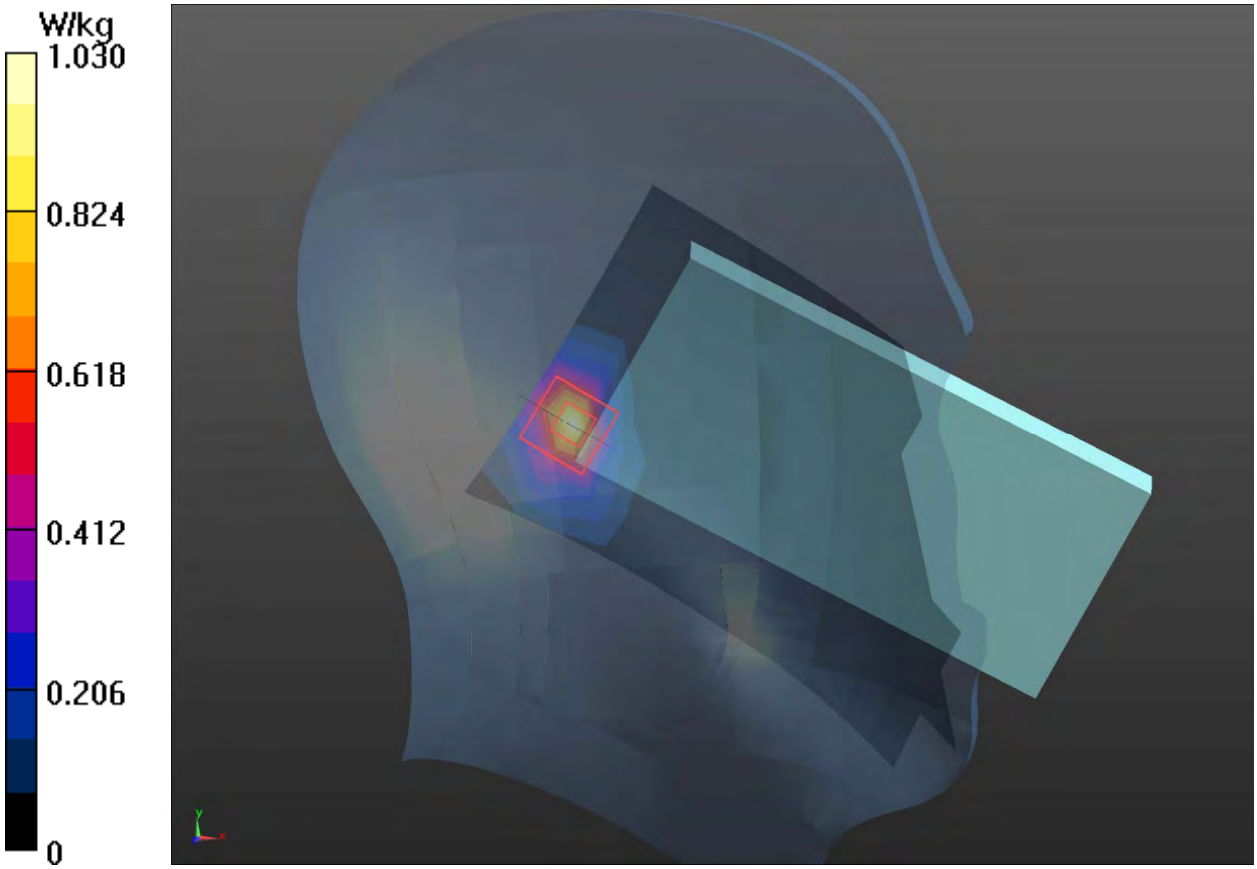
**Left Tilt High/Zoom Scan (7x7x12)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 0.6490 V/m; Power Drift = 0.086 dB

Peak SAR (extrapolated) = 1.77 W/kg

**SAR(1 g) = 0.477 W/kg; SAR(10 g) = 0.173 W/kg**

Maximum value of SAR (measured) = 1.03 W/kg



## Plot 30 Bluetooth Right Cheek Middle

Date: 2021/12/27

Communication System: UID 0, BT (0); Frequency: 2480 MHz;Duty Cycle: 1:1.30

Medium parameters used: f = 2480 MHz; $\sigma$ = 1.878 S/m; $\varepsilon_r$ = 37.511; $\rho$ = 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(7.50, 7.50, 7.50); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

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

Maximum value of SAR (measured) = 0.179 W/kg

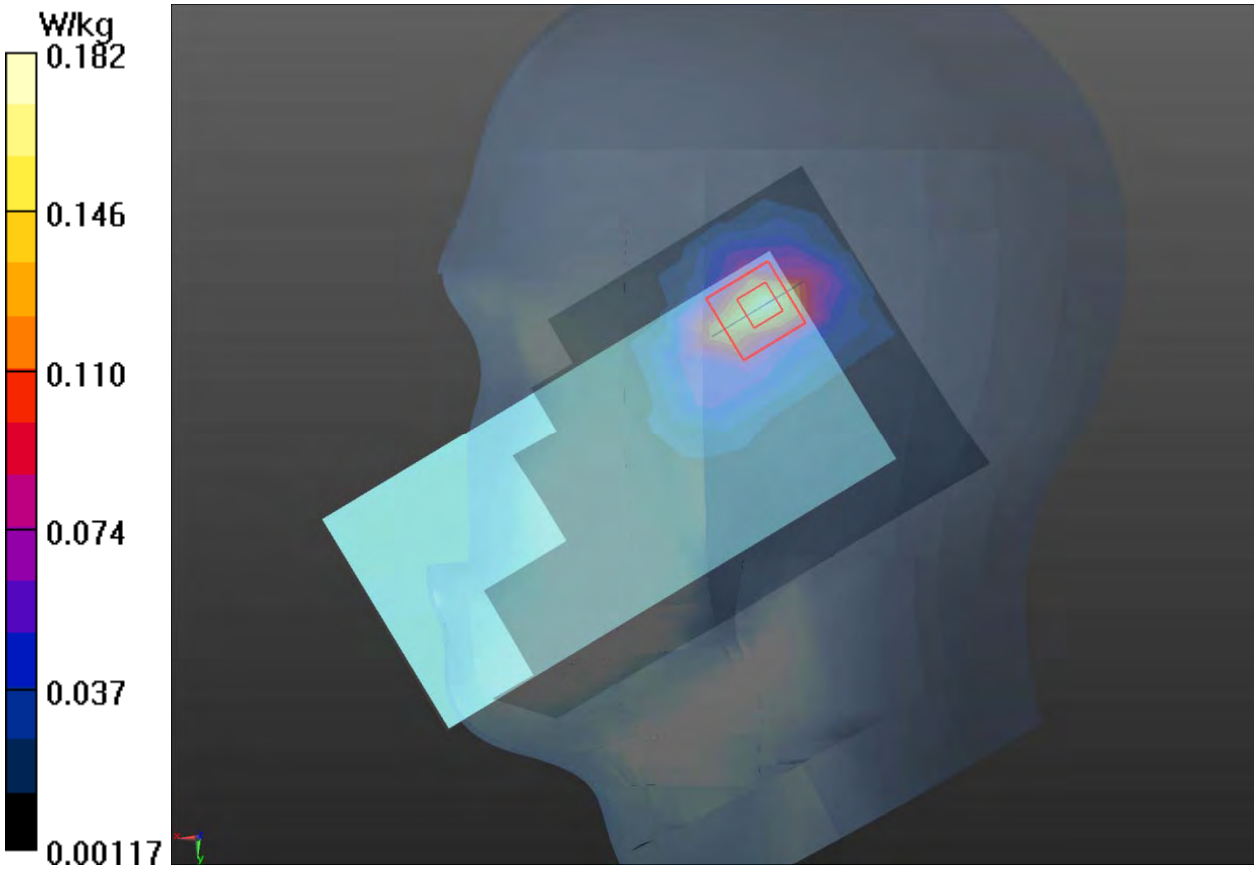
**Right Cheek Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.567 V/m; Power Drift = 0.033 dB

Peak SAR (extrapolated) = 0.231 W/kg

**SAR(1 g) = 0.111 W/kg; SAR(10 g) = 0.053 W/kg**

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



## Plot 31 GSM 850 Back Side Middle (Distance 15mm)

Date: 2021/11/16

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

Medium parameters used: f = 836.6 MHz; $\sigma$ = 0.923 S/m; $\varepsilon_r$ = 42.201; $\rho$ = 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(9.30, 9.30, 9.30); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

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

Maximum value of SAR (measured) = 0.225 W/kg

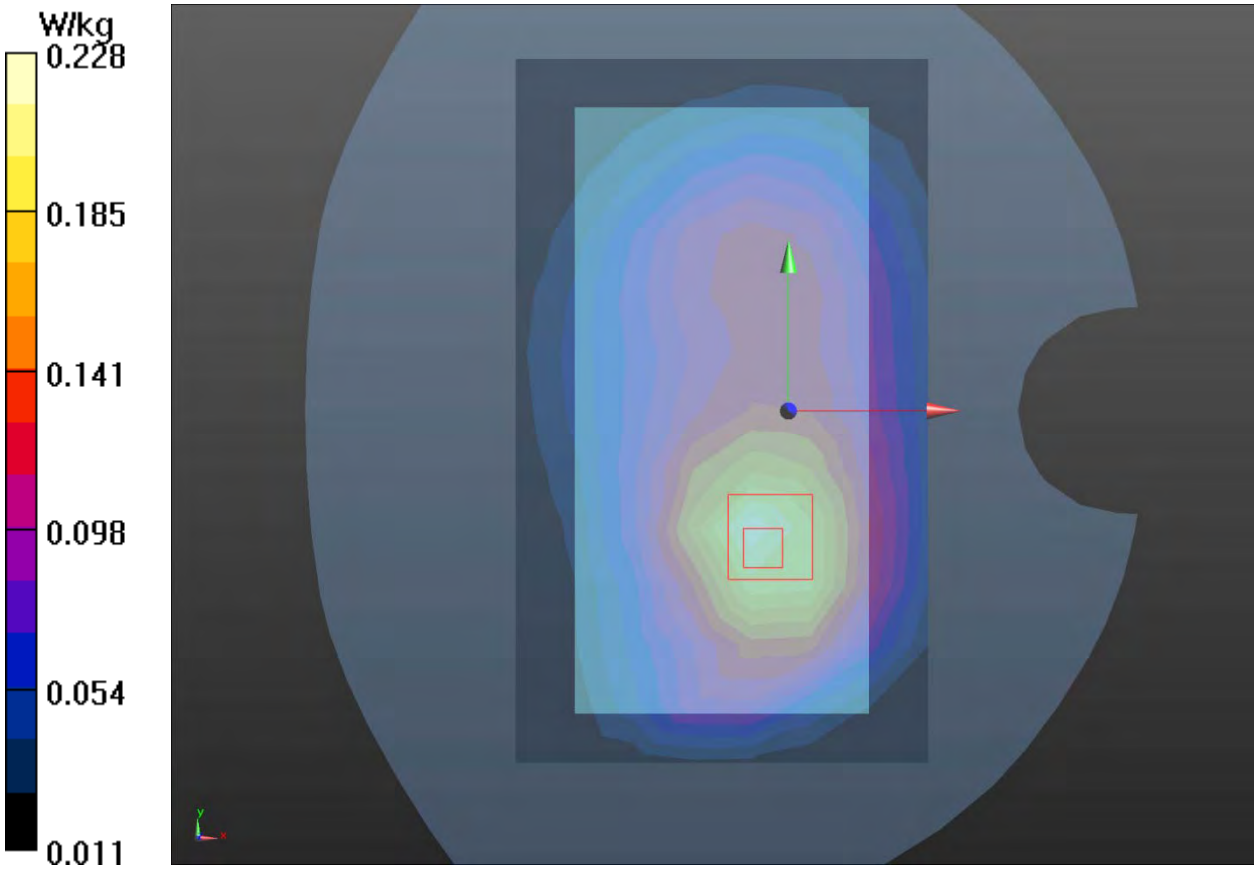
**Back Side Middle/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.50 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 0.300 W/kg

**SAR(1 g) = 0.213 W/kg; SAR(10 g) = 0.146 W/kg**

Maximum value of SAR (measured) = 0.228 W/kg



## Plot 32 GSM 1900 Back Side Middle (Distance 15mm)

Date: 2021/11/18

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

Medium parameters used: f = 1880 MHz; $\sigma$ = 1.42 S/m; $\varepsilon_r$ = 38.948; $\rho$ = 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(7.88, 7.88, 7.88); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

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

Maximum value of SAR (measured) = 0.170 W/kg

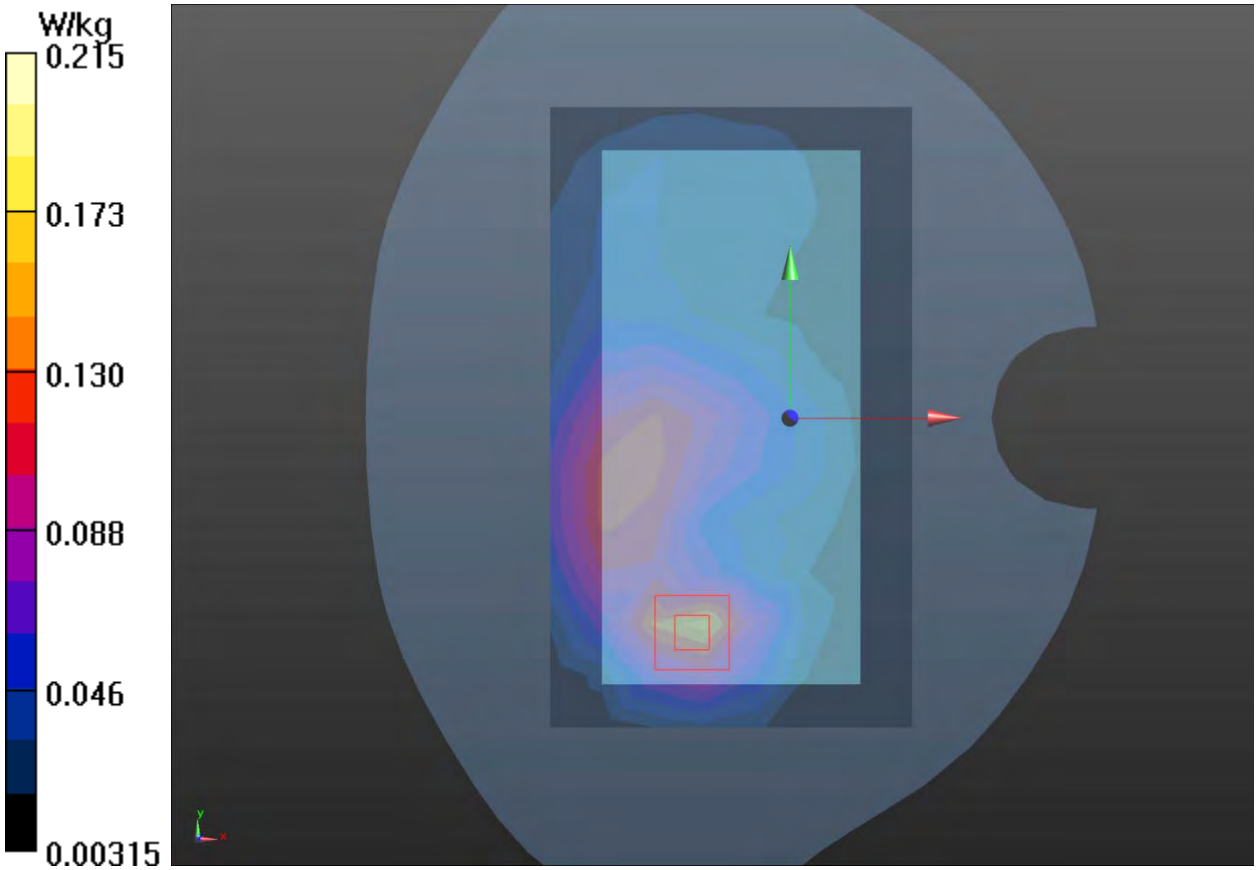
**Back Side Middle/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.703 V/m; Power Drift = 0.023 dB

Peak SAR (extrapolated) = 0.254 W/kg

**SAR(1 g) = 0.146 W/kg; SAR(10 g) = 0.081 W/kg**

Maximum value of SAR (measured) = 0.215 W/kg



## Plot 33 UMTS Band II Back Side Middle (Distance 15mm)

Date: 2021/11/18

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

Medium parameters used: f = 1880 MHz; $\sigma$ = 1.42 S/m; $\varepsilon_r$ = 38.948; $\rho$ = 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(7.88, 7.88, 7.88); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

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

Maximum value of SAR (measured) = 0.346 W/kg

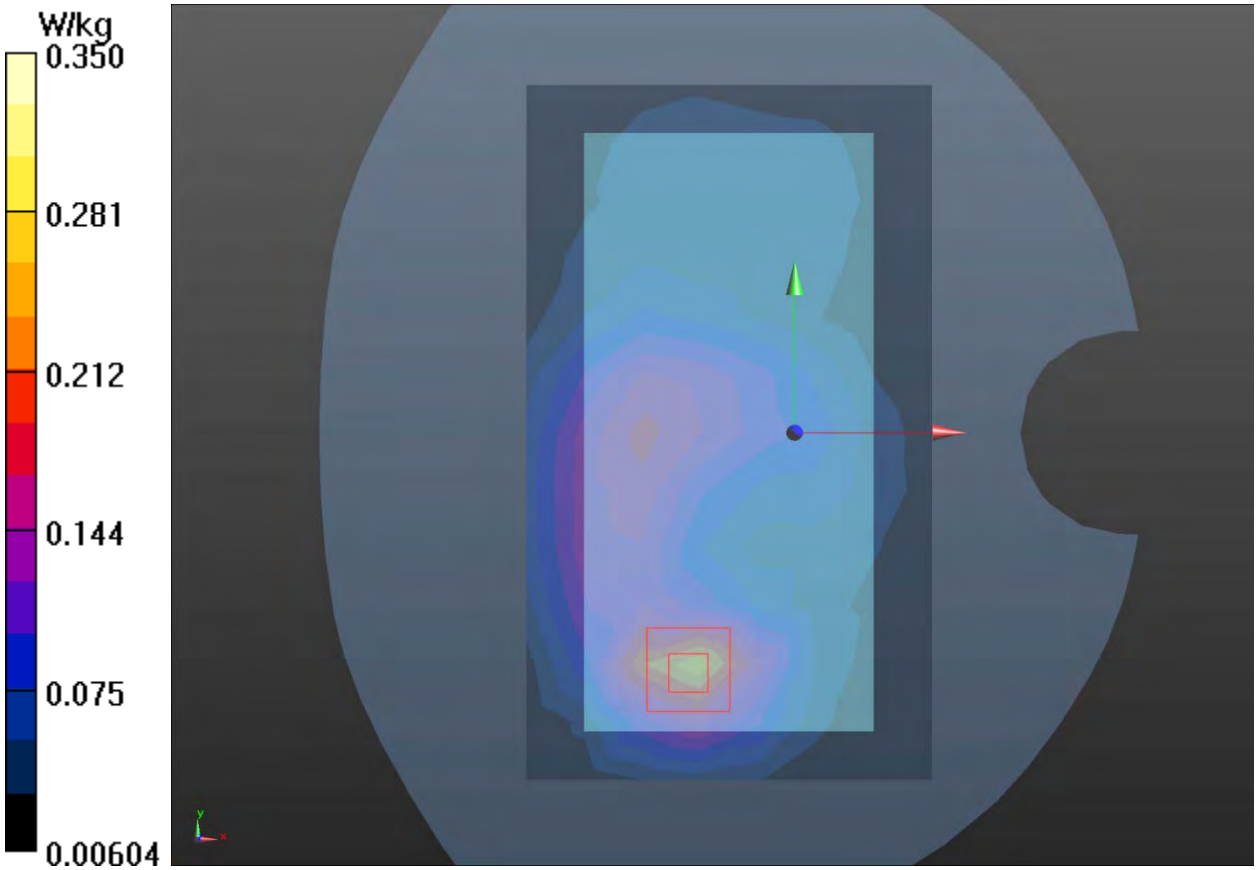
**Back Side Middle/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.645 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.414 W/kg

**SAR(1 g) = 0.239 W/kg; SAR(10 g) = 0.134 W/kg**

Maximum value of SAR (measured) = 0.350 W/kg



## Plot 34 UMTS Band IV Back Side Middle (Distance 15mm)

Date: 2021/11/14

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

Medium parameters used: f = 1732.6 MHz; $\sigma$ = 1.312 S/m; $\varepsilon_r$ = 39.365; $\rho$ = 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(8.22, 8.22, 8.22); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

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

Maximum value of SAR (measured) = 0.380 W/kg

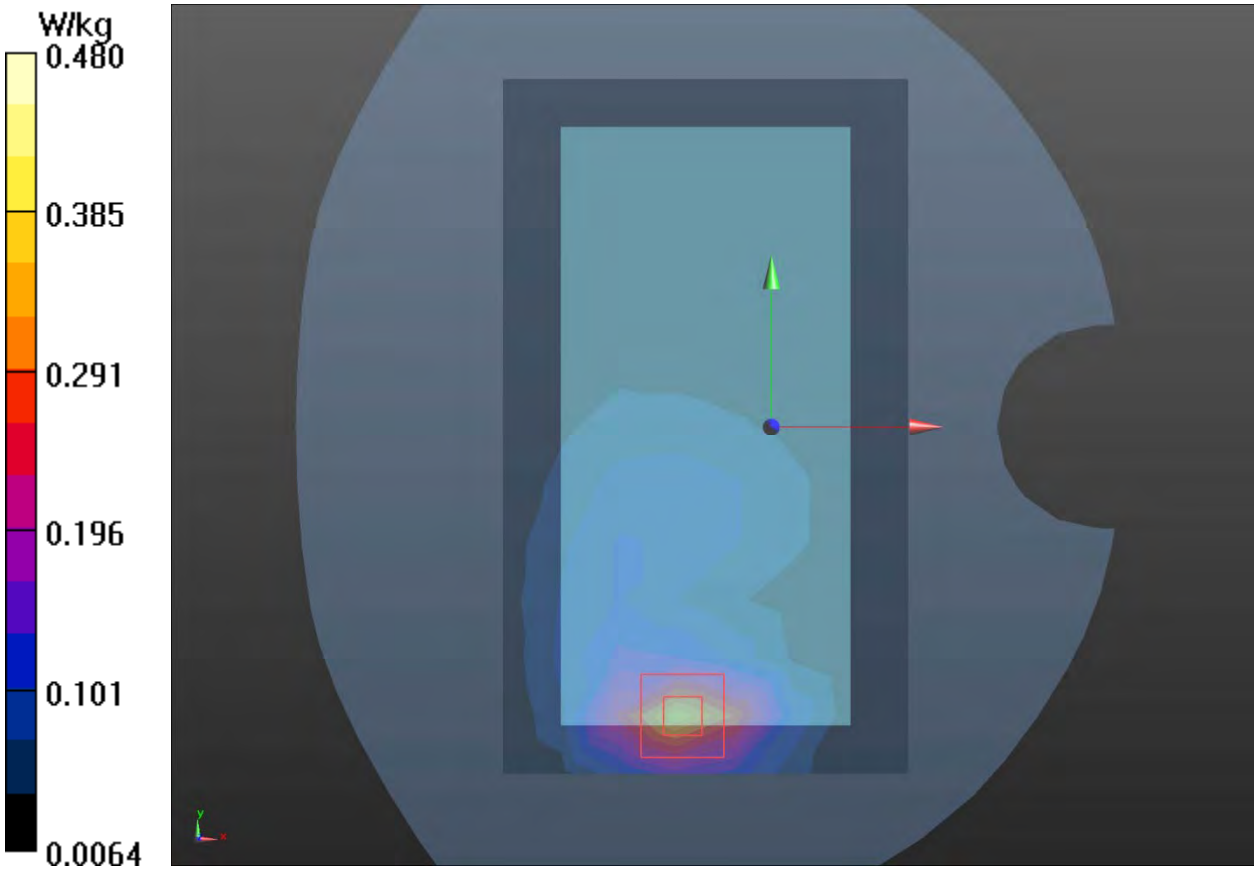
**Back Side Middle/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.455 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.584 W/kg

**SAR(1 g) = 0.343 W/kg; SAR(10 g) = 0.189 W/kg**

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



## Plot 35 UMTS Band V Back Side Middle (Distance 15mm)

Date: 2021/11/16

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

Medium parameters used: f = 836.6MHz; $\sigma$ = 0.923 S/m; $\varepsilon_r$ = 42.201; $\rho$ = 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(9.30, 9.30, 9.30); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

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

Maximum value of SAR (measured) = 0.192 W/kg

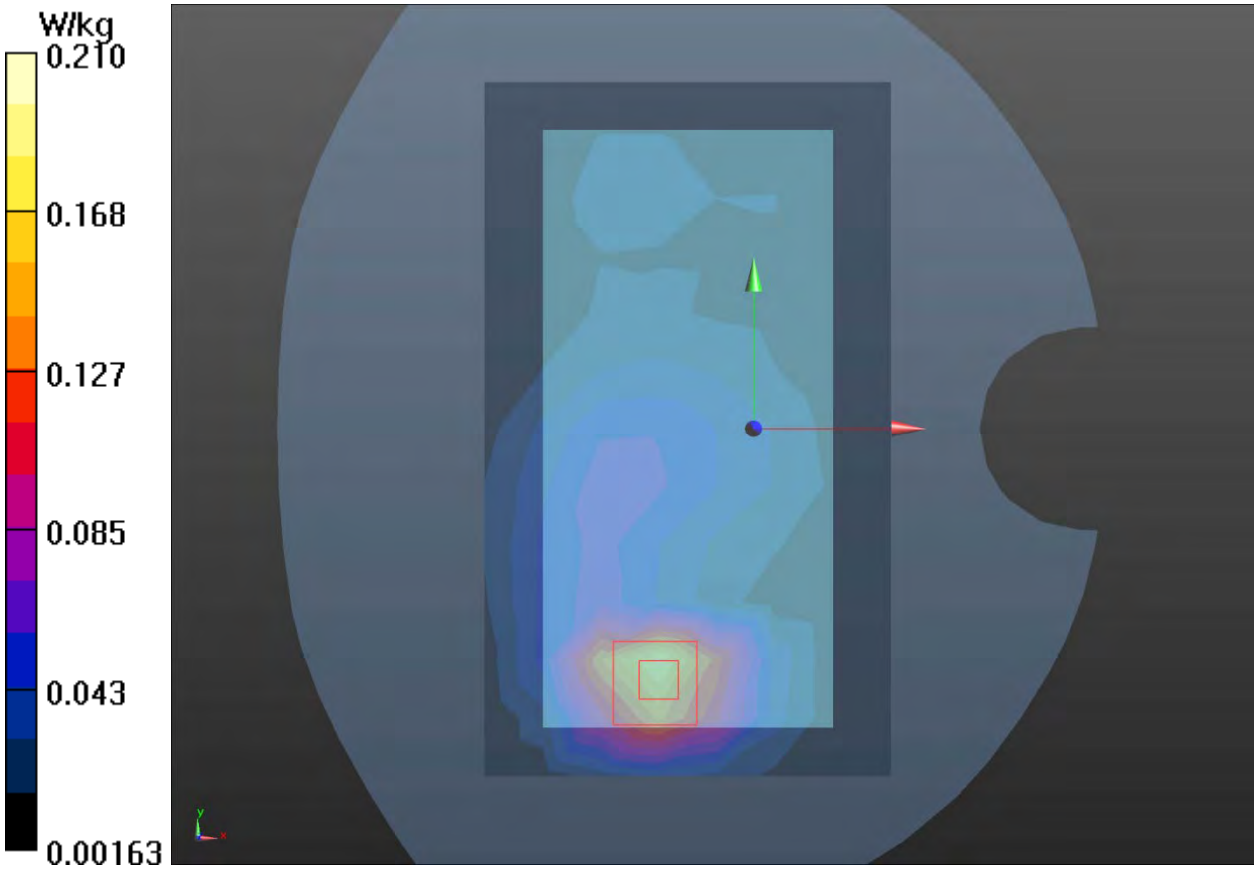
**Back Side Middle/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.646 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 0.351 W/kg

**SAR(1 g) = 0.189 W/kg; SAR(10 g) = 0.099 W/kg**

Maximum value of SAR (measured) = 0.210 W/kg



## Plot 36 LTE Band 2 1RB Back Side High (Distance 15mm)

Date: 2021/11/18

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

Medium parameters used: f = 1900 MHz; $\sigma$ = 1.434 S/m; $\varepsilon_r$ = 38.861; $\rho$ = 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(7.88, 7.88, 7.88); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

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

Maximum value of SAR (measured) = 0.293 W/kg

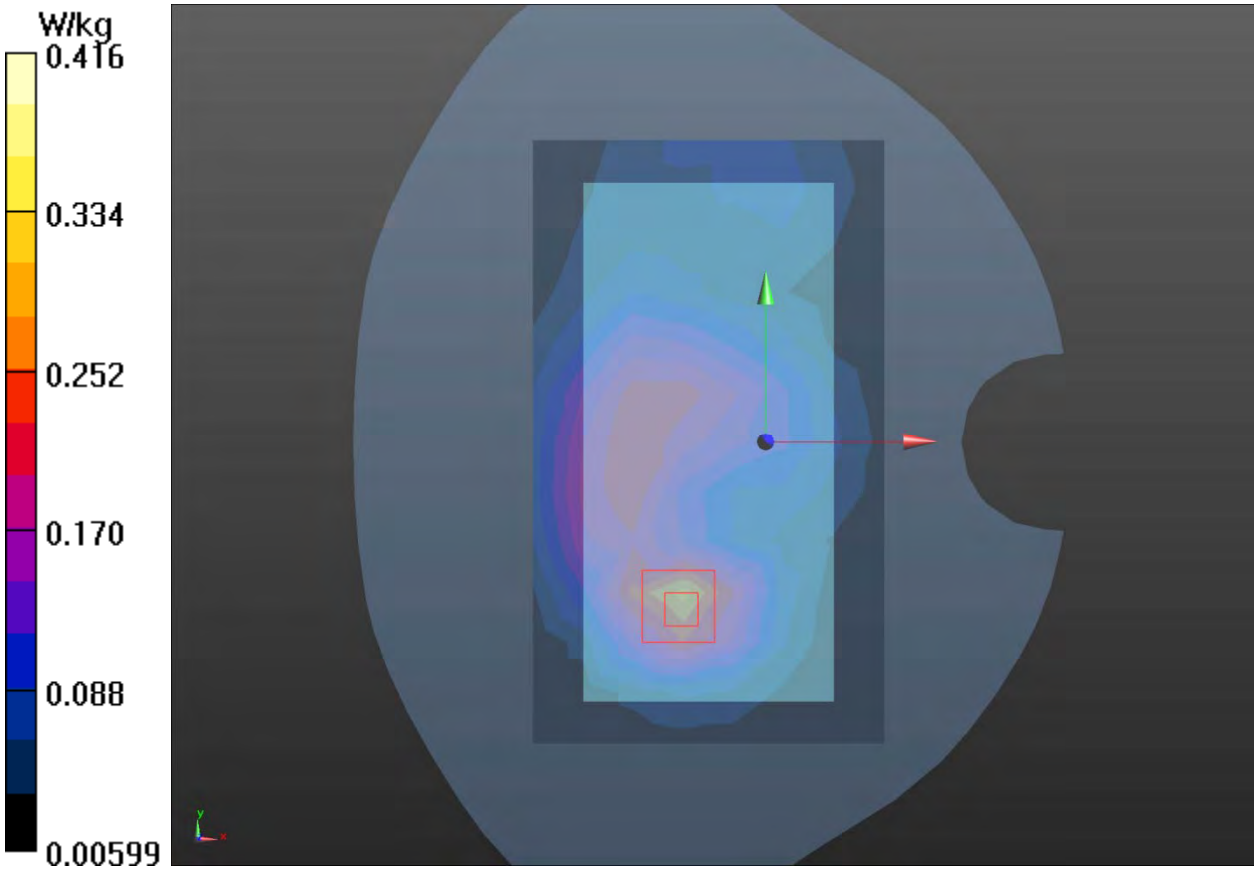
**Back Side High/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 10.82 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.501 W/kg

**SAR(1 g) = 0.287 W/kg; SAR(10 g) = 0.161 W/kg**

Maximum value of SAR (measured) = 0.416 W/kg



## Plot 37 LTE Band 4 50%RB Back Side Low (Distance 15mm)

Date: 2021/11/14

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

Medium parameters used: f = 1720 MHz; $\sigma$ = 1.303 S/m; $\varepsilon_r$ = 39.467; $\rho$ = 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(8.22, 8.22, 8.22); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

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

Maximum value of SAR (measured) = 0.390 W/kg

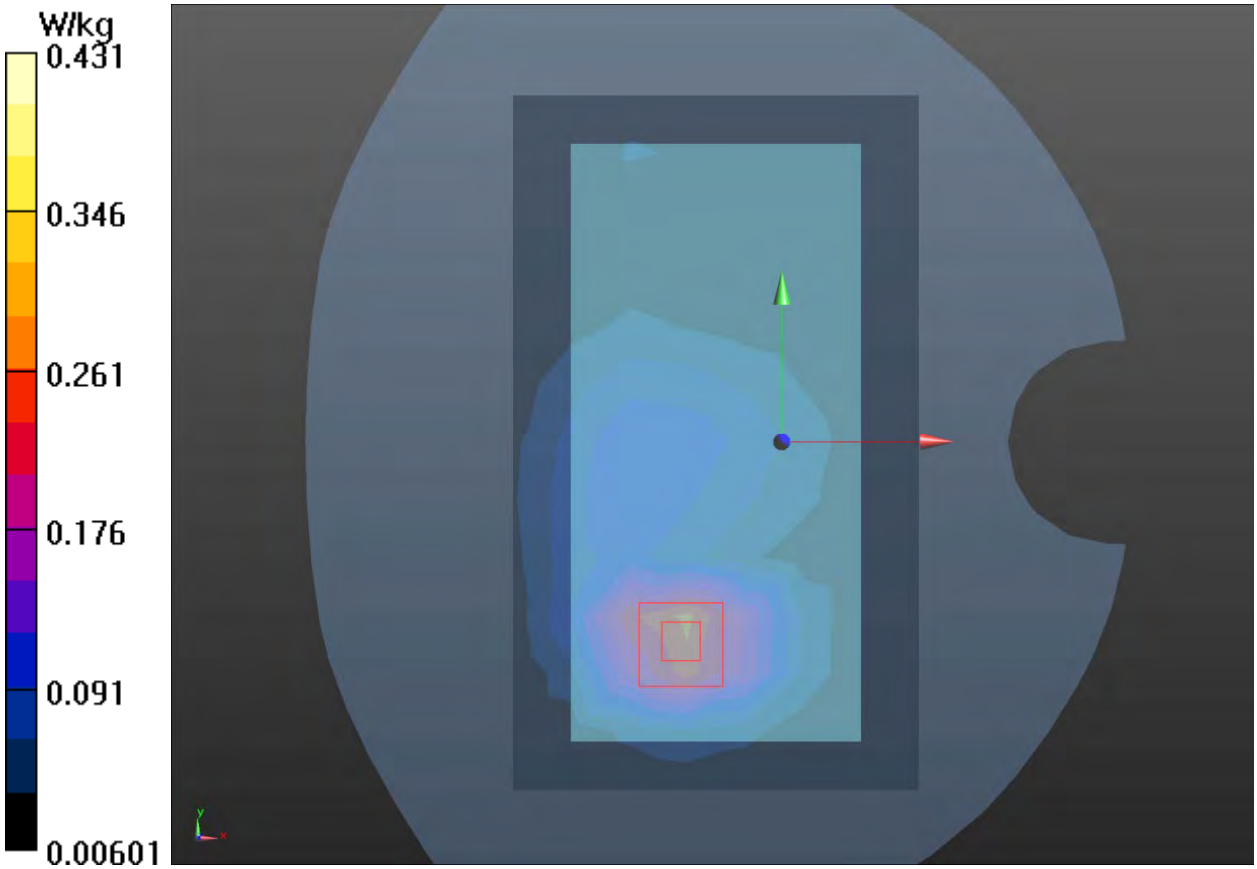
**Back Side Low/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.863 V/m; Power Drift = 0.010 dB

Peak SAR (extrapolated) = 0.505 W/kg

**SAR(1 g) = 0.380 W/kg; SAR(10 g) = 0.205W/kg**

Maximum value of SAR (measured) = 0.431 W/kg



## Plot 38 LTE Band 5 1RB Back Side Middle (Distance 15mm)

Date: 2021/11/16

Communication System: UID 0, LTE (0); Frequency: 836.5 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 836.5 MHz; $\sigma$ = 0.923 S/m; $\varepsilon_r$ = 42.199; $\rho$ = 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(9.30, 9.30, 9.30); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

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

Maximum value of SAR (measured) = 0.290 W/kg

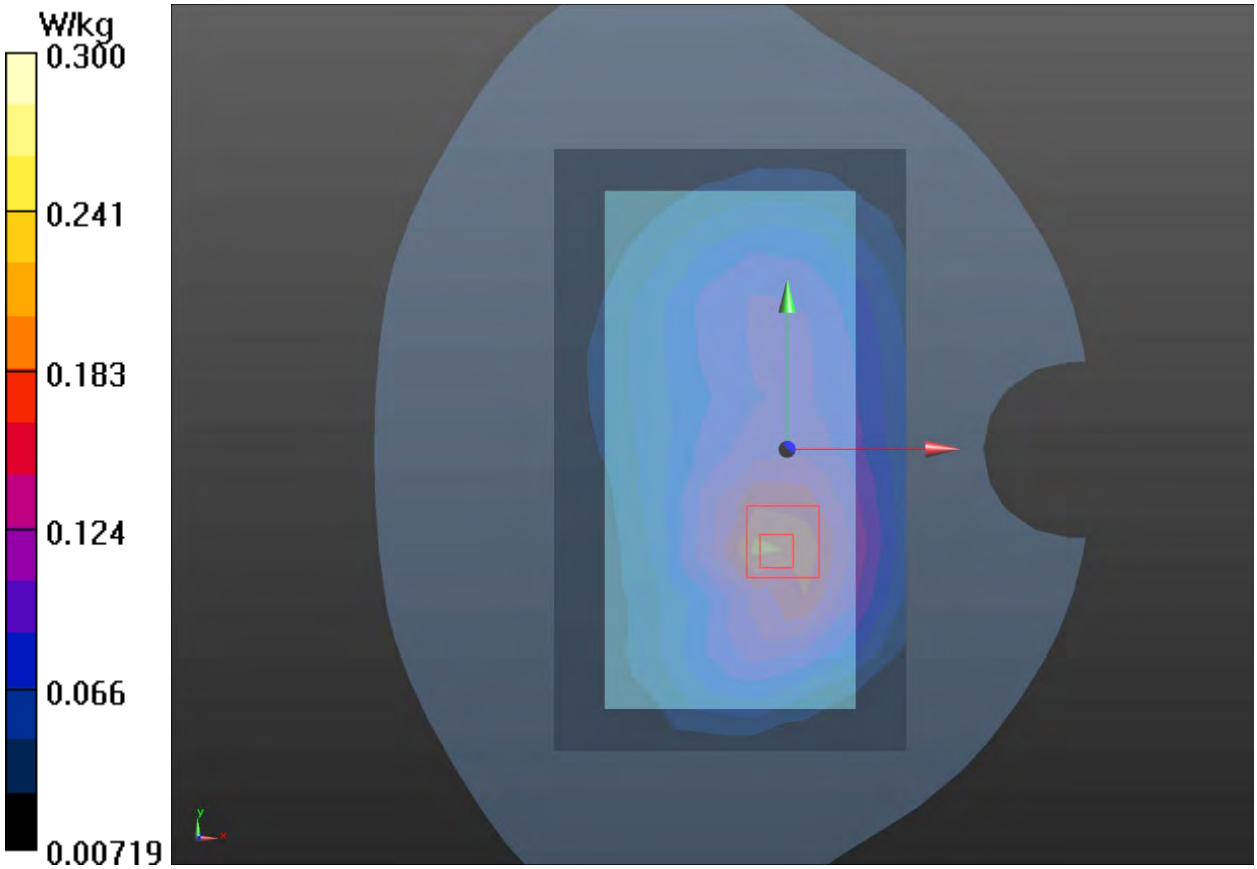
**Back Side Middle/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 10.88 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.258 W/kg

**SAR(1 g) = 0.261 W/kg; SAR(10 g) = 0.177 W/kg**

Maximum value of SAR (measured) = 0.300 W/kg



## Plot 39 LTE Band 7 1RB Back Side Middle (Distance 15mm)

Date: 2021/12/01

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

Medium parameters used: f = 2535 MHz; $\sigma$ = 1.94 S/m; $\varepsilon_r$ = 37.31; $\rho$ = 1000 kg/m$^3$

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.50, 7.50, 7.50); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Back Side Middle/Area Scan (9x16x1):** Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 0.890 W/kg

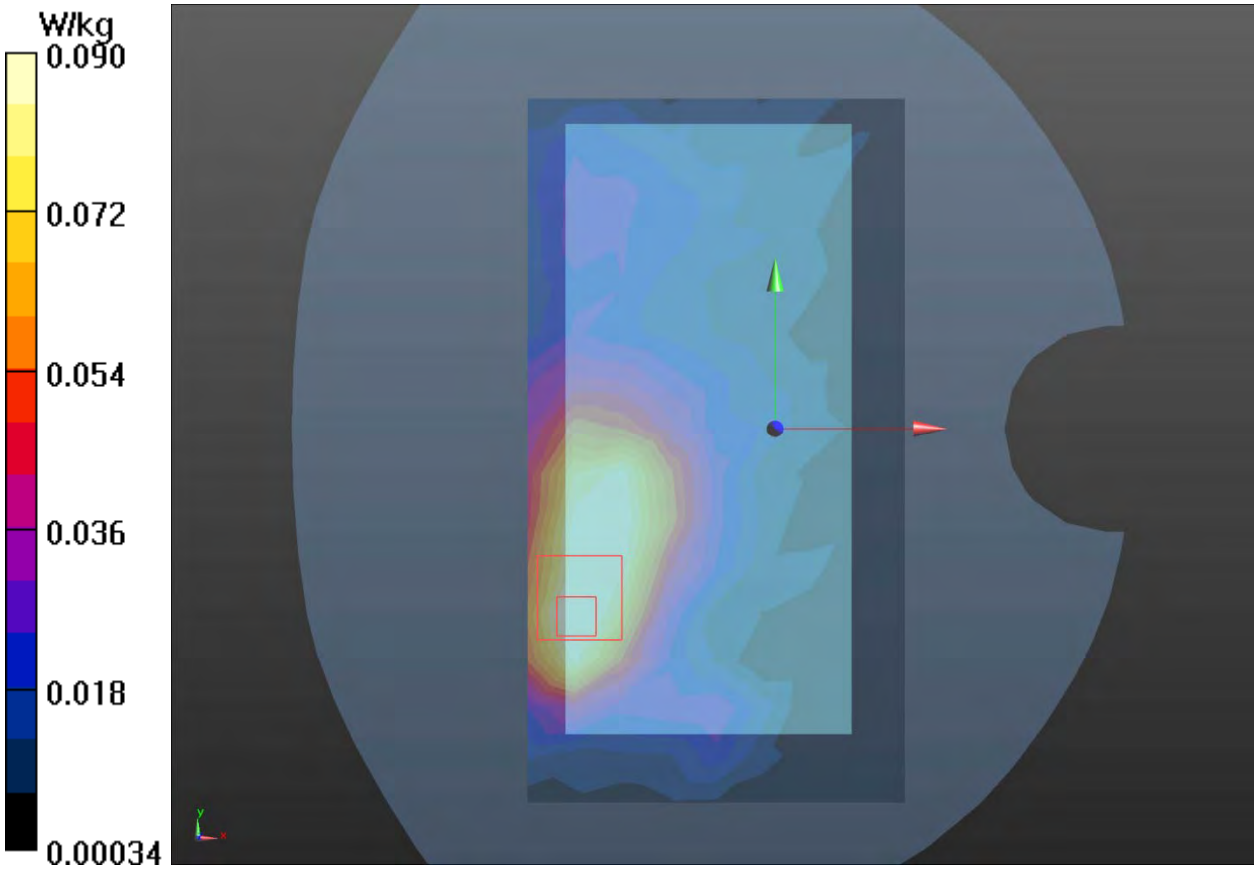
**Back Side Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 2.722 V/m; Power Drift = 0.073 dB

Peak SAR (extrapolated) = 0.115 W/kg

**SAR(1 g) = 0.074 W/kg; SAR(10 g) = 0.040 W/kg**

Maximum value of SAR (measured) = 0.090 W/kg



## Plot 40 LTE Band 19 1RB Back Side Middle (Distance 15mm)

Date: 2021/11/16

Communication System: UID 0, LTE (0); Frequency: 837.5 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 837.5 MHz; $\sigma$ = 0.924 S/m; $\varepsilon_r$ = 42.202; $\rho$ = 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(9.30, 9.30, 9.30); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

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

Maximum value of SAR (measured) = 0.290 W/kg

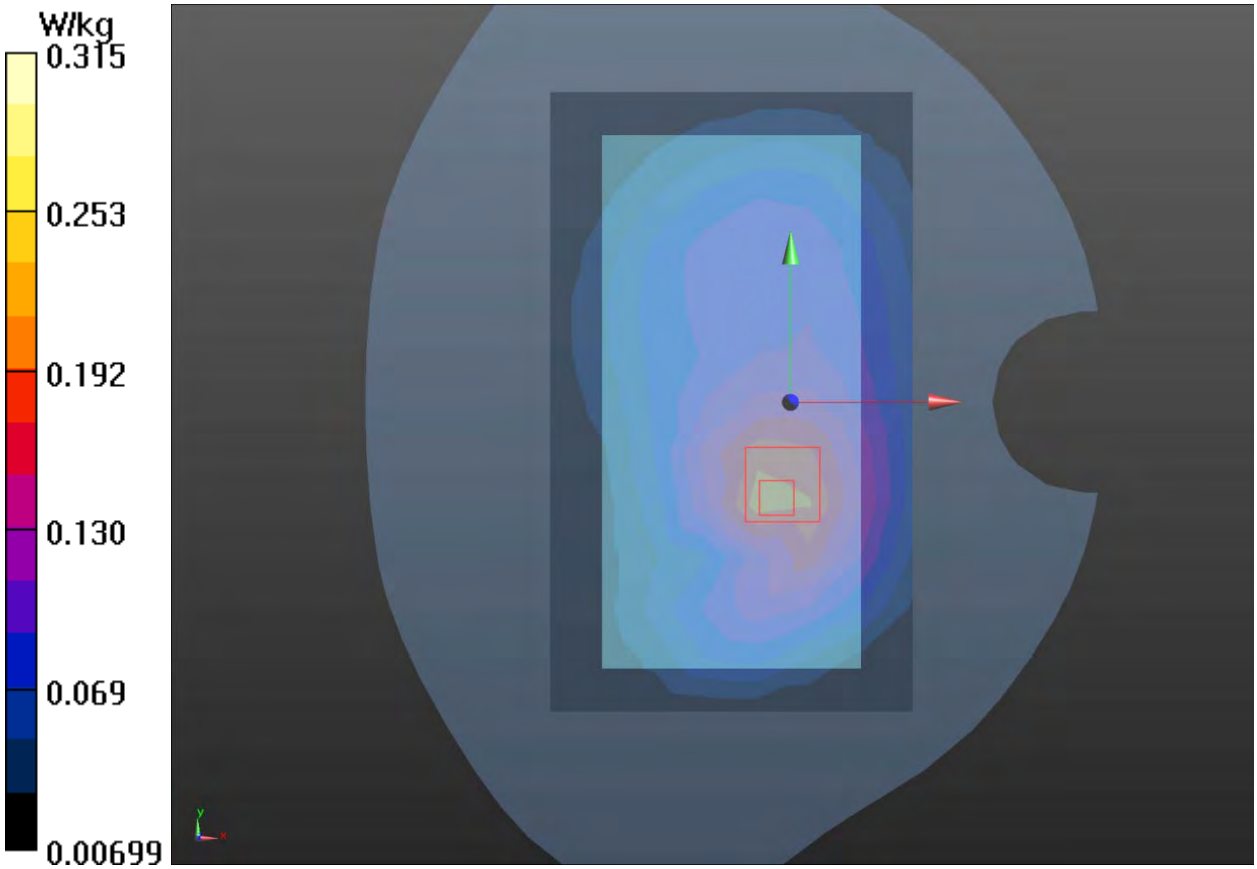
**Back Side Middle/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.89 V/m; Power Drift = -0.011 dB

Peak SAR (extrapolated) = 0.276 W/kg

**SAR(1 g) = 0.276 W/kg; SAR(10 g) = 0.188 W/kg**

Maximum value of SAR (measured) = 0.315 W/kg



## Plot 41 LTE Band 26 1RB Back Side Low (Distance 15mm)

Date: 2021/11/16

Communication System: UID 0, LTE (0); Frequency: 821.5 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 821.5 MHz; $\sigma$ = 0.912 S/m; $\varepsilon_r$ = 42.152; $\rho$ = 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(9.30, 9.30, 9.30); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

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

Maximum value of SAR (measured) = 0.260 W/kg

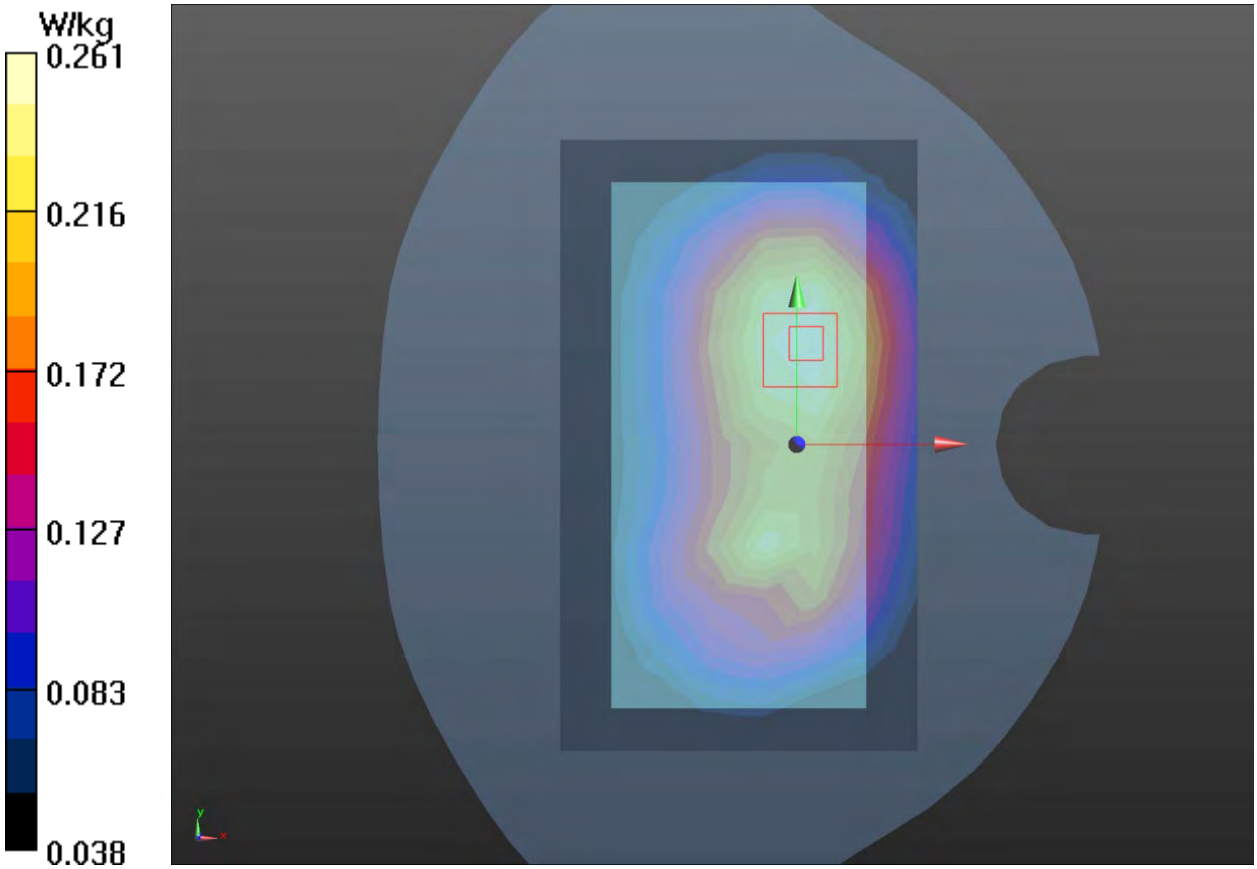
**Back Side Low/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.12 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.312 W/kg

**SAR(1 g) = 0.249 W/kg; SAR(10 g) = 0.188 W/kg**

Maximum value of SAR (measured) = 0.261 W/kg



## Plot 42 LTE Band 28A 1RB Back Side Middle (Distance 15mm)

Date: 2021/11/15

Communication System: UID 0, LTE (0); Frequency: 718 MHz;Duty Cycle: 1:1

Medium parameters used: f = 718 MHz; $\sigma$ = 0.855 S/m; $\varepsilon_r$ = 42.721; $\rho$ = 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(9.64, 9.64, 9.64); Calibrated:2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

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

Maximum value of SAR (measured) = 0.0597 W/kg

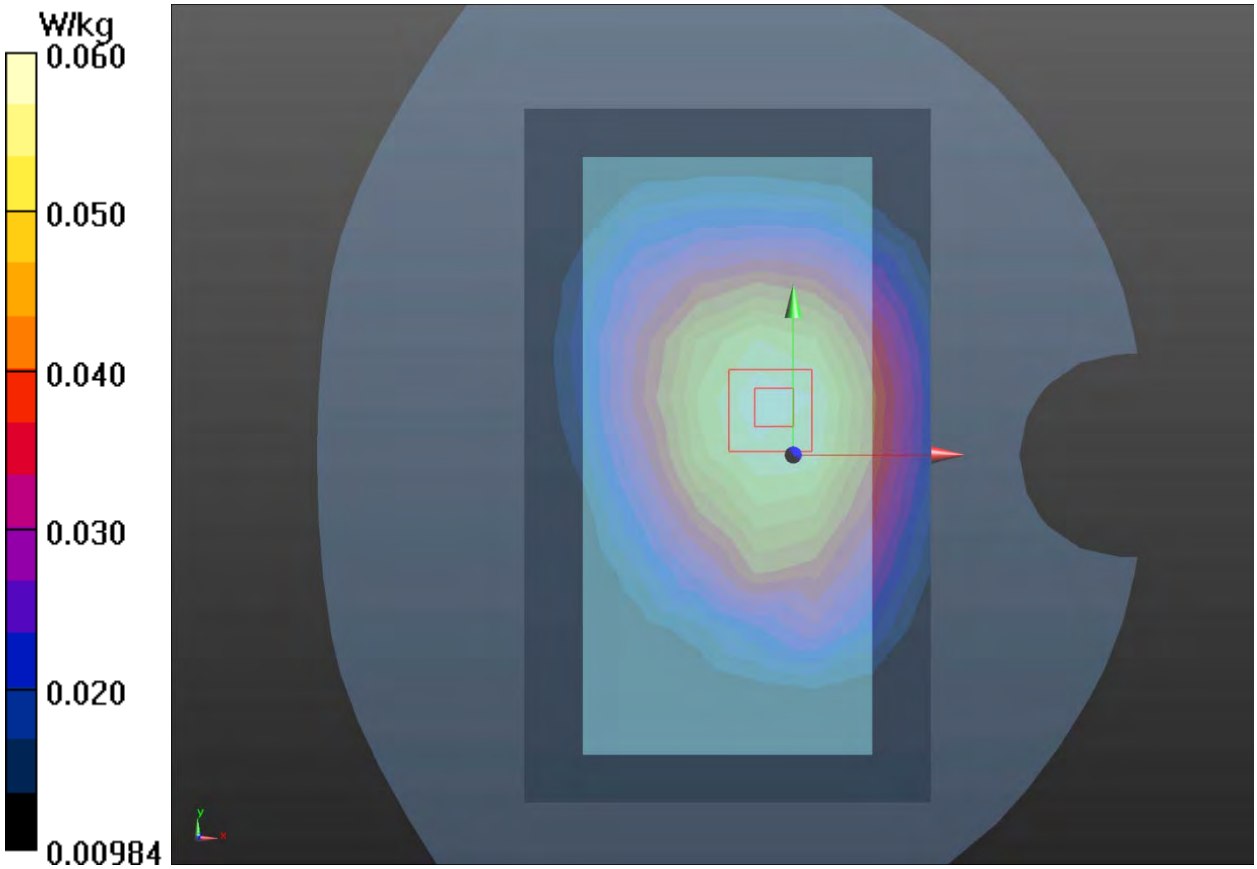
**Back Side Middle/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.997 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.0710 W/kg

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

Maximum value of SAR (measured) = 0.0603 W/kg



## Plot 43 LTE Band 28B 1RB Back Side Middle (Distance 15mm)

Date: 2021/11/15

Communication System: UID 0, LTE (0); Frequency: 728 MHz;Duty Cycle: 1:1

Medium parameters used: f = 728 MHz; $\sigma$ = 0.861 S/m; $\varepsilon_r$ = 42.637; $\rho$ = 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(9.64, 9.64, 9.64); Calibrated:2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

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

Maximum value of SAR (measured) = 0.560W/kg

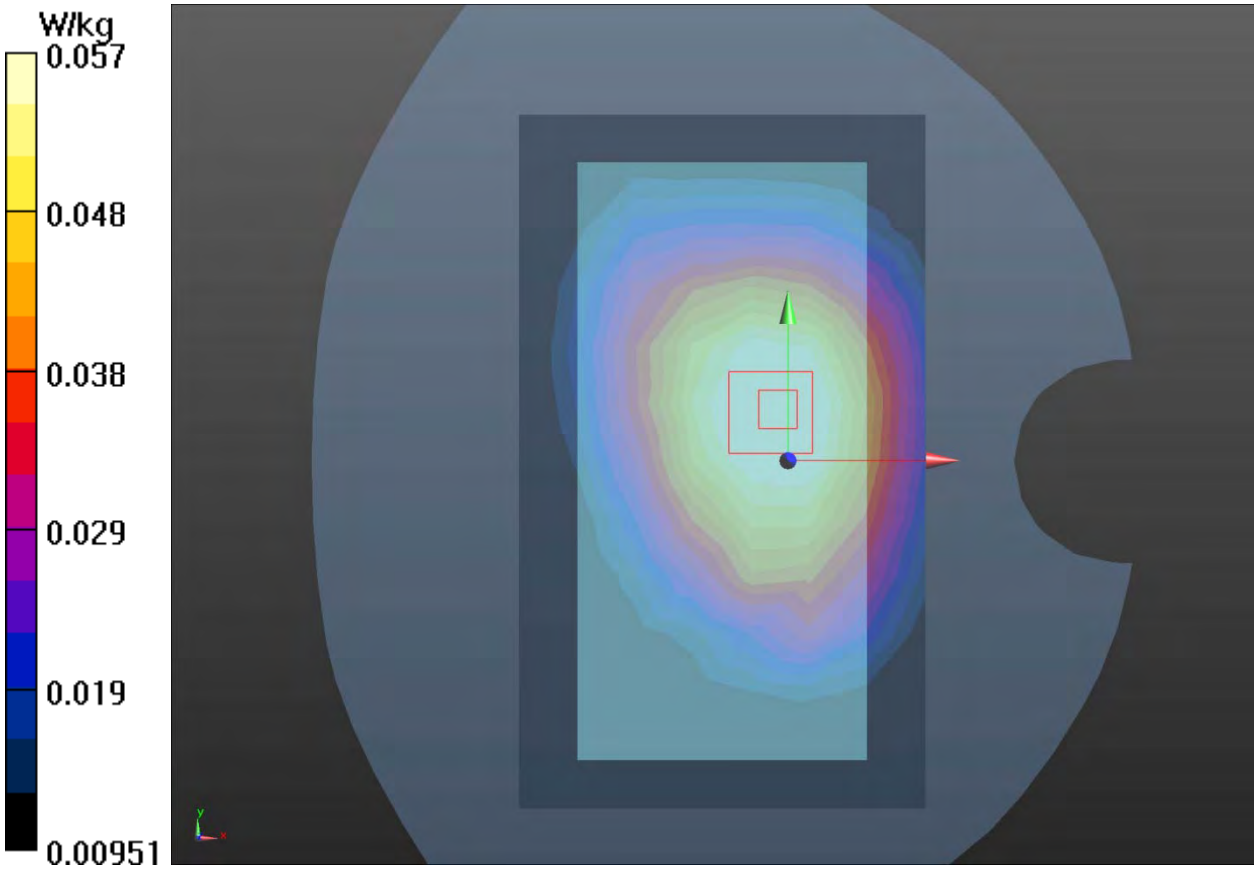
**Back Side Middle/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.014 V/m; Power Drift = -0.037 dB

Peak SAR (extrapolated) = 0.0680 W/kg

**SAR(1 g) = 0.054 W/kg; SAR(10 g) = 0.042 W/kg**

Maximum value of SAR (measured) = 0.0570 W/kg



## Plot 44 LTE Band 38 1RB Back Side High (Distance 15mm)

Date: 2021/12/01

Communication System: UID 0, LTE (0); Frequency: 2610 MHz;Duty Cycle: 1:1.58

Medium parameters used: f = 2610 MHz; $\sigma$ = 2.027 S/m; $\varepsilon_r$ = 37.056; $\rho$ = 1000 kg/m$^3$

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.50, 7.50, 7.50); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Back Side High/Area Scan (9x16x1):** Measurement grid: dx=12mm, dy=12mm

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

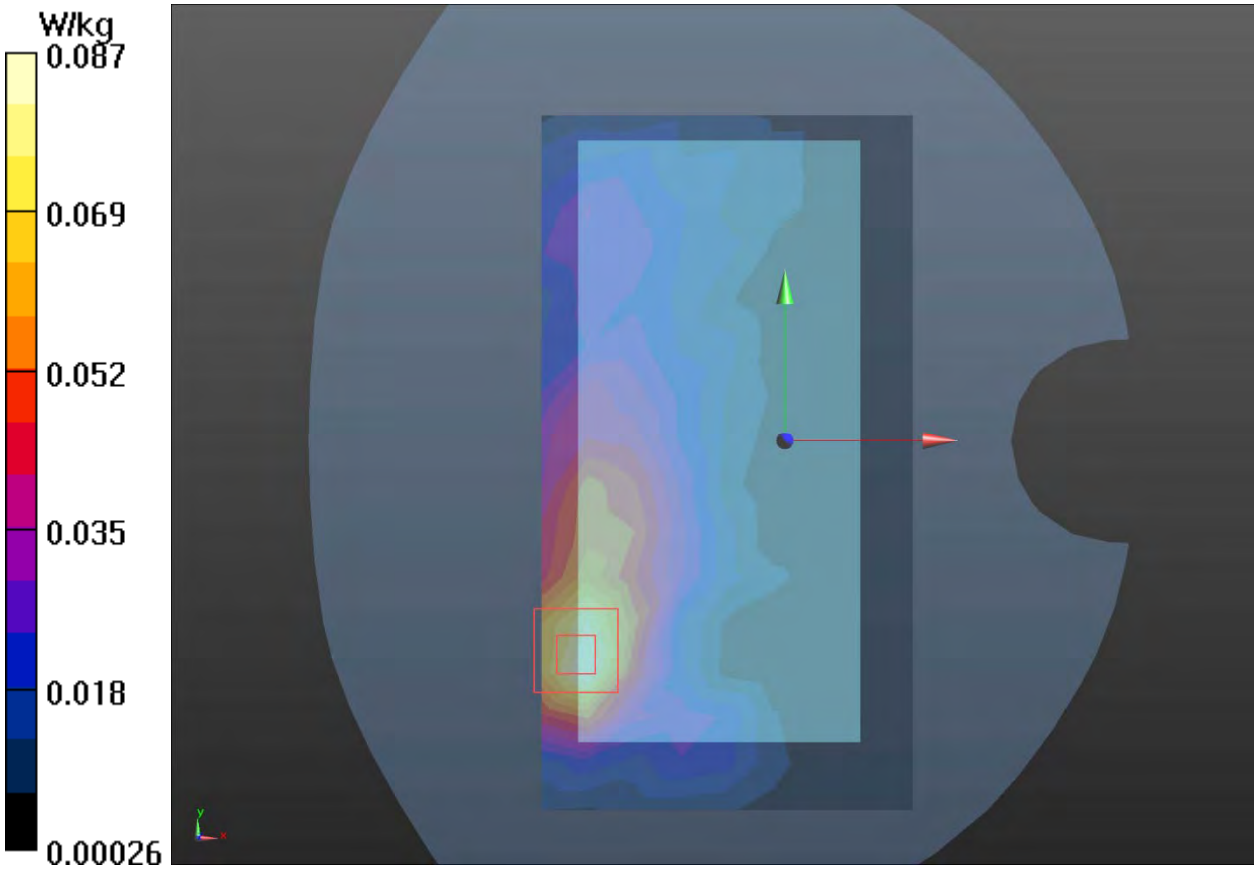
**Back Side High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 2.319 V/m; Power Drift = 0.046 dB

Peak SAR (extrapolated) = 0.113 W/kg

**SAR(1 g) = 0.054 W/kg; SAR(10 g) = 0.027 W/kg**

Maximum value of SAR (measured) = 0.087 W/kg



## Plot 45 LTE Band 40 1RB Back Side Low (Distance 15mm)

Date: 2021/11/19

Communication System: UID 0, LTE (0); Frequency: 2305 MHz;Duty Cycle: 1:1.58

Medium parameters used: f = 2305 MHz; $\sigma$ = 1.687 S/m; $\varepsilon_r$ = 38.123; $\rho$ = 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(7.67, 7.67, 7.67); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Back Side Low/Area Scan (9x16x1):** Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 0.030 W/kg

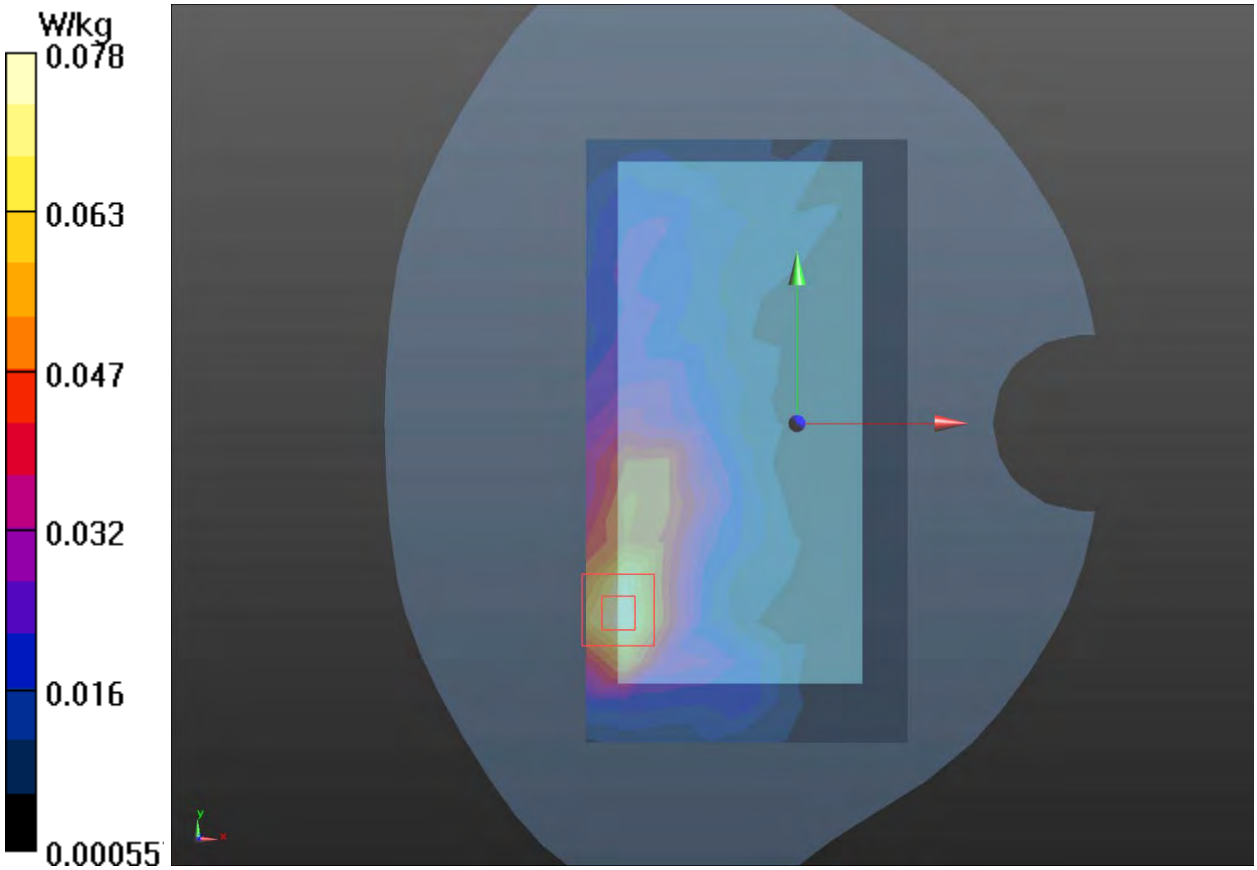
**Back Side Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 1.977 V/m; Power Drift = 0.011 dB

Peak SAR (extrapolated) = 0.101 W/kg

**SAR(1 g) = 0.00 W/kg; SAR(10 g) = 0.00 W/kg**

Maximum value of SAR (measured) = 0.078 W/kg



## Plot 46 LTE Band 41 1RB Back Side High (Distance 15mm)

Date: 2021/12/01

Communication System: UID 0, LTE (0); Frequency: 2625 MHz;Duty Cycle: 1:1.58

Medium parameters used: f = 2625 MHz; $\sigma$ = 2.063 S/m; $\varepsilon_r$ = 36.918; $\rho$ = 1000 kg/m$^3$

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.50, 7.50, 7.50); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Back Side High/Area Scan (9x16x1):** Measurement grid: dx=12mm, dy=12mm

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

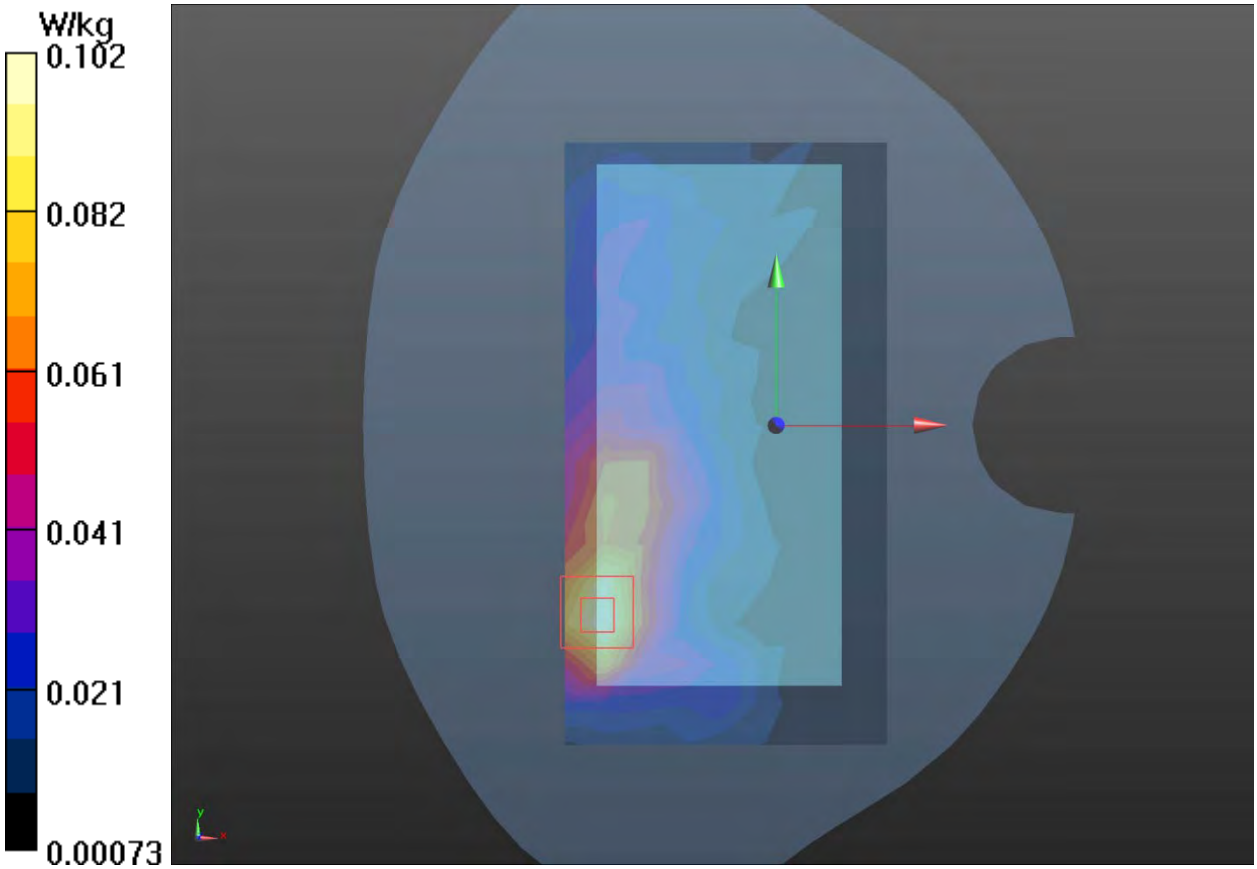
**Back Side High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 2.048 V/m; Power Drift = 0.133 dB

Peak SAR (extrapolated) = 0.131 W/kg

**SAR(1 g) = 0.061 W/kg; SAR(10 g) = 0.031 W/kg**

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



## Plot 47 802.11b Front Side Low (Distance 15mm)

Date: 2021/12/27

Communication System: UID 0, 802.11b (0); Frequency: 2412 MHz;Duty Cycle: 1:1

Medium parameters used: f = 2412 MHz; $\sigma$ = 1.801 S/m; $\varepsilon_r$ = 37.737; $\rho$ = 1000 kg/m$^3$

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.50, 7.50, 7.50); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Front Side Low/Area Scan (9x16x1):** Measurement grid: dx=12mm, dy=12mm

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

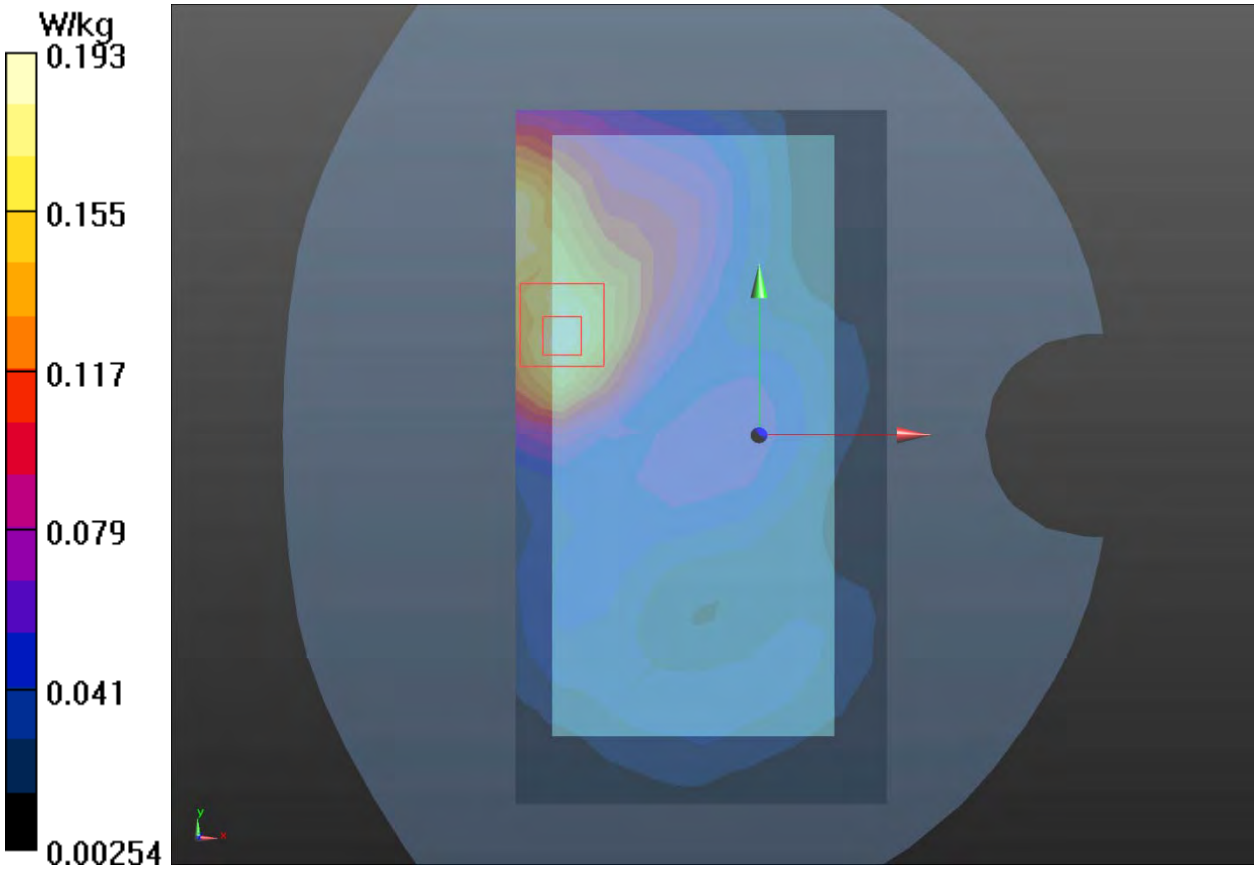
**Front Side Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.994 V/m; Power Drift = 0.049 dB

Peak SAR (extrapolated) = 0.234 W/kg

**SAR(1 g) = 0.135 W/kg; SAR(10 g) = 0.077 W/kg**

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



## Plot 48 802.11nHT20 U-NII-1 Back Side High (Distance 15mm)

Date: 2021/12/20

Communication System: UID 0, 802.11n HT20 (0); Frequency: 5240 MHz;Duty Cycle: 1:1.04

Medium parameters used: f = 5240 MHz; $\sigma$ = 4.847 S/m; $\varepsilon_r$ = 36.872; $\rho$ = 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(5.45, 5.45, 5.45); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Back Side High/Area Scan (15x14x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.410 W/kg

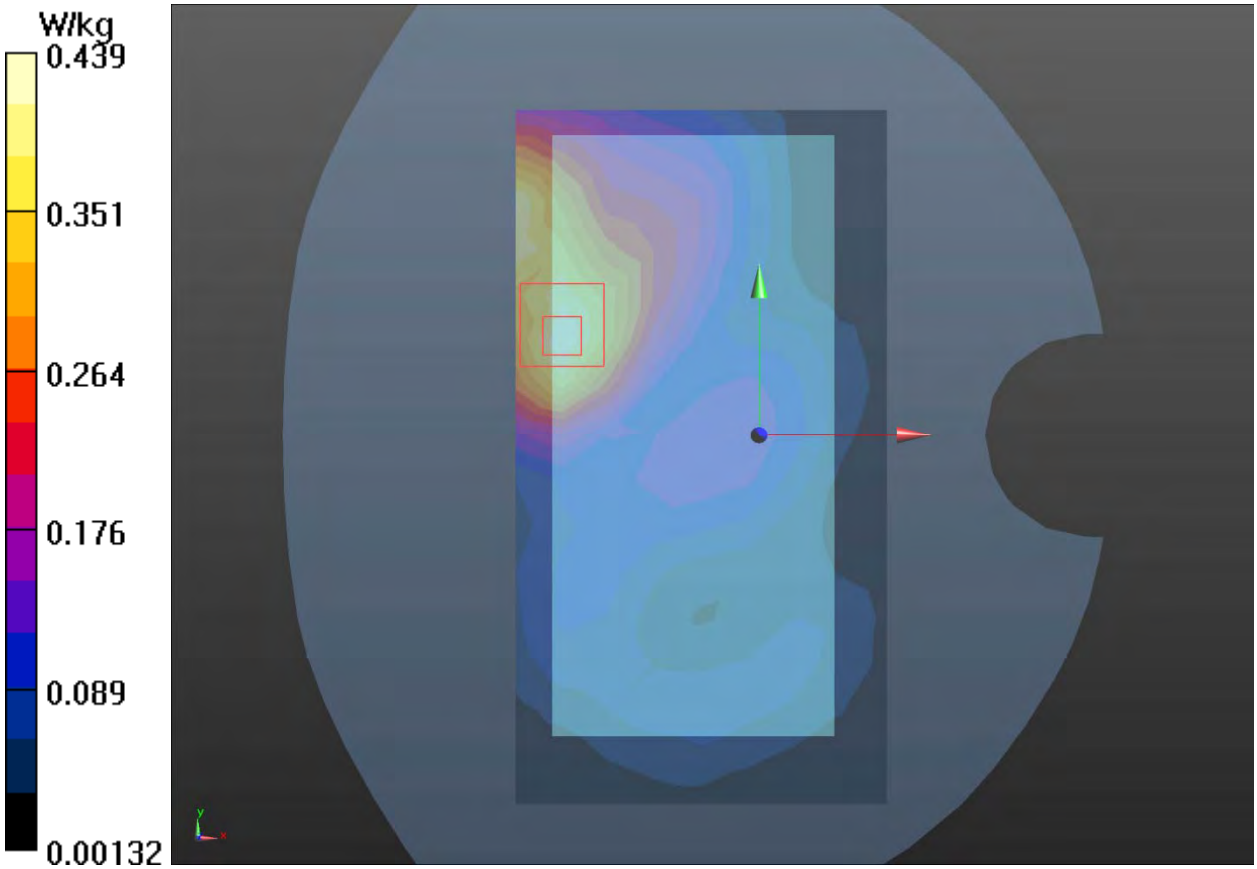
**Back Side High/Zoom Scan (7x7x12)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 1.812 V/m; Power Drift = 0.1 dB

Peak SAR (extrapolated) = 0.838 W/kg

**SAR(1 g) = 0.304 W/kg; SAR(10 g) = 0.117 W/kg**

Maximum value of SAR (measured) = 0.439 W/kg



## Plot 49 GSM 850 GPRS (4Txslots) Back Side Middle (Distance 10mm)

Date: 2021/11/17

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

Medium parameters used: f = 837 MHz; $\sigma$ = 0.923 S/m; $\varepsilon_r$ = 42.201; $\rho$ = 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(9.30, 9.30, 9.30); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

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

Maximum value of SAR (measured) = 0.580 W/kg

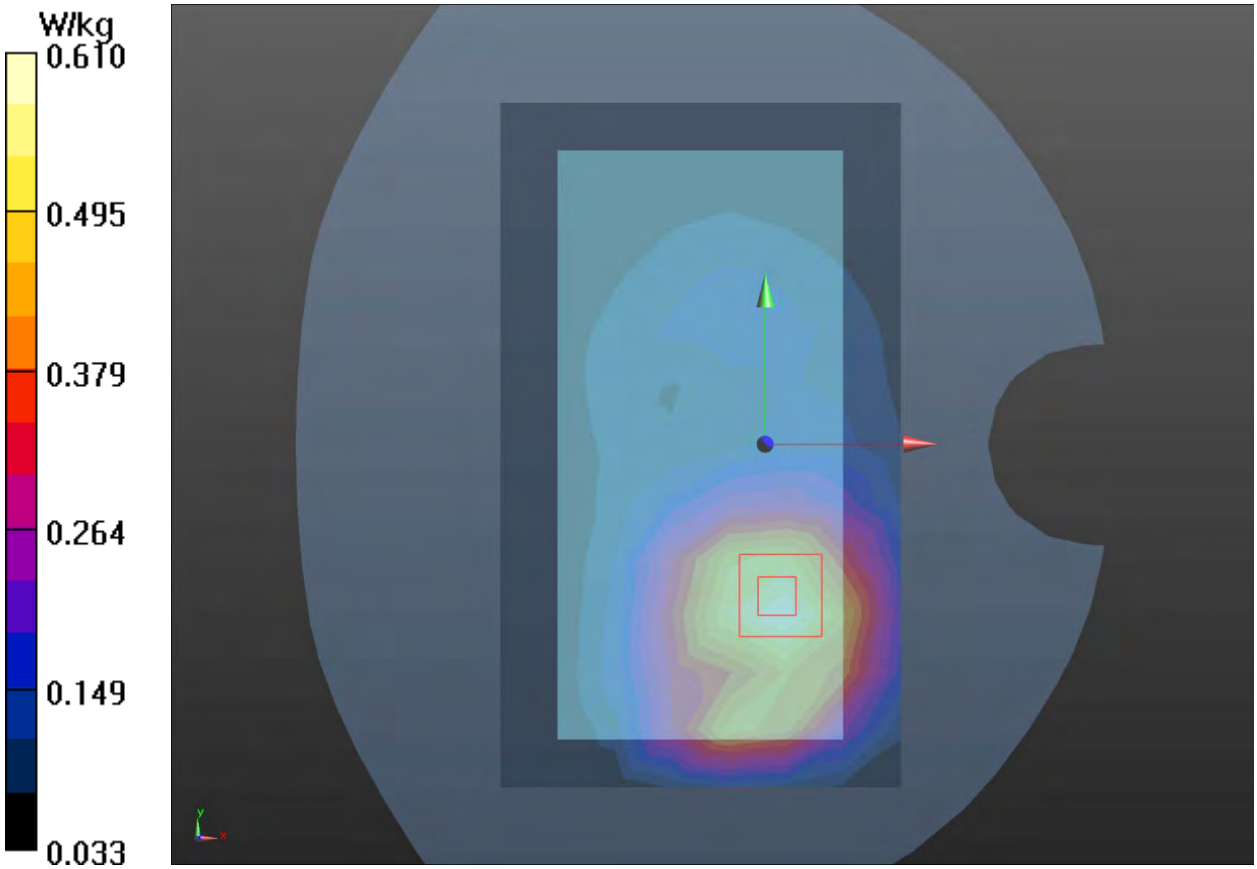
**Back Side Middle/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.763 V/m; Power Drift = -0.14 dB

Peak SAR (extrapolated) = 0.812 W/kg

**SAR(1 g) = 0.577 W/kg; SAR(10 g) = 0.383 W/kg**

Maximum value of SAR (measured) = 0.610 W/kg



## Plot 50 GSM 1900 GPRS (4Txslots) Back Side Middle (Distance 10mm)

Date: 2021/11/18

Communication System: UID 0, GPRS 4TX (0); Frequency: 1880 MHz;Duty Cycle: 1:2.07

Medium parameters used: f = 1880 MHz; $\sigma$ = 1.42 S/m; $\varepsilon_r$ = 38.948; $\rho$ = 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(7.88, 7.88, 7.88); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

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

Maximum value of SAR (measured) = 1.10 W/kg

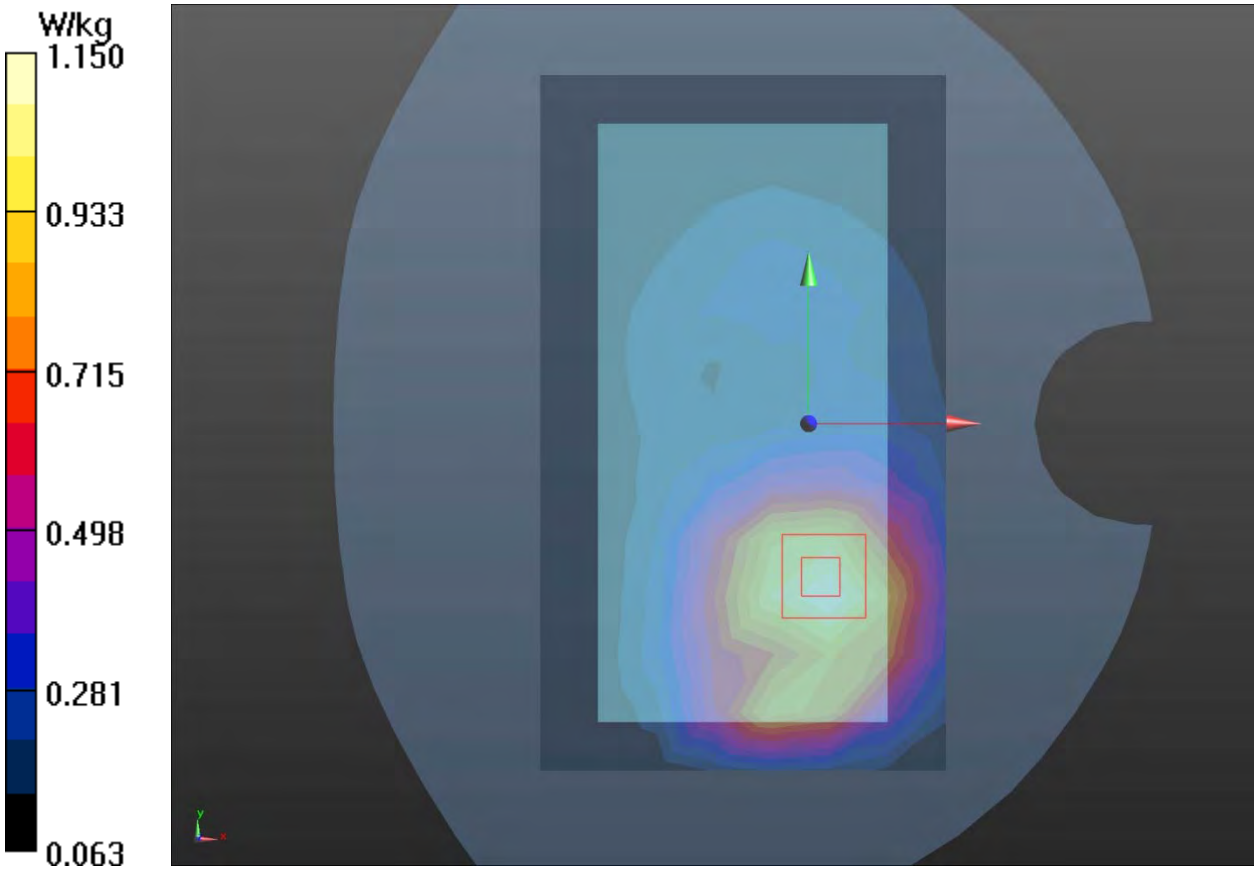
**Back Side Middle/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 10.84 V/m; Power Drift = 0.1 dB

Peak SAR (extrapolated) = 1.53 W/kg

**SAR(1 g) = 0.594 W/kg; SAR(10 g) = 0.325 W/kg**

Maximum value of SAR (measured) = 1.15 W/kg



## Plot 51 UMTS Band II Back Side Middle (Distance 10mm)

Date: 2021/11/18

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

Medium parameters used: f = 1880 MHz; $\sigma$ = 1.42 S/m; $\varepsilon_r$ = 38.948; $\rho$ = 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(7.88, 7.88, 7.88); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

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

Maximum value of SAR (measured) = 0.563 W/kg

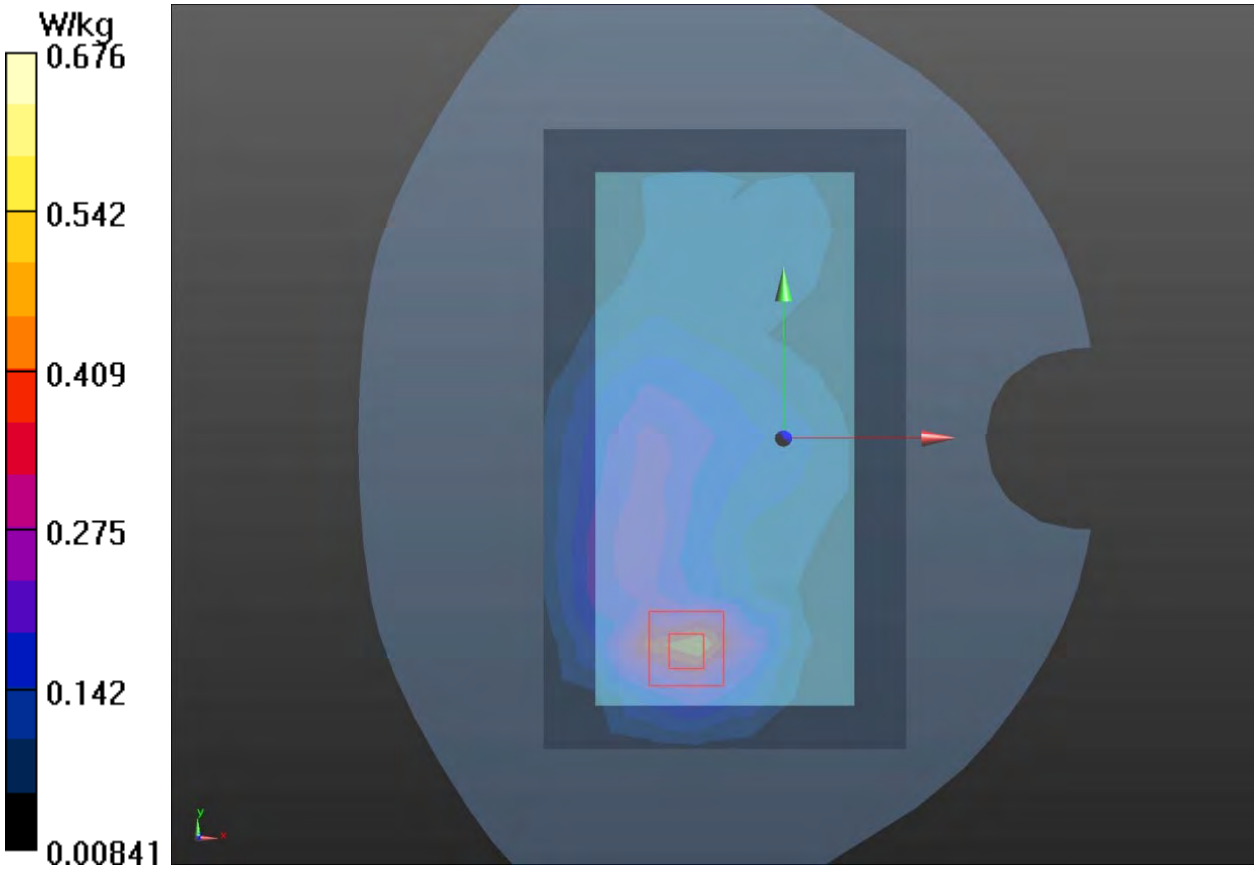
**Back Side Middle/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.41 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 0.776 W/kg

**SAR(1 g) = 0.515 W/kg; SAR(10 g) = 0.270 W/kg**

Maximum value of SAR (measured) = 0.676 W/kg



## Plot 52 UMTS Band IV Back Side Middle (Distance 10mm)

Date: 2021/11/14

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

Medium parameters used: f = 1732.6 MHz; $\sigma$ = 1.312 S/m; $\varepsilon_r$ = 39.365; $\rho$ = 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(8.22, 8.22, 8.22); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

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

Maximum value of SAR (measured) = 0.669 W/kg

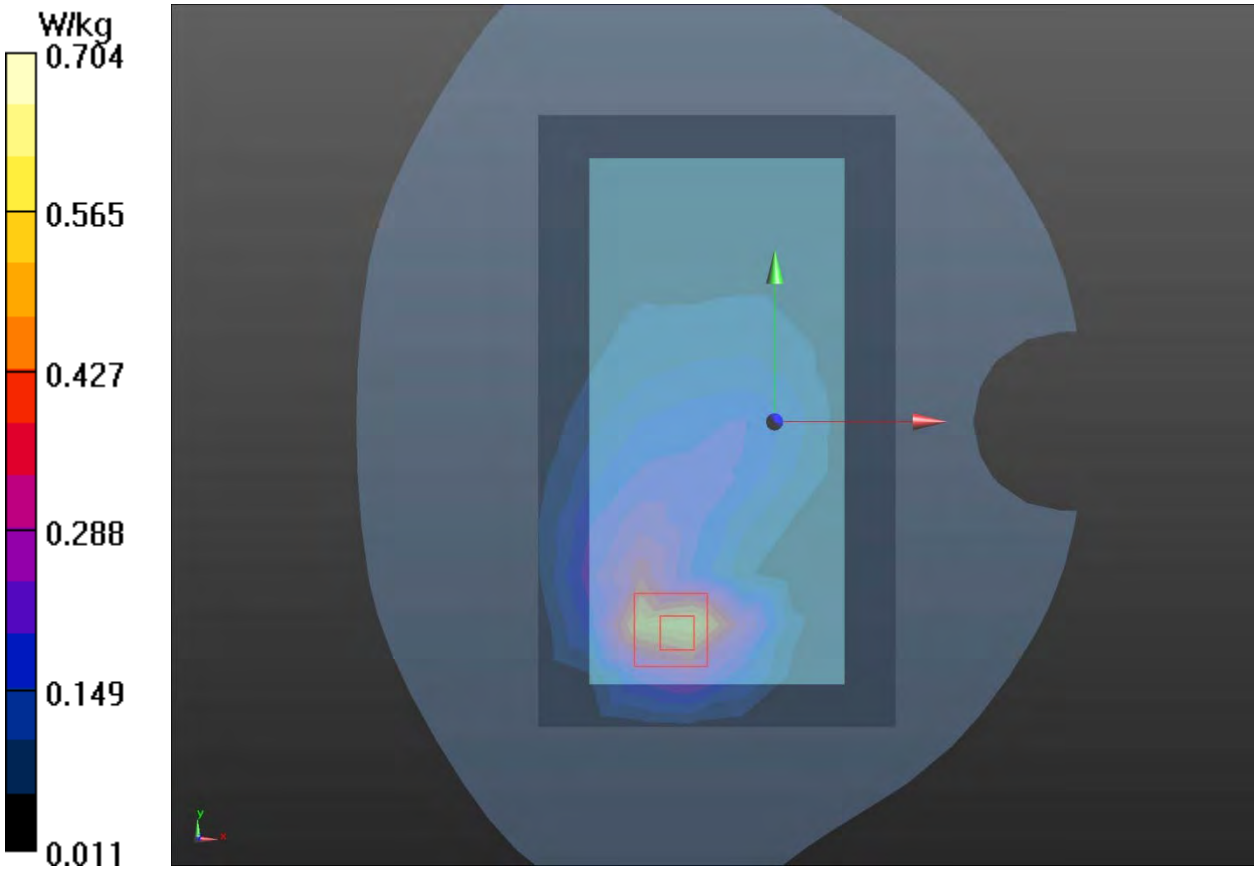
**Back Side Middle/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 12.47 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.942 W/kg

**SAR(1 g) = 0.652 W/kg; SAR(10 g) = 0.330 W/kg**

Maximum value of SAR (measured) = 0.704 W/kg



## Plot 53 UMTS Band V Back Side Middle (Distance 10mm)

Date: 2021/11/17

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

Medium parameters used: f = 837 MHz; $\sigma$ = 0.923 S/m; $\varepsilon_r$ = 42.201; $\rho$ = 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(9.30, 9.30, 9.30); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

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

Maximum value of SAR (measured) = 0.398 W/kg

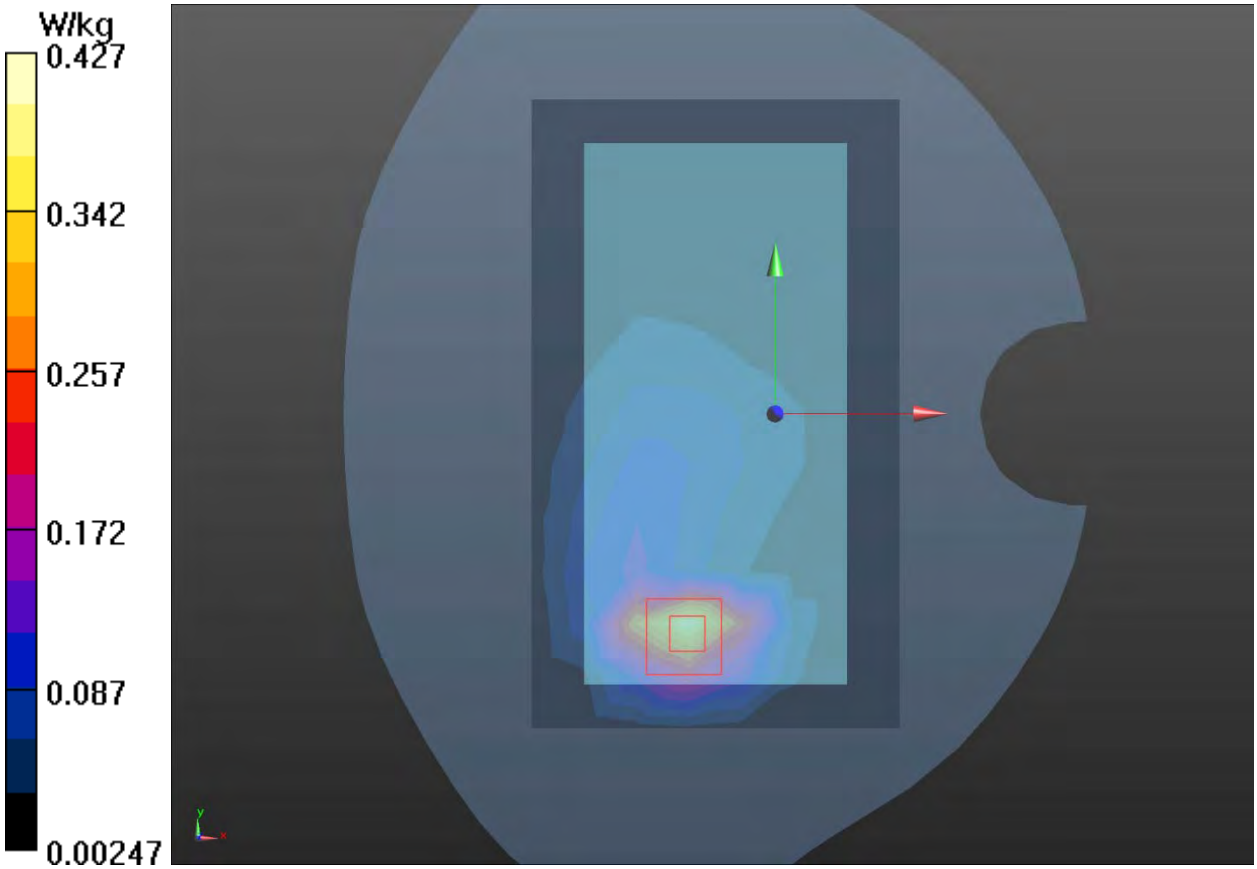
**Back Side Middle/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.769 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.753 W/kg

**SAR(1 g) = 0.377 W/kg; SAR(10 g) = 0.184 W/kg**

Maximum value of SAR (measured) = 0.427 W/kg



## Plot 54 LTE Band 2 1RB Back Side High (Distance 10mm)

Date: 2021/11/18

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

Medium parameters used: f = 1900 MHz; $\sigma$ = 1.434 S/m; $\varepsilon_r$ = 38.861; $\rho$ = 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(7.88, 7.88, 7.88); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

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

Maximum value of SAR (measured) = 0.586 W/kg

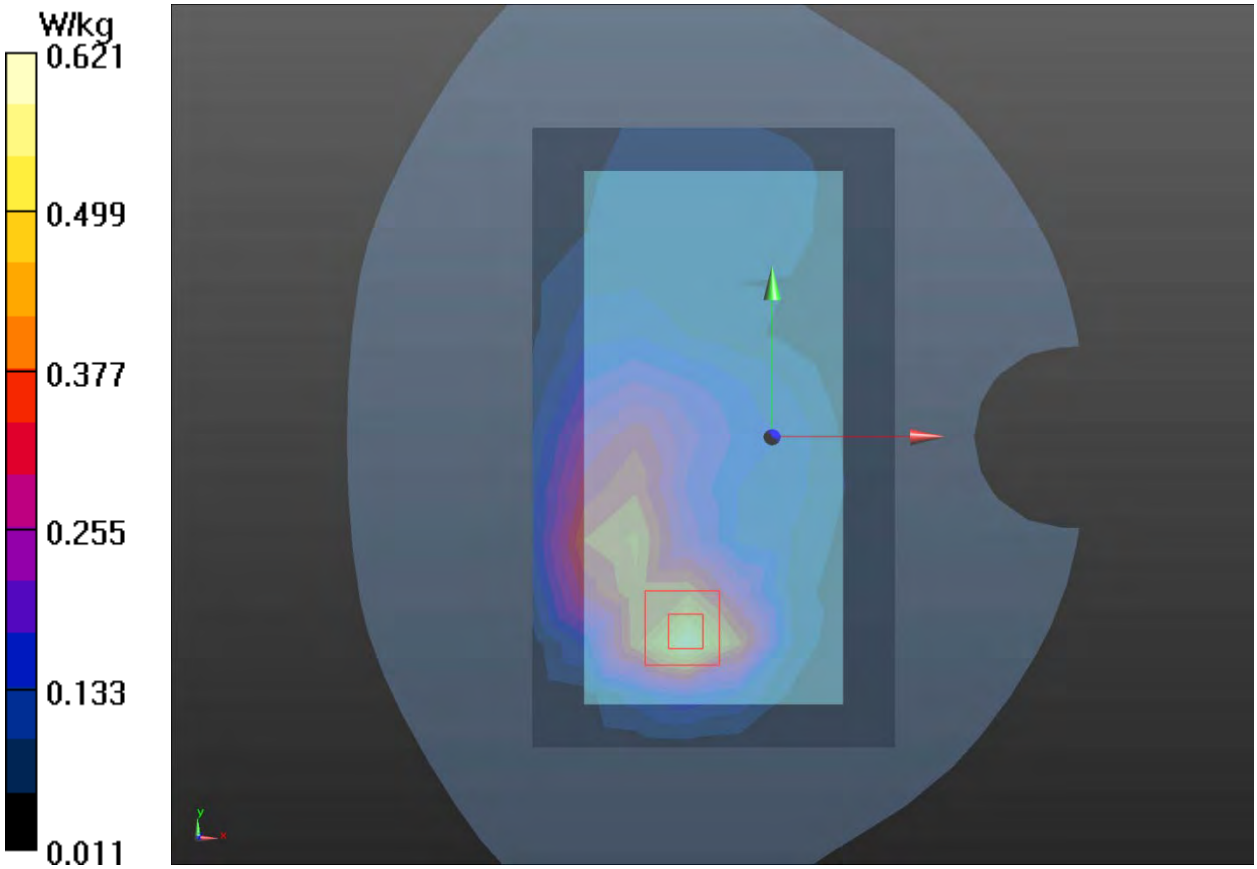
**Back Side High/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.59 V/m; Power Drift = 0.18 dB

Peak SAR (extrapolated) = 1.00 W/kg

**SAR(1 g) = 0.560 W/kg; SAR(10 g) = 0.305 W/kg**

Maximum value of SAR (measured) = 0.621 W/kg



## Plot 55 LTE Band 4 50%RB Back Side Low (Distance 10mm)

Date: 2021/11/14

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

Medium parameters used: f = 1720 MHz; $\sigma$ = 1.303 S/m; $\varepsilon_r$ = 39.467; $\rho$ = 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(8.22, 8.22, 8.22); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

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

Maximum value of SAR (measured) = 0.664 W/kg

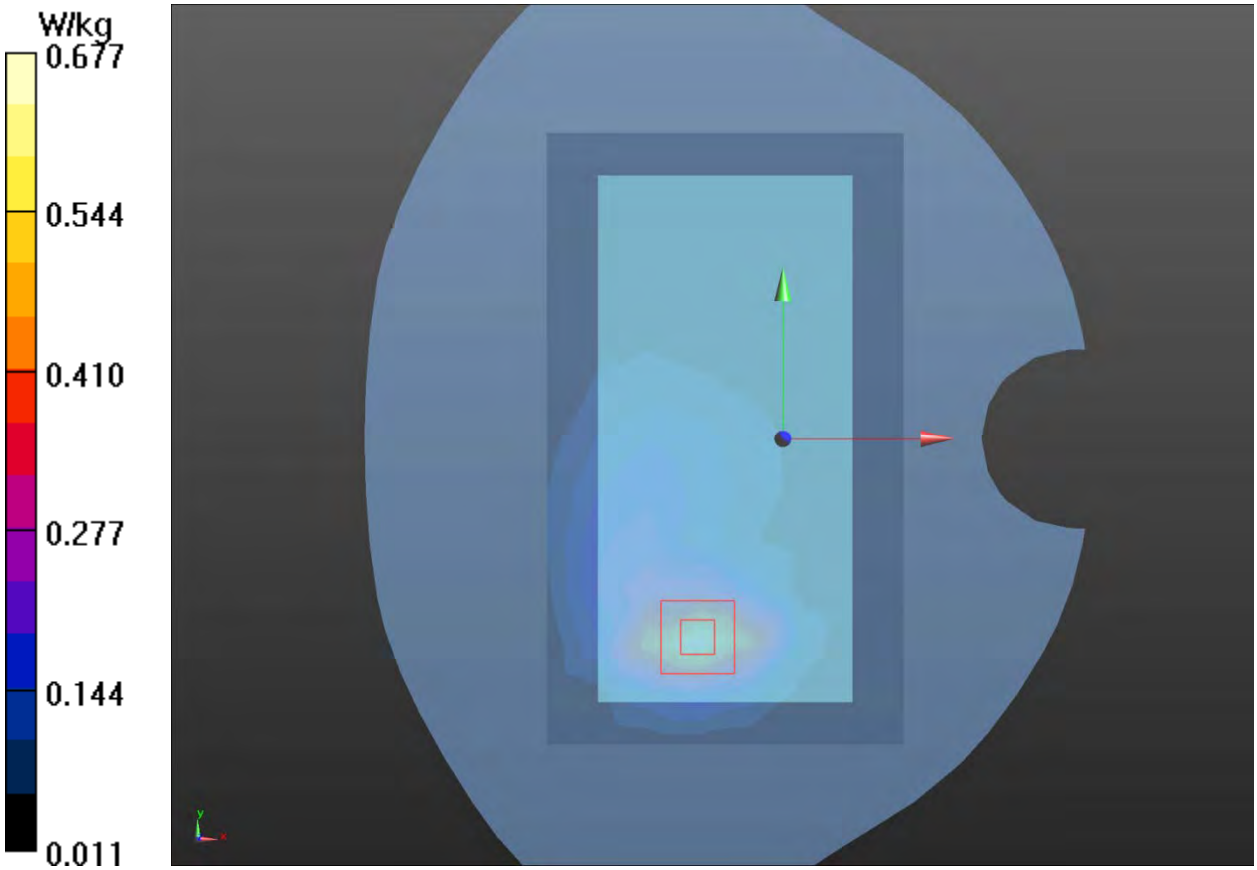
**Back Side Low/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.910 V/m; Power Drift = 0.15 dB

Peak SAR (extrapolated) = 1.07 W/kg

**SAR(1 g) = 0.604 W/kg; SAR(10 g) = 0.323 W/kg**

Maximum value of SAR (measured) = 0.677 W/kg



## Plot 56 LTE Band 5 1RB Back Side Middle (Distance 10mm)

Date: 2021/11/17

Communication System: UID 0, LTE (0); Frequency: 836.5 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 836.5 MHz; $\sigma$ = 0.923 S/m; $\varepsilon_r$ = 42.199; $\rho$ = 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(9.30, 9.30, 9.30); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

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

Maximum value of SAR (measured) = 0.388 W/kg

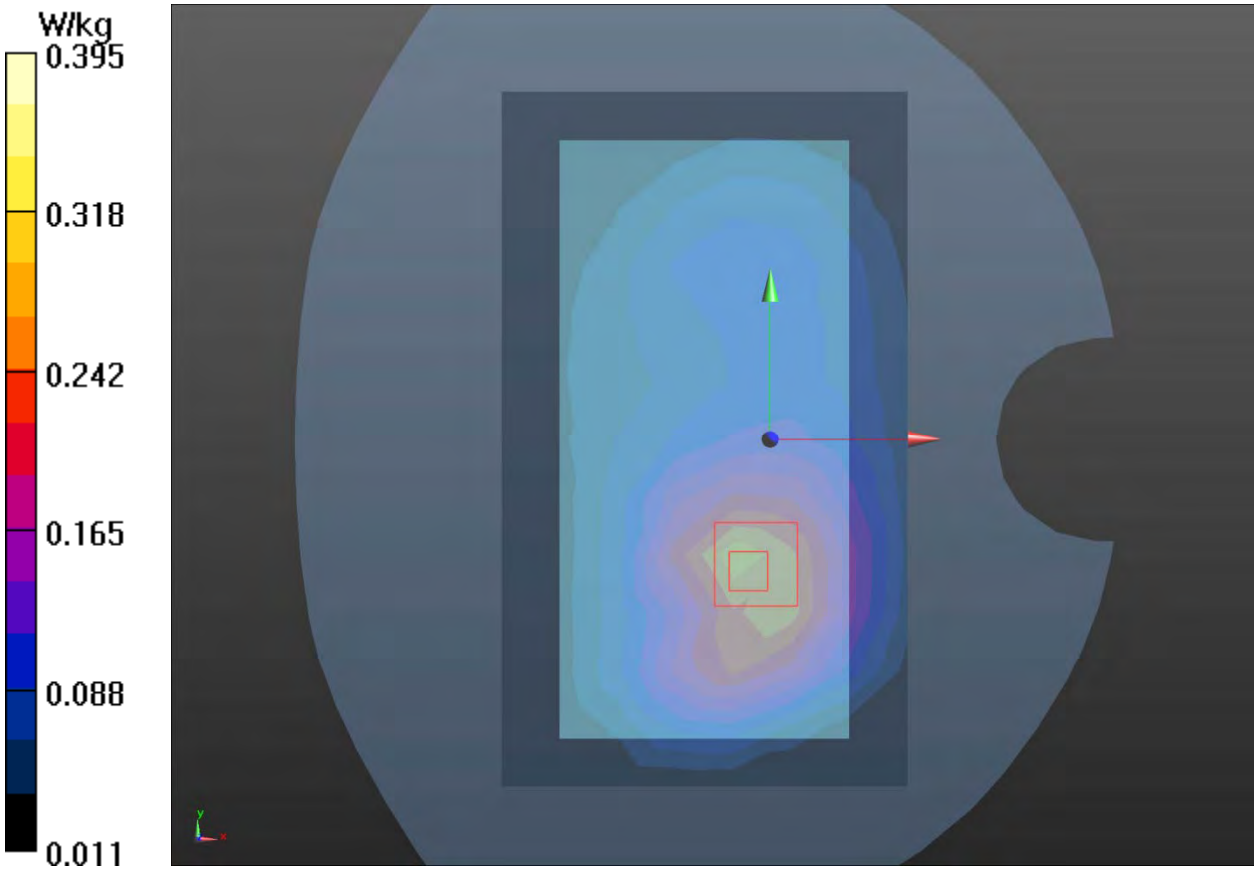
**Back Side Middle/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 10.90 V/m; Power Drift = 0.027 dB

Peak SAR (extrapolated) = 0.394 W/kg

**SAR(1 g) = 0.360 W/kg; SAR(10 g) = 0.240 W/kg**

Maximum value of SAR (measured) = 0.395 W/kg



## Plot 57 LTE Band 7 1RB Right Edge Middle (Distance 10mm)

Date: 2021/12/02

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

Medium parameters used: f = 2535 MHz; $\sigma$ = 1.94 S/m; $\varepsilon_r$ = 37.31; $\rho$ = 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(7.25, 7.25, 7.25); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Right Edge Middle/Area Scan (7x15x1):** Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 0.203 W/kg

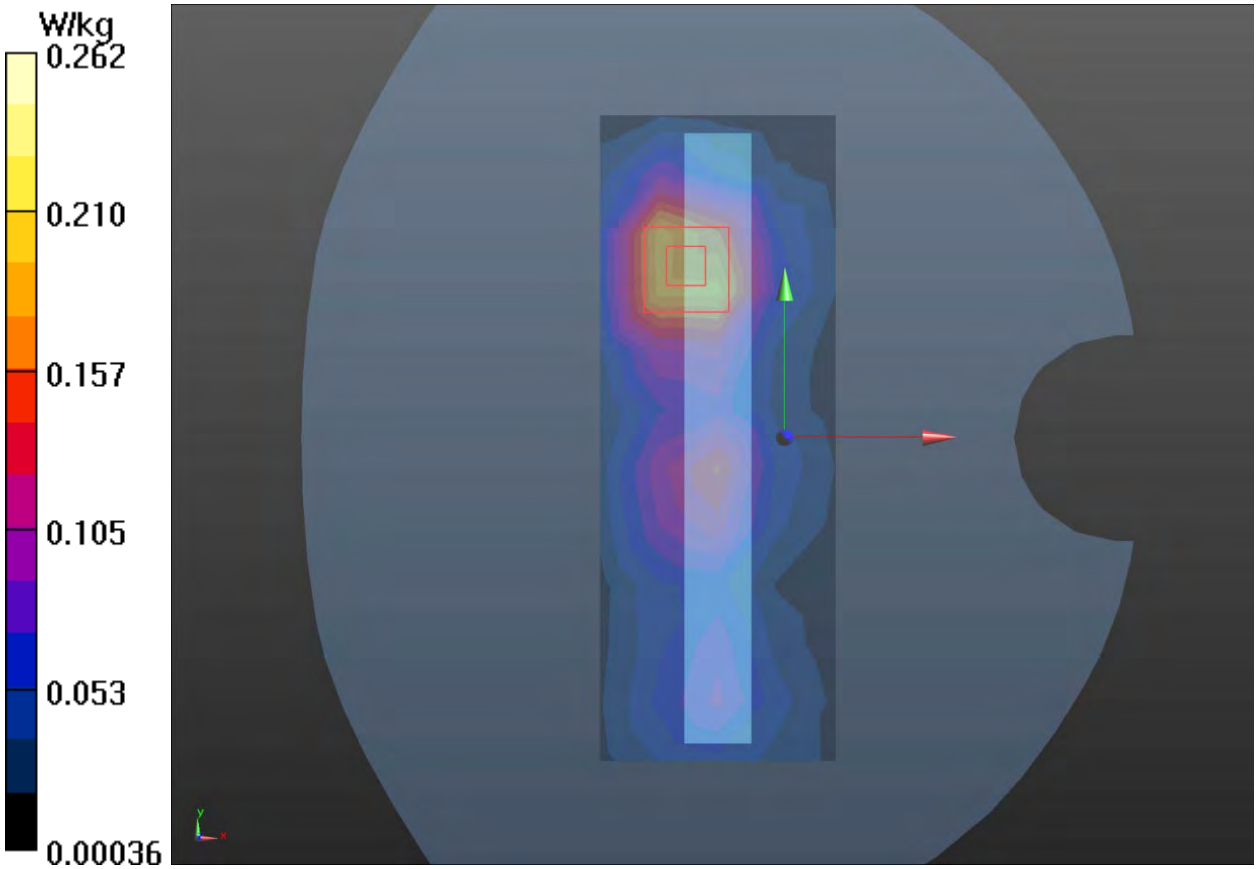
**Right Edge Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.366 V/m; Power Drift = 0.17 dB

Peak SAR (extrapolated) = 0.331 W/kg

**SAR(1 g) = 0.159 W/kg; SAR(10 g) = 0.080 W/kg**

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



## Plot 58 LTE Band 19 1RB Back Side Middle (Distance 10mm)

Date: 2021/11/17

Communication System: UID 0, LTE (0); Frequency: 837.5 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 837.5 MHz; $\sigma$ = 0.924 S/m; $\varepsilon_r$ = 42.202; $\rho$ = 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(9.30, 9.30, 9.30); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

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

Maximum value of SAR (measured) = 0.392 W/kg

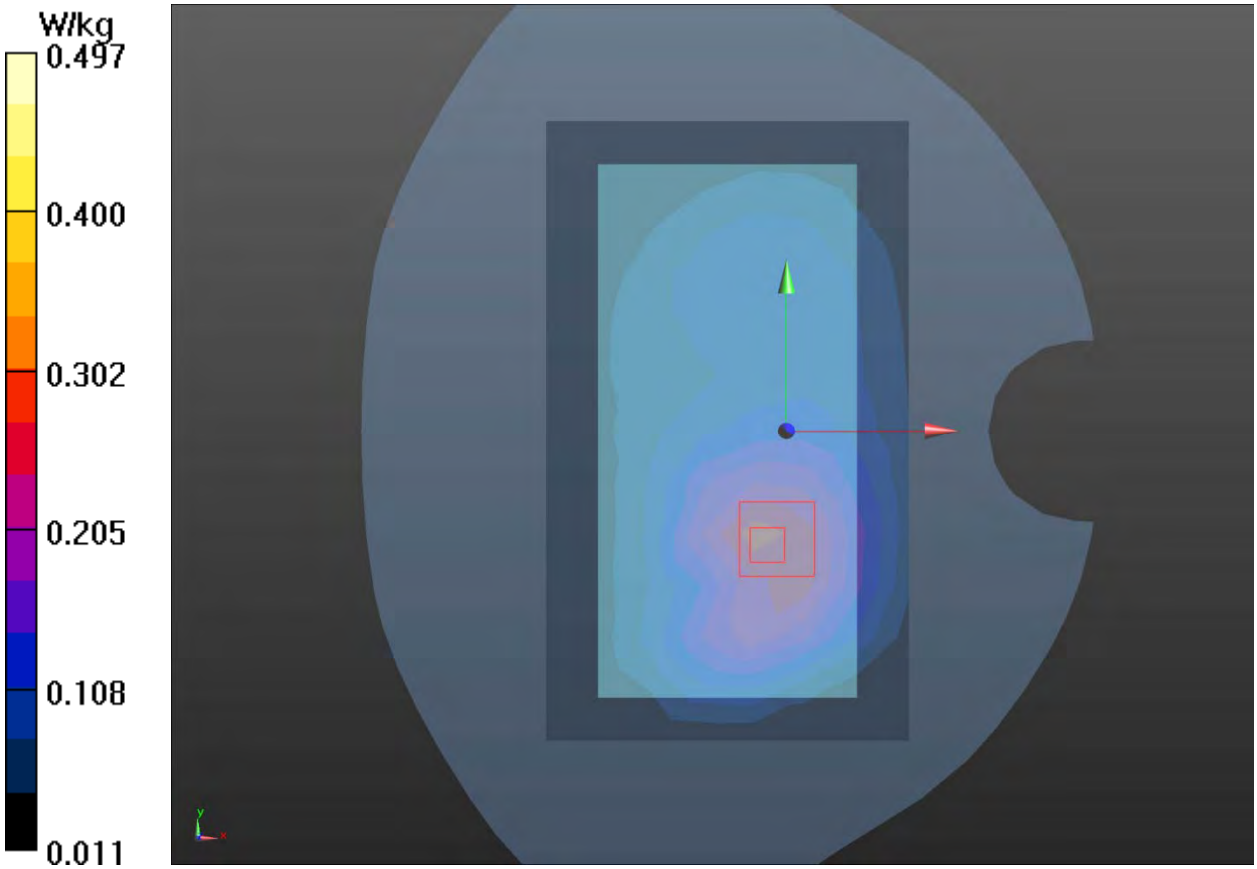
**Back Side Middle/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.21 V/m; Power Drift = 0 dB

Peak SAR (extrapolated) = 0.395 W/kg

**SAR(1 g) = 0.378 W/kg; SAR(10 g) = 0.252 W/kg**

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



## Plot 59 LTE Band 26 1RB Back Side Low (Distance 10mm)

Date: 2021/11/17

Communication System: UID 0, LTE (0); Frequency: 821.5 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 821.5 MHz; $\sigma$ = 0.912 S/m; $\varepsilon_r$ = 42.152; $\rho$ = 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(9.30, 9.30, 9.30); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

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

Maximum value of SAR (measured) = 0.378 W/kg

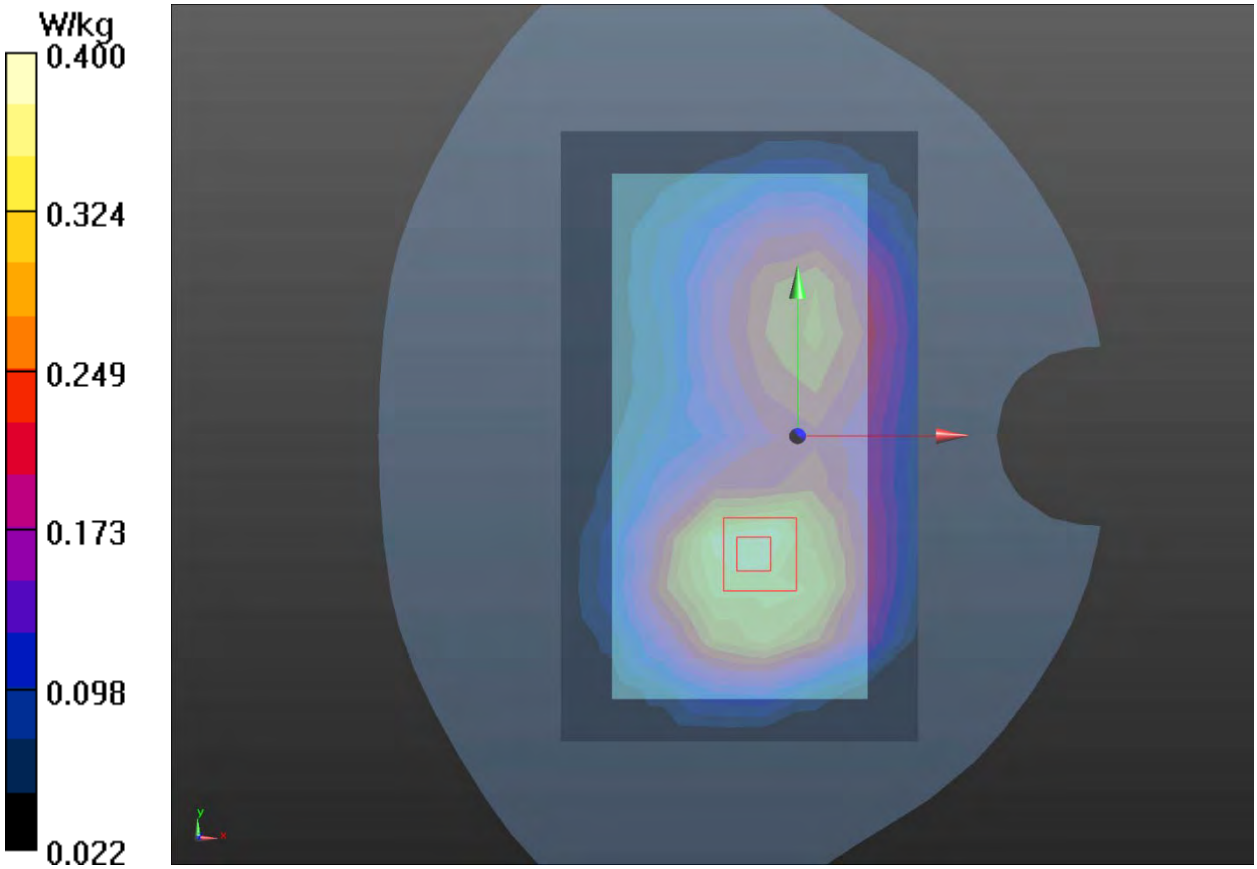
**Back Side Low/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 13.57 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 0.560 W/kg

**SAR(1 g) = 0.371 W/kg; SAR(10 g) = 0.240 W/kg**

Maximum value of SAR (measured) = 0.400 W/kg



## Plot 60 LTE Band 28A 1RB Back Side Middle (Distance 10mm)

Date: 2021/11/15

Communication System: UID 0, LTE (0); Frequency: 718 MHz;Duty Cycle: 1:1

Medium parameters used: f = 718 MHz; $\sigma$ = 0.855 S/m; $\varepsilon_r$ = 42.721; $\rho$ = 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(9.64, 9.64, 9.64); Calibrated:2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

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

Maximum value of SAR (measured) = 0.065 W/kg

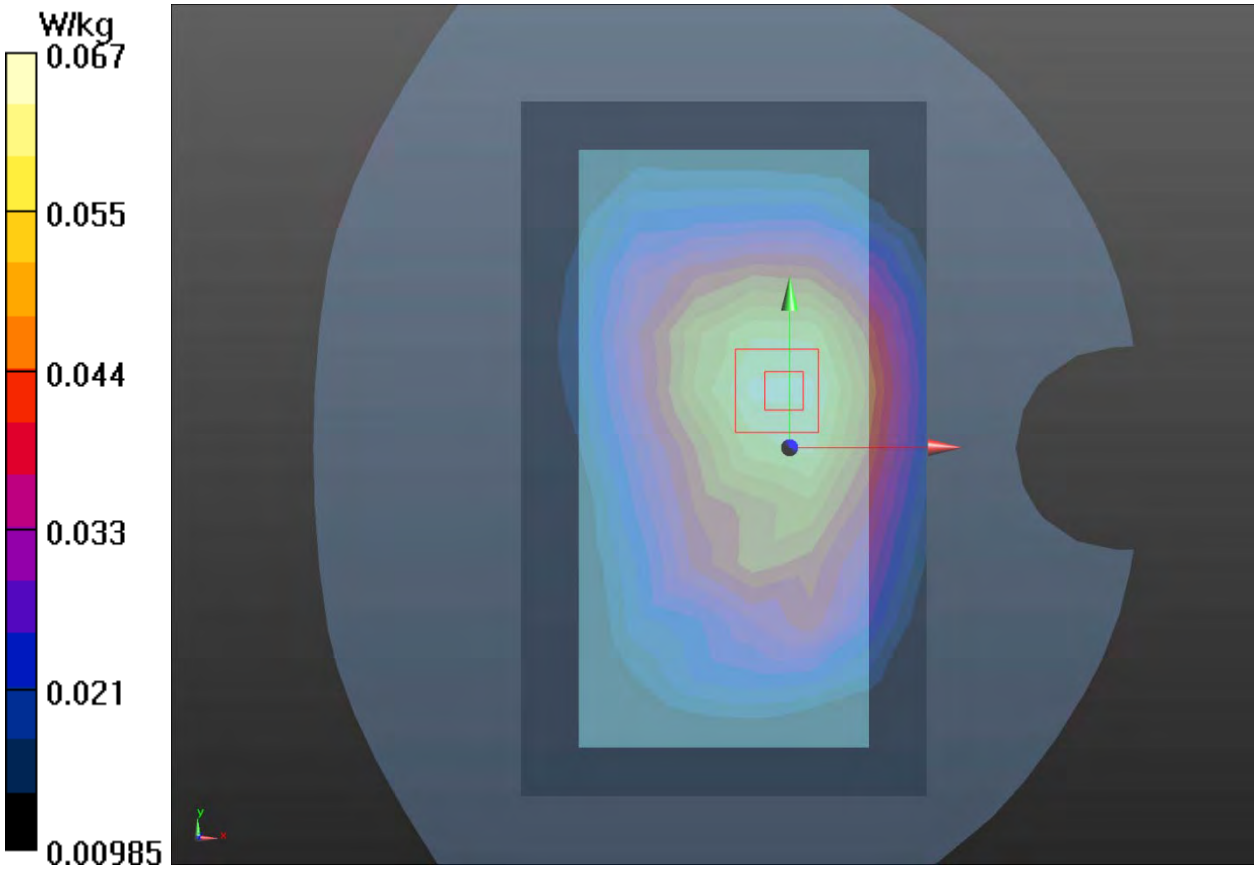
**Back Side Middle/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.907 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.0800 W/kg

**SAR(1 g) = 0.064 W/kg; SAR(10 g) = 0.049 W/kg**

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



## Plot 61 LTE Band 28B 1RB Back Side Middle (Distance 10mm)

Date: 2021/11/15

Communication System: UID 0, LTE (0); Frequency: 728 MHz;Duty Cycle: 1:1

Medium parameters used: f = 728 MHz; $\sigma$ = 0.861 S/m; $\varepsilon_r$ = 42.637; $\rho$ = 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(9.64, 9.64, 9.64); Calibrated:2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

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

Maximum value of SAR (measured) = 0.082 W/kg

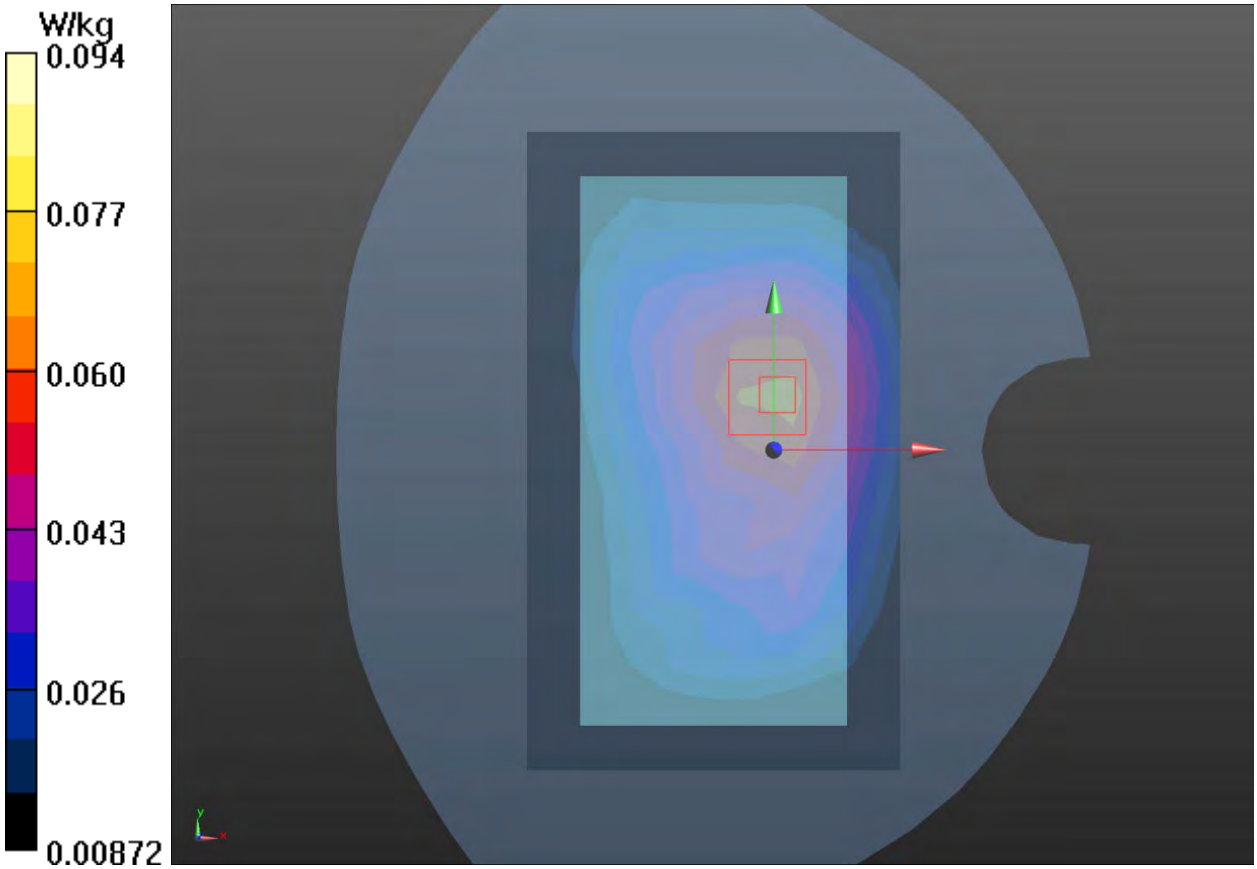
**Back Side Middle/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.562 V/m; Power Drift = 0.024 dB

Peak SAR (extrapolated) = 0.0770 W/kg

**SAR(1 g) = 0.076 W/kg; SAR(10 g) = 0.054 W/kg**

Maximum value of SAR (measured) = 0.094 W/kg



## Plot 62 LTE Band 38 1RB Right Edge High (Distance 10mm)

Date: 2021/12/02

Communication System: UID 0, LTE (0); Frequency: 2610 MHz;Duty Cycle: 1:1.58

Medium parameters used: f = 2610 MHz; $\sigma$ = 2.027 S/m; $\varepsilon_r$ = 37.056; $\rho$ = 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(7.25, 7.25, 7.25); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Right Edge High/Area Scan (7x15x1):** Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 0.151 W/kg

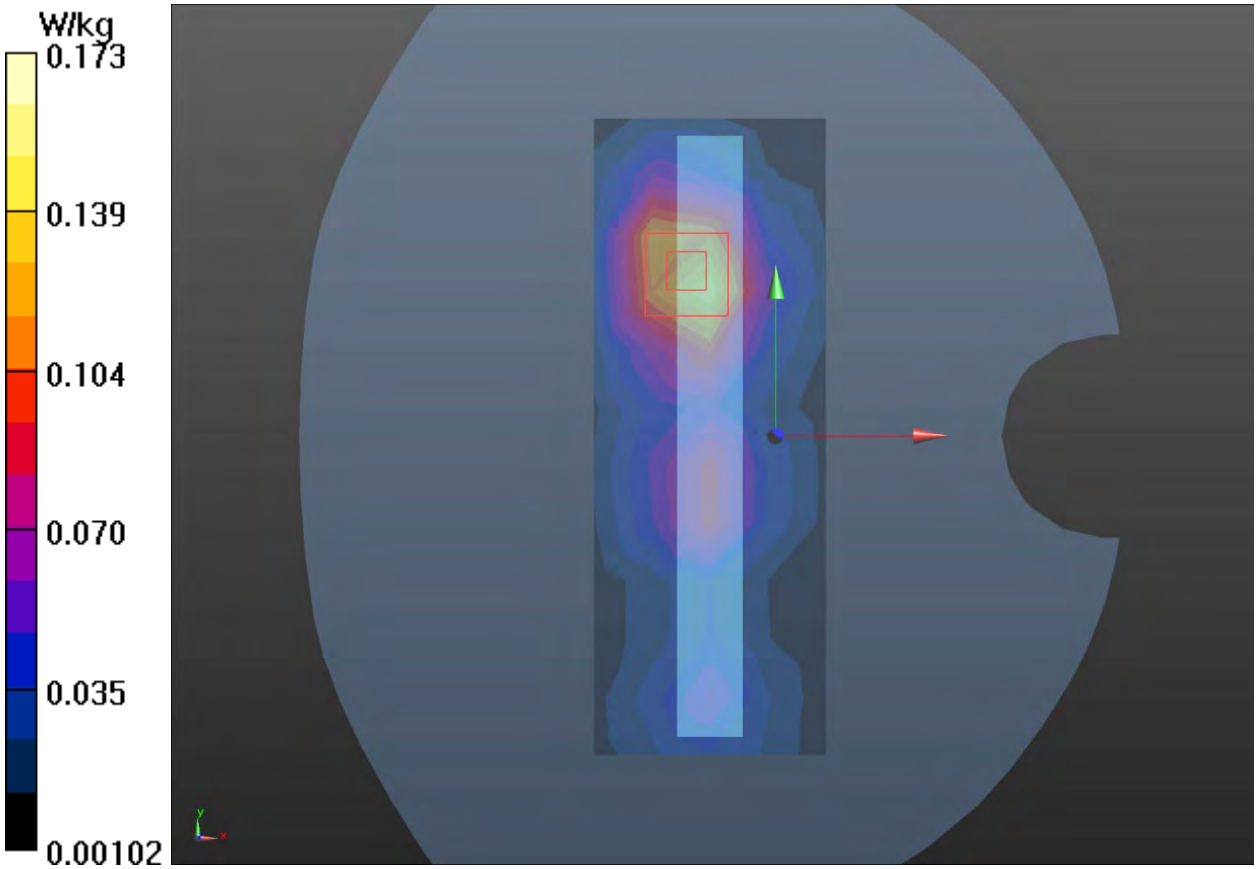
**Right Edge High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.525 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 0.223 W/kg

**SAR(1 g) = 0.109 W/kg; SAR(10 g) = 0.056 W/kg**

Maximum value of SAR (measured) = 0.173 W/kg



## Plot 63 LTE Band 40 1RB Right Edge Low (Distance 10mm)

Date: 2021/11/19

Communication System: UID 0, LTE (0); Frequency: 2305 MHz;Duty Cycle: 1:1.58

Medium parameters used: f = 2305 MHz; $\sigma$ = 1.687 S/m; $\varepsilon_r$ = 38.123; $\rho$ = 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(7.67, 7.67, 7.67); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Right Edge Low/Area Scan (7x15x1):** Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 0.042 W/kg

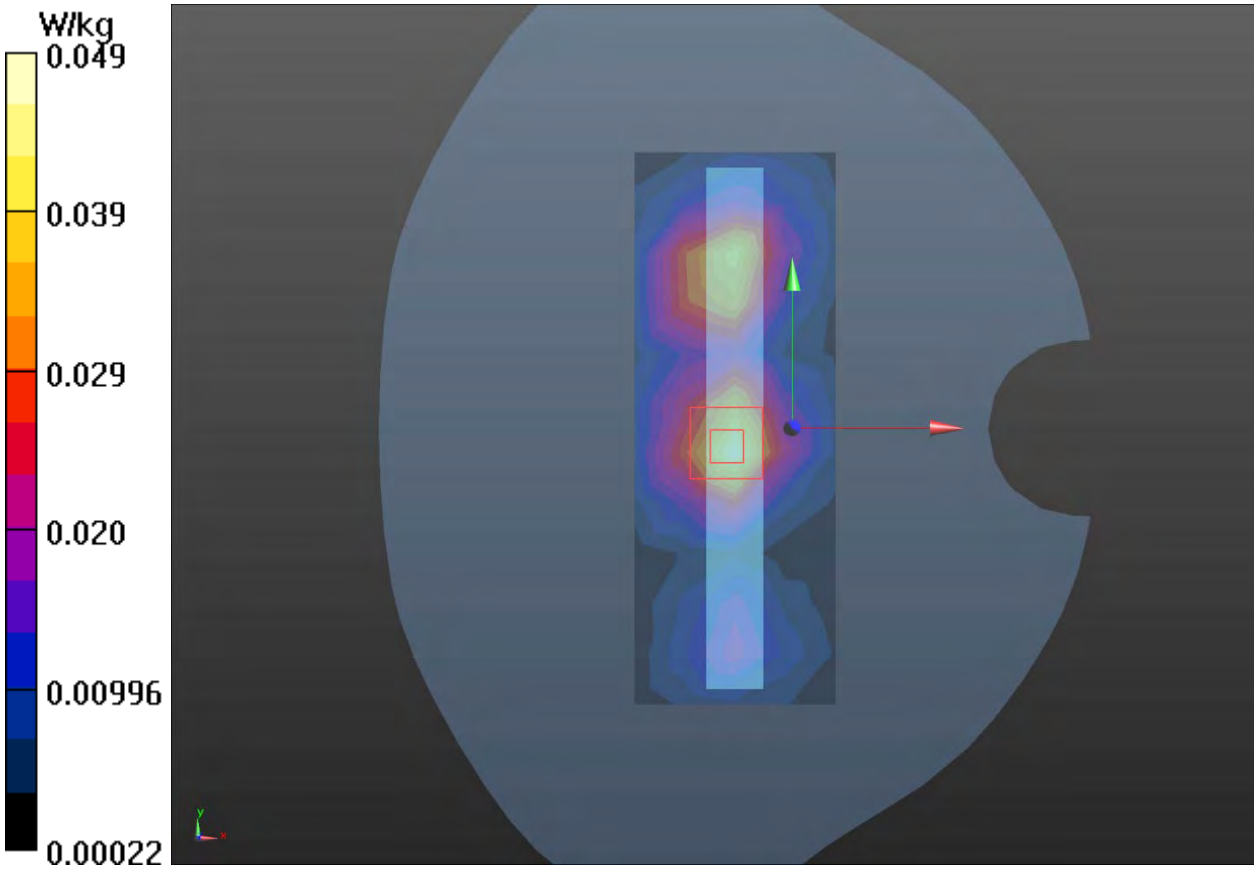
**Right Edge Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.217 V/m; Power Drift = 0.074 dB

Peak SAR (extrapolated) = 0.0610 W/kg

**SAR(1 g) = 0.030 W/kg; SAR(10 g) = 0.017 W/kg**

Maximum value of SAR (measured) = 0.049 W/kg



## Plot 64 LTE Band 41 1RB Right Edge High (Distance 10mm)

Date: 2021/12/02

Communication System: UID 0, LTE (0); Frequency: 2625 MHz;Duty Cycle: 1:1.58

Medium parameters used: f = 2625 MHz; $\sigma$ = 2.063 S/m; $\varepsilon_r$ = 36.918; $\rho$ = 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(7.25, 7.25, 7.25); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Right Edge High/Area Scan (7x15x1):** Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 0.135 W/kg

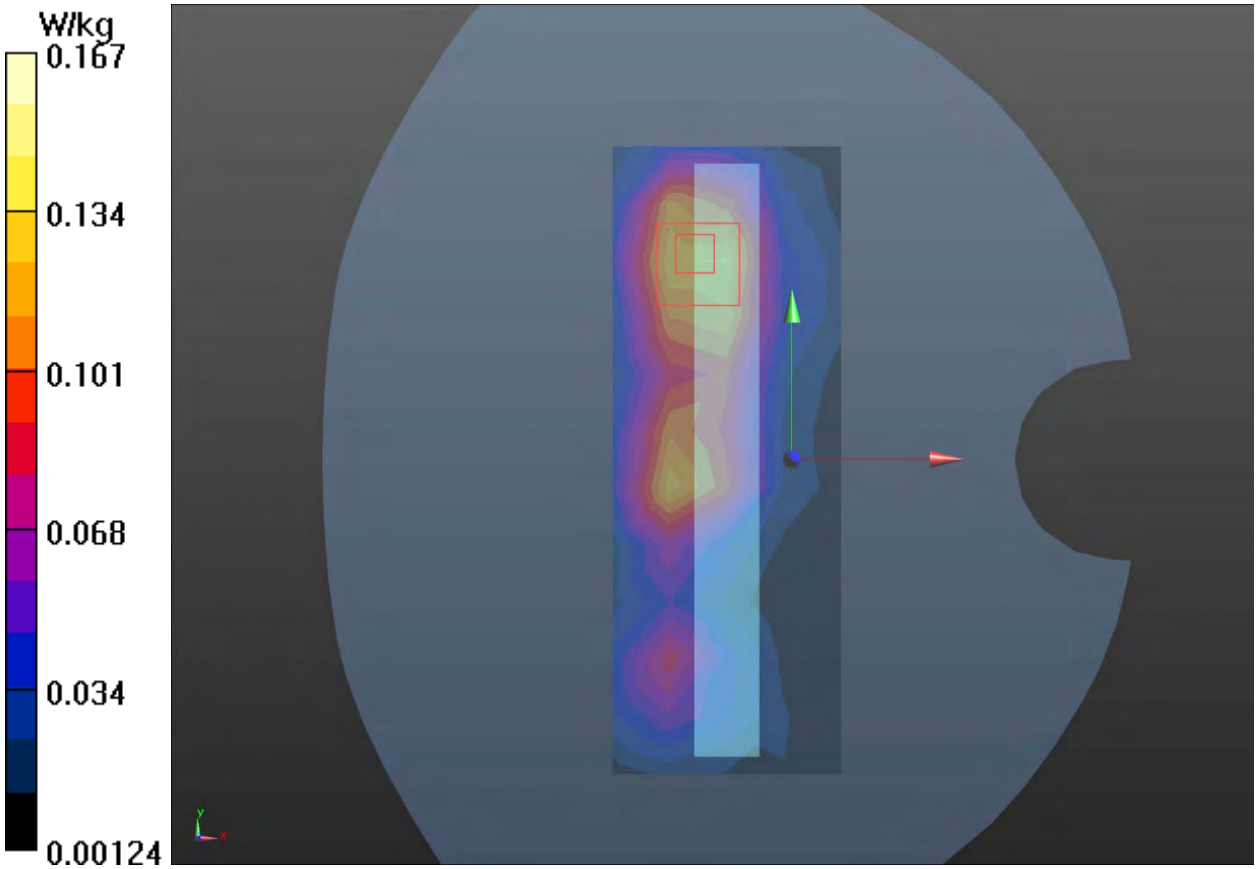
**Right Edge High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=2mm, dy=2mm, dz=5mm

Reference Value = 5.739 V/m; Power Drift = 0.062 dB

Peak SAR (extrapolated) = 0.216 W/kg

**SAR(1 g) = 0.111 W/kg; SAR(10 g) = 0.056 W/kg**

Maximum value of SAR (measured) = 0.167 W/kg



## Plot 65 802.11b Left Edge Low (Distance 0mm)

Date: 2021/12/02

Communication System: UID 0, 802.11b (0); Frequency: 2412 MHz;Duty Cycle: 1:1

Medium parameters used: f = 2412 MHz; $\sigma$ = 1.801 S/m; $\varepsilon_r$ = 37.737; $\rho$ = 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(7.25, 7.25, 7.25); Calibrated: 2021/8/12

Electronics: DAE4 SN1317; Calibrated: 2021/2/23

Phantom: SAM 2; Type: SAM

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Left Edge Low/Area Scan (7x15x1):** Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 3.18 W/kg

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

Reference Value = 11.67 V/m; Power Drift = 0.046 dB

Peak SAR (extrapolated) = 8.88 W/kg

**SAR(1 g) = 2.94 W/kg; SAR(10 g) = 0.997 W/kg**

Maximum value of SAR (measured) = 5.11 W/kg