



Test Laboratory: Sporton International Inc. SAR Testing Lab

Date/Time: 06/16/04 20:17:44

Body_802.11b Ch6_Keypad Down With Touch_20040616_Black Housing**DUT: EW-7317Ug; Type: USB Downgo**

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

Medium: MSL_2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.98$ mho/m; $\epsilon_r = 51.6$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1788; ConvF(4.5, 4.5, 4.5); Calibrated: 8/29/2003
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 11/21/2003
- Phantom: SAM 12; Type: QD 000 P40 C; Serial: TP-1150
- Measurement SW: DASY4, V4.2 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 112

Ch6/Area Scan (51x81x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 15.4 V/m; Power Drift = -0.2 dB

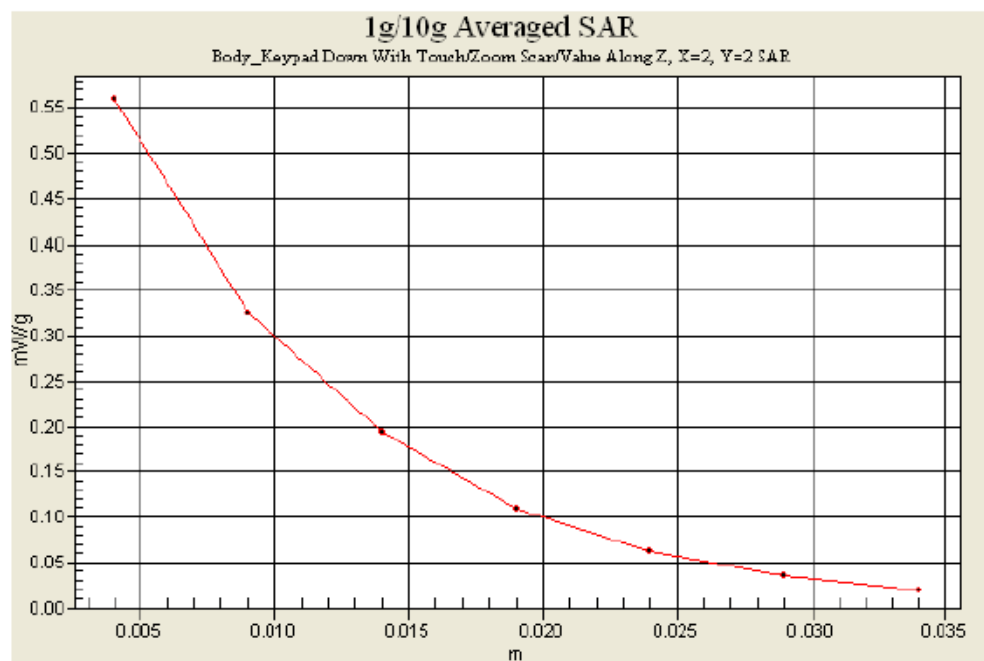
Maximum value of SAR (interpolated) = 0.641 mW/g

Ch6/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.4 V/m; Power Drift = -0.2 dB

Maximum value of SAR (measured) = 0.559 mW/g

Peak SAR (extrapolated) = 0.973 W/kg

SAR(1 g) = 0.520 mW/g; SAR(10 g) = 0.269 mW/g



Appendix C – Calibration Data

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

Client **Auden > Sporton Int. Inc.**

| CALIBRATION CERTIFICATE | | | |
|--|--|---|------------------------|
| Object(s) | D2450V2 - SN:736 | | |
| Calibration procedure(s) | QA CAL-05.v2 Calibration procedure for dipole validation kits | | |
| Calibration date: | August 27, 2003 | | |
| Condition of the calibrated item | In Tolerance (according to the specific calibration document) | | |
| This calibration statement documents traceability of M&TE used in the calibration procedures and conformity of the procedures with the ISO/IEC 17025 international standard. | | | |
| All calibrations have been conducted in the closed laboratory facility: environment temperature 22 +/- 2 degrees Celsius and humidity < 75%. | | | |
| Calibration Equipment used (M&TE critical for calibration) | | | |
| Model Type | ID # | Cal Date (Calibrated by, Certificate No.) | Scheduled Calibration |
| RF generator R&S SML-03 | 100698 | 27-Mar-2002 (R&S, No. 20-92389) | In house check: Mar-05 |
| Power sensor HP 8481A | MY41092317 | 18-Oct-02 (Agilent, No. 20021018) | Oct-04 |
| Power sensor HP 8481A | US37292783 | 30-Oct-02 (METAS, No. 252-0236) | Oct-03 |
| Power meter EPM E442 | GB37480704 | 30-Oct-02 (METAS, No. 252-0236) | Oct-03 |
| Network Analyzer HP 8753E | US37390585 | 18-Oct-01 (Agilent, No. 24BR1033101) | In house check: Oct 03 |
| Calibrated by: | Name Joachim Mueller | Function Technician | Signature |
| Approved by: | Name Katja Pokovic | Function Laboratory Director | Signature |
| Date issued: August 28, 2003 | | | |
| This calibration certificate is issued as an intermediate solution until the accreditation process (based on ISO/IEC 17025 International Standard) for Calibration Laboratory of Schmid & Partner Engineering AG is completed. | | | |



Schmid & Partner Engineering AG

s p e e g

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DASY

Dipole Validation Kit

Type: D2450V2

Serial: 736

Manufactured: August 26, 2003

Calibrated: August 27, 2003



1. Measurement Conditions

The measurements were performed in the flat section of the SAM twin phantom filled with head simulating solution of the following electrical parameters at 2450 MHz:

| | | |
|------------------------|------------|------|
| Relative Dielectricity | 38.2 | ± 5% |
| Conductivity | 1.89 mho/m | ± 5% |

The DASY4 System with a dosimetric E-field probe ES3DV2 (SN:3013, Conversion factor 4.8 at 2450 MHz) was used for the measurements.

The dipole was mounted on the small tripod so that the dipole feedpoint was positioned below the center marking of the flat phantom section and the dipole was oriented parallel to the body axis (the long side of the phantom). The standard measuring distance was 10mm from dipole center to the solution surface. Lossless spacer was used during measurements for accurate distance positioning.

The coarse grid with a grid spacing of 15mm was aligned with the dipole. The 7x7x7 fine cube was chosen for cube integration.

The dipole input power (forward power) was 250mW ± 3 %. The results are normalized to 1W input power.

2. SAR Measurement with DASY4 System

Standard SAR-measurements were performed according to the measurement conditions described in section 1. The results (see figure supplied) have been normalized to a dipole input power of 1W (forward power). The resulting averaged SAR-values measured with the dosimetric probe ES3DV2 SN:3013 and applying the advanced extrapolation are:

averaged over 1 cm³ (1 g) of tissue: **55.6 mW/g ± 16.8 % (k=2)¹**

averaged over 10 cm³ (10 g) of tissue: **25.0 mW/g ± 16.2 % (k=2)¹**

¹ validation uncertainty



3. Dipole Impedance and Return Loss

The impedance was measured at the SMA-connector with a network analyzer and numerically transformed to the dipole feedpoint. The transformation parameters from the SMA-connector to the dipole feedpoint are:

| | | |
|----------------------|-----------------|---------------------------------------|
| Electrical delay: | 1.158 ns | (one direction) |
| Transmission factor: | 0.983 | (voltage transmission, one direction) |

The dipole was positioned at the flat phantom sections according to section 1 and the distance spacer was in place during impedance measurements.

| | |
|----------------------------------|--|
| Feedpoint impedance at 2450 MHz: | $\text{Re}\{Z\} = \mathbf{52.5\ \Omega}$ |
| | $\text{Im}\{Z\} = \mathbf{3.6\ \Omega}$ |
| Return Loss at 2450 MHz | -27.5 dB |

4. Measurement Conditions

The measurements were performed in the flat section of the SAM twin phantom filled with **body simulating solution** of the following electrical parameters at 2450 MHz:

| | | |
|------------------------|-------------------|-----------|
| Relative Dielectricity | 50.8 | $\pm 5\%$ |
| Conductivity | 2.03 mho/m | $\pm 5\%$ |

The DASY4 System with a dosimetric E-field probe ES3DV2 (SN:3013, Conversion factor 4.2 at 2450 MHz) was used for the measurements.

The dipole was mounted on the small tripod so that the dipole feedpoint was positioned below the center marking of the flat phantom section and the dipole was oriented parallel to the body axis (the long side of the phantom). The standard measuring distance was 10mm from dipole center to the solution surface. Lossless spacer was used during measurements for accurate distance positioning.

The coarse grid with a grid spacing of 15mm was aligned with the dipole. The 7x7x7 fine cube was chosen for cube integration.

The dipole input power (forward power) was 250mW $\pm 3\%$. The results are normalized to 1W input power.



5. SAR Measurement with DASY4 System

Standard SAR-measurements were performed according to the measurement conditions described in section 4. The results (see figure supplied) have been normalized to a dipole input power of 1W (forward power). The resulting averaged SAR-values measured with the dosimetric probe ES3DV2 SN:3013 and applying the advanced extrapolation are:

| | |
|--|---|
| averaged over 1 cm ³ (1 g) of tissue: | 56.0 mW/g ± 16.8 % (k=2)² |
| averaged over 10 cm ³ (10 g) of tissue: | 25.8 mW/g ± 16.2 % (k=2)² |

6. Dipole Impedance and Return Loss

The dipole was positioned at the flat phantom sections according to section 4 and the distance spacer was in place during impedance measurements.

| | |
|----------------------------------|-----------------------|
| Feedpoint impedance at 2450 MHz: | Re{Z} = 48.7 Ω |
| | Im {Z} = 4.8 Ω |
| Return Loss at 2450 MHz | -25.8 dB |

7. Handling

Do not apply excessive force to the dipole arms, because they might bend. Bending of the dipole arms stresses the soldered connections near the feedpoint leading to a damage of the dipole.

8. Design

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals.

Small end caps have been added to the dipole arms in order to improve matching when loaded according to the position as explained in Sections 1 and 4. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

9. Power Test

After long term use with 40W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

² validation uncertainty



Test Laboratory: SPEAG, Zurich, Switzerland
File Name: SN736_SN3013_M2450_270803.da4

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN736
Program: Dipole Calibration

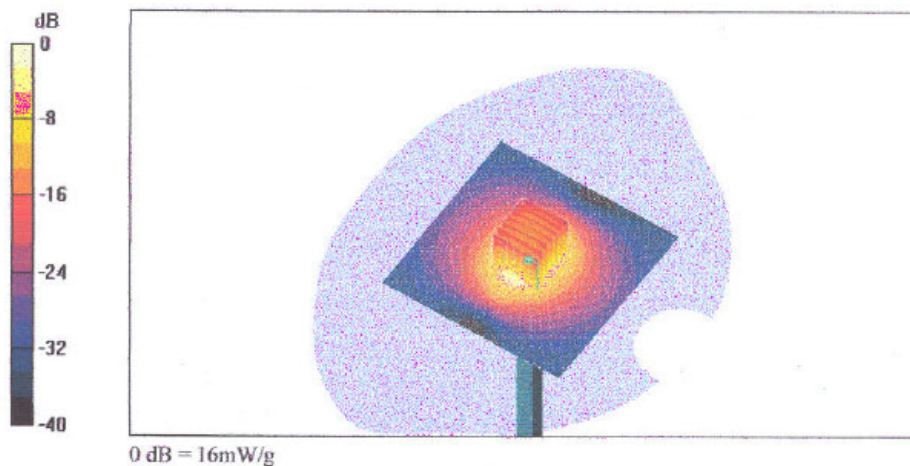
Communication System: CW-2450; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: Muscle 2450 MHz ($\sigma = 2.03 \text{ mho/m}$, $\epsilon_r = 50.75$, $\rho = 1000 \text{ kg/m}^3$)
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

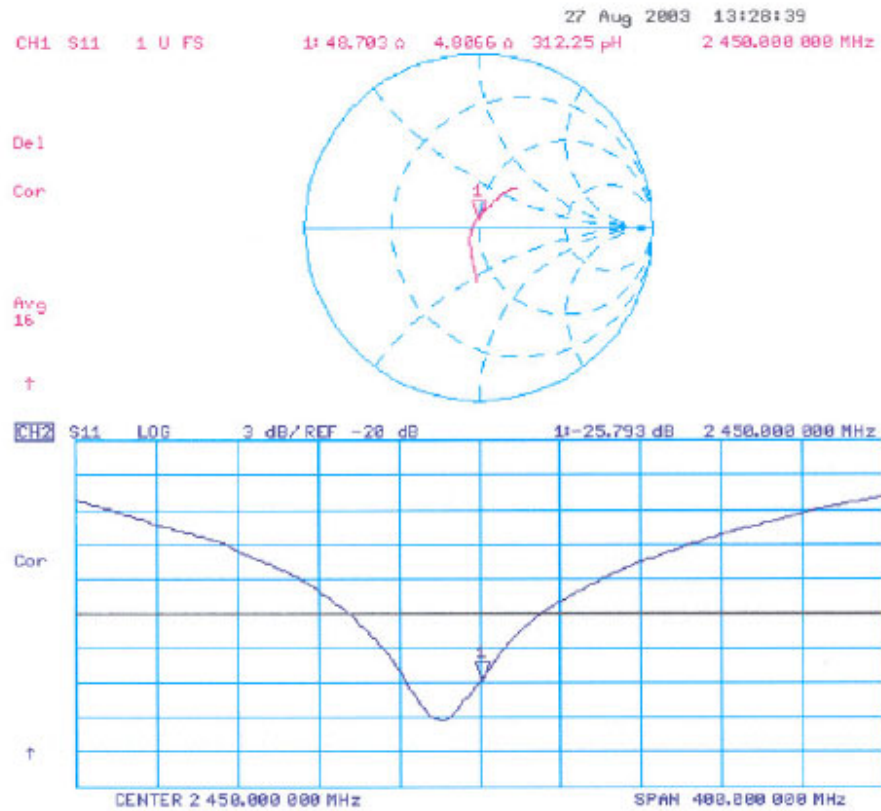
DASY4 Configuration:

- Probe: ES3DV2 - SN3013; ConvF(4.2, 4.2, 4.2); Calibrated: 1/19/2003
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 - SN411; Calibrated: 1/16/2003
- Phantom: SAM with CRP - TP1006; Type: SAM 4.0; Serial: TP:1006
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Pin = 250 mW; d = 10 mm/Area Scan (81x81x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 91 V/m
Power Drift = -0.02 dB
Maximum value of SAR = 15.7 mW/g

Pin = 250 mW; d = 10 mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 27.8 W/kg
SAR(1 g) = 14 mW/g; SAR(10 g) = 6.46 mW/g
Reference Value = 91 V/m
Power Drift = -0.02 dB
Maximum value of SAR = 16 mW/g







Test Laboratory: SPEAG, Zurich, Switzerland
File Name: SN736_SN3013_HSL2450_270803.da4

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN736
Program: Dipole Calibration

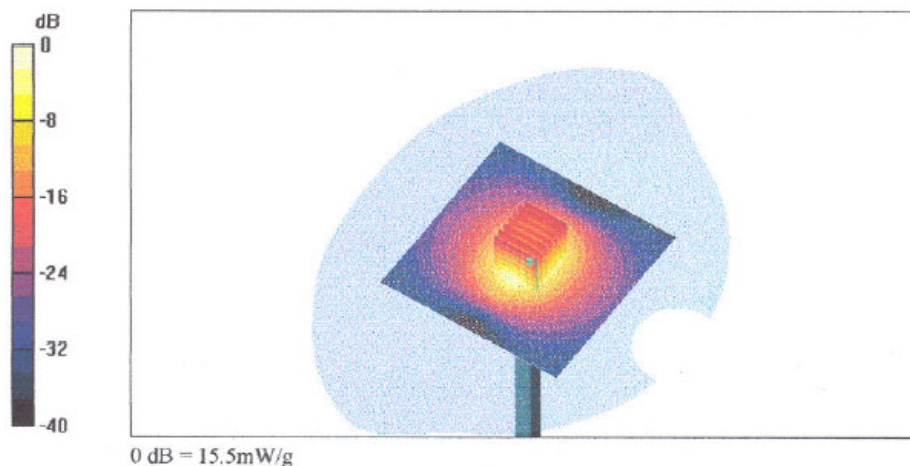
Communication System: CW-2450; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: HSL 2450 MHz ($\sigma = 1.89 \text{ mho/m}$, $\epsilon_r = 38.19$, $\rho = 1000 \text{ kg/m}^3$)
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

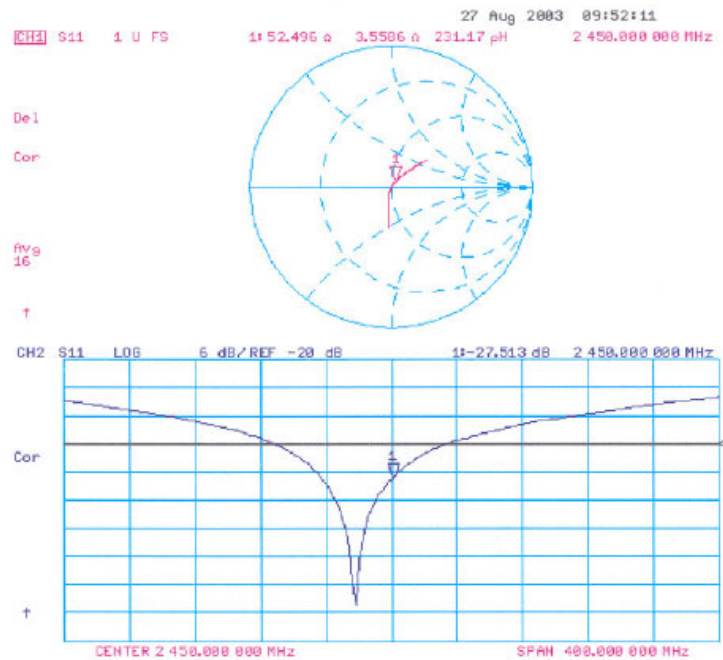
DASY4 Configuration:

- Probe: ES3DV2 - SN3013; ConvF(4.8, 4.8, 4.8); Calibrated: 1/19/2003
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 - SN411; Calibrated: 1/16/2003
- Phantom: SAM with CRP - TP1006; Type: SAM 4.0; Serial: TP:1006
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Pin = 250 mW; d = 10 mm/Area Scan (81x81x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 91.5 V/m
Power Drift = -0.04 dB
Maximum value of SAR = 15.3 mW/g

Pin = 250 mW; d = 10 mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 30.2 W/kg
SAR(1 g) = 13.9 mW/g; SAR(10 g) = 6.25 mW/g
Reference Value = 91.5 V/m
Power Drift = -0.04 dB
Maximum value of SAR = 15.5 mW/g







Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

Client Auden > Sporton Int. Inc.

| CALIBRATION CERTIFICATE | | | |
|--|---|---|------------------------|
| Object(s) | ET3DV6 - SN:1788 | | |
| Calibration procedure(s) | QA CAL-01.v2 Calibration procedure for dosimetric E-field probes | | |
| Calibration date: | August 29, 2003 | | |
| Condition of the calibrated item | In Tolerance (according to the specific calibration document) | | |
| This calibration statement documents traceability of M&TE used in the calibration procedures and conformity of the procedures with the ISO/IEC 17025 international standard. | | | |
| All calibrations have been conducted in the closed laboratory facility: environment temperature 22 +/- 2 degrees Celsius and humidity < 75%. | | | |
| Calibration Equipment used (M&TE critical for calibration) | | | |
| Model Type | ID # | Cal Date (Calibrated by, Certificate No.) | Scheduled Calibration |
| RF generator HP 8684C | US3842U01700 | 4-Aug-99 (SPEAG, in house check Aug-02) | In house check: Aug-05 |
| Power sensor E4412A | MY41495277 | 2-Apr-03 (METAS, No 252-0250) | Apr-04 |
| Power sensor HP 8461A | MY41092180 | 18-Sep-02 (Agilent, No. 20020918) | Sep-03 |
| Power meter EPM E4419B | GB41293874 | 2-Apr-03 (METAS, No 252-0250) | Apr-04 |
| Network Analyzer HP 8753E | US37390585 | 18-Oct-01 (Agilent, No. 24BR1033101) | In house check: Oct 03 |
| Fuke Process Calibrator Type 702 | SN: 6295803 | 3-Sep-01 (ELCAL, No.2360) | Sep-03 |
| Calibrated by: | Name Neo Veltens | Function Technician | Signature |
| Approved by: | Name Katja Pokorny | Function Laboratory Director | Signature |
| Date issued: August 28, 2003 | | | |
| This calibration certificate is issued as an intermediate solution until the accreditation process (based on ISO/IEC 17025 International Standard) for Calibration Laboratory of Schmid & Partner Engineering AG is completed. | | | |



Schmid & Partner Engineering AG

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Probe ET3DV6

SN:1788

Manufactured: May 28, 2003
Last calibration: August 29, 2003

Calibrated for DASY Systems

(Note: non-compatible with DASY2 system!)



ET3DV6 SN:1788

August 29, 2003

DASY - Parameters of Probe: ET3DV6 SN:1788

Sensitivity in Free Space

Diode Compression

| | | | | |
|-------|--|-------|----|----|
| NormX | 1.68 $\mu\text{V}/(\text{V}/\text{m})^2$ | DCP X | 95 | mV |
| NormY | 1.62 $\mu\text{V}/(\text{V}/\text{m})^2$ | DCP Y | 95 | mV |
| NormZ | 1.71 $\mu\text{V}/(\text{V}/\text{m})^2$ | DCP Z | 95 | mV |

Sensitivity in Tissue Simulating Liquid

Head 900 MHz $\epsilon_r = 41.5 \pm 5\%$ $\sigma = 0.97 \pm 5\%$ mho/m

Valid for f=800-1000 MHz with Head Tissue Simulating Liquid according to EN 50361, P1528-200X

| | | | |
|---------|-----------------------|------------------|------|
| ConvF X | 6.6 $\pm 9.5\%$ (k=2) | Boundary effect: | |
| ConvF Y | 6.6 $\pm 9.5\%$ (k=2) | Alpha | 0.34 |
| ConvF Z | 6.6 $\pm 9.5\%$ (k=2) | Depth | 2.48 |

Head 1800 MHz $\epsilon_r = 40.0 \pm 5\%$ $\sigma = 1.40 \pm 5\%$ mho/m

Valid for f=1710-1910 MHz with Head Tissue Simulating Liquid according to EN 50361, P1528-200X

| | | | |
|---------|-----------------------|------------------|------|
| ConvF X | 5.3 $\pm 9.5\%$ (k=2) | Boundary effect: | |
| ConvF Y | 5.3 $\pm 9.5\%$ (k=2) | Alpha | 0.43 |
| ConvF Z | 5.3 $\pm 9.5\%$ (k=2) | Depth | 2.80 |

Boundary Effect

Head 900 MHz Typical SAR gradient: 5 % per mm

| | | | |
|-----------------------|------------------------------|------|------|
| Probe Tip to Boundary | | 1 mm | 2 mm |
| SAR _{te} [%] | Without Correction Algorithm | 8.7 | 5.0 |
| SAR _{te} [%] | With Correction Algorithm | 0.3 | 0.5 |

Head 1800 MHz Typical SAR gradient: 10 % per mm

| | | | |
|-----------------------|------------------------------|------|------|
| Probe Tip to Boundary | | 1 mm | 2 mm |
| SAR _{te} [%] | Without Correction Algorithm | 12.8 | 8.9 |
| SAR _{te} [%] | With Correction Algorithm | 0.3 | 0.1 |

Sensor Offset

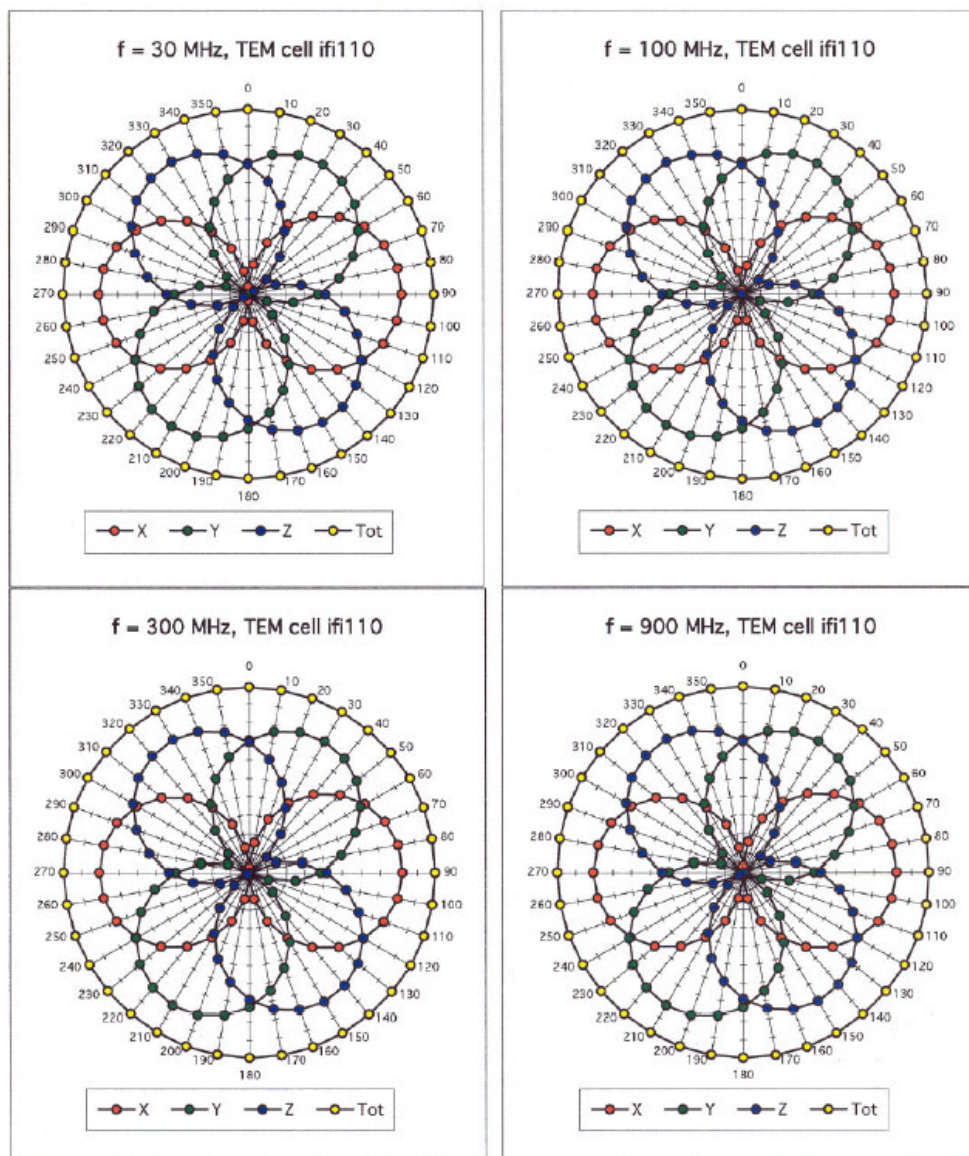
| | | |
|----------------------------|---------------|----|
| Probe Tip to Sensor Center | 2.7 | mm |
| Optical Surface Detection | 1.6 ± 0.2 | mm |



ET3DV6 SN:1788

August 29, 2003

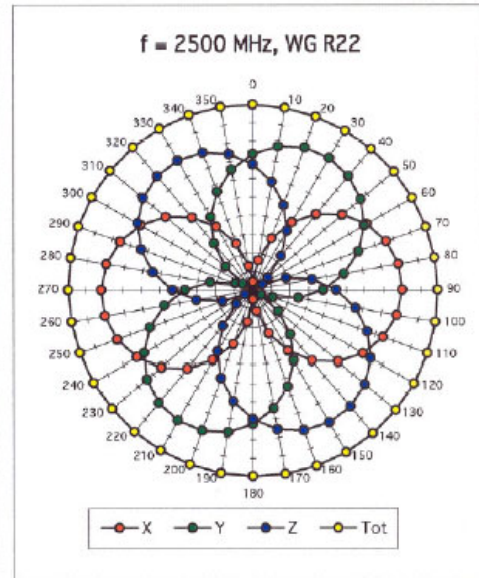
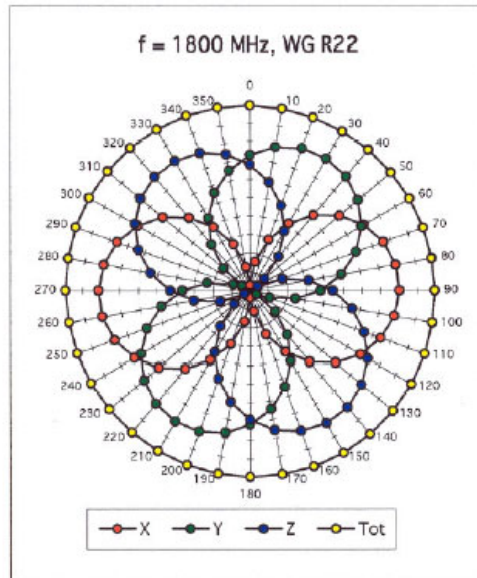
Receiving Pattern (ϕ), $\theta = 0^\circ$



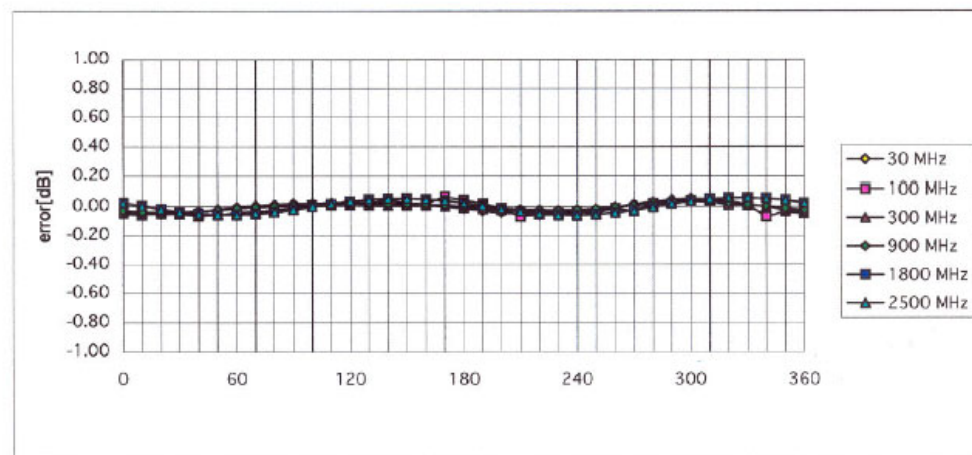


ET3DV6 SN:1788

August 29, 2003



Isotropy Error (ϕ), $\theta = 0^\circ$



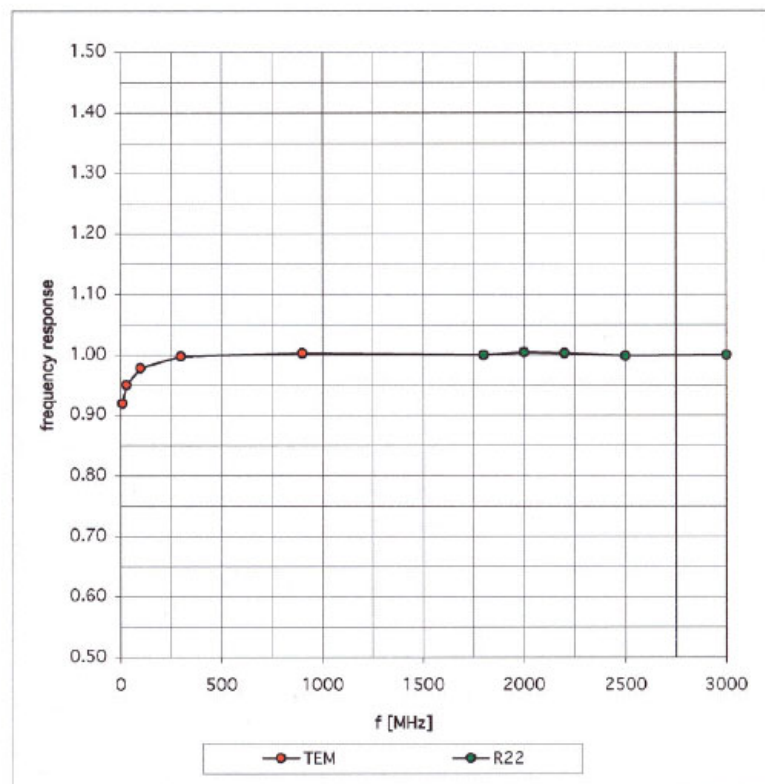


ET3DV6 SN:1788

August 29, 2003

Frequency Response of E-Field

(TEM-Cell:ifi110, Waveguide R22)



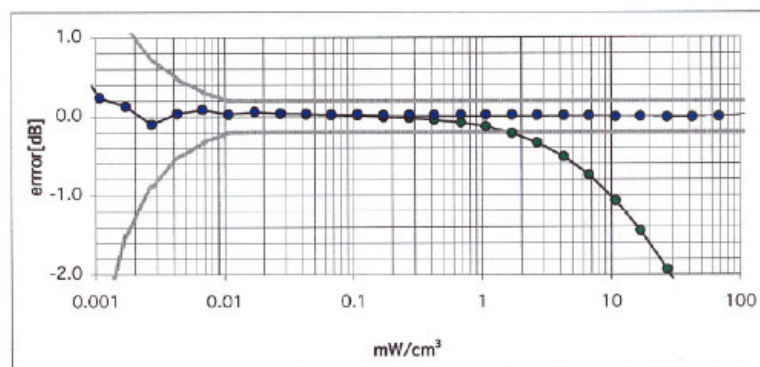
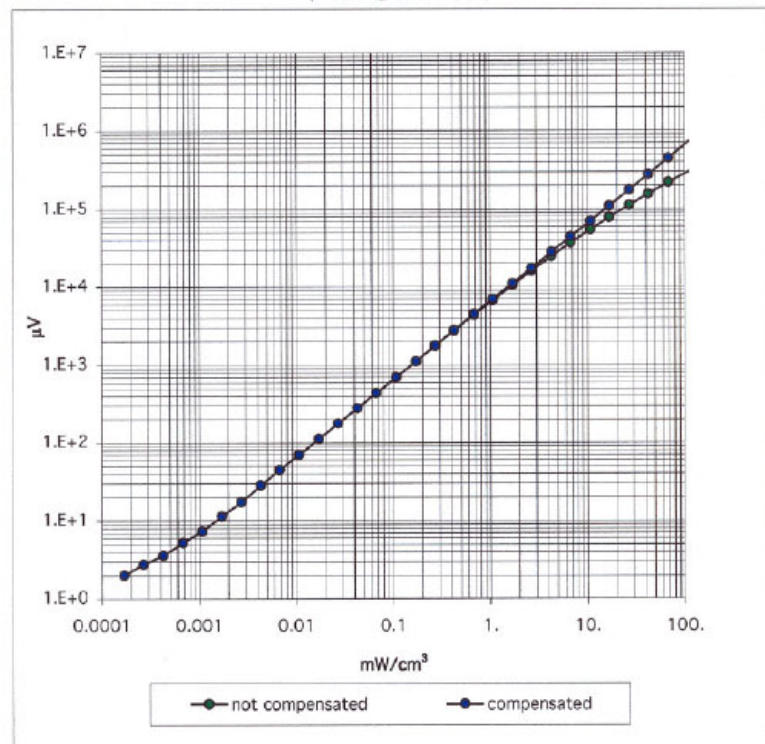


ET3DV6 SN:1788

August 29, 2003

Dynamic Range $f(\text{SAR}_{\text{brain}})$

(Waveguide R22)

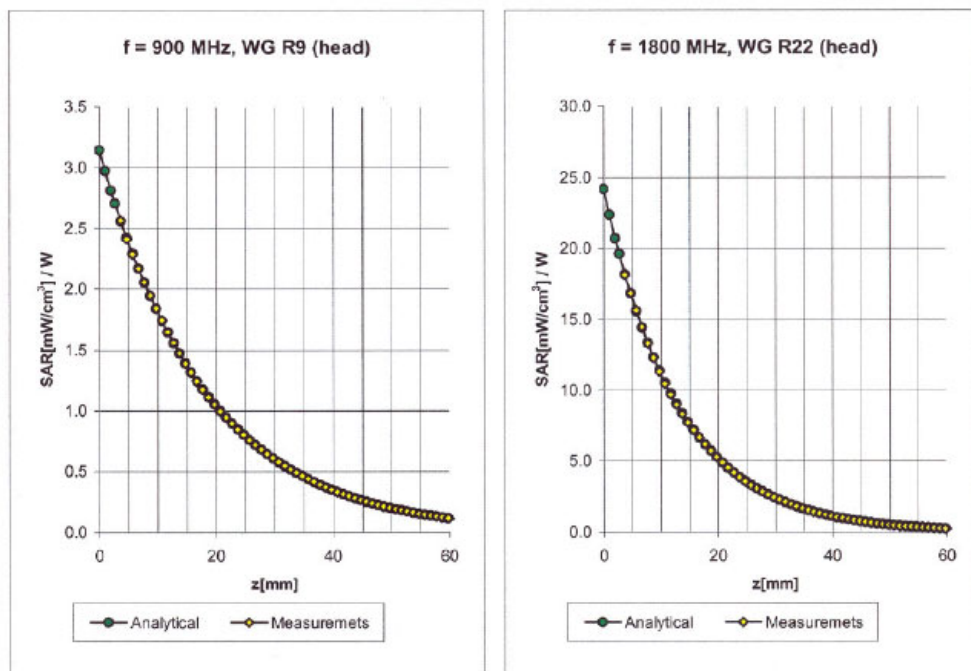




ET3DV6 SN:1788

August 29, 2003

Conversion Factor Assessment



Head 900 MHz $\epsilon_r = 41.5 \pm 5\%$ $\sigma = 0.97 \pm 5\%$ mho/m

Valid for f=800-1000 MHz with Head Tissue Simulating Liquid according to EN 50361, P1528-200X

| | | | |
|---------|-----------------------|------------------|------|
| ConvF X | 6.6 $\pm 9.5\%$ (k=2) | Boundary effect: | |
| ConvF Y | 6.6 $\pm 9.5\%$ (k=2) | Alpha | 0.34 |
| ConvF Z | 6.6 $\pm 9.5\%$ (k=2) | Depth | 2.48 |

Head 1800 MHz $\epsilon_r = 40.0 \pm 5\%$ $\sigma = 1.40 \pm 5\%$ mho/m

Valid for f=1710-1910 MHz with Head Tissue Simulating Liquid according to EN 50361, P1528-200X

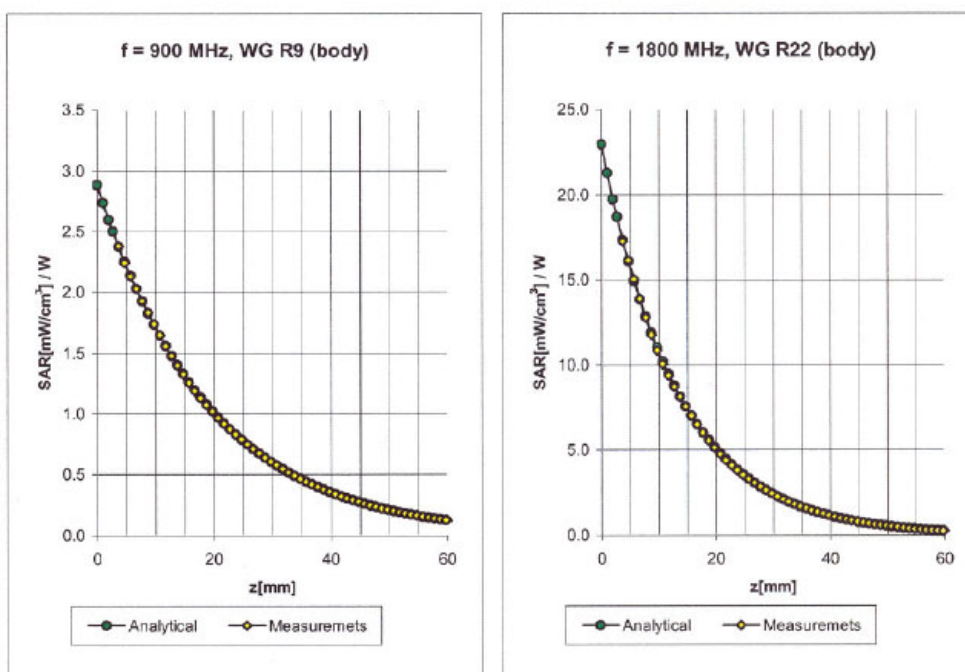
| | | | |
|---------|-----------------------|------------------|------|
| ConvF X | 5.3 $\pm 9.5\%$ (k=2) | Boundary effect: | |
| ConvF Y | 5.3 $\pm 9.5\%$ (k=2) | Alpha | 0.43 |
| ConvF Z | 5.3 $\pm 9.5\%$ (k=2) | Depth | 2.80 |



ET3DV6 SN:1788

August 29, 2003

Conversion Factor Assessment



Body 900 MHz $\epsilon_r = 55.0 \pm 5\%$ $\sigma = 1.05 \pm 5\%$ mho/m

Valid for f=800-1000 MHz with Body Tissue Simulating Liquid according to OET 65 Suppl. C

| | | | |
|---------|-----------------------|------------------|------|
| ConvF X | 6.5 $\pm 9.5\%$ (k=2) | Boundary effect: | |
| ConvF Y | 6.5 $\pm 9.5\%$ (k=2) | Alpha | 0.31 |
| ConvF Z | 6.5 $\pm 9.5\%$ (k=2) | Depth | 2.92 |

Body 1800 MHz $\epsilon_r = 53.3 \pm 5\%$ $\sigma = 1.52 \pm 5\%$ mho/m

Valid for f=1710-1910 MHz with Body Tissue Simulating Liquid according to OET 65 Suppl. C

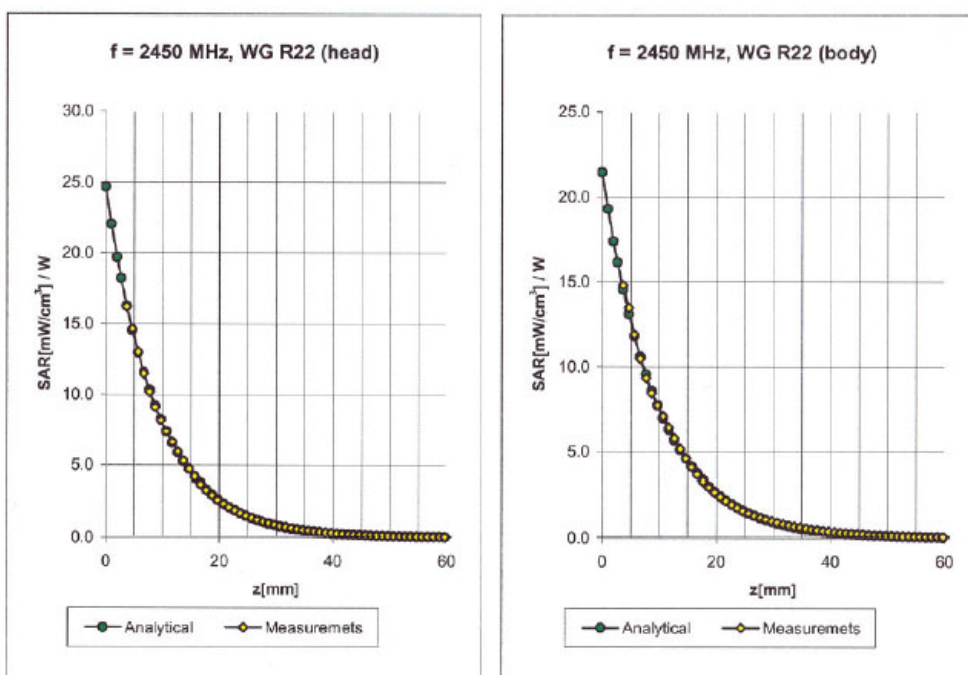
| | | | |
|---------|-----------------------|------------------|------|
| ConvF X | 5.0 $\pm 9.5\%$ (k=2) | Boundary effect: | |
| ConvF Y | 5.0 $\pm 9.5\%$ (k=2) | Alpha | 0.51 |
| ConvF Z | 5.0 $\pm 9.5\%$ (k=2) | Depth | 2.78 |



ET3DV6 SN:1788

August 29, 2003

Conversion Factor Assessment



Head 2450 MHz $\epsilon_r = 39.2 \pm 5\%$ $\sigma = 1.80 \pm 5\%$ mho/m

Valid for f=2400-2500 MHz with Head Tissue Simulating Liquid according to EN 50361, P1528-200X

| | | | |
|---------|-----------------------|------------------|-------------|
| ConvF X | $4.7 \pm 8.9\%$ (k=2) | Boundary effect: | |
| ConvF Y | $4.7 \pm 8.9\%$ (k=2) | Alpha | 0.99 |
| ConvF Z | $4.7 \pm 8.9\%$ (k=2) | Depth | 1.81 |

Body 2450 MHz $\epsilon_r = 52.7 \pm 5\%$ $\sigma = 1.95 \pm 5\%$ mho/m

Valid for f=2400-2500 MHz with Body Tissue Simulating Liquid according to OET 65 Suppl. C

| | | | |
|---------|-----------------------|------------------|-------------|
| ConvF X | $4.5 \pm 8.9\%$ (k=2) | Boundary effect: | |
| ConvF Y | $4.5 \pm 8.9\%$ (k=2) | Alpha | 1.01 |
| ConvF Z | $4.5 \pm 8.9\%$ (k=2) | Depth | 1.74 |

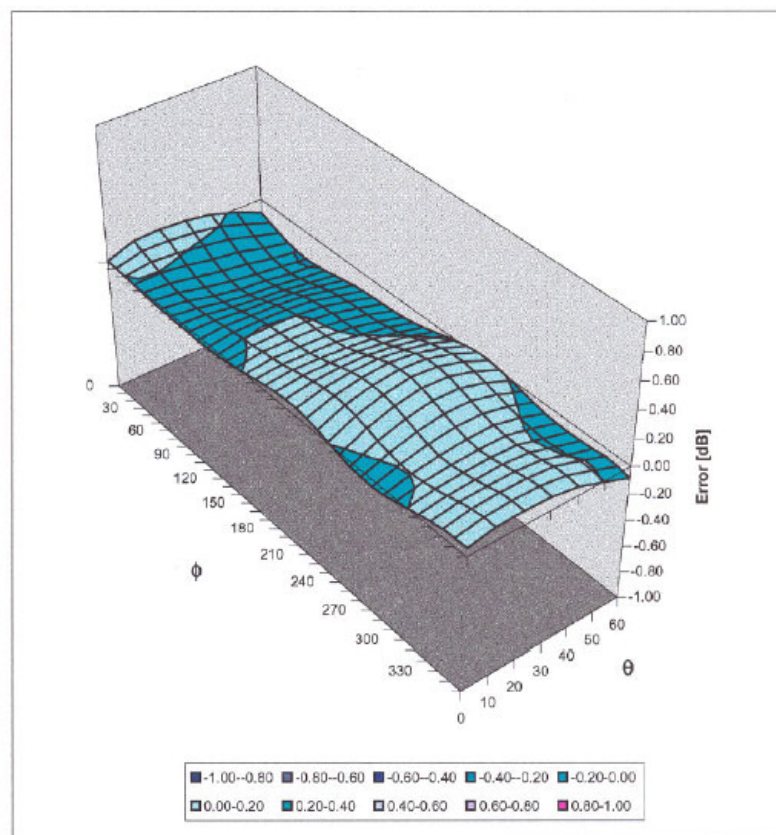


ET3DV6 SN:1788

August 29, 2003

Deviation from Isotropy in HSL

Error (θ, ϕ), $f = 900$ MHz





**Calibration Laboratory of
Schmid & Partner
Engineering AG**
Zeughausstrasse 43, 8004 Zurich, Switzerland

Client **Sporton (Auden)**

CALIBRATION CERTIFICATE

Object(s) **DAE3 – SD 000 D03 AA – SN:577**

Calibration procedure(s) **QA CAL-06.v4
Calibration procedure for the data acquisition unit (DAE)**

Calibration date: **21.11.2003**

Condition of the calibrated item **In Tolerance (according to the specific calibration document)**

This calibration statement documents traceability of M&TE used in the calibration procedures and conformity of the procedures with the ISO/IEC 17025 international standard.

All calibrations have been conducted in the closed laboratory facility environment temperature 22 +/- 2 degrees Celsius and humidity < 75%.

Calibration Equipment used (M&TE critical for calibration)

| Model Type | ID # | Cal Date | Scheduled Calibration |
|-----------------------------------|-------------|----------|-----------------------|
| Fluke Process Calibrator Type 702 | SN: 6295803 | 8-Sep-03 | Sep-05 |

| | Name | Function | Signature |
|----------------|-----------------------|------------|-----------|
| Calibrated by: | Philipp Storchenegger | Technician | |

| | | | |
|--------------|-------------|--------------|--|
| Approved by: | Fin Bomholt | R&D Director | |
|--------------|-------------|--------------|--|

Date issued: 21.11.2003

This calibration certificate is issued as an intermediate solution until the accreditation process (based on ISO/IEC 17025 International Standard) for Calibration Laboratory of Schmid & Partner Engineering AG is completed.



DAE3 SN: 577

DATE: 21.11.2003

1. Cal Lab. Incoming Inspection & Pre Test

| | | |
|----------------------------------|--------------------------|---------------|
| Modification Status | Note Status here → → → → | BC |
| Visual Inspection | Note anomalies..... | None |
| | | |
| Pre Test | Indication | Yes/No |
| Probe Touch | Function | Yes |
| Probe Collision | Function | Yes |
| Probe Touch&Collision | Function | Yes |

2. DC Voltage Measurement

A/D - Converter Resolution nominal

High Range: 1LSB = 6.1 μ V , full range = 400 mV
 Low Range: 1LSB = 61nV , full range = 4 mV

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

| Calibration Factors | X | Y | Z |
|--|----------|----------|----------|
| High Range | 404.434 | 403.889 | 404.352 |
| Low Range | 3.94303 | 3.94784 | 3.9501 |
| Connector Angle to be used in DASY System | 127 ° | | |

| High Range | Input | Reading in μV | % Error |
|--------------------------|--------------|-------------------------------------|----------------|
| Channel X + Input | 200mV | 200000.6 | 0.00 |
| | 20mV | 20000.9 | 0.00 |
| Channel X - Input | 20mV | -19992.7 | -0.04 |
| Channel Y + Input | 200mV | 200000.6 | 0.00 |
| | 20mV | 19999.1 | 0.00 |
| Channel Y - Input | 20mV | -19994.7 | -0.03 |
| Channel Z + Input | 200mV | 199999.8 | 0.00 |
| | 20mV | 19998.1 | -0.01 |
| Channel Z - Input | 20mV | -19999.2 | 0.00 |

| Low Range | Input | Reading in μV | % Error |
|--------------------------|--------------|-------------------------------------|----------------|
| Channel X + Input | 2mV | 1999.94 | 0.00 |
| | 0.2mV | 199.08 | -0.46 |
| Channel X - Input | 0.2mV | -200.24 | 0.12 |
| Channel Y + Input | 2mV | 1999.98 | 0.00 |
| | 0.2mV | 199.50 | -0.25 |
| Channel Y - Input | 0.2mV | -200.80 | 0.40 |
| Channel Z + Input | 2mV | 1999.98 | 0.00 |
| | 0.2mV | 199.11 | -0.44 |
| Channel Z - Input | 0.2mV | -201.12 | 0.56 |

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3. Common mode sensitivity

DASY measurement parameters:

Auto Zero Time: 3 sec,

Measuring time: 3 sec

High/Low Range

| in μV | Common mode Input Voltage | High Range Reading | Low Range Reading |
|------------------|---------------------------|--------------------|-------------------|
| Channel X | 200mV | 12.00 | 11.9 |
| | - 200mV | -10.76 | -12.44 |
| Channel Y | 200mV | -8.55 | -8.51 |
| | - 200mV | 7.58 | 6.67 |
| Channel Z | 200mV | -0.86 | -0.58 |
| | - 200mV | -0.85 | -0.77 |

4. Channel separation

DASY measurement parameters:

Auto Zero Time: 3 sec,

Measuring time: 3 sec

High Range

| in μV | Input Voltage | Channel X | Channel Y | Channel Z |
|------------------|---------------|-----------|-----------|-----------|
| Channel X | 200mV | - | 1.96 | 0.28 |
| Channel Y | 200mV | 0.66 | - | 3.59 |
| Channel Z | 200mV | -0.89 | -0.11 | - |

5.1 AD-Converter Values with Input Voltage set to 2.0 VDC

| in Zero Low | Low Range Max - Min | Max. | Min |
|-------------|---------------------|-------|-------|
| Channel X | 17 | 16137 | 16120 |
| Channel Y | 27 | 16767 | 16740 |
| Channel Z | 8 | 15103 | 15077 |

5.2 AD-Converter Values with inputs shorted

| in LSB | Low Range | High Range |
|-----------|-----------|------------|
| Channel X | 16134 | 15955 |
| Channel Y | 16740 | 15960 |
| Channel Z | 15093 | 16252 |

6. Input Offset Measurement

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DASY measurement parameters:

Auto Zero Time: 3 sec, Measuring time: 3 sec
Number of measurements: 100, Low Range

Input 10M Ω

| in μ V | Average | min. Offset | max. Offset | Std. Deviation |
|------------|---------|-------------|-------------|----------------|
| Channel X | -0.64 | -1.84 | 0.71 | 0.49 |
| Channel Y | -1.77 | -3.93 | 0.94 | 0.58 |
| Channel Z | -2.21 | -3.14 | -0.81 | 0.34 |

Input shorted

| in μ V | Average | min. Offset | max. Offset | Std. Deviation |
|------------|---------|-------------|-------------|----------------|
| Channel X | 0.12 | -1.34 | 1.45 | 0.69 |
| Channel Y | -0.69 | -1.39 | 0.30 | 0.26 |
| Channel Z | -0.94 | -1.58 | -0.30 | 0.23 |

7. Input Offset Current

Nominal Input circuitry offset current on all channels: <25fA

8. Input Resistance

| In MOhm | Calibrating | Measuring |
|-----------|-------------|-----------|
| Channel X | 0.2000 | 197.1 |
| Channel Y | 0.1999 | 200.3 |
| Channel Z | 0.2001 | 198.3 |

9. Low Battery Alarm Voltage

| in V | Alarm Level |
|----------------|-------------|
| Supply (+ Vcc) | 7.58 |
| Supply (- Vcc) | -7.65 |

10. Power Consumption

| in mA | Switched off | Stand by | Transmitting |
|----------------|--------------|----------|--------------|
| Supply (+ Vcc) | 0.00 | 5.65 | 13.7 |
| Supply (- Vcc) | -0.01 | -7.69 | -8.97 |