

# SAR TEST REPORT

|                      |                                                        |
|----------------------|--------------------------------------------------------|
| Equipment Under Test | Edison                                                 |
| Model Name           | MB865                                                  |
| Company Name         | Motorola Mobility, Inc.                                |
| Company Address      | 600 North U.S. Highway 45, Libertyville, IL 60048-5343 |
| Date of Receipt      | 2011.05.31                                             |
| Date of Test(s)      | 2011.06.06-2011.06.11;2011.08.22;2011.09.13            |
| Date of Issue        | 2011.09.14                                             |

Standards:

## FCC OET Bulletin 65 supplement C, IEEE/ANSI C95.1, C95.3, IEEE 1528

In the configuration tested, the EUT complied with the standards specified above.

### Remarks:

This report details the results of the testing carried out on one sample, the results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

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Tested by : Ricky Huang  
Asst. Supervisor

Date : 2011.09.14

Approved by : Robert Chang  
Tech Manager

Date : 2011.09.14

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## Version

| Version No. | Date          | Description                  |
|-------------|---------------|------------------------------|
| 1.0         | Jun. 29, 2011 | Initial issue of report      |
| 1.1         | Aug. 15, 2011 | 1 <sup>st</sup> modification |
| 1.2         | Aug. 26, 2011 | 2 <sup>nd</sup> modification |
| 1.3         | Aug. 27, 2011 | 3 <sup>rd</sup> modification |
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| 1.5         | Sep. 14, 2011 | 5 <sup>th</sup> modification |
| 1.6         | Sep. 14, 2011 | 6 <sup>th</sup> modification |

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# 1. General Information

## 1.1 Testing Laboratory

|                                                        |                        |
|--------------------------------------------------------|------------------------|
| SGS Taiwan Ltd. Electronics & Communication Laboratory |                        |
| 134, Wu Kung Road, Wuku industrial zone                |                        |
| Taipei county, Taiwan, R.O.C.                          |                        |
| Telephone                                              | +886-2-2299-3279       |
| Fax                                                    | +886-2-2298-0488       |
| Internet                                               | http://www.tw.sgs.com/ |

## 1.2 Details of Applicant

|                 |                                                        |
|-----------------|--------------------------------------------------------|
| Company Name    | Motorola Mobility, Inc.                                |
| Company Address | 600 North U.S. Highway 45, Libertyville, IL 60048-5343 |
| Contact Person  | Doug Hammers                                           |
| TEL             | +1-847-523-1644                                        |
| Fax             | +1-847-523-4538                                        |
| E-mail          | doug.hammers@motorola.com                              |

## 1.3 Description of EUT

|                   |                                                                |
|-------------------|----------------------------------------------------------------|
| EUT Name          | Edison                                                         |
| Model Name        | MB865                                                          |
| IMEI Code         | 356378040035586                                                |
| FCC ID            | IHDT56MV1                                                      |
| Mode of Operation | GSM/GPRS/EDGE/WCDMA/HSDPA/<br>HSUPA/WLAN802.11 b/g/n(H20) band |

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| Definition                  | Production unit |                          |                   |                 |                                  |
|-----------------------------|-----------------|--------------------------|-------------------|-----------------|----------------------------------|
| Duty Cycle                  | GSM             | GPRS/ EDGE               |                   | WCDMA           | WLAN<br>802.11<br>b/g/n(H20)     |
|                             | 1/8.3           | 1/2;1/4;<br>1/2.76;1/8.3 |                   | 1               | 1                                |
|                             |                 | MS Class B               |                   |                 |                                  |
| TX Frequency Range<br>(MHz) | GSM850          | GSM1900                  | WCDMA<br>Band II  | WCDMA<br>Band V | WLAN<br>802.11<br>b/g/n<br>(H20) |
|                             | 824.2-<br>848.8 | 1850.2-<br>1909.8        | 1852.4-<br>1907.6 | 826.4-<br>846.6 | 2412-<br>2462                    |
| Channel Number<br>(ARFCN)   | GSM850          | GSM1900                  | WCDMA<br>Band II  | WCDMA<br>Band V | WLAN<br>802.11<br>b/g/n<br>(H20) |
|                             | 128-<br>251     | 512-<br>810              | 9262-<br>9538     | 4132-<br>4233   | 1-11                             |
| VOIP Function               | Yes             |                          |                   |                 |                                  |

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| Max. SAR Measured<br>(1 g) | GSM850                                                                                |                                                                                               |                                                                    |
|----------------------------|---------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|--------------------------------------------------------------------|
|                            | Head                                                                                  | WIFI Hotspot mode                                                                             | Body-Worn                                                          |
|                            | <b>0.386mW/g</b><br>(At GSM 850 Left Head<br>(Cheek Position)_ 251<br>Channel)        | <b>0.648mW/g</b><br>(At GPRS 850 _Left side_<br>190 channl)                                   | <b>0.541mW/g</b><br>(At GPRS 850 _Back<br>side_ 190 channl)        |
|                            | GSM1900                                                                               |                                                                                               |                                                                    |
|                            | Head                                                                                  | WIFI Hotspot mode                                                                             | Body-Worn                                                          |
|                            | <b>0.595 mW/g</b><br>(At GSM 1900 Left Head<br>(Cheek Position)_ 661<br>channel)      | <b>1.17mW/g</b><br>(At GPRS 1900 _ Bottom<br>side_661 channel)                                | <b>0.451mW/g</b><br>(At GPRS 1900 _ Back<br>side_661 channel)      |
|                            | WCDMA Band II                                                                         |                                                                                               |                                                                    |
|                            | Head                                                                                  | WIFI Hotspot mode                                                                             | Body-Worn                                                          |
|                            | <b>1.01mW/g</b><br>(At WCDMA Band II _Left<br>Head (Cheek Position)<br>_9400 channel) | <b>1.29 mW/g</b><br>(At WCDMA Band II _<br>Bottom side_ 9400<br>channel)                      | <b>1.15mW/g</b><br>(At WCDMA Band II _<br>Back side_ 9262 channel) |
|                            | WCDMA Band V                                                                          |                                                                                               |                                                                    |
|                            | Head                                                                                  | WIFI Hotspot mode                                                                             | Body-Worn                                                          |
|                            | <b>0.382mW/g</b><br>(At WCDMA Band V _Left<br>Head (Cheek Position)_<br>4183 channel) | <b>0.631mW/g</b><br>(At WCDMA Band V _Left<br>side_ 4183 channel)                             | <b>0.470mW/g</b><br>(At WCDMA Band V _Back<br>side_ 4183 channel)  |
|                            | WLAN802.11 b                                                                          |                                                                                               |                                                                    |
|                            | Head                                                                                  | WIFI Hotspot mode                                                                             | Body-Worn                                                          |
|                            | <b>0.441mW/g</b><br>(At WLAN802.11 b _Left<br>Head (Cheek Position)_ 1<br>channel)    | <b>0.296mW/g</b><br>(At WLAN802.11b _ Right<br>side_ 6 channel _repeated<br>with memory card) | <b>0.222mW/g</b><br>(At WLAN802.11b _ Back<br>side_ 6 channel)     |

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# #. GSM/GPRS/EDGE conducted power table:

| GSM850 | Burst average power | Source-based time- averaged |
|--------|---------------------|-----------------------------|
| CH 128 | 33.30               | 24.27                       |
| CH 190 | 33.30               | 24.27                       |
| CH 251 | 33.20               | 24.17                       |

| Burst average power         |        |        |        |        |
|-----------------------------|--------|--------|--------|--------|
| GPRS850                     | 1Dn1UP | 1Dn2UP | 1Dn3UP | 1Dn4UP |
| CH 128                      | 33.20  | 31.00  | 29.00  | 27.00  |
| CH 190                      | 33.30  | 31.00  | 29.00  | 27.10  |
| CH 251                      | 33.20  | 31.00  | 29.00  | 27.00  |
| Source-based time- averaged |        |        |        |        |
| GPRS850                     | 1Dn1UP | 1Dn2UP | 1Dn3UP | 1Dn4UP |
| CH 128                      | 24.17  | 24.98  | 24.74  | 23.99  |
| CH 190                      | 24.27  | 24.98  | 24.98  | 24.09  |
| CH 251                      | 24.17  | 24.98  | 24.98  | 23.99  |

| Burst average power         |        |        |        |        |
|-----------------------------|--------|--------|--------|--------|
| EDGE850                     | 1Dn1UP | 1Dn2UP | 1Dn3UP | 1Dn4UP |
| CH 128                      | 27.80  | 25.80  | 23.70  | 21.70  |
| CH 190                      | 27.80  | 25.90  | 23.70  | 21.70  |
| CH 251                      | 27.80  | 25.80  | 23.70  | 21.70  |
| Source-based time- averaged |        |        |        |        |
| EDGE850                     | 1Dn1UP | 1Dn2UP | 1Dn3UP | 1Dn4UP |
| CH 128                      | 18.77  | 19.78  | 19.44  | 18.69  |
| CH 190                      | 18.77  | 19.88  | 19.44  | 18.69  |
| CH 251                      | 18.77  | 19.78  | 19.44  | 18.69  |

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### #. GSM/GPRS/EGPRS conducted power table:

| GSM1900 | Burst average power | Source-based time-averaged |
|---------|---------------------|----------------------------|
| CH 512  | 30.70               | 21.67                      |
| CH 661  | 30.70               | 21.67                      |
| CH 810  | 30.90               | 21.87                      |

| Burst average power         |        |        |        |        |
|-----------------------------|--------|--------|--------|--------|
| GPRS1900                    | 1Dn1UP | 1Dn2UP | 1Dn3UP | 1Dn4UP |
| CH 512                      | 30.70  | 28.80  | 26.70  | 24.70  |
| CH 661                      | 30.70  | 28.70  | 26.70  | 24.70  |
| CH 810                      | 30.90  | 28.90  | 26.80  | 24.90  |
| Source-based time- averaged |        |        |        |        |
| GPRS1900                    | 1Dn1UP | 1Dn2UP | 1Dn3UP | 1Dn4UP |
| CH 512                      | 21.67  | 22.26  | 22.44  | 21.69  |
| CH 661                      | 21.67  | 22.68  | 22.44  | 21.69  |
| CH 810                      | 21.87  | 22.80  | 22.54  | 21.89  |

| Burst average power         |        |        |        |        |
|-----------------------------|--------|--------|--------|--------|
| EDGE1900                    | 1Dn1UP | 1Dn2UP | 1Dn3UP | 1Dn4UP |
| CH 512                      | 26.90  | 25.00  | 22.90  | 20.90  |
| CH 661                      | 26.90  | 25.00  | 23.00  | 21.00  |
| CH 810                      | 27.10  | 25.10  | 23.10  | 21.20  |
| Source-based time- averaged |        |        |        |        |
| EDGE1900                    | 1Dn1UP | 1Dn2UP | 1Dn3UP | 1Dn4UP |
| CH 512                      | 17.87  | 18.89  | 18.64  | 17.89  |
| CH 661                      | 17.87  | 18.89  | 18.74  | 17.99  |
| CH 810                      | 18.07  | 19.08  | 18.84  | 18.19  |

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### #. WCDMA Band II & V HSDPA/HSUPA conducted power table:

| Mode  | Subtest | WCDMA Band II Channel |       |       | WCDMA Band V Channel |       |       |
|-------|---------|-----------------------|-------|-------|----------------------|-------|-------|
|       |         | 9262                  | 9400  | 9538  | 4132                 | 4183  | 4233  |
| Rel99 | R99     | 23.83                 | 23.73 | 23.63 | 23.78                | 23.91 | 23.72 |
| HSDPA | 1       | 24                    | 23.62 | 23.49 | 23.57                | 23.77 | 23.84 |
|       | 2       | 23.71                 | 23.59 | 23.48 | 23.71                | 23.8  | 23.59 |
|       | 3       | 23.52                 | 23.17 | 22.96 | 23.11                | 23.29 | 23.35 |
|       | 4       | 23.59                 | 23.18 | 23.08 | 23.16                | 23.33 | 23.41 |
| HSUPA | 1       | 23.75                 | 23.71 | 23.57 | 23.74                | 23.84 | 23.64 |
|       | 2       | 21.8                  | 21.78 | 21.61 | 21.8                 | 21.92 | 21.68 |
|       | 3       | 22.81                 | 22.73 | 22.65 | 22.78                | 22.9  | 22.72 |
|       | 4       | 21.93                 | 21.83 | 21.65 | 21.85                | 21.98 | 21.76 |
|       | 5       | 23.64                 | 23.57 | 23.48 | 23.6                 | 23.67 | 23.53 |

### #. WLAN802.11 b/g/n(H20) conducted power table:

| WLAN802.11 b          | 2412  | 2437  | 2462  |
|-----------------------|-------|-------|-------|
| Peak power            | 18.17 | 18.32 | 18.74 |
| Avg power             | 15.74 | 15.77 | 16.22 |
| WLAN802.11 g          | 2412  | 2437  | 2462  |
| Peak power            | 18.88 | 18.35 | 18.32 |
| Avg power             | 15.5  | 14.73 | 14.84 |
| WLAN802.11 n<br>(20M) | 2412  | 2437  | 2462  |
| Peak power            | 18.8  | 18.12 | 18.23 |
| Avg power             | 15.34 | 14.49 | 14.68 |

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## 1.4 Test Environment

Ambient Temperature :  $22 \pm 2^{\circ} \text{C}$

Tissue Simulating Liquid:  $22 \pm 2^{\circ} \text{C}$

## 1.5 Operation description

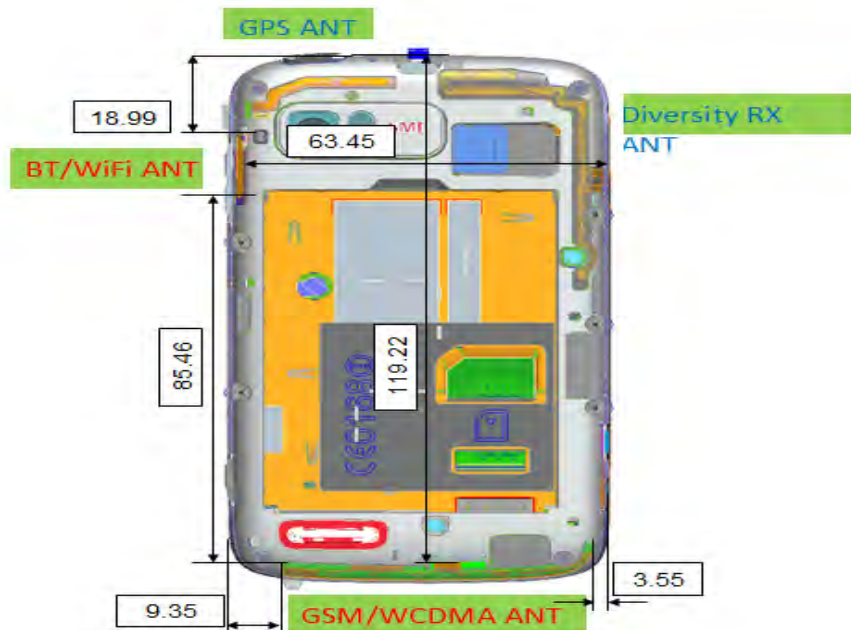
### General:

1. The EUT is controlled by using a Radio Communication Tester (R&S CMU200), and the communication between the EUT and the tester is established by air link.
2. Measurements are performed respectively on the lowest, middle and highest channels of the operating band(s). The EUT is set to maximum power level during all tests, and at the beginning of each test the battery is fully charged.
3. During the SAR testing, the DASY4 system checks power drift by comparing the e-field strength of one specific location measured at the beginning with that measured at the end of the SAR testing.
4. Testing Head SAR at lowest, middle and highest channel for all bands with LET/LEC/RET/REC conditions.
5. Body SAR Test configurations:
  - (1) Front side
  - (2) Back side
  - (3) Top side. (WWAN antenna to user distance >25mm\_No need SAR)
  - (4) Bottom side. (WLAN antenna to user distance >25mm\_No need SAR)
  - (5) Right side.
  - (6) Left side.

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**Antenna position of EUT**

**SAR evaluation considerations for handsets with multiple transmitters:**

6. When the maximum transmitter and antenna output power are  $\leq 60/f(\text{GHz})$  (mW) SAR evaluation is typically not required for FCC or TCB approval (BT power= 11.73dBm)
7. According to KDB248227-SAR is not required for 802.11 g/HT20/HT40 channels when the maximum average output power is less than 1/4 dB higher than that measured on the corresponding 802.11b channels.
8. According to section 6.3.1 and 6.3.1.2 of KDB941225 D03 to exclude SAR test requirements for EDGE modes due to the source-based time-averaged output power (page 7's conducted power table) for edge mode is lower than that in the GPRS mode.
9. According to KDB941225 D01 to exclude SAR test requirements for HSPA modes due to the maximum average output power of HSPA active is less than 1/4 dB higher than that measured without HSPA using 12.2kbps RMC.
10. Identify the simultaneous transmission conditions for the voice and data configurations supported by all wireless modes, device configurations and frequency bands, for the head and body exposure conditions and device operating

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configurations (handset flip or cover positions, antenna diversity conditions etc.)

| Simultaneous TX Modes | UMTS      | GPRS/EDGE | 802.11b/g/n |
|-----------------------|-----------|-----------|-------------|
| 1                     | <b>ON</b> | OFF       | <b>ON</b>   |
| 2                     | OFF       | <b>ON</b> | <b>ON</b>   |

11. The VoIP function can be used by third party software applications, therefore user may hold this device close to ear when talk via VoIP. We test Head SAR for the pure data mode(GPRS)

12. **Body (Hotsopt mode):** The highest 1-g SAR for WLAN is 0.222 W/kg(Hotspot mode\_Back side) and the highest 1-g SAR for WWAN is 1.15W/kg(Body worn\_Back side). The sum of 1-g for simultaneous transmitting WLAN and WWAN antenna pair is  $0.222+1.15 = 1.372 \text{ W/kg} < 1.6 \text{ W/kg}$ . According to KDB648474/ KDB447498 /KDB248227 Simultaneous SAR evaluation is not required.

**Head:** The highest 1-g SAR for WLAN is 0.441W/kg(Left Head (Cheek Position))and the highest 1-g SAR for WWAN is 1.01W/kg(Left Head (Cheek Position)). The sum of 1-g for simultaneous transmitting WLAN and WWAN antenna pair is  $0.441+1.01 = 1.451 \text{ W/kg} < 1.6 \text{ W/kg}$ . According to KDB648474/ KDB447498 /KDB248227 Simultaneous SAR evaluation is not required.

**Additional configuration(Head):**

13. For highest SAR configuration in this band repeated with external Memory card inside.

**Additional configuration(Body):**

14. For highest SAR configuration in this band repeated with external Memory card inside.

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## 15. Reduced Radiated Power

To meet the 10mm separation distance for the “Mobile Hotspot” feature, the radiated RF power of WWAN is limited for body-worn operation with Hotspot mode on. But conducted power keep the same as normal talk mode.

The conducted power in source based time averaged method was list in page 8 and 9. The Normal radiated power and reduced radiated power are listed in below table, which are measured by “TRP (Total Radiated Power) “ method.

Due to Antenna Gain and Conducted power are not changed, only the antenna matching is changed. Using traditional EIRP method ( $EIRP = \text{conducted power} + \text{antenna gain}$ ) to judge the difference of radiated power before and after the power cut-off are not practical. Instead, we use CTIA “Test plan for mobile station Over The Air performance” version v2.2.2 to measure the 3-dimensional performance of antenna, and get the Total radiated power value, which shows total radiated power in the space.

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As shown in the table , The reduced amount is around 1db in GSM1900 band , and around 3 db in WCDMA Band II. It will also be noted in Sec.2 of this report.

| Band          | Freq<br>(MHz) | Channel | Reduced Power | Normal Power | Normal power -<br>reduction<br>amount(dbm) |
|---------------|---------------|---------|---------------|--------------|--------------------------------------------|
|               |               | (ARFCN) | TRP(dbm)      | TRP(dbm)     |                                            |
| GSM850        | 824.2         | 128     | <b>27.26</b>  | <b>27.11</b> | 27.11 -0                                   |
|               | 836.6         | 190     | <b>28.04</b>  | <b>27.99</b> | 27.99 - 0                                  |
|               | 848.8         | 251     | <b>28.55</b>  | <b>28.61</b> | 28.61 - 0                                  |
| GSM1900       | 1850.2        | 512     | <b>25.73</b>  | <b>26.64</b> | 26.64 - 0.91                               |
|               | 1880          | 661     | <b>25.65</b>  | <b>26.68</b> | 26.68 - 1.03                               |
|               | 1909.8        | 810     | <b>24.87</b>  | <b>25.81</b> | 25.81 - 0.94                               |
| WCDMA Band II | 1852.4        | 9262    | <b>19.61</b>  | <b>22.48</b> | 22.48 - 2.87                               |
|               | 1880          | 9400    | <b>18.14</b>  | <b>21.28</b> | 21.28 - 3.14                               |
|               | 1907.6        | 9538    | <b>17.22</b>  | <b>20.25</b> | 20.25 - 3.03                               |
| WCDMA Band V  | 826.4         | 4132    | <b>19.31</b>  | <b>19.27</b> | 19.27 - 0                                  |
|               | 836.6         | 4183    | <b>19.9</b>   | <b>19.86</b> | 19.86 - 0                                  |
|               | 846.6         | 4233    | <b>19.39</b>  | <b>19.48</b> | 19.48 - 0                                  |

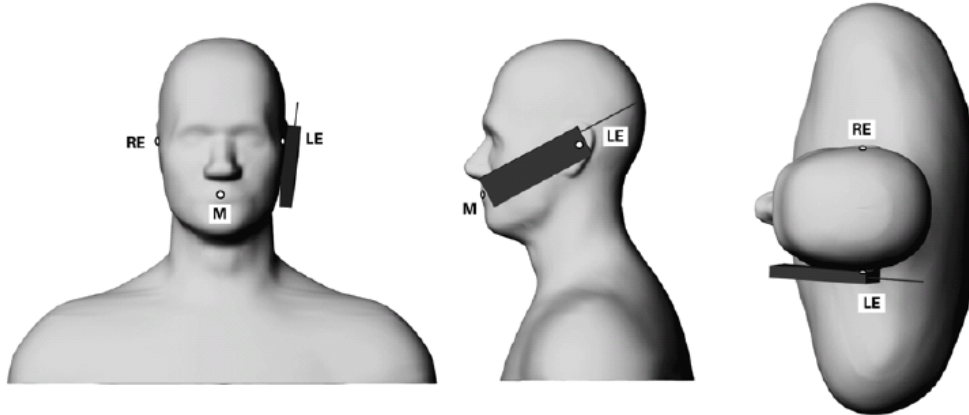
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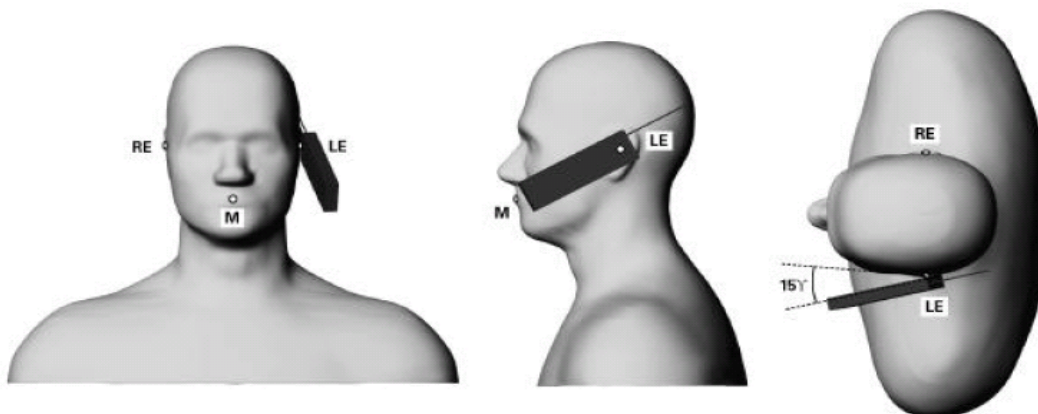
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## 1.6 Positioning Procedure



Phone position 1, “cheek” or “touch” position. The reference points for the right ear (RE), left ear (LE) and mouth (M), which define the reference plane for phone positioning



Phone position 2, “tilted position.” The reference points for the right ear (RE), left ear (LE) and mouth (M), which define the reference plane for phone positioning

Cheek/Touch Position:

the handset was brought toward the mouth of the head phantom by pivoting against the ear reference point until any point of the mouthpiece or keypad touched the phantom.

Ear/Tilt Position:

With the phone aligned in the Cheek/Touch position, the handset was tilted away from the mouth with respect to the test device reference point by 15 degrees.

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## 1.7 EVALUATION PROCEDURES

The entire evaluation of the spatial peak values is performed within the Post-processing engine (SEMCAD). The system always gives the maximum values for the 1 g and 10 g cubes. The algorithm to find the cube with highest averaged SAR is divided into the following stages:

1. The extraction of the measured data (grid and values) from the Zoom Scan.
2. The calculation of the SAR value at every measurement point based on all stored data (A/D values and measurement parameters)
3. The generation of a high-resolution mesh within the measured volume
4. The interpolation of all measured values from the measurement grid to the high-resolution grid
5. The extrapolation of the entire 3-D field distribution to the phantom surface over the distance from sensor to surface
6. The calculation of the averaged SAR within masses of 1g and 10g.

The probe is calibrated at the center of the dipole sensors that is located 1 to 2.7mm away from the probe tip. During measurements, the probe stops shortly above the phantom surface, depending on the probe and the surface detecting system. Both distances are included as parameters in the probe configuration file. The software always knows exactly how far away the measured point is from the surface. As the probe cannot directly measure at the surface, the values between the deepest measured point and the surface must be extrapolated. The angle between the probe axis and the surface normal line is less than 30 degree.

In the Area Scan, the gradient of the interpolation function is evaluated to find all the extreme of the SAR distribution. The uncertainty on the locations of the extreme is less than 1/20 of the grid size. Only local maximum within -2 dB of the global maximum are searched and passed for the Cube Scan measurement. In the Cube Scan, the interpolation function is used to extrapolate the Peak SAR from the lowest measurement points to the inner phantom surface (the extrapolation distance). The uncertainty increases with the extrapolation distance. To keep the uncertainty within 1% for the 1 g and 10 g cubes, the extrapolation distance should not be larger than 5mm.

The maximum search is automatically performed after each area scan measurement. It

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is based on splines in two or three dimensions. The procedure can find the maximum for most SAR distributions even with relatively large grid spacing. After the area scanning measurement, the probe is automatically moved to a position at the interpolated maximum. The following scan can directly use this position for reference, e.g., for a finer resolution grid or the cube evaluations. The 1g and 10g peak evaluations are only available for the predefined cube 7x7x7 scans.

The routines are verified and optimized for the grid dimensions used in these cube measurements. The measured volume of 30x30x30mm contains about 30g of tissue. The first procedure is an extrapolation (incl. Boundary correction) to get the points between the lowest measured plane and the surface. The next step uses 3D interpolation to get all points within the measured volume. In the last step, a 1g cube is placed numerically into the volume and its averaged SAR is calculated. This cube is then moved around until the highest averaged SAR is found.

If the highest SAR is found at the edge of the measured volume, the system will issue a warning: higher SAR values might be found outside of the measured volume. In that case the cube measurement can be repeated, using the new interpolated maximum as the center.

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## 1.8 The SAR Measurement System

A photograph of the SAR measurement System is given in Fig. a. This SAR Measurement System uses a Computer-controlled 3-D stepper motor system (SPEAG DASY 4 professional system ). A Model EX3DV4/ES3DV3 field probe is used to determine the internal electric fields. The SAR can be obtained from the equation  $SAR = \sigma (|E|^2) / \rho$  where  $\sigma$  and  $\rho$  are the conductivity and mass density of the tissue-simulant.

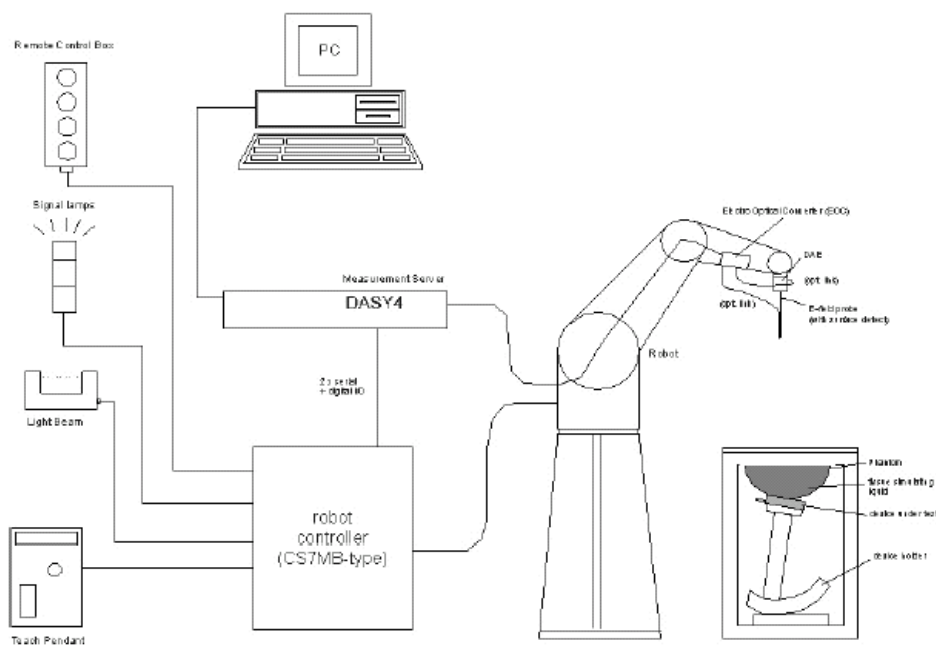


Fig.a The block diagram of SAR system

The DASY4 system for performing compliance tests consists of the following items:

- A standard high precision 6-axis robot (Staubli RX family) with controller, teach pendant and software. An arm extension is for accommodating the data acquisition electronics (DAE).
- A dosimetric probe, i.e., an isotropic E-field probe optimized and calibrated for usage in tissue simulating liquid. The probe is equipped with an optical surface detector system.
- A data acquisition electronics (DAE) which performs the signal amplification, signal

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multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.

- The Electro-optical converter (EOC) performs the conversion between optical and electrical of the signals for the digital communication to the DAE and for the analog signal from the optical surface detection. The EOC is connected to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- A probe alignment unit which improves the (absolute) accuracy of the probe positioning.
  - A computer operating Windows 2000 or Windows XP.
  - DASY4 software.
- Remote control with teach pendant and additional circuitry for robot safety such as warning lamps, etc.
  - The SAM twin phantom enabling testing left-hand and right-hand usage.
  - The device holder for handheld mobile phones.
  - Tissue simulating liquid mixed according to the given recipes.
  - Validation dipole kits allowing to validate the proper functioning of the system.

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## 1.9 System Components

### EX3DV4/ES3DV3 E-Field Probe

|                |                                                                                                                                                                                                            |                                                                                     |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Construction:  | Symmetrical design with triangular core<br>Built-in shielding against static charges<br>PEEK enclosure material (resistant to organic solvents, e.g., DGBE)                                                |  |
| Calibration:   | Basic Broad Band Calibration in air<br>Conversion Factors (CF) for HSL835/1900/2450MHz<br>Additional CF for other liquids and frequencies upon request                                                     |                                                                                     |
| Frequency:     | 10 MHz to > 6 GHz; Linearity: $\pm 0.2$ dB (30 MHz to 6 GHz)                                                                                                                                               |                                                                                     |
| Directivity:   | $\pm 0.3$ dB in HSL (rotation around probe axis)<br>$\pm 0.5$ dB in tissue material (rotation normal to probe axis)                                                                                        |                                                                                     |
| Dynamic Range: | 10 $\mu$ W/g to > 100 mW/g;<br>Linearity: $\pm 0.2$ dB (noise: typically < 1 $\mu$ W/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%. |                                                                                     |

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## SAM PHANTOM V4.0C

|                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                    |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| Construction:    | <p>The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE 1528-200X, CENELEC 50361 and IEC 62209.</p> <p>It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents evaporation of the liquid. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids by manually teaching three points with the robot.</p> |                                                                                    |
| Shell Thickness: | 2 ± 0.2 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |
| Filling Volume:  | Approx. 25 liters                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                    |
| Dimensions:      | Height: 251 mm;<br>Length: 1000 mm;<br>Width: 500 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                    |

## DEVICE HOLDER

|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                           |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| Construction | <p>In combination with the Twin SAM Phantom V4.0/V4.0C or Twin SAM, the Mounting Device (made from POM) enables the rotation of the mounted transmitter in spherical coordinates, whereby the rotation point is the ear opening. The devices can be easily and accurately positioned according to IEC, IEEE, CENELEC, FCC or other specifications. The device holder can be locked at different phantom locations (left head, right head, flat phantom).</p> |  <p>Device Holder</p> |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|

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## 1.10 SAR System Verification

The microwave circuit arrangement for system verification is sketched in Fig. b. The daily system accuracy verification occurs within the flat section of the SAM phantom. A SAR measurement was performed to see if the measured SAR was within  $\pm 5\%$  from the target SAR values.

These tests were done at 835/1900/2450 MHz. The tests were conducted on the same days as the measurement of the DUT. The obtained results from the system accuracy verification are displayed in the table 1. During the tests, the ambient temperature of the laboratory was in the range  $22.1^{\circ}\text{C}$ , the relative humidity was in the range 62% and the liquid depth above the ear reference points was above 15 cm in all the cases. It is seen that the system is operating within its specification, as the results are within acceptable tolerance of the reference values.

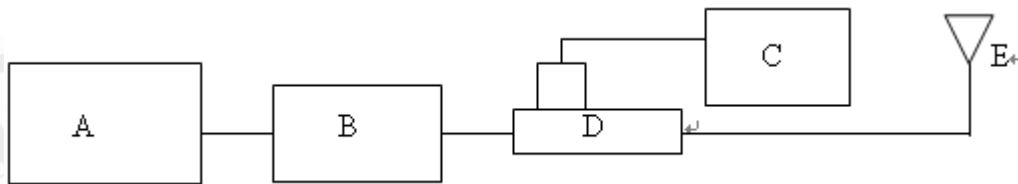
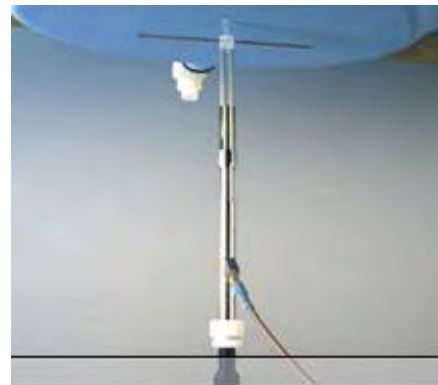


Fig.b The block diagram of system verification

- A. Agilent Model 8648D Signal Generator
- B. Mini circuits Model ZHL-42 Amplifier
- C. Agilent Model U2001B Power Sensor
- D. Agilent Model 778D/777D Dual directional coupling
- E. Reference dipole antenna



Photograph of the dipole Antenna

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| Validation Kit        | Frequency (MHz)    | Target SAR (1g) (Pin=250mW) | Measured SAR (1g) | Measured Date |
|-----------------------|--------------------|-----------------------------|-------------------|---------------|
| D835V2<br>S/N: 4d063  | 835 MHz<br>(Head)  | 2.31 mW/g                   | 2.34mW/g          | 2011-06-06    |
| D835V2<br>S/N: 4d063  | 835 MHz<br>(Body)  | 2.43 mW/g                   | 2.47mW/g          | 2011-06-06    |
| D1900V2<br>S/N: 5d027 | 1900 MHz<br>(Head) | 10.1 mW/g                   | 9.98mW/g          | 2011-06-08    |
| D1900V2<br>S/N: 5d027 | 1900 MHz<br>(Body) | 9.93 mW/g                   | 9.85mW/g          | 2011-06-09    |
| D2450V2<br>S/N: 727   | 2450 MHz<br>(Head) | 13.7 mW/g                   | 13.2mW/g          | 2011-06-11    |
| D2450V2<br>S/N: 727   | 2450 MHz<br>(Body) | 12.7 mW/g                   | 12.6mW/g          | 2011-06-11    |
| D835V2<br>S/N: 4d063  | 835 MHz<br>(Body)  | 2.43 mW/g                   | 2.46mW/g          | 2011-08-22    |
| D1900V2<br>S/N: 5d027 | 1900 MHz<br>(Body) | 9.93 mW/g                   | 9.95mW/g          | 2011-08-22    |
| D835V2<br>S/N: 4d063  | 835 MHz<br>(Head)  | 2.31 mW/g                   | 2.25mW/g          | 2011-09-13    |
| D1900V2<br>S/N: 5d027 | 1900 MHz<br>(Head) | 10.1 mW/g                   | 9.71mW/g          | 2011-09-13    |

Table 1. System validation (follow manufacture target value)

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### 1.11 Tissue Simulant Fluid for the Frequency Band

The dielectric properties for this Head-simulant fluid were measured by using the HP Model 85070D Dielectric Probe (rates frequency band 200 MHz to 20 GHz) in conjunction with HP 8753D Network Analyzer (30 KHz-6000MHz).

All dielectric parameters of tissue simulates were measured within 24 hours of SAR measurements. The depth of the tissue simulant iin the flat section of the phantom was 15cm±5mm during all tests. (Appendix Fig .2)

| Frequency (MHz) | Tissue type | Measurement date/<br>Limits | Dielectric Parameters |                |                                   |
|-----------------|-------------|-----------------------------|-----------------------|----------------|-----------------------------------|
|                 |             |                             | $\epsilon_r$          | $\sigma$ (S/m) | Simulated Tissue Temperature(° C) |
| 835             | Head        | Measured, 2011-06-06        | 41.4                  | 0.917          | 21.7                              |
|                 |             | Recommended Limits          | 38.38-42.42           | 0.84-0.92      | 20-24                             |
| 835             | Body        | Measured, 2011-06-06        | 56.2                  | 1.01           | 21.7                              |
|                 |             | Recommended Limits          | 51.21-56.60           | 0.95-1.05      | 20-24                             |
| 1900            | Head        | Measured, 2011-06-08        | 39.5                  | 1.47           | 21.7                              |
|                 |             | Recommended Limits          | 36.96-40.85           | 1.34-1.48      | 20-24                             |
| 1900            | Body        | Measured, 2011-06-09        | 53                    | 1.57           | 21.7                              |
|                 |             | Recommended Limits          | 48.55-53.66           | 1.44-1.60      | 20-24                             |
| 2450            | Head        | Measured, 2011-06-11        | 37.9                  | 1.79           | 21.7                              |
|                 |             | Recommended Limits          | 36.77-40.64           | 1.63-1.81      | 20-24                             |
| 2450            | Body        | Measured, 2011-06-11        | 52.1                  | 1.97           | 21.7                              |
|                 |             | Recommended Limits          | 48.07-53.13           | 1.81-2.01      | 20-24                             |
| 835             | Body        | Measured, 2011-08-22        | 55.3                  | 1.02           | 21.7                              |
|                 |             | Recommended Limits          | 51.21-56.60           | 0.95-1.05      | 20-24                             |
| 1900            | Body        | Measured, 2011-08-22        | 51.4                  | 1.60           | 21.7                              |
|                 |             | Recommended Limits          | 48.55-53.66           | 1.44-1.60      | 20-24                             |
| 835             | Head        | Measured, 2011-09-13        | 41.9                  | 0.896          | 21.7                              |
|                 |             | Recommended Limits          | 38.38-42.42           | 0.84-0.92      | 20-24                             |
| 1900            | Head        | Measured, 2011-09-13        | 40.6                  | 1.42           | 21.7                              |
|                 |             | Recommended Limits          | 36.96-40.85           | 1.34-1.48      | 20-24                             |

Table 2. Dielectric Parameters of Tissue Simulant Fluid

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The composition of the brain tissue simulating liquid:

| Ingredient       | 850MHz<br>(Head) | 850MHz<br>(Body) | 1900MHz<br>(Head) | 1900MHz<br>(Body) | 2450MHz<br>(Head) | 2450MHz<br>(Body) |
|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|
| DGMBE            | X                | X                | 444.52 g          | 300.67g           | 550ml             | 301.7ml           |
| Water            | 532.98 g         | 631.68 g         | 552.42 g          | 716.56 g          | 450ml             | 698.3ml           |
| Salt             | 18.3 g           | 11.72 g          | 3.06 g            | 4.0 g             | X                 | X                 |
| Preventol<br>D-7 | 2.4 g            | 1.2 g            | X                 | X                 | X                 | X                 |
| Cellulose        | 3.2 g            | X                | X                 | X                 | X                 | X                 |
| Sugar            | 766.0 g          | 600 g            | X                 | X                 | X                 | X                 |
| Total<br>amount  | 1 L<br>(1.0kg)   | 1 L<br>(1.0kg)   | 1 L<br>(1.0kg)    | 1 L<br>(1.0kg)    | 1 L<br>(1.0kg)    | 1 L<br>(1.0kg)    |

Table 3. Recipes for tissue simulating liquid

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### 1.12 Test Standards and Limits

According to FCC 47CFR §2.1093(d) The limits to be used for evaluation are based generally on criteria published by the American National Standards Institute (ANSI) for localized specific absorption rate ("SAR") in Section 4.2 of "IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz," ANSI/IEEE C95.1–1992, Copyright 1992 by the Institute of Electrical and Electronics Engineers, Inc., New York, New York 10017.

These criteria for SAR evaluation are similar to those recommended by the National Council on Radiation Protection and Measurements (NCRP) in "Biological Effects and Exposure Criteria for Radio frequency Electromagnetic Fields," NCRP Report No. 86, Section 17.4.5. Copyright NCRP, 1986, Bethesda, Maryland 20814. SAR is a measure of the rate of energy absorption due to exposure to an RF transmitting source. SAR values have been related to threshold levels for potential biological hazards. The criteria to be used are specified in paragraphs (d)(1) and (d)(2) of this section and shall apply for portable devices transmitting in the frequency range from 100 kHz to 6 GHz. Portable devices that transmit at frequencies above 6 GHz are to be evaluated in terms of the MPE limits specified in § 1.1310 of this chapter.

Measurements and calculations to demonstrate compliance with MPE field strength or power density limits for devices operating above 6 GHz should be made at a minimum distance of 5 cm from the radiating source.

(1) Limits for Occupational/Controlled exposure: 0.4 W/kg as averaged over the whole-body and spatial peak SAR not exceeding 8 W/kg as averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube). Exceptions are the hands, wrists, feet and ankles where the spatial peak SAR shall not exceed 20 W/kg, as averaged over an 10 grams of tissue (defined as a tissue volume in the shape of a cube). Occupational/Controlled limits apply when persons are exposed as a consequence of their employment provided these persons are fully aware of and exercise control over their exposure. Awareness of exposure can be accomplished by use of warning labels or by specific training or education through appropriate means, such as an RF safety program in a work environment.

(2) Limits for General Population/Uncontrolled exposure: 0.08 W/kg as averaged over

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the whole-body and spatial peak SAR not exceeding 1.6 W/kg as averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube).

Exceptions are the hands, wrists, feet and ankles where the spatial peak SAR shall not exceed 4 W/kg, as averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube).

General Population/Uncontrolled limits apply when the general public may be exposed, or when persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or do not exercise control over their exposure.

Warning labels placed on consumer devices such as cellular telephones will not be sufficient reason to allow these devices to be evaluated subject to limits for occupational/controlled exposure in paragraph (d)(1) of this section.(Table .6)

| Human Exposure                               | Uncontrolled Environment<br>General Population | Controlled Environment<br>Occupational |
|----------------------------------------------|------------------------------------------------|----------------------------------------|
| Spatial Peak SAR<br>(Brain)                  | 1.60 m W/g                                     | 8.00 m W/g                             |
| Spatial Average SAR<br>(Whole Body)          | 0.08 m W/g                                     | 0.40 m W/g                             |
| Spatial Peak SAR<br>(Hands/Feet/Ankle/Wrist) | 4.00 m W/g                                     | 20.00 m W/g                            |

Table 4. RF exposure limits

Notes:

1. Uncontrolled environments are defined as locations where there is potential exposure of individuals who have no knowledge or control of their potential exposure.
2. Controlled environments are defined as locations where there is potential exposure of individuals who have knowledge of their potential exposure and can exercise control over their exposure.

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## 2. Summary of Results

### GSM 850 MHz

| Right Head (Cheek Position)    |         |       |                                  |                   |                 |                   |
|--------------------------------|---------|-------|----------------------------------|-------------------|-----------------|-------------------|
| Frequency                      | Channel | MHz   | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ ° C] | Liquid Temp[ ° C] |
| 850 MHz                        | 190     | 836.6 | 24.27dBm                         | 0.303             | 22.1            | 21.7              |
| Left Head (Cheek Position)     |         |       |                                  |                   |                 |                   |
| Frequency                      | Channel | MHz   | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ ° C] | Liquid Temp[ ° C] |
| 850 MHz                        | 128     | 824.2 | 24.27dbm                         | 0.278             | 22.1            | 21.7              |
|                                | 190     | 836.6 | 24.27dbm                         | 0.344             | 22.1            | 21.7              |
|                                | 251     | 848.8 | 24.17dBm                         | 0.386             | 22.1            | 21.7              |
| Right Head (15° Tilt Position) |         |       |                                  |                   |                 |                   |
| Frequency                      | Channel | MHz   | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ ° C] | Liquid Temp[ ° C] |
| 850 MHz                        | 190     | 836.6 | 24.27dbm                         | 0.190             | 22.1            | 21.7              |
| Left Head (15° Tilt Position)  |         |       |                                  |                   |                 |                   |
| Frequency                      | Channel | MHz   | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ ° C] | Liquid Temp[ ° C] |
| 850 MHz                        | 190     | 836.6 | 24.27dbm                         | 0.222             | 22.1            | 21.7              |

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| <b>Hotspot mode _Front side (testing in GPRS mode) _multi class 10 _test distance is 10mm, Radiated power (EIRP) is not reduced.</b>  |         |       |                                  |                   |                 |                   |
|---------------------------------------------------------------------------------------------------------------------------------------|---------|-------|----------------------------------|-------------------|-----------------|-------------------|
| Frequency                                                                                                                             | Channel | MHz   | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ ° C] | Liquid Temp[ ° C] |
| 850 MHz                                                                                                                               | 190     | 836.6 | 24.98dbm                         | 0.474             | 22.1            | 21.7              |
| <b>Hotspot mode _Back side (testing in GPRS mode) _multi class 10 _test distance is 10mm, Radiated power (EIRP) is not reduced.</b>   |         |       |                                  |                   |                 |                   |
| Frequency                                                                                                                             | Channel | MHz   | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ ° C] | Liquid Temp[ ° C] |
| 850 MHz                                                                                                                               | 190     | 836.6 | 24.98dbm                         | 0.638             | 22.1            | 21.7              |
| <b>Hotspot mode _Bottom side (testing in GPRS mode) _multi class 10 _test distance is 10mm, Radiated power (EIRP) is not reduced.</b> |         |       |                                  |                   |                 |                   |
| Frequency                                                                                                                             | Channel | MHz   | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ ° C] | Liquid Temp[ ° C] |
| 850 MHz                                                                                                                               | 190     | 836.6 | 24.98dbm                         | 0.058             | 22.1            | 21.7              |
| <b>Hotspot mode _Right side (testing in GPRS mode) _multi class 10 _test distance is 10mm, Radiated power (EIRP) is not reduced.</b>  |         |       |                                  |                   |                 |                   |
| Frequency                                                                                                                             | Channel | MHz   | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ ° C] | Liquid Temp[ ° C] |
| 850 MHz                                                                                                                               | 190     | 836.6 | 24.98dbm                         | 0.436             | 22.1            | 21.7              |
| <b>Hotspot mode _Left side (testing in GPRS mode) _multi class 10 _test distance is 10mm, Radiated power (EIRP) is not reduced.</b>   |         |       |                                  |                   |                 |                   |
| Frequency                                                                                                                             | Channel | MHz   | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ ° C] | Liquid Temp[ ° C] |
| 850 MHz                                                                                                                               | 190     | 836.6 | 24.98dbm                         | 0.648             | 22.1            | 21.7              |
| <b>Hotspot mode _Left side (testing in GPRS mode) _multi class 8 _test distance is 10mm, Radiated power (EIRP) is not reduced.</b>    |         |       |                                  |                   |                 |                   |
| Frequency                                                                                                                             | Channel | MHz   | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ ° C] | Liquid Temp[ ° C] |
| 850 MHz                                                                                                                               | 190     | 836.6 | 24.27dbm                         | 0.574             | 22.1            | 21.7              |

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| <b>Hotspot mode _Left side (testing in GPRS mode) _multi class 12_test distance is 10mm, Radiated power (EIRP) is not reduced.</b> |         |       |                                  |                   |                 |                   |
|------------------------------------------------------------------------------------------------------------------------------------|---------|-------|----------------------------------|-------------------|-----------------|-------------------|
| Frequency                                                                                                                          | Channel | MHz   | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ ° C] | Liquid Temp[ ° C] |
| 850 MHz                                                                                                                            | 190     | 836.6 | 24.09dBm                         | 0.520             | 22.1            | 21.7              |
| <b>Body worn _Front side (testing in GPRS mode) _multi class 10_test distance is 15mm, Radiated power (EIRP) is not reduced.</b>   |         |       |                                  |                   |                 |                   |
| Frequency                                                                                                                          | Channel | MHz   | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ ° C] | Liquid Temp[ ° C] |
| 850 MHz                                                                                                                            | 190     | 836.6 | 24.09dBm                         | 0.414             | 22.1            | 21.7              |
| <b>Body worn _Back side (testing in GPRS mode) _multi class 10_test distance is 15mm, Radiated power (EIRP) is not reduced.</b>    |         |       |                                  |                   |                 |                   |
| Frequency                                                                                                                          | Channel | MHz   | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ ° C] | Liquid Temp[ ° C] |
| 850 MHz                                                                                                                            | 190     | 836.6 | 24.09dBm                         | 0.541             | 22.1            | 21.7              |
| <b>Right Head (Cheek Position)_(testing in GPRS mode) _multi-class 10</b>                                                          |         |       |                                  |                   |                 |                   |
| Frequency                                                                                                                          | Channel | MHz   | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ ° C] | Liquid Temp[ ° C] |
| 850 MHz                                                                                                                            | 190     | 836.6 | 24.98dBm                         | 0.330             | 22.1            | 21.7              |
| <b>Left Head (Cheek Position) _ (testing in GPRS mode) _multi-class 10</b>                                                         |         |       |                                  |                   |                 |                   |
| Frequency                                                                                                                          | Channel | MHz   | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ ° C] | Liquid Temp[ ° C] |
| 850 MHz                                                                                                                            | 190     | 836.6 | 24.98dBm                         | 0.374             | 22.1            | 21.7              |
| <b>Right Head (15° Tilt Position) _ (testing in GPRS mode) _multi-class 10</b>                                                     |         |       |                                  |                   |                 |                   |
| Frequency                                                                                                                          | Channel | MHz   | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ ° C] | Liquid Temp[ ° C] |
| 850 MHz                                                                                                                            | 190     | 836.6 | 24.98dBm                         | 0.232             | 22.1            | 21.7              |
| <b>Left Head (15° Tilt Position) _ (testing in GPRS mode) _multi-class 10</b>                                                      |         |       |                                  |                   |                 |                   |
| Frequency                                                                                                                          | Channel | MHz   | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ ° C] | Liquid Temp[ ° C] |
| 850 MHz                                                                                                                            | 190     | 836.6 | 24.98dBm                         | 0.252             | 22.1            | 21.7              |

#. According to section 6.3.1 and 6.3.1.2 of KDB941225 D03 to exclude SAR test requirements for EDGE modes due to the source-based time-averaged output power(page

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7's conducted power table) for edge mode is lower than that in the GPRS mode.

- #. According to KDB447498 the 1-g SAR for the highest output channel is less than 0.8 W/kg, where the transmission band corresponding to all channels is  $\leq 100$  MHz, testing for the other channels is not required.
- #. The VoIP function can be used by third party software applications, therefore user may hold this device close to ear when talk via VoIP. We test Head SAR for the pure data mode(GPRS).

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## PCS 1900 MHz

| Right Head (Cheek Position)    |         |        |                                  |                   |                |                  |
|--------------------------------|---------|--------|----------------------------------|-------------------|----------------|------------------|
| Frequency                      | Channel | MHz    | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
| 1900 MHz                       | 661     | 1880   | 21.67dbm                         | 0.312             | 22.1           | 21.7             |
| Left Head (Cheek Position)     |         |        |                                  |                   |                |                  |
| Frequency                      | Channel | MHz    | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
| 1900 MHz                       | 512     | 1850.2 | 21.67dbm                         | 0.416             | 22.1           | 21.7             |
|                                | 661     | 1880   | 21.67dbm                         | 0.481             | 22.1           | 21.7             |
|                                | 810     | 1909.8 | 21.87dBm                         | 0.425             | 22.1           | 21.7             |
| Right Head (15° Tilt Position) |         |        |                                  |                   |                |                  |
| Frequency                      | Channel | MHz    | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
| 1900 MHz                       | 661     | 1880   | 21.67dbm                         | 0.176             | 22.1           | 21.7             |
| Left Head (15° Tilt Position)  |         |        |                                  |                   |                |                  |
| Frequency                      | Channel | MHz    | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
| 1900 MHz                       | 661     | 1880   | 21.67dbm                         | 0.149             | 22.1           | 21.7             |

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| Hotspot mode _Front side (testing in GPRS mode) _multi class 10_test distance is 10mm, Radiated power (EIRP) is reduced for 1 dbm  |         |        |                                  |                   |                |                  |
|------------------------------------------------------------------------------------------------------------------------------------|---------|--------|----------------------------------|-------------------|----------------|------------------|
| Frequency                                                                                                                          | Channel | MHz    | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
| 1900 MHz                                                                                                                           | 661     | 1880   | 22.68dbm                         | 0.465             | 22.1           | 21.7             |
| Hotspot mode _Back side (testing in GPRS mode) _multi class 10_test distance is 10mm, Radiated power (EIRP) is reduced for 1 dbm   |         |        |                                  |                   |                |                  |
| Frequency                                                                                                                          | Channel | MHz    | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
| 1900 MHz                                                                                                                           | 512     | 1850.2 | 22.26dBm                         | 0.910             | 22.1           | 21.7             |
|                                                                                                                                    | 661     | 1880   | 22.68dbm                         | 0.899             | 22.1           | 21.7             |
|                                                                                                                                    | 810     | 1909.8 | 22.80dBm                         | 0.740             | 22.1           | 21.7             |
| Hotspot mode _Bottom side (testing in GPRS mode) _multi class 10_test distance is 10mm, Radiated power (EIRP) is reduced for 1 dbm |         |        |                                  |                   |                |                  |
| Frequency                                                                                                                          | Channel | MHz    | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
| 1900 MHz                                                                                                                           | 512     | 1850.2 | 22.26dBm                         | 1.05              | 22.1           | 21.7             |
|                                                                                                                                    | 661     | 1880   | 22.68dbm                         | 1.17              | 22.1           | 21.7             |
|                                                                                                                                    | 810     | 1909.8 | 22.80dBm                         | 0.944             | 22.1           | 21.7             |
| Hotspot mode _Right side (testing in GPRS mode) _multi class 10_test distance is 10mm, Radiated power (EIRP) is reduced for 1 dbm  |         |        |                                  |                   |                |                  |
| Frequency                                                                                                                          | Channel | MHz    | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
| 1900 MHz                                                                                                                           | 661     | 1880   | 22.68dbm                         | 0.053             | 22.1           | 21.7             |
| Hotspot mode _Left side (testing in GPRS mode) _multi class 10_test distance is 10mm, Radiated power (EIRP) is reduced for 1 dbm   |         |        |                                  |                   |                |                  |
| Frequency                                                                                                                          | Channel | MHz    | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
| 1900 MHz                                                                                                                           | 661     | 1880   | 22.68dbm                         | 0.441             | 22.1           | 21.7             |

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**Hotspot mode \_Bottom side (testing in GPRS mode) \_multi class 8\_test distance is 10mm, Radiated power (EIRP) is reduced for 1 dbm**

| Frequency | Channel | MHz    | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
|-----------|---------|--------|----------------------------------|-------------------|----------------|------------------|
| 1900 MHz  | 512     | 1850.2 | 21.67dbm                         | 0.818             | 22.1           | 21.7             |
|           | 661     | 1880   | 21.67dbm                         | 0.873             | 22.1           | 21.7             |
|           | 810     | 1909.8 | 21.87dBm                         | 0.687             | 22.1           | 21.7             |

**Hotspot mode \_Bottom side (testing in GPRS mode) \_multi class 12\_test distance is 10mm, Radiated power (EIRP) is reduced for 1 dbm**

| Frequency | Channel | MHz    | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
|-----------|---------|--------|----------------------------------|-------------------|----------------|------------------|
| 1900 MHz  | 512     | 1850.2 | 24.70dBm                         | 0.824             | 22.1           | 21.7             |
|           | 661     | 1880   | 24.70dBm                         | 0.874             | 22.1           | 21.7             |
|           | 810     | 1909.8 | 24.90dBm                         | 0.697             | 22.1           | 21.7             |

**Body worn \_Front side (testing in GPRS mode) \_multi class 10\_test distance is 15mm**

| Frequency | Channel | MHz  | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
|-----------|---------|------|----------------------------------|-------------------|----------------|------------------|
| 1900 MHz  | 661     | 1880 | 24.70dBm                         | 0.239             | 22.1           | 21.7             |

**Body worn \_Back side (testing in GPRS mode) \_multi class 10\_test distance is 15mm**

| Frequency | Channel | MHz  | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
|-----------|---------|------|----------------------------------|-------------------|----------------|------------------|
| 1900 MHz  | 661     | 1880 | 24.70dBm                         | 0.451             | 22.1           | 21.7             |

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**Right Head (Cheek Position)\_(testing in GPRS mode)\_multi-class 10**

| Frequency | Channel | MHz  | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
|-----------|---------|------|----------------------------------|-------------------|----------------|------------------|
| 1900 MHz  | 661     | 1880 | 22.68dBm                         | 0.347             | 22.1           | 21.7             |

**Left Head (Cheek Position)\_(testing in GPRS mode)\_multi-class 10**

| Frequency | Channel | MHz  | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
|-----------|---------|------|----------------------------------|-------------------|----------------|------------------|
| 1900 MHz  | 661     | 1880 | 22.68dBm                         | 0.595             | 22.1           | 21.7             |

**Right Head (15° Tilt Position)\_(testing in GPRS mode)\_multi-class 10**

| Frequency | Channel | MHz  | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
|-----------|---------|------|----------------------------------|-------------------|----------------|------------------|
| 1900 MHz  | 661     | 1880 | 22.68dBm                         | 0.193             | 22.1           | 21.7             |

**Left Head (15° Tilt Position)\_(testing in GPRS mode)\_multi-class 10**

| Frequency | Channel | MHz  | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
|-----------|---------|------|----------------------------------|-------------------|----------------|------------------|
| 1900 MHz  | 661     | 1880 | 22.68dBm                         | 0.191             | 22.1           | 21.7             |

- #. Using KDB941225 D03 and KDB941225 D04 to exclude SAR test requirements for EDGE modes due to the source-based time-averaged output power for edge mode is lower than that in the GPRS mode.
- #. According to KDB447498 the 1-g SAR for the highest output channel is less than 0.8 W/kg, where the transmission band corresponding to all channels is  $\leq 100$  MHz, testing for the other channels is not required.
- #. The VoIP function can be used by third party software applications, therefore user may hold this device close to ear when talk via VoIP. We test Head SAR for the pure data mode(GPRS).

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## WCDMA Band II

| Right Head (Cheek Position)                          |         |         |                                  |                   |                |                  |
|------------------------------------------------------|---------|---------|----------------------------------|-------------------|----------------|------------------|
| Frequency                                            | Channel | MHz     | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
| 1900 MHz                                             | 9400    | 1880.00 | 23.73dBm                         | 0.681             | 22.1           | 21.7             |
| Left Head (Cheek Position)                           |         |         |                                  |                   |                |                  |
| Frequency                                            | Channel | MHz     | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
| 1900 MHz                                             | 9262    | 1852.40 | 23.83dBm                         | 1.00              | 22.1           | 21.7             |
|                                                      | 9400    | 1880.00 | 23.73dBm                         | 1.01              | 22.1           | 21.7             |
|                                                      | 9538    | 1907.60 | 23.63dBm                         | 0.941             | 22.1           | 21.7             |
| Right Head (15° Tilt Position)                       |         |         |                                  |                   |                |                  |
| Frequency                                            | Channel | MHz     | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
| 1900 MHz                                             | 9400    | 1880.00 | 23.73dBm                         | 0.318             | 22.1           | 21.7             |
| Left Head (15° Tilt Position)                        |         |         |                                  |                   |                |                  |
| Frequency                                            | Channel | MHz     | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
| 1900 MHz                                             | 9400    | 1880.00 | 23.73dBm                         | 0.281             | 22.1           | 21.7             |
| (For highest SAR configuration in this band)         |         |         |                                  |                   |                |                  |
| Left Head (Cheek Position)_repeated with memory card |         |         |                                  |                   |                |                  |
| Frequency                                            | Channel | MHz     | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
| 1900 MHz                                             | 9400    | 1880.00 | 23.73dBm                         | 0.987             | 22.1           | 21.7             |

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| Hotspot mode _Front side (testing in R99 mode) _test distance is 10mm, Radiated power (EIRP) is reduced for 3 dbm  |         |         |                                  |                   |                |                  |
|--------------------------------------------------------------------------------------------------------------------|---------|---------|----------------------------------|-------------------|----------------|------------------|
| Frequency                                                                                                          | Channel | MHz     | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
| 1900 MHz                                                                                                           | 9262    | 1852.40 | 23.83dBm                         | 1.06              | 22.1           | 21.7             |
|                                                                                                                    | 9400    | 1880.00 | 23.73dBm                         | 0.825             | 22.1           | 21.7             |
|                                                                                                                    | 9538    | 1907.60 | 23.63dBm                         | 0.583             | 22.1           | 21.7             |
| Hotspot mode _Back side (testing in R99 mode) _test distance is 10mm ,Radiated power (EIRP) is reduced for 3 dbm   |         |         |                                  |                   |                |                  |
| Frequency                                                                                                          | Channel | MHz     | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
| 1900 MHz                                                                                                           | 9262    | 1852.40 | 23.83dBm                         | 1.08              | 22.1           | 21.7             |
|                                                                                                                    | 9400    | 1880.00 | 23.73dBm                         | 0.992             | 22.1           | 21.7             |
|                                                                                                                    | 9538    | 1907.60 | 23.63dBm                         | 0.762             | 22.1           | 21.7             |
| Hotspot mode _Bottom side (testing in R99 mode) _test distance is 10mm ,Radiated power (EIRP) is reduced for 3 dbm |         |         |                                  |                   |                |                  |
| Frequency                                                                                                          | Channel | MHz     | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
| 1900 MHz                                                                                                           | 9262    | 1852.40 | 23.83dBm                         | 1.25              | 22.1           | 21.7             |
|                                                                                                                    | 9400    | 1880.00 | 23.73dBm                         | 1.29              | 22.1           | 21.7             |
|                                                                                                                    | 9538    | 1907.60 | 23.63dBm                         | 1.04              | 22.1           | 21.7             |
| Hotspot mode _Right side (testing in R99 mode) _test distance is 10mm ,Radiated power (EIRP) is reduced for 3 dbm  |         |         |                                  |                   |                |                  |
| Frequency                                                                                                          | Channel | MHz     | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
| 1900 MHz                                                                                                           | 9400    | 1880.00 | 23.73dBm                         | 0.076             | 22.1           | 21.7             |
| Hotspot mode _Left side (testing in R99 mode) _test distance is 10mm ,Radiated power (EIRP) is reduced for 3 dbm   |         |         |                                  |                   |                |                  |
| Frequency                                                                                                          | Channel | MHz     | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
| 1900 MHz                                                                                                           | 9400    | 1880.00 | 23.73dBm                         | 0.752             | 22.1           | 21.7             |

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**(For highest SAR configuration in this band)**
**Hotspot mode\_ Bottom side(testing in R99 mode)\_repeated with headset \_test distance is 10mm**

| Frequency | Channel | MHz     | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
|-----------|---------|---------|----------------------------------|-------------------|----------------|------------------|
| 1900 MHz  | 9400    | 1880.00 | 23.73dBm                         | 1.08              | 22.1           | 21.7             |

**(For highest SAR configuration in this band)**
**Hotspot mode\_ Bottom side(testing in R99 mode)\_repeated with memory card \_test distance is 10mm ,Radiated power (EIRP) is reduced for 3 dbm**

| Frequency | Channel | MHz     | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
|-----------|---------|---------|----------------------------------|-------------------|----------------|------------------|
| 1900 MHz  | 9400    | 1880.00 | 23.73dBm                         | 1.23              | 22.1           | 21.7             |

**Body worn \_Front side (testing in R99 mode) \_test distance is 15mm**

| Frequency | Channel | MHz     | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
|-----------|---------|---------|----------------------------------|-------------------|----------------|------------------|
| 1900 MHz  | 9400    | 1880.00 | 23.73dBm                         | 0.386             | 22.1           | 21.7             |

**Body worn \_Back side (testing in R99 mode) \_test distance is 15mm**

| Frequency | Channel | MHz     | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
|-----------|---------|---------|----------------------------------|-------------------|----------------|------------------|
| 1900 MHz  | 9262    | 1852.40 | 23.83dBm                         | 1.15              | 22.1           | 21.7             |
|           | 9400    | 1880.00 | 23.73dBm                         | 1.12              | 22.1           | 21.7             |
|           | 9538    | 1907.60 | 23.63dBm                         | 0.845             | 22.1           | 21.7             |

#. Using KDB941225 D01 to exclude SAR test requirements for HSPA modes due to the maximum average output power of HSPA active is less than 1/4 dB higher than that measured without HSPA using 12.2kbps RMC

#. According to KDB447498 the 1-g SAR for the highest output channel is less than 0.8 W/kg, where the transmission band corresponding to all channels is  $\leq 100$  MHz, testing for the other channels is not required.

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## WCDMA Band V

| Right Head (Cheek Position)    |         |        |                                  |                   |                 |                   |
|--------------------------------|---------|--------|----------------------------------|-------------------|-----------------|-------------------|
| Frequency                      | Channel | MHz    | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ ° C] | Liquid Temp[ ° C] |
| 850 MHz                        | 4183    | 836.60 | 23.91dBm                         | 0.362             | 22.1            | 21.7              |
| Left Head (Cheek Position)     |         |        |                                  |                   |                 |                   |
| Frequency                      | Channel | MHz    | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ ° C] | Liquid Temp[ ° C] |
| 850 MHz                        | 4132    | 826.40 | 23.78dBm                         | 0.323             | 22.1            | 21.7              |
|                                | 4183    | 836.60 | 23.91dBm                         | 0.382             | 22.1            | 21.7              |
|                                | 4233    | 846.60 | 23.72dBm                         | 0.354             | 22.1            | 21.7              |
| Right Head (15° Tilt Position) |         |        |                                  |                   |                 |                   |
| Frequency                      | Channel | MHz    | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ ° C] | Liquid Temp[ ° C] |
| 850 MHz                        | 4183    | 836.60 | 23.91dBm                         | 0.230             | 22.1            | 21.7              |
| Left Head (15° Tilt Position)  |         |        |                                  |                   |                 |                   |
| Frequency                      | Channel | MHz    | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ ° C] | Liquid Temp[ ° C] |
| 850 MHz                        | 4183    | 836.60 | 23.91dBm                         | 0.222             | 22.1            | 21.7              |

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| <b>Hotspot mode _Front side (testing in R99 mode) _test distance is 10mm, Radiated power (EIRP) is not reduced.</b>  |         |        |                                  |                   |                |                  |
|----------------------------------------------------------------------------------------------------------------------|---------|--------|----------------------------------|-------------------|----------------|------------------|
| Frequency                                                                                                            | Channel | MHz    | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
| 850 MHz                                                                                                              | 4183    | 836.60 | 23.91dBm                         | 0.459             | 22.1           | 21.7             |
| <b>Hotspot mode _Back side (testing in R99 mode) _test distance is 10mm, Radiated power (EIRP) is not reduced.</b>   |         |        |                                  |                   |                |                  |
| Frequency                                                                                                            | Channel | MHz    | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
| 850 MHz                                                                                                              | 4183    | 836.60 | 23.91dBm                         | 0.578             | 22.1           | 21.7             |
| <b>Hotspot mode _Bottom side (testing in R99 mode) _test distance is 10mm, Radiated power (EIRP) is not reduced.</b> |         |        |                                  |                   |                |                  |
| Frequency                                                                                                            | Channel | MHz    | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
| 850 MHz                                                                                                              | 4183    | 836.60 | 23.91dBm                         | 0.057             | 22.1           | 21.7             |
| <b>Hotspot mode _Right side (testing in R99 mode) _test distance is 10mm, Radiated power (EIRP) is not reduced.</b>  |         |        |                                  |                   |                |                  |
| Frequency                                                                                                            | Channel | MHz    | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
| 850 MHz                                                                                                              | 4183    | 836.60 | 23.91dBm                         | 0.404             | 22.1           | 21.7             |
| <b>Hotspot mode _Left side (testing in R99 mode) _test distance is 10mm, Radiated power (EIRP) is not reduced.</b>   |         |        |                                  |                   |                |                  |
| Frequency                                                                                                            | Channel | MHz    | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
| 850 MHz                                                                                                              | 4183    | 836.60 | 23.91dBm                         | 0.631             | 22.1           | 21.7             |
| <b>Body worn _Front side (testing in R99 mode) _test distance is 15mm</b>                                            |         |        |                                  |                   |                |                  |
| Frequency                                                                                                            | Channel | MHz    | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
| 850 MHz                                                                                                              | 4183    | 836.60 | 23.91dBm                         | 0.401             | 22.1           | 21.7             |
| <b>Body worn _Back side (testing in R99 mode) _test distance is 15mm</b>                                             |         |        |                                  |                   |                |                  |
| Frequency                                                                                                            | Channel | MHz    | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
| 850 MHz                                                                                                              | 4183    | 836.60 | 23.91dBm                         | 0.470             | 22.1           | 21.7             |

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- #. Using KDB941225 D01 to exclude SAR test requirements for HSPA modes due to the maximum average output power of HSPA active is less than 1/4 dB higher than that measured without HSPA using 12.2kbps RMC
- #. According to KDB447498 the 1-g SAR for the highest output channel is less than 0.8 W/kg, where the transmission band corresponding to all channels is  $\leq 100$  MHz, testing for the other channels is not required.

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## WLAN802.11 b

| Right Head (Cheek Position)                          |         |      |                                  |                   |                |                  |
|------------------------------------------------------|---------|------|----------------------------------|-------------------|----------------|------------------|
| Frequency                                            | Channel | MHz  | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
| 2450 MHz                                             | 6       | 2437 | 15.77dBm                         | 0.189             | 22.1           | 21.7             |
| Left Head (Cheek Position)                           |         |      |                                  |                   |                |                  |
| Frequency                                            | Channel | MHz  | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
| 2450 MHz                                             | 1       | 2412 | 15.74dBm                         | 0.441             | 22.1           | 21.7             |
|                                                      | 6       | 2437 | 15.77dBm                         | 0.412             | 22.1           | 21.7             |
|                                                      | 11      | 2462 | 16.22dBm                         | 0.350             | 22.1           | 21.7             |
| Right Head (15° Tilt Position)                       |         |      |                                  |                   |                |                  |
| Frequency                                            | Channel | MHz  | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
| 2450 MHz                                             | 6       | 2437 | 15.77dBm                         | 0.113             | 22.1           | 21.7             |
| Left Head (15° Tilt Position)                        |         |      |                                  |                   |                |                  |
| Frequency                                            | Channel | MHz  | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
| 2450 MHz                                             | 6       | 2437 | 15.77dBm                         | 0.283             | 22.1           | 21.7             |
| Left Head (Cheek Position)_repeated with memory card |         |      |                                  |                   |                |                  |
| Frequency                                            | Channel | MHz  | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
| 2450 MHz                                             | 1       | 2412 | 15.74dBm                         | 0.423             | 22.1           | 21.7             |

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| Hotspot mode _Front side_ test distance is 10mm                           |         |      |                                  |                   |                |                  |
|---------------------------------------------------------------------------|---------|------|----------------------------------|-------------------|----------------|------------------|
| Frequency                                                                 | Channel | MHz  | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
| 2450 MHz                                                                  | 6       | 2437 | 15.77dBm                         | 0.110             | 22.1           | 21.7             |
| Hotspot mode _Back side_ test distance is 10mm                            |         |      |                                  |                   |                |                  |
| Frequency                                                                 | Channel | MHz  | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
| 2450 MHz                                                                  | 6       | 2437 | 15.77dBm                         | 0.222             | 22.1           | 21.7             |
| Hotspot mode _Top side_ test distance is 10mm                             |         |      |                                  |                   |                |                  |
| Frequency                                                                 | Channel | MHz  | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
| 2450 MHz                                                                  | 6       | 2437 | 15.77dBm                         | 0.041             | 22.1           | 21.7             |
| Hotspot mode _Right side_ test distance is 10mm                           |         |      |                                  |                   |                |                  |
| Frequency                                                                 | Channel | MHz  | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
| 2450 MHz                                                                  | 6       | 2437 | 15.77dBm                         | 0.286             | 22.1           | 21.7             |
| Hotspot mode _Left side_ test distance is 10mm                            |         |      |                                  |                   |                |                  |
| Frequency                                                                 | Channel | MHz  | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
| 2450 MHz                                                                  | 6       | 2437 | 15.77dBm                         | 0.022             | 22.1           | 21.7             |
| Hotspot mode _Right side_ test distance is 10mm_repeated with headset     |         |      |                                  |                   |                |                  |
| Frequency                                                                 | Channel | MHz  | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
| 2450 MHz                                                                  | 6       | 2437 | 15.77dBm                         | 0.290             | 22.1           | 21.7             |
| Hotspot mode _Right side_ test distance is 10mm_repeated with memory card |         |      |                                  |                   |                |                  |
| Frequency                                                                 | Channel | MHz  | Conducted Output Power (Average) | Measured(W/kg) 1g | Amb. Temp[ °C] | Liquid Temp[ °C] |
| 2450 MHz                                                                  | 6       | 2437 | 15.77dBm                         | 0.296             | 22.1           | 21.7             |

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- #. Using **KDB248227**-SAR is not required for 802.11 g/HT20 channels when the maximum average output power is less than 1/4 dB higher than that measured on the corresponding 802.11b channels.
- #. According to KDB447498 the 1-g SAR for the highest output channel is less than 0.8 W/kg, where the transmission band corresponding to all channels is  $\leq 100$  MHz, testing for the other channels is not required.

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### 3. Instruments List

| Manufacturer                    | Device                                       | Type                 | Serial number | Date of last calibration   |
|---------------------------------|----------------------------------------------|----------------------|---------------|----------------------------|
| Schmid & Partner Engineering AG | Dosimetric E-Field Probe                     | EX3DV4<br>ES3DV3     | 3770<br>3071  | Apr.19.2011<br>Jun.22.2011 |
| Schmid & Partner Engineering AG | 835 /1900 /2450 MHz System Validation Dipole | D835V2               | 4d063         | May.25.2011                |
|                                 |                                              | D1900V2              | 5d027         | Apr.19.2011                |
|                                 |                                              | D2450V2              | 727           | Apr.19.2011                |
| Schmid & Partner Engineering AG | Data acquisition Electronics                 | DAE4                 | 547<br>679    | Aug.18.2010<br>Jun.24.2011 |
| Schmid & Partner Engineering AG | Software                                     | DASY 4 V4.7 Build 80 | N/A           | Calibration not required   |
| Schmid & Partner Engineering AG | Phantom                                      | SAM                  | N/A           | Calibration not required   |
| HP                              | Network Analyzer                             | 8753D                | 3410A05547    | Mar.16.2011                |
| HP                              | Dielectric Probe Kit                         | 85070D               | US01440168    | Calibration not required   |
| Agilent                         | Dual-directional coupler                     | 778D                 | 50313         | Aug.25.2010<br>Aug.19.2011 |
|                                 |                                              | 777D                 | 50114         | Aug.25.2010<br>Aug.18.2011 |
| Agilent                         | RF Signal Generator                          | 8648D                | 3847M00432    | Jun.01.2011                |
| Agilent                         | Power Sensor                                 | U2001B               | MY48100169    | Apr.28.2011                |
| R&S                             | Radio Communication Test                     | CMU200               | 113505        | May.31.2011                |
| R&S                             | Radio Communication Test                     | CMU200               | 109326        | April 1, 2011              |
| SATIMO                          | Antenna chamber                              | StarGate 24 system   | N/A           | Aug.10,2011                |

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## 4. Measurements

Date: 2011/6/6

### RE Cheek\_CH190

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium: Head 835MHz Medium parameters used:  $f = 837 \text{ MHz}$ ;  $\sigma = 0.918 \text{ mho/m}$ ;  $\epsilon_r = 41.4$ ;  
 $\rho = 1000 \text{ kg/m}^3$

- Probe: EX3DV4 - SN3770; ConvF(9.25, 9.25, 9.25); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**HEAD /Area Scan (51x101x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) =  $0.317 \text{ mW/g}$

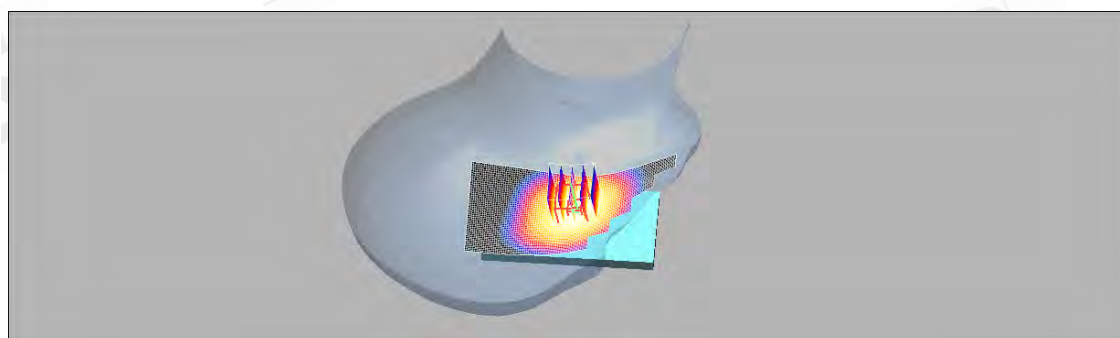
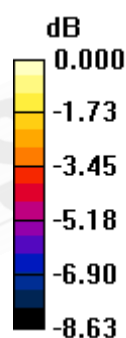
**HEAD/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value =  $4.92 \text{ V/m}$ ; Power Drift =  $-0.095 \text{ dB}$

Peak SAR (extrapolated) =  $0.372 \text{ W/kg}$

**SAR(1 g) =  $0.303 \text{ mW/g}$ ; SAR(10 g) =  $0.234 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.319 \text{ mW/g}$



0 dB =  $0.319 \text{ mW/g}$

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## LE Cheek\_CH128

Communication System: GSM 850; Frequency: 824.2 MHz; Duty Cycle: 1:8.3

Medium: Head 835MHz Medium parameters used (interpolated):  $f = 824.2 \text{ MHz}$ ;  $\sigma = 0.905 \text{ mho/m}$ ;  $\epsilon_r = 41.5$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(9.25, 9.25, 9.25); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**HEAD/Area Scan (51x101x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.295 mW/g

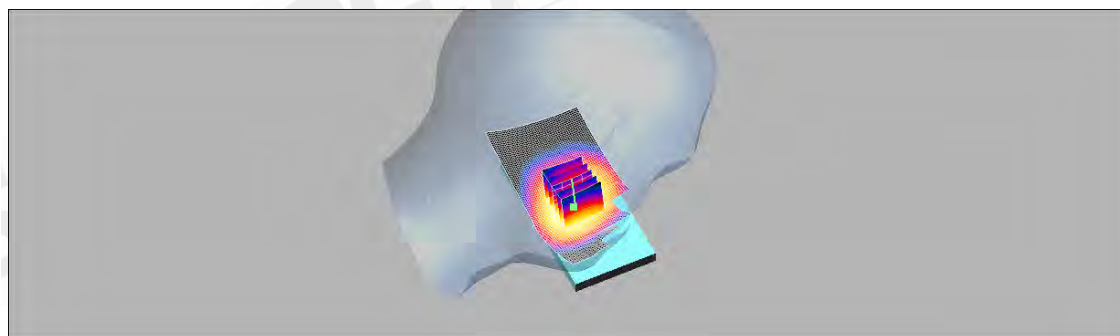
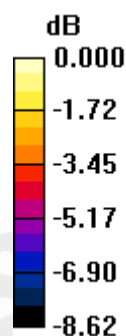
**HEAD/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 5.27 V/m; Power Drift = -0.009 dB

Peak SAR (extrapolated) = 0.337 W/kg

**SAR(1 g) = 0.278 mW/g; SAR(10 g) = 0.215 mW/g**

Maximum value of SAR (measured) = 0.292 mW/g



0 dB = 0.292mW/g

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## LE Cheek\_CH190

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium: Head 835MHz Medium parameters used:  $f = 837 \text{ MHz}$ ;  $\sigma = 0.918 \text{ mho/m}$ ;  $\epsilon_r = 41.4$ ;  
 $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(9.25, 9.25, 9.25); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**HEAD/Area Scan (51x101x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) =  $0.360 \text{ mW/g}$

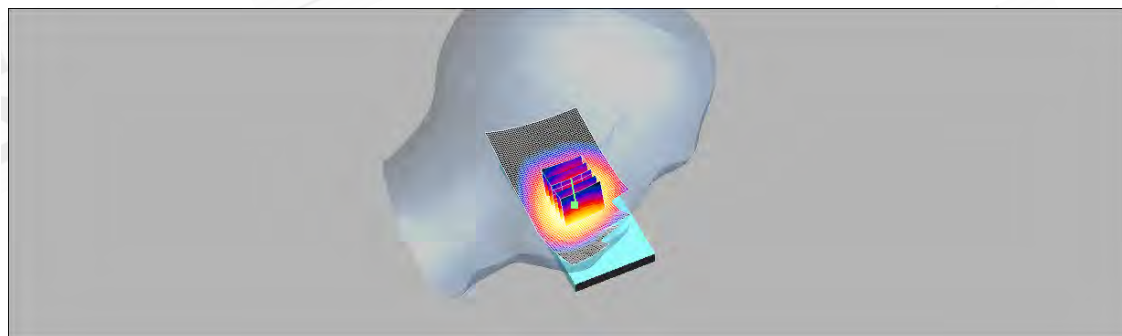
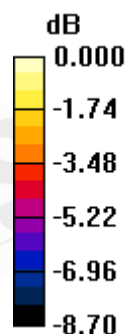
**HEAD/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value =  $5.76 \text{ V/m}$ ; Power Drift =  $-0.079 \text{ dB}$

Peak SAR (extrapolated) =  $0.420 \text{ W/kg}$

**SAR(1 g) =  $0.344 \text{ mW/g}$ ; SAR(10 g) =  $0.263 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.362 \text{ mW/g}$



0 dB =  $0.362 \text{ mW/g}$

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## LE Cheek\_CH251

Communication System: GSM 850; Frequency: 848.8 MHz; Duty Cycle: 1:8.3

Medium: Head 835MHz Medium parameters used:  $f = 849 \text{ MHz}$ ;  $\sigma = 0.93 \text{ mho/m}$ ;  $\epsilon_r = 41.2$ ;  
 $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(9.25, 9.25, 9.25); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**HEAD/Area Scan (51x101x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) =  $0.407 \text{ mW/g}$

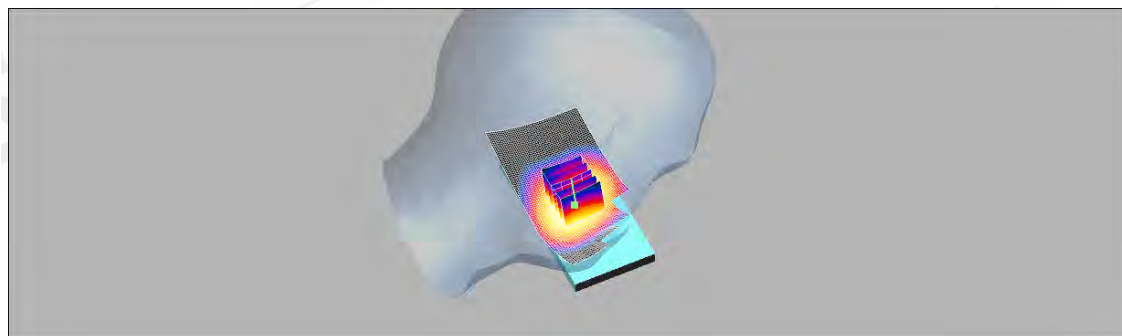
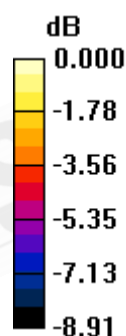
**HEAD/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value =  $4.72 \text{ V/m}$ ; Power Drift =  $0.062 \text{ dB}$

Peak SAR (extrapolated) =  $0.475 \text{ W/kg}$

**SAR(1 g) =  $0.386 \text{ mW/g}$ ; SAR(10 g) =  $0.295 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.407 \text{ mW/g}$



0 dB =  $0.407\text{mW/g}$

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Date: 2011/6/6

## RE Tilt\_CH190

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:8.3  
Medium: Head 835MHz Medium parameters used:  $f = 837 \text{ MHz}$ ;  $\sigma = 0.918 \text{ mho/m}$ ;  $\epsilon_r = 41.4$ ;  
 $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Right Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(9.25, 9.25, 9.25); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**HEAD/Area Scan (51x101x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) = 0.197 mW/g

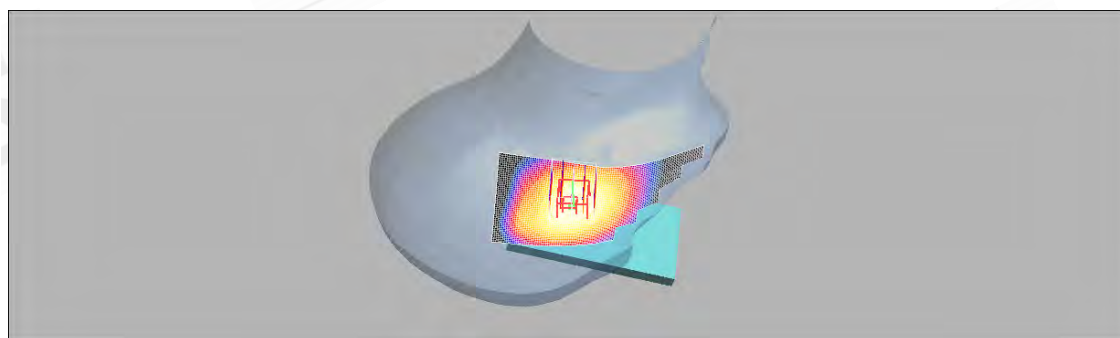
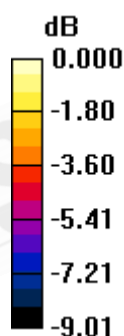
**HEAD/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value = 8.38 V/m; Power Drift = 0.021 dB

Peak SAR (extrapolated) = 0.236 W/kg

**SAR(1 g) = 0.190 mW/g; SAR(10 g) = 0.146 mW/g**

Maximum value of SAR (measured) = 0.196 mW/g



0 dB = 0.196mW/g

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Date: 2011/6/6

## LE Tilt\_CH190

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:8.3  
Medium: Head 835MHz Medium parameters used:  $f = 837 \text{ MHz}$ ;  $\sigma = 0.918 \text{ mho/m}$ ;  $\epsilon_r = 41.4$ ;  
 $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Left Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(9.25, 9.25, 9.25); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**HEAD/Area Scan (51x101x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) = 0.231 mW/g

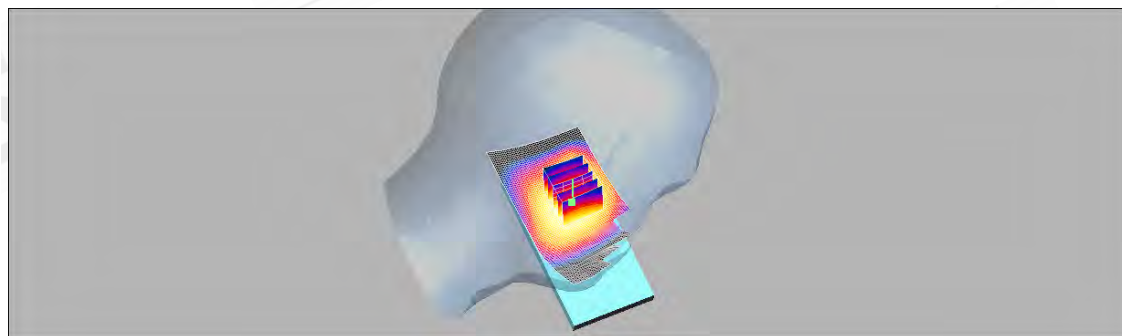
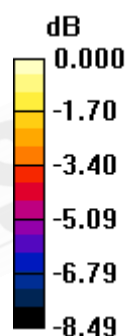
**HEAD/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value = 8.36 V/m; Power Drift = 0.071 dB

Peak SAR (extrapolated) = 0.277 W/kg

**SAR(1 g) = 0.222 mW/g; SAR(10 g) = 0.170 mW/g**

Maximum value of SAR (measured) = 0.232 mW/g



0 dB = 0.232mW/g

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Date: 2011/6/6

## Hotspot mode\_Front side\_CH190

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:4.1

Medium: Muscle 835 MHz Medium parameters used:  $f = 837 \text{ MHz}$ ;  $\sigma = 1.01 \text{ mho/m}$ ;  $\epsilon_r = 56.2$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(9.3, 9.3, 9.3); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) =  $0.497 \text{ mW/g}$

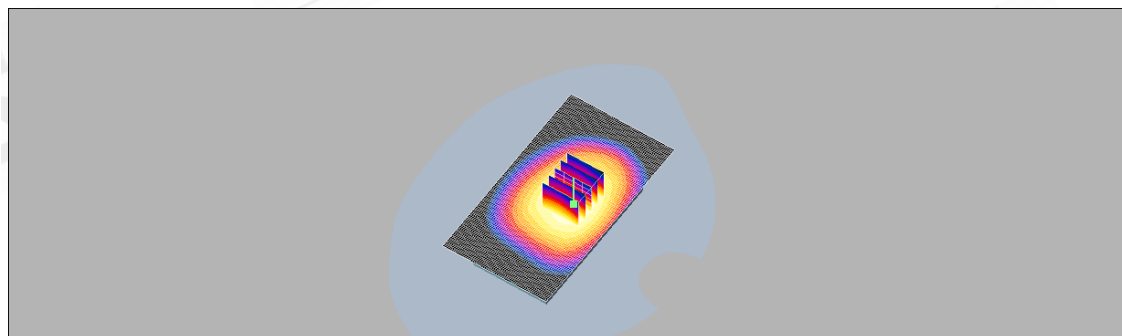
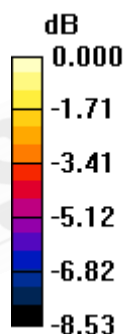
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $21.4 \text{ V/m}$ ; Power Drift =  $-0.029 \text{ dB}$

Peak SAR (extrapolated) =  $0.598 \text{ W/kg}$

**SAR(1 g) =  $0.474 \text{ mW/g}$ ; SAR(10 g) =  $0.362 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.497 \text{ mW/g}$



0 dB =  $0.497\text{mW/g}$

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Date: 2011/6/6

## Hotspot mode\_Back side\_CH190

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:4.1  
Medium: Muscle 835 MHz Medium parameters used:  $f = 837 \text{ MHz}$ ;  $\sigma = 1.01 \text{ mho/m}$ ;  $\epsilon_r = 56.2$ ;  $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(9.3, 9.3, 9.3); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.667 \text{ mW/g}$

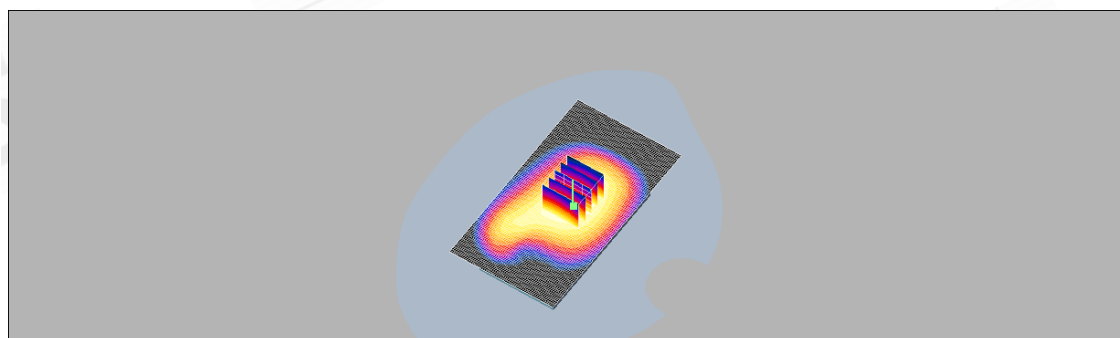
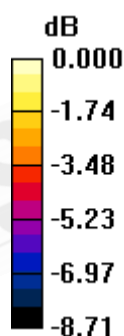
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $24.6 \text{ V/m}$ ; Power Drift =  $-0.029 \text{ dB}$

Peak SAR (extrapolated) =  $0.799 \text{ W/kg}$

**SAR(1 g) =  $0.638 \text{ mW/g}$ ; SAR(10 g) =  $0.482 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.672 \text{ mW/g}$



0 dB =  $0.672 \text{ mW/g}$

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Date: 2011/6/6

## Hotspot mode\_Bottom side\_CH190

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:4.1

Medium: Muscle 835 MHz Medium parameters used:  $f = 837 \text{ MHz}$ ;  $\sigma = 1.01 \text{ mho/m}$ ;  $\epsilon_r = 56.2$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(9.3, 9.3, 9.3); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (51x71x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) =  $0.065 \text{ mW/g}$

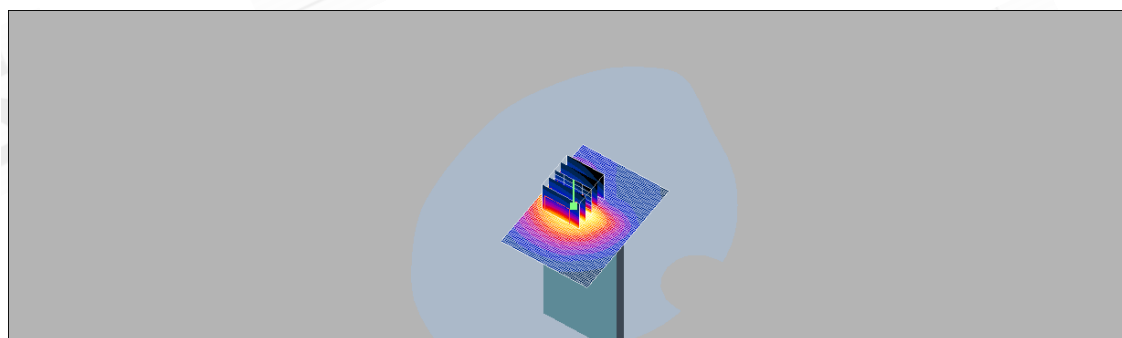
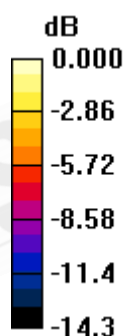
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $7.62 \text{ V/m}$ ; Power Drift =  $0.044 \text{ dB}$

Peak SAR (extrapolated) =  $0.088 \text{ W/kg}$

**SAR(1 g) =  $0.058 \text{ mW/g}$ ; SAR(10 g) =  $0.039 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.062 \text{ mW/g}$



0 dB =  $0.062 \text{ mW/g}$

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Date: 2011/6/6

## Hotspot mode\_Right side\_CH190

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:4.1

Medium: Muscle 835 MHz Medium parameters used:  $f = 837 \text{ MHz}$ ;  $\sigma = 1.01 \text{ mho/m}$ ;  $\epsilon_r = 56.2$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(9.3, 9.3, 9.3); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (51x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) =  $0.463 \text{ mW/g}$

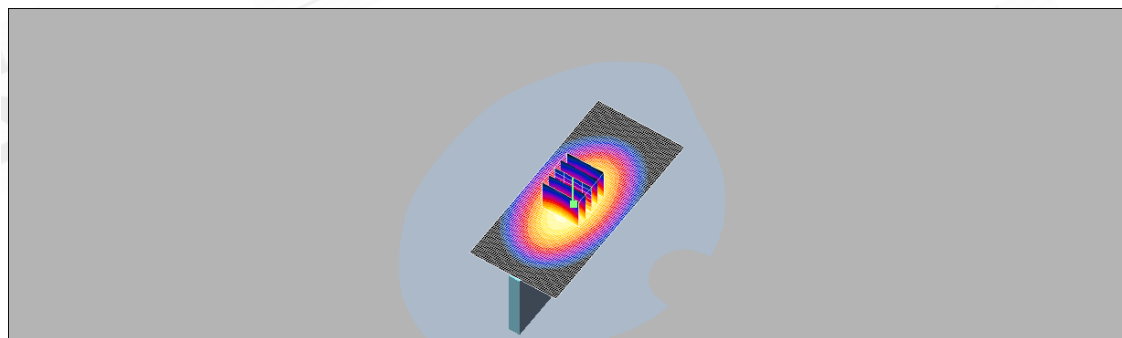
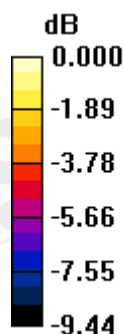
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $21.3 \text{ V/m}$ ; Power Drift =  $-0.031 \text{ dB}$

Peak SAR (extrapolated) =  $0.603 \text{ W/kg}$

**SAR(1 g) =  $0.436 \text{ mW/g}$ ; SAR(10 g) =  $0.303 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.466 \text{ mW/g}$



0 dB =  $0.466 \text{ mW/g}$

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Date: 2011/6/6

## Hotspot mode\_Left side\_CH190

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:4.1  
Medium: Muscle 835 MHz Medium parameters used:  $f = 837 \text{ MHz}$ ;  $\sigma = 1.01 \text{ mho/m}$ ;  $\epsilon_r = 56.2$ ;  $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(9.3, 9.3, 9.3); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (51x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.694 \text{ mW/g}$

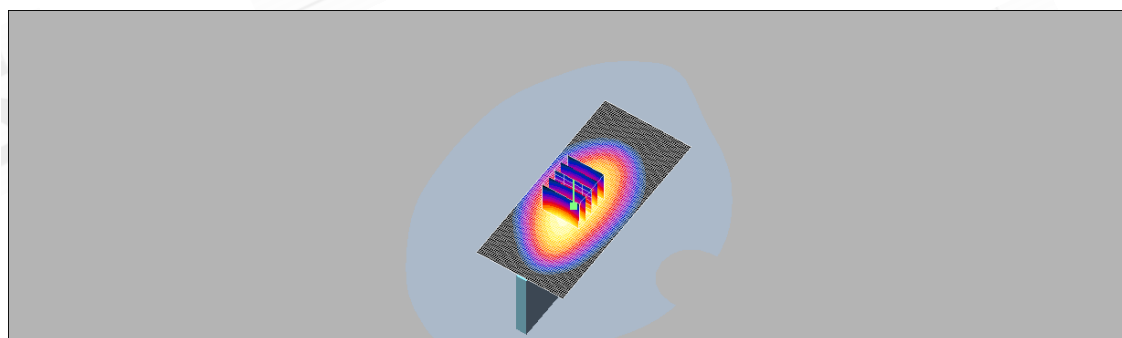
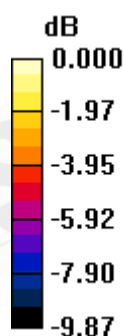
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $25.9 \text{ V/m}$ ; Power Drift =  $0.029 \text{ dB}$

Peak SAR (extrapolated) =  $0.922 \text{ W/kg}$

**SAR(1 g) =  $0.648 \text{ mW/g}$ ; SAR(10 g) =  $0.446 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.696 \text{ mW/g}$



0 dB =  $0.696 \text{ mW/g}$

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Date: 2011/6/6

## Hotspot mode\_Left side\_CH190\_multi class 8

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:8.3  
Medium: Muscle 835 MHz Medium parameters used:  $f = 837 \text{ MHz}$ ;  $\sigma = 1.01 \text{ mho/m}$ ;  $\epsilon_r = 56.2$ ;  $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(9.3, 9.3, 9.3); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (51x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.588 \text{ mW/g}$

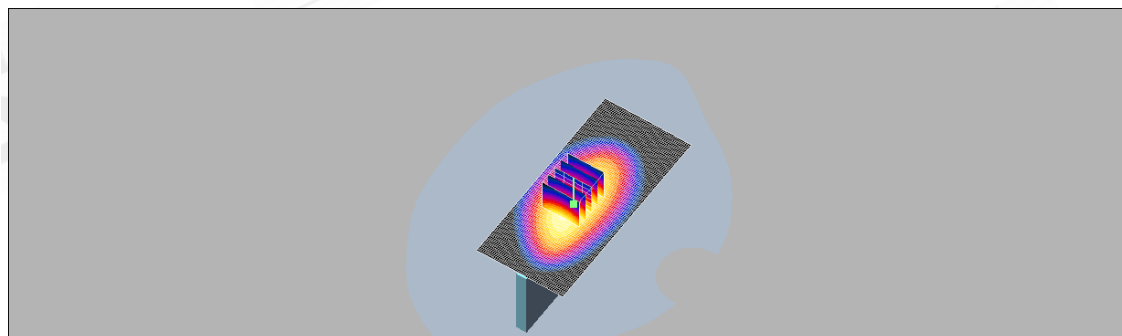
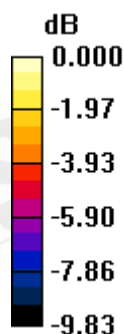
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $23.7 \text{ V/m}$ ; Power Drift =  $0.117 \text{ dB}$

Peak SAR (extrapolated) =  $0.805 \text{ W/kg}$

**SAR(1 g) =  $0.574 \text{ mW/g}$ ; SAR(10 g) =  $0.396 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.611 \text{ mW/g}$



0 dB =  $0.611 \text{ mW/g}$

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Date: 2011/6/6

## Hotspot mode\_Left side\_CH190\_multi class 12

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:2

Medium: Muscle 835 MHz Medium parameters used:  $f = 837 \text{ MHz}$ ;  $\sigma = 1.01 \text{ mho/m}$ ;  $\epsilon_r = 56.2$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(9.3, 9.3, 9.3); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (51x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) = 0.574 mW/g

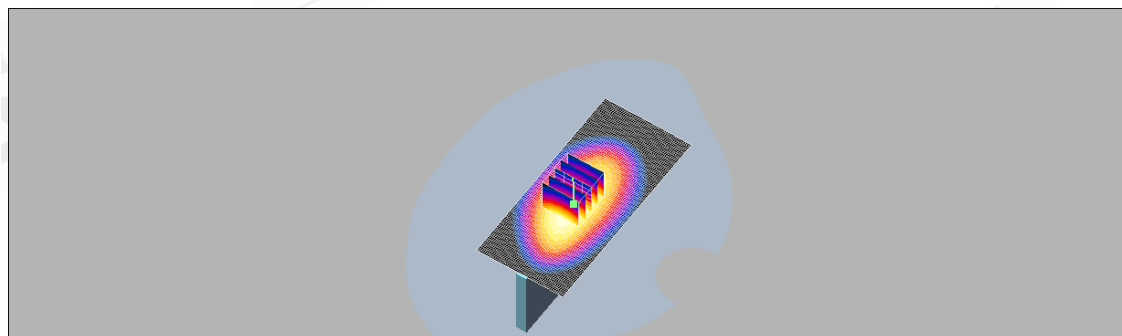
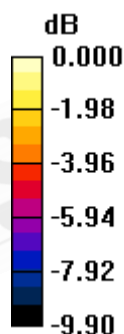
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 23.9 V/m; Power Drift = -0.146 dB

Peak SAR (extrapolated) = 0.735 W/kg

**SAR(1 g) = 0.520 mW/g; SAR(10 g) = 0.357 mW/g**

Maximum value of SAR (measured) = 0.558 mW/g



0 dB = 0.558mW/g

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Date: 2011/8/22

## Body worn\_Front side\_CH190\_multi class 10

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:4.1

Medium: Muscle 835 MHz Medium parameters used:  $f = 837 \text{ MHz}$ ;  $\sigma = 1.02 \text{ mho/m}$ ;  $\epsilon_r = 55.2$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3071; ConvF(5.68, 5.68, 5.68); Calibrated: 2011/6/22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn679; Calibrated: 2011/6/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) = 0.433 mW/g

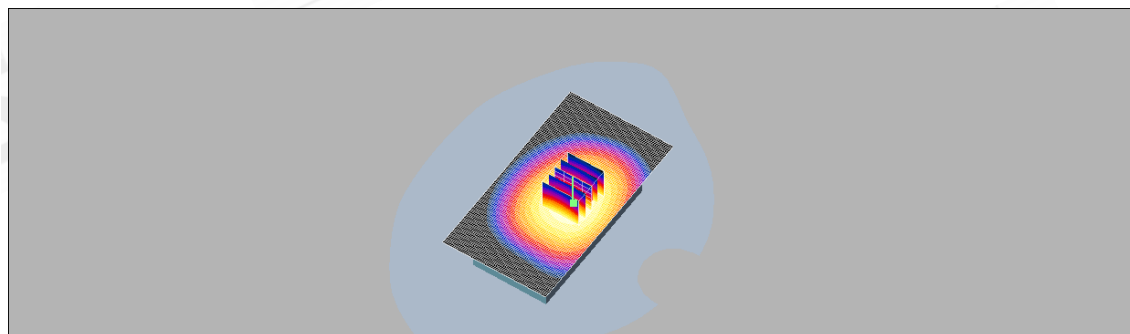
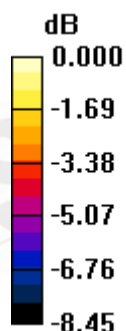
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 20.2 V/m; Power Drift = 0.004 dB

Peak SAR (extrapolated) = 0.524 W/kg

**SAR(1 g) = 0.414 mW/g; SAR(10 g) = 0.312 mW/g**

Maximum value of SAR (measured) = 0.433 mW/g



0 dB = 0.433mW/g

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Date: 2011/8/22

## Body worn\_Back side\_CH190\_multi class 10

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:4.1  
Medium: Muscle 835 MHz Medium parameters used:  $f = 837 \text{ MHz}$ ;  $\sigma = 1.02 \text{ mho/m}$ ;  $\epsilon_r = 55.2$ ;  $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

### DASY4 Configuration:

- Probe: ES3DV3 - SN3071; ConvF(5.68, 5.68, 5.68); Calibrated: 2011/6/22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn679; Calibrated: 2011/6/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) = 0.570 mW/g

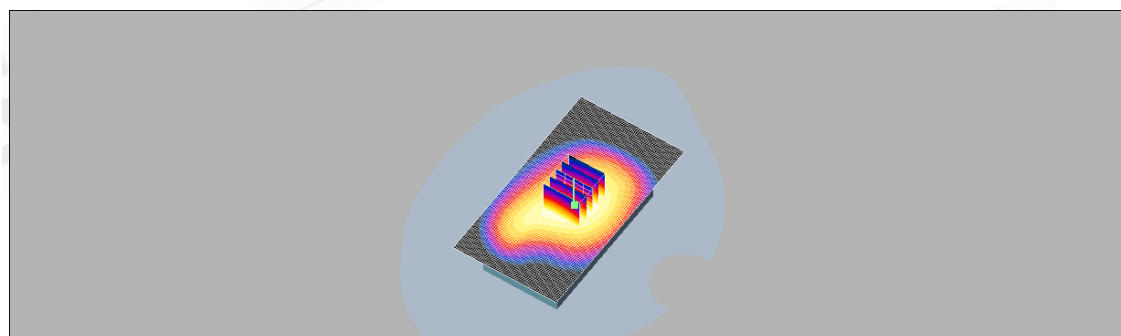
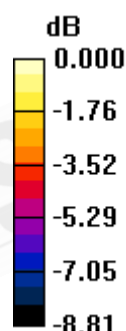
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 23.3 V/m; Power Drift = -0.022 dB

Peak SAR (extrapolated) = 0.684 W/kg

**SAR(1 g) = 0.541 mW/g; SAR(10 g) = 0.404 mW/g**

Maximum value of SAR (measured) = 0.571 mW/g



0 dB = 0.571mW/g

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## RE Cheek\_CH190\_(test in GPRS mode)

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:4.1

Medium: Head 900 MHz Medium parameters used:  $f = 837 \text{ MHz}$ ;  $\sigma = 0.899 \text{ mho/m}$ ;  $\epsilon_r = 41.9$ ;  
 $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(9.25, 9.25, 9.25); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn679; Calibrated: 2011/6/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**HEAD/Area Scan (51x101x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.348 mW/g

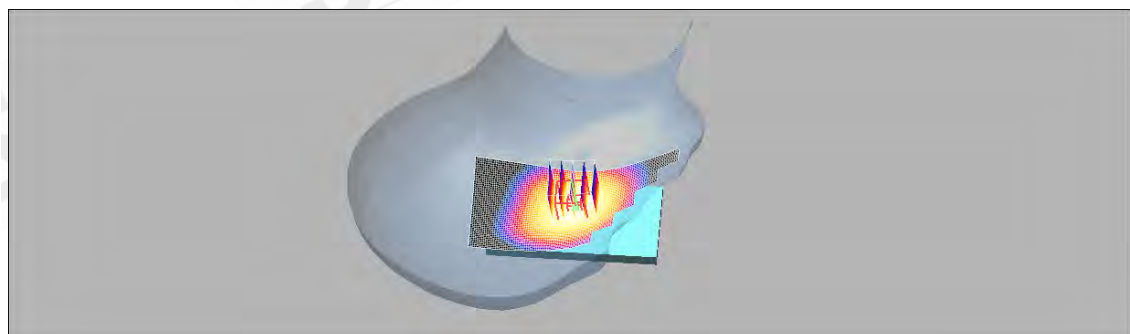
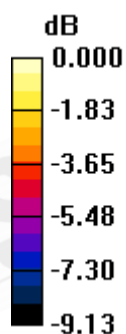
**HEAD/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value = 6.42 V/m; Power Drift = -0.167 dB

Peak SAR (extrapolated) = 0.408 W/kg

**SAR(1 g) = 0.330 mW/g; SAR(10 g) = 0.250 mW/g**

Maximum value of SAR (measured) = 0.348 mW/g



0 dB = 0.348mW/g

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Date: 2011/9/13

## LE Cheek\_CH190\_(test in GPRS mode)

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:4.1

Medium: Head 900 MHz Medium parameters used:  $f = 837 \text{ MHz}$ ;  $\sigma = 0.899 \text{ mho/m}$ ;  $\epsilon_r = 41.9$ ;  
 $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(9.25, 9.25, 9.25); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn679; Calibrated: 2011/6/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**HEAD/Area Scan (51x101x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.393 \text{ mW/g}$

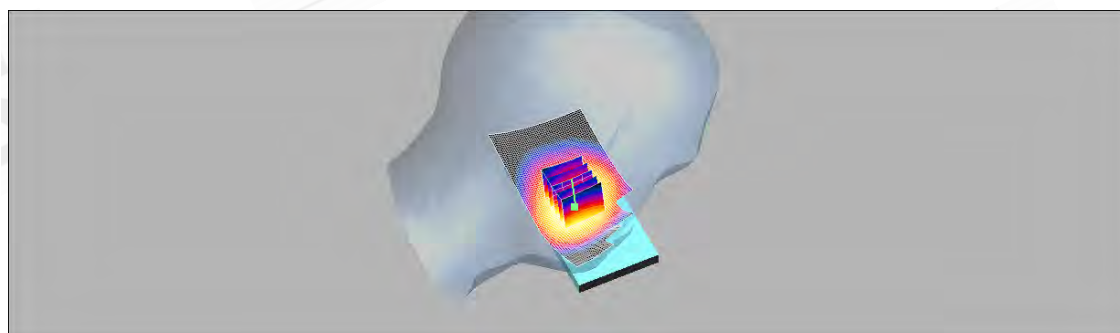
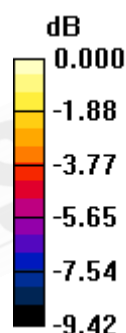
**HEAD/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value =  $7.17 \text{ V/m}$ ; Power Drift =  $-0.132 \text{ dB}$

Peak SAR (extrapolated) =  $0.474 \text{ W/kg}$

**SAR(1 g) =  $0.374 \text{ mW/g}$ ; SAR(10 g) =  $0.278 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.396 \text{ mW/g}$



0 dB =  $0.396 \text{ mW/g}$

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Date: 2011/9/13

## RE Tilt\_CH190\_(test in GPRS mode)

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:4.1

Medium: Head 900 MHz Medium parameters used:  $f = 837 \text{ MHz}$ ;  $\sigma = 0.899 \text{ mho/m}$ ;  $\epsilon_r = 41.9$ ;  
 $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(9.25, 9.25, 9.25); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn679; Calibrated: 2011/6/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**HEAD/Area Scan (51x101x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.239 \text{ mW/g}$

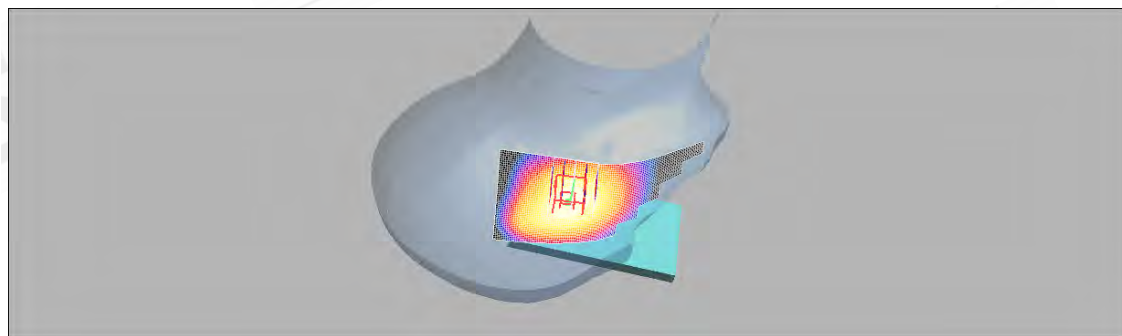
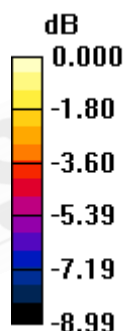
**HEAD/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value =  $10.1 \text{ V/m}$ ; Power Drift =  $0.065 \text{ dB}$

Peak SAR (extrapolated) =  $0.296 \text{ W/kg}$

**SAR(1 g) =  $0.232 \text{ mW/g}$ ; SAR(10 g) =  $0.174 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.242 \text{ mW/g}$



0 dB =  $0.242 \text{ mW/g}$

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Date: 2011/9/13

## LE Tilt\_CH190\_(test in GPRS mode)

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:4.1

Medium: Head 900 MHz Medium parameters used:  $f = 837$  MHz;  $\sigma = 0.899$  mho/m;  $\epsilon_r = 41.9$ ;  
 $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(9.25, 9.25, 9.25); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn679; Calibrated: 2011/6/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**HEAD/Area Scan (51x101x1):** Measurement grid: dx=15mm, dy=15mm  
Maximum value of SAR (interpolated) = 0.265 mW/g

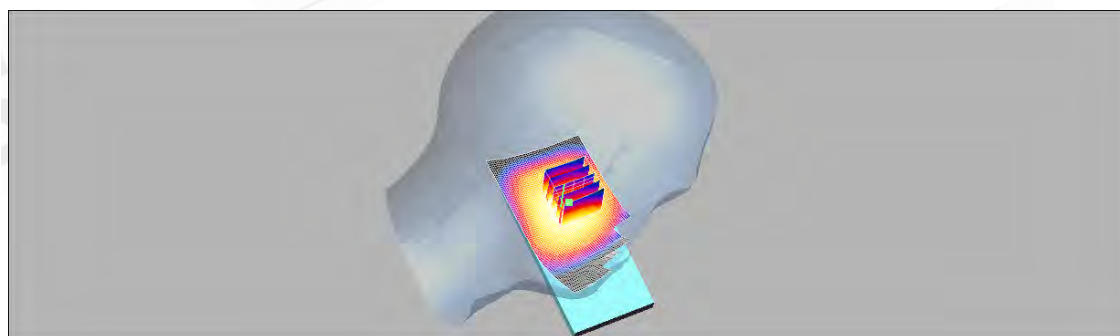
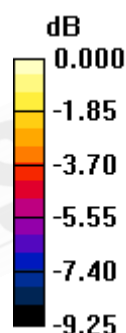
**HEAD/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm,  
dz=5mm

Reference Value = 11.4 V/m; Power Drift = 0.027 dB

Peak SAR (extrapolated) = 0.322 W/kg

**SAR(1 g) = 0.252 mW/g; SAR(10 g) = 0.190 mW/g**

Maximum value of SAR (measured) = 0.265 mW/g



0 dB = 0.265mW/g

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## RE Cheek\_CH661

Communication System: GSM1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: Head 1800 MHz Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.45 \text{ mho/m}$ ;  $\epsilon_r = 39.5$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.78, 7.78, 7.78); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**HEAD/Area Scan (51x101x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.345 mW/g

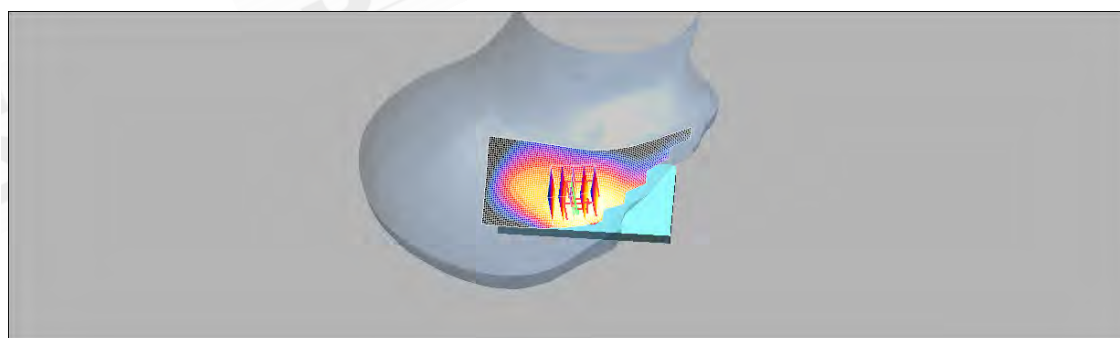
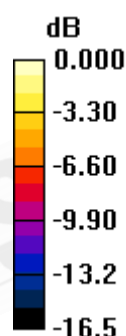
**HEAD/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 6.31 V/m; Power Drift = 0.135 dB

Peak SAR (extrapolated) = 0.463 W/kg

**SAR(1 g) = 0.312 mW/g; SAR(10 g) = 0.197 mW/g**

Maximum value of SAR (measured) = 0.336 mW/g



0 dB = 0.336mW/g

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Date: 2011/6/8

## LE Cheek\_CH512

Communication System: GSM1900; Frequency: 1850.2 MHz; Duty Cycle: 1:8.3  
Medium: Head 1800 MHz Medium parameters used (interpolated):  $f = 1850.2 \text{ MHz}$ ;  $\sigma = 1.42 \text{ mho/m}$ ;  $\epsilon_r = 39.6$ ;  $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Left Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.78, 7.78, 7.78); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**HEAD/Area Scan (61x101x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.478 \text{ mW/g}$

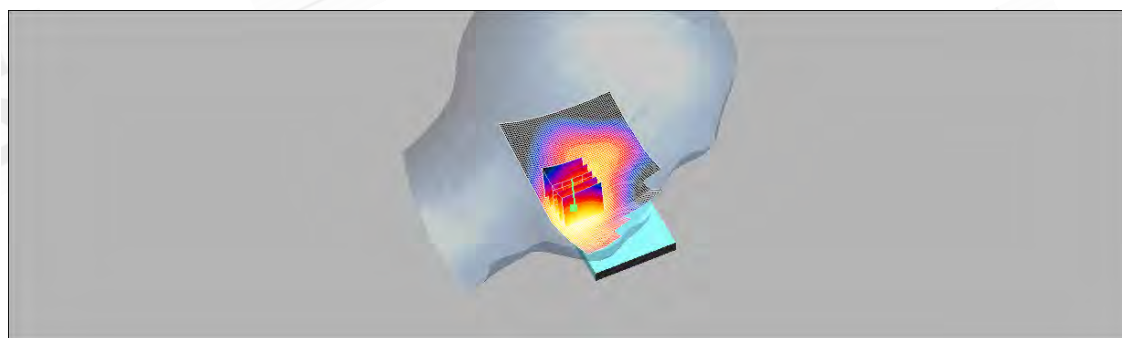
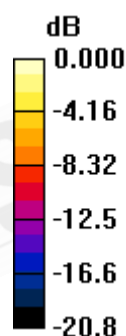
**HEAD/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $3.61 \text{ V/m}$ ; Power Drift =  $0.168 \text{ dB}$

Peak SAR (extrapolated) =  $0.629 \text{ W/kg}$

**SAR(1 g) =  $0.416 \text{ mW/g}$ ; SAR(10 g) =  $0.257 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.454 \text{ mW/g}$



0 dB =  $0.454 \text{ mW/g}$

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Date: 2011/6/8

## LE Cheek\_CH661

Communication System: GSM1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3  
Medium: Head 1800 MHz Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.45 \text{ mho/m}$ ;  $\epsilon_r = 39.5$ ;  $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Left Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.78, 7.78, 7.78); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**HEAD/Area Scan (51x101x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) = 0.543 mW/g

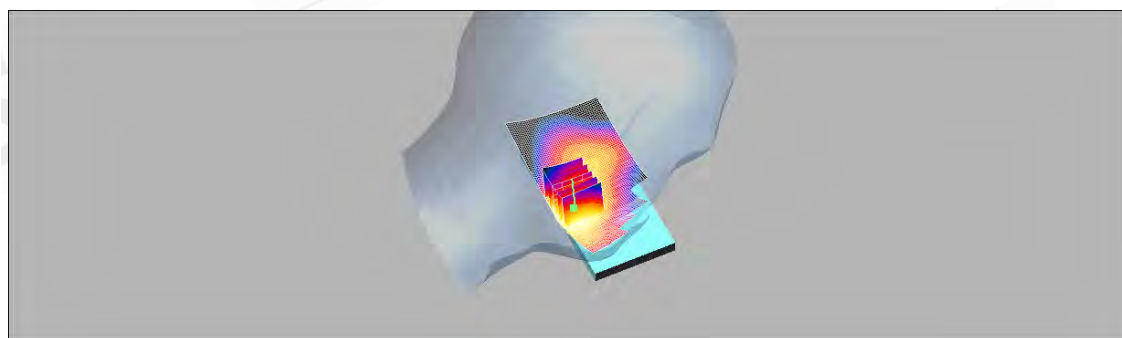
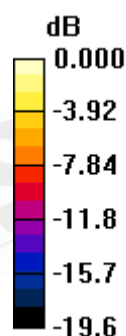
**HEAD/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 4.65 V/m; Power Drift = -0.182 dB

Peak SAR (extrapolated) = 0.735 W/kg

**SAR(1 g) = 0.481 mW/g; SAR(10 g) = 0.295 mW/g**

Maximum value of SAR (measured) = 0.522 mW/g



0 dB = 0.522mW/g

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Date: 2011/6/8

## LE Cheek\_CH810

Communication System: GSM1900; Frequency: 1909.8 MHz; Duty Cycle: 1:8.3  
Medium: Head 1800 MHz Medium parameters used:  $f = 1910 \text{ MHz}$ ;  $\sigma = 1.48 \text{ mho/m}$ ;  $\epsilon_r = 39.4$ ;  $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Left Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.78, 7.78, 7.78); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**HEAD/Area Scan (61x101x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.482 \text{ mW/g}$

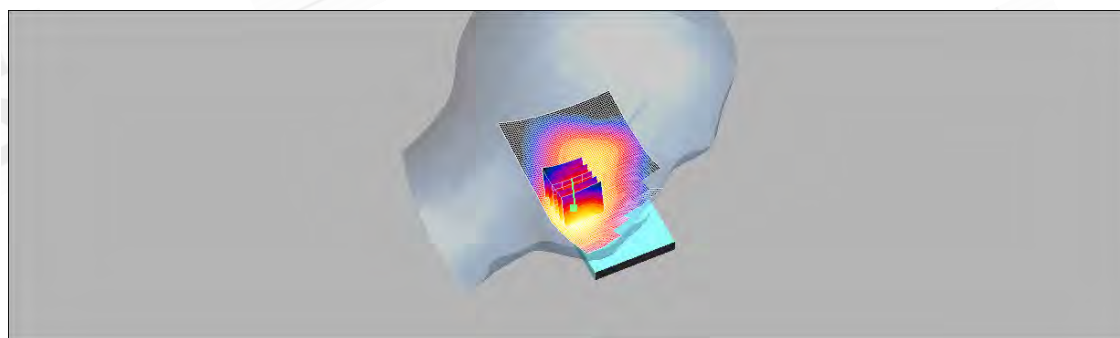
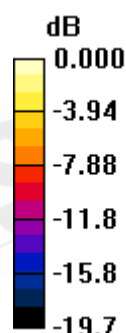
**HEAD/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $4.55 \text{ V/m}$ ; Power Drift =  $-0.021 \text{ dB}$

Peak SAR (extrapolated) =  $0.673 \text{ W/kg}$

**SAR(1 g) =  $0.425 \text{ mW/g}$ ; SAR(10 g) =  $0.256 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.465 \text{ mW/g}$



0 dB =  $0.465 \text{ mW/g}$

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Date: 2011/6/8

**RE Tilt\_CH661**

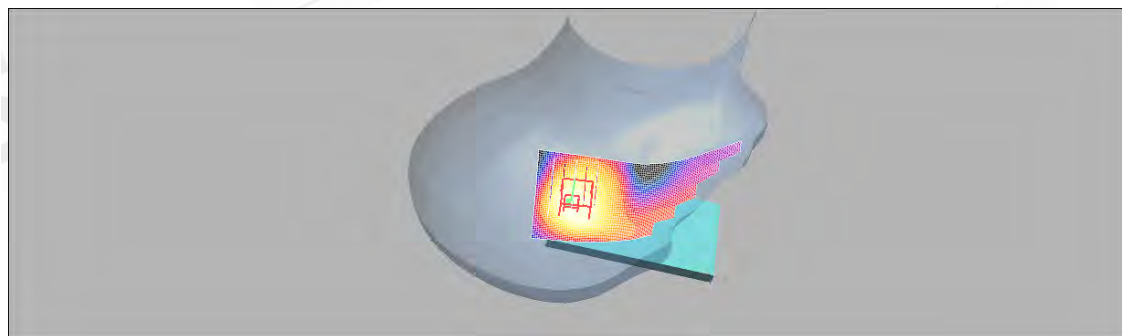
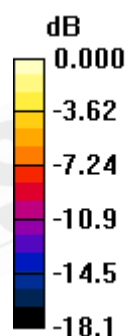
Communication System: GSM1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: Head 1800 MHz Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.45 \text{ mho/m}$ ;  $\epsilon_r = 39.5$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Phantom section: Right Section

## DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.78, 7.78, 7.78); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**HEAD/Area Scan (51x101x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$ Maximum value of SAR (interpolated) =  $0.196 \text{ mW/g}$ **HEAD/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$ Reference Value =  $9.28 \text{ V/m}$ ; Power Drift =  $0.111 \text{ dB}$ Peak SAR (extrapolated) =  $0.272 \text{ W/kg}$ **SAR(1 g) =  $0.176 \text{ mW/g}$ ; SAR(10 g) =  $0.108 \text{ mW/g}$** Maximum value of SAR (measured) =  $0.186 \text{ mW/g}$ 0 dB =  $0.186 \text{ mW/g}$ 

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## LE Tilt\_CH661

Communication System: GSM1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: Head 1800 MHz Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.45 \text{ mho/m}$ ;  $\epsilon_r = 39.5$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.78, 7.78, 7.78); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**HEAD/Area Scan (61x101x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.173 \text{ mW/g}$

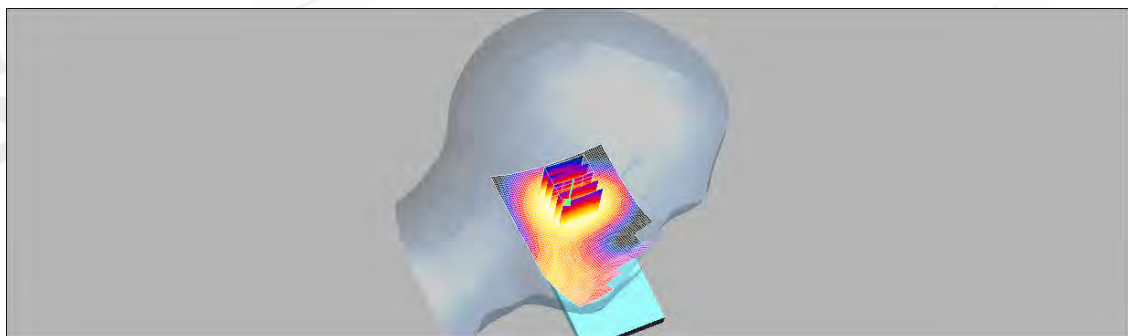
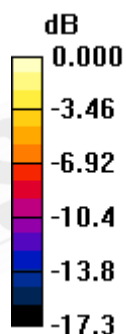
**HEAD/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $7.05 \text{ V/m}$ ; Power Drift =  $-0.182 \text{ dB}$

Peak SAR (extrapolated) =  $0.231 \text{ W/kg}$

**SAR(1 g) =  $0.149 \text{ mW/g}$ ; SAR(10 g) =  $0.095 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.158 \text{ mW/g}$



0 dB =  $0.158 \text{ mW/g}$

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Date: 2011/6/9

## Hotspot mode\_Front side\_CH661

Communication System: GSM1900; Frequency: 1880 MHz; Duty Cycle: 1:4.1  
Medium: M1800 & 1900 Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.55 \text{ mho/m}$ ;  $\epsilon_r = 53.1$ ;  
 $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.51, 7.51, 7.51); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.464 \text{ mW/g}$

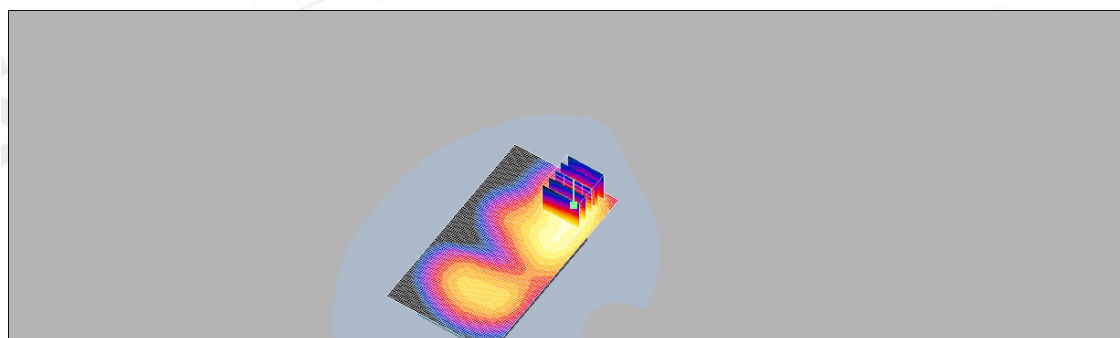
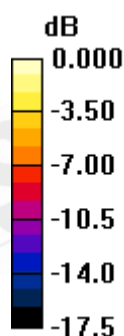
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value =  $6.48 \text{ V/m}$ ; Power Drift =  $-0.012 \text{ dB}$

Peak SAR (extrapolated) =  $0.822 \text{ W/kg}$

**SAR(1 g) =  $0.465 \text{ mW/g}$ ; SAR(10 g) =  $0.255 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.523 \text{ mW/g}$



0 dB =  $0.523 \text{ mW/g}$

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Date: 2011/6/9

## Hotspot mode\_Back side\_CH512

Communication System: GSM1900; Frequency: 1850.2 MHz; Duty Cycle: 1:4.1

Medium: M1800 & 1900 Medium parameters used (interpolated):  $f = 1850.2 \text{ MHz}$ ;  $\sigma = 1.52 \text{ mho/m}$ ;  $\epsilon_r = 53.2$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.51, 7.51, 7.51); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) =  $1.01 \text{ mW/g}$

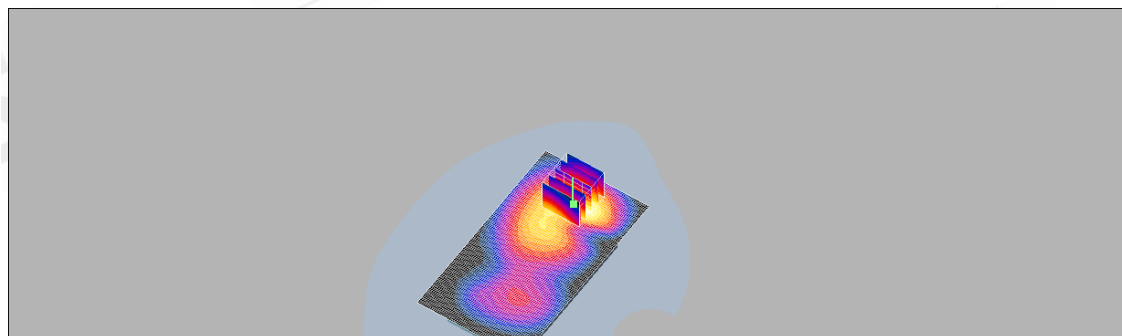
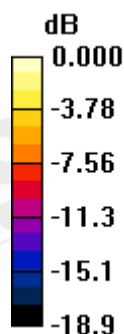
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $7.00 \text{ V/m}$ ; Power Drift =  $-0.078 \text{ dB}$

Peak SAR (extrapolated) =  $1.60 \text{ W/kg}$

**SAR(1 g) =  $0.910 \text{ mW/g}$ ; SAR(10 g) =  $0.477 \text{ mW/g}$**

Maximum value of SAR (measured) =  $1.02 \text{ mW/g}$



0 dB =  $1.02 \text{ mW/g}$

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Date: 2011/6/9

## Hotspot mode\_Back side\_CH661

Communication System: GSM1900; Frequency: 1880 MHz; Duty Cycle: 1:4.1  
Medium: M1800 & 1900 Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.55 \text{ mho/m}$ ;  $\epsilon_r = 53.1$ ;  
 $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.51, 7.51, 7.51); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.990 \text{ mW/g}$

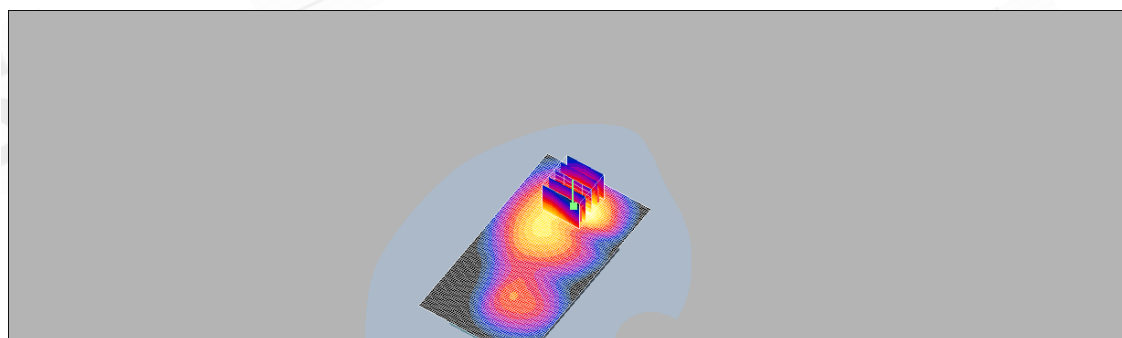
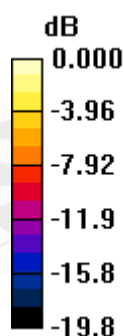
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value =  $7.32 \text{ V/m}$ ; Power Drift =  $0.039 \text{ dB}$

Peak SAR (extrapolated) =  $1.62 \text{ W/kg}$

**SAR(1 g) =  $0.899 \text{ mW/g}$ ; SAR(10 g) =  $0.461 \text{ mW/g}$**

Maximum value of SAR (measured) =  $1.01 \text{ mW/g}$



0 dB =  $1.01 \text{ mW/g}$

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Date: 2011/6/9

## Hotspot mode\_Back side\_CH810

Communication System: GSM1900; Frequency: 1909.8 MHz; Duty Cycle: 1:4.1  
Medium: M1800 & 1900 Medium parameters used:  $f = 1910$  MHz;  $\sigma = 1.58$  mho/m;  $\epsilon_r = 53$ ;  
 $\rho = 1000$  kg/m<sup>3</sup>  
Phantom section: Flat Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.51, 7.51, 7.51); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (61x111x1):** Measurement grid: dx=15mm, dy=15mm  
Maximum value of SAR (interpolated) = 0.808 mW/g

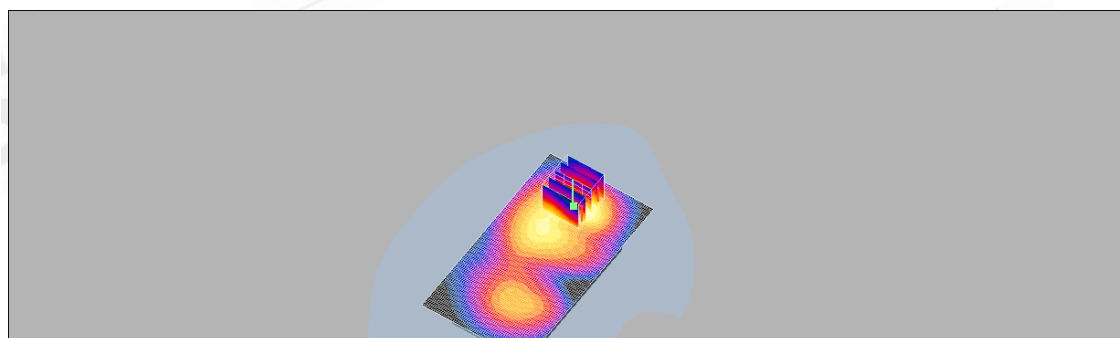
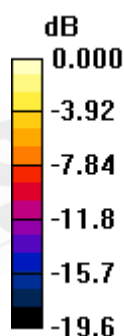
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.25 V/m; Power Drift = -0.069 dB

Peak SAR (extrapolated) = 1.37 W/kg

**SAR(1 g) = 0.740 mW/g; SAR(10 g) = 0.370 mW/g**

Maximum value of SAR (measured) = 0.806 mW/g



0 dB = 0.806mW/g

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## Hotspot mode\_Bottom side\_CH512

Communication System: GSM1900; Frequency: 1850.2 MHz; Duty Cycle: 1:4.1

Medium: M1800 & 1900 Medium parameters used (interpolated):  $f = 1850.2 \text{ MHz}$ ;  $\sigma = 1.52 \text{ mho/m}$ ;  $\epsilon_r = 53.2$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.51, 7.51, 7.51); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (51x71x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) =  $1.26 \text{ mW/g}$

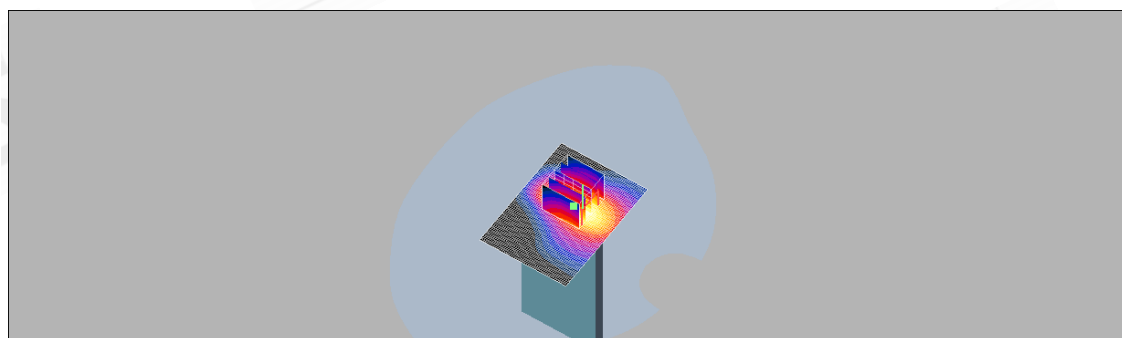
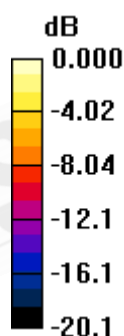
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $13.2 \text{ V/m}$ ; Power Drift =  $0.136 \text{ dB}$

Peak SAR (extrapolated) =  $1.89 \text{ W/kg}$

**SAR(1 g) =  $1.05 \text{ mW/g}$ ; SAR(10 g) =  $0.534 \text{ mW/g}$**

Maximum value of SAR (measured) =  $1.16 \text{ mW/g}$



0 dB =  $1.16 \text{ mW/g}$

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Date: 2011/6/9

## Hotspot mode\_Bottom side\_CH661

Communication System: GSM1900; Frequency: 1880 MHz; Duty Cycle: 1:4.1  
Medium: M1800 & 1900 Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.55 \text{ mho/m}$ ;  $\epsilon_r = 53.1$ ;  
 $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.51, 7.51, 7.51); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (51x71x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $1.36 \text{ mW/g}$

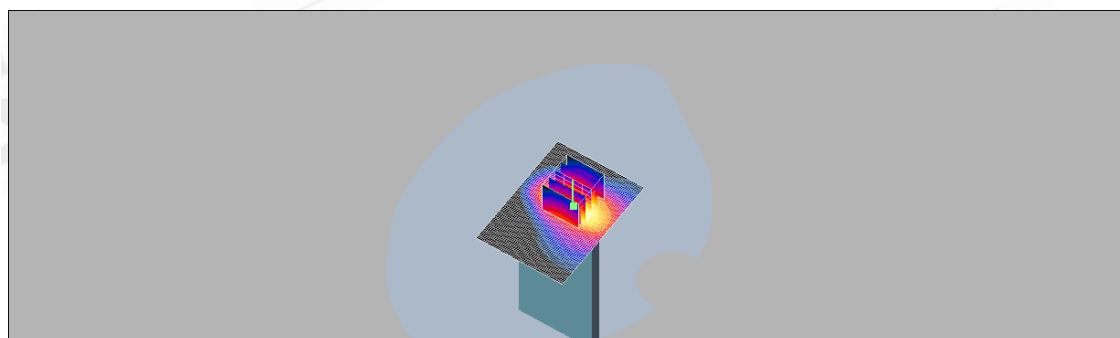
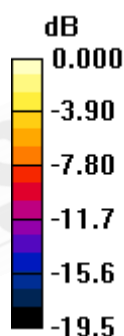
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value =  $14.4 \text{ V/m}$ ; Power Drift =  $0.065 \text{ dB}$

Peak SAR (extrapolated) =  $2.14 \text{ W/kg}$

**SAR(1 g) =  $1.17 \text{ mW/g}$ ; SAR(10 g) =  $0.577 \text{ mW/g}$**

Maximum value of SAR (measured) =  $1.29 \text{ mW/g}$



0 dB =  $1.29 \text{ mW/g}$

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Date: 2011/6/9

## Hotspot mode\_Bottom side\_CH810

Communication System: GSM1900; Frequency: 1909.8 MHz; Duty Cycle: 1:4.1  
Medium: M1800 & 1900 Medium parameters used:  $f = 1910 \text{ MHz}$ ;  $\sigma = 1.58 \text{ mho/m}$ ;  $\epsilon_r = 53$ ;  
 $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.51, 7.51, 7.51); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (51x71x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $1.09 \text{ mW/g}$

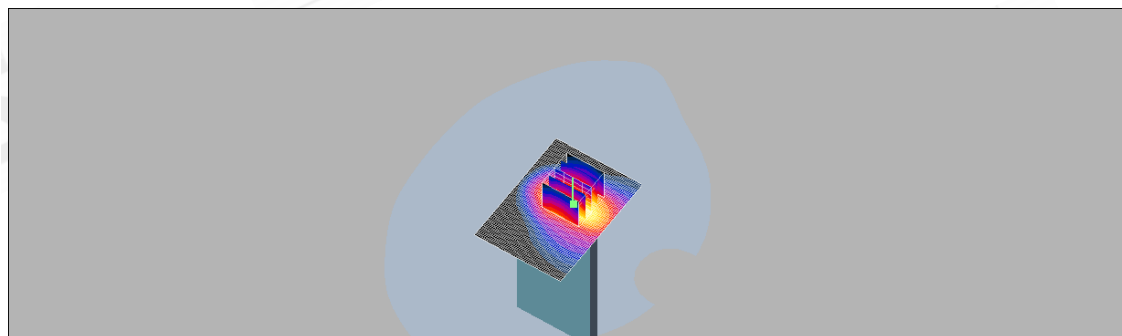
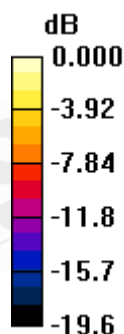
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value =  $13.4 \text{ V/m}$ ; Power Drift =  $0.096 \text{ dB}$

Peak SAR (extrapolated) =  $1.75 \text{ W/kg}$

**SAR(1 g) =  $0.944 \text{ mW/g}$ ; SAR(10 g) =  $0.460 \text{ mW/g}$**

Maximum value of SAR (measured) =  $1.05 \text{ mW/g}$



0 dB =  $1.05 \text{ mW/g}$

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Date: 2011/6/9

## Hotspot mode\_Right side\_CH661

Communication System: GSM1900; Frequency: 1880 MHz; Duty Cycle: 1:4.1  
Medium: M1800 & 1900 Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.55 \text{ mho/m}$ ;  $\epsilon_r = 53.1$ ;  
 $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.51, 7.51, 7.51); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (51x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) = 0.059 mW/g

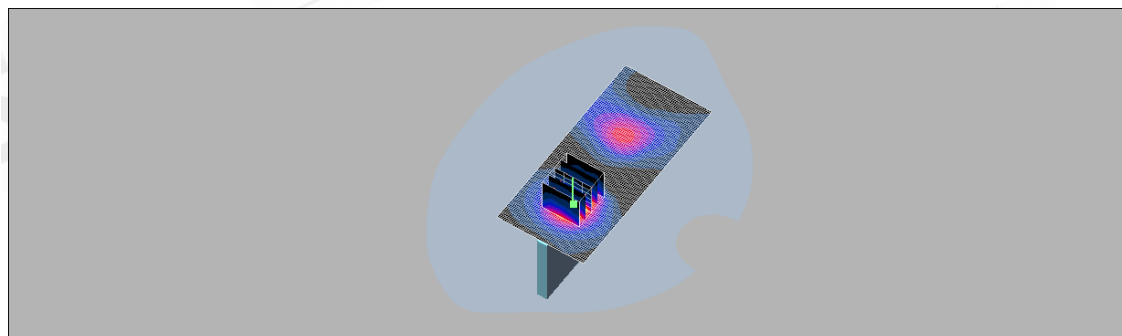
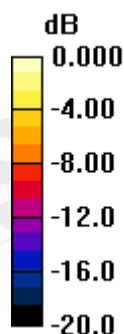
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value = 2.10 V/m; Power Drift = 0.158 dB

Peak SAR (extrapolated) = 0.088 W/kg

**SAR(1 g) = 0.053 mW/g; SAR(10 g) = 0.030 mW/g**

Maximum value of SAR (measured) = 0.058 mW/g



0 dB = 0.058mW/g

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Date: 2011/6/9

## Hotspot mode\_Left side\_CH661

Communication System: GSM1900; Frequency: 1880 MHz; Duty Cycle: 1:4.1  
Medium: M1800 & 1900 Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.55 \text{ mho/m}$ ;  $\epsilon_r = 53.1$ ;  
 $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.51, 7.51, 7.51); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (51x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.490 \text{ mW/g}$

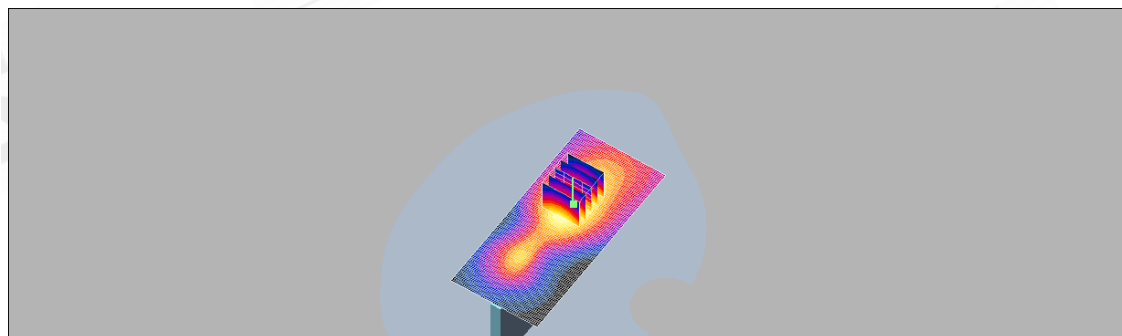
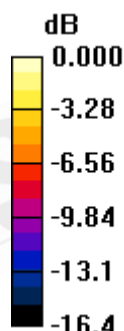
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value =  $8.33 \text{ V/m}$ ; Power Drift =  $0.012 \text{ dB}$

Peak SAR (extrapolated) =  $0.732 \text{ W/kg}$

**SAR(1 g) =  $0.441 \text{ mW/g}$ ; SAR(10 g) =  $0.253 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.486 \text{ mW/g}$



0 dB =  $0.486 \text{ mW/g}$

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Date: 2011/6/9

## Hotspot mode\_Bottom side\_CH512\_multi class 8

Communication System: GSM1900; Frequency: 1850.2 MHz; Duty Cycle: 1:8.3  
Medium: M1800 & 1900 Medium parameters used (interpolated):  $f = 1850.2 \text{ MHz}$ ;  $\sigma = 1.52 \text{ mho/m}$ ;  $\epsilon_r = 53.2$ ;  $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.51, 7.51, 7.51); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (51x71x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.906 \text{ mW/g}$

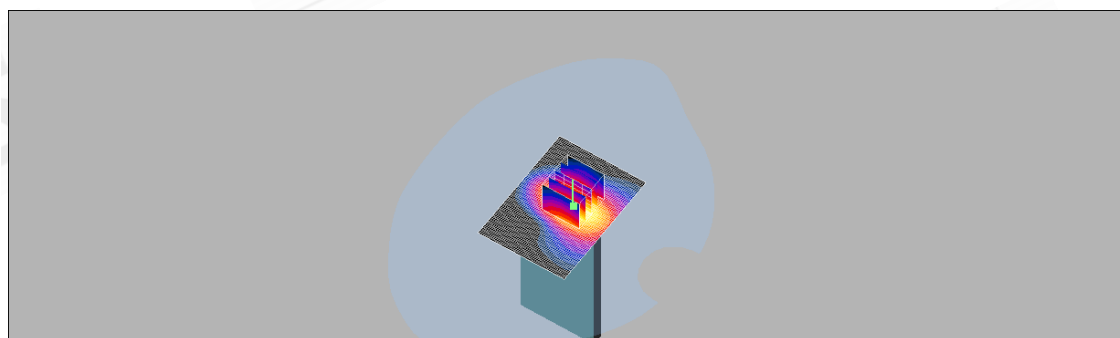
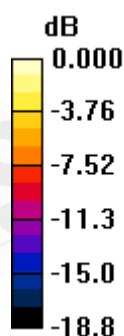
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $18.1 \text{ V/m}$ ; Power Drift =  $0.000 \text{ dB}$

Peak SAR (extrapolated) =  $1.45 \text{ W/kg}$

**SAR(1 g) =  $0.818 \text{ mW/g}$ ; SAR(10 g) =  $0.415 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.904 \text{ mW/g}$



0 dB =  $0.904 \text{ mW/g}$

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Date: 2011/6/9

## Hotspot mode\_Bottom side\_CH661\_multi class 8

Communication System: GSM1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3  
Medium: M1800 & 1900 Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.55 \text{ mho/m}$ ;  $\epsilon_r = 53.1$ ;  
 $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.51, 7.51, 7.51); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (51x71x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.978 \text{ mW/g}$

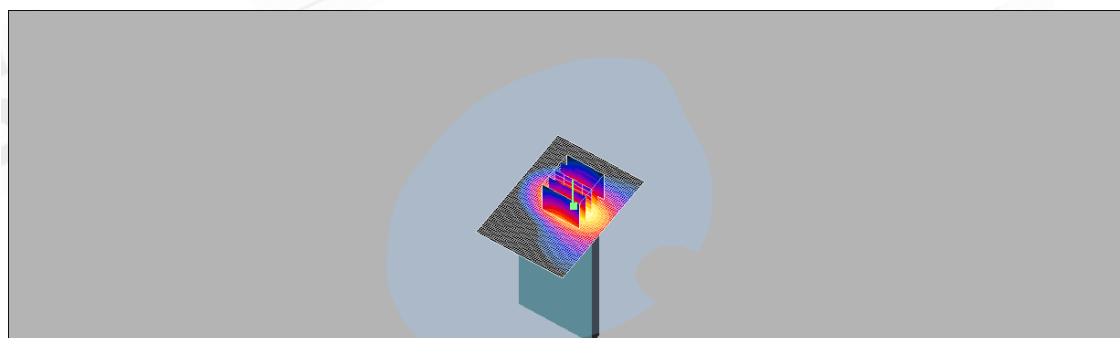
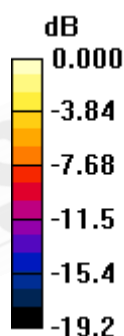
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value =  $18.1 \text{ V/m}$ ; Power Drift =  $0.078 \text{ dB}$

Peak SAR (extrapolated) =  $1.56 \text{ W/kg}$

**SAR(1 g) =  $0.873 \text{ mW/g}$ ; SAR(10 g) =  $0.438 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.963 \text{ mW/g}$



0 dB =  $0.963 \text{ mW/g}$

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Date: 2011/6/9

## Hotspot mode\_Bottom side\_CH810\_multi class 8

Communication System: GSM1900; Frequency: 1909.8 MHz; Duty Cycle: 1:8.3

Medium: M1800 & 1900 Medium parameters used:  $f = 1910$  MHz;  $\sigma = 1.58$  mho/m;  $\epsilon_r = 53$ ;  
 $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.51, 7.51, 7.51); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (51x71x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.768 mW/g

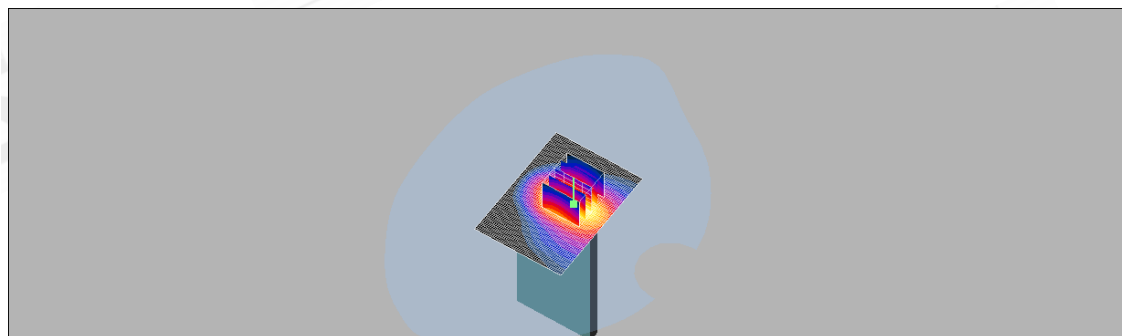
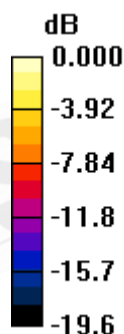
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.7 V/m; Power Drift = 0.050 dB

Peak SAR (extrapolated) = 1.28 W/kg

**SAR(1 g) = 0.687 mW/g; SAR(10 g) = 0.337 mW/g**

Maximum value of SAR (measured) = 0.763 mW/g



0 dB = 0.763mW/g

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Date: 2011/6/9

## Hotspot mode\_Bottom side\_CH512\_multi class 12

Communication System: GSM1900; Frequency: 1850.2 MHz; Duty Cycle: 1:2  
Medium: M1800 & 1900 Medium parameters used (interpolated):  $f = 1850.2 \text{ MHz}$ ;  $\sigma = 1.52 \text{ mho/m}$ ;  $\epsilon_r = 53.2$ ;  $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.51, 7.51, 7.51); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (51x71x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.916 \text{ mW/g}$

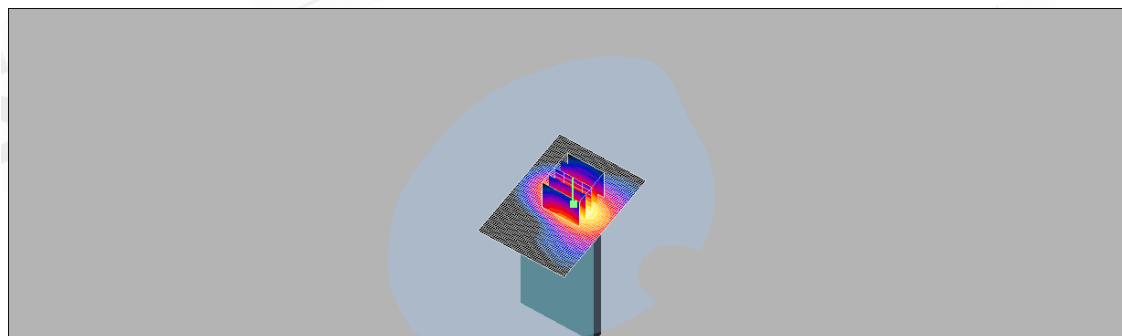
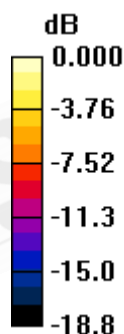
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $18.2 \text{ V/m}$ ; Power Drift =  $0.022 \text{ dB}$

Peak SAR (extrapolated) =  $1.47 \text{ W/kg}$

**SAR(1 g) =  $0.824 \text{ mW/g}$ ; SAR(10 g) =  $0.418 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.904 \text{ mW/g}$



0 dB =  $0.904 \text{ mW/g}$

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Date: 2011/6/9

## Hotspot mode\_Bottom side\_CH661\_multi class 12

Communication System: GSM1900; Frequency: 1880 MHz; Duty Cycle: 1:2  
Medium: M1800 & 1900 Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.55 \text{ mho/m}$ ;  $\epsilon_r = 53.1$ ;  
 $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.51, 7.51, 7.51); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (51x71x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.979 \text{ mW/g}$

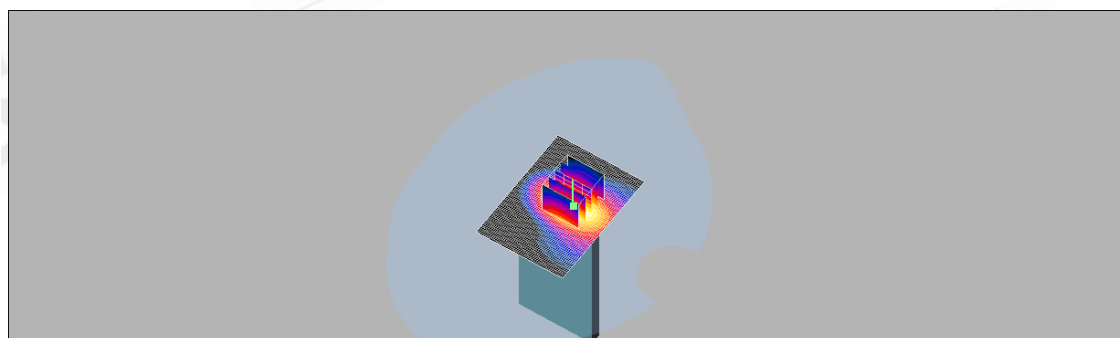
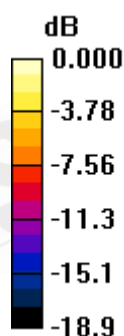
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value =  $18.3 \text{ V/m}$ ; Power Drift =  $0.000 \text{ dB}$

Peak SAR (extrapolated) =  $1.58 \text{ W/kg}$

**SAR(1 g) =  $0.874 \text{ mW/g}$ ; SAR(10 g) =  $0.436 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.966 \text{ mW/g}$



0 dB =  $0.966 \text{ mW/g}$

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Date: 2011/6/9

## Hotspot mode\_Bottom side\_CH810\_multi class 12

Communication System: GSM1900; Frequency: 1909.8 MHz; Duty Cycle: 1:2

Medium: M1800 & 1900 Medium parameters used:  $f = 1910$  MHz;  $\sigma = 1.58$  mho/m;  $\epsilon_r = 53$ ;  
 $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.51, 7.51, 7.51); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (51x71x1):** Measurement grid: dx=15mm, dy=15mm  
Maximum value of SAR (interpolated) = 0.777 mW/g

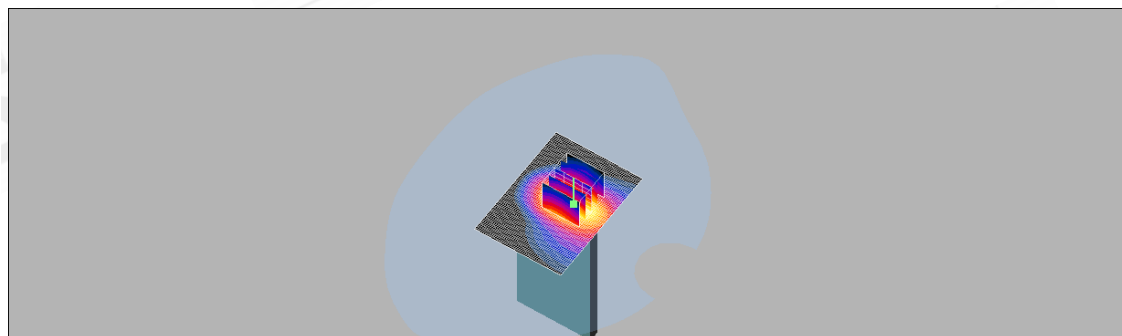
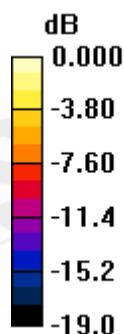
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm,  
dz=5mm

Reference Value = 15.9 V/m; Power Drift = 0.020 dB

Peak SAR (extrapolated) = 1.29 W/kg

**SAR(1 g) = 0.697 mW/g; SAR(10 g) = 0.342 mW/g**

Maximum value of SAR (measured) = 0.769 mW/g



0 dB = 0.769mW/g

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Date: 2011/8/22

## Body worn\_Front side\_CH661\_multi class 10

Communication System: GSM1900; Frequency: 1880 MHz; Duty Cycle: 1:4.1  
Medium: M1800 & 1900 Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.57 \text{ mho/m}$ ;  $\epsilon_r = 51.5$ ;  
 $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

### DASY4 Configuration:

- Probe: ES3DV3 - SN3071; ConvF(4.32, 4.32, 4.32); Calibrated: 2011/6/22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn679; Calibrated: 2011/6/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.254 \text{ mW/g}$

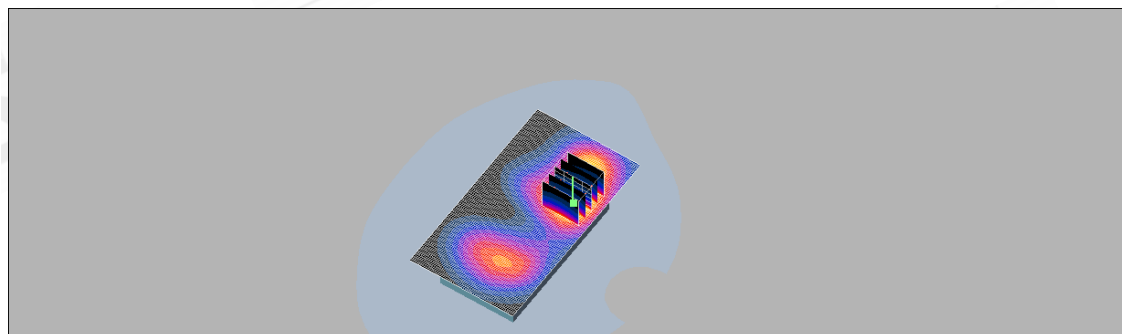
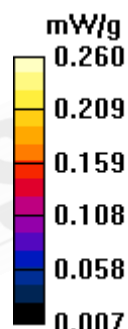
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value =  $5.63 \text{ V/m}$ ; Power Drift =  $-0.070 \text{ dB}$

Peak SAR (extrapolated) =  $0.377 \text{ W/kg}$

**SAR(1 g) =  $0.239 \text{ mW/g}$ ; SAR(10 g) =  $0.145 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.260 \text{ mW/g}$



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Date: 2011/8/22

## Body worn\_Back side\_CH661\_multi class 10

Communication System: GSM1900; Frequency: 1880 MHz; Duty Cycle: 1:4.1  
Medium: M1800 & 1900 Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.57 \text{ mho/m}$ ;  $\epsilon_r = 51.5$ ;  
 $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

### DASY4 Configuration:

- Probe: ES3DV3 - SN3071; ConvF(4.32, 4.32, 4.32); Calibrated: 2011/6/22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn679; Calibrated: 2011/6/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.504 \text{ mW/g}$

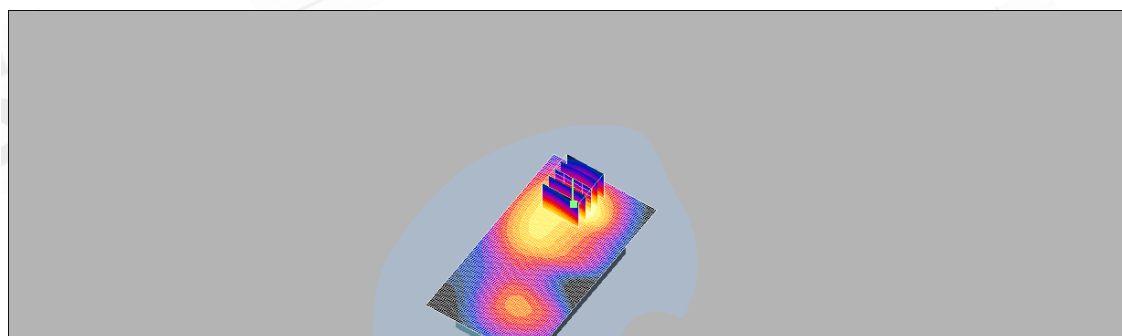
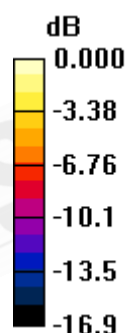
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value =  $5.30 \text{ V/m}$ ; Power Drift =  $0.048 \text{ dB}$

Peak SAR (extrapolated) =  $0.754 \text{ W/kg}$

**SAR(1 g) =  $0.451 \text{ mW/g}$ ; SAR(10 g) =  $0.254 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.499 \text{ mW/g}$



0 dB =  $0.499 \text{ mW/g}$

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## RE Cheek\_CH661\_(test in GPRS mode)

Communication System: GSM1900; Frequency: 1880 MHz; Duty Cycle: 1:4

Medium: Head 1900 MHz Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.4 \text{ mho/m}$ ;  $\epsilon_r = 40.7$ ;  
 $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.78, 7.78, 7.78); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn679; Calibrated: 2011/6/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**HEAD/Area Scan (51x101x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.376 mW/g

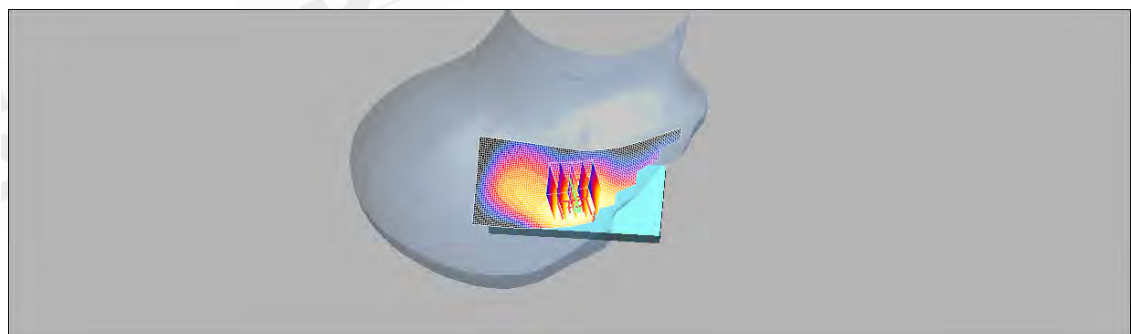
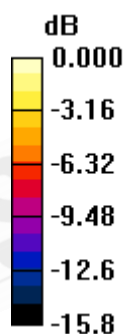
**HEAD/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value = 7.57 V/m; Power Drift = -0.048 dB

Peak SAR (extrapolated) = 0.515 W/kg

**SAR(1 g) = 0.347 mW/g; SAR(10 g) = 0.221 mW/g**

Maximum value of SAR (measured) = 0.376 mW/g



0 dB = 0.376mW/g

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## LE Cheek\_CH661\_(test in GPRS mode)

Communication System: GSM1900; Frequency: 1880 MHz; Duty Cycle: 1:4

Medium: Head 1900 MHz Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.4 \text{ mho/m}$ ;  $\epsilon_r = 40.7$ ;  
 $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.78, 7.78, 7.78); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn679; Calibrated: 2011/6/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**HEAD/Area Scan (51x101x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.658 mW/g

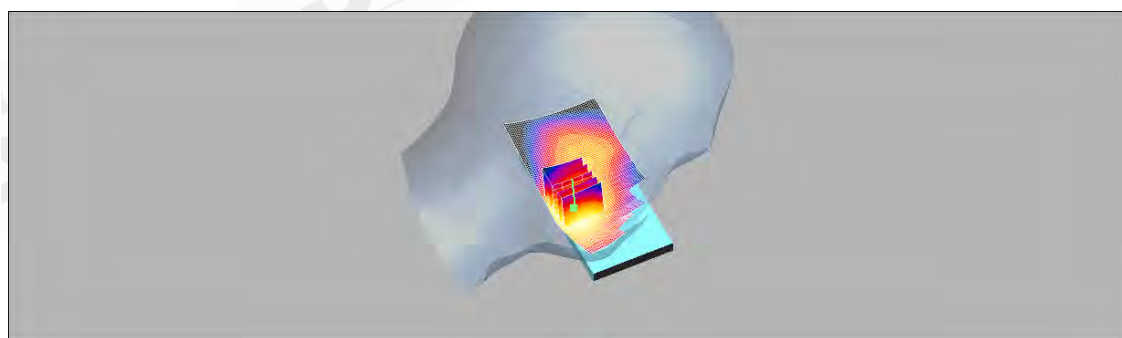
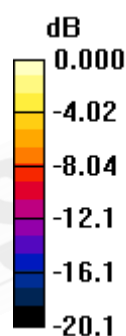
**HEAD/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value = 7.26 V/m; Power Drift = -0.139 dB

Peak SAR (extrapolated) = 0.909 W/kg

**SAR(1 g) = 0.595 mW/g; SAR(10 g) = 0.368 mW/g**

Maximum value of SAR (measured) = 0.648 mW/g



0 dB = 0.648mW/g

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Date: 2011/9/13

## RE Tilt\_CH661\_(test in GPRS mode)

Communication System: GSM1900; Frequency: 1880 MHz; Duty Cycle: 1:4  
Medium: Head 1900 MHz Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.4 \text{ mho/m}$ ;  $\epsilon_r = 40.7$ ;  
 $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Right Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.78, 7.78, 7.78); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn679; Calibrated: 2011/6/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**HEAD/Area Scan (51x101x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.231 \text{ mW/g}$

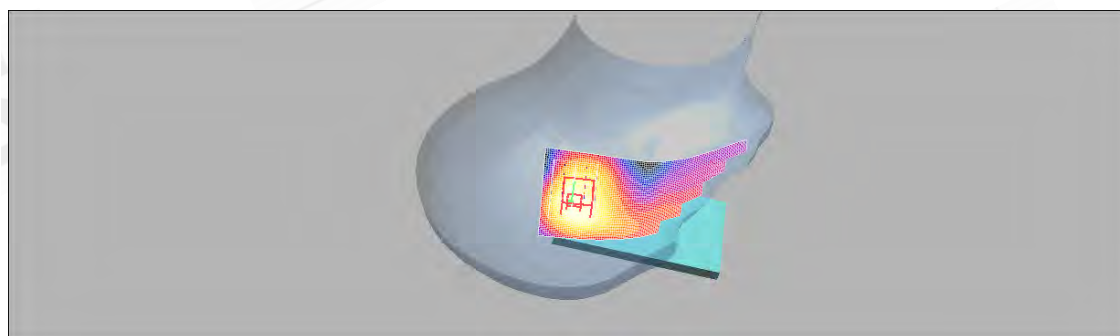
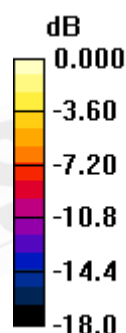
**HEAD/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value =  $10.7 \text{ V/m}$ ; Power Drift =  $0.092 \text{ dB}$

Peak SAR (extrapolated) =  $0.296 \text{ W/kg}$

**SAR(1 g) =  $0.193 \text{ mW/g}$ ; SAR(10 g) =  $0.118 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.208 \text{ mW/g}$



0 dB =  $0.208 \text{ mW/g}$

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Date: 2011/9/13

## LE Tilt\_CH661\_(test in GPRS mode)

Communication System: GSM1900; Frequency: 1880 MHz; Duty Cycle: 1:4  
Medium: Head 1900 MHz Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.4 \text{ mho/m}$ ;  $\epsilon_r = 40.7$ ;  
 $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Left Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.78, 7.78, 7.78); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn679; Calibrated: 2011/6/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**HEAD/Area Scan (51x101x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.220 \text{ mW/g}$

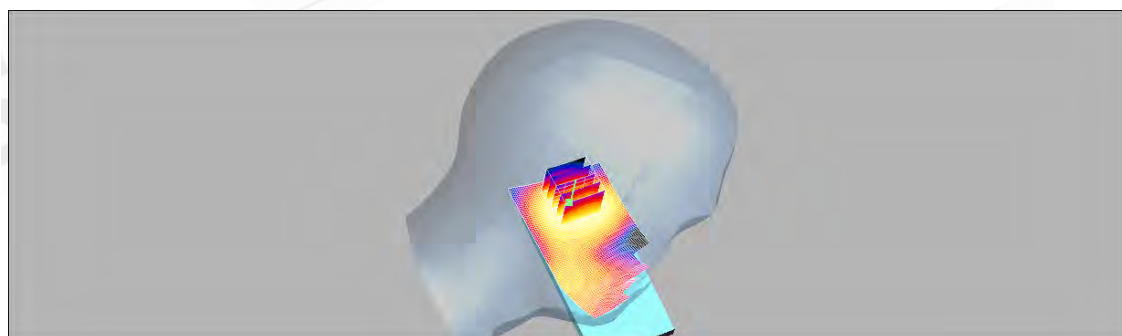
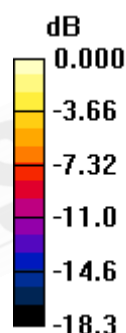
**HEAD/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value =  $10.6 \text{ V/m}$ ; Power Drift =  $0.060 \text{ dB}$

Peak SAR (extrapolated) =  $0.301 \text{ W/kg}$

**SAR(1 g) =  $0.191 \text{ mW/g}$ ; SAR(10 g) =  $0.120 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.207 \text{ mW/g}$



0 dB =  $0.207 \text{ mW/g}$

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## RE Cheek\_CH9400

Communication System: WCDMA BAND2; Frequency: 1880 MHz; Duty Cycle: 1:1  
Medium: Head 1800 MHz Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.45 \text{ mho/m}$ ;  $\epsilon_r = 39.5$ ;  $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Right Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.78, 7.78, 7.78); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**HEAD/Area Scan (61x101x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.732 mW/g

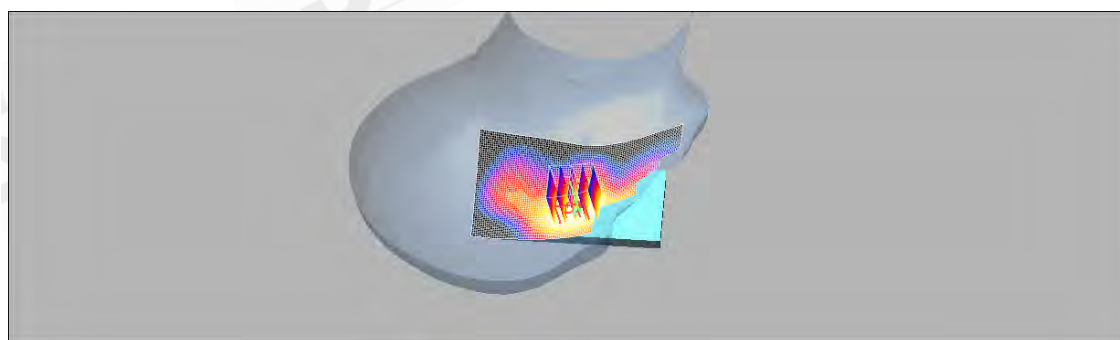
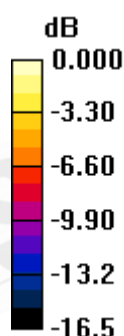
**HEAD/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 8.94 V/m; Power Drift = -0.106 dB

Peak SAR (extrapolated) = 1.05 W/kg

**SAR(1 g) = 0.681 mW/g; SAR(10 g) = 0.420 mW/g**

Maximum value of SAR (measured) = 0.727 mW/g



0 dB = 0.727mW/g

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## LE Cheek\_CH9262

Communication System: WCDMA BAND2; Frequency: 1852.4 MHz; Duty Cycle: 1:1  
Medium: Head 1800 MHz Medium parameters used (interpolated):  $f = 1852.4 \text{ MHz}$ ;  $\sigma = 1.42 \text{ mho/m}$ ;  $\epsilon_r = 39.6$ ;  $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Left Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.78, 7.78, 7.78); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**HEAD/Area Scan (61x101x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $1.13 \text{ mW/g}$

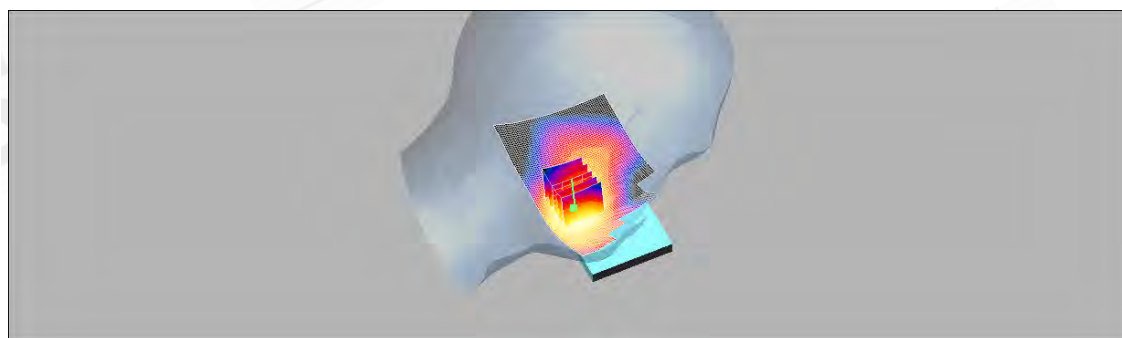
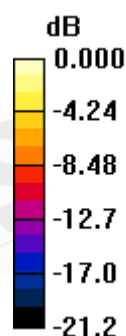
**HEAD/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $6.34 \text{ V/m}$ ; Power Drift =  $0.038 \text{ dB}$

Peak SAR (extrapolated) =  $1.55 \text{ W/kg}$

**SAR(1 g) =  $1.00 \text{ mW/g}$ ; SAR(10 g) =  $0.624 \text{ mW/g}$**

Maximum value of SAR (measured) =  $1.09 \text{ mW/g}$



0 dB =  $1.09 \text{ mW/g}$

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Date: 2011/6/8

## LE Cheek\_CH9400

Communication System: WCDMA BAND2; Frequency: 1880 MHz; Duty Cycle: 1:1  
Medium: Head 1800 MHz Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.45 \text{ mho/m}$ ;  $\epsilon_r = 39.5$ ;  $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Left Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.78, 7.78, 7.78); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**HEAD/Area Scan (61x101x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $1.12 \text{ mW/g}$

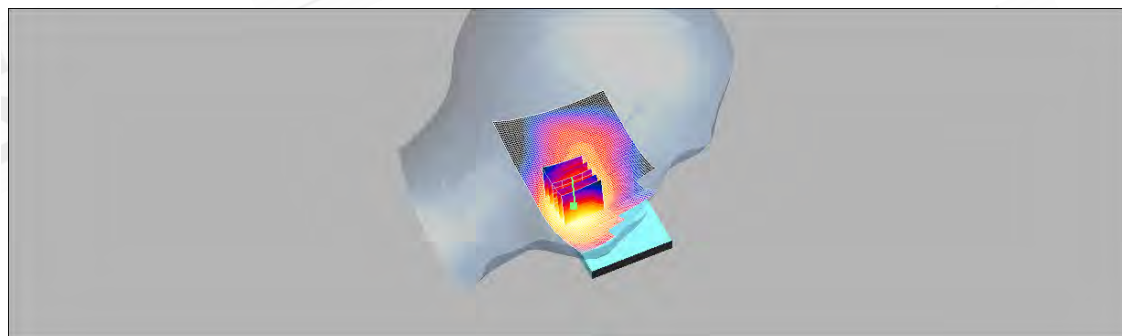
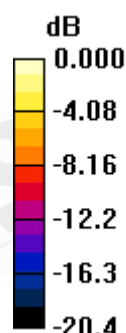
**HEAD/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $8.39 \text{ V/m}$ ; Power Drift =  $-0.078 \text{ dB}$

Peak SAR (extrapolated) =  $1.58 \text{ W/kg}$

**SAR(1 g) =  $1.01 \text{ mW/g}$ ; SAR(10 g) =  $0.606 \text{ mW/g}$**

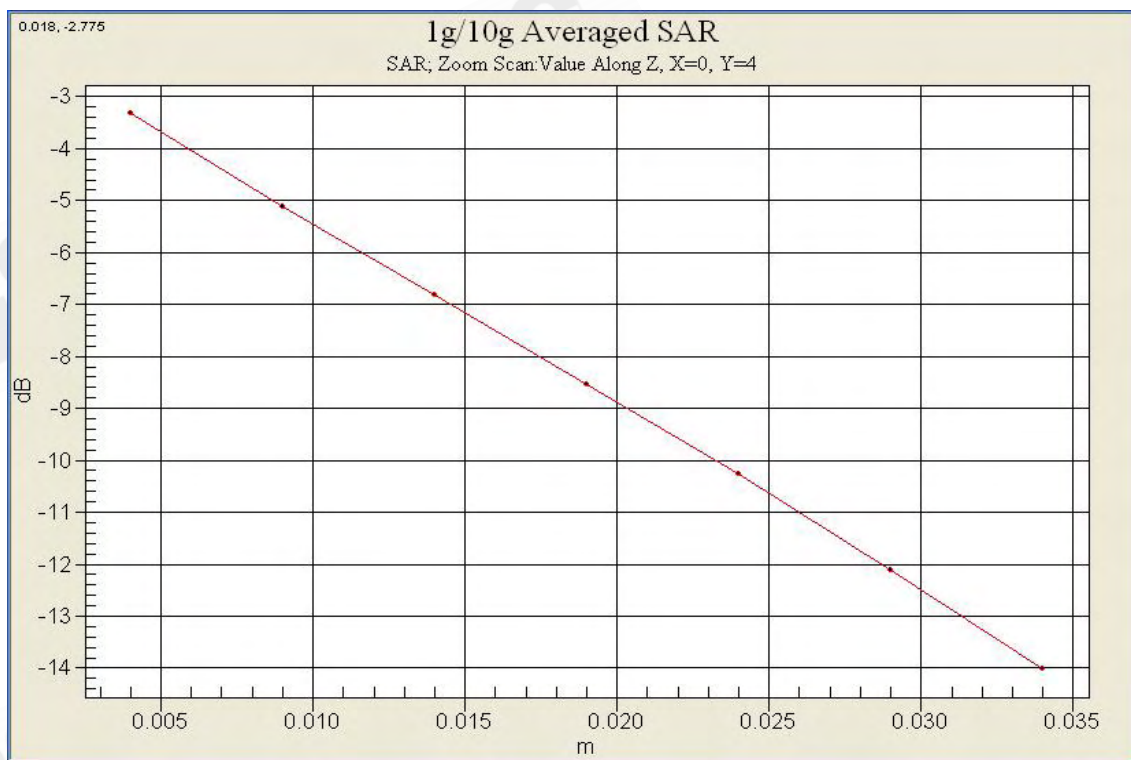
Maximum value of SAR (measured) =  $1.10 \text{ mW/g}$



0 dB =  $1.10 \text{ mW/g}$

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**LE Cheek\_CH9538**

Communication System: WCDMA BAND2; Frequency: 1907.6 MHz; Duty Cycle: 1:1  
Medium: Head 1800 MHz Medium parameters used:  $f = 1908 \text{ MHz}$ ;  $\sigma = 1.48 \text{ mho/m}$ ;  $\epsilon_r = 39.4$ ;  $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Left Section

**DASY4 Configuration:**

- Probe: EX3DV4 - SN3770; ConvF(7.78, 7.78, 7.78); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**HEAD/Area Scan (61x101x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) = 1.03 mW/g

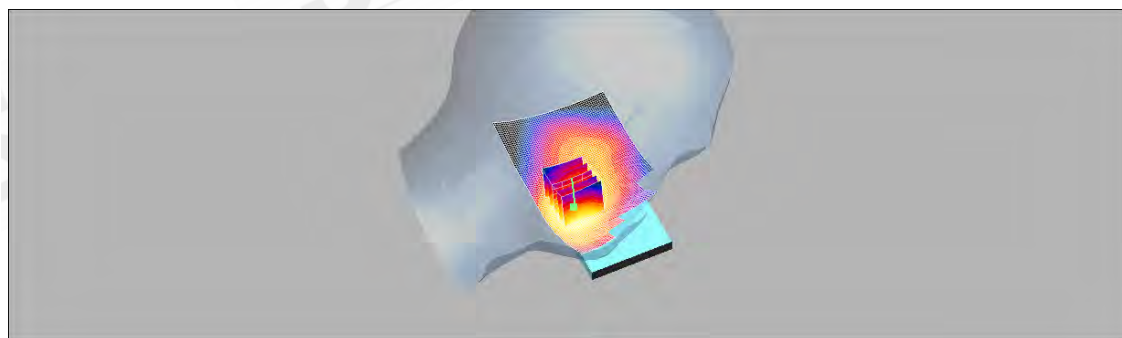
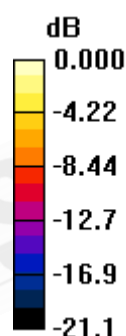
**HEAD/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value = 7.51 V/m; Power Drift = -0.061 dB

Peak SAR (extrapolated) = 1.52 W/kg

**SAR(1 g) = 0.941 mW/g; SAR(10 g) = 0.561 mW/g**

Maximum value of SAR (measured) = 1.03 mW/g



0 dB = 1.03mW/g

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Date: 2011/6/8

**RE Tilt\_CH9400**

Communication System: WCDMA BAND2; Frequency: 1880 MHz; Duty Cycle: 1:1  
Medium: Head 1800 MHz Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.45 \text{ mho/m}$ ;  $\epsilon_r = 39.5$ ;  $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Right Section

**DASY4 Configuration:**

- Probe: EX3DV4 - SN3770; ConvF(7.78, 7.78, 7.78); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**HEAD/Area Scan (61x101x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.363 \text{ mW/g}$

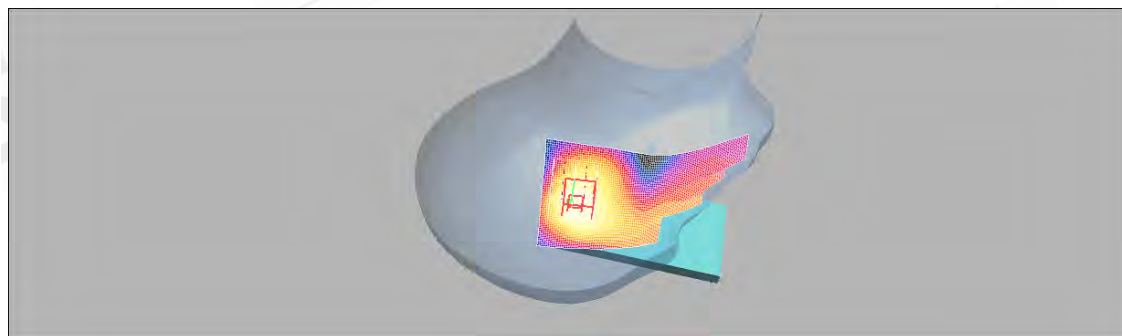
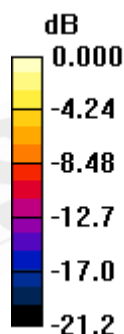
**HEAD/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value =  $13.3 \text{ V/m}$ ; Power Drift =  $0.061 \text{ dB}$

Peak SAR (extrapolated) =  $0.516 \text{ W/kg}$

**SAR(1 g) =  $0.318 \text{ mW/g}$ ; SAR(10 g) =  $0.191 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.337 \text{ mW/g}$



0 dB =  $0.337 \text{ mW/g}$

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Date: 2011/6/8

## LE Tilt\_CH9400

Communication System: WCDMA BAND2; Frequency: 1880 MHz; Duty Cycle: 1:1  
Medium: Head 1800 MHz Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.45 \text{ mho/m}$ ;  $\epsilon_r = 39.5$ ;  $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Left Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.78, 7.78, 7.78); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**HEAD/Area Scan (61x101x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.338 \text{ mW/g}$

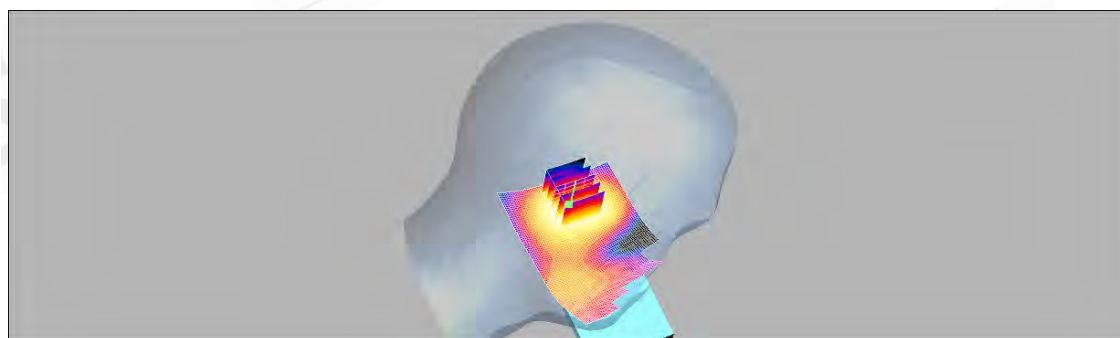
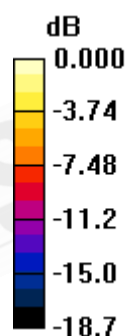
**HEAD/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $13.7 \text{ V/m}$ ; Power Drift =  $-0.158 \text{ dB}$

Peak SAR (extrapolated) =  $0.449 \text{ W/kg}$

**SAR(1 g) =  $0.281 \text{ mW/g}$ ; SAR(10 g) =  $0.171 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.304 \text{ mW/g}$



0 dB =  $0.304 \text{ mW/g}$

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Date: 2011/6/8

## LE Cheek\_CH9400\_repeated with memory card

Communication System: WCDMA BAND2; Frequency: 1880 MHz; Duty Cycle: 1:1  
Medium: Head 1800 MHz Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.45 \text{ mho/m}$ ;  $\epsilon_r = 39.5$ ;  $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Left Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.78, 7.78, 7.78); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**HEAD/Area Scan (61x101x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $1.09 \text{ mW/g}$

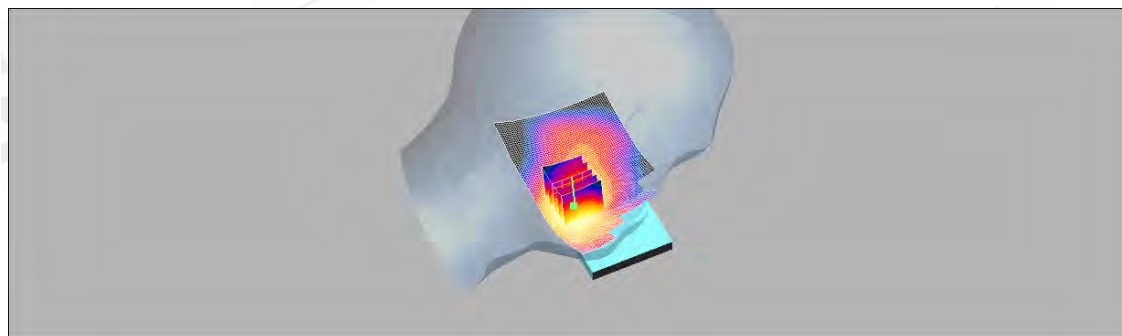
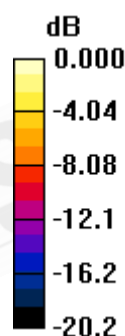
**HEAD/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $8.67 \text{ V/m}$ ; Power Drift =  $-0.125 \text{ dB}$

Peak SAR (extrapolated) =  $1.54 \text{ W/kg}$

**SAR(1 g) =  $0.987 \text{ mW/g}$ ; SAR(10 g) =  $0.595 \text{ mW/g}$**

Maximum value of SAR (measured) =  $1.08 \text{ mW/g}$



0 dB =  $1.08 \text{ mW/g}$

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Date: 2011/6/9

## Hotspot mode\_Front side\_CH9262

Communication System: WCDMA BAND2; Frequency: 1852.4 MHz; Duty Cycle: 1:1  
Medium: M1800 & 1900 Medium parameters used (interpolated):  $f = 1852.4$  MHz;  $\sigma = 1.52$  mho/m;  $\epsilon_r = 53.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Phantom section: Flat Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.51, 7.51, 7.51); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (61x111x1):** Measurement grid: dx=15mm, dy=15mm  
Maximum value of SAR (interpolated) = 1.04 mW/g

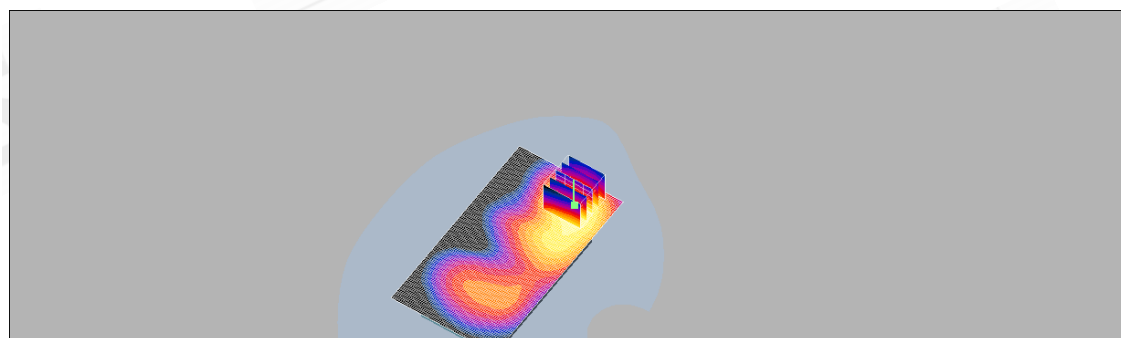
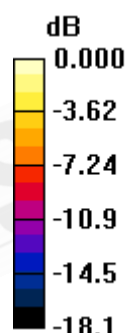
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.68 V/m; Power Drift = 0.062 dB

Peak SAR (extrapolated) = 1.84 W/kg

**SAR(1 g) = 1.06 mW/g; SAR(10 g) = 0.575 mW/g**

Maximum value of SAR (measured) = 1.17 mW/g



0 dB = 1.17mW/g

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Date: 2011/6/9

## Hotspot mode\_Front side\_CH9400

Communication System: WCDMA BAND2; Frequency: 1880 MHz; Duty Cycle: 1:1  
Medium: M1800 & 1900 Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.55 \text{ mho/m}$ ;  $\epsilon_r = 53.1$ ;  
 $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

**BODY/Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.815 mW/g

**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value = 8.56 V/m; Power Drift = -0.113 dB

Peak SAR (extrapolated) = 1.49 W/kg

**SAR(1 g) = 0.825 mW/g; SAR(10 g) = 0.441 mW/g**

Maximum value of SAR (measured) = 0.938 mW/g

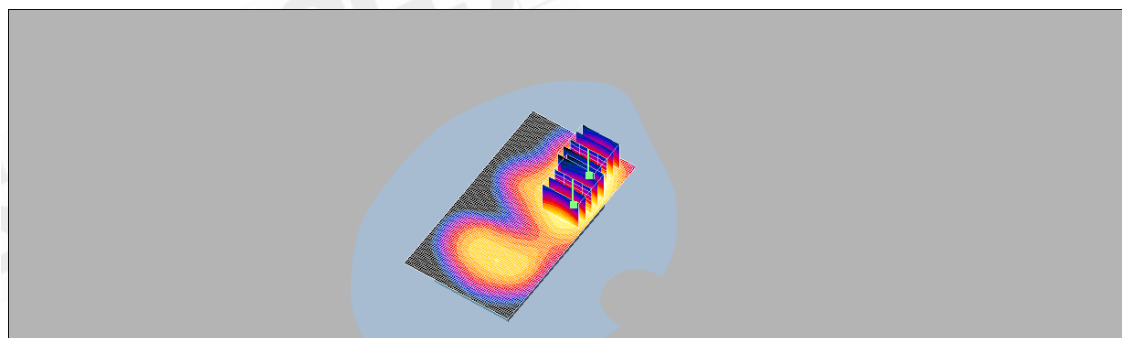
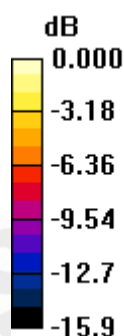
**BODY/Zoom Scan (5x5x7)/Cube 1:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value = 8.56 V/m; Power Drift = -0.113 dB

Peak SAR (extrapolated) = 1.07 W/kg

**SAR(1 g) = 0.669 mW/g; SAR(10 g) = 0.400 mW/g**

Maximum value of SAR (measured) = 0.730 mW/g



0 dB = 0.730mW/g

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Date: 2011/6/9

## Hotspot mode\_Front side\_CH9538

Communication System: WCDMA BAND2; Frequency: 1907.6 MHz; Duty Cycle: 1:1  
Medium: M1800 & 1900 Medium parameters used:  $f = 1908 \text{ MHz}$ ;  $\sigma = 1.58 \text{ mho/m}$ ;  $\epsilon_r = 53.1$ ;  
 $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

**BODY/Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.607 mW/g

**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value = 7.31 V/m; Power Drift = 0.008 dB

Peak SAR (extrapolated) = 1.07 W/kg

**SAR(1 g) = 0.583 mW/g; SAR(10 g) = 0.316 mW/g**

Maximum value of SAR (measured) = 0.651 mW/g

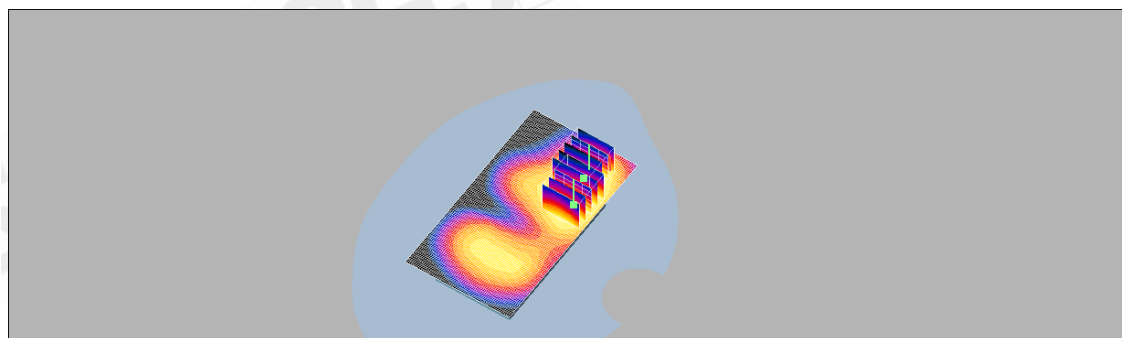
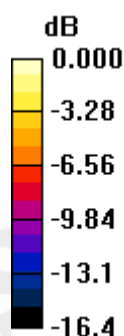
**BODY/Zoom Scan (5x5x7)/Cube 1:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value = 7.31 V/m; Power Drift = 0.008 dB

Peak SAR (extrapolated) = 0.934 W/kg

**SAR(1 g) = 0.579 mW/g; SAR(10 g) = 0.346 mW/g**

Maximum value of SAR (measured) = 0.624 mW/g



0 dB = 0.624mW/g

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Date: 2011/6/9

## Hotspot mode\_Back side\_CH9262

Communication System: WCDMA BAND2; Frequency: 1852.4 MHz; Duty Cycle: 1:1  
Medium: M1800 & 1900 Medium parameters used (interpolated):  $f = 1852.4 \text{ MHz}$ ;  $\sigma = 1.52 \text{ mho/m}$ ;  $\epsilon_r = 53.2$ ;  $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.51, 7.51, 7.51); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $1.28 \text{ mW/g}$

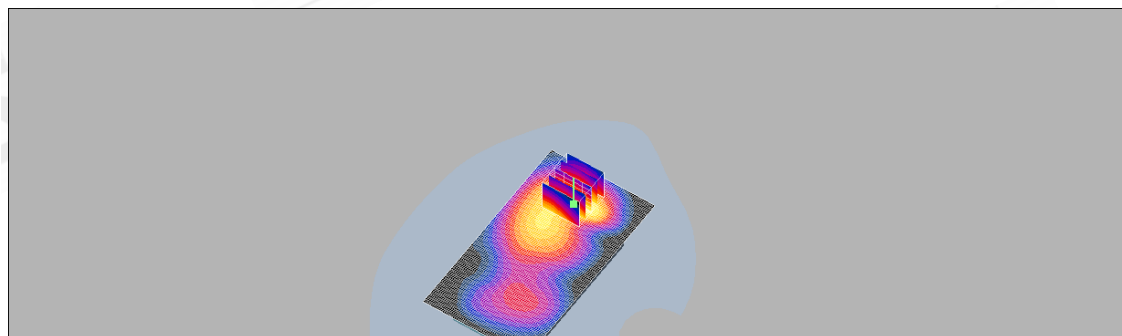
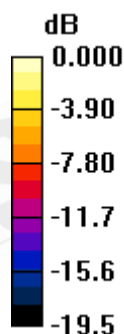
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $7.44 \text{ V/m}$ ; Power Drift =  $0.041 \text{ dB}$

Peak SAR (extrapolated) =  $1.90 \text{ W/kg}$

**SAR(1 g) =  $1.08 \text{ mW/g}$ ; SAR(10 g) =  $0.567 \text{ mW/g}$**

Maximum value of SAR (measured) =  $1.24 \text{ mW/g}$



0 dB =  $1.24 \text{ mW/g}$

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Date: 2011/6/9

## Hotspot mode\_Back side\_CH9400

Communication System: WCDMA BAND2; Frequency: 1880 MHz; Duty Cycle: 1:1  
Medium: M1800 & 1900 Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.55 \text{ mho/m}$ ;  $\epsilon_r = 53.1$ ;  
 $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.51, 7.51, 7.51); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) = 1.16 mW/g

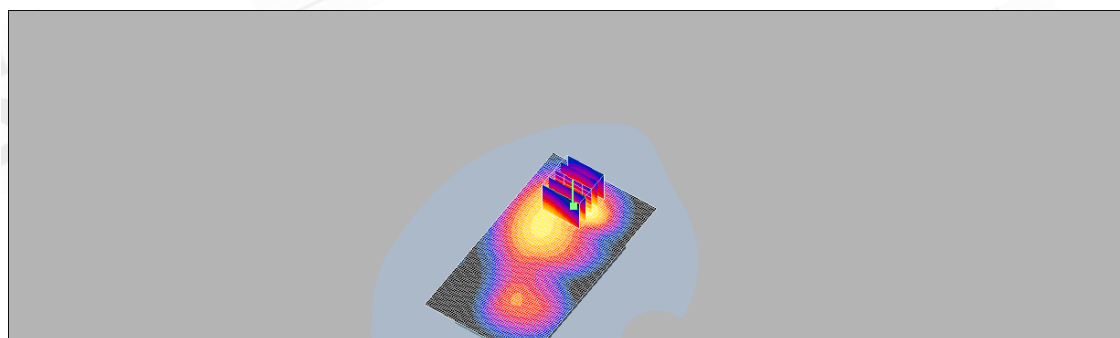
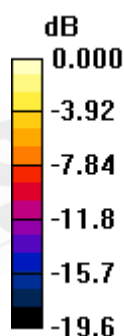
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value = 7.39 V/m; Power Drift = 0.008 dB

Peak SAR (extrapolated) = 1.78 W/kg

**SAR(1 g) = 0.992 mW/g; SAR(10 g) = 0.513 mW/g**

Maximum value of SAR (measured) = 1.14 mW/g



0 dB = 1.14mW/g

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Date: 2011/6/9

## Hotspot mode\_Back side\_CH9538

Communication System: WCDMA BAND2; Frequency: 1907.6 MHz; Duty Cycle: 1:1  
Medium: M1800 & 1900 Medium parameters used:  $f = 1908 \text{ MHz}$ ;  $\sigma = 1.58 \text{ mho/m}$ ;  $\epsilon_r = 53.1$ ;  
 $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.51, 7.51, 7.51); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.879 \text{ mW/g}$

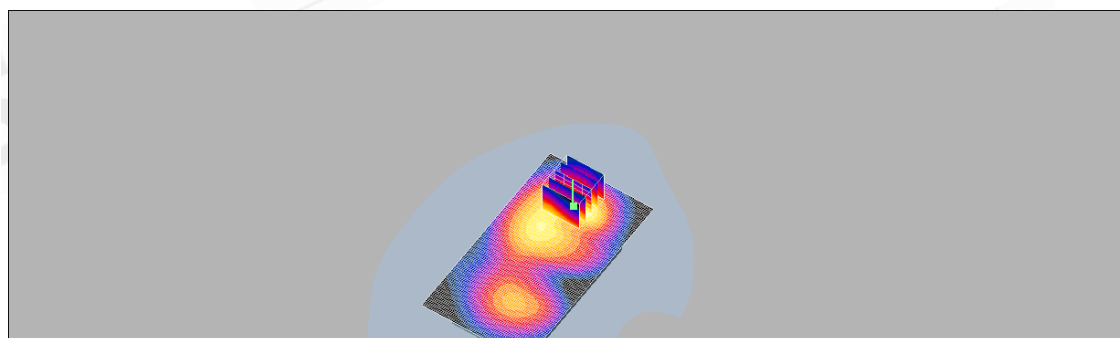
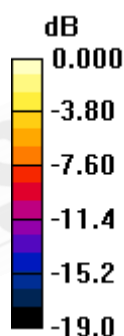
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value =  $5.97 \text{ V/m}$ ; Power Drift =  $0.040 \text{ dB}$

Peak SAR (extrapolated) =  $1.41 \text{ W/kg}$

**SAR(1 g) =  $0.762 \text{ mW/g}$ ; SAR(10 g) =  $0.385 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.876 \text{ mW/g}$



0 dB =  $0.876 \text{ mW/g}$

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Date: 2011/6/9

## Hotspot mode\_Bottom side\_CH9262

Communication System: WCDMA BAND2; Frequency: 1852.4 MHz; Duty Cycle: 1:1  
Medium: M1800 & 1900 Medium parameters used (interpolated):  $f = 1852.4 \text{ MHz}$ ;  $\sigma = 1.52 \text{ mho/m}$ ;  $\epsilon_r = 53.2$ ;  $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.51, 7.51, 7.51); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (51x71x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $1.47 \text{ mW/g}$

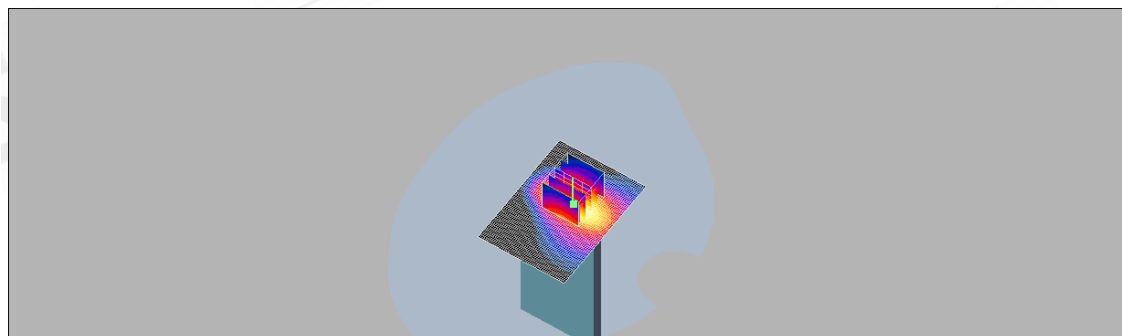
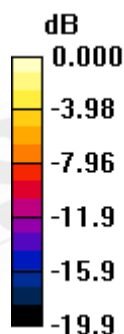
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $15.6 \text{ V/m}$ ; Power Drift =  $0.108 \text{ dB}$

Peak SAR (extrapolated) =  $2.30 \text{ W/kg}$

**SAR(1 g) =  $1.25 \text{ mW/g}$ ; SAR(10 g) =  $0.616 \text{ mW/g}$**

Maximum value of SAR (measured) =  $1.36 \text{ mW/g}$



0 dB =  $1.36 \text{ mW/g}$

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Date: 2011/6/9

## Hotspot mode\_Bottom side\_CH9400

Communication System: WCDMA BAND2; Frequency: 1880 MHz; Duty Cycle: 1:1  
Medium: M1800 & 1900 Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.55 \text{ mho/m}$ ;  $\epsilon_r = 53.1$ ;  
 $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.51, 7.51, 7.51); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (51x71x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $1.52 \text{ mW/g}$

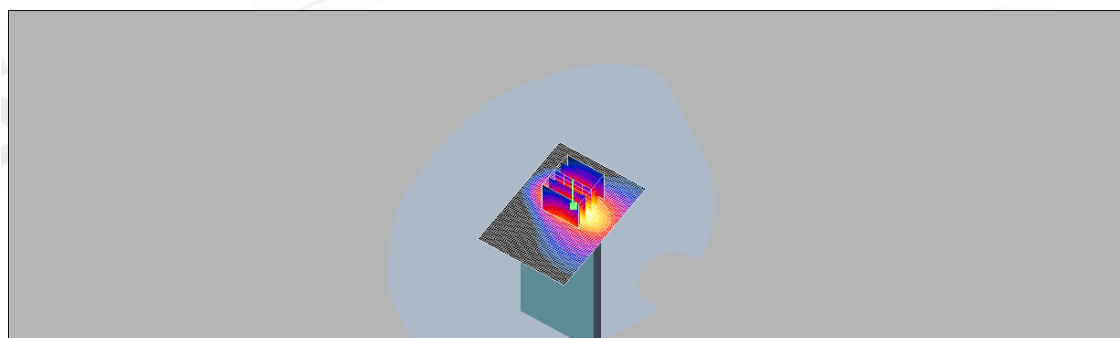
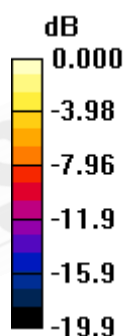
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value =  $15.7 \text{ V/m}$ ; Power Drift =  $0.108 \text{ dB}$

Peak SAR (extrapolated) =  $2.37 \text{ W/kg}$

**SAR(1 g) =  $1.29 \text{ mW/g}$ ; SAR(10 g) =  $0.635 \text{ mW/g}$**

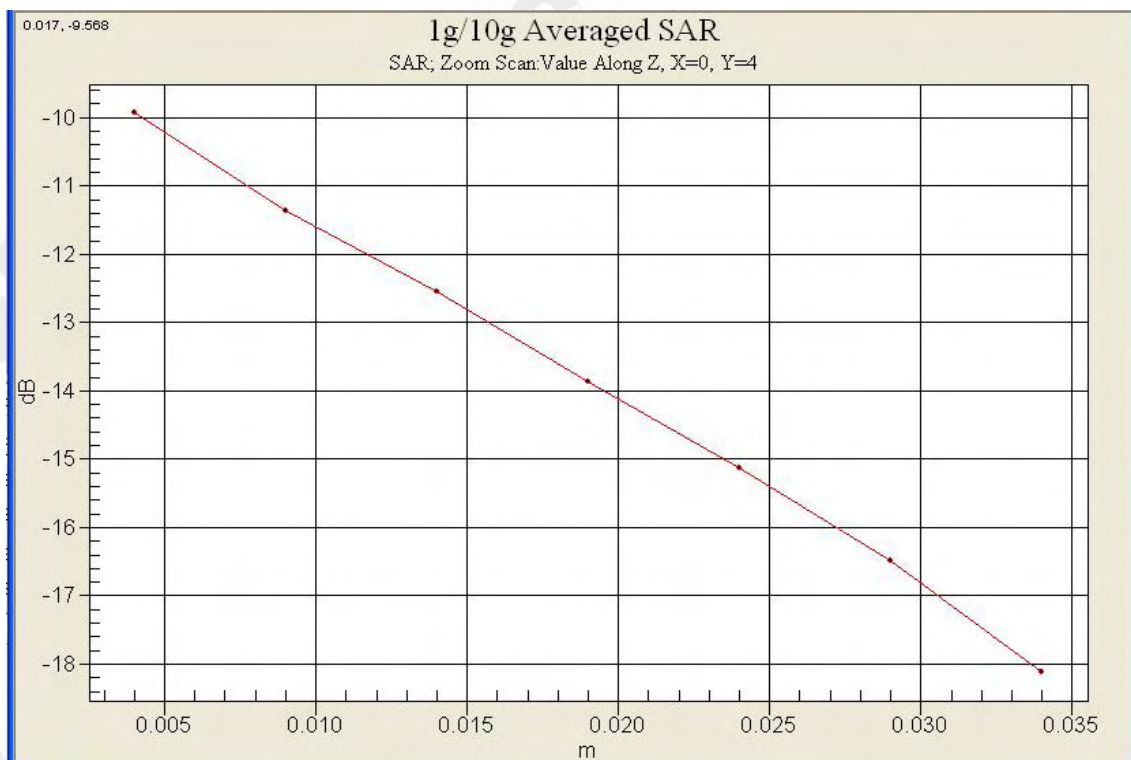
Maximum value of SAR (measured) =  $1.40 \text{ mW/g}$



0 dB =  $1.40 \text{ mW/g}$

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## Hotspot mode\_Bottom side\_CH9538

Communication System: WCDMA BAND2; Frequency: 1907.6 MHz; Duty Cycle: 1:1  
Medium: M1800 & 1900 Medium parameters used:  $f = 1908 \text{ MHz}$ ;  $\sigma = 1.58 \text{ mho/m}$ ;  $\epsilon_r = 53.1$ ;  
 $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.51, 7.51, 7.51); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (51x71x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 1.21 mW/g

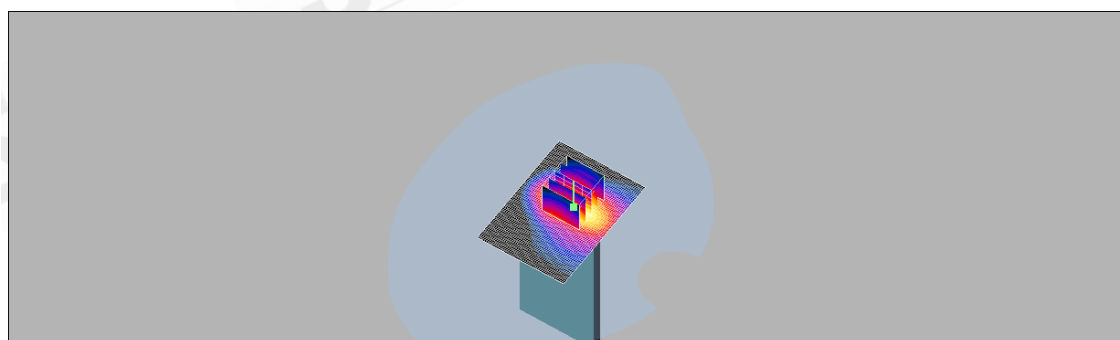
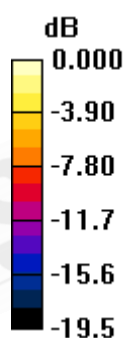
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value = 14.8 V/m; Power Drift = 0.082 dB

Peak SAR (extrapolated) = 1.95 W/kg

**SAR(1 g) = 1.04 mW/g; SAR(10 g) = 0.503 mW/g**

Maximum value of SAR (measured) = 1.18 mW/g



0 dB = 1.18mW/g

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Date: 2011/6/9

## Hotspot mode\_Right side\_CH9400

Communication System: WCDMA BAND2; Frequency: 1880 MHz; Duty Cycle: 1:1  
Medium: M1800 & 1900 Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.55 \text{ mho/m}$ ;  $\epsilon_r = 53.1$ ;  
 $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.51, 7.51, 7.51); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (51x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) = 0.085 mW/g

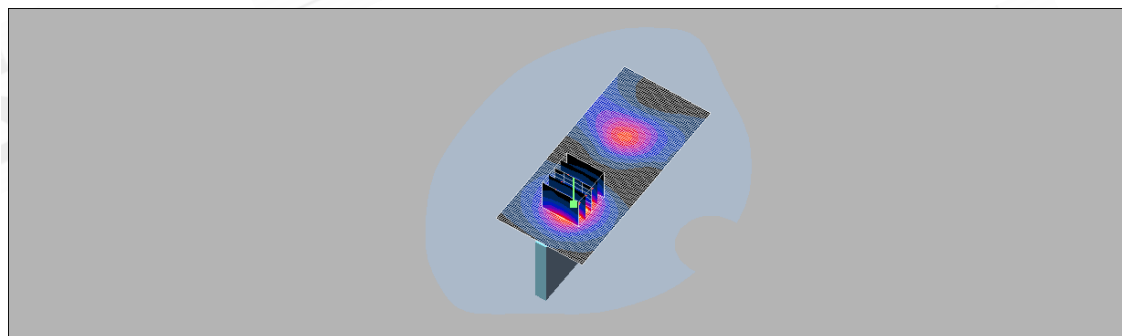
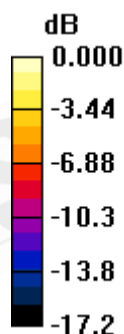
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value = 2.88 V/m; Power Drift = 0.191 dB

Peak SAR (extrapolated) = 0.125 W/kg

**SAR(1 g) = 0.076 mW/g; SAR(10 g) = 0.044 mW/g**

Maximum value of SAR (measured) = 0.085 mW/g



0 dB = 0.085mW/g

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Date: 2011/6/9

## Hotspot mode\_Left side\_CH9400

Communication System: WCDMA BAND2; Frequency: 1880 MHz; Duty Cycle: 1:1  
Medium: M1800 & 1900 Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.55 \text{ mho/m}$ ;  $\epsilon_r = 53.1$ ;  
 $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.51, 7.51, 7.51); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (51x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.847 \text{ mW/g}$

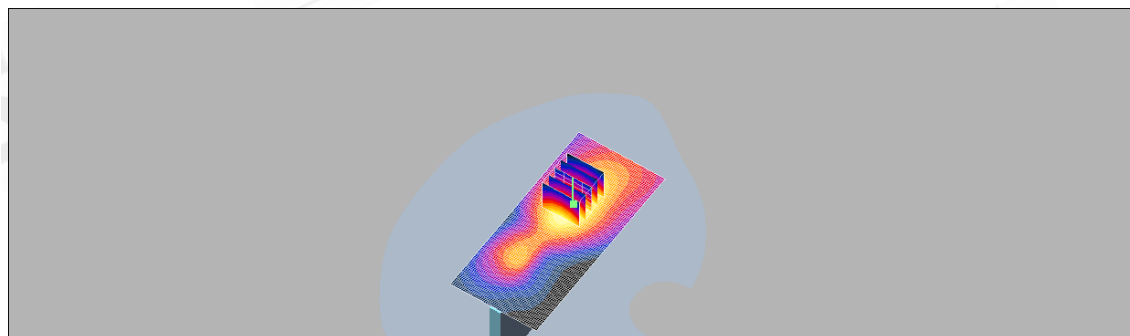
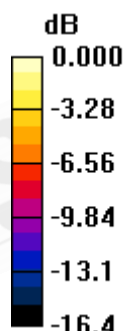
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value =  $9.41 \text{ V/m}$ ; Power Drift =  $0.057 \text{ dB}$

Peak SAR (extrapolated) =  $1.24 \text{ W/kg}$

**SAR(1 g) =  $0.752 \text{ mW/g}$ ; SAR(10 g) =  $0.432 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.826 \text{ mW/g}$



0 dB =  $0.826 \text{ mW/g}$

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Date: 2011/6/9

## Hotspot mode\_Bottom side\_CH9400\_repeated with headset

Communication System: WCDMA BAND2; Frequency: 1880 MHz; Duty Cycle: 1:1  
Medium: M1800 & 1900 Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.55 \text{ mho/m}$ ;  $\epsilon_r = 53.1$ ;  
 $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.51, 7.51, 7.51); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (51x71x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $1.30 \text{ mW/g}$

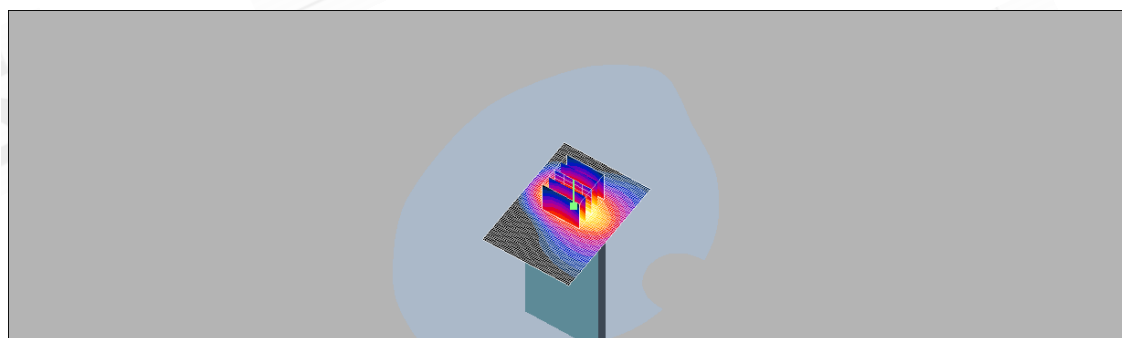
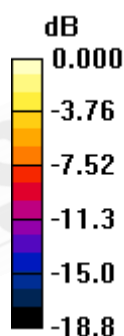
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value =  $17.5 \text{ V/m}$ ; Power Drift =  $-0.196 \text{ dB}$

Peak SAR (extrapolated) =  $1.91 \text{ W/kg}$

**SAR(1 g) =  $1.08 \text{ mW/g}$ ; SAR(10 g) =  $0.558 \text{ mW/g}$**

Maximum value of SAR (measured) =  $1.22 \text{ mW/g}$



0 dB =  $1.22 \text{ mW/g}$

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Date: 2011/6/9

## Hotspot mode\_Bottom side\_CH9400\_repeated with memory card

Communication System: WCDMA BAND2; Frequency: 1880 MHz; Duty Cycle: 1:1  
Medium: M1800 & 1900 Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.55 \text{ mho/m}$ ;  $\epsilon_r = 53.1$ ;  
 $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.51, 7.51, 7.51); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (51x71x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $1.42 \text{ mW/g}$

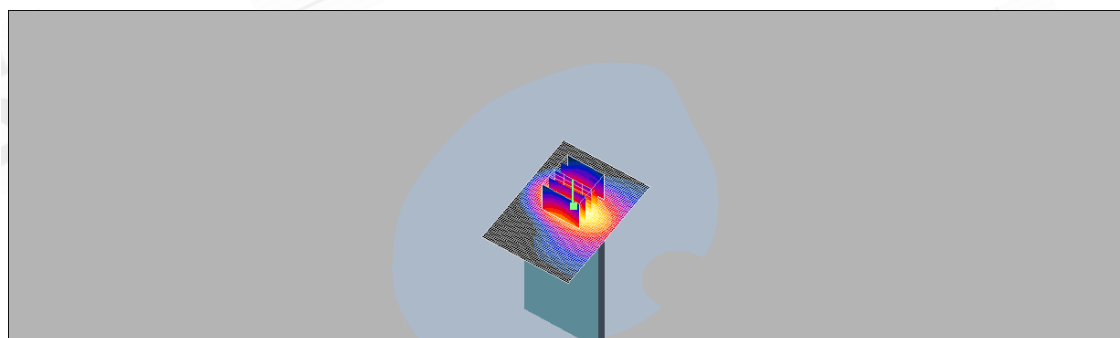
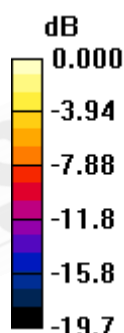
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value =  $21.5 \text{ V/m}$ ; Power Drift =  $-0.053 \text{ dB}$

Peak SAR (extrapolated) =  $2.22 \text{ W/kg}$

**SAR(1 g) =  $1.23 \text{ mW/g}$ ; SAR(10 g) =  $0.616 \text{ mW/g}$**

Maximum value of SAR (measured) =  $1.33 \text{ mW/g}$



0 dB =  $1.33 \text{ mW/g}$

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Date: 2011/8/22

## Body worn\_Front side\_CH9400

Communication System: WCDMA BAND2; Frequency: 1880 MHz; Duty Cycle: 1:1  
Medium: M1800 & 1900 Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.57 \text{ mho/m}$ ;  $\epsilon_r = 51.5$ ;  
 $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

### DASY4 Configuration:

- Probe: ES3DV3 - SN3071; ConvF(4.32, 4.32, 4.32); Calibrated: 2011/6/22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn679; Calibrated: 2011/6/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.410 \text{ mW/g}$

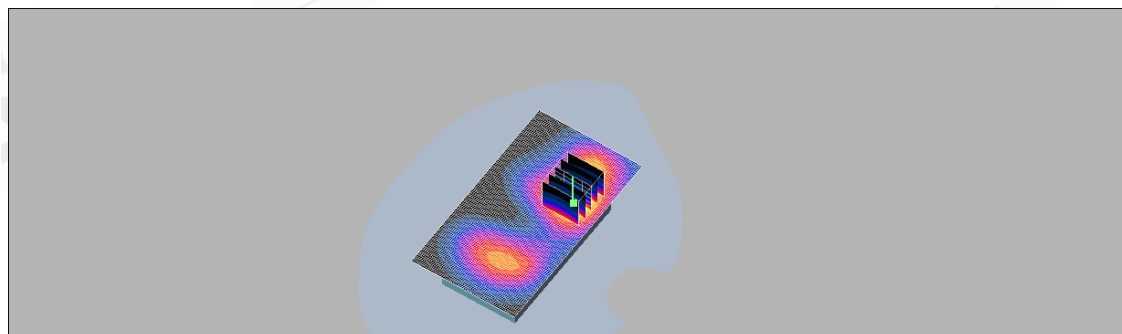
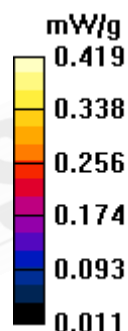
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value =  $7.07 \text{ V/m}$ ; Power Drift =  $-0.064 \text{ dB}$

Peak SAR (extrapolated) =  $0.616 \text{ W/kg}$

**SAR(1 g) =  $0.386 \text{ mW/g}$ ; SAR(10 g) =  $0.234 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.419 \text{ mW/g}$



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Date: 2011/8/22

## Body worn\_Back side\_CH9262

Communication System: WCDMA BAND2; Frequency: 1852.4 MHz; Duty Cycle: 1:1  
Medium: M1800 & 1900 Medium parameters used (interpolated):  $f = 1852.4 \text{ MHz}$ ;  $\sigma = 1.53 \text{ mho/m}$ ;  $\epsilon_r = 51.6$ ;  $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

### DASY4 Configuration:

- Probe: ES3DV3 - SN3071; ConvF(4.32, 4.32, 4.32); Calibrated: 2011/6/22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn679; Calibrated: 2011/6/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $1.28 \text{ mW/g}$

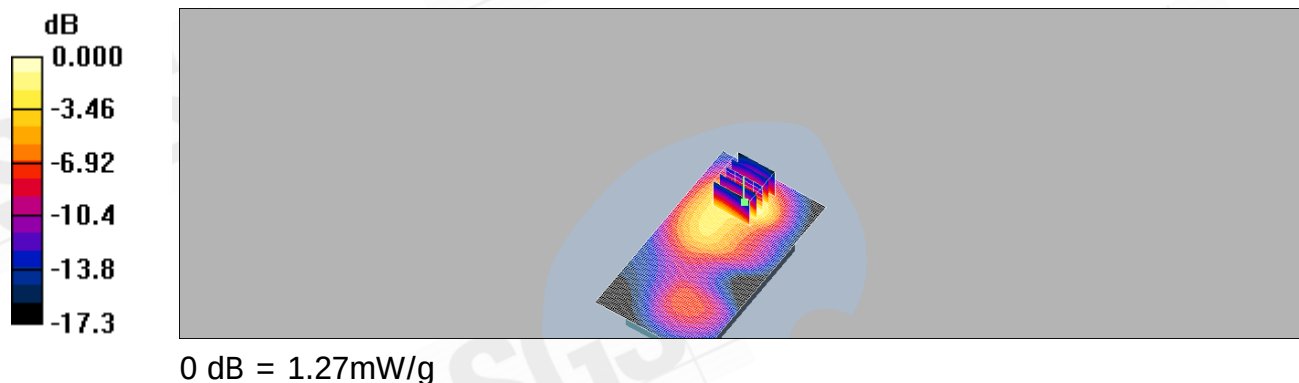
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $7.72 \text{ V/m}$ ; Power Drift =  $0.106 \text{ dB}$

Peak SAR (extrapolated) =  $1.98 \text{ W/kg}$

**SAR(1 g) =  $1.15 \text{ mW/g}$ ; SAR(10 g) =  $0.626 \text{ mW/g}$**

Maximum value of SAR (measured) =  $1.27 \text{ mW/g}$



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Date: 2011/8/22

## Body worn\_Back side\_CH9400

Communication System: WCDMA BAND2; Frequency: 1880 MHz; Duty Cycle: 1:1  
Medium: M1800 & 1900 Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.57 \text{ mho/m}$ ;  $\epsilon_r = 51.5$ ;  
 $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

### DASY4 Configuration:

- Probe: ES3DV3 - SN3071; ConvF(4.32, 4.32, 4.32); Calibrated: 2011/6/22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn679; Calibrated: 2011/6/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $1.27 \text{ mW/g}$

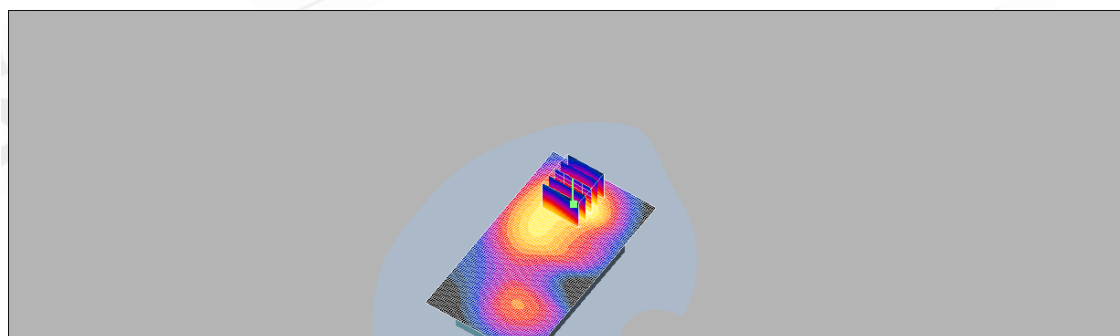
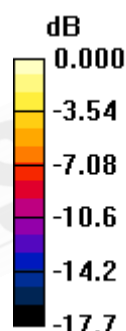
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value =  $7.90 \text{ V/m}$ ; Power Drift =  $-0.199 \text{ dB}$

Peak SAR (extrapolated) =  $1.93 \text{ W/kg}$

**SAR(1 g) =  $1.12 \text{ mW/g}$ ; SAR(10 g) =  $0.613 \text{ mW/g}$**

Maximum value of SAR (measured) =  $1.26 \text{ mW/g}$



0 dB =  $1.26 \text{ mW/g}$

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Date: 2011/8/22

**Body worn\_Back side\_CH9538**

Communication System: WCDMA BAND2; Frequency: 1907.6 MHz; Duty Cycle: 1:1  
Medium: M1800 & 1900 Medium parameters used:  $f = 1908 \text{ MHz}$ ;  $\sigma = 1.62 \text{ mho/m}$ ;  $\epsilon_r = 51.4$ ;  
 $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

**BODY/Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.952 mW/g

**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value = 6.68 V/m; Power Drift = 0.142 dB

Peak SAR (extrapolated) = 1.47 W/kg

**SAR(1 g) = 0.845 mW/g; SAR(10 g) = 0.458 mW/g**

Maximum value of SAR (measured) = 0.948 mW/g

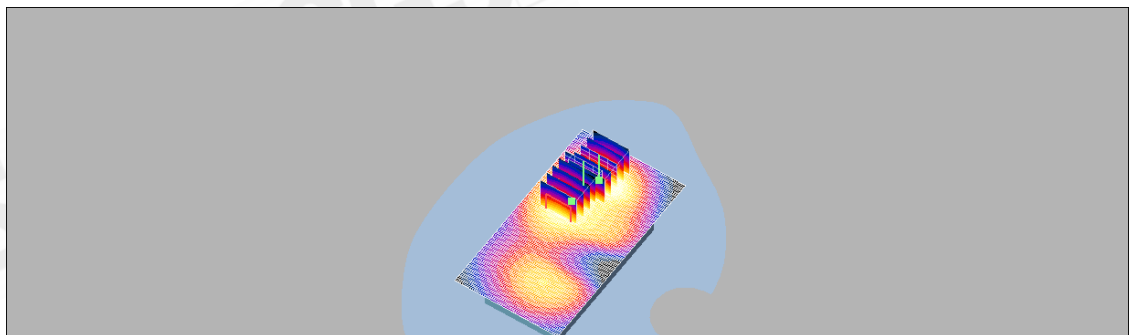
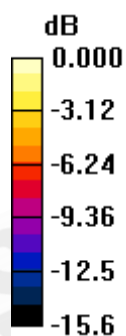
**BODY/Zoom Scan (5x5x7)/Cube 1:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value = 6.68 V/m; Power Drift = 0.142 dB

Peak SAR (extrapolated) = 0.945 W/kg

**SAR(1 g) = 0.579 mW/g; SAR(10 g) = 0.344 mW/g**

Maximum value of SAR (measured) = 0.625 mW/g



0 dB = 0.625mW/g

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**RE Cheek\_CH4183**

Communication System: WCDMA BAND5; Frequency: 836.6 MHz; Duty Cycle: 1:1  
Medium: Head 835MHz Medium parameters used:  $f = 837$  MHz;  $\sigma = 0.918$  mho/m;  $\epsilon_r = 41.4$ ;  
 $\rho = 1000$  kg/m<sup>3</sup>  
Phantom section: Right Section

**DASY4 Configuration:**

- Probe: EX3DV4 - SN3770; ConvF(9.25, 9.25, 9.25); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**HEAD/Area Scan (51x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.377 mW/g

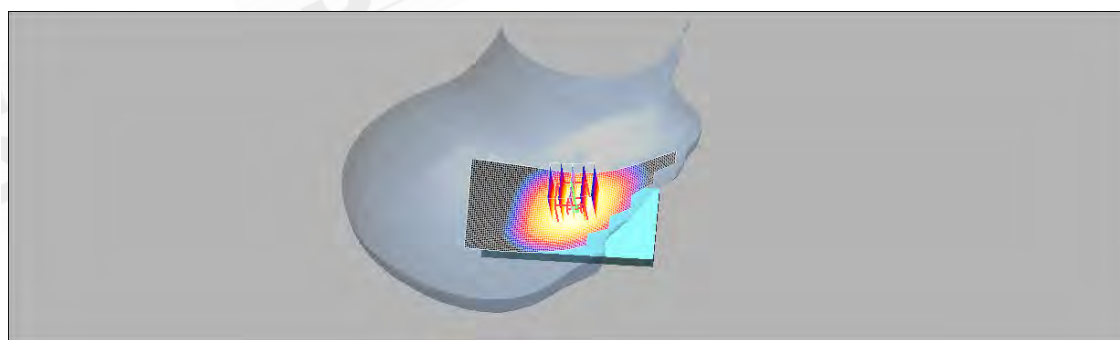
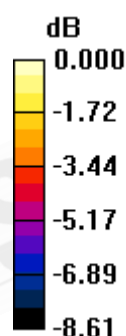
**HEAD/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.70 V/m; Power Drift = 0.044 dB

Peak SAR (extrapolated) = 0.441 W/kg

**SAR(1 g) = 0.362 mW/g; SAR(10 g) = 0.279 mW/g**

Maximum value of SAR (measured) = 0.382 mW/g



0 dB = 0.382mW/g

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Date: 2011/6/6

## LE Cheek\_CH4132

Communication System: WCDMA BAND5; Frequency: 826.4 MHz; Duty Cycle: 1:1  
Medium: Head 835MHz Medium parameters used (interpolated):  $f = 826.4 \text{ MHz}$ ;  $\sigma = 0.907 \text{ mho/m}$ ;  $\epsilon_r = 41.5$ ;  $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Left Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(9.25, 9.25, 9.25); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**HEAD/Area Scan (51x101x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.338 \text{ mW/g}$

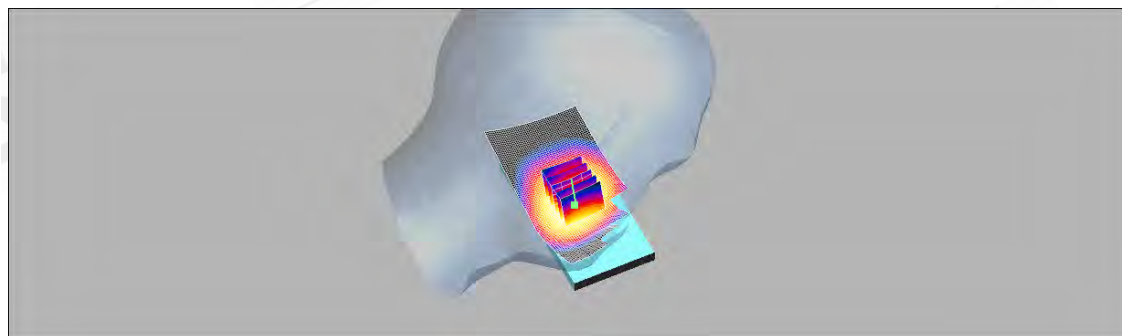
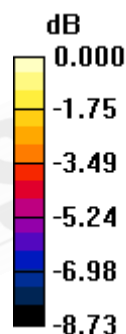
**HEAD/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $6.07 \text{ V/m}$ ; Power Drift =  $-0.115 \text{ dB}$

Peak SAR (extrapolated) =  $0.397 \text{ W/kg}$

**SAR(1 g) =  $0.323 \text{ mW/g}$ ; SAR(10 g) =  $0.250 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.338 \text{ mW/g}$



0 dB =  $0.338 \text{ mW/g}$

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Date: 2011/6/6

## LE Cheek\_CH4183

Communication System: WCDMA BAND5; Frequency: 836.6 MHz; Duty Cycle: 1:1  
Medium: Head 835MHz Medium parameters used:  $f = 837 \text{ MHz}$ ;  $\sigma = 0.918 \text{ mho/m}$ ;  $\epsilon_r = 41.4$ ;  
 $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Left Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(9.25, 9.25, 9.25); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**HEAD/Area Scan (51x101x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.393 \text{ mW/g}$

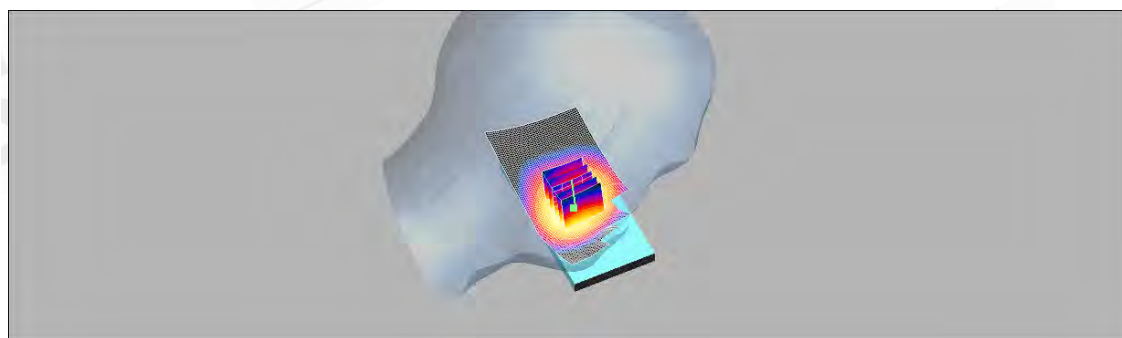
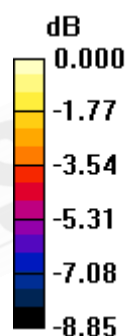
**HEAD/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value =  $5.28 \text{ V/m}$ ; Power Drift =  $0.012 \text{ dB}$

Peak SAR (extrapolated) =  $0.477 \text{ W/kg}$

**SAR(1 g) =  $0.382 \text{ mW/g}$ ; SAR(10 g) =  $0.290 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.400 \text{ mW/g}$



0 dB =  $0.400 \text{ mW/g}$

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Date: 2011/6/6

## LE Cheek\_CH4233

Communication System: WCDMA BAND5; Frequency: 846.6 MHz; Duty Cycle: 1:1  
Medium: Head 835MHz Medium parameters used:  $f = 847$  MHz;  $\sigma = 0.93$  mho/m;  $\epsilon_r = 41.2$ ;  
 $\rho = 1000$  kg/m<sup>3</sup>  
Phantom section: Left Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(9.25, 9.25, 9.25); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**HEAD/Area Scan (51x101x1):** Measurement grid: dx=15mm, dy=15mm  
Maximum value of SAR (interpolated) = 0.371 mW/g

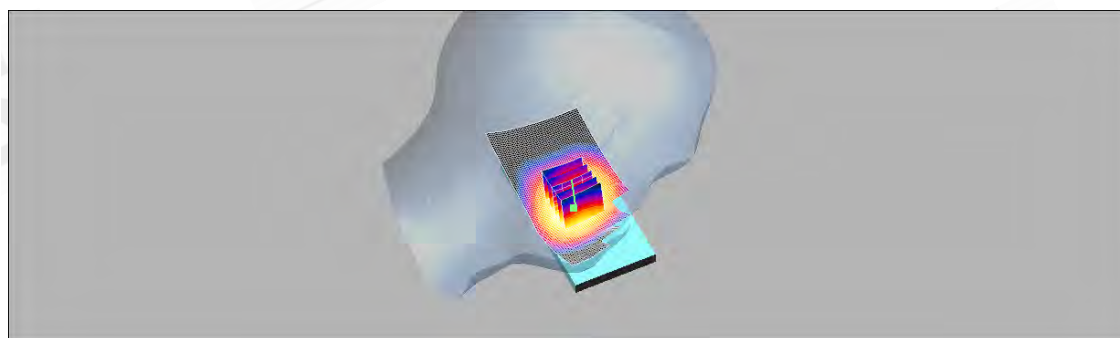
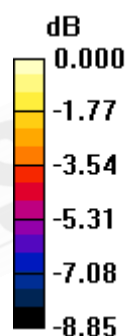
**HEAD/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.03 V/m; Power Drift = 0.102 dB

Peak SAR (extrapolated) = 0.437 W/kg

**SAR(1 g) = 0.354 mW/g; SAR(10 g) = 0.272 mW/g**

Maximum value of SAR (measured) = 0.371 mW/g



0 dB = 0.371mW/g

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Date: 2011/6/6

## RE Tilt\_CH4183

Communication System: WCDMA BAND5; Frequency: 836.6 MHz; Duty Cycle: 1:1  
Medium: Head 835MHz Medium parameters used:  $f = 837 \text{ MHz}$ ;  $\sigma = 0.918 \text{ mho/m}$ ;  $\epsilon_r = 41.4$ ;  
 $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Right Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(9.25, 9.25, 9.25); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**HEAD/Area Scan (51x101x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.239 \text{ mW/g}$

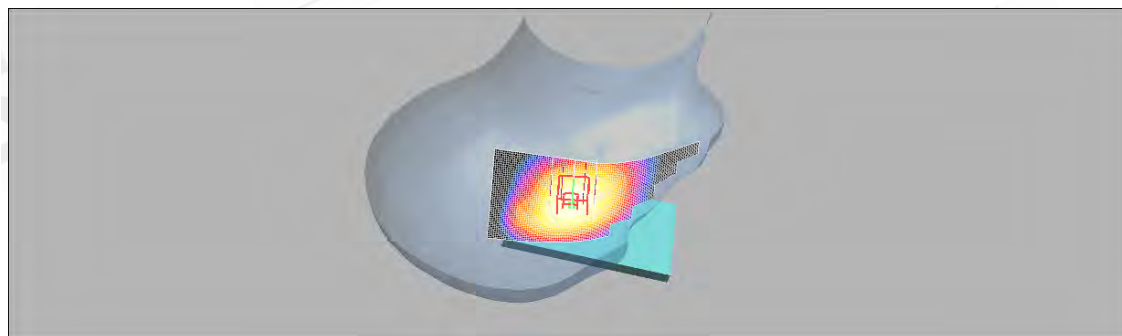
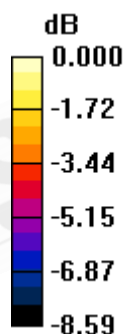
**HEAD/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value =  $8.08 \text{ V/m}$ ; Power Drift =  $0.123 \text{ dB}$

Peak SAR (extrapolated) =  $0.283 \text{ W/kg}$

**SAR(1 g) =  $0.230 \text{ mW/g}$ ; SAR(10 g) =  $0.177 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.240 \text{ mW/g}$



0 dB =  $0.240\text{mW/g}$

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Date: 2011/6/6

## LE Tilt\_CH4183

Communication System: WCDMA BAND5; Frequency: 836.6 MHz; Duty Cycle: 1:1  
Medium: Head 835MHz Medium parameters used:  $f = 837 \text{ MHz}$ ;  $\sigma = 0.918 \text{ mho/m}$ ;  $\epsilon_r = 41.4$ ;  
 $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Left Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(9.25, 9.25, 9.25); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**HEAD/Area Scan (51x101x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.231 \text{ mW/g}$

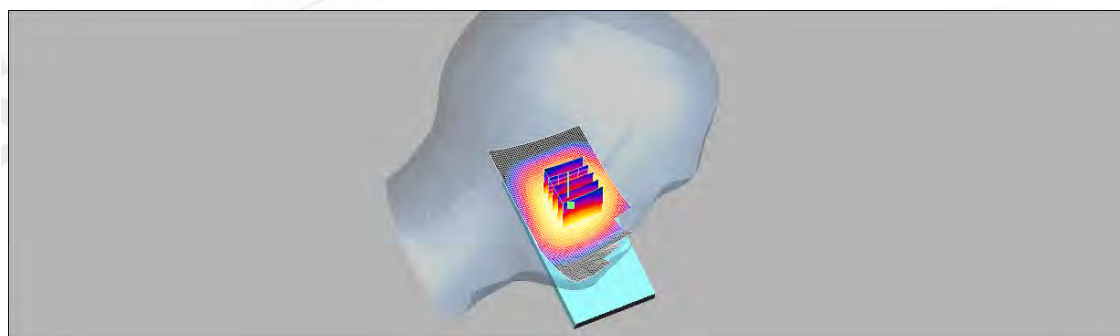
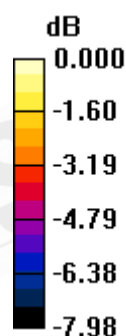
**HEAD/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value =  $8.73 \text{ V/m}$ ; Power Drift =  $0.003 \text{ dB}$

Peak SAR (extrapolated) =  $0.273 \text{ W/kg}$

**SAR(1 g) =  $0.222 \text{ mW/g}$ ; SAR(10 g) =  $0.173 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.231 \text{ mW/g}$



0 dB =  $0.231\text{mW/g}$

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Date: 2011/6/6

## Hotspot mode\_Front side\_CH4183

Communication System: WCDMA BAND5; Frequency: 846.6 MHz; Duty Cycle: 1:1  
Medium: Muscle 835 MHz Medium parameters used:  $f = 847 \text{ MHz}$ ;  $\sigma = 1.02 \text{ mho/m}$ ;  $\epsilon_r = 56.1$ ;  $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(9.3, 9.3, 9.3); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.492 \text{ mW/g}$

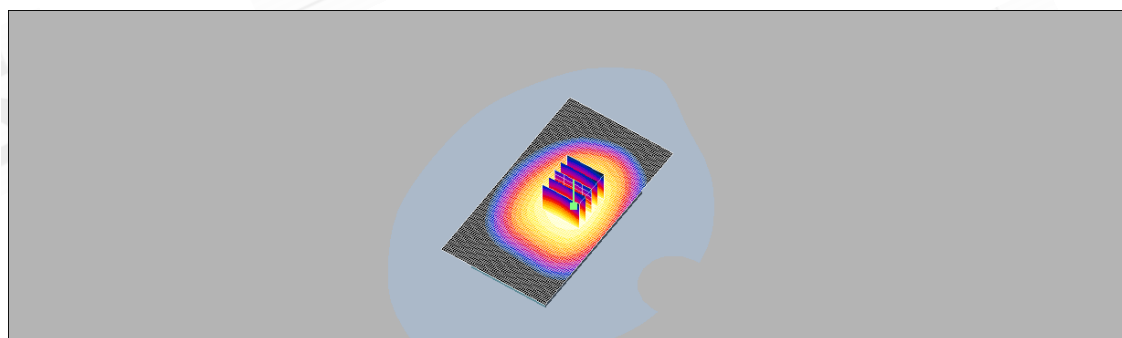
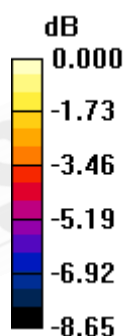
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $21.1 \text{ V/m}$ ; Power Drift =  $-0.102 \text{ dB}$

Peak SAR (extrapolated) =  $0.576 \text{ W/kg}$

**SAR(1 g) =  $0.459 \text{ mW/g}$ ; SAR(10 g) =  $0.350 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.480 \text{ mW/g}$



0 dB =  $0.480 \text{ mW/g}$

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Date: 2011/6/6

## Hotspot mode\_Back side\_CH4183

Communication System: WCDMA BAND5; Frequency: 836.6 MHz; Duty Cycle: 1:1  
Medium: Muscle 835 MHz Medium parameters used:  $f = 837 \text{ MHz}$ ;  $\sigma = 1.01 \text{ mho/m}$ ;  $\epsilon_r = 56.2$ ;  $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(9.3, 9.3, 9.3); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.608 \text{ mW/g}$

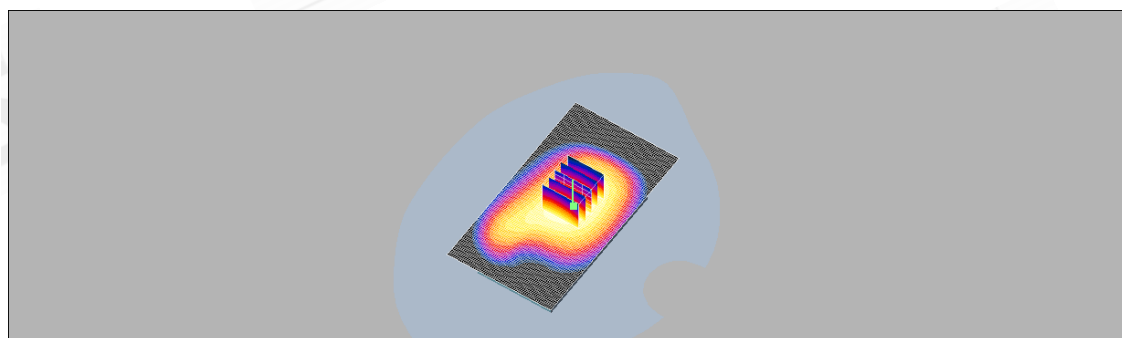
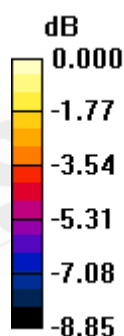
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $22.9 \text{ V/m}$ ; Power Drift =  $0.020 \text{ dB}$

Peak SAR (extrapolated) =  $0.730 \text{ W/kg}$

**SAR(1 g) =  $0.578 \text{ mW/g}$ ; SAR(10 g) =  $0.436 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.607 \text{ mW/g}$



0 dB =  $0.607 \text{ mW/g}$

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Date: 2011/6/6

## Hotspot mode\_Bottom side\_CH4183

Communication System: WCDMA BAND5; Frequency: 836.6 MHz; Duty Cycle: 1:1  
Medium: Muscle 835 MHz Medium parameters used:  $f = 837 \text{ MHz}$ ;  $\sigma = 1.01 \text{ mho/m}$ ;  $\epsilon_r = 56.2$ ;  $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(9.3, 9.3, 9.3); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (51x71x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.065 \text{ mW/g}$

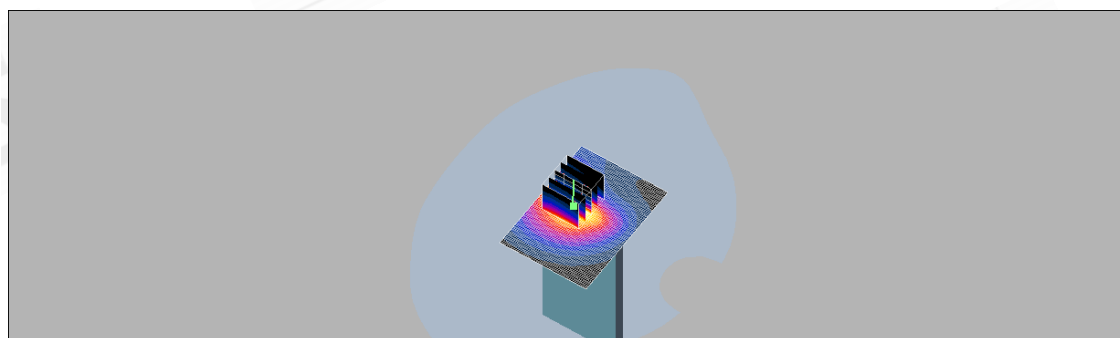
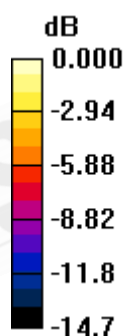
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $7.37 \text{ V/m}$ ; Power Drift =  $0.013 \text{ dB}$

Peak SAR (extrapolated) =  $0.090 \text{ W/kg}$

**SAR(1 g) =  $0.057 \text{ mW/g}$ ; SAR(10 g) =  $0.038 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.060 \text{ mW/g}$



0 dB =  $0.060 \text{ mW/g}$

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Date: 2011/6/6

**Hotspot mode\_Right side\_CH4183**

Communication System: WCDMA BAND5; Frequency: 836.6 MHz; Duty Cycle: 1:1  
Medium: Muscle 835 MHz Medium parameters used:  $f = 837 \text{ MHz}$ ;  $\sigma = 1.01 \text{ mho/m}$ ;  $\epsilon_r = 56.2$ ;  $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

**DASY4 Configuration:**

- Probe: EX3DV4 - SN3770; ConvF(9.3, 9.3, 9.3); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (51x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.431 \text{ mW/g}$

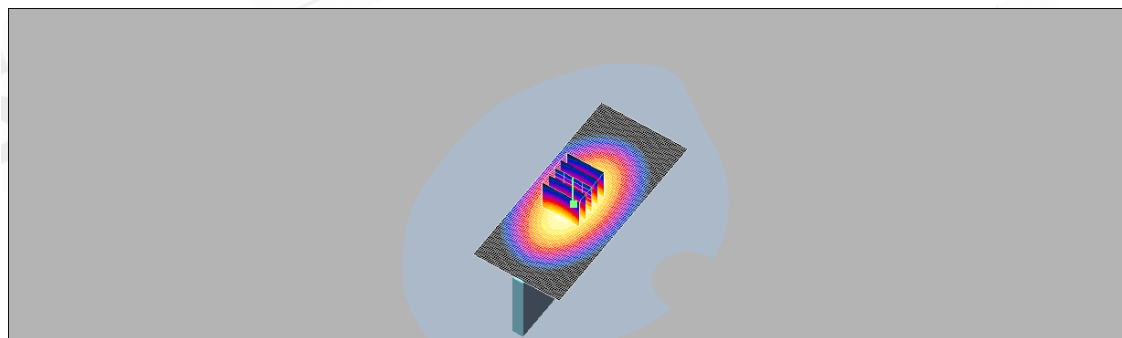
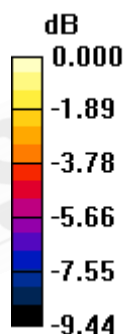
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value =  $20.2 \text{ V/m}$ ; Power Drift =  $0.006 \text{ dB}$

Peak SAR (extrapolated) =  $0.568 \text{ W/kg}$

**SAR(1 g) =  $0.404 \text{ mW/g}$ ; SAR(10 g) =  $0.280 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.429 \text{ mW/g}$



0 dB =  $0.429 \text{ mW/g}$

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Date: 2011/6/6

## Hotspot mode\_Left side\_CH4183

Communication System: WCDMA BAND5; Frequency: 836.6 MHz; Duty Cycle: 1:1  
Medium: Muscle 835 MHz Medium parameters used:  $f = 837 \text{ MHz}$ ;  $\sigma = 1.01 \text{ mho/m}$ ;  $\epsilon_r = 56.2$ ;  $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(9.3, 9.3, 9.3); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (51x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.675 \text{ mW/g}$

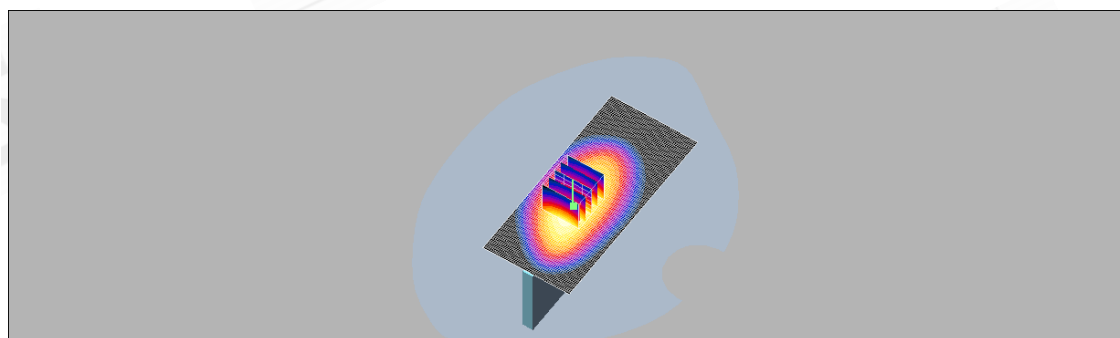
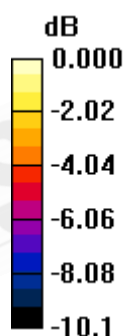
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $25.1 \text{ V/m}$ ; Power Drift =  $0.015 \text{ dB}$

Peak SAR (extrapolated) =  $0.899 \text{ W/kg}$

**SAR(1 g) =  $0.631 \text{ mW/g}$ ; SAR(10 g) =  $0.432 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.675 \text{ mW/g}$



0 dB =  $0.675 \text{ mW/g}$

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Date: 2011/8/22

## Body worn\_Front side\_CH4183

Communication System: WCDMA BAND5; Frequency: 836.6 MHz; Duty Cycle: 1:1  
Medium: Muscle 835 MHz Medium parameters used:  $f = 837 \text{ MHz}$ ;  $\sigma = 1.02 \text{ mho/m}$ ;  $\epsilon_r = 55.2$ ;  $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

### DASY4 Configuration:

- Probe: ES3DV3 - SN3071; ConvF(5.68, 5.68, 5.68); Calibrated: 2011/6/22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn679; Calibrated: 2011/6/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.422 \text{ mW/g}$

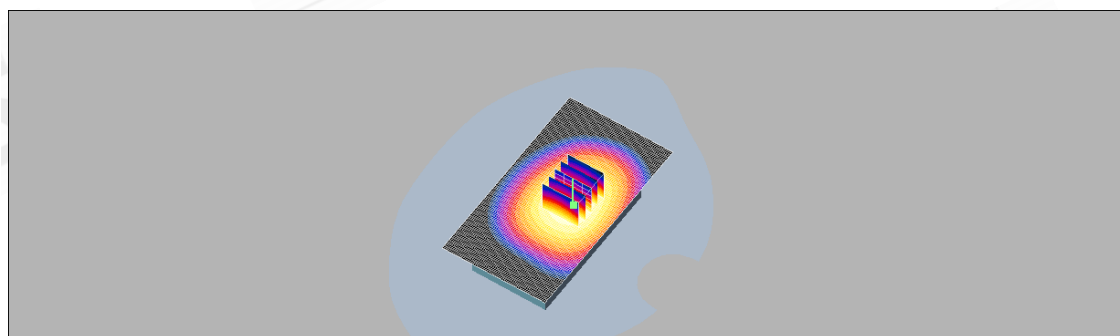
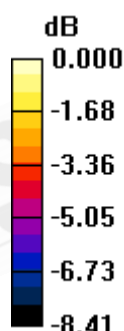
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $19.6 \text{ V/m}$ ; Power Drift =  $0.014 \text{ dB}$

Peak SAR (extrapolated) =  $0.501 \text{ W/kg}$

**SAR(1 g) =  $0.401 \text{ mW/g}$ ; SAR(10 g) =  $0.304 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.420 \text{ mW/g}$



0 dB =  $0.420 \text{ mW/g}$

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Date: 2011/8/22

## Body worn\_Back side\_CH4183

Communication System: WCDMA BAND5; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium: Muscle 835 MHz Medium parameters used:  $f = 837 \text{ MHz}$ ;  $\sigma = 1.02 \text{ mho/m}$ ;  $\epsilon_r = 55.2$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3071; ConvF(5.68, 5.68, 5.68); Calibrated: 2011/6/22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn679; Calibrated: 2011/6/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.494 \text{ mW/g}$

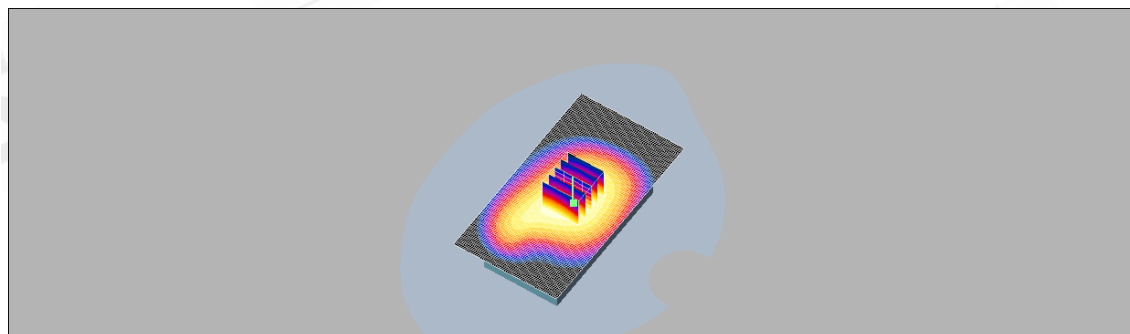
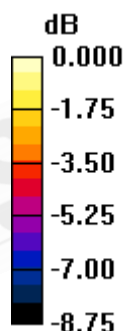
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $21.8 \text{ V/m}$ ; Power Drift =  $-0.003 \text{ dB}$

Peak SAR (extrapolated) =  $0.596 \text{ W/kg}$

**SAR(1 g) =  $0.470 \text{ mW/g}$ ; SAR(10 g) =  $0.351 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.496 \text{ mW/g}$



0 dB =  $0.496 \text{ mW/g}$

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## RE Cheek\_WLAN802.11 b\_CH6

Communication System: Wireless LAN; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: HEAD 2450 Medium parameters used:  $f = 2437 \text{ MHz}$ ;  $\sigma = 1.79 \text{ mho/m}$ ;  $\epsilon_r = 37.9$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(6.99, 6.99, 6.99); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**HEAD/Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) =  $0.211 \text{ mW/g}$

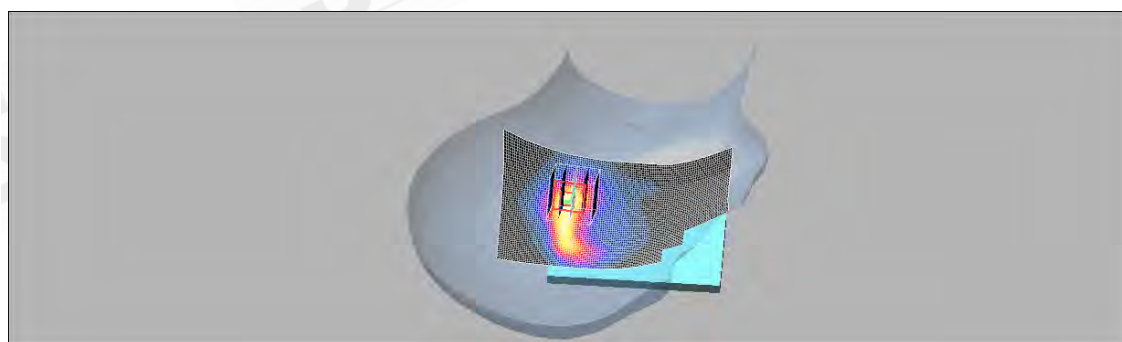
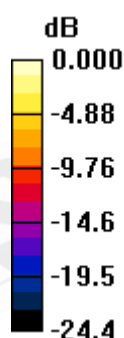
**HEAD/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $8.69 \text{ V/m}$ ; Power Drift =  $0.188 \text{ dB}$

Peak SAR (extrapolated) =  $0.375 \text{ W/kg}$

**SAR(1 g) =  $0.189 \text{ mW/g}$ ; SAR(10 g) =  $0.097 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.203 \text{ mW/g}$



0 dB =  $0.203 \text{ mW/g}$

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Date: 2011/6/11

## LE Cheek\_WLAN802.11 b\_CH1

Communication System: Wireless LAN; Frequency: 2412 MHz; Duty Cycle: 1:1  
Medium: HEAD 2450 Medium parameters used:  $f = 2412 \text{ MHz}$ ;  $\sigma = 1.78 \text{ mho/m}$ ;  $\epsilon_r = 38.1$ ;  $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Left Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(6.99, 6.99, 6.99); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**HEAD/Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.483 \text{ mW/g}$

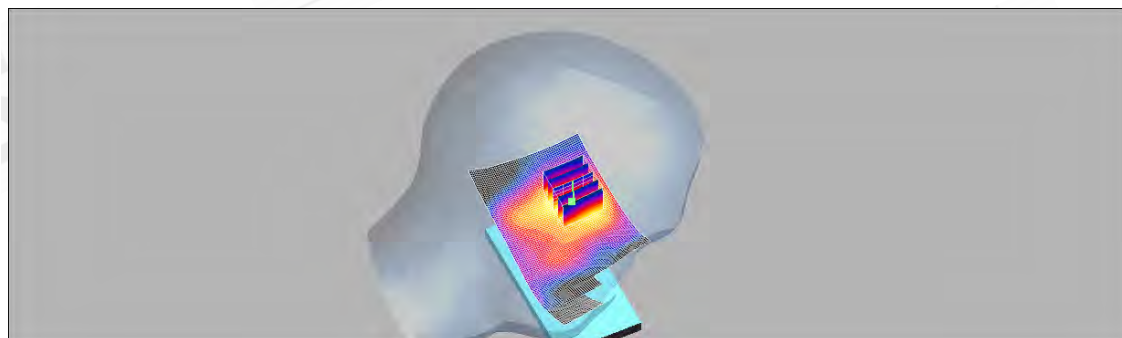
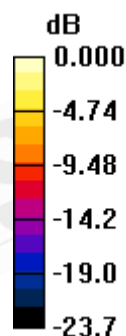
**HEAD/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $7.73 \text{ V/m}$ ; Power Drift =  $-0.139 \text{ dB}$

Peak SAR (extrapolated) =  $1.03 \text{ W/kg}$

**SAR(1 g) =  $0.441 \text{ mW/g}$ ; SAR(10 g) =  $0.200 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.494 \text{ mW/g}$



0 dB =  $0.494 \text{ mW/g}$

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Date: 2011/6/11

## LE Cheek\_WLAN802.11 b\_CH6

Communication System: Wireless LAN; Frequency: 2437 MHz; Duty Cycle: 1:1  
Medium: HEAD 2450 Medium parameters used:  $f = 2437 \text{ MHz}$ ;  $\sigma = 1.79 \text{ mho/m}$ ;  $\epsilon_r = 37.9$ ;  $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Left Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(6.99, 6.99, 6.99); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**HEAD/Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.449 \text{ mW/g}$

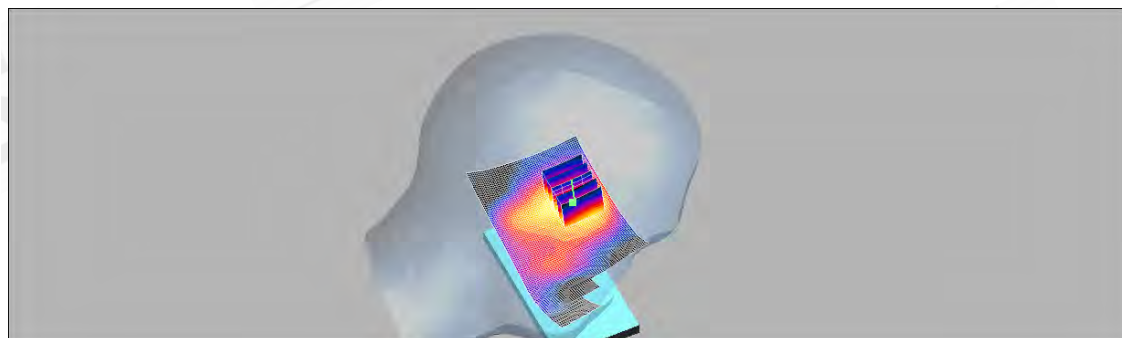
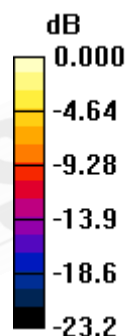
**HEAD/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $7.29 \text{ V/m}$ ; Power Drift =  $0.156 \text{ dB}$

Peak SAR (extrapolated) =  $0.945 \text{ W/kg}$

**SAR(1 g) =  $0.412 \text{ mW/g}$ ; SAR(10 g) =  $0.188 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.469 \text{ mW/g}$



0 dB =  $0.469 \text{ mW/g}$

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Date: 2011/6/11

## LE Cheek\_WLAN802.11 b\_CH11

Communication System: Wireless LAN; Frequency: 2462 MHz; Duty Cycle: 1:1  
Medium: HEAD 2450 Medium parameters used:  $f = 2462 \text{ MHz}$ ;  $\sigma = 1.81 \text{ mho/m}$ ;  $\epsilon_r = 37.8$ ;  $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Left Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(6.99, 6.99, 6.99); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**HEAD/Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.376 \text{ mW/g}$

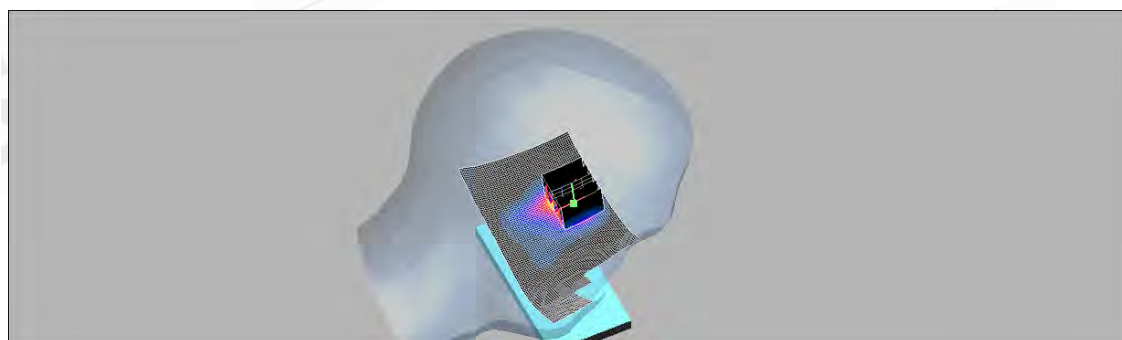
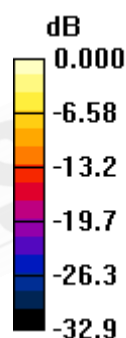
**HEAD/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $5.13 \text{ V/m}$ ; Power Drift =  $0.063 \text{ dB}$

Peak SAR (extrapolated) =  $0.825 \text{ W/kg}$

**SAR(1 g) =  $0.350 \text{ mW/g}$ ; SAR(10 g) =  $0.162 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.382 \text{ mW/g}$



0 dB =  $0.382 \text{ mW/g}$

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Date: 2011/6/11

**RE Tilt\_WLAN802.11 b\_CH6**

Communication System: Wireless LAN; Frequency: 2437 MHz; Duty Cycle: 1:1  
Medium: HEAD 2450 Medium parameters used:  $f = 2437 \text{ MHz}$ ;  $\sigma = 1.79 \text{ mho/m}$ ;  $\epsilon_r = 37.9$ ;  $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Right Section

**DASY4 Configuration:**

- Probe: EX3DV4 - SN3770; ConvF(6.99, 6.99, 6.99); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**HEAD/Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.131 \text{ mW/g}$

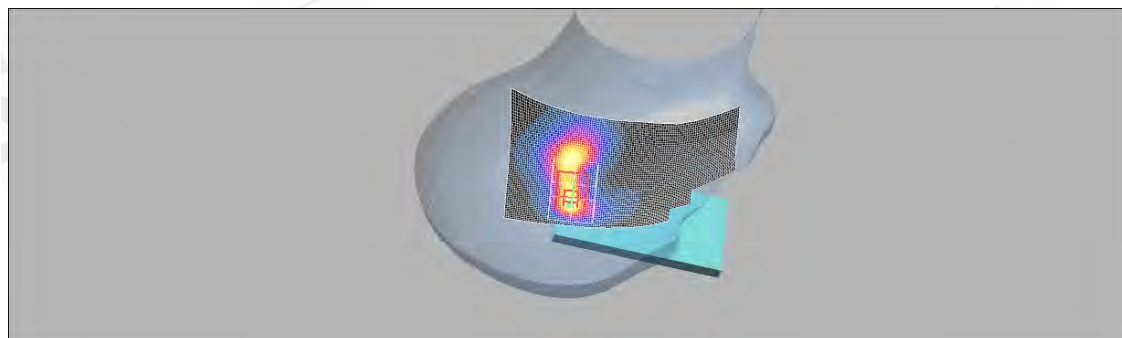
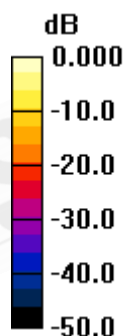
**HEAD/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $7.41 \text{ V/m}$ ; Power Drift =  $0.126 \text{ dB}$

Peak SAR (extrapolated) =  $0.230 \text{ W/kg}$

**SAR(1 g) =  $0.113 \text{ mW/g}$ ; SAR(10 g) =  $0.055 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.130 \text{ mW/g}$



0 dB =  $0.130\text{mW/g}$

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Date: 2011/6/11

## LE Tilt\_WLAN802.11 b\_CH6

Communication System: Wireless LAN; Frequency: 2437 MHz; Duty Cycle: 1:1  
Medium: HEAD 2450 Medium parameters used:  $f = 2437 \text{ MHz}$ ;  $\sigma = 1.79 \text{ mho/m}$ ;  $\epsilon_r = 37.9$ ;  $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Left Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(6.99, 6.99, 6.99); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**HEAD/Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.304 \text{ mW/g}$

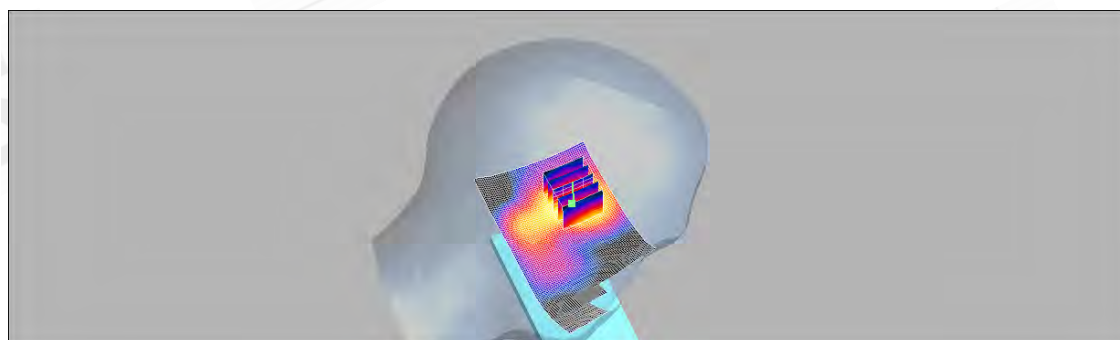
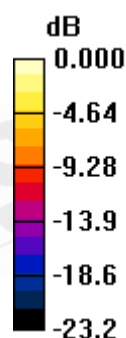
**HEAD/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $6.66 \text{ V/m}$ ; Power Drift =  $0.101 \text{ dB}$

Peak SAR (extrapolated) =  $0.601 \text{ W/kg}$

**SAR(1 g) =  $0.283 \text{ mW/g}$ ; SAR(10 g) =  $0.133 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.317 \text{ mW/g}$



0 dB =  $0.317 \text{ mW/g}$

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Date: 2011/6/11

## LE Cheek\_WLAN802.11 b\_CH1\_repeated with memory card

Communication System: Wireless LAN; Frequency: 2412 MHz; Duty Cycle: 1:1  
Medium: HEAD 2450 Medium parameters used:  $f = 2412 \text{ MHz}$ ;  $\sigma = 1.78 \text{ mho/m}$ ;  $\epsilon_r = 38.1$ ;  $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Left Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(6.99, 6.99, 6.99); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**HEAD/Area Scan (61x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.453 \text{ mW/g}$

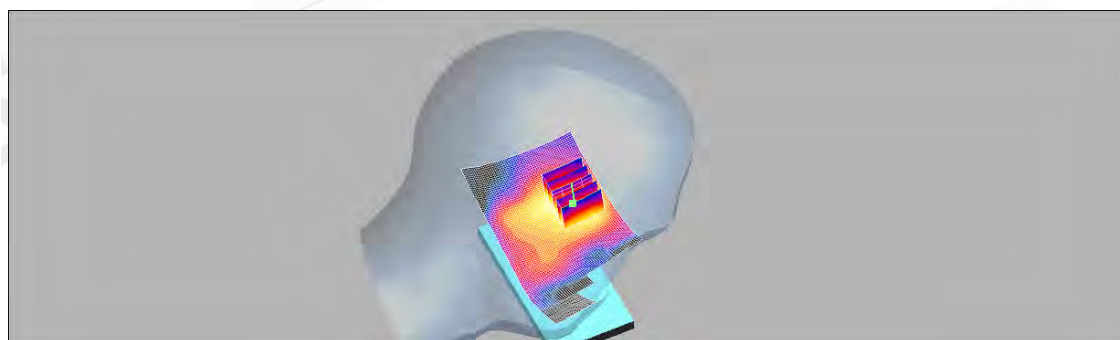
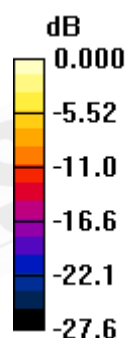
**HEAD/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $7.73 \text{ V/m}$ ; Power Drift =  $0.192 \text{ dB}$

Peak SAR (extrapolated) =  $0.778 \text{ W/kg}$

**SAR(1 g) =  $0.423 \text{ mW/g}$ ; SAR(10 g) =  $0.193 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.377 \text{ mW/g}$



0 dB =  $0.377 \text{ mW/g}$

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Date: 2011/6/11

## Hotspot mode\_ WLAN802.11 b\_Front side\_CH6

Communication System: Wireless LAN; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: Muscle 2450 Medium parameters used:  $f = 2437 \text{ MHz}$ ;  $\sigma = 1.94 \text{ mho/m}$ ;  $\epsilon_r = 52.1$ ;  
 $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(6.96, 6.96, 6.96); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (71x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) = 0.119 mW/g

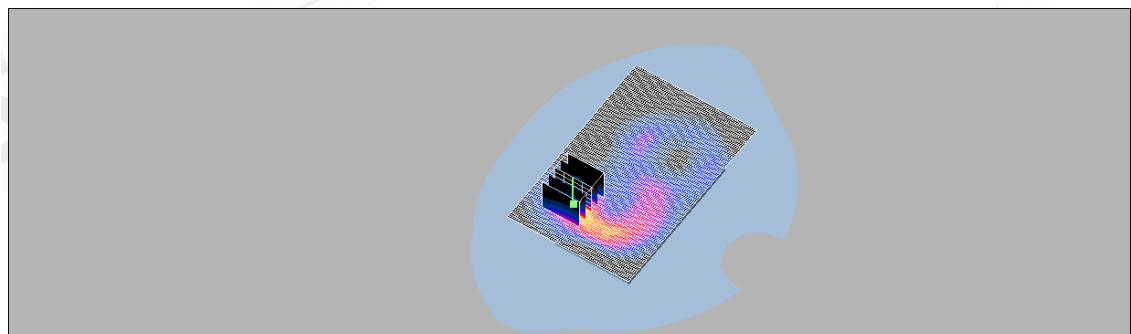
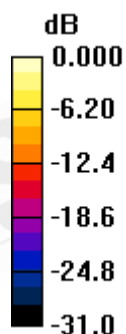
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value = 4.61 V/m; Power Drift = 0.075 dB

Peak SAR (extrapolated) = 0.212 W/kg

**SAR(1 g) = 0.110 mW/g; SAR(10 g) = 0.056 mW/g**

Maximum value of SAR (measured) = 0.123 mW/g



0 dB = 0.123mW/g

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Date: 2011/6/11

## Hotspot mode\_ WLAN802.11 b\_Back side\_CH6

Communication System: Wireless LAN; Frequency: 2437 MHz; Duty Cycle: 1:1  
Medium: Muscle 2450 Medium parameters used:  $f = 2437 \text{ MHz}$ ;  $\sigma = 1.94 \text{ mho/m}$ ;  $\epsilon_r = 52.1$ ;  
 $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(6.96, 6.96, 6.96); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (71x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) = 0.231 mW/g

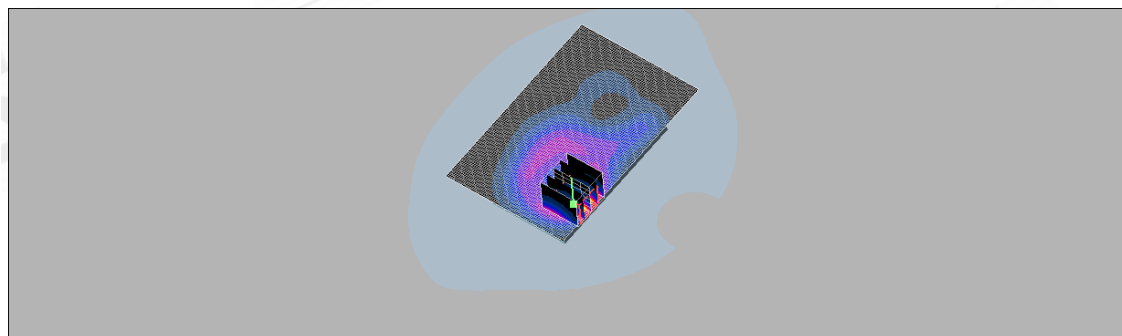
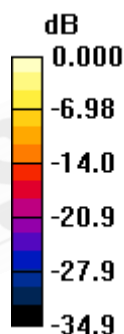
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value = 6.22 V/m; Power Drift = 0.160 dB

Peak SAR (extrapolated) = 0.447 W/kg

**SAR(1 g) = 0.222 mW/g; SAR(10 g) = 0.105 mW/g**

Maximum value of SAR (measured) = 0.241 mW/g



0 dB = 0.241mW/g

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Date: 2011/6/11

## Hotspot mode\_ WLAN802.11 b\_Top side\_CH6

Communication System: Wireless LAN; Frequency: 2437 MHz; Duty Cycle: 1:1  
Medium: Muscle 2450 Medium parameters used:  $f = 2437 \text{ MHz}$ ;  $\sigma = 1.94 \text{ mho/m}$ ;  $\epsilon_r = 52.1$ ;  
 $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(6.96, 6.96, 6.96); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (51x71x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.041 \text{ mW/g}$

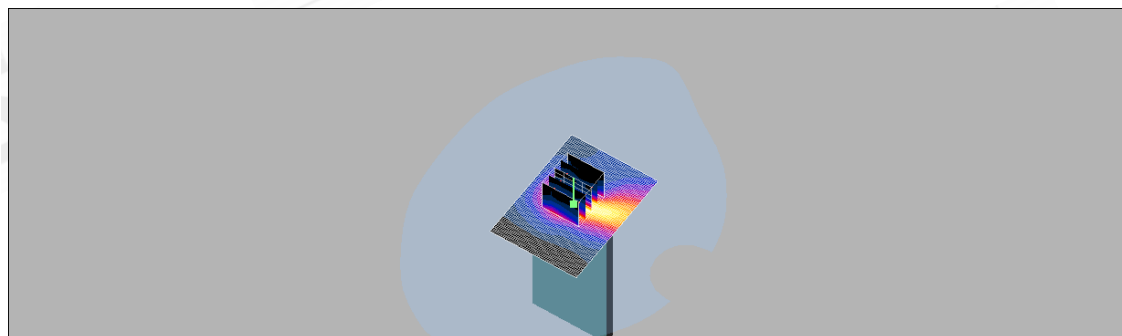
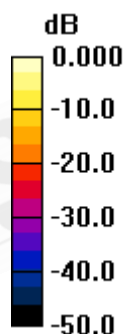
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value =  $4.57 \text{ V/m}$ ; Power Drift =  $0.184 \text{ dB}$

Peak SAR (extrapolated) =  $0.076 \text{ W/kg}$

**SAR(1 g) =  $0.041 \text{ mW/g}$ ; SAR(10 g) =  $0.022 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.045 \text{ mW/g}$



0 dB =  $0.045 \text{ mW/g}$

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Date: 2011/6/11

## Hotspot mode\_ WLAN802.11 b\_Right side\_CH6

Communication System: Wireless LAN; Frequency: 2437 MHz; Duty Cycle: 1:1  
Medium: Muscle 2450 Medium parameters used:  $f = 2437 \text{ MHz}$ ;  $\sigma = 1.94 \text{ mho/m}$ ;  $\epsilon_r = 52.1$ ;  
 $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(6.96, 6.96, 6.96); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (51x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.331 \text{ mW/g}$

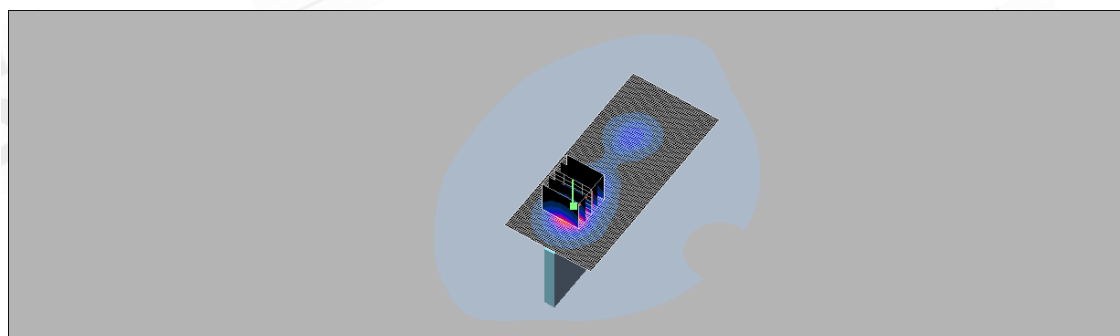
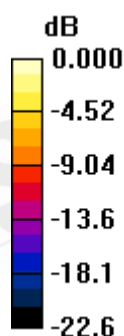
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value =  $6.80 \text{ V/m}$ ; Power Drift =  $-0.099 \text{ dB}$

Peak SAR (extrapolated) =  $0.568 \text{ W/kg}$

**SAR(1 g) =  $0.286 \text{ mW/g}$ ; SAR(10 g) =  $0.133 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.327 \text{ mW/g}$



0 dB =  $0.327 \text{ mW/g}$

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Date: 2011/6/11

## Hotspot mode\_ WLAN802.11 b\_Left side\_CH6

Communication System: Wireless LAN; Frequency: 2437 MHz; Duty Cycle: 1:1  
Medium: Muscle 2450 Medium parameters used:  $f = 2437 \text{ MHz}$ ;  $\sigma = 1.94 \text{ mho/m}$ ;  $\epsilon_r = 52.1$ ;  
 $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(6.96, 6.96, 6.96); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (51x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.022 \text{ mW/g}$

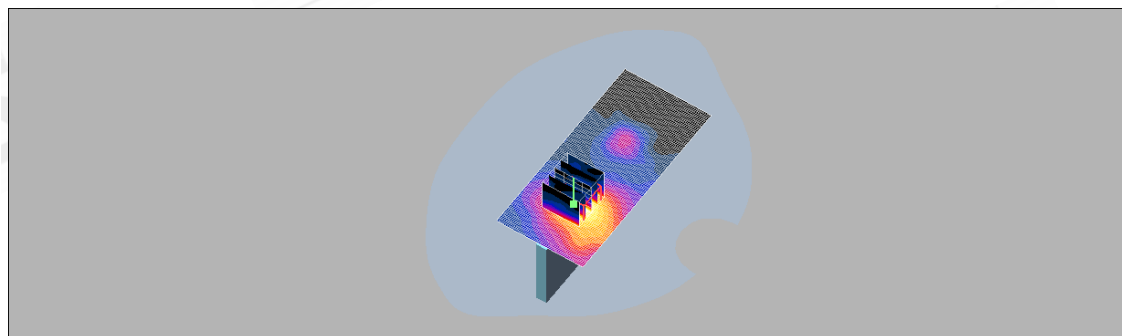
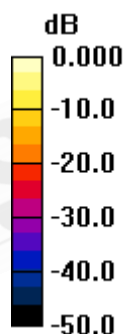
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value =  $2.07 \text{ V/m}$ ; Power Drift =  $0.152 \text{ dB}$

Peak SAR (extrapolated) =  $0.041 \text{ W/kg}$

**SAR(1 g) =  $0.022 \text{ mW/g}$ ; SAR(10 g) =  $0.012 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.023 \text{ mW/g}$



0 dB =  $0.023 \text{ mW/g}$

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Date: 2011/6/11

## Hotspot mode\_ WLAN802.11 b\_Right side\_CH6\_repeated with headset

Communication System: Wireless LAN; Frequency: 2437 MHz; Duty Cycle: 1:1  
Medium: Muscle 2450 Medium parameters used:  $f = 2437 \text{ MHz}$ ;  $\sigma = 1.94 \text{ mho/m}$ ;  $\epsilon_r = 52.1$ ;  
 $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(6.96, 6.96, 6.96); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (51x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) =  $0.358 \text{ mW/g}$

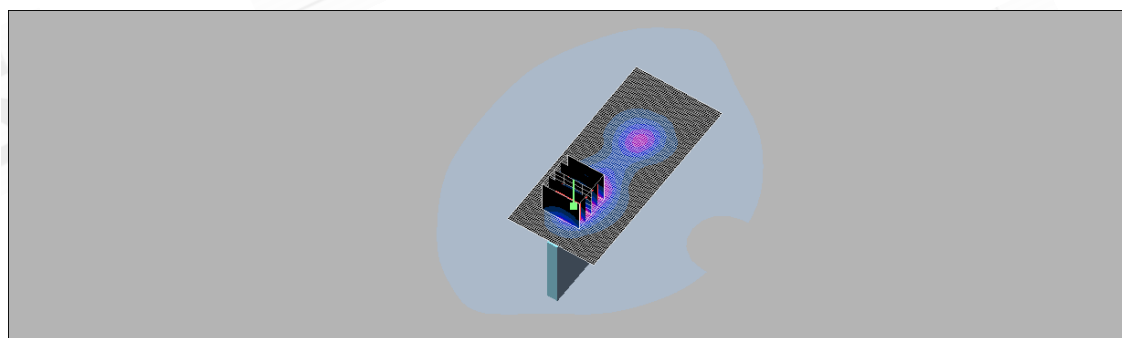
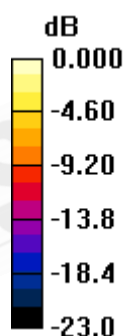
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value =  $7.79 \text{ V/m}$ ; Power Drift =  $0.110 \text{ dB}$

Peak SAR (extrapolated) =  $0.580 \text{ W/kg}$

**SAR(1 g) =  $0.290 \text{ mW/g}$ ; SAR(10 g) =  $0.140 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.340 \text{ mW/g}$



0 dB =  $0.340 \text{ mW/g}$

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Date: 2011/6/11

## Hotspot mode\_ WLAN802.11 b\_Right side\_CH6\_ repeated with memory card

Communication System: Wireless LAN; Frequency: 2437 MHz; Duty Cycle: 1:1  
Medium: Muscle 2450 Medium parameters used:  $f = 2437 \text{ MHz}$ ;  $\sigma = 1.94 \text{ mho/m}$ ;  $\epsilon_r = 52.1$ ;  
 $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(6.96, 6.96, 6.96); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**BODY/Area Scan (51x111x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) = 0.334 mW/g

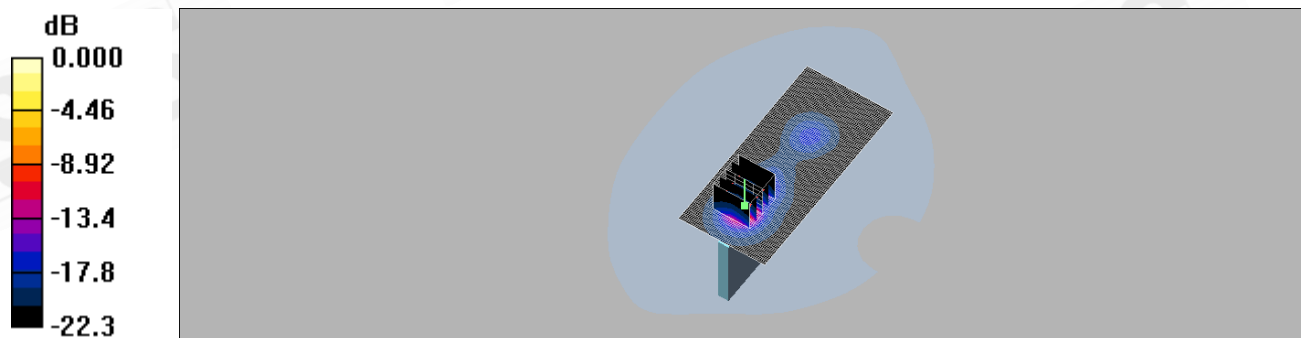
**BODY/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  
 $dz=5\text{mm}$

Reference Value = 6.38 V/m; Power Drift = 0.063 dB

Peak SAR (extrapolated) = 0.594 W/kg

**SAR(1 g) = 0.296 mW/g; SAR(10 g) = 0.138 mW/g**

Maximum value of SAR (measured) = 0.349 mW/g



0 dB = 0.349mW/g

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## 5. System Verification

Date: 2011/6/6

### DUT: Dipole 835 MHz; (Head)

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

Medium: Head 835MHz Medium parameters used:  $f = 835 \text{ MHz}$ ;  $\sigma = 0.917 \text{ mho/m}$ ;  $\epsilon_r = 41.4$ ;  
 $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(9.25, 9.25, 9.25); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Pin=250mW/Area Scan (61x61x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) = 2.53 mW/g

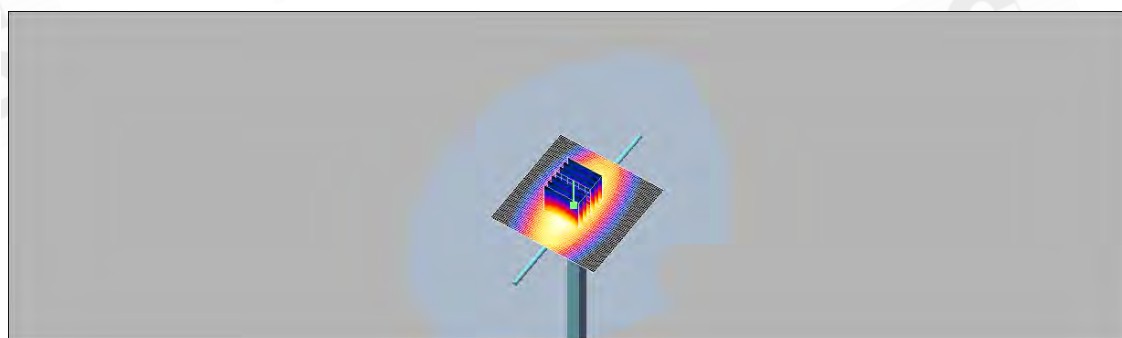
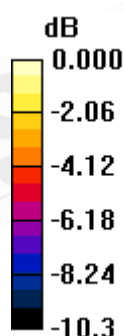
**Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  
 $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 53.0 V/m; Power Drift = -0.001 dB

Peak SAR (extrapolated) = 3.51 W/kg

**SAR(1 g) = 2.34 mW/g; SAR(10 g) = 1.53 mW/g**

Maximum value of SAR (measured) = 2.53 mW/g



0 dB = 2.53mW/g

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## DUT: Dipole 835 MHz; (Body)

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

Medium: Muscle 835 MHz Medium parameters used:  $f = 835 \text{ MHz}$ ;  $\sigma = 1.01 \text{ mho/m}$ ;  $\epsilon_r = 56.2$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(9.3, 9.3, 9.3); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Pin=250mW/Area Scan (61x61x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

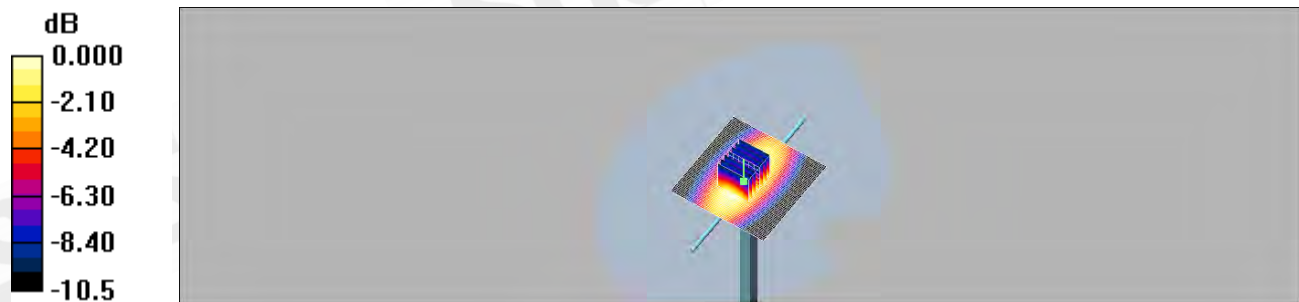
Maximum value of SAR (interpolated) =  $2.87 \text{ mW/g}$

**Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $53.7 \text{ V/m}$ ; Power Drift =  $0.012 \text{ dB}$

Peak SAR (extrapolated) =  $3.95 \text{ W/kg}$

**SAR(1 g) =  $2.47 \text{ mW/g}$ ; SAR(10 g) =  $1.75 \text{ mW/g}$**



0 dB =  $2.87 \text{ mW/g}$

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Date: 2011/6/8

## DUT: Dipole 1900 MHz;(Head)

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

Medium: Head 1900MHz Medium parameters used:  $f = 1900 \text{ MHz}$ ;  $\sigma = 1.47 \text{ mho/m}$ ;  $\epsilon_r = 39.5$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.78, 7.78, 7.78); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Pin=250mw/Area Scan (51x61x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) = 13.0 mW/g

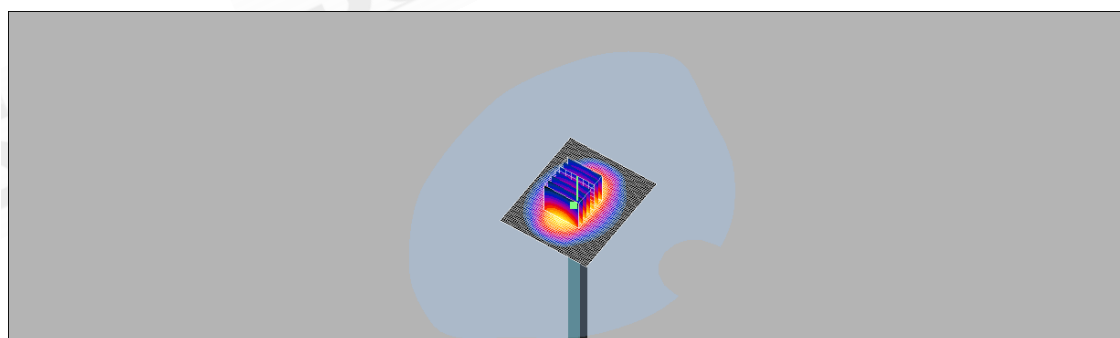
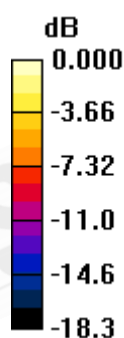
**Pin=250mw/Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 90.4 V/m; Power Drift = 0.024 dB

Peak SAR (extrapolated) = 19.3 W/kg

**SAR(1 g) = 9.98 mW/g; SAR(10 g) = 5.23 mW/g**

Maximum value of SAR (measured) = 11.5 mW/g



0 dB = 11.5mW/g

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Date: 2011/6/9

## DUT: Dipole 1900 MHz; (Body)

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

Medium: M1800 & 1900 Medium parameters used:  $f = 1900 \text{ MHz}$ ;  $\sigma = 1.57 \text{ mho/m}$ ;  $\epsilon_r = 53$ ;  
 $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.51, 7.51, 7.51); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Pin=250mW/Area Scan (51x61x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) = 12.9 mW/g

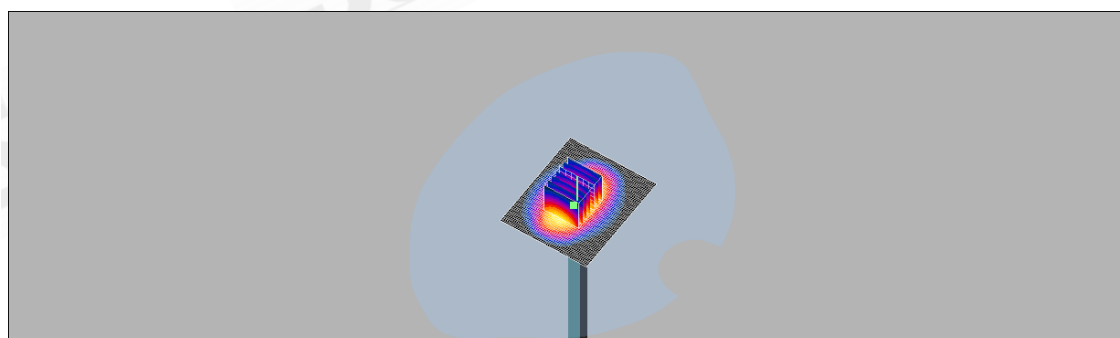
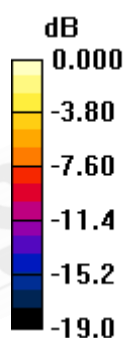
**Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  
 $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 86.2 V/m; Power Drift = 0.009 dB

Peak SAR (extrapolated) = 18.0 W/kg

**SAR(1 g) = 9.85 mW/g; SAR(10 g) = 5 mW/g**

Maximum value of SAR (measured) = 11.2 mW/g



0 dB = 11.2mW/g

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Date: 2011/6/11

## DUT: Dipole 2450 MHz; (Head)

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

Medium: HEAD 2450 Medium parameters used:  $f = 2450$  MHz;  $\sigma = 1.79$  mho/m;  $\epsilon_r = 37.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(6.99, 6.99, 6.99); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Pin=250mW / Area Scan (41x61x1):** Measurement grid: dx=15mm, dy=15mm  
Maximum value of SAR (interpolated) = 15.1 mW/g

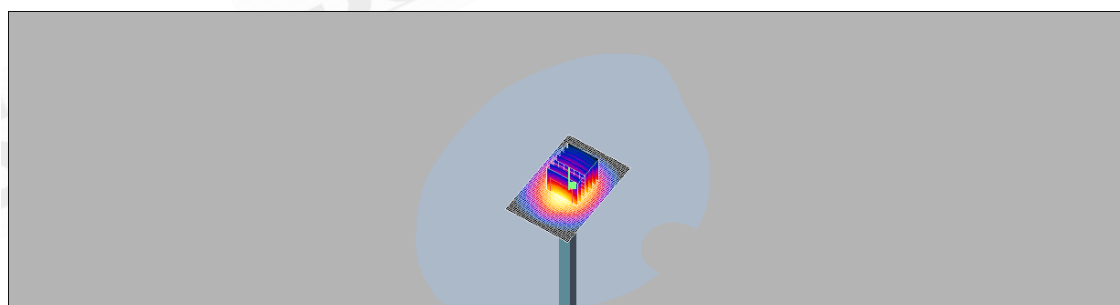
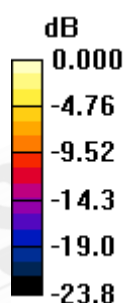
**Pin=250mW / Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 89.9 V/m; Power Drift = -0.115 dB

Peak SAR (extrapolated) = 27.8 W/kg

**SAR(1 g) = 13.2 mW/g; SAR(10 g) = 6.1 mW/g**

Maximum value of SAR (measured) = 14.6 mW/g



0 dB = 14.6mW/g

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Date: 2011/6/11

## DUT: Dipole 2450 MHz; (Body)

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

Medium: M 2450 Medium parameters used:  $f = 2450 \text{ MHz}$ ;  $\sigma = 1.97 \text{ mho/m}$ ;  $\epsilon_r = 52.1$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(6.96, 6.96, 6.96); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Pin=250mW/Area Scan (51x61x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
Maximum value of SAR (interpolated) = 17.6 mW/g

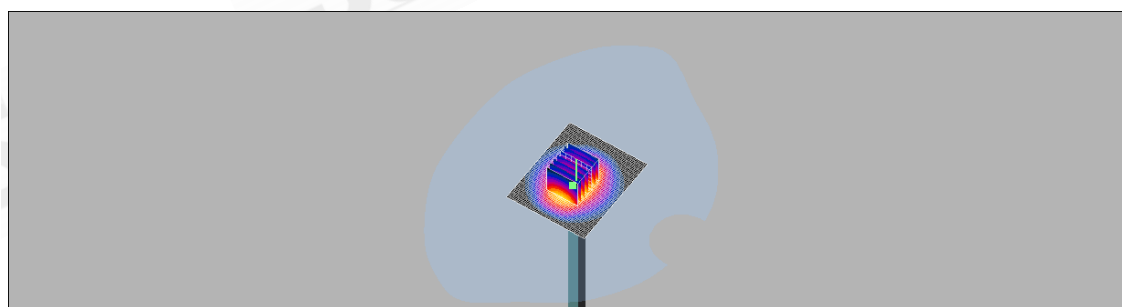
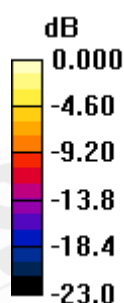
**Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 86.2 V/m; Power Drift = -0.031 dB

Peak SAR (extrapolated) = 27.3 W/kg

**SAR(1 g) = 12.6 mW/g; SAR(10 g) = 5.73 mW/g**

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



0 dB = 14.4mW/g

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Date: 2011/8/22

## DUT: Dipole 835 MHz; (Body)

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

Medium: Muscle 835 MHz Medium parameters used:  $f = 835 \text{ MHz}$ ;  $\sigma = 1.02 \text{ mho/m}$ ;  $\epsilon_r = 55.3$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

### DASY4 Configuration:

- Probe: ES3DV3 - SN3071; ConvF(5.68, 5.68, 5.68); Calibrated: 2011/6/22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn679; Calibrated: 2011/6/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Pin=250mW/Area Scan (61x61x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 2.68 mW/g

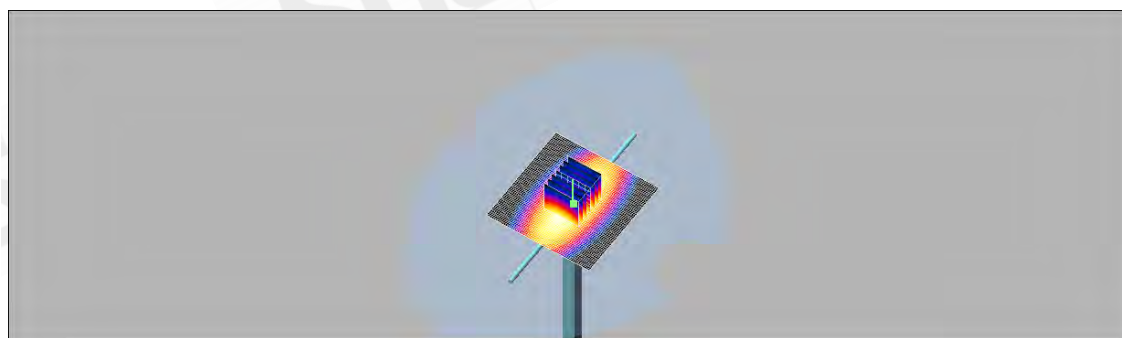
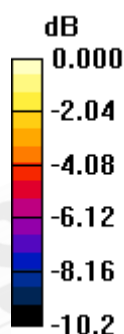
**Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 51.6 V/m; Power Drift = 0.000 dB

Peak SAR (extrapolated) = 3.64 W/kg

**SAR(1 g) = 2.46 mW/g; SAR(10 g) = 1.62 mW/g**

Maximum value of SAR (measured) = 2.68 mW/g



0 dB = 2.68mW/g

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Date: 2011/8/22

## DUT: Dipole 1900 MHz; (Body)

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

Medium: M1800 & 1900 Medium parameters used:  $f = 1900 \text{ MHz}$ ;  $\sigma = 1.60 \text{ mho/m}$ ;  $\epsilon_r = 51.4$ ;  
 $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

### DASY4 Configuration:

- Probe: ES3DV3 - SN3071; ConvF(4.32, 4.32, 4.32); Calibrated: 2011/6/22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn679; Calibrated: 2011/6/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Pin=250mW/Area Scan (51x61x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 13.0 mW/g

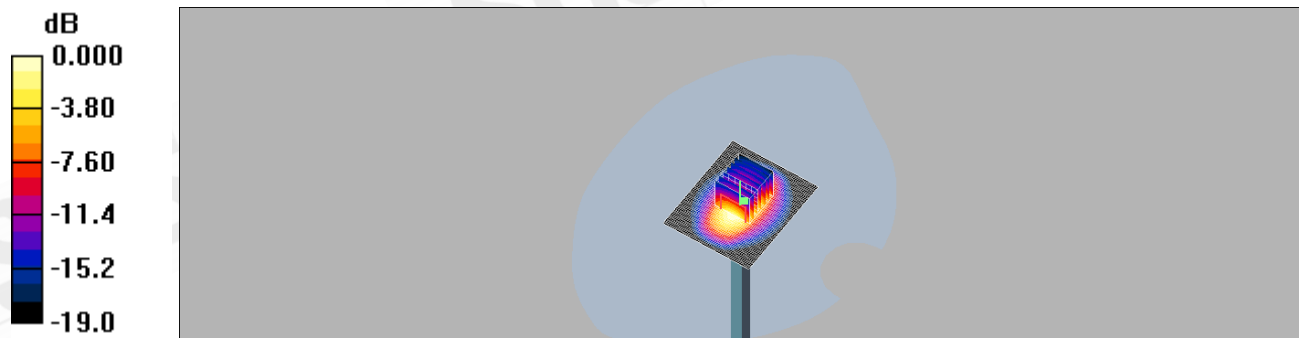
**Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  
 $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 84.7 V/m; Power Drift = -0.018 dB

Peak SAR (extrapolated) = 18.6 W/kg

**SAR(1 g) = 9.95 mW/g; SAR(10 g) = 5.07 mW/g**

Maximum value of SAR (measured) = 11.2 mW/g



0 dB = 11.2mW/g

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Date: 2011/9/13

## DUT: Dipole 835 MHz; (Head)

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

Medium: Head 900 MHz Medium parameters used:  $f = 835 \text{ MHz}$ ;  $\sigma = 0.896 \text{ mho/m}$ ;  $\epsilon_r = 41.9$ ;  
 $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(9.25, 9.25, 9.25); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn679; Calibrated: 2011/6/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Pin=250mW/Area Scan (61x61x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 2.43 mW/g

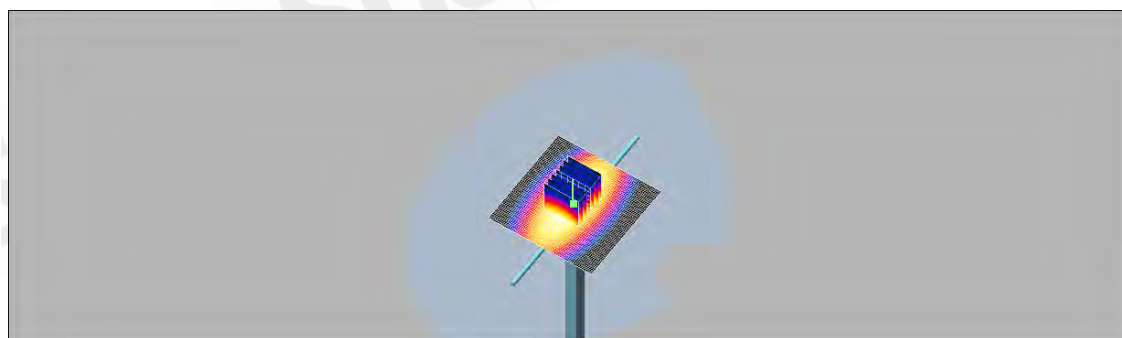
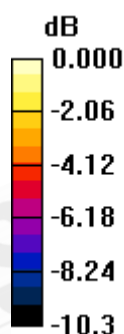
**Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  
 $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 52.5 V/m; Power Drift = 0.013 dB

Peak SAR (extrapolated) = 3.36 W/kg

**SAR(1 g) = 2.25 mW/g; SAR(10 g) = 1.48 mW/g**

Maximum value of SAR (measured) = 2.44 mW/g



0 dB = 2.44mW/g

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Date: 2011/9/13

## DUT: Dipole 1900 MHz; (Head)

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

Medium: Head 1900MHz Medium parameters used:  $f = 1900 \text{ MHz}$ ;  $\sigma = 1.42 \text{ mho/m}$ ;  $\epsilon_r = 40.6$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

### DASY4 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.78, 7.78, 7.78); Calibrated: 2011/4/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn679; Calibrated: 2011/6/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

**Pin=250mw/Area Scan (51x61x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 12.4 mW/g

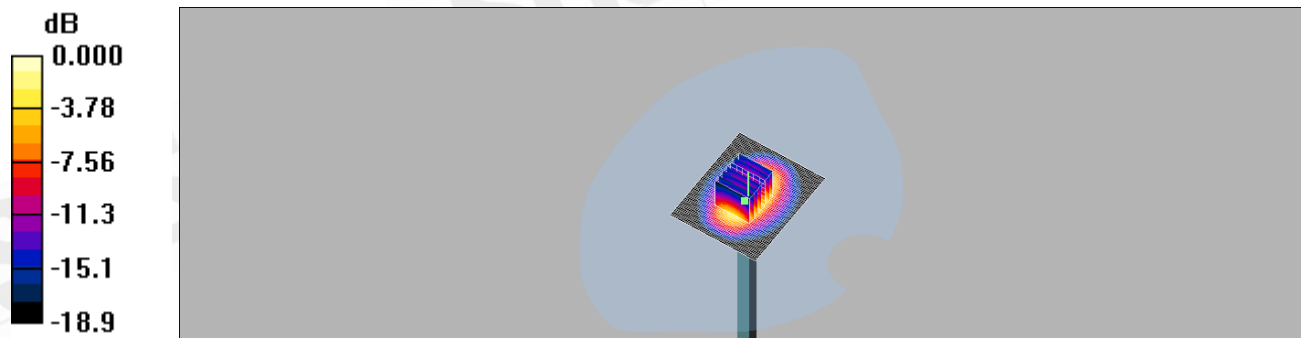
**Pin=250mw/Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 87.1 V/m; Power Drift = -0.007 dB

Peak SAR (extrapolated) = 18.3 W/kg

**SAR(1 g) = 9.71 mW/g; SAR(10 g) = 5.1 mW/g**

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



0 dB = 10.8mW/g

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## 6. DAE &amp; Probe Calibration certificate

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Accreditation No.: SCS 108

Client **SGS-TW**

Certificate No: **DAE4-547\_Aug10**

**CALIBRATION CERTIFICATE**

Object **DAE4 - SD 000 D04 BJ - SN: 547**

Calibration procedure(s) **QA CAL-06.v22  
Calibration procedure for the data acquisition electronics (DAE)**

Calibration date: **August 18, 2010**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).  
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature  $(22 \pm 3)^{\circ}\text{C}$  and humidity  $< 70\%$ .

Calibration Equipment used (M&TE critical for calibration)

| Primary Standards             | ID #               | Cal Date (Certificate No.) | Scheduled Calibration  |
|-------------------------------|--------------------|----------------------------|------------------------|
| Keithley Multimeter Type 2001 | SN: 0810278        | 1-Oct-09 (No: 9055)        | Oct-10                 |
| Secondary Standards           | ID #               | Check Date (in house)      | Scheduled Check        |
| Calibrator Box V1.1           | SE UMS 006 AB 1004 | 07-Jun-10 (in house check) | In house check: Jun-11 |

|                | Name              | Function     | Signature |
|----------------|-------------------|--------------|-----------|
| Calibrated by: | Dominique Steffen | Technician   |           |
| Approved by:   | Fin Bornholt      | R&D Director |           |

Issued: August 18, 2010

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Certificate No: DAE4-547\_Aug10

Page 1 of 5

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Accreditation No.: **SCS 108**

Client **Auden**

Certificate No: **DAE4-679 Jun11**

## CALIBRATION CERTIFICATE

Object **DAE4 - SD 000 D04 BJ - SN: 679**

Calibration procedure(s) **QA CAL-06.v23**  
**Calibration procedure for the data acquisition electronics (DAE)**

Calibration date: **June 24, 2011**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).  
 The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature  $(22 \pm 3)^{\circ}\text{C}$  and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

| Primary Standards             | ID #               | Cal Date (Certificate No.) | Scheduled Calibration  |
|-------------------------------|--------------------|----------------------------|------------------------|
| Keithley Multimeter Type 2001 | SN: 0810278        | 28-Sep-10 (No:10376)       | Sep-11                 |
| Secondary Standards           | ID #               | Check Date (in house)      | Scheduled Check        |
| Calibrator Box V1.1           | SE UMS 006 AB 1004 | 08-Jun-11 (in house check) | In house check: Jun-12 |

Calibrated by: Name **Dominique Steffen** Function **Technician** Signature

Approved by: **Fin Bornholt** R&D Director

Issued: June 24, 2011

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Certificate No: DAE4-679\_Jun11

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Accreditation No.: SCS 108

Client **SGS-TW (Auden)**

Certificate No: **EX3-3770\_Apr11**

## CALIBRATION CERTIFICATE

Object **EX3DV4 - SN:3770**

Calibration procedure(s) **QA CAL-01.v7, QA CAL-14.v3, QA CAL-23.v4, QA CAL-25.v3  
Calibration procedure for dosimetric E-field probes**

Calibration date: **April 19, 2011**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).  
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature ( $22 \pm 3$ )°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

| Primary Standards          | ID              | Cal Date (Certificate No.)        | Scheduled Calibration  |
|----------------------------|-----------------|-----------------------------------|------------------------|
| Power meter E4419B         | GB41293874      | 31-Mar-11 (No. 217-01372)         | Apr-12                 |
| Power sensor E4412A        | MY41495277      | 31-Mar-11 (No. 217-01372)         | Apr-12                 |
| Power sensor E4412A        | MY41498087      | 31-Mar-11 (No. 217-01372)         | Apr-12                 |
| Reference 3 dB Attenuator  | SN: S5054 (3c)  | 29-Mar-11 (No. 217-01369)         | Apr-12                 |
| Reference 20 dB Attenuator | SN: S5086 (20b) | 29-Mar-11 (No. 217-01367)         | Apr-12                 |
| Reference 30 dB Attenuator | SN: S5129 (30b) | 29-Mar-11 (No. 217-01370)         | Apr-12                 |
| Reference Probe ES3DV2     | SN: 3013        | 29-Dec-10 (No. ES3-3013_Dec10)    | Dec-11                 |
| DAE4                       | SN: 654         | 23-Apr-10 (No. DAE4-654_Apr10)    | Apr-11                 |
| Secondary Standards        | ID              | Check Date (in house)             | Scheduled Check        |
| RF generator HP 8648C      | US3642U01700    | 4-Aug-99 (in house check Oct-09)  | In house check: Oct-11 |
| Network Analyzer HP 8753E  | US37390585      | 18-Oct-01 (in house check Oct-10) | In house check: Oct-11 |

|                                                                                                                 |                       |                               |                        |
|-----------------------------------------------------------------------------------------------------------------|-----------------------|-------------------------------|------------------------|
| Calibrated by:                                                                                                  | Name<br>Katja Pokovic | Function<br>Technical Manager | Signature<br>          |
| Approved by:                                                                                                    | Name<br>Fin Bornholt  | Function<br>R&D Director      | Signature<br>          |
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Certificate No: EX3-3770\_Apr11

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## Glossary:

|                          |                                                                                                                                                         |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| TSL                      | tissue simulating liquid                                                                                                                                |
| NORM <sub>x,y,z</sub>    | sensitivity in free space                                                                                                                               |
| ConvF                    | sensitivity in TSL / NORM <sub>x,y,z</sub>                                                                                                              |
| DCP                      | diode compression point                                                                                                                                 |
| CF                       | crest factor (1/duty_cycle) of the RF signal                                                                                                            |
| A, B, C                  | modulation dependent linearization parameters                                                                                                           |
| Polarization $\varphi$   | $\varphi$ rotation around probe axis                                                                                                                    |
| Polarization $\vartheta$ | $\vartheta$ rotation around an axis that is in the plane normal to probe axis (at measurement center),<br>i.e., $\vartheta = 0$ is normal to probe axis |

## Calibration is Performed According to the Following Standards:

- IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
- IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005

## Methods Applied and Interpretation of Parameters:

- NORM<sub>x,y,z</sub>**: Assessed for E-field polarization  $\vartheta = 0$  ( $f \leq 900$  MHz in TEM-cell;  $f > 1800$  MHz: R22 waveguide). NORM<sub>x,y,z</sub> are only intermediate values, i.e., the uncertainties of NORM<sub>x,y,z</sub> does not affect the E<sup>2</sup>-field uncertainty inside TSL (see below ConvF).
- NORM(f)<sub>x,y,z</sub>** = NORM<sub>x,y,z</sub> \* frequency\_response (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of ConvF.
- DCP<sub>x,y,z</sub>**: DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- PAR**: PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- A<sub>x,y,z</sub>; B<sub>x,y,z</sub>; C<sub>x,y,z</sub>** are numerical linearization parameters in dB assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media.
- VR**: VR is the validity range of the calibration related to the average diode voltage or DAE voltage in mV.
- ConvF and Boundary Effect Parameters**: Assessed in flat phantom using E-field (or Temperature Transfer Standard for  $f \leq 800$  MHz) and inside waveguide using analytical field distributions based on power measurements for  $f > 800$  MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORM<sub>x,y,z</sub> \* ConvF whereby the uncertainty corresponds to that given for ConvF. A frequency dependent ConvF is used in DASY version 4.4 and higher which allows extending the validity from  $\pm 50$  MHz to  $\pm 100$  MHz.
- Spherical isotropy (3D deviation from isotropy)**: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- Sensor Offset**: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.

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EX3DV4 – SN:3770

April 19, 2011

# Probe EX3DV4

## SN:3770

Manufactured: July 6, 2010  
Calibrated: April 19, 2011

Calibrated for DASY/EASY Systems  
(Note: non-compatible with DASY2 system!)

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EX3DV4- SN:3770

April 19, 2011

## DASY/EASY - Parameters of Probe: EX3DV4 - SN:3770

### Basic Calibration Parameters

|                                                    | Sensor X | Sensor Y | Sensor Z | Unc (k=2)     |
|----------------------------------------------------|----------|----------|----------|---------------|
| Norm ( $\mu\text{V}/(\text{V/m})^2$ ) <sup>A</sup> | 0.32     | 0.62     | 0.40     | $\pm 10.1 \%$ |
| DCP (mV) <sup>B</sup>                              | 106.6    | 98.3     | 102.8    |               |

### Modulation Calibration Parameters

| UID   | Communication System Name | PAR  |   | A<br>dB | B<br>dB | C<br>dB | VR<br>mV | Unc <sup>E</sup><br>(k=2) |
|-------|---------------------------|------|---|---------|---------|---------|----------|---------------------------|
| 10000 | CW                        | 0.00 | X | 0.00    | 0.00    | 1.00    | 120.8    | $\pm 2.7 \%$              |
|       |                           |      | Y | 0.00    | 0.00    | 1.00    | 134.3    |                           |
|       |                           |      | Z | 0.00    | 0.00    | 1.00    | 133.5    |                           |

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

<sup>A</sup> The uncertainties of NormX,Y,Z do not affect the E<sup>2</sup>-field uncertainty inside TSL (see Pages 5 and 6).

<sup>B</sup> Numerical linearization parameter; uncertainty not required.

<sup>E</sup> Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

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EX3DV4- SN:3770

April 19, 2011

**DASY/EASY - Parameters of Probe: EX3DV4 - SN:3770****Calibration Parameter Determined in Head Tissue Simulating Media**

| f (MHz) <sup>C</sup> | Relative Permittivity <sup>F</sup> | Conductivity (S/m) <sup>F</sup> | ConvF X | ConvF Y | ConvF Z | Alpha | Depth (mm) | Unct. (k=2) |
|----------------------|------------------------------------|---------------------------------|---------|---------|---------|-------|------------|-------------|
| 750                  | 41.9                               | 0.89                            | 9.58    | 9.58    | 9.58    | 0.80  | 0.70       | ± 12.0 %    |
| 835                  | 41.5                               | 0.90                            | 9.25    | 9.25    | 9.25    | 0.80  | 0.67       | ± 12.0 %    |
| 900                  | 41.5                               | 0.97                            | 9.06    | 9.06    | 9.06    | 0.76  | 0.71       | ± 12.0 %    |
| 1750                 | 40.1                               | 1.37                            | 7.97    | 7.97    | 7.97    | 0.80  | 0.61       | ± 12.0 %    |
| 1900                 | 40.0                               | 1.40                            | 7.78    | 7.78    | 7.78    | 0.71  | 0.62       | ± 12.0 %    |
| 2000                 | 40.0                               | 1.40                            | 7.79    | 7.79    | 7.79    | 0.75  | 0.58       | ± 12.0 %    |
| 2450                 | 39.2                               | 1.80                            | 6.99    | 6.99    | 6.99    | 0.80  | 0.56       | ± 12.0 %    |
| 2600                 | 39.0                               | 1.96                            | 6.95    | 6.95    | 6.95    | 0.66  | 0.62       | ± 12.0 %    |

<sup>C</sup> Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

<sup>F</sup> At frequencies below 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

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EX3DV4- SN:3770

April 19, 2011

**DASY/EASY - Parameters of Probe: EX3DV4- SN:3770****Calibration Parameter Determined in Body Tissue Simulating Media**

| f (MHz) <sup>c</sup> | Relative Permittivity <sup>f</sup> | Conductivity (S/m) <sup>f</sup> | ConvF X | ConvF Y | ConvF Z | Alpha | Depth (mm) | Unct. (k=2) |
|----------------------|------------------------------------|---------------------------------|---------|---------|---------|-------|------------|-------------|
| 750                  | 55.5                               | 0.96                            | 9.42    | 9.42    | 9.42    | 0.73  | 0.72       | ± 12.0 %    |
| 835                  | 55.2                               | 0.97                            | 9.30    | 9.30    | 9.30    | 0.72  | 0.72       | ± 12.0 %    |
| 900                  | 55.0                               | 1.05                            | 9.12    | 9.12    | 9.12    | 0.73  | 0.75       | ± 12.0 %    |
| 1750                 | 53.4                               | 1.49                            | 7.84    | 7.84    | 7.84    | 0.80  | 0.68       | ± 12.0 %    |
| 1900                 | 53.3                               | 1.52                            | 7.51    | 7.51    | 7.51    | 0.80  | 0.62       | ± 12.0 %    |
| 2000                 | 53.3                               | 1.52                            | 7.44    | 7.44    | 7.44    | 0.80  | 0.66       | ± 12.0 %    |
| 2450                 | 52.7                               | 1.95                            | 6.96    | 6.96    | 6.96    | 0.80  | 0.50       | ± 12.0 %    |
| 2600                 | 52.5                               | 2.16                            | 6.78    | 6.78    | 6.78    | 0.80  | 0.50       | ± 12.0 %    |
| 5200                 | 49.0                               | 5.30                            | 4.42    | 4.42    | 4.42    | 0.50  | 1.90       | ± 13.1 %    |
| 5300                 | 48.9                               | 5.42                            | 4.12    | 4.12    | 4.12    | 0.52  | 1.90       | ± 13.1 %    |
| 5600                 | 48.5                               | 5.77                            | 3.54    | 3.54    | 3.54    | 0.60  | 1.90       | ± 13.1 %    |
| 5800                 | 48.2                               | 6.00                            | 3.80    | 3.80    | 3.80    | 0.60  | 1.90       | ± 13.1 %    |

<sup>c</sup> Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

<sup>f</sup> At frequencies below 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

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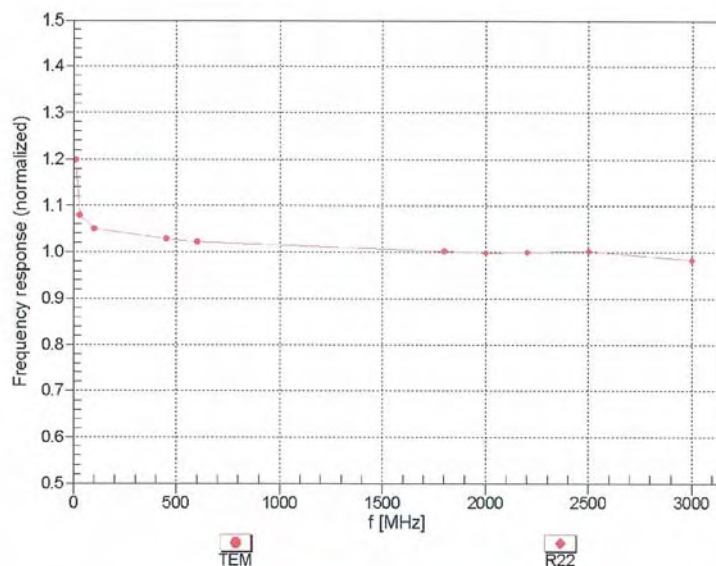
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EX3DV4- SN:3770

April 19, 2011

### Frequency Response of E-Field (TEM-Cell:ifi110 EXX, Waveguide: R22)

Uncertainty of Frequency Response of E-field:  $\pm 6.3\%$  ( $k=2$ )

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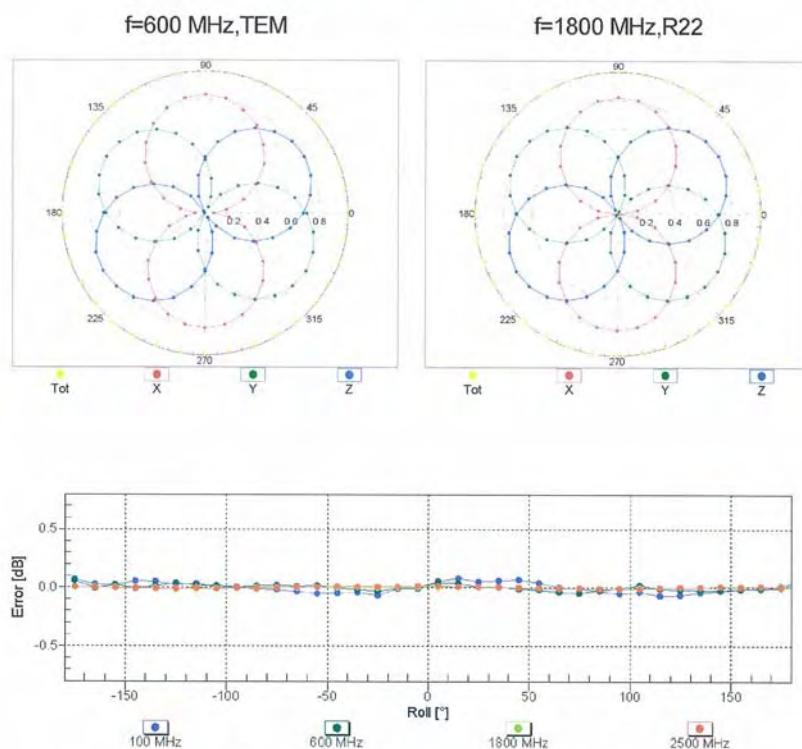
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## Receiving Pattern ( $\phi$ ), $\theta = 0^\circ$



Uncertainty of Axial Isotropy Assessment:  $\pm 0.5\%$  ( $k=2$ )

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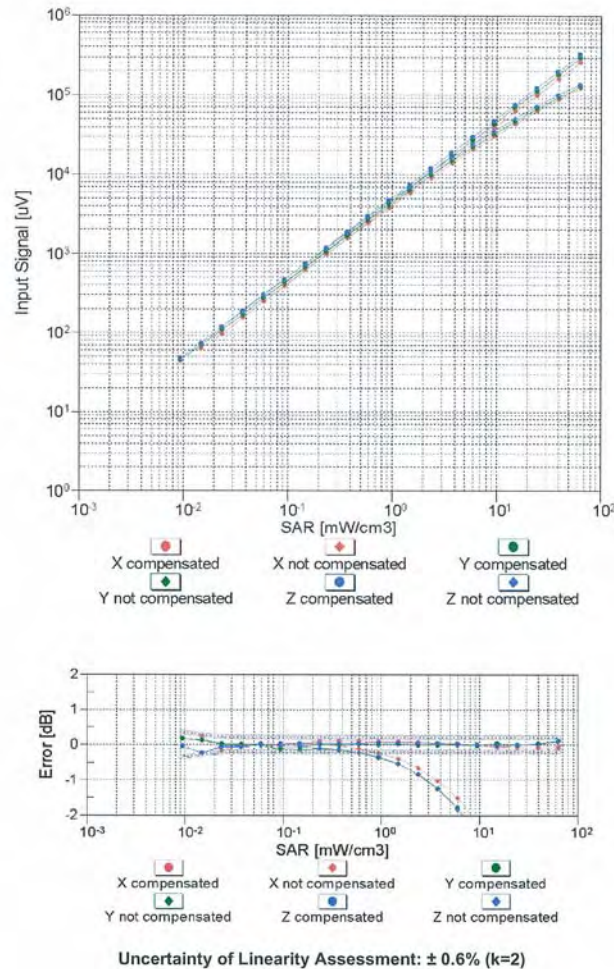
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## Dynamic Range f(SAR<sub>head</sub>) (TEM cell , f = 900 MHz)



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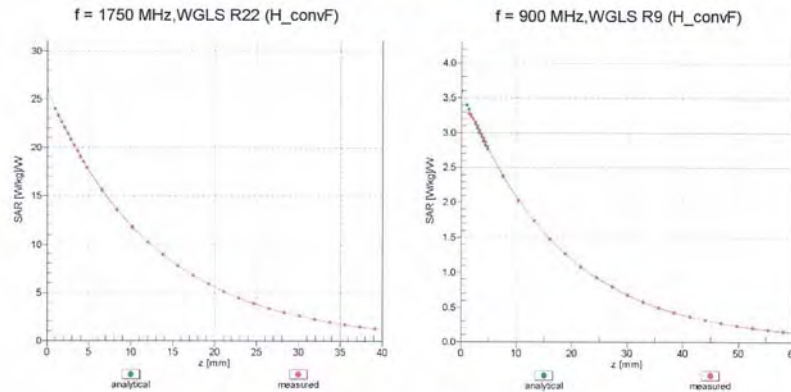
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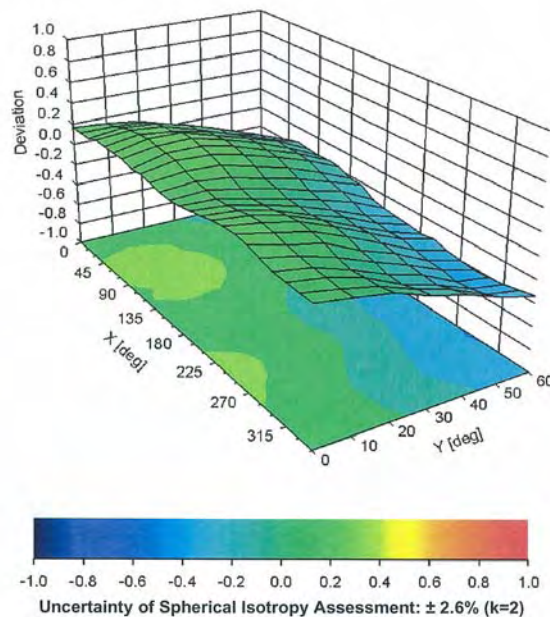
EX3DV4- SN:3770

April 19, 2011

## Conversion Factor Assessment



## Deviation from Isotropy in Liquid Error ( $\phi, \theta$ ), $f = 900 \text{ MHz}$



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EX3DV4- SN:3770

April 19, 2011

## DASY/EASY - Parameters of Probe: EX3DV4 - SN:3770

### Other Probe Parameters

|                                               |                |
|-----------------------------------------------|----------------|
| Sensor Arrangement                            | Triangular     |
| Connector Angle (°)                           | Not applicable |
| Mechanical Surface Detection Mode             | enabled        |
| Optical Surface Detection Mode                | disabled       |
| Probe Overall Length                          | 337 mm         |
| Probe Body Diameter                           | 10 mm          |
| Tip Length                                    | 9 mm           |
| Tip Diameter                                  | 2.5 mm         |
| Probe Tip to Sensor X Calibration Point       | 1 mm           |
| Probe Tip to Sensor Y Calibration Point       | 1 mm           |
| Probe Tip to Sensor Z Calibration Point       | 1 mm           |
| Recommended Measurement Distance from Surface | 2 mm           |

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Calibration Laboratory of  
Schmid & Partner  
Engineering AG  
Zeughausstrasse 43, 8004 Zurich, Switzerland



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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

Client **Audon**

Certificate No: **ES3-3071\_Jun11**

### CALIBRATION CERTIFICATE

Object **ES3DV3 - SN:3071**

Calibration procedure(s) **QA-CAL-01.v8 QA-CAL-23.v4 QA-CAL-25.v4  
Calibration procedure for dosimetric E-field probes**

Calibration date: **June 22, 2011**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).  
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature ( $22 \pm 3$ )°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

| Primary Standards          | ID              | Cal Date (Certificate No.)        | Scheduled Calibration  |
|----------------------------|-----------------|-----------------------------------|------------------------|
| Power meter E4419B         | GB41293874      | 31-Mar-11 (No. 217-01372)         | Apr-12                 |
| Power sensor E4412A        | MY41498087      | 31-Mar-11 (No. 217-01372)         | Apr-12                 |
| Reference 3 dB Attenuator  | SN: S5054 (3c)  | 29-Mar-11 (No. 217-01369)         | Apr-12                 |
| Reference 20 dB Attenuator | SN: S5086 (20b) | 29-Mar-11 (No. 217-01367)         | Apr-12                 |
| Reference 30 dB Attenuator | SN: S5129 (30b) | 29-Mar-11 (No. 217-01370)         | Apr-12                 |
| Reference Probe ES3DV2     | SN: 3013        | 29-Dec-10 (No. ES3-3013_Dec10)    | Dec-11                 |
| DAE4                       | SN: 654         | 3-May-11 (No. DAE4-654_May11)     | May-12                 |
| Secondary Standards        | ID              | Check Date (in house)             | Scheduled Check        |
| RF generator HP 8648C      | US3642U01700    | 4-Aug-99 (in house check Oct-09)  | In house check: Oct-11 |
| Network Analyzer HP 8753E  | US37390585      | 18-Oct-01 (in house check Oct-10) | In house check: Oct-11 |

Calibrated by: **Name** **Function** **Signature**  
**Audon Kastrali** **Laboratory Technician**

Approved by: **Katia Pokovic** **Technical Manager**

Issued: June 23, 2011

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**Schmid & Partner**  
**Engineering AG**  
 Zeughausstrasse 43, 8004 Zurich, Switzerland



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#### Glossary:

|                          |                                                                                                                                                         |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| TSL                      | tissue simulating liquid                                                                                                                                |
| NORM <sub>x,y,z</sub>    | sensitivity in free space                                                                                                                               |
| ConvF                    | sensitivity in TSL / NORM <sub>x,y,z</sub>                                                                                                              |
| DCP                      | diode compression point                                                                                                                                 |
| CF                       | crest factor (1/duty_cycle) of the RF signal                                                                                                            |
| A, B, C                  | modulation dependent linearization parameters                                                                                                           |
| Polarization $\phi$      | $\phi$ rotation around probe axis                                                                                                                       |
| Polarization $\vartheta$ | $\vartheta$ rotation around an axis that is in the plane normal to probe axis (at measurement center),<br>i.e., $\vartheta = 0$ is normal to probe axis |

#### Calibration is Performed According to the Following Standards:

- IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
- IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005

#### Methods Applied and Interpretation of Parameters:

- NORM<sub>x,y,z</sub>**: Assessed for E-field polarization  $\vartheta = 0$  ( $f \leq 900$  MHz in TEM-cell;  $f > 1800$  MHz: R22 waveguide). NORM<sub>x,y,z</sub> are only intermediate values, i.e., the uncertainties of NORM<sub>x,y,z</sub> does not affect the  $E^2$ -field uncertainty inside TSL (see below ConvF).
- NORM(f)<sub>x,y,z</sub> = NORM<sub>x,y,z</sub> \* frequency\_response** (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of ConvF.
- DCP<sub>x,y,z</sub>**: DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- PAR**: PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- A<sub>x,y,z</sub>; B<sub>x,y,z</sub>; C<sub>x,y,z</sub>; VR<sub>x,y,z</sub>**: A, B, C are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. VR is the maximum calibration range expressed in RMS voltage across the diode.
- ConvF and Boundary Effect Parameters**: Assessed in flat phantom using E-field (or Temperature Transfer Standard for  $f \leq 800$  MHz) and inside waveguide using analytical field distributions based on power measurements for  $f > 800$  MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORM<sub>x,y,z</sub> \* ConvF whereby the uncertainty corresponds to that given for ConvF. A frequency dependent ConvF is used in DASY version 4.4 and higher which allows extending the validity from  $\pm 50$  MHz to  $\pm 100$  MHz.
- Spherical isotropy (3D deviation from isotropy)**: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- Sensor Offset**: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.

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ES3DV3 – SN:3071

June 22, 2011

## Probe ES3DV3

SN:3071

Manufactured: December 14, 2004  
Calibrated: June 22, 2011Calibrated for DASY/EASY Systems  
(Note: non-compatible with DASY2 system!)

Certificate No: ES3-3071\_Jun11

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ES3DV3- SN:3071

June 22, 2011

**DASY/EASY - Parameters of Probe: ES3DV3 - SN:3071****Basic Calibration Parameters**

|                                                           | Sensor X | Sensor Y | Sensor Z | Unc (k=2)     |
|-----------------------------------------------------------|----------|----------|----------|---------------|
| Norm ( $\mu\text{V}/(\text{V}/\text{m})^2$ ) <sup>A</sup> | 1.12     | 1.21     | 0.96     | $\pm 10.1 \%$ |
| DCP (mV) <sup>B</sup>                                     | 101.2    | 101.2    | 97.4     |               |

**Modulation Calibration Parameters**

| UID   | Communication System Name | PAR  |   | A<br>dB | B<br>dB | C<br>dB | VR<br>mV | Unc <sup>E</sup><br>(k=2) |
|-------|---------------------------|------|---|---------|---------|---------|----------|---------------------------|
| 10000 | CW                        | 0.00 | X | 0.00    | 0.00    | 1.00    | 102.4    | $\pm 3.0 \%$              |
|       |                           |      | Y | 0.00    | 0.00    | 1.00    | 110.9    |                           |
|       |                           |      | Z | 0.00    | 0.00    | 1.00    | 130.0    |                           |

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k=2$ , which for a normal distribution corresponds to a coverage probability of approximately 95%.

<sup>A</sup> The uncertainties of NormX,Y,Z do not affect the  $E^2$ -field uncertainty inside TSL (see Pages 5 and 6).

<sup>B</sup> Numerical linearization parameter: uncertainty not required.

<sup>E</sup> Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

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ES3DV3- SN:3071

June 22, 2011

**DASY/EASY - Parameters of Probe: ES3DV3 - SN:3071****Calibration Parameter Determined in Head Tissue Simulating Media**

| f (MHz) <sup>C</sup> | Relative Permittivity <sup>F</sup> | Conductivity (S/m) <sup>F</sup> | ConvF X | ConvF Y | ConvF Z | Alpha | Depth (mm) | Unct. (k=2) |
|----------------------|------------------------------------|---------------------------------|---------|---------|---------|-------|------------|-------------|
| 750                  | 41.9                               | 0.89                            | 6.00    | 6.00    | 6.00    | 0.90  | 1.10       | ± 12.0 %    |
| 835                  | 41.5                               | 0.90                            | 5.78    | 5.78    | 5.78    | 0.90  | 1.10       | ± 12.0 %    |
| 900                  | 41.5                               | 0.97                            | 5.67    | 5.67    | 5.67    | 0.90  | 1.10       | ± 12.0 %    |
| 1450                 | 40.5                               | 1.20                            | 5.22    | 5.22    | 5.22    | 0.83  | 1.23       | ± 12.0 %    |
| 1750                 | 40.1                               | 1.37                            | 5.03    | 5.03    | 5.03    | 0.90  | 1.15       | ± 12.0 %    |
| 1900                 | 40.0                               | 1.40                            | 4.83    | 4.83    | 4.83    | 0.86  | 1.19       | ± 12.0 %    |
| 2000                 | 40.0                               | 1.40                            | 4.80    | 4.80    | 4.80    | 0.89  | 1.14       | ± 12.0 %    |
| 2450                 | 39.2                               | 1.80                            | 4.19    | 4.19    | 4.19    | 0.74  | 1.29       | ± 12.0 %    |

<sup>C</sup> Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

<sup>F</sup> At frequencies below 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

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ES3DV3- SN:3071

June 22, 2011

**DASY/EASY - Parameters of Probe: ES3DV3- SN:3071****Calibration Parameter Determined in Body Tissue Simulating Media**

| f (MHz) <sup>c</sup> | Relative Permittivity <sup>F</sup> | Conductivity (S/m) <sup>F</sup> | ConvF X | ConvF Y | ConvF Z | Alpha | Depth (mm) | Unct. (k=2) |
|----------------------|------------------------------------|---------------------------------|---------|---------|---------|-------|------------|-------------|
| 750                  | 55.5                               | 0.96                            | 5.78    | 5.78    | 5.78    | 0.80  | 1.20       | ± 12.0 %    |
| 835                  | 55.2                               | 0.97                            | 5.68    | 5.68    | 5.68    | 0.80  | 1.20       | ± 12.0 %    |
| 900                  | 55.0                               | 1.05                            | 5.63    | 5.63    | 5.63    | 0.90  | 1.10       | ± 12.0 %    |
| 1450                 | 54.0                               | 1.30                            | 5.22    | 5.22    | 5.22    | 1.00  | 1.21       | ± 12.0 %    |
| 1750                 | 53.4                               | 1.49                            | 4.66    | 4.66    | 4.66    | 0.72  | 1.43       | ± 12.0 %    |
| 1900                 | 53.3                               | 1.52                            | 4.32    | 4.32    | 4.32    | 0.72  | 1.37       | ± 12.0 %    |
| 2000                 | 53.3                               | 1.52                            | 4.29    | 4.29    | 4.29    | 0.74  | 1.30       | ± 12.0 %    |
| 2450                 | 52.7                               | 1.95                            | 3.89    | 3.89    | 3.89    | 0.75  | 1.22       | ± 12.0 %    |

<sup>c</sup> Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

<sup>F</sup> At frequencies below 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

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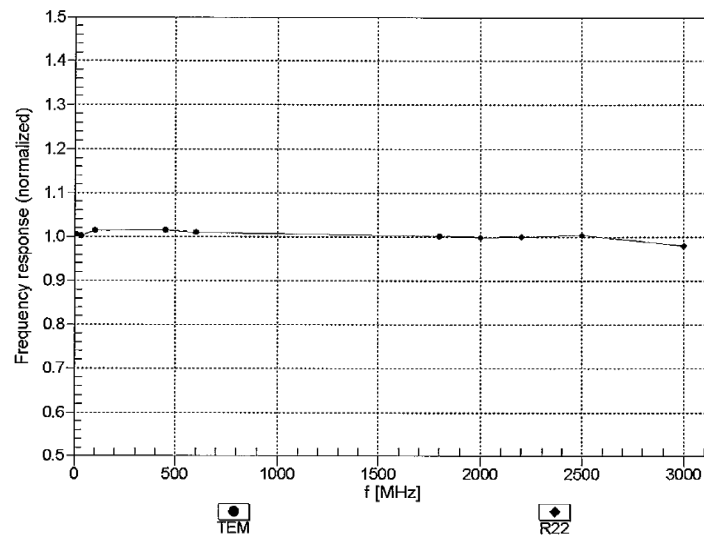
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June 22, 2011

## Frequency Response of E-Field (TEM-Cell:ifi110 EXX, Waveguide: R22)



Uncertainty of Frequency Response of E-field:  $\pm 6.3\%$  ( $k=2$ )

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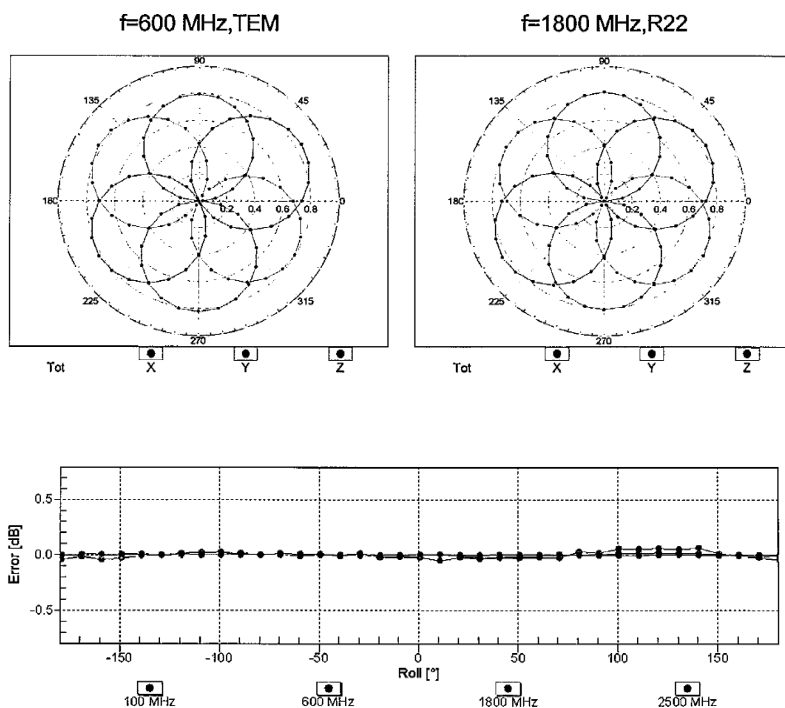
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## Receiving Pattern ( $\phi$ ), $\theta = 0^\circ$



Uncertainty of Axial Isotropy Assessment:  $\pm 0.5\%$  ( $k=2$ )

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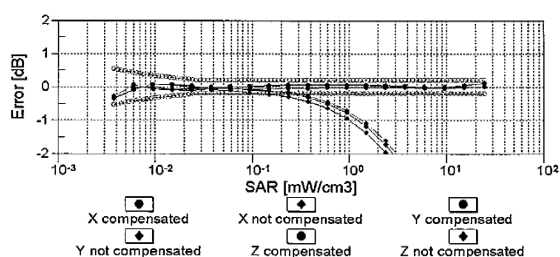
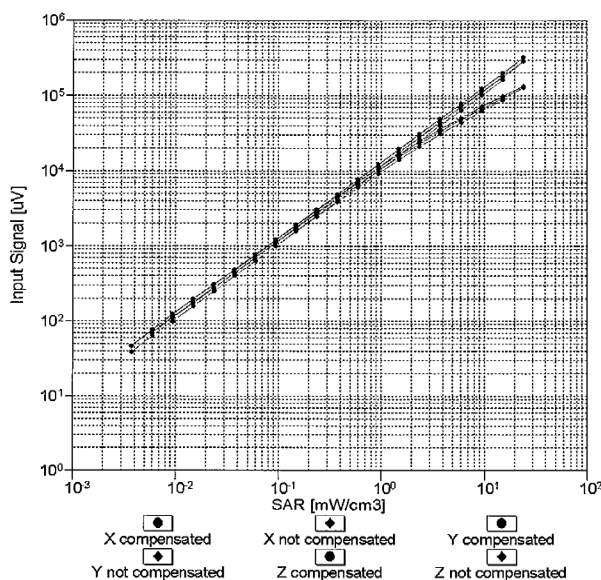
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## Dynamic Range f(SAR<sub>head</sub>) (TEM cell , f = 900 MHz)



Uncertainty of Linearity Assessment:  $\pm 0.6\%$  (k=2)

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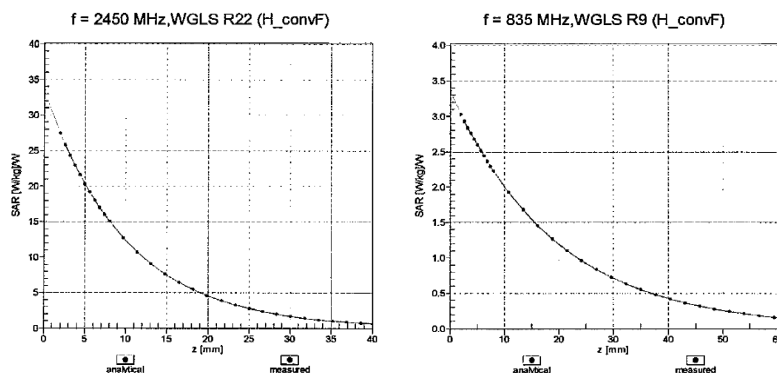
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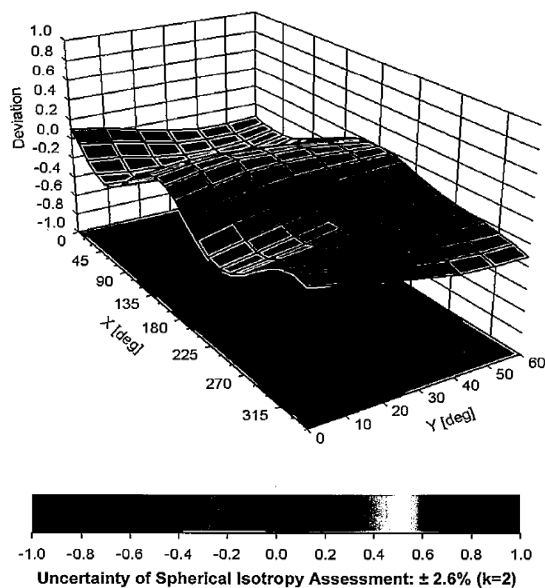
ES3DV3- SN:3071

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## Conversion Factor Assessment



## Deviation from Isotropy in Liquid Error ( $\phi$ , $\theta$ ), $f = 900 \text{ MHz}$



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ES3DV3- SN:3071

June 22, 2011

**DASY/EASY - Parameters of Probe: ES3DV3 - SN:3071****Other Probe Parameters**

|                                               |                |
|-----------------------------------------------|----------------|
| Sensor Arrangement                            | Triangular     |
| Connector Angle (°)                           | Not applicable |
| Mechanical Surface Detection Mode             | enabled        |
| Optical Surface Detection Mode                | disabled       |
| Probe Overall Length                          | 337 mm         |
| Probe Body Diameter                           | 10 mm          |
| Tip Length                                    | 10 mm          |
| Tip Diameter                                  | 4 mm           |
| Probe Tip to Sensor X Calibration Point       | 2 mm           |
| Probe Tip to Sensor Y Calibration Point       | 2 mm           |
| Probe Tip to Sensor Z Calibration Point       | 2 mm           |
| Recommended Measurement Distance from Surface | 3 mm           |

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## 7. Uncertainty Budget

| <b>DASY4 Uncertainty Budget</b><br>According to IEEE P1528 [1] |                   |             |            |               |                |                |                 |                      |
|----------------------------------------------------------------|-------------------|-------------|------------|---------------|----------------|----------------|-----------------|----------------------|
| Error Description                                              | Uncertainty value | Prob. Dist. | Div.       | $(c_i)$<br>1g | $(c_i)$<br>10g | Std. Unc. (1g) | Std. Unc. (10g) | $(v_i)$<br>$v_{eff}$ |
| <b>Measurement System</b>                                      |                   |             |            |               |                |                |                 |                      |
| Probe Calibration                                              | ±4.8 %            | N           | 1          | 1             | 1              | ±4.8 %         | ±4.8 %          | ∞                    |
| Axial Isotropy                                                 | ±4.7 %            | R           | $\sqrt{3}$ | 0.7           | 0.7            | ±1.9 %         | ±1.9 %          | ∞                    |
| Hemispherical Isotropy                                         | ±9.6 %            | R           | $\sqrt{3}$ | 0.7           | 0.7            | ±3.9 %         | ±3.9 %          | ∞                    |
| Boundary Effects                                               | ±1.0 %            | R           | $\sqrt{3}$ | 1             | 1              | ±0.6 %         | ±0.6 %          | ∞                    |
| Linearity                                                      | ±4.7 %            | R           | $\sqrt{3}$ | 1             | 1              | ±2.7 %         | ±2.7 %          | ∞                    |
| System Detection Limits                                        | ±1.0 %            | R           | $\sqrt{3}$ | 1             | 1              | ±0.6 %         | ±0.6 %          | ∞                    |
| Readout Electronics                                            | ±1.0 %            | N           | 1          | 1             | 1              | ±1.0 %         | ±1.0 %          | ∞                    |
| Response Time                                                  | ±0.8 %            | R           | $\sqrt{3}$ | 1             | 1              | ±0.5 %         | ±0.5 %          | ∞                    |
| Integration Time                                               | ±2.6 %            | R           | $\sqrt{3}$ | 1             | 1              | ±1.5 %         | ±1.5 %          | ∞                    |
| RF Ambient Conditions                                          | ±3.0 %            | R           | $\sqrt{3}$ | 1             | 1              | ±1.7 %         | ±1.7 %          | ∞                    |
| Probe Positioner                                               | ±0.4 %            | R           | $\sqrt{3}$ | 1             | 1              | ±0.2 %         | ±0.2 %          | ∞                    |
| Probe Positioning                                              | ±2.9 %            | R           | $\sqrt{3}$ | 1             | 1              | ±1.7 %         | ±1.7 %          | ∞                    |
| Max. SAR Eval.                                                 | ±1.0 %            | R           | $\sqrt{3}$ | 1             | 1              | ±0.6 %         | ±0.6 %          | ∞                    |
| <b>Test Sample Related</b>                                     |                   |             |            |               |                |                |                 |                      |
| Device Positioning                                             | ±2.9 %            | N           | 1          | 1             | 1              | ±2.9 %         | ±2.9 %          | 875                  |
| Device Holder                                                  | ±3.6 %            | N           | 1          | 1             | 1              | ±3.6 %         | ±3.6 %          | 5                    |
| Power Drift                                                    | ±5.0 %            | R           | $\sqrt{3}$ | 1             | 1              | ±2.9 %         | ±2.9 %          | ∞                    |
| <b>Phantom and Setup</b>                                       |                   |             |            |               |                |                |                 |                      |
| Phantom Uncertainty                                            | ±4.0 %            | R           | $\sqrt{3}$ | 1             | 1              | ±2.3 %         | ±2.3 %          | ∞                    |
| Liquid Conductivity (target)                                   | ±5.0 %            | R           | $\sqrt{3}$ | 0.64          | 0.43           | ±1.8 %         | ±1.2 %          | ∞                    |
| Liquid Conductivity (meas.)                                    | ±2.5 %            | N           | 1          | 0.64          | 0.43           | ±1.6 %         | ±1.1 %          | ∞                    |
| Liquid Permittivity (target)                                   | ±5.0 %            | R           | $\sqrt{3}$ | 0.6           | 0.49           | ±1.7 %         | ±1.4 %          | ∞                    |
| Liquid Permittivity (meas.)                                    | ±2.5 %            | N           | 1          | 0.6           | 0.49           | ±1.5 %         | ±1.2 %          | ∞                    |
| Combined Std. Uncertainty                                      |                   |             |            |               |                | ±10.3 %        | ±10.0 %         | 331                  |
| <b>Expanded STD Uncertainty</b>                                |                   |             |            |               |                | <b>±20.6 %</b> | <b>±20.1 %</b>  |                      |

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## 8. Phantom description

Schmid &amp; Partner Engineering AG

s p e a g

Zeughausstrasse 43, 8004 Zurich, Switzerland  
Phone +41 1 245 9700, Fax +41 1 245 9779  
info@speag.com, http://www.speag.com

## Certificate of Conformity / First Article Inspection

|              |                                                              |
|--------------|--------------------------------------------------------------|
| Item         | SAM Twin Phantom V4.0                                        |
| Type No      | QD 000 P40 C                                                 |
| Series No    | TP-1150 and higher                                           |
| Manufacturer | SPEAG<br>Zeughausstrasse 43<br>CH-8004 Zurich<br>Switzerland |

## Tests

The series production process used allows the limitation to test of first articles.  
Complete tests were made on the pre-series Type No. QD 000 P40 AA, Serial No. TP-1001 and on the series first article Type No. QD 000 P40 BA, Serial No. TP-1006. Certain parameters have been retested using further series items (called samples) or are tested at each item.

| Test                        | Requirement                                                                                                                                                                                      | Details                                                                  | Units tested                                |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|---------------------------------------------|
| Dimensions                  | Compliant with the geometry according to the CAD model.                                                                                                                                          | IT'IS CAD File (*)                                                       | First article, Samples                      |
| Material thickness of shell | Compliant with the requirements according to the standards                                                                                                                                       | 2mm +/- 0.2mm in flat and specific areas of head section                 | First article, Samples, TP-1314 ff.         |
| Material thickness at ERP   | Compliant with the requirements according to the standards                                                                                                                                       | 6mm +/- 0.2mm at ERP                                                     | First article, All items                    |
| Material parameters         | Dielectric parameters for required frequencies                                                                                                                                                   | 300 MHz – 6 GHz:<br>Relative permittivity < 5,<br>Loss tangent < 0.05    | Material samples                            |
| Material resistivity        | The material has been tested to be compatible with the liquids defined in the standards if handled and cleaned according to the instructions. Observe technical Note for material compatibility. | DEGMBE based simulating liquids                                          | Pre-series, First article, Material samples |
| Sagging                     | Compliant with the requirements according to the standards. Sagging of the flat section when filled with tissue simulating liquid.                                                               | < 1% typical < 0.8% if filled with 155mm of HSL900 and without DUT below | Prototypes, Sample testing                  |

## Standards

- [1] CENELEC EN 50361
- [2] IEEE Std 1528-2003
- [3] IEC 62209 Part I
- [4] FCC OET Bulletin 65, Supplement C, Edition 01-01

(\*) The IT'IS CAD file is derived from [2] and is also within the tolerance requirements of the shapes of the other documents.

## Conformity

Based on the sample tests above, we certify that this item is in compliance with the uncertainty requirements of SAR measurements specified in standards [1] to [4].

Date 07.07.2005

s p e a g

Signature / Stamp

Schmid & Partner Engineering AG  
Zeughausstrasse 43, 8004 Zurich, Switzerland  
Phone +41 1 245 9700, Fax +41 1 245 9779  
info@speag.com, http://www.speag.com

Doc No. 881 – QD 000 P40 C – F

Page 1 (1)

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## 9. System Validation from Original equipment supplier

Calibration Laboratory of  
Schmid & Partner  
Engineering AG  
Zeughausstrasse 43, 8004 Zurich, Switzerland



S Schweizerischer Kalibrierdienst  
C Service suisse d'étalonnage  
S Servizio svizzero di taratura  
S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)  
The Swiss Accreditation Service is one of the signatories to the EA  
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

Client SGS-TW (Auden)

Certificate No: D835V2-4d063\_May11

### CALIBRATION CERTIFICATE

Object D835V2 - SN: 4d063

Calibration procedure(s) QA CAL-05.v8  
Calibration procedure for dipole validation kits above 700 MHz

Calibration date: May 25, 2011

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).  
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature ( $22 \pm 3$ )°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

| Primary Standards           | ID #               | Cal Date (Certificate No.)        | Scheduled Calibration  |
|-----------------------------|--------------------|-----------------------------------|------------------------|
| Power meter EPM-442A        | GB37480704         | 06-Oct-10 (No. 217-01266)         | Oct-11                 |
| Power sensor HP 8481A       | US37292783         | 06-Oct-10 (No. 217-01266)         | Oct-11                 |
| Reference 20 dB Attenuator  | SN: S5086 (20b)    | 29-Mar-11 (No. 217-01367)         | Apr-12                 |
| Type-N mismatch combination | SN: 5047.2 / 06327 | 29-Mar-11 (No. 217-01371)         | Apr-12                 |
| Reference Probe ES3DV3      | SN: 3205           | 29-Apr-11 (No. ES3-3205_Apr11)    | Apr-12                 |
| DAE4                        | SN: 601            | 10-Jun-10 (No. DAE4-601_Jun10)    | Jun-11                 |
| Secondary Standards         | ID #               | Check Date (in house)             | Scheduled Check        |
| Power sensor HP 8481A       | MY41092317         | 18-Oct-02 (in house check Oct-09) | In house check: Oct-11 |
| RF generator R&S SMT-06     | 100005             | 4-Aug-99 (in house check Oct-09)  | In house check: Oct-11 |
| Network Analyzer HP 8753E   | US37390585 S4206   | 18-Oct-01 (in house check Oct-10) | In house check: Oct-11 |

Calibrated by: Name Claudio Leubler Function Laboratory Technician

Approved by: Katja Pokovic Technical Manager

Issued: May 25, 2011

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Certificate No: D835V2-4d063\_May11

Page 1 of 8

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## DASY5 Validation Report for Head TSL

Date: 25.05.2011

Test Laboratory: SPEAG, Zurich, Switzerland

**DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 4d063**

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

Medium: HSL900

Medium parameters used:  $f = 835 \text{ MHz}$ ;  $\sigma = 0.88 \text{ mho/m}$ ;  $\epsilon_r = 40.4$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(6.07, 6.07, 6.07); Calibrated: 29.04.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 10.06.2010
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- Measurement SW: DASY52, V52.6.2 Build (424)
- Postprocessing SW: SEMCAD X, V14.4.4 Build (2829)

### Dipole Calibration for Head Tissue/Pin=250 mW, d=15mm/Cube 0:

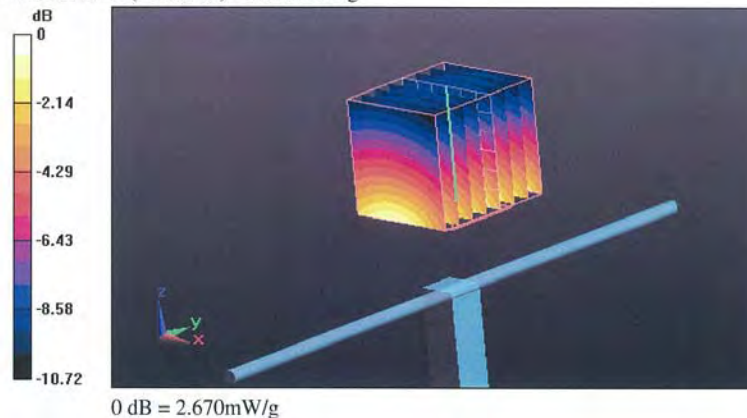
Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 56.554 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 3.427 W/kg

**SAR(1 g) = 2.31 mW/g; SAR(10 g) = 1.52 mW/g**

Maximum value of SAR (measured) = 2.669 mW/g



Certificate No: D835V2-4d063\_May11

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## DASY5 Validation Report for Body TSL

Date: 25.05.2011

Test Laboratory: SPEAG, Zurich, Switzerland

**DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 4d063**

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

Medium: MSL900

Medium parameters used:  $f = 835 \text{ MHz}$ ;  $\sigma = 1 \text{ mho/m}$ ;  $\epsilon_r = 53.9$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(6.02, 6.02, 6.02); Calibrated: 29.04.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 10.06.2010
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- Measurement SW: DASY52, V52.6.2 Build (424)
- Postprocessing SW: SEMCAD X, V14.4.4 Build (2829)

### Dipole Calibration for Body Tissue/Pin=250 mW, d=15mm/Cube 0:

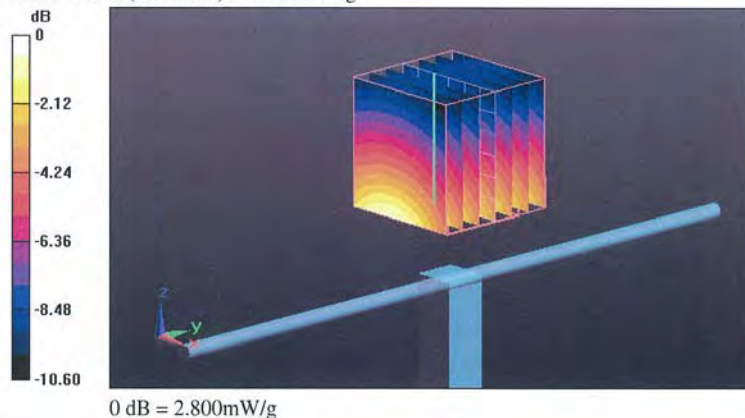
Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 54.297 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 3.530 W/kg

**SAR(1 g) = 2.43 mW/g; SAR(10 g) = 1.6 mW/g**

Maximum value of SAR (measured) = 2.804 mW/g



Certificate No: D835V2-4d063\_May11

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**Calibration Laboratory of**  
**Schmid & Partner**  
**Engineering AG**  
Zeughausstrasse 43, 8004 Zurich, Switzerland



**S** Schweizerischer Kalibrierdienst  
**C** Service suisse d'étalonnage  
**S** Servizio svizzero di taratura  
**S** Swiss Calibration Service

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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client **SGS TW (Auden)**

Certificate No: **D1900V2-5d027\_Apr11**

## CALIBRATION CERTIFICATE

Object **D1900V2 - SN: 5d027**

Calibration procedure(s) **QA CAL-05.v8**  
Calibration procedure for dipole validation kits

Calibration date: **April 19, 2011**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).  
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

| Primary Standards           | ID #               | Cal Date (Certificate No.)        | Scheduled Calibration  |
|-----------------------------|--------------------|-----------------------------------|------------------------|
| Power meter EPM-442A        | GB37480704         | 06-Oct-10 (No. 217-01266)         | Oct-11                 |
| Power sensor HP 8481A       | US37292783         | 06-Oct-10 (No. 217-01266)         | Oct-11                 |
| Reference 20 dB Attenuator  | SN: 5086 (20g)     | 29-Mar-11 (No. 217-01368)         | Apr-12                 |
| Type-N mismatch combination | SN: 5047.2 / 06327 | 29-Mar-11 (No. 217-01371)         | Apr-12                 |
| Reference Probe ES3DV3      | SN: 3205           | 30-Apr-10 (No. ES3-3205_Apr10)    | Apr-11                 |
| DAE4                        | SN: 601            | 10-Jun-10 (No. DAE4-601_Jun10)    | Jun-11                 |
| Secondary Standards         | ID #               | Check Date (in house)             | Scheduled Check        |
| Power sensor HP 8481A       | MY41092317         | 18-Oct-02 (in house check Oct-09) | In house check: Oct-11 |
| RF generator R&S SMT-06     | 100005             | 4-Aug-99 (in house check Oct-09)  | In house check: Oct-11 |
| Network Analyzer HP 8753E   | US37390585 S4206   | 18-Oct-01 (in house check Oct-10) | In house check: Oct-11 |

Calibrated by: **Claudio Leubler** Laboratory Technician

Approved by: **Katja Pokovic** Technical Manager

Issued: April 19, 2011

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Certificate No: D1900V2-5d027\_Apr11

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## DASY5 Validation Report for Head TSL

Date/Time: 18.04.2011 15:27:22

Test Laboratory: SPEAG, Zurich, Switzerland

**DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d027**

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

Medium: HSL U12 BB

Medium parameters used:  $f = 1900 \text{ MHz}$ ;  $\sigma = 1.41 \text{ mho/m}$ ;  $\epsilon_r = 39$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(5.09, 5.09, 5.09); Calibrated: 30.04.2010
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 10.06.2010
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- Measurement SW: DASY52, V52.6.2 Build (424)
- Postprocessing SW: SEMCAD X, V14.4.2 Build (2829)

**Pin=250 mW, Cube 0:**

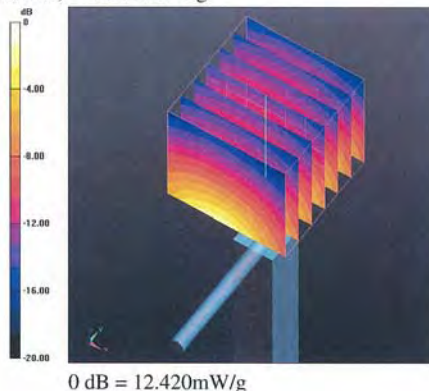
Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 97.235 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 18.650 W/kg

**SAR(1 g) = 10.1 mW/g; SAR(10 g) = 5.26 mW/g**

Maximum value of SAR (measured) = 12.424 mW/g



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## DASY5 Validation Report for Body TSL

Date/Time: 19.04.2011 12:53:51

Test Laboratory: SPEAG, Zurich, Switzerland

**DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d027**

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

Medium: MSL U12 BB

Medium parameters used:  $f = 1900 \text{ MHz}$ ;  $\sigma = 1.52 \text{ mho/m}$ ;  $\epsilon_r = 51.1$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.59, 4.59, 4.59); Calibrated: 30.04.2010
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 10.06.2010
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- Measurement SW: DASY52, V52.6.2 Build (424)
- Postprocessing SW: SEMCAD X, V14.4.2 Build (2829)

**Pin=250 mW, Cube 0:**

Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 96.170 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 17.156 W/kg

**SAR(1 g) = 9.93 mW/g; SAR(10 g) = 5.18 mW/g**

Maximum value of SAR (measured) = 12.615 mW/g



0 dB = 12.610mW/g

Certificate No: D1900V2-5d027\_Apr11

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**Calibration Laboratory of**  
**Schmid & Partner**  
**Engineering AG**  
 Zeughausstrasse 43, 8004 Zurich, Switzerland



**S** Schweizerischer Kalibrierdienst  
**C** Service suisse d'étalonnage  
**S** Servizio svizzero di taratura  
**S** Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)  
 The Swiss Accreditation Service is one of the signatories to the EA  
 Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client **SGS TW (Auden)**

Certificate No: **D2450V2- 727\_Apr11**

### CALIBRATION CERTIFICATE

Object **D2450V2 - SN: 727**

Calibration procedure(s) **QA CAL-05.v8**  
 Calibration procedure for dipole validation kits

Calibration date: **April 19, 2011**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).  
 The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

| Primary Standards           | ID #               | Cal Date (Certificate No.)     | Scheduled Calibration |
|-----------------------------|--------------------|--------------------------------|-----------------------|
| Power meter EPM-442A        | GB37480704         | 06-Oct-10 (No. 217-01266)      | Oct-11                |
| Power sensor HP 8481A       | US37292783         | 06-Oct-10 (No. 217-01266)      | Oct-11                |
| Reference 20 dB Attenuator  | SN: 5086 (20g)     | 29-Mar-11 (No. 217-01368)      | Apr-12                |
| Type-N mismatch combination | SN: 5047.2 / 06327 | 29-Mar-11 (No. 217-01371)      | Apr-12                |
| Reference Probe ES3DV3      | SN: 3205           | 30-Apr-10 (No. ES3-3205_Apr10) | Apr-11                |
| DAE4                        | SN: 601            | 10-Jun-10 (No. DAE4-601_Jun10) | Jun-11                |

| Secondary Standards       | ID #             | Check Date (in house)             | Scheduled Check        |
|---------------------------|------------------|-----------------------------------|------------------------|
| Power sensor HP 8481A     | MY41092317       | 18-Oct-02 (in house check Oct-09) | In house check: Oct-11 |
| RF generator R&S SMT-06   | 100005           | 4-Aug-99 (in house check Oct-09)  | In house check: Oct-11 |
| Network Analyzer HP 8753E | US37390585 S4206 | 18-Oct-01 (in house check Oct-10) | In house check: Oct-11 |

Calibrated by: **Claudio Leubler** Function **Laboratory Technician** Signature

Approved by: **Katja Pokovic** Technical Manager Signature

Issued: April 19, 2011

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Certificate No: D2450V2-727\_Apr11

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## DASY5 Validation Report for Head TSL

Date/Time: 18.04.2011 16:55:19

Test Laboratory: SPEAG, Zurich, Switzerland

**DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:727**

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

Medium: HSL U12 BB

Medium parameters used:  $f = 2450 \text{ MHz}$ ;  $\sigma = 1.74 \text{ mho/m}$ ;  $\epsilon_r = 38.6$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.53, 4.53, 4.53); Calibrated: 30.04.2010
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 10.06.2010
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- Measurement SW: DASY52, V52.6.2 Build (424)
- Postprocessing SW: SEMCAD X, V14.4.2 Build (2829)

**Pin=250 mW, Cube 0:**

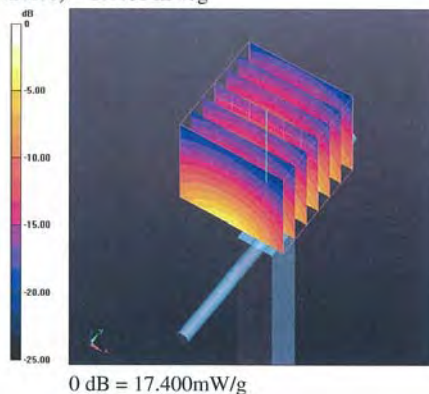
Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 103.6 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 27.919 W/kg

**SAR(1 g) = 13.7 mW/g; SAR(10 g) = 6.39 mW/g**

Maximum value of SAR (measured) = 17.401 mW/g



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## DASY5 Validation Report for Body TSL

Date/Time: 19.04.2011 14:37:11

Test Laboratory: SPEAG, Zurich, Switzerland

**DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:727**

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

Medium: MSL U12 BB

Medium parameters used:  $f = 2450 \text{ MHz}$ ;  $\sigma = 1.91 \text{ mho/m}$ ;  $\epsilon_r = 50.6$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.31, 4.31, 4.31); Calibrated: 30.04.2010
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 10.06.2010
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- Measurement SW: DASY52, V52.6.2 Build (424)
- Postprocessing SW: SEMCAD X, V14.4.2 Build (2829)

**Pin=250 mW, Cube 0:**

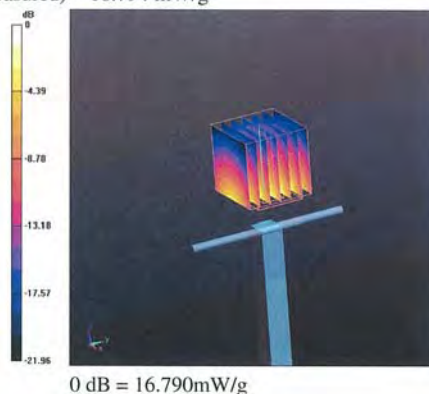
Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 96.949 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 26.888 W/kg

**SAR(1 g) = 12.7 mW/g; SAR(10 g) = 5.84 mW/g**

Maximum value of SAR (measured) = 16.794 mW/g



**End of 1<sup>st</sup> part of report**

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