Test Date: 28 November 2007

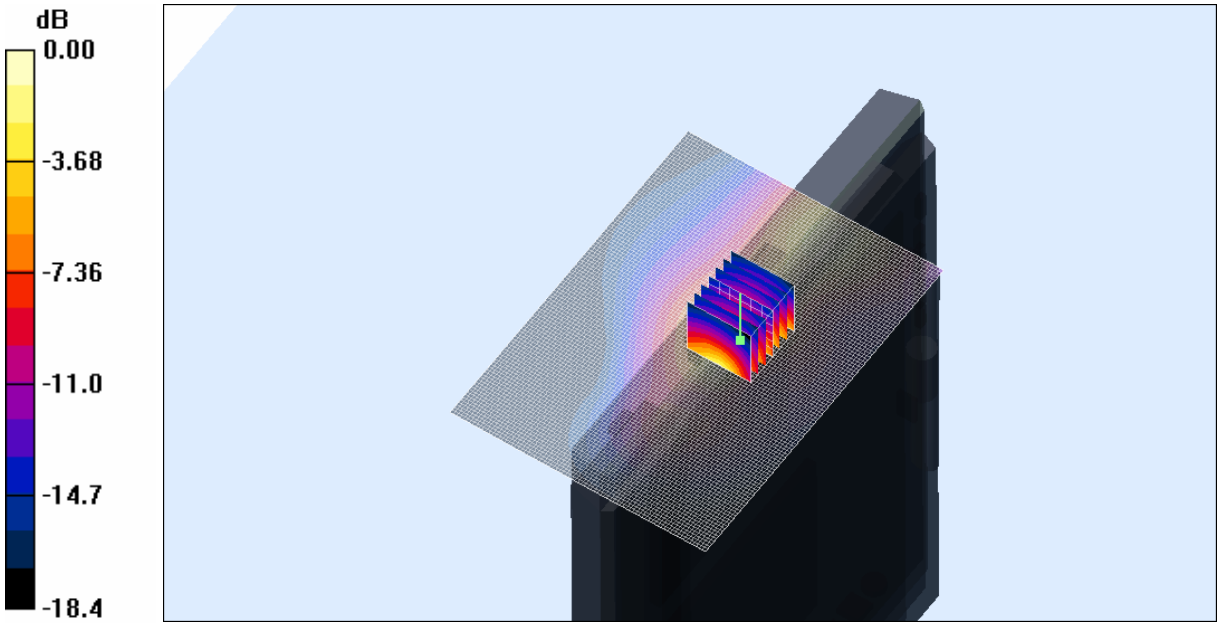
File Name: Edge On Right 1900 MHz UMTS Champlain 28-11-07.da4

DUT: Fujitsu Tablet Champlain with Sierra GSM/UMTS Module; Type: MC8781; Serial: IMEI:354220010021398

* Communication System: 1900 MHz 3G; Frequency: 1907.6 MHz; Duty Cycle: 1:1
* Medium parameters used: σ = 1.55854 mho/m, ε_r = 50.9548; ρ = 1000 kg/m^3
- Electronics: DAE3 Sn359; Probe: ET3DV6 - SN1377; ConvF(4.74, 4.74, 4.74)
- Phantom: Flat Phantom 10.1; Serial: P 10.1; Phantom section: Flat 2.2 Section

Channel 9538 Test/Area Scan (81x111x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.613 mW/g

Channel 9538 Test/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0.901 V/m; Power Drift = 0.212 dB
Peak SAR (extrapolated) = 0.972 W/kg
SAR(1 g) = 0.519 mW/g; SAR(10 g) = 0.261 mW/g
Maximum value of SAR (measured) = 0.605 mW/g



0 dB = 0.605mW/g

SAR MEASUREMENT PLOT 46

Ambient Temperature	**21.5 Degrees Celsius**
Liquid Temperature	**21.1 Degrees Celsius**
Humidity	**61.0 %**

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Test Date: 28 November 2007

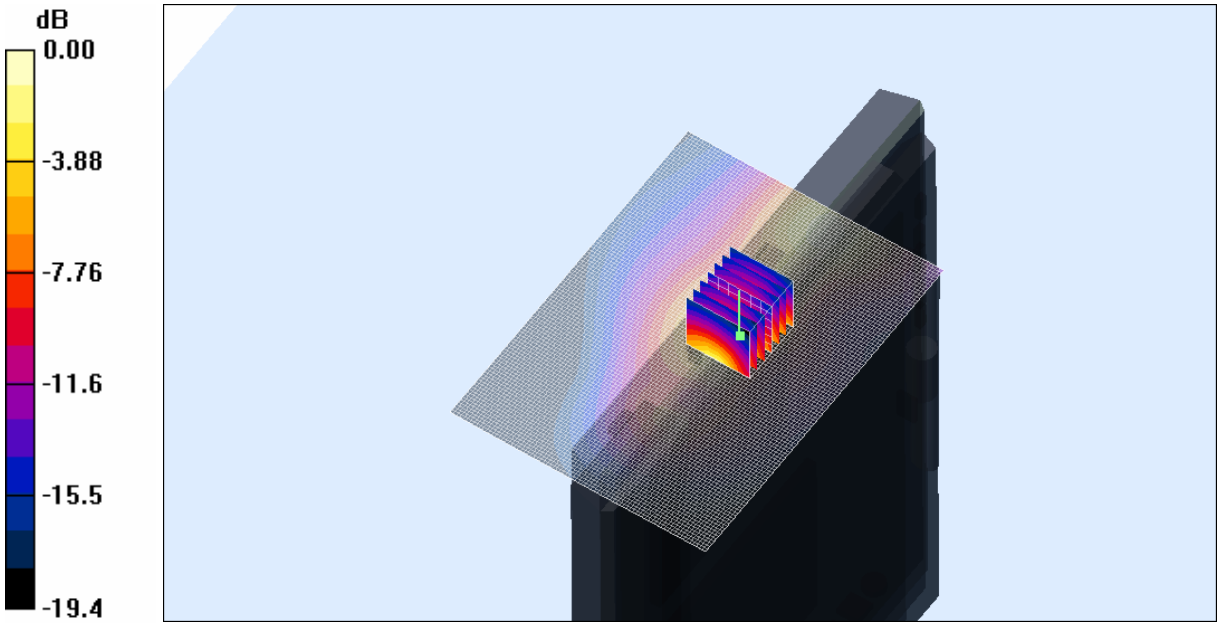
File Name: Edge On Right 1900 MHz UMTS Champlain WiFi ON 28-11-07.da4

DUT: Fujitsu Tablet Champlain with Sierra GSM/UMTS Module; Type: MC8781; Serial: IMEI:354220010021398

* Communication System: 1900 MHz 3G; Frequency: 1907.6 MHz; Duty Cycle: 1:1
* Medium parameters used: σ = 1.55854 mho/m, ε_r = 50.9548; ρ = 1000 kg/m^3
- Electronics: DAE3 Sn359; Probe: ET3DV6 - SN1377; ConvF(4.74, 4.74, 4.74)
- Phantom: Flat Phantom 10.1; Serial: P 10.1; Phantom section: Flat 2.2 Section

Channel 9538 Test/Area Scan (81x111x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.522 mW/g

Channel 9538 Test/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.3 V/m; Power Drift = -0.288 dB
Peak SAR (extrapolated) = 0.994 W/kg
SAR(1 g) = 0.519 mW/g; SAR(10 g) = 0.258 mW/g
Maximum value of SAR (measured) = 0.590 mW/g



0 dB = 0.590mW/g

SAR MEASUREMENT PLOT 47

Ambient Temperature	**21.5 Degrees Celsius**
Liquid Temperature	**21.1 Degrees Celsius**
Humidity	**61.0 %**

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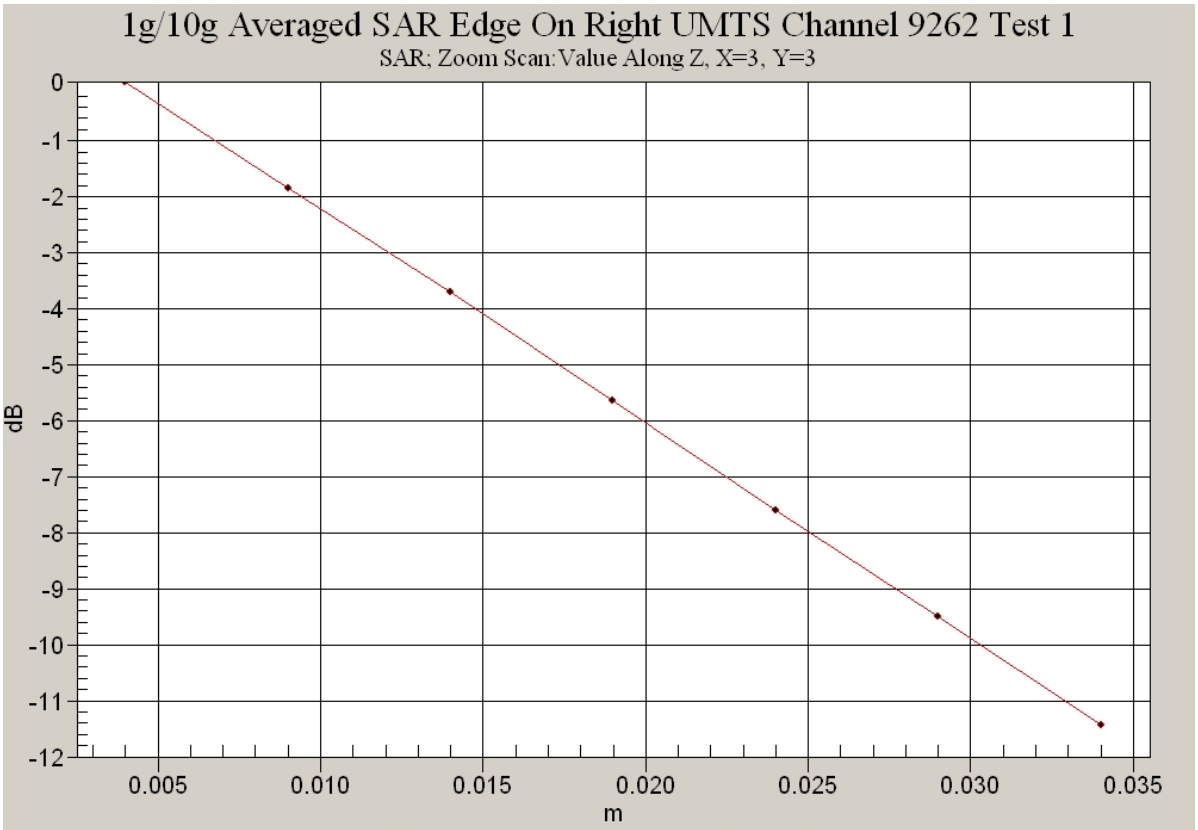

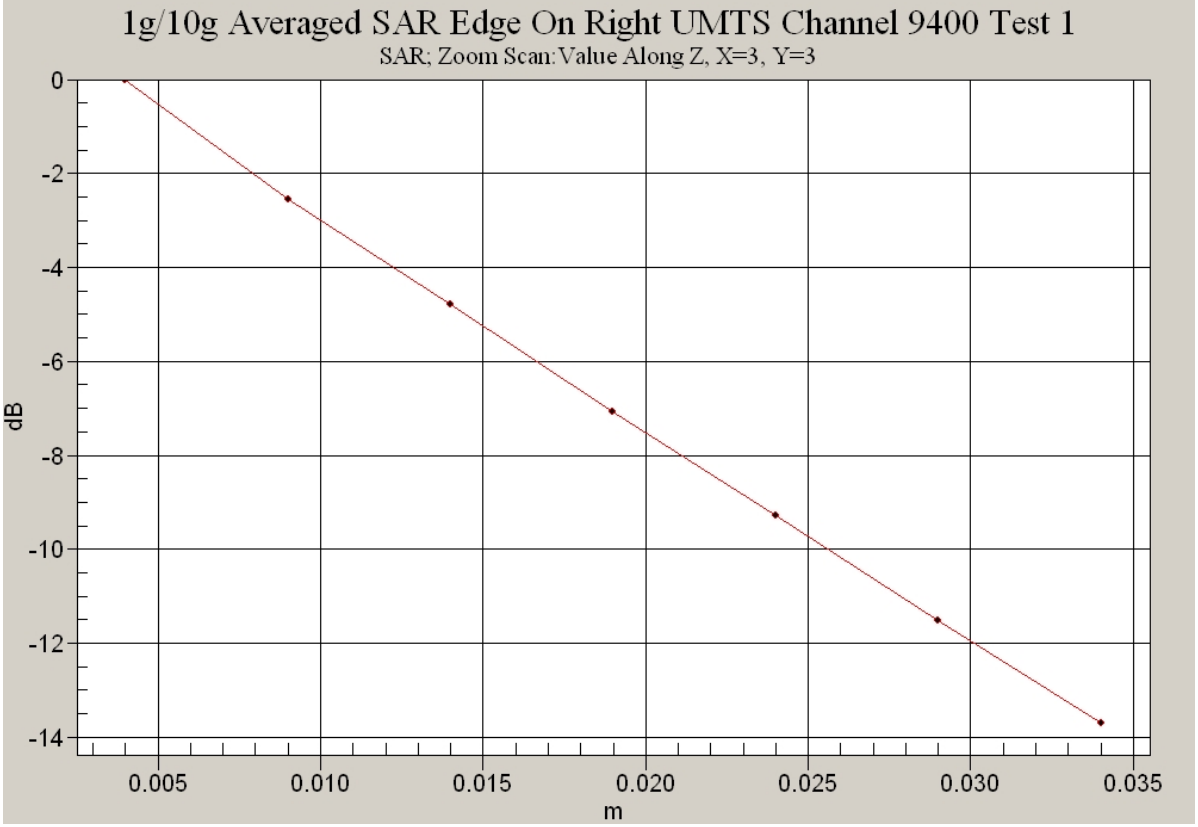

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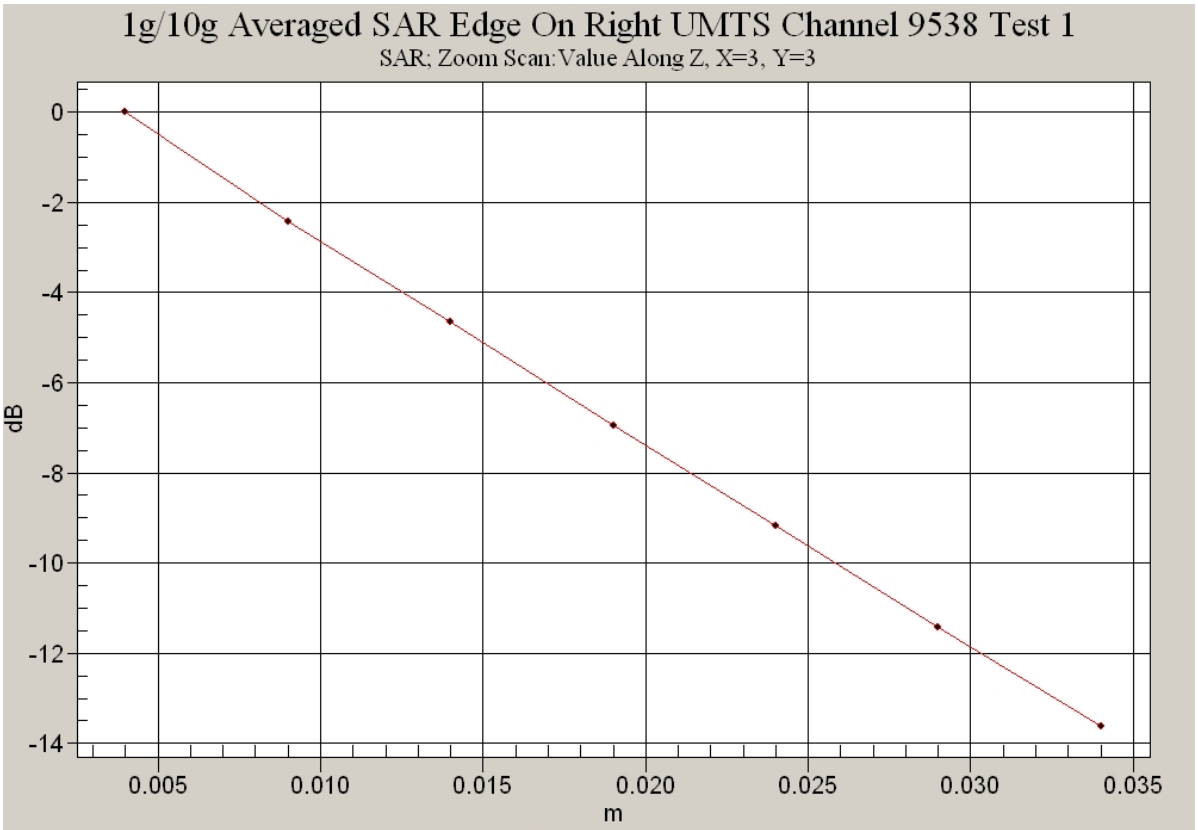

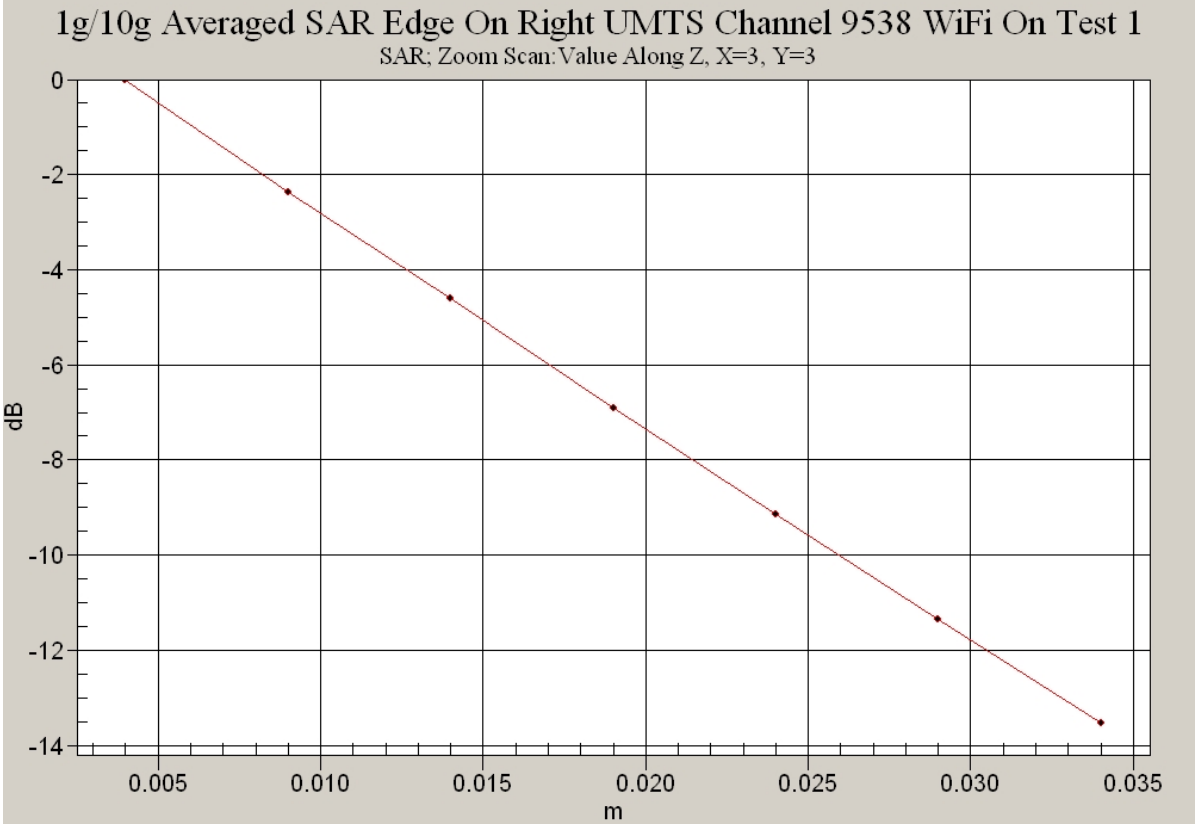

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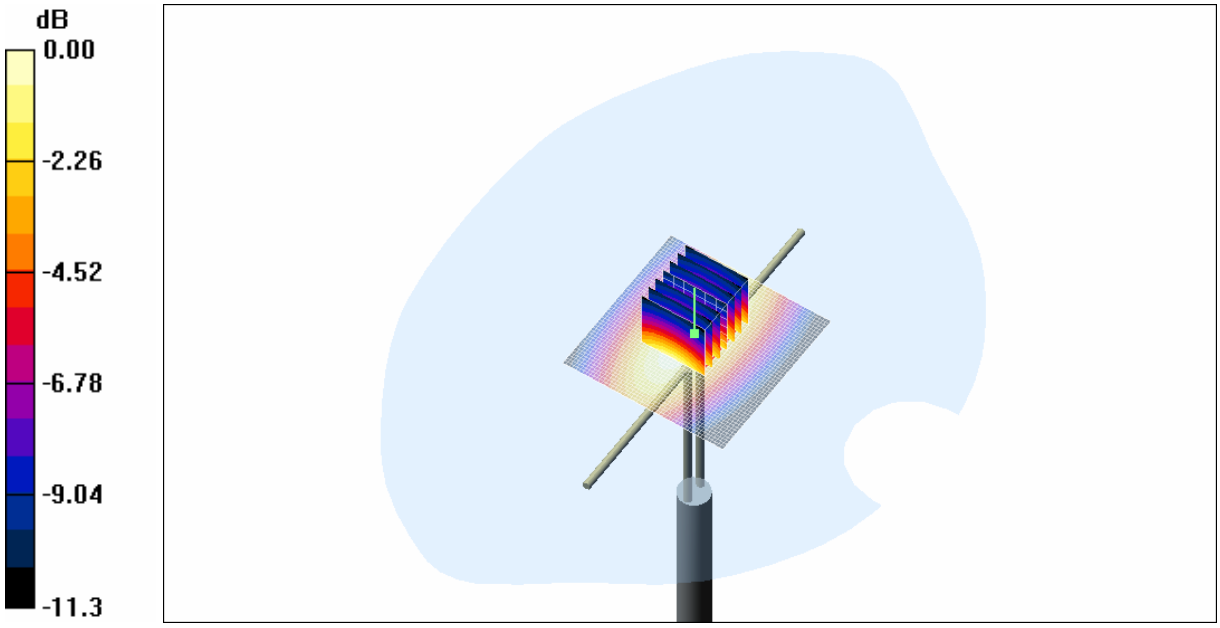
Test Date: 27 November 2007
File Name: Validation 900 MHz (DAE359 Probe1377) 27-11-07.da4
DUT: Dipole 900 MHz; Type: DV900; Serial: 047

* Communication System: CW 900 MHz; Frequency: 900 MHz; Duty Cycle: 1:1
* Medium parameters used: σ = 0.996746 mho/m, ε_r = 42.1565; ρ = 1000 kg/m^3
- Electronics: DAE3 Sn359; Probe: ET3DV6 - SN1377; ConvF(6.43, 6.43, 6.43)
- Phantom: SAM 12; Serial: 1060; Phantom section: Flat Section

Channel 1 Test/Area Scan (51x51x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 3.02 mW/g

Channel 1 Test/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 57.1 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 4.31 W/kg
SAR(1 g) = 2.81 mW/g; SAR(10 g) = 1.8 mW/g
Maximum value of SAR (measured) = 3.05 mW/g



0 dB = 3.05mW/g

SAR MEASUREMENT PLOT 48

Ambient Temperature	**21.6 Degrees Celsius**
Liquid Temperature	**20.9 Degrees Celsius**
Humidity	**53.0 %**

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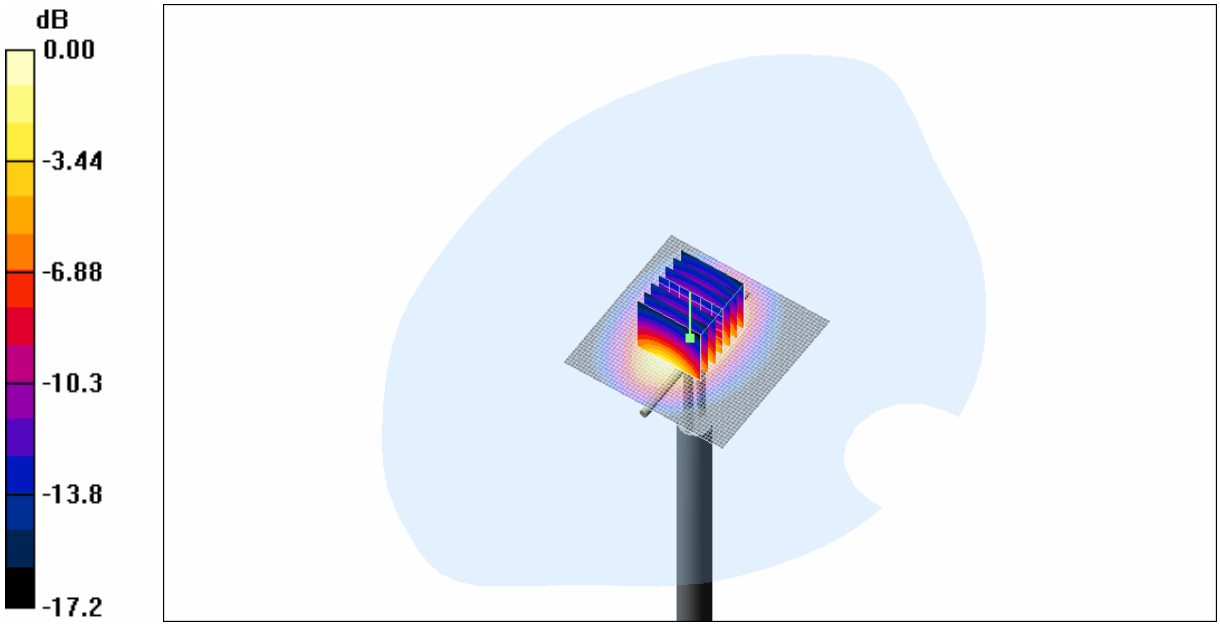
Test Date: 28 November 2007
File Name: Validation 1800 MHz (DAE359 Probe1377) 28-11-07.da4
DUT: Dipole 1800 MHz; Type: DV1800V2; Serial: 242

* Communication System: CW 1800 MHz; Frequency: 1800 MHz; Duty Cycle: 1:1
* Medium parameters used: σ = 1.3624 mho/m, ε_r = 38.1139; ρ = 1000 kg/m^3
- Electronics: DAE3 Sn359; Probe: ET3DV6 - SN1377; ConvF(5.13, 5.13, 5.13)
- Phantom: SAM 22; Serial: 1260; Phantom section: Flat Section

Channel 1 Test/Area Scan (51x51x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 11.4 mW/g

Channel 1 Test/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 92.2 V/m; Power Drift = -0.030 dB
Peak SAR (extrapolated) = 15.5 W/kg
SAR(1 g) = 9.03 mW/g; SAR(10 g) = 4.8 mW/g
Maximum value of SAR (measured) = 10.1 mW/g



0 dB = 10.1mW/g

SAR MEASUREMENT PLOT 49

Ambient Temperature	**21.5 Degrees Celsius**
Liquid Temperature	**21.1 Degrees Celsius**
Humidity	**61.0 %**

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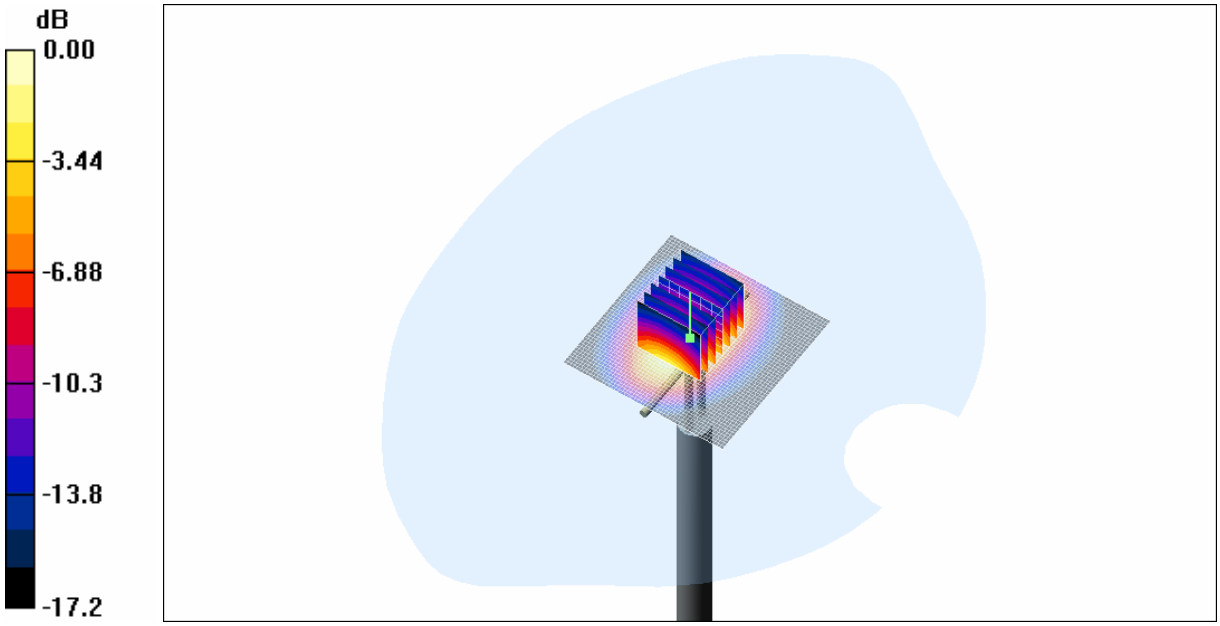
Test Date: 29 November 2007
File Name: Validation 1800 MHz (DAE359 Probe1377) 29-11-07.da4
DUT: Dipole 1800 MHz; Type: DV1800V2; Serial: 242

* Communication System: CW 1800 MHz; Frequency: 1800 MHz; Duty Cycle: 1:1
* Medium parameters used: σ = 1.38049 mho/m, ε_r = 38.5131; ρ = 1000 kg/m^3
- Electronics: DAE3 Sn359; Probe: ET3DV6 - SN1377; ConvF(5.13, 5.13, 5.13)
- Phantom: SAM 22; Serial: 1260; Phantom section: Flat Section

Channel 1 Test/Area Scan (51x51x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 11.7 mW/g

Channel 1 Test/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 92.7 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 15.8 W/kg
SAR(1 g) = 9.27 mW/g; SAR(10 g) = 4.95 mW/g
Maximum value of SAR (measured) = 10.4 mW/g



0 dB = 10.4mW/g

SAR MEASUREMENT PLOT 50

Ambient Temperature	**21.7 Degrees Celsius**
Liquid Temperature	**21.1 Degrees Celsius**
Humidity	**62.0 %**

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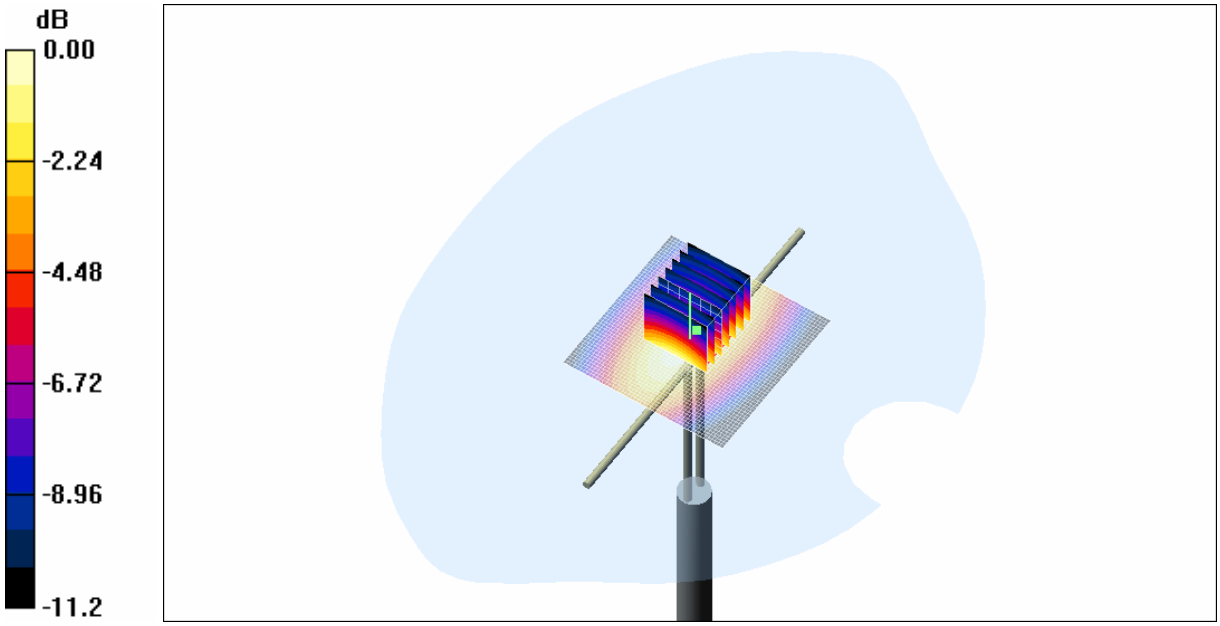
Test Date: 29 November 2007
File Name: Validation 900 MHz (DAE359 Probe1377) 28-11-07.da4
DUT: Dipole 900 MHz; Type: DV900; Serial: 047

* Communication System: CW 900 MHz; Frequency: 900 MHz; Duty Cycle: 1:1
* Medium parameters used: σ = 0.950406 mho/m, ε_r = 40.2931; ρ = 1000 kg/m^3
- Electronics: DAE3 Sn359; Probe: ET3DV6 - SN1377; ConvF(6.43, 6.43, 6.43)
- Phantom: SAM 12; Serial: 1060; Phantom section: Flat Section

Channel 1 Test/Area Scan (51x51x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 2.91 mW/g

Channel 1 Test/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 57.3 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 4.15 W/kg
SAR(1 g) = 2.72 mW/g; SAR(10 g) = 1.73 mW/g
Maximum value of SAR (measured) = 2.95 mW/g



0 dB = 2.95mW/g

SAR MEASUREMENT PLOT 51

Ambient Temperature	**21.7 Degrees Celsius**
Liquid Temperature	**21.2 Degrees Celsius**
Humidity	**59.0 %**

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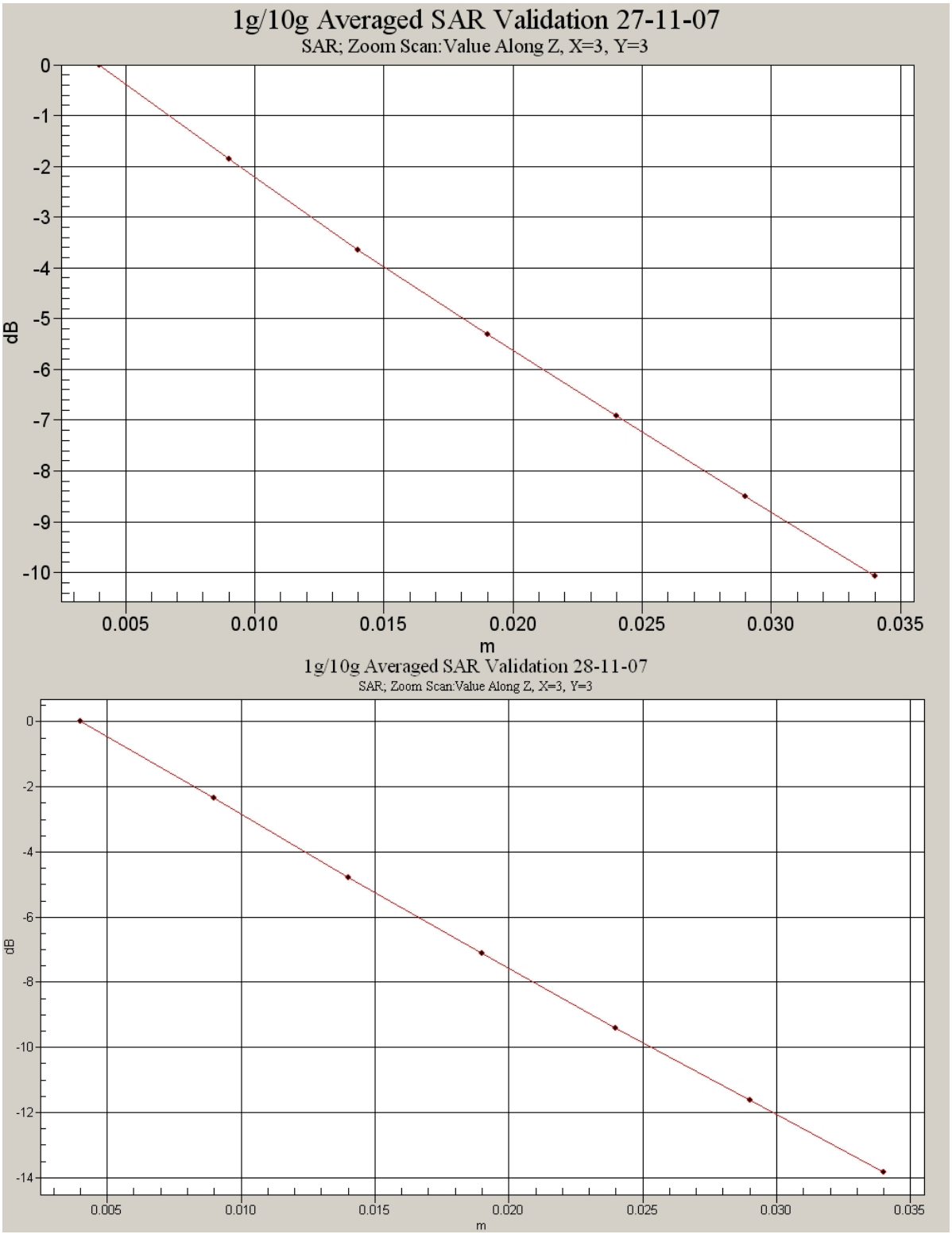

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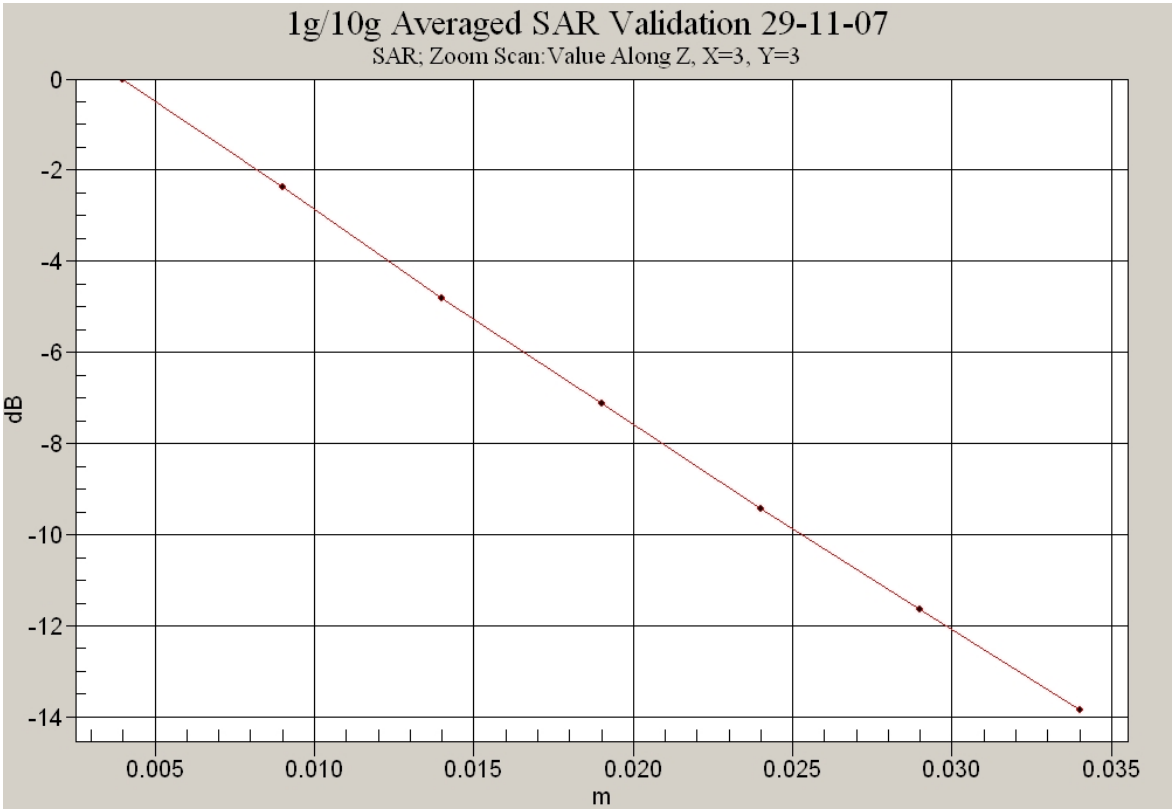
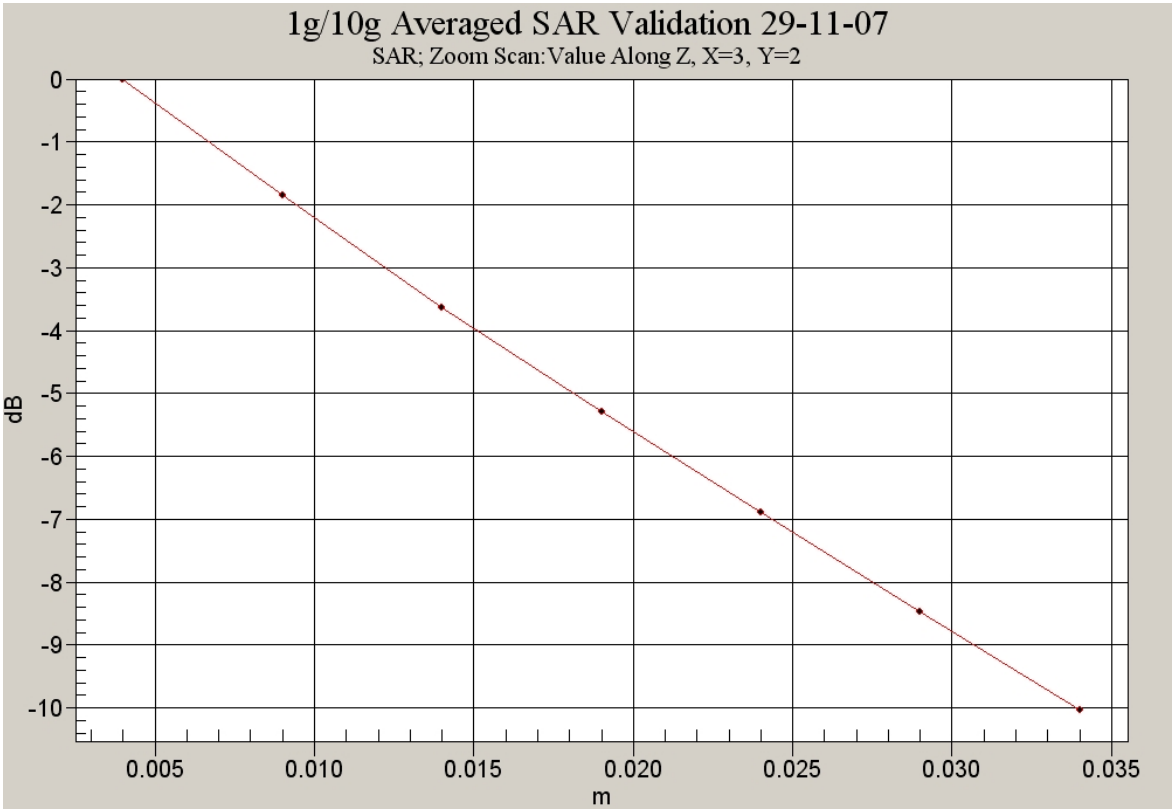
Validation 1800 MHz



Validation 900 MHz



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APPENDIX C CALIBRATION DOCUMENTS

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

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
Swiss Calibration Service

Accredited by the Swiss Federal Office of Metrology and Accreditation
The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

Client EMC Technologies **Certificate No: ET3-1377_Jul07**

CALIBRATION CERTIFICATE

Object	ET3DV6 - SN:1377
Calibration procedure(s)	QA CAL-01.v6 Calibration procedure for dosimetric E-field probes
Calibration date:	July 9, 2007
Condition of the calibrated item	In Tolerance

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	29-Mar-07 (METAS, No. 217-00670)	Mar-08
Power sensor E4412A	MY41495277	29-Mar-07 (METAS, No. 217-00670)	Mar-08
Power sensor E4412A	MY41498087	29-Mar-07 (METAS, No. 217-00670)	Mar-08
Reference 3 dB Attenuator	SN: S5054 (3c)	10-Aug-06 (METAS, No. 217-00592)	Aug-07
Reference 20 dB Attenuator	SN: S5086 (20b)	29-Mar-07 (METAS, No. 217-00671)	Mar-08
Reference 30 dB Attenuator	SN: S5129 (30b)	10-Aug-06 (METAS, No. 217-00593)	Aug-07
Reference Probe ES3DV2	SN: 3013	4-Jan-07 (SPEAG, No. ES3-3013_Jan07)	Jan-08
DAE4	SN: 654	20-Apr-07 (SPEAG, No. DAE4-654_Apr07)	Apr-08

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 Oct-06)	In house check: Oct-07

	Name	Function	Signature
Calibrated by:	Katja Pokovic	Technical Manager	
Approved by:	Niels Kuster	Quality Manager	

Issued: July 10, 2007

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

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Federal Office of Metrology and Accreditation
The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

Glossary:

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
Polarization φ	φ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., ϑ = 0 is normal to probe axis

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005

Methods Applied and Interpretation of Parameters:

- *NORMx,y,z:* Assessed for E-field polarization ϑ = 0 (f ≤ 900 MHz in TEM-cell; f > 1800 MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not effect the E^2-field uncertainty inside TSL (see below *ConvF*).
- *NORM(f)x,y,z = NORMx,y,z * frequency_response* (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of *ConvF*.
- *DCPx,y,z:* DCP are numerical linearization parameters assessed based on the data of power sweep (no uncertainty required). DCP does not depend on frequency nor media.
- *ConvF and Boundary Effect Parameters:* Assessed in flat phantom using E-field (or Temperature Transfer Standard for f ≤ 800 MHz) and inside waveguide using analytical field distributions based on power measurements for f > 800 MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to *NORMx,y,z * ConvF* whereby the uncertainty corresponds to that given for *ConvF*. A frequency dependent *ConvF* is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- *Spherical isotropy (3D deviation from isotropy)*: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- *Sensor Offset*: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.

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Probe ET3DV6

SN:1377

Manufactured:	August 16, 1999
Last calibrated:	July 14, 2006
Recalibrated:	July 9, 2007

Calibrated for DASY Systems

(Note: non-compatible with DASY2 system!)

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ET3DV6 SN:1377 **July 9, 2007**

DASY - Parameters of Probe: ET3DV6 SN:1377

Sensitivity in Free Space[A] Diode Compression[B]

NormX	**1.93** ± 10.1%	$\mu V/(V/m)^2$	DCP X	**94** mV
NormY	**1.91** ± 10.1%	$\mu V/(V/m)^2$	DCP Y	**97** mV
NormZ	**1.87** ± 10.1%	$\mu V/(V/m)^2$	DCP Z	**94** 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_{be} [%]	Without Correction Algorithm	8.8	4.3
SAR_{be} [%]	With Correction Algorithm	0.1	0.1

TSL **1810 MHz** **Typical SAR gradient: 10 % per mm**

Sensor Center to Phantom Surface Distance		**3.7 mm**	**4.7 mm**
SAR_{be} [%]	Without Correction Algorithm	13.1	8.7
SAR_{be} [%]	With Correction Algorithm	0.2	0.1

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%.

[A] The uncertainties of NormX,Y,Z do not affect the E^2-field uncertainty inside TSL (see Page 8).

[B] Numerical linearization parameter: uncertainty not required.

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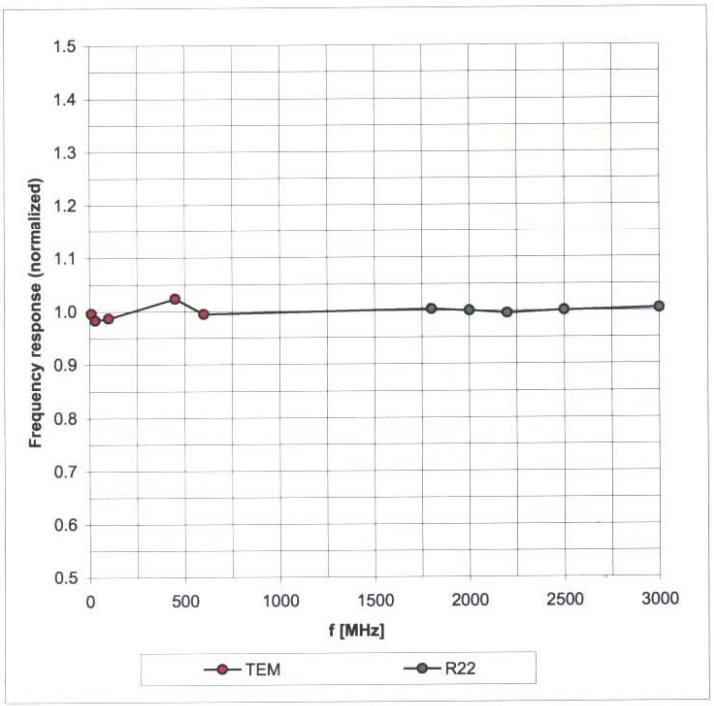
ET3DV6 SN:1377 July 9, 2007

Frequency Response of E-Field

(TEM-Cell:ifi110 EXX, Waveguide: R22)



Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

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