

# SAR TEST REPORT

| Equipment Under Test | PDA phone   |
|----------------------|---|
| Model Name           | SAPP300   |
| Company Name         | HTC Corporation   |
| Company Address      | No.23, Xinghua Rd., Taoyuan City, Taoyuan County 330,<br>Taiwan, R.O.C. |
| Date of Receipt      | 2008.12.10  |
| Date of Test(s)      | 2008.12.17-2008.12.24,2009.03.04  |
| Date of Issue        | 2009.03.20  |

Standards:

### FCC OET Bulletin 65 supplement C, ANSI/IEEE 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   | : <u>Ricky Huang</u><br>Asst. Supervisor | Kicky Wrang  | Date |   | 2009.03.20 |
|-------------|--|--------------|------|---|------------|
| Approved by | : Robert Chang                           | 20bert Chang | Date | : | 2009.03.20 |
|             | Tech Manager                             |              | -    | - |            |

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### 1. General Information

#### 1.1 Testing Laboratory

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|   |  |  |  |  |  |

### **1.2 Details of Applicant**

| Company Name    | HTC Corporation                                  |
|-----------------|--|
|                 |  |
| Company Address | No.23, Xinghua Rd., Taoyuan City, Taoyuan County |
| Company Address | 330, Taiwan, R.O.C.                              |
| Contact Person  | Shane Chen                                       |
| TEL             | +886-3-375-3252                                  |
| Fax             | +886-3-375-5530                                  |
| E-mail          | Shane_Chen@htc.com                               |

### 1.3 Description of EUT

| EUT Name   | PDA phone   |  |  |  |
|--|---|--|--|--|
| FCC ID   | NM8SPRM   |  |  |  |
| Model Name SAPP300                               |   |  |  |  |
| Brand Name                                       | hTC   |  |  |  |
| IMEI Code  | Orignal solution :359444020011877<br>Second solution :359444020011960 |  |  |  |
| Mode of Operation GSM /GPRS/EDGE/WCDMA/HSDPA/HSU |   |  |  |  |
| Definition                                       | Production unit   |  |  |  |

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|                              | rage. 4 (  |                          |  |             |  |
|------------------------------|--|--------------------------|--|-------------|--|
| Modulation Mode              | GSM/GMSK/8PSK/QPSK/16QAM   |                          |  |             |  |
| Duty Cycle                   | GSM  | GPF                      | RS   | WCDMA B4    |  |
| Ducy Cycle                   | 1/8  | 1/4                      | 4  | 1           |  |
| Maximum RF                   | GSM 850  | GSM1                     | 900  | WCDMA B4    |  |
| Conducted Power<br>(Average) | 32.3dbm  | 30.3d                    | lbm  | 23.01dbm    |  |
| TX Frequency Range           | GSM 850  | GSM1                     | 900  | WCDMA B4    |  |
| (MHz)                        | 824.2-   | 1850                     | .2-  | 1712.4-     |  |
| (14112)                      | 848.8  | 1909                     | 9.8  | 1752.6      |  |
| Channel Number               | GSM 850  | GSM1                     | 900  | WCDMA B4    |  |
| (ARFCN)                      | 128-251  | 512-8                    | 310  | 1312-1513   |  |
| Battery Type                 |  | 3.7 V Lith               | ium-Ion  |             |  |
| Antenna Type                 | RAFE   | Internal A               | Antenna  |             |  |
|                              | Second solu  | ution(char               | nge Came   | era & LCM ) |  |
|                              | Besides the original sample, this model SAPP300  |                          |  |             |  |
|                              | changed another Camera & LCM component. In order to                                      |                          |  |             |  |
| Declaration                  | find SAR value whether the same between first and  |                          |  |             |  |
|                              | second solution, we used spot-check method to check it.                                  |                          |  |             |  |
|                              | Finally, the check result, GSM850/ 1900/WCDMA  |                          |  |             |  |
|                              | B4/WALN 802.11 b/g was within 20% deviation.   |                          |  |             |  |
|                              | Orignal solution   |                          |  |             |  |
|                              | Head   |                          | Body   |             |  |
| Max. SAR Measured            | 1.55 mW/<br>(At WCDMA B4 Rig<br>(Cheek Position)_<br>channel_repeated<br>WELLDONE batter | ght Head<br>1513<br>with | nd 1.43 mW/g<br>(At GSM 850 Body<br>_ 251 Channel) |             |  |
| (1 g)                        |  | Second s                 | olution  |             |  |
|                              | Head   |                          |  | Body        |  |
|                              | 1.39 mW/g1.35 m(At WCDMA B4 Right Head(At GSM 850)                                       |                          | .35 mW/g<br>GSM 850 Body<br>1 Channel)             |             |  |

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Note:

1. EGPRS mode was not measured because maximum averaged output power is 3 dB lower in EGPRS than in GPRS mode.

#### **1.4 Test Environment**

Ambient Temperature: 22±2° C Tissue Simulating Liquid: 22±2° 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. WLAN part is controlled by chip-specific software to make it transmit at max power.
- 3. 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 batt<sup>-</sup>ery is fully charged.
- 4. 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.
- 5. Testing Head SAR at lowest, middle and highest channel for all bands with LET/LEC/RET/REC conditions.
- 6. Testing body-worn SAR by separating **1.5cm** between the back of the EUT and the flat phantom in GPRS mode.
- 7. Since the WLAN function of this device does NOT support VoIP function. Users will not use it close to head. SAR evaluation of head adjacent is unnecessary, only Body condition will be considered for WLAN stand-alone situation.

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- The maximum SAR value for licensed transmitter happens on WCDMA B4 band, Right Head(Cheek Position)\_ repeated with WELLDONE Battery, channel 1513. the value is 1.55 W/kg(1g). And the max SAR value for un-licensed transmitter WLAN 802.11b happens on Body worn, channel 6 . The SAR value is 0.163 W/kg (1g) . and Bluetooth part is 0.0031 W/kg(1g) . The summation of the 1g SAR is 1.55+0.163+0.0031 = 1.716 W/kg, which higher than the limit 1.6W/kg.
- 9. By the way, the hotspot peak to peak distance for WWAN and WLAN is 6 cm, we calculate the peak location separation ratio of simultaneous transmitting antenna pair, the value is 0.28, which less than 0.3. NO simultaneous transmission SAR evaluation is necessary.

### Additional configuration(Head):

10. For highest SAR configuration in this band repeated with external Memory card inside. 11. For highest SAR configuration in this band repeated with WELLDONE Battery.

### Additional configuration(Body):

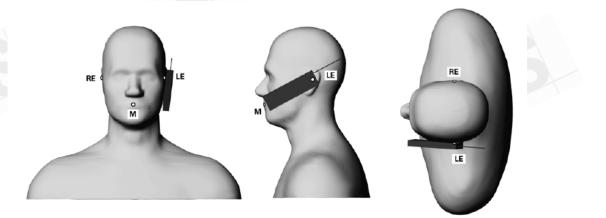
- 12. For highest SAR configuration in this band repeated with external Memory card inside.
- 13. For highest SAR configuration in this band repeated with WELLDONE Battery.
- 14. Since WLAN and Bluetooth use same antenna , both WLAN and Bluetooth turn ON co-transmit is evaluated.

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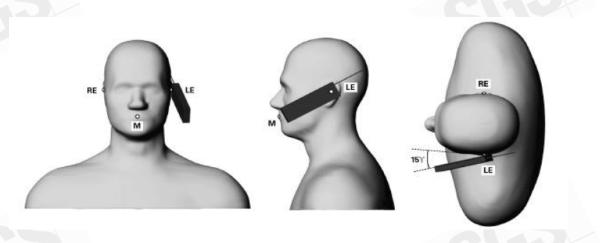


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#### 1.6 Positioning Procedure



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)
- 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.

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

#### 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 EX3DV3 field probe is used to determine the internal electric fields. The SAR can be obtained from the equation SAR=  $\sigma$  ( $|Ei|^2$ )/ $\rho$  where  $\sigma$  and  $\rho$  are the conductivity and mass density of the tissue-simulant.

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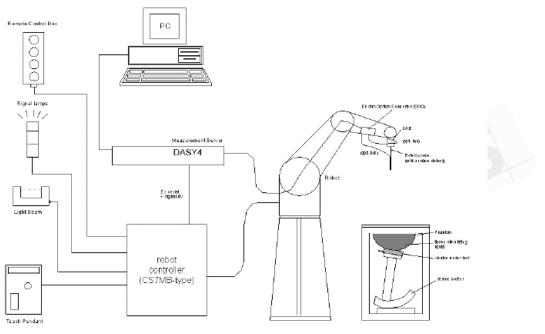


Fig.a The block diagram of SAR system

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 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.

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- 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.

### 1.9 System Components

#### EX3DV3 E-Field Probe

| Construction:  | Symmetrical design with triangular core                       |                      |  |  |
|--|---|----------------------|--|--|
|  | Built-in shielding against static charges                     | a second second      |  |  |
|  | PEEK enclosure material (resistant to                         | 1                    |  |  |
|  | organic solvents, e.g., DGBE)                                 |                      |  |  |
| Calibration:   | Basic Broad Band Calibration in air                           |                      |  |  |
|  | Conversion Factors (CF) for                                   |                      |  |  |
|  | HSL850/1800/1900/2450   |                      |  |  |
|  | Additional CF for other liquids and                           |                      |  |  |
|  | frequencies upon request                                      |                      |  |  |
|  |   | EX3DV3 E-Field Probe |  |  |
| Frequency:   | 10 MHz to $>$ 6 GHz; Linearity: $\pm$ 0.2 dB (30              | MHz to 6 GHz)        |  |  |
| Directivity:   | ± 0.3 dB in HSL (rotation around probe axis                   | ;)                   |  |  |
|  | ± 0.5 dB in tissue material (rotation normal                  | to probe axis)       |  |  |
| Dynamic Range:   | 10 $\mu$ W/g to > 100 mW/g;                                   |                      |  |  |
|  | Linearity: $\pm$ 0.2 dB (noise: typically < 1 $\mu$ W/        | /g)                  |  |  |
| Dimensions:  | Overall length: 330 mm (Tip: 20 mm)                           |                      |  |  |
|  | Tip diameter: 2.5 mm (Body: 12 mm)                            |                      |  |  |
|  | Typical distance from probe tip to dipole centers: 1 mm       |                      |  |  |
| Application: High precision dosimetric measurements in any exposure scen |   |                      |  |  |
|  | (e.g., very strong gradient fields). Only probe which enables |                      |  |  |
| compliance testing for frequencies up to 6 GHz with precisio             |   |                      |  |  |
| 30%.   |   |                      |  |  |

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#### SAM PHANTOM V4.0C

| Construction:    | The shell corresponds to the specifications of the Specific<br>Anthropomorphic Mannequin (SAM) phantom defined in IEEE<br>1528-200X, CENELEC 50361 and IEC 62209.<br>It enables the dosimetric evaluation of left and right hand phone<br>usage as well as body mounted usage at the flat phantom region. A<br>cover prevents evaporation of the liquid. Reference markings on the<br>phantom allow the complete setup of all predefined phantom<br>positions and measurement grids by manually teaching three points<br>with the robot. |  |  |  |
|------------------|--|--|--|--|
| Shell Thickness: | 2 ± 0.2 mm   |  |  |  |
| Filling Volume:  | Approx. 25 liters  | ( The second sec |  |  |
| Dimensions:      | Height: 251 mm;<br>Length: 1000 mm;<br>Width: 500 mm   |  |  |  |
| DEVICE HOLDE     | R  |  |  |  |
| Construction     | In combination with the Twin SAM F<br>V4.0/V4.0C or Twin SAM, the Mount<br>Device (made from POM) enables the<br>of the mounted transmitter in spher<br>coordinates, whereby the rotation po<br>ear opening. The devices can be eas<br>accurately positioned according to II<br>CENELEC, FCC or other specification<br>device holder can be locked at differ<br>phantom locations (left head, right h<br>phantom).   | ting<br>e rotation<br>ical<br>oint is the<br>sily and<br>EC, IEEE,<br>ns. The<br>rent  |  |  |

#### 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 +/- 5% from the target SAR values. These tests were done at 850/1800/1900/2450 MHz. The tests were conducted on the same days as the measurement of the DUT.

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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°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.

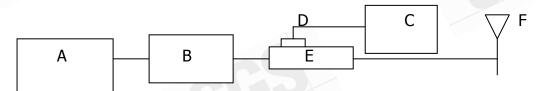


Fig.b The block diagram for SAR system verification

- A. Agilent Model 8648D Signal Generator
- B. Mini circuits Model ZHL-42 Amplifier
- C. Agilent Model E4416A Power Meter
- D. Agilent Model 8481H Power Sensor

F. Reference dipole antenna

E. Agilent Model 778D & 777D Dual directional coupling



Photograph of the dipole Antenna

| Validation Kit        | Frequency<br>(MHz) | Target<br>SAR (1g)<br>(Pin=250mW) | Measured<br>SAR (1g) | Measured<br>Date |
|-----------------------|--------------------|-----------------------------------|----------------------|------------------|
| D835V2<br>S/N: 4d063  | 835 MHz<br>(Head)  | 2.29 mW/g                         | 2.4 mW/g             | 2008/12/17       |
| D835V2<br>S/N: 4d063  | 835 MHz<br>(Body)  | 2.44 mW/g                         | 2.53 mW/g            | 2008/12/18       |
| D1900V2<br>S/N: 5d027 | 1900 MHz<br>(Head) | 10.3 mW/g                         | 10.1 mW/g            | 2008/12/17       |

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| 1 m                |                    |           |           | Page : 14  |
|--------------------|--------------------|-----------|-----------|------------|
| 1900V2<br>I: 5d027 | 1900 MHz<br>(Body) | 9.64 mW/g | 9.43 mW/g | 2008/12/18 |
| 1800V2<br>I: 2d061 | 1800 MHz<br>(Head) | 9.86 mW/g | 9.98 mW/g | 2008/12/17 |
| 1800V2<br>I: 2d061 | 1800 MHz<br>(Body) | 9.87 mW/g | 9.96 mW/g | 2008/12/18 |
| 2450V2<br>′N: 727  | 2450 MHz<br>(Body) | 13.2 mW/g | 13.6 mW/g | 2008/12/22 |
| 835V2<br>I: 4d063  | 835 MHz<br>(Head)  | 2.29 mW/g | 2.38 mW/g | 2008/12/24 |
| 835V2<br>I: 4d063  | 835 MHz<br>(Body)  | 2.44 mW/g | 2.39 mW/g | 2008/12/24 |
| 1900V2<br>I: 5d027 | 1900 MHz<br>(Head) | 10.3 mW/g | 10.5 mW/g | 2008/12/24 |
| 1900V2<br>I: 5d027 | 1900 MHz<br>(Body) | 9.64 mW/g | 9.77 mW/g | 2008/12/24 |
| 1800V2<br>I: 2d061 | 1800 MHz<br>(Head) | 9.86 mW/g | 9.97 mW/g | 2008/12/24 |
| 1800V2<br>I: 2d061 | 1800 MHz<br>(Body) | 9.87 mW/g | 10.1 mW/g | 2008/12/24 |
| 2450V2<br>′N: 727  | 2450 MHz<br>(Body) | 13.2 mW/g | 13.6 mW/g | 2008/12/24 |
| 2450V2<br>/N: 727  | 2450 MHz<br>(Body) | 13.2 mW/g | 13.8 mW/g | 2009/03/05 |

Table 1. System validation (follow manufacture target value)

#### 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 conjuncation with HP 8753D Network Analyzer (30 KHz-6000MHz) by using a procedure detailed in Section V.

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

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|   |           |             |                       |                                       |           | Page : 15 of 16          |
|---|-----------|-------------|-----------------------|---------------------------------------|-----------|--------------------------|
|   | Frequency | Tissue type | Measurement date/     | Dielectric Parameters                 |           |                          |
| - | (MHz)     |             | Limits                | ρ                                     | σ (S/m)   | Simulated Tissue         |
|   |           |             | Measured, 2008.12.17  | 42.4                                  | 0.908     | Temperature(° C)<br>21.7 |
|   | 850       | Head        | Recommended Limits    |                                       |           |                          |
|   |           |             | Measured, 2008.12.18  |                                       | 0.947     | 21.7                     |
|   | 850       | Body        | Recommended Limits    |                                       |           |                          |
|   |           | /           | Measured, 2008.12.17  |                                       | 1.41      | 21.7                     |
|   | 1900      | Head        | Recommended Limits    |                                       |           | 20-24                    |
|   |           |             | Measured, 2008.12.18  |                                       | 1.1 1.51  | 20 21                    |
|   | 1900      | Body        | Recommended Limits    |                                       |           |                          |
|   |           |             | Measured, 2008.12.17  |                                       | 1.39      | 20 21                    |
|   | 1800      | Head        | Recommended Limits    |                                       |           |                          |
|   |           |             | Measured, 2008.12.18  |                                       | 1.47      | 20.21                    |
|   | 1800      | Body        | Recommended Limits    |                                       |           |                          |
|   |           | 0 Body      | Measured, 2008.12.22  |                                       | 2.05      | 20 21                    |
|   | 2450      |             | Recommended Limits    |                                       |           |                          |
|   |           | 60 Head     | Measured, 2008.12.24  |                                       | 0.896     | 21.7                     |
|   | 850       |             | Recommended Limits    |                                       |           |                          |
|   |           | 0 Body      | Measured, 2008.12.24  |                                       | 0.946     | 21.7                     |
|   | 850       |             | Recommended Limits    |                                       |           |                          |
|   |           | 00 Head     | Measured, 2008.12.24  |                                       | 1.41      | 21.7                     |
|   | 1900      |             | Recommended Limits    |                                       |           | 20-24                    |
|   |           |             | Measured, 2008.12.24  |                                       | 1.58      | 21.7                     |
|   | 1900      | 0 Body      | Recommended Limits    |                                       |           |                          |
|   |           |             | Measured, 2008.12.24  |                                       | 1.4       | 21.7                     |
|   | 1800      | Head        | Recommended Limits    |                                       |           |                          |
|   |           | 4           | Measured, 2008.12.24  | 52.3                                  | 1.49      | 21.7                     |
|   | 1800      | Body        | Recommended Limits    | 48.83-53.97                           | 1.43-1.58 | 20-24                    |
|   | 0.470     |             | Measured, 2008.12.24  | 53                                    | 2.05      | 21.7                     |
|   | 2450      | Body        | Recommended Limits    | 48.36-53.45                           |           | 20-24                    |
|   | 2450      |             | Measured, 2009.03.04  | 53                                    | 2.04      | 21.7                     |
|   | 2450      | 50 Body     | Recommended Limits    |                                       |           |                          |
|   | L I       |             | 2 Dialactria Daramata | · · · · · · · · · · · · · · · · · · · |           |                          |

Table 2. Dielectric Parameters of Tissue Simulant Fluid

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| Ingredient       | 850MHz<br>(Head) | 850MHz<br>(Body) | 1800MHz<br>(Head) | 1800MHz<br>(Body) | 1900MHz<br>(Head) | 1900MHz<br>(Body) | 2450Mhz<br>(Body) |
|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| DGMBE            | Х                | X                | 444.52 g          | 300.67g           | 444.52 g          | 300.67g           | 301.7 ml          |
| Water            | 532.98 g         | 631.68 g         | 552.42 g          | 716.56 g          | 552.42 g          | 716.56 g          | 698.3 ml          |
| Salt             | 18.3 g           | 11.72 g          | 3.06 g            | 4.0 g             | 3.06 g            | 4.0 g             | X                 |
| Preventol<br>D-7 | 2.4 g            | 1.2 g            | Х                 | Х                 | х                 | ×                 | x                 |
| Cellulose        | 3.2 g            | Х                | Х                 | Х                 | Х                 | X                 | Х                 |
| Sugar            | 766.0 g          | 600 g            | Х                 | Х                 | Х                 | Х                 | Х                 |
| Total            | 1 L              | 1 L              | 11                | 1 L               | 1 L               | 1 L               | 1 L               |
| amount           | (1.0kg)          | (1.0kg)          | (1.0kg)           | (1.0kg)           | (1.0kg)           | (1.0kg)           | (1.0kg)           |

The composition of the brain tissue simulating liquid for 850& 1800 & 1900 & 2450 band:

Table 3. Recipes for tissue simulating liquid

#### 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.

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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 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 | Controlled Environment |
|--|--------------------------|------------------------|
|  | General Population       | 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

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- 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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### **Orignal solution measurement result**

### **GSM 850 MHZ**

| Right Head   | (Cheek Po   | osition) |                                     |                      |                  |                    |
|--------------|-------------|----------|-------------------------------------|----------------------|------------------|--------------------|
| Frequency    | Channel     | MHz      | Conducted Output<br>Power (Average) | Measured(W/kg)<br>1g | Amb.<br>Temp[°C] | Liquid<br>Temp[°C] |
|              | 128         | 824.2    | 32.3dbm                             | 0.589                | 22.1             | 21.7               |
| 850 MHz      | 190         | 836.6    | 33.1dbm                             | 0.848                | 22.1             | 21.7               |
|              | 251         | 848.8    | 33.2dbm                             | 1.11                 | 22.1             | 21.7               |
| Left Head (0 | Cheek Pos   | sition)  | C F C F                             |                      |                  |                    |
| Frequency    | Channel     | MHz      | Conducted Output<br>Power (Average) | Measured(W/kg)<br>1g | Amb.<br>Temp[°C] | Liquid<br>Temp[°C] |
|              | 128         | 824.2    | 32.3dbm                             | 0.611                | 22.1             | 21.7               |
| 850 MHz      | 190         | 836.6    | 33.1dbm                             | 0.916                | 22.1             | 21.7               |
|              | 251         | 848.8    | 33.2dbm                             | 1.22                 | 22.1             | 21.7               |
| Right Head   | (15° Tilt I | Position | ı)                                  |                      |                  |                    |
| Frequency    | Channel     | MHz      | Conducted Output<br>Power (Average) | Measured(W/kg)<br>1g | Amb.<br>Temp[°C] | Liquid<br>Temp[°C] |
|              | 128         | 824.2    | 32.3dbm                             | 0.344                | 22.1             | 21.7               |
| 850 MHz      | 190         | 836.6    | 33.1dbm                             | 0.491                | 22.1             | 21.7               |
|              | 251         | 848.8    | 33.2dbm                             | 0.626                | 22.1             | 21.7               |
| Left Head (* | 15° Tilt Po | sition)  |                                     |                      |                  |                    |
| Frequency    | Channel     | MHz      | Conducted Output<br>Power (Average) | Measured(W/kg)<br>1g | Amb.<br>Temp[°C] | Liquid<br>Temp[°C] |
|              | 128         | 824.2    | 32.3dbm                             | 0.32                 | 22.1             | 21.7               |
| 850 MHz      | 190         | 836.6    | 33.1dbm                             | 0.475                | 22.1             | 21.7               |
|              | 251         | 848.8    | 33.2dbm                             | 0.619                | 22.1             | 21.7               |
| Body worn    | (testing ir | GPRS     | mode)                               |                      |                  |                    |
| Frequency    | Channel     | MHz      | Conducted Output<br>Power (Average) | Measured(W/kg)<br>1g | Amb.<br>Temp[°C] | Liquid<br>Temp[°C] |

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|-------------|-------------|-------|------------------|-------------------|-------------|----------|
|             | 128         | 824.2 | 32dbm            | 0.969             | 22.1        | 21.7     |
| 850 MHz     | 190         | 836.6 | 33.6dbm          | 1.16              | 22.1        | 21.7     |
|             | 251         | 848.8 | 33.3dbm          | 1.43              | 22.1        | 21.7     |
| Body worn ( | (testing ir | GPRS  | mode)_repeated f | or EUT front to p | hantom      |          |
| Frequency   | Channel     | MHz   | Conducted Output | Measured(W/kg)    | Amb.        | Liquid   |
|             |             |       | Power (Average)  | 1g                | Temp[°C]    | Temp[°C] |
| 850 MHz     | 251         | 848.8 | 33.3dbm          | 0.662             | 22.1        | 21.7     |
| Body worn ( | (testing ir | GPRS  | mode)_repeated \ | with Memory car   | d           |          |
| Frequency   | Channel     | MHz   | Conducted Output | Measured(W/kg)    | Amb.        | Liquid   |
|             |             |       | Power (Average)  | 1g                | Temp[°C]    | Temp[°C] |
| 850 MHz     | 251         | 848.8 | 33.3dbm          | 1.31              | 22.1        | 21.7     |
| Body worn ( | (testing ir | GPRS  | mode)_repeated \ | with WELLDONE     | Battery     |          |
| Frequency   | Channel     | MHz   | Conducted Output | Measured(W/kg)    | Amb.        | Liquid   |
|             |             |       | Power (Average)  | 1g                | Temp[°C]    | Temp[°C] |
| 850 MHz     | 251         | 848.8 | 33.3dbm          | 1.36              | 22.1        | 21.7     |

### **PCS 1900 MHZ**

| Right Head   | Right Head (Cheek Position) |         |                                     |                      |                  |                    |  |  |  |  |
|--------------|-----------------------------|---------|-------------------------------------|----------------------|------------------|--------------------|--|--|--|--|
| Frequency    | Channel                     | MHz     | Conducted Output<br>Power (Average) | Measured(W/kg)<br>1g | Amb.<br>Temp[°C] | Liquid<br>Temp[°C] |  |  |  |  |
| 460          | 512                         | 1850.2  | 30.3dbm                             | 1.3                  | 22.1             | 21.7               |  |  |  |  |
| 1900 MHz     | 661                         | 1880    | 30.1dbm                             | 1.37                 | 22.1             | 21.7               |  |  |  |  |
|              | 810                         | 1909.8  | 30dbm                               | 1.18                 | 22.1             | 21.7               |  |  |  |  |
| Left Head (0 | Cheek Pos                   | sition) |                                     |                      |                  |                    |  |  |  |  |
| Frequency    | Channel                     | MHz     | Conducted Output<br>Power (Average) | Measured(W/kg)<br>1g | Amb.<br>Temp[°C] | Liquid<br>Temp[°C] |  |  |  |  |
|              | 512                         | 1850.2  | 30.3dbm                             | 0.955                | 22.1             | 21.7               |  |  |  |  |
| 1900 MHz     | 661                         | 1880    | 30.1dbm                             | 1.05                 | 22.1             | 21.7               |  |  |  |  |
|              | 810                         | 1909.8  | 30dbm                               | 0.935                | 22.1             | 21.7               |  |  |  |  |

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| Right Head   | (15° Tilt I | Position |                                     |                      |                  |                    |
|--------------|-------------|----------|-------------------------------------|----------------------|------------------|--------------------|
| Frequency    | Channel     | MHz      | Conducted Output<br>Power (Average) | Measured(W/kg)<br>1g | Amb.<br>Temp[°C] | Liquid<br>Temp[°C] |
|              | 512         | 1850.2   | 30.3dbm                             | 0.479                | 22.1             | 21.7               |
| 1900 MHz     | 661         | 1880     | 30.1dbm                             | 0.542                | 22.1             | 21.7               |
|              | 810         | 1909.8   | 30dbm                               | 0.479                | 22.1             | 21.7               |
| Left Head (* | 15° Tilt Po | osition) |                                     |                      |                  |                    |
| Frequency    | Channel     | MHz      | Conducted Output<br>Power (Average) | Measured(W/kg)<br>1g | Amb.<br>Temp[°C] | Liquid<br>Temp[°C] |
|              | 512         | 1850.2   | 30.3dbm                             | 0.469                | 22.1             | 21.7               |
| 1900 MHz     | 661         | 1880     | 30.1dbm                             | 0.531                | 22.1             | 21.7               |
|              | 810         | 1909.8   | 30dbm                               | 0.508                | 22.1             | 21.7               |
| Body worn    | (testing ir | GPRS     | mode)                               |                      |                  |                    |
| Frequency    | Channel     | MHz      | Conducted Output<br>Power (Average) | Measured(W/kg)<br>1g | Amb.<br>Temp[°C] | Liquid<br>Temp[°C] |
|              | 512         | 1850.2   | 30.1dbm                             | 1.05                 | 22.1             | 21.7               |
| 1900 MHz     | 661         | 1880     | 29.8dbm                             | 0.999                | 22.1             | 21.7               |
|              | 810         | 1909.8   | 29.6dbm                             | 0.825                | 22.1             | 21.7               |

### WCDMA BAND 4

| Right Head   | Right Head (Cheek Position) |         |                                     |                      |                  |                    |  |  |  |  |
|--------------|-----------------------------|---------|-------------------------------------|----------------------|------------------|--------------------|--|--|--|--|
| Frequency    | Channel                     | MHz     | Conducted Output<br>Power (Average) | Measured(W/kg)<br>1g | Amb.<br>Temp[°C] | Liquid<br>Temp[°C] |  |  |  |  |
|              | 1312                        | 1712.4  | 22.81dbm                            | 1.07                 | 22.1             | 21.7               |  |  |  |  |
| WCDMA B4     | 1412                        | 1732.6  | 22.76dbm                            | 1.05                 | 22.1             | 21.7               |  |  |  |  |
|              | 1513                        | 1752.6  | 23.01dbm                            | 1.41                 | 22.1             | 21.7               |  |  |  |  |
| Left Head (C | Cheek Pos                   | sition) |                                     | /                    |                  |                    |  |  |  |  |
| Frequency    | Channel                     | MHz     | Conducted Output<br>Power (Average) | Measured(W/kg)<br>1g | Amb.<br>Temp[°C] | Liquid<br>Temp[°C] |  |  |  |  |
|              | 1312                        | 1712.4  | 22.81dbm                            | 0.805                | 22.1             | 21.7               |  |  |  |  |
| WCDMA B4     | 1412                        | 1732.6  | 22.76dbm                            | 0.729                | 22.1             | 21.7               |  |  |  |  |
|              | 1513                        | 1752.6  | 23.01dbm                            | 0.932                | 22.1             | 21.7               |  |  |  |  |

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| (15° Tilt I | Position  |   |  |  |   |
|-------------|---|---|--|--|---|
| Channel     | MHz   | Conducted Output  | Measured(W/kg)   | Amb.   | Liquid  |
|             |   | Power (Average)   | 1g   | Temp[°C]   | Temp[°C   |
| 1312        | 1712.4  | 22.81dbm  | 0.384  | 22.1   | 21.7  |
| 1412        | 1732.6  | 22.76dbm  | 0.391  | 22.1   | 21.7  |
| 1513        | 1752.6  | 23.01dbm  | 0.521  | 22.1   | 21.7  |
| 15° Tilt Po | osition)  |   |  |  |   |
| Channel     | MHz   | Conducted Output  | Measured(W/kg)   | Amb.   | Liquid  |
|             |   | Power (Average)   | 1g   | Temp[°C]   | Temp[°C   |
| 1312        | 1712.4  | 22.81dbm  | 0.368  | 22.1   | 21.7  |
| 1412        | 1732.6  | 22.76dbm  | 0.353  | 22.1   | 21.7  |
| 1513        | 1752.6  | 23.01dbm  | 0.48   | 22.1   | 21.7  |
| (Cheek Po   | osition)  | _repeated with M  | lemory card  |  |   |
| Channel     | MHz   | Conducted Output  | Measured(W/kg)   | Amb.   | Liquid  |
|             |   | Power (Average)   | 1g   | Temp[°C]   | Temp[°C   |
| 1513        | 1752.6  | 23.01dbm  | 1.34   | 22.1   | 21.7  |
| (Cheek Po   | osition)  | _repeated with W  | ELLDONE Batter   | у  |   |
| Channel     | MHz   | Conducted Output  | Measured(W/kg)   | Amb.   | Liquid  |
|             |   | Power (Average)   | 1g   | Temp[°C]   | Temp[°C   |
| 1513        | 1752.6  | 23.01dbm  | 1.55   | 22.1   | 21.7  |
|             |   |   |  |  |   |
| Channel     | MHz   | Conducted Output  | Measured(W/kg)   | Amb.   | Liquid  |
|             |   | Power (Average)   | 1g   | Temp[°C]   | Temp[°C]  |
| 1312        | 1712.4  | 22.81dbm  | 0.496  | 22.1   | 21.7  |
| 1412        | 1732.6  | 22.76dbm  | 0.464  | 22.1   | 21.7  |
| 1513        | 1752.6  | 23.01dbm  | 0.592  | 22.1   | 21.7  |
|             | Channel<br>1312<br>1412<br>1513<br>15° Tilt Po<br>Channel<br>1312<br>1412<br>1513<br>(Cheek Po<br>Channel<br>1513<br>(Cheek Po<br>Channel<br>1513<br>(Cheek Po<br>Channel<br>1513<br>(Cheek Po<br>Channel<br>1513 | Channel       MHz         1312       1712.4         1412       1732.6         1513       1752.6         15° Tilt Position         Channel       MHz         1312       1712.4         1412       1732.6         15° Tilt Position         Channel       MHz         1312       1712.4         1412       1732.6         1513       1752.6         (Cheek Position)       MHz         1513       1752.6         (Cheek Position)       MHz         1513       1752.6         (Channel       MHz         1312       1712.4         1312       1712.4         1412       1732.6 | Power (Average)           1312         1712.4         22.81dbm           1412         1732.6         22.76dbm           1513         1752.6         23.01dbm           15° Tilt Position)         IS° Tilt Power (Average)         IS°           Channel         MHz         Conducted Output Power (Average)           1312         1712.4         22.81dbm           1412         1732.6         22.76dbm           1312         1712.4         22.81dbm           1412         1732.6         23.01dbm           1412         1732.6         23.01dbm           1513         1752.6         23.01dbm           Channel         MHz         Conducted Output Power (Average)           1513         1752.6         23.01dbm           Channel         MHz         Conducted Output Power (Average)           1513         1752.6         23.01dbm           Channel         MHz         Conducted Output Power (Average)           1513         1752.6         23.01dbm           Channel         MHz         Conducted Output Power (Average)           1513         1752.6         23.01dbm           Channel         MHz         Conducted Output Power (Average) | Channel         MHz         Conducted Output<br>Power (Average)         Measured(W/kg)<br>1g           1312         1712.4         22.81dbm         0.384           1412         1732.6         22.76dbm         0.391           1513         1752.6         23.01dbm         0.521           15° Tilt Position)         Source (Average)         Measured(W/kg)<br>0.391           Channel         MHz         Conducted Output<br>Power (Average)         Measured(W/kg)<br>1g           1312         1712.4         22.81dbm         0.368           1412         1732.6         22.76dbm         0.353           1513         1752.6         23.01dbm         0.48           (Cheek Position)         _repeated with Memory card         Measured(W/kg)           Channel         MHz         Conducted Output<br>Power (Average)         Measured(W/kg)           1513         1752.6         23.01dbm         1.34           (Cheek Position)_repeated with WELLDONE Batter         1g         134           (Cheek Position)_repeated output<br>Power (Average)         Measured(W/kg)         1g           1513         1752.6         23.01dbm         1.34           (Cheek Position)_repeated with WELLDONE Batter         1g         1g           1513         1752. | Channel         MHz         Conducted Output<br>Power (Average)         Measured(W/kg)<br>1g         Amb.<br>Temp[°C]           1312         1712.4         22.81dbm         0.384         22.1           1412         1732.6         22.76dbm         0.391         22.1           1513         1752.6         23.01dbm         0.521         22.1           15* Tilt Position          22.1         22.1         22.1           15* Tilt Position         MHz         Conducted Output<br>Power (Average)         Measured(W/kg)<br>1g         Amb.<br>Temp[°C]           1312         1712.4         22.81dbm         0.368         22.1           1412         1732.6         22.76dbm         0.353         22.1           1513         1752.6         23.01dbm         0.48         22.1           1513         1752.6         23.01dbm         0.48         22.1           (Cheek Position) _repeated with Memory card         Temp[°C]         Temp[°C]           1513         1752.6         23.01dbm         1.34         22.1           (Cheek Position) _repeated with WELLDONE Battery         Temp[°C]         Temp[°C]           1513         1752.6         23.01dbm         1.35         22.1           (Cheek Position) _repeat |

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C]

### WCDMA BAND 4 HSDPA mode

| Body worn |         |        |                                     |                      |                  |                   |
|-----------|---------|--------|-------------------------------------|----------------------|------------------|-------------------|
| Frequency | Channel | MHz    | Conducted Output<br>Power (Average) | Measured(W/kg)<br>1g | Amb.<br>Temp[°C] | Liquid<br>Temp[°( |
|           | 1312    | 1712.4 | 22.69dbm                            | 0.45                 | 22.1             | 21.7              |
| WCDMA B4  | 1412    | 1732.6 | 22.62dbm                            | 0.43                 | 22.1             | 21.7              |
|           | 1513    | 1752.6 | 22.85dbm                            | 0.532                | 22.1             | 21.7              |

### WCDMA BAND 4 HSUPA mode

| Body worn |         |        |                                     |                      |                  |                    |
|-----------|---------|--------|-------------------------------------|----------------------|------------------|--------------------|
| Frequency | Channel | MHz    | Conducted Output<br>Power (Average) | Measured(W/kg)<br>1g | Amb.<br>Temp[°C] | Liquid<br>Temp[°C] |
|           | 1312    | 1712.4 | 22.73dbm                            | 0.479                | 22.1             | 21.7               |
| WCDMA B4  | 1412    | 1732.6 | 22.67dbm                            | 0.445                | 22.1             | 21.7               |
|           | 1513    | 1752.6 | 22.91dbm                            | 0.565                | 22.1             | 21.7               |

### WLAN802.11 b

| Body worn                                    |                       |        |                  |                |          |          |
|--|-----------------------|--------|------------------|----------------|----------|----------|
| Frequency                                    | Channel               | MHz    | Conducted Output | Measured(W/kg) | Amb.     | Liquid   |
|  |                       |        | Power (Average)  | 1g             | Temp[°C] | Temp[°C] |
|  | 1                     | 2412   | 17.21dbm         | 0.143          | 22.1     | 21.7     |
| WLAN<br>802.11 b                             | 6                     | 2437   | 17.38dbm         | 0.163          | 22.1     | 21.7     |
|  | 11                    | 2462   | 17.92dbm         | 0.162          | 22.1     | 21.7     |
| Body worn- repeated for EUT front to phantom |                       |        |                  |                |          |          |
| Frequency                                    | Channel               | MHz    | Conducted Output | Measured(W/kg) | Amb.     | Liquid   |
|  |                       |        | Power (Average)  | 1g             | Temp[°C] | Temp[°C] |
| WLAN<br>802.11 b                             | 6                     | 2437   | 17.38dbm         | 0.049          | 22.1     | 21.7     |
| Body worn-                                   | repeated <sup>•</sup> | with M | emory card       |                |          |          |
| Frequency                                    | Channel               | MHz    | Conducted Output | Measured(W/kg) | Amb.     | Liquid   |
|  |                       |        | Power (Average)  | 1g             | Temp[°C] | Temp[°C] |
| WLAN<br>802.11 b                             | 6                     | 2437   | 17.38dbm         | 0.147          | 22.1     | 21.7     |

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| Body worn-repeated with Bluetooth active |          |        |                                     |                      |                  |                    |  |  |  |
|--|----------|--------|-------------------------------------|----------------------|------------------|--------------------|--|--|--|
| Frequency                                | Channel  | MHz    | Conducted Output<br>Power (Average) | Measured(W/kg)<br>1g | Amb.<br>Temp[°C] | Liquid<br>Temp[°C] |  |  |  |
| WLAN<br>802.11 b                         | 6        | 2437   | 17.38dbm                            | 0.154                | 22.1             | 21.7               |  |  |  |
| Body worn-                               | repeated | with W | <b>/ELLDONE</b> Battery             |                      |                  |                    |  |  |  |
| Frequency                                | Channel  | MHz    | Conducted Output                    | Measured(W/kg)       | Amb.             | Liquid             |  |  |  |
|  |          |        | Power (Average)                     | 1g                   | Temp[°C]         | Temp[°C]           |  |  |  |
| WLAN<br>802.11 b                         | 6        | 2437   | 17.38dbm                            | 0.145                | 22.1             | 21.7               |  |  |  |

### WLAN 802.11 g

| Body worn        |         |      | ALCO                                |                      |                  |                    |
|------------------|---------|------|-------------------------------------|----------------------|------------------|--------------------|
| Frequency        | Channel | MHz  | Conducted Output<br>Power (Average) | Measured(W/kg)<br>1g | Amb.<br>Temp[°C] | Liquid<br>Temp[°C] |
|                  | 1       | 2412 | 13.5dbm                             | 0.033                | 22.1             | 21.7               |
| WLAN<br>802.11 g | 6       | 2437 | 13.8dbm                             | 0.039                | 22.1             | 21.7               |
| 002.11 g         | 11      | 2462 | 13.6dbm                             | 0.038                | 22.1             | 21.7               |

### Second solution measurement result

### GSM 850 MHZ

| Left Head (Cheek Position) |             |       |                  |                |          |          |  |  |  |
|----------------------------|-------------|-------|------------------|----------------|----------|----------|--|--|--|
| Frequency                  | Channel     | MHz   | Conducted Output | Amb.           | Liquid   |          |  |  |  |
|                            |             |       | Power (Average)  | 1g             | Temp[°C] | Temp[°C] |  |  |  |
| 850 MHz                    | 251         | 848.8 | 33.1dbm          | 1.25           | 22.1     | 21.7     |  |  |  |
| Body worn                  | (testing in | GPRS  | mode)            |                |          |          |  |  |  |
| Frequency                  | Channel     | MHz   | Conducted Output | Measured(W/kg) | Amb.     | Liquid   |  |  |  |
|                            |             |       | Power (Average)  | 1g             | Temp[°C] | Temp[°C] |  |  |  |
| 850 MHz                    | 251         | 848.8 | 32.1dbm          | 1.35           | 22.1     | 21.7     |  |  |  |

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### **PCS 1900 MHZ**

| Right Head (Cheek Position) |             |        |                                     |                      |                    |                    |  |  |
|-----------------------------|-------------|--------|-------------------------------------|----------------------|--------------------|--------------------|--|--|
| Frequency                   | Channel     | MHz    | Conducted Output<br>Power (Average) | Amb.<br>Temp[°C]     | Liquid<br>Temp[°C] |                    |  |  |
| 1900 MHz                    | 661         | 1880   | 29.9dbm                             | 1.37                 | 22.1               | 21.7               |  |  |
| Body worn                   | (testing ir | ו GPRS | mode)                               |                      |                    |                    |  |  |
| Frequency                   | Channel     | MHz    | Conducted Output<br>Power (Average) | Measured(W/kg)<br>1g | Amb.<br>Temp[°C]   | Liquid<br>Temp[°C] |  |  |
| 1900 MHz                    | 512         | 1850.2 | 29.6dbm                             | 1.15                 | 22.1               | 21.7               |  |  |

### WCDMA BAND 4

| Right Head (Cheek Position)_repeated with WELLDONE Battery |         |   |                  |                |          |          |  |  |  |
|--|---------|---|------------------|----------------|----------|----------|--|--|--|
| Frequency  | Channel | el MHz Conducted Output Measured(W/kg) Amb. L |                  |                |          |          |  |  |  |
|  |         |   | Power (Average)  | 1g             | Temp[°C] | Temp[°C] |  |  |  |
| WCDMA B4   | 1513    | 1752.6  | 23dbm            | 1.39           | 22.1     | 21.7     |  |  |  |
| Body worn  |         |   |                  |                | 1 8-2-   |          |  |  |  |
| Frequency  | Channel | MHz   | Conducted Output | Measured(W/kg) | Amb.     | Liquid   |  |  |  |
|  |         |   | Power (Average)  | 1g             | Temp[°C] | Temp[°C] |  |  |  |
| WCDMA B4   | 1513    | 1752.6  | 23dbm            | 0.646          | 22.1     | 21.7     |  |  |  |

### WCDMA BAND 4 HSDPA mode

| Body worn |         |        |                                     |                      |                  |                    |
|-----------|---------|--------|-------------------------------------|----------------------|------------------|--------------------|
| Frequency | Channel | MHz    | Conducted Output<br>Power (Average) | Measured(W/kg)<br>1g | Amb.<br>Temp[°C] | Liquid<br>Temp[°C] |
| WCDMA B4  | 1513    | 1752.6 | 22.7dbm                             | 0.546                | 22.1             | 21.7               |

### WCDMA BAND 4 HSUPA mode

| Body worn |         |        |                                     |                      |                  |                    |
|-----------|---------|--------|-------------------------------------|----------------------|------------------|--------------------|
| Frequency | Channel | MHz    | Conducted Output<br>Power (Average) | Measured(W/kg)<br>1g | Amb.<br>Temp[°C] | Liquid<br>Temp[°C] |
| WCDMA B4  | 1513    | 1752.6 | 22.87dbm                            | 0.588                | 22.1             | 21.7               |

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### WLAN802.11 b

| Body worn        |         |      |                  |                |          |          |
|------------------|---------|------|------------------|----------------|----------|----------|
| Frequency        | Channel | MHz  | Conducted Output | Measured(W/kg) | Amb.     | Liquid   |
|                  |         |      | Power (Average)  | 1g             | Temp[°C] | Temp[°C] |
| WLAN<br>802.11 b | 6       | 2437 | 17.32dbm         | 0.157          | 22.1     | 21.7     |

### WLAN 802.11 g

| Body worn        |         |      |                                     |                      |                  |                    |  |  |  |
|------------------|---------|------|-------------------------------------|----------------------|------------------|--------------------|--|--|--|
| Frequency        | Channel | MHz  | Conducted Output<br>Power (Average) | Measured(W/kg)<br>1g | Amb.<br>Temp[°C] | Liquid<br>Temp[°C] |  |  |  |
| WLAN<br>802.11 g | 6       | 2437 | 13.7dbm                             | 0.037                | 22.1             | 21.7               |  |  |  |

### Bluetooth

| Body worn |         |  |         |                      |                  |                    |  |  |
|-----------|---------|--|---------|----------------------|------------------|--------------------|--|--|
| Frequency | Channel | nel MHz Conducted Output Measured(W/kg<br>Power (Average) 1g |         | Measured(W/kg)<br>1g | Amb.<br>Temp[°C] | Liquid<br>Temp[°C] |  |  |
|           | 0       | 2402   | 0.28dbm | 0.00234              | 22.1             | 21.7               |  |  |
| Bluetooth | 39      | 2441   | 0.72dbm | 0.0031               | 22.1             | 21.7               |  |  |
|           | 78      | 2480   | 0.48dbm | 0.00242              | 22.1             | 21.7               |  |  |

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### 3. Instruments List

| Manufacturer                       | Device  | Туре                                    | Serial<br>number               | Date of last calibration                                 |
|------------------------------------|---|---|--------------------------------|--|
| Schmid & Partner<br>Engineering AG | Dosimetric E-FieldProbe                           | EX3DV3                                  | 3526                           | Aug.26.2008  |
| Schmid & Partner<br>Engineering AG | 850/1800/1900/2450MHz<br>System Validation Dipole | D835V2<br>D1800V2<br>D1900V2<br>D2450V2 | 4d063<br>2d061<br>5d027<br>727 | Jun.06.2008<br>Apr.15.2008<br>Apr.15.2008<br>Apr.11.2008 |
| Schmid & Partner<br>Engineering AG | Data acquisition<br>Electronics                   | DAE4                                    | 547                            | Jan.24.2008  |
| Schmid & Partner<br>Engineering AG | Software  | DASY 4<br>V4.7<br>Build71               | N/A                            | Calibration<br>not required                              |
| Schmid & Partner<br>Engineering AG | Phantom   | SAM                                     | N/A                            | Calibration<br>not required                              |
| Agilent                            | Network Analyzer                                  | 8753D                                   | 3410A56662                     | Apr.16.2008  |
| Agilent                            | Dielectric Probe Kit                              | 85070D                                  | US01440168                     | Calibration<br>not required                              |
| Agilent                            | Dual-directional coupler                          | 778D<br>777D                            | 50313<br>50014                 | Aug.26.2008<br>Aug.26.2008                               |
| Agilent                            | RF Signal Generator                               | E4438c                                  | MY45093613                     | May.21.2008  |
| Agilent                            | Power Sensor                                      | 8481H                                   | MY41091361                     | May.20.2008  |
| R&S                                | Radio Communication<br>Test                       | CMU200                                  | 109326                         | Mar.11.2008  |

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Date/Time: 2008/12/17 01:42:18

Re Cheek\_CH128

DUT: SAPP 300;

Communication System: GSM 850; Frequency: 824.2 MHz;Duty Cycle: 1:8.3 Medium: Head 850 MHz Medium parameters used (interpolated): f = 824.2 MHz;  $\sigma$  = 0.89 mho/m;  $\epsilon_r$  = 42.4;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Right Section

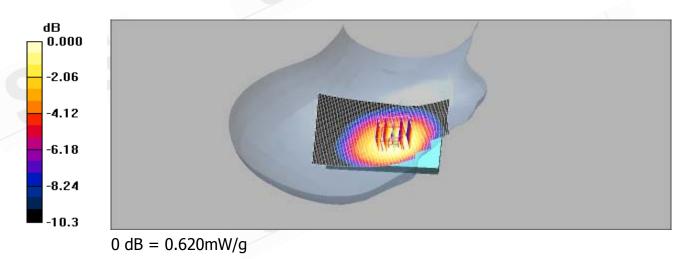
- Probe: EX3DV3 SN3526; ConvF(10.93, 10.93, 10.93); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

**RE Cheek/Area Scan (61x91x1):** Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.625 mW/g

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

Reference Value = 7.83 V/m; Power Drift = -0.144 dB Peak SAR (extrapolated) = 0.736 W/kg

#### SAR(1 g) = 0.589 mW/g; SAR(10 g) = 0.440 mW/gMaximum value of SAR (measured) = 0.620 mW/g



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Report No. : ES/2008/C0010 Page : 29 of 161

Date/Time: 2008/12/17 02:10:45

Re Cheek\_CH190

DUT: SAPP 300;

Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3 Medium: Head 850 MHz Medium parameters used: f = 837 MHz;  $\sigma$  = 0.902 mho/m;  $\epsilon_r$  = 42.3;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV3 SN3526; ConvF(10.93, 10.93, 10.93); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

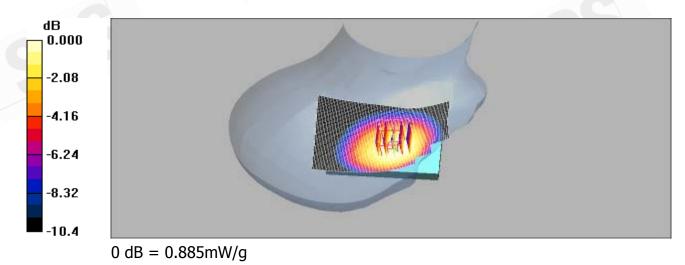
**RE Cheek/Area Scan (61x91x1):** Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.904 mW/g

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

Reference Value = 9.30 V/m; Power Drift = -0.101 dBPeak SAR (extrapolated) = 1.06 W/kg

### SAR(1 g) = 0.848 mW/g; SAR(10 g) = 0.635 mW/g

Maximum value of SAR (measured) = 0.885 mW/g



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Report No. : ES/2008/C0010 Page : 30 of 161

Date/Time: 2008/12/17 02:38:11

Re Cheek\_CH251

**DUT: SAPP 300;** 

Communication System: GSM 850; Frequency: 848.8 MHz; Duty Cycle: 1:8.3 Medium: Head 850 MHz Medium parameters used: f = 849 MHz;  $\sigma = 0.914$  mho/m;  $\varepsilon_r = 42.1$ ;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Right Section

**DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(10.93, 10.93, 10.93); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

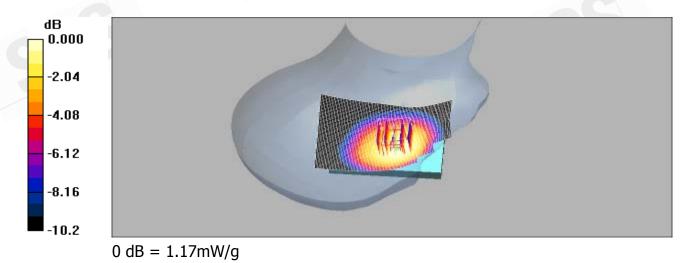
RE Cheek/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 1.16 mW/g

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

Reference Value = 10.4 V/m; Power Drift = 0.016 dBPeak SAR (extrapolated) = 1.40 W/kg

### SAR(1 g) = 1.11 mW/g; SAR(10 g) = 0.826 mW/g

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



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Date/Time: 2008/12/17 04:58:40

Le Cheek\_CH128

**DUT: SAPP 300;** 

Communication System: GSM 850; Frequency: 824.2 MHz; Duty Cycle: 1:8.3 Medium: Head 850 MHz Medium parameters used (interpolated): f = 824.2 MHz;  $\sigma = 0.89$ mho/m;  $\epsilon_r = 42.4$ ;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Left Section

**DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(10.93, 10.93, 10.93); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

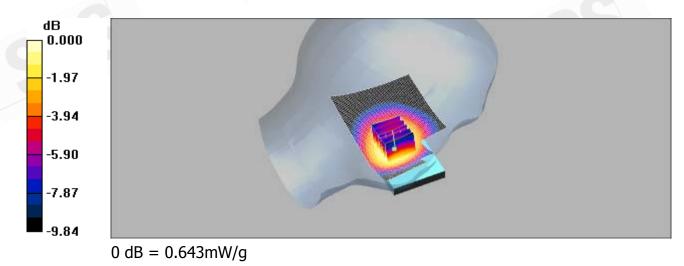
LE Cheek/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.653 mW/g

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

Reference Value = 9.45 V/m; Power Drift = -0.160 dBPeak SAR (extrapolated) = 0.795 W/kg

### SAR(1 g) = 0.611 mW/g; SAR(10 g) = 0.453 mW/g

Maximum value of SAR (measured) = 0.643 mW/g



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Date/Time: 2008/12/17 05:28:03

Le Cheek\_CH190

**DUT: SAPP 300;** 

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:8.3 Medium: Head 850 MHz Medium parameters used: f = 837 MHz;  $\sigma = 0.902$  mho/m;  $\varepsilon_r = 42.3$ ;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Left Section

**DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(10.93, 10.93, 10.93); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

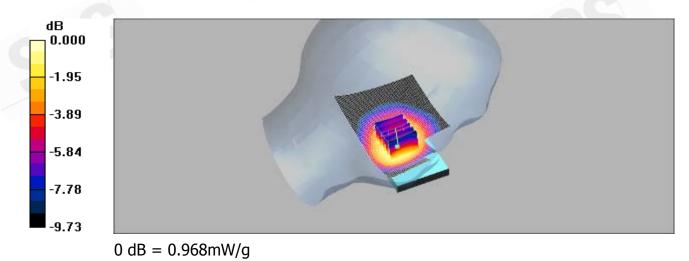
LE Cheek/Area Scan (61x91x1): Measurement grid: dx=15mm, dv=15mm Maximum value of SAR (interpolated) = 0.968 mW/g

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

Reference Value = 10.8 V/m; Power Drift = 0.023 dB Peak SAR (extrapolated) = 1.18 W/kg

### SAR(1 g) = 0.916 mW/g; SAR(10 g) = 0.674 mW/g

Maximum value of SAR (measured) = 0.968 mW/g



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Report No. : ES/2008/C0010 Page : 33 of 161

Date/Time: 2008/12/17 05:57:11

Le Cheek\_CH251

**DUT: SAPP 300;** 

Communication System: GSM 850; Frequency: 848.8 MHz; Duty Cycle: 1:8.3 Medium: Head 850 MHz Medium parameters used: f = 849 MHz;  $\sigma = 0.914$  mho/m;  $\varepsilon_r = 42.1$ ;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Left Section

**DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(10.93, 10.93, 10.93); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

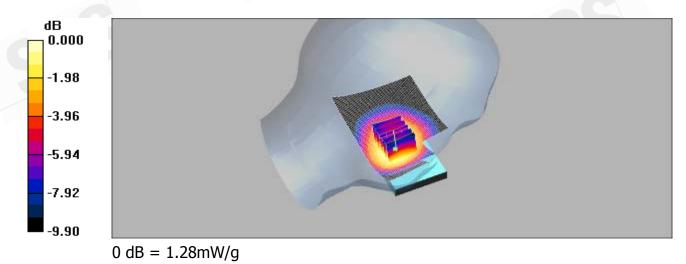
LE Cheek/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 1.29 mW/g

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

Reference Value = 12.4 V/m; Power Drift = 0.000 dBPeak SAR (extrapolated) = 1.56 W/kg

### SAR(1 g) = 1.22 mW/g; SAR(10 g) = 0.891 mW/g

Maximum value of SAR (measured) = 1.28 mW/g



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Report No. : ES/2008/C0010 Page : 34 of 161

Date/Time: 2008/12/17 03:09:03

Re Tilt\_CH128

DUT: SAPP 300;

Communication System: GSM 850; Frequency: 824.2 MHz;Duty Cycle: 1:8.3 Medium: Head 850 MHz Medium parameters used (interpolated): f = 824.2 MHz;  $\sigma$  = 0.89 mho/m;  $\epsilon_r$  = 42.4;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV3 SN3526; ConvF(10.93, 10.93, 10.93); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

**RE Tilt/Area Scan (61x91x1):** Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.360 mW/g

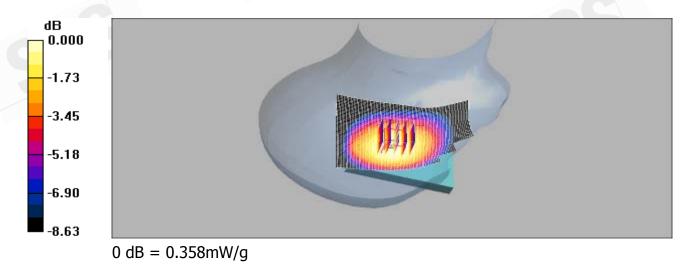
# **RE Tilt/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 13.3 V/m; Power Drift = 0.026 dBPeak SAR (extrapolated) = 0.442 W/kg

#### SAR(1 g) = 0.344 mW/g; SAR(10 g) = 0.259 mW/g

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Maximum value of SAR (measured) = 0.358 mW/g



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Report No. : ES/2008/C0010 Page : 35 of 161

Date/Time: 2008/12/17 03:40:20

Re Tilt\_CH190

**DUT: SAPP 300;** 

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:8.3 Medium: Head 850 MHz Medium parameters used: f = 837 MHz;  $\sigma = 0.902$  mho/m;  $\varepsilon_r = 42.3$ ;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Right Section

**DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(10.93, 10.93, 10.93); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

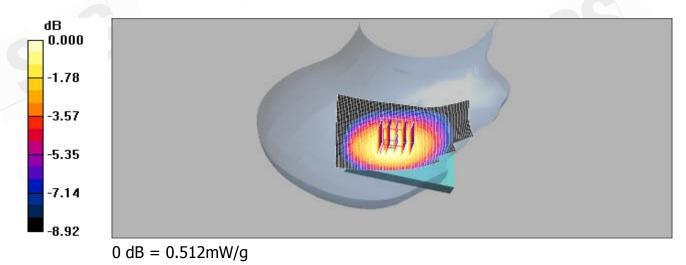
**RE Tilt/Area Scan (61x91x1):** Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.509 mW/g

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

Reference Value = 15.8 V/m; Power Drift = -0.026 dBPeak SAR (extrapolated) = 0.625 W/kg

### SAR(1 g) = 0.491 mW/g; SAR(10 g) = 0.367 mW/g

Maximum value of SAR (measured) = 0.512 mW/g



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Report No. : ES/2008/C0010 Page : 36 of 161

Date/Time: 2008/12/17 04:13:16

Re Tilt\_CH251

DUT: SAPP 300;

Communication System: GSM 850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3 Medium: Head 850 MHz Medium parameters used: f = 849 MHz;  $\sigma$  = 0.914 mho/m;  $\epsilon_r$  = 42.1;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV3 SN3526; ConvF(10.93, 10.93, 10.93); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

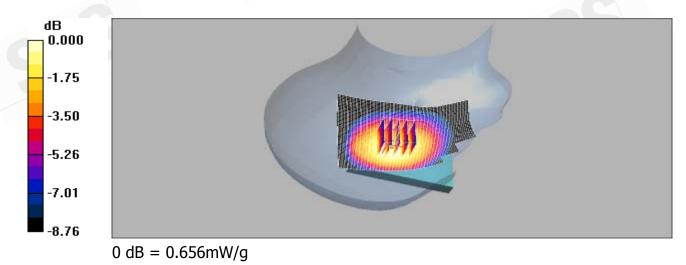
**RE Tilt/Area Scan (61x91x1):** Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.660 mW/g

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

Reference Value = 17.5 V/m; Power Drift = 0.039 dBPeak SAR (extrapolated) = 0.803 W/kg

#### SAR(1 g) = 0.626 mW/g; SAR(10 g) = 0.469 mW/g

Maximum value of SAR (measured) = 0.656 mW/g



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Report No. : ES/2008/C0010 Page : 37 of 161

Date/Time: 2008/12/17 06:30:27

Le Tilt\_CH128

DUT: SAPP 300;

Communication System: GSM 850; Frequency: 824.2 MHz;Duty Cycle: 1:8.3 Medium: Head 850 MHz Medium parameters used (interpolated): f = 824.2 MHz;  $\sigma$  = 0.89 mho/m;  $\epsilon_r$  = 42.4;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV3 SN3526; ConvF(10.93, 10.93, 10.93); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

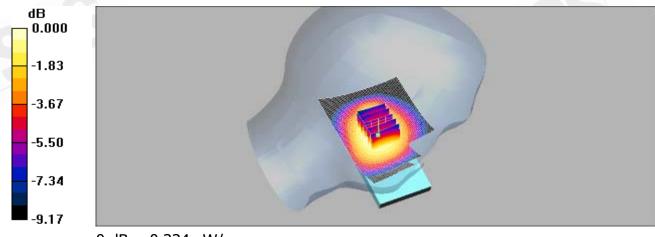
**LE Tilt/Area Scan (61x91x1):** Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.337 mW/g

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

Reference Value = 12.8 V/m; Power Drift = -0.001 dB Peak SAR (extrapolated) = 0.413 W/kg

### SAR(1 g) = 0.320 mW/g; SAR(10 g) = 0.241 mW/g

Maximum value of SAR (measured) = 0.334 mW/g



 $0 \, dB = 0.334 mW/g$ 

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Report No. : ES/2008/C0010 Page : 38 of 161

Date/Time: 2008/12/17 07:02:30

Le Tilt\_CH190

DUT: SAPP 300;

Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3 Medium: Head 850 MHz Medium parameters used: f = 837 MHz;  $\sigma$  = 0.902 mho/m;  $\epsilon_r$  = 42.3;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV3 SN3526; ConvF(10.93, 10.93, 10.93); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

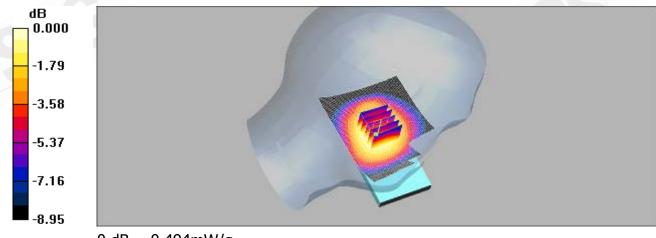
**LE Tilt/Area Scan (61x91x1):** Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.504 mW/g

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

Reference Value = 15.5 V/m; Power Drift = -0.060 dBPeak SAR (extrapolated) = 0.598 W/kg

### SAR(1 g) = 0.475 mW/g; SAR(10 g) = 0.357 mW/g

Maximum value of SAR (measured) = 0.494 mW/g



 $0 \, dB = 0.494 \, mW/g$ 

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Report No. : ES/2008/C0010 Page : 39 of 161

Date/Time: 2008/12/17 07:30:37

Le Tilt\_CH251

DUT: SAPP 300;

Communication System: GSM 850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3 Medium: Head 850 MHz Medium parameters used: f = 849 MHz;  $\sigma$  = 0.914 mho/m;  $\epsilon_r$  = 42.1;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV3 SN3526; ConvF(10.93, 10.93, 10.93); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

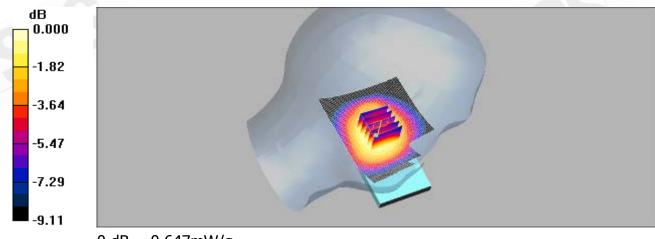
**LE Tilt/Area Scan (61x91x1):** Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.656 mW/g

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

Reference Value = 17.5 V/m; Power Drift = -0.083 dBPeak SAR (extrapolated) = 0.786 W/kg

### SAR(1 g) = 0.619 mW/g; SAR(10 g) = 0.463 mW/g

Maximum value of SAR (measured) = 0.647 mW/g



 $0 \, dB = 0.647 \, mW/g$ 

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Date/Time: 2008/12/18 05:35:07

### BODY\_CH128

**DUT: SAPP 300;** 

Communication System: GSM 850; Frequency: 824.2 MHz; Duty Cycle: 1:4 Medium: Muscle 900 MHz Medium parameters used (interpolated): f = 824.2 MHz;  $\sigma = 0.943$ mho/m;  $\epsilon_r = 55.3$ ;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Flat Section

- Probe: EX3DV3 SN3526; ConvF(10.87, 10.87, 10.87); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

### BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

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

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

Reference Value = 9.69 V/m; Power Drift = -0.129 dB

Peak SAR (extrapolated) = 1.27 W/kg

### SAR(1 g) = 0.969 mW/g; SAR(10 g) = 0.712 mW/g

Maximum value of SAR (measured) = 1.02 mW/g

# BODY/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm,

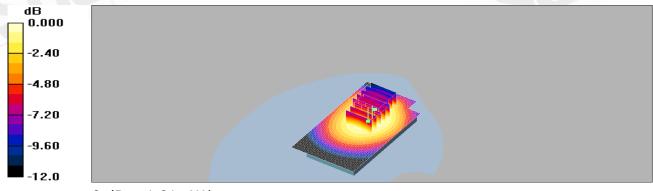
dz=5mm

Reference Value = 9.69 V/m; Power Drift = -0.129 dB

Peak SAR (extrapolated) = 1.27 W/kg

SAR(1 g) = 0.933 mW/g; SAR(10 g) = 0.668 mW/g

Maximum value of SAR (measured) = 1.01 mW/g



#### $0 \, dB = 1.01 \, mW/q$

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Report No. : ES/2008/C0010 Page : 41 of 161

Date/Time: 2008/12/18 06:08:20

BODY\_CH190

**DUT: SAPP 300;** 

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:4 Medium: Muscle 900 MHz Medium parameters used: f = 837 MHz;  $\sigma = 0.958$  mho/m;  $\epsilon_r =$ 55.3;  $\rho = 1000 \text{ kg/m}^3$ 

Phantom section: Flat Section

- Probe: EX3DV3 SN3526; ConvF(10.87, 10.87, 10.87); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

### BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.22 mW/g

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

Reference Value = 11.3 V/m; Power Drift = -0.188 dB

Peak SAR (extrapolated) = 1.50 W/kg

### SAR(1 g) = 1.16 mW/g; SAR(10 g) = 0.848 mW/g

Maximum value of SAR (measured) = 1.22 mW/g

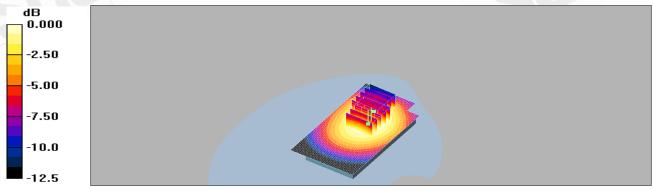
### BODY/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm,

dz=5mm

Reference Value = 11.3 V/m; Power Drift = -0.188 dB

Peak SAR (extrapolated) = 1.49 W/kg

SAR(1 g) = 1.1 mW/g; SAR(10 g) = 0.783 mW/gMaximum value of SAR (measured) = 1.20 mW/g



#### $0 \, dB = 1.20 \, mW/g$

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Report No. : ES/2008/C0010 Page : 42 of 161

Date/Time: 2008/12/18 06:38:34

BODY\_CH251

DUT: SAPP 300;

Communication System: GSM 850; Frequency: 848.8 MHz; Duty Cycle: 1:4 Medium: Muscle 900 MHz Medium parameters used: f = 849 MHz;  $\sigma = 0.971$  mho/m;  $\epsilon_r =$ 55.1;  $\rho = 1000 \text{ kg/m}^3$ 

Phantom section: Flat Section

- Probe: EX3DV3 SN3526; ConvF(10.87, 10.87, 10.87); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

### BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.48 mW/g

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

Reference Value = 11.4 V/m; Power Drift = 0.049 dB

Peak SAR (extrapolated) = 1.89 W/kg

SAR(1 g) = 1.43 mW/g; SAR(10 g) = 1.04 mW/g

Maximum value of SAR (measured) = 1.52 mW/g

# BODY/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm,

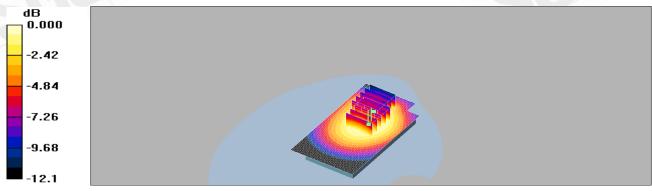
dz=5mm

Reference Value = 11.4 V/m; Power Drift = 0.049 dB

Peak SAR (extrapolated) = 1.91 W/kg

SAR(1 g) = 1.35 mW/g; SAR(10 g) = 0.957 mW/g

Maximum value of SAR (measured) = 1.50 mW/g



#### $0 \, dB = 1.50 \, mW/g$

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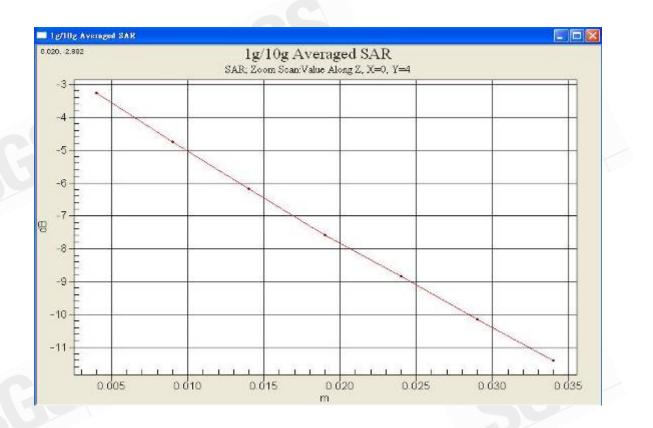
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Date/Time: 2008/12/18 16:23:37

### BODY\_CH251\_repeated for EUT front to phantom

### **DUT: SAPP 300;**

Communication System: GSM 850; Frequency: 848.8 MHz; Duty Cycle: 1:4 Medium: Muscle 900 MHz Medium parameters used: f = 849 MHz;  $\sigma = 0.971$  mho/m;  $\epsilon_r =$ 55.1;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Flat Section

**DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(10.87, 10.87, 10.87); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

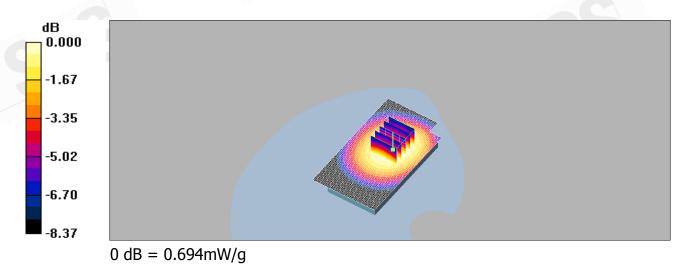
BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.714 mW/g

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

dz=5mmReference Value = 9.15 V/m; Power Drift = -0.125 dBPeak SAR (extrapolated) = 0.850 W/kg

### SAR(1 g) = 0.662 mW/g; SAR(10 g) = 0.496 mW/g

Maximum value of SAR (measured) = 0.694 mW/g



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Date/Time: 2008/12/18 17:02:31

### BODY\_CH251\_repeated Memory card

**DUT: SAPP 300;** 

Communication System: GSM 850; Frequency: 848.8 MHz; Duty Cycle: 1:4 Medium: Muscle 900 MHz Medium parameters used: f = 849 MHz;  $\sigma = 0.971$  mho/m;  $\epsilon_r =$ 55.1;  $\rho = 1000 \text{ kg/m}^3$ 

Phantom section: Flat Section

- Probe: EX3DV3 SN3526; ConvF(10.87, 10.87, 10.87); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

### BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.39 mW/g

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

Reference Value = 11.9 V/m; Power Drift = -0.089 dB

Peak SAR (extrapolated) = 1.72 W/kg

### SAR(1 g) = 1.31 mW/g; SAR(10 g) = 0.959 mW/g

Maximum value of SAR (measured) = 1.39 mW/g

### BODY/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm,

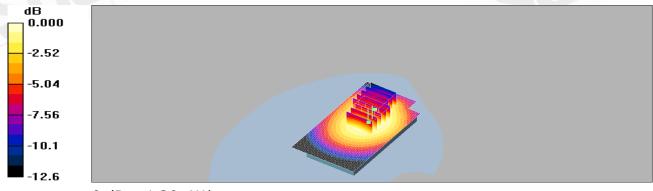
dz=5mm

Reference Value = 11.9 V/m; Power Drift = -0.089 dB

Peak SAR (extrapolated) = 1.78 W/kg

SAR(1 g) = 1.24 mW/g; SAR(10 g) = 0.889 mW/g

Maximum value of SAR (measured) = 1.36 mW/g



 $0 \, dB = 1.36 \, mW/q$ 

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Date/Time: 2008/12/18 17:48:52

### BODY\_CH251\_repeated Bluetooth active

DUT: SAPP 300;

Communication System: GSM 850; Frequency: 848.8 MHz;Duty Cycle: 1:4 Medium: Muscle 900 MHz Medium parameters used: f = 849 MHz;  $\sigma$  = 0.971 mho/m;  $\epsilon_r$  = 55.1;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Elst Section

Phantom section: Flat Section

- Probe: EX3DV3 SN3526; ConvF(10.87, 10.87, 10.87); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

### BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.51 mW/g

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

Reference Value = 12.6 V/m; Power Drift = -0.173 dB

Peak SAR (extrapolated) = 1.87 W/kg

SAR(1 g) = 1.42 mW/g; SAR(10 g) = 1.03 mW/g

Maximum value of SAR (measured) = 1.50 mW/g

## BODY/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm,

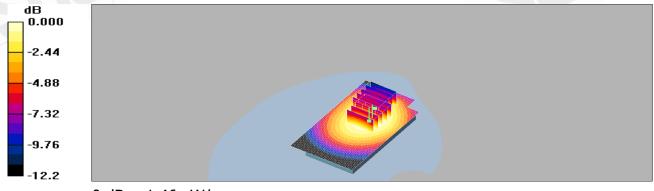
dz=5mm

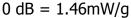
Reference Value = 12.6 V/m; Power Drift = -0.173 dBPeak SAR (extrapolated) = 1.82 W/kg

 $\frac{1}{2} = \frac{1}{2} = \frac{1}$ 

SAR(1 g) = 1.33 mW/g; SAR(10 g) = 0.950 mW/g

Maximum value of SAR (measured) = 1.46 mW/g





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Date/Time: 2008/12/18 20:23:21

### **BODY\_CH251\_ repeated with WELLDONE Battery**

### **DUT: SAPP 300;**

Communication System: GSM 850; Frequency: 848.8 MHz; Duty Cycle: 1:4 Medium: Muscle 900 MHz Medium parameters used: f = 849 MHz;  $\sigma = 0.971$  mho/m;  $\epsilon_r =$ 55.1;  $\rho = 1000 \text{ kg/m}^3$ 

Phantom section: Flat Section

- Probe: EX3DV3 SN3526; ConvF(10.87, 10.87, 10.87); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

### BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.47 mW/g

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

Reference Value = 12.9 V/m; Power Drift = -0.145 dB

Peak SAR (extrapolated) = 1.80 W/kg

SAR(1 g) = 1.36 mW/g; SAR(10 g) = 0.996 mW/g

Maximum value of SAR (measured) = 1.44 mW/g

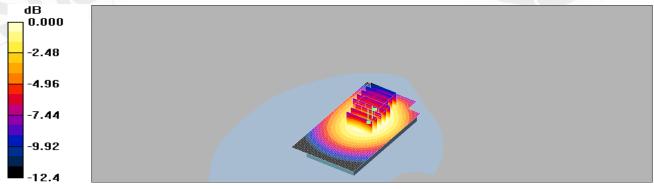
## BODY/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm,

dz=5mm

Reference Value = 12.9 V/m; Power Drift = -0.145 dBPeak SAR (extrapolated) = 1.74 W/kg

SAR(1 g) = 1.27 mW/g; SAR(10 g) = 0.906 mW/g

Maximum value of SAR (measured) = 1.40 mW/g



### $0 \, dB = 1.40 \, mW/q$

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Date/Time: 2008/12/17 09:17:34

Re Cheek\_CH512

**DUT: SAPP 300;** 

Communication System: GSM1900; Frequency: 1850.2 MHz; Duty Cycle: 1:8.3 Medium: Head 1900 MHz Medium parameters used (interpolated): f = 1850.2 MHz;  $\sigma = 1.44$ mho/m;  $\epsilon_r = 41.4$ ;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Right Section

**DASY4** Configuration:

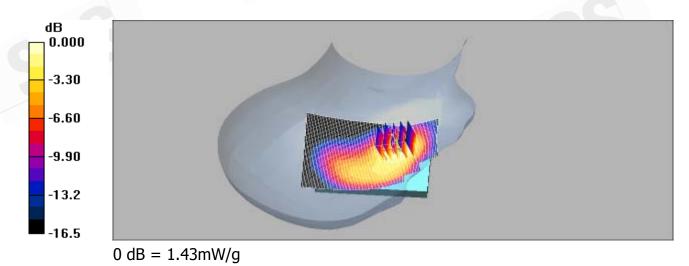
- Probe: EX3DV3 SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

RE Cheek/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 1.48 mW/g

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

Reference Value = 11.0 V/m; Power Drift = -0.107 dBPeak SAR (extrapolated) = 2.21 W/kg

#### SAR(1 g) = 1.3 mW/g; SAR(10 g) = 0.753 mW/gMaximum value of SAR (measured) = 1.43 mW/g



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Report No. : ES/2008/C0010 Page : 49 of 161

Date/Time: 2008/12/17 09:45:57

Re Cheek\_CH661

**DUT: SAPP 300;** 

Communication System: GSM1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3 Medium: Head 1900 MHz Medium parameters used: f = 1880 MHz;  $\sigma = 1.47$  mho/m;  $\epsilon_r =$ 41.3;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Right Section

**DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

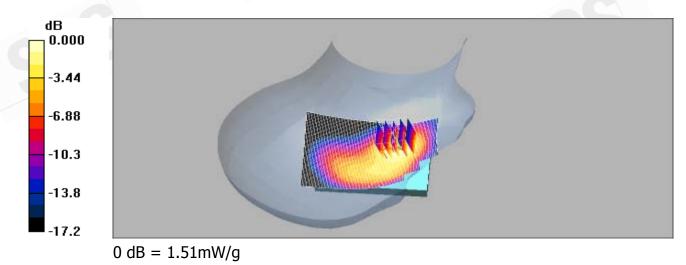
RE Cheek/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 1.57 mW/g

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

Reference Value = 11.5 V/m; Power Drift = 0.058 dB Peak SAR (extrapolated) = 2.31 W/kg

# SAR(1 g) = 1.37 mW/g; SAR(10 g) = 0.784 mW/g

Maximum value of SAR (measured) = 1.51 mW/g



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Report No. : ES/2008/C0010 Page : 50 of 161

Date/Time: 2008/12/17 10:17:27

Re Cheek\_CH810

**DUT: SAPP 300;** 

Communication System: GSM1900; Frequency: 1909.8 MHz; Duty Cycle: 1:8.3 Medium: Head 1900 MHz Medium parameters used: f = 1910 MHz;  $\sigma = 1.49$  mho/m;  $\epsilon_r =$ 41.1;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Right Section

**DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

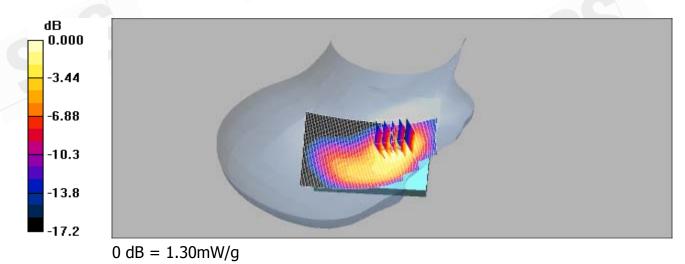
RE Cheek/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 1.35 mW/g

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

Reference Value = 10.9 V/m; Power Drift = -0.048 dBPeak SAR (extrapolated) = 2.01 W/kg

# SAR(1 g) = 1.18 mW/g; SAR(10 g) = 0.673 mW/g

Maximum value of SAR (measured) = 1.30 mW/g



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Report No. : ES/2008/C0010 Page : 51 of 161

Date/Time: 2008/12/17 12:39:17

Le Cheek\_CH512

**DUT: SAPP 300;** 

Communication System: GSM1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3 Medium: Head 1900 MHz Medium parameters used (interpolated): f = 1850.2 MHz;  $\sigma$  = 1.44 mho/m;  $\epsilon_r$  = 41.4;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV3 SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

**LE Cheek/Area Scan (61x91x1):** Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 1.05 mW/g

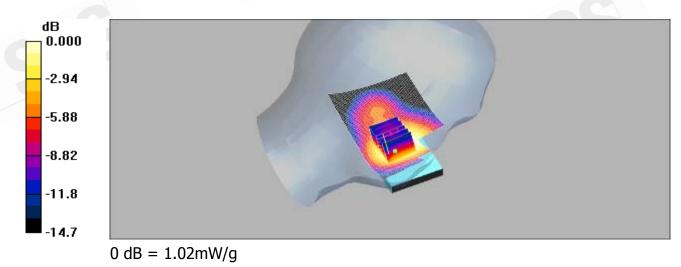
LE Cheek/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 12.3 V/m; Power Drift = -0.050 dBPeak SAR (extrapolated) = 1.42 W/kg

# SAR(1 g) = 0.955 mW/g; SAR(10 g) = 0.603 mW/g

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Maximum value of SAR (measured) = 1.02 mW/g



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Report No. : ES/2008/C0010 Page : 52 of 161

Date/Time: 2008/12/17 13:10:23

Le Cheek\_CH661

**DUT: SAPP 300;** 

Communication System: GSM1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3 Medium: Head 1900 MHz Medium parameters used: f = 1880 MHz;  $\sigma = 1.47$  mho/m;  $\epsilon_r =$ 41.3;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Left Section

**DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

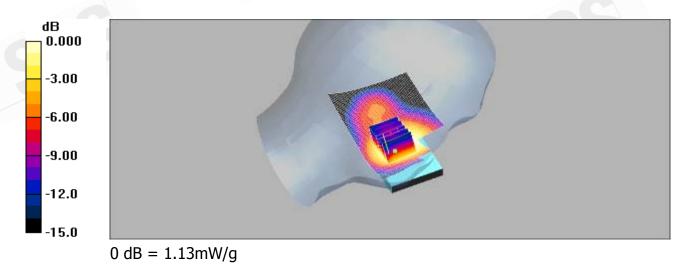
LE Cheek/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 1.17 mW/g

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

Reference Value = 13.6 V/m; Power Drift = -0.133 dB Peak SAR (extrapolated) = 1.56 W/kg

# SAR(1 g) = 1.05 mW/g; SAR(10 g) = 0.660 mW/g

Maximum value of SAR (measured) = 1.13 mW/g



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Report No. : ES/2008/C0010 Page : 53 of 161

Date/Time: 2008/12/17 13:39:15

Le Cheek\_CH810

DUT: SAPP 300;

Communication System: GSM1900; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3 Medium: Head 1900 MHz Medium parameters used: f = 1910 MHz;  $\sigma$  = 1.49 mho/m;  $\epsilon_r$  = 41.1;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section.

Phantom section: Left Section

- Probe: EX3DV3 SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

### LE Cheek/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.04 mW/g

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

Reference Value = 13.3 V/m; Power Drift = -0.120 dB

Peak SAR (extrapolated) = 1.40 W/kg

SAR(1 g) = 0.935 mW/g; SAR(10 g) = 0.581 mW/g

Maximum value of SAR (measured) = 1.00 mW/g

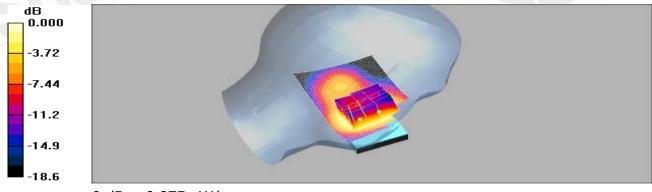
**LE Cheek/Zoom Scan (5x5x7)/Cube 1**: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 13.3 V/m; Power Drift = -0.120 dB

Peak SAR (extrapolated) = 1.23 W/kg

SAR(1 g) = 0.804 mW/g; SAR(10 g) = 0.519 mW/g

Maximum value of SAR (measured) = 0.875 mW/g



 $0 \, dB = 0.875 \, mW/g$ 

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Report No. : ES/2008/C0010 Page : 54 of 161

Date/Time: 2008/12/17 10:49:28

Re Tilt\_CH512

**DUT: SAPP 300;** 

Communication System: GSM1900; Frequency: 1850.2 MHz; Duty Cycle: 1:8.3 Medium: Head 1900 MHz Medium parameters used (interpolated): f = 1850.2 MHz;  $\sigma = 1.44$ mho/m;  $\epsilon_r = 41.4$ ;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Right Section

**DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

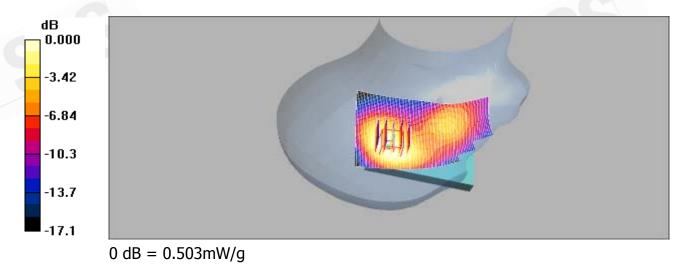
**RE Tilt/Area Scan (61x91x1):** Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.546 mW/g

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

Reference Value = 17.2 V/m; Power Drift = 0.009 dBPeak SAR (extrapolated) = 0.709 W/kg

### SAR(1 g) = 0.479 mW/g; SAR(10 g) = 0.304 mW/g

Maximum value of SAR (measured) = 0.503 mW/g



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Report No. : ES/2008/C0010 Page : 55 of 161

Date/Time: 2008/12/17 11:21:08

Re Tilt\_CH661

**DUT: SAPP 300;** 

Communication System: GSM1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3 Medium: Head 1900 MHz Medium parameters used: f = 1880 MHz;  $\sigma = 1.47$  mho/m;  $\epsilon_r =$ 41.3;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Right Section

**DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

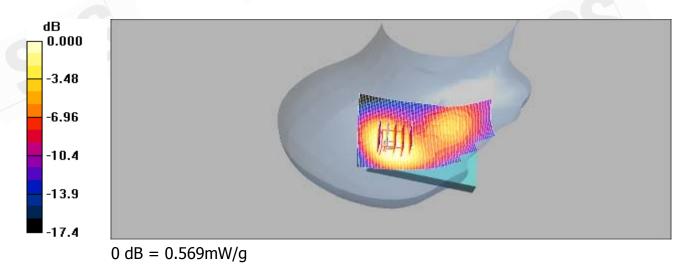
**RE Tilt/Area Scan (61x91x1):** Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.614 mW/g

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

Reference Value = 18.5 V/m; Power Drift = -0.028 dB Peak SAR (extrapolated) = 0.805 W/kg

### SAR(1 g) = 0.542 mW/g; SAR(10 g) = 0.340 mW/g

Maximum value of SAR (measured) = 0.569 mW/g



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Report No. : ES/2008/C0010 Page : 56 of 161

Date/Time: 2008/12/17 11:51:02

Re Tilt\_CH810

**DUT: SAPP 300;** 

Communication System: GSM1900; Frequency: 1909.8 MHz; Duty Cycle: 1:8.3 Medium: Head 1900 MHz Medium parameters used: f = 1910 MHz;  $\sigma = 1.49$  mho/m;  $\epsilon_r =$ 41.1;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Right Section

**DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

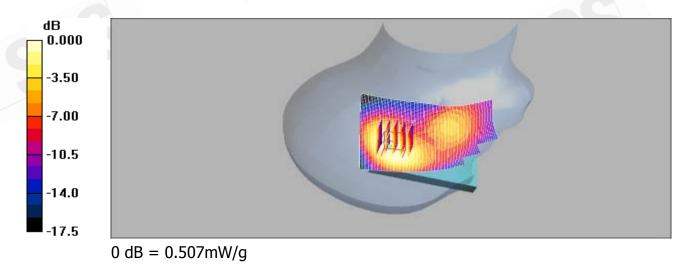
**RE Tilt/Area Scan (61x91x1):** Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.533 mW/g

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

Reference Value = 17.7 V/m; Power Drift = 0.015 dBPeak SAR (extrapolated) = 0.735 W/kg

### SAR(1 g) = 0.479 mW/g; SAR(10 g) = 0.297 mW/g

Maximum value of SAR (measured) = 0.507 mW/g



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Report No. : ES/2008/C0010 Page : 57 of 161

Date/Time: 2008/12/17 14:13:14

Le Tilt\_CH512

DUT: SAPP 300;

Communication System: GSM1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3 Medium: Head 1900 MHz Medium parameters used (interpolated): f = 1850.2 MHz;  $\sigma$  = 1.44 mho/m;  $\epsilon_r$  = 41.4;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV3 SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

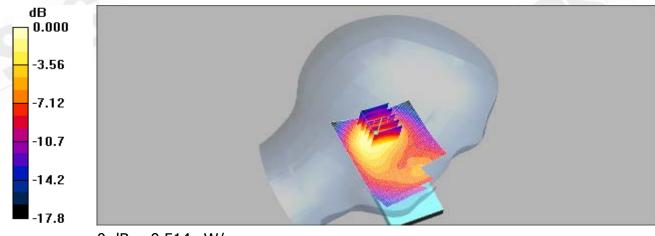
**LE Cheek/Area Scan (61x91x1):** Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.519 mW/g

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

Reference Value = 18.7 V/m; Power Drift = -0.029 dBPeak SAR (extrapolated) = 0.740 W/kg

### SAR(1 g) = 0.469 mW/g; SAR(10 g) = 0.283 mW/g

Maximum value of SAR (measured) = 0.514 mW/g



 $0 \, dB = 0.514 \, mW/g$ 

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Report No. : ES/2008/C0010 Page : 58 of 161

Date/Time: 2008/12/17 14:45:45

Le Tilt\_CH661

DUT: SAPP 300;

Communication System: GSM1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3 Medium: Head 1900 MHz Medium parameters used: f = 1880 MHz;  $\sigma$  = 1.47 mho/m;  $\epsilon_r$  = 41.3;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV3 SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

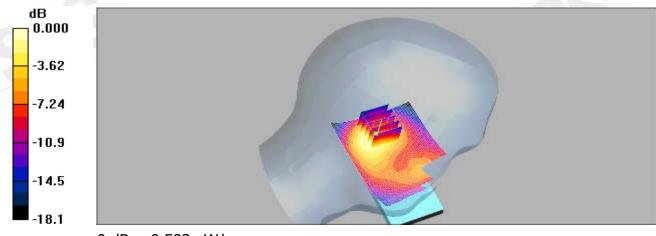
**LE Cheek/Area Scan (61x91x1):** Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.594 mW/g

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

Reference Value = 19.7 V/m; Power Drift = -0.022 dBPeak SAR (extrapolated) = 0.845 W/kg

### SAR(1 g) = 0.531 mW/g; SAR(10 g) = 0.316 mW/g

Maximum value of SAR (measured) = 0.583 mW/g



 $0 \, dB = 0.583 \, mW/g$ 

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Date/Time: 2008/12/17 15:14:15

Le Tilt\_CH810

DUT: SAPP 300;

Communication System: GSM1900; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3 Medium: Head 1900 MHz Medium parameters used: f = 1910 MHz;  $\sigma$  = 1.49 mho/m;  $\epsilon_r$  = 41.1;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV3 SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

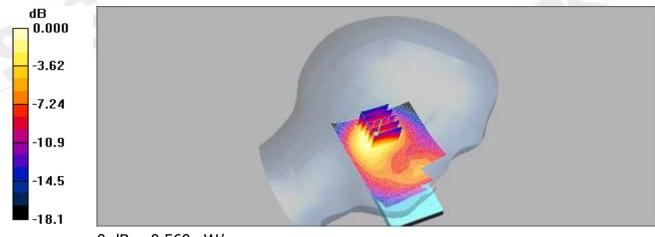
**LE Cheek/Area Scan (61x91x1):** Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.573 mW/g

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

Reference Value = 19.2 V/m; Power Drift = -0.052 dBPeak SAR (extrapolated) = 0.825 W/kg

### SAR(1 g) = 0.508 mW/g; SAR(10 g) = 0.298 mW/g

Maximum value of SAR (measured) = 0.560 mW/g



 $0 \, dB = 0.560 \, mW/g$ 

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Date/Time: 2008/12/18 08:14:12

BODY\_CH512

**DUT: SAPP 300;** 

Communication System: GSM1900; Frequency: 1850.2 MHz; Duty Cycle: 1:4 Medium: M1800 & 1900 Medium parameters used (interpolated): f = 1850.2 MHz;  $\sigma = 1.54$ mho/m;  $\epsilon_r = 51.4$ ;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Flat Section

**DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(9.28, 9.28, 9.28); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

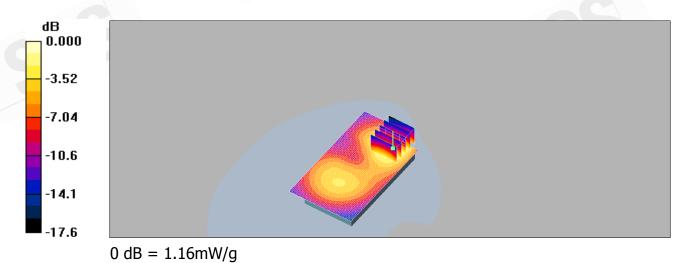
BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 1.14 mW/g

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

Reference Value = 13.3 V/m; Power Drift = -0.009 dB Peak SAR (extrapolated) = 1.80 W/kg

### SAR(1 g) = 1.05 mW/g; SAR(10 g) = 0.598 mW/g

Maximum value of SAR (measured) = 1.16 mW/g





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Date/Time: 2008/12/18 08:47:01

BODY\_CH661

DUT: SAPP 300;

Communication System: GSM1900; Frequency: 1880 MHz; Duty Cycle: 1:4 Medium: M1800 & 1900 Medium parameters used: f = 1880 MHz;  $\sigma = 1.56$  mho/m;  $\varepsilon_r = 51.3$ ;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Flat Section

**DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(9.28, 9.28, 9.28); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

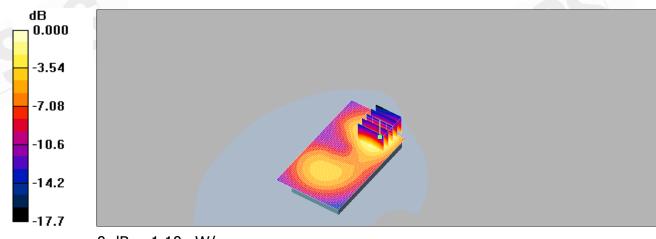
BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 1.08 mW/g

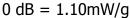
#### BODY/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 12.6 V/m; Power Drift = 0.086 dBPeak SAR (extrapolated) = 1.72 W/kg

### SAR(1 g) = 0.999 mW/g; SAR(10 g) = 0.566 mW/g

Maximum value of SAR (measured) = 1.10 mW/g





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Report No. : ES/2008/C0010 Page : 62 of 161

Date/Time: 2008/12/18 09:16:49

BODY\_CH810

DUT: SAPP 300;

Communication System: GSM1900; Frequency: 1909.8 MHz; Duty Cycle: 1:4 Medium: M1800 & 1900 Medium parameters used: f = 1910 MHz;  $\sigma = 1.58$  mho/m;  $\varepsilon_r = 51.1$ ;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Flat Section

**DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(9.28, 9.28, 9.28); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

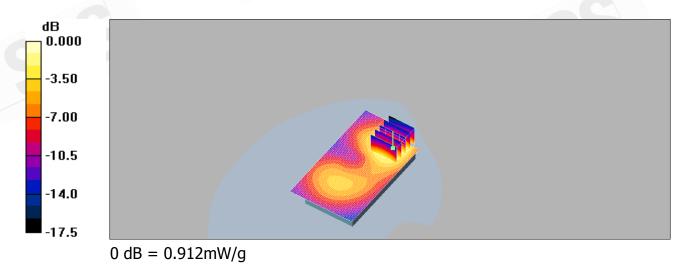
BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.887 mW/g

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

Reference Value = 11.1 V/m; Power Drift = 0.042 dBPeak SAR (extrapolated) = 1.43 W/kg

### SAR(1 g) = 0.825 mW/g; SAR(10 g) = 0.467 mW/g

Maximum value of SAR (measured) = 0.912 mW/g



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Report No. : ES/2008/C0010 Page : 63 of 161

Date/Time: 2008/12/17 17:10:42

Re Cheek\_CH1312

**DUT: SAPP 300;** 

Communication System: WCDMA BAND4; Frequency: 1712.4 MHz; Duty Cycle: 1:1 Medium: Head 1800 MHz Medium parameters used (interpolated): f = 1712.4 MHz;  $\sigma = 1.41$ mho/m;  $\epsilon_r = 41.6$ ;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Right Section

**DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

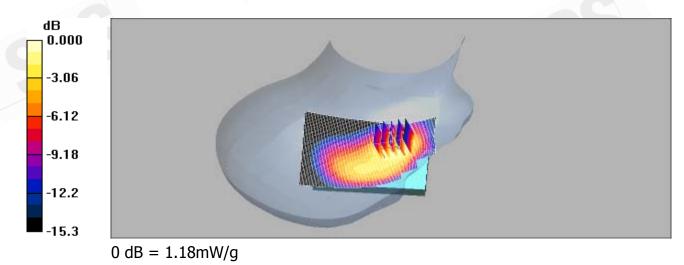
RE Cheek/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 1.22 mW/g

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

Reference Value = 9.97 V/m; Power Drift = -0.053 dB Peak SAR (extrapolated) = 1.73 W/kg

## SAR(1 g) = 1.07 mW/g; SAR(10 g) = 0.639 mW/g

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



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Date/Time: 2008/12/17 17:41:46

Re Cheek\_CH1412

**DUT: SAPP 300;** 

Communication System: WCDMA BAND4; Frequency: 1732.6 MHz; Duty Cycle: 1:1 Medium: Head 1800 MHz Medium parameters used (interpolated): f = 1732.6 MHz;  $\sigma = 1.42$ mho/m;  $\varepsilon_r = 41.5$ ;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Right Section

**DASY4** Configuration:

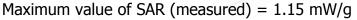
- Probe: EX3DV3 SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

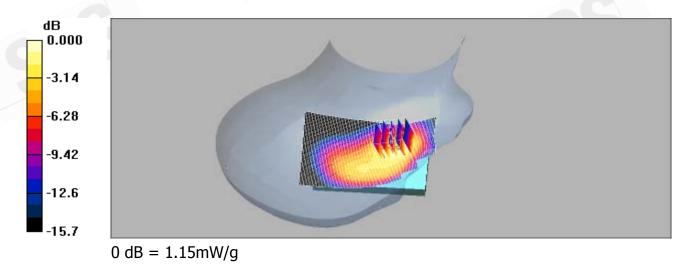
RE Cheek/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 1.19 mW/g

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

Reference Value = 9.74 V/m; Power Drift = -0.080 dBPeak SAR (extrapolated) = 1.71 W/kg

# SAR(1 g) = 1.05 mW/g; SAR(10 g) = 0.617 mW/g





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Report No. : ES/2008/C0010 Page : 65 of 161

Date/Time: 2008/12/17 18:09:22

Re Cheek\_CH1513

**DUT: SAPP 300;** 

Communication System: WCDMA BAND4; Frequency: 1752.6 MHz; Duty Cycle: 1:1 Medium: Head 1800 MHz Medium parameters used: f = 1753 MHz;  $\sigma = 1.44$  mho/m;  $\epsilon_r =$ 41.4;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Right Section

**DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

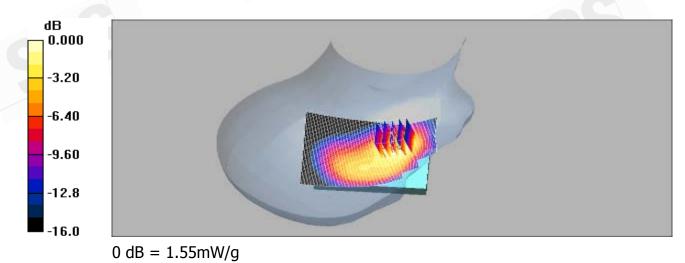
RE Cheek/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 1.60 mW/g

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

Reference Value = 11.3 V/m; Power Drift = 0.000 dB Peak SAR (extrapolated) = 2.31 W/kg

# SAR(1 g) = 1.41 mW/g; SAR(10 g) = 0.823 mW/g

Maximum value of SAR (measured) = 1.55 mW/g



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Report No. : ES/2008/C0010 Page : 66 of 161

Date/Time: 2008/12/17 20:29:46

Le Cheek\_CH1312

DUT: SAPP 300;

Communication System: WCDMA BAND4; Frequency: 1712.4 MHz;Duty Cycle: 1:1 Medium: Head 1800 MHz Medium parameters used (interpolated): f = 1712.4 MHz;  $\sigma$  = 1.41 mho/m;  $\epsilon_r$  = 41.6;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV3 SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

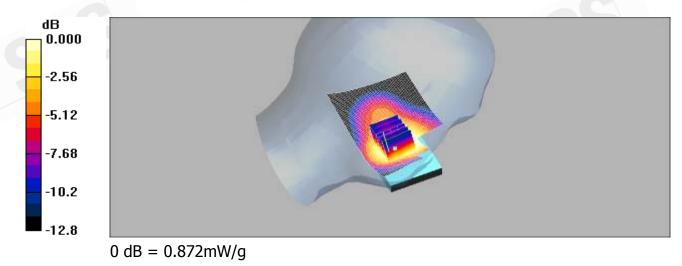
**LE Cheek/Area Scan (61x91x1):** Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.887 mW/g

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

Reference Value = 11.4 V/m; Power Drift = -0.142 dB Peak SAR (extrapolated) = 1.21 W/kg

## SAR(1 g) = 0.805 mW/g; SAR(10 g) = 0.540 mW/g

Maximum value of SAR (measured) = 0.872 mW/g



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Report No. : ES/2008/C0010 Page : 67 of 161

Date/Time: 2008/12/17 21:00:47

Le Cheek\_CH1412

**DUT: SAPP 300;** 

Communication System: WCDMA BAND4; Frequency: 1732.6 MHz; Duty Cycle: 1:1 Medium: Head 1800 MHz Medium parameters used (interpolated): f = 1732.6 MHz;  $\sigma = 1.42$ mho/m;  $\varepsilon_r = 41.5$ ;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Left Section

**DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

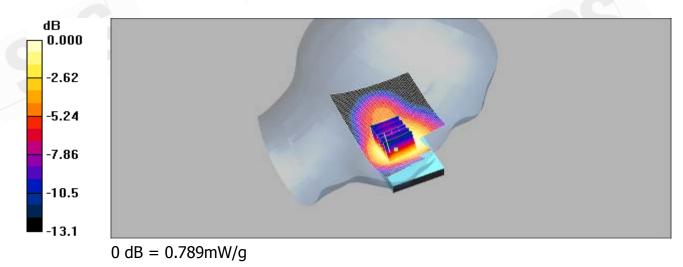
LE Cheek/Area Scan (61x91x1): Measurement grid: dx=15mm, dv=15mm Maximum value of SAR (interpolated) = 0.769 mW/g

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

Reference Value = 11.2 V/m; Power Drift = 0.034 dB Peak SAR (extrapolated) = 1.04 W/kg

### SAR(1 g) = 0.729 mW/g; SAR(10 g) = 0.481 mW/g

Maximum value of SAR (measured) = 0.789 mW/g



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Report No. : ES/2008/C0010 Page : 68 of 161

Date/Time: 2008/12/17 21:28:14

Le Cheek\_CH1513

**DUT: SAPP 300;** 

Communication System: WCDMA BAND4; Frequency: 1752.6 MHz; Duty Cycle: 1:1 Medium: Head 1800 MHz Medium parameters used: f = 1753 MHz;  $\sigma = 1.44$  mho/m;  $\epsilon_r =$ 41.4;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Left Section

**DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

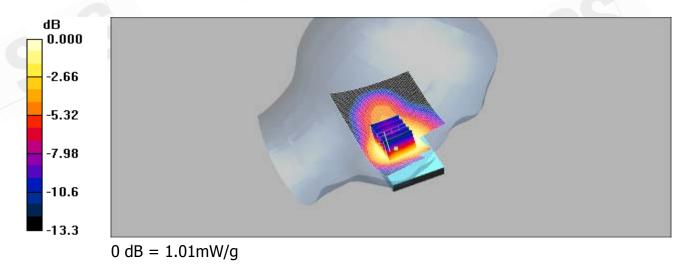
LE Cheek/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.992 mW/g

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

Reference Value = 12.9 V/m; Power Drift = -0.048 dB Peak SAR (extrapolated) = 1.35 W/kg

# SAR(1 g) = 0.932 mW/g; SAR(10 g) = 0.606 mW/g

Maximum value of SAR (measured) = 1.01 mW/g



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Report No. : ES/2008/C0010 Page : 69 of 161

Date/Time: 2008/12/17 18:42:41

Re Tilt\_CH1312

**DUT: SAPP 300;** 

Communication System: WCDMA BAND4; Frequency: 1712.4 MHz; Duty Cycle: 1:1 Medium: Head 1800 MHz Medium parameters used (interpolated): f = 1712.4 MHz;  $\sigma = 1.41$ mho/m;  $\epsilon_r = 41.6$ ;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Right Section

**DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

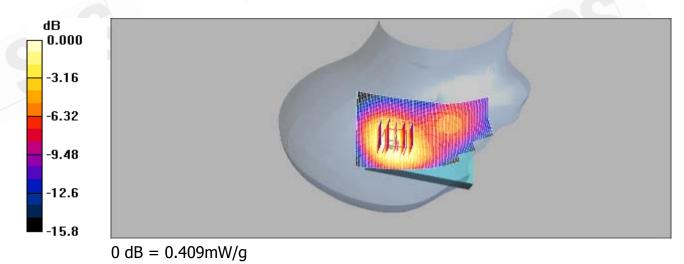
**RE Tilt/Area Scan (61x91x1):** Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.434 mW/g

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

Reference Value = 14.7 V/m; Power Drift = 0.019 dBPeak SAR (extrapolated) = 0.549 W/kg

### SAR(1 g) = 0.384 mW/g; SAR(10 g) = 0.252 mW/g

Maximum value of SAR (measured) = 0.409 mW/g



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Report No. : ES/2008/C0010 Page : 70 of 161

Date/Time: 2008/12/17 19:13:25

Re Tilt\_CH1412

**DUT: SAPP 300;** 

Communication System: WCDMA BAND4; Frequency: 1732.6 MHz; Duty Cycle: 1:1 Medium: Head 1800 MHz Medium parameters used (interpolated): f = 1732.6 MHz;  $\sigma = 1.42$ mho/m;  $\varepsilon_r = 41.5$ ;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Right Section

**DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

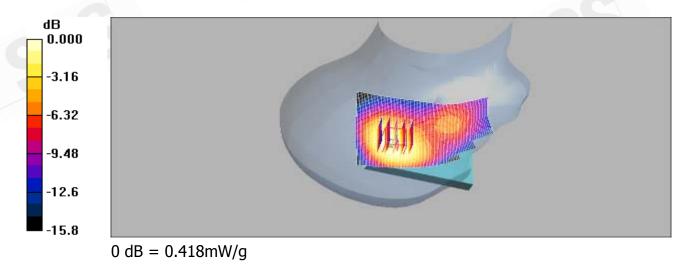
**RE Tilt/Area Scan (61x91x1):** Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.444 mW/g

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

Reference Value = 14.9 V/m; Power Drift = -0.001 dB Peak SAR (extrapolated) = 0.558 W/kg

### SAR(1 g) = 0.391 mW/g; SAR(10 g) = 0.257 mW/g

Maximum value of SAR (measured) = 0.418 mW/g



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Report No. : ES/2008/C0010 Page : 71 of 161

Date/Time: 2008/12/17 19:41:23

Re Tilt\_CH1513

DUT: SAPP 300;

Communication System: WCDMA BAND4; Frequency: 1752.6 MHz;Duty Cycle: 1:1 Medium: Head 1800 MHz Medium parameters used: f = 1753 MHz;  $\sigma$  = 1.44 mho/m;  $\epsilon_r$  = 41.4;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV3 SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

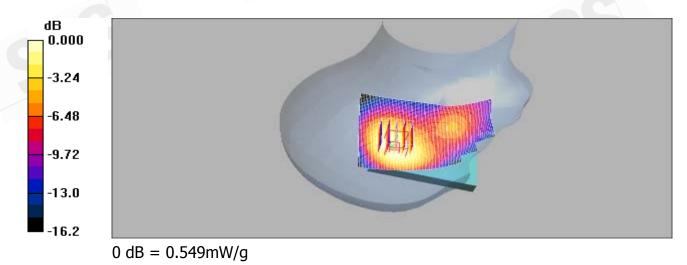
**RE Tilt/Area Scan (61x91x1):** Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.592 mW/g

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

Reference Value = 17.1 V/m; Power Drift = 0.050 dBPeak SAR (extrapolated) = 0.754 W/kg

### SAR(1 g) = 0.521 mW/g; SAR(10 g) = 0.340 mW/g

Maximum value of SAR (measured) = 0.549 mW/g



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Report No. : ES/2008/C0010 Page : 72 of 161

Date/Time: 2008/12/17 22:11:31

Le Tilt\_CH1312

**DUT: SAPP 300;** 

Communication System: WCDMA BAND4; Frequency: 1712.4 MHz;Duty Cycle: 1:1 Medium: Head 1800 MHz Medium parameters used (interpolated): f = 1712.4 MHz;  $\sigma$  = 1.41 mho/m;  $\epsilon_r$  = 41.6;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV3 SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

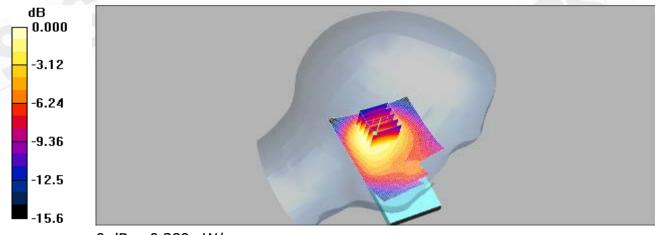
**LE Tilt/Area Scan (61x91x1):** Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.404 mW/g

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

Reference Value = 16.1 V/m; Power Drift = 0.012 dBPeak SAR (extrapolated) = 0.542 W/kg

### SAR(1 g) = 0.368 mW/g; SAR(10 g) = 0.239 mW/g

Maximum value of SAR (measured) = 0.389 mW/g



 $0 \, dB = 0.389 \, mW/g$ 

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Report No. : ES/2008/C0010 Page : 73 of 161

Date/Time: 2008/12/17 22:42:28

Le Tilt\_CH1412

**DUT: SAPP 300;** 

Communication System: WCDMA BAND4; Frequency: 1732.6 MHz;Duty Cycle: 1:1 Medium: Head 1800 MHz Medium parameters used (interpolated): f = 1732.6 MHz;  $\sigma$  = 1.42 mho/m;  $\epsilon_r$  = 41.5;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV3 SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

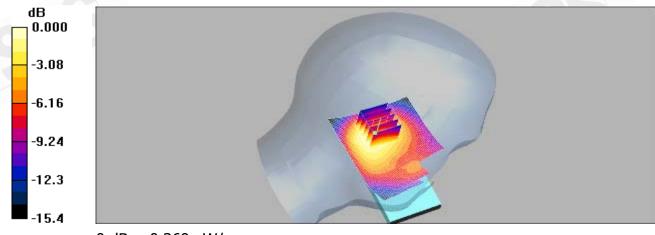
**LE Tilt/Area Scan (61x91x1):** Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.387 mW/g

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

Reference Value = 16.0 V/m; Power Drift = -0.034 dBPeak SAR (extrapolated) = 0.525 W/kg

## SAR(1 g) = 0.353 mW/g; SAR(10 g) = 0.227 mW/g

Maximum value of SAR (measured) = 0.369 mW/g



 $0 \, dB = 0.369 \, mW/g$ 

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Report No. : ES/2008/C0010 Page : 74 of 161

Date/Time: 2008/12/17 23:11:20

Le Tilt\_CH1513

**DUT: SAPP 300;** 

Communication System: WCDMA BAND4; Frequency: 1752.6 MHz;Duty Cycle: 1:1 Medium: Head 1800 MHz Medium parameters used: f = 1753 MHz;  $\sigma$  = 1.44 mho/m;  $\epsilon_r$  = 41.4;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV3 SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

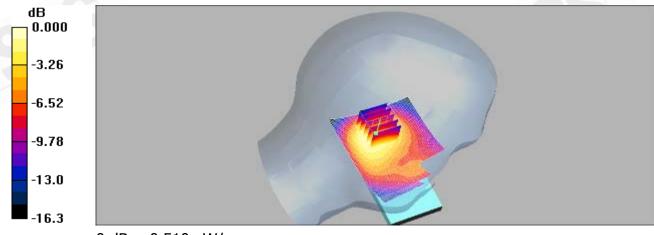
**LE Tilt/Area Scan (61x91x1):** Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.521 mW/g

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

Reference Value = 18.5 V/m; Power Drift = 0.012 dBPeak SAR (extrapolated) = 0.725 W/kg

## SAR(1 g) = 0.480 mW/g; SAR(10 g) = 0.302 mW/g

Maximum value of SAR (measured) = 0.510 mW/g



 $0 \, dB = 0.510 \, mW/g$ 

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Date/Time: 2008/12/17 23:57:47

## Re Cheek\_CH1513\_repeated with Memory card

#### **DUT: SAPP 300;**

Communication System: WCDMA BAND4; Frequency: 1752.6 MHz; Duty Cycle: 1:1 Medium: Head 1800 MHz Medium parameters used: f = 1753 MHz;  $\sigma = 1.44$  mho/m;  $\epsilon_r =$ 41.4;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Right Section

**DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

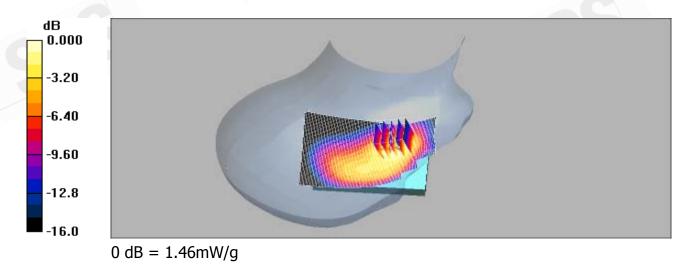
RE Cheek/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 1.51 mW/g

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

Reference Value = 12.3 V/m; Power Drift = -0.201 dBPeak SAR (extrapolated) = 2.17 W/kg

## SAR(1 g) = 1.34 mW/g; SAR(10 g) = 0.789 mW/g

Maximum value of SAR (measured) = 1.46 mW/g



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Date/Time: 2008/12/18 00:42:45

## Re Cheek\_CH1513\_repeated with Bluetooth active

#### **DUT: SAPP 300;**

Communication System: WCDMA BAND4; Frequency: 1752.6 MHz; Duty Cycle: 1:1 Medium: Head 1800 MHz Medium parameters used: f = 1753 MHz;  $\sigma = 1.44$  mho/m;  $\epsilon_r =$ 41.4;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Right Section

**DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

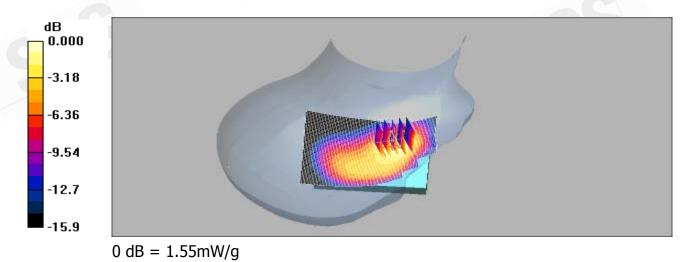
RE Cheek/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 1.59 mW/g

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

Reference Value = 12.0 V/m; Power Drift = -0.103 dBPeak SAR (extrapolated) = 2.28 W/kg

## SAR(1 g) = 1.4 mW/g; SAR(10 g) = 0.819 mW/g

Maximum value of SAR (measured) = 1.55 mW/g



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Date/Time: 2008/12/18 03:40:56

## Re Cheek\_CH1513\_ repeated with WELLDONE Battery

#### **DUT: SAPP 300;**

Communication System: WCDMA BAND4; Frequency: 1752.6 MHz;Duty Cycle: 1:1 Medium: Head 1800 MHz Medium parameters used: f = 1753 MHz;  $\sigma$  = 1.44 mho/m;  $\epsilon_r$  = 41.4;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Right Section

DASY4 Configuration:

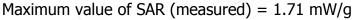
- Probe: EX3DV3 SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

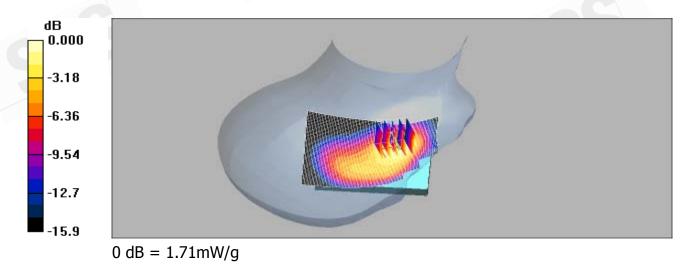
**RE Cheek/Area Scan (61x91x1):** Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 1.76 mW/g

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

Reference Value = 12.4 V/m; Power Drift = -0.020 dBPeak SAR (extrapolated) = 2.52 W/kg

## SAR(1 g) = 1.55 mW/g; SAR(10 g) = 0.905 mW/g





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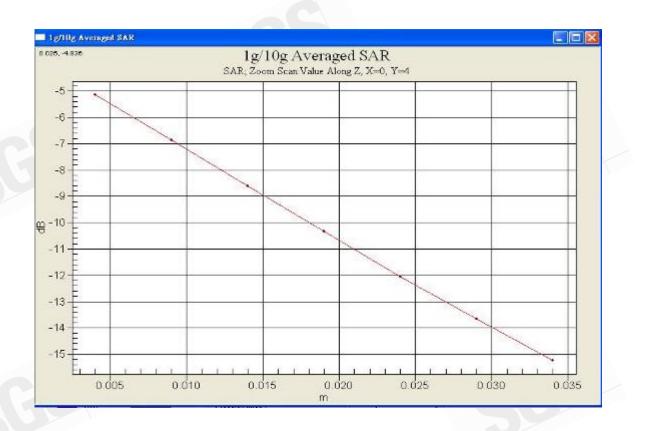
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#### Report No. : ES/2008/C0010 Page : 78 of 161



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Date/Time: 2008/12/18 10:57:59

BODY\_CH1312

**DUT: SAPP 300;** 

Communication System: WCDMA BAND4; Frequency: 1712.4 MHz; Duty Cycle: 1:1 Medium: M1800 & 1900 Medium parameters used (interpolated): f = 1712.4 MHz;  $\sigma = 1.5$ mho/m;  $\varepsilon_r = 51.9$ ;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Flat Section

**DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(9.28, 9.28, 9.28); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

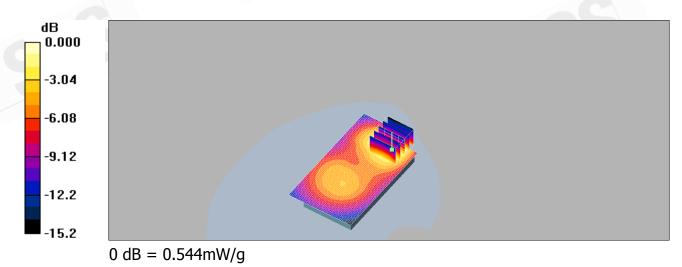
BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.530 mW/g

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

Reference Value = 8.83 V/m; Power Drift = 0.032 dB Peak SAR (extrapolated) = 0.825 W/kg

### SAR(1 g) = 0.496 mW/g; SAR(10 g) = 0.290 mW/g

Maximum value of SAR (measured) = 0.544 mW/g



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Report No. : ES/2008/C0010 Page : 80 of 161

Date/Time: 2008/12/18 11:28:44

BODY\_CH1412

**DUT: SAPP 300;** 

Communication System: WCDMA BAND4; Frequency: 1732.6 MHz; Duty Cycle: 1:1 Medium: M1800 & 1900 Medium parameters used (interpolated): f = 1732.6 MHz;  $\sigma = 1.51$ mho/m;  $\epsilon_r = 51.8$ ;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Flat Section

**DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(9.28, 9.28, 9.28); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

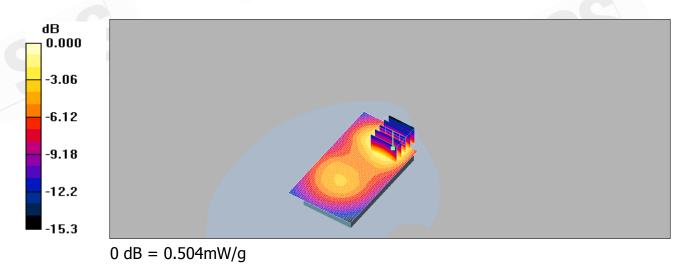
BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.498 mW/g

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

Reference Value = 8.34 V/m; Power Drift = 0.071 dB Peak SAR (extrapolated) = 0.770 W/kg

### SAR(1 g) = 0.464 mW/g; SAR(10 g) = 0.272 mW/g

Maximum value of SAR (measured) = 0.504 mW/g



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Report No. : ES/2008/C0010 Page : 81 of 161

Date/Time: 2008/12/18 11:58:25

### BODY\_CH1513

**DUT: SAPP 300;** 

Communication System: WCDMA BAND4; Frequency: 1752.6 MHz; Duty Cycle: 1:1 Medium: M1800 & 1900 Medium parameters used (interpolated): f = 1752.6 MHz;  $\sigma = 1.52$ mho/m;  $\varepsilon_r = 51.7$ ;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Flat Section

#### **DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(9.28, 9.28, 9.28); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

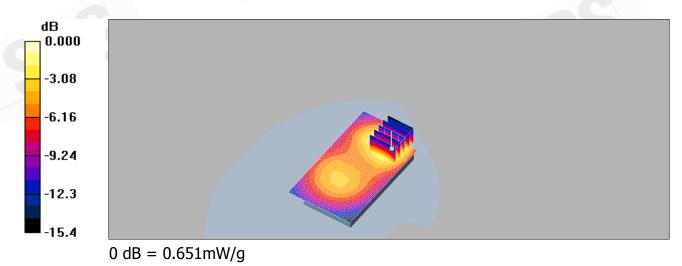
BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.620 mW/g

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

Reference Value = 9.46 V/m; Power Drift = 0.129 dBPeak SAR (extrapolated) = 0.985 W/kg

### SAR(1 g) = 0.592 mW/g; SAR(10 g) = 0.345 mW/g

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



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Date/Time: 2008/12/18 12:32:38

## BODY\_CH1312\_repeated with HSDPA mode

#### **DUT: SAPP 300;**

Communication System: WCDMA BAND4; Frequency: 1712.4 MHz; Duty Cycle: 1:1 Medium: M1800 & 1900 Medium parameters used (interpolated): f = 1712.4 MHz;  $\sigma = 1.5$ mho/m;  $\epsilon_r = 51.9$ ;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Flat Section

#### **DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(9.28, 9.28, 9.28); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

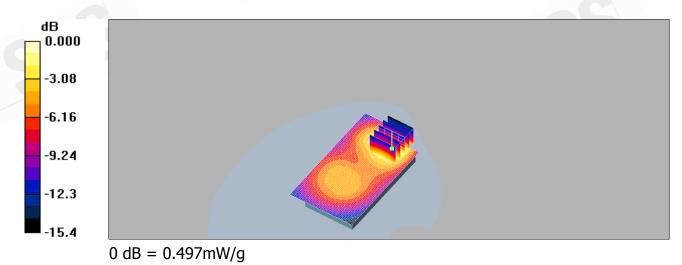
BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.479 mW/g

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

Reference Value = 8.17 V/m; Power Drift = 0.081 dB Peak SAR (extrapolated) = 0.754 W/kg

### SAR(1 g) = 0.450 mW/g; SAR(10 g) = 0.261 mW/g

Maximum value of SAR (measured) = 0.497 mW/g



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Date/Time: 2008/12/18 13:03:08

## BODY\_CH1412\_ repeated with HSDPA mode

#### **DUT: SAPP 300;**

Communication System: WCDMA BAND4; Frequency: 1732.6 MHz; Duty Cycle: 1:1 Medium: M1800 & 1900 Medium parameters used (interpolated): f = 1732.6 MHz;  $\sigma = 1.51$ mho/m;  $\varepsilon_r = 51.8$ ;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Flat Section

#### **DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(9.28, 9.28, 9.28); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

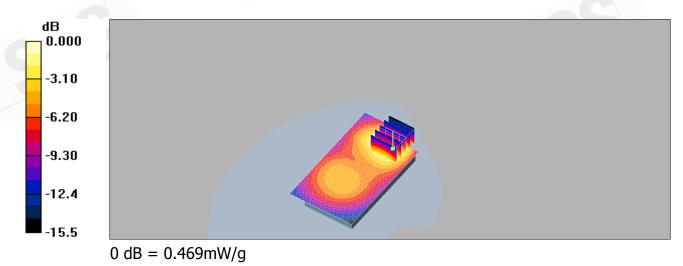
BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.453 mW/g

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

Reference Value = 7.86 V/m; Power Drift = 0.078 dBPeak SAR (extrapolated) = 0.720 W/kg

### SAR(1 g) = 0.430 mW/g; SAR(10 g) = 0.252 mW/g

Maximum value of SAR (measured) = 0.469 mW/g



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Date/Time: 2008/12/18 13:35:26

## BODY\_CH1513\_ repeated with HSDPA mode

#### **DUT: SAPP 300;**

Communication System: WCDMA BAND4; Frequency: 1752.6 MHz; Duty Cycle: 1:1 Medium: M1800 & 1900 Medium parameters used (interpolated): f = 1752.6 MHz;  $\sigma = 1.52$ mho/m;  $\epsilon_r = 51.7$ ;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Flat Section

#### **DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(9.28, 9.28, 9.28); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

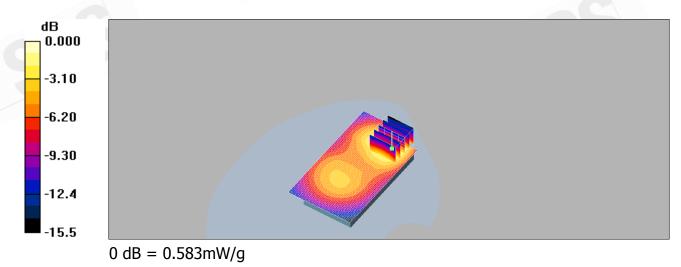
BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.572 mW/g

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

dz=5mmReference Value = 9.05 V/m; Power Drift = -0.011 dBPeak SAR (extrapolated) = 0.887 W/kg

### SAR(1 g) = 0.532 mW/g; SAR(10 g) = 0.310 mW/g

Maximum value of SAR (measured) = 0.583 mW/g



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Date/Time: 2008/12/18 14:07:10

## BODY\_CH1312\_ repeated with HSUPA mode

#### **DUT: SAPP 300;**

Communication System: WCDMA BAND4; Frequency: 1712.4 MHz; Duty Cycle: 1:1 Medium: M1800 & 1900 Medium parameters used (interpolated): f = 1712.4 MHz;  $\sigma = 1.5$ mho/m;  $\epsilon_r = 51.9$ ;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Flat Section

#### **DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(9.28, 9.28, 9.28); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

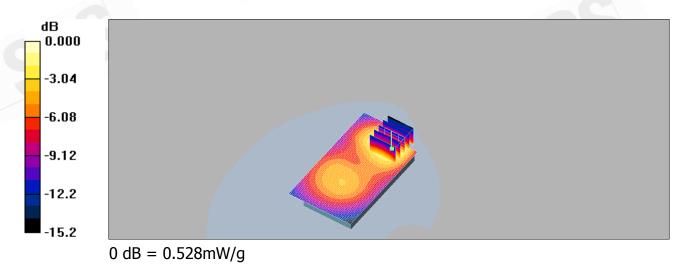
BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.509 mW/g

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

dz=5mmReference Value = 8.72 V/m; Power Drift = -0.047 dB Peak SAR (extrapolated) = 0.799 W/kg

### SAR(1 g) = 0.479 mW/g; SAR(10 g) = 0.279 mW/g

Maximum value of SAR (measured) = 0.528 mW/g



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Date/Time: 2008/12/18 14:37:33

## BODY\_CH1412\_ repeated with HSUPA mode

#### **DUT: SAPP 300;**

Communication System: WCDMA BAND4; Frequency: 1732.6 MHz; Duty Cycle: 1:1 Medium: M1800 & 1900 Medium parameters used (interpolated): f = 1732.6 MHz;  $\sigma = 1.51$ mho/m;  $\varepsilon_r = 51.8$ ;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Flat Section

#### **DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(9.28, 9.28, 9.28); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

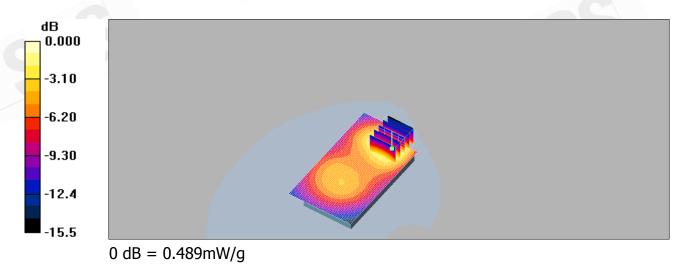
BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.475 mW/g

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

Reference Value = 8.16 V/m; Power Drift = 0.023 dBPeak SAR (extrapolated) = 0.742 W/kg

### SAR(1 g) = 0.445 mW/g; SAR(10 g) = 0.260 mW/g

Maximum value of SAR (measured) = 0.489 mW/g



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Date/Time: 2008/12/18 15:11:50

## BODY\_CH1513\_ repeated with HSUPA mode

#### **DUT: SAPP 300;**

Communication System: WCDMA BAND4; Frequency: 1752.6 MHz; Duty Cycle: 1:1 Medium: M1800 & 1900 Medium parameters used (interpolated): f = 1752.6 MHz;  $\sigma = 1.52$ mho/m;  $\varepsilon_r = 51.7$ ;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Flat Section

#### **DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(9.28, 9.28, 9.28); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

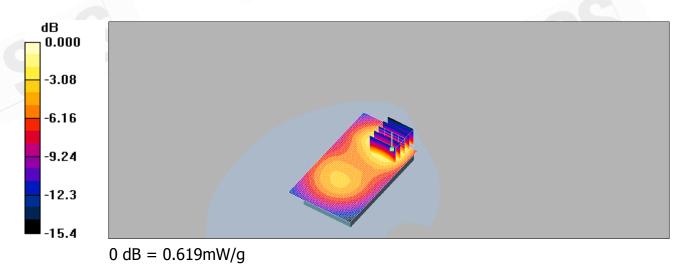
BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.609 mW/g

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

Reference Value = 9.27 V/m; Power Drift = -0.009 dB Peak SAR (extrapolated) = 0.941 W/kg

### SAR(1 g) = 0.565 mW/g; SAR(10 g) = 0.330 mW/g

Maximum value of SAR (measured) = 0.619 mW/g



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Date/Time: 2008/12/22 07:21:29

### BODY\_WLAN 802.11b\_CH1

DUT: SAPP 300;

Communication System: Wireless LAN; Frequency: 2412 MHz; Duty Cycle: 1:1 Medium: Muscle 2450 Medium parameters used: f = 2412 MHz;  $\sigma = 2.02$  mho/m;  $\varepsilon_r = 53.4$ ;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Flat Section

**DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(8.18, 8.18, 8.18); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

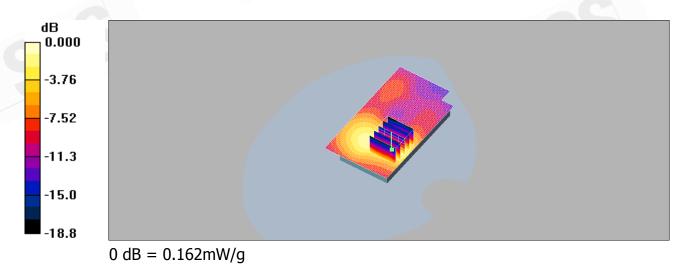
BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.155 mW/g

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

dz=5mmReference Value = 5.60 V/m; Power Drift = -0.078 dBPeak SAR (extrapolated) = 0.260 W/kg

### SAR(1 g) = 0.143 mW/g; SAR(10 g) = 0.075 mW/g

Maximum value of SAR (measured) = 0.162 mW/g



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Date/Time: 2008/12/22 07:59:05

## BODY\_ WLAN 802.11b \_CH6

DUT: SAPP 300;

Communication System: Wireless LAN; Frequency: 2437 MHz; Duty Cycle: 1:1 Medium: Muscle 2450 Medium parameters used: f = 2437 MHz;  $\sigma = 2.03$  mho/m;  $\epsilon_r = 53.2$ ;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Flat Section

**DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(8.18, 8.18, 8.18); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

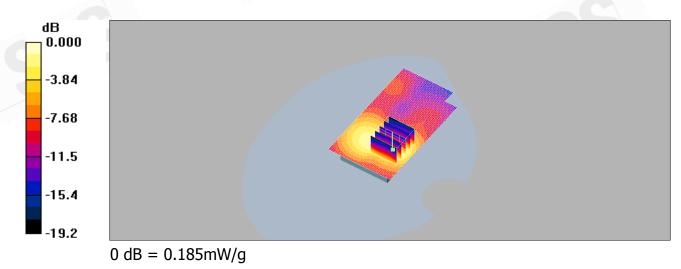
BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.176 mW/g

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

dz=5mmReference Value = 6.16 V/m; Power Drift = -0.162 dBPeak SAR (extrapolated) = 0.299 W/kg

### SAR(1 g) = 0.163 mW/g; SAR(10 g) = 0.084 mW/g

Maximum value of SAR (measured) = 0.185 mW/g



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Date/Time: 2008/12/22 08:36:09

## BODY\_ WLAN 802.11b\_CH11

DUT: SAPP 300;

Communication System: Wireless LAN; Frequency: 2462 MHz; Duty Cycle: 1:1 Medium: Muscle 2450 Medium parameters used: f = 2462 MHz;  $\sigma = 2.08$  mho/m;  $\varepsilon_r = 53.1$ ;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Flat Section

**DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(8.18, 8.18, 8.18); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

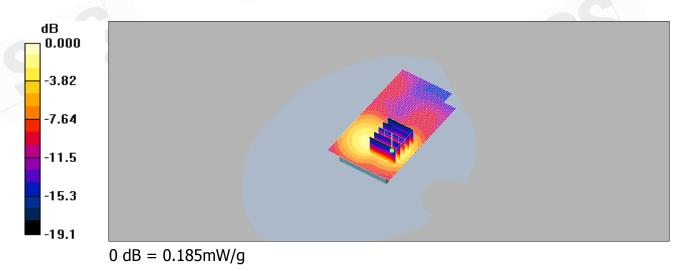
BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.169 mW/g

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

dz=5mmReference Value = 5.75 V/m; Power Drift = -0.034 dB Peak SAR (extrapolated) = 0.301 W/kg

### SAR(1 g) = 0.162 mW/g; SAR(10 g) = 0.083 mW/g

Maximum value of SAR (measured) = 0.185 mW/g



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Date/Time: 2008/12/22 09:20:54

## BODY\_WLAN 802.11b\_CH6\_ repeated for EUT front to phantom

#### **DUT: SAPP 300;**

Communication System: Wireless LAN; Frequency: 2437 MHz; Duty Cycle: 1:1 Medium: Muscle 2450 Medium parameters used: f = 2437 MHz;  $\sigma = 2.03$  mho/m;  $\epsilon_r = 53.2$ ;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Flat Section

#### **DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(8.18, 8.18, 8.18); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

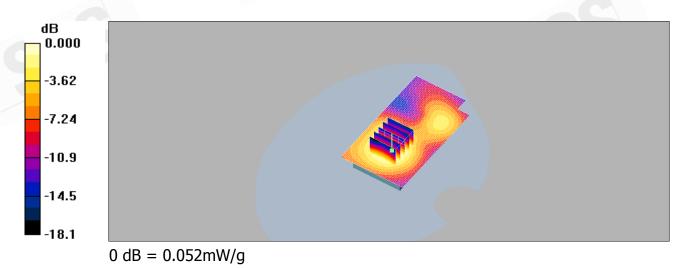
BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.057 mW/g

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

dz=5mmReference Value = 3.84 V/m; Power Drift = -0.135 dBPeak SAR (extrapolated) = 0.080 W/kg

### SAR(1 g) = 0.049 mW/g; SAR(10 g) = 0.029 mW/g

Maximum value of SAR (measured) = 0.052 mW/g



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Date/Time: 2008/12/22 10:08:36

## BODY\_ WLAN 802.11b\_CH6\_repeated with Memory card

#### DUT: SAPP 300;

Communication System: Wireless LAN; Frequency: 2437 MHz;Duty Cycle: 1:1 Medium: Muscle 2450 Medium parameters used: f = 2437 MHz;  $\sigma$  = 2.03 mho/m;  $\epsilon_r$  = 53.2;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV3 SN3526; ConvF(8.18, 8.18, 8.18); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

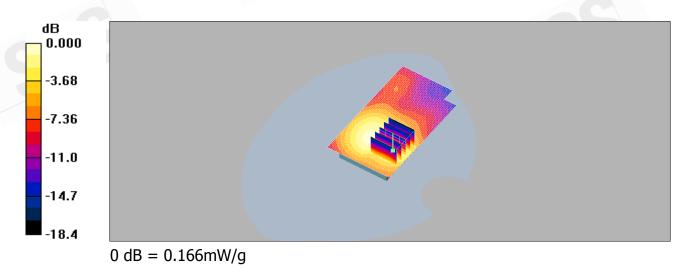
**BODY/Area Scan (51x91x1):** Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.159 mW/g

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

dz=5mm Reference Value = 6.53 V/m; Power Drift = -0.023 dB Peak SAR (extrapolated) = 0.266 W/kg

### SAR(1 g) = 0.147 mW/g; SAR(10 g) = 0.078 mW/g

Maximum value of SAR (measured) = 0.166 mW/g



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Date/Time: 2008/12/22 10:53:51

## BODY\_ WLAN 802.11b\_CH6\_repeated with Bluetooth active

#### DUT: SAPP 300;

Communication System: Wireless LAN; Frequency: 2437 MHz;Duty Cycle: 1:1 Medium: Muscle 2450 Medium parameters used: f = 2437 MHz;  $\sigma$  = 2.03 mho/m;  $\epsilon_r$  = 53.2;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV3 SN3526; ConvF(8.18, 8.18, 8.18); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

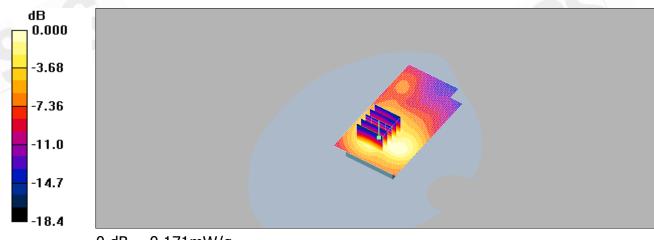
**BODY/Area Scan (51x91x1):** Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.169 mW/g

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

Reference Value = 6.62 V/m; Power Drift = 0.130 dBPeak SAR (extrapolated) = 0.262 W/kg

### SAR(1 g) = 0.154 mW/g; SAR(10 g) = 0.088 mW/g

Maximum value of SAR (measured) = 0.171 mW/g



 $0 \, dB = 0.171 \, mW/g$ 

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Date/Time: 2008/12/22 11:39:54

## BODY\_ WLAN 802.11b\_CH6\_repeated with WELLDONE Battery

#### **DUT: SAPP 300;**

Communication System: Wireless LAN; Frequency: 2437 MHz; Duty Cycle: 1:1 Medium: Muscle 2450 Medium parameters used: f = 2437 MHz;  $\sigma = 2.03$  mho/m;  $\epsilon_r = 53.2$ ;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Flat Section

**DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(8.18, 8.18, 8.18); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

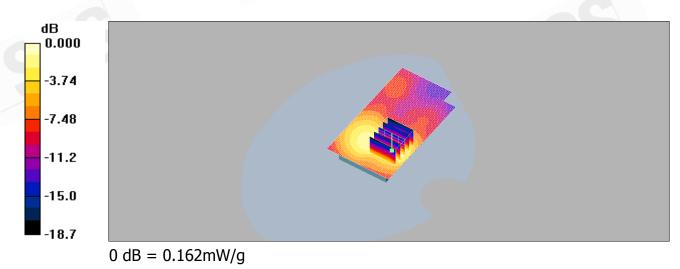
BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.162 mW/g

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

dz=5mmReference Value = 6.23 V/m; Power Drift = -0.185 dB Peak SAR (extrapolated) = 0.265 W/kg

### SAR(1 g) = 0.145 mW/g; SAR(10 g) = 0.075 mW/g

Maximum value of SAR (measured) = 0.162 mW/g



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Date/Time: 2008/12/22 12:26:07

## BODY\_ WLAN 802.11g\_CH1

**DUT: SAPP 300;** 

Communication System: Wireless LAN; Frequency: 2412 MHz; Duty Cycle: 1:1 Medium: Muscle 2450 Medium parameters used: f = 2412 MHz;  $\sigma = 2.02$  mho/m;  $\varepsilon_r = 53.4$ ;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Flat Section

**DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(8.18, 8.18, 8.18); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

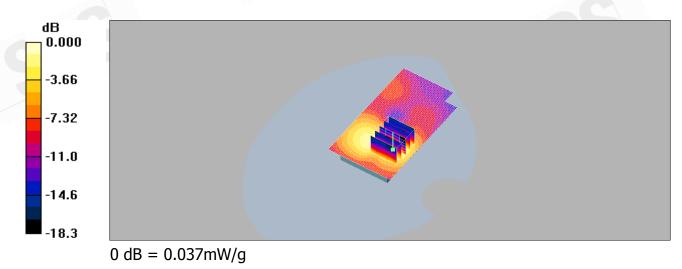
BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.034 mW/g

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

Reference Value = 2.64 V/m; Power Drift = 0.067 dBPeak SAR (extrapolated) = 0.059 W/kg

### SAR(1 g) = 0.033 mW/g; SAR(10 g) = 0.017 mW/g

Maximum value of SAR (measured) = 0.037 mW/g



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Date/Time: 2008/12/22 13:12:50

## BODY\_ WLAN 802.11g\_CH6

**DUT: SAPP 300;** 

Communication System: Wireless LAN; Frequency: 2437 MHz; Duty Cycle: 1:1 Medium: Muscle 2450 Medium parameters used: f = 2437 MHz;  $\sigma = 2.03$  mho/m;  $\epsilon_r = 53.2$ ;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Flat Section

**DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(8.18, 8.18, 8.18); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

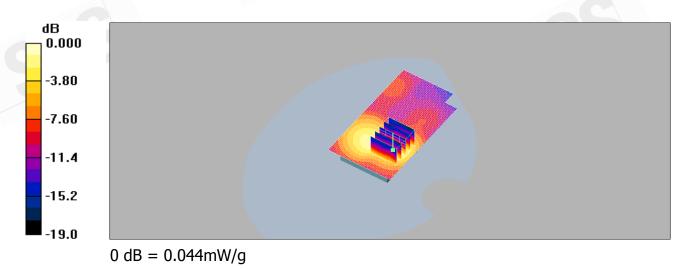
BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.040 mW/g

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

dz=5mmReference Value = 2.81 V/m; Power Drift = -0.075 dBPeak SAR (extrapolated) = 0.071 W/kg

### SAR(1 g) = 0.039 mW/g; SAR(10 g) = 0.020 mW/g

Maximum value of SAR (measured) = 0.044 mW/g



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f (886-2) 2298-0488



Date/Time: 2008/12/22 13:56:39

## BODY\_ WLAN 802.11g \_CH11

**DUT: SAPP 300;** 

Communication System: Wireless LAN; Frequency: 2462 MHz; Duty Cycle: 1:1 Medium: Muscle 2450 Medium parameters used: f = 2462 MHz;  $\sigma = 2.08$  mho/m;  $\varepsilon_r = 53.1$ ;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Flat Section

**DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(8.18, 8.18, 8.18); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

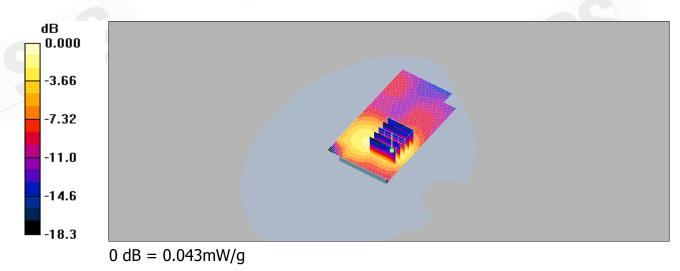
BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.039 mW/g

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

dz=5mmReference Value = 2.79 V/m; Power Drift = -0.114 dBPeak SAR (extrapolated) = 0.072 W/kg

### SAR(1 g) = 0.038 mW/g; SAR(10 g) = 0.020 mW/g

Maximum value of SAR (measured) = 0.043 mW/g



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Date/Time: 2008/12/24 08:14:06

Le Cheek\_CH251

**DUT: SAPP 300;** 

Communication System: GSM 850; Frequency: 848.8 MHz; Duty Cycle: 1:8.3 Medium: Head 850 MHz Medium parameters used: f = 849 MHz;  $\sigma = 0.913$  mho/m;  $\varepsilon_r = 41.7$ ;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Left Section

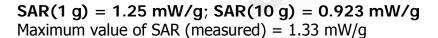
**DASY4** Configuration:

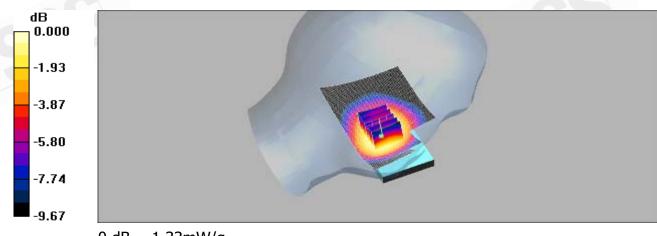
- Probe: EX3DV3 SN3526; ConvF(10.93, 10.93, 10.93); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

LE Cheek/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 1.35 mW/g

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

Reference Value = 13.6 V/m; Power Drift = -0.161 dB Peak SAR (extrapolated) = 1.58 W/kg





 $0 \, dB = 1.33 mW/g$ 

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Date/Time: 2008/12/24 15:10:37

BODY\_CH251

DUT: SAPP 300;

Communication System: GSM 850; Frequency: 848.8 MHz;Duty Cycle: 1:4 Medium: Muscle 900 MHz Medium parameters used (interpolated): f = 848.8 MHz;  $\sigma$  = 0.951 mho/m;  $\epsilon_r$  = 54.1;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Flat Section

- Probe: EX3DV3 SN3526; ConvF(10.87, 10.87, 10.87); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

#### BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.43 mW/g

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

Reference Value = 11.8 V/m; Power Drift = -0.148 dB

Peak SAR (extrapolated) = 1.78 W/kg

SAR(1 g) = 1.35 mW/g; SAR(10 g) = 0.980 mW/g

Maximum value of SAR (measured) = 1.43 mW/g

### BODY/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm,

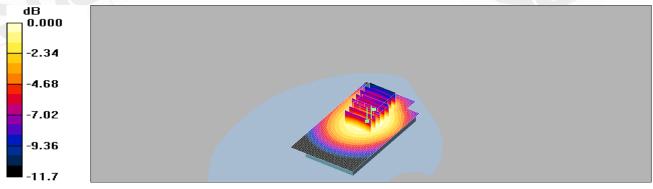
dz=5mm

Reference Value = 11.8 V/m; Power Drift = -0.148 dB

Peak SAR (extrapolated) = 1.82 W/kg

SAR(1 g) = 1.26 mW/g; SAR(10 g) = 0.898 mW/g

Maximum value of SAR (measured) = 1.39 mW/g



 $0 \, dB = 1.39 \, mW/g$ 

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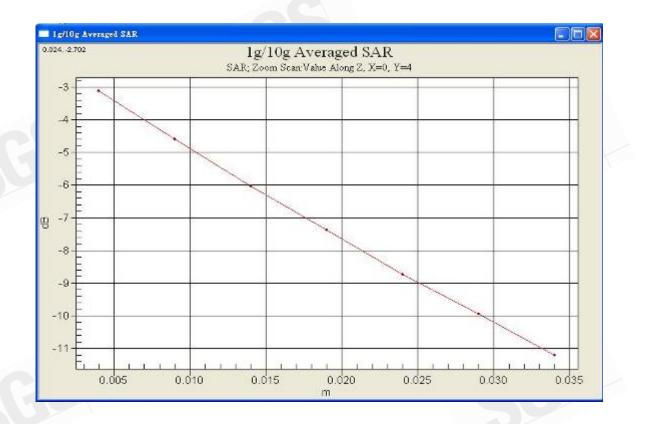
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Date/Time: 2008/12/24 10:42:13

Re Cheek\_CH661

**DUT: SAPP 300;** 

Communication System: GSM1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3 Medium: Head 1900 MHz Medium parameters used: f = 1880 MHz;  $\sigma = 1.47$  mho/m;  $\epsilon_r =$ 41.1;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Right Section

**DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

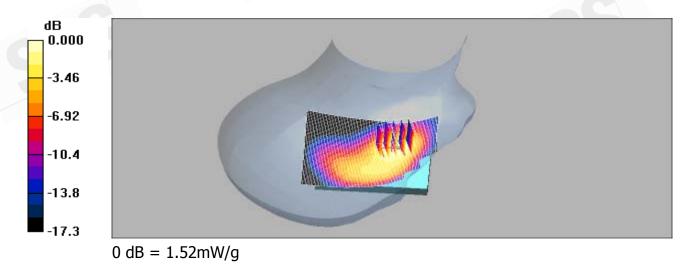
RE Cheek/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 1.55 mW/g

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

Reference Value = 12.0 V/m; Power Drift = 0.033 dB Peak SAR (extrapolated) = 2.33 W/kg

## SAR(1 g) = 1.37 mW/g; SAR(10 g) = 0.779 mW/g

Maximum value of SAR (measured) = 1.52 mW/g



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Date/Time: 2008/12/24 16:31:10

BODY\_CH512

**DUT: SAPP 300;** 

Communication System: GSM1900; Frequency: 1850.2 MHz; Duty Cycle: 1:4 Medium: M1800 & 1900 Medium parameters used (interpolated): f = 1850.2 MHz;  $\sigma = 1.52$ mho/m;  $\varepsilon_r = 52.5$ ;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Flat Section

**DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(9.28, 9.28, 9.28); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

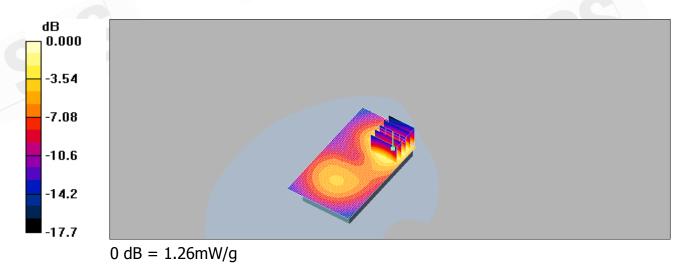
BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 1.26 mW/g

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

Reference Value = 13.1 V/m; Power Drift = 0.004 dBPeak SAR (extrapolated) = 2.00 W/kg

## SAR(1 g) = 1.15 mW/g; SAR(10 g) = 0.641 mW/g

Maximum value of SAR (measured) = 1.26 mW/g



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Date/Time: 2008/12/24 12:56:54

## Re Cheek\_CH1513\_repeated with WELLDONE Battery

#### **DUT: SAPP 300;**

Communication System: WCDMA BAND4; Frequency: 1752.6 MHz; Duty Cycle: 1:1 Medium: Head 1800 MHz Medium parameters used: f = 1753 MHz;  $\sigma = 1.34$  mho/m;  $\epsilon_r =$ 41.4;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Right Section

**DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

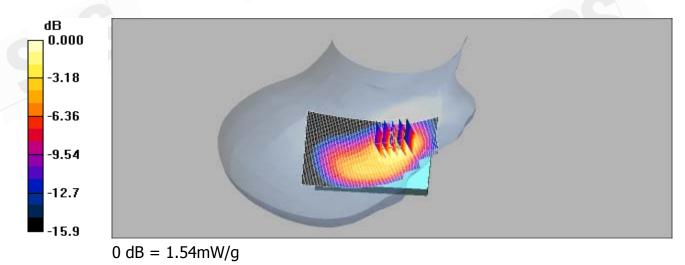
RE Cheek/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 1.52 mW/g

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

Reference Value = 11.1 V/m; Power Drift = 0.113 dBPeak SAR (extrapolated) = 2.29 W/kg

## SAR(1 g) = 1.39 mW/g; SAR(10 g) = 0.809 mW/g

Maximum value of SAR (measured) = 1.54 mW/g



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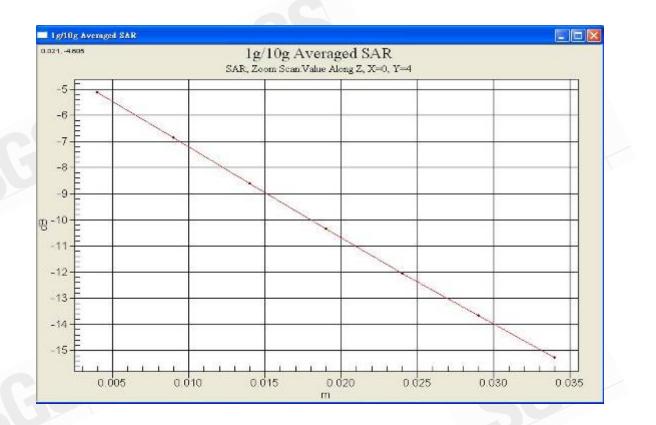
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Date/Time: 2008/12/24 17:52:35

### BODY\_CH1513

**DUT: SAPP 300;** 

Communication System: WCDMA BAND4; Frequency: 1752.6 MHz; Duty Cycle: 1:1 Medium: M1800 & 1900 Medium parameters used: f = 1753 MHz;  $\sigma = 1.45$  mho/m;  $\varepsilon_r = 52.3$ ;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Flat Section

**DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(9.28, 9.28, 9.28); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

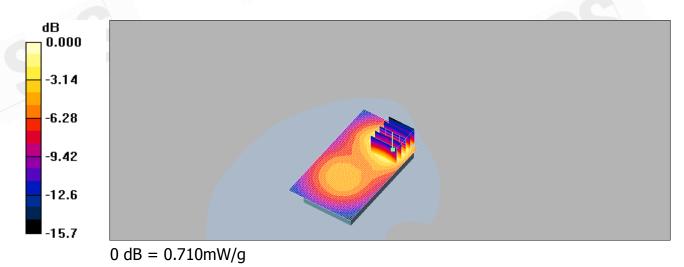
BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.701 mW/g

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

dz=5mmReference Value = 9.58 V/m; Power Drift = 0.147 dB Peak SAR (extrapolated) = 1.10 W/kg

#### SAR(1 g) = 0.646 mW/g; SAR(10 g) = 0.374 mW/g

Maximum value of SAR (measured) = 0.710 mW/g



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Date/Time: 2008/12/24 18:30:14

## BODY\_CH1513\_repeated with HSDPA mode

#### **DUT: SAPP 300;**

Communication System: WCDMA BAND4; Frequency: 1752.6 MHz; Duty Cycle: 1:1 Medium: M1800 & 1900 Medium parameters used: f = 1753 MHz;  $\sigma = 1.45$  mho/m;  $\varepsilon_r = 52.3$ ;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Flat Section

**DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(9.28, 9.28, 9.28); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

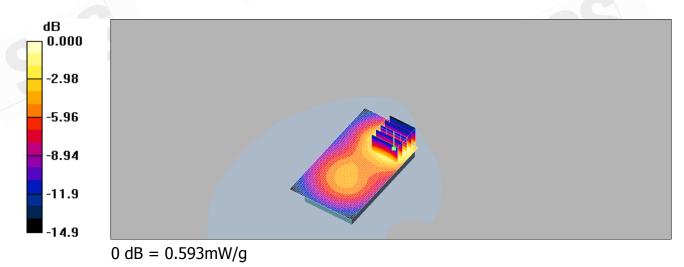
BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.610 mW/g

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

dz=5mmReference Value = 8.41 V/m; Power Drift = 0.015 dB Peak SAR (extrapolated) = 0.898 W/kg

#### SAR(1 g) = 0.546 mW/g; SAR(10 g) = 0.325 mW/g

Maximum value of SAR (measured) = 0.593 mW/g



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Date/Time: 2008/12/24 19:05:23

## BODY\_CH1513\_repeated with HSUPA mode

#### **DUT: SAPP 300;**

Communication System: WCDMA BAND4; Frequency: 1752.6 MHz; Duty Cycle: 1:1 Medium: M1800 & 1900 Medium parameters used: f = 1753 MHz;  $\sigma = 1.45$  mho/m;  $\varepsilon_r = 52.3$ ;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Flat Section

**DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(9.28, 9.28, 9.28); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

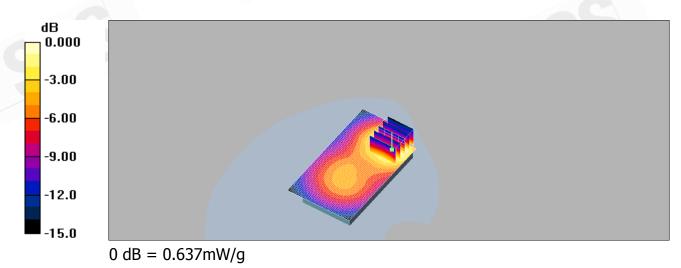
BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.660 mW/g

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

Reference Value = 8.72 V/m; Power Drift = 0.031 dBPeak SAR (extrapolated) = 0.969 W/kg

### SAR(1 g) = 0.588 mW/g; SAR(10 g) = 0.350 mW/g

Maximum value of SAR (measured) = 0.637 mW/g



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Date/Time: 2008/12/24 20:25:17

## BODY\_ WLAN 802.11b\_CH6

**DUT: SAPP 300;** 

Communication System: Wireless LAN; Frequency: 2437 MHz; Duty Cycle: 1:1 Medium: Muscle 2450 Medium parameters used: f = 2437 MHz;  $\sigma = 2.03$  mho/m;  $\epsilon_r = 53.3$ ;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Flat Section

**DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(8.18, 8.18, 8.18); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

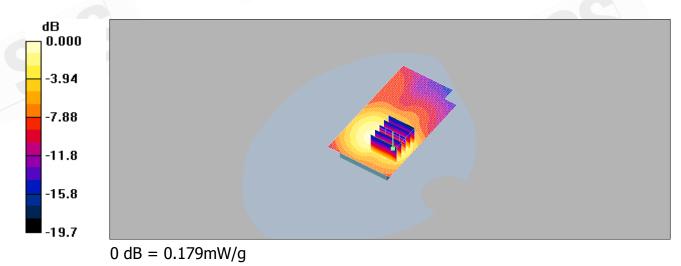
BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.164 mW/g

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

dz=5mmReference Value = 6.43 V/m; Power Drift = -0.010 dB Peak SAR (extrapolated) = 0.286 W/kg

### SAR(1 g) = 0.157 mW/g; SAR(10 g) = 0.084 mW/g

Maximum value of SAR (measured) = 0.179 mW/g



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Date/Time: 2008/12/24 20:57:41

## BODY\_ WLAN 802.11g\_CH6

**DUT: SAPP 300;** 

Communication System: Wireless LAN; Frequency: 2437 MHz; Duty Cycle: 1:1 Medium: Muscle 2450 Medium parameters used: f = 2437 MHz;  $\sigma = 2.03$  mho/m;  $\epsilon_r = 53.3$ ;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Flat Section

**DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(8.18, 8.18, 8.18); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

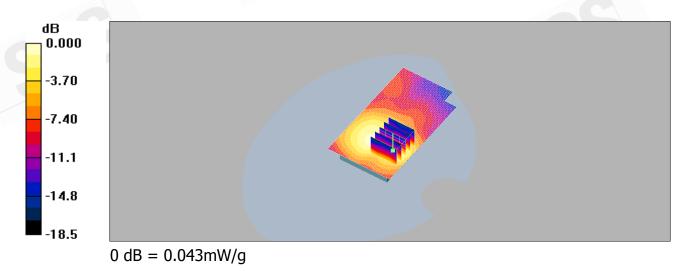
BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.038 mW/g

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

Reference Value = 3.05 V/m; Power Drift = 0.072 dB Peak SAR (extrapolated) = 0.068 W/kg

## SAR(1 g) = 0.037 mW/g; SAR(10 g) = 0.019 mW/g

Maximum value of SAR (measured) = 0.043 mW/g



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## BODY\_Bluetooth\_CH0

**DUT: SAPP 300;** 

Communication System: Bluetooth; Frequency: 2402 MHz; Duty Cycle: 1:1 Medium: Muscle 2450 Medium parameters used: f = 2402 MHz;  $\sigma = 2.03 \text{ mho/m}$ ;  $\epsilon_r = 53.3$ ;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Flat Section

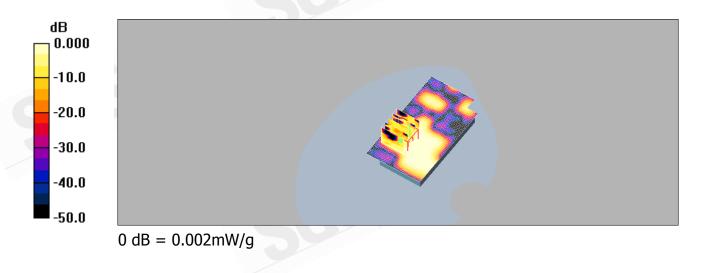
**DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(8.18, 8.18, 8.18); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2009/1/20
- Phantom: SAM2; Type: SAM 4.0; Serial: TP:1270
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.003 mW/g

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

Reference Value = 0.380 V/m; Power Drift = 0.126 dB Peak SAR (extrapolated) = 0.008 W/kg SAR(1 g) = 0.00234 mW/g; SAR(10 g) = 0.00102 mW/gMaximum value of SAR (measured) = 0.002 mW/g



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## BODY\_Bluetooth\_CH39

**DUT: SAPP 300;** 

Communication System: Bluetooth; Frequency: 2441 MHz;Duty Cycle: 1:1 Medium: Muscle 2450 Medium parameters used: f = 2441 MHz;  $\sigma$  = 2.03 mho/m;  $\epsilon_r$  = 53.2;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Flat Section

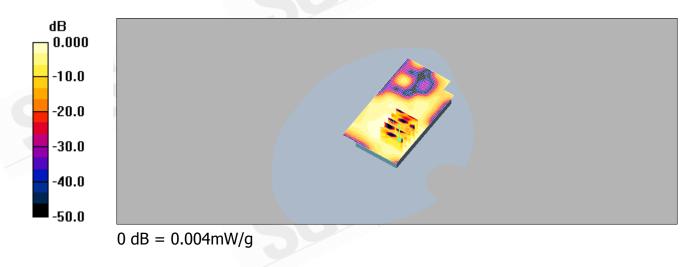
DASY4 Configuration:

- Probe: EX3DV3 SN3526; ConvF(8.18, 8.18, 8.18); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2009/1/20
- Phantom: SAM2; Type: SAM 4.0; Serial: TP:1270
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

**BODY/Area Scan (51x91x1):** Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.004 mW/g

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

Reference Value = 0.794 V/m; Power Drift = 0.11 dB Peak SAR (extrapolated) = 0.006 W/kg SAR(1 g) = 0.0031 mW/g; SAR(10 g) = 0.00145 mW/g Maximum value of SAR (measured) = 0.004 mW/g



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## BODY\_Bluetooth\_CH78

**DUT: SAPP 300;** 

Communication System: Bluetooth; Frequency: 2480 MHz; Duty Cycle: 1:1 Medium: Muscle 2450 Medium parameters used: f = 2480 MHz;  $\sigma = 2.08$  mho/m;  $\varepsilon_r = 53.3$ ;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Flat Section

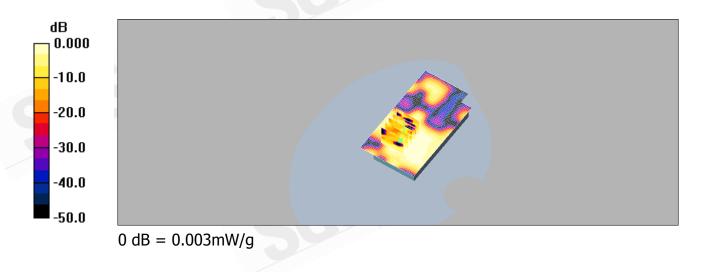
**DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(8.18, 8.18, 8.18); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2009/1/20
- Phantom: SAM2; Type: SAM 4.0; Serial: TP:1270
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

BODY/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.003 mW/g

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

Reference Value = 0.564 V/m; Power Drift = 0.124 dBPeak SAR (extrapolated) = 0.006 W/kg SAR(1 g) = 0.00242 mW/g; SAR(10 g) = 0.00115 mW/gMaximum value of SAR (measured) = 0.003 mW/g



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Report No. : ES/2008/C0010 Page : 113 of 161

Date/Time: 2008/12/17 00:36:15

## DUT: Dipole 835 MHz;

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1 Medium: Head 900 MHz Medium parameters used: f = 835 MHz;  $\sigma$  = 0.908 mho/m;  $\epsilon_r$  = 42.4;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV3 SN3526; ConvF(10.93, 10.93, 10.93); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

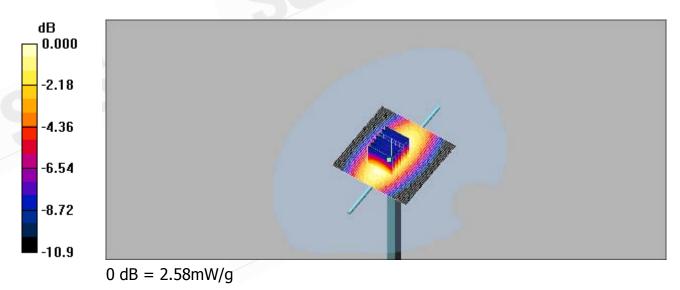
**Pin=250mW/Area Scan (61x61x1):** Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 2.60 mW/g

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

Reference Value = 53.3 V/m; Power Drift = 0.004 dB Peak SAR (extrapolated) = 3.66 W/kg

# SAR(1 g) = 2.4 mW/g; SAR(10 g) = 1.55 mW/g

Maximum value of SAR (measured) = 2.58 mW/g



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Date/Time: 2008/12/18 04:52:29

## DUT: Dipole 835 MHz;

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1 Medium: Muscle 900 MHz Medium parameters used (interpolated): f = 835 MHz;  $\sigma = 0.947$ mho/m;  $\epsilon_r = 54.3$ ;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Flat Section

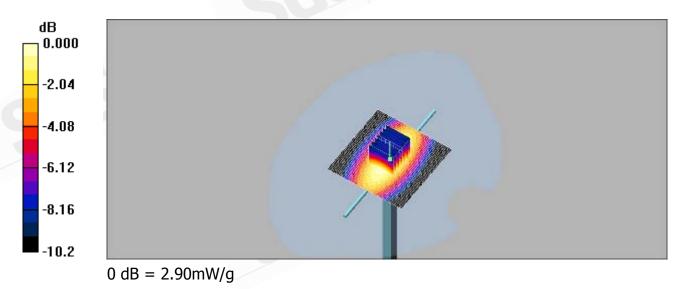
**DASY4** Configuration:

- Probe: EX3DV3 SN3526; ConvF(10.87, 10.87, 10.87); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 2.90 mW/gPin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mmReference Value = 55.6 V/m; Power Drift = 0.010 dB Peak SAR (extrapolated) = 4.00 W/kg

# SAR(1 g) = 2.53 mW/g; SAR(10 g) = 1.77 mW/g

Maximum value of SAR (measured) = 2.90 mW/g



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Date/Time: 2008/12/17 08:46:24

## DUT: Dipole 1900 MHz;

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1 Medium: Head 1900MHz Medium parameters used: f = 1900 MHz;  $\sigma = 1.41$  mho/m;  $\epsilon_r =$ 41.2;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Flat Section

**DASY4** Configuration:

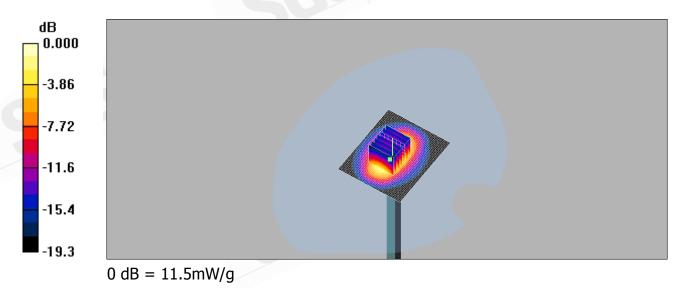
- Probe: EX3DV3 SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Pin=250mw/Area Scan (51x61x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 13.4 mW/gPin=250mw/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mmReference Value = 90.7 V/m; Power Drift = -0.009 dB Peak SAR (extrapolated) = 19.8 W/kg

# SAR(1 g) = 10.1 mW/g; SAR(10 g) = 5.24 mW/g

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Maximum value of SAR (measured) = 11.5 mW/g



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Date/Time: 2008/12/18 07:46:52

## DUT: Dipole 1900 MHz;

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1 Medium: M1800 & 1900 Medium parameters used: f = 1900 MHz;  $\sigma$  = 1.57 mho/m;  $\epsilon_r$  = 51.1;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Flat Section

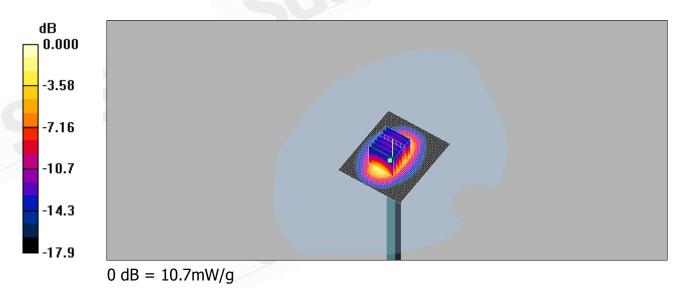
DASY4 Configuration:

- Probe: EX3DV3 SN3526; ConvF(9.28, 9.28, 9.28); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Pin=250mW/Area Scan (51x61x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 12.5 mW/g Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 82.4 V/m; Power Drift = -0.018 dB Peak SAR (extrapolated) = 17.3 W/kg

## SAR(1 g) = 9.43 mW/g; SAR(10 g) = 5 mW/g

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



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Report No. : ES/2008/C0010 Page : 117 of 161

Date/Time: 2008/12/17 16:21:33

## DUT: Dipole 1800 MHz;

Communication System: CW; Frequency: 1800 MHz;Duty Cycle: 1:1 Medium: Head 1800 MHz Medium parameters used: f = 1800 MHz;  $\sigma$  = 1.39 mho/m;  $\epsilon_r$  = 41.2;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Flat Section

DASY4 Configuration:

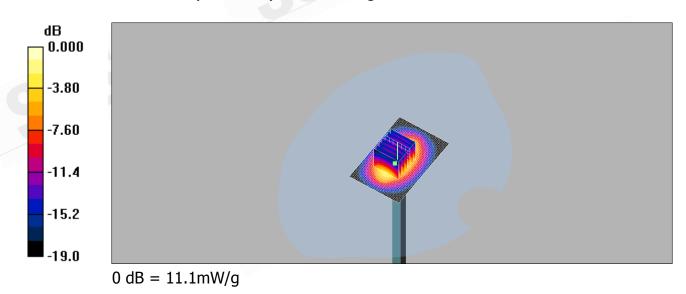
- Probe: EX3DV3 SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

**Pin=250mW/Area Scan (41x61x1):** Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 11.5 mW/g

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

dy=5mm, dz=5mm Reference Value = 88.1 V/m; Power Drift = -0.037 dB Peak SAR (extrapolated) = 18.8 W/kg

SAR(1 g) = 9.98 mW/g; SAR(10 g) = 5.13 mW/g Maximum value of SAR (measured) = 11.1 mW/g



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Report No. : ES/2008/C0010 Page : 118 of 161

Date/Time: 2008/12/18 10:28:43

## DUT: Dipole 1800 MHz;

Communication System: CW; Frequency: 1800 MHz;Duty Cycle: 1:1 Medium: M1800 & 1900 Medium parameters used: f = 1800 MHz;  $\sigma$  = 1.47 mho/m;  $\epsilon_r$  = 51.5;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Flat Section

DASY4 Configuration:

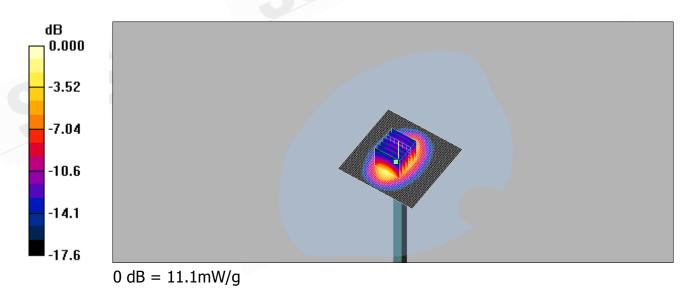
- Probe: EX3DV3 SN3526; ConvF(9.28, 9.28, 9.28); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

**Pin=250mW /Area Scan (61x61x1):** Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 11.8 mW/g

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

dy=5mm, dz=5mm Reference Value = 86.3 V/m; Power Drift = -0.007 dB Peak SAR (extrapolated) = 18.0 W/kg

SAR(1 g) = 9.96 mW/g; SAR(10 g) = 5.29 mW/g Maximum value of SAR (measured) = 11.1 mW/g



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Report No. : ES/2008/C0010 Page : 119 of 161

Date/Time: 2008/12/22 12:53:47

## DUT: Dipole 2450 MHz;

Communication System: CW; Frequency: 2450 MHz;Duty Cycle: 1:1 Medium: M 2450 Medium parameters used: f = 2450 MHz;  $\sigma$  = 2.05 mho/m;  $\epsilon_r$  = 53.1;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Flat Section

DASY4 Configuration:

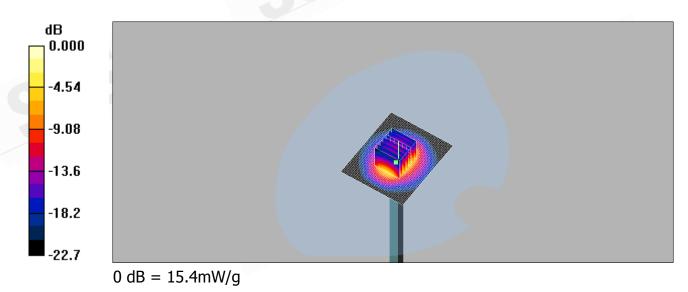
- Probe: EX3DV3 SN3526; ConvF(8.18, 8.18, 8.18); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

**Pin=250mW/Area Scan (51x61x1):** Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 18.6 mW/g

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

dy=5mm, dz=5mm Reference Value = 85.6 V/m; Power Drift = -0.016 dB Peak SAR (extrapolated) = 28.3 W/kg

SAR(1 g) = 13.6 mW/g; SAR(10 g) = 6.25 mW/gMaximum value of SAR (measured) = 15.4 mW/g



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Report No. : ES/2008/C0010 Page : 120 of 161

Date/Time: 2008/12/24 07:21:41

## DUT: Dipole 835 MHz;

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1 Medium: Head 900 MHz Medium parameters used: f = 835 MHz;  $\sigma$  = 0.896 mho/m;  $\epsilon_r$  = 41.6;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Flat Section

DASY4 Configuration:

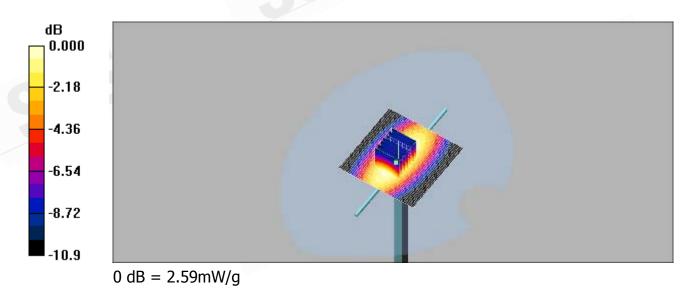
- Probe: EX3DV3 SN3526; ConvF(10.93, 10.93, 10.93); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

**Pin=250mW/Area Scan (61x61x1):** Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 2.60 mW/g

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

dy=5mm, dz=5mm Reference Value = 53.7 V/m; Power Drift = -0.003 dB Peak SAR (extrapolated) = 3.66 W/kg

SAR(1 g) = 2.38 mW/g; SAR(10 g) = 1.55 mW/gMaximum value of SAR (measured) = 2.59 mW/g



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Report No. : ES/2008/C0010 Page : 121 of 161

Date/Time: 2008/12/24 14:03:14

## DUT: Dipole 835 MHz;

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1 Medium: Muscle 900 MHz Medium parameters used (interpolated): f = 835 MHz;  $\sigma$  = 0.946 mho/m;  $\epsilon_r$  = 54.3;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Flat Section

DASY4 Configuration:

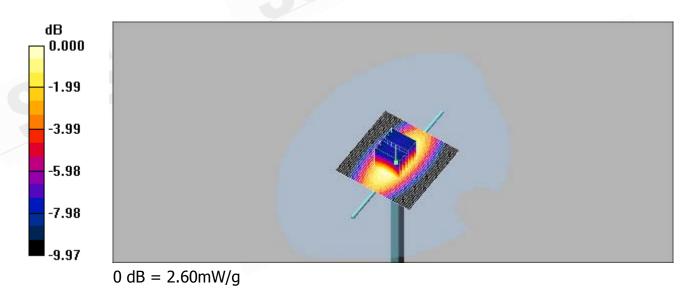
- Probe: EX3DV3 SN3526; ConvF(10.87, 10.87, 10.87); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

**Pin=250mW/Area Scan (61x61x1):** Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 2.60 mW/g

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

dy=5mm, dz=5mm Reference Value = 52.8 V/m; Power Drift = -0.012 dB Peak SAR (extrapolated) = 3.57 W/kg

SAR(1 g) = 2.39 mW/g; SAR(10 g) = 1.6 mW/g Maximum value of SAR (measured) = 2.60 mW/g



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Report No. : ES/2008/C0010 Page : 122 of 161

Date/Time: 2008/12/24 09:35:32

## DUT: Dipole 1900 MHz;

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1 Medium: Head 1900MHz Medium parameters used: f = 1900 MHz;  $\sigma$  = 1.41 mho/m;  $\epsilon_r$  = 40.9;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Flat Section

DASY4 Configuration:

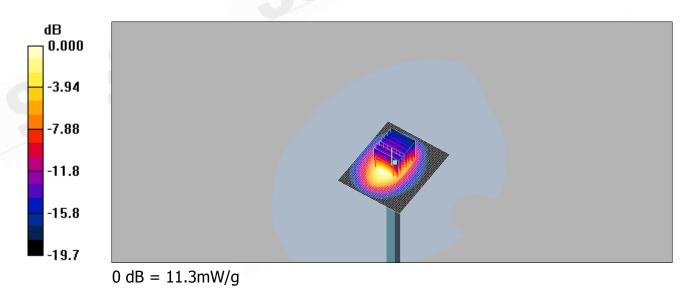
- Probe: EX3DV3 SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

**Pin=250mw/Area Scan (51x61x1):** Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 12.5 mW/g

Pin=250mw/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm,

dy=5mm, dz=5mm Reference Value = 86.2 V/m; Power Drift = 0.007 dB Peak SAR (extrapolated) = 19.5 W/kg

SAR(1 g) = 10.5 mW/g; SAR(10 g) = 5.37 mW/gMaximum value of SAR (measured) = 11.3 mW/g



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Report No. : ES/2008/C0010 Page : 123 of 161

Date/Time: 2008/12/24 15:47:17

## DUT: Dipole 1900 MHz;

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1 Medium: M1800 & 1900 Medium parameters used: f = 1900 MHz;  $\sigma$  = 1.58 mho/m;  $\epsilon_r$  = 52.6;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Flat Section

DASY4 Configuration:

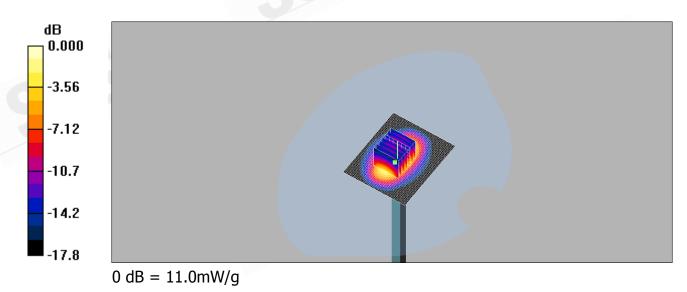
- Probe: EX3DV3 SN3526; ConvF(9.28, 9.28, 9.28); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

**Pin=250mW/Area Scan (51x61x1):** Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 12.9 mW/g

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

dy=5mm, dz=5mm Reference Value = 83.3 V/m; Power Drift = -0.014 dB Peak SAR (extrapolated) = 17.7 W/kg

SAR(1 g) = 9.77 mW/g; SAR(10 g) = 5.14 mW/g Maximum value of SAR (measured) = 11.0 mW/g



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Report No. : ES/2008/C0010 Page : 124 of 161

Date/Time: 2008/12/24 11:50:17

## DUT: Dipole 1800 MHz;

Communication System: CW; Frequency: 1800 MHz;Duty Cycle: 1:1 Medium: Head 1800 MHz Medium parameters used: f = 1800 MHz;  $\sigma$  = 1.4 mho/m;  $\epsilon_r$  = 41.2;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Flat Section

DASY4 Configuration:

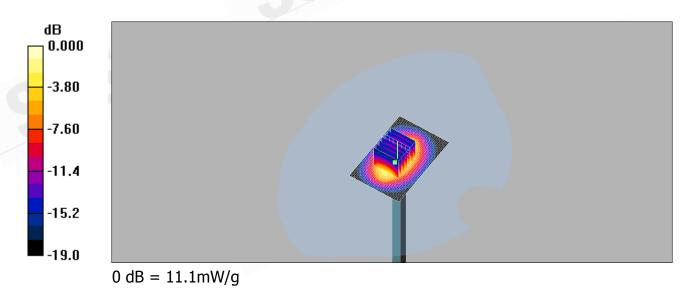
- Probe: EX3DV3 SN3526; ConvF(9.46, 9.46, 9.46); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

**Pin=250mW/Area Scan (41x61x1):** Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 11.6 mW/g

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

dy=5mm, dz=5mm Reference Value = 88.1 V/m; Power Drift = -0.023 dB Peak SAR (extrapolated) = 18.8 W/kg

SAR(1 g) = 9.97 mW/g; SAR(10 g) = 5.15 mW/g Maximum value of SAR (measured) = 11.1 mW/g



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Report No. : ES/2008/C0010 Page : 125 of 161

Date/Time: 2008/12/24 17:04:03

## DUT: Dipole 1800 MHz;

Communication System: CW; Frequency: 1800 MHz;Duty Cycle: 1:1 Medium: M1800 & 1900 Medium parameters used: f = 1800 MHz;  $\sigma$  = 1.49 mho/m;  $\epsilon_r$  = 52.3;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Flat Section

DASY4 Configuration:

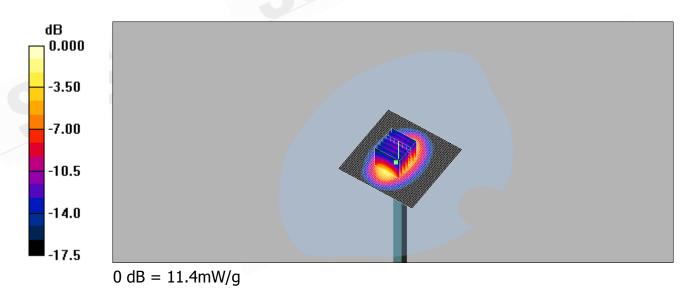
- Probe: EX3DV3 SN3526; ConvF(9.28, 9.28, 9.28); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

**Pin=250mW /Area Scan (61x61x1):** Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 12.1 mW/g

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

dy=5mm, dz=5mm Reference Value = 86.6 V/m; Power Drift = -0.094 dB Peak SAR (extrapolated) = 18.3 W/kg

SAR(1 g) = 10.1 mW/g; SAR(10 g) = 5.3 mW/gMaximum value of SAR (measured) = 11.4 mW/g



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Report No. : ES/2008/C0010 Page : 126 of 161

Date/Time: 2008/12/24 19:37:03

## DUT: Dipole 2450 MHz;

Communication System: CW; Frequency: 2450 MHz;Duty Cycle: 1:1 Medium: M 2450 Medium parameters used: f = 2450 MHz;  $\sigma$  = 2.05 mho/m;  $\epsilon_r$  = 53;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Flat Section

DASY4 Configuration:

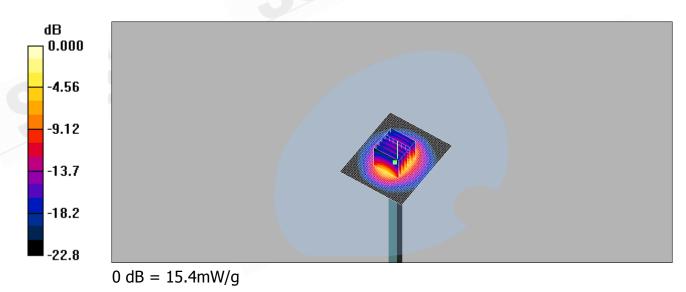
- Probe: EX3DV3 SN3526; ConvF(8.18, 8.18, 8.18); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: SAM1; Type: SAM 4.0; Serial: TP:1419
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

**Pin=250mW/Area Scan (51x61x1):** Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 18.6 mW/g

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

dy=5mm, dz=5mm Reference Value = 85.5 V/m; Power Drift = -0.004 dB Peak SAR (extrapolated) = 28.2 W/kg

SAR(1 g) = 13.6 mW/g; SAR(10 g) = 6.25 mW/gMaximum value of SAR (measured) = 15.4 mW/g



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## DUT: Dipole 2450 MHz;

Communication System: CW; Frequency: 2450 MHz;Duty Cycle: 1:1 Medium: M 2450 Medium parameters used: f = 2450 MHz;  $\sigma$  = 2.05 mho/m;  $\epsilon_r$  = 53;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Flat Section

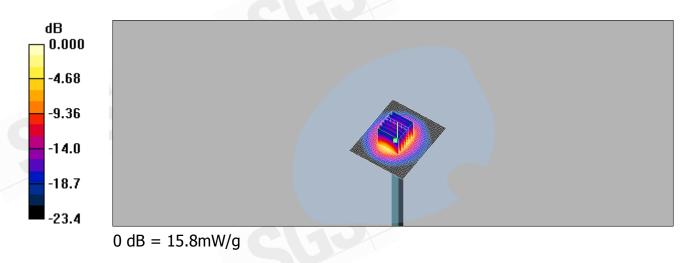
DASY4 Configuration:

- Probe: EX3DV3 SN3526; ConvF(8.18, 8.18, 8.18); Calibrated: 2008/8/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2009/1/20
- Phantom: SAM2; Type: SAM 4.0; Serial: TP:1270
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

**Pin=250mW/Area Scan (51x61x1):** Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 18.7 mW/g

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

dy=5mm, dz=5mm Reference Value = 87.5 V/m; Power Drift = -0.009 dB Peak SAR (extrapolated) = 29.8 W/kg SAR(1 g) = 13.8 mW/g; SAR(10 g) = 6.22 mW/g Maximum value of SAR (measured) = 15.8 mW/g



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| CALIBRATION CI  | ERTIFICATE   |  |  |
| bject   | DAE4 - SD 000 D0   | 04 BA - SN: 547  |  |
| Calibration procedure(s)  | QA CAL-06.v12<br>Calibration proced  | ture for the data acquisition ele  | ctronics (DAE)   |
| Calibration date:   | January 24, 2008   |  |  |
| Condition of the calibrated item  | In Tolerance   |  | Constant in the second   |
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| The measurements and the uncert<br>All celibrations have been conduct<br>Calibration Equipment used (M&TE<br>Primary Standards<br>Fluke Process Calibrator Type 702   | sinties with confidence pro<br>ed in the closed laboratory<br>E ontical for calibration)   | abability are given on the following pages a $(22\pm3)$  | ed are part of the certificate.<br>*C and humidity < 70%.<br>Scheduled Calibration   |
| The measurements and the uncert<br>All osibilitions have been conduction<br>Calibration Equipment used (M&TE<br>Primary Standards   | einties with confidence pro<br>ed in the closed laboratory<br>E ontical for calibration)<br>ID #<br>SN: 6295803  | bability are given on the following pages a<br>facility: environment temperature (22 ± 3)<br>Cal Date (Calibrated by, Certificate No.)<br>04-Oct-07 (Eical AG, No: 6467)   | rd are part of the certificate.<br>*C and humidity < 70%.<br>Scheduled Calibration<br>Oct-08<br>Oct-08<br>Scheduled Check                          |
| The measurements and the uncert<br>All calibrations have been conducts<br>Calibration Equipment used (M&TE<br>Primary Standards<br>Fluke Process Calibrator Type 702<br>Kalthley Multimeter Type 2001   | entices with confidence pro<br>ed in the closed laboratory<br>contical for calibration)<br>ID #<br>SN: 6295803<br>SN: 0810278<br>ID #  | Cal Date (Celibrated by, Certificate No.)<br>04-Oct-07 (Elcal AG, No: 6467)<br>03-Oct-07 (Elcal AG, No: 6466)  | rd are part of the certificate.<br>*C and humidity < 70%.<br>Scheduled Calibration<br>Oct-08<br>Oct-08   |
| The measurements and the uncert<br>All osibilations have been conducts<br>Calibration Equipment used (M&TE<br>Primary Standards<br>Fluke Process Calibrator Type 702<br>Keithley Multimeter Type 2001<br>Secondary Standards                        | entices with confidence pro<br>ed in the closed laboratory<br>contical for calibration)<br>ID #<br>SN: 6295803<br>SN: 0810278<br>ID #  | bability are given on the following pages a<br>facility: environment temperature (22 ± 3)<br>Cal Date (Calibrated by, Cartificate No.)<br>04-Oct-07 (Eical AG, No: 6467)<br>03-Oct-07 (Eical AG, No: 6465)<br>Check Date (in house)      | rd are part of the certificate.<br>*C and humidity < 70%.<br>Scheduled Calibration<br>Oct-08<br>Oct-08<br>Scheduled Check                          |
| The measurements and the uncert<br>All calibrations have been conduct<br>Calibration Equipment used (M&TE<br>Primary Standards<br>Floke Process Calibrator Type 702<br>Keithley Multimeter Type 2001<br>Secondary Standards                         | entices with confidence pro-<br>ed in the closed laboratory<br>E ontical for calibration)<br>ID #<br>SN: 6295803<br>SN: 0810275<br>ID #<br>SE UMS 006 AB 1004  | bability are given on the following pages a<br>facility: environment temperature (22 ± 3)<br>O4-Oct-07 (Elcal AG, No: 6467)<br>03-Oct-07 (Elcal AG, No: 6465)<br>Ohack Date (in house)<br>25-Jun-07 (SPEAG, in house check)              | rd are part of the certificate.<br>*C and humidity < 70%.<br>Scheduled Calibration<br>Oct-08<br>Oct-08<br>Scheduled Check<br>In house check Jun-08 |
| The measurements and the uncert<br>All celibrations have been conducts<br>Calibration Equipment used (M&TE<br>Primary Standards<br>Fluke Process Calibrator Type 702<br>Kelthey Multimeter Type 2001<br>Secondary Standards<br>Calibrator Box V1.1  | ainties with confidence proved in the closed laboratory<br>contical for calibration)<br>ID #<br>SN: 6295803<br>SN: 0810278<br>ID #<br>SE UMS 006 AB 1004   | bability are given on the following pages a<br>facility: environment temperature (22 ± 3)<br>Out-Oct-07 (Elcal AG, No: 6467)<br>03-Oct-07 (Elcal AG, No: 6465)<br>Check Date (in house)<br>25-Jun-07 (SPEAG, in house check)<br>Function | rd are part of the certificate.<br>*C and humidity < 70%.<br>Scheduled Calibration<br>Oct-08<br>Oct-08<br>Scheduled Check<br>In house check Jun-08 |
| The measurements and the uncert<br>All celibrations have been conducts<br>Calibration Equipment used (M&TE<br>Primary Standards<br>Fluke Process Calibrator Type 702<br>Kalibley Multimeter Type 2001<br>Secondary Standards<br>Calibrator Box V1.1 | ainties with confidence proved in the closed laboratory<br>contical for calibration)<br>ID #<br>SN: 6295803<br>SN: 0810278<br>ID #<br>SE UMS 006 AB 1004   | bability are given on the following pages a<br>facility: environment temperature (22 ± 3)<br>Out-Oct-07 (Elcal AG, No: 6467)<br>03-Oct-07 (Elcal AG, No: 6465)<br>Check Date (in house)<br>25-Jun-07 (SPEAG, in house check)<br>Function | rd are part of the certificate.<br>*C and humidity < 70%.<br>Scheduled Calibration<br>Oct-08<br>Oct-08<br>Scheduled Check<br>In house check Jun-08 |
| The measurements and the uncert<br>All calibrations have been conducts<br>Calibration Equipment used (M&TE<br>Primary Standards<br>Fluke Process Calibrator Type 702<br>Keithley Multimeter Type 2001<br>Secondary Standards<br>Calibrator Box V1.1 | A series with confidence provide in the closed laboratory contraction of the closed l | Cal Date (Celibrated by, Certificate No.)<br>04-Oct-07 (Elcal AG, No: 6467)<br>03-Oct-07 (Elcal AG, No: 6467)<br>03-Oct-07 (Elcal AG, No: 6466)<br>Check Date (in house)<br>25-Jun-07 (SPEAG, in house check)<br>Function<br>Technician  | rd are part of the certificate.<br>*C and humidity < 70%.<br>Scheduled Calibration<br>Oct-08<br>Oct-08<br>Scheduled Check<br>In house check Jun-08 |

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| Client SGS (Auden)  |   | certificates   |   |
|---|---|--|---|
| CALIBRATION   | CERTIFICAT  |  | x EX3-3526_Aug08  |
| Object  | EX3DV3 - SN:3   |  |   |
| Calibration procedure(s)  |   | QA CAL-14.v3 and QA CAL-23.v3<br>edure for dosimetric E-field probes   |   |
| Calibration date:   | August 26, 2008   |  |   |
| Condition of the calibrated item  | In Tolerance  |  |   |
| All calibrations have been condu<br>Calibration Equipment used (M8  | ucted in the closed laborate  | probability are given on the following pages an<br>ory facility: environment temperature $(22 \pm 3)^\circ$ C  |   |
| Calibration Equipment used (M8<br>Primary Standards   | ucted in the closed laborate  |  |   |
| Calibration Equipment used (M&<br>Primary Standards<br>Power meter E4419B<br>Power sensor E4412A  | LICED IN the closed laboration<br>ATE critical for calibration)<br>ID #<br>GB41293874<br>MY41495277   | Cal Date (Certificate No.)<br>1-Apr-08 (No. 217-00788)<br>1-Apr-08 (No. 217-00788)   | and humidity < 70%.<br>Scheduled Calibration<br>Apr-09<br>Apr-09  |
| Calibration Equipment used (M8<br>Primary Standards<br>Power meter E4419B<br>Power sensor E4412A<br>Power sensor E4412A   | Licted in the closed laboration<br>ATE critical for calibration)<br>ID #<br>GB41293874<br>MY41495277<br>MY41498087  | Cal Date (Certificate No.)<br>1-Apr-08 (No. 217-00788)<br>1-Apr-08 (No. 217-00788)<br>1-Apr-08 (No. 217-00788)   | Scheduled Calibration<br>Apr-09<br>Apr-09<br>Apr-09   |
| Calibration Equipment used (M8<br>Primary Standards<br>Power meter E4419B<br>Power sensor E4412A<br>Power sensor E4412A<br>Reference 3 dB Attenuator  | Licted in the closed laboration<br>LID #<br>GB41293874<br>MY41495277<br>MY41498087<br>SN: S5054 (3c)  | Cal Date (Certificate No.)<br>1-Apr-08 (No. 217-00788)<br>1-Apr-08 (No. 217-00788)<br>1-Apr-08 (No. 217-00788)<br>1-Apr-08 (No. 217-00788)<br>1-Jul-08 (No. 217-00865)   | Sand humidity < 70%.<br>Scheduled Calibration<br>Apr-09<br>Apr-09<br>Jul-09   |
| Calibration Equipment used (M8<br>Primary Standards<br>Power meter E4419B<br>Power sensor E4412A<br>Power sensor E4412A<br>Reference 3 dB Attenuator<br>Reference 30 dB Attenuator  | Licted in the closed laboration<br>ATE critical for calibration)<br>ID #<br>GB41293874<br>MY41495277<br>MY41498087  | Cal Date (Certificate No.)<br>1-Apr-08 (No. 217-00788)<br>1-Apr-08 (No. 217-00788)<br>1-Apr-08 (No. 217-00788)   | Scheduled Calibration<br>Apr-09<br>Apr-09<br>Apr-09   |
| Calibration Equipment used (M8<br>Primary Standards<br>Power meter E4419B<br>Power sensor E4412A<br>Power sensor E4412A<br>Reference 3 dB Attenuator<br>Reference 30 dB Attenuator<br>Reference 30 dB Attenuator<br>Reference 30 dB Attenuator  | Licted in the closed laboration<br>LID #<br>GB41293974<br>MY41495277<br>MY41495087<br>SN: 55054 (3c)<br>SN: 55054 (3cb)<br>SN: 55129 (30b)<br>SN: 3013  | Cal Date (Certificate No.)<br>1-Apr-08 (No. 217-00788)<br>1-Apr-08 (No. 217-00788)<br>1-Apr-08 (No. 217-00788)<br>1-Jul-08 (No. 217-00785)<br>31-Mar-08 (No. 217-00787)<br>1-Jul-08 (No. 217-00786)<br>2-Jan-08 (No. 217-00786)<br>2-Jan-08 (No. 213-00866)  | c and humidity < 70%.<br>Scheduled Calibration<br>Apr-09<br>Apr-09<br>Jul-09<br>Jul-09<br>Jul-09<br>Jul-09<br>Jan-09  |
| Calibration Equipment used (M8<br>Primary Standards<br>Power meter E4419B<br>Power sensor E4412A<br>Power sensor E4412A<br>Reference 24 BA Attenuator<br>Reference 20 dB Attenuator<br>Reference 30 dB Attenuator<br>Reference Probe ES3DV2<br>DAE4   | LID #<br>GB41293874<br>MY41495277<br>MY4149687<br>SN: 55054 (3c)<br>SN: 55086 (20b)<br>SN: 55129 (30b)<br>SN: 3013<br>SN: 660   | Cal Date (Certificate No.)<br>1-Apr-08 (No. 217-00788)<br>1-Apr-08 (No. 217-00788)<br>1-Apr-08 (No. 217-00788)<br>1-Apr-08 (No. 217-00786)<br>1-Jul-08 (No. 217-00865)<br>31-Mar-08 (No. 217-00866)<br>2-Jan-08 (No. ES3-3013_Jan08)<br>3-Sep-07 (No. DAE4-660_Sep07)  | C and humidity < 70%.<br>Scheduled Calibration<br>Apr-09<br>Apr-09<br>Jul-09<br>Jul-09<br>Jul-09<br>Jul-09<br>Jan-09<br>Sep-08  |
| Calibration Equipment used (M8<br>Primary Standards<br>Power meter E4419B<br>Power sensor E4412A<br>Power sensor E4412A<br>Reference 3 dB Attenuator<br>Reference 20 dB Attenuator<br>Reference 20 dB Attenuator<br>Reference Probe ES3DV2<br>DAE4<br>Secondary Standards   | LID #<br>GB41293874<br>MY41495277<br>MY41496277<br>MY41498087<br>SN: 55054 (3c)<br>SN: 55129 (30b)<br>SN: 3013<br>SN: 660<br>ID #   | Cal Date (Certificate No.)<br>1-Apr-08 (No. 217-00788)<br>1-Apr-08 (No. 217-00788)<br>1-Apr-08 (No. 217-00788)<br>1-Apr-08 (No. 217-00786)<br>1-Jul-08 (No. 217-00787)<br>1-Jul-08 (No. 217-00787)<br>1-Jul-08 (No. 217-00866)<br>2-Jan-08 (No. ES3-3013_Jan08)<br>3-Sep-07 (No. DAE4-660_Sep07)<br>Check Date (in house)  | C and humidity < 70%.<br>Scheduled Calibration<br>Apr-09<br>Apr-09<br>Jul-09<br>Jul-09<br>Jul-09<br>Jul-09<br>Jan-09<br>Sep-08<br>Scheduled Check   |
| Calibration Equipment used (M8<br>Primary Standards<br>Power meter E4419B<br>Power sensor E4412A<br>Power sensor E4412A<br>Reference 3 dB Attenuator<br>Reference 20 dB Attenuator<br>Reference 20 dB Attenuator<br>Reference Probe ES3DV2<br>DAE4<br>Secondary Standards<br>RF generator HP 8648C                              | LID #<br>GB41293874<br>MY41495277<br>MY4149687<br>SN: 55054 (3c)<br>SN: 55086 (20b)<br>SN: 55129 (30b)<br>SN: 3013<br>SN: 660   | Cal Date (Certificate No.)<br>1-Apr-08 (No. 217-00788)<br>1-Apr-08 (No. 217-00788)<br>1-Apr-08 (No. 217-00788)<br>1-Apr-08 (No. 217-00786)<br>1-Jul-08 (No. 217-00865)<br>31-Mar-08 (No. 217-00866)<br>2-Jan-08 (No. ES3-3013_Jan08)<br>3-Sep-07 (No. DAE4-660_Sep07)  | C and humidity < 70%.<br>Scheduled Calibration<br>Apr-09<br>Apr-09<br>Jul-09<br>Jul-09<br>Jul-09<br>Jul-09<br>Jan-09<br>Sep-08  |
| Calibration Equipment used (M8<br>Primary Standards<br>Power meter E4419B<br>Power sensor E4412A<br>Power sensor E4412A<br>Reference 3 dB Attenuator<br>Reference 20 dB Attenuator<br>Reference 20 dB Attenuator<br>Reference Probe ES3DV2<br>DAE4<br>Secondary Standards<br>RF generator HP 8648C                              | Licted in the closed laboration<br>LID #<br>GB41293974<br>MY41495277<br>MY41498087<br>SN: 55054 (3c)<br>SN: 55054 (3c)<br>SN: 55129 (30b)<br>SN: 3013<br>SN: 660<br>LID #<br>US3642U01700   | Cal Date (Certificate No.)<br>1-Apr-08 (No. 217-00788)<br>1-Apr-08 (No. 217-00788)<br>1-Apr-08 (No. 217-00788)<br>1-Jul-08 (No. 217-00788)<br>1-Jul-08 (No. 217-00787)<br>1-Jul-08 (No. 217-00865)<br>31-Mar-08 (No. 217-00866)<br>2-Jan-08 (No. ES3-3013_Jan08)<br>3-Sep-07 (No. DAE4-660_Sep07)<br>Check Date (in house)<br>4-Aug-99 (in house check Oct-07)   | c and humidity < 70%.<br>Scheduled Calibration<br>Apr-09<br>Apr-09<br>Jul-09<br>Jul-09<br>Jul-09<br>Jan-09<br>Sep-08<br>Scheduled Check<br>In house check: Oct-09                           |
| Calibration Equipment used (M8<br>Primary Standards<br>Power meter E4419B<br>Power sensor E4412A<br>Power sensor E4412A<br>Reference 3 dB Attenuator<br>Reference 20 dB Attenuator<br>Reference 20 dB Attenuator<br>Reference Probe ES3DV2<br>DAE4<br>Secondary Standards<br>RF generator HP 8648C<br>Network Analyzer HP 8753E | LID #<br>ID #<br>GB41293874<br>MY41495277<br>MY41495087<br>SN: 55054 (3c)<br>SN: 55086 (20b)<br>SN: 55129 (30b)<br>SN: 55129 (30b)<br>SN: 3013<br>SN: 660<br>ID #<br>US3642U01700<br>US3642U01700<br>US37390585                                     | Cal Date (Certificate No.)<br>1-Apr-08 (No. 217-00788)<br>1-Apr-08 (No. 217-00788)<br>1-Apr-08 (No. 217-00788)<br>1-Apr-08 (No. 217-00786)<br>1-Jul-08 (No. 217-00786)<br>31-Mar-08 (No. 217-00787)<br>1-Jul-08 (No. ES3-3013_Jan08)<br>3-Sep-07 (No. DAE4-660_Sep07)<br>Check Date (in house)<br>4-Aug-99 (in house check Oct-07)<br>18-Oct-01 (in house check Oct-07)  | c and humidity < 70%.<br>Scheduled Calibration<br>Apr-09<br>Apr-09<br>Jul-09<br>Apr-09<br>Jul-09<br>Jul-09<br>Sep-08<br>Scheduled Check<br>In house check: Oct-09<br>In house check: Oct-08 |
|   | LICEd in the closed laboration<br>LID #<br>GB41293874<br>MY41495277<br>MY41498087<br>SN: 55054 (3c)<br>SN: 55086 (20b)<br>SN: 55129 (30b)<br>SN: 56129 (30b)<br>SN: 3013<br>SN: 660<br>ID #<br>US3642U01700<br>US37390585<br>Name                   | Cal Date (Certificate No.)<br>1-Apr-08 (No. 217-00788)<br>1-Apr-08 (No. 217-00788)<br>1-Apr-08 (No. 217-00788)<br>1-Apr-08 (No. 217-00785)<br>1-Jul-08 (No. 217-00787)<br>1-Jul-08 (No. 217-00866)<br>2-Jan-08 (No. ES3-3013_Jan08)<br>3-Sep-07 (No. DAE4-660_Sep07)<br>Check Date (in house)<br>4-Aug-99 (in house check Oct-07)<br>18-Oct-01 (in house check Oct-07)<br>Function   | c and humidity < 70%.<br>Scheduled Calibration<br>Apr-09<br>Apr-09<br>Jul-09<br>Apr-09<br>Jul-09<br>Jul-09<br>Sep-08<br>Scheduled Check<br>In house check: Oct-09<br>In house check: Oct-08 |
| Calibration Equipment used (M8<br>Primary Standards<br>Power meter E4419B<br>Power sensor E4412A<br>Power sensor E4412A<br>Reference 30 dB Attenuator<br>Reference 30 dB Attenuator<br>Reference Probe ES3DV2<br>DAE4<br>Secondary Standards<br>RF generator HP 8648C<br>Network Analyzer HP 8753E<br>Calibrated by:            | Licted in the closed laboration<br>LID #<br>GB41293874<br>MY41495277<br>MY41498087<br>SN: S5054 (3c)<br>SN: S5056 (2ob)<br>SN: S5096 (2ob)<br>SN: S5129 (30b)<br>SN: 3013<br>SN: 660<br>LD #<br>US3642U01700<br>US37390585<br>Name<br>Katja Pokovic | Cal Date (Certificate No.)<br>1-Apr-08 (No. 217-00788)<br>1-Apr-08 (No. 217-00788)<br>1-Apr-08 (No. 217-00788)<br>1-Apr-08 (No. 217-00786)<br>31-Mar-08 (No. 217-00787)<br>1-Jul-08 (No. 217-00787)<br>1-Jul-08 (No. 217-00787)<br>2-Jan-08 (No. 217-00787)<br>2-Jan-08 (No. 217-00787)<br>1-Jul-08 (No. 217-00787)<br>2-Jan-08 (No. 217-00787)<br>1-Jul-08 (No. 217-00787)<br>1-Jul-08 (No. 217-00787)<br>2-Jan-08 (No. 217-00787)<br>1-Jul-08 (No. 217-00788)<br>1-Jul-08 (No. 2 | c and humidity < 70%.<br>Scheduled Calibration<br>Apr-09<br>Apr-09<br>Jul-09<br>Apr-09<br>Jul-09<br>Jul-09<br>Sep-08<br>Scheduled Check<br>In house check: Oct-09<br>In house check: Oct-08 |

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Service suisse d'étalonnage

Servizio svizzero di taratura

Swiss Calibration Service Accreditation No.: SCS 108

Calibration Laboratory of Schmid & Partner Engineering AG aughausstrasse 43, 8004 Zurich, Switzerland



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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

#### Glossary:

TSL NORMx,y,z ConvF DCP Polarization  $\phi$ Polarization 9

tissue simulating liquid sensitivity in free space sensitivity in TSL / NORMx,y,z diode compression point φ rotation around probe axis 9 rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., 9 = 0 is normal to probe axis

## Calibration is Performed According to the Following Standards:

- a) 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 b) devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005

### Methods Applied and Interpretation of Parameters:

- NORMx,y,z: Assessed for E-field polarization 9 = 0 (f ≤ 900 MHz in TEM-cell; f > 1800 MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not effect the E<sup>2</sup>-field uncertainty inside TSL (see below ConvF).
- NORM(f)x,y,z = NORMx,y,z \* frequency\_response (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of ConvF.
- DCPx,y,z: DCP are numerical linearization parameters assessed based on the data of power sweep (no uncertainty required). DCP does not depend on frequency nor media.
- ConvF and Boundary Effect Parameters: Assessed in flat phantom using E-field (or Temperature Transfer Standard for f ≤ 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 NORMx, y, z \* ConvF whereby the uncertainty corresponds to that given for ConvF. A frequency dependent ConvF is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 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.

Certificate No: EX3-3526\_Aug08

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EX3DV3 SN:3526

August 26, 2008

# Probe EX3DV3

# SN:3526

Manufactured: Last calibrated: Recalibrated: March 19, 2004 August 29, 2007 August 26, 2008

Calibrated for DASY Systems (Note: non-compatible with DASY2 system!)

Certificate No: EX3-3526\_Aug08

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#### EX3DV3 SN:3526

August 26, 2008

## DASY - Parameters of Probe: EX3DV3 SN:3526

Sensitivity in Free Space<sup>A</sup>

Diode Compression<sup>B</sup>

| NormX | 0.99 ± 10.1% | $\mu$ V/(V/m) <sup>2</sup> | DCP X | 93 mV        |
|-------|--------------|----------------------------|-------|--------------|
| NormY | 0.81 ± 10.1% | $\mu V/(V/m)^2$            | DCP Y | 94 mV        |
| NormZ | 0.89 ± 10.1% | $\mu$ V/(V/m) <sup>2</sup> | DCP Z | <b>94</b> mV |

Sensitivity in Tissue Simulating Liquid (Conversion Factors)

Please see Page 8.

#### **Boundary Effect**

Typical SAR gradient: 5 % per mm TSL 900 MHz

| Sensor Cente          | r to Phantom Surface Distance | 2.0 mm | 3.0 mm |
|-----------------------|-------------------------------|--------|--------|
| SAR <sub>be</sub> [%] | Without Correction Algorithm  | 8.9    | 5.3    |
| SAR <sub>be</sub> [%] | With Correction Algorithm     | 0.8    | 0.4    |

Typical SAR gradient: 10 % per mm 1810 MHz TSL

| Sensor Cer            | ter to Phantom Surface Distance | 2.0 mm | 3.0 mm |
|-----------------------|---------------------------------|--------|--------|
| SAR <sub>be</sub> [%] | Without Correction Algorithm    | 6.8    | 3.6    |
| SAR <sub>be</sub> [%] | With Correction Algorithm       | 0.5    | 0.2    |

#### Sensor Offset

1.0 mm Probe Tip to Sensor Center

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 Page 8).

<sup>B</sup> Numerical linearization parameter: uncertainty not required.

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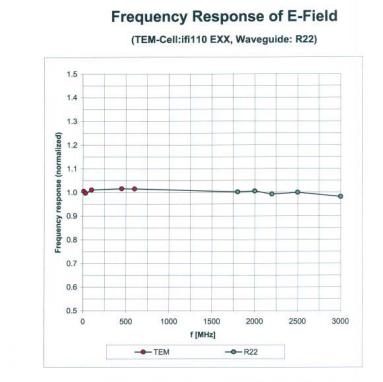
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EX3DV3 SN:3526

August 26, 2008



#### Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

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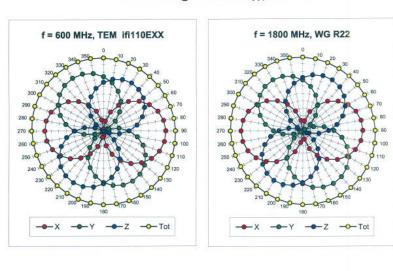
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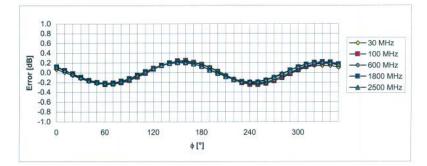
Report No. : ES/2008/C0010 Page : 134 of 161

EX3DV3 SN:3526

August 26, 2008



## Receiving Pattern ( $\phi$ ), $\vartheta = 0^{\circ}$



Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

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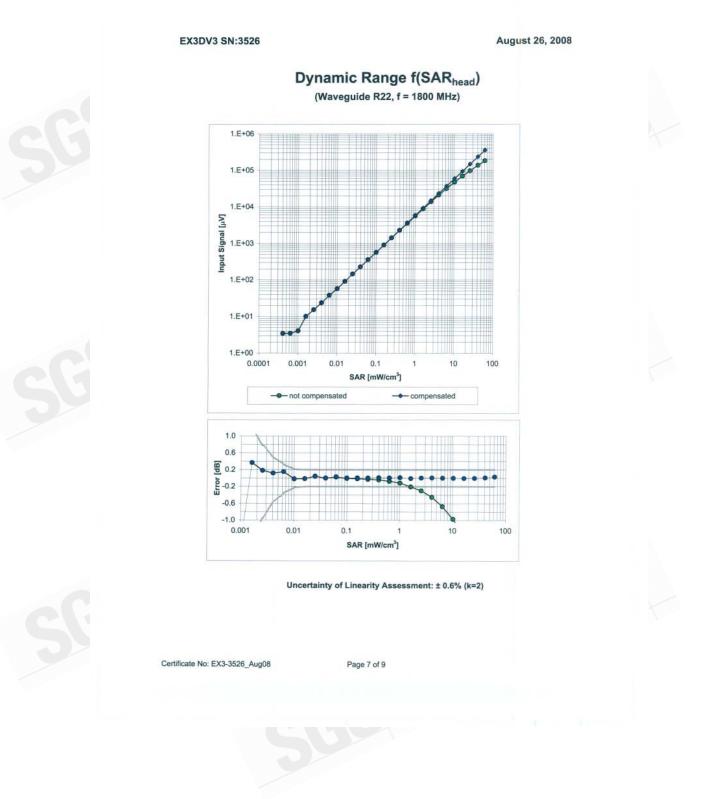
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#### EX3DV3 SN:3526

#### August 26, 2008

| f [MHz] | Validity [MHz] <sup>C</sup> | TSL  | Permittivity | Conductivity | Alpha | Depth | ConvF Uncertainty |      |
|---------|-----------------------------|------|--------------|--------------|-------|-------|-------------------|------|
| 900     | ± 50 / ± 100                | Head | 41.5 ± 5%    | 0.97 ± 5%    | 0.54  | 0.76  | 10.93 ± 11.0% (k  | :=2) |
| 1810    | ± 50 / ± 100                | Head | 40.0 ± 5%    | 1.40 ± 5%    | 0.52  | 0.68  | 9.46 ± 11.0% (k   | =2)  |
| 1950    | ± 50 / ± 100                | Head | 40.0 ± 5%    | 1.40 ± 5%    | 0.58  | 0.61  | 9.15 ± 11.0% (k   | =2)  |
| 2450    | ± 50 / ± 100                | Head | 39.2 ± 5%    | 1.80 ± 5%    | 0.42  | 0.74  | 8.49 ± 11.0% (k   | :=2) |
| 2600    | ± 50 / ± 100                | Head | 39.0 ± 5%    | 1.96 ± 5%    | 0.42  | 0.75  | 8.53 ± 11.0% (k   | =2)  |
| 3500    | ± 50 / ± 100                | Head | 37.9 ± 5%    | 2.91 ± 5%    | 0.30  | 1.20  | 8.15 ± 13.1% (k   | =2)  |
| 5200    | ± 50 / ± 100                | Head | 36.0 ± 5%    | 4.66 ± 5%    | 0.40  | 1.65  | 5.68 ± 13.1% (k   | =2)  |
| 5500    | ± 50 / ± 100                | Head | 35.6 ± 5%    | 4.96 ± 5%    | 0.40  | 1.65  | 5.01 ± 13.1% (k   | =2)  |
| 5800    | ± 50 / ± 100                | Head | 35.3 ± 5%    | 5.27 ± 5%    | 0.40  | 1.65  | 4.90 ± 13.1% (k   | =2)  |
| 900     | ± 50 / ± 100                | Body | 55.0 ± 5%    | 1.05 ± 5%    | 0.66  | 0.68  | 10.87 ± 11.0% (k  | =2)  |
| 1810    | ± 50 / ± 100                | Body | 53.3 ± 5%    | 1.52 ± 5%    | 0.50  | 0.74  | 9.28 ± 11.0% (k   | =2)  |
| 1950    | ± 50 / ± 100                | Body | 53.3 ± 5%    | 1.52 ± 5%    | 0.45  | 0.78  | 9.17 ± 11.0% (k   | =2)  |
| 2450    | ± 50 / ± 100                | Body | 52.7 ± 5%    | 1.95 ± 5%    | 0.44  | 0.80  | 8.18 ± 11.0% (k   | =2)  |
| 2600    | ± 50 / ± 100                | Body | 52.5 ± 5%    | 2.16 ± 5%    | 0.47  | 0.76  | 8.14 ± 11.0% (k   | =2)  |
| 3500    | ± 50 / ± 100                | Body | 51.3 ± 5%    | 3.31 ± 5%    | 0.30  | 1.20  | 7.36 ± 13.1% (k   | =2)  |
| 5200    | ± 50 / ± 100                | Body | 49.0 ± 5%    | 5.30 ± 5%    | 0.40  | 1.70  | 4.89 ± 13.1% (k   | =2)  |
| 5500    | ± 50 / ± 100                | Body | 48.6 ± 5%    | 5.65 ± 5%    | 0.40  | 1.70  | 4.39 ± 13.1% (k   | =2)  |
| 5800    | ± 50 / ± 100                | Body | 48.2 ± 5%    | 6.00 ± 5%    | 0.40  | 1.70  | 4.44 ± 13.1% (k   | =2)  |

### **Conversion Factor Assessment**

<sup>C</sup> The validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2). The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

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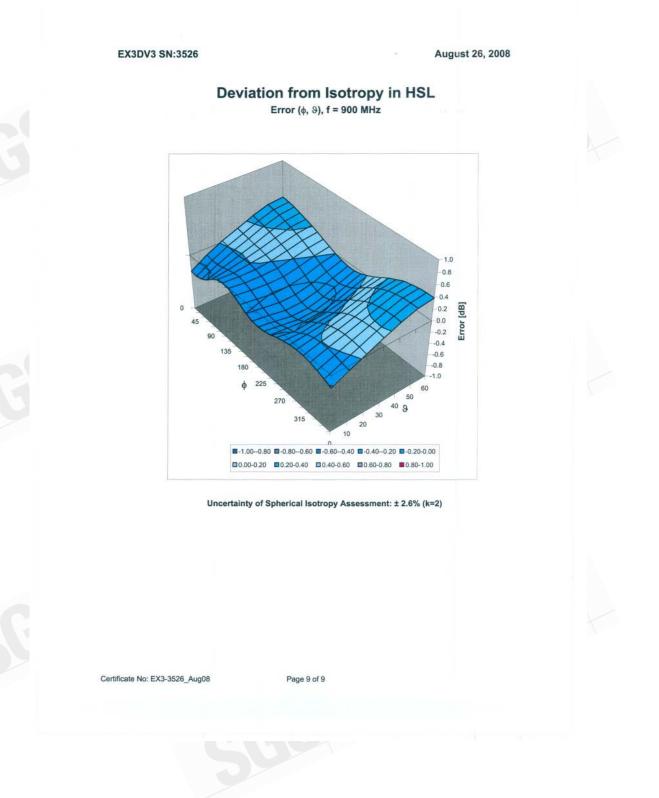
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# 7. Uncertainty Analysis

| Error Description            | Uncertainty<br>value | Prob.<br>Dist. | Div.       | $\begin{pmatrix} (c_i) \\ 1 g \end{pmatrix}$ | $\begin{pmatrix} (c_i) \\ 10g \end{pmatrix}$ | Std. Unc.<br>(1g) | Std. Unc.<br>(10g) | $\left  \begin{array}{c} (v_i) \\ v_{eff} \end{array} \right $ |
|------------------------------|----------------------|----------------|------------|--|--|-------------------|--------------------|--|
| Measurement System           |                      |                |            |  |  |                   |                    |  |
| Probe Calibration            | $\pm 4.8 \%$         | N              | 1          | 1  | 1  | $\pm 4.8\%$       | $\pm 4.8\%$        | $\infty$   |
| Axial Isotropy               | $\pm 4.7\%$          | R              | $\sqrt{3}$ | 0.7  | 0.7  | $\pm 1.9\%$       | $\pm 1.9 \%$       | $\infty$   |
| Hemispherical Isotropy       | $\pm 9.6 \%$         | R              | $\sqrt{3}$ | 0.7  | 0.7  | $\pm 3.9\%$       | $\pm 3.9\%$        | $\infty$   |
| Boundary Effects             | $\pm 1.0 \%$         | R              | $\sqrt{3}$ | 1  | 1  | $\pm 0.6\%$       | $\pm 0.6 \%$       | $\infty$   |
| Linearity                    | $\pm 4.7 \%$         | R              | $\sqrt{3}$ | 1  | 1  | $\pm 2.7\%$       | $\pm 2.7 \%$       | $\infty$   |
| System Detection Limits      | $\pm 1.0 \%$         | R              | $\sqrt{3}$ | 1  | 1  | $\pm 0.6\%$       | $\pm 0.6 \%$       | $\infty$   |
| Readout Electronics          | $\pm 1.0 \%$         | N              | 1          | 1  | 1  | ±1.0%             | $\pm 1.0 \%$       | $\infty$   |
| Response Time                | $\pm 0.8 \%$         | R              | $\sqrt{3}$ | 1  | 1  | $\pm 0.5 \%$      | $\pm 0.5 \%$       | $\infty$   |
| Integration Time             | $\pm 2.6 \%$         | R              | $\sqrt{3}$ | 1  | 1  | $\pm 1.5\%$       | $\pm 1.5 \%$       | $\infty$   |
| RF Ambient Conditions        | $\pm 3.0 \%$         | R              | $\sqrt{3}$ | 1  | 1  | ±1.7%             | $\pm 1.7 \%$       | $\infty$   |
| Probe Positioner             | $\pm 0.4\%$          | R              | $\sqrt{3}$ | 1  | 1  | $\pm 0.2\%$       | $\pm 0.2 \%$       | $\infty$   |
| Probe Positioning            | $\pm 2.9 \%$         | R              | $\sqrt{3}$ | 1  | 1  | $\pm 1.7\%$       | $\pm 1.7\%$        | $\infty$   |
| Max. SAR Eval.               | ±1.0%                | R              | $\sqrt{3}$ | 1  | 1  | $\pm 0.6\%$       | ±0.6 %             | $\infty$   |
| Test Sample Related          |                      |                |            |  |  |                   |                    |  |
| Device Positioning           | $\pm 2.9\%$          | N              | 1          | 1  | 1  | $\pm 2.9\%$       | $\pm 2.9 \%$       | 875  |
| Device Holder                | $\pm 3.6\%$          | N              | 1          | 1  | 1  | $\pm 3.6\%$       | $\pm 3.6 \%$       | 5  |
| Power Drift                  | $\pm 5.0 \%$         | R              | $\sqrt{3}$ | 1  | 1  | $\pm 2.9\%$       | $\pm 2.9\%$        | $\infty$   |
| Phantom and Setup            |                      |                |            |  |  |                   |                    |  |
| Phantom Uncertainty          | $\pm 4.0 \%$         | R              | $\sqrt{3}$ | 1  | 1  | $\pm 2.3\%$       | $\pm 2.3 \%$       | $\infty$   |
| Liquid Conductivity (target) | $\pm 5.0 \%$         | R              | $\sqrt{3}$ | 0.64   | 0.43   | $\pm 1.8\%$       | $\pm 1.2 \%$       | $\infty$   |
| Liquid Conductivity (meas.)  | $\pm 2.5 \%$         | N              | 1          | 0.64   | 0.43   | $\pm 1.6 \%$      | $\pm 1.1 \%$       | $\infty$   |
| Liquid Permittivity (target) | $\pm 5.0 \%$         | R              | $\sqrt{3}$ | 0.6  | 0.49   | $\pm 1.7\%$       | $\pm 1.4 \%$       | $\infty$   |
| Liquid Permittivity (meas.)  | $\pm 2.5 \%$         | N              | 1          | 0.6  | 0.49   | $\pm 1.5 \%$      | $\pm 1.2 \%$       | $\infty$   |
| Combined Std. Uncertainty    |                      |                |            |  |  | $\pm 10.3 \%$     | $\pm 10.0 \%$      | 331  |
| Expanded STD Uncertain       | ty                   |                |            |  |  | $\pm 20.6\%$      | $\pm 20.1\%$       |  |

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# 8. Phantom description

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| Scre          | TUO OF           | Partner      | Engineering AG   |   |
|---------------|------------------|--------------|--|---|
| COLUMN TWO IS | distant strength | COLUMN STATE | the standard state of the state | - |

Zeughausstrasse 43, 8004 Zurich, Switzerland Phone +41 1 245 9700, Fax +41 1 245 9779 info@speeg.com, http://www.speeg.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 Zürich<br>Switzerland |  |

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#### 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<br>according to the CAD model.  | IT'IS CAD File (*)  | First article,<br>Samples                            |
| Material thickness<br>of shell | Compliant with the requirements<br>according to the standards   | 2mm +/- 0.2mm in flat<br>and specific areas of<br>head section                    | First article,<br>Samples,<br>TP-1314 ff.            |
| Material thickness<br>at ERP   | Compliant with the requirements<br>according to the standards   | 6mm +/- 0.2mm at ERP  | First article,<br>All items                          |
| Material<br>parameters         | Dielectric parameters for required<br>frequencies   | 300 MHz – 6 GHz:<br>Relative permittivity < 5,<br>Loss tangent < 0.05             | Material<br>samples                                  |
| Material resistivity           | The material has been tested to be<br>compatible with the liquids defined in<br>the standards if handled and cleaned<br>according to the instructions.<br>Observe technical Note for material<br>compatibility. | DEGMBE based<br>simulating liquids  | Pre-series,<br>First article,<br>Material<br>samples |
| Sagging                        | Compliant with the requirements<br>according to the standards.<br>Sagging of the flat section when filled<br>with tissue simulating liquid.   | < 1% typical < 0.8% if<br>filled with 155mm of<br>HSL900 and without<br>DUT below | Prototypes,<br>Sample<br>testing                     |

#### Standards

CENELEC EN 50361 IEEE Std 1528-2003 [1] [2]

IEC 62209 Part I

[3] [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].

07.07.2005

Date Signature / Stamp

D e 8

to & Partner Engineering AG Inusadanse 43, 8004 Zuridi Switzerland I 141 - 245 8700 Faw 40 245 9779 ng.

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Doc No 881 - QD 000 P40 C - F

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9. System Validation from Original equipment supplier

| Accredited by the Swiss Accred   |  | Accreditation No.  | wiss Calibration Service   |
|--|--|--|--|
| Multilateral Agreement for the n   | IN CONCERNMENT OF CAMPAC   |  |  |
| Client SGS (Auden)   | CREW-KILL  | Certificate No: D  | 835V2-4d063_Jun08  |
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| Object   | D835V2 - SN: 40  | 1063   |  |
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| Calibration procedure(s)   | QA CAL-05.v7<br>Calibration proce  | dure for dipole validation kits  |  |
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| Calibration date:  | June 06, 2008  | AUTO AND THE REAL OF A   |  |
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Report No. : ES/2008/C0010 Page : 141 of 161

#### **DASY4 Validation Report for Head TSL**

Date/Time: 05.06.2008 14:11:53

Test Laboratory: SPEAG, Zurich, Switzerland

#### DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d063

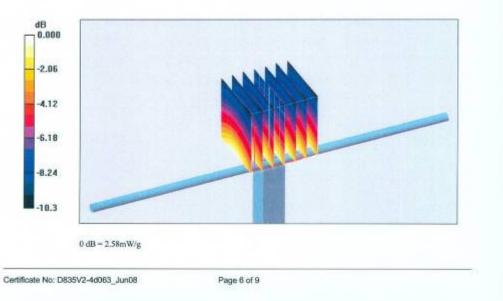
Communication System: CW-835; Frequency: 835 MHz; Duty Cycle: 1:1 Medium: HSL 900 MHz; Medium parameters used: f = 835 MHz;  $\sigma = 0.879$  mho/m;  $\varepsilon_r = 40.3$ ;  $\rho = 1000$  kg/m<sup>3</sup> Phantom section: Flat Section Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV2 SN3025; ConvF(5.97, 5.97, 5.97); Calibrated: 28.04.2008
- Sensor-Surface: 3.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 14.03.2008 .
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; ;
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

#### Pin=250mW; dip=15mm; dist=3.4mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 55.3 V/m; Power Drift = -0.021 dB

Peak SAR (extrapolated) = 3.36 W/kg SAR(1 g) = 2.29 mW/g; SAR(10 g) = 1.52 mW/g Maximum value of SAR (measured) = 2.58 mW/g



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Member of SGS Group



Report No. : ES/2008/C0010 Page : 142 of 161

#### **DASY4 Validation Report for Body TSL**

Date/Time: 06.06.2008 14:01:1

Test Laboratory: SPEAG, Zurich, Switzerland

#### DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d063

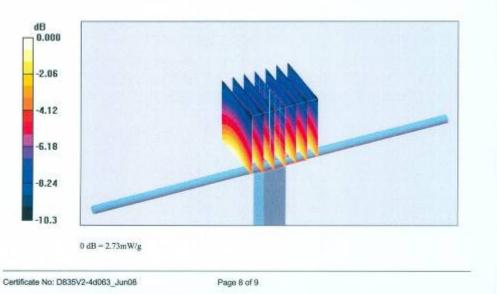
Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1 Medium: MSL900; Medium parameters used: f = 835 MHz;  $\sigma = 0.99$  mho/m;  $\epsilon_r = 53.4$ ;  $\rho = 1000$  kg/m<sup>3</sup> Phantom section: Flat Section Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV2 SN3025; ConvF(5.9, 5.9, 5.9); Calibrated: 28.04.2008
- Sensor-Surface: 3.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 14.03.2008
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; ;
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

#### Pin = 250mW, d = 15mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 53.6 V/m; Power Drift = 0.010 dB Peak SAR (extrapolated) = 3.53 W/kg SAR(1 g) = 2.44 mW/g; SAR(10 g) = 1.61 mW/g Maximum value of SAR (measured) = 2.73 mW/g



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## Report No. : ES/2008/C0010 Page : 143 of 161

Calibration Laboratory of SWISS Schweizerischer Kalibrierdienst S Schmid & Partner Service suisse d'étalonnage CRUBRA C AC-MRA Engineering AG Servizio svizzero di taratura s Zeughausstrasse 43, 8004 Zurich, Switzerland Swiss Calibration Service Accreditation No.: SCS 108 Accredited by the Swiss Federal Office of Metrology and Accreditation The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates Certificate No: D1900V2-5d027\_Apr08 SGS (Auden) Client CALIBRATION CERTIFICATE D1900V2 - SN: 5d027 Object Calibration procedure(s) QA CAL-05.v7 Calibration procedure for dipole validation kits April 15, 2008 Calibration date: Condition of the calibrated item In Tolerance 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) Cal Date (Calibrated by, Certificate No.) Scheduled Calibration Primary Standards ID N GB37480704 Power meter EPM-442A 04-Oct-07 (No. 217-00736) Oct-08 Power sensor HP 8481A US37292783 04-Oct-07 (No. 217-00736) Oct-08 Reference 20 dB Attenuator SN: 5086 (20g) 07-Aug-07 (No. 217-00718) Aug-08 SN: 5047.2 / 06327 08-Aug-07 (No. 217-00721) Type-N mismatch combination Aug-08 Mar-09 SN: 3025 01-Mar-08 (No. ES3-3025 Mar08) Reference Probe ES3DV2 DAE4 14-Mar-08 (No. DAE4-601\_Mar08) SN: 601 Mar-09 Secondary Standards ID # Check Date (in house) Scheduled Check 18-Oct-02 (in house check Oct-07) In house check: Oct-08 Power sensor HP 8481A MY41092317 RF generator R&S SMT-06 100005 4-Aug-99 (in house check Oct-07) In house check: Oct-09 Network Analyzer HP 8753E US37390585 S4206 18-Oct-01 (In house check Oct-07) In house check: Oct-08 Name Function Calibrated by: Laboratory Technician Marcel Fehr Katja Pokovic Technical Manager Approved by: issued: April 17, 2008 This calibration certificate shall not be reproduced except in full without written approval of the laboratory Certificate No: D1900V2-5d027 Apr08 Page 1 of 9

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#### DASY4 Validation Report for Head TSL

Date/Time: 08.04.2008 13:49:58

Test Laboratory: SPEAG, Zurich, Switzerland

## DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d027

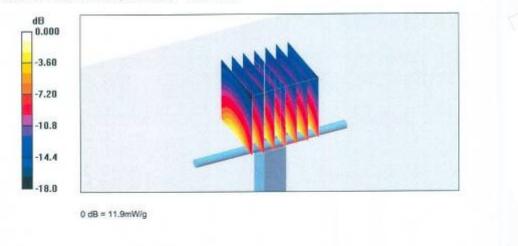
Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1 Medium: HSL U10 BB; Medium parameters used: f = 1900 MHz;  $\sigma$  = 1.47 mho/m;  $\epsilon_r$  = 40.1;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Flat Section Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV2 SN3025; ConvF(4.9, 4.9, 4.9); Calibrated: 01.03.2008
- Sensor-Surface: 3.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 14.03.2008
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA: ;
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

#### Pin = 250 mW; d = 10 mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 92.2 V/m; Power Drift = 0.033 dB Peak SAR (extrapolated) = 19.1 W/kg SAR(1 g) = 10.3 mW/g; SAR(10 g) = 5.3 mW/g

Maximum value of SAR (measured) = 11.9 mW/g



Certificate No: D1900V2-5d027\_Apr08

Page 6 of 9

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### DASY4 Validation Report for Body TSL

Date/Time: 15.04.2008 13:51:25

Test Laboratory: SPEAG, Zurich, Switzerland

## DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d027

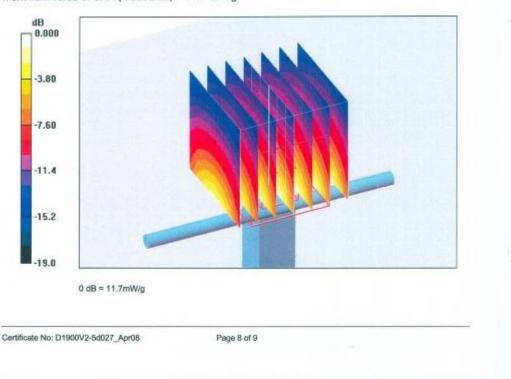
Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1 Medium: MSL U10 BB; Medium parameters used: f = 1900 MHz; σ = 1.56 mho/m; ε, = 51.6; ρ = 1000 kg/m<sup>3</sup> Phantom section: Flat Section Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV2 SN3025; ConvF(4.5, 4.5, 4.5); Calibrated: 01.03.2008
- Sensor-Surface: 3.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 14.03.2008
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; ;
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

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

Reference Value = 89.3 V/m; Power Drift = -0.022 dB Peak SAR (extrapolated) = 17.4 W/kg SAR(1 g) = 9.64 mW/g; SAR(10 g) = 5.07 mW/g Maximum value of SAR (measured) = 11.7 mW/g



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| Accredited by the Swiss Accred<br>The Swiss Accreditation Servic  | e is one of the signatorie  | s to the EA  | No.: SCS 108  |
|---|---|--|---|
| Aultilateral Agreement for the r  | ecognition of calibration   |  | D1800V2-2d061_Apr08   |
| CALIBRATION   | CERTIFICATE   |  |   |
| Object  | D1800V2 - SN: 2   | d061   |   |
| Calibration procedure(s)  | QA CAL-05.v7<br>Calibration proce   | dure for dipole validation kits  |   |
| Calibration date:   | April 15, 2008  |  |   |
|   | Constant and the second second  |  |   |
| This calibration certificate docum<br>The measurements and the unce   | ertainties with confidence p  | onal standards, which realize the physical units<br>robability are given on the following pages and<br>$\gamma$ facility: environment temperature (22 ± 3)°C (   | are part of the certificate.  |
| The measurements and the unce<br>All calibrations have been condu<br>Calibration Equipment used (M&   | ents the traceability to nati<br>intainties with confidence p<br>cted in the closed laborator<br>TE oritical for calibration)   | robability are given on the following pages and<br>y facility: environment temperature (22 $\pm$ 3)°C (  | are part of the certificate.<br>and humidity < 70%.   |
| This calibration certificate docum<br>The measurements and the unce<br>All calibrations have been condu<br>Calibration Equipment used (M&<br>Primary Standards  | ents the traceability to nati<br>entainties with confidence p<br>cted in the closed laborator<br>TE oritical for calibration)   | robability are given on the following pages and<br>y facility: environment temperature (22 ± 3)°C (<br>Cal Date (Calibrated by, Certificate No.)   | are part of the carlificate.<br>and humidity < 70%.<br>Scheduled Calibration  |
| This calibration certificate docum<br>The measurements and the unce<br>All calibrations have been condu<br>Calibration Equipment used (M&   | ents the traceability to nati<br>intainties with confidence p<br>cted in the closed laborator<br>TE oritical for calibration)   | robability are given on the following pages and<br>y facility: environment temperature (22 $\pm$ 3)°C (  | are part of the certificate.<br>and humidity < 70%.   |
| This calibration certificate docum<br>The measurements and the unce<br>All calibrations have been condu<br>Calibration Equipment used (M&<br>Primary Standards<br>Power meter EPM-442A  | ents the traceability to nati<br>entainties with confidence p<br>oted in the closed laborator<br>TE ortical for calibration)<br>ID #<br>GB37480704  | robability are given on the following pages and<br>y facility: environment temperature (22 ± 3)°C (<br>Cal Date (Calibrated by, Certificate No.)<br>04-Oct-07 (No. 217-00736)  | are part of the certificate.<br>and humidity < 70%.<br>Scheduled Calibration<br>Oct-08  |
| This calibration certificate docum<br>The measurements and the unce<br>All calibrations have been condu<br>Calibration Equipment used (M&<br>Primary Standards<br>Power meter EPM-442A<br>Power sensor HP 8481A<br>Reference 20 dB Attenuator<br>Type-N mismatch combination  | ents the traceability to nati<br>entainties with confidence p<br>cted in the closed laborator<br>TE oritical for calibration)<br>ID #<br>GB37480704<br>US37292783<br>SN: 5086 (20g)<br>SN: 5047.2 / 06327   | cobability are given on the following pages and         y facility: environment temperature (22 ± 3)°C i           Cal Date (Calibrated by, Cartificate No.)         04-Oct-07 (No. 217-00736)           04-Oct-07 (No. 217-00736)         07-Aug-07 (No. 217-00718)           06-Aug-07 (No. 217-00718)         08-Aug-07 (No. 217-00718)   | and humidity < 70%.<br>Scheduled Calibration<br>Oct-08<br>Aug-08<br>Aug-08  |
| This calibration certificate docum<br>The measurements and the unce<br>All calibrations have been condu<br>Calibration Equipment used (M&<br>Primary Standards<br>Power meter EPM-442A<br>Power sensor HP 8481A<br>Reference 20 dB Attenuator<br>Type-N mismatch combination<br>Reference Probe ES3DV2  | ents the traceability to nati<br>entainties with confidence p<br>cted in the closed laborator<br>TE ortical for calibration)<br>ID #<br>UB37292783<br>SN: 5066 (20g)  | Cal Date (Calibrated by, Certificate No.)<br>04-Oct-07 (No. 217-00736)<br>04-Oct-07 (No. 217-00736)<br>04-Oct-07 (No. 217-00736)<br>04-Oct-07 (No. 217-00736)  | see part of the certificate.<br>and humidity < 70%.<br>Scheduled Calibration<br>Oct-08<br>Oct-08<br>Aug-08  |
| This calibration certificate docum<br>The measurements and the unce<br>All calibrations have been condu<br>Calibration Equipment used (M&<br>Primary Standards<br>Power sensor HP 9481A<br>Reference 20 dB Attenuator<br>Type-N mismatch combination<br>Reference Probe ES3DV2<br>DAE4<br>Secondary Standards   | ents the traceability to nati<br>entainties with confidence p<br>cted in the closed laborator<br>TE critical for calibration)<br>ID #<br>OB37480704<br>US37292783<br>SN: 5066 (20g)<br>SN: 5067.2 / 06327<br>SN: 3025<br>SN: 601<br>ID #  | coability are given on the following pages and           y facility: environment temperature (22 ± 3)°C i           Cal Date (Calibrated by, Certificate No.)           04-Oct-07 (No. 217-00736)           04-Oct-07 (No. 217-00736)           07-Aug-07 (No. 217-00718)           08-Aug-07 (No. 217-00721)           01-Mar-08 (No. ES3-3025_Mar08)   | and humidity < 70%.<br>Scheduled Calibration<br>Oct-08<br>Oct-08<br>Aug-08<br>Aug-08<br>Mar-09<br>Mar-09<br>Scheduled Check   |
| This calibration certificate docum<br>The measurements and the unce<br>All calibrations have been condu<br>Calibration Equipment used (M&<br>Primary Standards<br>Power sensor HP 8481A<br>Reference 20 dB Attenuator<br>Type-N mismatch combination<br>Reference Probe ES3DV2<br>DAE4<br>Secondary Standards<br>Power sensor HP 8481A  | ents the traceability to nati<br>entainties with confidence p<br>oted in the closed laborator<br>TE ortical for calibration)<br>ID #<br>GB37480704<br>US37292783<br>SN: 5086 (20g)<br>SN: 5047.2 / 06327<br>SN: 5025<br>SN: 601<br>ID #<br>MY41092317   | Cal Date (Calibrated by, Certificate No.)           O4-Oct-07 (No. 217-00736)           O4-Oct-07 (No. 217-00736)           O7-Aug-07 (No. 217-00736)           O7-Aug-07 (No. 217-00718)           O8-Aug-07 (No. 217-00718)           O8-Aug-07 (No. 217-00718)           O1-Mar-06 (No. ES3-3025_Mar08)           14-Mar-05 (No. DAE-4-601_Mar08)           Check Date (in house)           18-Oct-02 (in house check Oct-07)   | are part of the carificate.<br>and humidity < 70%.<br>Scheduled Calibration<br>Oct-08<br>Oct-08<br>Aug-08<br>Aug-08<br>Mar-09<br>Mar-09<br>Scheduled Check<br>In house check: Oct-08  |
| This calibration certificate docum<br>The measurements and the unce<br>All calibrations have been condu<br>Calibration Equipment used (M&<br>Primary Standards<br>Power meter EPM-442A<br>Power sensor HP 8481A<br>Reference 20 dB Attenuator<br>Type-N mismatch combination<br>Reference Probe ES3DV2<br>DAE4<br>Secondary Standards<br>Power sensor HP 6481A<br>RF generator R&S SMT-06   | ents the traceability to nati<br>entainties with confidence p<br>cted in the closed laborator<br>TE critical for calibration)<br>ID #<br>OB37480704<br>US37292783<br>SN: 5066 (20g)<br>SN: 5067.2 / 06327<br>SN: 3025<br>SN: 601<br>ID #  | Cal Date (Calibrated by, Certificate No.)<br>04-Oct-07 (No. 217-00736)<br>04-Oct-07 (No. 217-00736)<br>04-Oct-07 (No. 217-00736)<br>07-Aug-07 (No. 217-00718)<br>06-Aug-07 (No. 217-00718)<br>06-Aug-07 (No. 217-00721)<br>01-Mar-08 (No. ES3-3025_Mar08)<br>14-Mar-08 (No. DAE4-601_Mar08)<br>Check Date (in house)   | and humidity < 70%.<br>Scheduled Calibration<br>Oct-08<br>Oct-08<br>Aug-08<br>Aug-08<br>Mar-09<br>Mar-09<br>Scheduled Check   |
| This calibration certificate docum<br>The measurements and the unce<br>All calibrations have been condu<br>Calibration Equipment used (M&<br>Primary Standards<br>Power meter EPM-442A<br>Power sensor HP 8481A<br>Reference 20 dB Attenuator<br>Type-N mismatch combination<br>Reference Probe ES3DV2<br>DAE4<br>Secondary Standards<br>Power sensor HP 6481A<br>RF generator R&S SMT-06   | ents the traceability to nati<br>entainties with confidence p<br>oted in the closed laborator<br>TE ortical for calibration)<br>ID #<br>OB37480704<br>US37292783<br>SN: 5086 (20g)<br>SN: 5047.2 / 06327<br>SN: 5047.2 / 06327<br>SN: 5025<br>SN: 601<br>ID #<br>MY41092317<br>100005<br>US37390585 S4206                                 | Cal Date (Calibrated by, Certificate No.)           O4-Oct-07 (No. 217-00736)           O4-Oct-07 (No. 217-00736)           O4-Oct-07 (No. 217-00736)           O7-Aug-07 (No. 217-00718)           O8-Aug-07 (No. 217-00718)           O4-Oct-07 (No. 217-00718)           O8-Aug-07 (No. 217-00718)           O8-Aug-07 (No. 217-00718)           O8-Aug-07 (No. 217-00718)           O4-Oct-07 (No. 217-00718)           O4-Oct-07 (No. 217-00718)           O8-Aug-98 (n house check Oct-07)           18-Oct-01 (in house check Oct-07) | ere part of the certificate.<br>and humidity < 70%.<br>Scheduled Calibration<br>Oct-08<br>Oct-08<br>Oct-08<br>Aug-08<br>Aug-08<br>Mar-09<br>Scheduled Check<br>In house check: Oct-08<br>In house check: Oct-08<br>In house check: Oct-08     |
| This calibration certificate docum<br>The measurements and the unce<br>All calibrations have been condu<br>Calibration Equipment used (M&<br>Primary Standards<br>Power meter EPM-442A<br>Power sensor HP 8481A   | ents the traceability to nati<br>entainties with confidence p<br>cted in the closed laborator<br>TE oritical for calibration)<br>ID #<br>GB37480704<br>US37292783<br>SN: 5086 (20g)<br>SN: 5047.2 / 06327<br>SN: 5047.2 / 06327<br>SN: 5025<br>SN: 601<br>ID #<br>MY41092317<br>100005  | coability are given on the following pages and           y facility: environment temperature (22 ± 3)°C i           O4-Oct-07 (No. 217-00736)           04-Oct-07 (No. 217-00736)           04-Oct-07 (No. 217-00736)           06-Aug-07 (No. 217-00736)           06-Aug-07 (No. 217-00736)           06-Aug-07 (No. 217-00736)           06-Aug-07 (No. 217-00721)           01-Mar-08 (No. ES3-3025_Mar08)           14-Mar-08 (No. DAE4-601_Mar08)           Check Date (in house)           18-Oct-02 (in house check Oct-07)           4-Aug-99 (in house check Oct-07)   | see part of the certificate.<br>and humidity < 70%.<br>Scheduled Calibration<br>Oct-08<br>Oct-08<br>Oct-08<br>Aug-08<br>Aug-08<br>Aug-08<br>Mar-09<br>Mar-09<br>Mar-09<br>Scheduled Check<br>In house check: Oct-08<br>In house check: Oct-09 |
| This calibration certificate docum<br>The measurements and the unce<br>All calibrations have been condu<br>Calibration Equipment used (Må<br>Primary Standards<br>Power meter EPM-442A<br>Power sensor HP 8481A<br>Reference 20 dB Attenuator<br>Type-N mismatch combination<br>Reference 20 dB Attenuator<br>Type-N mismatch combination<br>Reference Probe ES3DV2<br>DAE4<br>Secondary Standards<br>Power sensor HP 8481A<br>RF generator R&S SMT-06<br>Network Analyzer HP 8753E | ents the traceability to native<br>etainties with confidence p<br>cted in the closed laborator<br>TE oritical for calibration)<br>ID #<br>GB37480704<br>US37292783<br>SN: 5086 (20g)<br>SN: 5047.2 / 06327<br>SN: 5047.2 / 06327<br>SN: 5047.2 / 06327<br>SN: 5047<br>SN: 601<br>ID #<br>MY41092317<br>100005<br>US37390585 S4206<br>Name | Cal Date (Calibrated by, Certificate No.)           04-Oct-07 (No. 217-00736)           04-Oct-07 (No. 217-00736)           04-Oct-07 (No. 217-00736)           06-Aug-07 (No. 217-00736)           06-Aug-07 (No. 217-00736)           06-Aug-07 (No. 217-00736)           06-Aug-07 (No. 217-00721)           01-Mar-08 (No. ESS-3025_Mar08)           14-Mar-08 (No. DAE4-601_Mar08)           Check Date (in house)           18-Oct-01 (in house check Oct-07)           18-Oct-01 (in house check Oct-07)           18-Oct-01 (in house check Oct-07)           Function   | ere part of the certificate.<br>and humidity < 70%.<br>Scheduled Calibration<br>Oct-08<br>Oct-08<br>Oct-08<br>Aug-08<br>Aug-08<br>Mar-09<br>Scheduled Check<br>In house check: Oct-08<br>In house check: Oct-08<br>In house check: Oct-08     |

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Report No. : ES/2008/C0010 Page : 147 of 161

#### **DASY4 Validation Report for Head TSL**

Date/Time: 08.04.2008 11:57:19

Test Laboratory: SPEAG, Zurich, Switzerland

#### DUT: Dipole 1800 MHz; Type: D1800V2; Serial: SN:2d061

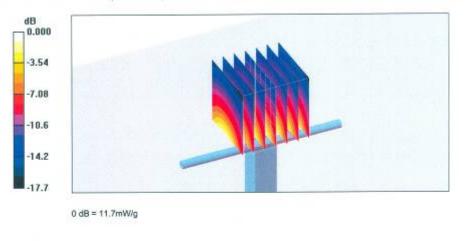
Communication System: CW; Frequency: 1800 MHz;Duty Cycle: 1:1 Medium: HSL U10 BB; Medium parameters used: f = 1800 MHz; σ = 1.41 mho/m; ε, = 40.2; p = 1000 kg/m<sup>3</sup> Phantom section: Flat Section Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV2 SN3025; ConvF(4.96, 4.96, 4.96); Calibrated: 01.03.2008
- Sensor-Surface: 3.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 14.03.2008
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; ;
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

#### Pin = 250 mW; dip = 10 mm, scan at 3.4mm/Zoom Scan (dist=3.4mm, probe 0deg) (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 91.0 V/m; Power Drift = 0.040 dB Peak SAR (extrapolated) = 18.1 W/kg SAR(1 g) = 9.86 mW/g; SAR(10 g) = 5.14 mW/g Maximum value of SAR (measured) = 11.7 mW/g



Certificate No: D1800V2-2d061 Apr08

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Report No. : ES/2008/C0010 Page : 148 of 161

#### **DASY4 Validation Report for Body TSL**

Date/Time: 15.04.2008 10:21:05

Test Laboratory: SPEAG, Zurich, Switzerland

### DUT: Dipole 1800 MHz; Type: D1800V2; Serial: SN:2d061

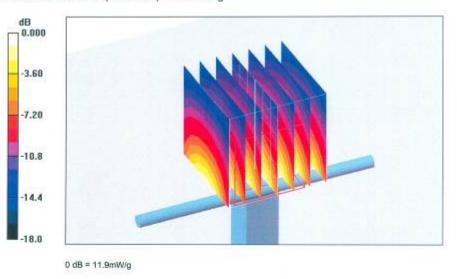
Communication System: CW; Frequency: 1800 MHz; Duty Cycle: 1:1 Medium: MSL U10; Medium parameters used: f = 1800 MHz; σ = 1.5 mho/m; ε, = 51.5; ρ = 1000 kg/m<sup>3</sup> Phantom section: Flat Section Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV2 SN3025; ConvF(4.73, 4.73, 4.73); Calibrated: 01.03.2008
- Sensor-Surface: 3.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 14.03.2008
- Phantom; Flat Phantom 5.0 (back); Type: QD000P50AA; ;
- Measurement SW: DASY4, V4.7 Build 55: Postprocessing SW: SEMCAD, V1.8 Build 172

#### Pin = 250 mW; dip = 10 mm, scan at 3.4mm/Zoom Scan (dist=3.4mm, probe 0deg) (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 91.2 V/m; Power Drift = 0.005 dB Peak SAR (extrapolated) = 17.6 W/kg SAR(1 g) = 9.87 mW/g; SAR(10 g) = 5.25 mW/g Maximum value of SAR (measured) = 11.9 mW/g



Certificate No: D1800V2-2d061\_Apr08

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## Report No. : ES/2008/C0010 Page : 149 of 161

|   |  |  | 000 100   |
|---|--|--|---|
| Accredited by the Swiss Accred<br>The Swiss Accreditation Servic<br>Multilateral Agreement for the n  | e is one of the signatorie   | s to the EA  | on No.: SCS 108   |
| Client SGS (Auden)  |  |  | No: D2450V2-727_Apr08   |
| CALIBRATION C   | ERTIFICATE   |  |   |
| Object  | D2450V2 - SN: 7  | 27   |   |
| Calibration procedure(s)  | QA CAL-05.v7<br>Calibration proce  | dure for dipole validation kits  |   |
| Calibration date:   | April 11, 2008   |  |   |
| Condition of the calibrated item  | In Tolerance   |  |   |
| The measurements and the unor<br>All calibrations have been condu   | intainties with confidence p<br>ched in the closed laborator   | anal standards, which realize the physical<br>robability are given on the following pages<br>ry facility: environment temperature $122 \pm 3$  | and are part of the certificate.  |
| The measurements and the unce   | intainties with confidence p<br>ched in the closed laborator   | robability are given on the following pages  | and are part of the certificate.  |
| The measurements and the unce<br>All calibrations have been condu<br>Calibration Equipment used (M&<br>Primary Standards<br>Power meter EPM-442A  | Intainties with confidence p<br>cted in the closed laborator<br>TE critical for calibration)   | robability are given on the following pages<br>ty facility: environment temperature (22 ± 3<br>Cal Date (Cartificate No.)<br>04-Oct-07 (No. 217-00736)   | and are part of the certificate.<br>§°C and humidity < 70%.<br>Scheduled Calibration<br>Oct-08  |
| The measurements and the unce<br>All calibrations have been condu<br>Calibration Equipment used (M&<br>Primary Standards<br>Power meter EPM-442A<br>Power sensor HP 8481A   | Intainties with confidence p<br>cted in the closed laborator<br>TE critical for calibration)<br>ID 9<br>0837480704<br>US37292783   | robability are given on the following pages<br>ty facility: environment temperature (22 ± 3<br>Cel Date (Certificate No.)<br>04-Oct-07 (No. 217-00736)<br>04-Oct-07 (No. 217-00736)  | and are part of the certificate.<br>String and humidity < 70%.<br>Scheduled Calibration<br>Oct-08<br>Oct-08   |
| The measurements and the unce<br>All calibrations have been condu<br>Calibration Equipment used (M&<br>Primary Standards<br>Power meter EPM-442A<br>Power meter EPM-442A<br>Power sensor HP 8481A<br>Reference 20 dB Attenuator   | utainties with confidence p<br>cted in the closed laborator<br>TE critical for calibration)<br>(0837460704<br>US37292783<br>SN: 5086 (20g)   | robability are given on the following pages<br>y facility: environment temperature (22 ± 3<br>Cal Date (Certificate No.)<br>04-Oct-07 (No. 217-00736)<br>04-Oct-07 (No. 217-00736)<br>07-Aug-07 (No. 217-00736)  | and are part of the certificate.<br>BYC and humidity < 70%.<br>Scheduled Calibration<br>Oct-08<br>Oct-08<br>Aug-08  |
| The measurements and the unce<br>All calibrations have been condu<br>Calibration Equipment used (M&<br>Primary Standards<br>Power meter EPM-442A<br>Power sensor HP 8481A   | Intainties with confidence p<br>cted in the closed laborator<br>TE critical for calibration)<br>ID 9<br>0837480704<br>US37292783   | robability are given on the following pages<br>ty facility: environment temperature (22 ± 3<br>Cel Date (Certificate No.)<br>04-Oct-07 (No. 217-00736)<br>04-Oct-07 (No. 217-00736)  | and are part of the certificate.<br>String and humidity < 70%.<br>Scheduled Calibration<br>Oct-08<br>Oct-08   |
| The measurements and the unce<br>All calibrations have been condu<br>Calibration Equipment used (M&<br>Primary Standards<br>Power meter EPM-442A<br>Power sensor HP 8481A<br>Reference 20 dB Artemustor<br>Reference Probe ES3DV2   | International Sector (Control of the control of the | cobability are given on the following pages           y facility: environment temperature (22 ± 3           Cal Date (Certificate No.)           04-Oct-07 (No. 217-00736)           04-Act-07 (No. 217-00736)           07-Aug-07 (No. 217-00736) | and are part of the certificate.<br>§°C and humidity < 70%.<br>Scheduled Calibration<br>Oct-08<br>Aug-08<br>Mar-09  |
| The measurements and the unce<br>All calibrations have been condu<br>Calibration Equipment used (M&<br>Primary Standards<br>Power meter EPM-442A<br>Power sensor HP 8481A<br>Reference 20 dB Attenuator<br>Reference Probe ES3DV2<br>DAE4   | Intainties with confidence p<br>cted in the closed laborator<br>TE critical for calibration)<br>CB37480704<br>US37292783<br>SN: 5086 (20g)<br>SN: 3025<br>SN: 601  | robability are given on the following pages<br>ty facility: environment temperature (22 ± 3<br>Cal Date (Cartificate No.)<br>04-Oct-07 (No. 217-00736)<br>04-Oct-07 (No. 217-00736)<br>07-Mag-07 (No. 217-00718)<br>01-Mar-06 (No. ES3-3025_Mar08)<br>14-Mar-06 (No. DAE4-601_Mar08)   | and are part of the certificate.<br>§°C and humidity < 70%.<br>Scheduled Calibration<br>Oct-08<br>Aug-08<br>Mar-09<br>Mar-09  |
| The measurements and the unce<br>All calibrations have been condu<br>Calibration Equipment used (M&<br>Primary Standards<br>Power meter EPM-442A<br>Power sensor HP 8481A<br>Reference 20 dB Amenuator<br>Reference Probe ES3DV2<br>DAE4<br>Secondary Standards<br>Power sensor HP 8481A<br>RF generator R&S SMT-06                               | Intainties with confidence p<br>cted in the closed laborator<br>TE critical far calibration)<br>ID #<br>0837480704<br>US37292783<br>SN: 5086 (20g)<br>SN: 5085<br>SN: 601<br>ID #<br>MY41092317<br>100005  | robability are given on the following pages<br>y facility: environment temperature (22 ± 3<br>Cal Date (Certificate No.)<br>04-Oct-07 (No. 217-00736)<br>04-Oct-07 (No. 217-00736)<br>07-Aug-07 (No. 217-00736)<br>07-Aug-07 (No. 217-00736)<br>01-AMar-06 (No. ES3-3025_Mar08)<br>14-Mar-06 (No. DAE4-601_Mar08)<br>Check Date (in house)<br>18-Oct-02 (in house check Oct-07)<br>4-Aug-99 (in house check Oct-07)  | and are part of the certificate.<br>§°C and humidity < 70%<br>Scheduled Calibration<br>Oct-08<br>Oct-08<br>Aug-08<br>Mar-09<br>Mar-09<br>Scheduled Check<br>In house check: Oct-09<br>In house check: Oct-09<br>In house check: Oct-09  |
| The measurements and the unce<br>All calibrations have been condu<br>Calibration Equipment used (M&<br>Primary Standards<br>Power meter EPM-442A<br>Power sensor HP 8481A<br>Reference 20 dB Attenuator<br>Reference 20 dB Attenuator<br>Reference Probe ES3DV2<br>DAE4<br>Secondary Standards<br>Power sensor HP 8481A                           | Intainties with confidence p<br>cted in the closed laborator<br>TE critical for calibration)<br>D 9<br>QB37480704<br>US37292783<br>SN: 5086 (20g)<br>SN: 3025<br>SN: 5086 (20g)<br>SN: 3025<br>SN: 601<br>ID #<br>MY41092317   | robability are given on the following pages<br>y facility: environment temperature (22 ± 3<br>Cel Date (Certificate No.)<br>04-Oct-07 (No. 217-00736)<br>04-Oct-07 (No. 217-00736)<br>07-Aug-07 (No 217-00718)<br>01-Mar-06 (No. ES3-3025_Mar08)<br>14-Mar-06 (No. DAE4-601_Mar08)<br>Check Date (in house)<br>18-Oct-02 (in house check Oct-07)   | and are part of the certificate.<br>8)°C and humidity < 70%.<br>Scheduled Calibration<br>Oct-08<br>Oct-08<br>Aug-08<br>Mar-09<br>Mar-09<br>Scheduled Check<br>In house check: Oct-09  |
| The measurements and the unce<br>All calibrations have been condu<br>Calibration Equipment used (M&<br>Primary Standards<br>Power meter EPM-442A<br>Power sensor HP 8481A<br>Reference 20 dB Amenuator<br>Reference Probe ES3DV2<br>DAE4<br>Secondary Standards<br>Power sensor HP 8481A<br>RF generator R&S SMT-06                               | Intainties with confidence p<br>cted in the closed laborator<br>TE critical far calibration)<br>ID #<br>0837480704<br>US37292783<br>SN: 5086 (20g)<br>SN: 5085<br>SN: 601<br>ID #<br>MY41092317<br>100005  | robability are given on the following pages<br>y facility: environment temperature (22 ± 3<br>Cal Date (Certificate No.)<br>04-Oct-07 (No. 217-00736)<br>04-Oct-07 (No. 217-00736)<br>07-Aug-07 (No. 217-00736)<br>07-Aug-07 (No. 217-00736)<br>01-AMar-06 (No. ES3-3025_Mar08)<br>14-Mar-06 (No. DAE4-601_Mar08)<br>Check Date (in house)<br>18-Oct-02 (in house check Oct-07)<br>4-Aug-99 (in house check Oct-07)  | and are part of the certificate.<br>§°C and humidity < 70%<br>Scheduled Calibration<br>Oct-08<br>Oct-08<br>Aug-08<br>Mar-09<br>Mar-09<br>Scheduled Check<br>In house check: Oct-09<br>In house check: Oct-09<br>In house check: Oct-09  |
| The measurements and the unce<br>All calibrations have been condu<br>Calibration Equipment used (M&<br>Primary Standards<br>Power meter EPM-442A<br>Power sensor HP 8481A<br>Reference 20 dB Amenuator<br>Reference Probe ES3DV2<br>DAE4<br>Secondary Standards<br>Power sensor HP 8481A<br>RF generator R&S SMT-06                               | utainties with confidence p<br>cted in the closed laborator<br>TE critical far calibration)<br>ID #<br>0837480704<br>US37292783<br>SN: 5086 (20g)<br>SN: 5085<br>SN: 601<br>ID #<br>MY41092317<br>100005<br>US37390585 54206   | cobability are given on the following pages           y facility: environment temperature (22 ± 3           Cal Date (Certificate No.)           04-Oct-07 (No. 217-00736)           04-Oct-07 (No. 217-00736)           07-Aug-07 (No. 217-00736)           07-Aug-07 (No. 217-00736)           07-Aug-07 (No. 217-00736)           01-Mar-06 (No. ES3-3025_Mar08)           14-Mar-06 (No. DAE4-601_Mar08)           Check Date (in house)           18-Oct-07 (in house check Oct-07)           4-Aug-99 (in house check Oct-07)           18-Oct-01 (in house check Oct-07)  | and are part of the certificate.<br>§°C and humidity < 70%.<br>Scheduled Calibration<br>Oct-08<br>Oct-08<br>Aug-08<br>Mar-09<br>Mar-09<br>Scheduled Check<br>In house check: Oct-09<br>In house check: Oct-09<br>In house check: Oct-06 |
| The measurements and the unce<br>All calibrations have been condu<br>Calibration Equipment used (M&<br>Primary Standards<br>Power meter EPM-442A<br>Power sensor HP 8481A<br>Reference 20 dB Attenuator<br>Reference Probe ES3DV2<br>DAE4<br>Secondary Standards<br>Power sensor HP 8481A<br>RF generator R&S SMT-06<br>Network Analyzer HP 8753E | International State Stat | robability are given on the following pages<br>y facility: environment temperature (22 ± 3<br>Cal Date (Certificate No.)<br>04-Oct-07 (No. 217-00736)<br>04-Oct-07 (No. 217-00736)<br>07-Aug.07 (No. 217-00736)<br>07-Aug.07 (No. 217-00736)<br>01-Mar-06 (No. ES3-3025_Mar08)<br>14-Mar-06 (No. DAE4-601_Mar08)<br>Check Date (in house)<br>18-Oct-02 (in house check Oct-07)<br>18-Oct-02 (in house check Oct-07)<br>18-Oct-01 (in house check Oct-07)<br>18-Oct-01 (in house check Oct-07)  | and are part of the certificate.<br>§°C and humidity < 70%.<br>Scheduled Calibration<br>Oct-08<br>Oct-08<br>Aug-08<br>Mar-09<br>Mar-09<br>Scheduled Check<br>In house check: Oct-09<br>In house check: Oct-09<br>In house check: Oct-06 |

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Date/Time: 11.04.2008 15:23:03

#### **DASY4 Validation Report for Body TSL**

Test Laboratory: SPEAG, Zurich, Switzerland

#### DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN727

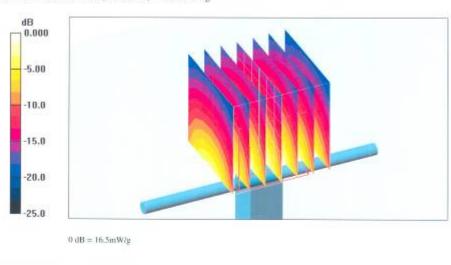
Communication System: CW-2450; Frequency: 2450 MHz; Duty Cycle: 1:1 Medium: MSL U10; Medium parameters used: f = 2450 MHz;  $\sigma = 1.99 \text{ mho/m}$ ;  $e_r = 51$ ;  $\rho = 1000 \text{ kg/m}^3$ Phantom section: Flat Section Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV2 SN3025; ConvF(4.07, 4.07, 4.07); Calibrated: 01.03.2008
- Sensor-Surface: 3.4mm (Mechanical Surface Detection) .
- Electronics: DAE4 Sn601: Calibrated: 14.03 2008
- Phantom; Flat Phantom 5.0 (back); Type; QD000P50AA
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

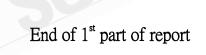
#### Pin = 250 mW; d = 10 mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 93.5 V/m; Power Drift = 0.010 dB Peak SAR (extrapolated) = 26.5 W/kg SAR(1 g) = 13.2 mW/g; SAR(10 g) = 6.15 mW/g Maximum value of SAR (measured) = 16.5 mW/g



Certificate No: D2450V2-727 Apr08

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