A.1.1. Calibration Certificates

This section contains the calibration certificates and data for the Probe(s) and Dipole(s) used, which are not included in the total number of pages for this report.

NM 24/01/07

A1322

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

Client RFI

Certificate No: D2450V2-725_Jan07

CALIBRATION CERTIFICATE

Object	D2450V2 - SN: 725
Calibration procedure(s)	QA CAL-05.v6 Calibration procedure for dipole validation kits
Calibration date:	January 17, 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 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)	10-Aug-06 (METAS, No 217-00591)	Aug-07
Reference 10 dB Attenuator	SN: 5047.2 (10r)	10-Aug-06 (METAS, No 217-00591)	Aug-07
Reference Probe ES3DV2	SN 3025	19-Oct-06 (SPEAG, No. ES3-3025_Oct06)	Oct-07
DAE4	SN: 907	20-Jul-06 (SPEAG, No. DAE4-907_Jul06)	Jul-07

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

	Name	Function	Signature
Calibrated by:	Mike Meili	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: January 18, 2007

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

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) CENELEC EN 50361, "Basic standard for the measurement of Specific Absorption Rate related to human exposure to electromagnetic fields from mobile phones (300 MHz - 3 GHz), July 2001
c) Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

d) DASY4 System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY4	V4.7
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V5.0	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	2450 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	39.2	1.80 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	38.0 ± 6 %	1.79 mho/m ± 6 %
Head TSL temperature during test	(22.3 ± 0.2) °C	-------	------

SAR result with Head TSL

SAR averaged over 1 cm^3 (1 g) of Head TSL	condition	
SAR measured	250 mW input power	13.5 mW / g
SAR normalized	normalized to 1W	54.0 mW / g
SAR for nominal Head TSL parameters [1]	normalized to 1W	**53.3 mW / g ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.26 mW / g
SAR normalized	normalized to 1W	25.0 mW / g
SAR for nominal Head TSL parameters [1]	normalized to 1W	**24.8 mW / g ± 16.5 % (k=2)**

[1] Correction to nominal TSL parameters according to d), chapter "SAR Sensitivities"

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	52.7	1.95 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	51.2 ± 6 %	1.97 mho/m ± 6 %
Body TSL temperature during test	(22.1 ± 0.2) °C	-----	-----

SAR result with Body TSL

SAR averaged over 1 cm^3 (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	13.6 mW / g
SAR normalized	normalized to 1W	54.4 mW / g
SAR for nominal Body TSL parameters [2]	normalized to 1W	**53.3 mW / g ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	Condition	
SAR measured	250 mW input power	6.21 mW / g
SAR normalized	normalized to 1W	24.8 mW / g
SAR for nominal Body TSL parameters [2]	normalized to 1W	**24.5 mW / g ± 16.5 % (k=2)**

[2] Correction to nominal TSL parameters according to d), chapter "SAR Sensitivities"

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	52.4 Ω + 7.7 jΩ
Return Loss	– 22.1 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	47.8 Ω + 7.7 jΩ
Return Loss	– 21.8 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.154 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

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.
No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	October 16, 2002

DASY4 Validation Report for Head TSL

Date/Time: 17.01.2007 12:35:59

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN725

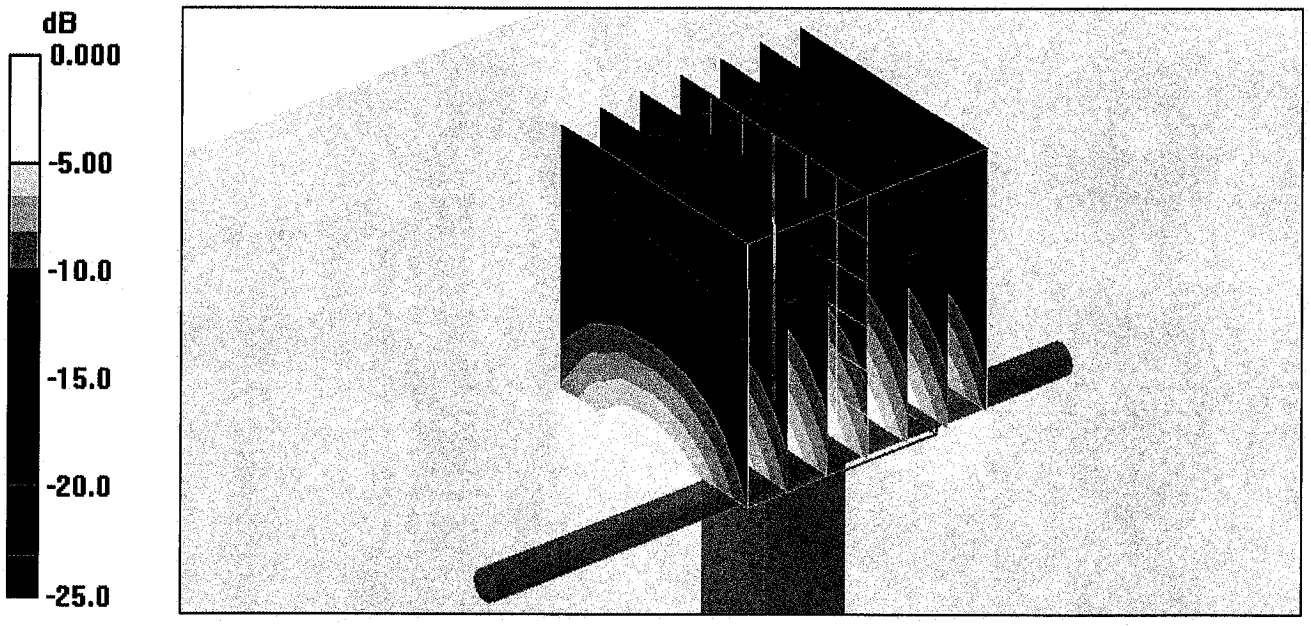
Communication System: CW-2450; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: HSL U10 BB;
Medium parameters used: f = 2450 MHz; σ = 1.79 mho/m; ε_r = 38; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV2 - SN3025 (HF); ConvF(4.5, 4.5, 4.5); Calibrated: 19.10.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn907; Calibrated: 20.07.2006
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

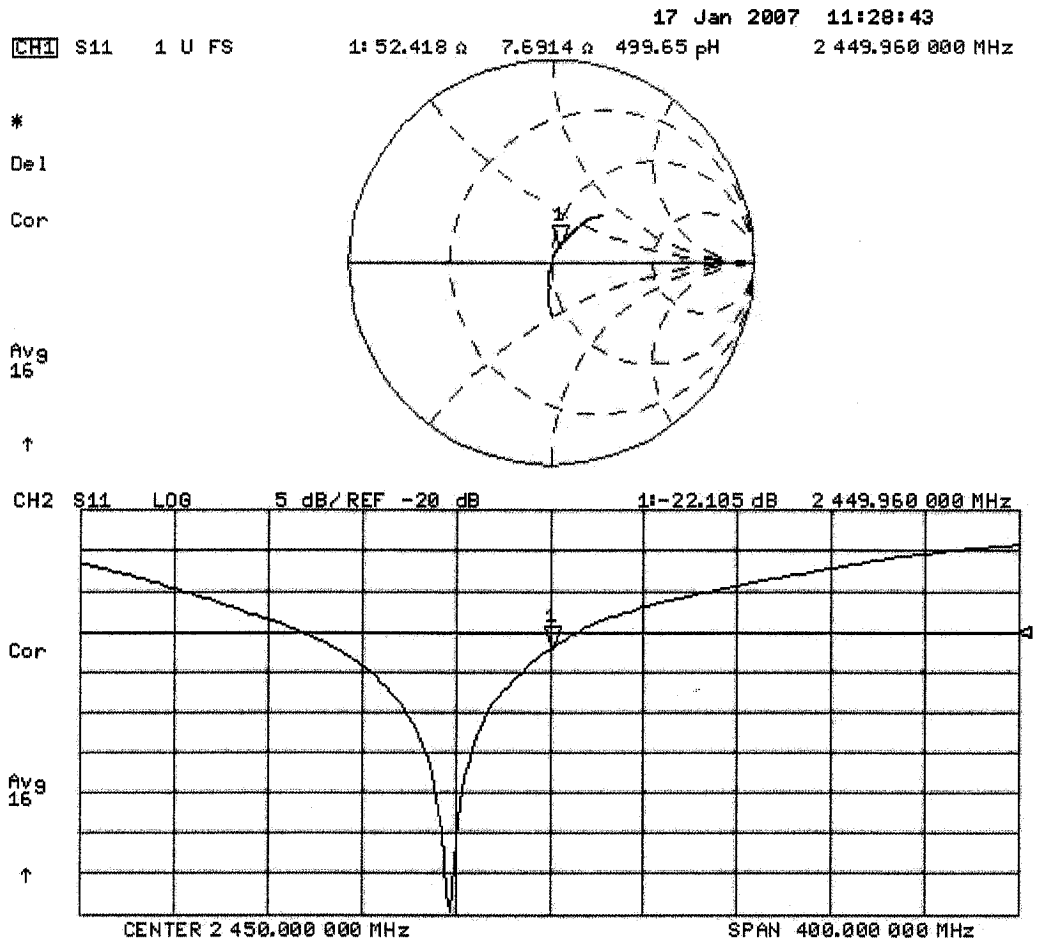
Pin = 250 mW; d = 10 mm 2/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 93.0 V/m; Power Drift = 0.021 dB
Peak SAR (extrapolated) = 28.9 W/kg
SAR(1 g) = 13.5 mW/g; SAR(10 g) = 6.26 mW/g
Maximum value of SAR (measured) = 15.1 mW/g



0 dB = 15.1mW/g

Impedance Measurement Plot for Head TSL



DASY4 Validation Report for Body TSL

Date/Time: 17.01.2007 16:53:02

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN725

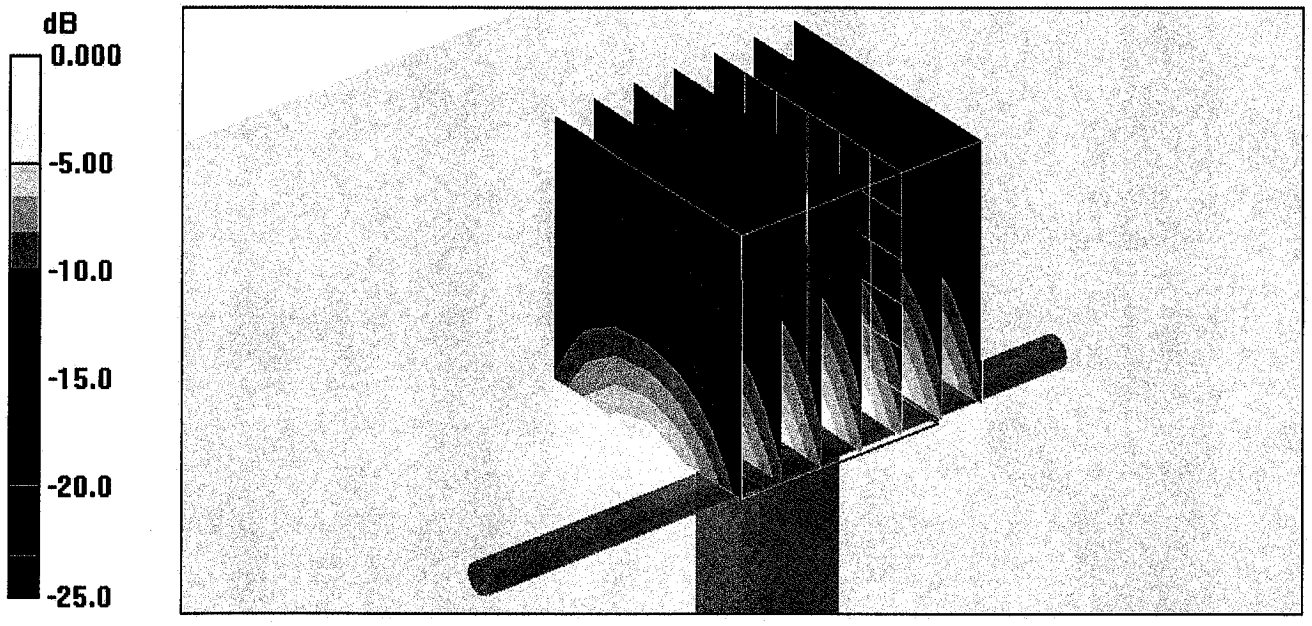
Communication System: CW-2450; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: MSL U10 BB;
Medium parameters used: f = 2450 MHz; σ = 1.97 mho/m; ε_r = 51.1; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV2 - SN3025 (HF); ConvF(4.16, 4.16, 4.16); Calibrated: 19.10.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn907; Calibrated: 20.07.2006
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

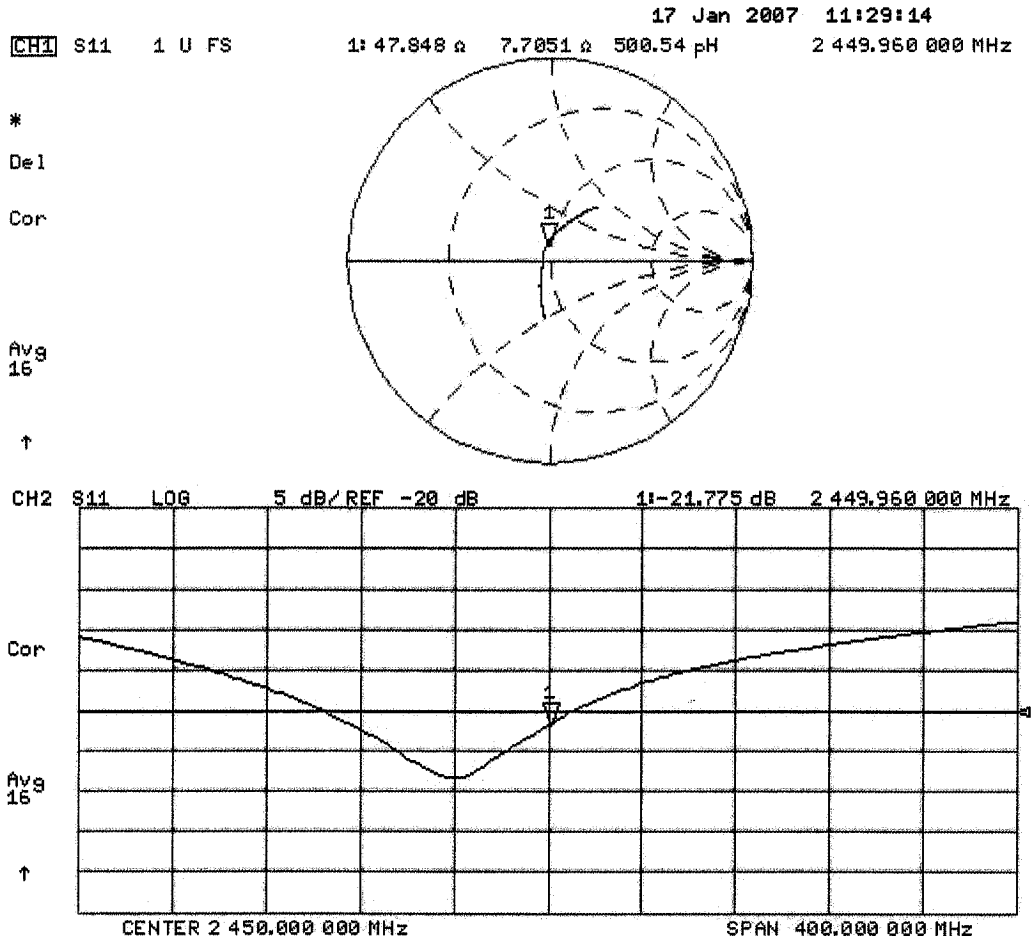
Pin = 250 mW; d = 10 mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 87.8 V/m; Power Drift = -0.004 dB
Peak SAR (extrapolated) = 30.8 W/kg
SAR(1 g) = 13.6 mW/g; SAR(10 g) = 6.21 mW/g
Maximum value of SAR (measured) = 15.1 mW/g



0 dB = 15.1mW/g

Impedance Measurement Plot for Body TSL



A1378

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

Client RFI

Certificate No: EX3-3508_Nov06

CALIBRATION CERTIFICATE

CAL DUE 16/11/07

Object	EX3DV3 - SN:3508
Calibration procedure(s)	QA CAL-01.v5 Calibration procedure for dosimetric E-field probes
Calibration date:	November 16, 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 ± 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	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)	10-Aug-06 (METAS, No. 217-00592)	Aug-07
Reference 20 dB Attenuator	SN: S5086 (20b)	4-Apr-06 (METAS, No. 251-00558)	Apr-07
Reference 30 dB Attenuator	SN: S5129 (30b)	10-Aug-06 (METAS, No. 217-00593)	Aug-07
Reference Probe ES3DV2	SN: 3013	2-Jan-06 (SPEAG, No. ES3-3013_Jan06)	Jan-07
DAE4	SN: 654	21-Jun-06 (SPEAG, No. DAE4-654_Jun06)	Jun-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 Oct-06)	In house check: Oct-07

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

Issued: November 17, 2006

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., $\vartheta = 0$ 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) CENELEC EN 50361, "Basic standard for the measurement of Specific Absorption Rate related to human exposure to electromagnetic fields from mobile phones (300 MHz - 3 GHz), July 2001

Methods Applied and Interpretation of Parameters:

- *NORMx,y,z:* Assessed for E-field polarization $\vartheta = 0$ ($f \leq 900$ 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 $f \leq 800$ 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.

Probe EX3DV3

SN:3508

Manufactured:	December 19, 2003
Last calibrated:	March 18, 2006
Recalibrated:	November 16, 2006

Calibrated for DASY Systems

(Note: non-compatible with DASY2 system!)

DASY - Parameters of Probe: EX3DV3 SN:3508

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

NormX	**0.780** ± 10.1%	$\mu V/(V/m)^2$	DCP X	**95** mV
NormY	**0.640** ± 10.1%	$\mu V/(V/m)^2$	DCP Y	**96** mV
NormZ	**0.610** ± 10.1%	$\mu V/(V/m)^2$	DCP Z	**97** mV

Sensitivity in Tissue Simulating Liquid (Conversion Factors)

Please see Page 8.

Boundary Effect

TSL **2450 MHz** **Typical SAR gradient: 10 % per mm**

Sensor Center to Phantom Surface Distance		**2.0 mm**	**3.0 mm**
SAR_{be} [%]	Without Correction Algorithm	2.6	1.0
SAR_{be} [%]	With Correction Algorithm	0.2	0.4

Sensor Offset

Probe Tip to Sensor Center	**1.0** mm

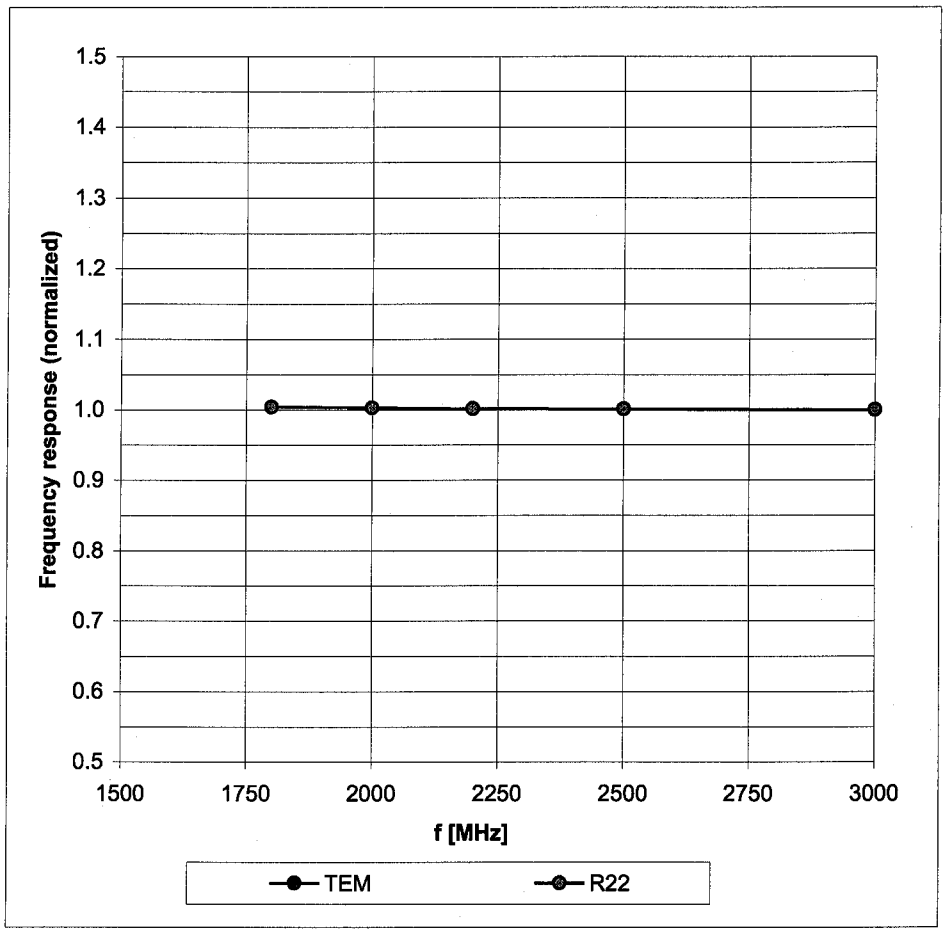
The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

[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.

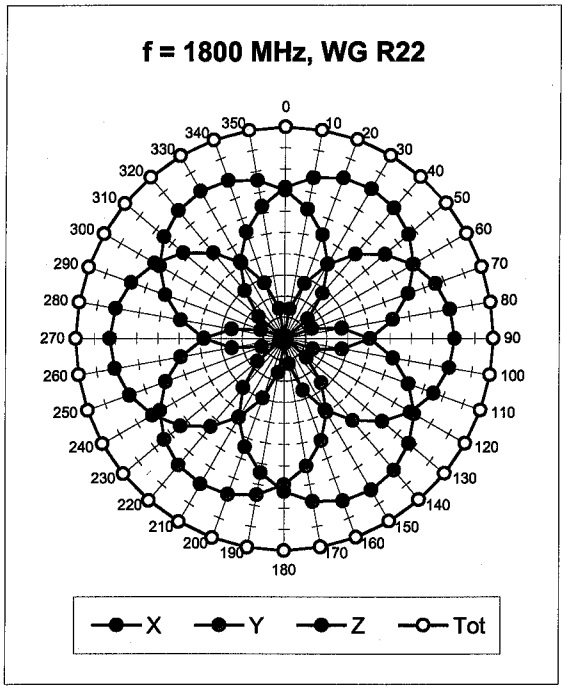
Frequency Response of E-Field

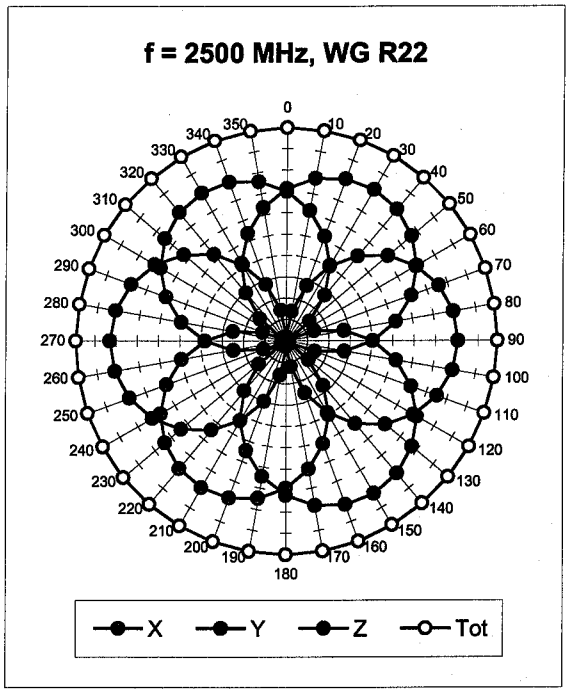
(TEM-Cell:ifi110 EXX, Waveguide: R22)

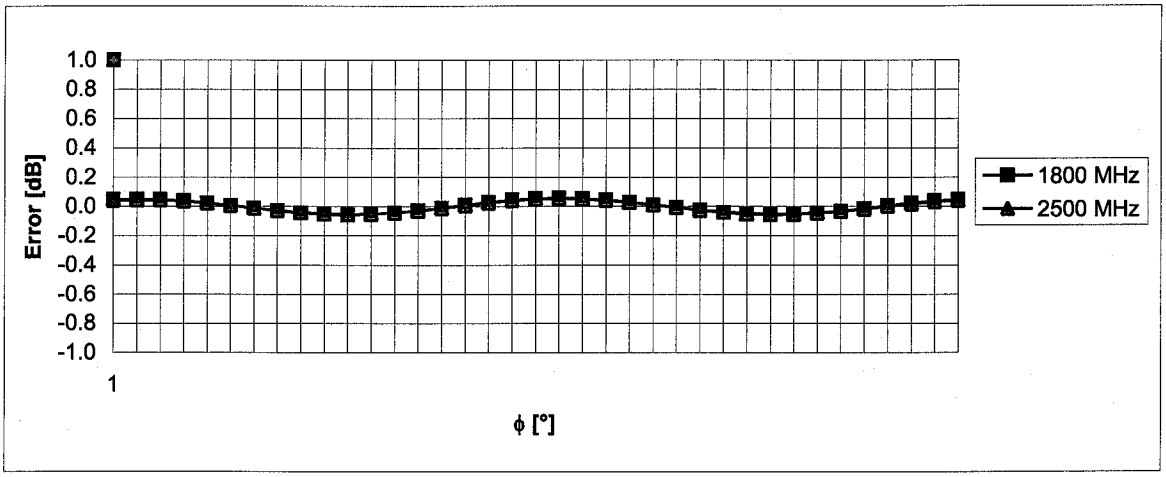


Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

Receiving Pattern (ϕ), ϑ = 0°



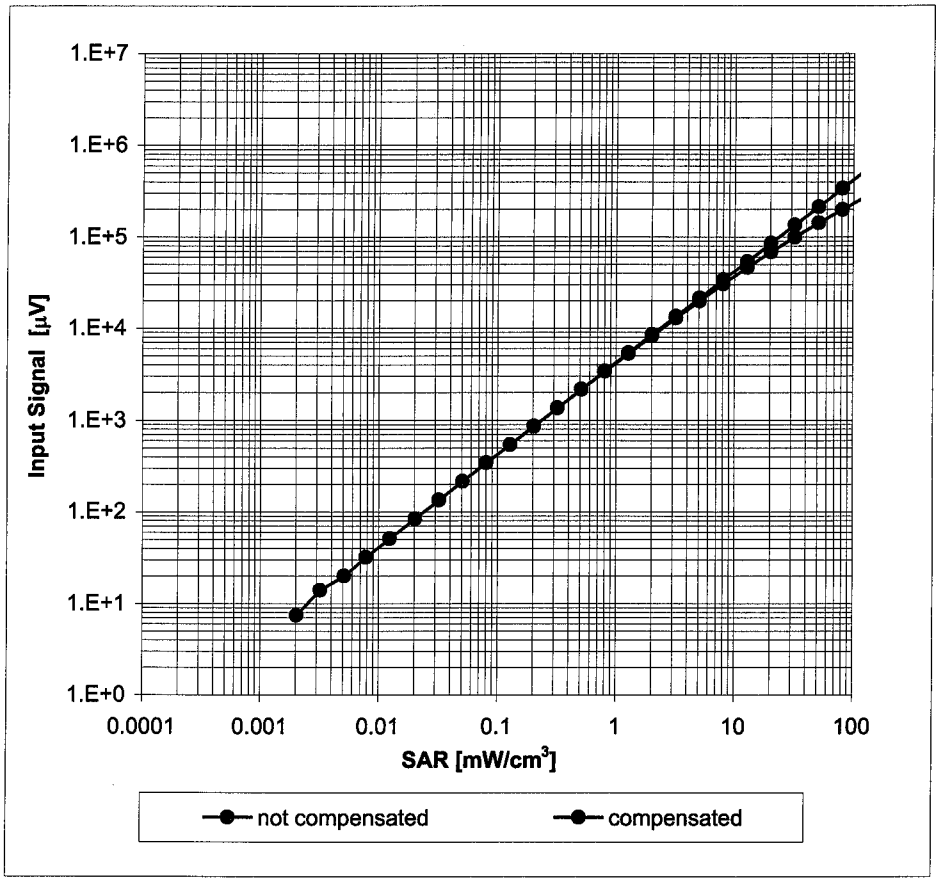


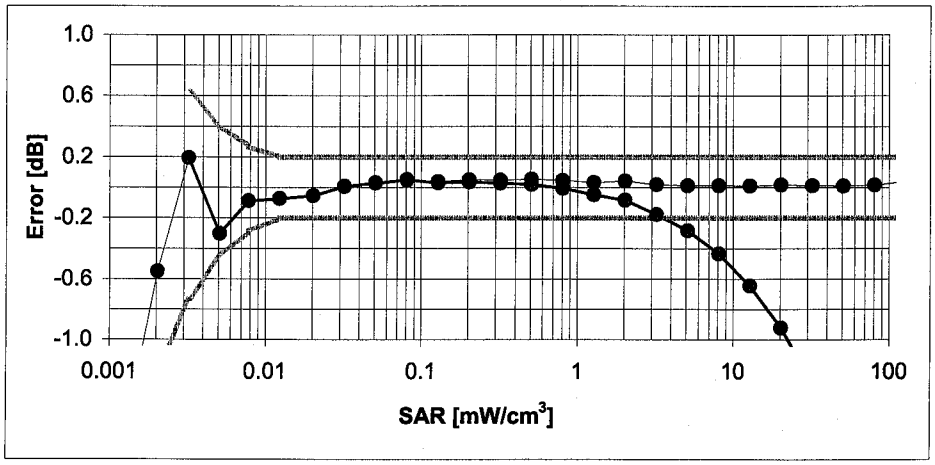


Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

Dynamic Range f(SAR_{head})

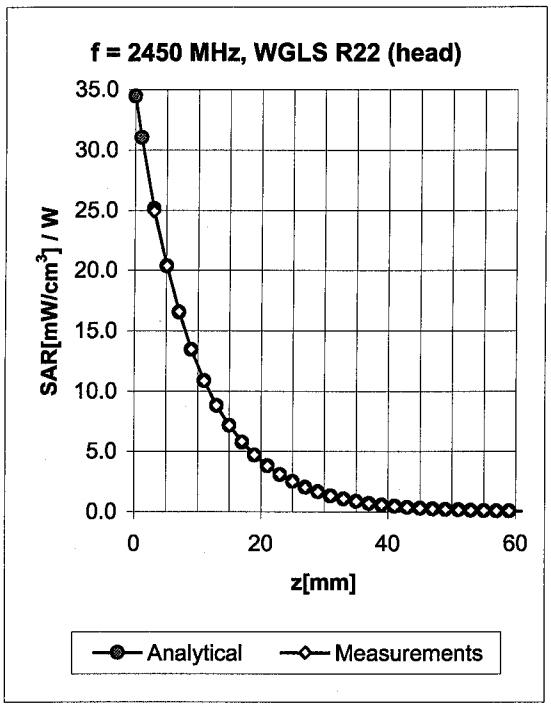
(Waveguide R22, f = 1800 MHz)

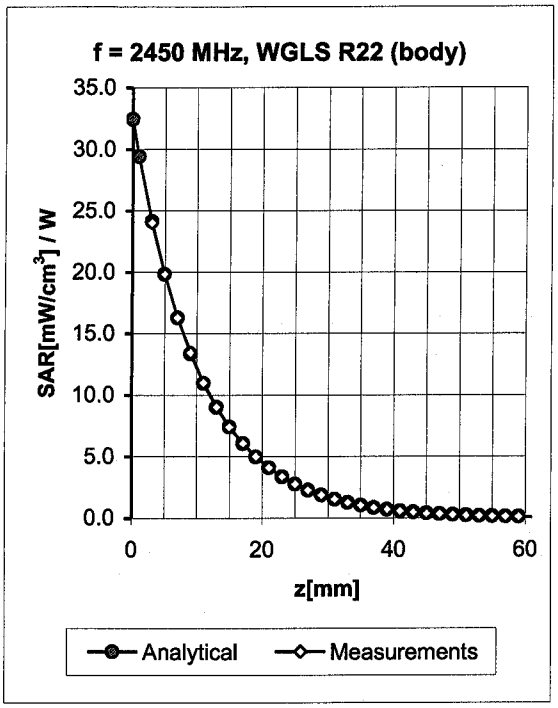




Uncertainty of Linearity Assessment: ± 0.6% (k=2)

Conversion Factor Assessment



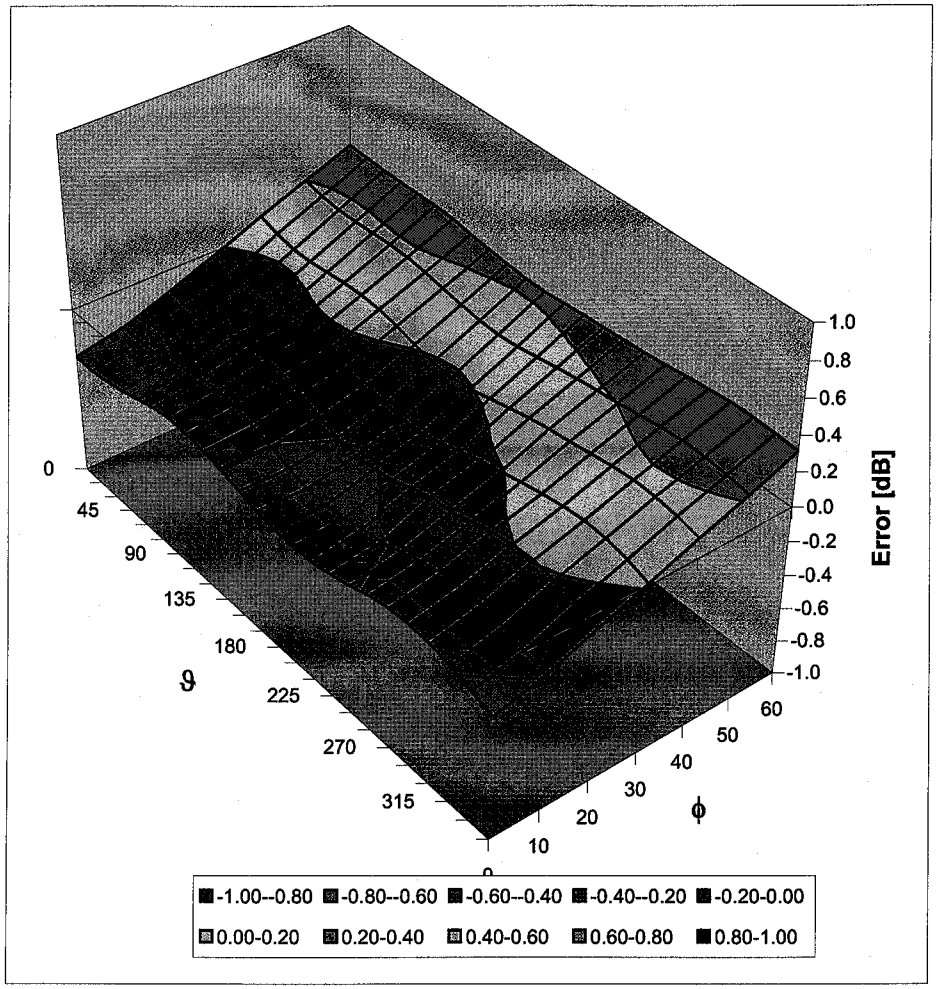


f [MHz]	Validity [MHz][C]	TSL	Permittivity	Conductivity	Alpha	Depth	ConvF Uncertainty
2450	± 50 / ± 100	Head	39.2 ± 5%	1.80 ± 5%	0.33	1.00	8.00 ± 11.8% (k=2)
2450	± 50 / ± 100	Body	52.7 ± 5%	1.95 ± 5%	0.33	1.00	7.89 ± 11.8% (k=2)
2600	± 50 / ± 100	Body	52.5 ± 5%	2.16 ± 5%	0.29	1.00	7.76 ± 11.8% (k=2)

[C] **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.**

Deviation from Isotropy in HSL

Error (ϕ, ϑ), f = 900 MHz



Uncertainty of Spherical Isotropy Assessment: ± 2.6% (k=2)

Appendix 2. Measurement Methods

A.2.1. Evaluation Procedure

The Specific Absorption Rate (SAR) evaluation was performed in the following manner:

a) (i) The evaluation was performed in an applicable area of the phantom depending on the type of device being tested. For devices worn about the ear during normal operation, both the left and right ear positions were evaluated at the centre frequency of the band at maximum power. The side, which produced the greatest SAR, determined which side of the phantom would be used for the entire evaluation. The positioning of the head worn device relative to the phantom was dictated by the test specification identified in section 3.1 of this report.

   (ii) For body worn devices or devices which can be operated within 20 cm of the body, the flat section of the phantom was used. The type of device being evaluated dictated the distance of the EUT to the outer surface of the phantom flat section.

b) The SAR was determined by a pre-defined procedure within the DASY4 software. The exposed region of the phantom was scanned near the inner surface with a grid spacing of 20mm x 20mm or appropriate resolution.

c) A 7x7x7 matrix was performed around the greatest spatial SAR distribution found during the area scan of the applicable exposed region. SAR values were then calculated using a 3-D spline interpolation algorithm and averaged over spatial volumes of 1 and 10 grams.

d) If the EUT had any appreciable drift over the course of the evaluation, then the EUT was re-evaluated. Any unusual anomalies over the course of the test also warranted a re-evaluation.

Test of: Datalogic S.p.A
Skorpio

To: OET Bulletin 65 supplement C

A.2.2. Specific Absorption Rate (SAR) Measurements to OET Bulletin 65 Supplement C: (2001-01)

Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields

SAR measurements were performed in accordance with Appendix D of the standard FCC OET Bulletin 65 Supplement C: 2001, against appropriate limits for each measurement position in accordance with the standard.

The test was performed in a shielded enclosure with the temperature controlled to remain between +18.0ºC and +25.0ºC. The tissue equivalent material fluid temperature was controlled to give a maximum variation of ± 2.0ºC

Prior to any SAR measurements on the EUT, system validation and material dielectric property measurements were conducted. In the absence of a detailed procedure within the specification, system validation and material dielectric property measurements were performed in accordance with Appendix C and Appendix D of FCC OET Bulletin 65 Supplement C: 2001.

Following the successful system validation and material dielectric property measurements, a SAR versus time sweep shall be performed within 10 mm of the phantom inner surface. If the EUT power output is stable after three minutes then the measurement probe will perform a coarse surface level scan at each test position in order to ascertain the location of the maximum local SAR level. Once this area had been established, a 7x7x7 cube of 343 points (5 mm spacing in each axis ≈ 27g) will be centred at the area of concern. Extrapolation and interpolation will then be carried out on the 27g of tissue and the highest averaged SAR over a 10g cube determined.

Once the maximum interpolated SAR measurement is complete; the coarse scan is visually assessed to check for secondary peaks within 50% of the maximum SAR level. If there are any further SAR measurements required, extra 7x7x7 cubes shall be centred on each of these extra local SAR maxima.

At the end of each position test case a second time sweep shall be performed to check whether the EUT has remained stable throughout the test.

Appendix 3. SAR Distribution Scans

This appendix contains SAR distribution scans which are included in the total number of pages for this report.

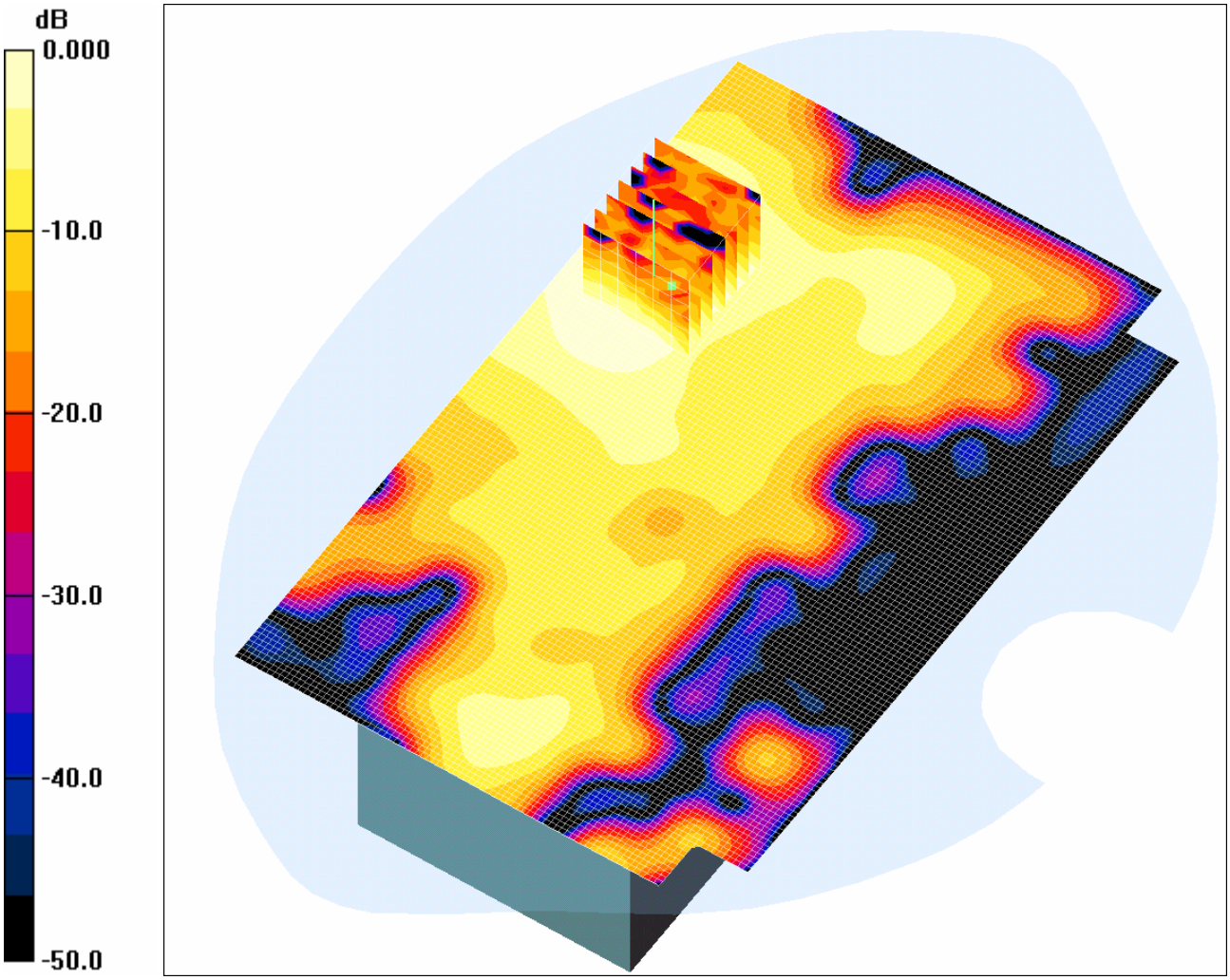
Scan Reference Number	Title
SCN/48655JD09A/001	Front Of EUT Facing Phantom WiFi 802_11b Main Antenna CH6
SCN/48655JD09A/002	Front Of EUT Facing Phantom WiFi 802_11b Auxiliary Antenna CH6
SCN/48655JD09A/003	Rear Of EUT Facing Phantom WiFi 802_11b Main Antenna CH6
SCN/48655JD09A/004	Rear Of EUT Facing Phantom WiFi 802_11b Main Antenna CH1
SCN/48655JD09A/005	Rear Of EUT Facing Phantom WiFi 802_11b Main Antenna CH11
SCN/48655JD09A/006	Front Of EUT Facing Phantom WiFi 802_11g Main Antenna CH6
SCN/48655JD09A/007	Front Of EUT Facing Phantom WiFi 802_11g Auxiliary Antenna CH6
SCN/48655JD09A/008	Rear Of EUT Facing Phantom WiFi 802_11g Main Antenna CH6
SCN/48655JD09A/009	Rear Of EUT Facing Phantom WiFi 802_11g Main Antenna CH1
SCN/48655JD09A/010	Rear Of EUT Facing Phantom WiFi 802_11g Main Antenna CH11
SCN/48655JD09A/011	System Performance Check 2450 MHz Body 04_04_07

Test of: Datalogic S.p.A
Skorpio

To: OET Bulletin 65 supplement C

---

001 Front Of EUT Facing Phantom WiFi 802.11b Main Antenna CH6
DUT: DATALOGIC; Type: Skorpio; Serial: D07P00000



0 dB = 0.017mW/g

Communication System: WLAN; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium: 2450 MHz MSL Medium parameters used (interpolated): f = 2437 MHz; σ = 2.03 mho/m; ε_r = 53.1; ρ = 1000 kg/m^3 Phantom section: Flat Section
DASY4 Configuration:
- Probe: EX3DV3 - SN3508add; ConvF(7.89, 7.89, 7.89); Calibrated: 16/11/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn394; Calibrated: 19/05/2006
- Phantom: SAM 12b; Type: SAM 4.0; Serial: TP:1207
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

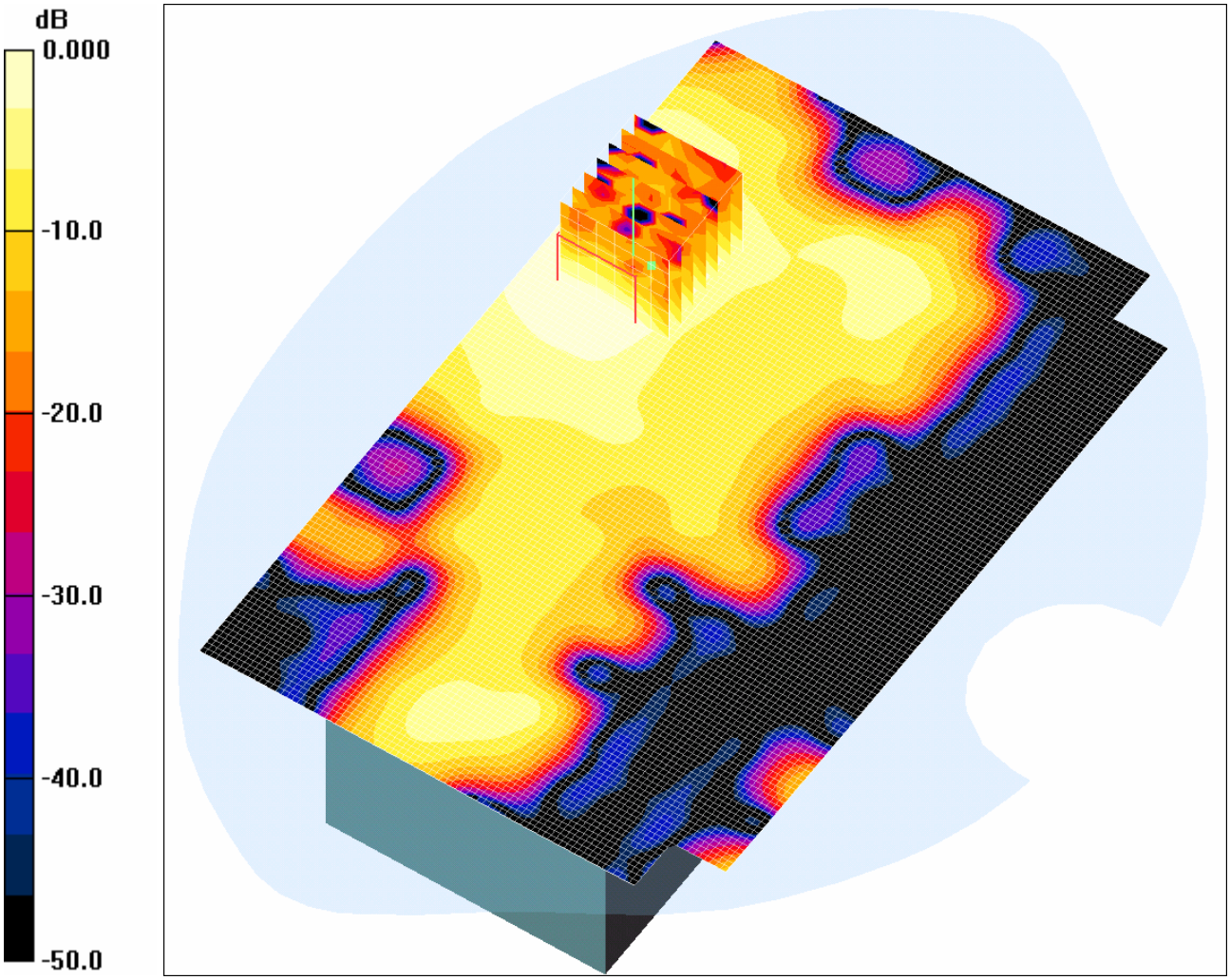
Front Of EUT Facing Phantom WiFi 802.11b Main Antenna- Middle/Area Scan (91x141x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.018 mW/g
Front Of EUT Facing Phantom WiFi 802.11b Main Antenna- Middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0.972 V/m; Power Drift = 1.19 dB
Peak SAR (extrapolated) = 0.027 W/kg
SAR(1 g) = 0.015 mW/g; SAR(10 g) = 0.00786 mW/g Maximum value of SAR (measured) = 0.017 mW/g

Test of: Datalogic S.p.A
Skorpio

To: OET Bulletin 65 supplement C

---

002 Front Of EUT Facing Phantom WiFi 802.11b Auxillary Antenna CH6
DUT: DATALOGIC; Type: Skorpio; Serial: D07P00000

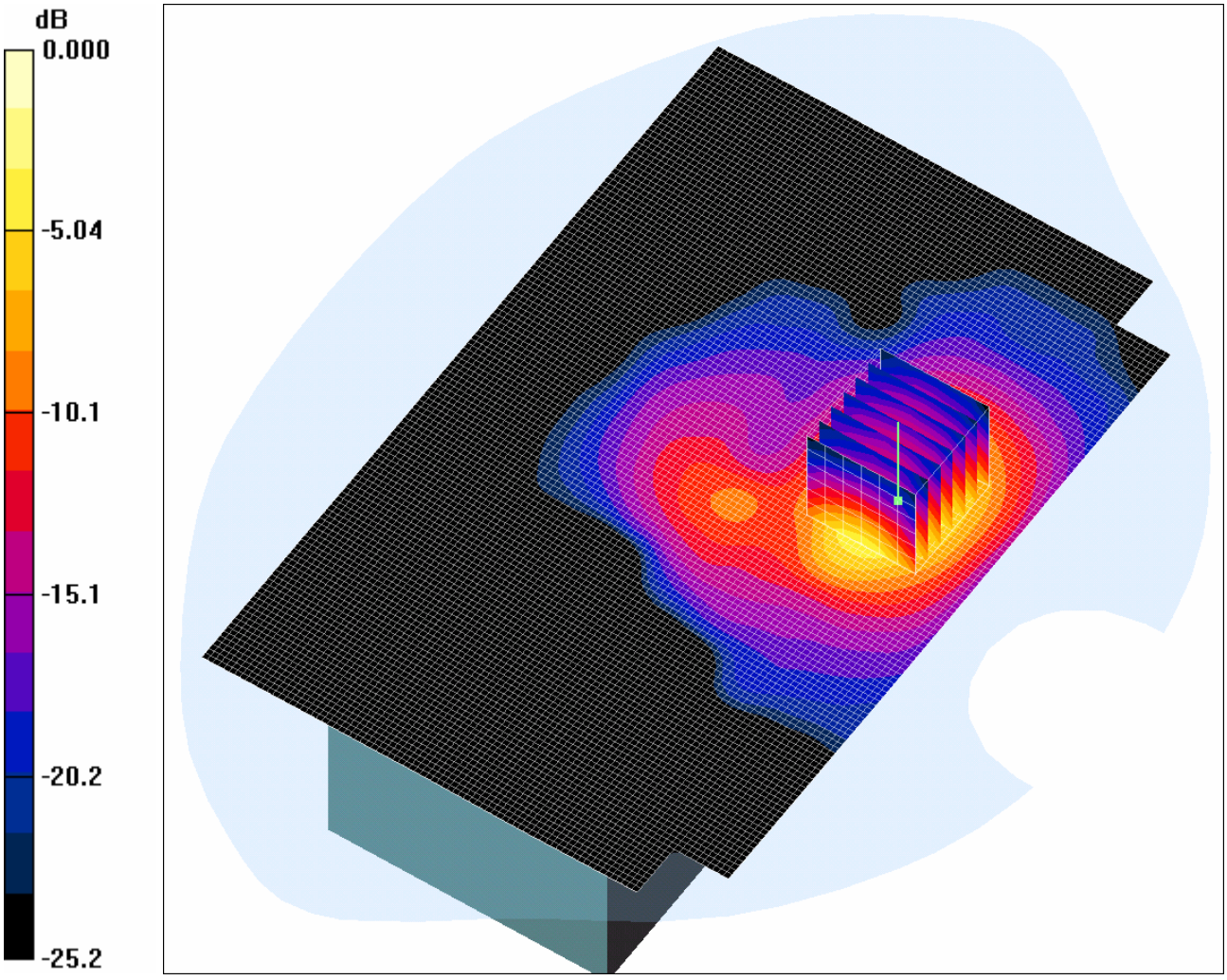


0 dB = 0.017mW/g

Communication System: WLAN; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium: 2450 MHz MSL Medium parameters used (interpolated): f = 2437 MHz; σ = 2.03 mho/m; ε_r = 53.1; ρ = 1000 kg/m^3 Phantom section: Flat Section
DASY4 Configuration:
- Probe: EX3DV3 - SN3508add; ConvF(7.89, 7.89, 7.89); Calibrated: 16/11/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn394; Calibrated: 19/05/2006
- Phantom: SAM 12b; Type: SAM 4.0; Serial: TP:1207
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Front Of EUT Facing Phantom WiFi 802.11b Auxillary Antenna- Middle/Area Scan (91x141x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.017 mW/g
Front Of EUT Facing Phantom WiFi 802.11b Auxillary Antenna- Middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.02 V/m; Power Drift = 1.65 dB
Peak SAR (extrapolated) = 0.027 W/kg
SAR(1 g) = 0.015 mW/g; SAR(10 g) = 0.00754 mW/g Maximum value of SAR (measured) = 0.017 mW/g

003 Rear Of EUT Facing Phantom WiFi 802.11b Main Antenna CH6
DUT: DATALOGIC; Type: Skorpio; Serial: D07P00000



0 dB = 0.315mW/g

Communication System: WLAN; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium: 2450 MHz MSL Medium parameters used (interpolated): f = 2437 MHz; σ = 2.03 mho/m; ε_r = 53.1; ρ = 1000 kg/m^3 Phantom section: Flat Section
DASY4 Configuration:
- Probe: EX3DV3 - SN3508add; ConvF(7.89, 7.89, 7.89); Calibrated: 16/11/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn394; Calibrated: 19/05/2006
- Phantom: SAM 12b; Type: SAM 4.0; Serial: TP:1207
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

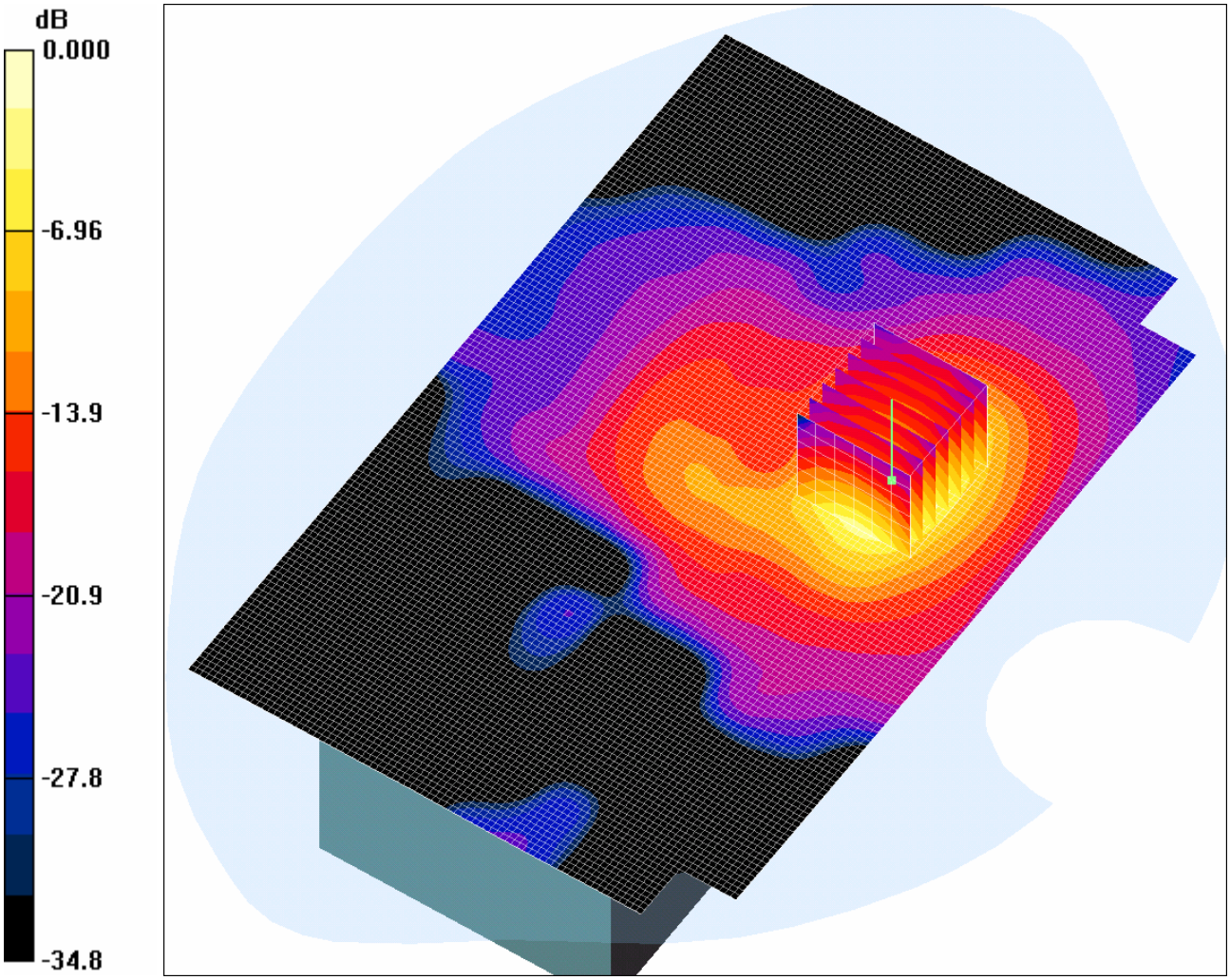
Rear Of EUT Facing Phantom WiFi 802.11b Main Antenna- Middle/Area Scan (91x141x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.317 mW/g
Rear Of EUT Facing Phantom WiFi 802.11b Main Antenna- Middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.97 V/m; Power Drift = 0.363 dB
Peak SAR (extrapolated) = 0.548 W/kg
SAR(1 g) = 0.273 mW/g; SAR(10 g) = 0.124 mW/g Maximum value of SAR (measured) = 0.315 mW/g

Test of: Datalogic S.p.A
Skorpio

To: OET Bulletin 65 supplement C

---

004 Rear Of EUT Facing Phantom WiFi 802.11b Main Antenna CH1
DUT: DATALOGIC; Type: Skorpio; Serial: D07P00000



0 dB = 0.471mW/g

Communication System: WLAN; Frequency: 2412 MHz;Duty Cycle: 1:1
Medium: 2450 MHz MSL Medium parameters used (interpolated): f = 2412 MHz; σ = 1.99 mho/m; ε_r = 53.2; ρ = 1000 kg/m^3 Phantom section: Flat Section
DASY4 Configuration:
- Probe: EX3DV3 - SN3508add; ConvF(7.89, 7.89, 7.89); Calibrated: 16/11/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn394; Calibrated: 19/05/2006
- Phantom: SAM 12b; Type: SAM 4.0; Serial: TP:1207
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

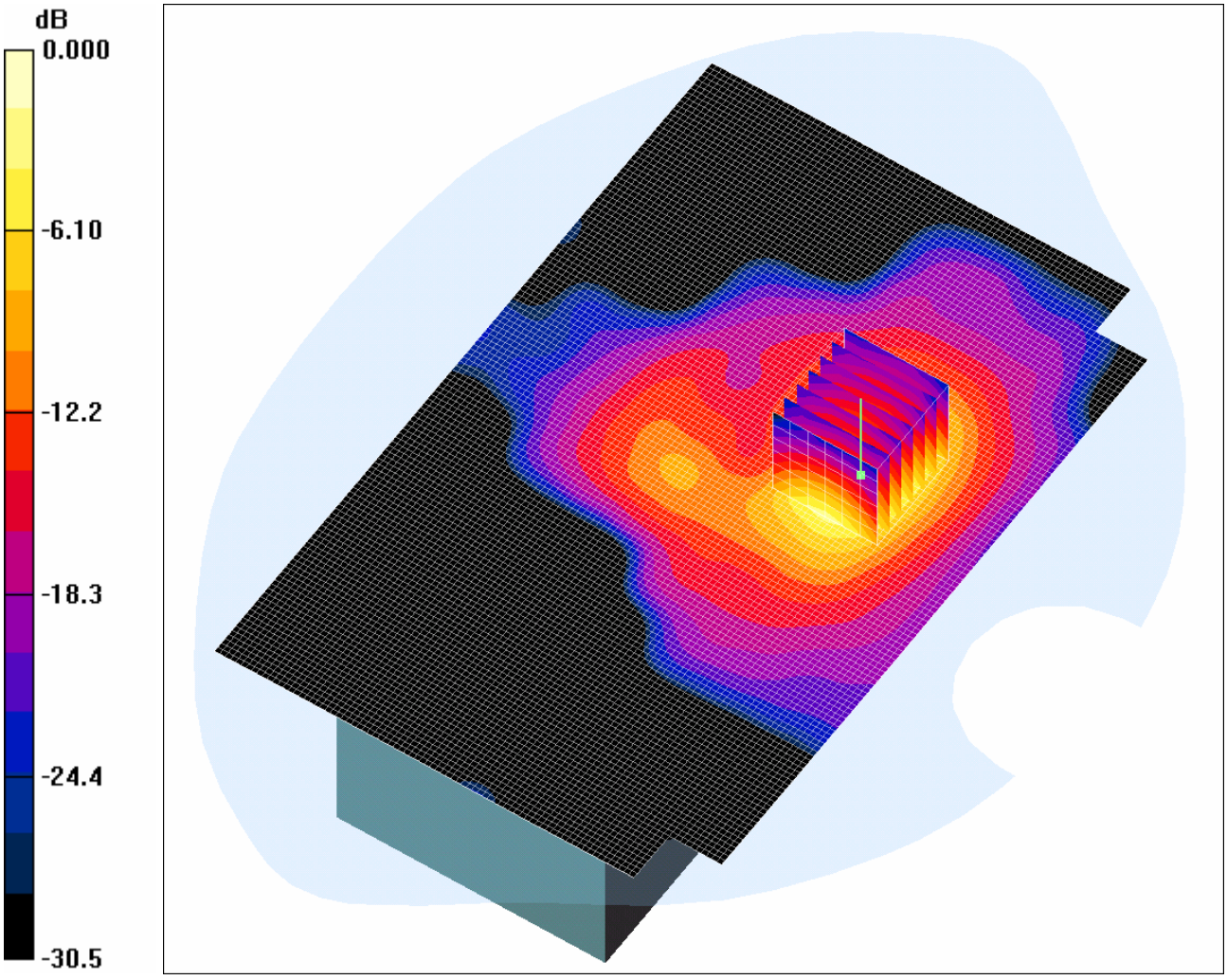
Rear Of EUT Facing Phantom WiFi 802.11b Main Antenna- Low/Area Scan (91x141x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.493 mW/g
Rear Of EUT Facing Phantom WiFi 802.11b Main Antenna- Low/Zoom Scan (7x7x7) (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.41 V/m; Power Drift = 0.180 dB
Peak SAR (extrapolated) = 0.841 W/kg
SAR(1 g) = 0.412 mW/g; SAR(10 g) = 0.185 mW/g Maximum value of SAR (measured) = 0.471 mW/g

Test of: Datalogic S.p.A
Skorpio

To: OET Bulletin 65 supplement C

---

005 Rear Of EUT Facing Phantom WiFi 802.11b Main Antenna CH11
DUT: DATALOGIC; Type: Skorpio; Serial: D07P00000



0 dB = 0.270mW/g

Communication System: WLAN; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium: 2450 MHz MSL Medium parameters used (interpolated): f = 2462 MHz; σ = 2.06 mho/m; ε_r = 53.1; ρ = 1000 kg/m^3 Phantom section: Flat Section
DASY4 Configuration:
- Probe: EX3DV3 - SN3508add; ConvF(7.89, 7.89, 7.89); Calibrated: 16/11/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn394; Calibrated: 19/05/2006
- Phantom: SAM 12b; Type: SAM 4.0; Serial: TP:1207
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

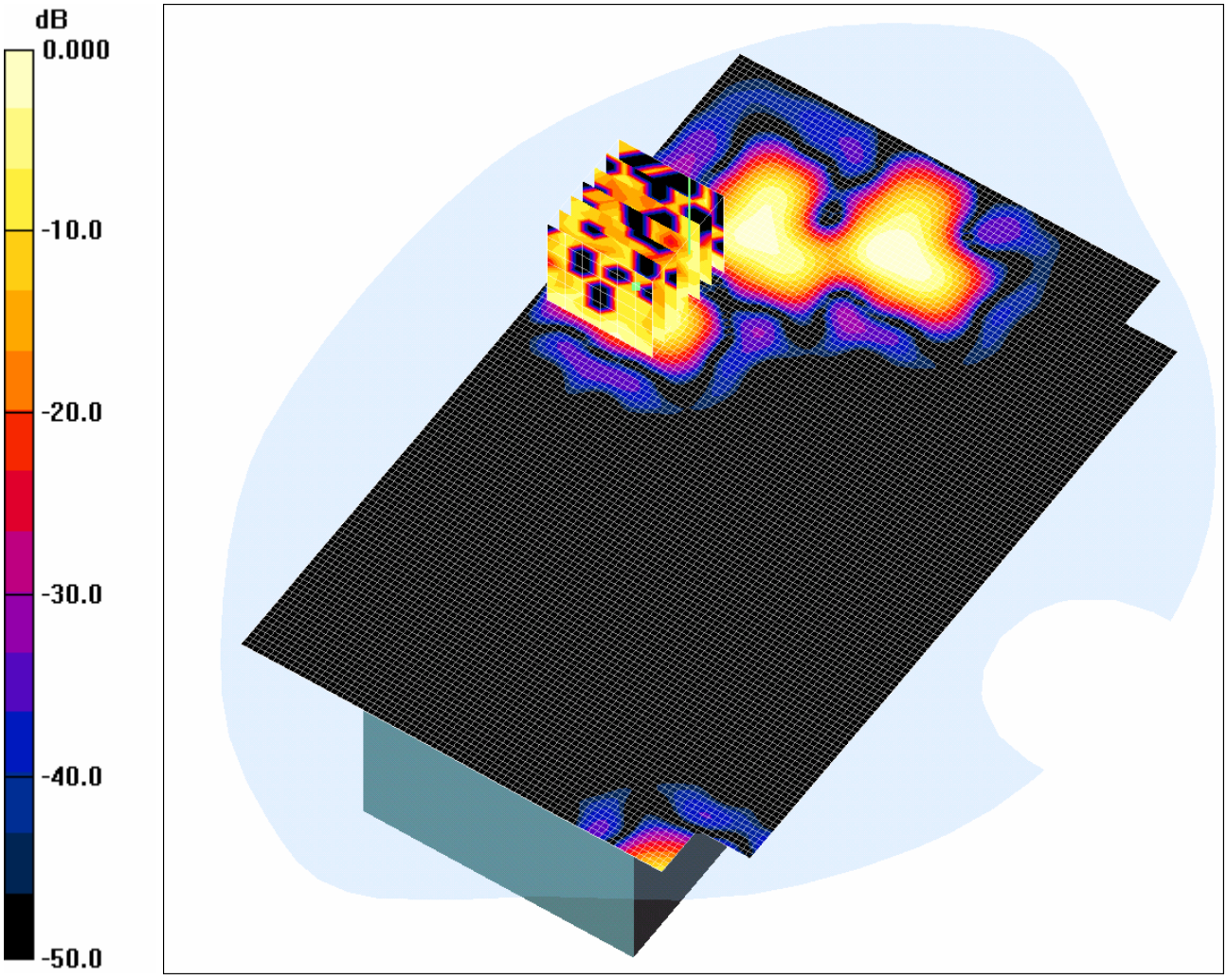
Rear Of EUT Facing Phantom WiFi 802.11b Main Antenna- High/Area Scan (91x141x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.286 mW/g
Rear Of EUT Facing Phantom WiFi 802.11b Main Antenna- High/Zoom Scan (7x7x7) (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.61 V/m; Power Drift = 0.190 dB
Peak SAR (extrapolated) = 0.479 W/kg
SAR(1 g) = 0.235 mW/g; SAR(10 g) = 0.106 mW/g Maximum value of SAR (measured) = 0.270 mW/g

Test of: Datalogic S.p.A
Skorpio

To: OET Bulletin 65 supplement C

---

006 Front Of EUT Facing Phantom WiFi 802.11g Main Antenna CH6
DUT: DATALOGIC; Type: Skorpio; Serial: D07P00000



0 dB = 0.003mW/g

Communication System: WLAN; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium: 2450 MHz MSL Medium parameters used (interpolated): f = 2437 MHz; σ = 2.03 mho/m; ε_r = 53.1; ρ = 1000 kg/m^3 Phantom section: Flat Section
DASY4 Configuration:
- Probe: EX3DV3 - SN3508add; ConvF(7.89, 7.89, 7.89); Calibrated: 16/11/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn394; Calibrated: 19/05/2006
- Phantom: SAM 12b; Type: SAM 4.0; Serial: TP:1207
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

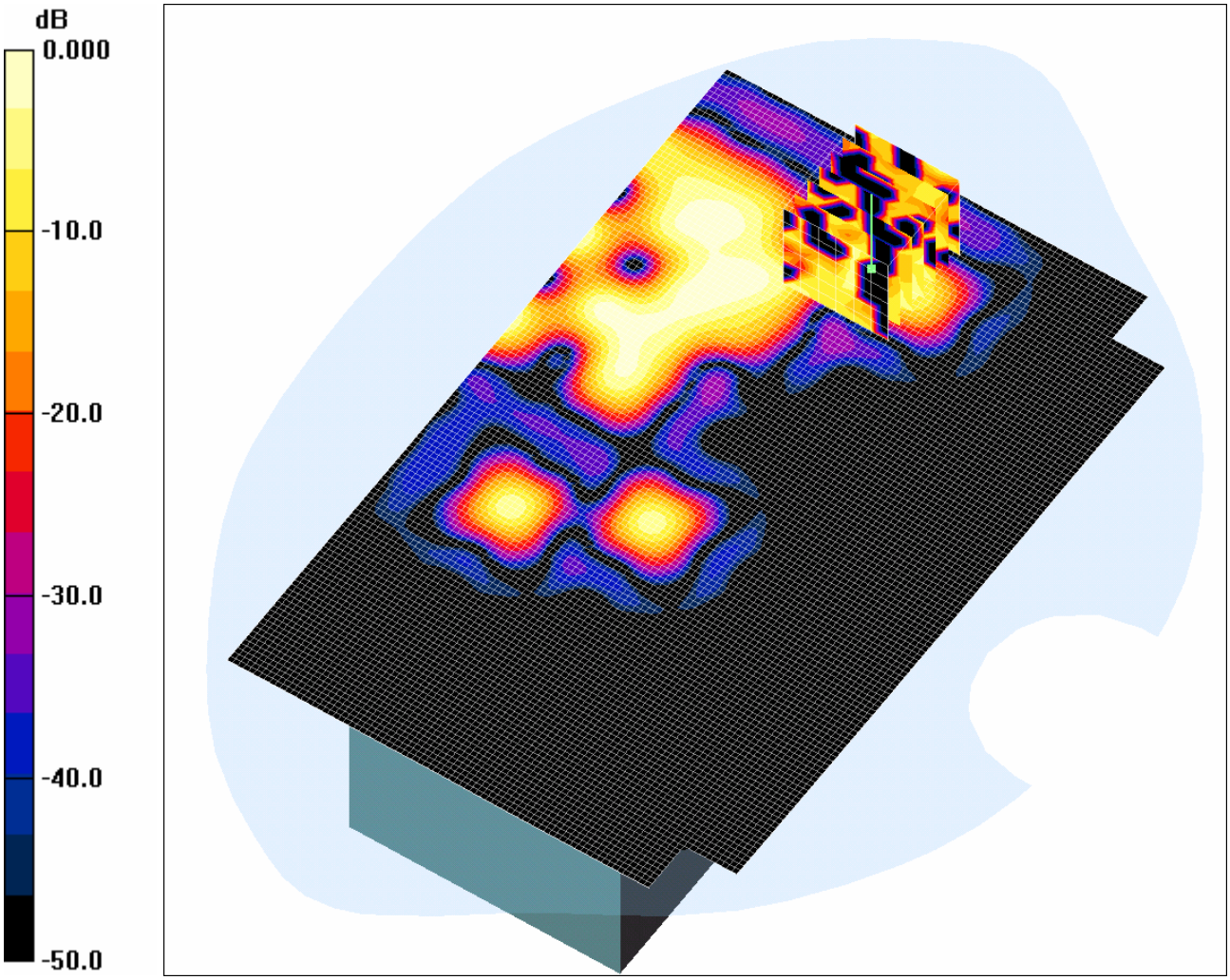
Front Of EUT Facing Phantom WiFi 802.11g Main Antenna- Middle/Area Scan (91x141x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.005 mW/g
Front Of EUT Facing Phantom WiFi 802.11g Main Antenna- Middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0.565 V/m; Power Drift = 3.54 dB
Peak SAR (extrapolated) = 0.013 W/kg
SAR(1 g) = 0.00268 mW/g; SAR(10 g) = 0.00104 mW/g Maximum value of SAR (measured) = 0.003 mW/g

Test of: Datalogic S.p.A
Skorpio

To: OET Bulletin 65 supplement C

---

007 Front Of EUT Facing Phantom WiFi 802.11g Auxillary Antenna CH6
DUT: DATALOGIC; Type: Skorpio; Serial: D07P00000



0 dB = 0.003mW/g

Communication System: WLAN; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium: 2450 MHz MSL Medium parameters used (interpolated): f = 2437 MHz; σ = 2.03 mho/m; ε_r = 53.1; ρ = 1000 kg/m^3 Phantom section: Flat Section
DASY4 Configuration:
- Probe: EX3DV3 - SN3508add; ConvF(7.89, 7.89, 7.89); Calibrated: 16/11/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn394; Calibrated: 19/05/2006
- Phantom: SAM 12b; Type: SAM 4.0; Serial: TP:1207
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

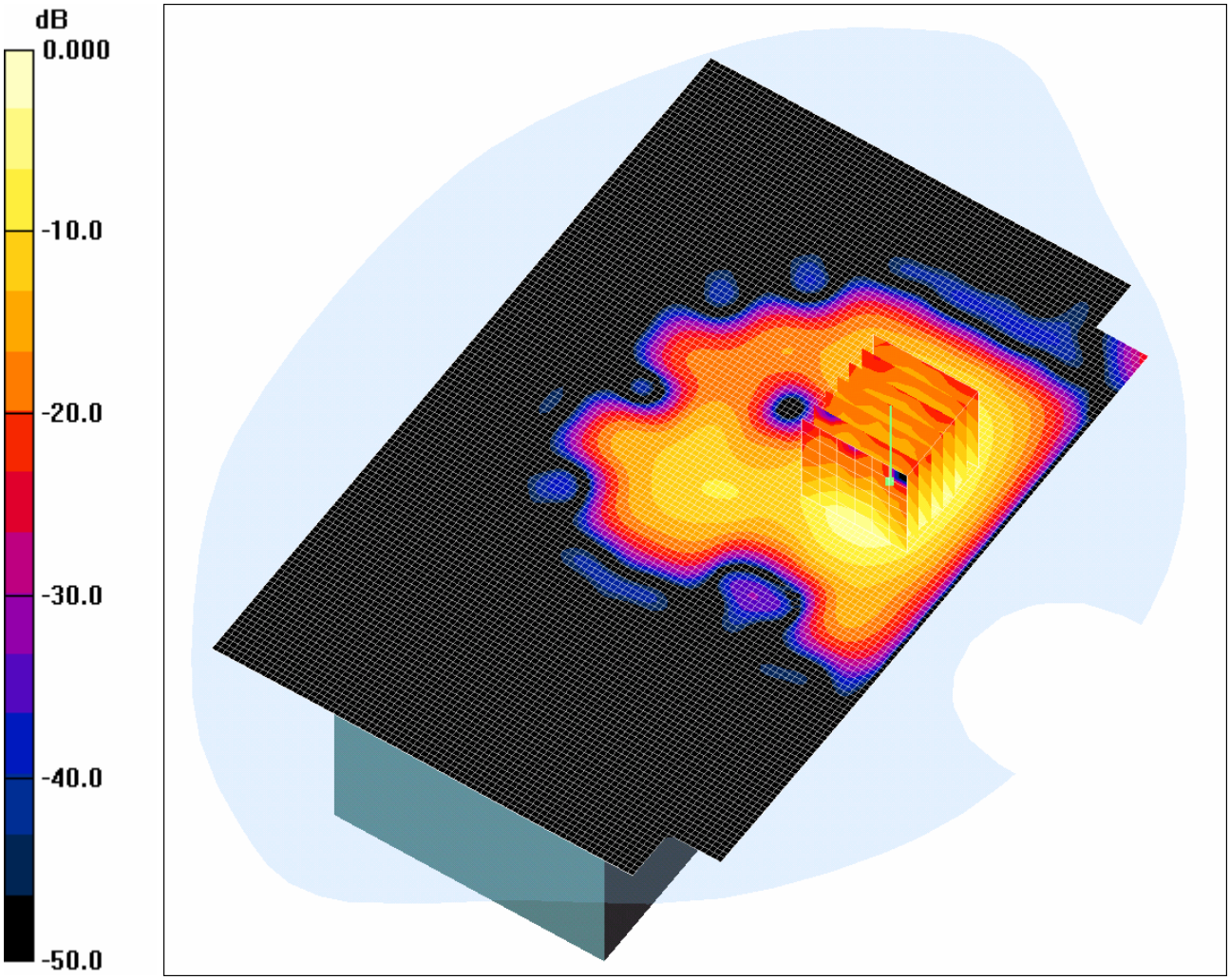
Front Of EUT Facing Phantom WiFi 802.11g Auxillary Antenna- Middle/Area Scan (91x141x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.003 mW/g
Front Of EUT Facing Phantom WiFi 802.11g Auxillary Antenna- Middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0.573 V/m; Power Drift = 2.60 dB
Peak SAR (extrapolated) = 0.005 W/kg
SAR(1 g) = 0.00211 mW/g; SAR(10 g) = 0.000692 mW/g Maximum value of SAR (measured) = 0.003 mW/g

Test of: Datalogic S.p.A
Skorpio

To: OET Bulletin 65 supplement C

---

008 Rear Of EUT Facing Phantom WiFi 802.11g Main Antenna CH6
DUT: DATALOGIC; Type: Skorpio; Serial: D07P00000



0 dB = 0.076mW/g

Communication System: WLAN; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium: 2450 MHz MSL Medium parameters used (interpolated): f = 2437 MHz; σ = 2.03 mho/m; ε_r = 53.1; ρ = 1000 kg/m^3 Phantom section: Flat Section
DASY4 Configuration:
- Probe: EX3DV3 - SN3508add; ConvF(7.89, 7.89, 7.89); Calibrated: 16/11/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn394; Calibrated: 19/05/2006
- Phantom: SAM 12b; Type: SAM 4.0; Serial: TP:1207
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

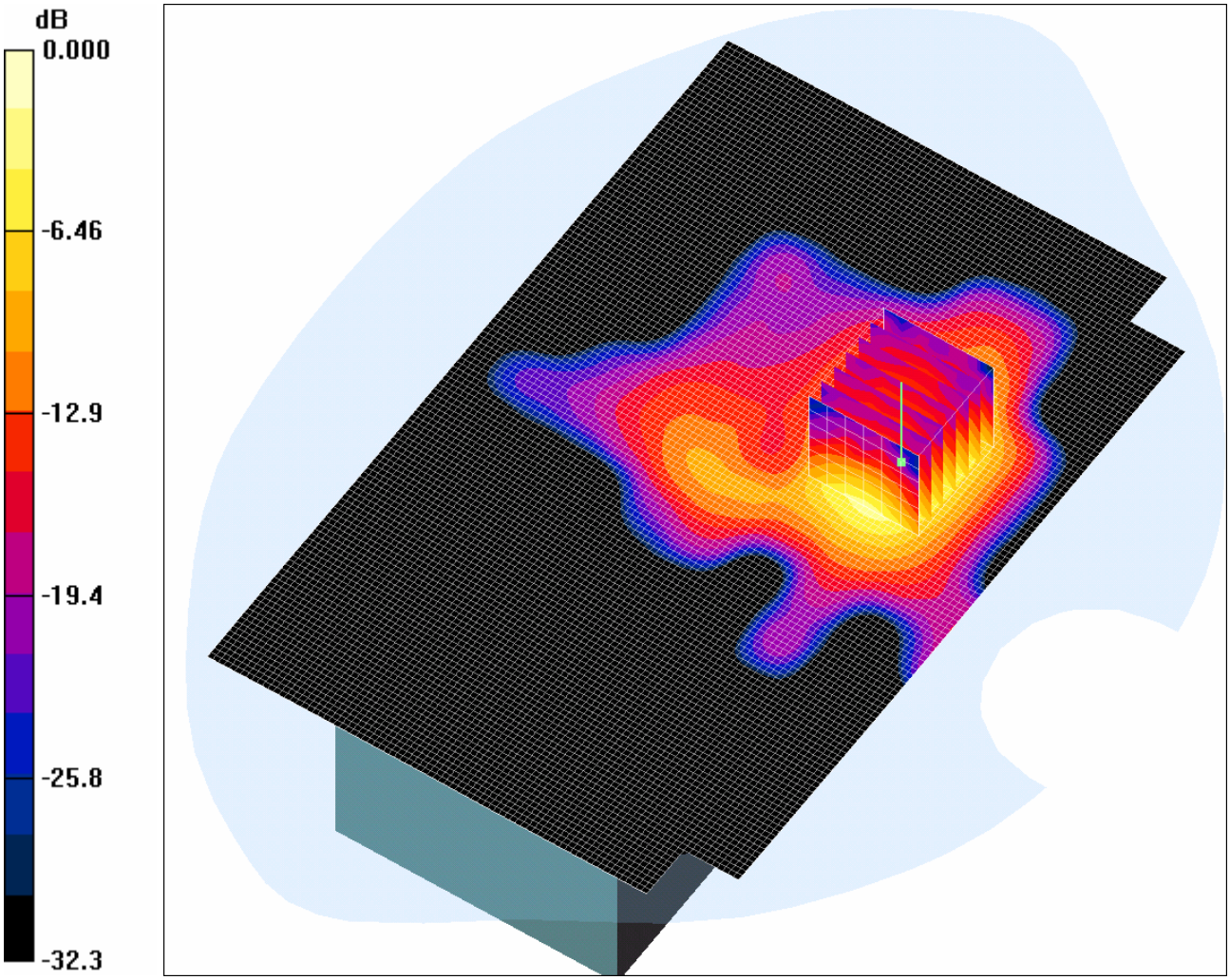
Rear Of EUT Facing Phantom WiFi 802.11g Main Antenna- Middle/Area Scan (91x141x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.079 mW/g
Rear Of EUT Facing Phantom WiFi 802.11g Main Antenna- Middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.93 V/m; Power Drift = 0.184 dB
Peak SAR (extrapolated) = 0.132 W/kg
SAR(1 g) = 0.066 mW/g; SAR(10 g) = 0.030 mW/g Maximum value of SAR (measured) = 0.076 mW/g

Test of: Datalogic S.p.A
Skorpio

To: OET Bulletin 65 supplement C

---

009 Rear Of EUT Facing Phantom WiFi 802.11g Main Antenna CH1
DUT: DATALOGIC; Type: Skorpio; Serial: D07P00000



0 dB = 0.090mW/g

Communication System: WLAN; Frequency: 2412 MHz;Duty Cycle: 1:1
Medium: 2450 MHz MSL Medium parameters used (interpolated): f = 2412 MHz; σ = 1.99 mho/m; ε_r = 53.2; ρ = 1000 kg/m^3 Phantom section: Flat Section
DASY4 Configuration:
- Probe: EX3DV3 - SN3508add; ConvF(7.89, 7.89, 7.89); Calibrated: 16/11/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn394; Calibrated: 19/05/2006
- Phantom: SAM 12b; Type: SAM 4.0; Serial: TP:1207
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

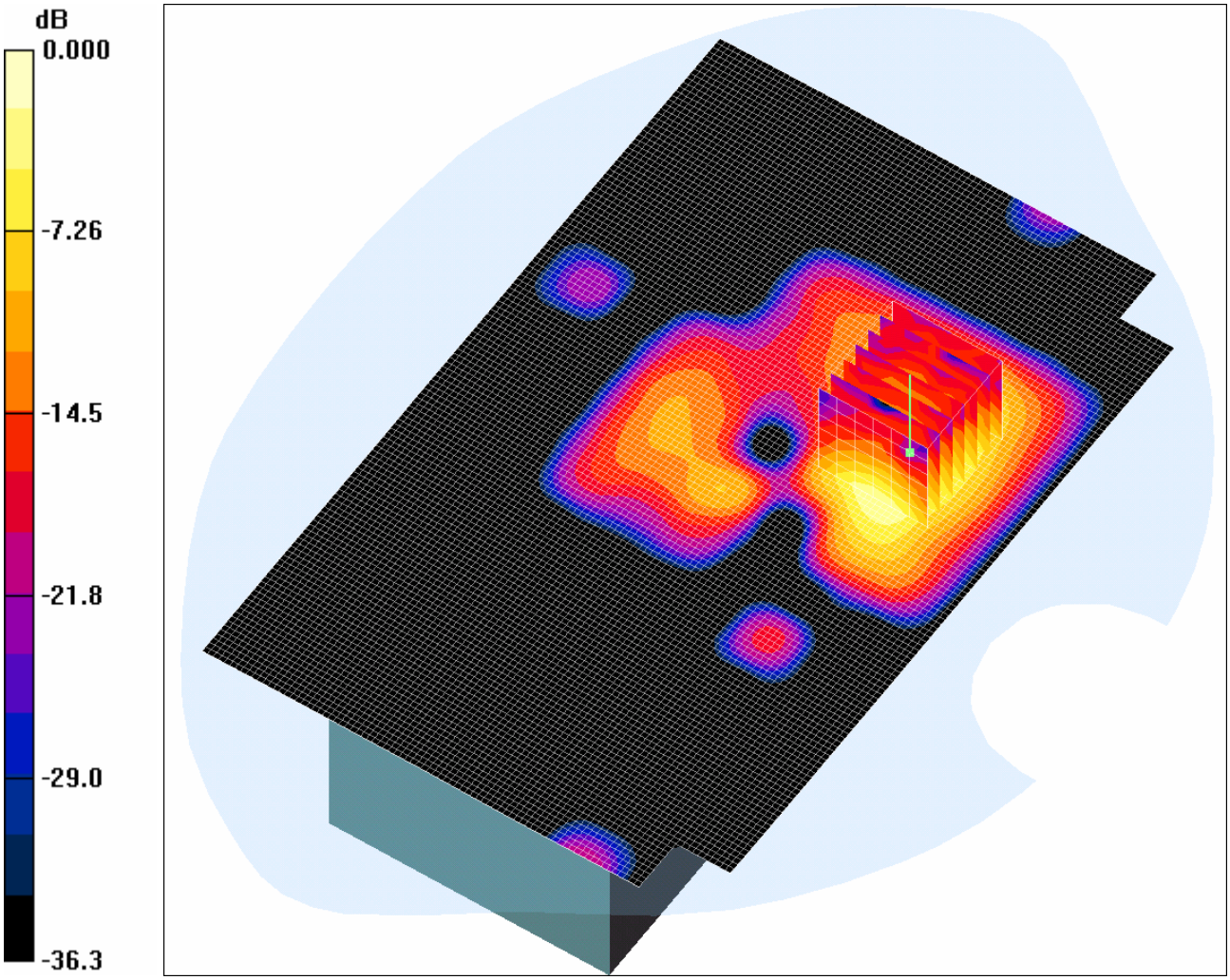
Rear Of EUT Facing Phantom WiFi 802.11g Main Antenna- Low/Area Scan (91x141x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.093 mW/g
Rear Of EUT Facing Phantom WiFi 802.11g Main Antenna- Low/Zoom Scan (7x7x7) (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.12 V/m; Power Drift = -0.312 dB
Peak SAR (extrapolated) = 0.155 W/kg
SAR(1 g) = 0.077 mW/g; SAR(10 g) = 0.035 mW/g Maximum value of SAR (measured) = 0.090 mW/g

Test of: Datalogic S.p.A
Skorpio

To: OET Bulletin 65 supplement C

---

010 Rear Of EUT Facing Phantom WiFi 802.11g Main Antenna CH11
DUT: DATALOGIC; Type: Skorpio; Serial: D07P00000

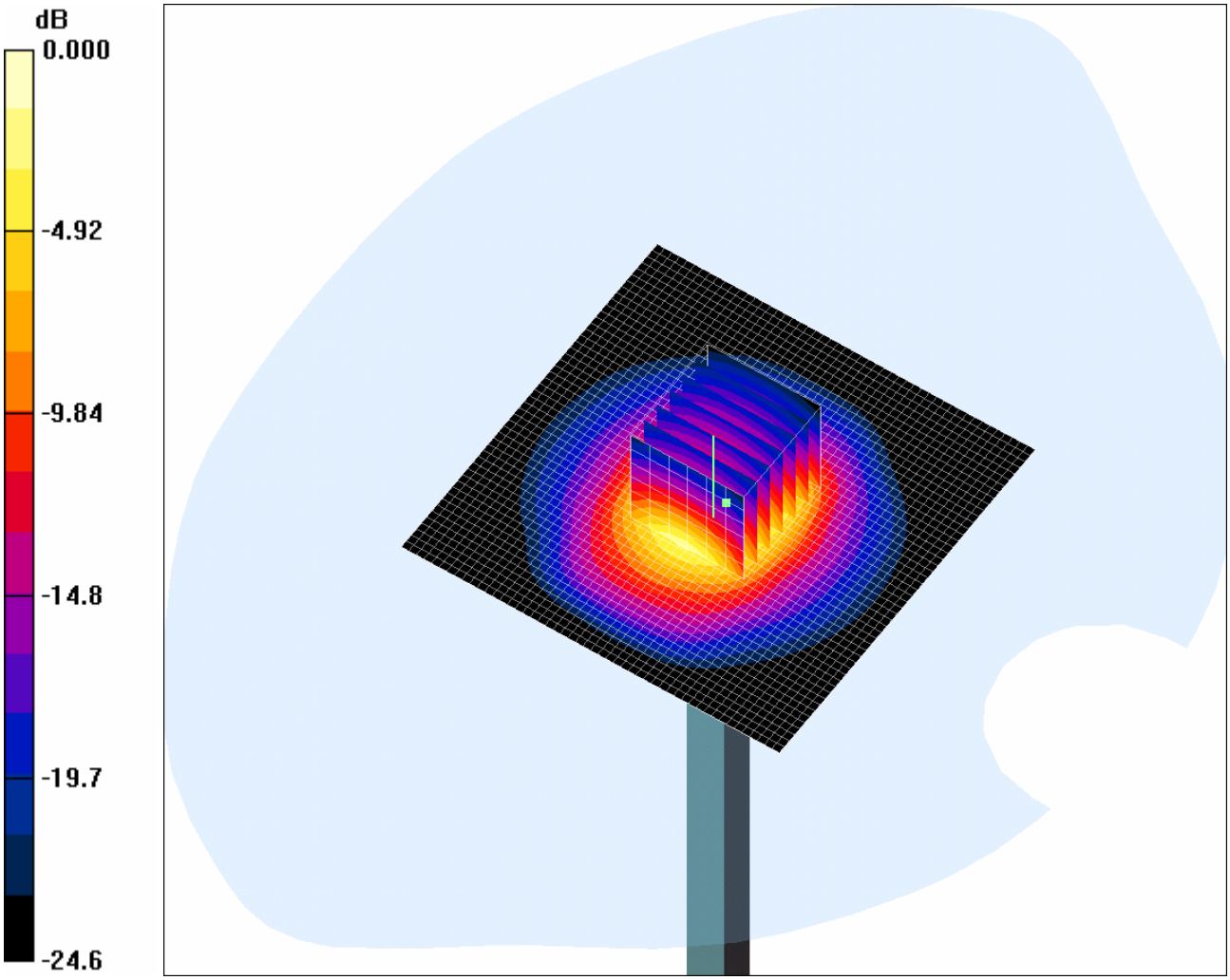


0 dB = 0.063mW/g

Communication System: WLAN; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium: 2450 MHz MSL Medium parameters used (interpolated): f = 2462 MHz; σ = 2.06 mho/m; ε_r = 53.1; ρ = 1000 kg/m^3 Phantom section: Flat Section
DASY4 Configuration:
- Probe: EX3DV3 - SN3508add; ConvF(7.89, 7.89, 7.89); Calibrated: 16/11/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn394; Calibrated: 19/05/2006
- Phantom: SAM 12b; Type: SAM 4.0; Serial: TP:1207
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Rear Of EUT Facing Phantom WiFi 802.11g Main Antenna- High/Area Scan (91x141x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.063 mW/g
Rear Of EUT Facing Phantom WiFi 802.11g Main Antenna- High/Zoom Scan (7x7x7) (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.85 V/m; Power Drift = -0.344 dB
Peak SAR (extrapolated) = 0.112 W/kg
SAR(1 g) = 0.055 mW/g; SAR(10 g) = 0.025 mW/g Maximum value of SAR (measured) = 0.063 mW/g

011 System Performance Check 2450 MHz Body
DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:725



0 dB = 15.0mW/g

Communication System: CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium: 2450 MHz MSL Medium parameters used: f = 2450 MHz; σ = 2.05 mho/m; ε_r = 53.1; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: EX3DV3 - SN3508add; ConvF(7.89, 7.89, 7.89); Calibrated: 16/11/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn394; Calibrated: 19/05/2006
- Phantom: SAM 12b; Type: SAM 4.0; Serial: TP:1207
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172
d=10mm, Pin=250mW/Area Scan (51x51x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 19.2 mW/g
d=10mm, Pin=250mW/Zoom Scan 7x7x7 (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 85.4 V/m; Power Drift = 0.003 dB
Peak SAR (extrapolated) = 29.3 W/kg
SAR(1 g) = 13.4 mW/g; SAR(10 g) = 5.96 mW/g Maximum value of SAR (measured) = 15.0 mW/g