



Attachment 1 – System Validation Plots

Test Laboratory: JAPAN QUALITY ASSURANCE ORGANIZATION

System Validation (Head 1950 MHz)

DUT: Dipole 1950 MHz; Type: D1950V2; Serial: 1033

Communication System: CW; Frequency: 1950 MHz; Duty Cycle: 1:1

Medium: HSL1950 Medium parameters used: $f = 1950$ MHz; $\sigma = 1.4$ mho/m; $\epsilon_r = 39.7$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASYS4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ET3DV6 - SN1679; ConvF(5.06, 5.06, 5.06); Calibrated: 2007/11/15
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn508; Calibrated: 2007/11/07
- Phantom: SAM 1200; Type: QD 000 P40 CA; Serial: 1200
- Measurement SW: DASYS4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Antenna Input Power 250 mW/Area Scan (5x5x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (measured) = 11.2 mW/g

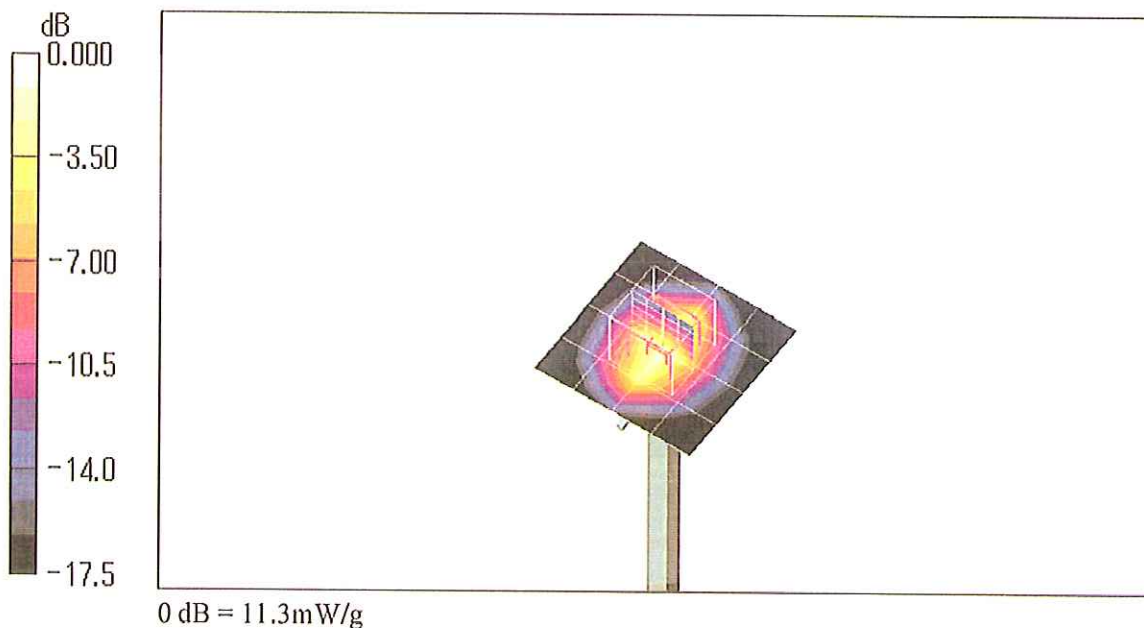
Antenna Input Power 250 mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 94.1 V/m; Power Drift = -0.012 dB

Peak SAR (extrapolated) = 17.7 W/kg

SAR(1 g) = 10 mW/g; SAR(10 g) = 5.26 mW/g

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





Attachment 2 – SAR Test Plots

Test Laboratory: JAPAN QUALITY ASSURANCE ORGANIZATION

Left Head, Cheek/Touch 2ch (1924.9MHz)**DUT: All-in-One Headset; Type: WX-H3050; Serial: ---**

Communication System: DECT; Frequency: 1924.9 MHz; Duty Cycle: 1:25

Medium: HSL1950 Medium parameters used: $f = 1924.9$ MHz; $\sigma = 1.4$ mho/m; $\epsilon_r = 39.7$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Measurement Standard: DAS4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ET3DV6 - SN1679; ConvF(5.06, 5.06, 5.06); Calibrated: 2007/11/15
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn508; Calibrated: 2007/11/07
- Phantom: SAM 1200; Type: QD 000 P40 CA; Serial: 1200
- Measurement SW: DAS4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Cheek/Touch Position/Area Scan (11x6x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.002 mW/g

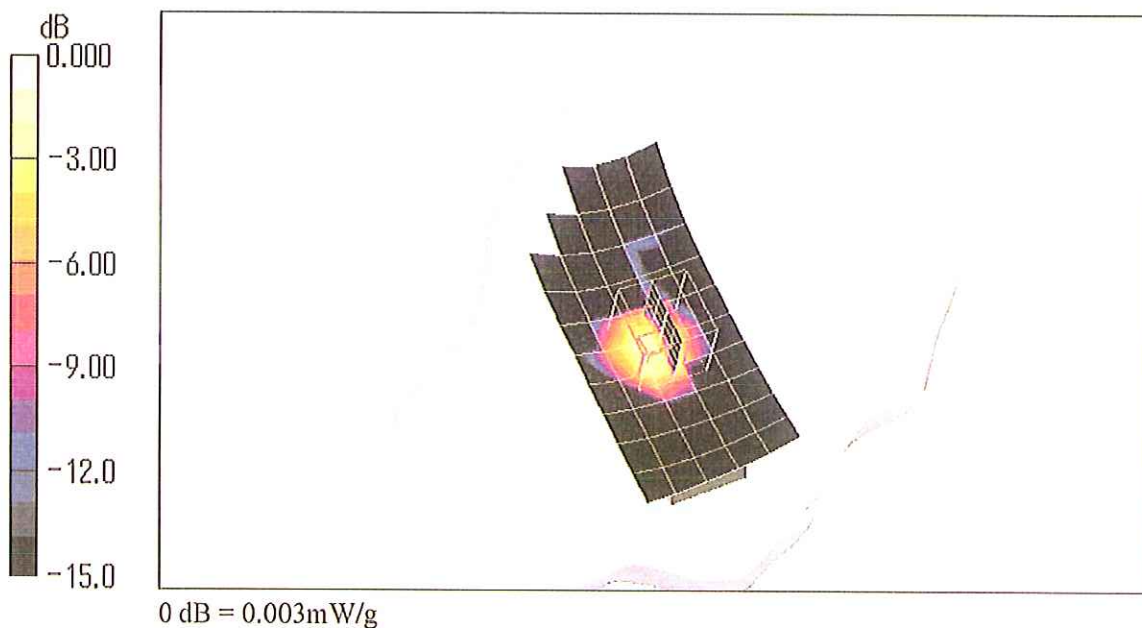
Cheek/Touch Position/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 1.33 V/m; Power Drift = -0.086 dB

Peak SAR (extrapolated) = 0.008 W/kg

SAR(1 g) = 0.00281 mW/g; SAR(10 g) = 0.00116 mW/g

Maximum value of SAR (measured) = 0.003 mW/g



Test Laboratory: JAPAN QUALITY ASSURANCE ORGANIZATION

Left Head, Ear/Tilt 2ch (1924.9MHz)

DUT: All-in-One Headset; Type: WX-H3050; Serial: --

Communication System: DECT; Frequency: 1924.9 MHz; Duty Cycle: 1:25

Medium: HSL1950 Medium parameters used; $f = 1924.9$ MHz; $\sigma = 1.4$ mho/m; $\epsilon_r = 39.7$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Measurement Standard: DASy4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ET3DV6 - SN1679; ConvF(5.06, 5.06, 5.06); Calibrated: 2007/11/15
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn508; Calibrated: 2007/11/07
- Phantom: SAM 1200; Type: QD 000 P40 CA; Serial: 1200
- Measurement SW: DASy4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Ear/Tilt Position/Area Scan (11x6x1): Measurement grid: dx=15mm, dy=15mm

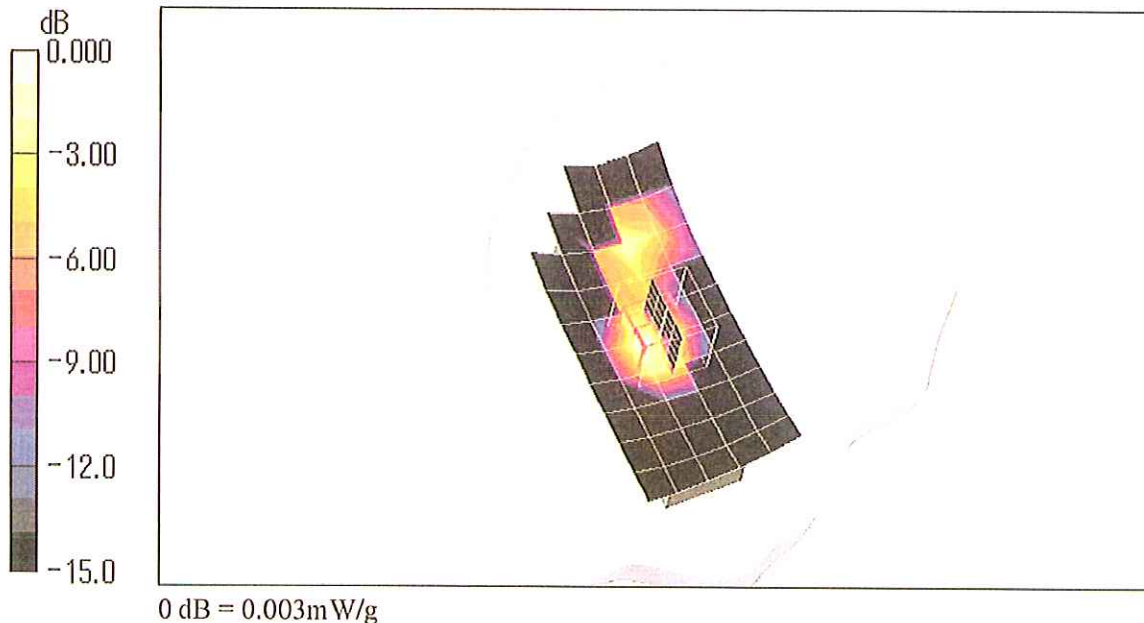
Maximum value of SAR (measured) = 0.003 mW/g

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

Reference Value = 1.16 V/m; Power Drift = 0.010 dB

Peak SAR (extrapolated) = 0.009 W/kg

SAR(1 g) = 0.00273 mW/g; SAR(10 g) = 0.00113 mW/g



Test Laboratory: JAPAN QUALITY ASSURANCE ORGANIZATION

Right Head, Cheek/Touch 4ch (1921.5MHz)

DUT: All-in-One Headset; Type: WX-H3050; Serial: --

Communication System: DECT; Frequency: 1921.5 MHz; Duty Cycle: 1:25

Medium: HSL1950 Medium parameters used: $f = 1921.5$ MHz; $\sigma = 1.4$ mho/m; $\epsilon_r = 39.7$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Measurement Standard: DASy4 (High Precision Assessment)

DASy4 Configuration:

- Probe: ET3DV6 - SN1679; ConvF(5.06, 5.06, 5.06); Calibrated: 2007/11/15
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn508; Calibrated: 2007/11/07
- Phantom: SAM 1200; Type: QD 000 P40 CA; Serial: 1200
- Measurement SW: DASy4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Cheek/Touch Position/Area Scan (11x6x1): Measurement grid: dx=15mm, dy=15mm

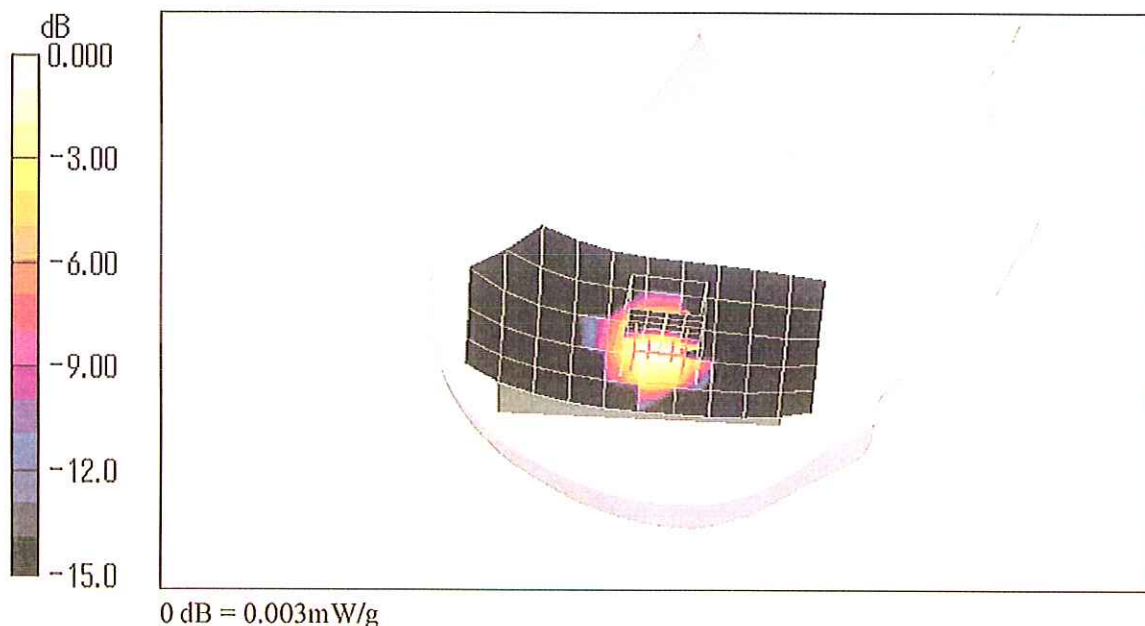
Maximum value of SAR (measured) = 0.003 mW/g

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

Reference Value = 1.37 V/m; Power Drift = 0.024 dB

Peak SAR (extrapolated) = 0.006 W/kg

SAR(1 g) = 0.00313 mW/g; SAR(10 g) = 0.00136 mW/g



Test Laboratory: JAPAN QUALITY ASSURANCE ORGANIZATION

Right Head, Cheek/Touch 4ch (1921.5MHz)

DUT: All-in-One Headset; Type: WX-H3050; Serial: --

Communication System: DECT; Frequency: 1921.5 MHz; Duty Cycle: 1:25

Medium: HSL1950 Medium parameters used: $f = 1921.5 \text{ MHz}$; $\sigma = 1.4 \text{ mho/m}$; $\epsilon_r = 39.7$; $\rho = 1000 \text{ kg/m}^3$

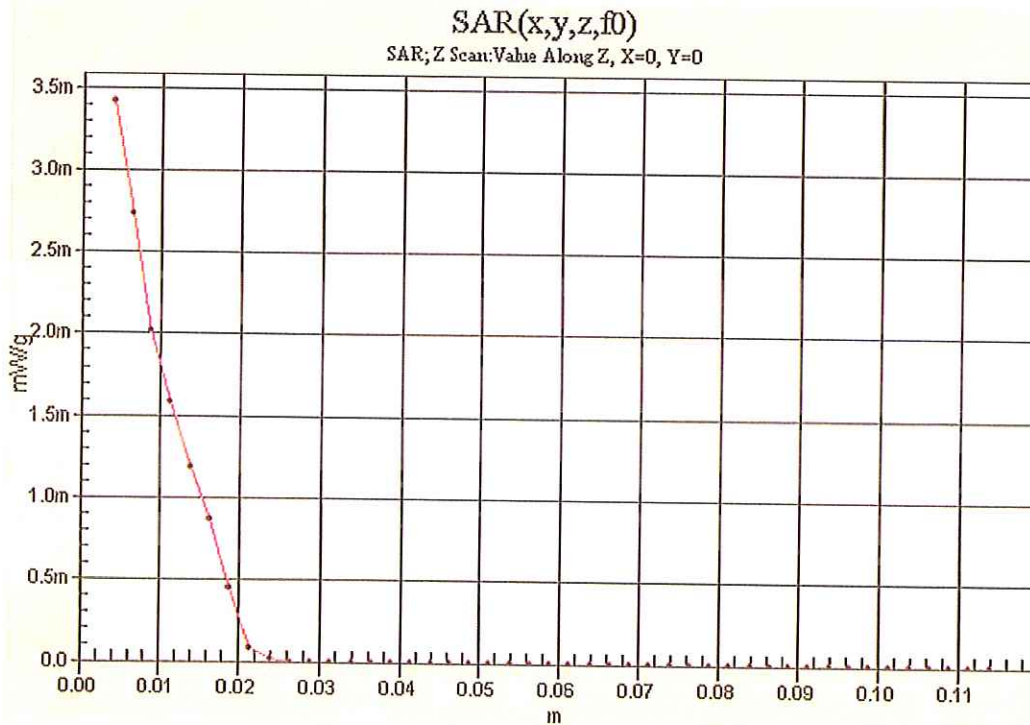
Phantom section: Right Section

Measurement Standard: DAS4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ET3DV6 - SN1679; ConvF(5.06, 5.06, 5.06); Calibrated: 2007/11/15
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn508; Calibrated: 2007/11/07
- Phantom: SAM 1200; Type: QD 000 P40 CA; Serial: 1200
- Measurement SW: DAS4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Cheek/Touch Position/Z Scan (1x1x45): Measurement grid: $dx=20\text{mm}$, $dy=20\text{mm}$, $dz=2.5\text{mm}$
 Maximum value of SAR (measured) = 0.003 mW/g



Test Laboratory: JAPAN QUALITY ASSURANCE ORGANIZATION

Right Head, Cheek/Touch 2ch (1924.9MHz)

DUT: All-in-One Headset; Type: WX-H3050; Serial: --

Communication System: DECT; Frequency: 1924.9 MHz; Duty Cycle: 1:25

Medium: HSL1950 Medium parameters used: $f = 1924.9$ MHz; $\sigma = 1.4$ mho/m; $\epsilon_r = 39.7$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Measurement Standard: DASy4 (High Precision Assessment)

DASy4 Configuration:

- Probe: ET3DV6 - SN1679; ConvF(5.06, 5.06, 5.06); Calibrated: 2007/11/15
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn508; Calibrated: 2007/11/07
- Phantom: SAM 1200; Type: QD 000 P40 CA; Serial: 1200
- Measurement SW: DASy4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Cheek/Touch Position/Area Scan (11x6x1): Measurement grid: dx=15mm, dy=15mm

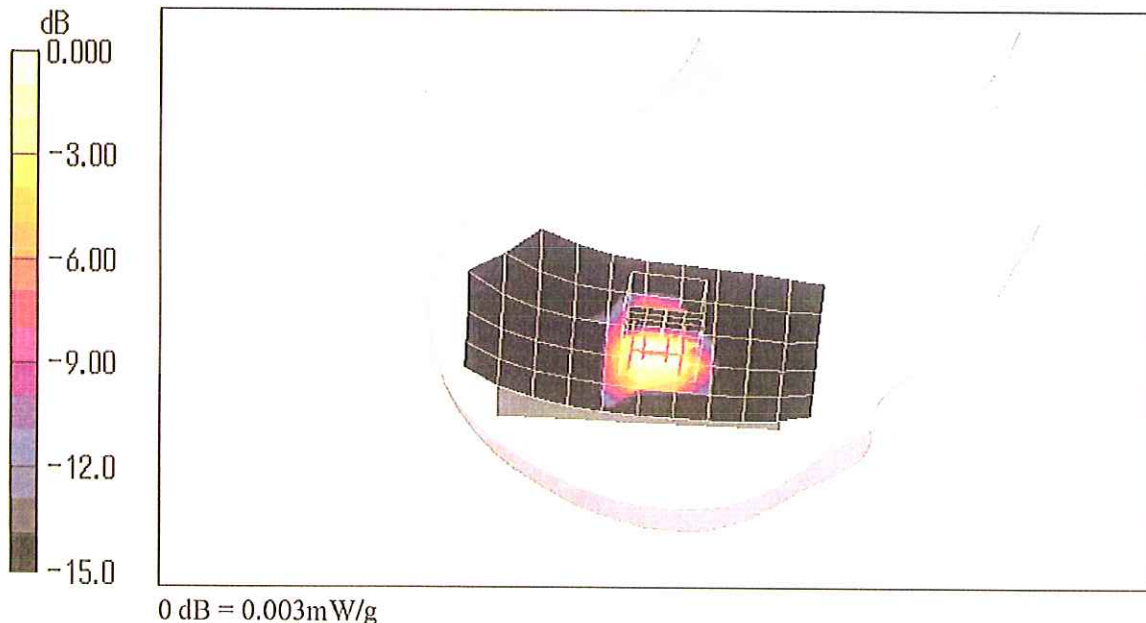
Maximum value of SAR (measured) = 0.003 mW/g

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

Reference Value = 1.45 V/m; Power Drift = -0.037 dB

Peak SAR (extrapolated) = 0.006 W/kg

SAR(1 g) = 0.00304 mW/g; SAR(10 g) = 0.00138 mW/g



Test Laboratory: JAPAN QUALITY ASSURANCE ORGANIZATION

Right Head, Cheek/Touch 0ch (1928.4MHz)**DUT: All-in-One Headset; Type: WX-H3050; Serial: --**

Communication System: DECT; Frequency: 1928.4 MHz; Duty Cycle: 1:25

Medium: HSL1950 Medium parameters used: $f = 1928.4$ MHz; $\sigma = 1.4$ mho/m; $\epsilon_r = 39.7$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Measurement Standard: DASy4 (High Precision Assessment)

DASy4 Configuration:

- Probe: ET3DV6 - SN1679; ConvF(5.06, 5.06, 5.06); Calibrated: 2007/11/15
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn508; Calibrated: 2007/11/07
- Phantom: SAM 1200; Type: QD 000 P40 CA; Serial: 1200
- Measurement SW: DASy4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Cheek/Touch Position/Area Scan (11x6x1): Measurement grid: dx=15mm, dy=15mm

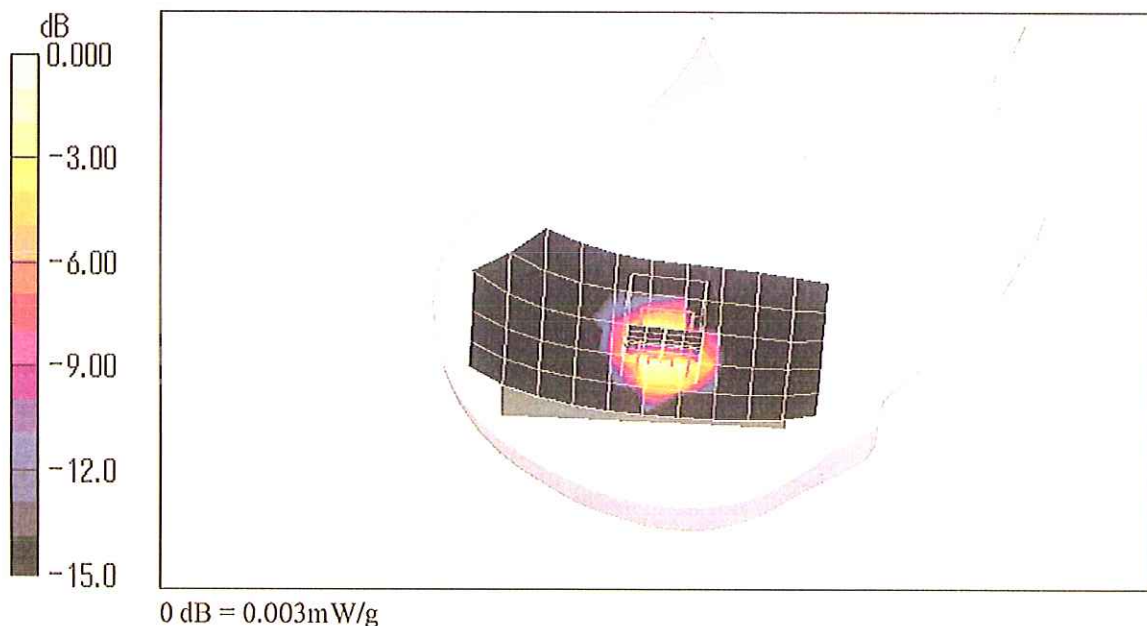
Maximum value of SAR (measured) = 0.003 mW/g

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

Reference Value = 1.43 V/m; Power Drift = -0.051 dB

Peak SAR (extrapolated) = 0.006 W/kg

SAR(1 g) = 0.0029 mW/g; SAR(10 g) = 0.00128 mW/g



Test Laboratory: JAPAN QUALITY ASSURANCE ORGANIZATION

Right Head, Ear/Tilt 2ch (1924.9MHz)

DUT: All-in-One Headset; Type: WX-H3050; Serial: --

Communication System: DECT; Frequency: 1924.9 MHz; Duty Cycle: 1:25

Medium: HSL1950 Medium parameters used: $f = 1924.9$ MHz; $\sigma = 1.4$ mho/m; $\epsilon_r = 39.7$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Measurement Standard: DASy4 (High Precision Assessment)

DASy4 Configuration:

- Probe: ET3DV6 - SN1679; ConvF(5.06, 5.06, 5.06); Calibrated: 2007/11/15
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn508; Calibrated: 2007/11/07
- Phantom: SAM 1200; Type: QD 000 P40 CA; Serial: 1200
- Measurement SW: DASy4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Ear/Tilt Position/Area Scan (11x6x1): Measurement grid: dx=15mm, dy=15mm

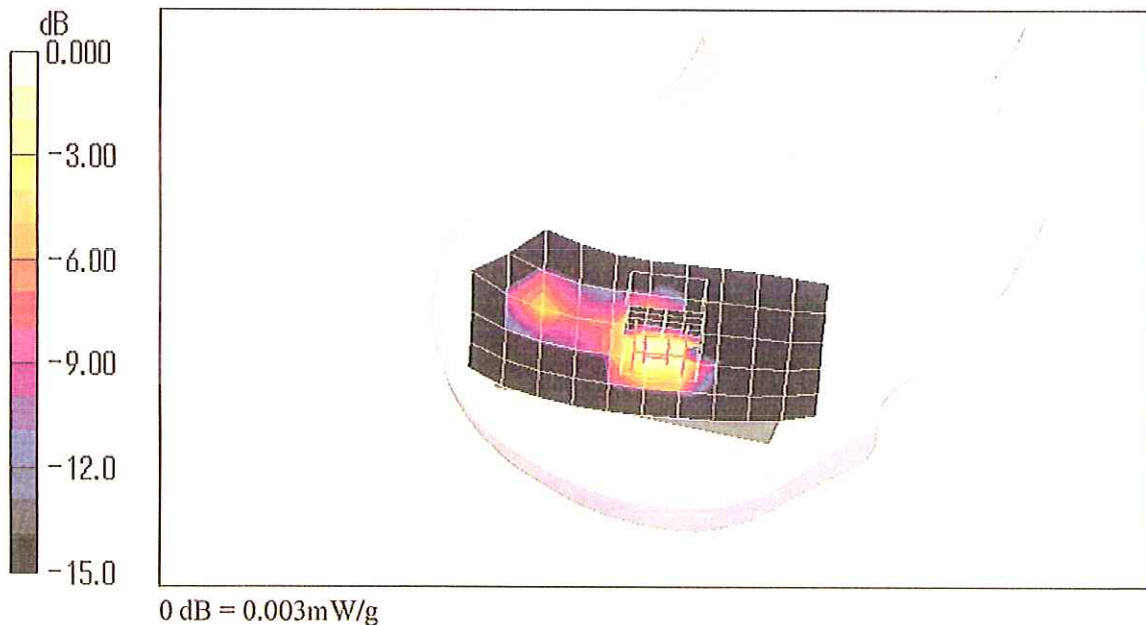
Maximum value of SAR (measured) = 0.003 mW/g

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

Reference Value = 1.28 V/m; Power Drift = -0.076 dB

Peak SAR (extrapolated) = 0.005 W/kg

SAR(1 g) = 0.00267 mW/g; SAR(10 g) = 0.00119 mW/g





Attachment 3 – Dosimetric E-Field Probe – ET3DV6, S/N: 1679 Calibration Data



Accredited by the Swiss Accreditation Service (SAS)
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: JQA (MTT)

Certificate No: ET3-1679_Nov07

CALIBRATION CERTIFICATE

Object: ET3DV6 - SN:1679

Calibration procedure(s): QA CAL-01.v6
Calibration procedure for dosimetric E-field probes

Calibration date: November 15, 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)	8-Aug-07 (METAS, No. 217-00719)	Aug-08
Reference 20 dB Attenuator	SN: S5086 (20b)	29-Mar-07 (METAS, No. 217-00671)	Mar-08
Reference 30 dB Attenuator	SN: S5129 (30b)	8-Aug-07 (METAS, No. 217-00720)	Aug-08
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 Oct-07)	In house check: Oct-09
Network Analyzer HP 8753E	US37390585	18-Oct-01 (SPEAG, in house check Oct-07)	In house check: Oct-08

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

Issued: November 15, 2007

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

**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 Accreditation Service (SAS)
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
NORM _{x,y,z}	sensitivity in free space
ConvF	sensitivity in TSL / NORM _{x,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:

- 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
- 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:

- NORM_{x,y,z}**: Assessed for E-field polarization $\vartheta = 0$ ($f \leq 900$ MHz in TEM-cell; $f > 1800$ MHz: R22 waveguide). NORM_{x,y,z} are only intermediate values, i.e., the uncertainties of NORM_{x,y,z} does not effect the E²-field uncertainty inside TSL (see below *ConvF*).
- NORM(f)_{x,y,z} = NORM_{x,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*.
- DCP_{x,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 NORM_{x,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.