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**APPENDIX C: RELEVANT PAGES FROM PROBE CALIBRATION REPORT(S)**

See the following 6 pages.



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The Swiss Accreditation Service is one of the signatories to the EA  
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

Client **Nokia Salo TCC**

Certificate No: **ET3-1396\_Jan06**

## CALIBRATION CERTIFICATE

Object **ET3DV6 - SN:1396**

Calibration procedure(s) **QA CAL-01.v5 and QA CAL-12.v4  
Calibration procedure for dosimetric E-field probes**

Calibration date: **January 24, 2006**

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  $(22 \pm 3)^{\circ}\text{C}$  and humidity  $< 70\%$ .

Calibration Equipment used (M&TE critical for calibration)

| Primary Standards          | ID #            | Cal Date (Calibrated by, Certificate No.) | Scheduled Calibration  |
|----------------------------|-----------------|-------------------------------------------|------------------------|
| Power meter E4419B         | GB41293874      | 3-May-05 (METAS, No. 251-00466)           | May-06                 |
| Power sensor E4412A        | MY41495277      | 3-May-05 (METAS, No. 251-00466)           | May-06                 |
| Power sensor E4412A        | MY41498087      | 3-May-05 (METAS, No. 251-00466)           | May-06                 |
| Reference 3 dB Attenuator  | SN: S5054 (3c)  | 11-Aug-05 (METAS, No. 251-00499)          | Aug-06                 |
| Reference 20 dB Attenuator | SN: S5086 (20b) | 3-May-05 (METAS, No. 251-00467)           | May-06                 |
| Reference 30 dB Attenuator | SN: S5129 (30b) | 11-Aug-05 (METAS, No. 251-00500)          | Aug-06                 |
| Reference Probe ES3DV2     | SN: 3013        | 2-Jan-06 (SPEAG, No. ES3-3013_Jan06)      | Jan-07                 |
| DAE4                       | SN: 654         | 27-Oct-05 (SPEAG, No. DAE4-654_Oct05)     | Oct-06                 |
| Secondary Standards        | ID #            | Check Date (in house)                     | Scheduled Check        |
| RF generator HP 8648C      | US3642U01700    | 4-Aug-99 (SPEAG, in house check Nov-05)   | In house check: Nov-07 |
| Network Analyzer HP 8753E  | US37390585      | 18-Oct-01 (SPEAG, in house check Nov-05)  | In house check: Nov 06 |

|                |                      |                          |           |
|----------------|----------------------|--------------------------|-----------|
|                | Name                 | Function                 | Signature |
| Calibrated by: | <b>Katja Pokovic</b> | <b>Technical Manager</b> |           |
| Approved by:   | <b>Niels Kuster</b>  | <b>Quality Manager</b>   |           |

Issued: January 24, 2006

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DASY - Parameters of Probe: ET3DV6 SN:1396

| Sensitivity in Free Space <sup>A</sup> |              |                       | Diode Compression <sup>B</sup> |       |
|----------------------------------------|--------------|-----------------------|--------------------------------|-------|
| NormX                                  | 1.83 ± 10.1% | μV/(V/m) <sup>2</sup> | DCP X                          | 91 mV |
| NormY                                  | 1.82 ± 10.1% | μV/(V/m) <sup>2</sup> | DCP Y                          | 91 mV |
| NormZ                                  | 1.95 ± 10.1% | μV/(V/m) <sup>2</sup> | DCP Z                          | 91 mV |

Sensitivity in Tissue Simulating Liquid (Conversion Factors)

Please see Page 8.

Boundary Effect

|                                           |                              |                                   |        |  |
|-------------------------------------------|------------------------------|-----------------------------------|--------|--|
| TSL                                       | 900 MHz                      | Typical SAR gradient: 5 % per mm  |        |  |
| Sensor Center to Phantom Surface Distance |                              | 3.7 mm                            | 4.7 mm |  |
| SAR <sub>be</sub> [%]                     | Without Correction Algorithm | 7.3                               | 3.8    |  |
| SAR <sub>be</sub> [%]                     | With Correction Algorithm    | 0.1                               | 0.1    |  |
| TSL                                       | 1750 MHz                     | Typical SAR gradient: 10 % per mm |        |  |
| Sensor Center to Phantom Surface Distance |                              | 3.7 mm                            | 4.7 mm |  |
| SAR <sub>be</sub> [%]                     | Without Correction Algorithm | 7.1                               | 4.1    |  |
| SAR <sub>be</sub> [%]                     | With Correction Algorithm    | 0.2                               | 0.2    |  |

Sensor Offset

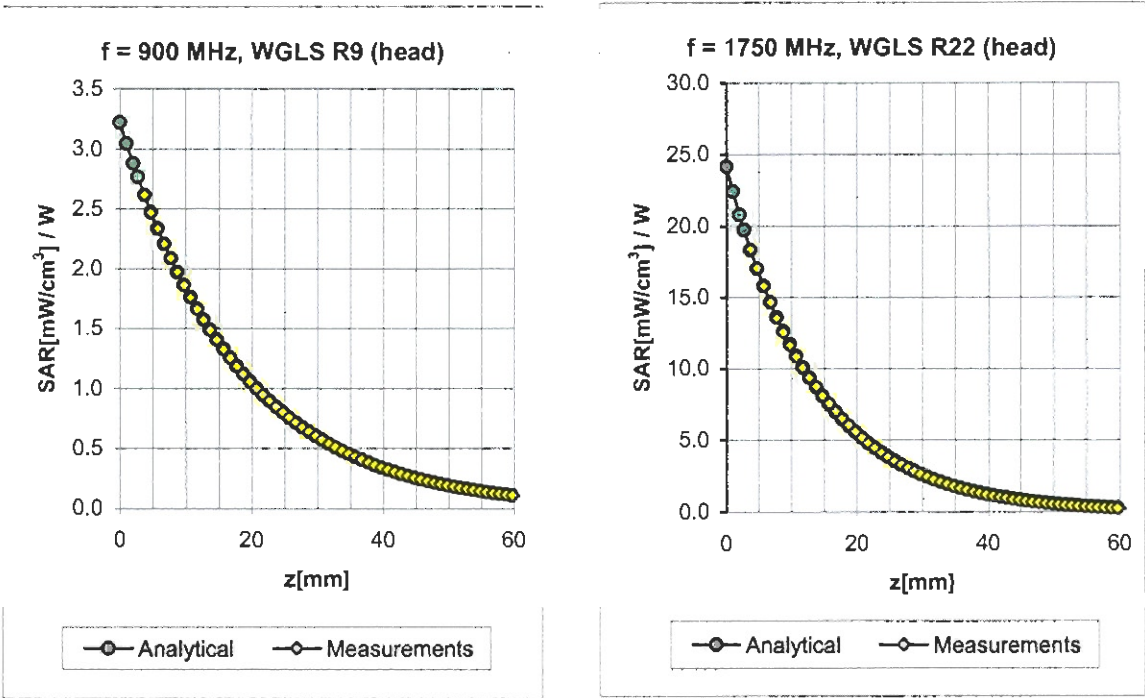
|                            |        |
|----------------------------|--------|
| Probe Tip to Sensor Center | 2.7 mm |
|----------------------------|--------|

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.

Conversion Factor Assessment



| f [MHz] | Validity [MHz] <sup>c</sup> | TSL  | Permittivity | Conductivity | Alpha | Depth | ConvF Uncertainty  |
|---------|-----------------------------|------|--------------|--------------|-------|-------|--------------------|
| 450     | ± 50 / ± 100                | Head | 43.5 ± 5%    | 0.87 ± 5%    | 0.27  | 3.22  | 6.97 ± 13.3% (k=2) |
| 835     | ± 50 / ± 100                | Head | 41.5 ± 5%    | 0.90 ± 5%    | 0.47  | 1.91  | 6.79 ± 11.0% (k=2) |
| 900     | ± 50 / ± 100                | Head | 41.5 ± 5%    | 0.97 ± 5%    | 0.57  | 1.75  | 6.55 ± 11.0% (k=2) |
| 1750    | ± 50 / ± 100                | Head | 40.1 ± 5%    | 1.37 ± 5%    | 0.51  | 1.79  | 5.52 ± 11.0% (k=2) |
| 1900    | ± 50 / ± 100                | Head | 40.0 ± 5%    | 1.40 ± 5%    | 0.56  | 1.71  | 5.37 ± 11.0% (k=2) |
| 1950    | ± 50 / ± 100                | Head | 40.0 ± 5%    | 1.40 ± 5%    | 0.61  | 1.69  | 5.02 ± 11.0% (k=2) |
| 2450    | ± 50 / ± 100                | Head | 39.2 ± 5%    | 1.80 ± 5%    | 0.72  | 1.28  | 4.58 ± 11.8% (k=2) |
| 450     | ± 50 / ± 100                | Body | 56.7 ± 5%    | 0.94 ± 5%    | 0.24  | 4.42  | 7.36 ± 13.3% (k=2) |
| 835     | ± 50 / ± 100                | Body | 55.2 ± 5%    | 0.97 ± 5%    | 0.48  | 1.99  | 6.41 ± 11.0% (k=2) |
| 900     | ± 50 / ± 100                | Body | 55.0 ± 5%    | 1.05 ± 5%    | 0.48  | 2.08  | 6.29 ± 11.0% (k=2) |
| 1750    | ± 50 / ± 100                | Body | 53.4 ± 5%    | 1.49 ± 5%    | 0.66  | 1.97  | 4.79 ± 11.0% (k=2) |
| 1900    | ± 50 / ± 100                | Body | 53.3 ± 5%    | 1.52 ± 5%    | 0.64  | 2.12  | 4.58 ± 11.0% (k=2) |
| 1950    | ± 50 / ± 100                | Body | 53.3 ± 5%    | 1.52 ± 5%    | 0.55  | 2.61  | 4.33 ± 11.0% (k=2) |
| 2450    | ± 50 / ± 100                | Body | 52.7 ± 5%    | 1.95 ± 5%    | 0.57  | 1.58  | 4.22 ± 11.8% (k=2) |

<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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Accreditation No.: **SCS 108**

Client **Nokia Safe TCC**

Calibration No. **ET3-1766\_May06**

## CALIBRATION CERTIFICATE

Object **ET3DV6 - SN: 1766**

Calibration procedure(s) **QA CAL-01.v5  
 Calibration procedure for dosimetric E-field probes**

Calibration date: **May 3, 2006**

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  $(22 \pm 3)^\circ\text{C}$  and humidity  $< 70\%$ .

Calibration Equipment used (M&TE critical for calibration)

| Primary Standards          | ID #            | Cal Date (Calibrated by, Certificate No.) | Scheduled Calibration |
|----------------------------|-----------------|-------------------------------------------|-----------------------|
| Power meter E4419B         | GB41293874      | 5-Apr-06 (METAS, No. 251-00557)           | Apr-07                |
| Power sensor E4412A        | MY41495277      | 5-Apr-06 (METAS, No. 251-00557)           | Apr-07                |
| Power sensor E4412A        | MY41498087      | 5-Apr-06 (METAS, No. 251-00557)           | Apr-07                |
| Reference 3 dB Attenuator  | SN: S5054 (3c)  | 11-Aug-05 (METAS, No. 251-00499)          | Aug-06                |
| Reference 20 dB Attenuator | SN: S5086 (20b) | 4-Apr-06 (METAS, No. 251-00558)           | Apr-07                |
| Reference 30 dB Attenuator | SN: S5129 (30b) | 11-Aug-05 (METAS, No. 251-00500)          | Aug-06                |
| Reference Probe ES3DV2     | SN: 3013        | 2-Jan-06 (SPEAG, No. ES3-3013_Jan06)      | Jan-07                |
| DAE4                       | SN: 654         | 2-Feb-06 (SPEAG, No. DAE4-654_Feb06)      | Feb-07                |

| Secondary Standards       | ID #         | Check Date (in house)                    | Scheduled Check        |
|---------------------------|--------------|------------------------------------------|------------------------|
| RF generator HP 8648C     | US3642U01700 | 4-Aug-99 (SPEAG, in house check Nov-05)  | In house check: Nov-07 |
| Network Analyzer HP 8753E | US37390585   | 18-Oct-01 (SPEAG, in house check Nov-05) | In house check: Nov 06 |

|                |               |                   |           |
|----------------|---------------|-------------------|-----------|
|                | Name          | Function          | Signature |
| Calibrated by: | Katja Pokorec | Technical Manager |           |
| Approved by:   | Markus Kuster | Quality Manager   |           |

Issued: May 3, 2006

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## DASY - Parameters of Probe: ET3DV6 SN:1766

### Sensitivity in Free Space<sup>A</sup>

### Diode Compression<sup>B</sup>

|       |                     |                                     |       |              |
|-------|---------------------|-------------------------------------|-------|--------------|
| NormX | <b>2.00</b> ± 10.1% | $\mu\text{V}/(\text{V}/\text{m})^2$ | DCP X | <b>93</b> mV |
| NormY | <b>1.71</b> ± 10.1% | $\mu\text{V}/(\text{V}/\text{m})^2$ | DCP Y | <b>93</b> mV |
| NormZ | <b>1.88</b> ± 10.1% | $\mu\text{V}/(\text{V}/\text{m})^2$ | DCP Z | <b>93</b> mV |

### Sensitivity in Tissue Simulating Liquid (Conversion Factors)

Please see Page 8.

### Boundary Effect

**TSL**                      **900 MHz**      **Typical SAR gradient: 5 % per mm**

|                                           |                              |               |               |
|-------------------------------------------|------------------------------|---------------|---------------|
| Sensor Center to Phantom Surface Distance |                              | <b>3.7 mm</b> | <b>4.7 mm</b> |
| SAR <sub>be</sub> [%]                     | Without Correction Algorithm | 8.3           | 4.2           |
| SAR <sub>be</sub> [%]                     | With Correction Algorithm    | 0.1           | 0.3           |

**TSL**                      **1750 MHz**      **Typical SAR gradient: 10 % per mm**

|                                           |                              |               |               |
|-------------------------------------------|------------------------------|---------------|---------------|
| Sensor Center to Phantom Surface Distance |                              | <b>3.7 mm</b> | <b>4.7 mm</b> |
| SAR <sub>be</sub> [%]                     | Without Correction Algorithm | 6.8           | 3.6           |
| SAR <sub>be</sub> [%]                     | With Correction Algorithm    | 0.2           | 0.2           |

### Sensor Offset

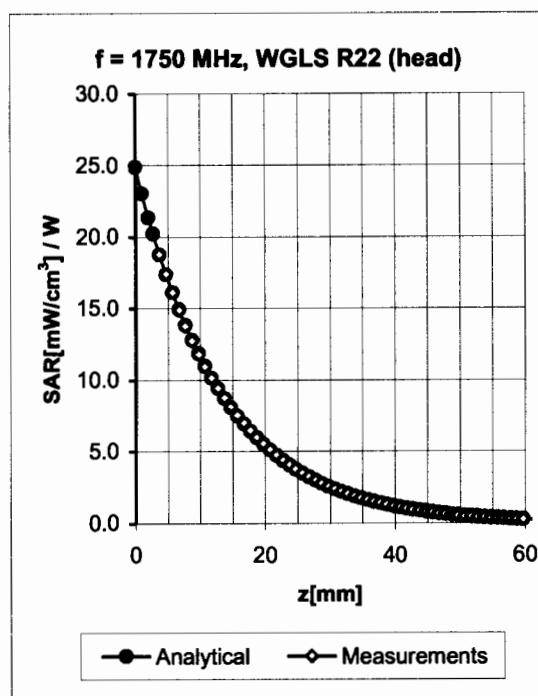
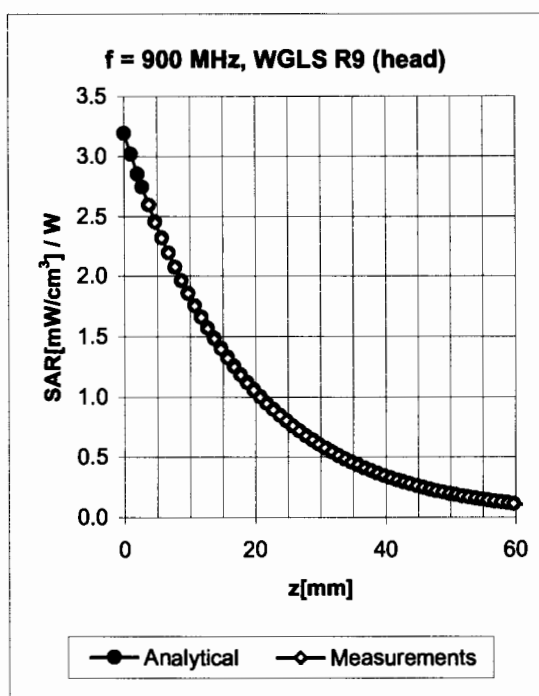
Probe Tip to Sensor Center                      **2.7 mm**

**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.

## Conversion Factor Assessment



| f [MHz] | Validity [MHz] <sup>c</sup> | TSL  | Permittivity | Conductivity | Alpha | Depth | ConvF Uncertainty  |
|---------|-----------------------------|------|--------------|--------------|-------|-------|--------------------|
| 835     | ± 50 / ± 100                | Head | 41.5 ± 5%    | 0.90 ± 5%    | 0.64  | 1.73  | 6.42 ± 11.0% (k=2) |
| 900     | ± 50 / ± 100                | Head | 41.5 ± 5%    | 0.97 ± 5%    | 0.60  | 1.79  | 6.25 ± 11.0% (k=2) |
| 1750    | ± 50 / ± 100                | Head | 40.1 ± 5%    | 1.37 ± 5%    | 0.53  | 2.47  | 5.18 ± 11.0% (k=2) |
| 1900    | ± 50 / ± 100                | Head | 40.0 ± 5%    | 1.40 ± 5%    | 0.57  | 2.44  | 4.99 ± 11.0% (k=2) |
| 1950    | ± 50 / ± 100                | Head | 40.0 ± 5%    | 1.40 ± 5%    | 0.57  | 2.49  | 4.71 ± 11.0% (k=2) |
| 2450    | ± 50 / ± 100                | Head | 39.2 ± 5%    | 1.80 ± 5%    | 0.74  | 1.75  | 4.42 ± 11.8% (k=2) |
| 835     | ± 50 / ± 100                | Body | 55.2 ± 5%    | 0.97 ± 5%    | 0.51  | 2.00  | 6.20 ± 11.0% (k=2) |
| 900     | ± 50 / ± 100                | Body | 55.0 ± 5%    | 1.05 ± 5%    | 0.48  | 2.11  | 5.94 ± 11.0% (k=2) |
| 1750    | ± 50 / ± 100                | Body | 53.4 ± 5%    | 1.49 ± 5%    | 0.59  | 2.54  | 4.66 ± 11.0% (k=2) |
| 1900    | ± 50 / ± 100                | Body | 53.3 ± 5%    | 1.52 ± 5%    | 0.69  | 2.32  | 4.48 ± 11.0% (k=2) |
| 1950    | ± 50 / ± 100                | Body | 53.3 ± 5%    | 1.52 ± 5%    | 0.75  | 2.17  | 4.40 ± 11.0% (k=2) |
| 2450    | ± 50 / ± 100                | Body | 52.7 ± 5%    | 1.95 ± 5%    | 0.71  | 1.78  | 4.09 ± 11.8% (k=2) |

<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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**APPENDIX D: RELEVANT PAGES FROM DIPOLE VALIDATION KIT REPORT(S)**

See the following 6 pages.





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Accreditation No.: **SCS 108**

Client **Nokia Oulu 2**

Certificate No: **D835V2-480\_Feb05**

## CALIBRATION CERTIFICATE

Object **D835V2 - SN: 480**

Calibration procedure(s) **QA CAL-05.v6  
Calibration procedure for dipole validation kits**

Calibration date: **February 24, 2005**

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 ( $22 \pm 3$ )°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

| Primary Standards          | ID #             | Cal Date (Calibrated by, Certificate No.) | Scheduled Calibration |
|----------------------------|------------------|-------------------------------------------|-----------------------|
| Power meter EPM E442       | GB37480704       | 12-Oct-04 (METAS, No. 251-00412)          | Oct-05                |
| Power sensor HP 8481A      | US37292783       | 12-Oct-04 (METAS, No. 251-00412)          | Oct-05                |
| Reference 20 dB Attenuator | SN: 5086 (20g)   | 10-Aug-04 (METAS, No 251-00402)           | Aug-05                |
| Reference 10 dB Attenuator | SN: 5047.2 (10r) | 10-Aug-04 (METAS, No 251-00402)           | Aug-05                |
| Reference Probe ET3DV6     | SN 1507          | 26-Oct-04 (SPEAG, No. ET3-1507_Oct04)     | Oct-05                |
| DAE4                       | SN 601           | 07-Jan-05 (SPEAG, No. DAE4-601_Jan05)     | Jan-06                |

| Secondary Standards       | ID #             | Check Date (in house)                    | Scheduled Check        |
|---------------------------|------------------|------------------------------------------|------------------------|
| Power sensor HP 8481A     | MY41092317       | 18-Oct-02 (SPEAG, in house check Oct-03) | In house check: Oct-05 |
| RF generator R&S SML-03   | 100698           | 27-Mar-02 (SPEAG, in house check Dec-03) | In house check: Dec-05 |
| Network Analyzer HP 8753E | US37390585 S4206 | 18-Oct-01 (SPEAG, in house check Nov-04) | In house check: Nov-05 |

|                |            |                       |                   |
|----------------|------------|-----------------------|-------------------|
|                | Name       | Function              | Signature         |
| Calibrated by: | Mike Meili | Laboratory Technician | <i>Mike Meili</i> |

|              |               |                   |
|--------------|---------------|-------------------|
| Approved by: | Katja Pokovic | Technical Manager |
|--------------|---------------|-------------------|

Issued: February 25, 2005

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Test Laboratory: SPEAG, Zurich, Switzerland

**DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN480**

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

Medium: HSL 900 MHz;

Medium parameters used:  $f = 835 \text{ MHz}$ ;  $\sigma = 0.91 \text{ mho/m}$ ;  $\epsilon_r = 42.2$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Phantom section: Flat Section

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ET3DV6 - SN1507; ConvF(6.24, 6.24, 6.24); Calibrated: 26.10.2004
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 07.01.2005
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001;
- Measurement SW: DASY4, V4.5 Build 17; Postprocessing SW: SEMCAD, V1.8 Build 144

**Pin = 250 mW; d = 15 mm/Area Scan (81x81x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$ 

Maximum value of SAR (interpolated) = 2.42 mW/g

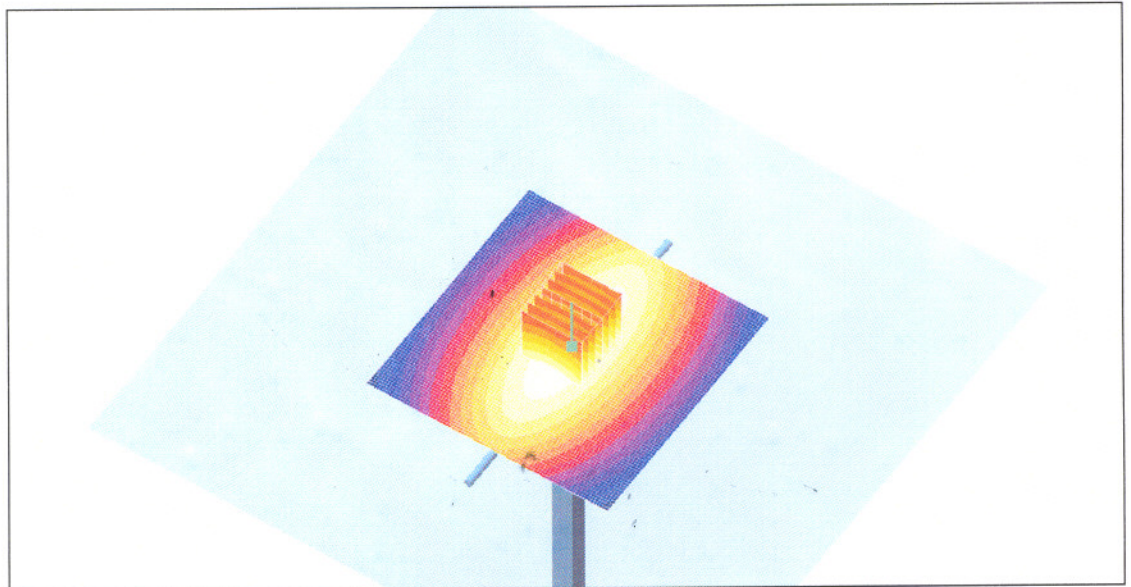
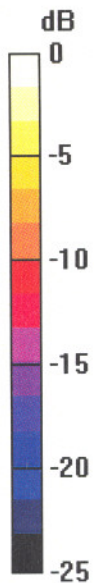
**Pin = 250 mW; d = 15 mm/Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$ 

Reference Value = 53.8 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 3.25 W/kg

**SAR(1 g) = 2.25 mW/g; SAR(10 g) = 1.48 mW/g**

Maximum value of SAR (measured) = 2.42 mW/g



0 dB = 2.42 mW/g



Test Laboratory: SPEAG, Zurich, Switzerland

**DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN480**

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

Medium: M900;

Medium parameters used:  $f = 835 \text{ MHz}$ ;  $\sigma = 1.01 \text{ mho/m}$ ;  $\epsilon_r = 54.9$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Phantom section: Flat Section

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ET3DV6 - SN1507; ConvF(5.98, 5.98, 5.98); Calibrated: 26.10.2004
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 07.01.2005
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001;
- Measurement SW: DASY4, V4.5 Build 13; Postprocessing SW: SEMCAD, V1.8 Build 142

**Pin = 250 mW; d = 15 mm/Area Scan (81x81x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$ 

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

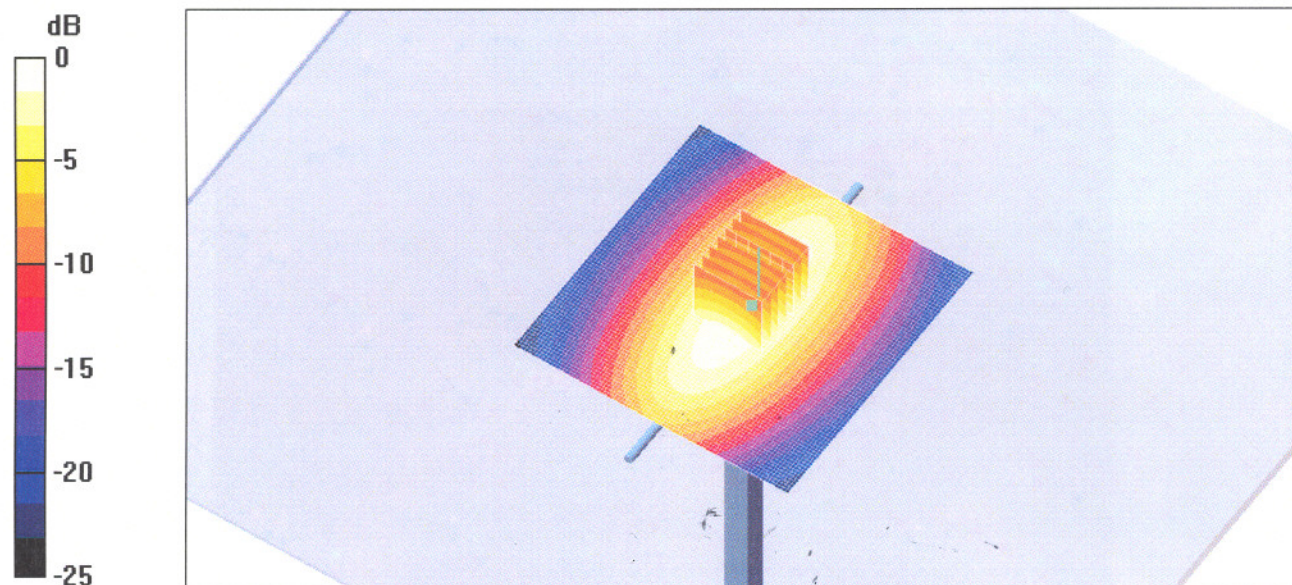
**Pin = 250 mW; d = 15 mm/Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$ 

Reference Value = 52.8 V/m; Power Drift = 0.001 dB

Peak SAR (extrapolated) = 3.4 W/kg

**SAR(1 g) = 2.39 mW/g; SAR(10 g) = 1.58 mW/g**

Maximum value of SAR (measured) = 2.6 mW/g



0 dB = 2.6 mW/g



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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client **Nokia Salo TCC**

Certificate No: **D1900V2-5d013\_Jul06**

## CALIBRATION CERTIFICATE

Object **D1900V2 - SN: 5d013**

Calibration procedure(s) **QA CAL-05.v6**  
**Calibration procedure for dipole validation kits**

Calibration date: **July 07, 2006**

Condition of the calibrated item **In Tolerance**

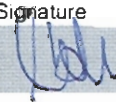
This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).  
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

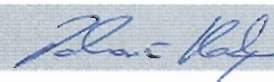
All calibrations have been conducted in the closed laboratory facility: environment temperature ( $22 \pm 3$ )°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

| Primary Standards          | ID #             | Cal Date (Calibrated by, Certificate No.) | Scheduled Calibration |
|----------------------------|------------------|-------------------------------------------|-----------------------|
| Power meter EPM-442A       | GB37480704       | 04-Oct-05 (METAS, No. 251-00516)          | Oct-06                |
| Power sensor HP 8481A      | US37292783       | 04-Oct-05 (METAS, No. 251-00516)          | Oct-06                |
| Reference 20 dB Attenuator | SN: 5086 (20g)   | 11-Aug-05 (METAS, No 251-00498)           | Aug-06                |
| Reference 10 dB Attenuator | SN: 5047.2 (10r) | 11-Aug-05 (METAS, No 251-00498)           | Aug-06                |
| Reference Probe ET3DV6     | SN: 1507         | 28-Oct-05 (SPEAG, No. ET3-1507_Oct05)     | Oct-06                |
| DAE4                       | SN: 601          | 15-Dec-05 (SPEAG, No. DAE4-601_Dec05)     | Dec-06                |

| Secondary Standards         | ID #             | Check Date (in house)                    | Scheduled Check        |
|-----------------------------|------------------|------------------------------------------|------------------------|
| Power sensor HP 8481A       | MY41092317       | 18-Oct-02 (SPEAG, in house check Oct-05) | In house check: Oct-07 |
| RF generator Agilent E4421B | MY41000675       | 11-May-05 (SPEAG, in house check Nov-05) | In house check: Nov-07 |
| Network Analyzer HP 8753E   | US37390585 S4206 | 18-Oct-01 (SPEAG, in house check Nov-05) | In house check: Nov-06 |

Calibrated by: **Claudio Leubler** **Laboratory Technician** 

Approved by: **Katja Pokovic** **Technical Manager** 

Issued: July 10, 2006

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Test Laboratory: SPEAG, Zurich, Switzerland

**DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d013**

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

Medium: HSL U10 BB;

Medium parameters used:  $f = 1900$  MHz;  $\sigma = 1.44$  mho/m;  $\epsilon_r = 39.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ET3DV6 - SN1507 (HF); ConvF(4.74, 4.74, 4.74); Calibrated: 28.10.2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 15.12.2005
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; ;
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 171

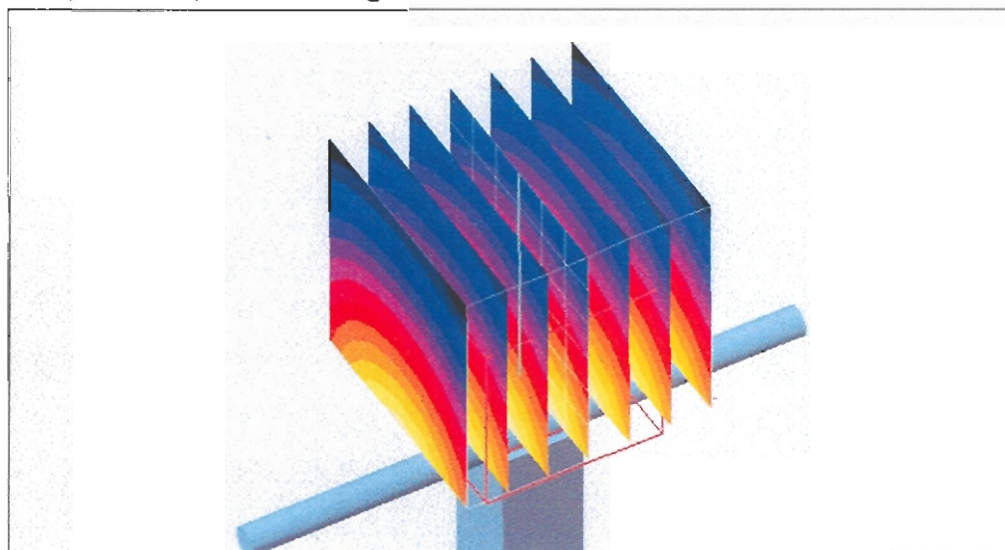
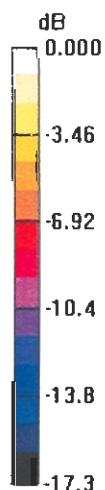
**Pin = 250 mW; d = 10 mm/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 93.5 V/m; Power Drift = 0.005 dB

Peak SAR (extrapolated) = 16.7 W/kg

**SAR(1 g) = 9.69 mW/g; SAR(10 g) = 5.11 mW/g**

Maximum value of SAR (measured) = 11.0 mW/g



0 dB = 11.0mW/g

Test Laboratory: SPEAG, Zurich, Switzerland

**DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d013**

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

Medium: MSL U10;

Medium parameters used:  $f = 1900$  MHz;  $\sigma = 1.57$  mho/m;  $\epsilon_r = 52.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY4 (High Precision Assessment)

#### DASY4 Configuration:

- Probe: ET3DV6 - SN1507 (HF); ConvF(4.3, 4.3, 4.3); Calibrated: 28.10.2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 15.12.2005
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; ;
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 171

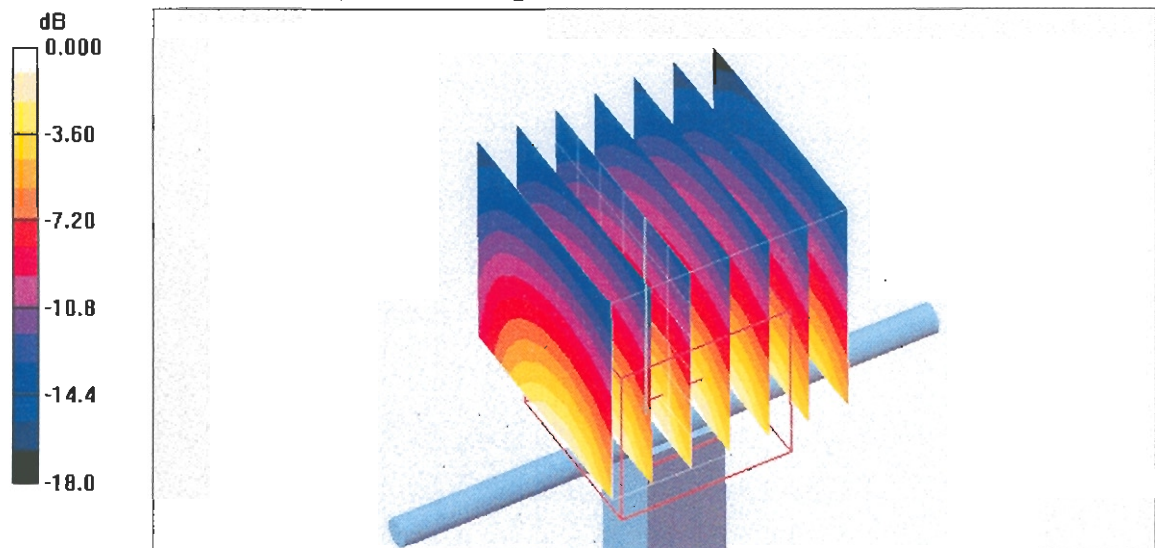
**Pin = 250 mW; d = 10 mm big batch/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 87.1 V/m; Power Drift = 0.079 dB

Peak SAR (extrapolated) = 17.4 W/kg

**SAR(1 g) = 10.1 mW/g; SAR(10 g) = 5.36 mW/g**

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



0 dB = 11.3mW/g