

## SAR Compliance Test Report

|                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                         |                                                                                                                                              |
|--------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Test report no.:                                 | Salo_SAR_0821_09                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Date of report:         | 2008-05-23                                                                                                                                   |
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| Tested device:                                   | RM-314                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                         |                                                                                                                                              |
| FCC ID:                                          | QVVRM-314                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | IC:                     | 661AE-RM314                                                                                                                                  |
| Supplement reports:                              | Salo_SAR_0820_18 for RM-313 / FCCID: QVVRM-313 / ICID: 661AE-RM313                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                         |                                                                                                                                              |
| Testing has been carried out in accordance with: | <b>47CFR §2.1093</b><br>Radiofrequency Radiation Exposure Evaluation: Portable Devices<br><b>FCC OET Bulletin 65 (Edition 97-01), Supplement C (Edition 01-01)</b><br>Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields<br><b>RSS-102</b><br>Evaluation Procedure for Mobile and Portable Radio Transmitters with Respect to Health Canada's Safety Code 6 for Exposure of Humans to Radio Frequency Fields<br><b>IEEE 1528 - 2003</b><br>IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Technique |                         |                                                                                                                                              |
| Documentation:                                   | The documentation of the testing performed on the tested devices is archived for 15 years at TCC Nokia.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                         |                                                                                                                                              |
| Test results:                                    | <b>The tested device complies with the requirements in respect of all parameters subject to the test.</b> The test results and statements relate only to the items tested. The test report shall not be reproduced except in full, without written approval of the laboratory.                                                                                                                                                                                                                                                                                                                                                                                                |                         |                                                                                                                                              |
| Date and signatures:                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                         |                                                                                                                                              |
| For the contents:                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                         |                                                                                                                                              |

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## 1. SUMMARY OF SAR TEST REPORT

### 1.1 Test Details

|                                        |                                                                                                                                                                                                                                                              |
|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Period of test                         | 2008-05-13 to 2008-05-15                                                                                                                                                                                                                                     |
| SN, HW and SW numbers of tested device | SN: 358984/01/276084/2, HW: 4004, SW: V 20.0.062, DUT: 12880<br>SN: 358082/01/438829/8, HW: 4004, SW: V 20.0.062, DUT: 12881<br>SN: 358984/01/276082/6, HW: 4004, SW: V 20.0.062, DUT: 12883<br>SN: 358082/01/438808/2, HW: 4004, SW: V 20.0.062, DUT: 12884 |
| Batteries used in testing              | BP-6MT, DUT: 12876, 12877, 12878, 12879                                                                                                                                                                                                                      |
| Headsets used in testing               | -                                                                                                                                                                                                                                                            |
| Other accessories used in testing      | -                                                                                                                                                                                                                                                            |
| State of sample                        | Prototype unit                                                                                                                                                                                                                                               |
| Notes                                  | -                                                                                                                                                                                                                                                            |

### 1.2 Maximum Results

The maximum measured SAR values for Head configuration and Body Worn configuration are given in section 1.2.1 and 1.2.2 respectively. The device conforms to the requirements of the standard(s) when the maximum measured SAR value is less than or equal to the limit.

#### 1.2.1 Head Configuration\*\*

| Mode            | Ch / f (MHz) | Radiated power | Position    | Measured SAR value (1g avg) | Scaled* SAR value (1g avg) | SAR limit (1g avg) | Result        |
|-----------------|--------------|----------------|-------------|-----------------------------|----------------------------|--------------------|---------------|
| 3-slot GPRS850  | 251 / 848.8  | 27.3 dBm ERP   | Left, Cheek | 1.04 W/kg                   | <b>1.16 W/kg</b>           | 1.6 W/kg           | <b>PASSED</b> |
| 2-slot GPRS1900 | 661 / 1880.0 | 32.6 dBm EIRP  | Left, Cheek | 0.708 W/kg                  | <b>0.79 W/kg</b>           | 1.6 W/kg           | <b>PASSED</b> |

#### 1.2.2 Body Worn Configuration\*\*

| Mode            | Ch / f (MHz) | Radiated power | Separation distance | Measured SAR value (1g avg) | Scaled* SAR value (1g avg) | SAR limit (1g avg) | Result        |
|-----------------|--------------|----------------|---------------------|-----------------------------|----------------------------|--------------------|---------------|
| 3-slot GPRS850  | 251 / 848.8  | 27.3 dBm ERP   | 2.2cm               | 1.07 W/kg                   | <b>1.20 W/kg</b>           | 1.6 W/kg           | <b>PASSED</b> |
| 2-slot GPRS1900 | 661 / 1880.0 | 32.6 dBm EIRP  | 2.2cm               | 0.331 W/kg                  | <b>0.37 W/kg</b>           | 1.6 W/kg           | <b>PASSED</b> |

\*SAR values are scaled up by 12% to cover measurement drift.

\*\*SAR values taken from Salo\_SAR\_0820\_18 for RM-313 / FCCID: QVVRM-313 / 661AE-RM313.

### 1.2.3 Maximum Drift

| Maximum drift covered by<br>12% scaling up of the SAR values | Maximum drift during measurements |
|--------------------------------------------------------------|-----------------------------------|
| 0.5dB                                                        | 0.46dB                            |

### 1.2.4 Measurement Uncertainty

|                                |         |
|--------------------------------|---------|
| Expanded Uncertainty (k=2) 95% | ± 25.8% |
|--------------------------------|---------|

## 2. DESCRIPTION OF THE DEVICE UNDER TEST

|                      |                                   |
|----------------------|-----------------------------------|
| Device category      | Portable                          |
| Exposure environment | General population / uncontrolled |

| Modes of Operation | Bands       | Modulation Mode | Duty Cycle | Transmitter Frequency Range (MHz) |
|--------------------|-------------|-----------------|------------|-----------------------------------|
| GSM                | 850<br>1900 | GMSK            | 1/8        | 824 – 849<br>1850 – 1910          |
| GPRS               | 850<br>1900 | GMSK            | 1/8 to 3/8 | 824 – 849<br>1850 – 1910          |
| EGPRS              | 850<br>1900 | GMSK / 8PSK     | 1/8 to 3/8 | 824 – 849<br>1850 – 1910          |
| BT                 | 2450        | GFSK            | 1          | 2402 – 2480                       |

Outside of USA and Canada, the transmitter of the device is capable of operating also in GSM/GPRS/EGPRS900 and GSM/GPRS/EGPRS1800 bands which are not part of this filing.

## 2.1 Picture of the Device



## 2.2 Description of the Antenna

The device has internal antennas.

## 3. TEST CONDITIONS

### 3.1 Temperature and Humidity

|                           |              |
|---------------------------|--------------|
| Ambient temperature (°C): | 20.4 to 22.4 |
| Ambient humidity (RH %):  | 29 to 38     |

### 3.2 Test Signal, Frequencies and Output Power

The device was put into operation by using a call tester. Communication between the device and the call tester was established by air link.

The device output power was set to maximum power level for all tests; a fully charged battery was used for every test sequence.

In all operating bands the measurements were performed on lowest, middle and highest channels.

The radiated output power of the device was measured by a separate test laboratory on the same unit(s) as used for SAR testing.

The SAR results, SAR plots and test details given in this report are duplicated from the earlier test report Salo\_SAR\_0820\_18 for RM-313 / FCC ID: QVVRM-313 / IC ID: 661AE-RM313. The only difference between RM-314 and RM-313 is that RM-314 has had WCDMA and WLAN components removed.

## 4. DESCRIPTION OF THE TEST EQUIPMENT

### 4.1 Measurement System and Components

The measurements were performed using an automated near-field scanning system, DASY4, manufactured by Schmid & Partner Engineering AG (SPEAG) in Switzerland. The SAR extrapolation algorithm used in all measurements was the 'advanced extrapolation' algorithm.

The following table lists calibration dates of SPEAG components:

| Test Equipment                 | Serial Number | Calibration interval | Calibration expiry |
|--------------------------------|---------------|----------------------|--------------------|
| DAE 4                          | 538           | 12 months            | 2008-07            |
| E-field Probe ET3DV6           | 1395          | 12 months            | 2008-07            |
| Dipole Validation Kit, D835V2  | 480           | 24 months            | 2009-05            |
| Dipole Validation Kit, D1900V2 | 5d013         | 24 months            | 2008-07            |
| DASY4 software                 | Version 4.7   | -                    | -                  |

Additional test equipment used in testing:

| Test Equipment          | Model        | Serial Number | Calibration interval | Calibration expiry |
|-------------------------|--------------|---------------|----------------------|--------------------|
| Signal Generator        | SML03        | 101265        | 12 months            | 2008-07            |
| Amplifier               | ZHL-42 (SMA) | N072095-5     | 12 months            | 2008-07            |
| Power Meter             | NRVS         | 849305/028    | 12 months            | 2008-07            |
| Power Sensor            | NRV-Z32      | 839176/020    | 12 months            | 2008-07            |
| Call Tester             | CMU 200      | 103293        | -                    | -                  |
| Call Tester             | CMU 200      | 100084        | -                    | -                  |
| Vector Network Analyzer | 8753E        | US38432928    | 12 months            | 2008-07            |
| Dielectric Probe Kit    | 85070B       | US33020420    | -                    | -                  |

#### 4.1.1 Isotropic E-field Probe Type ET3DV6

|                                  |                                                                                                                                                                                                                              |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Construction</b>              | Symmetrical design with triangular core<br>Built-in optical fiber for surface detection system<br>Built-in shielding against static charges<br>PEEK enclosure material (resistant to organic solvents, e.g., butyl diglycol) |
| <b>Calibration</b>               | Calibration certificate in Appendix C                                                                                                                                                                                        |
| <b>Frequency</b>                 | 10 MHz to 3 GHz (dosimetry); Linearity: $\pm 0.2$ dB (30 MHz to 3 GHz)                                                                                                                                                       |
| <b>Optical Surface Detection</b> | $\pm 0.2$ mm repeatability in air and clear liquids over diffuse reflecting surfaces                                                                                                                                         |
| <b>Directivity</b>               | $\pm 0.2$ dB in HSL (rotation around probe axis)<br>$\pm 0.4$ dB in HSL (rotation normal to probe axis)                                                                                                                      |
| <b>Dynamic Range</b>             | 5 $\mu$ W/g to > 100 mW/g; Linearity: $\pm 0.2$ dB                                                                                                                                                                           |
| <b>Dimensions</b>                | Overall length: 330 mm<br>Tip length: 16 mm<br>Body diameter: 12 mm<br>Tip diameter: 6.8 mm<br>Distance from probe tip to dipole centers: 2.7 mm                                                                             |
| <b>Application</b>               | General dosimetry up to 3 GHz<br>Compliance tests of mobile phones<br>Fast automatic scanning in arbitrary phantoms                                                                                                          |

#### 4.2 Phantoms

The phantom used for all tests i.e. for both system checks and device testing, was the twin-headed "SAM Phantom", manufactured by SPEAG. The phantom conforms to the requirements of IEEE 1528 - 2003.

System checking was performed using the flat section, whilst Head SAR tests used the left and right head profile sections. Body SAR testing also used the flat section between the head profiles.

The SPEAG device holder (see Section 5.1) was used to position the device in all tests whilst a tripod was used to position the validation dipoles against the flat section of phantom.

### 4.3 Tissue Simulants

Recommended values for the dielectric parameters of the tissue simulants are given in IEEE 1528 - 2003 and FCC Supplement C to OET Bulletin 65. All tests were carried out using simulants whose dielectric parameters were within  $\pm 5\%$  of the recommended values. All tests were carried out within 24 hours of measuring the dielectric parameters.

The depth of the tissue simulant was  $15.0 \pm 0.5$  cm measured from the ear reference point during system checking and device measurements.

#### 4.3.1 Tissue Simulant Recipes

The following recipe(s) were used for Head and Body tissue simulant(s):

##### 800MHz band

| Ingredient      | Head<br>(% by weight) | Body<br>(% by weight) |
|-----------------|-----------------------|-----------------------|
| Deionised Water | 51.50                 | 69.25                 |
| Tween 20        | 47.35                 | 30.00                 |
| Salt            | 1.15                  | 0.75                  |

##### 1900MHz band

| Ingredient      | Head<br>(% by weight) | Body<br>(% by weight) |
|-----------------|-----------------------|-----------------------|
| Deionised Water | 54.50                 | 70.25                 |
| Tween 20        | 45.23                 | 29.41                 |
| Salt            | 0.27                  | 0.34                  |

#### 4.3.2 System Checking

The manufacturer calibrates the probes annually. Dielectric parameters of the tissue simulants were measured every day using the dielectric probe kit and the network analyser. A system check measurement was made following the determination of the dielectric parameters of the simulant, using the dipole validation kit. A power level of 250 mW was supplied to the dipole antenna, which was placed under the flat section of the twin SAM phantom. The system checking results (dielectric parameters and SAR values) are given in the table below.

### System checking, head tissue simulant

| f [MHz] | Description       | SAR [W/kg],<br>1g | Dielectric Parameters |                | Temp<br>[°C] |
|---------|-------------------|-------------------|-----------------------|----------------|--------------|
|         |                   |                   | $\epsilon_r$          | $\sigma$ [S/m] |              |
| 835     | Reference result  | 2.29              | 41.6                  | 0.90           |              |
|         | $\pm 10\%$ window | 2.06 – 2.52       |                       |                |              |
|         | 2008-05-13        | 2.33              | 41.7                  | 0.89           | 21.0         |
|         | 2008-05-14        | 2.33              | 41.6                  | 0.90           | 21.0         |
| 1900    | Reference result  | 9.69              | 39.3                  | 1.44           |              |
|         | $\pm 10\%$ window | 8.72 – 10.66      |                       |                |              |
|         | 2008-05-15        | 9.89              | 38.4                  | 1.44           | 21.0         |

Plots of the system checking scans are given in Appendix A.

### 4.3.3 Tissue Simulants used in the Measurements

#### Head tissue simulant measurements

| f<br>[MHz] | Description       | Dielectric Parameters |                | Temp<br>[°C] |
|------------|-------------------|-----------------------|----------------|--------------|
|            |                   | $\epsilon_r$          | $\sigma$ [S/m] |              |
| 836        | Recommended value | 41.5                  | 0.90           |              |
|            | $\pm 5\%$ window  | 39.4 – 43.6           | 0.86 – 0.95    |              |
|            | 2008-05-13        | 41.7                  | 0.89           | 21.0         |
|            | 2008-05-14        | 41.6                  | 0.90           | 21.0         |
| 1880       | Recommended value | 40.0                  | 1.40           |              |
|            | $\pm 5\%$ window  | 38.0 – 42.0           | 1.33 – 1.47    |              |
|            | 2008-05-15        | 38.5                  | 1.42           | 21.0         |

#### Body tissue simulant measurements

| f<br>[MHz] | Description       | Dielectric Parameters |                | Temp<br>[°C] |
|------------|-------------------|-----------------------|----------------|--------------|
|            |                   | $\epsilon_r$          | $\sigma$ [S/m] |              |
| 836        | Recommended value | 55.2                  | 0.97           |              |
|            | $\pm 5\%$ window  | 52.4 – 58.0           | 0.92 – 1.02    |              |
|            | 2008-05-14        | 54.2                  | 0.97           | 21.0         |
| 1880       | Recommended value | 53.3                  | 1.52           |              |
|            | $\pm 5\%$ window  | 50.6 – 56.0           | 1.44 – 1.60    |              |
|            | 2008-05-15        | 51.9                  | 1.53           | 21.0         |

## 5. DESCRIPTION OF THE TEST PROCEDURE

### 5.1 Device Holder

The device was placed in the device holder (illustrated below) that is supplied by SPEAG as an integral part of the Dasy system.



Device holder supplied by SPEAG

A Nokia designed spacer (illustrated below) was used to position the device within the SPEAG holder. The spacer positions the device so that the holder has minimal effect on the test results but still holds the device securely. The spacer was removed before the tests.



Nokia spacer

### 5.2 Test Positions

#### 5.2.1 Against Phantom Head

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

The positions used in the measurements were according to IEEE 1528 - 2003 "IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques".



Photo of the device in “cheek” position



Photo of the device in “tilt” position

### 5.2.2 Body Worn Configuration

The device was placed in the SPEAG holder using the Nokia spacer and placed below the flat section of the phantom. The distance between the device and the phantom was kept at the separation distance indicated in the photo below using a separate flat spacer that was removed before the start of the measurements. The device was oriented with its back facing the phantom since this orientation gives higher results.



Photo of the device positioned for Body SAR measurement.  
The spacer was removed for the tests.

---

### 5.3 Scan Procedures

First, area scans were used for determination of the field distribution. Next, a zoom scan, a minimum of 5x5x7 points covering a volume of at least 30x30x30mm, was performed around the highest E-field value to determine the averaged SAR value. Drift was determined by measuring the same point at the start of the area scan and again at the end of the zoom scan.

### 5.4 SAR Averaging Methods

The maximum SAR value was averaged over a cube of tissue using interpolation and extrapolation.

The interpolation, extrapolation and maximum search routines within Dasy4 are all based on the modified Quadratic Shepard's method (Robert J. Renka, "Multivariate Interpolation Of Large Sets Of Scattered Data", University of North Texas ACM Transactions on Mathematical Software, vol. 14, no. 2, June 1988, pp. 139-148).

The interpolation scheme combines a least-square fitted function method with a weighted average method. A trivariate 3-D / bivariate 2-D quadratic function is computed for each measurement point and fitted to neighbouring points by a least-square method. For the zoom scan, inverse distance weighting is incorporated to fit distant points more accurately. The interpolating function is finally calculated as a weighted average of the quadratics.

In the zoom scan, the interpolation function is used to extrapolate the Peak SAR from the deepest measurement points to the inner surface of the phantom.

## 6. MEASUREMENT UNCERTAINTY

Table 6.1 – Measurement uncertainty evaluation

| Uncertainty Component                                                           | Section in IEEE 1528 | Tol. (%) | Prob Dist | Div | $C_i$           | $C_i \cdot U_i$ (%) | $V_i$ |
|---------------------------------------------------------------------------------|----------------------|----------|-----------|-----|-----------------|---------------------|-------|
| <b>Measurement System</b>                                                       |                      |          |           |     |                 |                     |       |
| Probe Calibration                                                               | E2.1                 | ±5.9     | N         | 1   | 1               | ±5.9                | ∞     |
| Axial Isotropy                                                                  | E2.2                 | ±4.7     | R         | √3  | $(1-c_p)^{1/2}$ | ±1.9                | ∞     |
| Hemispherical Isotropy                                                          | E2.2                 | ±9.6     | R         | √3  | $(c_p)^{1/2}$   | ±3.9                | ∞     |
| Boundary Effect                                                                 | E2.3                 | ±1.0     | R         | √3  | 1               | ±0.6                | ∞     |
| Linearity                                                                       | E2.4                 | ±4.7     | R         | √3  | 1               | ±2.7                | ∞     |
| System Detection Limits                                                         | E2.5                 | ±1.0     | R         | √3  | 1               | ±0.6                | ∞     |
| Readout Electronics                                                             | E2.6                 | ±1.0     | N         | 1   | 1               | ±1.0                | ∞     |
| Response Time                                                                   | E2.7                 | ±0.8     | R         | √3  | 1               | ±0.5                | ∞     |
| Integration Time                                                                | E2.8                 | ±2.6     | R         | √3  | 1               | ±1.5                | ∞     |
| RF Ambient Conditions - Noise                                                   | E6.1                 | ±3.0     | R         | √3  | 1               | ±1.7                | ∞     |
| RF Ambient Conditions - Reflections                                             | E6.1                 | ±3.0     | R         | √3  | 1               | ±1.7                | ∞     |
| Probe Positioner Mechanical Tolerance                                           | E6.2                 | ±0.4     | R         | √3  | 1               | ±0.2                | ∞     |
| Probe Positioning with respect to Phantom Shell                                 | E6.3                 | ±2.9     | R         | √3  | 1               | ±1.7                | ∞     |
| Extrapolation, interpolation and Integration Algorithms for Max. SAR Evaluation | E5                   | ±3.9     | R         | √3  | 1               | ±2.3                | ∞     |
| <b>Test sample Related</b>                                                      |                      |          |           |     |                 |                     |       |
| Test Sample Positioning                                                         | E4.2                 | ±6.0     | N         | 1   | 1               | ±6.0                | 11    |
| Device Holder Uncertainty                                                       | E4.1                 | ±5.0     | N         | 1   | 1               | ±5.0                | 7     |
| Output Power Variation - SAR drift measurement                                  | 6.6.3                | ±0.0     | R         | √3  | 1               | ±0.0                | ∞     |
| <b>Phantom and Tissue Parameters</b>                                            |                      |          |           |     |                 |                     |       |
| Phantom Uncertainty (shape and thickness tolerances)                            | E3.1                 | ±4.0     | R         | √3  | 1               | ±2.3                | ∞     |
| Conductivity Target - tolerance                                                 | E3.2                 | ±5.0     | R         | √3  | 0.64            | ±1.8                | ∞     |
| Conductivity - measurement uncertainty                                          | E3.3                 | ±5.5     | N         | 1   | 0.64            | ±3.5                | 5     |
| Permittivity Target - tolerance                                                 | E3.2                 | ±5.0     | R         | √3  | 0.6             | ±1.7                | ∞     |
| Permittivity - measurement uncertainty                                          | E3.3                 | ±2.9     | N         | 1   | 0.6             | ±1.7                | 5     |
| <b>Combined Standard Uncertainty</b>                                            |                      |          | RSS       |     |                 | ±12.9               | 116   |
| <b>Coverage Factor for 95%</b>                                                  |                      |          | k=2       |     |                 |                     |       |
| <b>Expanded Uncertainty</b>                                                     |                      |          |           |     |                 | ±25.8               |       |

## 7. RESULTS

The measured Head SAR values for the test device are tabulated below:

### 850MHz Head SAR results

| DUT                  | Option used    | Test configuration    |       | SAR, averaged over 1g (W/kg) |                     |                     |
|----------------------|----------------|-----------------------|-------|------------------------------|---------------------|---------------------|
|                      |                |                       |       | Ch 128<br>824.2 MHz          | Ch 190<br>836.6 MHz | Ch 251<br>848.8 MHz |
| GSM                  |                | Power                 |       | 26.8 dBm                     | 27.9 dBm            | 28.2 dBm            |
| 12880                | Silver covers  | Left                  | Cheek | -                            | 0.352               | -                   |
|                      |                |                       | Tilt  | -                            | -                   | -                   |
|                      |                | Right                 | Cheek | -                            | -                   | -                   |
|                      |                |                       | Tilt  | -                            | -                   | -                   |
| 2-slot GPRS          |                | Power                 |       | 26.7 dBm                     | 27.9 dBm            | 28.2 dBm            |
| 12880                | Silver covers  | Left                  | Cheek | -                            | 0.641               | -                   |
|                      |                |                       | Tilt  | -                            | -                   | -                   |
|                      |                | Right                 | Cheek | -                            | -                   | -                   |
|                      |                |                       | Tilt  | -                            | -                   | -                   |
| 3-slot GPRS          |                | Power                 |       | 25.6 dBm                     | 26.9 dBm            | 27.0 dBm            |
| 12880                | Silver covers  | Left                  | Cheek | 0.761                        | 0.749               | 0.878               |
|                      |                |                       | Tilt  | -                            | -                   | -                   |
|                      |                | Right                 | Cheek | -                            | -                   | -                   |
|                      |                |                       | Tilt  | -                            | -                   | -                   |
| 3-slot GPRS          |                | Power                 |       | 26.4 dBm                     | 28.0 dBm            | 27.3 dBm            |
| 12881                | Painted covers | Left                  | Cheek | 0.747                        | 0.816               | 0.977               |
|                      |                |                       | Tilt  | -                            | -                   | -                   |
|                      |                | Right                 | Cheek | -                            | -                   | -                   |
|                      |                |                       | Tilt  | -                            | -                   | -                   |
| 3-slot GPRS<br>12881 | Painted covers | Left Cheek, BT active |       | -                            | -                   | 1.04                |

**1900MHz Head SAR results**

| DUT                  | Option used    | Test configuration    |       | SAR, averaged over 1g (W/kg) |                      |                      |
|----------------------|----------------|-----------------------|-------|------------------------------|----------------------|----------------------|
|                      |                |                       |       | Ch 512<br>1850.2 MHz         | Ch 661<br>1880.0 MHz | Ch 810<br>1909.8 MHz |
| GSM                  |                | Power                 |       | 28.4 dBm                     | 32.6 dBm             | 28.3 dBm             |
| 12880                | Silver covers  | Left                  | Cheek | -                            | 0.246                | -                    |
|                      |                |                       | Tilt  | -                            | -                    | -                    |
|                      |                | Right                 | Cheek | -                            | -                    | -                    |
|                      |                |                       | Tilt  | -                            | -                    | -                    |
| 2-slot GPRS          |                | Power                 |       | 28.3 dBm                     | 32.5 dBm             | 28.2 dBm             |
| 12880                | Silver covers  | Left                  | Cheek | 0.309                        | 0.442                | 0.385                |
|                      |                |                       | Tilt  | -                            | -                    | -                    |
|                      |                | Right                 | Cheek | -                            | -                    | -                    |
|                      |                |                       | Tilt  | -                            | -                    | -                    |
| 3-slot GPRS          |                | Power                 |       | 26.4 dBm                     | 30.4 dBm             | 26.1 dBm             |
| 12880                | Silver covers  | Left                  | Cheek |                              | 0.392                |                      |
|                      |                |                       | Tilt  | -                            | -                    | -                    |
|                      |                | Right                 | Cheek | -                            | -                    | -                    |
|                      |                |                       | Tilt  | -                            | -                    | -                    |
| 2-slot GPRS          |                | Power                 |       | 30.5 dBm                     | 32.6 dBm             | 30.4 dBm             |
| 12881                | Painted covers | Left                  | Cheek | 0.523                        | 0.708                | 0.653                |
|                      |                |                       | Tilt  | -                            | -                    | -                    |
|                      |                | Right                 | Cheek | -                            | -                    | -                    |
|                      |                |                       | Tilt  | -                            | -                    | -                    |
| 2-slot GPRS<br>12881 | Painted covers | Left Cheek, BT active |       | -                            | 0.624                | -                    |

The measured Body SAR values for the test device are tabulated below:

**850MHz Body SAR results**

| DUT                  | Option used    | Test configuration         | SAR, averaged over 1g (W/kg) |                     |                     |
|----------------------|----------------|----------------------------|------------------------------|---------------------|---------------------|
|                      |                |                            | Ch 128<br>824.2 MHz          | Ch 190<br>836.6 MHz | Ch 251<br>848.8 MHz |
| 3-slot GPRS          |                | Power                      | 25.6 dBm                     | 26.9 dBm            | 27.0 dBm            |
| 12880                | Silver covers  | Without headset            | 0.753                        | 0.928               | 0.952               |
|                      |                | Headset                    | -                            | -                   | -                   |
| 3-slot GPRS          |                | Power                      | 26.4 dBm                     | 28.0 dBm            | 27.3 dBm            |
| 12881                | Painted covers | Without headset            | 0.775                        | 0.984               | 1.07                |
|                      |                | Headset                    | -                            | -                   | -                   |
| 3-slot GPRS<br>12881 | Painted covers | Without headset, BT active | -                            | -                   | 0.968               |

**1900MHz Body SAR results**

| DUT                  | Option used    | Test configuration         | SAR, averaged over 1g (W/kg) |                      |                      |
|----------------------|----------------|----------------------------|------------------------------|----------------------|----------------------|
|                      |                |                            | Ch 512<br>1850.2 MHz         | Ch 661<br>1880.0 MHz | Ch 810<br>1909.8 MHz |
| 2-slot GPRS          |                | Power                      | 28.3 dBm                     | 32.5 dBm             | 28.2 dBm             |
| 12880                | Silver covers  | Without headset            | 0.143                        | 0.234                | 0.226                |
|                      |                | Headset                    | -                            | -                    | -                    |
| 2-slot GPRS          |                | Power                      | 30.5 dBm                     | 32.6 dBm             | 30.4 dBm             |
| 12881                | Painted covers | Without headset            | 0.225                        | 0.331                | 0.327                |
|                      |                | Headset                    | -                            | -                    | -                    |
| 2-slot GPRS<br>12881 | Painted covers | Without headset, BT active | -                            | 0.315                | -                    |

Plots of the Measurement scans are given in Appendix B.

## APPENDIX A: SYSTEM CHECKING SCANS

Date/Time: 2008-05-13 16:29:42

Test Laboratory: TCC Nokia

Type: D835V2; Serial: D835V2 - SN:480

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL900; Medium Notes: 20.2C

Medium parameters used:  $f = 835 \text{ MHz}$ ;  $\sigma = 0.892 \text{ mho/m}$ ;  $\epsilon_r = 41.7$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1395; Probe Notes:
- ConvF(6.1, 6.1, 6.1); Calibrated: 2007-07-18
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2007-07-06
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

**d=15mm, Pin=250mW/Area Scan (61x81x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 2.49 mW/g

**d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 55.2 V/m

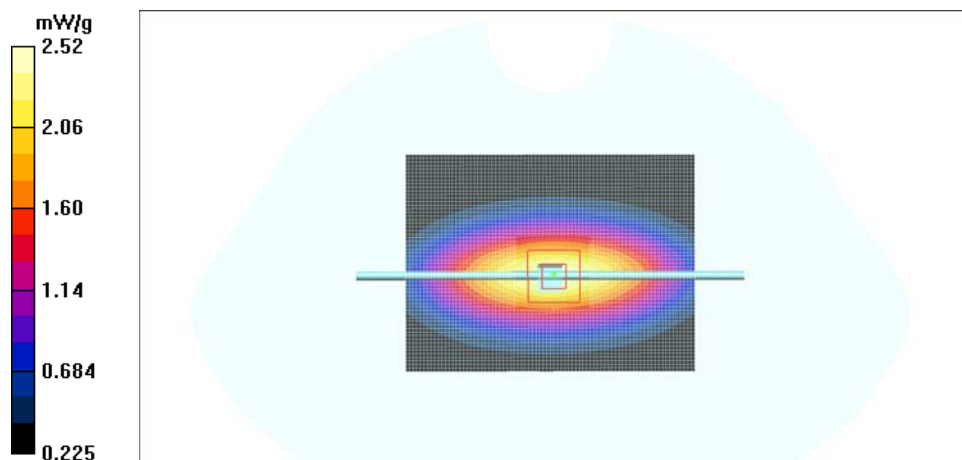
Peak SAR (extrapolated) = 3.51 W/kg

**SAR(1 g) = 2.33 mW/g**

**SAR(10 g) = 1.52 mW/g**

**Power Drift = -0.032 dB**

Maximum value of SAR (measured) = 2.52 mW/g



Date/Time: 2008-05-14 10:16:38

Test Laboratory: TCC Nokia  
Type: D835V2; Serial: D835V2 - SN:480

**Communication System: CW835**

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL900; Medium Notes: 21.3C

Medium parameters used:  $f = 835 \text{ MHz}$ ;  $\sigma = 0.903 \text{ mho/m}$ ;  $\epsilon_r = 41.6$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

**DASY4 Configuration:**

- Probe: ET3DV6 - SN1395
- ConvF(6.1, 6.1, 6.1); Calibrated: 2007-07-18
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2007-07-06
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

**d=15mm, Pin=250mW/Area Scan (61x81x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 2.49 mW/g

**d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 54.6 V/m

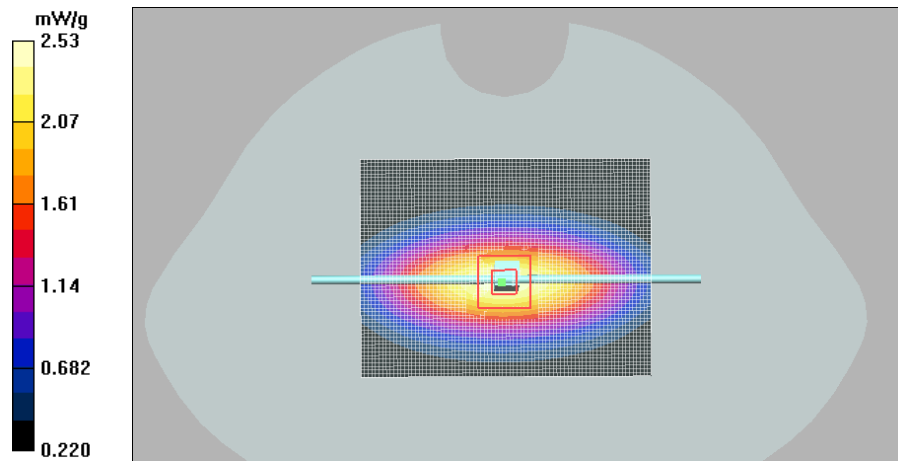
Peak SAR (extrapolated) = 3.53 W/kg

**SAR(1 g) = 2.33 mW/g**

**SAR(10 g) = 1.51 mW/g**

**Power Drift = -0.032 dB**

Maximum value of SAR (measured) = 2.53 mW/g



Date/Time: 2008-05-15 09:50:06

Test Laboratory: TCC Nokia  
Type: D1900V2; Serial: D1900V2 - SN:5d013

**Communication System: CW1900**

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: 21.3C

Medium parameters used:  $f = 1900$  MHz;  $\sigma = 1.44$  mho/m;  $\epsilon_r = 38.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

**DASY4 Configuration:**

- Probe: ET3DV6 - SN1395
- ConvF(4.85, 4.85, 4.85); Calibrated: 2007-07-18
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2007-07-06
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1018
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

**d=15mm, Pin=250mW/Area Scan (61x81x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 12.2 mW/g

**d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 94.1 V/m

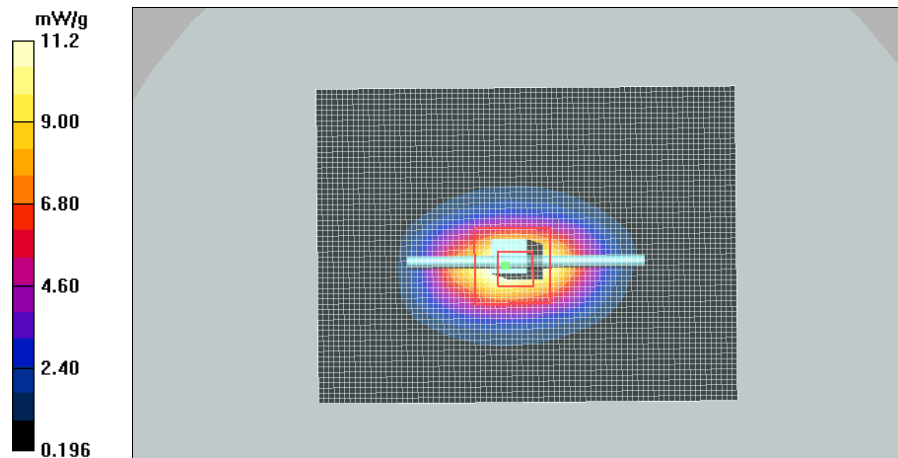
Peak SAR (extrapolated) = 17.0 W/kg

**SAR(1 g) = 9.89 mW/g**

**SAR(10 g) = 5.24 mW/g**

**Power Drift = -0.056 dB**

Maximum value of SAR (measured) = 11.2 mW/g



## APPENDIX B: MEASUREMENT SCANS

Date/Time: 2008-05-13 20:51:38

Test Laboratory: TCC Nokia

Type: RM-313; Serial: 358984/01/276084/2

### Communication System: GSM850

Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium: HSL900; Medium Notes: 20.0C

Medium parameters used:  $f = 837$  MHz;  $\sigma = 0.894$  mho/m;  $\epsilon_r = 41.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

#### DASY4 Configuration:

- Probe: ET3DV6 - SN1395
- ConvF(6.1, 6.1, 6.1); Calibrated: 2007-07-18
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2007-07-06
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

### Cheek position, Middle, Silver covers/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.372 mW/g

### Cheek position, Middle, Silver covers/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 7.62 V/m

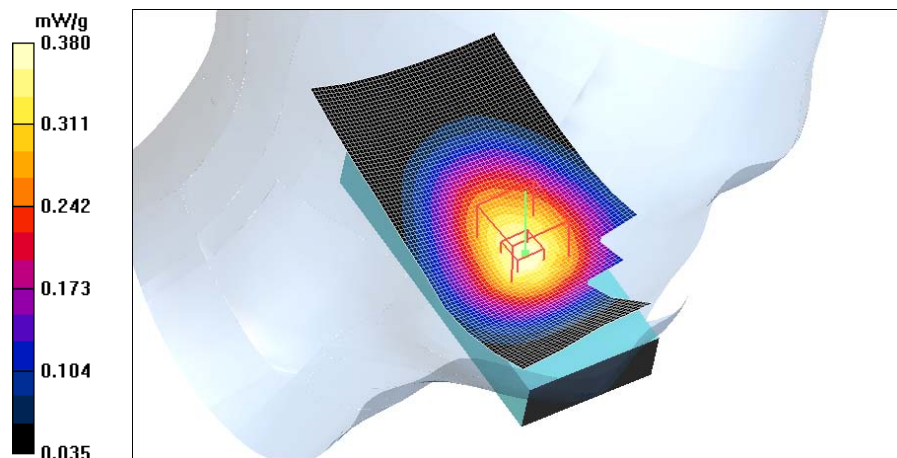
Peak SAR (extrapolated) = 0.471 W/kg

**SAR(1 g) = 0.352 mW/g**

**SAR(10 g) = 0.246 mW/g**

**Power Drift = -0.194 dB**

Maximum value of SAR (measured) = 0.380 mW/g



Date/Time: 2008-05-13 21:16:34

Test Laboratory: TCC Nokia

Type: RM-313; Serial: 358984/01/276084/2

**Communication System: 2-slot GPRS850**

Frequency: 836.6 MHz; Duty Cycle: 1:4.2

Medium: HSL900; Medium Notes: 20.0C

Medium parameters used:  $f = 837$  MHz;  $\sigma = 0.894$  mho/m;  $\epsilon_r = 41.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1395
- ConvF(6.1, 6.1, 6.1); Calibrated: 2007-07-18
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2007-07-06
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

**Cheek position, Middle, Silver covers /Area Scan (51x91x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.681 mW/g

**Cheek position, Middle, Silver covers /Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 10.2 V/m

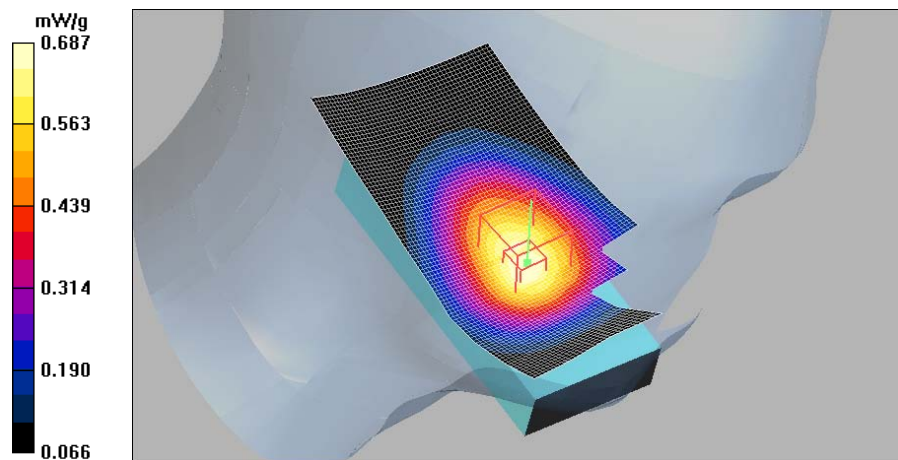
Peak SAR (extrapolated) = 0.854 W/kg

**SAR(1 g) = 0.641 mW/g**

**SAR(10 g) = 0.449 mW/g**

**Power Drift = -0.212 dB**

Maximum value of SAR (measured) = 0.687 mW/g



Date/Time: 2008-05-14 16:43:16

Test Laboratory: TCC Nokia

Type: RM-313; Serial: 358984/01/276084/2

**Communication System: 3-slot GPRS850**

Frequency: 848.8 MHz; Duty Cycle: 1:2.8

Medium: HSL900; Medium Notes: 21.3C

Medium parameters used:  $f = 849 \text{ MHz}$ ;  $\sigma = 0.912 \text{ mho/m}$ ;  $\epsilon_r = 41.4$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1395

- ConvF(6.1, 6.1, 6.1); Calibrated: 2007-07-18

- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE4 Sn538; Calibrated: 2007-07-06

- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449

- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

**Cheek position, High, Silver covers/Area Scan (51x91x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.962 mW/g

**Cheek position, High, Silver covers/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 11.6 V/m

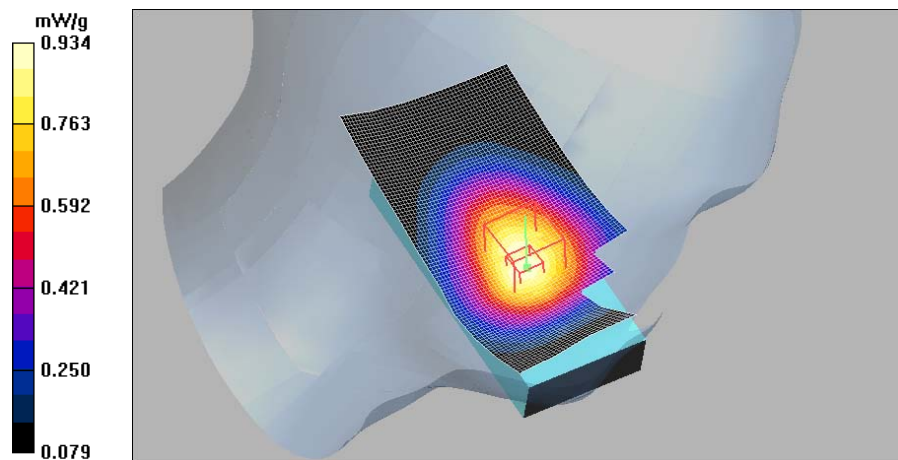
Peak SAR (extrapolated) = 1.18 W/kg

**SAR(1 g) = 0.878 mW/g**

**SAR(10 g) = 0.617 mW/g**

**Power Drift = -0.275 dB**

Maximum value of SAR (measured) = 0.934 mW/g



Date/Time: 2008-05-14 17:18:42

Test Laboratory: TCC Nokia

Type: RM-313; Serial: 358082/01/438829/8

**Communication System: 3-slot GPRS850**

Frequency: 848.8 MHz; Duty Cycle: 1:2.8

Medium: HSL900; Medium Notes: 21.3C

Medium parameters used:  $f = 849$  MHz;  $\sigma = 0.912$  mho/m;  $\epsilon_r = 41.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1395

- ConvF(6.1, 6.1, 6.1); Calibrated: 2007-07-18

- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE4 Sn538; Calibrated: 2007-07-06

- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449

- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

**Cheek position, High, Painted covers/Area Scan (51x91x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.05 mW/g

**Cheek position, High, Painted covers/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 14.0 V/m

Peak SAR (extrapolated) = 1.37 W/kg

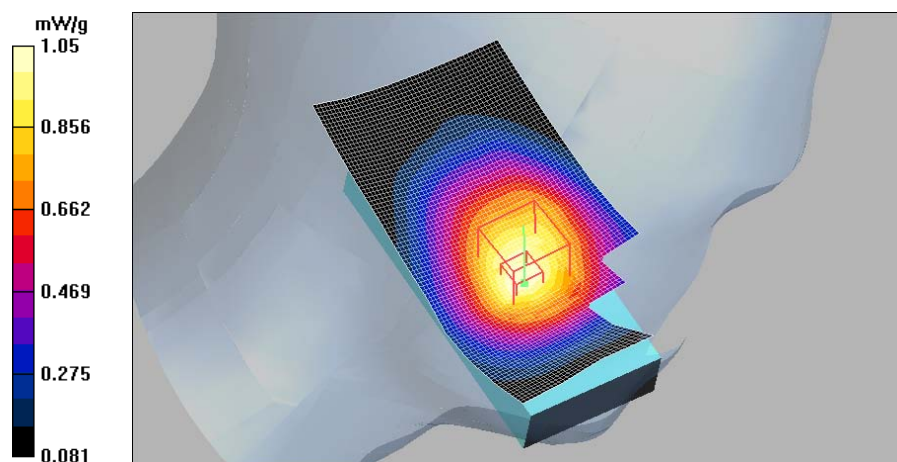
**SAR(1 g) = 0.977 mW/g**

**SAR(10 g) = 0.692 mW/g**

**Power Drift = -0.203 dB**

Warning: Maximum averaged SAR over 10 g is located on the boundary of the measurement cube. This cube might not incorporate the absolute averaged SAR. Please consider a refinement of the Area Scan measurement.

Maximum value of SAR (measured) = 1.05 mW/g



Date/Time: 2008-05-14 18:00:30

Test Laboratory: TCC Nokia

Type: RM-313; Serial: 358082/01/438829/8

**Communication System: 3-slot GPRS850**

Frequency: 848.8 MHz; Duty Cycle: 1:2.8

Medium: HSL900; Medium Notes: 21.3C

Medium parameters used:  $f = 849$  MHz;  $\sigma = 0.912$  mho/m;  $\epsilon_r = 41.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1395

- ConvF(6.1, 6.1, 6.1); Calibrated: 2007-07-18

- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE4 Sn538; Calibrated: 2007-07-06

- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449

- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

**Cheek position, High, Painted covers, BT/Area Scan (51x91x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.05 mW/g

**Cheek position, High, Painted covers, BT/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 12.8 V/m

Peak SAR (extrapolated) = 1.52 W/kg

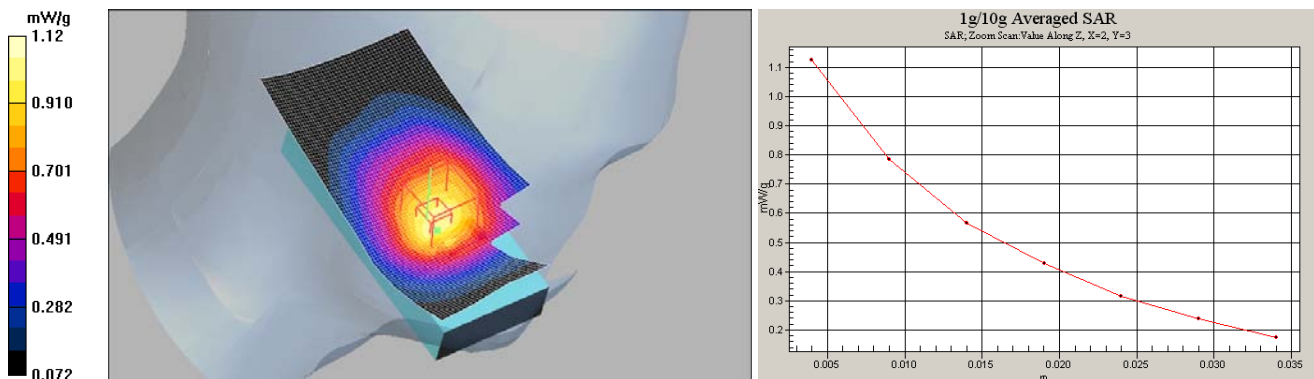
**SAR(1 g) = 1.04 mW/g**

**SAR(10 g) = 0.693 mW/g**

**Power Drift = -0.369 dB**

Warning: Maximum averaged SAR over 10 g is located on the boundary of the measurement cube. This cube might not incorporate the absolute averaged SAR. Please consider a refinement of the Area Scan measurement.

Maximum value of SAR (measured) = 1.12 mW/g



Date/Time: 2008-05-15 10:46:41

Test Laboratory: TCC Nokia

Type: RM-313; Serial: 358984/01/276084/2

**Communication System: GSM1900**

Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: HSL1900; Medium Notes: 21.0C

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.42$  mho/m;  $\epsilon_r = 38.5$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

**DASY4 Configuration:**

- Probe: ET3DV6 - SN1395
- ConvF(4.85, 4.85, 4.85); Calibrated: 2007-07-18
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2007-07-06
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1018
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

**Cheek position, Middle, Silver covers/Area Scan (51x91x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.273 mW/g

**Cheek position, Middle, Silver covers/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 4.90 V/m

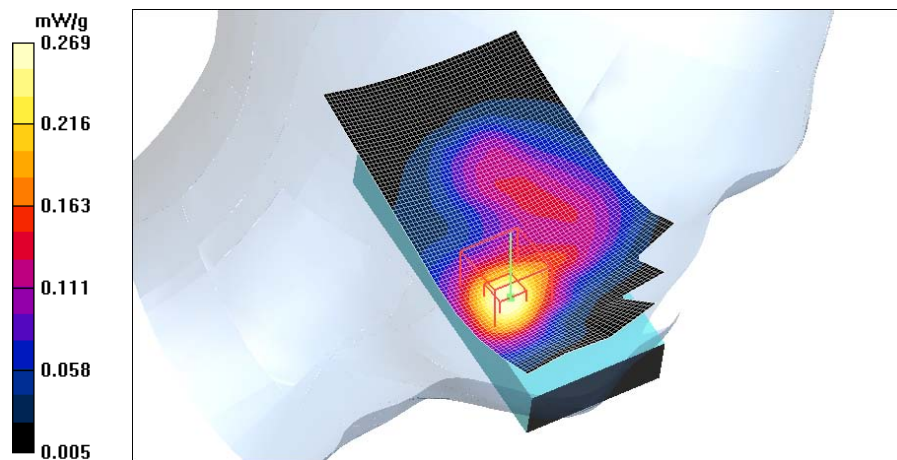
Peak SAR (extrapolated) = 0.375 W/kg

**SAR(1 g) = 0.246 mW/g**

**SAR(10 g) = 0.143 mW/g**

**Power Drift = -0.410 dB**

Maximum value of SAR (measured) = 0.269 mW/g



Date/Time: 2008-05-15 11:08:57

Test Laboratory: TCC Nokia

Type: RM-313; Serial: 358984/01/276084/2

**Communication System: 2-slot GPRS1900**

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: HSL1900; Medium Notes: 20.5C

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.42$  mho/m;  $\epsilon_r = 38.5$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1395
- ConvF(4.85, 4.85, 4.85); Calibrated: 2007-07-18
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2007-07-06
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1018
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

**Cheek position, Middle, Silver covers/Area Scan (51x91x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.501 mW/g

**Cheek position, Middle, Silver covers/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 6.44 V/m

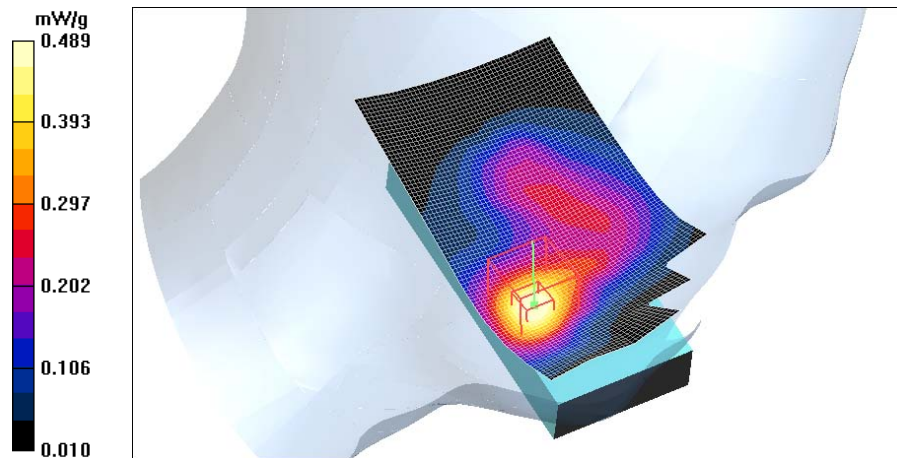
Peak SAR (extrapolated) = 0.673 W/kg

**SAR(1 g) = 0.442 mW/g**

**SAR(10 g) = 0.259 mW/g**

**Power Drift = -0.362 dB**

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



Date/Time: 2008-05-15 11:31:26

Test Laboratory: TCC Nokia

Type: RM-313; Serial: 358984/01/276084/2

**Communication System: 3-slot GPRS1900**

Frequency: 1880 MHz; Duty Cycle: 1:2.8

Medium: HSL1900; Medium Notes: 21.0C

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.42$  mho/m;  $\epsilon_r = 38.5$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1395
- ConvF(4.85, 4.85, 4.85); Calibrated: 2007-07-18
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2007-07-06
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1018
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

**Cheek position, Middle, Silver covers/Area Scan (51x91x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.449 mW/g

**Cheek position, Middle, Silver covers/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 6.35 V/m

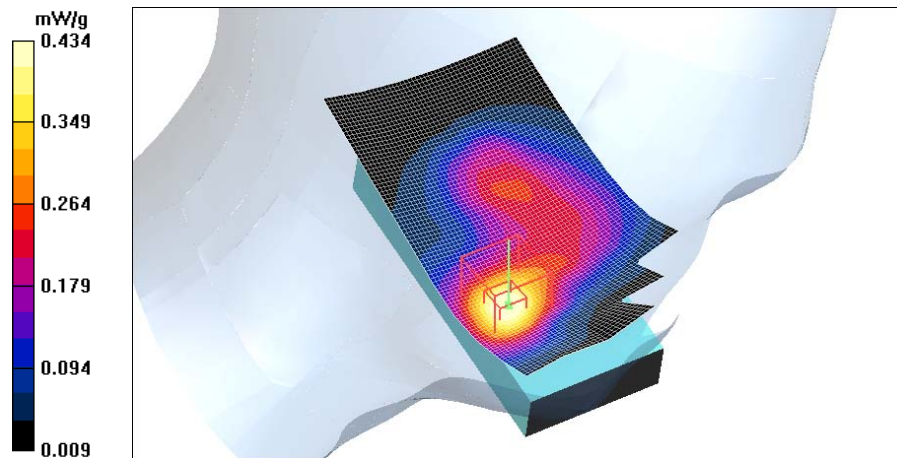
Peak SAR (extrapolated) = 0.594 W/kg

**SAR(1 g) = 0.392 mW/g**

**SAR(10 g) = 0.230 mW/g**

**Power Drift = -0.398 dB**

Maximum value of SAR (measured) = 0.434 mW/g



Date/Time: 2008-05-15 12:45:20

Test Laboratory: TCC Nokia  
Type: RM-313; Serial: 358082/01/438829/8

**Communication System: 2-slot GPRS1900**

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: HSL1900; Medium Notes: 20.5C

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.42$  mho/m;  $\epsilon_r = 38.5$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

**DASY4 Configuration:**

- Probe: ET3DV6 - SN1395
- ConvF(4.85, 4.85, 4.85); Calibrated: 2007-07-18
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2007-07-06
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1018
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

**Cheek position, Middle, Painted covers/Area Scan (51x91x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.792 mW/g

**Cheek position, Middle, Painted covers/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 9.15 V/m

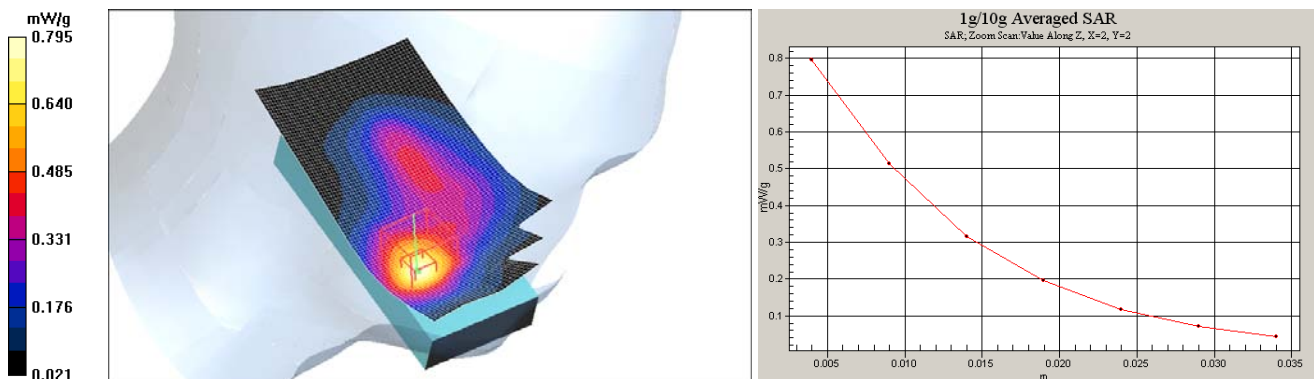
Peak SAR (extrapolated) = 1.08 W/kg

**SAR(1 g) = 0.708 mW/g**

**SAR(10 g) = 0.406 mW/g**

**Power Drift = -0.182 dB**

Maximum value of SAR (measured) = 0.795 mW/g



Date/Time: 2008-05-15 13:39:27

Test Laboratory: TCC Nokia

Type: RM-313; Serial: 358082/01/438829/8

**Communication System: 2-slot GPRS1900**

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: HSL1900; Medium Notes: 20.5C

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.42$  mho/m;  $\epsilon_r = 38.5$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

**DASY4 Configuration:**

- Probe: ET3DV6 - SN1395
- ConvF(4.85, 4.85, 4.85); Calibrated: 2007-07-18
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2007-07-06
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1018
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

**Cheek position, Middle, Painted covers, BT/Area Scan (51x91x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.687 mW/g

**Cheek position, Middle, Painted covers, BT/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 8.81 V/m

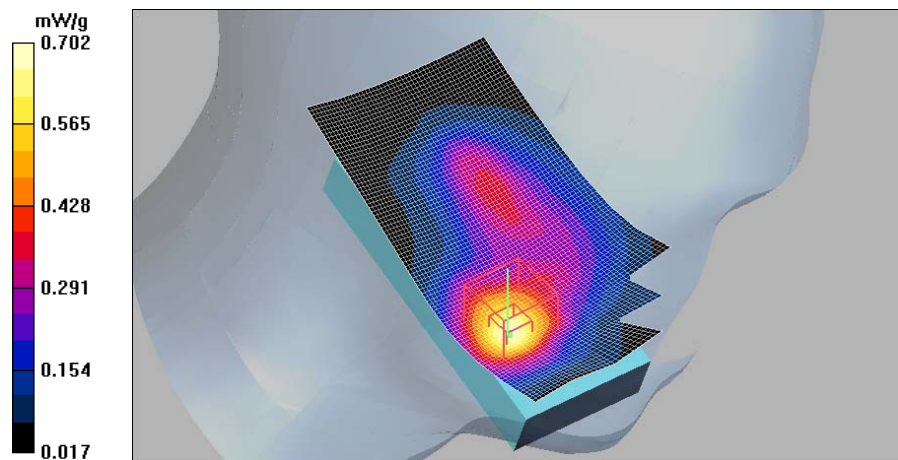
Peak SAR (extrapolated) = 0.976 W/kg

**SAR(1 g) = 0.624 mW/g**

**SAR(10 g) = 0.359 mW/g**

**Power Drift = -0.024 dB**

Maximum value of SAR (measured) = 0.702 mW/g



Date/Time: 2008-05-14 15:27:24

Test Laboratory: TCC Nokia

Type: RM-313; Serial: 358984/01/276084/2

**Communication System: 3-slot GPRS850**

Frequency: 848.8 MHz; Duty Cycle: 1:2.8

Medium: BSL850; Medium Notes: 20.8C

Medium parameters used:  $f = 849 \text{ MHz}$ ;  $\sigma = 0.981 \text{ mho/m}$ ;  $\epsilon_r = 54.2$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

**DASY4 Configuration:**

- Probe: ET3DV6 - SN1395
- ConvF(5.69, 5.69, 5.69); Calibrated: 2007-07-18
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2007-07-06
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1179
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

**Body Measurement, High, No accessory, Silver covers/Area Scan (51x91x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

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

**Body Measurement, High, No accessory, Silver covers/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:

$dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 17.6 V/m

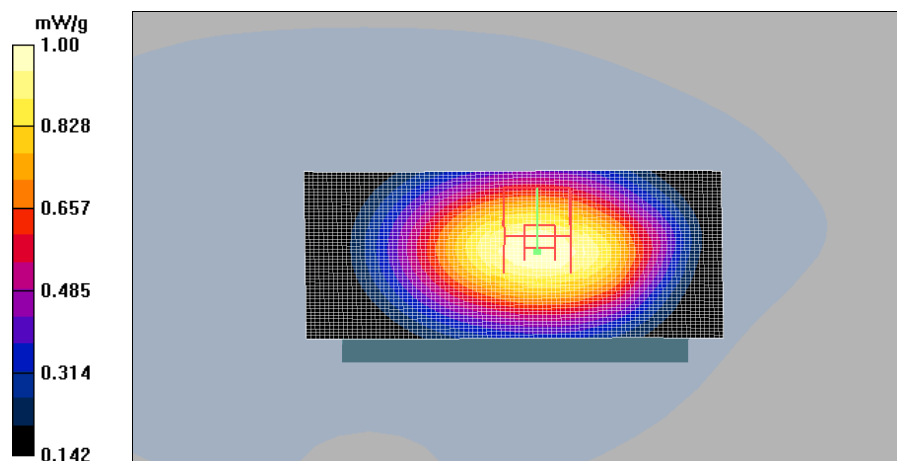
Peak SAR (extrapolated) = 1.16 W/kg

**SAR(1 g) = 0.952 mW/g**

**SAR(10 g) = 0.706 mW/g**

**Power Drift = -0.225 dB**

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



Date/Time: 2008-05-14 14:25:17

Test Laboratory: TCC Nokia

Type: RM-313; Serial: 358082/01/438829/8

**Communication System: 3-slot GPRS850**

Frequency: 848.8 MHz; Duty Cycle: 1:2.8

Medium: BSL850; Medium Notes: 20.8C

Medium parameters used:  $f = 849$  MHz;  $\sigma = 0.981$  mho/m;  $\epsilon_r = 54.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

**DASY4 Configuration:**

- Probe: ET3DV6 - SN1395
- ConvF(5.69, 5.69, 5.69); Calibrated: 2007-07-18
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2007-07-06
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1179
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

**Body Measurement, High, No accessory, Painted covers/Area Scan (51x91x1):** Measurement grid: dx=15mm, dy=15mm

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

**Body Measurement, High, No accessory, Painted covers/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:

dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 19.1 V/m

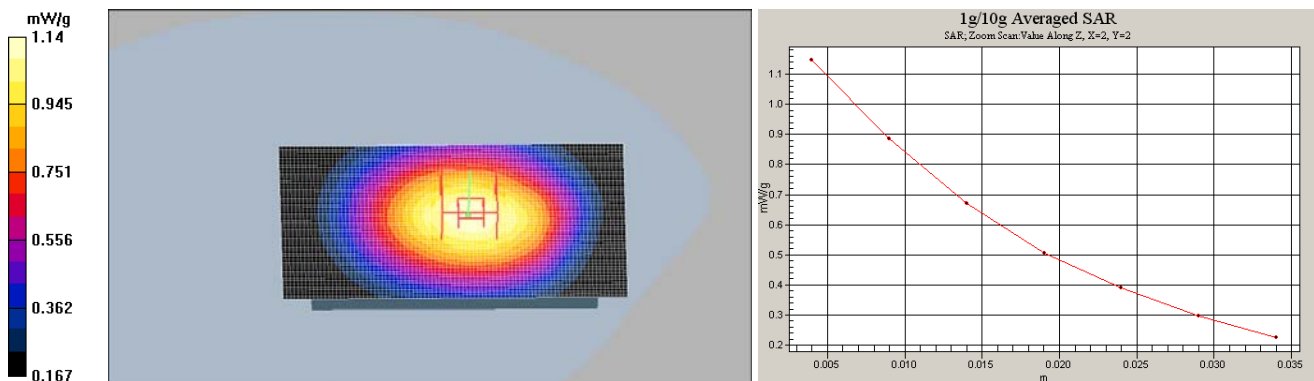
Peak SAR (extrapolated) = 1.32 W/kg

**SAR(1 g) = 1.07 mW/g**

**SAR(10 g) = 0.794 mW/g**

**Power Drift = -0.232 dB**

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



Date/Time: 2008-05-14 14:36:18

Test Laboratory: TCC Nokia

Type: RM-313; Serial: 358082/01/438829/8

**Communication System: 3-slot GPRS850**

Frequency: 848.8 MHz; Duty Cycle: 1:2.8

Medium: BSL850; Medium Notes: 20.8C

Medium parameters used:  $f = 849 \text{ MHz}$ ;  $\sigma = 0.981 \text{ mho/m}$ ;  $\epsilon_r = 54.2$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

**DASY4 Configuration:**

- Probe: ET3DV6 - SN1395
- ConvF(5.69, 5.69, 5.69); Calibrated: 2007-07-18
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2007-07-06
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1179
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

**Body Measurement, High, No accessory, Painted covers, BT/Area Scan (51x91x1): Measurement grid:**

$dx=15\text{mm}$ ,  $dy=15\text{mm}$

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

**Body Measurement, High, No accessory, Painted covers, BT/Zoom Scan (5x5x7)/Cube 0: Measurement grid:**

$dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 18.0 V/m

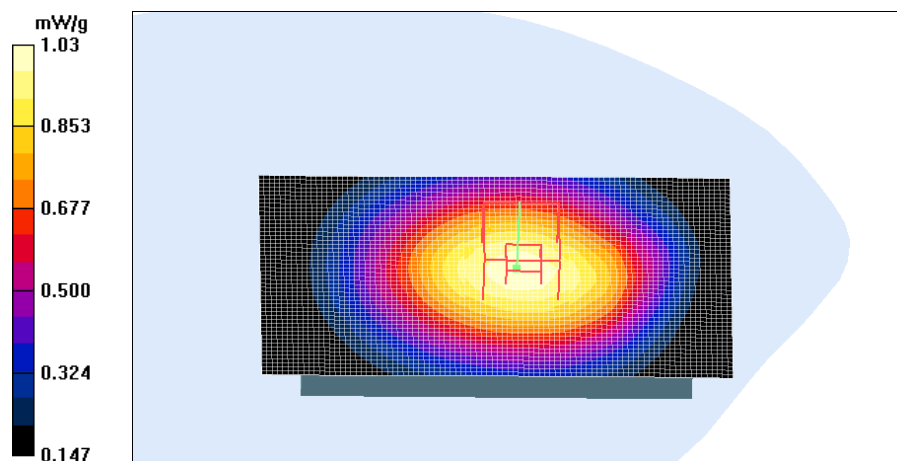
Peak SAR (extrapolated) = 1.20 W/kg

**SAR(1 g) = 0.968 mW/g**

**SAR(10 g) = 0.713 mW/g**

**Power Drift = -0.079 dB**

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



Date/Time: 2008-05-15 16:13:23

Test Laboratory: TCC Nokia

Type: RM-313; Serial: 358984/01/276084/2

**Communication System: 2-slot GPRS1900**

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: BSL1900; Medium Notes: 21.4C

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.53$  mho/m;  $\epsilon_r = 51.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

**DASY4 Configuration:**

- Probe: ET3DV6 - SN1395
- ConvF(4.51, 4.51, 4.51); Calibrated: 2007-07-18
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2007-07-06
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

**Body Measurement, Middle, No accessory, Silver covers/Area Scan (51x91x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.250 mW/g

**Body Measurement, Middle, No accessory, Silver covers/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 10.2 V/m

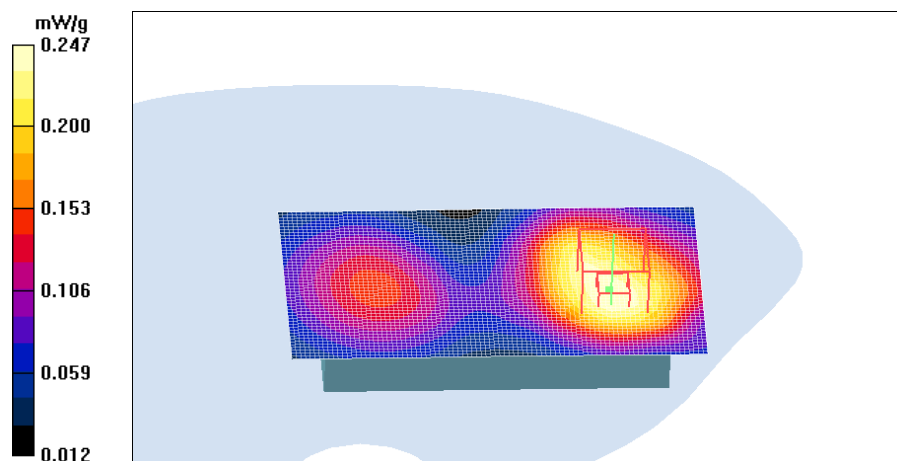
Peak SAR (extrapolated) = 0.367 W/kg

**SAR(1 g) = 0.234 mW/g**

**SAR(10 g) = 0.151 mW/g**

**Power Drift = -0.086 dB**

Maximum value of SAR (measured) = 0.247 mW/g



Date/Time: 2008-05-15 14:57:10

Test Laboratory: TCC Nokia  
Type: RM-313; Serial: 358082/01/438829/8

**Communication System: 2-slot GPRS1900**

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: BSL1900; Medium Notes: 21.4C

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.53$  mho/m;  $\epsilon_r = 51.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

**DASY4 Configuration:**

- Probe: ET3DV6 - SN1395
- ConvF(4.51, 4.51, 4.51); Calibrated: 2007-07-18
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2007-07-06
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

**Body Measurement, Middle, No accessory, Painted covers/Area Scan (51x91x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.368 mW/g

**Body Measurement, Middle, No accessory, Painted covers/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:

dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 12.4 V/m

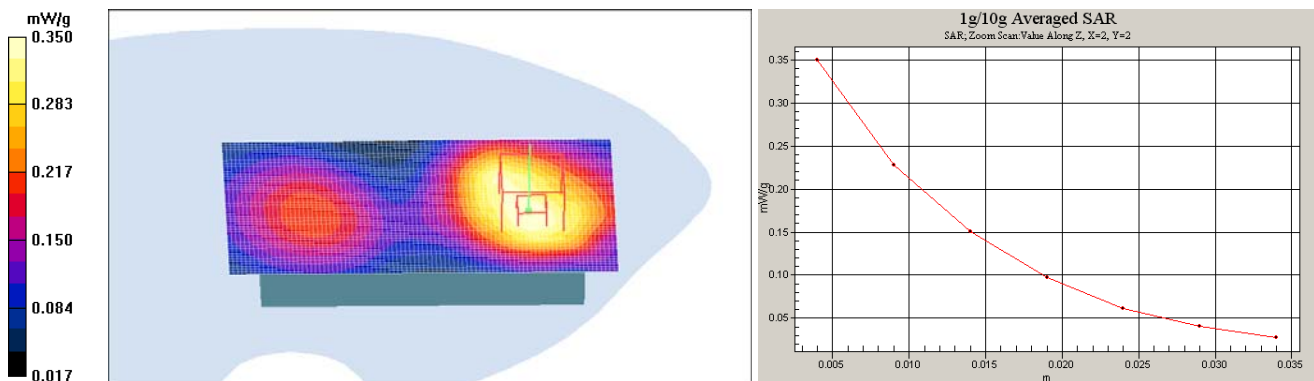
Peak SAR (extrapolated) = 0.517 W/kg

**SAR(1 g) = 0.331 mW/g**

**SAR(10 g) = 0.215 mW/g**

**Power Drift = -0.267 dB**

Maximum value of SAR (measured) = 0.350 mW/g



Date/Time: 2008-05-15 15:40:12

Test Laboratory: TCC Nokia

Type: RM-313; Serial: 358082/01/438829/8

**Communication System: 2-slot GPRS1900**

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: BSL1900; Medium Notes: 21.4C

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.53$  mho/m;  $\epsilon_r = 51.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

**DASY4 Configuration:**

- Probe: ET3DV6 - SN1395
- ConvF(4.51, 4.51, 4.51); Calibrated: 2007-07-18
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2007-07-06
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

**Body Measurement, Middle, No accessory, Painted covers, BT/Area Scan (51x91x1): Measurement grid:**

dx=15mm, dy=15mm

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

**Body Measurement, Middle, No accessory, Painted covers, BT/Zoom Scan (5x5x7)/Cube 0: Measurement grid:**

dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 11.6 V/m

Peak SAR (extrapolated) = 0.494 W/kg

**SAR(1 g) = 0.315 mW/g**

**SAR(10 g) = 0.207 mW/g**

**Power Drift = -0.116 dB**

Maximum value of SAR (measured) = 0.333 mW/g

