802.11an_HT20_CH48_orientation D

Date/Time: 8/25/2009 3:29:42 PM

Test Laboratory: Electronics Testing Center, Taiwan

DUT: USB Adapter; Type: TER-NUSB1; Serial: N/A
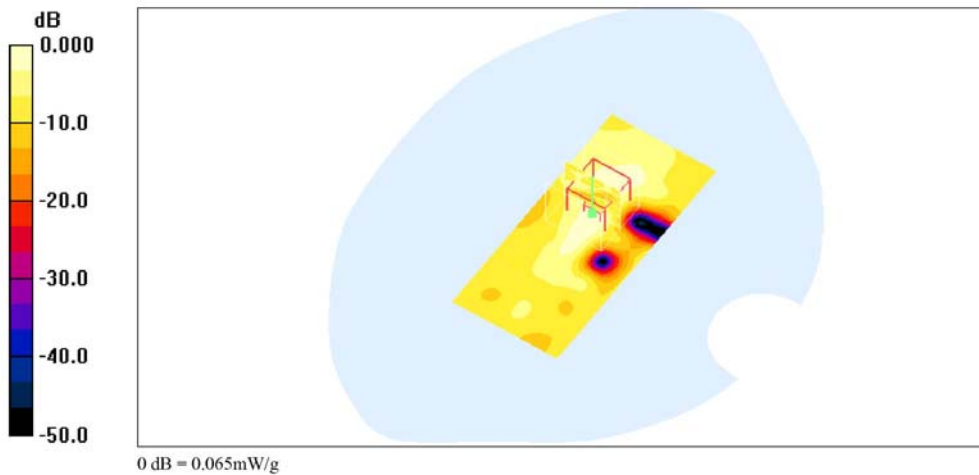
Communication System: IEEE 802.11a; Frequency: 5240 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5240 MHz; σ = 5.24 mho/m; ε_r = 49.1; ρ = 1000 kg/m^3
Air temperature:22 degC; Liquid temperature:21.5 degC;
Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3555; ConvF(4.08, 4.08, 4.08); Calibrated: 9/19/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn629; Calibrated: 9/23/2008
- Phantom: SAM 12-2; Type: SAM4.0; Serial: TP-1347
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

802.11an_HT20_CH48_orientation D/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.64 V/m; Power Drift = 0.158 dB
Peak SAR (extrapolated) = 0.119 W/kg
SAR(1 g) = 0.051 mW/g; SAR(10 g) = 0.022 mW/g

Warning: Maximum averaged SAR over 10 g is located on the boundary of the measurement cube. This cube might not incorporate the absolute averaged SAR. Please consider a refinement of the Area Scan measurement.
Maximum value of SAR (measured) = 0.065 mW/g

802.11an_HT20_CH48_orientation D/Area Scan (41x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.060 mW/g

0 dB = 0.065mW/g

802.11an_HT20_CH157_orientation A

Date/Time: 8/24/2009 12:29:09 PM

Test Laboratory: Electronics Testing Center, Taiwan

DUT: USB Adapter; Type: TER-NUSB1; Serial: N/A

Communication System: IEEE 802.11a; Frequency: 5785 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 5785 MHz; σ = 6.03 mho/m; ε_r = 48; ρ = 1000 kg/m^3
Air temperature:23 degC; Liquid temperature:22 degC;
Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3555; ConvF(3.82, 3.82, 3.82); Calibrated: 9/19/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn629; Calibrated: 9/23/2008
- Phantom: SAM 12-2; Type: SAM4.0; Serial: TP-1347
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

802.11an_HT20_CH157_orientation A/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.11 V/m; Power Drift = 0.123 dB
Peak SAR (extrapolated) = 0.045 W/kg
**SAR(1 g) = 0.0017 mW/g; SAR(10 g) = 0.000465 mW/g**

Info: Interpolated medium parameters used for SAR evaluation.

Warning: Maximum averaged SAR over 1 g is located on the boundary of the measurement cube. This cube might not incorporate the absolute averaged SAR. Please consider a refinement of the Area Scan measurement. Maximum averaged SAR over 10 g is located on the boundary of the measurement cube. This cube might not incorporate the absolute averaged SAR. Please consider a refinement of the Area Scan measurement.
Maximum value of SAR (measured) = 0.043 mW/g

802.11an_HT20_CH157_orientation A/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.037 mW/g

0 dB = 0.043mW/g
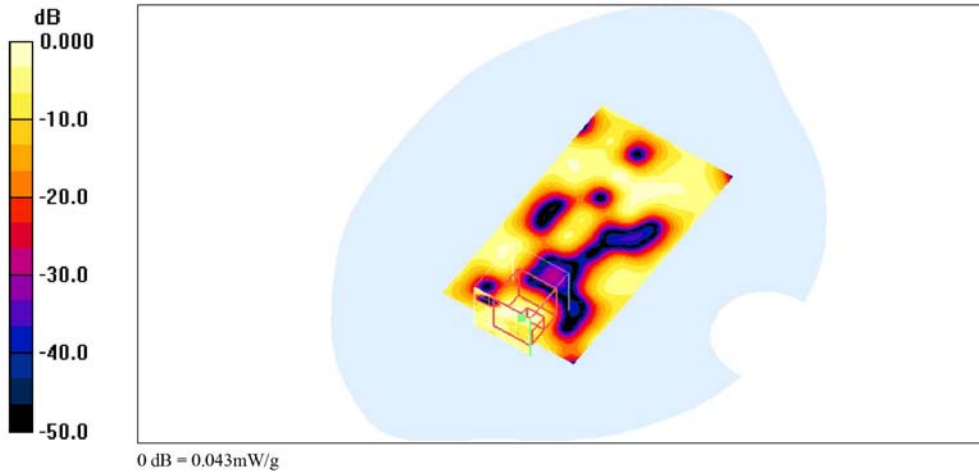
802.11an_HT20_CH157_orientation B

Date/Time: 8/24/2009 4:11:17 PM

Test Laboratory: Electronics Testing Center, Taiwan

DUT: USB Adapter; Type: TER-NUSB1; Serial: N/A

Communication System: IEEE 802.11a; Frequency: 5785 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 5785 MHz; σ = 6.03 mho/m; ε_r = 48; ρ = 1000 kg/m^3
Air temperature:23 degC; Liquid temperature:22 degC;
Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3555; ConvF(3.82, 3.82, 3.82); Calibrated: 9/19/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn629; Calibrated: 9/23/2008
- Phantom: SAM 12-2; Type: SAM4.0; Serial: TP-1347
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

802.11an_HT20_CH157_orientation B/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.05 V/m; Power Drift = 0.153 dB
Peak SAR (extrapolated) = 0.160 W/kg
SAR(1 g) = 0.046 mW/g; SAR(10 g) = 0.016 mW/g

Info: Interpolated medium parameters used for SAR evaluation.

Warning: Maximum averaged SAR over 10 g is located on the boundary of the measurement cube. This cube might not incorporate the absolute averaged SAR. Please consider a refinement of the Area Scan measurement.
Maximum value of SAR (measured) = 0.058 mW/g

802.11an_HT20_CH157_orientation B/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.043 mW/g

0 dB = 0.058mW/g

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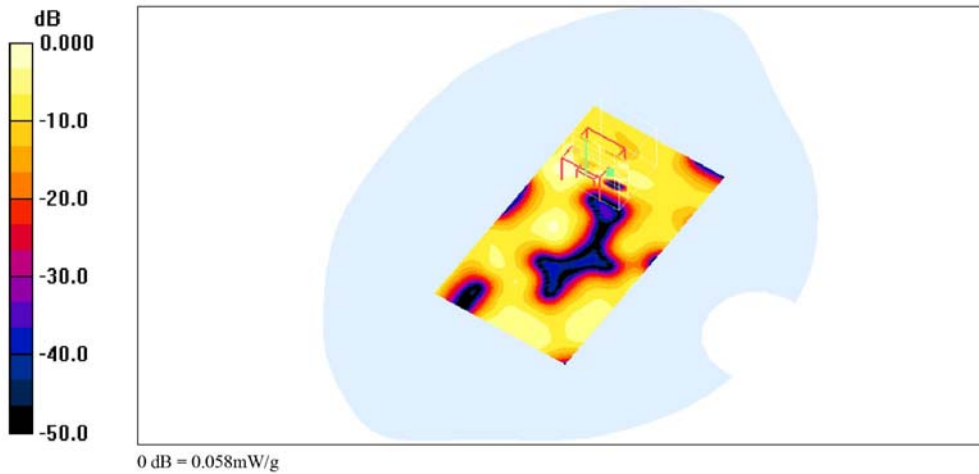
Date/Time: 8/25/2009 12:39:46 PM

Test Laboratory: Electronics Testing Center, Taiwan

DUT: USB Adapter; Type: TER-NUSB1; Serial: N/A

Communication System: IEEE 802.11a; Frequency: 5785 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 5785 MHz; σ = 6.03 mho/m; ε_r = 48; ρ = 1000 kg/m^3
Air temperature:22 degC; Liquid temperature:21.5 degC;
Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3555; ConvF(3.82, 3.82, 3.82); Calibrated: 9/19/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn629; Calibrated: 9/23/2008
- Phantom: SAM 12-2; Type: SAM4.0; Serial: TP-1347
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

802.11an_HT20_CH157_orientation C/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 0.899 V/m; Power Drift = 0.158 dB
Peak SAR (extrapolated) = 0.052 W/kg
**SAR(1 g) = 0.00761 mW/g; SAR(10 g) = 0.00275 mW/g**

Info: Interpolated medium parameters used for SAR evaluation.

Warning: Maximum averaged SAR over 1 g is located on the boundary of the measurement cube. This cube might not incorporate the absolute averaged SAR. Please consider a refinement of the Area Scan measurement. Maximum averaged SAR over 10 g is located on the boundary of the measurement cube. This cube might not incorporate the absolute averaged SAR. Please consider a refinement of the Area Scan measurement.
Maximum value of SAR (measured) = 0.032 mW/g

802.11an_HT20_CH157_orientation C/Area Scan (41x91x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.029 mW/g

0 dB = 0.032mW/g
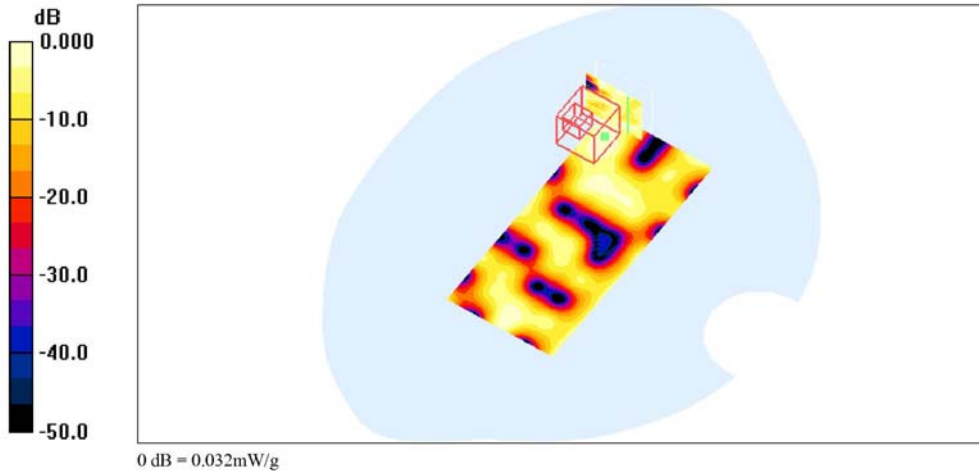
802.11an_HT20_CH157_orientation D

Test Laboratory: Electronics Testing Center, Taiwan

DUT: USB Adapter; Type: TER-NUSB1; Serial: N/A

Communication System: IEEE 802.11a; Frequency: 5745 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 5745 MHz; σ = 5.99 mho/m; ε_r = 48.1; ρ = 1000 kg/m^3
Air temperature:22 degC; Liquid temperature:21.5 degC;
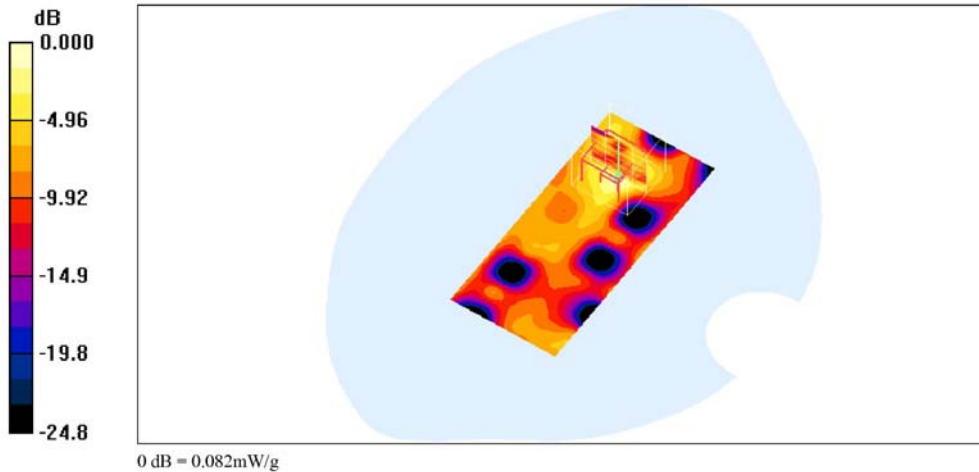Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3555; ConvF(3.82, 3.82, 3.82); Calibrated: 9/19/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn629; Calibrated: 9/23/2008
- Phantom: SAM 12-2; Type: SAM4.0; Serial: TP-1347
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

802.11an_HT20_CH157_orientation D/Area Scan (41x91x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.067 mW/g

802.11an_HT20_CH157_orientation D/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.38 V/m; Power Drift = 0.105 dB
Peak SAR (extrapolated) = 0.356 W/kg
SAR(1 g) = 0.077 mW/g; SAR(10 g) = 0.027 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.082 mW/g

0 dB = 0.082mW/g

802.11an_HT20_CH161_orientation A

Date/Time: 8/24/2009 12:36:55 PM

Test Laboratory: Electronics Testing Center, Taiwan

DUT: USB Adapter; Type: TER-NUSB1; Serial: N/A

Communication System: IEEE 802.11a; Frequency: 5805 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 5805 MHz; σ = 6.05 mho/m; ε_r = 48; ρ = 1000 kg/m^3
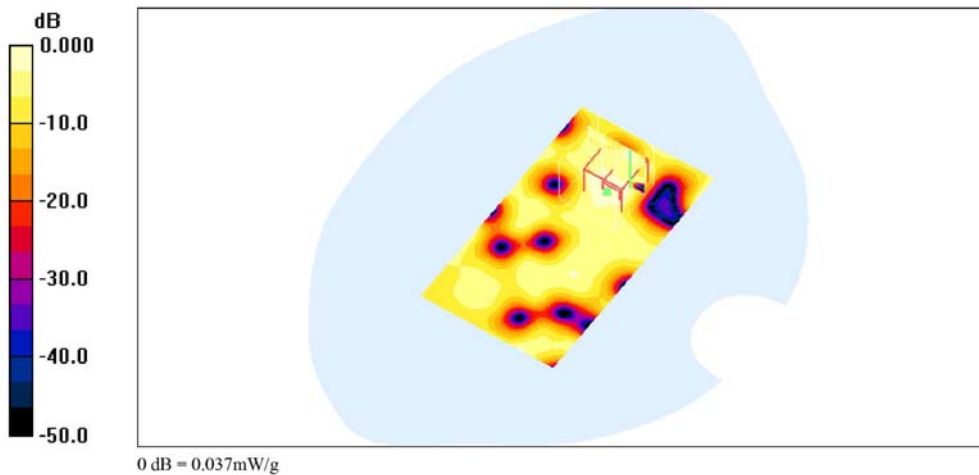Air temperature:23 degC; Liquid temperature:22 degC;
Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3555; ConvF(3.82, 3.82, 3.82); Calibrated: 9/19/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn629; Calibrated: 9/23/2008
- Phantom: SAM 12-2; Type: SAM4.0; Serial: TP-1347
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

802.11an_HT20_CH161_orientation A/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.055 mW/g

802.11an_HT20_CH161_orientation A/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.26 V/m; Power Drift = -0.113 dB
Peak SAR (extrapolated) = 0.160 W/kg
SAR(1 g) = 0.034 mW/g; SAR(10 g) = 0.00809 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.037 mW/g

0 dB = 0.037mW/g

802.11an_HT20_CH161_orientation B

Date/Time: 8/24/2009 4:25:59 PM

Test Laboratory: Electronics Testing Center, Taiwan

DUT: USB Adapter; Type: TER-NUSB1; Serial: N/A

Communication System: IEEE 802.11a; Frequency: 5805 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 5805 MHz; σ = 6.05 mho/m; ε_r = 48; ρ = 1000 kg/m^3
Air temperature:23 degC; Liquid temperature:22 degC;
Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3555; ConvF(3.82, 3.82, 3.82); Calibrated: 9/19/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn629; Calibrated: 9/23/2008
- Phantom: SAM 12-2; Type: SAM4.0; Serial: TP-1347
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

802.11an_HT20_CH161_orientation B/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 0.722 V/m; Power Drift = -0.135 dB
Peak SAR (extrapolated) = 0.119 W/kg
SAR(1 g) = 0.026 mW/g; SAR(10 g) = 0.0049 mW/g

Info: Interpolated medium parameters used for SAR evaluation.

Warning: Maximum averaged SAR over 10 g is located on the boundary of the measurement cube. This cube might not incorporate the absolute averaged SAR. Please consider a refinement of the Area Scan measurement.
Maximum value of SAR (measured) = 0.061 mW/g

802.11an_HT20_CH161_orientation B/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.058 mW/g

0 dB = 0.061mW/g
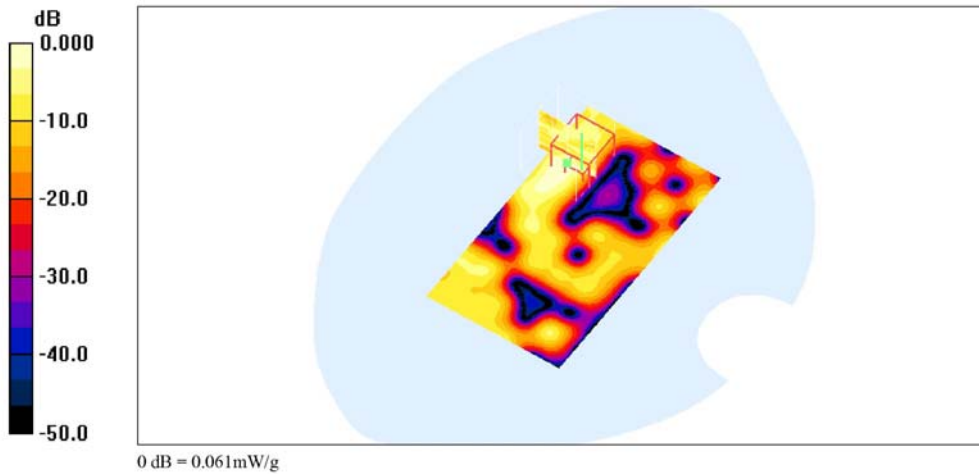
802.11an_HT20_CH161_orientation C

Date/Time: 8/25/2009 12:51:17 PM

Test Laboratory: Electronics Testing Center, Taiwan

DUT: USB Adapter; Type: TER-NUSB1; Serial: N/A

Communication System: IEEE 802.11a; Frequency: 5805 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 5805 MHz; σ = 6.05 mho/m; ε_r = 48; ρ = 1000 kg/m^3
Air temperature:22 degC; Liquid temperature:21.5 degC;
Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3555; ConvF(3.82, 3.82, 3.82); Calibrated: 9/19/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn629; Calibrated: 9/23/2008
- Phantom: SAM 12-2; Type: SAM4.0; Serial: TP-1347
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

802.11an_HT20_CH161_orientation C/Area Scan (41x91x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.024 mW/g

802.11an_HT20_CH161_orientation C/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.21 V/m; Power Drift = 0.135 dB
Peak SAR (extrapolated) = 0.041 W/kg
SAR(1 g) = 0.013 mW/g; SAR(10 g) = 0.00278 mW/g

Info: Interpolated medium parameters used for SAR evaluation.

Warning: Maximum averaged SAR over 10 g is located on the boundary of the measurement cube. This cube might not incorporate the absolute averaged SAR. Please consider a refinement of the Area Scan measurement.
Maximum value of SAR (measured) = 0.041 mW/g

0 dB = 0.041mW/g

802.11an_HT20_CH161_orientation D

Date/Time: 8/25/2009 4:02:03 PM

Test Laboratory: Electronics Testing Center, Taiwan

DUT: USB Adapter; Type: TER-NUSB1; Serial: N/A

Communication System: IEEE 802.11a; Frequency: 5805 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 5805 MHz; σ = 6.05 mho/m; ε_r = 48; ρ = 1000 kg/m^3
Air temperature:22 degC; Liquid temperature:21.5 degC;
Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3555; ConvF(3.82, 3.82, 3.82); Calibrated: 9/19/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn629; Calibrated: 9/23/2008
- Phantom: SAM 12-2; Type: SAM4.0; Serial: TP-1347
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186
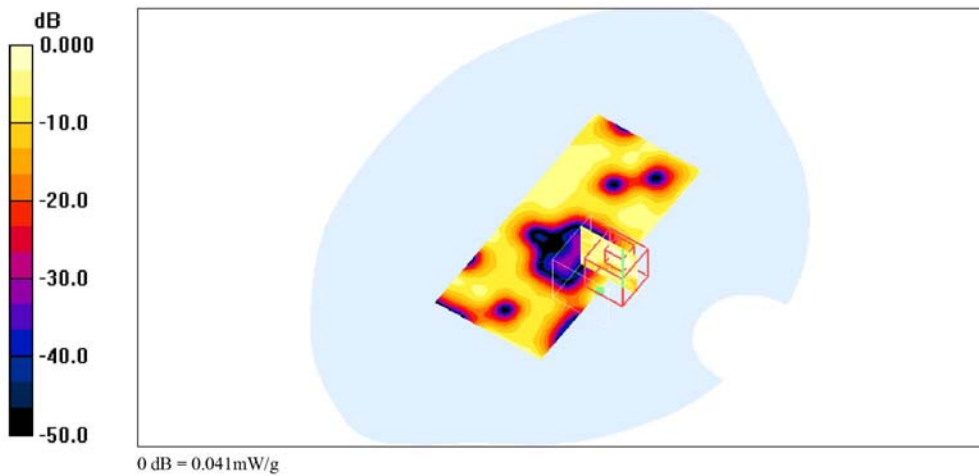
802.11an_HT20_CH161_orientation D/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.62 V/m; Power Drift = -0.196 dB
Peak SAR (extrapolated) = 0.215 W/kg
SAR(1 g) = 0.068 mW/g; SAR(10 g) = 0.029 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.083 mW/g

802.11an_HT20_CH161_orientation D/Area Scan (41x91x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.075 mW/g

0 dB = 0.083mW/g

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Date/Time: 8/24/2009 1:02:56 PM

Test Laboratory: Electronics Testing Center, Taiwan

DUT: USB Adapter; Type: TER-NUSB1; Serial: N/A

Communication System: IEEE 802.11a; Frequency: 5190 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 5190 MHz; σ = 5.17 mho/m; ε_r = 49.2; ρ = 1000 kg/m^3
Air temperature:23 degC; Liquid temperature:22 degC;
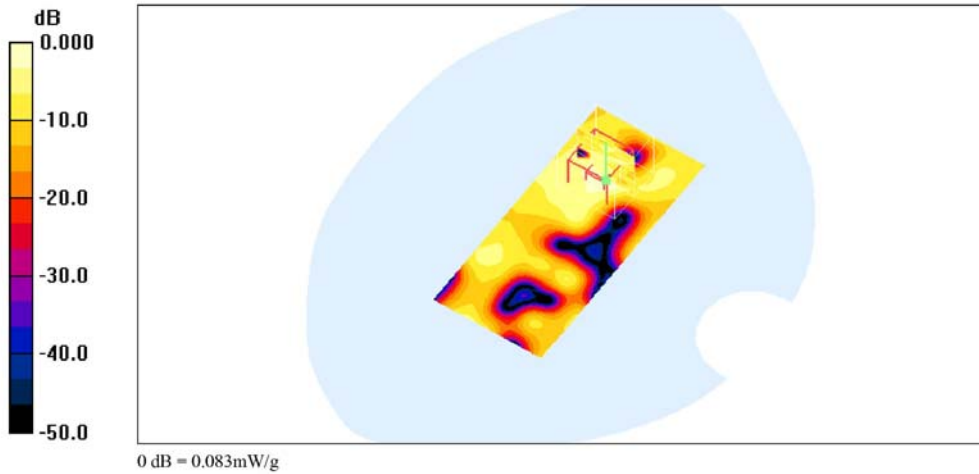Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3555; ConvF(4.08, 4.08, 4.08); Calibrated: 9/19/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn629; Calibrated: 9/23/2008
- Phantom: SAM 12-2; Type: SAM4.0; Serial: TP-1347
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

802.11an_HT40_CH38_orientation A/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.025 mW/g

802.11an_HT40_CH38_orientation A/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.38 V/m; Power Drift = 0.123 dB
Peak SAR (extrapolated) = 0.032 W/kg
SAR(1 g) = 0.00642 mW/g; SAR(10 g) = 0.00155 mW/g

Info: Interpolated medium parameters used for SAR evaluation.

Warning: Maximum averaged SAR over 1 g is located on the boundary of the measurement cube. This cube might not incorporate the absolute averaged SAR. Please consider a refinement of the Area Scan measurement. Maximum averaged SAR over 10 g is located on the boundary of the measurement cube. This cube might not incorporate the absolute averaged SAR. Please consider a refinement of the Area Scan measurement.
Maximum value of SAR (measured) = 0.032 mW/g

0 dB = 0.032mW/g
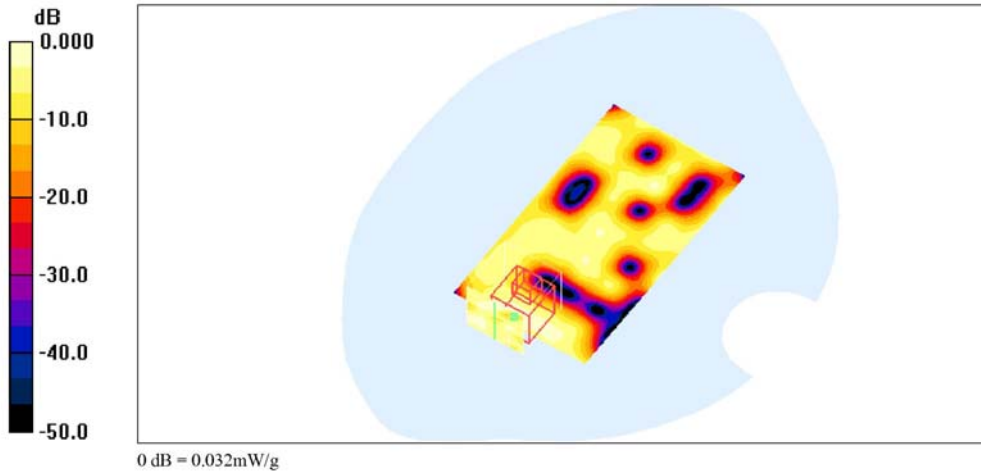
802.11an_HT40_CH38_orientation B

Date/Time: 8/24/2009 4:44:05 PM

Test Laboratory: Electronics Testing Center, Taiwan

DUT: USB Adapter; Type: TER-NUSB1; Serial: N/A

Communication System: IEEE 802.11a; Frequency: 5190 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 5190 MHz; σ = 5.17 mho/m; ε_r = 49.2; ρ = 1000 kg/m^3
Air temperature:22 degC; Liquid temperature:21.5 degC;
Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3555; ConvF(4.08, 4.08, 4.08); Calibrated: 9/19/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn629; Calibrated: 9/23/2008
- Phantom: SAM 12-2; Type: SAM4.0; Serial: TP-1347
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

802.11an_HT40_CH38_orientation B/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.39 V/m; Power Drift = -0.107 dB
Peak SAR (extrapolated) = 0.058 W/kg
SAR(1 g) = 0.017 mW/g; SAR(10 g) = 0.00974 mW/g

Info: Interpolated medium parameters used for SAR evaluation.

Warning: Maximum averaged SAR over 10 g is located on the boundary of the measurement cube. This cube might not incorporate the absolute averaged SAR. Please consider a refinement of the Area Scan measurement.
Maximum value of SAR (measured) = 0.023 mW/g

802.11an_HT40_CH38_orientation B/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.022 mW/g

0 dB = 0.023mW/g
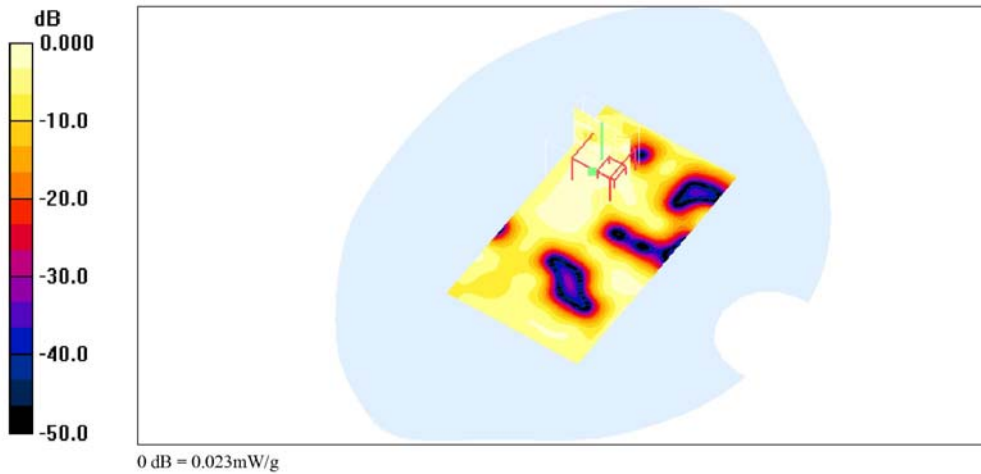
802.11an_HT40_CH38_orientation C

Date/Time: 8/25/2009 1:15:55 PM

Test Laboratory: Electronics Testing Center, Taiwan

DUT: USB Adapter; Type: TER-NUSB1; Serial: N/A

Communication System: IEEE 802.11a; Frequency: 5190 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 5190 MHz; σ = 5.17 mho/m; ε_r = 49.2; ρ = 1000 kg/m³
Air temperature:22 degC; Liquid temperature:21.5 degC;
Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3555; ConvF(4.08, 4.08, 4.08); Calibrated: 9/19/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn629; Calibrated: 9/23/2008
- Phantom: SAM 12-2; Type: SAM4.0; Serial: TP-1347
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

802.11an_HT40_CH38_orientation C/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 0.923 V/m; Power Drift = 0.111 dB
Peak SAR (extrapolated) = 0.033 W/kg
SAR(1 g) = 0.0089 mW/g; SAR(10 g) = 0.00248 mW/g

Info: Interpolated medium parameters used for SAR evaluation.

Warning: Maximum averaged SAR over 1 g is located on the boundary of the measurement cube. This cube might not incorporate the absolute averaged SAR. Please consider a refinement of the Area Scan measurement. Maximum averaged SAR over 10 g is located on the boundary of the measurement cube. This cube might not incorporate the absolute averaged SAR. Please consider a refinement of the Area Scan measurement.
Maximum value of SAR (measured) = 0.033 mW/g

802.11an_HT40_CH38_orientation C/Area Scan (41x91x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.017 mW/g

0 dB = 0.033mW/g
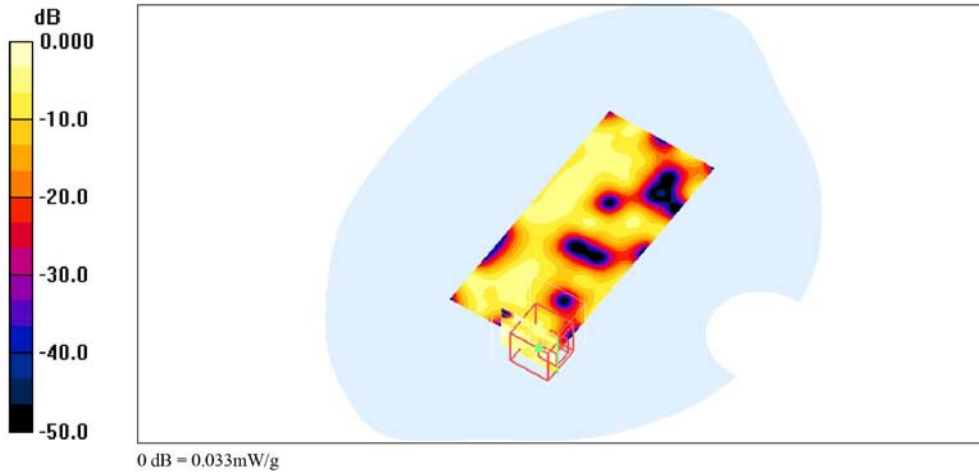
802.11an_HT40_CH38_orientation D

Date/Time: 8/25/2009 4:26:32 PM

Test Laboratory: Electronics Testing Center, Taiwan

DUT: USB Adapter; Type: TER-NUSB1; Serial: N/A

Communication System: IEEE 802.11a; Frequency: 5190 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 5190 MHz; σ = 5.17 mho/m; ε_r = 49.2; ρ = 1000 kg/m^3
Air temperature:22 degC; Liquid temperature:21.5 degC;
Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3555; ConvF(4.08, 4.08, 4.08); Calibrated: 9/19/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn629; Calibrated: 9/23/2008
- Phantom: SAM 12-2; Type: SAM4.0; Serial: TP-1347
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

802.11an_HT40_CH38_orientation D/Area Scan (41x91x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.036 mW/g

802.11an_HT40_CH38_orientation D/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.47 V/m; Power Drift = 0.132 dB
Peak SAR (extrapolated) = 0.068 W/kg
**SAR(1 g) = 0.024 mW/g; SAR(10 g) = 0.010 mW/g**

Info: Interpolated medium parameters used for SAR evaluation.

Warning: Maximum averaged SAR over 10 g is located on the boundary of the measurement cube. This cube might not incorporate the absolute averaged SAR. Please consider a refinement of the Area Scan measurement.
Maximum value of SAR (measured) = 0.030 mW/g

0 dB = 0.030mW/g

802.11an_HT40_CH46_orientation A

Date/Time: 8/24/2009 1:18:25 PM

Test Laboratory: Electronics Testing Center, Taiwan

DUT: USB Adapter; Type: TER-NUSB1; Serial: N/A

Communication System: IEEE 802.11a; Frequency: 5230 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 5230 MHz; σ = 5.23 mho/m; ε_r = 49.1; ρ = 1000 kg/m^3
Air temperature:23 degC; Liquid temperature:22 degC;
Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3555; ConvF(4.08, 4.08, 4.08); Calibrated: 9/19/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn629; Calibrated: 9/23/2008
- Phantom: SAM 12-2; Type: SAM4.0; Serial: TP-1347
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186
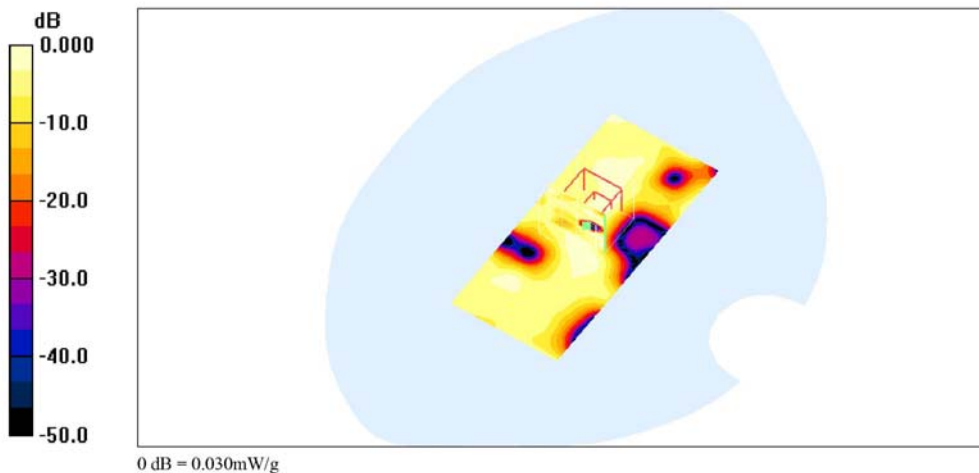
802.11an_HT40_CH46_orientation A/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.026 mW/g

802.11an_HT40_CH46_orientation A/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.27 V/m; Power Drift = 0.128 dB
Peak SAR (extrapolated) = 0.041 W/kg
SAR(1 g) = 0.010 mW/g; SAR(10 g) = 0.00191 mW/g

Info: Interpolated medium parameters used for SAR evaluation.

Warning: Maximum averaged SAR over 1 g is located on the boundary of the measurement cube. This cube might not incorporate the absolute averaged SAR. Please consider a refinement of the Area Scan measurement. Maximum averaged SAR over 10 g is located on the boundary of the measurement cube. This cube might not incorporate the absolute averaged SAR. Please consider a refinement of the Area Scan measurement.
Maximum value of SAR (measured) = 0.029 mW/g

0 dB = 0.026mW/g

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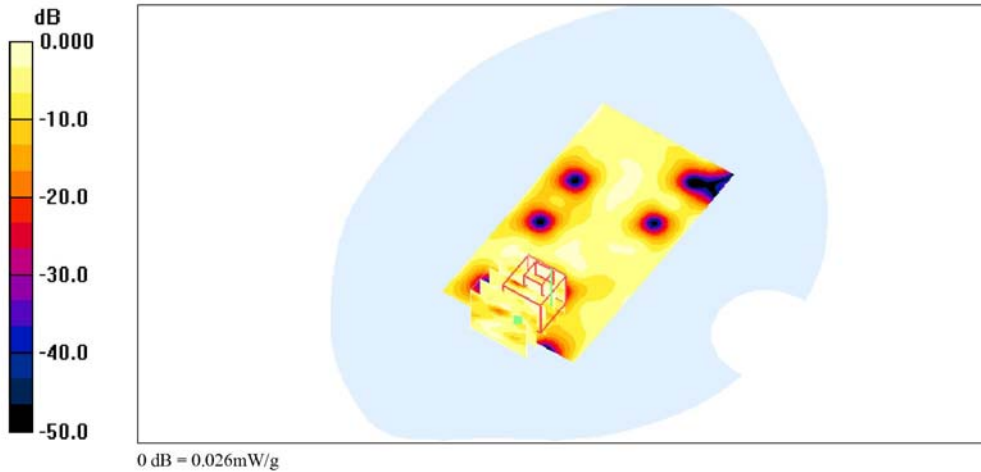
802.11an_HT40_CH46_orientation B

Date/Time: 8/24/2009 4:55:51 PM

Test Laboratory: Electronics Testing Center, Taiwan

DUT: USB Adapter; Type: TER-NUSB1; Serial: N/A

Communication System: IEEE 802.11a; Frequency: 5230 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 5230 MHz; σ = 5.23 mho/m; ε_r = 49.1; ρ = 1000 kg/m^3
Air temperature:23 degC; Liquid temperature:22 degC;
Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3555; ConvF(4.08, 4.08, 4.08); Calibrated: 9/19/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn629; Calibrated: 9/23/2008
- Phantom: SAM 12-2; Type: SAM4.0; Serial: TP-1347
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

802.11an_HT40_CH46_orientation B/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.028 mW/g

802.11an_HT40_CH46_orientation B/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.14 V/m; Power Drift = 0.166 dB
Peak SAR (extrapolated) = 0.053 W/kg
SAR(1 g) = 0.017 mW/g; SAR(10 g) = 0.0056 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.022 mW/g

0 dB = 0.022mW/g

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802.11an_HT40_CH46_orientation C

Date/Time: 8/25/2009 1:24:30 PM

Test Laboratory: Electronics Testing Center, Taiwan

DUT: USB Adapter; Type: TER-NUSB1; Serial: N/A

Communication System: IEEE 802.11a; Frequency: 5230 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 5230 MHz; σ = 5.23 mho/m; ε_r = 49.1; ρ = 1000 kg/m^3
Air temperature:22 degC; Liquid temperature:21.5 degC;
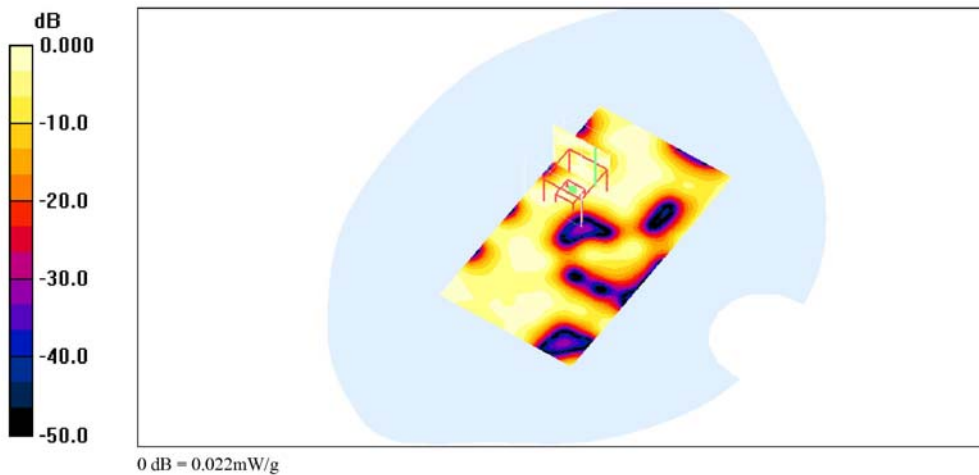Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3555; ConvF(4.08, 4.08, 4.08); Calibrated: 9/19/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn629; Calibrated: 9/23/2008
- Phantom: SAM 12-2; Type: SAM4.0; Serial: TP-1347
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

802.11an_HT40_CH46_orientation C/Area Scan (41x91x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.016 mW/g

802.11an_HT40_CH46_orientation C/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 0.603 V/m; Power Drift = 0.164 dB
Peak SAR (extrapolated) = 0.054 W/kg
SAR(1 g) = 0.019 mW/g; SAR(10 g) = 0.00909 mW/g

Info: Interpolated medium parameters used for SAR evaluation.

Warning: Maximum averaged SAR over 1 g is located on the boundary of the measurement cube. This cube might not incorporate the absolute averaged SAR. Please consider a refinement of the Area Scan measurement. Maximum averaged SAR over 10 g is located on the boundary of the measurement cube. This cube might not incorporate the absolute averaged SAR. Please consider a refinement of the Area Scan measurement.
Maximum value of SAR (measured) = 0.037 mW/g

0 dB = 0.037mW/g

802.11an_HT40_CH46_orientation D

Date/Time: 8/25/2009 4:44:42 PM

Test Laboratory: Electronics Testing Center, Taiwan

DUT: USB Adapter; Type: TER-NUSB1; Serial: N/A

Communication System: IEEE 802.11a; Frequency: 5230 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 5230 MHz; σ = 5.23 mho/m; ε_r = 49.1; ρ = 1000 kg/m^3
Air temperature:22 degC; Liquid temperature:21.5 degC;
Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3555; ConvF(4.08, 4.08, 4.08); Calibrated: 9/19/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn629; Calibrated: 9/23/2008
- Phantom: SAM 12-2; Type: SAM4.0; Serial: TP-1347
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

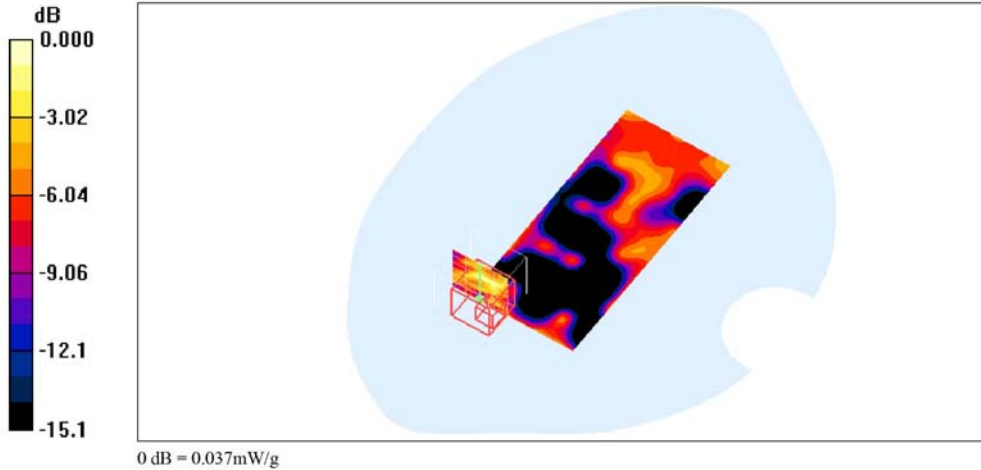**802.11an_HT40_CH46_orientation D/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.47 V/m; Power Drift = 0.145 dB
Peak SAR (extrapolated) = 0.077 W/kg
SAR(1 g) = 0.022 mW/g; SAR(10 g) = 0.00915 mW/g

Info: Interpolated medium parameters used for SAR evaluation.

Warning: Maximum averaged SAR over 10 g is located on the boundary of the measurement cube. This cube might not incorporate the absolute averaged SAR. Please consider a refinement of the Area Scan measurement.
Maximum value of SAR (measured) = 0.027 mW/g

802.11an_HT40_CH46_orientation D/Area Scan (41x91x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.034 mW/g

0 dB = 0.027mW/g
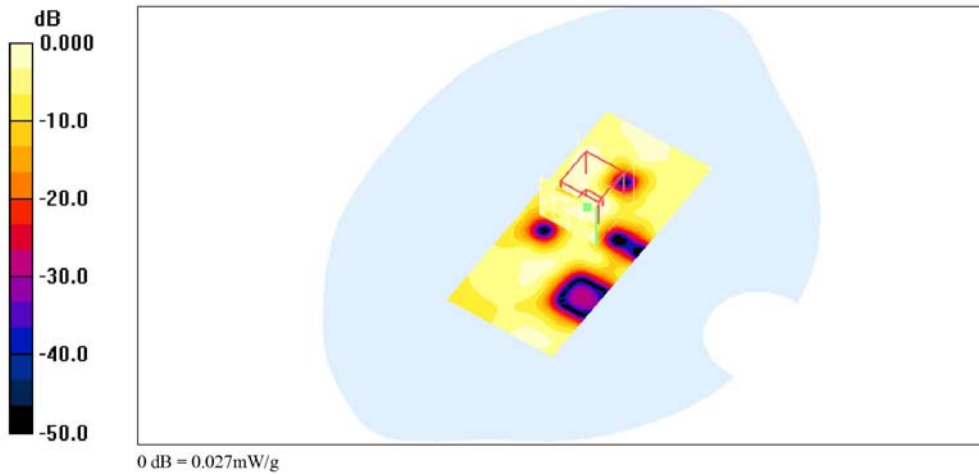
802.11an_HT40_CH151_orientation A

Date/Time: 8/24/2009 1:43:29 PM

Test Laboratory: Electronics Testing Center, Taiwan

DUT: USB Adapter; Type: TER-NUSB1; Serial: N/A

Communication System: IEEE 802.11a; Frequency: 5755 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 5755 MHz; σ = 6 mho/m; $ε_r$ = 48.1; ρ = 1000 kg/m^3
Air temperature:23 degC; Liquid temperature:22 degC;
Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3555; ConvF(3.82, 3.82, 3.82); Calibrated: 9/19/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn629; Calibrated: 9/23/2008
- Phantom: SAM 12-2; Type: SAM4.0; Serial: TP-1347
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

802.11an_HT40_CH151_orientation A/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.22 V/m; Power Drift = -0..180 dB
Peak SAR (extrapolated) = 0.072 W/kg
SAR(1 g) = 0.019 mW/g; SAR(10 g) = 0.00535 mW/g

Info: Interpolated medium parameters used for SAR evaluation.

Warning: Maximum averaged SAR over 10 g is located on the boundary of the measurement cube. This cube might not incorporate the absolute averaged SAR. Please consider a refinement of the Area Scan measurement.
Maximum value of SAR (measured) = 0.031 mW/g

802.11an_HT40_CH151_orientation A/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.037 mW/g

0 dB = 0.031mW/g
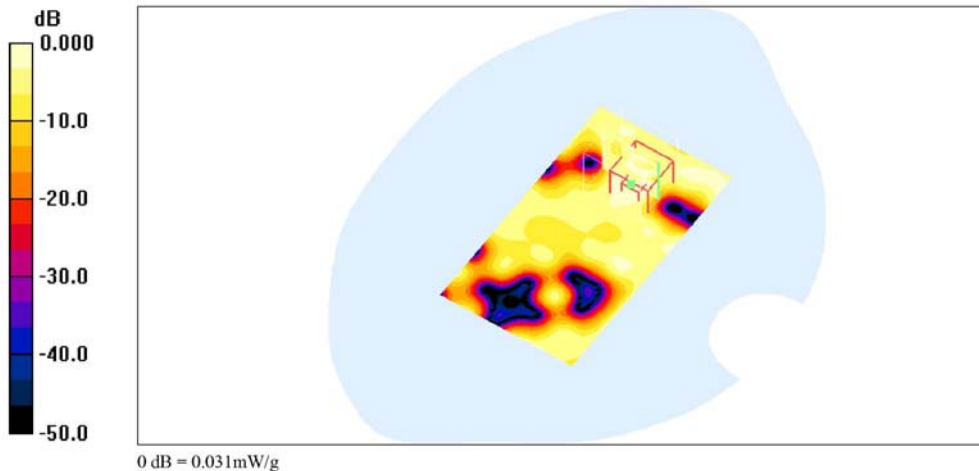
802.11an_HT40_CH151_orientation B

Date/Time: 8/24/2009 5:16:27 PM

Test Laboratory: Electronics Testing Center, Taiwan

DUT: USB Adapter; Type: TER-NUSB1; Serial: N/A

Communication System: IEEE 802.11a; Frequency: 5755 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 5755 MHz; σ = 6 mho/m; ε_r = 48.1; ρ = 1000 kg/m^3
Air temperature:23 degC; Liquid temperature:22 degC;
Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3555; ConvF(3.82, 3.82, 3.82); Calibrated: 9/19/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn629; Calibrated: 9/23/2008
- Phantom: SAM 12-2; Type: SAM4.0; Serial: TP-1347
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

802.11an_HT40_CH151_orientation B/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.29 V/m; Power Drift = 0.192 dB
Peak SAR (extrapolated) = 0.067 W/kg
SAR(1 g) = 0.019 mW/g; SAR(10 g) = 0.00569 mW/g

Info: Interpolated medium parameters used for SAR evaluation.

Warning: Maximum averaged SAR over 10 g is located on the boundary of the measurement cube. This cube might not incorporate the absolute averaged SAR. Please consider a refinement of the Area Scan measurement.
Maximum value of SAR (measured) = 0.042 mW/g

802.11an_HT40_CH151_orientation B/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.050 mW/g

0 dB = 0.042mW/g

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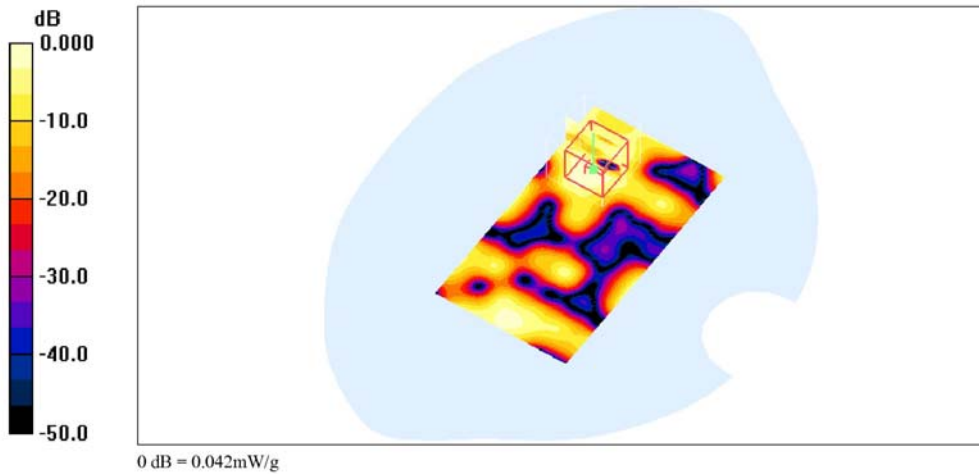
802.11an_HT40_CH151_orientation C

Date/Time: 8/25/2009 1:43:38 PM

Test Laboratory: Electronics Testing Center, Taiwan

DUT: USB Adapter; Type: TER-NUSB1; Serial: N/A

Communication System: IEEE 802.11a; Frequency: 5755 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 5755 MHz; σ = 6 mho/m; ε_r = 48.1; ρ = 1000 kg/m^3
Air temperature:22 degC; Liquid temperature:21.5 degC;
Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3555; ConvF(3.82, 3.82, 3.82); Calibrated: 9/19/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn629; Calibrated: 9/23/2008
- Phantom: SAM 12-2; Type: SAM4.0; Serial: TP-1347
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

802.11an_HT40_CH151_orientation C/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.36 V/m; Power Drift = 0.125 dB
Peak SAR (extrapolated) = 0.048 W/kg
SAR(1 g) = 0.00305 mW/g; SAR(10 g) = 0.000734 mW/g

Info: Interpolated medium parameters used for SAR evaluation.

Warning: Maximum averaged SAR over 10 g is located on the boundary of the measurement cube. This cube might not incorporate the absolute averaged SAR. Please consider a refinement of the Area Scan measurement.
Maximum value of SAR (measured) = 0.048 mW/g

802.11an_HT40_CH151_orientation C/Area Scan (41x91x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.027 mW/g

0 dB = 0.048mW/g

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Issued Date   : Aug. 28, 2009
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Date/Time: 8/25/2009 4:56:43 PM

Test Laboratory: Electronics Testing Center, Taiwan

DUT: USB Adapter; Type: TER-NUSB1; Serial: N/A

Communication System: IEEE 802.11a; Frequency: 5755 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 5755 MHz; σ = 6 mho/m; $ε_r$ = 48.1; ρ = 1000 kg/m^3
Air temperature:22 degC; Liquid temperature:21.5 degC;
Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3555; ConvF(3.82, 3.82, 3.82); Calibrated: 9/19/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn629; Calibrated: 9/23/2008
- Phantom: SAM 12-2; Type: SAM4.0; Serial: TP-1347
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

802.11an_HT40_CH151_orientation D/Area Scan (41x91x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.050 mW/g

802.11an_HT40_CH151_orientation D/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.45 V/m; Power Drift = 0.131 dB
Peak SAR (extrapolated) = 0.258 W/kg
SAR(1 g) = 0.055 mW/g; SAR(10 g) = 0.022 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.050 mW/g

0 dB = 0.050mW/g

802.11an_HT40_CH159_orientation A

Date/Time: 8/24/2009 1:56:08 PM

Test Laboratory: Electronics Testing Center, Taiwan

DUT: USB Adapter; Type: TER-NUSB1; Serial: N/A

Communication System: IEEE 802.11a; Frequency: 5795 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 5795 MHz; σ = 6.04 mho/m; ε_r = 48; ρ = 1000 kg/m³
Air temperature:23 degC; Liquid temperature:22 degC;
Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3555; ConvF(3.82, 3.82, 3.82); Calibrated: 9/19/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn629; Calibrated: 9/23/2008
- Phantom: SAM 12-2; Type: SAM4.0; Serial: TP-1347
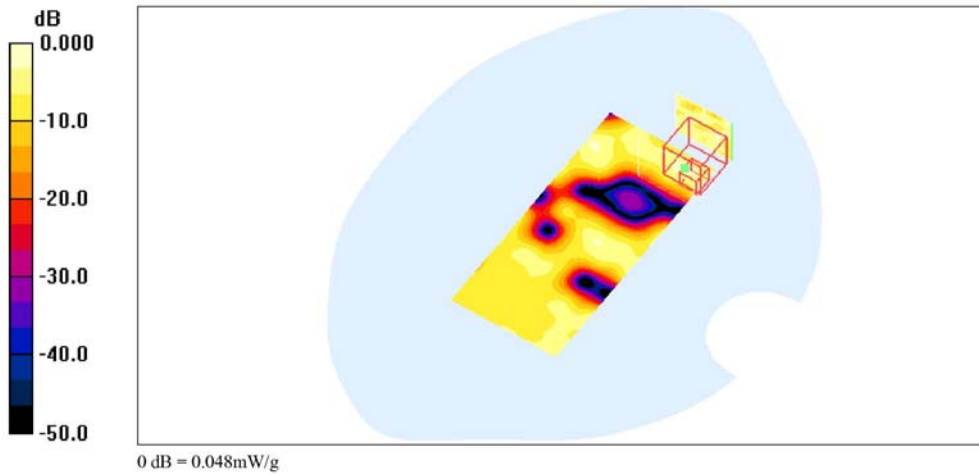- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

802.11an_HT40_CH159_orientation A/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.044 mW/g

802.11an_HT40_CH159_orientation A/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.28 V/m; Power Drift = -0.053 dB
Peak SAR (extrapolated) = 0.098 W/kg
SAR(1 g) = 0.024 mW/g; SAR(10 g) = 0.00883 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.037 mW/g

0 dB = 0.037mW/g

802.11an_HT40_CH159_orientation B

Date/Time: 8/24/2009 5:30:44 PM

Test Laboratory: Electronics Testing Center, Taiwan

DUT: USB Adapter; Type: TER-NUSB1; Serial: N/A

Communication System: IEEE 802.11a; Frequency: 5795 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 5795 MHz; σ = 6.04 mho/m; ε_r = 48; ρ = 1000 kg/m^3
Air temperature:23 degC; Liquid temperature:22 degC;
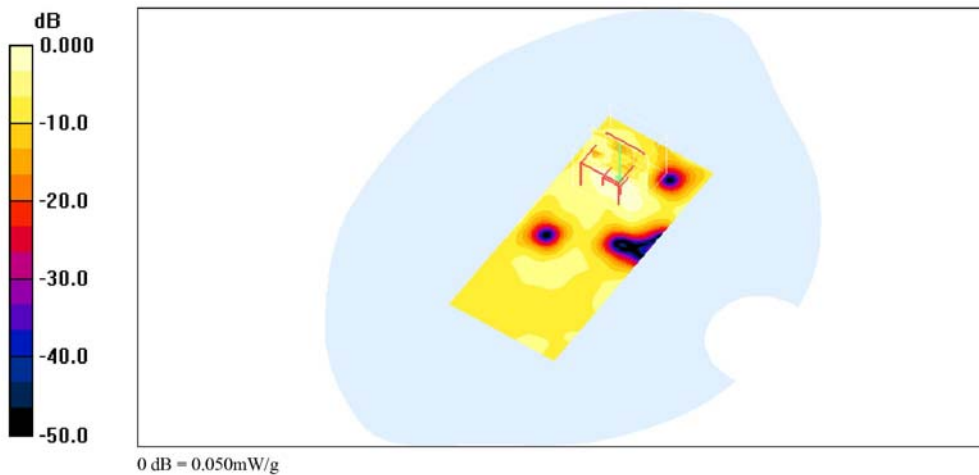Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3555; ConvF(3.82, 3.82, 3.82); Calibrated: 9/19/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn629; Calibrated: 9/23/2008
- Phantom: SAM 12-2; Type: SAM4.0; Serial: TP-1347
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

802.11an_HT40_CH159_orientation B/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.23 V/m; Power Drift = 0.116 dB
Peak SAR (extrapolated) = 0.088 W/kg
SAR(1 g) = 0.018 mW/g; SAR(10 g) = 0.00693 mW/g

Info: Interpolated medium parameters used for SAR evaluation.

Warning: Maximum averaged SAR over 1 g is located on the boundary of the measurement cube. This cube might not incorporate the absolute averaged SAR. Please consider a refinement of the Area Scan measurement. Maximum averaged SAR over 10 g is located on the boundary of the measurement cube. This cube might not incorporate the absolute averaged SAR. Please consider a refinement of the Area Scan measurement.
Maximum value of SAR (measured) = 0.034 mW/g

802.11an_HT40_CH159_orientation B/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.038 mW/g

0 dB = 0.034mW/g
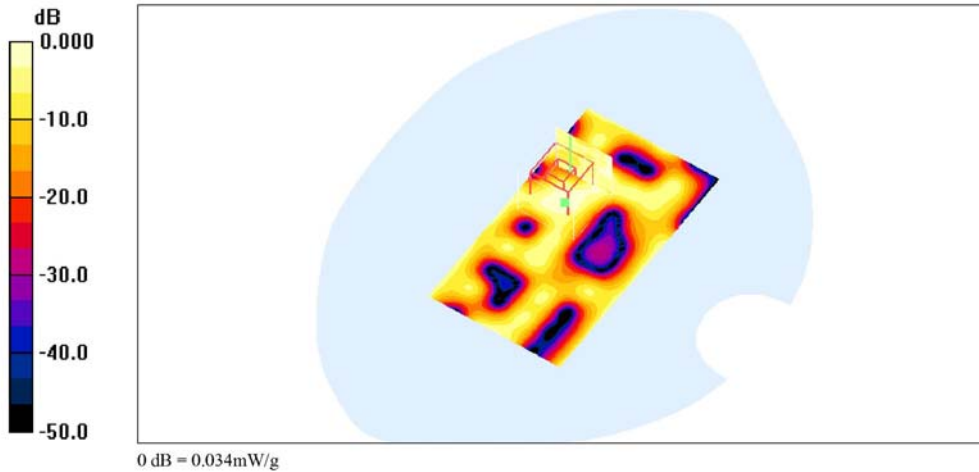
802.11an_HT40_CH159_orientation C

Date/Time: 8/25/2009 1:52:38 PM

Test Laboratory: Electronics Testing Center, Taiwan

DUT: USB Adapter; Type: TER-NUSB1; Serial: N/A

Communication System: IEEE 802.11a; Frequency: 5795 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 5795 MHz; σ = 6.04 mho/m; ε_r = 48; ρ = 1000 kg/m^3
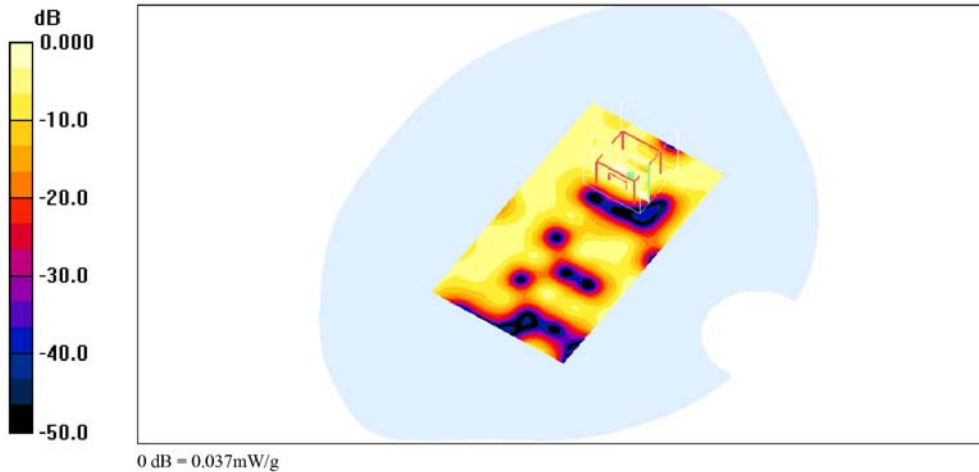Air temperature:22 degC; Liquid temperature:21.5 degC;
Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3555; ConvF(3.82, 3.82, 3.82); Calibrated: 9/19/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn629; Calibrated: 9/23/2008
- Phantom: SAM 12-2; Type: SAM4.0; Serial: TP-1347
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

802.11an_HT40_CH159_orientation C/Area Scan (41x91x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.029 mW/g

802.11an_HT40_CH159_orientation C/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 0.982 V/m; Power Drift = 0.192 dB
Peak SAR (extrapolated) = 0.045 W/kg
SAR(1 g) = 0.010 mW/g; SAR(10 g) = 0.00372 mW/g

Info: Interpolated medium parameters used for SAR evaluation.

Warning: Maximum averaged SAR over 1 g is located on the boundary of the measurement cube. This cube might not incorporate the absolute averaged SAR. Please consider a refinement of the Area Scan measurement. Maximum averaged SAR over 10 g is located on the boundary of the measurement cube. This cube might not incorporate the absolute averaged SAR. Please consider a refinement of the Area Scan measurement.
Maximum value of SAR (measured) = 0.045 mW/g

0 dB = 0.045mW/g

CERPASS TECHNOLOGY CORP.
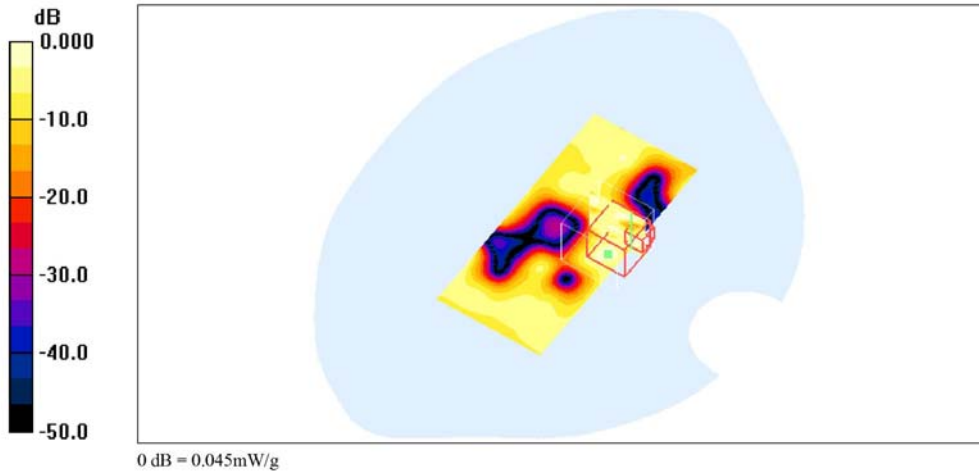
Date/Time: 8/25/2009 5:16:52 PM

Test Laboratory: Electronics Testing Center, Taiwan

DUT: USB Adapter; Type: TER-NUSB1; Serial: N/A

Communication System: IEEE 802.11a; Frequency: 5795 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 5795 MHz; σ = 6.04 mho/m; ε_r = 48; ρ = 1000 kg/m^3
Air temperature:22 degC; Liquid temperature:21.5 degC;
Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3555; ConvF(3.82, 3.82, 3.82); Calibrated: 9/19/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn629; Calibrated: 9/23/2008
- Phantom: SAM 12-2; Type: SAM4.0; Serial: TP-1347
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

802.11an_HT40_CH159_orientation D/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.15 V/m; Power Drift = 0.141 dB
Peak SAR (extrapolated) = 0.206 W/kg
**SAR(1 g) = 0.051 mW/g; SAR(10 g) = 0.017 mW/g**

Info: Interpolated medium parameters used for SAR evaluation.

Warning: Maximum averaged SAR over 10 g is located on the boundary of the measurement cube. This cube might not incorporate the absolute averaged SAR. Please consider a refinement of the Area Scan measurement.
Maximum value of SAR (measured) = 0.054 mW/g

802.11an_HT40_CH159_orientation D/Area Scan (41x91x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.048 mW/g

0 dB = 0.054mW/g
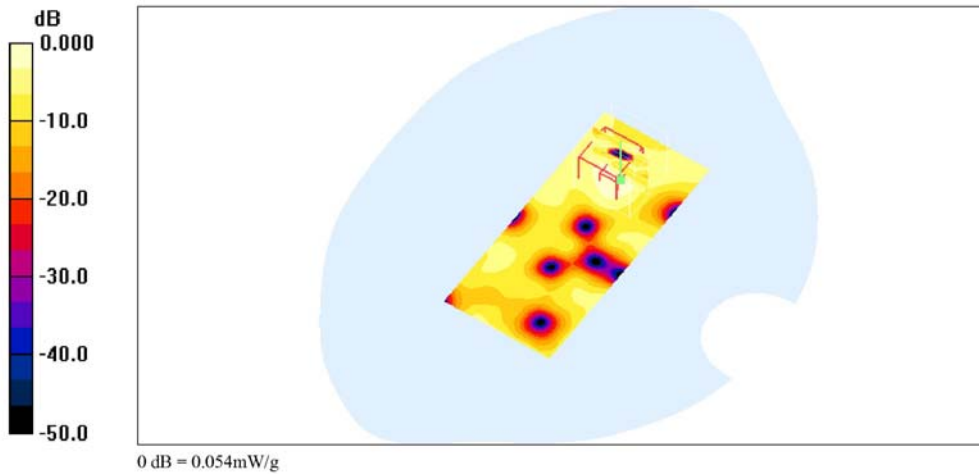
ANNEX C: DIPOLE CERTIFICATE

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**

Client **ETC (Auden)**

Certificate No: **D2450V2-764_Sep08**

CALIBRATION CERTIFICATE

Object	D2450V2 - SN: 764
Calibration procedure(s)	QA CAL-05.v7 Calibration procedure for dipole validation kits
Calibration date:	September 24, 2008
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 (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	04-Oct-07 (No. 217-00736)	Oct-08
Power sensor HP 8481A	US37292783	04-Oct-07 (No. 217-00736)	Oct-08
Reference 20 dB Attenuator	SN: S5086 (20g)	01-Jul-08 (No. 217-00864)	Jul-09
Type-N mismatch combination	SN: 5047.2 / 06327	01-Jul-08 (No. 217-00867)	Jul-09
Reference Probe ES3DV2	SN: 3025	28-Apr-08 (No. ES3-3025_Apr08)	Apr-09
DAE4	SN: 601	14-Mar-08 (No. DAE4-601_Mar08)	Mar-09

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-07)	In house check: Oct-09
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-07)	In house check: Oct-09
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-07)	In house check: Oct-08

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: September 25, 2008

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

Certificate No: D2450V2-764_Sep08   Page 1 of 9

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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

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) 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
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) DASY4/5 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.

Certificate No: D2450V2-764_Sep08   Page 2 of 9

Measurement Conditions

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

DASY Version	DASY5	V5.0
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	39.8 ± 6 %	1.80 mho/m ± 6 %
Head TSL temperature during test	(22.0 ± 0.2) °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	13.3 mW / g
SAR normalized	normalized to 1W	53.2 mW / g
SAR for nominal Head TSL parameters [1]	normalized to 1W	**53.6 mW /g ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.19 mW / g
SAR normalized	normalized to 1W	24.8 mW / g
SAR for nominal Head TSL parameters [1]	normalized to 1W	**24.9 mW /g ± 16.5 % (k=2)**

---

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

Certificate No: D2450V2-764_Sep08   Page 3 of 9

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	50.7 ± 6 %	1.97 mho/m ± 6 %
Body TSL temperature during test	(22.0 ± 0.2) °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	12.7 mW / g
SAR normalized	normalized to 1W	50.8 mW / g
SAR for nominal Body TSL parameters [2]	normalized to 1W	**49.5 mW /g ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	5.83 mW / g
SAR normalized	normalized to 1W	23.3 mW / g
SAR for nominal Body TSL parameters [2]	normalized to 1W	**22.9 mW /g ± 16.5 % (k=2)**

---

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

Certificate No: D2450V2-764_Sep08   Page 4 of 9

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	52.3 Ω + 0.5 jΩ
Return Loss	- 32.7 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	47.8 Ω + 3.5 jΩ
Return Loss	- 27.5 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.151 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	April 10, 2004

DASY5 Validation Report for Head TSL

Date/Time: 24.09.2008 12:28:28

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN764

Communication System: CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: HSL U10 BB
Medium parameters used: f = 2450 MHz; σ = 1.8 mho/m; ε_r = 39.8; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV2 - SN3025; ConvF(4.4, 4.4, 4.4); Calibrated: 28.04.2008

- Sensor-Surface: 3.4mm (Mechanical Surface Detection)

- Electronics: DAE4 Sn601; Calibrated: 14.03.2008

- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001

- Measurement SW: DASY5, V5.0 Build 119; SEMCAD X Version 13.2 Build 87

Pin = 250 mW; d = 10 mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 96.2 V/m; Power Drift = 0.014 dB
Peak SAR (extrapolated) = 27.6 W/kg
SAR(1 g) = 13.3 mW/g; SAR(10 g) = 6.19 mW/g
Maximum value of SAR (measured) = 15.8 mW/g

0 dB = 15.8mW/g

Certificate No: D2450V2-764_Sep08   Page 6 of 9
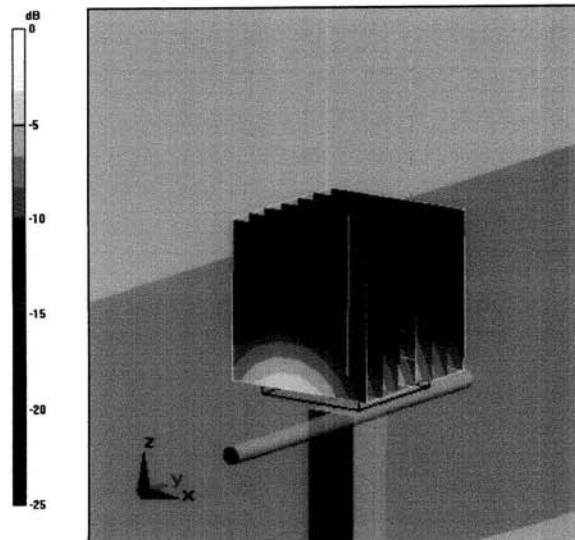
Impedance Measurement Plot for Head TSL
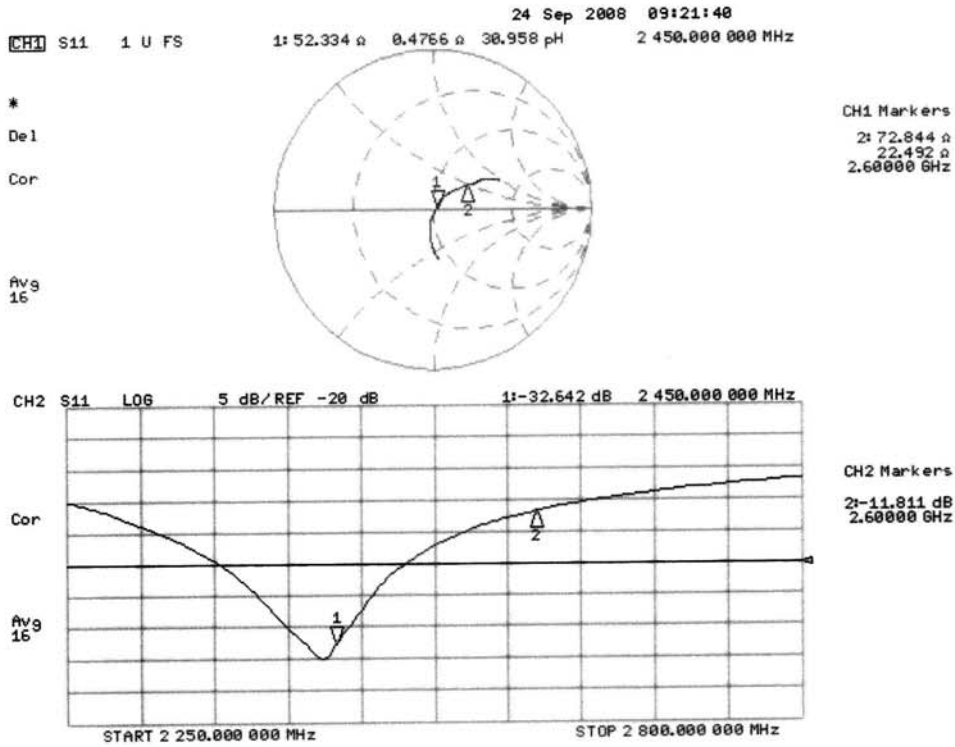
DASY5 Validation Report for Body TSL

Date/Time: 18.09.2008 13:33:00

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:764

Communication System: CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: MSL U10 BB
Medium parameters used: f = 2450 MHz; σ = 1.97 mho/m; ε_r = 50.7; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV2 - SN3025; ConvF(4.07, 4.07, 4.07); Calibrated: 28.04.2008

- Sensor-Surface: 3.4mm (Mechanical Surface Detection)

- Electronics: DAE4 Sn601; Calibrated: 14.03.2008

- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002

- Measurement SW: DASY5, V5.0 Build 119; SEMCAD X Version 13.2 Build 87

Pin = 250 mW; d = 10 mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 91.8 V/m; Power Drift = 0.029 dB
Peak SAR (extrapolated) = 26.4 W/kg
SAR(1 g) = 12.7 mW/g; SAR(10 g) = 5.83 mW/g
Maximum value of SAR (measured) = 15.7 mW/g
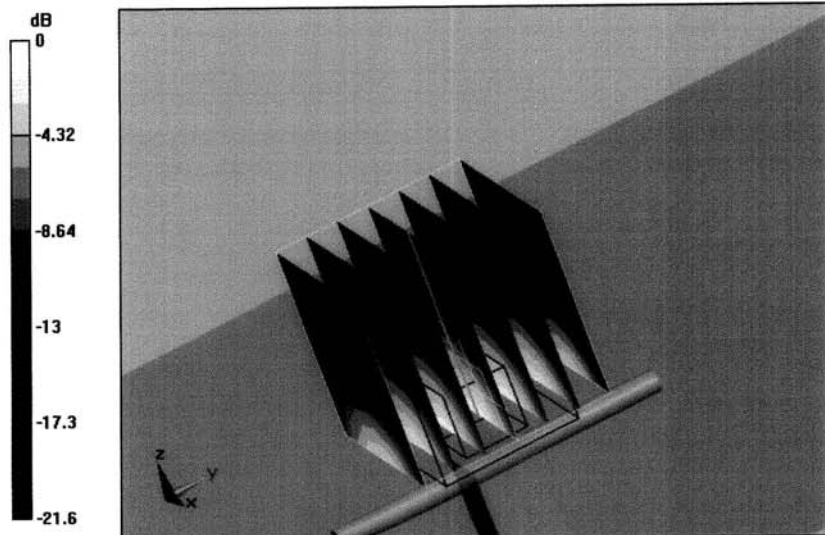
0 dB = 15.7mW/g
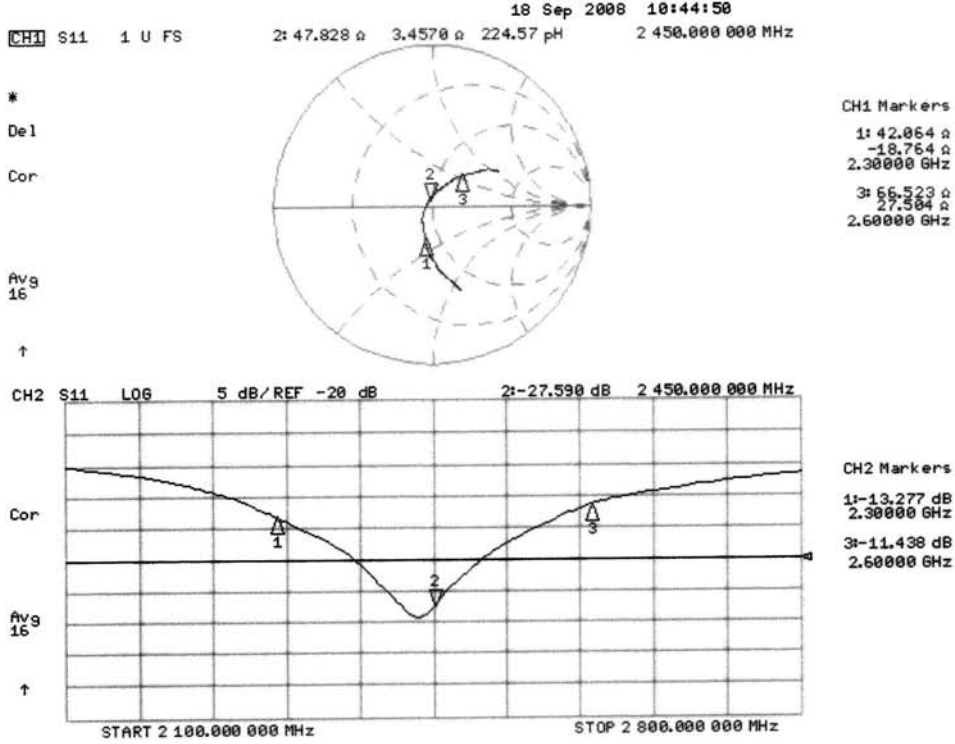
Certificate No: D2450V2-764_Sep08   Page 8 of 9

Impedance Measurement Plot for Body TSL

18 Sep 2008 10:44:50

CH1 S11 1 U FS   2: 47.828 Ω   3.4570 Ω 224.57 pH   2 450.000 000 MHz

*

Del

Cor

CH1 Markers

1: 42.064 Ω
   -18.764 Ω
2.30000 GHz

3: 66.523 Ω
   27.504 Ω
2.60000 GHz

Avg
16

↑

CH2 S11   LOG   5 dB/REF -20 dB   2:-27.590 dB   2 450.000 000 MHz

Cor

CH2 Markers

1:-13.277 dB
2.30000 GHz

3:-11.438 dB
2.60000 GHz

Avg
16

↑

START 2 100.000 000 MHz   STOP 2 800.000 000 MHz

Certificate No: D2450V2-764_Sep08   Page 9 of 9

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S   Servizio svizzero di taratura
     Swiss Calibration Service

Accreditation No.: SCS 108

Client	ETC (Auden)	Certificate No: D5GHzV2-1030_Sep08

CALIBRATION CERTIFICATE

Object	D5GHzV2 - SN: 1030
Calibration procedure(s)	QA CAL-22.v1 Calibration procedure for dipole validation kits between 3-6 GHz
Calibration date:	September 19, 2008
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 (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	04-Oct-07 (No. 217-00736)	Oct-08
Power sensor HP 8481A	US37292783	04-Oct-07 (No. 217-00736)	Oct-08
Reference 20 dB Attenuator	SN: 5086 (20g)	01-Jul-08 (No. 217-00864)	Jul-09
Type-N mismatch combination	SN: 5047.2 / 06327	01-Jul-08 (No. 217-00867)	Jul-09
Reference Probe EX3DV4	SN: 3503	8-Mar-08 (No. EX3-3503_Mar08)	Mar-09
DAE4	SN: 601	14-Mar-08 (No. DAE4-601_Mar08)	Mar-09

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-07)	In house check: Oct-09
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-07)	In house check: Oct-09
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-07)	In house check: Oct-08

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: September 22, 2008

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Certificate No: D5GHzV2-1030_Sep08   Page 1 of 8

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S	Swiss Calibration Service

Accreditation No.: SCS 108

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

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) IEC Std 62209 Part 2, "Evaluation of Human Exposure to Radio Frequency Fields from
      Handheld and Body-Mounted Wireless Communication Devices in the Frequency Range
      of 30 MHz to 6 GHz: Human models, Instrumentation, and Procedures"; Part 2:
      "Procedure to determine the Specific Absorption Rate (SAR) for including accessories and
      multiple transmitters", Draft Version 0.9, December 2004
   b) 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:
   c) DASY4/5 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.

Certificate No: D5GHzV2-1030_Sep08   Page 2 of 8

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Measurement Conditions

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

DASY Version	DASY5	V5.0
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V5.0	
Distance Dipole Center - TSL	10 mm	with Spacer
Area Scan resolution	dx, dy = 10 mm	
Zoom Scan Resolution	dx, dy = 4.0 mm, dz = 2.5 mm	
Frequency	5200 MHz ± 1 MHz 5500 MHz ± 1 MHz 5800 MHz ± 1 MHz	

Body TSL parameters at 5200 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	49.0	5.30 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	47.6 ± 6 %	5.43 mho/m ± 6 %
Body TSL temperature during test	(22.0 ± 0.2) °C	----	----

SAR result with Body TSL at 5200 MHz

SAR averaged over 1 cm³ (1 g) of Body TSL	condition	
SAR measured	100 mW input power	7.47 mW / g
SAR normalized	normalized to 1W	74.7 mW / g
SAR for nominal Body TSL parameters [1]	normalized to 1W	74.0 mW / g ± 19.9 % (k=2)

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.08 mW / g
SAR normalized	normalized to 1W	20.8 mW / g
SAR for nominal Body TSL parameters [1]	normalized to 1W	20.7 mW / g ± 19.5 % (k=2)

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

Body TSL parameters at 5500 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.6	5.65 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	46.9 ± 6 %	5.78 mho/m ± 6 %
Body TSL temperature during test	(22.0 ± 0.2) °C	----	----

SAR result with Body TSL at 5500 MHz

SAR averaged over 1 cm³ (1 g) of Body TSL	condition	
SAR measured	100 mW input power	7.80 mW / g
SAR normalized	normalized to 1W	78.0 mW / g
SAR for nominal Body TSL parameters [2]	normalized to 1W	**77.2 mW / g ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.15 mW / g
SAR normalized	normalized to 1W	21.5 mW / g
SAR for nominal Body TSL parameters [2]	normalized to 1W	**21.3 mW / g ± 19.5 % (k=2)**

Body TSL parameters at 5800 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.2	6.00 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	46.1 ± 6 %	6.20 mho/m ± 6 %
Body TSL temperature during test	(22.0 ± 0.2) °C	----	----

SAR result with Body TSL at 5800 MHz

SAR averaged over 1 cm³ (1 g) of Body TSL	condition	
SAR measured	100 mW input power	6.87 mW / g
SAR normalized	normalized to 1W	68.7 mW / g
SAR for nominal Body TSL parameters [2]	normalized to 1W	**67.8 mW / g ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	1.89 mW / g
SAR normalized	normalized to 1W	18.9 mW / g
SAR for nominal Body TSL parameters [2]	normalized to 1W	**18.7 mW / g ± 19.5 % (k=2)**

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

Certificate No: D5GHzV2-1030_Sep08   Page 4 of 8

Appendix

Antenna Parameters with Body TSL at 5200 MHz

Impedance, transformed to feed point	52.2 Ω - 7.0 jΩ
Return Loss	-22.9 dB

Antenna Parameters with Body TSL at 5500 MHz

Impedance, transformed to feed point	55.5 Ω - 0.4 jΩ
Return Loss	-25.6 dB

Antenna Parameters with Body TSL at 5800 MHz

Impedance, transformed to feed point	58.9 Ω -1.4 jΩ
Return Loss	-21.6 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.198 ns

After long term use with 40 W 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	July 09, 2004

DASY5 Validation Report for Body TSL

Date/Time: 19.09.2008 17:49:06

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 5GHz; Type: D5GHz; Serial: D5GHzV2 - SN:1030

Communication System: CW-5GHz; Frequency: 5200 MHzFrequency: 5500 MHzFrequency: 5800 MHz; Duty Cycle: 1:1
Medium: MSL 5800 MHz
Medium parameters used: f = 5200 MHz; σ = 5.43 mho/m; ε_r = 47.6; ρ = 1000 kg/m^3 Medium parameters used: f = 5500 MHz; σ = 5.78 mho/m; ε_r = 46.9; ρ = 1000 kg/m^3 Medium parameters used: f = 5800 MHz; σ = 6.2 mho/m; ε_r = 46.1; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: EX3DV4 - SN3503; ConvF(4.95, 4.95, 4.95)ConvF(4.61, 4.61, 4.61)ConvF(4.74, 4.74, 4.74); Calibrated: 08.03.2008

- Sensor-Surface: 2mm (Mechanical Surface Detection)

- Electronics: DAE4 Sn601; Calibrated: 14.03.2008

- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002

- Measurement SW: DASY5, V5.0 Build 119; SEMCAD X Version 13.2 Build 87

d=10mm, Pin=100mW, f=5200 MHz/Area Scan (61x61x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 15.5 mW/g

d=10mm, Pin=100mW, f=5200 MHz/Zoom Scan (8x8x10), dist=2mm (8x8x10)/Cube 0:
Measurement grid: dx=4mm, dy=4mm, dz=2.5mm
Reference Value = 57.4 V/m; Power Drift = 0.063 dB
Peak SAR (extrapolated) = 28.6 W/kg
SAR(1 g) = 7.47 mW/g; SAR(10 g) = 2.08 mW/g
Maximum value of SAR (measured) = 15.8 mW/g

d=10mm, Pin=100mW, f=5500 MHz/Zoom Scan (8x8x10), dist=2mm (8x8x10)/Cube 0:
Measurement grid: dx=4mm, dy=4mm, dz=2.5mm
Reference Value = 57.1 V/m; Power Drift = 0.043 dB
Peak SAR (extrapolated) = 32.1 W/kg
SAR(1 g) = 7.8 mW/g; SAR(10 g) = 2.15 mW/g
Maximum value of SAR (measured) = 16.7 mW/g

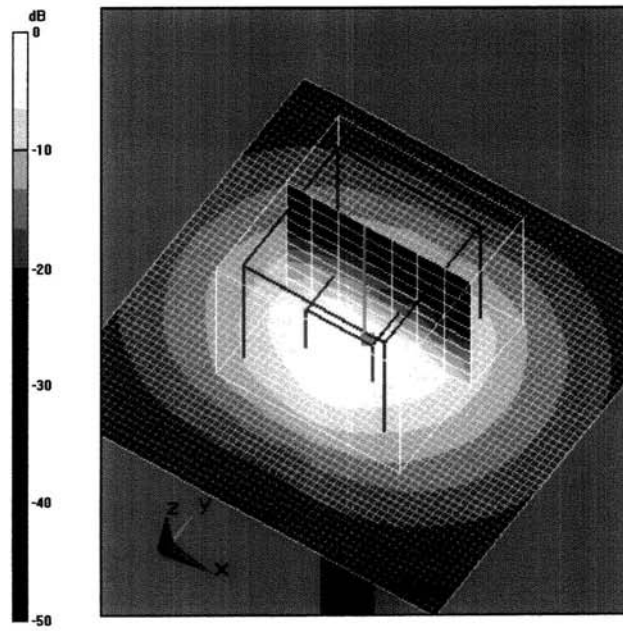**d=10mm, Pin=100mW, f=5800 MHz/Zoom Scan (8x8x10), dist=2mm (8x8x10)/Cube 0:**
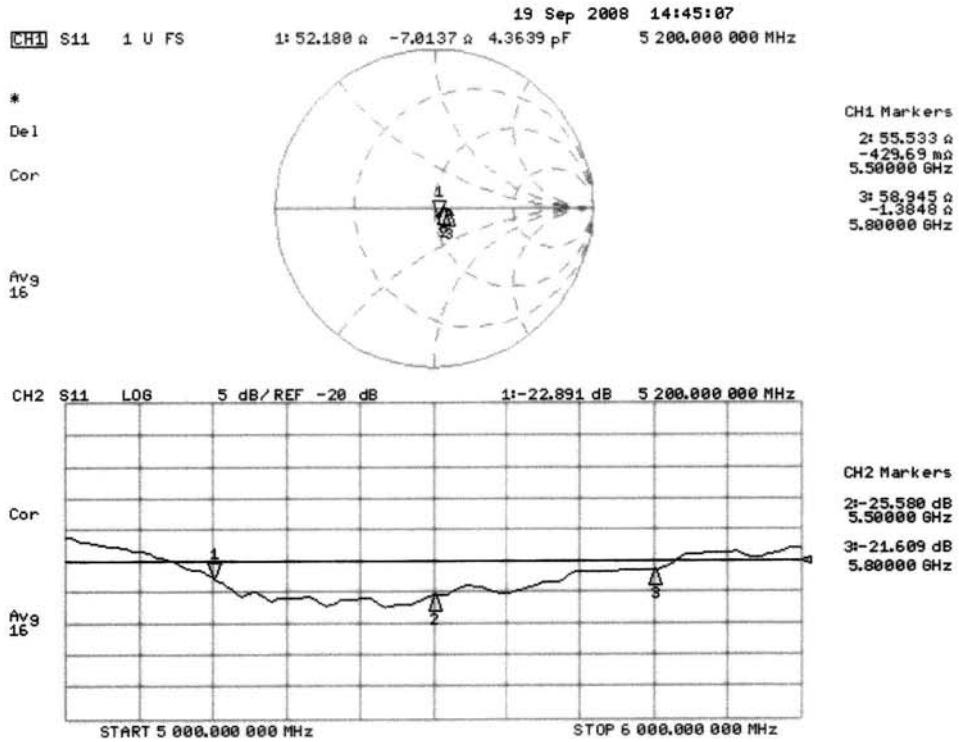Measurement grid: dx=4mm, dy=4mm, dz=2.5mm
Reference Value = 52.2 V/m; Power Drift = -0.037 dB
Peak SAR (extrapolated) = 29.7 W/kg
SAR(1 g) = 6.87 mW/g; SAR(10 g) = 1.89 mW/g
Maximum value of SAR (measured) = 15 mW/g

Certificate No: D5GHzV2-1030_Sep08   Page 6 of 8

0 dB = 15mW/g

Cerpass Technology Corp.

Tel:886-2-2792-3366 Fax:886-2-2792-1100

Impedance Measurement Plot for Body TSL


```
                                    19 Sep 2008  14:45:07
CH1  S11   1 U FS      1: 52.180 Ω  -7.0137 Ω  4.3639 pF    5 200.000 000 MHz

 *                                                      CH1 Markers
Del                                                     2: 55.533 Ω
                                                        -429.69 mΩ
Cor                                                     5.50000 GHz

                                                        3: 58.945 Ω
                                                        -1.3848 Ω
                                                        5.80000 GHz
Avg
16

CH2  S11   LOG    5 dB/REF -20 dB       1:-22.891 dB  5 200.000 000 MHz

                                                        CH2 Markers
Cor                                                     2:-25.580 dB
                                                        5.50000 GHz

                                                        3:-21.609 dB
                                                        5.80000 GHz
Avg
16

   START 5 000.000 000 MHz              STOP 6 000.000 000 MHz
```

ANNEX D: PROBE CERTIFICATE

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

Accreditation No.: SCS 108

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

Client	ETC (Auden)	Certificate No: EX3-3555_Sep08

CALIBRATION CERTIFICATE

Object	EX3DV4 - SN:3555
Calibration procedure(s)	QA CAL-01.v6, QA CAL-14.v3 and QA CAL-23.v3 Calibration procedure for dosimetric E-field probes
Calibration date:	September 19, 2008
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 (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	1-Apr-08 (No. 217-00788)	Apr-09
Power sensor E4412A	MY41495277	1-Apr-08 (No. 217-00788)	Apr-09
Power sensor E4412A	MY41498087	1-Apr-08 (No. 217-00788)	Apr-09
Reference 3 dB Attenuator	SN: S5054 (3c)	1-Jul-08 (No. 217-00865)	Jul-09
Reference 20 dB Attenuator	SN: S5086 (20b)	31-Mar-08 (No. 217-00787)	Apr-09
Reference 30 dB Attenuator	SN: S5129 (30b)	1-Jul-08 (No. 217-00866)	Jul-09
Reference Probe ES3DV2	SN: 3013	2-Jan-08 (No. ES3-3013_Jan08)	Jan-09
DAE4	SN: 660	9-Sep-08 (No. DAE4-660_Sep08)	Sep-09

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Oct-07)	In house check: Oct-09
Network Analyzer HP 8753E	US37390585	18-Oct-01 (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: September 20, 2008

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

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CERPASS TECHNOLOGY CORP.

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

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Accreditation No.: **SCS 108**

Glossary:

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConvF	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) 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 $\vartheta = 0$ (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.

Probe EX3DV4

SN:3555

Manufactured:	July 13, 2004
Last calibrated:	September 27, 2007
Recalibrated:	September 19, 2008

Calibrated for DASY Systems

(Note: non-compatible with DASY2 system!)

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DASY - Parameters of Probe: EX3DV4 SN:3555

Sensitivity in Free Space[A]			Diode Compression[B]	
NormX	$0.40 \pm 10.1\%$	$\mu V/(V/m)^2$	DCP X	95 mV
NormY	$0.41 \pm 10.1\%$	$\mu V/(V/m)^2$	DCP Y	103 mV
NormZ	$0.40 \pm 10.1\%$	$\mu V/(V/m)^2$	DCP Z	93 mV

Sensitivity in Tissue Simulating Liquid (Conversion Factors)

Please see Page 8.

Boundary Effect

TSL 900 MHz Typical SAR gradient: 5 % per mm

		2.0 mm	3.0 mm
Sensor Center to Phantom Surface Distance			
SAR_{be} [%]	Without Correction Algorithm	10.4	6.0
SAR_{be} [%]	With Correction Algorithm	0.8	0.5

TSL 1750 MHz Typical SAR gradient: 10 % per mm

		2.0 mm	3.0 mm
Sensor Center to Phantom Surface Distance			
SAR_{be} [%]	Without Correction Algorithm	8.6	4.6
SAR_{be} [%]	With Correction Algorithm	0.6	0.1

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).

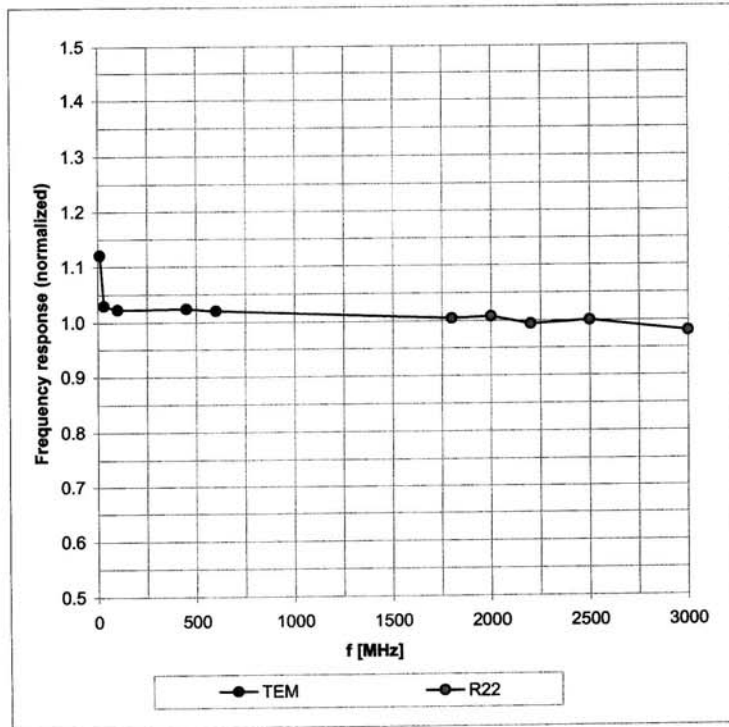[B] Numerical linearization parameter: uncertainty not required.

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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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EX3DV4 SN:3555   September 19, 2008

Receiving Pattern (φ), ϑ = 0°

f = 600 MHz, TEM ifi110EXX

f = 1800 MHz, WG R22
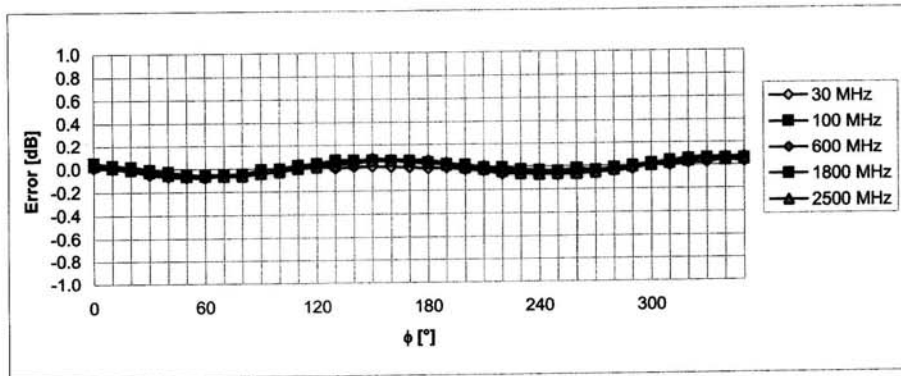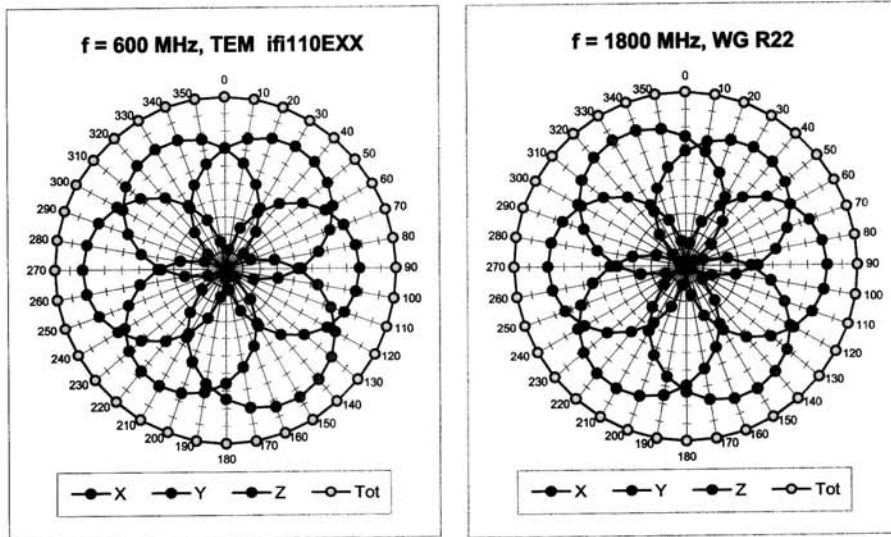
Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

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Dynamic Range f(SAR$_{head}$)

(Waveguide R22, f = 1800 MHz)
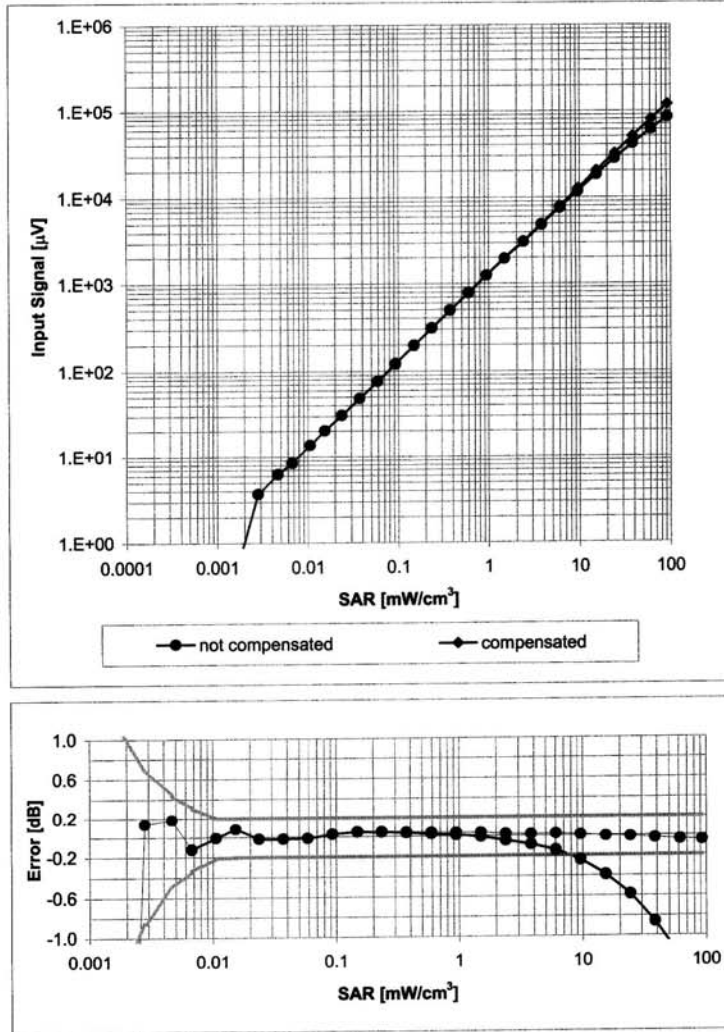
Uncertainty of Linearity Assessment: ± 0.6% (k=2)

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EX3DV4 SN:3555   September 19, 2008

Conversion Factor Assessment
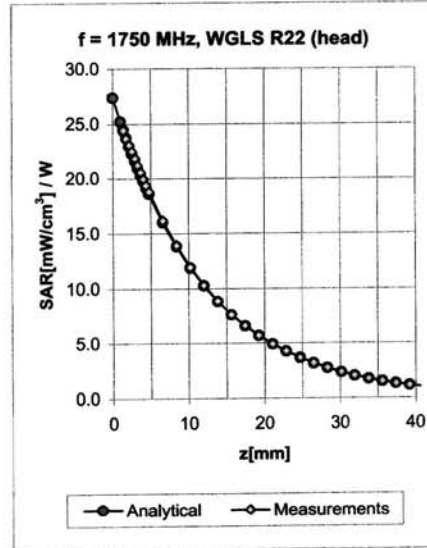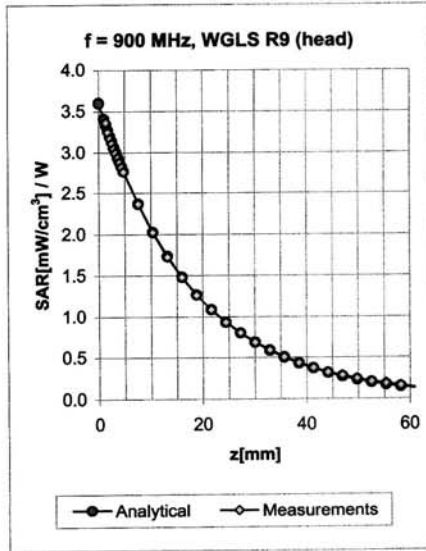
f [MHz]	Validity [MHz]^c	TSL	Permittivity	Conductivity	Alpha	Depth	ConvF	Uncertainty
900	± 50 / ± 100	Head	41.5 ± 5%	0.97 ± 5%	0.29	1.13	8.03	± 11.0% (k=2)
1750	± 50 / ± 100	Head	40.1 ± 5%	1.37 ± 5%	0.39	0.79	7.03	± 11.0% (k=2)
1950	± 50 / ± 100	Head	40.0 ± 5%	1.40 ± 5%	0.66	0.62	6.68	± 11.0% (k=2)
2450	± 50 / ± 100	Head	39.2 ± 5%	1.80 ± 5%	0.47	0.72	6.40	± 11.0% (k=2)
900	± 50 / ± 100	Body	55.0 ± 5%	1.05 ± 5%	0.30	1.17	8.01	± 11.0% (k=2)
1750	± 50 / ± 100	Body	53.4 ± 5%	1.49 ± 5%	0.38	0.85	6.87	± 11.0% (k=2)
1950	± 50 / ± 100	Body	53.3 ± 5%	1.52 ± 5%	0.32	0.92	6.70	± 11.0% (k=2)
2450	± 50 / ± 100	Body	52.7 ± 5%	1.95 ± 5%	0.34	1.00	6.17	± 11.0% (k=2)
5200	± 50 / ± 100	Body	49.0 ± 5%	5.30 ± 5%	0.48	1.70	4.08	± 13.1% (k=2)
5500	± 50 / ± 100	Body	48.6 ± 5%	5.65 ± 5%	0.48	1.70	3.86	± 13.1% (k=2)
5800	± 50 / ± 100	Body	48.2 ± 5%	6.00 ± 5%	0.48	1.70	3.82	± 13.1% (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.
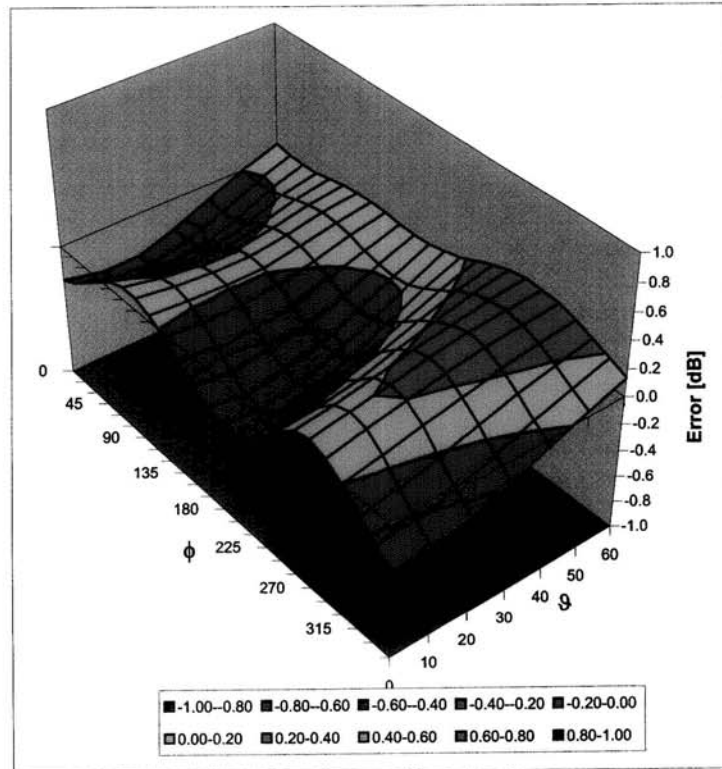
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Deviation from Isotropy in HSL
Error (φ, ϑ), f = 900 MHz

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