# SAR Evaluation Report
# for
# FCC KDB Publication 616217 D04 SAR for laptop and tablets v01r01 and 47CFR § 2.1093

## Report No.:SESF1410008

| | | |
|---|---|---|
| Client | : | Shenzhen Autel Intelligent Technology Corp., Ltd. |
| Product | : | AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM |
| Trade Mark | : | AUTEL |
| Model | : | MaxiSys Elite |
| FCC ID | : | WQ8MAXISYSELITE |
| Manufacturer/ supplier | : | Shenzhen South Digital Limited |
| Test Date | : | October 29th, 2014 |
| Date of issue | : | November 03rd 2014 |
| Test Result | : | ■Compliance □Not Compliance |

Statement of Compliance:
The SAR values measured for the test sample are below the maximum recommended level of 1.6 W/kg averaged over any 1g tissue according to FCC KDBs and IEEE Std1528-2013.



*Total number of pages of this test report: 82 pages*



Test Engineer: Leo Chen

Approved by: Miro Chueh

## Applicant Information

| | | |
|---|---|---|
| **Client** | : | Shenzhen Autel Intelligent Technology Corp., Ltd. |
| **Address** | : | 8th Floor, Building B1, Zhiyuan, xueyuan road, Xili, Nanshan, Shenzhen,518055,China |
| **Manufacturer** | : | Shenzhen Autel Intelligent Technology Corp., Ltd. |
| **Address** | : | 8th Floor, Building B1, Zhiyuan, xueyuan road, Xili, Nanshan, Shenzhen,518055,China |
| **EUT** | : | AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM |
| **Model No.** | : | MaxiSys Elite |
| **Standard Applied** | : | FCC KDB Publication 616217 D04 SAR for laptop and tablets v01r01 and<br>47CFR § 2.1093 |
| **Laboratory** | : | CERPASS TECHNOLOGY CORP.<br>No.66, Tangzhuang Road, Suzhou Industrial Park, Jiangsu 215006, China. |
| **Max. reported SAR** | : | Max. Reported SAR (1g)<br>2.4GHz WLAN: 802.11b 2462MHz 0.541W/kg<br>5.2GHz WLAN: 802.11a 5240MHz 1.19W/kg<br>5.8GHz WLAN: 802.11a 5240MHz 1.164W/kg<br>Bluetooth: 2441MHz 0.44W/kg |
| **Max. Simultaneous SAR** | : | 2.4GHz WLAN + Bluetooth: 0.94W/kg<br>5.2GHz WLAN + Bluetooth: 1.589W/kg<br>5.8GHz WLAN + Bluetooth: 1.563W/kg |

## Contents

# 1. General Information

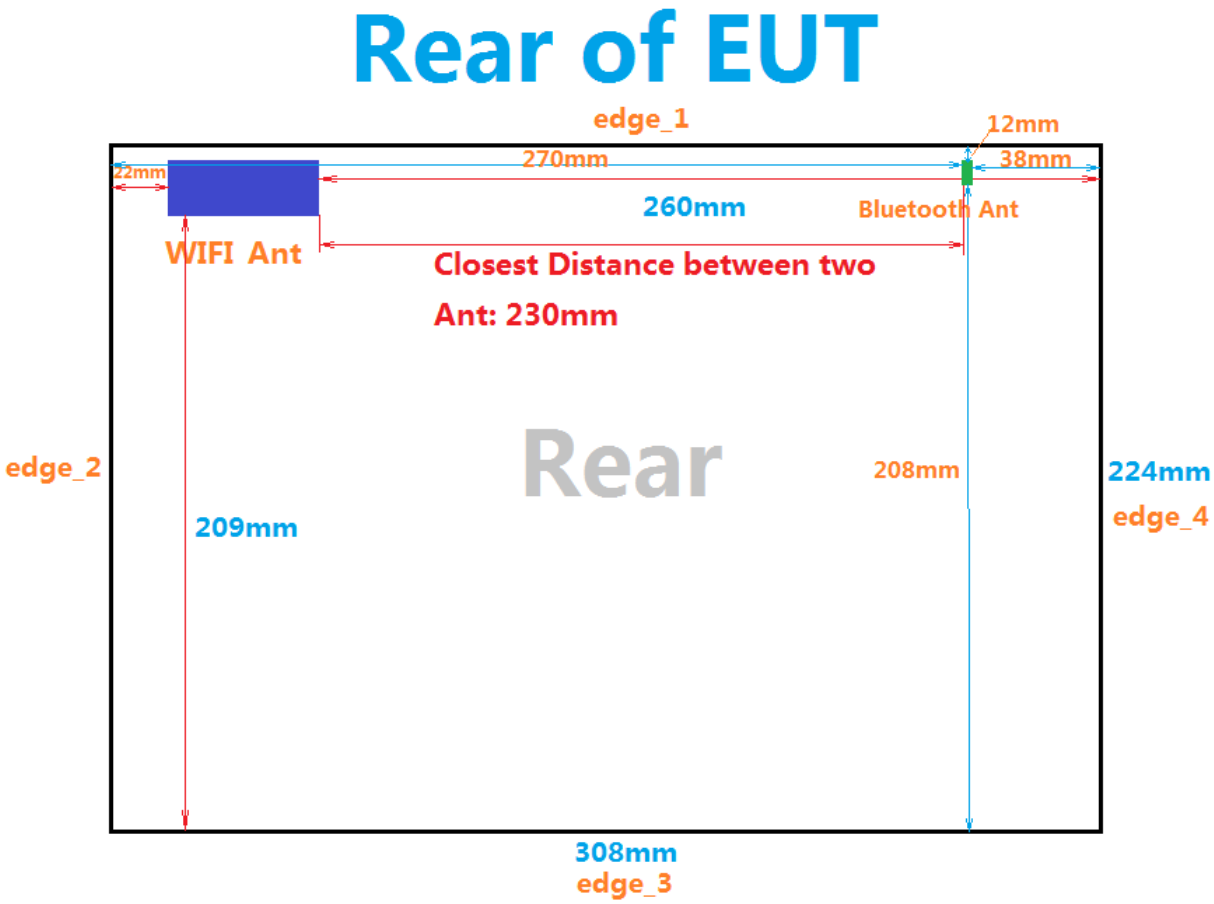
## 1.1. Executive Summary

The EUT is a AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM with operations in 2450MHz frequency ranges. It contains WIFI and BT functions for SAR testing. The measurement was conducted by CERPASS, carried out with the dosimetric assessment system under DASY5. And it conducts according to the IEEE Std. 1528-2013 and FCC KDBs for SAR evaluating compliance.

## 1.2. Description of Equipment under Test

| | |
|---|---|
| **Product Name** | AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM |
| **Model No.** | MaxiSys Elite |
| **Device Category** | Portable |
| **RF Exposure Environment** | Uncontrolled |
| **Bluetooth** | |
| **Bluetooth Frequency** | 2402~2480MHz |
| **Channel numbers** | 79 |
| **Channel separation** | 1MHz |
| **Modulation technology** | GFSK, Pi/4 QPSK, 8DPSK |
| **Antenna Type** | Integral |
| **Antenna gain** | 0.5dBi (declare by Applicant) |
| **Wi-Fi** | |
| **Wi-Fi Frequency** | 2412MHz~2472MHz (802.11b/802.11g/802.11n(HT20)@2.4G band)<br>2422MHz~2462MHz (802.11n(H40) @ 2.4G band)<br>5180MHz~5240MHz, 5745MHz~5825MHz(802.11a/802.11n(HT20)/ 802.11ac(HT20)@ 5G band)<br>5190MHz ~ 5230MHz, 5755MHz~5795MHz(802.11n(H40)/802.11ac (HT40) @ 5G band)<br>5210MHz, 5775MHz(802.11ac(HT80) @ 5G band) |
| **Channel Separation** | 5MHz @ 2.4G band<br>20MHz for 802.11a/802.11n(HT20)/ 802.11ac(HT20) @ 5G band<br>40MHz for 802.11n(HT40)/ 802.11ac(HT40) @ 5G band<br>80MHz for 802.11ac(HT80) @ 5G band |

## 1.3. Antenna Location and Test Configuration




| Mode | SAR Test Positions | | | | | |
|---|---|---|---|---|---|---|
| | Back | Front | Edge_1 | Edge_2 | Edge_3 | Edge_4 |
| WIFI(2.4GHz, 5GHz) | Yes | No | Yes | Yes | No | No |
| Bluetooth | Yes | No | Yes | No | No | No |

## 1.4. Simultaneous Transmission Configurations

Simultaneous Transmission Scenarios

| No. | Simultaneous Transmit Configurations | FCC KDB 616217 | Note |
|---|---|---|---|
| 1. | 2.4GHz WIFI + 2.4GHz Bluetooth | YES | N/A |
| 2. | 5GHz WIFI + 2.4GHz Bluetooth | YES | N/A |

Note: According to FCC KDB Publication 447498 D01v05r02, transmitter are considered to be transmitting simultaneously when there is overlapping transmission, with the exception of transmissions during network hand-offs with maximum hand-off duration less than 30 seconds. This device contains multiple transmitters that may operate simultaneously, and therefore requires a simultaneously transmission analysis.

## 1.5. Power Reduction for SAR

There is no power reduction used for any band/mode implemented in this device for SAR purposes.

## 1.6. Environment Condition

| Item | Target | Measured |
|---|---|---|
| Ambient Temperature(℃) | 18~25 | 21.5±2 |
| Temperature of Simulant(℃) | 20~22 | 21±2 |
| Relative Humidity(%RH) | 30~70 | 52 |

## 1.7. Test Standards

1. FCC KDB Publication 447498 D01 General RF Exposure Guidance v05r02
2. FCC KDB Publication 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r03
3. FCC KDB Publication 616217 D04 SAR for laptop and tablets v01r01
4. FCC KDB Publication 248227 D01 SAR measurement for 802 11 a b g v01r02
5. IEEE 1528-2013

## 1.8. RF Exposure Limits

| Human Exposure | Basic restrictions for electric, magnetic and electromagnetic fields. (Unit in mW/ or W/kg) |
|---|---|
| Spatial Peak SAR[1] (Head and Body) | 1.60 |
| Spatial Average SAR[2] (Whole Body) | 0.08 |
| Spatial Peak SAR[3] (Arms and Legs) | 4.00 |

**Notes:**

1. The Spatial Peak value of the SAR averaged over any 1gram of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.
2. The Spatial Average value of the SAR averaged over the whole body.
3. The Spatial Peak value of the SAR averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube) and over appropriate averaging time.

# 2. The SAR Measurement Procedure

## 2.1. System Performance Check

### 2.1.1 Purpose

1. To verify the simulating liquids are valid for testing.
2. To verify the performance of testing system is valid for testing.

### 2.1.2 Tissue Dielectric Parameters for Head and Body Phantoms

| Target Frequency | Head | | Body | |
|---|---|---|---|---|
| (MHz) | $\varepsilon_r$ | $\sigma$ (S/m) | $\varepsilon_r$ | $\sigma$ (S/m) |
| 150 | 52.3 | 0.76 | 61.9 | 0.80 |
| 300 | 45.3 | 0.87 | 58.2 | 0.92 |
| 450 | 43.5 | 0.87 | 56.7 | 0.94 |
| 835 | 41.5 | 0.90 | 55.2 | 0.97 |
| 850 | 41.5 | 0.92 | 55.2 | 0.99 |
| 900 | 41.5 | 0.97 | 55.0 | 1.05 |
| 915 | 41.5 | 0.98 | 55.0 | 1.06 |
| 1450 | 40.5 | 1.20 | 54.0 | 1.30 |
| 1610 | 40.3 | 1.29 | 53.8 | 1.40 |
| 1800 – 2000 | 40.0 | 1.40 | 53.3 | 1.52 |
| **2450** | 39.2 | 1.80 | **52.7** | **1.95** |
| 3000 | 38.5 | 2.40 | 52.0 | 2.73 |
| **5200** | 36.0 | 4.66 | **49.0** | **5.30** |
| **5800** | 35.3 | 5.27 | **48.2** | **6.00** |

($\varepsilon_r$ = relative permittivity, $\sigma$ = conductivity and $\rho$ = 1000 kg/m$^3$)

### 2.1.3 Tissue Calibration Result

➢ The dielectric parameters of the liquids were verified prior to the SAR evaluation using DASY5 Dielectric Assessment Kit and Agilent Vector Network Analyzer E5071C.

**Body Tissue Simulant Measurement**

| Frequency [MHz] | Description | Dielectric Parameters | | Tissue Temp. [°C] |
|---|---|---|---|---|
| | | $\varepsilon_r$ | σ [s/m] | |
| 2450MHz | Reference result ± 5% window | 52.7 50.07 to 55.34 | 1.95 1.85 to 2.05 | N/A |
| | 29-10-2014 | 51.70 | 1.92 | 21.0 |
| 5200MHz | Reference result ± 5% window | 49.0 46.55 to 51.45 | 5.30 5.035 to 5.565 | N/A |
| | 29-10-2014 | 49.40 | 5.27 | |
| 5800MHz | Reference result ± 5% window | 48.2 45.79 to 50.61 | 6.00 5.7 to 6.3 | N/A |
| | 29-10-2014 | 48.48 | 6.05 | |

➢ Refer to KDB 865664 D01 v01r03, The depth of body tissue-equivalent liquid in a phantom must be ≥ 15.0 cm with ≤ ± 0.5 cm variation for SAR measurements ≤ 3 GHz and ≥ 10.0 cm with ≤ ± 0.5 cm variation for measurements > 3 GHz.

### 2.1.4 System Performance Check Procedure

The DASY5 installation includes predefined files with recommended procedures for measurements and the system performance check. They are read-only document files and destined as fully defined but unmeasured masks, so the finished system performance check must be saved under a different name. The system performance check document requires the SAM Twin Phantom or ELI4 Phantom, so the phantom must be properly installed in your system. (User defined measurement procedures can be created by opening a new document or editing an existing document file). Before you start the system performance check, you need only to tell the system with which components (probe, medium, and device) you are performing the system performance check; the system will take care of all parameters.

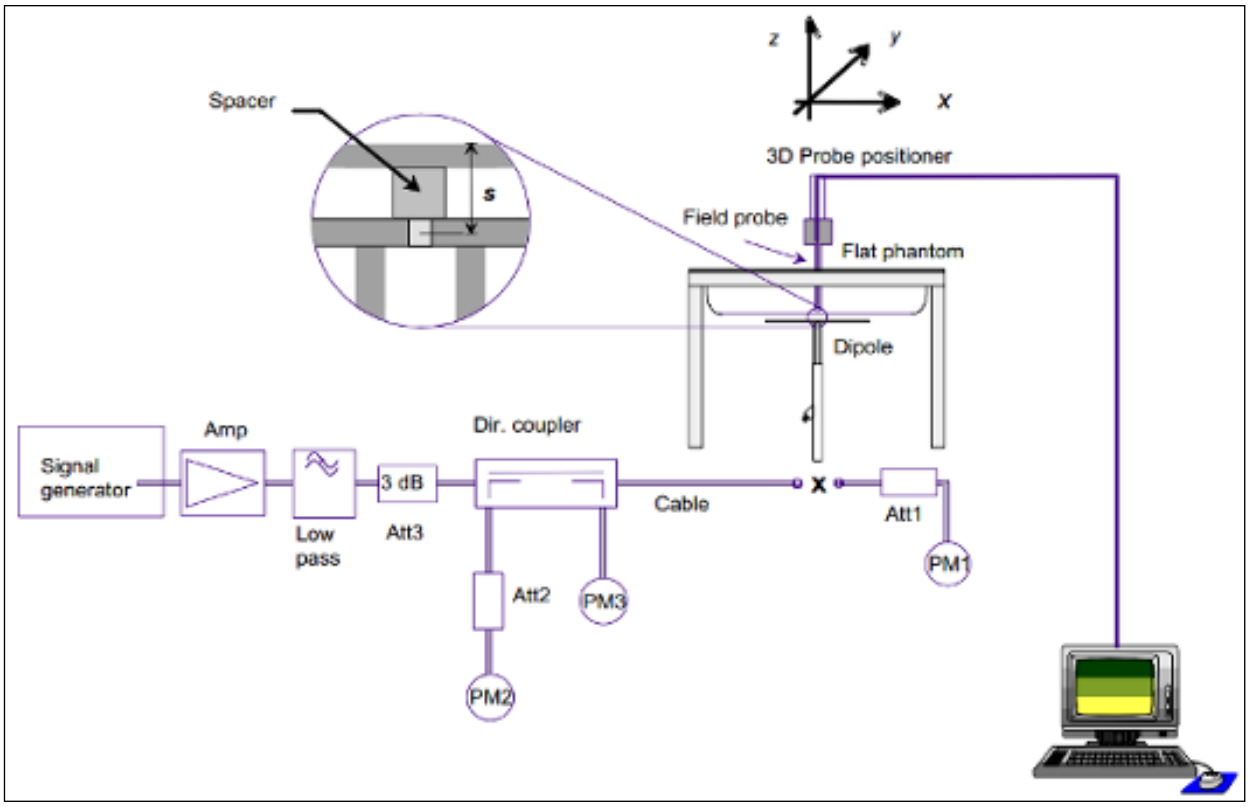
• **The Power Reference Measurement and Power Drift Measurement** jobs are located at the beginning and end of the batch process. They measure the field drift at one single point in the liquid over the complete procedure. The indicated drift is mainly the variation of the Dipole output power. If it is too high (above ±0.2 dB), the system performance check should be repeated;

• **The Surface Check** job tests the optical surface detection system of the DASY5 system by repeatedly detecting the surface with the optical and mechanical surface detector and comparing the results. The output gives the detecting heights of both systems, the difference between the two systems and the standard deviation of the detection repeatability. Air bubbles or refraction in the liquid due to separation of the sugar-water mixture gives poor repeatability (above ±0.1mm). In that case it is better to abort the system performance check and stir the liquid;

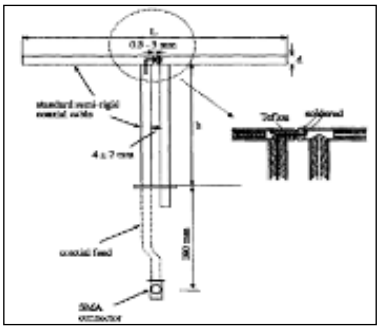
• **The Area Scan** job measures the SAR above the dipole on a plane parallel to the surface. It is used to locate the approximate location of the peak SAR. The proposed scan uses large grid spacing for faster measurement; due to the symmetric field, the peak detection is reliable;

• **The Zoom Scan j**ob measures the field in a volume around the peak SAR value assessed in the previous Area Scan job (for more information see the application note on SAR evaluation). If the system performance check gives reasonable results. The dipole input power(forward power) was 250mW, 1 g and 10 g spatial average SAR values normalized to 1W dipole input power give reference data for comparisons and it's equal to 10x(dipole forward power). The next sections analyze the expected uncertainties of these values, as well as additional checks for further information or troubleshooting.

### 2.1.5 System Performance Check Setup



### 2.1.6 Validation Dipoles



The dipoles use is based on the IEEE Std.1528-2013 and FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r03standard, and is complied with mechanical and electrical specifications in line with the requirements of both EN62209-1 and EN62209-2. The table below provides details for the mechanical and electrical specifications for the dipoles.

### 2.1.7 Result of System Performance Check: Valid Result

**System Performance Check at 2450MHz, 5200MHz and 5800MHz for Body.**

**Validation Dipole: D2450V2-SN 914**

| Frequency [MHz] | Description | SAR [w/kg] 1g | SAR [w/kg] 10g | Tissue Temp. [°C] |
|---|---|---|---|---|
| 2450 MHz | Reference result ± 10% window | 51.5 46.35 to 56.65 | 23.9 21.51 to 26.29 | 21.0 |
| | 29-10-2014 | 51.2 | 23.4 | |

**Validation Dipole: D5GHzV2-SN1156**

| Frequency [MHz] | Description | SAR [w/kg] 1g | SAR [w/kg] 10g | Tissue Temp. [°C] |
|---|---|---|---|---|
| 5200MHz | Reference result ± 10% window | 73.7 66.33 to 81.07 | 20.6 18.54 to 22.66 | 21.0 |
| | 29-10-2014 | 74.5 | 20.9 | |
| Frequency [MHz] | Description | SAR [w/kg] 1g | SAR [w/kg] 10g | Tissue Temp. [°C] |
| 5800MHz | Reference result ± 10% window | 73.1 65.79 to 80.41 | 20.1 18.09 to 22.11 | 21.0 |
| | 29-10-2014 | 72.4 | 20.2 | |

Note: All SAR values are normalized to 1W forward power.

## 2.2. Test Requirements

### 2.2.1 Test Procedures

**Step 1 Setup a Connection**

First, engineer should record the conducted power before the test. Then establish a call in handset at the maximum power level with a base station simulator via air interface, or make the EUT estimate by itself in testing band. Place the EUT to the specific test location. After the testing, must export SAR test data by SEMCAD. Then writing down the conducted power of the EUT into the report, also the SAR values tested.

**Step 2 Power Reference Measurements**

To measure the local E-field value at a fixed location which value will be taken as a reference value for calculating a possible power drift.

**Step 3 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 locations even in relatively coarse grids. When an Area Scan has measured all reachable points, it computes the field maximal 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 KDB 865664 D01v01r01**

| | ≤ 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: $\Delta x_{Area}$, $\Delta y_{Area}$ | ≤ 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. | |

**Step 4 Zoom Scan**

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

**Zoom Scan Parameters extracted from KDB 865664 D01 v01r03**

<table>
<tr><td colspan="3"></td><td>≤ 3 GHz</td><td>> 3 GHz</td></tr>
<tr><td colspan="3">Maximum zoom scan spatial resolution: $\Delta x_{Zoom}$, $\Delta y_{Zoom}$</td><td>≤ 2 GHz: ≤ 8 mm<br>2 – 3 GHz: ≤ 5 mm*</td><td>3 – 4 GHz: ≤ 5 mm*<br>4 – 6 GHz: ≤ 4 mm*</td></tr>
<tr><td rowspan="3">Maximum zoom scan spatial resolution, normal to phantom surface</td><td colspan="2">uniform grid: $\Delta z_{Zoom}(n)$</td><td>≤ 5 mm</td><td>3 – 4 GHz: ≤ 4 mm<br>4 – 5 GHz: ≤ 3 mm<br>5 – 6 GHz: ≤ 2 mm</td></tr>
<tr><td rowspan="2">graded grid</td><td>$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface</td><td>≤ 4 mm</td><td>3 – 4 GHz: ≤ 3 mm<br>4 – 5 GHz: ≤ 2.5 mm<br>5 – 6 GHz: ≤ 2 mm</td></tr>
<tr><td>$\Delta z_{Zoom}(n>1)$: between subsequent points</td><td colspan="2">≤ 1.5·$\Delta z_{Zoom}(n-1)$</td></tr>
<tr><td>Minimum zoom scan volume</td><td colspan="2">x, y, z</td><td>≥ 30 mm</td><td>3 – 4 GHz: ≥ 28 mm<br>4 – 5 GHz: ≥ 25 mm<br>5 – 6 GHz: ≥ 22 mm</td></tr>
<tr><td colspan="5">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 ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.</td></tr>
</table>

**Step 5 Power Drift Measurements**

Repetition of the E-field measurement at the fixed location mentioned in Step 1 to make sure the two results differ by less than ± 0.2 dB.

### 2.2.2 Positions for Tablet & Laptop SAR testing

Per FCC KDB 616217 D04v01r01, the back surface and edges of the tablet mode should be tested for SAR compliance with the tablet touching the phantom and back surface for laptop mode. The SAR Exclusion Threshold in KDB 447498 D01v05r02 can be applied to determine SAR test exclusion for adjacent edge configurations. The closest distance from the antenna to an adjacent tablet edge is used to determine if SAR testing is required for the adjacent edges, with the adjacent edge positioned against the phantom and the edge containing the antenna positioned perpendicular to the phantom.

### 2.2.3 Test Channel Choose

| Mode | | GHz | Channel | Turbo Channel | "Default Test Channels" §15.247 802.11b | §15.247 802.11g | UNII | |
|---|---|---|---|---|---|---|---|---|
| 802.11 b/g | | 2.412 | 1# | | √ | ∇ | | |
| | | 2.437 | 6 | 6 | √ | ∇ | | |
| | | 2.462 | 11# | | √ | ∇ | | |
| 802.11a | UNII | 5.18 | 36 | | | | √ | |
| | | 5.20 | 40 | 42 (5.21 GHz) | | | | * |
| | | 5.22 | 44 | | | | | * |
| | | 5.24 | 48 | 50 (5.25 GHz) | | | √ | |
| | | 5.26 | 52 | | | | √ | |
| | | 5.28 | 56 | 58 (5.29 GHz) | | | | * |
| | | 5.30 | 60 | | | | | * |
| | | 5.32 | 64 | | | | √ | |
| | | 5.500 | 100 | Unknown | | | | * |
| | | 5.520 | 104 | | | | √ | |
| | | 5.540 | 108 | | | | | * |
| | | 5.560 | 112 | | | | | * |
| | | 5.580 | 116 | | | | √ | |
| | | 5.600 | 120 | | | | | * |
| | | 5.620 | 124 | | | | √ | |
| | | 5.640 | 128 | | | | | * |
| | | 5.660 | 132 | | | | | * |
| | | 5.680 | 136 | | | | √ | |
| | | 5.700 | 140 | | | | | * |
| | UNII or §15.247 | 5.745 | 149 | | √ | | √ | |
| | | 5.765 | 153 | 152 (5.76 GHz) | | * | | * |
| | | 5.785 | 157 | | √ | | | * |
| | | 5.805 | 161 | 160 (5.80 GHz) | | * | √ | |
| | §15.247 | 5.825 | 165 | | √ | | | |

**Table 1: "Default Test Channels"**

- √ = "default test channels"
- * = possible 802.11a channels with maximum average output > the "default test channels"
- ∇ = possible 802.11g channels with maximum average output ¼ dB ≥ the "default test channels"
- # = when output power is reduced for channel 1 and/or 11 to meet restricted band requirements the highest output channels closest to each of these channels should be tested

1. Per KDB 248227 D01v01r02, SAR is not required for 802.11g/HT20 channels when the maximum average output power is less than 1/4 dB higher than that measured on the corresponding 802.11b channels.

2. SAR is not required for Channels 12 and 13, if the tune-up limit and the measured output power for these two channels are no greater than those for the default test channels.

# 3. DASY5 Measurement System

**DASY5 Measurement System**

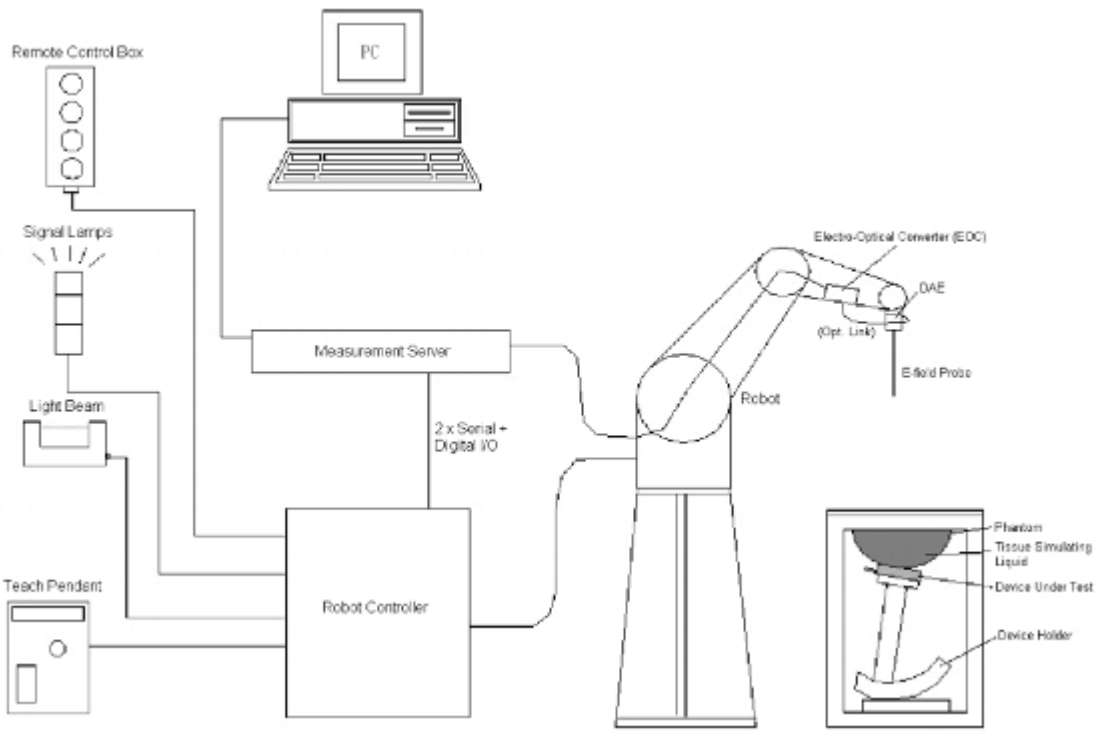



**Figure 2.1 SPEAG DASY5 System Configurations**

The DASY5 system for performance compliance tests is illustrated above graphically. This system consists of the following items:

- A standard high precision 6-axis robot with controller, a teach pendant and software
- A data acquisition electronic(DAE)attached to the robot arm extension
- A dosimetric probe equipped with an optical surface detector system
- The electro-optical converter(ECO)performs the conversion between optical and electrical signals
- A measurement server performs the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- A probe alignment unit which improves the accuracy of the probe positioning
- A computer operating Windows 7
- DASY5 software
- Remove control with teach pendant additional circuitry for robot safety such as warming lamps, etc.
- The SAM twin phantom
- A device holder
- Tissue simulating liquid
- Dipole for evaluating the proper functioning of the system

## 3.1. Uncertainty of Inter-/Extrapolation and Averaging

In order to evaluate the uncertainty of the interpolation, extrapolation and averaged SAR calculation algorithms of the Postprocessor, DASY5 allows the generation of measurement grids which are artificially predefined by analytically based test functions. Therefore, the grids of area scans and zoom scans can be filled with uncertainty test data, according to the SAR benchmark functions of IEEE 1528.The three analytical functions shown in equations as below are used to describe the possible range of the expected SAR distributions for the tested handsets. The field gradients are covered by the spatially flat distribution f1, the spatially steep distribution f3 and f2 accounts for H-field cancellation on the phantom/tissue surface.

$$f_1(x,y,z) = Ae^{-\frac{z}{2a}}\cos^2\left(\frac{\pi}{2}\frac{\sqrt{x'^2+y'^2}}{5a}\right)$$

$$f_2(x,y,z) = Ae^{-\frac{z}{a}}\frac{a^2}{a^2+x'^2}\left(3-e^{-\frac{2z}{a}}\right)\cos^2\left(\frac{\pi}{2}\frac{y'}{3a}\right)$$

$$f_3(x,y,z) = A\frac{a^2}{\frac{a^2}{4}+x'^2+y'^2}\left(e^{-\frac{2z}{a}}+\frac{a^2}{2(a+2z)^2}\right)$$

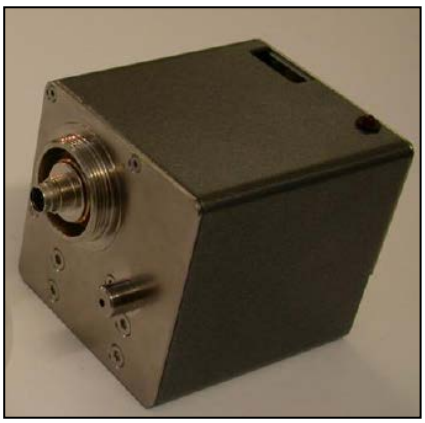
## 3.2. DASY5 E-Field Probe

The SAR measurement is conducted with the dosimetric probe manufactured by SPEAG. The probe is specially designed and calibrated for use in liquid with high permittivity. The dosimetric probe has special calibration in liquid at different frequency.

SPEAG conducts the probe calibration in compliance with international and national standards (e.g. IEEE 1528, EN 62209-1, IEC 62209, etc.) under ISO 17025. The calibration data are in Appendix D.

| Model | EX3DV4 | |
|---|---|---|
| **Construction** | Symmetrical design with triangular core Built-in shielding against static charges<br>PEEK enclosure material (resistant to organic solvents, e.g., DGBE) | |
| **Frequency** | 10 MHz to 6 GHz<br>Linearity: ± 0.2 dB (30 MHz to 6 GHz) |  |
| **Directivity** | ± 0.3 dB in HSL (rotation around probe axis)<br>± 0.5 dB in tissue material (rotation normal to probe axis) | |
| **Dynamic Range** | 10 µW/g to 100 mW/g<br>Linearity: ± 0.2 dB (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%. | |

## 3.3. Data Acquisition Electronics (DAE)



The data acquisition electronics (DAE) consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder and control logic unit.

Transmission to the measurement server is accomplished through an optical downlink for data and status information as well as an optical uplink for commands and the clock.

The input impedance of the DAE4 is 200M Ohm; the inputs are symmetrical and floating. Common mode rejection is above 80dB.

## 3.4. Robot

The DASY5 system uses the high precision robots TX90 XL type out of the newer series from Stäubli SA (France). For the 6-axis controller DASY5 system, the CS8C robot controller version from Stäubli is used.

The XL robot series have many features that are important for our application:

- High precision (repeatability 0.02 mm)
- High reliability (industrial design)
- Jerk-free straight movements
- Low ELF interference (the closed metallic construction shields against motor control fields)
- 6-axis controller

## 3.5. Light Beam Unit

The light beam switch allows automatic "tooling" of the probe. During the process, the actual position of the probe tip with respect to the robot arm is measured, as well as the probe length and the horizontal probe offset. The software then corrects all movements, such that the robot coordinates are valid for the probe tip.

The repeatability of this process is better than 0.1 mm. If a position has been taught with an aligned probe, the same position will be reached with another aligned probe within 0.1 mm, even if the other probe has different dimensions. During probe rotations, the probe tip will keep its actual position.

## 3.6. Measurement Server

The DASY5 measurement server is based on a PC/104 CPU board with a 400MHz intel ULV Celeron, 128MB chipdisk and 128MB RAM. The necessary circuits for communication with the DAE electronics box, as well as the 16 bit AD converter system for optical detection and digital I/O interface are contained on the DASY5 I/O board, which is directly connected to the PC/104 bus of the CPU board.


## 3.7. SAM Phantom

The SAM twin phantom is a fiberglass shell phantom with 2mm shell thickness (except the ear region where shell thickness increases to 6mm). It has three measurement areas:

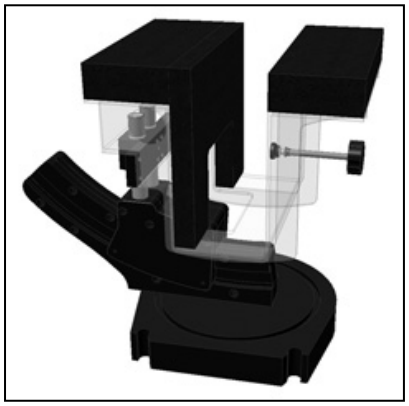
- Left head
- Right head
- Flat phantom

The ELI4 Phantom also is a fiberglass shell phantom with 2mm shell thickness. It has 30 liters filling volume, and with a dimension of 600mm for major ellipse axis , 400mm for minor axis. It is intended for compliance testing of handheld and body-mounted wireless devices in frequency range of 30 MHz to 6GHz. ELI4 is fully compatible with standard and all known tissue simulating liquids.

The bottom plate contains three pair of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections. A white cover is provided to tap the phantom during off-periods to prevent water evaporation and changes in the liquid parameters. On the phantom top, three reference markers are provided to identify the phantom position with respect to the robot.

## 3.8. Device Holder

➢ The DASY5 device holder is designed to cope with different positions given in the standard. It has two scales for the device rotation (with respect to the body axis) and the device inclination (with respect to the line between the ear reference points). The rotation center for both scales is the ear reference point (EPR).Thus the device needs no repositioning when changing the angles. The DASY5 device holder has been made out of low-loss POM material having the following dielectric parameters: relative permittivity εr =3 and loss tangent δ = 0.02. The amount of dielectric material has been reduced in the closest vicinity of the device, since measurements have suggested that the influence of the clamp on the test results could thus be lowered.



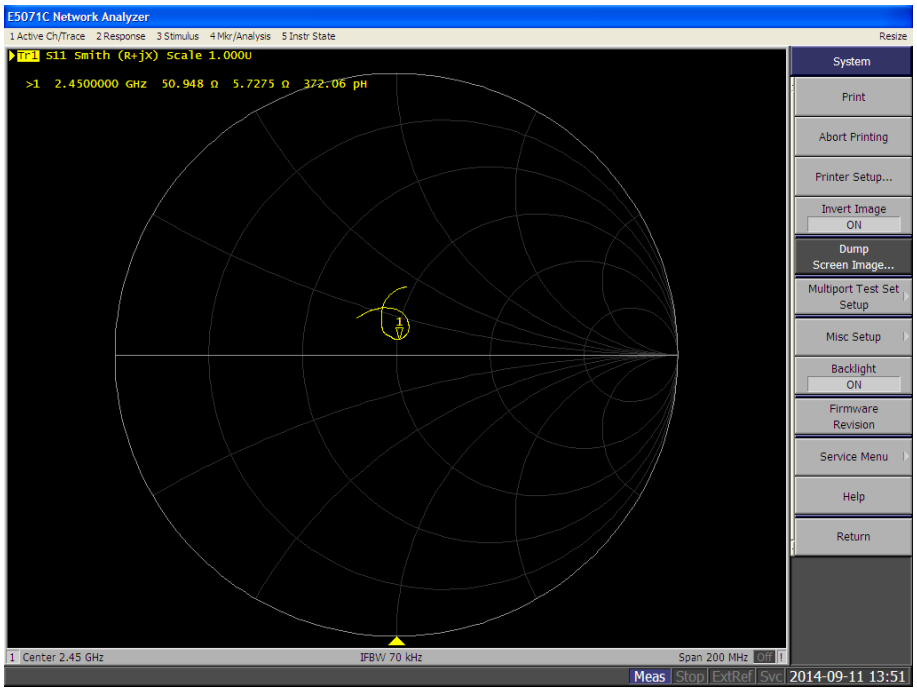
➢ The laptop extension is lightweight and made of POM, acrylic glass and foam. It fits easily on upper part of the mounting device in place of the phone positioned. The extension is fully compatible with the SAM Twin and ELI phantoms.

## 3.9. Test Equipment List

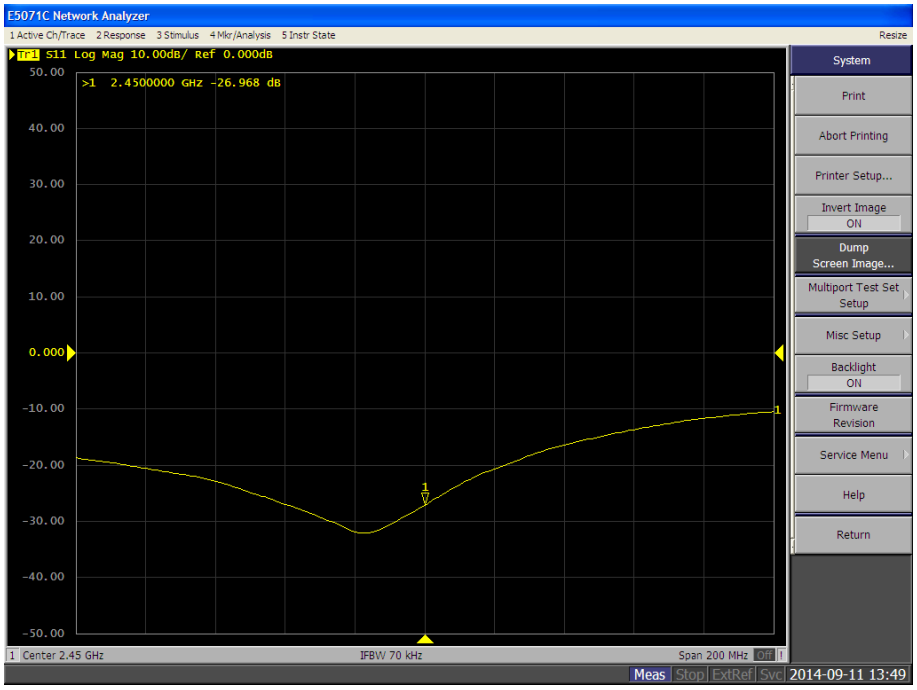
| Instrument | Manufacturer | Model No. | Serial No. | Cali. Due Date |
|---|---|---|---|---|
| Stäubli Robot TX60L | Stäubli | TX60L | 5P6VA1/A/01 | only once |
| Robot Controller | Stäubli | CS8C | 5P6VA1/C/01 | only once |
| Dipole Validation Kits | Speag | D2450V2 | 914 | 2015.06.06 |
| Dipole Validation Kits | Speag | D5GHzV2 | 1156 | 2015.06.19 |
| SAM ELI Phantom | Speag | SAM | 1211 | N/A |
| Laptop Holder | Speag | SM LH1 001CD | N/A | N/A |
| Data Acquisition Electronic | Speag | DAE4 | 1379 | 2015.05.18 |
| E-Field Probe | Speag | EX3DV4 | 3927 | 2015.05.22 |
| SAR Software | Speag | DASY5 | V5.2 Build 162 | N/A |
| Power Amplifier | Mini-Circuit | ZVA-183W-S+ | MN136701248 | N/A |
| Directional Coupler | Agilent | 772D | MY52180104 | N/A |
| Vector Network | Agilent | E5071C | MY4631693 | 2015.01.15 |
| Signal Generator | R&S | SML | 103287 | 2015.03.09 |
| Power Meter | BONN | BLWA0830-160/100/40D | 76659 | 2015.11.10 |
| AUG Power Sensor | R&S | NRP-Z91 | 100384 | 2015.03.09 |

## 3.10. Annul Internal Check of Impedance and Return Loss

2450MHz Body calibrated impedance 52.051Ω; measured impedance: 50.948Ω (within 5Ω)

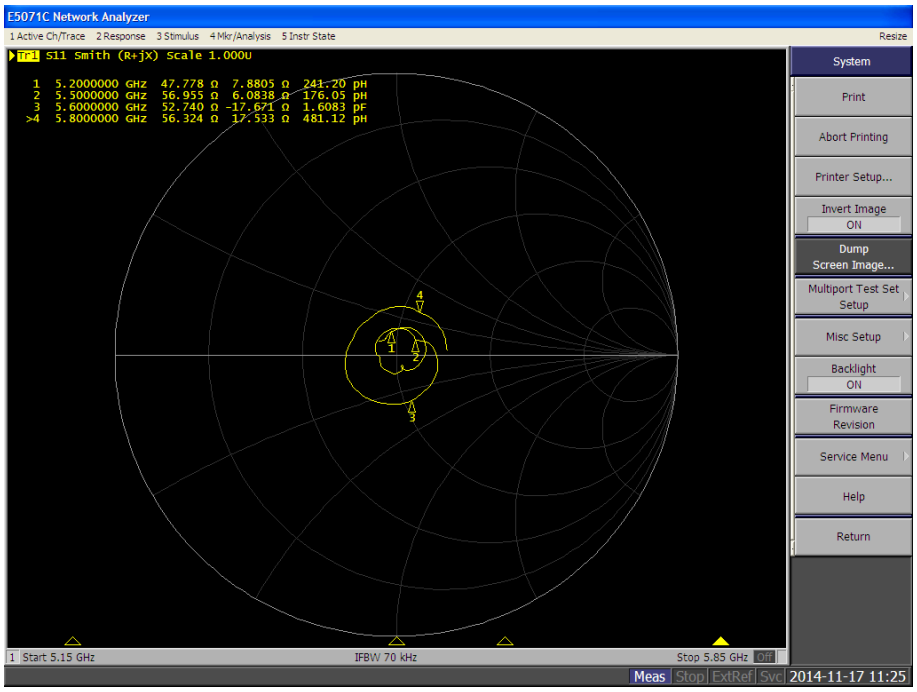



2450MHz Body calibrated return loss: -28.024 dB; Measured return loss: -26.968dB (within 20%)



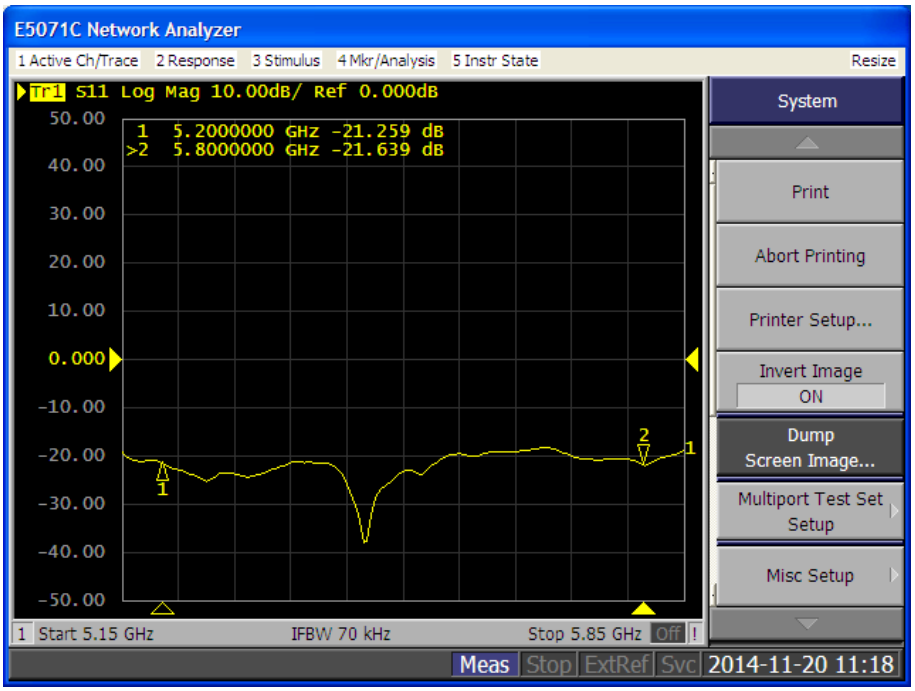
5200MHz Body calibrated impedance 49.105Ω; measured impedance: 47.778Ω (within 5Ω)

5800MHz Body calibrated impedance 58.912Ω; measured impedance: 56.324Ω (within 5Ω)




5200MHz Body calibrated return loss: -25.074 dB; Measured return loss: -21.259dB (within 20%)

5800MHz Body calibrated return loss: -21.232 dB; Measured return loss: -21.639dB (within 20%)



# 4. Results and Analysis

## 4.1. Conducted power (Averaged)

**WLAN Power**

| Mode | | Bandwidth | Ch. | Fr.(MHz) | AVG Power(dBm) | Tune-up Power(dBm) | Scaling Factor |
|---|---|---|---|---|---|---|---|
| 2.4GHz | 802.11b | 20MHz | 1 | 2412 | 12.44 | 13.0 | 1.14 |
| | | | 6 | 2437 | 13.77 | 14.0 | 1.05 |
| | | | 11 | 2462 | 14.89 | 15.0 | 1.03 |
| | 802.11g | 20MHz | 1 | 2412 | 12.40 | 13.0 | 1.15 |
| | | | 6 | 2437 | 13.77 | 14.0 | 1.05 |
| | | | 11 | 2462 | 14.80 | 15.0 | 1.05 |
| | 802.11n | 20MHz | 1 | 2412 | 11.08 | 11.5 | 1.10 |
| | | | 6 | 2437 | 12.38 | 12.5 | 1.03 |
| | | | 11 | 2462 | 13.27 | 13.5 | 1.05 |
| | | 40MHz | 3 | 2422 | 12.91 | 13.0 | 1.02 |
| | | | 7 | 2437 | 13.70 | 14.0 | 1.07 |
| | | | 11 | 2452 | 14.53 | 15.0 | 1.11 |
| 5.2GHz | 802.11a | 20MHz | 36 | 5180 | 13.27 | 13.5 | 1.05 |
| | | | 40 | 5200 | 13.26 | 13.5 | 1.06 |
| | | | 48 | 5240 | 12.84 | 13.0 | 1.04 |
| | 802.11n | 20MHz | 36 | 5180 | 13.40 | 13.5 | 1.02 |
| | | | 40 | 5200 | 13.23 | 13.5 | 1.06 |
| | | | 48 | 5240 | 12.97 | 13.0 | 1.01 |
| | | 40MHz | 38 | 5190 | 13.90 | 14.0 | 1.02 |
| | | | 46 | 5230 | 13.56 | 14.0 | 1.11 |
| | 802.11ac | 20MHz | 36 | 5180 | 13.24 | 13.5 | 1.06 |
| | | | 40 | 5200 | 13.17 | 13.5 | 1.08 |
| | | | 48 | 5240 | 12.81 | 13.0 | 1.04 |
| | 802.11ac | 40MHz | 38 | 5190 | 13.57 | 14.0 | 1.10 |
| | | | 46 | 5230 | 13.45 | 14.0 | 1.14 |
| | 802.11ac | 80MHz | 42 | 5210 | 13.25 | 13.5 | 1.06 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 5.8GHz | 802.11a | 20MHz | 149 | 5745 | 12.88 | 13.0 | 1.03 |
| | | | 157 | 5785 | 12.06 | 12.5 | 1.11 |
| | | | 165 | 5825 | 11.38 | 11.5 | 1.03 |
| | 802.11n | 20MHz | 149 | 5745 | 12.53 | 13.0 | 1.11 |
| | | | 157 | 5785 | 12.08 | 12.5 | 1.10 |
| | | | 165 | 5825 | 11.43 | 12.0 | 1.14 |
| | | 40MHz | 151 | 5755 | 12.96 | 13.0 | 1.01 |
| | | | 159 | 5795 | 12.50 | 13.0 | 1.12 |
| | 802.11ac | 20MHz | 149 | 5745 | 12.45 | 12.5 | 1.01 |
| | | | 157 | 5785 | 12.12 | 12.5 | 1.09 |
| | | | 165 | 5825 | 11.68 | 12.0 | 1.08 |
| | | 40MHz | 151 | 5755 | 13.08 | 13.5 | 1.10 |
| | | | 159 | 5795 | 12.41 | 12.5 | 1.02 |
| | | 80MHz | 155 | 5775 | 12.78 | 13.0 | 1.05 |

**Bluetooth Power**

| Test CH | Max Output Power (dBm) | Tune-up Power (dBm) | Scaling Factor |
|---|---|---|---|
| Lowest | 13.89 | 14.0 | 1.03 |
| Middle | 14.47 | 14.5 | 1.01 |
| Highest | 14.23 | 14.5 | 1.06 |

## 4.2. Wi-Fi/Bluetooth SAR exclusion

Per FCC KDB 447498 D01v05r02, the SAR exclusion threshold for distances<50mm is defined by the following equation:

$$\frac{Max\ Power\ of\ \ Channel(mW)}{Test\ Separation\ Distance(mm)} \times \sqrt{Frequency(GHz)} \le 3.0$$

Based on the maximum conducted power and the antenna to use separation distance, maximum average output power WIFI and Bluetooth are higher the $P_{re}$, therefore WIFI/BT SAR are both required.

*Note:*

*[(30.83mW/5)* √2.437] = 9.69>3.0, for 2.4GHz WIFI;*

*[(21.23mW/5)* √5.2] = 9.68>3.0, for 5.2GHz WIFI;*

*[(19.41mW/5)* √5.8] = 9.35>3.0, for 5.8GHz WIFI;*

*[(27.99mW/5)* √2441] = 8.75>3.0, for Bluetooth.*

*30.83mW, 21.23mW, 19.41mW and 27.99mW result from 14.89dBm for 2.4GHz WIFI, 13.27dBm for 5.2GHz WIFI, 12.88 dBm for 5.8GHz WIFI and 14.47dBm for Bluetooth.*

### 4.3. SAR Test Results Summary

| SAR Measurement | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Ambient Temperature (°C): 21.5 ± 2 | | | | | Relative Humidity (%): 52 | | | | |
| Liquid Temperature (°C): 21.0 ± 2 | | | | | Depth of Liquid (cm):>15 | | | | |
| Product: AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM | | | | | | | | | |
| Test Position Body (0mm gap) | Antenna Position | Frequency | | Average Power (dBm) | Power Drift (<±0.2) | SAR 1g (W/kg) | Scaling Factor | Scaled SAR 1g (W/kg) | Limit (W/kg) |
| | | Channel | MHz | | | | | | |
| **Test Mode: 802.11b** | | | | | | | | | |
| Back | Fixed | 1 | 2412 | 12.44 | -0.10 | 0.170 | 1.14 | 0.194 | 1.6 |
| Back | Fixed | 6 | 2437 | 13.77 | -0.03 | 0.209 | 1.05 | 0.219 | 1.6 |
| Back | Fixed | 11 | 2462 | 14.89 | 0.01 | 0.249 | 1.03 | 0.256 | 1.6 |
| Edge1 | Fixed | 11 | 2462 | 14.89 | 0.13 | **0.525** | 1.03 | **0.541** | 1.6 |
| Edge2 | Fixed | 11 | 2462 | 14.89 | 0.06 | 0.046 | 1.03 | 0.047 | 1.6 |
| **Test Mode: 802.11g** | | | | | | | | | |
| Edge1 | Fixed | 11 | 2462 | 14.80 | 0.03 | 0.494 | 1.05 | 0.519 | 1.6 |
| **Test Mode: 802.11n(20MHz)** | | | | | | | | | |
| Edge1 | Fixed | 11 | 2462 | 13.27 | 0.11 | 0.344 | 1.05 | 0.361 | 1.6 |
| **Test Mode: 802.11n(40MHz)** | | | | | | | | | |
| Edge1 | Fixed | 9 | 2452 | 14.53 | 0.03 | 0.340 | 1.11 | 0.377 | 1.6 |
| Note: when the 1-g SAR is ≤ 0.8 W/kg, testing for low and high channel is optional, refer to KDB 447498. | | | | | | | | | |

| SAR Measurement | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Ambient Temperature (°C): 21.5 ± 2 | | | | | Relative Humidity (%): 52 | | | | |
| Liquid Temperature (°C): 21.0 ± 2 | | | | | Depth of Liquid (cm):>15 | | | | |
| Product: AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM | | | | | | | | | |
| Test Position Body (0mm gap) | Antenna Position | Frequency | | Average Power (dBm) | Power Drift (<±0.2) | SAR 1g (W/kg) | Scaling Factor | Scaled SAR 1g (W/kg) | Limit (W/kg) |
| | | Channel | MHz | | | | | | |
| **Test Mode: 802.11a** | | | | | | | | | |
| Edge1 | Fixed | 36 | 5180 | 13.27 | -0.13 | 1.07 | 1.05 | 1.12 | 1.6 |
| Back | Fixed | 48 | 5240 | 12.84 | -0.19 | 0.526 | 1.04 | 0.55 | 1.6 |
| Edge1 | Fixed | 48 | 5240 | 12.84 | -0.11 | **1.14** | 1.04 | **1.19** | 1.6 |
| Edge1* | Fixed | 48 | 5240 | 12.84 | -0.05 | 1.12 | 1.04 | 1.16 | 1.6 |
| Edge2 | Fixed | 48 | 5240 | 12.84 | -0.18 | 0.133 | 1.04 | 0.14 | 1.6 |
| Edge1 | Fixed | 149 | 5745 | 12.88 | -0.19 | 1.04 | 1.03 | 1.07 | 1.6 |
| Edge1 | Fixed | 157 | 5785 | 12.06 | -0.12 | 1.02 | 1.11 | 1.13 | 1.6 |
| Back | Fixed | 165 | 5825 | 11.38 | -0.13 | 0.505 | 1.03 | 0.520 | 1.6 |
| Edge1 | Fixed | 165 | 5825 | 11.38 | -0.17 | **1.13** | 1.03 | **1.164** | 1.6 |
| Edge2 | Fixed | 165 | 5825 | 11.38 | 0.03 | 0.109 | 1.03 | 0.112 | 1.6 |
| **Test Mode: 802.11n(20MHz)** | | | | | | | | | |
| Edge1 | Fixed | 36 | 5180 | 13.40 | 0.14 | 1.02 | 1.02 | 1.04 | 1.6 |
| Edge1 | Fixed | 48 | 5240 | 12.97 | -0.09 | 1.06 | 1.01 | 1.07 | 1.6 |
| Edge1 | Fixed | 149 | 5745 | 12.53 | -0.11 | 1.04 | 1.11 | 1.15 | 1.6 |
| Edge1 | Fixed | 157 | 5785 | 12.08 | -0.10 | 0.998 | 1.10 | 1.10 | 1.6 |
| Edge1 | Fixed | 165 | 5825 | 11.43 | -0.13 | 1 | 1.14 | 1.14 | 1.6 |
| **Test Mode: 802.11n(40MHz)** | | | | | | | | | |
| Edge1 | Fixed | 38 | 5190 | 13.90 | -0.11 | 0.999 | 1.02 | 1.02 | 1.6 |
| Edge1 | Fixed | 46 | 5230 | 13.56 | -0.03 | 0.987 | 1.11 | 1.10 | 1.6 |
| Edge1 | Fixed | 151 | 5755 | 12.96 | -0.02 | 0.945 | 1.01 | 0.95 | 1.6 |
| Edge1 | Fixed | 159 | 5795 | 12.50 | -0.05 | 0.956 | 1.12 | 1.07 | 1.6 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Test Mode: 802.11ac(20MHz)** | | | | | | | | | |
| Edge1 | Fixed | 36 | 5180 | 13.24 | 0.10 | 1 | 1.06 | 1.06 | 1.6 |
| Edge1 | Fixed | 48 | 5240 | 12.81 | -0.17 | 1.03 | 1.04 | 1.07 | 1.6 |
| Edge1 | Fixed | 149 | 5745 | 12.45 | 0.03 | 1.12 | 1.01 | 1.13 | 1.6 |
| Edge1 | Fixed | 157 | 5785 | 12.12 | -0.05 | 1.04 | 1.09 | 1.13 | 1.6 |
| Edge1 | Fixed | 165 | 5825 | 11.68 | -0.02 | 0.952 | 1.08 | 1.03 | 1.6 |
| **Test Mode: 802.11ac(40MHz)** | | | | | | | | | |
| Edge1 | Fixed | 38 | 5190 | 13.57 | -0.09 | 1.08 | 1.10 | 1.19 | 1.6 |
| Edge1 | Fixed | 46 | 5230 | 13.45 | -0.19 | 0.933 | 1.14 | 0.97 | 1.6 |
| Edge1 | Fixed | 151 | 5755 | 13.08 | -0.05 | 1.07 | 1.10 | 1.08 | 1.6 |
| Edge1 | Fixed | 159 | 5795 | 12.41 | -0.14 | 1.05 | 1.02 | 1.14 | 1.6 |
| **Test Mode: 802.11ac(80MHz)** | | | | | | | | | |
| Edge1 | Fixed | 42 | 5210 | 13.25 | 0.16 | 1.02 | 1.06 | 1.08 | 1.6 |
| Edge1 | Fixed | 155 | 5775 | 12.78 | 0.01 | 1.04 | 1.05 | 1.09 | 1.6 |

Note1: when the 1-g SAR is ≤ 0.8 W/kg, testing for low and high channel is optional, refer to KDB 447498.

2: * - repeated at the highest SAR measurement according to the FCC KDB 865664.

3: According to kdb248227 D01v01r02 page5, the power of ch.40 is not higher than the default test channel, therefore ch.40 SAR is not required.

4: According to 2.4GHz WIFI SAR, Edge_1 is the worst case for SAR test.

| SAR Measurement | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Ambient Temperature (°C): 21.5 ± 2 | | | | Relative Humidity (%): 52 | | | | |
| Liquid Temperature (°C): 21.0 ± 2 | | | | Depth of Liquid (cm):>15 | | | | |
| Product: AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM | | | | | | | | |
| Test Position Body (0mm gap) | Antenna Position | Frequency (MHz) | Average Power (dBm) | Power Drift (<±0.2) | SAR 1g (W/kg) | Scaling Factor | Scaled SAR 1g (W/kg) | Limit (W/kg) |
| **Test Mode: Bluetooth(GFSK)** | | | | | | | | |
| Back | Fixed | 2441 | 14.47 | -0.10 | **0.436** | 1.01 | **0.44** | 1.6 |
| Edge1 | Fixed | 2402 | 13.89 | 0.03 | 0.354 | 1.03 | 0.365 | 1.6 |
| Edge1 | Fixed | 2441 | 14.47 | 0.07 | 0.383 | 1.01 | 0.387 | 1.6 |
| Edge1 | Fixed | 2480 | 14.23 | -0.06 | 0.376 | 1.06 | 0.399 | 1.6 |
| Note: when the 1-g SAR is ≤ 0.8 W/kg, testing for low and high channel is optional, refer to KDB 447498. | | | | | | | | |

# 5. The Description of Test Procedure

## 5.1. General Notes:

1. Batteries are fully charged at the beginning of the SAR measurements.
2. The manufacturer has confirmed that the device(s) tested have the same physical, mechanical and thermal characteristics and are within operational tolerances expected for production units.
3. SAR results were scaled to the maximum allowed power to demonstrate compliance per FCC KDB Publication 447498 D01v05r02.
4. Per FCC KDB 616217 D04 Section 4.3, SAR tests are required for the back surface and edges of the tablet with the tablet touching the phantom. The SAR Exclusion Threshold in FCC KDB 447498 D01v05 was applied to determine SAR test exclusion for adjacent edge configurations. SAR tests were required for bottom and primary landscape for the BT/WLAN Antenna.

**WLAN/BT Notes:**

1. Justification for reduced test configurations for WIFI channels per KDB Publication 248227 D01v01r02 and April 2010 FCC/TCB Meeting Notes for 2.4 GHz WIFI: Highest average RF output power channel for the lowest data rate was selected for SAR evaluation in 802.11b. Other IEEE 802.11 modes (including 802.11g/n) were not investigated since the average output powers over all channels and data rates were not more than 0.25 dB higher than the tested channel in the lowest data rate of IEEE 802.11b mode.
2. WIFI transmission was verified using a spectrum analyzer.
3. When the maximum extrapolated peak SAR of the zoom scan for the maximum output channel is <1.6 W/kg and the reported 1g averaged SAR is <0.8 W/kg, SAR testing on other default channels is not required.

## 5.2. Simultaneous Transmission Analysis

This device contains transmitters that may operate simultaneously. Therefore simultaneous transmission analysis is required. Per FCC KDB 447498 D01v05r02, simultaneous transmission SAR test exclusion may be applied when the sum of the 1-g SAR for all the simultaneous transmitting antennas in a specific a physical test configuration is≤1.6W/kg.

## 5.3. Simultaneous Transmission Analysis

***Max. Simultaneous SAR***

➢ 2.4GHz WIFI + Bluetooth

| Configuration | Mode | Max. Scaled SAR(W/kg) | Bluetooth SAR(W/kg) | ∑ SAR(W/kg) |
|---|---|---|---|---|
| Body-Back | 802.11b | 0.256 | 0.44 | 0.696 |
| Body-Edge_1 | 802.11b | 0.541 | 0.399 | **0.94** |
| Body-Edge_2 | 802.11b | 0.047 | 0.4 | 0.447 |
| Body-Edge_3 | 802.11b | 0.4 | 0.4 | 0.8 |
| Body-Edge_4 | 802.11b | 0.4 | 0.4 | 0.8 |

➢ 5.2GHz WIFI + Bluetooth

| Configuration | Mode | Max. Scaled SAR(W/kg) | Bluetooth SAR(W/kg) | ∑ SAR(W/kg) |
|---|---|---|---|---|
| Body-Back | 802.11a | 0.55 | 0.44 | 0.99 |
| Body-Edge_1 | 802.11a | 1.19 | 0.399 | **1.589** |
| Body-Edge_2 | 802.11a | 0.14 | 0.4 | 0.54 |
| Body-Edge_3 | 802.11a | 0.4 | 0.4 | 0.8 |
| Body-Edge_4 | 802.11a | 0.4 | 0.4 | 0.8 |

➢ 5.8GHz WIFI + Bluetooth

| Configuration | Mode | Max. Scaled SAR(W/kg) | Bluetooth SAR(W/kg) | ∑ SAR(W/kg) |
|---|---|---|---|---|
| Body-Back | 802.11a | 0.520 | 0.44 | 0.96 |
| Body-Edge_1 | 802.11a | 1.164 | 0.399 | **1.563** |
| Body-Edge_2 | 802.11a | 0.112 | 0.4 | 0.512 |
| Body-Edge_3 | 802.11a | 0.4 | 0.4 | 0.8 |
| Body-Edge_4 | 802.11a | 0.4 | 0.4 | 0.8 |

Note: An estimated SAR of 0.4 W/kg was used to determine simultaneous transmission SAR per 447498 D01v05r02.

## 5.4. Simultaneous Transmission Conclusion

The above numerical summed SAR results for all the worst-case simultaneous transmission conditions were below the SAR limit. Therefore, the above analysis is sufficient to determine that simultaneous transmission cases will not exceed the SAR limit and therefore no measured volumetric simultaneous SAR summation is required per FCC KDB Publication 447498 D01v05r02.

# 6. Measurement Uncertainty

| DASY5 Uncertainty Budget according to IEEE 1528/2011 and IEC 62209-1/2011(0.3-3GHz) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Error Description | Uncert. value | Prob. Dist. | Div. | (ci) 1g | (ci) 10g | Std.Unc. (1g) | Std. nc. (10g) | (vi) veff |
| **Measurement System** | | | | | | | | |
| Probe Calibration | ±6.0% | N | 1 | 1 | 1 | ±6.0% | ±6.0% | ∞ |
| Axial Isotropy | ±4.7% | R | √3 | 0.7 | 0.7 | ±1.9% | ±1.9% | ∞ |
| Hemispherical Isotropy | ±9.6% | R | √3 | 0.7 | 0.7 | ±3.9% | ±3.9% | ∞ |
| Boundary Effects | ±1.0% | R | √3 | 1 | 1 | ±0.6% | ±0.6% | ∞ |
| Linearity | ±4.7% | R | √3 | 1 | 1 | ±2.7% | ±2.7% | ∞ |
| System Detection Limits | ±1.0% | R | √3 | 1 | 1 | ±0.6% | ±0.6% | ∞ |
| Modulation Response | ±2.4% | R | √3 | 1 | 1 | ±1.4% | ±1.4% | ∞ |
| Readout Electronics | ±0.3% | N | 1 | 1 | 1 | ±0.3% | ±0.3% | ∞ |
| Response Time | ±0.8% | R | √3 | 1 | 1 | ±0.5% | ±0.5% | ∞ |
| Integration Time | ±2.6% | R | √3 | 1 | 1 | ±1.5% | ±1.5% | ∞ |
| RF Ambient Noise | ±3.0% | R | √3 | 1 | 1 | ±1.7% | ±1.7% | ∞ |
| RF Ambient Reflections | ±3.0% | R | √3 | 1 | 1 | ±1.7% | ±1.7% | ∞ |
| Probe Positioner | ±0.4% | R | √3 | 1 | 1 | ±0.2% | ±0.2% | ∞ |
| Probe Positioning | ±2.9% | R | √3 | 1 | 1 | ±1.7% | ±1.7% | ∞ |
| Max.SAR Eval. | ±2.0% | R | √3 | 1 | 1 | ±1.2% | ±1.2% | ∞ |
| **Test Sample Related** | | | | | | | | |
| Device Positioning | ±2.9% | N | 1 | 1 | 1 | ±2.9% | ±2.9% | 145 |
| Device Holder | ±3.6% | N | 1 | 1 | 1 | ±3.6% | ±3.6% | 5 |
| Power Drift | ±5.0% | R | √3 | 1 | 1 | ±2.9% | ±2.9% | ∞ |
| Power Scaling$^{p}$ | ±0% | R | √3 | 0 | 0 | ±0% | ±0% | ∞ |
| **Phantom and Setup** | | | | | | | | |
| Phantom Uncertainty | ±6.1% | R | √3 | 1 | 1 | ±3.5% | ±3.5% | ∞ |
| SAR correction | ±1.9% | R | √3 | 1 | 0.84 | ±1.1% | ±0.9% | ∞ |
| Liquid Conductivity (mea.)$^{DAK}$ | ±2.5% | R | √3 | 0.78 | 0.71 | ±1.1% | ±1.0% | ∞ |
| Liquid Permittivity (mea.)$^{DAK}$ | ±2.5% | R | √3 | 0.26 | 0.26 | ±0.3% | ±0.4% | ∞ |
| Temp. unc. –Conductivity$^{BB}$ | ±3.4% | R | √3 | 0.78 | 0.71 | ±1.5% | ±1.4% | ∞ |
| Temp. unc. – Permittivity$^{BB}$ | ±0.4% | R | √3 | 0.23 | 0.26 | ±0.1% | ±0.1% | ∞ |
| **Combined Std. Uncertainty** | | | | | | ±11.2% | ±11.1% | 361 |
| **Expanded STD Uncertainty(k=2)** | | | | | | **±22.3%** | **±22.2%** | |

# 7. APPENDIX A. SAR System Verification Data

**Date/Time: 29/10/2014**

Test Laboratory: Cerpass Lab

SystemPerformanceCheck-D2450 Body2014721

**DUT: Dipole 2450 MHz D2450V2; Type: SA AAD 245 BB**

Communication System: CW; Frequency: 2450 MHz

Medium parameters used: f = 2450 MHz; σ = 1.92 S/m; εr = 51.7; ρ = 1000 kg/m3

Phantom section: Flat Section; Meas. Ambient Temp (celsius) -22℃; Input power-250mW

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

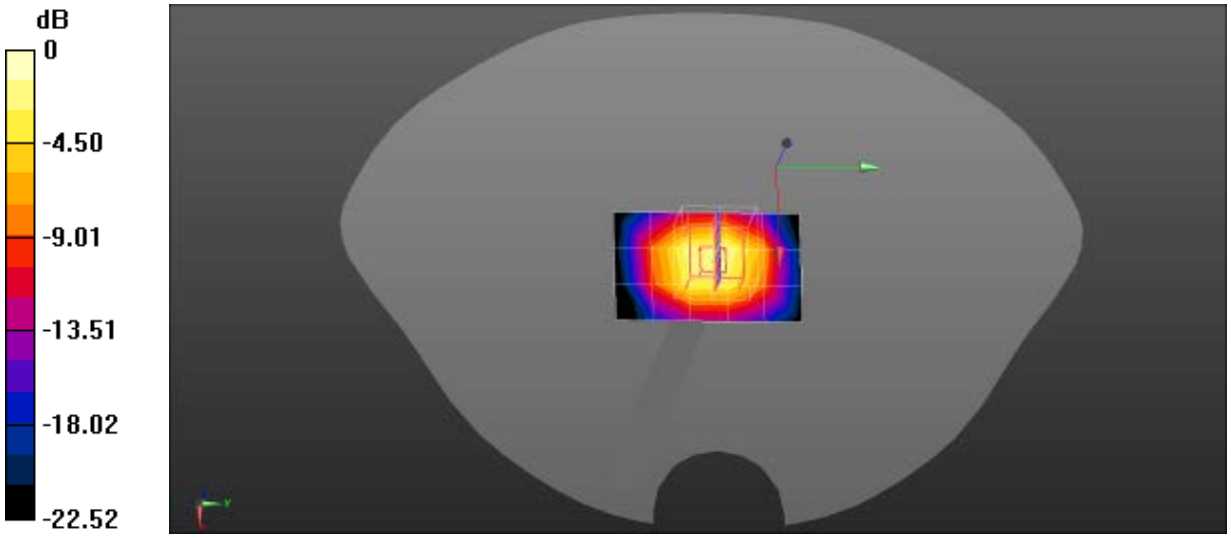
DASY Configuration:

- Probe: EX3DV4 - SN3927; ConvF(7.63, 7.63, 7.63); Calibrated: 2014/5/23;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1379; Calibrated: 2014/5/19
- Phantom: SAM (30deg probe tilt) with CRP v5.0; Type: QD000P40CD
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

**Configuration/SystemPerformanceCheck-D2450 Body/Area Scan (4x6x1):** Measurement grid: dx=15mm, dy=15mm, Maximum value of SAR (measured) = 10.4 W/kg

**Configuration/SystemPerformanceCheck-D2450 Body/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm, Reference Value = 89.29 V/m; Power Drift = 0.04 dB, Peak SAR (extrapolated) = 27.5 W/kg

**SAR(1 g) = 12.8 W/kg; SAR(10 g) = 5.85 W/kg** Maximum value of SAR (measured) = 14.7 W/kg




0 dB = 14.7 W/kg = 11.67 dBW/kg

**Date/Time: 29/10/2014**

Test Laboratory: Cerpass Lab

Dipole Calibration for Body Tissue Pin=100mW, dist=10mm, f=5200 MHz

**DUT: Dipole 5200MHz D5GHzV2; Type: SA AAD 510 BB**

Communication System: CW; Frequency: 5200 MHz

Medium parameters used: f = 5200 MHz; σ = 5.27 S/m; εr = 49.4; ρ = 1000 kg/m3

Phantom section: Flat Section; Meas. Ambient Temp (celsius) -22℃; Input power-100mW

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

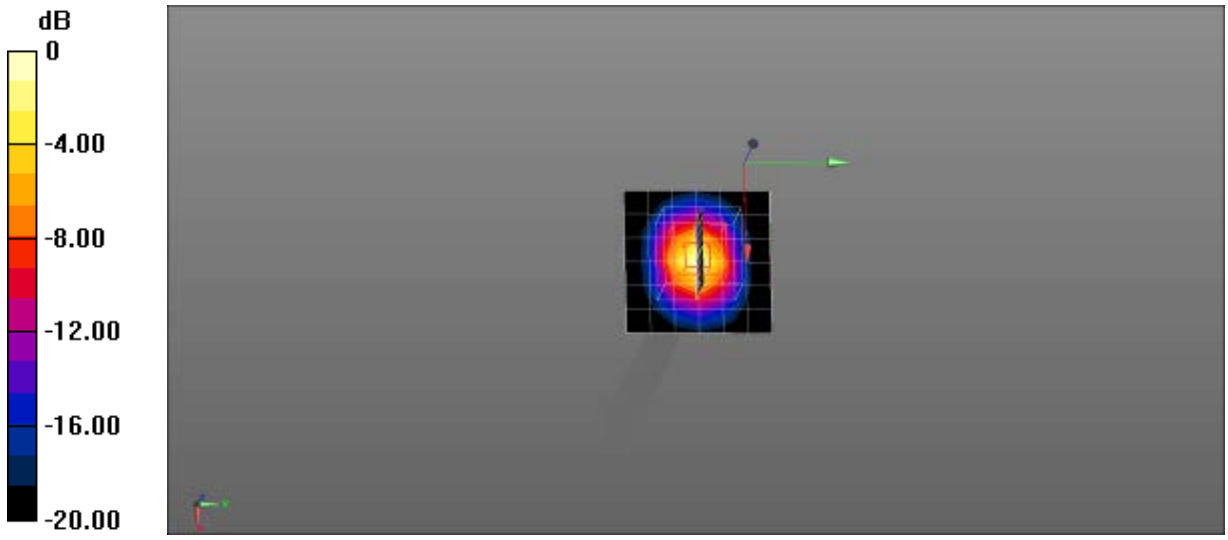
- Probe: EX3DV4 - SN3927; ConvF(4.61, 4.61, 4.61); Calibrated: 2014/5/23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1379; Calibrated: 2014/5/19
- Phantom: ELI v5.0; Type: QDOVA002AA
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

**Configuration/Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5200 MHz/Area Scan (7x7x1):** Measurement grid: dx=10mm, dy=10mm, Maximum value of SAR (measured) = 18.9 W/kg

**Configuration/Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5200 MHz/Zoom Scan (9x9x6)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 40.72 V/m; Power Drift = -0.03 dB, Peak SAR (extrapolated) = 31.1 W/kg

**SAR(1 g) = 7.45 W/kg; SAR(10 g) = 2.09 W/kg** Maximum value of SAR (measured) = 19.0 W/kg




0 dB = 19.0 W/kg = 12.79 dBW/kg

**Date/Time: 29/10/2014**

Test Laboratory: Cerpass Lab

Dipole Calibration for Body Tissue Pin=100mW, dist=10mm, f=5800 MHz

**DUT: Dipole 5800MHz D5GHzV2; Type: SA AAD 510 BB**

Communication System: CW; Frequency: 5800 MHz

Medium parameters used: f = 5800 MHz; σ = 6.05 S/m; εr = 48.48; ρ = 1000 kg/m3

Phantom section: Flat Section; Meas. Ambient Temp (celsius) -22℃; Input power-100mW

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

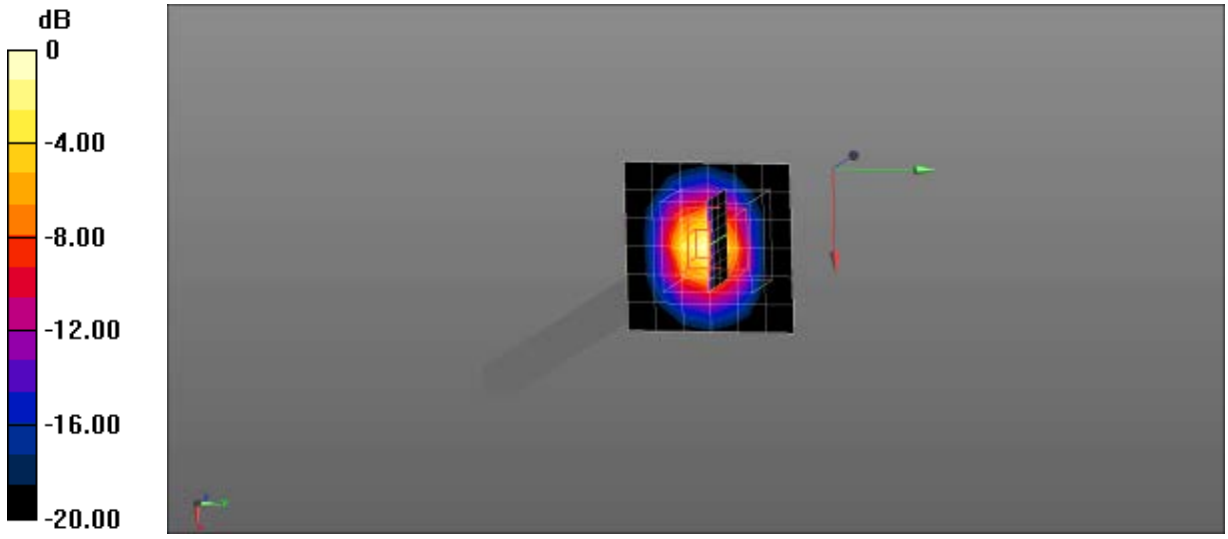
- Probe: EX3DV4 - SN3927; ConvF(4.25, 4.25, 4.25); Calibrated: 2014/5/23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1379; Calibrated: 2014/5/19
- Phantom: ELI v5.0; Type: QDOVA002AA
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

**Configuration/Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5800 MHz/Area Scan (7x7x1):** Measurement grid: dx=10mm, dy=10mm, Maximum value of SAR (measured) = 18.9 W/kg

**Configuration/Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5800 MHz/Zoom Scan (9x9x6)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 37.25 V/m; Power Drift = -0.04 dB, Peak SAR (extrapolated) = 34.2 W/kg

**SAR(1 g) = 7.24 W/kg; SAR(10 g) = 2.02 W/kg** Maximum value of SAR (measured) = 19.4 W/kg




0 dB = 19.4 W/kg = 12.88 dBW/kg

# 9. APPENDIX B. SAR measurement Data

**Date/Time: 29/10/2014**

Test Laboratory: Cerpass Lab

DUT: AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM; Type: MaxiSys Elite

**Procedure Name: 802.11b 2412MHz Low Body-Back**

Communication System Band: 802.11b; Frequency: 2412 MHz; Duty Cycle: 1:1

Medium parameters used: f = 2412 MHz; σ = 1.89 S/m; εr = 51.91; ρ = 1000 kg/m3

Phantom section: Flat Section; Tissue Temp (celsius) - 21℃

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5 Configuration:

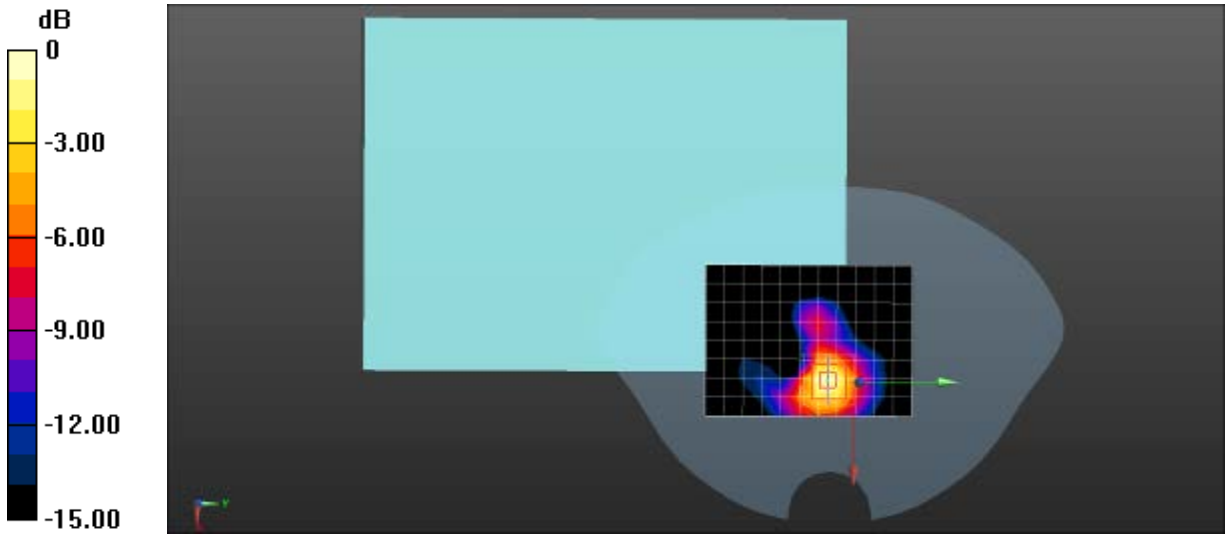
- Probe: EX3DV4 - SN3927; ConvF(7.63, 7.63, 7.63); Calibrated: 2014/5/23;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1379; Calibrated: 2014/5/19
- Phantom: SAM (30deg probe tilt) with CRP v5.0; Type: QD000P40CD
- Measurement SW: DASY52, Version 52.8 (8);

**Configuration/802.11b 2412MHz Low Body-Back/Area Scan (9x12x1):** Measurement grid: dx=12mm, dy=12mm, Maximum value of SAR (measured) = 0.174 W/kg

**Configuration/802.11b 2412MHz Low Body-Back/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 4.736 V/m; Power Drift = -0.10 dB

Peak SAR (extrapolated) = 0.332 W/kg

**SAR(1 g) = 0.170 W/kg; SAR(10 g) = 0.080 W/kg** Maximum value of SAR (measured) = 0.197 W/kg




0 dB = 0.197 W/kg = -7.06 dBW/kg

**Date/Time: 29/10/2014**

Test Laboratory: Cerpass Lab

DUT: AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM; Type: MaxiSys Elite

**Procedure Name: 802.11b 2437MHz Mid Body-Back**

Communication System Band: 802.11b; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium parameters used: f = 2437 MHz; $\sigma$ = 1.91 S/m; $\varepsilon r$ = 51.72; $\rho$ = 1000 kg/m3

Phantom section: Flat Section; Tissue Temp (celsius) - 21℃

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5 Configuration:

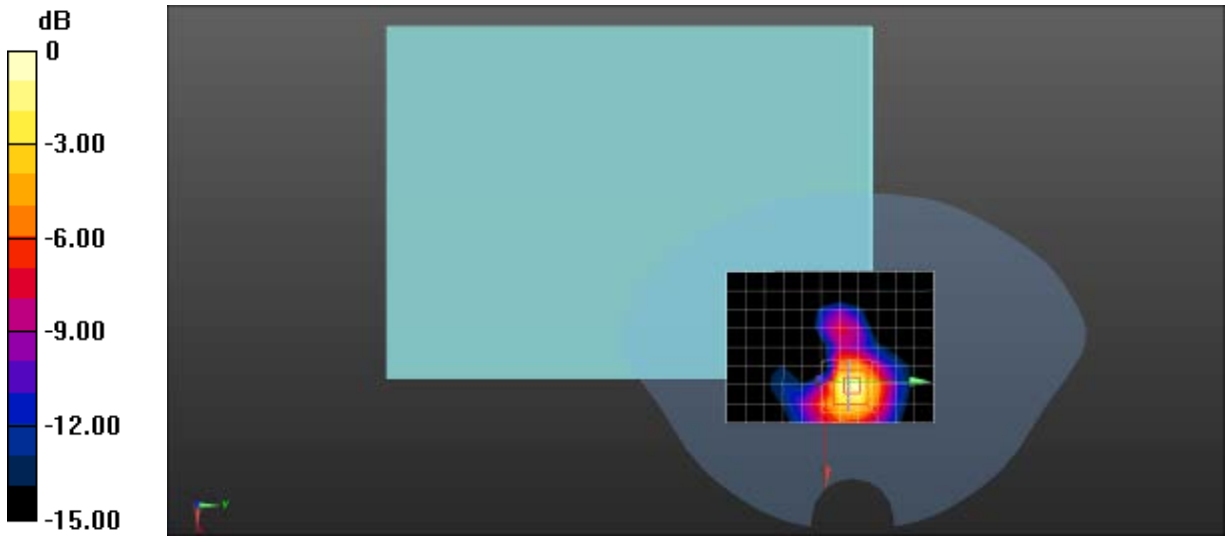
- Probe: EX3DV4 - SN3927; ConvF(7.63, 7.63, 7.63); Calibrated: 2014/5/23;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1379; Calibrated: 2014/5/19
- Phantom: SAM (30deg probe tilt) with CRP v5.0; Type: QD000P40CD
- Measurement SW: DASY52, Version 52.8 (8);

**Configuration/802.11b 2437MHz Mid Body-Back/Area Scan (9x12x1):** Measurement grid: dx=12mm, dy=12mm, Maximum value of SAR (measured) = 0.226 W/kg

**Configuration/802.11b 2437MHz Mid Body-Back/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 5.318 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.423 W/kg

**SAR(1 g) = 0.209 W/kg; SAR(10 g) = 0.097 W/kg** Maximum value of SAR (measured) = 0.241 W/kg




0 dB = 0.241 W/kg = -6.18 dBW/kg

**Date/Time: 29/10/2014**

Test Laboratory: Cerpass Lab

DUT: AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM; Type: MaxiSys Elite

**Procedure Name: 802.11b 2462MHz High Body-Back**

Communication System Band: 802.11b; Frequency: 2462 MHz; Duty Cycle: 1:1

Medium parameters used: f = 2462 MHz; σ = 1.93 S/m; εr = 51.63; ρ = 1000 kg/m3

Phantom section: Flat Section; Tissue Temp (celsius) - 21℃

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5 Configuration:

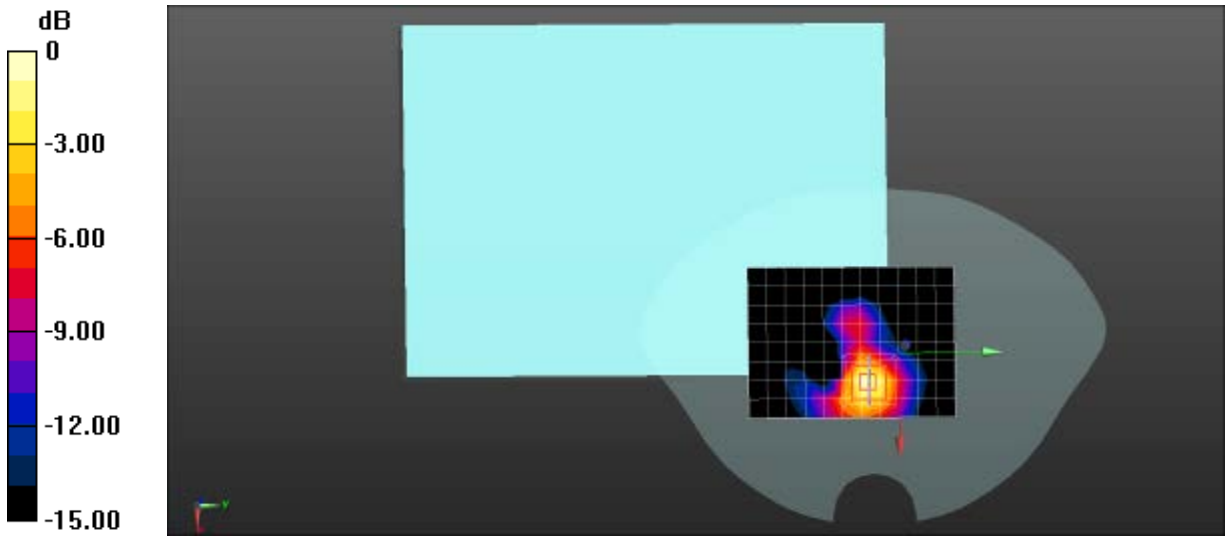
- Probe: EX3DV4 - SN3927; ConvF(7.63, 7.63, 7.63); Calibrated: 2014/5/23;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1379; Calibrated: 2014/5/19
- Phantom: SAM (30deg probe tilt) with CRP v5.0; Type: QD000P40CD
- Measurement SW: DASY52, Version 52.8 (8);

**Configuration/802.11b 2462MHz High Body-Back/Area Scan (9x12x1):** Measurement grid: dx=12mm, dy=12mm, Maximum value of SAR (measured) = 0.267 W/kg

**Configuration/802.11b 2462MHz High Body-Back/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 4.826 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.519 W/kg

**SAR(1 g) = 0.249 W/kg; SAR(10 g) = 0.114 W/kg** Maximum value of SAR (measured) = 0.282 W/kg




0 dB = 0.282 W/kg = -5.50 dBW/kg

**Date/Time: 29/10/2014**

Test Laboratory: Cerpass Lab

DUT: AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM; Type: MaxiSys Elite

**Procedure Name: 802.11b 2462MHz High Body-Edge_1**

Communication System Band: 802.11b; Frequency: 2462 MHz; Duty Cycle: 1:1

Medium parameters used: f = 2462 MHz; σ = 1.93 S/m; εr = 51.63; ρ = 1000 kg/m3

Phantom section: Flat Section; Tissue Temp (celsius) - 21℃

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5 Configuration:

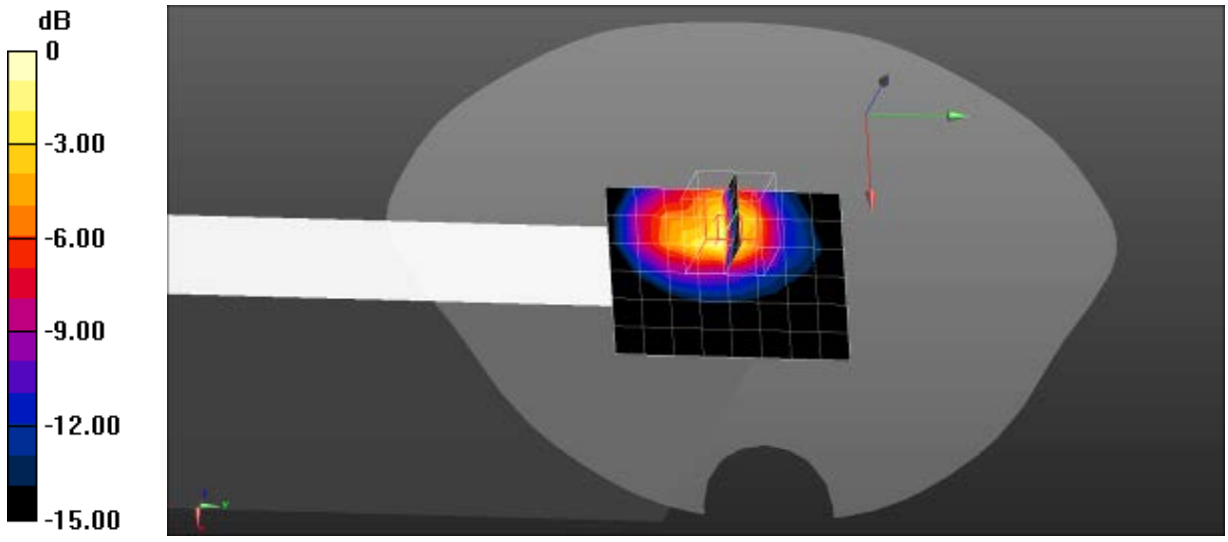
- Probe: EX3DV4 - SN3927; ConvF(7.63, 7.63, 7.63); Calibrated: 2014/5/23;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1379; Calibrated: 2014/5/19
- Phantom: SAM (30deg probe tilt) with CRP v5.0; Type: QD000P40CD
- Measurement SW: DASY52, Version 52.8 (8);

**Configuration/802.11b 2462MHz High Body-Edge_1/Area Scan (7x9x1):** Measurement grid: dx=12mm, dy=12mm, Maximum value of SAR (measured) = 0.520 W/kg

**Configuration/802.11b 2462MHz High Body-Edge_1/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 5.797 V/m; Power Drift = 0.13 dB

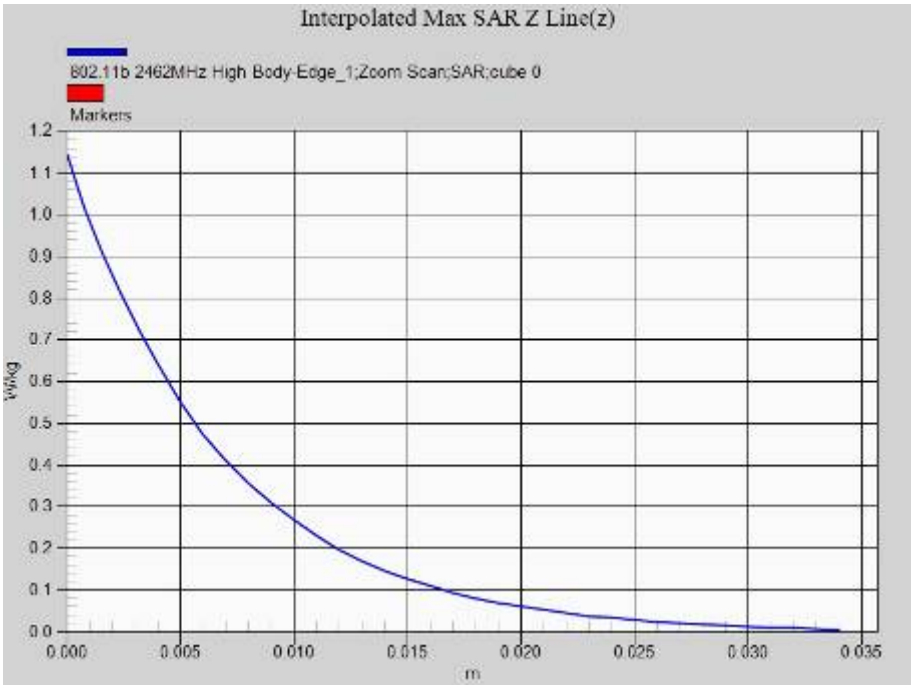
Peak SAR (extrapolated) = 1.15 W/kg

**SAR(1 g) = 0.525 W/kg; SAR(10 g) = 0.227 W/kg** Maximum value of SAR (measured) = 0.647 W/kg




0 dB = 0.647 W/kg = -1.89 dBW/kg

**Z-Axis Plot**


Interpolated Max SAR Z Line(z)
802.11b 2462MHz High Body-Edge_1;Zoom Scan;SAR;cube 0
Markers
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
W/kg
0.000
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

**Date/Time: 29/10/2014**

Test Laboratory: Cerpass Lab

DUT: AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM; Type: MaxiSys Elite

**Procedure Name: 802.11b 2462MHz High Body-Edge_2**

Communication System Band: 802.11b; Frequency: 2462 MHz; Duty Cycle: 1:1

Medium parameters used: f = 2462 MHz; σ = 1.93 S/m; εr = 51.63; ρ = 1000 kg/m3

Phantom section: Flat Section; Tissue Temp (celsius) - 21℃

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5 Configuration:

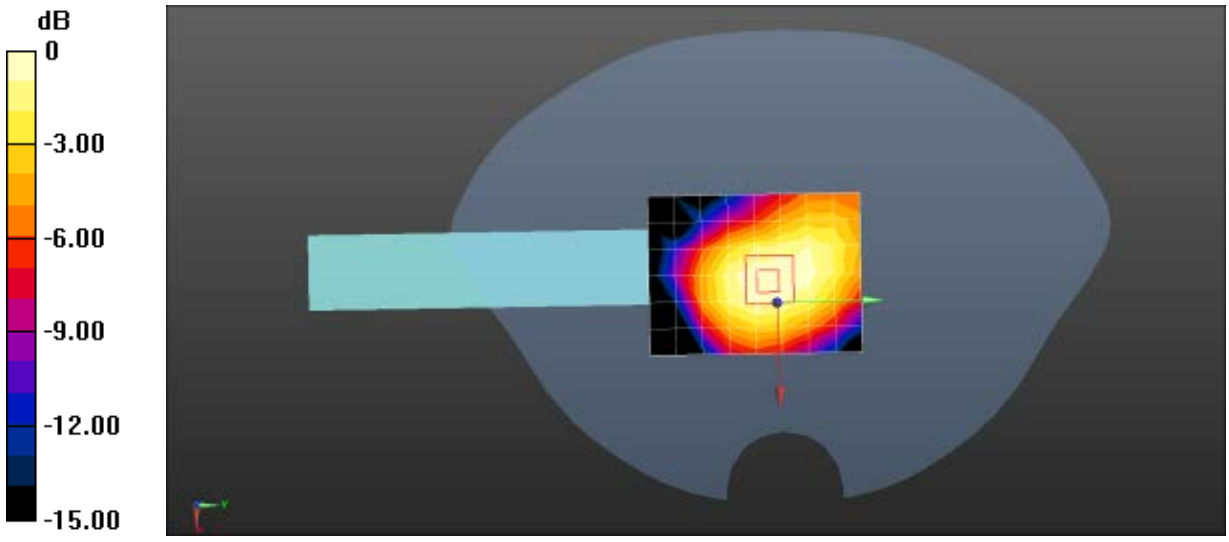
- Probe: EX3DV4 - SN3927; ConvF(7.63, 7.63, 7.63); Calibrated: 2014/5/23;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1379; Calibrated: 2014/5/19
- Phantom: SAM (30deg probe tilt) with CRP v5.0; Type: QD000P40CD
- Measurement SW: DASY52, Version 52.8 (8);

**Configuration/802.11b 2462MHz High Body-Edge_2/Area Scan (7x9x1):** Measurement grid: dx=12mm, dy=12mm, Maximum value of SAR (measured) = 0.0511 W/kg

**Configuration/802.11b 2462MHz High Body-Edge_2/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 4.787 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.0790 W/kg

**SAR(1 g) = 0.046 W/kg; SAR(10 g) = 0.025 W/kg** Maximum value of SAR (measured) = 0.0513 W/kg




0 dB = 0.0513 W/kg = -12.90 dBW/kg

**Date/Time: 29/10/2014**

Test Laboratory: Cerpass Lab

DUT: AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM; Type: MaxiSys Elite

**Procedure Name: 802.11g 2462MHz High Body-Edge_1**

Communication System Band: 802.11g; Frequency: 2462 MHz; Duty Cycle: 1:1

Medium parameters used: f = 2462 MHz; σ = 1.93 S/m; εr = 51.63; ρ = 1000 kg/m3

Phantom section: Flat Section; Tissue Temp (celsius) - 21℃

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5 Configuration:

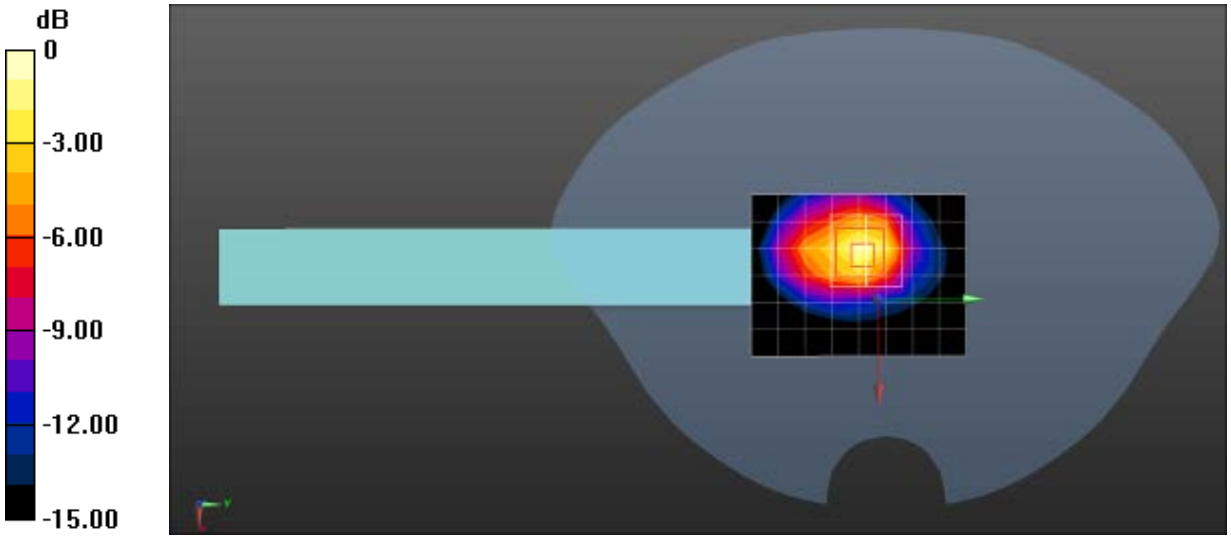
- Probe: EX3DV4 - SN3927; ConvF(7.63, 7.63, 7.63); Calibrated: 2014/5/23;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1379; Calibrated: 2014/5/19
- Phantom: SAM (30deg probe tilt) with CRP v5.0; Type: QD000P40CD
- Measurement SW: DASY52, Version 52.8 (8);

**Configuration/802.11g 2462MHz High Body-Edge_1/Area Scan (7x9x1):** Measurement grid: dx=12mm, dy=12mm, Maximum value of SAR (measured) = 0.513 W/kg

**Configuration/802.11g 2462MHz High Body-Edge_1/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 10.90 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 1.08 W/kg

**SAR(1 g) = 0.494 W/kg; SAR(10 g) = 0.213 W/kg** Maximum value of SAR (measured) = 0.581 W/kg




0 dB = 0.581 W/kg = -2.36 dBW/kg

**Date/Time: 29/10/2014**

Test Laboratory: Cerpass Lab

DUT: AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM; Type: MaxiSys Elite

**Procedure Name: 802.11n(20MHz) 2462MHz High Body-Edge_1**

Communication System Band: 802.11n(20MHz); Frequency: 2462 MHz; Duty Cycle: 1:1

Medium parameters used: f = 2462 MHz; $\sigma$ = 1.93 S/m; $\varepsilon r$ = 51.63; $\rho$ = 1000 kg/m3

Phantom section: Flat Section; Tissue Temp (celsius) - 21℃

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

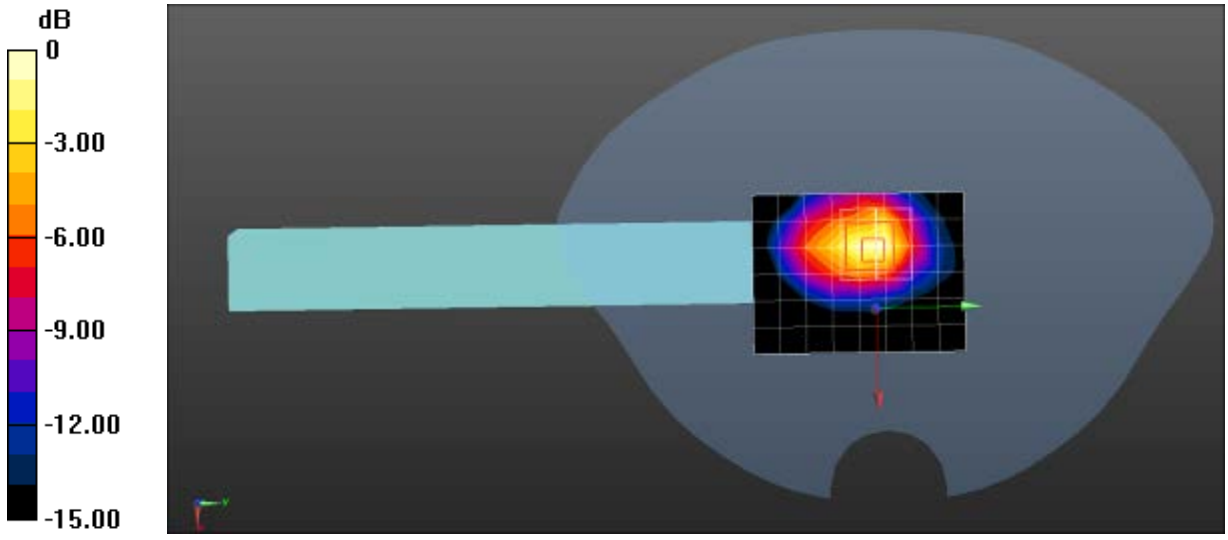
DASY5 Configuration:

- Probe: EX3DV4 - SN3927; ConvF(7.63, 7.63, 7.63); Calibrated: 2014/5/23;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1379; Calibrated: 2014/5/19
- Phantom: SAM (30deg probe tilt) with CRP v5.0; Type: QD000P40CD
- Measurement SW: DASY52, Version 52.8 (8);

**Configuration/802.11n(20MHz) 2462MHz High Body-Edge_1/Area Scan (7x9x1):** Measurement grid: dx=12mm, dy=12mm, Maximum value of SAR (measured) = 0.366 W/kg

**Configuration/802.11n(20MHz) 2462MHz High Body-Edge_1/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 10.12 V/m; Power Drift = 0.11 dB, Peak SAR (extrapolated) = 0.758 W/kg

**SAR(1 g) = 0.344 W/kg; SAR(10 g) = 0.148 W/kg** Maximum value of SAR (measured) = 0.391 W/kg




0 dB = 0.391 W/kg = -4.08 dBW/kg

**Date/Time: 29/10/2014**

Test Laboratory: Cerpass Lab

DUT: AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM; Type: MaxiSys Elite

**Procedure Name: 802.11n(40MHz) 2462MHz High Body-Edge_1**

Communication System Band: 802.11n(40MHz); Frequency: 2462 MHz; Duty Cycle: 1:1

Medium parameters used: f = 2462 MHz; $\sigma$ = 1.93 S/m; $\varepsilon r$ = 51.63; $\rho$ = 1000 kg/m3

Phantom section: Flat Section; Tissue Temp (celsius) - 21℃

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

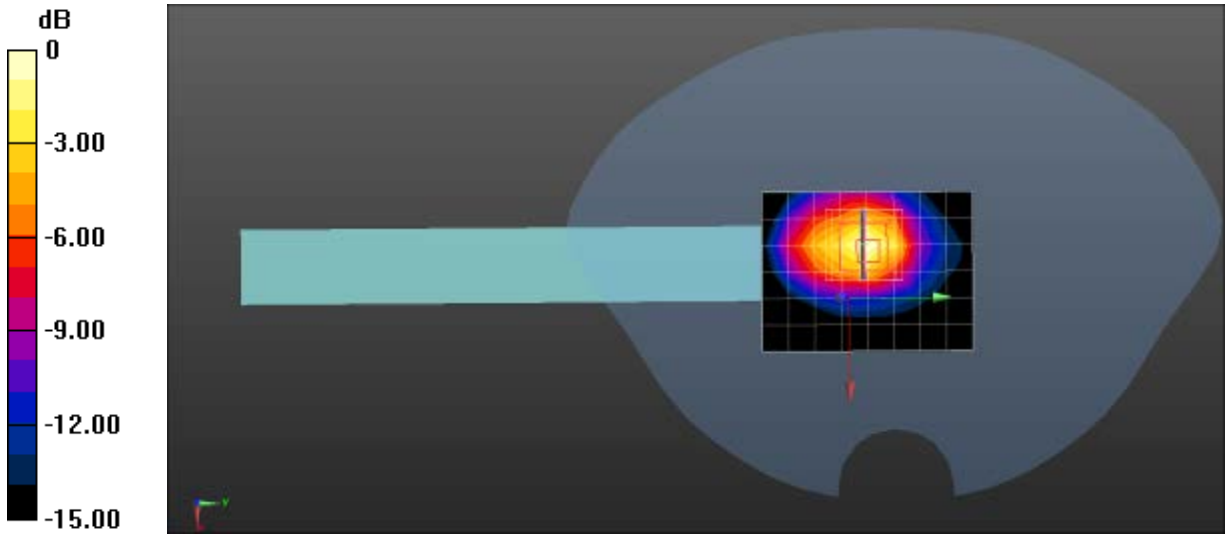
DASY5 Configuration:

- Probe: EX3DV4 - SN3927; ConvF(7.63, 7.63, 7.63); Calibrated: 2014/5/23;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1379; Calibrated: 2014/5/19
- Phantom: SAM (30deg probe tilt) with CRP v5.0; Type: QD000P40CD
- Measurement SW: DASY52, Version 52.8 (8);

**Configuration/802.11n(40MHz) 2462MHz High Body-Edge_1/Area Scan (7x9x1):** Measurement grid: dx=12mm, dy=12mm, Maximum value of SAR (measured) = 0.377 W/kg

**Configuration/802.11n(40MHz) 2462MHz High Body-Edge_1/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 8.223 V/m; Power Drift = 0.03 dB, Peak SAR (extrapolated) = 0.734 W/kg

**SAR(1 g) = 0.340 W/kg; SAR(10 g) = 0.148 W/kg**




0 dB = 0.377 W/kg = -4.24 dBW/kg

**Date/Time: 29/10/2014**

Test Laboratory: Cerpass Lab

DUT: AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM; Type: MaxiSys Elite

**Procedure Name: 802.11a 5180MHz Tablet-edge_1**

Communication System Band: 802.11a (20MHz); Frequency: 5180 MHz; Duty Cycle: 1:1

Medium parameters used: f = 5180 MHz; $\sigma$ = 5.25 S/m; $\varepsilon r$ = 49.42; $\rho$ = 1000 kg/m3

Phantom section: Flat Section; Tissue Temp (celsius) - 21℃

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5 Configuration:

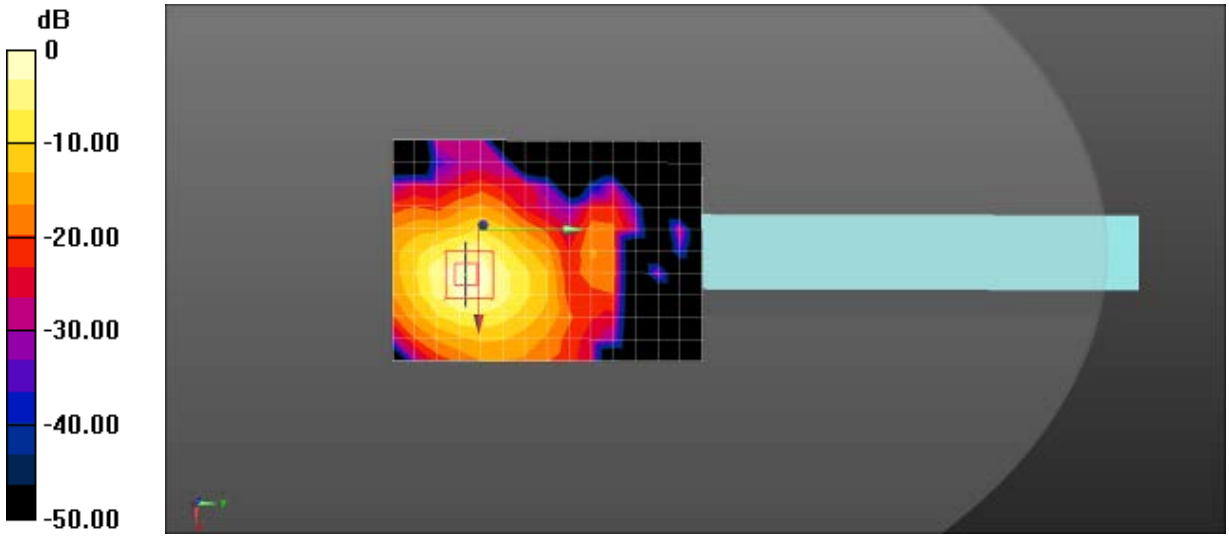
- Probe: EX3DV4 - SN3927; ConvF(4.61, 4.61, 4.61); Calibrated: 2014/5/23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1379; Calibrated: 2014/5/19
- Phantom: ELI v5.0; Type: QDOVA002AA
- Measurement SW: DASY52, Version 52.8 (8);

**Configuration/802.11a 5180MHz Tablet-edge_1/Area Scan (11x15x1):** Measurement grid: dx=10mm, dy=10mm, Maximum value of SAR (measured) = 1.99 W/kg

**Configuration/802.11a 5180MHz Tablet-edge_1/Zoom Scan (7x7x6)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=2mm, Reference Value = 7.978 V/m; Power Drift = -0.53 dB

Peak SAR (extrapolated) = 4.13 W/kg

**SAR(1 g) = 1.07 W/kg; SAR(10 g) = 0.363 W/kg** Maximum value of SAR (measured) = 2.08 W/kg




0 dB = 2.08 W/kg = 3.18 dBW/kg

**Date/Time: 29/10/2014**

Test Laboratory: Cerpass Lab

DUT: AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM; Type: MaxiSys Elite

**Procedure Name: 802.11a 5240MHz Body-Back**

Communication System Band: 802.11a (20MHz); Frequency: 5240 MHz; Duty Cycle: 1:1

Medium parameters used: f = 5240 MHz; σ = 5.38 S/m; εr = 49.37; ρ = 1000 kg/m3

Phantom section: Flat Section; Tissue Temp (celsius) - 21℃

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

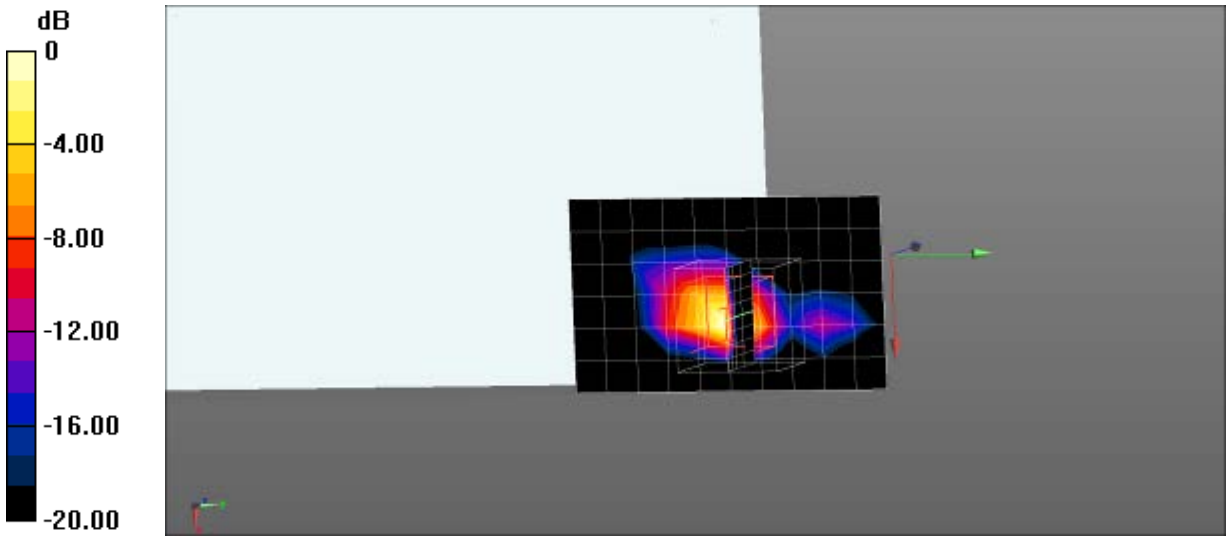
DASY5 Configuration:

- Probe: EX3DV4 - SN3927; ConvF(4.61, 4.61, 4.61); Calibrated: 2014/5/23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1379; Calibrated: 2014/5/19
- Phantom: ELI v5.0; Type: QDOVA002AA
- Measurement SW: DASY52, Version 52.8 (8);

**Configuration/802.11a 5240MHz Body-Back/Area Scan (7x11x1):** Measurement grid: dx=10mm, dy=10mm, Maximum value of SAR (measured) = 1.32 W/kg

**Configuration/802.11a 5240MHz Body-Back/Zoom Scan (9x9x6)/Cube 0:**Measurement grid: dx=4mm, dy=4mm, dz=2mm, Reference Value = 14.64 V/m; Power Drift = -0.19 dB, Peak SAR (extrapolated) = 2.77 W/kg

**SAR(1 g) = 0.526 W/kg; SAR(10 g) = 0.126 W/kg** Maximum value of SAR (measured) = 1.12 W/kg




0 dB = 1.12 W/kg = 0.49 dBW/kg

**Date/Time: 29/10/2014**

Test Laboratory: Cerpass Lab

DUT: AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM; Type: MaxiSys Elite

**Procedure Name: 802.11a 5240MHz Tablet-edge_1**

Communication System Band: 802.11a (20MHz); Frequency: 5240 MHz; Duty Cycle: 1:1

Medium parameters used: f = 5240 MHz; σ = 5.38 S/m; εr = 49.37; ρ = 1000 kg/m3

Phantom section: Flat Section; Tissue Temp (celsius) - 21℃

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5 Configuration:

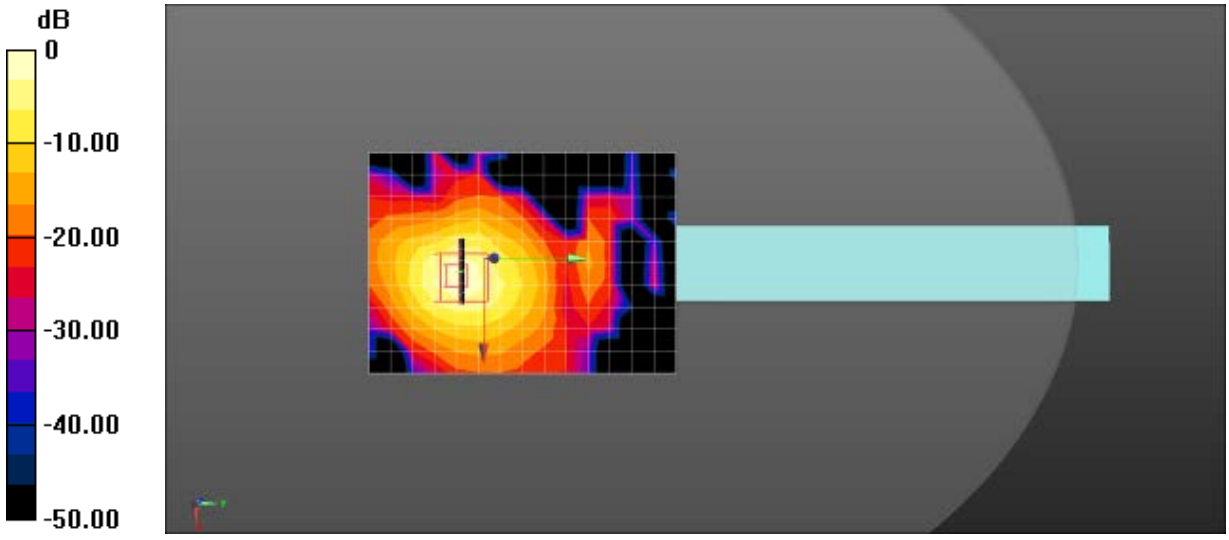
- Probe: EX3DV4 - SN3927; ConvF(4.61, 4.61, 4.61); Calibrated: 2014/5/23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1379; Calibrated: 2014/5/19
- Phantom: ELI v5.0; Type: QDOVA002AA
- Measurement SW: DASY52, Version 52.8 (8);

**Configuration/802.11a 5240MHz Tablet-edge_1/Area Scan (11x15x1):** Measurement grid: dx=10mm, dy=10mm, Maximum value of SAR (measured) = 1.82 W/kg

**Configuration/802.11a 5240MHz Tablet-edge_1/Zoom Scan (7x7x6)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=2mm, Reference Value = 9.493 V/m; Power Drift = -0.11 dB

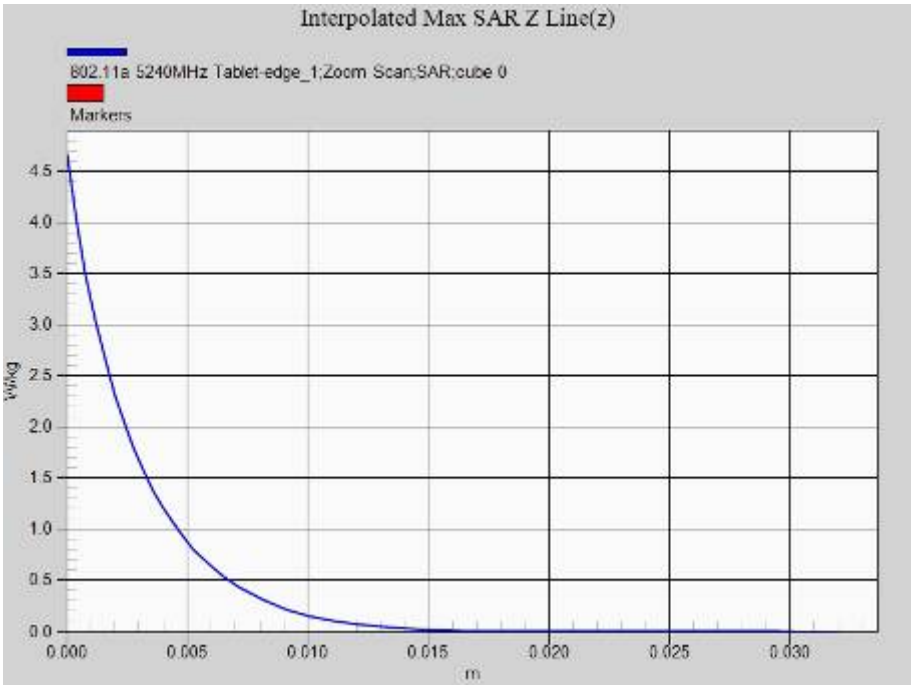
Peak SAR (extrapolated) = 4.67 W/kg

**SAR(1 g) = 1.14 W/kg; SAR(10 g) = 0.393 W/kg** Maximum value of SAR (measured) = 2.29 W/kg




0 dB = 2.29 W/kg = 3.60 dBW/kg

**Z-Axis Plot**


Interpolated Max SAR Z Line(z)
802.11a 5240MHz Tablet-edge_1;Zoom Scan;SAR;cube 0
Markers
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.000
0.005
0.010
0.015
0.020
0.025
0.030
m

**Date/Time: 29/10/2014**

Test Laboratory: Cerpass Lab

DUT: AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM; Type: MaxiSys Elite

**Procedure Name: 802.11a 5240MHz Tablet-edge_1**

Communication System Band: 802.11a (20MHz); Frequency: 5240 MHz; Duty Cycle: 1:1

Medium parameters used: f = 5240 MHz; σ = 5.38 S/m; εr = 49.37; ρ = 1000 kg/m3

Phantom section: Flat Section; Tissue Temp (celsius) - 21℃

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5 Configuration:

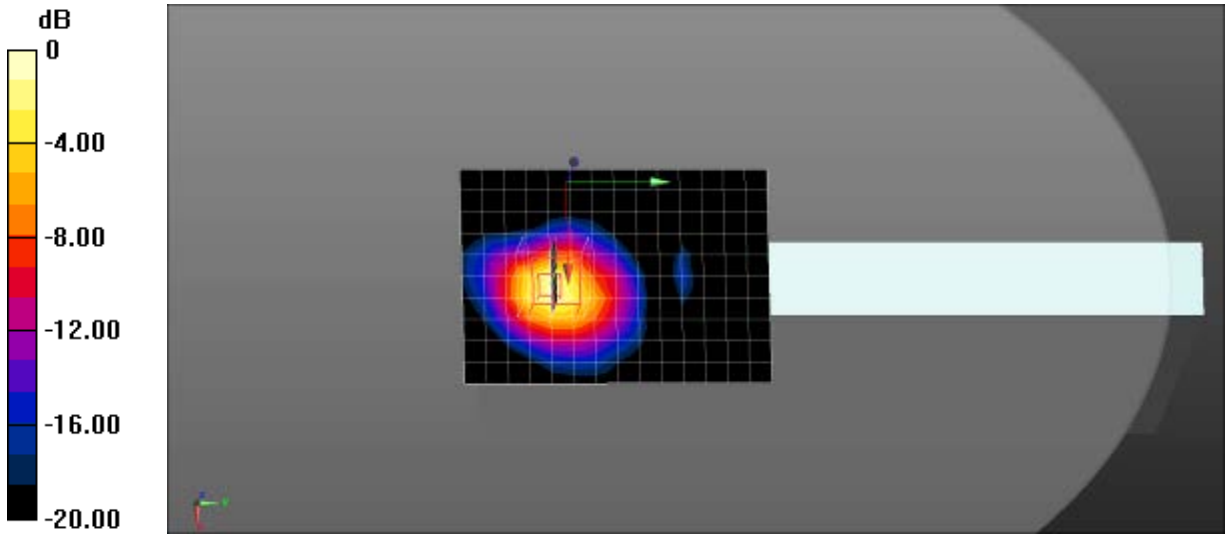
- Probe: EX3DV4 - SN3927; ConvF(4.61, 4.61, 4.61); Calibrated: 2014/5/23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1379; Calibrated: 2014/5/19
- Phantom: ELI v5.0; Type: QDOVA002AA
- Measurement SW: DASY52, Version 52.8 (8);

**Configuration/802.11a 5240MHz Tablet-edge_1/Area Scan (11x15x1):** Measurement grid: dx=10mm, dy=10mm, Maximum value of SAR (measured) = 1.76 W/kg

**Configuration/802.11a 5240MHz Tablet-edge_1/Zoom Scan (7x7x6)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=2mm, Reference Value = 9.484 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 4.52 W/kg

**SAR(1 g) = 1.12 W/kg; SAR(10 g) = 0.380 W/kg** Maximum value of SAR (measured) = 2.22 W/kg




0 dB = 2.22 W/kg = 3.46 dBW/kg

**Date/Time: 29/10/2014**

Test Laboratory: Cerpass Lab

DUT: AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM; Type: MaxiSys Elite

**Procedure Name: 802.11a 5240MHz Tablet-edge_2**

Communication System Band: 802.11a (20MHz); Frequency: 5240 MHz; Duty Cycle: 1:1

Medium parameters used: f = 5240 MHz; $\sigma$ = 5.38 S/m; $\varepsilon r$ = 49.37; $\rho$ = 1000 kg/m3

Phantom section: Flat Section; Tissue Temp (celsius) - 21℃

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5 Configuration:

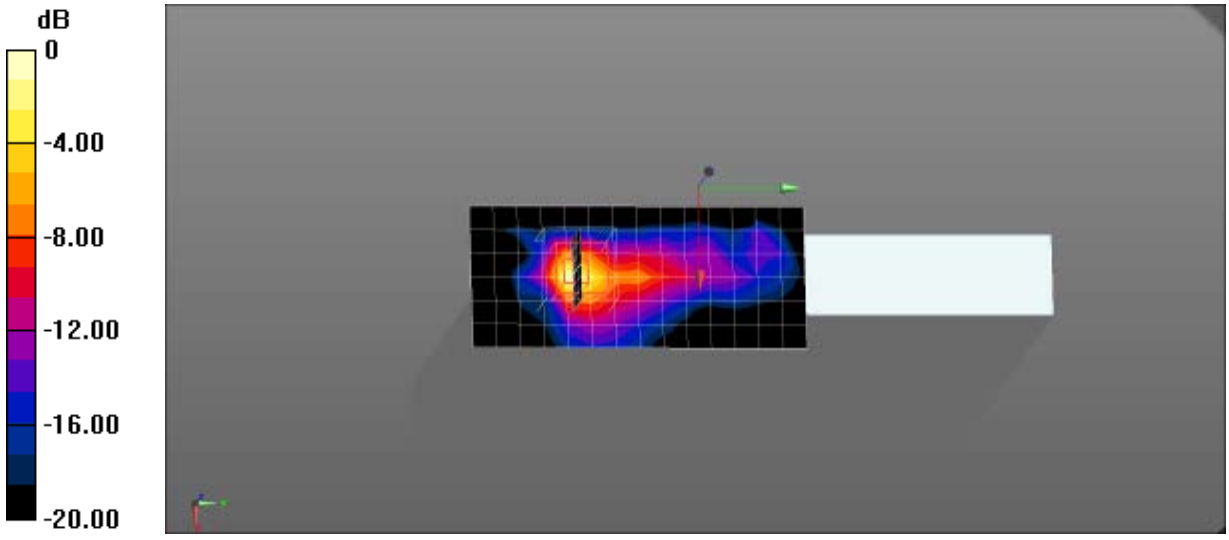
- Probe: EX3DV4 - SN3927; ConvF(4.61, 4.61, 4.61); Calibrated: 2014/5/23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1379; Calibrated: 2014/5/19
- Phantom: ELI v5.0; Type: QDOVA002AA
- Measurement SW: DASY52, Version 52.8 (8);

**Configuration/802.11a 5240MHz Tablet-edge_2/Area Scan (7x15x1):** Measurement grid: dx=10mm, dy=10mm, Maximum value of SAR (measured) = 0.263 W/kg

**Configuration/802.11a 5240MHz Tablet-edge_2/Zoom Scan (7x7x6)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=2mm, Reference Value = 7.714 V/m; Power Drift = -0.18 dB

Peak SAR (extrapolated) = 0.607 W/kg

**SAR(1 g) = 0.133 W/kg; SAR(10 g) = 0.033 W/kg** Maximum value of SAR (measured) = 0.292 W/kg




0 dB = 0.292 W/kg = -5.35 dBW/kg

**Date/Time: 29/10/2014**

Test Laboratory: Cerpass Lab

DUT: AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM; Type: MaxiSys Elite

**Procedure Name: 802.11a 5745MHz Tablet-edge_1**

Communication System Band: 802.11a (20MHz); Frequency: 5745 MHz; Duty Cycle: 1:1

Medium parameters used: f = 5745 MHz; σ = 5.91 S/m; εr = 48.57; ρ = 1000 kg/m3

Phantom section: Flat Section; Tissue Temp (celsius) - 21℃

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5 Configuration:

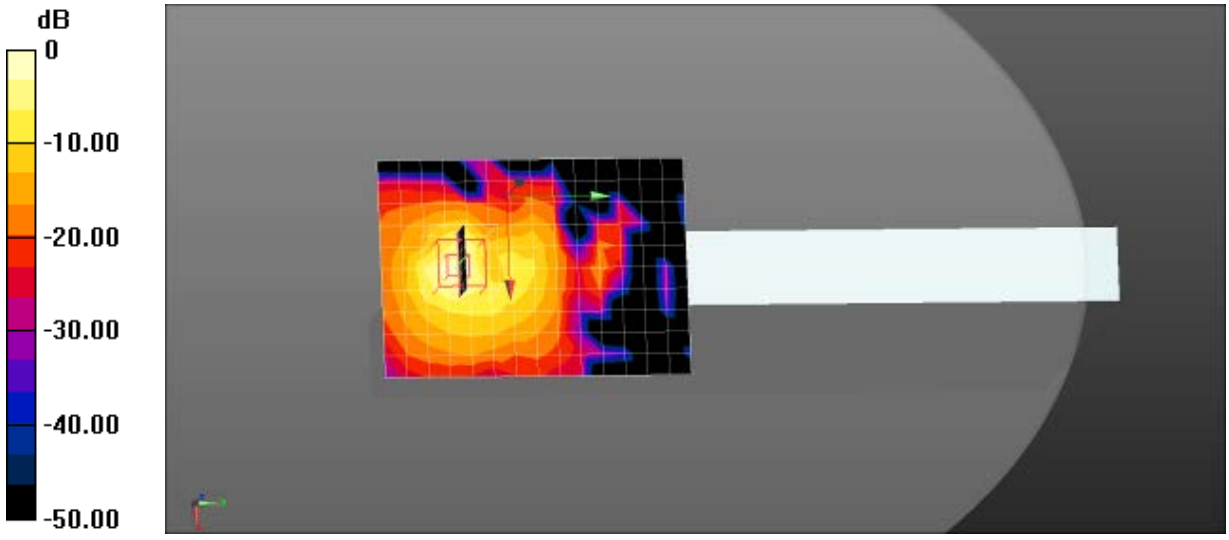
- Probe: EX3DV4 - SN3927; ConvF(4.25, 4.25, 4.25); Calibrated: 2014/5/23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1379; Calibrated: 2014/5/19
- Phantom: ELI v5.0; Type: QDOVA002AA
- Measurement SW: DASY52, Version 52.8 (8);

**Configuration/802.11a 5745MHz Tablet-edge_1/Area Scan (11x15x1):** Measurement grid: dx=10mm, dy=10mm, Maximum value of SAR (measured) = 1.92 W/kg

**Configuration/802.11a 5745MHz Tablet-edge_1/Zoom Scan (7x7x6)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=2mm, Reference Value = 15.03 V/m; Power Drift = -0.19 dB

Peak SAR (extrapolated) = 4.70 W/kg

**SAR(1 g) = 1.04 W/kg; SAR(10 g) = 0.303 W/kg** Maximum value of SAR (measured) = 2.23 W/kg




0 dB = 2.23 W/kg = 3.48 dBW/kg

**Date/Time: 29/10/2014**

Test Laboratory: Cerpass Lab

DUT: AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM; Type: MaxiSys Elite

**Procedure Name: 802.11a 5785MHz Tablet-edge_1**

Communication System Band: 802.11a (20MHz); Frequency: 5785 MHz; Duty Cycle: 1:1

Medium parameters used: f = 5785 MHz; σ = 6.02 S/m; εr = 48.51; ρ = 1000 kg/m3

Phantom section: Flat Section; Tissue Temp (celsius) - 21℃

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5 Configuration:

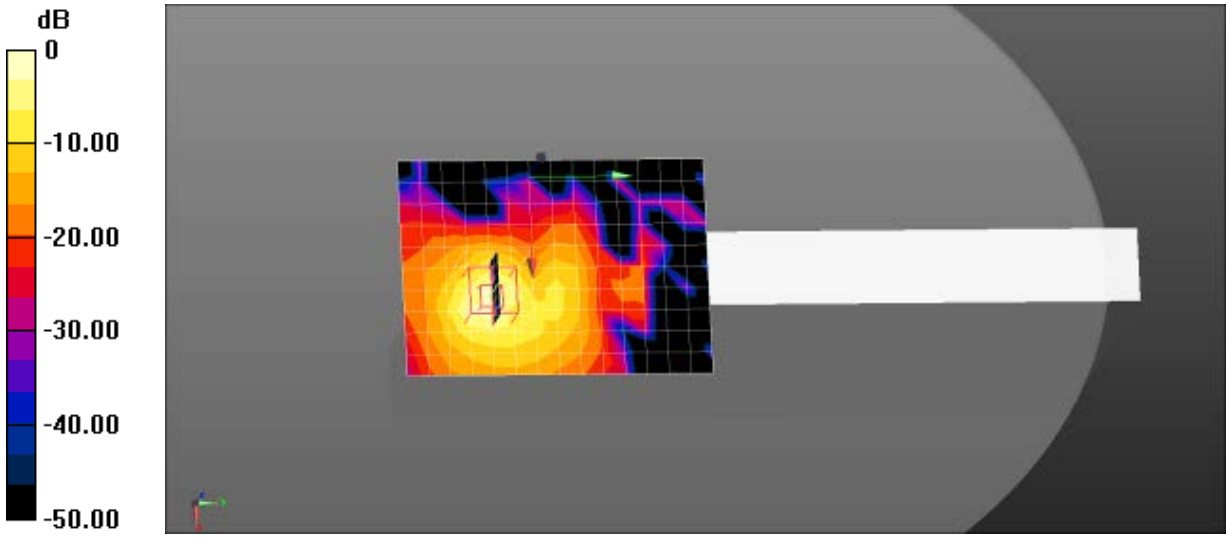
- Probe: EX3DV4 - SN3927; ConvF(4.25, 4.25, 4.25); Calibrated: 2014/5/23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1379; Calibrated: 2014/5/19
- Phantom: ELI v5.0; Type: QDOVA002AA
- Measurement SW: DASY52, Version 52.8 (8);

**Configuration/802.11a 5785MHz Tablet-edge_1/Area Scan (11x15x1):** Measurement grid: dx=10mm, dy=10mm, Maximum value of SAR (measured) = 1.80 W/kg

**Configuration/802.11a 5785MHz Tablet-edge_1/Zoom Scan (7x7x6)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=2mm, Reference Value = 3.453 V/m; Power Drift = -0.12 dB

Peak SAR (extrapolated) = 4.63 W/kg

**SAR(1 g) = 1.02 W/kg; SAR(10 g) = 0.298 W/kg** Maximum value of SAR (measured) = 2.15 W/kg




0 dB = 2.15 W/kg = 3.32 dBW/kg

**Date/Time: 29/10/2014**

Test Laboratory: Cerpass Lab

DUT: AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM; Type: MaxiSys Elite

**Procedure Name: 802.11a 5825MHz Mid Body-Back**

Communication System Band: 802.11a (20MHz); Frequency: 5825 MHz; Duty Cycle: 1:1

Medium parameters used: f = 5825 MHz; $\sigma$ = 6.11 S/m; $\varepsilon r$ = 48.4; $\rho$ = 1000 kg/m3

Phantom section: Flat Section; Tissue Temp (celsius) - 21℃

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5 Configuration:

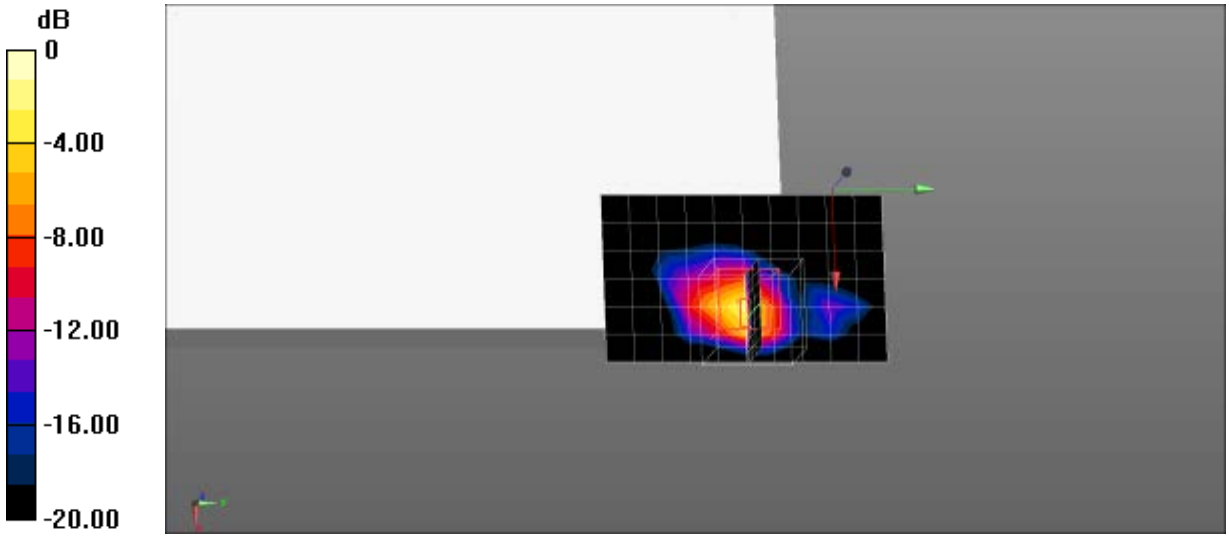
- Probe: EX3DV4 - SN3927; ConvF(4.25, 4.25, 4.25); Calibrated: 2014/5/23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1379; Calibrated: 2014/5/19
- Phantom: ELI v5.0; Type: QDOVA002AA
- Measurement SW: DASY52, Version 52.8 (8);

**Configuration/802.11a 5825MHz Mid Body-Back/Area Scan (7x11x1):** Measurement grid: dx=10mm, dy=10mm, Maximum value of SAR (measured) = 0.777 W/kg

**Configuration/802.11a 5825MHz Mid Body-Back/Zoom Scan (9x9x6)/Cube 0:**Measurement grid: dx=4mm, dy=4mm, dz=2mm, Reference Value = 11.72 V/m; Power Drift = -0.13 dB

Peak SAR (extrapolated) = 2.68 W/kg

**SAR(1 g) = 0.505 W/kg; SAR(10 g) = 0.122 W/kg** Maximum value of SAR (measured) = 1.23 W/kg




0 dB = 1.23 W/kg = 0.90 dBW/kg

**Date/Time: 29/10/2014**

Test Laboratory: Cerpass Lab

DUT: AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM; Type: MaxiSys Elite

**Procedure Name: 802.11a 5825MHz Tablet-edge_1**

Communication System Band: 802.11a (20MHz); Frequency: 5825 MHz; Duty Cycle: 1:1

Medium parameters used: f = 5825 MHz; σ = 6.11 S/m; εr = 48.4; ρ = 1000 kg/m3

Phantom section: Flat Section; Tissue Temp (celsius) - 21℃

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5 Configuration:

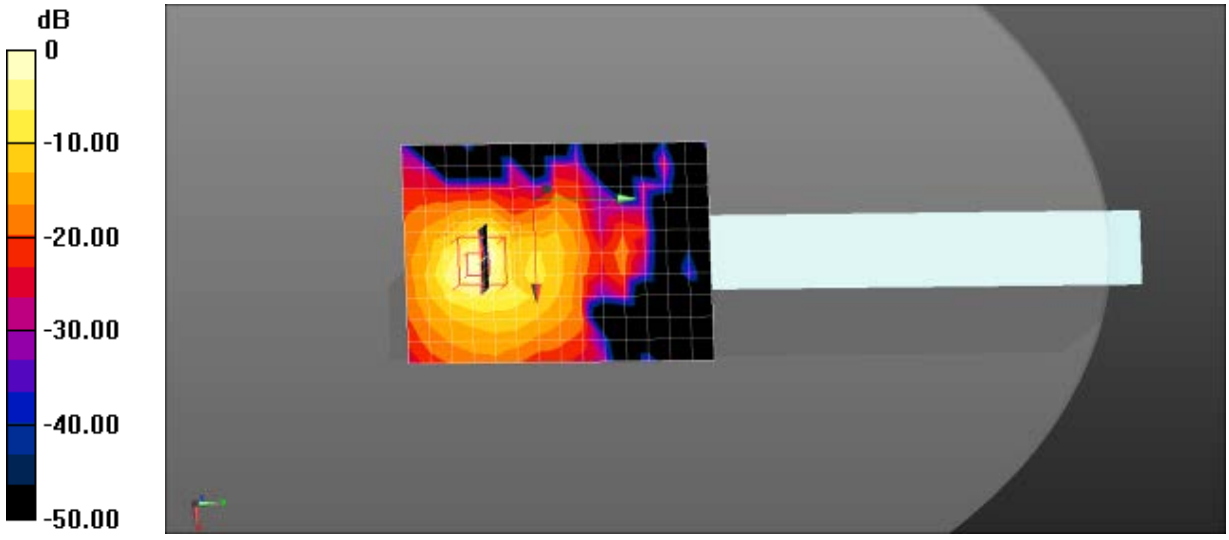
- Probe: EX3DV4 - SN3927; ConvF(4.25, 4.25, 4.25); Calibrated: 2014/5/23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1379; Calibrated: 2014/5/19
- Phantom: ELI v5.0; Type: QDOVA002AA
- Measurement SW: DASY52, Version 52.8 (8);

**Configuration/802.11a 5825MHz Tablet-edge_1/Area Scan (11x15x1):** Measurement grid: dx=10mm, dy=10mm, Maximum value of SAR (measured) = 1.97 W/kg

**Configuration/802.11a 5825MHz Tablet-edge_1/Zoom Scan (7x7x6)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=2mm, Reference Value = 12.33 V/m; Power Drift = -0.17 dB

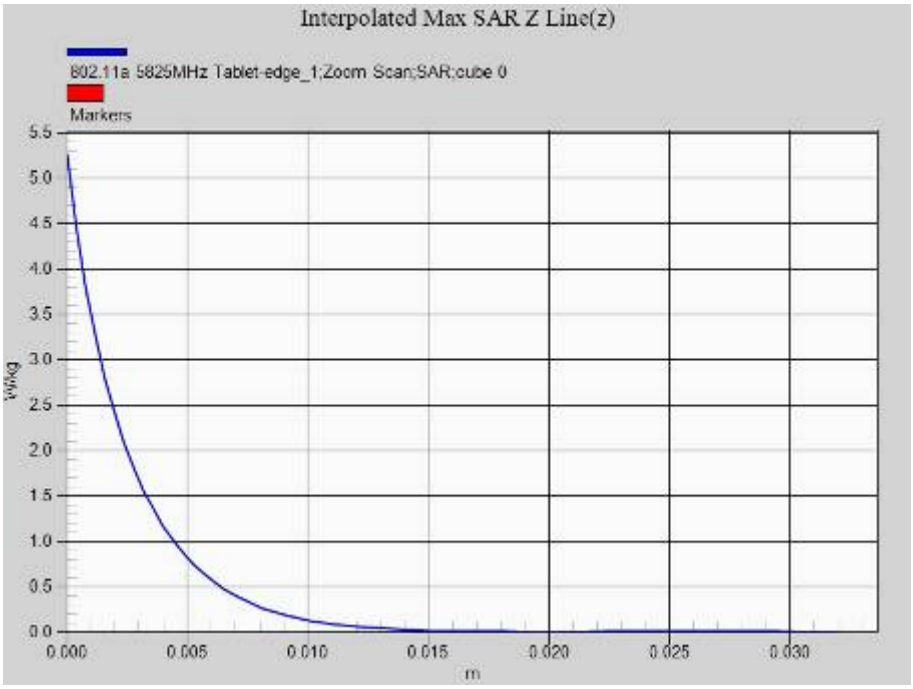
Peak SAR (extrapolated) = 5.26 W/kg

**SAR(1 g) = 1.13 W/kg; SAR(10 g) = 0.327 W/kg** Maximum value of SAR (measured) = 2.39 W/kg




0 dB = 2.39 W/kg = 3.78 dBW/kg

**Z-Axis Plot**


Interpolated Max SAR Z Line(z)
802.11a 5825MHz Tablet-edge_1;Zoom Scan;SAR;cube 0
Markers
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
W/kg
0.000
0.005
0.010
0.015
0.020
0.025
0.030
m

**Date/Time: 29/10/2014**

Test Laboratory: Cerpass Lab

DUT: AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM; Type: MaxiSys Elite

**Procedure Name: 802.11a 5825MHz Tablet-edge_2**

Communication System Band: 802.11a (20MHz); Frequency: 5825 MHz; Duty Cycle: 1:1

Medium parameters used: f = 5825 MHz; $\sigma$ = 6.11 S/m; $\varepsilon r$ = 48.4; $\rho$ = 1000 kg/m3

Phantom section: Flat Section; Tissue Temp (celsius) - 21℃

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5 Configuration:

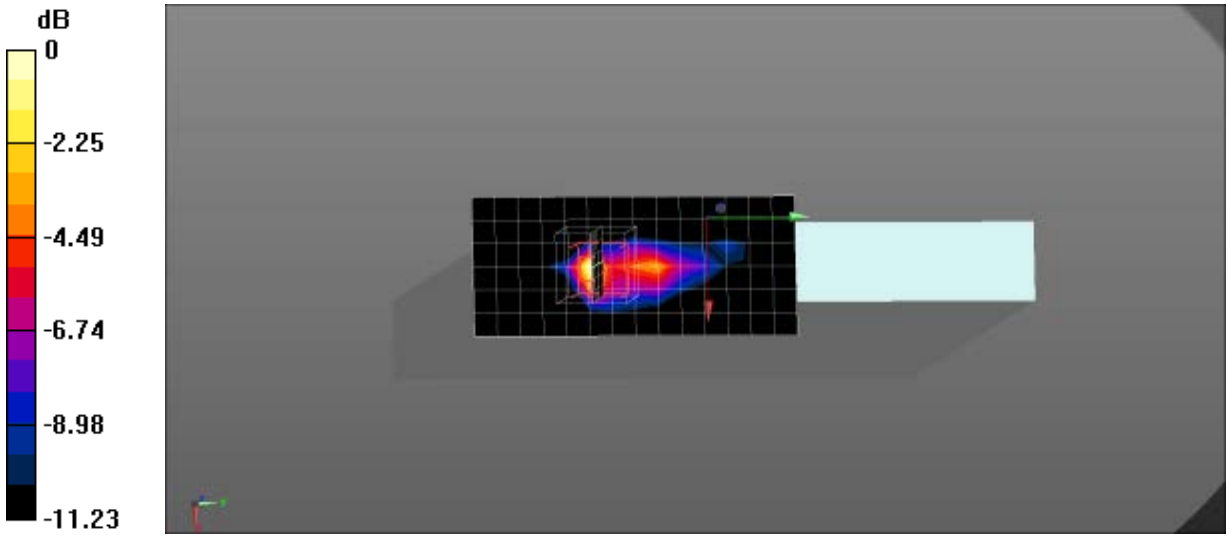
- Probe: EX3DV4 - SN3927; ConvF(4.25, 4.25, 4.25); Calibrated: 2014/5/23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1379; Calibrated: 2014/5/19
- Phantom: ELI v5.0; Type: QDOVA002AA
- Measurement SW: DASY52, Version 52.8 (8);

**Configuration/802.11a 5825MHz Tablet-edge_2/Area Scan (7x15x1):** Measurement grid: dx=10mm, dy=10mm, Maximum value of SAR (measured) = 0.258 W/kg

**Configuration/802.11a 5825MHz Tablet-edge_2/Zoom Scan (7x7x6)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=2mm, Reference Value = 6.201 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.438 W/kg

**SAR(1 g) = 0.109 W/kg; SAR(10 g) = 0.027 W/kg** Maximum value of SAR (measured) = 0.264 W/kg




0 dB = 0.264 W/kg = -5.78 dBW/kg

**Date/Time: 29/10/2014**

Test Laboratory: Cerpass Lab

DUT: AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM; Type: MaxiSys Elite

**Procedure Name: 802.11n(20MHz) 5180MHz Tablet-edge_1**

Communication System Band: 802.11n(20MHz); Frequency: 5180 MHz; Duty Cycle: 1:1

Medium parameters used: f = 5180 MHz; σ = 5.25 S/m; εr = 49.42; ρ = 1000 kg/m3

Phantom section: Flat Section; Tissue Temp (celsius) - 21℃

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

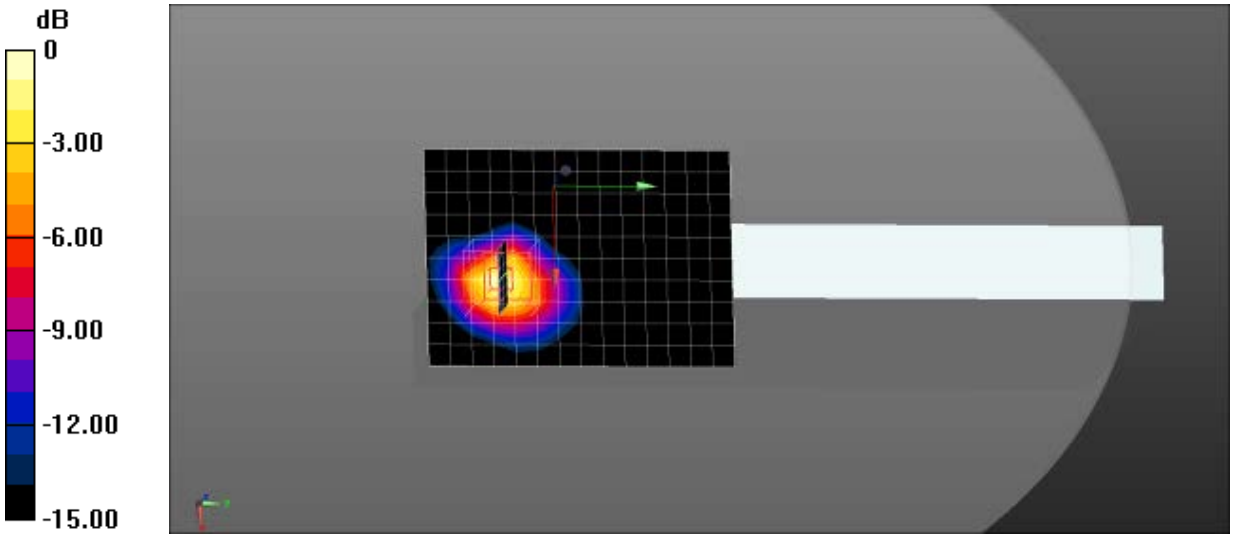
DASY5 Configuration:

- Probe: EX3DV4 - SN3927; ConvF(4.61, 4.61, 4.61); Calibrated: 2014/5/23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1379; Calibrated: 2014/5/19
- Phantom: ELI v5.0; Type: QDOVA002AA
- Measurement SW: DASY52, Version 52.8 (8);

**Configuration/802.11n(20MHz) 5180MHz Tablet-edge_1/Area Scan (11x15x1):** Measurement grid: dx=10mm, dy=10mm, Maximum value of SAR (measured) = 1.89 W/kg

**Configuration/802.11n(20MHz) 5180MHz Tablet-edge_1/Zoom Scan (7x7x6)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=2mm, Reference Value = 7.978 V/m; Power Drift = 0.14 dB, Peak SAR (extrapolated) = 3.93 W/kg

**SAR(1 g) = 1.02 W/kg; SAR(10 g) = 0.346 W/kg** Maximum value of SAR (measured) = 1.98 W/kg




0 dB = 1.98 W/kg = 2.97 dBW/kg

**Date/Time: 29/10/2014**

Test Laboratory: Cerpass Lab

DUT: AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM; Type: MaxiSys Elite

**Procedure Name: 802.11n(20MHz) 5240MHz Tablet-edge_1**

Communication System Band: 802.11n(20MHz); Frequency: 5240 MHz; Duty Cycle: 1:1

Medium parameters used: f = 5240 MHz; σ = 5.38 S/m; εr = 49.37; ρ = 1000 kg/m3

Phantom section: Flat Section; Tissue Temp (celsius) - 21℃

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

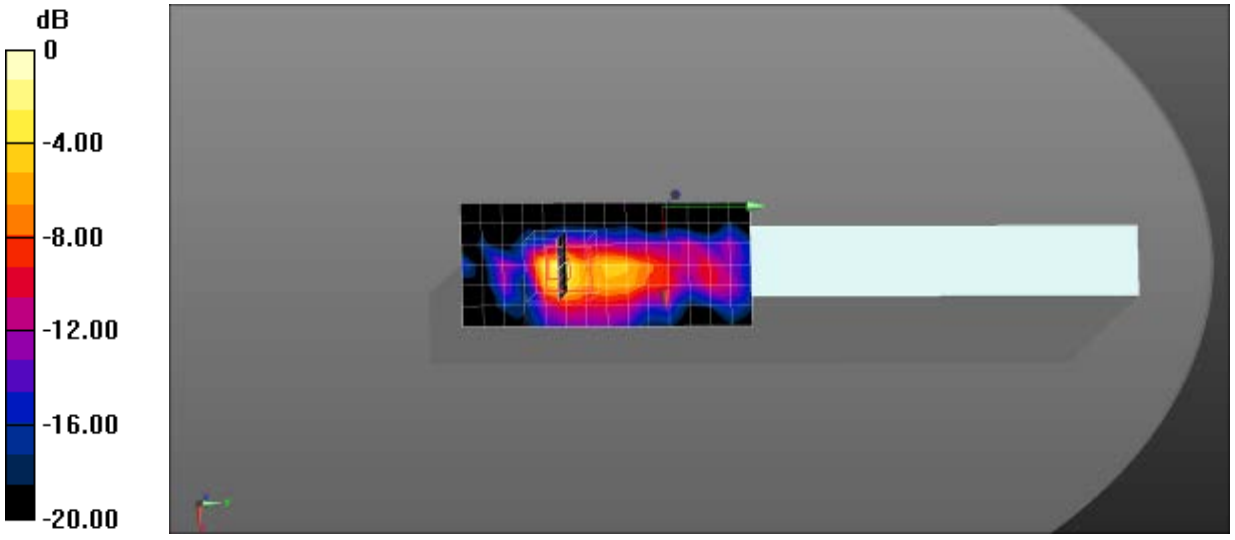
DASY5 Configuration:

- Probe: EX3DV4 - SN3927; ConvF(4.61, 4.61, 4.61); Calibrated: 2014/5/23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1379; Calibrated: 2014/5/19
- Phantom: ELI v5.0; Type: QDOVA002AA
- Measurement SW: DASY52, Version 52.8 (8);

**Configuration/802.11n(20MHz) 5240MHz Tablet-edge_1/Area Scan (7x15x1):** Measurement grid: dx=10mm, dy=10mm, Maximum value of SAR (measured) = 1.67 W/kg

**Configuration/802.11n(20MHz) 5240MHz Tablet-edge_1/Zoom Scan (7x7x6)/Cube 0:**Measurement grid: dx=5mm, dy=5mm, dz=2mm, Reference Value = 7.810 V/m; Power Drift = -0.09 dB, Peak SAR (extrapolated) = 5.56 W/kg

**SAR(1 g) = 1.06 W/kg; SAR(10 g) = 0.261 W/kg** Maximum value of SAR (measured) = 2.52 W/kg




0 dB = 2.52 W/kg = 4.01 dBW/kg

**Date/Time: 29/10/2014**

Test Laboratory: Cerpass Lab

DUT: AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM; Type: MaxiSys Elite

**Procedure Name: 802.1n(20MHz) 5745MHz Tablet-edge_1**

Communication System Band: 802.11n(20MHz); Frequency: 5745 MHz; Duty Cycle: 1:1

Medium parameters used: f = 5745 MHz; σ = 5.91 S/m; εr = 48.57; ρ = 1000 kg/m3

Phantom section: Flat Section; Tissue Temp (celsius) - 21℃

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

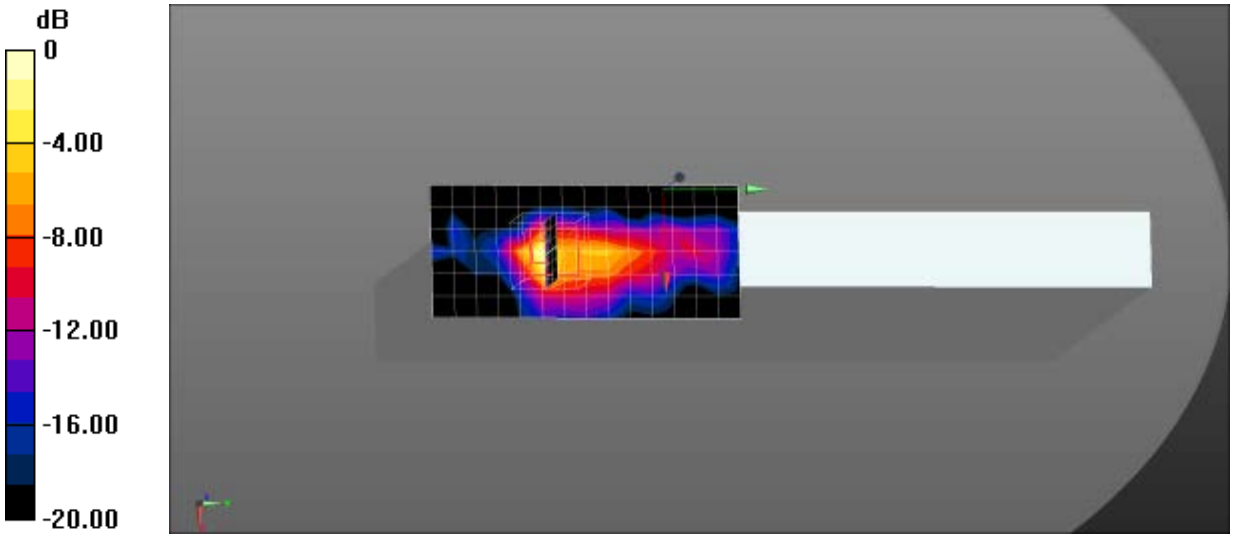
DASY5 Configuration:

- Probe: EX3DV4 - SN3927; ConvF(4.25, 4.25, 4.25); Calibrated: 2014/5/23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1379; Calibrated: 2014/5/19
- Phantom: ELI v5.0; Type: QDOVA002AA
- Measurement SW: DASY52, Version 52.8 (8);

**Configuration/802.1n(20MHz) 5745MHz Tablet-edge_1/Area Scan (7x15x1):** Measurement grid: dx=10mm, dy=10mm, Maximum value of SAR (measured) = 2.37 W/kg

**Configuration/802.1n(20MHz) 5745MHz Tablet-edge_1/Zoom Scan (7x7x6)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=2mm, Reference Value = 5.266 V/m; Power Drift = -0.11 dB, Peak SAR (extrapolated) = 5.77 W/kg

**SAR(1 g) = 1.04 W/kg; SAR(10 g) = 0.261 W/kg** Maximum value of SAR (measured) = 2.42 W/kg




0 dB = 2.42 W/kg = 3.84 dBW/kg

**Date/Time: 29/10/2014**

Test Laboratory: Cerpass Lab

DUT: AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM; Type: MaxiSys Elite

**Procedure Name: 802.11n(20MHz) 5785MHz Tablet-edge_1**

Communication System Band: 802.11n(20MHz); Frequency: 5785 MHz; Duty Cycle: 1:1

Medium parameters used: f = 5785 MHz; σ = 6.02 S/m; εr = 48.51; ρ = 1000 kg/m3

Phantom section: Flat Section; Tissue Temp (celsius) - 21℃

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

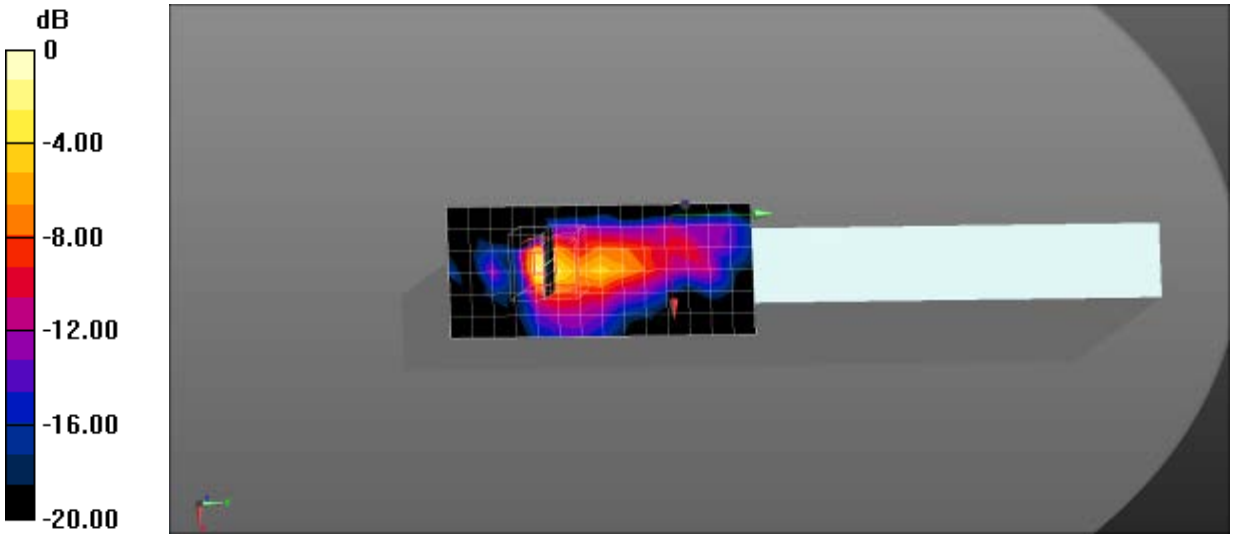
DASY5 Configuration:

- Probe: EX3DV4 - SN3927; ConvF(4.25, 4.25, 4.25); Calibrated: 2014/5/23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1379; Calibrated: 2014/5/19
- Phantom: ELI v5.0; Type: QDOVA002AA
- Measurement SW: DASY52, Version 52.8 (8);

**Configuration/802.11n(20MHz) 5785MHz Tablet-edge_1/Area Scan (7x15x1):** Measurement grid: dx=10mm, dy=10mm, Maximum value of SAR (measured) = 1.59 W/kg

**Configuration/802.11n(20MHz) 5785MHz Tablet-edge_1/Zoom Scan (7x7x6)/Cube 0:**Measurement grid: dx=5mm, dy=5mm, dz=2mm, Reference Value = 7.219 V/m; Power Drift = -0.10 dB, Peak SAR (extrapolated) = 4.17 W/kg

**SAR(1 g) = 0.998 W/kg; SAR(10 g) = 0.238 W/kg** Maximum value of SAR (measured) = 2.35 W/kg




0 dB = 2.35 W/kg = 3.71 dBW/kg

**Date/Time: 29/10/2014**

Test Laboratory: Cerpass Lab

DUT: AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM; Type: MaxiSys Elite

**Procedure Name: 802.11n(20MHz) 5825MHz Tablet-edge_1**

Communication System Band: 802.11n(20MHz); Frequency: 5825 MHz; Duty Cycle: 1:1

Medium parameters used: f = 5825 MHz; σ = 6.11 S/m; εr = 48.4; ρ = 1000 kg/m3

Phantom section: Flat Section; Tissue Temp (celsius) - 21℃

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

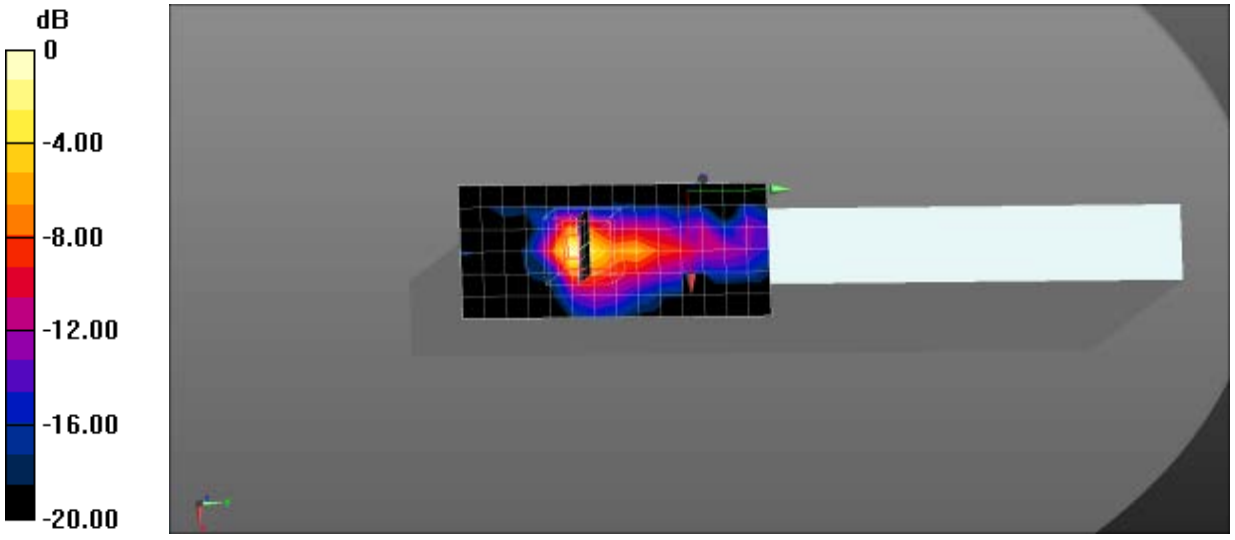
DASY5 Configuration:

- Probe: EX3DV4 - SN3927; ConvF(4.25, 4.25, 4.25); Calibrated: 2014/5/23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1379; Calibrated: 2014/5/19
- Phantom: ELI v5.0; Type: QDOVA002AA
- Measurement SW: DASY52, Version 52.8 (8);

**Configuration/802.11n(20MHz) 5825MHz Tablet-edge_1/Area Scan (7x15x1):** Measurement grid: dx=10mm, dy=10mm, Maximum value of SAR (measured) = 2.21 W/kg

**Configuration/802.11n(20MHz) 5825MHz Tablet-edge_1/Zoom Scan (7x7x6)/Cube 0:**Measurement grid: dx=5mm, dy=5mm, dz=2mm, Reference Value = 5.137 V/m; Power Drift = -0.13 dB, Peak SAR (extrapolated) = 4.20 W/kg

**SAR(1 g) = 1 W/kg; SAR(10 g) = 0.244 W/kg** Maximum value of SAR (measured) = 2.30 W/kg




0 dB = 2.30 W/kg = 3.62 dBW/kg

**Date/Time: 29/10/2014**

Test Laboratory: Cerpass Lab

DUT: AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM; Type: MaxiSys Elite

**Procedure Name: 802.11n(40MHz) 5190MHz Tablet-edge_1**

Communication System Band: 802.11n(40MHz); Frequency: 5190 MHz; Duty Cycle: 1:1

Medium parameters used: f = 5190 MHz; σ = 5.26 S/m; εr = 49.4; ρ = 1000 kg/m3

Phantom section: Flat Section; Tissue Temp (celsius) - 21℃

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

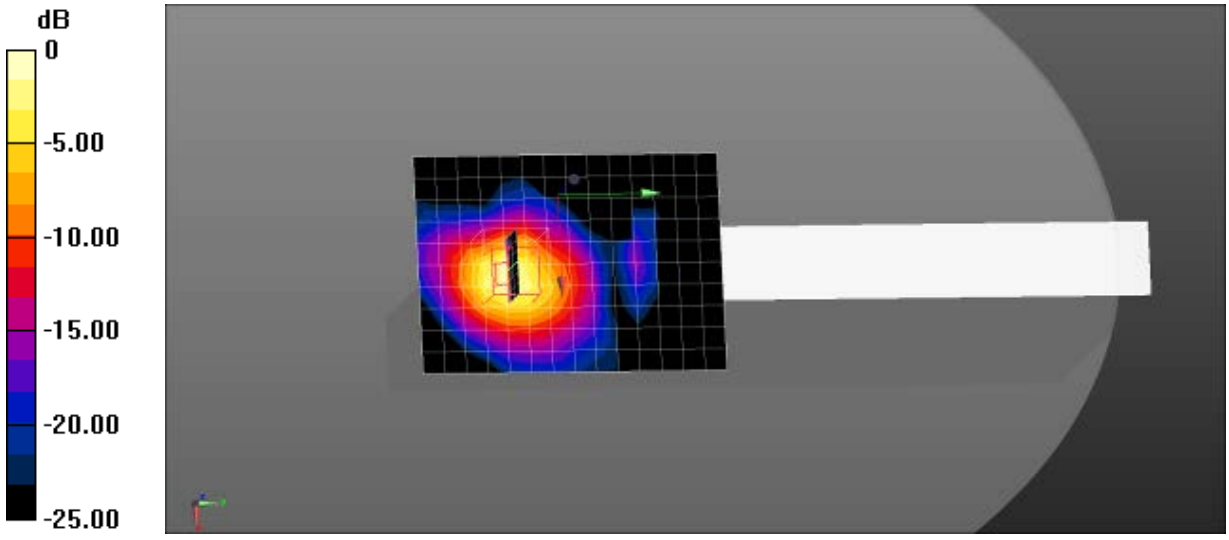
DASY5 Configuration:

- Probe: EX3DV4 - SN3927; ConvF(4.61, 4.61, 4.61); Calibrated: 2014/5/23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1379; Calibrated: 2014/5/19
- Phantom: ELI v5.0; Type: QDOVA002AA
- Measurement SW: DASY52, Version 52.8 (8);

**Configuration/802.11n(40MHz) 5190MHz Tablet-edge_1/Area Scan (11x15x1):** Measurement grid: dx=10mm, dy=10mm, Maximum value of SAR (measured) = 1.57 W/kg

**Configuration/802.11n(40MHz) 5190MHz Tablet-edge_1/Zoom Scan (7x7x6)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=2mm, Reference Value = 9.414 V/m; Power Drift = -0.11 dB, Peak SAR (extrapolated) = 4.01 W/kg

**SAR(1 g) = 0.999 W/kg; SAR(10 g) = 0.337 W/kg** Maximum value of SAR (measured) = 1.97 W/kg




0 dB = 1.97 W/kg = 2.94 dBW/kg

**Date/Time: 29/10/2014**

Test Laboratory: Cerpass Lab

DUT: AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM; Type: MaxiSys Elite

**Procedure Name: 802.11n(40MHz) 5230MHz Tablet-edge_1**

Communication System Band: 802.11n(40MHz); Frequency: 5230 MHz; Duty Cycle: 1:1

Medium parameters used: f = 5230 MHz; σ = 5.37 S/m; εr = 49.38; ρ = 1000 kg/m3

Phantom section: Flat Section; Tissue Temp (celsius) - 21℃

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

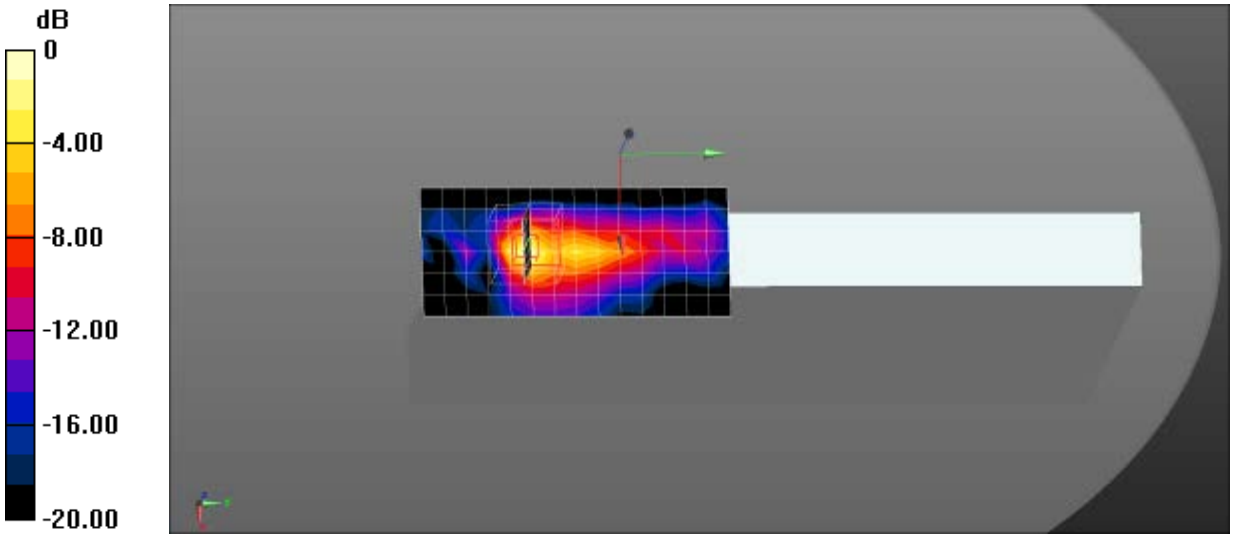
DASY5 Configuration:

- Probe: EX3DV4 - SN3927; ConvF(4.61, 4.61, 4.61); Calibrated: 2014/5/23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1379; Calibrated: 2014/5/19
- Phantom: ELI v5.0; Type: QDOVA002AA
- Measurement SW: DASY52, Version 52.8 (8);

**Configuration/802.11n(40MHz) 5230MHz Tablet-edge_1/Area Scan (7x15x1):** Measurement grid: dx=10mm, dy=10mm, Maximum value of SAR (measured) = 1.85 W/kg

**Configuration/802.11n(40MHz) 5230MHz Tablet-edge_1/Zoom Scan (7x7x6)/Cube 0:**Measurement grid: dx=5mm, dy=5mm, dz=2mm, Reference Value = 9.419 V/m; Power Drift = -0.03 dB, Peak SAR (extrapolated) = 4.89 W/kg

**SAR(1 g) = 0.987 W/kg; SAR(10 g) = 0.246 W/kg** Maximum value of SAR (measured) = 2.24 W/kg




0 dB = 2.24 W/kg = 3.50 dBW/kg

**Date/Time: 29/10/2014**

Test Laboratory: Cerpass Lab

DUT: AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM; Type: MaxiSys Elite

**Procedure Name: 802.11n(40MHz) 5755MHz Tablet-edge_1**

Communication System Band: 802.11n(40MHz); Frequency: 5755 MHz; Duty Cycle: 1:1

Medium parameters used: f = 5755 MHz; σ = 5.92 S/m; εr = 48.56; ρ = 1000 kg/m3

Phantom section: Flat Section; Tissue Temp (celsius) - 21℃

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

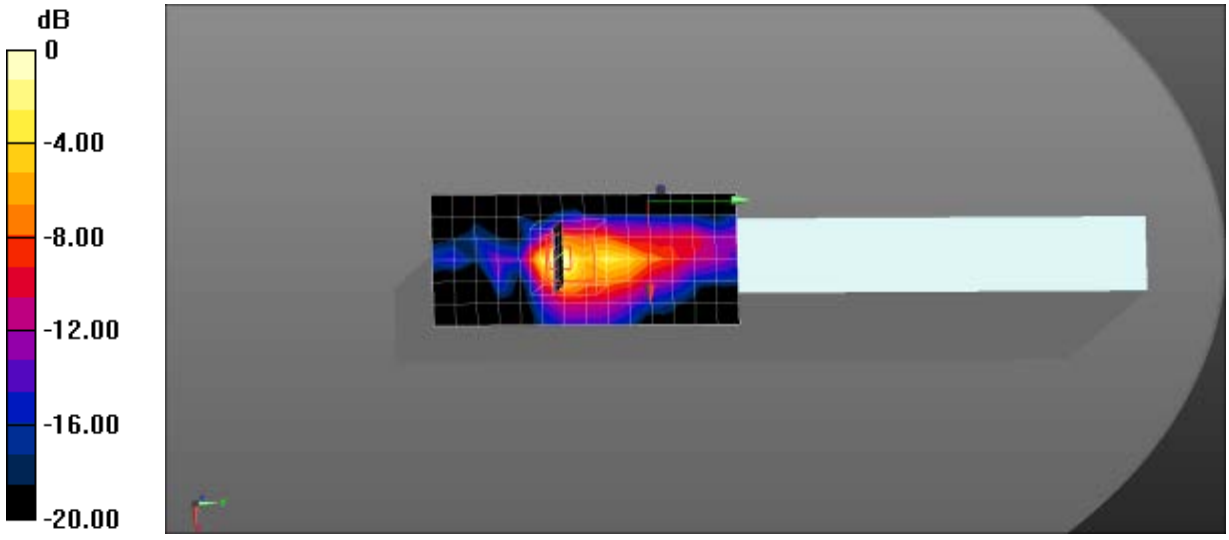
DASY5 Configuration:

- Probe: EX3DV4 - SN3927; ConvF(4.25, 4.25, 4.25); Calibrated: 2014/5/23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1379; Calibrated: 2014/5/19
- Phantom: ELI v5.0; Type: QDOVA002AA
- Measurement SW: DASY52, Version 52.8 (8);

**Configuration/802.11n(40MHz) 5755MHz Tablet-edge_1/Area Scan (7x15x1):** Measurement grid: dx=10mm, dy=10mm, Maximum value of SAR (measured) = 2.00 W/kg

**Configuration/802.11n(40MHz) 5755MHz Tablet-edge_1/Zoom Scan (7x7x6)/Cube 0:**Measurement grid: dx=5mm, dy=5mm, dz=2mm, Reference Value = 6.273 V/m; Power Drift = -0.02 dB, Peak SAR (extrapolated) = 4.20 W/kg

**SAR(1 g) = 0.945 W/kg; SAR(10 g) = 0.238 W/kg** Maximum value of SAR (measured) = 2.05 W/kg




0 dB = 2.05 W/kg = 3.12 dBW/kg

**Date/Time: 29/10/2014**

Test Laboratory: Cerpass Lab

DUT: AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM; Type: MaxiSys Elite

**Procedure Name: 802.11n(40MHz) 5795MHz Tablet-edge_1**

Communication System Band: 802.11n(40MHz); Frequency: 5795 MHz; Duty Cycle: 1:1

Medium parameters used: f = 5795 MHz; σ = 6.04 S/m; εr = 48.49; ρ = 1000 kg/m3

Phantom section: Flat Section; Tissue Temp (celsius) - 21℃

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

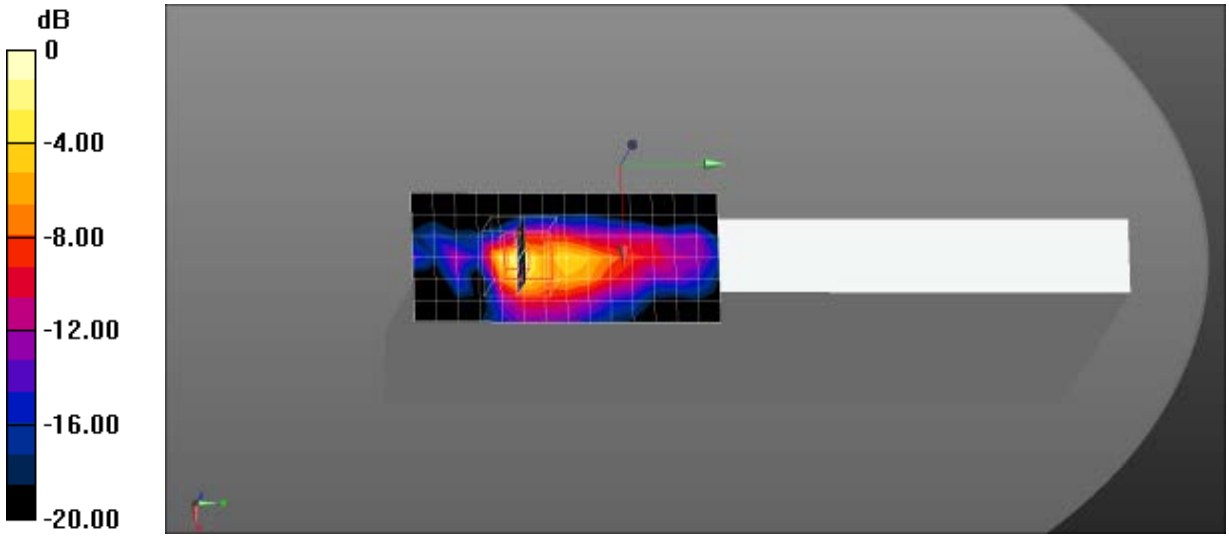
DASY5 Configuration:

- Probe: EX3DV4 - SN3927; ConvF(4.25, 4.25, 4.25); Calibrated: 2014/5/23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1379; Calibrated: 2014/5/19
- Phantom: ELI v5.0; Type: QDOVA002AA
- Measurement SW: DASY52, Version 52.8 (8);

**Configuration/802.11n(40MHz) 5795MHz Tablet-edge_1/Area Scan (7x15x1):** Measurement grid: dx=10mm, dy=10mm, Maximum value of SAR (measured) = 1.75 W/kg

**Configuration/802.11n(40MHz) 5795MHz Tablet-edge_1/Zoom Scan (7x7x6)/Cube 0:**Measurement grid: dx=5mm, dy=5mm, dz=2mm, Reference Value = 8.112 V/m; Power Drift = -0.05 dB, Peak SAR (extrapolated) = 4.33 W/kg

**SAR(1 g) = 0.956 W/kg; SAR(10 g) = 0.241 W/kg** Maximum value of SAR (measured) = 2.20 W/kg




0 dB = 2.20 W/kg = 3.42 dBW/kg

**Date/Time: 29/10/2014**

Test Laboratory: Cerpass Lab

DUT: AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM; Type: MaxiSys Elite

**Procedure Name: 802.11ac(20MHz) 5180MHz Tablet-edge_1**

Communication System Band: 802.11ac(20M); Frequency: 5180 MHz; Duty Cycle: 1:1

Medium parameters used: f = 5180 MHz; σ = 5.25 S/m; εr = 49.42; ρ = 1000 kg/m3

Phantom section: Flat Section; Tissue Temp (celsius) - 21℃

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

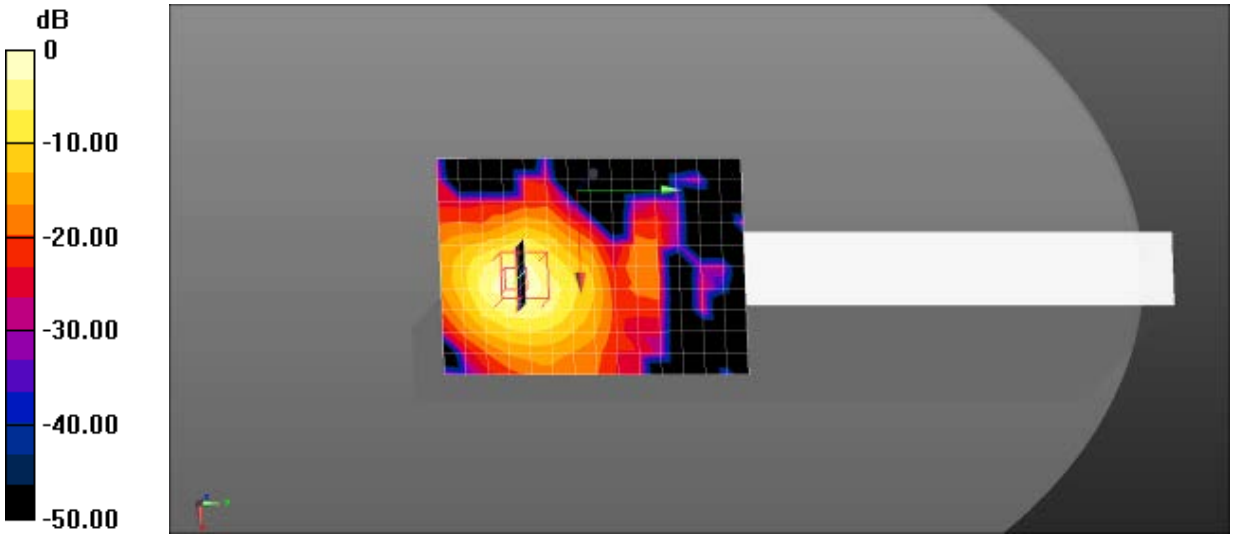
DASY5 Configuration:

- Probe: EX3DV4 - SN3927; ConvF(4.61, 4.61, 4.61); Calibrated: 2014/5/23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1379; Calibrated: 2014/5/19
- Phantom: ELI v5.0; Type: QDOVA002AA
- Measurement SW: DASY52, Version 52.8 (8);

**Configuration/802.11ac(20MHz) 5180MHz Tablet-edge_1/Area Scan (11x15x1):** Measurement grid: dx=10mm, dy=10mm, Maximum value of SAR (measured) = 1.73 W/kg

**Configuration/802.11ac(20MHz) 5180MHz Tablet-edge_1/Zoom Scan (7x7x6)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=2mm, Reference Value = 10.57 V/m; Power Drift = 0.10 dB, Peak SAR (extrapolated) = 3.96 W/kg

**SAR(1 g) = 1 W/kg; SAR(10 g) = 0.337 W/kg** Maximum value of SAR (measured) = 1.93 W/kg




0 dB = 1.93 W/kg = 2.86 dBW/kg

**Date/Time: 29/10/2014**

Test Laboratory: Cerpass Lab

DUT: AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM; Type: MaxiSys Elite

**Procedure Name: 802.11ac 5240MHz Tablet-edge_1**

Communication System Band: 802.11ac(20MHz); Frequency: 5240 MHz; Duty Cycle: 1:1

Medium parameters used: f = 5240 MHz; σ = 5.38 S/m; εr = 49.37; ρ = 1000 kg/m3

Phantom section: Flat Section; Tissue Temp (celsius) - 21℃

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5 Configuration:

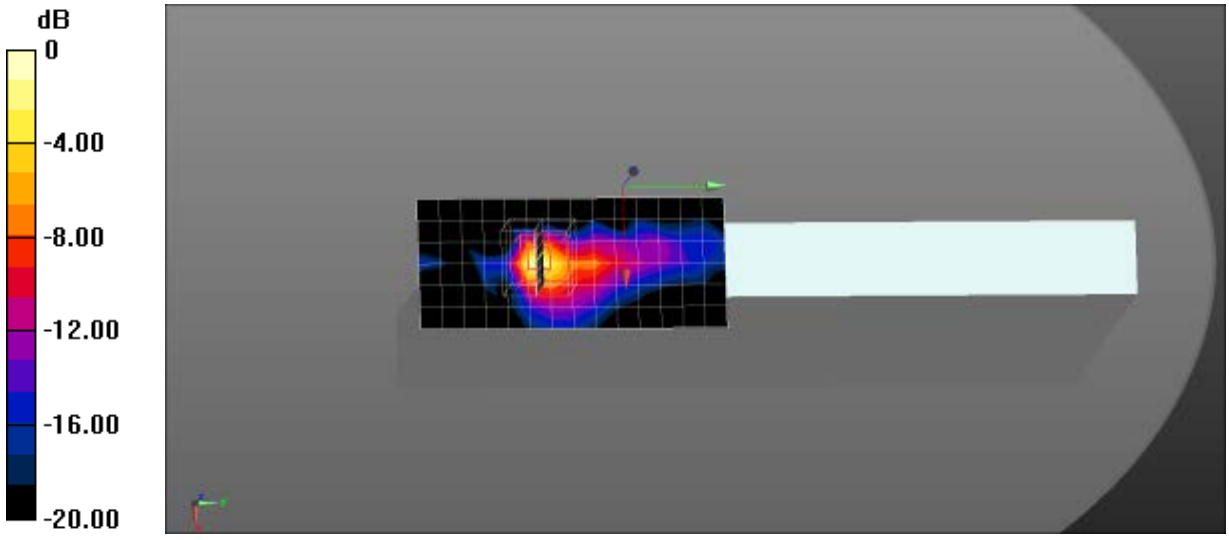
- Probe: EX3DV4 - SN3927; ConvF(4.61, 4.61, 4.61); Calibrated: 2014/5/23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1379; Calibrated: 2014/5/19
- Phantom: ELI v5.0; Type: QDOVA002AA
- Measurement SW: DASY52, Version 52.8 (8);

**Configuration/802.11ac 5240MHz Tablet-edge_1/Area Scan (7x15x1):** Measurement grid: dx=10mm, dy=10mm, Maximum value of SAR (measured) = 1.98 W/kg

**Configuration/802.11ac 5240MHz Tablet-edge_1/Zoom Scan (7x7x6)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=2mm, Reference Value = 6.320 V/m; Power Drift = -0.17 dB

Peak SAR (extrapolated) = 4.64 W/kg

**SAR(1 g) = 1.03 W/kg; SAR(10 g) = 0.248 W/kg** Maximum value of SAR (measured) = 2.34 W/kg




0 dB = 2.34 W/kg = 3.69 dBW/kg

**Date/Time: 29/10/2014**

Test Laboratory: Cerpass Lab

DUT: AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM; Type: MaxiSys Elite

**Procedure Name: 802.11ac(20MHz) 5745MHz Tablet-edge_1**

Communication System Band: 802.11ac(20MHz); Frequency: 5745 MHz; Duty Cycle: 1:1

Medium parameters used: f = 5745 MHz; σ = 5.91 S/m; εr = 48.57; ρ = 1000 kg/m3

Phantom section: Flat Section; Tissue Temp (celsius) - 21℃

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

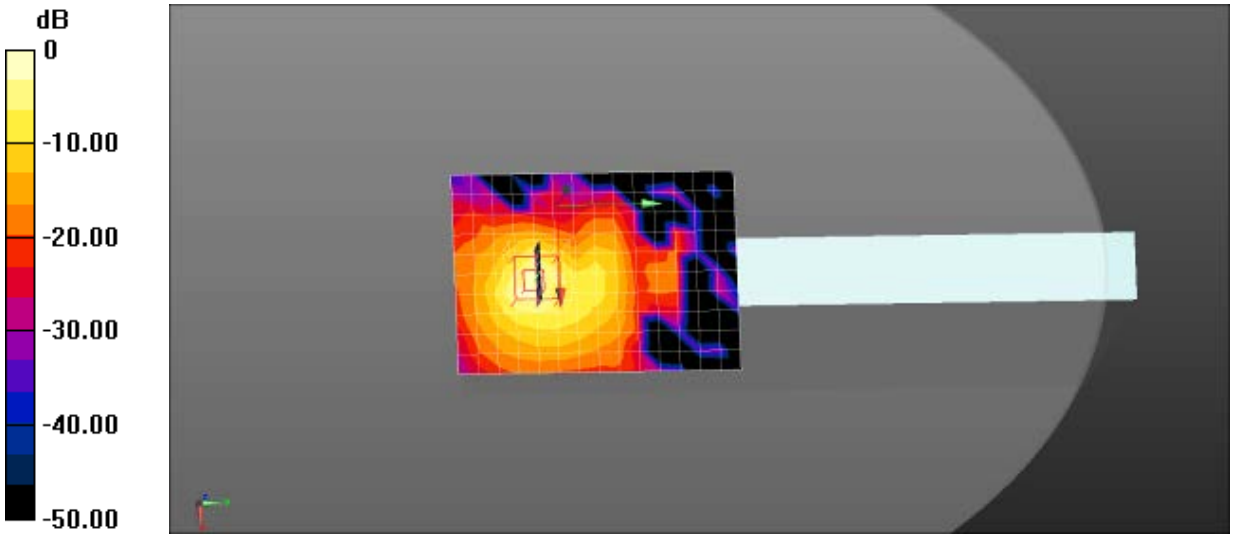
DASY5 Configuration:

- Probe: EX3DV4 - SN3927; ConvF(4.25, 4.25, 4.25); Calibrated: 2014/5/23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1379; Calibrated: 2014/5/19
- Phantom: ELI v5.0; Type: QDOVA002AA
- Measurement SW: DASY52, Version 52.8 (8);

**Configuration/802.11ac(20MHz) 5745MHz Tablet-edge_1/Area Scan (11x15x1):** Measurement grid: dx=10mm, dy=10mm, Maximum value of SAR (measured) = 1.96 W/kg

**Configuration/802.11ac(20MHz) 5745MHz Tablet-edge_1/Zoom Scan (7x7x6)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=2mm, Reference Value = 7.894 V/m; Power Drift = 0.03 dB, Peak SAR (extrapolated) = 5.15 W/kg

**SAR(1 g) = 1.12 W/kg; SAR(10 g) = 0.327 W/kg** Maximum value of SAR (measured) = 2.36 W/kg




0 dB = 2.36 W/kg = 3.73 dBW/kg

**Date/Time: 29/10/2014**

Test Laboratory: Cerpass Lab

DUT: AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM; Type: MaxiSys Elite

**Procedure Name: 802.11ac(20MHz) 5785MHz Tablet-edge_1**

Communication System Band: 802.11ac(20MHz); Frequency: 5785 MHz; Duty Cycle: 1:1

Medium parameters used: f = 5785 MHz; σ = 6.02 S/m; εr = 48.51; ρ = 1000 kg/m3

Phantom section: Flat Section; Tissue Temp (celsius) - 21℃

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

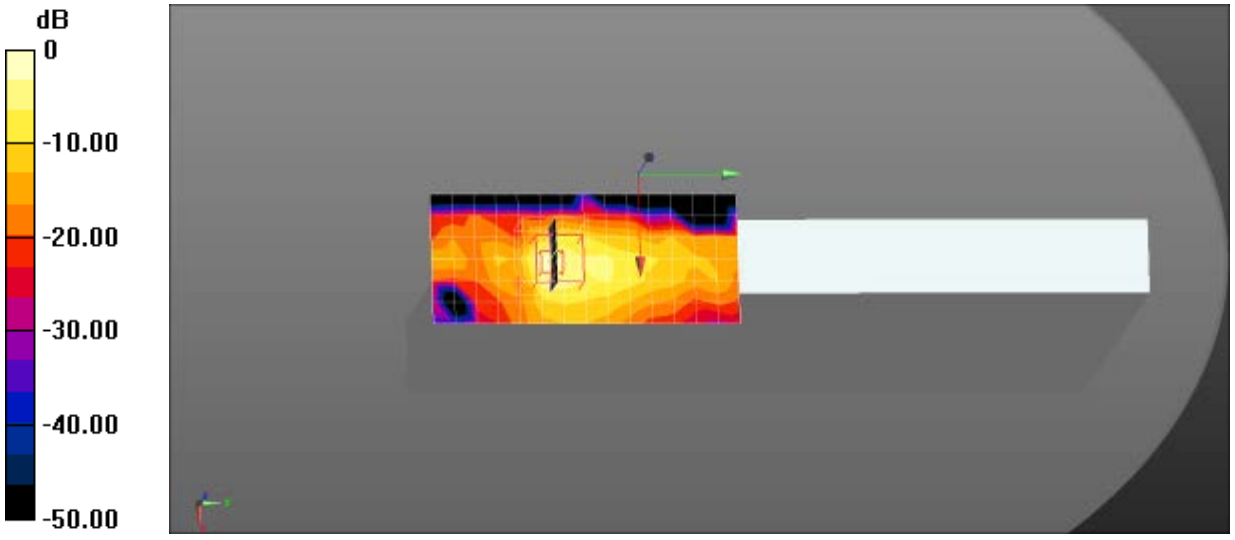
DASY5 Configuration:

- Probe: EX3DV4 - SN3927; ConvF(4.25, 4.25, 4.25); Calibrated: 2014/5/23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1379; Calibrated: 2014/5/19
- Phantom: ELI v5.0; Type: QDOVA002AA
- Measurement SW: DASY52, Version 52.8 (8);

**Configuration/802.11ac(20MHz) 5785MHz Tablet-edge_1/Area Scan (7x15x1):** Measurement grid: dx=10mm, dy=10mm, Maximum value of SAR (measured) = 1.79 W/kg

**Configuration/802.11ac(20MHz) 5785MHz Tablet-edge_1/Zoom Scan (7x7x6)/Cube 0:**Measurement grid: dx=5mm, dy=5mm, dz=2mm, Reference Value = 6.769 V/m; Power Drift = -0.05 dB, Peak SAR (extrapolated) = 4.78 W/kg

**SAR(1 g) = 1.04 W/kg; SAR(10 g) = 0.259 W/kg** Maximum value of SAR (measured) = 2.39 W/kg




0 dB = 2.39 W/kg = 3.78 dBW/kg

**Date/Time: 29/10/2014**

Test Laboratory: Cerpass Lab

DUT: AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM; Type: MaxiSys Elite

**Procedure Name: 802.11ac(20MHz) 5825MHz Tablet-edge_1**

Communication System Band: 802.11ac(20MHz); Frequency: 5825 MHz; Duty Cycle: 1:1

Medium parameters used: f = 5825 MHz; σ = 6.11 S/m; εr = 48.4; ρ = 1000 kg/m3

Phantom section: Flat Section; Tissue Temp (celsius) - 21℃

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

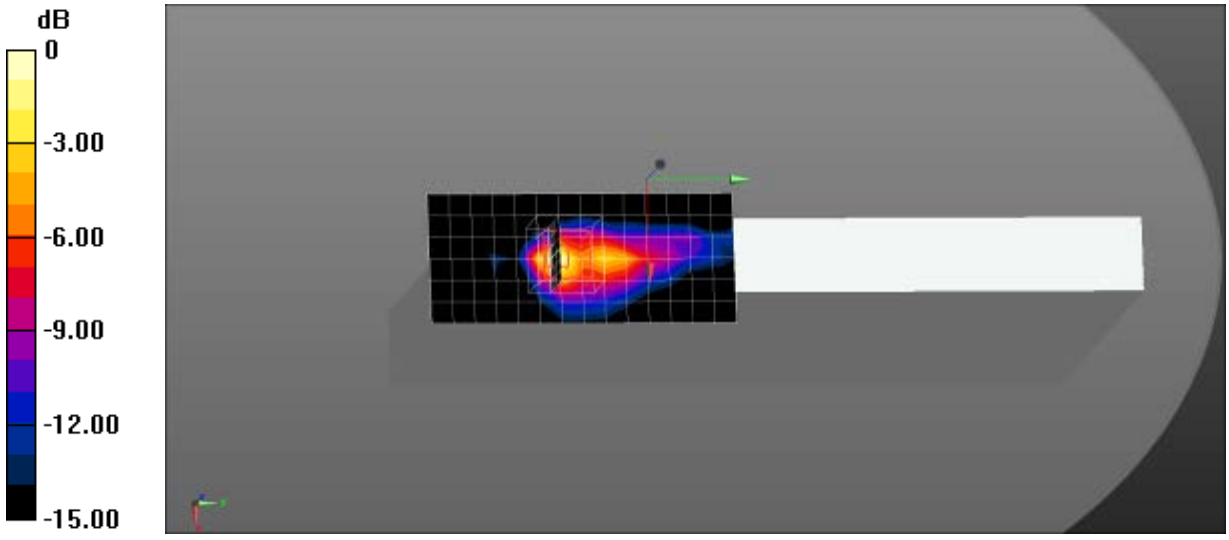
DASY5 Configuration:

- Probe: EX3DV4 - SN3927; ConvF(4.25, 4.25, 4.25); Calibrated: 2014/5/23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1379; Calibrated: 2014/5/19
- Phantom: ELI v5.0; Type: QDOVA002AA
- Measurement SW: DASY52, Version 52.8 (8);

**Configuration/802.11ac(20MHz) 5825MHz Tablet-edge_1/Area Scan (7x15x1):** Measurement grid: dx=10mm, dy=10mm, Maximum value of SAR (measured) = 2.02 W/kg

**Configuration/802.11ac(20MHz) 5825MHz Tablet-edge_1/Zoom Scan (7x7x6)/Cube 0:**Measurement grid: dx=5mm, dy=5mm, dz=2mm, Reference Value = 6.345 V/m; Power Drift = -0.02 dB, Peak SAR (extrapolated) = 4.23 W/kg

**SAR(1 g) = 0.952 W/kg; SAR(10 g) = 0.240 W/kg** Maximum value of SAR (measured) = 2.06 W/kg




0 dB = 2.06 W/kg = 3.14 dBW/kg

**Date/Time: 29/10/2014**

Test Laboratory: Cerpass Lab

DUT: AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM; Type: MaxiSys Elite

**Procedure Name: 802.11ac(40MHz) 5190MHz Tablet-edge_1**

Communication System Band: 802.11ac(40MHz); Frequency: 5190 MHz; Duty Cycle: 1:1

Medium parameters used: f = 5190 MHz; σ = 5.26 S/m; εr = 49.4; ρ = 1000 kg/m3

Phantom section: Flat Section; Tissue Temp (celsius) - 21℃

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

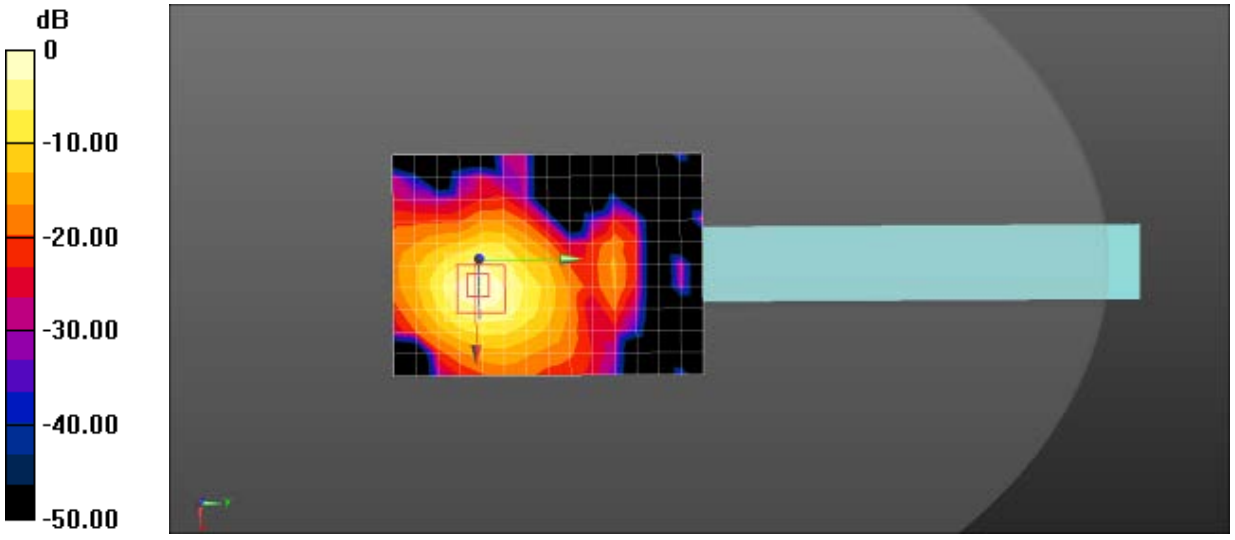
DASY5 Configuration:

- Probe: EX3DV4 - SN3927; ConvF(4.61, 4.61, 4.61); Calibrated: 2014/5/23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1379; Calibrated: 2014/5/19
- Phantom: ELI v5.0; Type: QDOVA002AA
- Measurement SW: DASY52, Version 52.8 (8);

**Configuration/802.11ac(40MHz) 5190MHz Tablet-edge_1/Area Scan (11x15x1):** Measurement grid: dx=10mm, dy=10mm, Maximum value of SAR (measured) = 2.14 W/kg

**Configuration/802.11ac(40MHz) 5190MHz Tablet-edge_1/Zoom Scan (7x7x6)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=2mm, Reference Value = 7.050 V/m; Power Drift = -0.09 dB, Peak SAR (extrapolated) = 4.36 W/kg

**SAR(1 g) = 1.08 W/kg; SAR(10 g) = 0.378 W/kg** Maximum value of SAR (measured) = 2.23 W/kg




0 dB = 2.23 W/kg = 3.48 dBW/kg

**Date/Time: 29/10/2014**

Test Laboratory: Cerpass Lab

DUT: AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM; Type: MaxiSys Elite

**Procedure Name: 802.11ac(40MHz) 5230MHz Tablet-edge_1**

Communication System Band: 802.11ac(40MHz); Frequency: 5230 MHz; Duty Cycle: 1:1

Medium parameters used: f = 5230 MHz; σ = 5.37 S/m; εr = 49.38; ρ = 1000 kg/m3

Phantom section: Flat Section; Tissue Temp (celsius) - 21℃

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

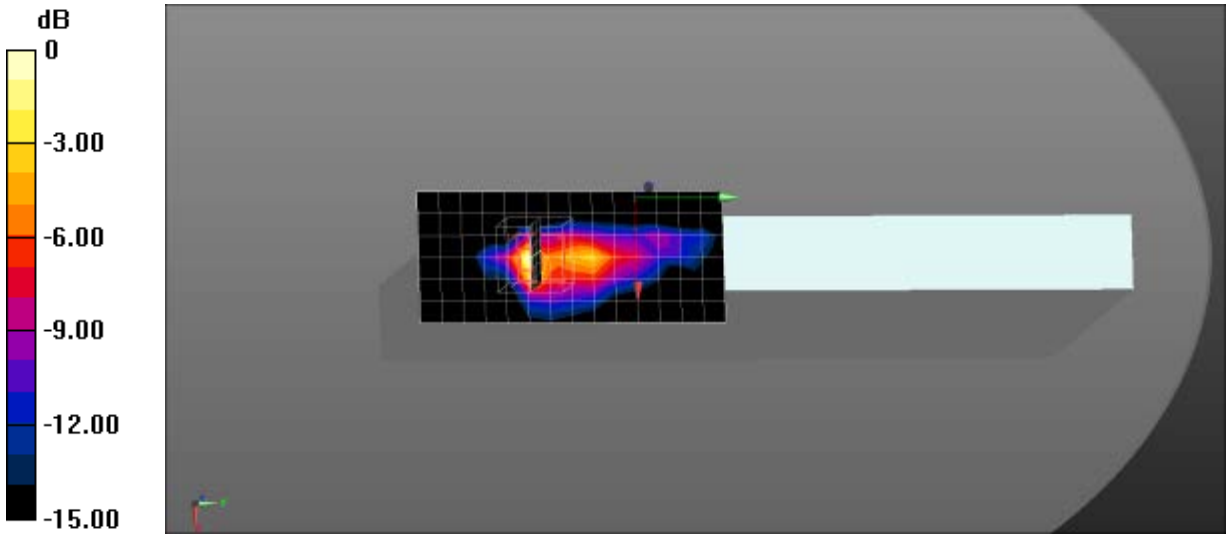
DASY5 Configuration:

- Probe: EX3DV4 - SN3927; ConvF(4.61, 4.61, 4.61); Calibrated: 2014/5/23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1379; Calibrated: 2014/5/19
- Phantom: ELI v5.0; Type: QDOVA002AA
- Measurement SW: DASY52, Version 52.8 (8);

**Configuration/802.11ac(40MHz) 5230MHz Tablet-edge_1/Area Scan (7x15x1):** Measurement grid: dx=10mm, dy=10mm, Maximum value of SAR (measured) = 2.21 W/kg

**Configuration/802.11ac(40MHz) 5230MHz Tablet-edge_1/Zoom Scan (7x7x6)/Cube 0:**Measurement grid: dx=5mm, dy=5mm, dz=2mm, Reference Value = 5.959 V/m; Power Drift = -0.19 dBPeak SAR (extrapolated) = 3.86 W/kg

**SAR(1 g) = 0.933 W/kg; SAR(10 g) = 0.232 W/kg** Maximum value of SAR (measured) = 2.26 W/kg




0 dB = 2.26 W/kg = 3.54 dBW/kg

**Date/Time: 29/10/2014**

Test Laboratory: Cerpass Lab

DUT: AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM; Type: MaxiSys Elite

**Procedure Name: 802.11ac(40MHz) 5755MHz Tablet-edge_1**

Communication System Band: 802.11ac(40MHz); Frequency: 5755 MHz; Duty Cycle: 1:1

Medium parameters used: f = 5755 MHz; σ = 5.92 S/m; εr = 48.56; ρ = 1000 kg/m3

Phantom section: Flat Section; Tissue Temp (celsius) - 21℃

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

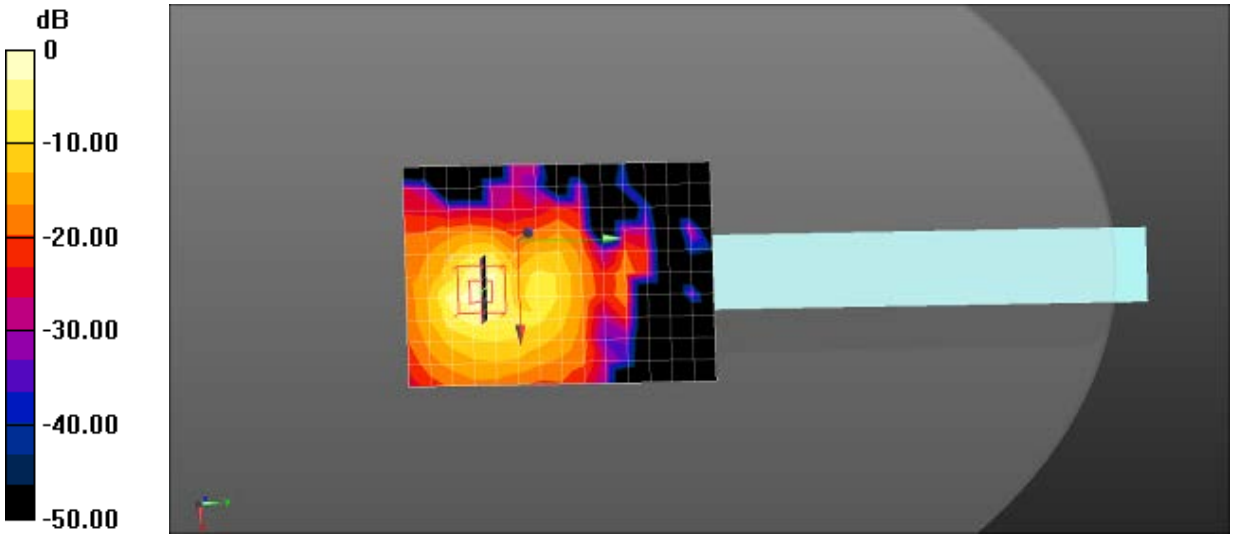
DASY5 Configuration:

- Probe: EX3DV4 - SN3927; ConvF(4.25, 4.25, 4.25); Calibrated: 2014/5/23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1379; Calibrated: 2014/5/19
- Phantom: ELI v5.0; Type: QDOVA002AA
- Measurement SW: DASY52, Version 52.8 (8);

**Configuration/802.11ac(40MHz) 5755MHz Tablet-edge_1/Area Scan (11x15x1):** Measurement grid: dx=10mm, dy=10mm, Maximum value of SAR (measured) = 2.20 W/kg

**Configuration/802.11ac(40MHz) 5755MHz Tablet-edge_1/Zoom Scan (7x7x6)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=2mm, Reference Value = 10.50 V/m; Power Drift = -0.05 dB, Peak SAR (extrapolated) = 5.08 W/kg

**SAR(1 g) = 1.07 W/kg; SAR(10 g) = 0.332 W/kg** Maximum value of SAR (measured) = 2.41 W/kg




0 dB = 2.41 W/kg = 3.82 dBW/kg

**Date/Time: 29/10/2014**

Test Laboratory: Cerpass Lab

DUT: AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM; Type: MaxiSys Elite

**Procedure Name: 802.11ac(40MHz) 5795MHz Tablet-edge_1**

Communication System Band: 802.11ac(40MHz); Frequency: 5795 MHz; Duty Cycle: 1:1

Medium parameters used: f = 5795 MHz; σ = 6.04 S/m; εr = 48.49; ρ = 1000 kg/m3

Phantom section: Flat Section; Tissue Temp (celsius) - 21℃

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

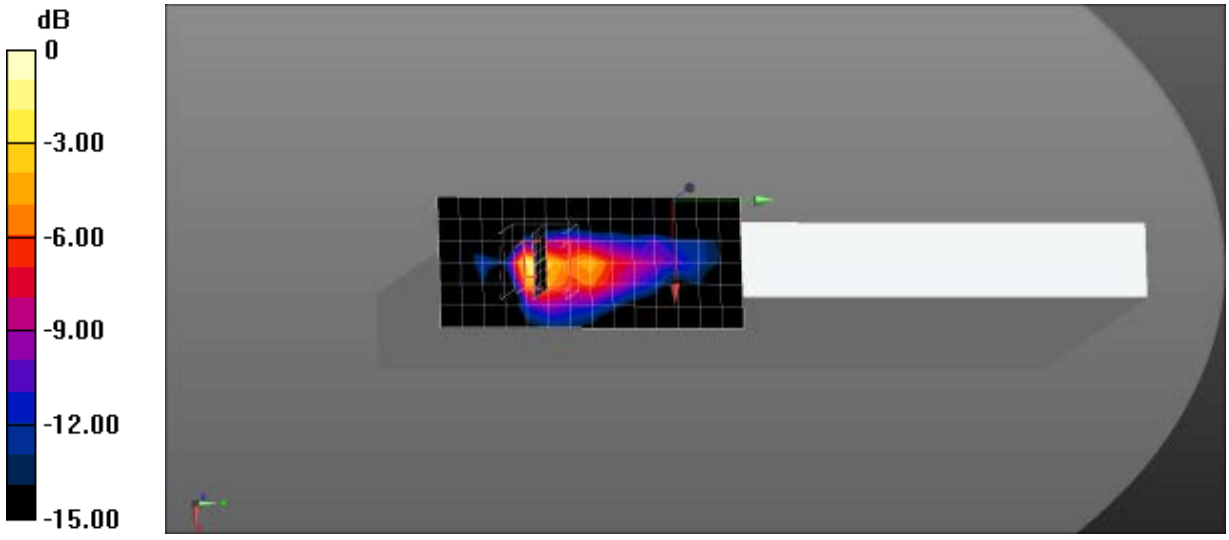
DASY5 Configuration:

- Probe: EX3DV4 - SN3927; ConvF(4.25, 4.25, 4.25); Calibrated: 2014/5/23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1379; Calibrated: 2014/5/19
- Phantom: ELI v5.0; Type: QDOVA002AA
- Measurement SW: DASY52, Version 52.8 (8);

**Configuration/802.11ac(40MHz) 5795MHz Tablet-edge_1/Area Scan (7x15x1):** Measurement grid: dx=10mm, dy=10mm, Maximum value of SAR (measured) = 1.94 W/kg

**Configuration/802.11ac(40MHz) 5795MHz Tablet-edge_1/Zoom Scan (7x7x6)/Cube 0:**Measurement grid: dx=5mm, dy=5mm, dz=2mm, Reference Value = 7.135 V/m; Power Drift = -0.14 dB, Peak SAR (extrapolated) = 4.49 W/kg

**SAR(1 g) = 1.05 W/kg; SAR(10 g) = 0.263 W/kg** Maximum value of SAR (measured) = 2.54 W/kg




0 dB = 2.54 W/kg = 4.05 dBW/kg

**Date/Time: 29/10/2014**

Test Laboratory: Cerpass Lab

DUT: AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM; Type: MaxiSys Elite

**Procedure Name: 802.11ac(80MHz) 5210MHz Tablet-edge_1**

Communication System Band: 802.11ac(80MHz); Frequency: 5210 MHz; Duty Cycle: 1:1

Medium parameters used: f = 5210 MHz; σ = 5.34 S/m; εr = 49.39; ρ = 1000 kg/m3

Phantom section: Flat Section; Tissue Temp (celsius) - 21℃

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

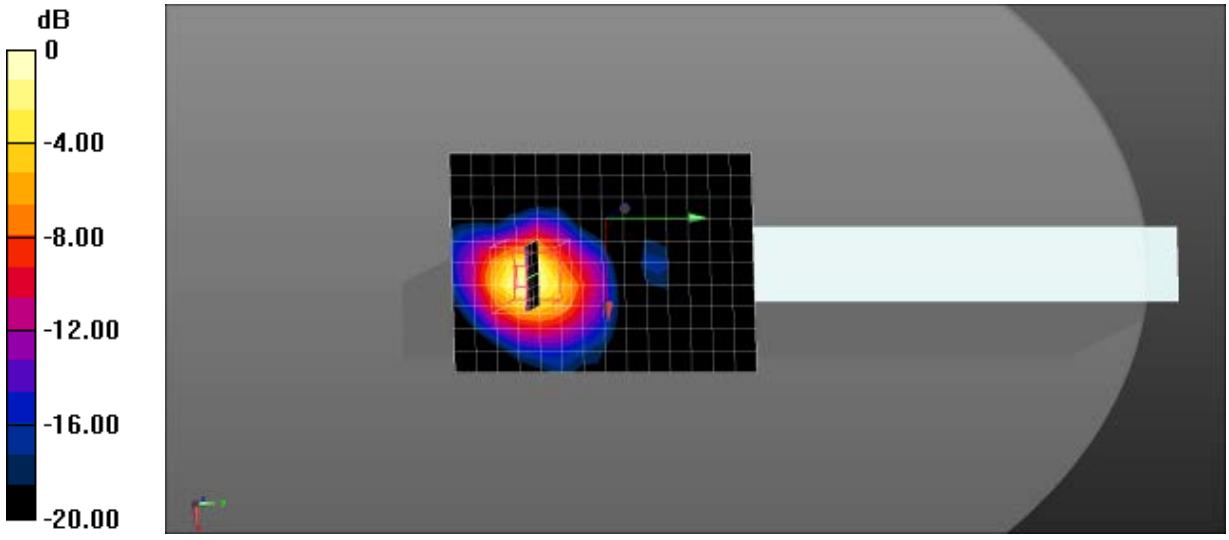
DASY5 Configuration:

- Probe: EX3DV4 - SN3927; ConvF(4.61, 4.61, 4.61); Calibrated: 2014/5/23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1379; Calibrated: 2014/5/19
- Phantom: ELI v5.0; Type: QDOVA002AA
- Measurement SW: DASY52, Version 52.8 (8);

**Configuration/802.11ac(80MHz) 5210MHz Tablet-edge_1/Area Scan (11x15x1):** Measurement grid: dx=10mm, dy=10mm, Maximum value of SAR (measured) = 1.75 W/kg

**Configuration/802.11ac(80MHz) 5210MHz Tablet-edge_1/Zoom Scan (7x7x6)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=2mm, Reference Value = 10.44 V/m; Power Drift = 0.16 dB, Peak SAR (extrapolated) = 4.02 W/kg

**SAR(1 g) = 1.02 W/kg; SAR(10 g) = 0.341 W/kg** Maximum value of SAR (measured) = 1.95 W/kg




0 dB = 1.95 W/kg = 2.90 dBW/kg

**Date/Time: 29/10/2014**

Test Laboratory: Cerpass Lab

DUT: AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM; Type: MaxiSys Elite

**Procedure Name: 802.11ac(80MHz) 5775MHz Tablet-edge_1**

Communication System Band: 802.11ac(80MHz); Frequency: 5775 MHz; Duty Cycle: 1:1

Medium parameters used: f = 5775 MHz; σ = 5.99 S/m; εr = 48.53; ρ = 1000 kg/m3

Phantom section: Flat Section; Tissue Temp (celsius) - 21℃

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

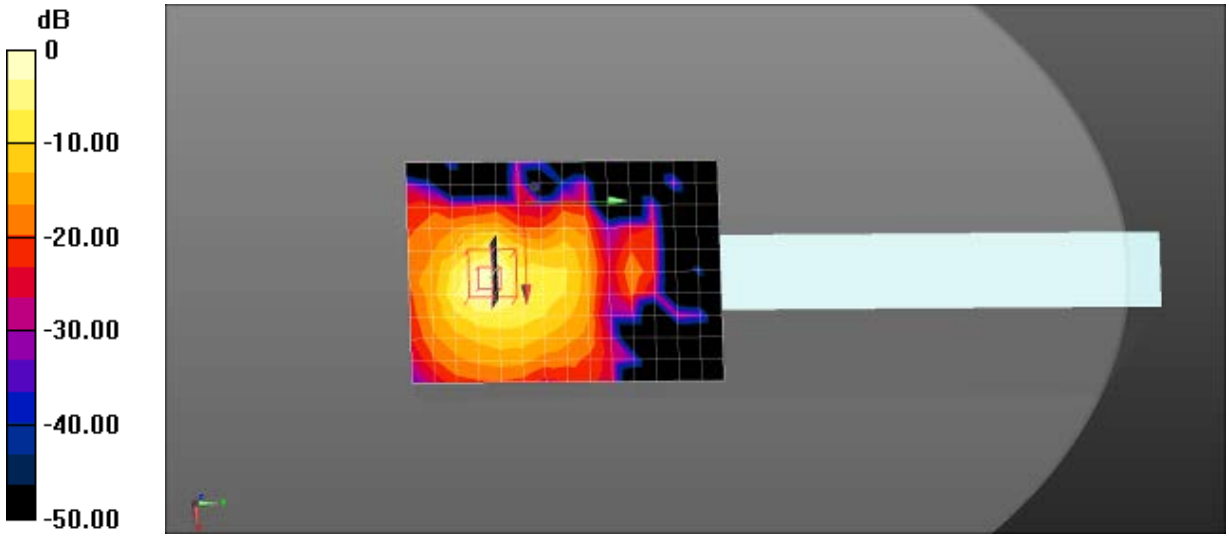
DASY5 Configuration:

- Probe: EX3DV4 - SN3927; ConvF(4.25, 4.25, 4.25); Calibrated: 2014/5/23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1379; Calibrated: 2014/5/19
- Phantom: ELI v5.0; Type: QDOVA002AA
- Measurement SW: DASY52, Version 52.8 (8);

**Configuration/802.11ac(80MHz) 5775MHz Tablet-edge_1/Area Scan (11x15x1):** Measurement grid: dx=10mm, dy=10mm, Maximum value of SAR (measured) = 1.90 W/kg

**Configuration/802.11ac(80MHz) 5775MHz Tablet-edge_1/Zoom Scan (7x7x6)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=2mm, Reference Value = 11.36 V/m; Power Drift = -0.01 dB, Peak SAR (extrapolated) = 4.56 W/kg

**SAR(1 g) = 1.04 W/kg; SAR(10 g) = 0.295 W/kg** Maximum value of SAR (measured) = 2.18 W/kg




0 dB = 2.18 W/kg = 3.38 dBW/kg

**Date/Time: 29/10/2014**

Test Laboratory: Cerpass Lab

DUT: AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM; Type: MaxiSys Elite

**Procedure Name: Bluetooth 2441MHz Mid Body-Back**

Communication System Band: Bluetooth; Frequency: 2441 MHz; Duty Cycle: 1:1

Medium parameters used: f = 2441 MHz; σ = 1.91 S/m; εr = 51.71; ρ = 1000 kg/m3

Phantom section: Flat Section; Tissue Temp (celsius)- 21 ℃

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5 Configuration:

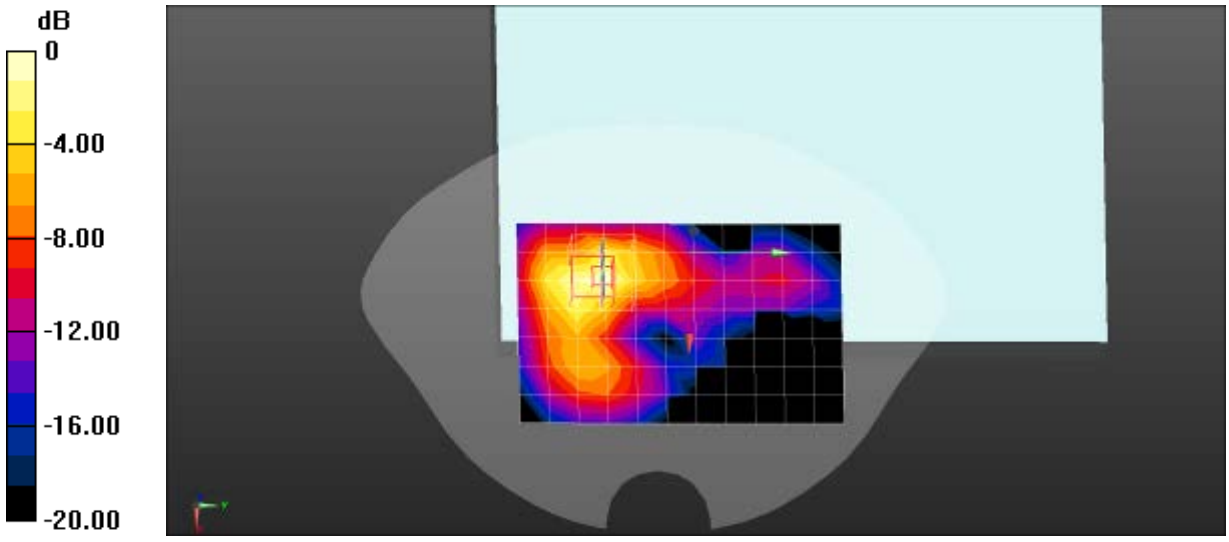
- Probe: EX3DV4 - SN3927; ConvF(7.63, 7.63, 7.63); Calibrated: 2014/5/23;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1379; Calibrated: 2014/5/19
- Phantom: SAM (30deg probe tilt) with CRP v5.0; Type: QD000P40CD
- Measurement SW: DASY52, Version 52.8 (8);

**Configuration/ Bluetooth 2441MHz Mid Body-Back/Area Scan (8x12x1):** Measurement grid: dx=15mm, dy=15mm, Maximum value of SAR (measured) = 0.493 W/kg

**Configuration/ Bluetooth 2441MHz Mid Body-Back/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 1.717 V/m; Power Drift = -0.10 dB

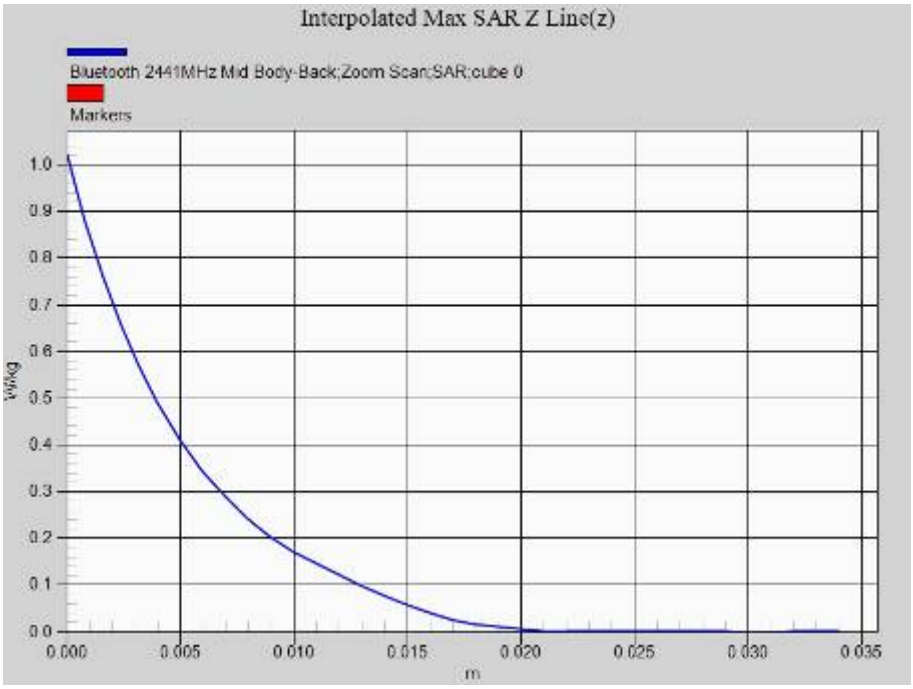
Peak SAR (extrapolated) = 1.02 W/kg

**SAR(1 g) = 0.436 W/kg; SAR(10 g) = 0.193 W/kg** Maximum value of SAR (measured) = 0.494 W/kg




0 dB = 0.494 W/kg = -3.06 dBW/kg

**Z-Axis Plot**


Interpolated Max SAR Z Line(z)
Bluetooth 2441MHz Mid Body-Back;Zoom Scan;SAR;cube 0
Markers
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
W/kg
0.000
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

**Date/Time: 29/10/2014**

Test Laboratory: Cerpass Lab

DUT: AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM; Type: MaxiSys Elite

**Procedure Name: Bluetooth 2402MHz Low Body-Edge_1**

Communication System Band: Bluetooth; Frequency: 2402 MHz; Duty Cycle: 1:1

Medium parameters used: f = 2402 MHz; σ = 1.88 S/m; εr = 51.92; ρ = 1000 kg/m3

Phantom section: Flat Section; Tissue Temp (celsius) - 21℃

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5 Configuration:

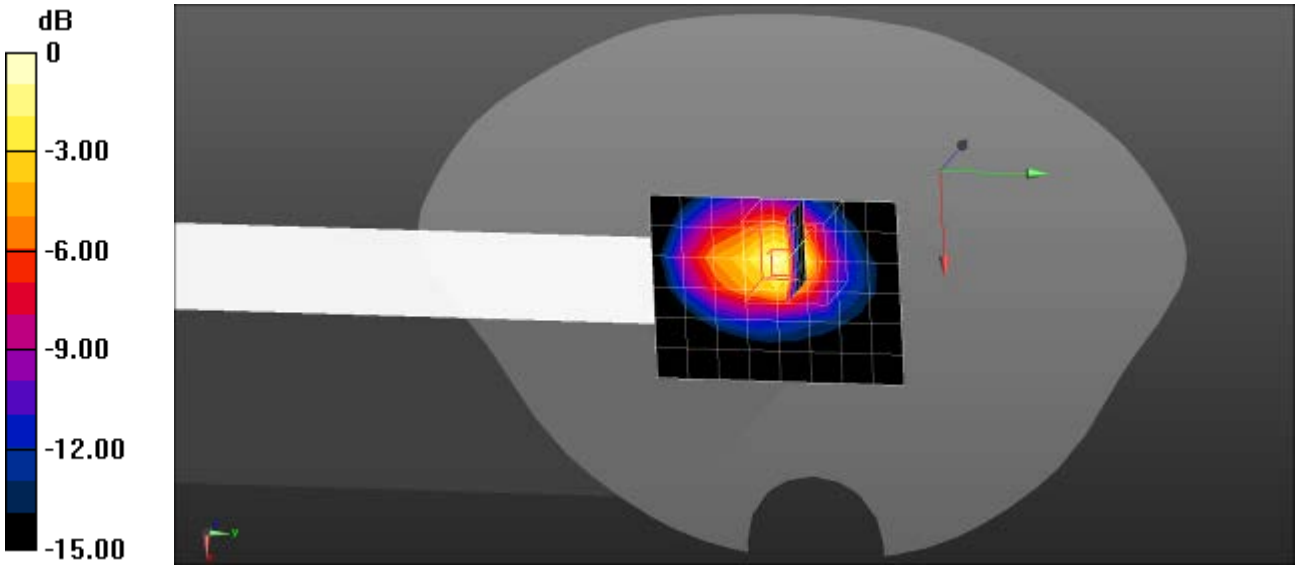
- Probe: EX3DV4 - SN3927; ConvF(7.63, 7.63, 7.63); Calibrated: 2014/5/23;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1379; Calibrated: 2014/5/19
- Phantom: SAM (30deg probe tilt) with CRP v5.0; Type: QD000P40CD
- Measurement SW: DASY52, Version 52.8 (8);

**Configuration/Bluetooth 2402MHz Low Body-Edge_1/Area Scan (7x9x1):** Measurement grid: dx=12mm, dy=12mm, Maximum value of SAR (measured) = 0.368 W/kg

**Configuration/Bluetooth 2402MHz Low Body-Edge_1/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 10.79 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.772 W/kg

**SAR(1 g) = 0.354 W/kg; SAR(10 g) = 0.153 W/kg** Maximum value of SAR (measured) = 0.417 W/kg




0 dB = 0.417 W/kg = -3.80 dBW/kg

**Date/Time: 29/10/2014**

Test Laboratory: Cerpass Lab

DUT: AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM; Type: MaxiSys Elite

**Procedure Name: Bluetooth 2441MHz Mid Body-Edge_1**

Communication System Band: Bluetooth; Frequency: 2441 MHz; Duty Cycle: 1:1

Medium parameters used: f = 2441 MHz; $\sigma$ = 1.91 S/m; $\varepsilon r$ = 51.71; $\rho$ = 1000 kg/m3

Phantom section: Flat Section; Tissue Temp (celsius) - 21℃

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5 Configuration:

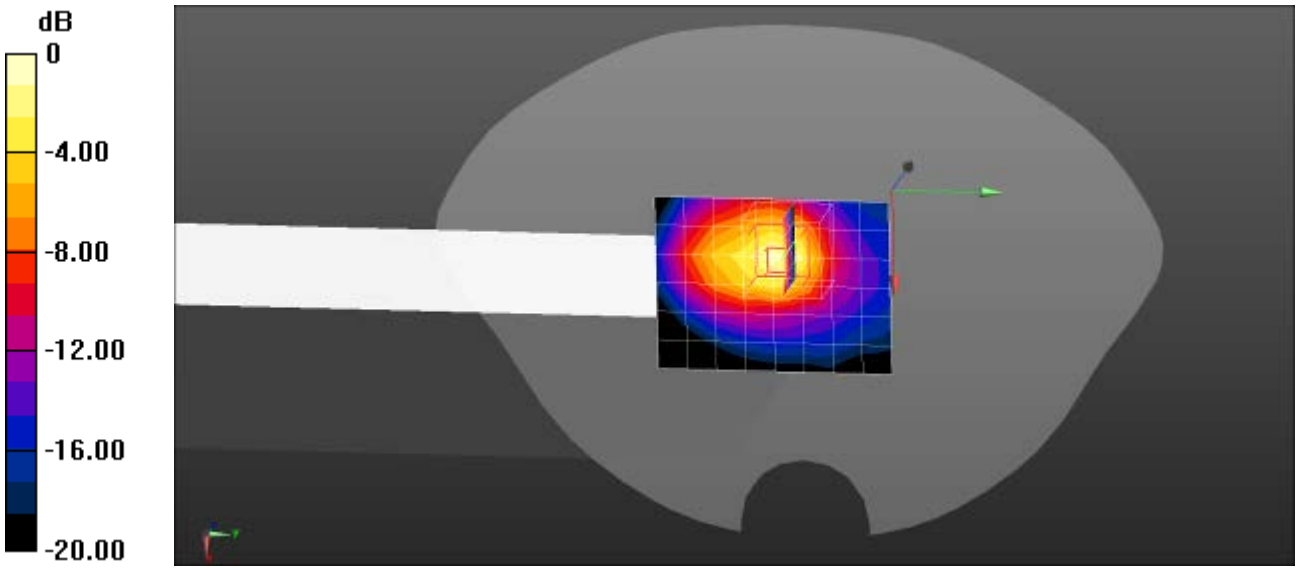
- Probe: EX3DV4 - SN3927; ConvF(7.63, 7.63, 7.63); Calibrated: 2014/5/23;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1379; Calibrated: 2014/5/19
- Phantom: SAM (30deg probe tilt) with CRP v5.0; Type: QD000P40CD
- Measurement SW: DASY52, Version 52.8 (8);

**Configuration/Bluetooth 2441MHz Mid Body-Edge_1/Area Scan (7x9x1):** Measurement grid: dx=12mm, dy=12mm, Maximum value of SAR (measured) = 0.397 W/kg

**Configuration/Bluetooth 2441MHz Mid Body-Edge_1/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 10.86 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 0.833 W/kg

**SAR(1 g) = 0.383 W/kg; SAR(10 g) = 0.165 W/kg** Maximum value of SAR (measured) = 0.450 W/kg




0 dB = 0.450 W/kg = -3.47 dBW/kg

**Date/Time: 29/10/2014**

Test Laboratory: Cerpass Lab

DUT: AUTOMOTIVE DIAGNOSTIC &ANALYSIS SYSTEM; Type: MaxiSys Elite

**Procedure Name: Bluetooth 2480MHz High Body-Edge_1**

Communication System Band: Bluetooth; Frequency: 2480 MHz; Duty Cycle: 1:1

Medium parameters used: f = 2480 MHz; $\sigma$ = 1.95 S/m; $\varepsilon r$ = 51.49; $\rho$ = 1000 kg/m3

Phantom section: Flat Section; Tissue Temp (celsius) - 21℃

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5 Configuration:

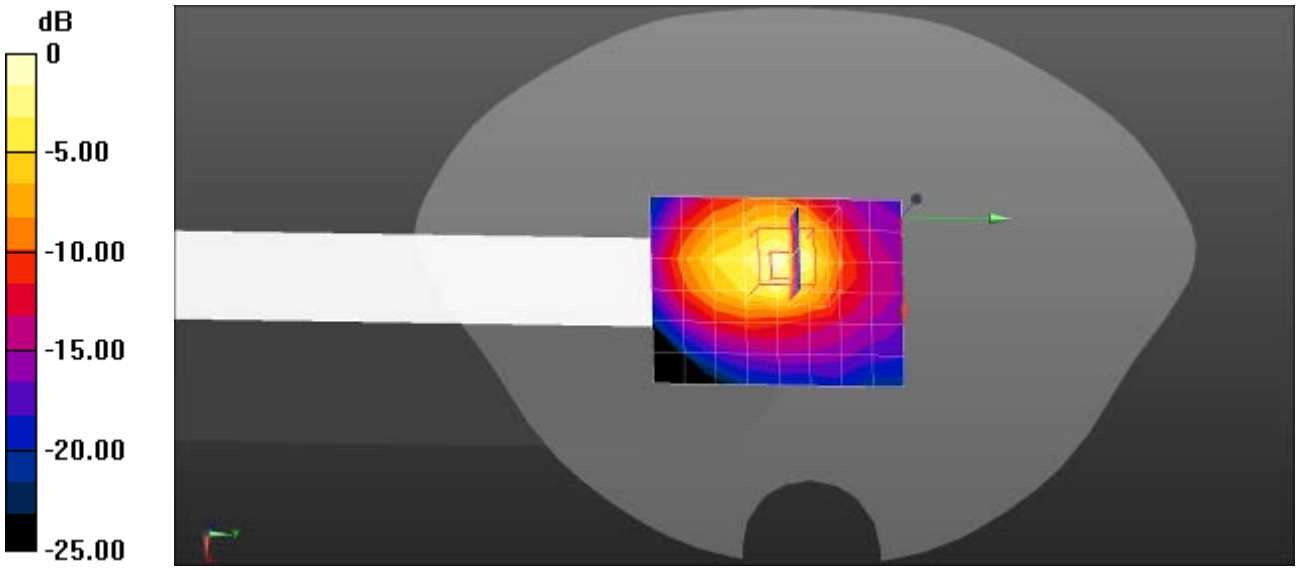
- Probe: EX3DV4 - SN3927; ConvF(7.63, 7.63, 7.63); Calibrated: 2014/5/23;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1379; Calibrated: 2014/5/19
- Phantom: SAM (30deg probe tilt) with CRP v5.0; Type: QD000P40CD
- Measurement SW: DASY52, Version 52.8 (8);

**Configuration/Bluetooth 2480MHz High Body-Edge_1/Area Scan (7x9x1):** Measurement grid: dx=12mm, dy=12mm, Maximum value of SAR (measured) = 0.390 W/kg

**Configuration/Bluetooth 2480MHz High Body-Edge_1/Zoom Scan (5x5x7)/Cube 0:**

Measurement grid: dx=8mm, dy=8mm, dz=5mm, Reference Value = 10.93 V/m; Power Drift = -0.06 dB, Peak SAR (extrapolated) = 0.818 W/kg

**SAR(1 g) = 0.376 W/kg; SAR(10 g) = 0.162 W/kg** Maximum value of SAR (measured) = 0.442 W/kg




0 dB = 0.442 W/kg = -3.55 dBW/kg

# 8. APPENDIX C EUT Photographs &Test Setup Photographs

Note: EUT photographs and test setup photos, see separate documents in PDF, named FCC SAR-Appendix C-EUT Photographs and FCC SAR-Appendix C- Test Setup Photographs.

# 9. APPENDIX D/E/F

**Appendix D. Probe Calibration Data**

**Appendix E. Dipole Calibration Data**

**Appendix F. DAE Calibration Data**

Note: Please refer to attached files, named “appendix for Instrument calibration data”.

End of this report