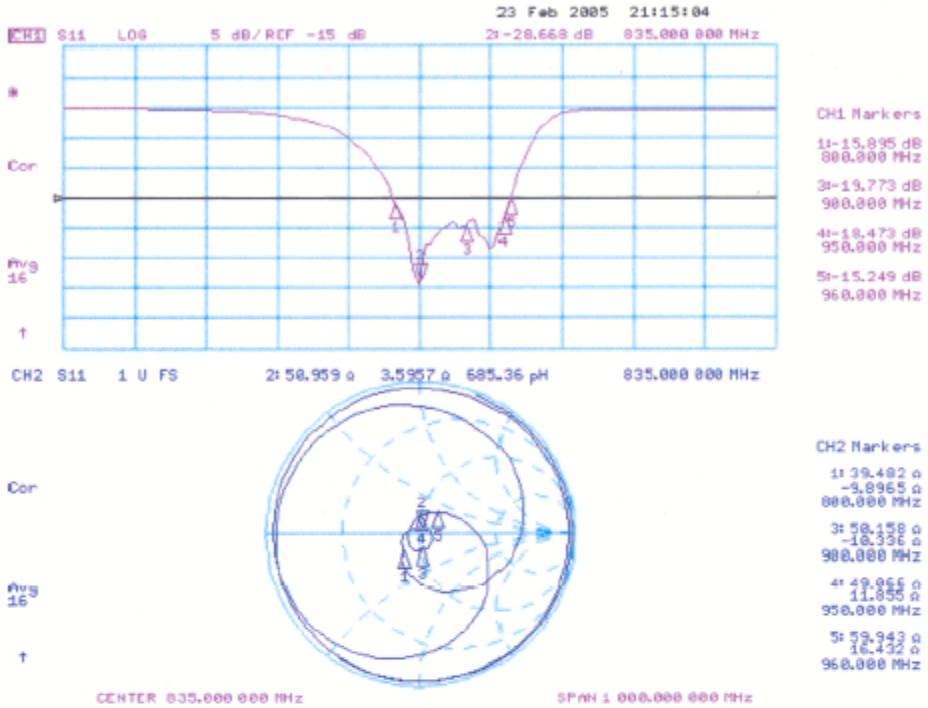
3.3 Measurement Sheets

3.3.1 Return Loss and Smith Chart



3.3.2 DASY4 H-field result

See page 5

3.3.3 DASY4 E-Field result

See page 6

NCL CALIBRATION LABORATORIES

Calibration File No: DC-0267
Project Number: BACL-CAL2450-3985

CERTIFICATE OF CALIBRATION

It is certified that the equipment identified below has been calibrated in the **NCL CALIBRATION LABORATORIES** by qualified personnel following recognized procedures and using transfer standards traceable to NRC/NIST.

BACL Validation Dipole

Manufacturer: APREL Laboratories
Part number: D-1800-S-1
Frequency: 1800 MHz
Serial No: BCL-049

Customer: Bay Area Compliance Laboratory

Calibrated: 4th March 2005
Released on: 4th March 2005

Released By: _____

NCL CALIBRATION LABORATORIES
51 SPECTRUM WAY
NEPEAN, ONTARIO
CANADA K2R 1E6
Division of APREL Lab.
TEL: (613) 820-4988
FAX: (613) 820-4162

NCL Calibration Laboratories
Division of APREL Laboratories.

Conditions

Dipole BCL-049 received from customer, with the attribute of having a repair to one radial arm, in good condition for re-calibration. SMA connector cleaned prior to calibration.

Ambient Temperature of the Laboratory: 22 °C +/- 0.5°C
Temperature of the Tissue: 21 °C +/- 0.5°C

We the undersigned attest that to the best of our knowledge the calibration of this device has been accurately conducted and that all information contained within this report has been reviewed for accuracy.

Stuart Nicol
Director Product Development

D. Brooks
Member of Engineering Staff
(Calibration Engineer)

This page has been reviewed for content and attested to by signature within this document.

NCL Calibration Laboratories
Division of APREL Laboratories.

Calibration Results Summary

The following results relate the Calibrated Dipole and should be used as a quick reference for the user.

Mechanical Dimensions

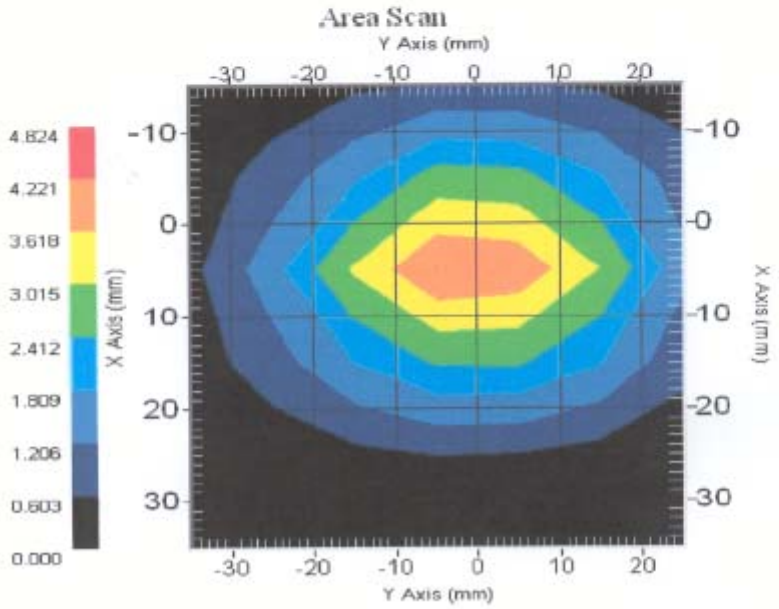
Length: 72.0 mm
Height: 41.7 mm

Electrical Specification

SWR: 1.09 U
Return Loss: -26.9 dB
Impedance: 50.9 Ω

System Validation Results

Frequency	1 Gram	10 Gram	Peak
1800 MHz	38.81	20.01	71.56



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NCL Calibration Laboratories
Division of APREL Laboratories.

Introduction

This Calibration Report has been produced in line with the SSI Dipole Calibration Procedure SSI-TP-018-ALSAS. The results contained within this report are for Validation Dipole BCL-049. The calibration routine consisted of a three-step process. Step 1 was a mechanical verification of the dipole to ensure that it meets the mechanical specifications. Step 2 was an Electrical Calibration for the Validation Dipole, where the SWR, Impedance, and the Return loss were assessed. Step 3 involved a System Validation using the ALSAS-10U, along with APREL E-020 130 MHz to 26 GHz E-Field Probe Serial Number 212.

References

SSI-TP-018-ALSAS Dipole Calibration Procedure
SSI-TP-016 Tissue Calibration Procedure
IEEE 1528 "Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Body Due to Wireless Communications Devices: Experimental Techniques"

Conditions

Dipole BCL-049 received from customer in good condition, with the attribute of a repair of one radial arm.

Ambient Temperature of the Laboratory: 22 °C +/- 0.5°C
Temperature of the Tissue: 20 °C +/- 0.5°C

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Dipole Calibration Results

Mechanical Verification

APREL Length	APREL Height	Measured Length	Measured Height
72.0 mm	41.7 mm	71.6 mm	41.7 mm

Tissue Validation

Head Tissue 1800 MHz	Measured
Dielectric constant, ε_r	40.0
Conductivity, σ [S/m]	1.40

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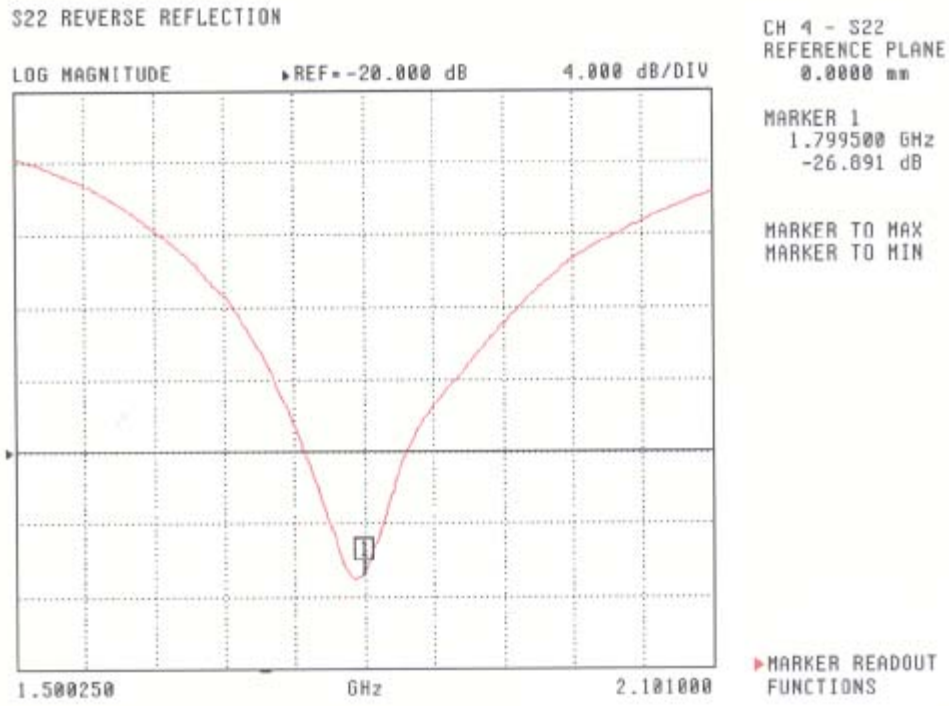
Electrical Calibration

Test	Result
S11 R/L	-26.9 dB
SWR	1.09 U
Impedance	50.9 Ω

The Following Graphs are the results as displayed on the Vector Network Analyzer.

S11 Parameter Return Loss



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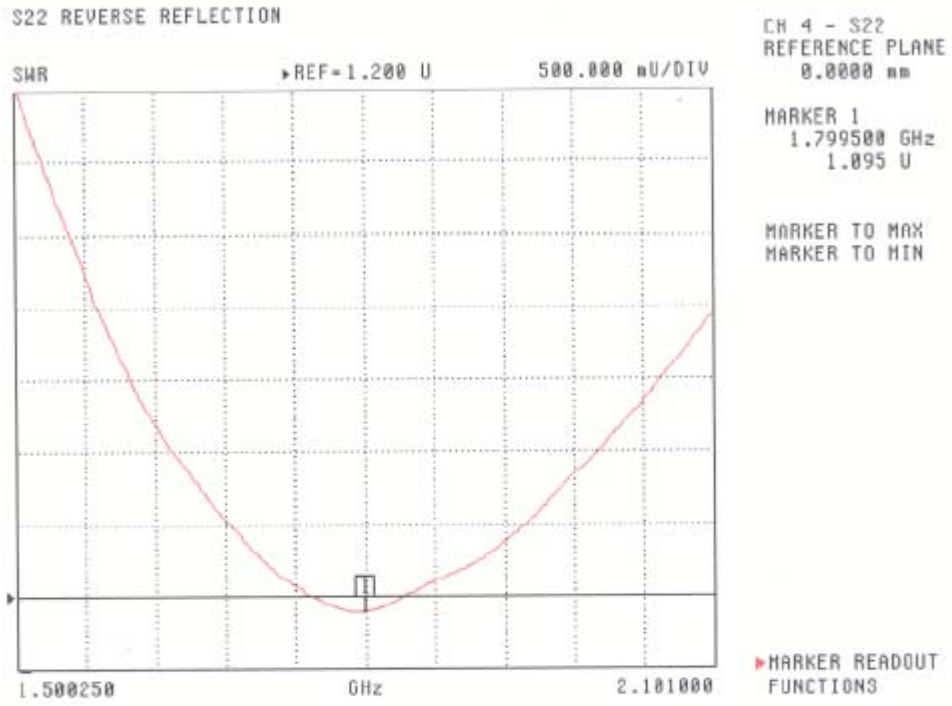
SWR



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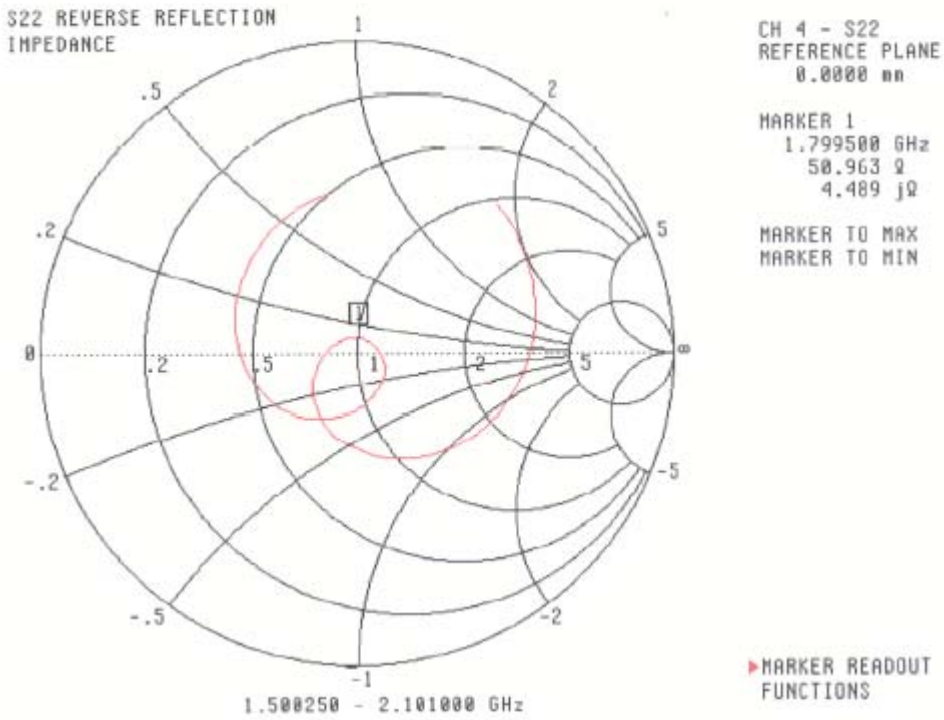
Smith Chart Dipole Impedance



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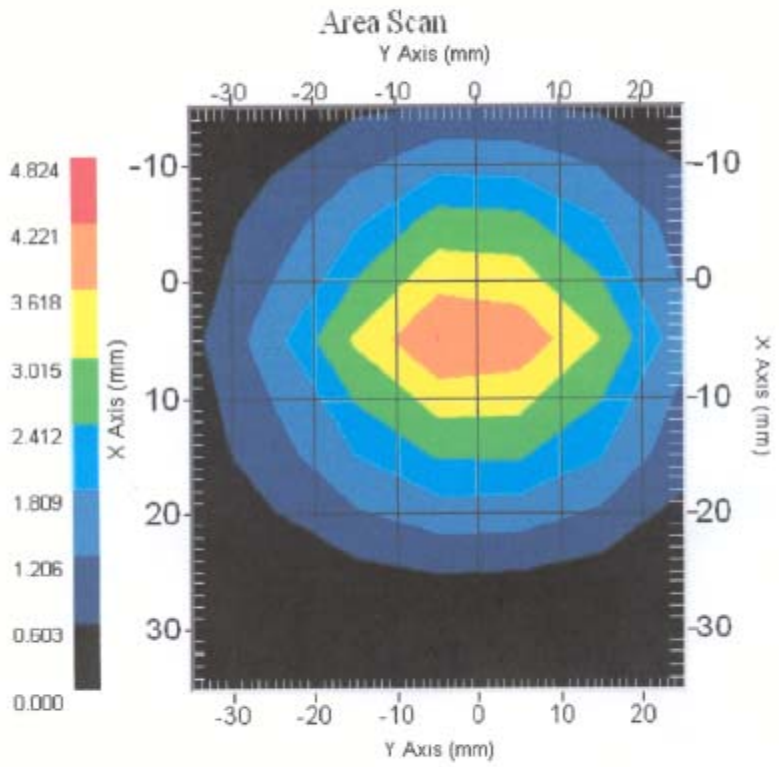
Division of APREL Laboratories.

System Validation Results Using the Electrically Calibrated Dipole

Head Tissue Frequency	1 Gram	10 Gram	Peak Above Feed Point
1800 MHz	38.81	20.01	71.56



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NCL Calibration Laboratories
Division of APREL Laboratories.

Test Equipment

The test equipment used during Probe Calibration, manufacturer, model number and, current calibration status are listed and located on the main APREL server R:\NCL\Calibration Equipment\Instrument List May 2004

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APPENDIX D - TEST SYSTEM VERIFICATIONS SCANS

Liquid Measurement Result

2005-07-25

Simulant	Freq [MHz]	Parameters	Liquid Temp [ºC]	Target Value	Measured Value	Deviation	Limits [%]
Body	835	ε_r	22.0	55.2	55.8	1.10	±5
		σ	22.0	0.97	0.96	-1.03	±5
		1g SAR	22.0	8.848	8.92	0.81	±10
Head	835	ε_r	22.0	41.5	41.3	-0.48	±5
		σ	22.0	0.90	0.89	-1.11	±5
		1g SAR	22.0	9.5	9.01	-5.16	±10

ε_r = relative permittivity, σ = conductivity and ρ=1000kg/m^3

2005-07-26

Simulant	Freq [MHz]	Parameters	Liquid Temp [ºC]	Target Value	Measured Value	Deviation	Limits [%]
Body	1880	ε_r	22.0	53.3	52.4	-1.67	±5
		σ	22.0	1.52	1.50	-1.32	±5
		1g SAR	22.0	24.97	26.7	6.93	±10
Head	1880	ε_r	22.0	40.0	39.9	-0.25	±5
		σ	22.0	1.4	1.38	-2.0	±5
		1g SAR	22.0	39.7	39.4	-0.76	±10

ε_r = relative permittivity, σ = conductivity and ρ=1000kg/m^3

Date/Time: 7/25/2005 1:57:01 PM

Test Laboratory: Bay Area Compliance Lab Corp.

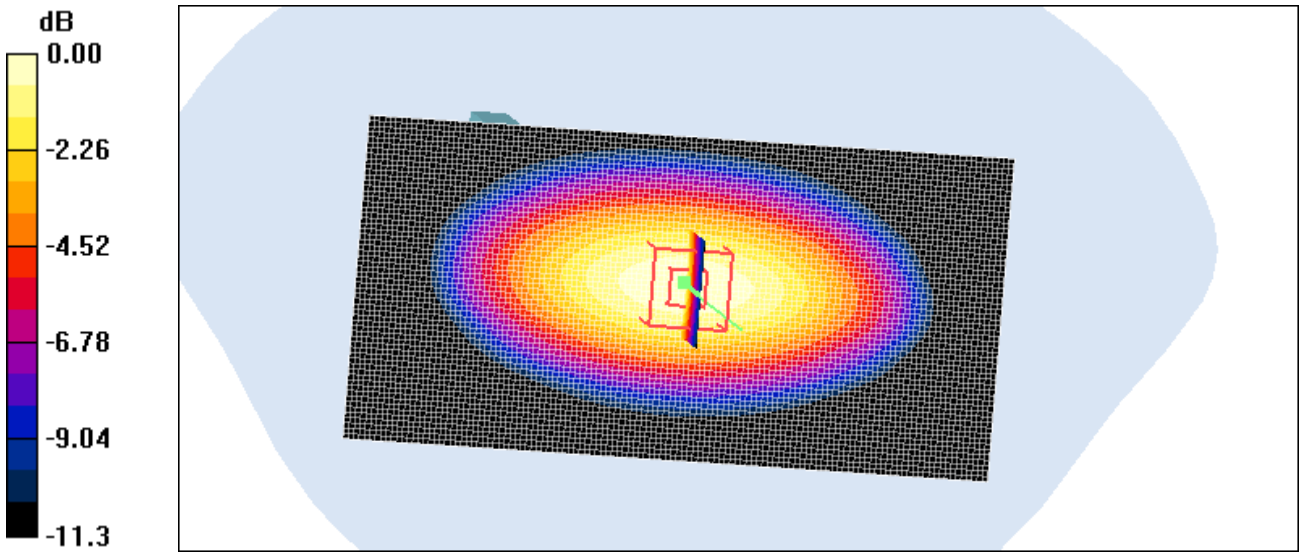
SystemValidationCheck_D835_Body
DUT: Dipole 900 MHz; Type: D900V2; Serial: D900V2 - SN:122
Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used: f = 835 MHz; σ = 0.96 mho/m; ε_r = 55.8; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:

- Probe: ET3DV6 - SN1604; ConvF(6.27, 6.27, 6.27); Calibrated: 3/18/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn456; Calibrated: 6/1/2004
- Phantom: SAM with CRP; Type: Twin SAM; Serial: TP-1032
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

d=15mm, Pin=1W 3/Area Scan (61x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 9.46 mW/g

d=15mm, Pin=1W 3/Z Scan (1x1x16): Measurement grid: dx=20mm, dy=20mm, dz=20mm
Maximum value of SAR (interpolated) = 4.29 mW/g

d=15mm, Pin=1W 3/Zoom Scan (5x5x5) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 104.4 V/m; Power Drift = -0.024 dB
Peak SAR (extrapolated) = 13.4 W/kg
SAR(1 g) = 8.92 mW/g; SAR(10 g) = 5.68 mW/g
Maximum value of SAR (measured) = 9.69 mW/g



0 dB = 9.69mW/g

Date/Time: 7/25/2005 4:15:59 PM

Test Laboratory: Bay Area Compliance Lab Corp.

SystemValidationCheck_D835_Head

DUT: Dipole 900 MHz; Type: D900V2; Serial: D900V2 - SN:122Serial: SN:122

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1

Medium parameters used: f = 835 MHz; σ = 0.89 mho/m; ε_r = 41.3; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1604; ConvF(6.27, 6.27, 6.27)ConvF(6.62, 6.62, 6.62); Calibrated: 3/18/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn456; Calibrated: 6/1/2004
- Phantom: SAM with CRP; Type: Twin SAM; Serial: TP-1032
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

d=15mm, Pin=1W/Area Scan (61x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 9.40 mW/g

d=15mm, Pin=1W/Z Scan (1x1x16): Measurement grid: dx=20mm, dy=20mm, dz=20mm

Maximum value of SAR (interpolated) = 4.75 mW/g

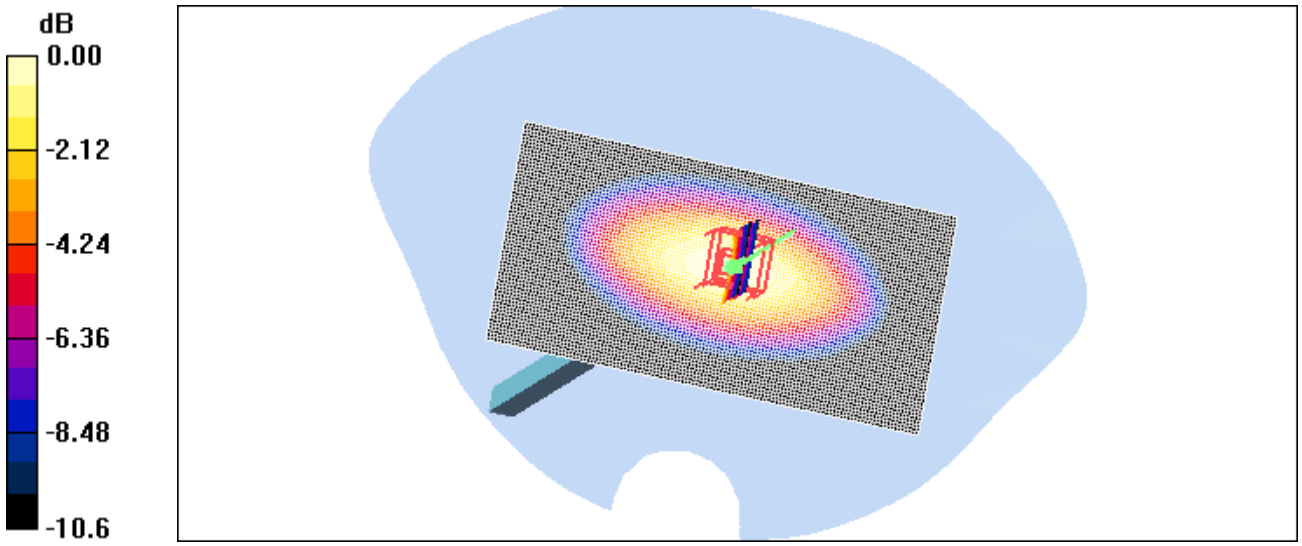
d=15mm, Pin=1W/Zoom Scan (5x5x5) Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 119.0 V/m; Power Drift = 0.163 dB

Peak SAR (extrapolated) = 13.4 W/kg

SAR(1 g) = 9.01 mW/g; SAR(10 g) = 5.88 mW/g

Maximum value of SAR (measured) = 9.73 mW/g



0 dB = 9.73mW/g

Date/Time: 7/26/2005 10:18:48 AM

Test Laboratory: Bay Area Compliance Lab Corp.

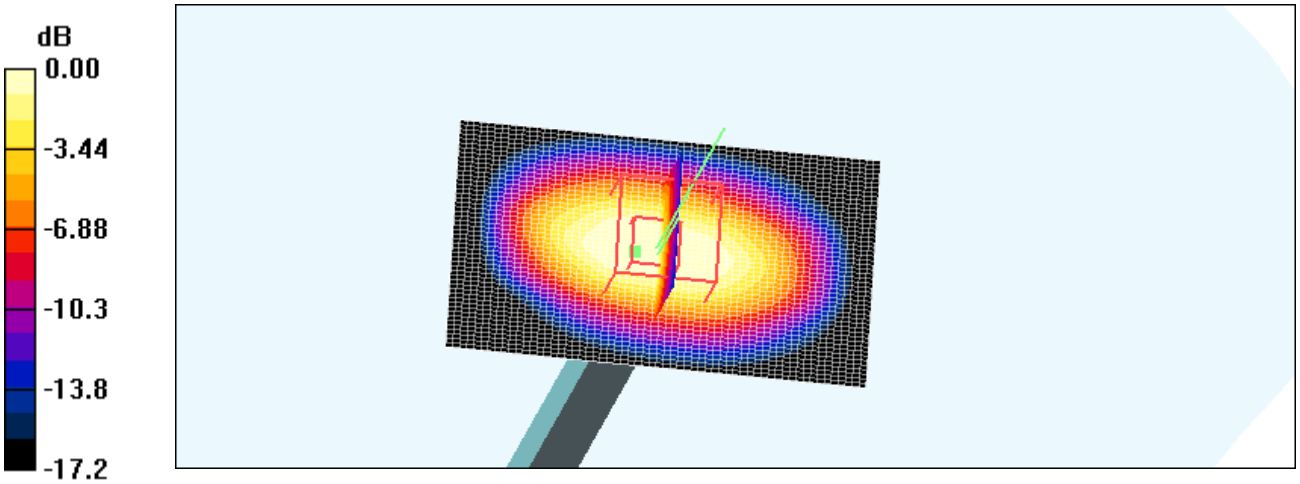
SystemValidationCheck_D1900_Body
DUT: Dipole 1800 MHz; Type: D1800S2; Serial: BCL-049
Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.5 mho/m; ε_r = 52.4; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:

- Probe: ET3DV6 - SN1604; ConvF(4.79, 4.79, 4.79); Calibrated: 3/18/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn456; Calibrated: 6/1/2004
- Phantom: SAM with CRP; Type: Twin SAM; Serial: TP-1032
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

d=10mm, Pin=1W/Area Scan (51x61x1): Measurement grid: dx=10mm, dy=15mm
Maximum value of SAR (interpolated) = 36.2 mW/g

d=10mm, Pin=1W/Z Scan (1x1x16): Measurement grid: dx=20mm, dy=20mm, dz=20mm
Maximum value of SAR (interpolated) = 9.06 mW/g

d=10mm, Pin=1W/Zoom Scan (5x5x5): Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 161.4 V/m; Power Drift = -0.103 dB
Peak SAR (extrapolated) = 46.9 W/kg
SAR(1 g) = 26.7 mW/g; SAR(10 g) = 13.9 mW/g
Maximum value of SAR (measured) = 30.6 mW/g



0 dB = 30.6mW/g

Date/Time: 7/26/2005 1:36:13 PM

Test Laboratory: Bay Area Compliance Lab Corp.

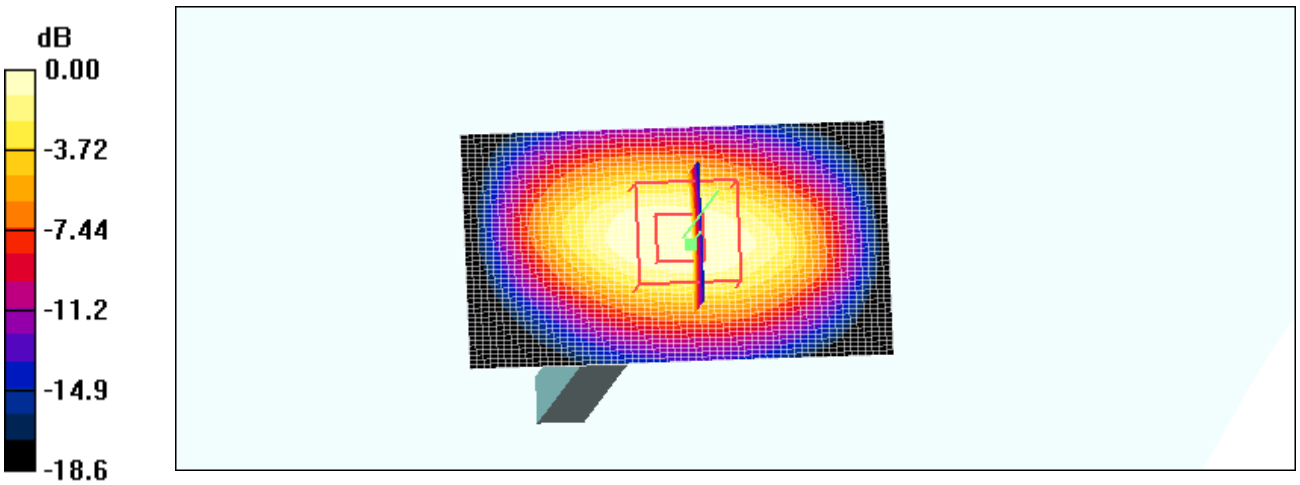
SystemValidationCheck_D1900_Head
DUT: Dipole 1800 MHz; Type: D1800S2; Serial: BCL-049
Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.38 mho/m; ε_r = 39.9; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:

- Probe: ET3DV6 - SN1604; ConvF(5.19, 5.19, 5.19); Calibrated: 3/18/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn456; Calibrated: 6/1/2004
- Phantom: SAM with CRP; Type: Twin SAM; Serial: TP-1032
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

d=10mm, Pin=1W/Area Scan (51x61x1): Measurement grid: dx=10mm, dy=15mm
Maximum value of SAR (interpolated) = 47.9 mW/g

d=10mm, Pin=1W/Z Scan (1x1x16): Measurement grid: dx=20mm, dy=20mm, dz=20mm
Maximum value of SAR (interpolated) = 9.59 mW/g

d=10mm, Pin=1W/Zoom Scan (5x5x5): Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 191.6 V/m; Power Drift = -0.029 dB
Peak SAR (extrapolated) = 72.2 W/kg
SAR(1 g) = 39.4 mW/g; SAR(10 g) = 20.1 mW/g
Maximum value of SAR (measured) = 44.9 mW/g



0 dB = 44.9mW/g

APPENDIX E - EUT SCANS

Date/Time: 7/25/2005 2:26:11 PM

Test Laboratory: Bay Area Compliance Lab Corp.

Body 850

DUT: Mobicom; Serial: 2188A-2

Communication System: GSM850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3

Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.96 mho/m; ε_r = 55.9; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1604; ConvF(6.27, 6.27, 6.27); Calibrated: 3/18/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn456; Calibrated: 6/1/2004
- Phantom: SAM with CRP; Type: Twin SAM; Serial: TP-1032
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

1.5cm from phantom , Middle Channel/Area Scan (41x91x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation!

Maximum value of SAR (interpolated) = 0.745 mW/g

1.5cm from phantom , Middle Channel/Z Scan (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=20mm

Info: Interpolated medium parameters used for SAR evaluation!

Maximum value of SAR (interpolated) = 0.882 mW/g

1.5cm from phantom , Middle Channel/Zoom Scan 2: Measurement grid: dx=5mm, dy=5mm, dz=5mm

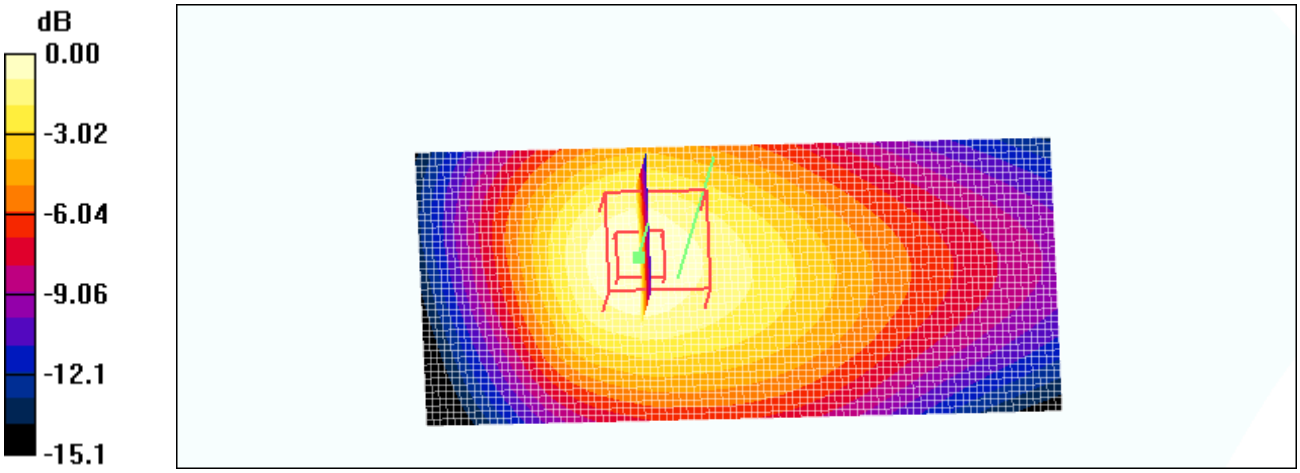
Reference Value = 27.1 V/m; Power Drift = 0.021 dB

Peak SAR (extrapolated) = 1.05 W/kg

SAR(1 g) = 0.686 mW/g; SAR(10 g) = 0.431 mW/g

Info: Interpolated medium parameters used for SAR evaluation!

Maximum value of SAR (measured) = 0.746 mW/g



0 dB = 0.746mW/g

Plot #1

Date/Time: 7/25/2005 7:34:34 PM

Test Laboratory: Bay Area Compliance Lab Corp.

Left Head 850 Touch
DUT: Mobicom; Serial: 2188A-2
Communication System: GSM850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.89 mho/m; ε_r = 41.5; ρ = 1000 kg/m^3
Phantom section: Left Section
DASY4 Configuration:

- Probe: ET3DV6 - SN1604; ConvF(6.62, 6.62, 6.62); Calibrated: 3/18/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn456; Calibrated: 6/1/2004
- Phantom: SAM with CRP; Type: Twin SAM; Serial: TP-1032
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

Touch Middle Channel/Area Scan (41x91x1): Measurement grid: dx=15mm, dy=15mm
Info: Interpolated medium parameters used for SAR evaluation!
Maximum value of SAR (interpolated) = 0.696 mW/g

Touch Middle Channel/Z Scan (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=20mm

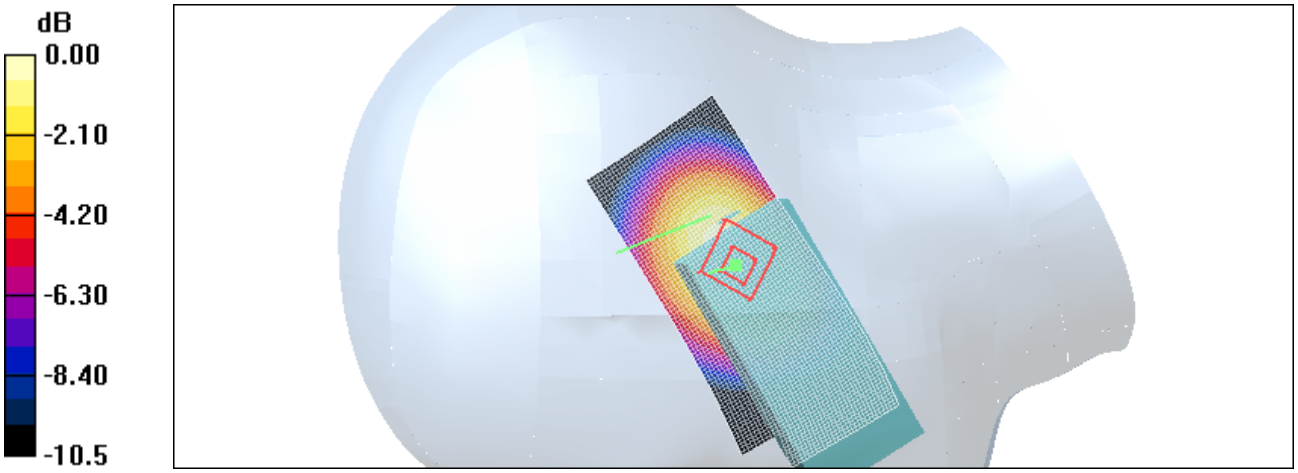
Info: Interpolated medium parameters used for SAR evaluation!
Maximum value of SAR (interpolated) = 0.653 mW/g

Touch Middle Channel/Zoom Scan: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 25.2 V/m; Power Drift = 0.053 dB
Peak SAR (extrapolated) = 0.902 W/kg
SAR(1 g) = 0.641 mW/g; SAR(10 g) = 0.439 mW/g

Info: Interpolated medium parameters used for SAR evaluation!
Maximum value of SAR (measured) = 0.690 mW/g

Tilt Middle Channel/Z Scan (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=20mm

Info: Interpolated medium parameters used for SAR evaluation!
Maximum value of SAR (interpolated) = 0.348 mW/g



Plot #2

Date/Time: 7/25/2005 5:31:13 PM

Test Laboratory: Bay Area Compliance Lab Corp.

Right Head 850 Touch
DUT: Mobicom; Serial: 2188A-2
Communication System: GSM850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.89 mho/m; ε_r = 41.5; ρ = 1000 kg/m^3
Phantom section: Right Section
DASY4 Configuration:

- Probe: ET3DV6 - SN1604; ConvF(6.62, 6.62, 6.62); Calibrated: 3/18/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn456; Calibrated: 6/1/2004
- Phantom: SAM with CRP; Type: Twin SAM; Serial: TP-1032
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

Touch Middle Channel/Area Scan (41x91x1): Measurement grid: dx=15mm, dy=15mm

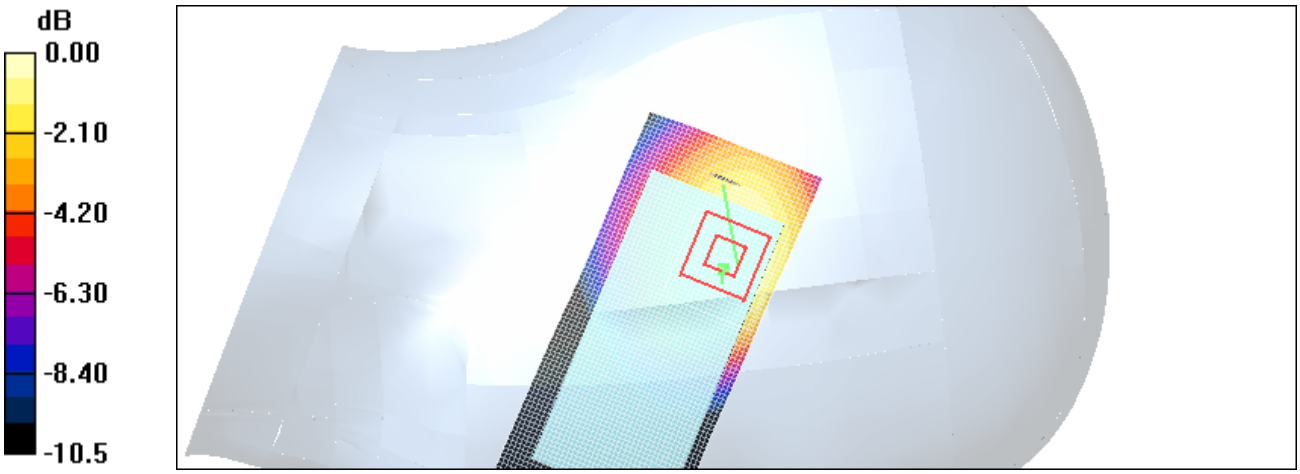
Info: Interpolated medium parameters used for SAR evaluation!
Maximum value of SAR (interpolated) = 0.564 mW/g

Touch Middle Channel/Z Scan (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=20mm

Info: Interpolated medium parameters used for SAR evaluation!
Maximum value of SAR (interpolated) = 0.493 mW/g

Touch Middle Channel/Zoom Scan: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 22.0 V/m; Power Drift = 0.033 dB
Peak SAR (extrapolated) = 0.737 W/kg
SAR(1 g) = 0.525 mW/g; SAR(10 g) = 0.364 mW/g

Info: Interpolated medium parameters used for SAR evaluation!
Maximum value of SAR (measured) = 0.562 mW/g



0 dB = 0.562mW/g

Plot #3

Date/Time: 7/25/2005 6:16:51 PM

Test Laboratory: Bay Area Compliance Lab Corp.

Right Head 850 Tilt

DUT: Mobicom; Serial: 2188A-2

Communication System: GSM850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3

Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.89 mho/m; ε_r = 41.5; ρ = 1000 kg/m^3

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1604; ConvF(6.62, 6.62, 6.62); Calibrated: 3/18/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn456; Calibrated: 6/1/2004
- Phantom: SAM with CRP; Type: Twin SAM; Serial: TP-1032
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

Tilt Middle Channel/Area Scan (41x91x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation!

Maximum value of SAR (interpolated) = 0.245 mW/g

Tilt Middle Channel/Z Scan (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=20mm

Info: Interpolated medium parameters used for SAR evaluation!

Maximum value of SAR (interpolated) = 0.253 mW/g

Tilt Middle Channel/Zoom Scan: Measurement grid: dx=5mm, dy=5mm, dz=5mm

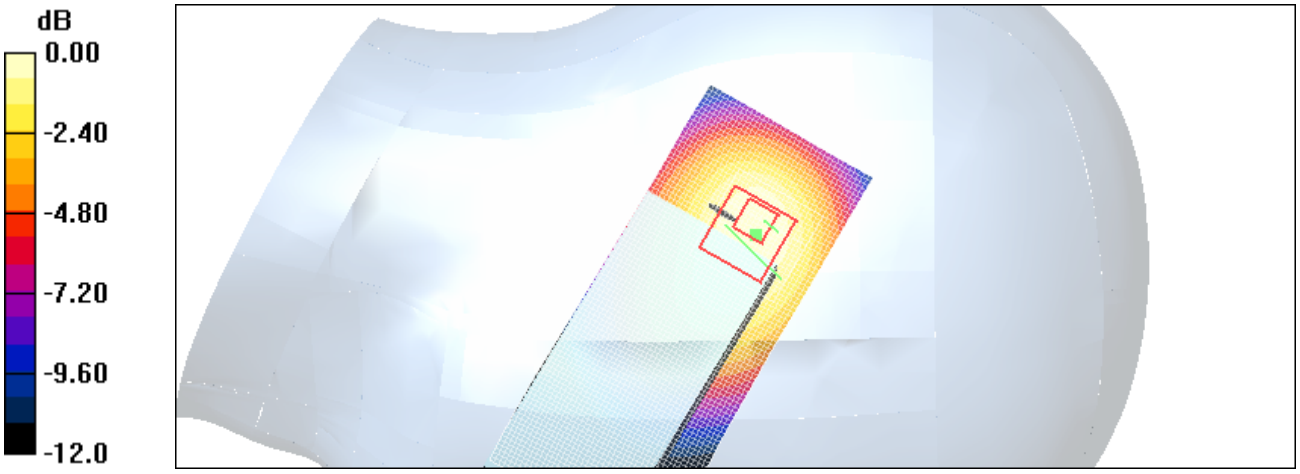
Reference Value = 15.8 V/m; Power Drift = -0.021 dB

Peak SAR (extrapolated) = 0.319 W/kg

SAR(1 g) = 0.226 mW/g; SAR(10 g) = 0.156 mW/g

Info: Interpolated medium parameters used for SAR evaluation!

Maximum value of SAR (measured) = 0.242 mW/g



0 dB = 0.242mW/g

Plot #4

Date/Time: 6/18/2005 1:25:32 PM; Date/Time: 6/18/2005 1:32:52 PM

Test Laboratory: Bay Area Compliance Lab Corp.
File Name: 050527_ZTE A12_Right Head.da4

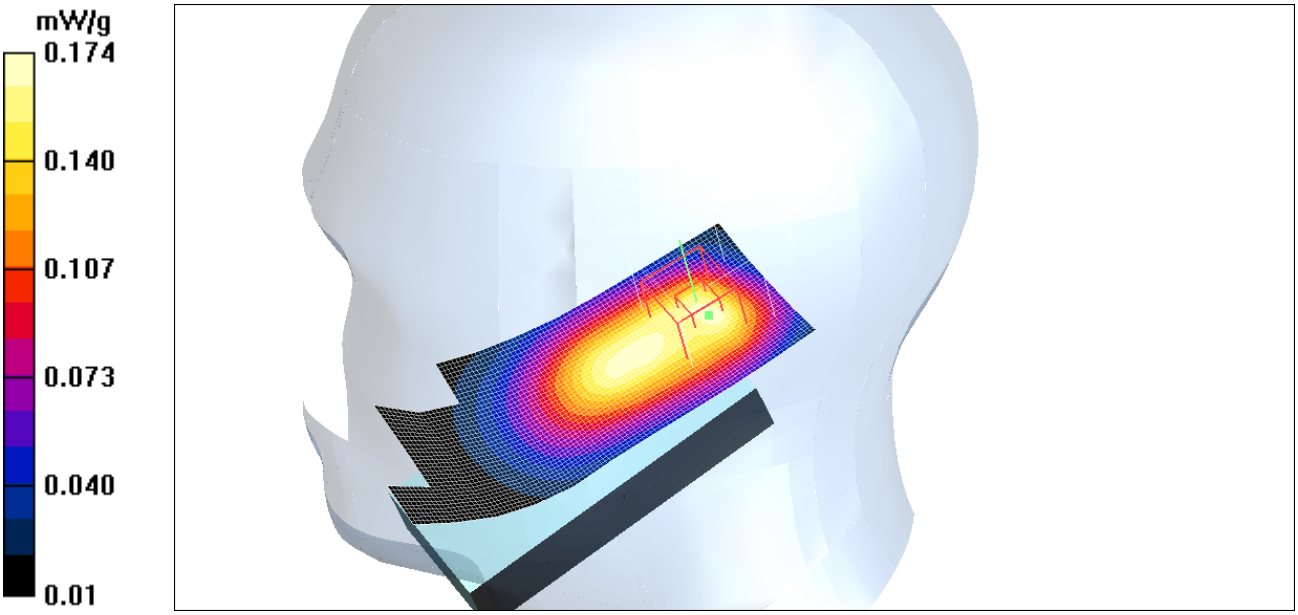
DUT: DUT; Type: Sample; Serial: Program Name: ZTE A12

Communication System: GSM 835; Frequency: 836.41 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 836.41 MHz; σ = 0.89 mho/m; ε_r = 41.5; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY4 Configuration:
- Probe: ET3DV6 - SN1604; ConvF(6.62, 6.62, 6.62); Calibrated: 3/18/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn456; Calibrated: 6/1/2004
- Phantom: SAM with CRP; Type: Twin SAM; Serial: TP-1032
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

Tilt position - Middle/Area Scan (41x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.170 mW/g

Tilt position - Middle/Zoom Scan: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.7 V/m; Power Drift = -0.00 dB
Peak SAR (extrapolated) = 0.259 W/kg
SAR(1 g) = 0.160 mW/g; SAR(10 g) = 0.104 mW/g
Maximum value of SAR (measured) = 0.174 mW/g



Plot #5

Date/Time: 7/26/2005 12:29:55 PM

Test Laboratory: Bay Area Compliance Lab Corp.

Body 1900

DUT: Mobicom; Serial: 2188A-2

Communication System: PCS 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3

Medium parameters used: f = 1880 MHz; σ = 1.57 mho/m; ε_r = 51.1; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1604; ConvF(4.79, 4.79, 4.79); Calibrated: 3/18/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn456; Calibrated: 6/1/2004
- Phantom: SAM with CRP; Type: Twin SAM; Serial: TP-1032
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

1.5cm from phantom , Middle Channel/Area Scan (41x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.152 mW/g

1.5cm from phantom , Middle Channel/Z Scan (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=20mm

Maximum value of SAR (interpolated) = 0.189 mW/g

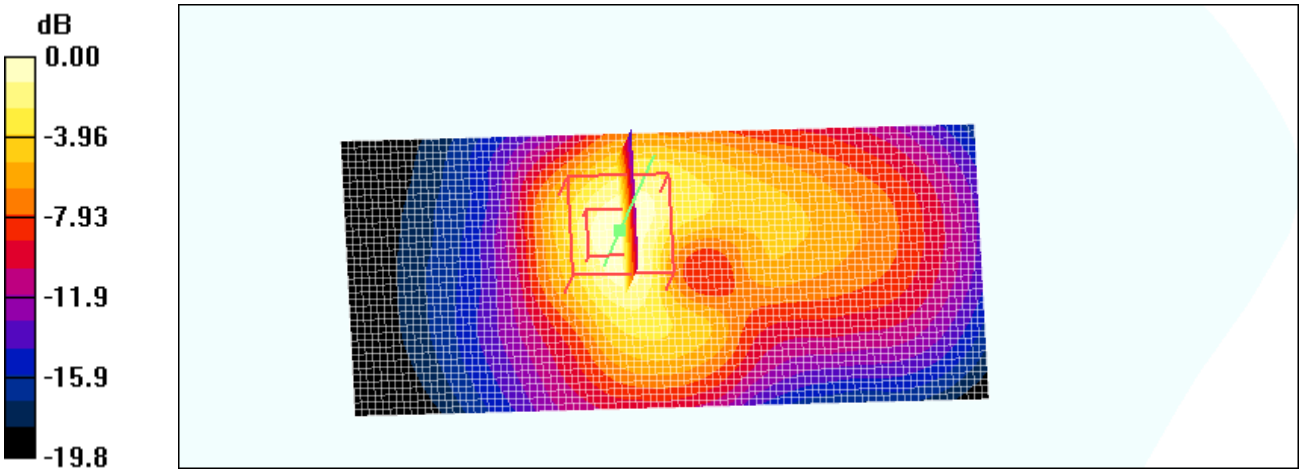
1.5cm from phantom , Middle Channel/Zoom Scan: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.3 V/m; Power Drift = -0.111 dB

Peak SAR (extrapolated) = 0.259 W/kg

SAR(1 g) = 0.142 mW/g; SAR(10 g) = 0.072 mW/g

Maximum value of SAR (measured) = 0.156 mW/g



0 dB = 0.156mW/g

Plot #6

Date/Time: 7/26/2005 6:03:51 PM

Test Laboratory: Bay Area Compliance Lab Corp.

Left Head 1900 Touch
DUT: Mobicom; Serial: 2188A-2
Communication System: PCS 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium parameters used (extrapolated): f = 1880 MHz; σ = 1.37 mho/m; ε_r = 40; ρ = 1000 kg/m^3
Phantom section: Left Section
DASY4 Configuration:

- Probe: ET3DV6 - SN1604; ConvF(5.19, 5.19, 5.19); Calibrated: 3/18/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn456; Calibrated: 6/1/2004
- Phantom: SAM with CRP; Type: Twin SAM; Serial: TP-1032
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

Touch Middle Channel/Area Scan (41x91x1): Measurement grid: dx=15mm, dy=15mm

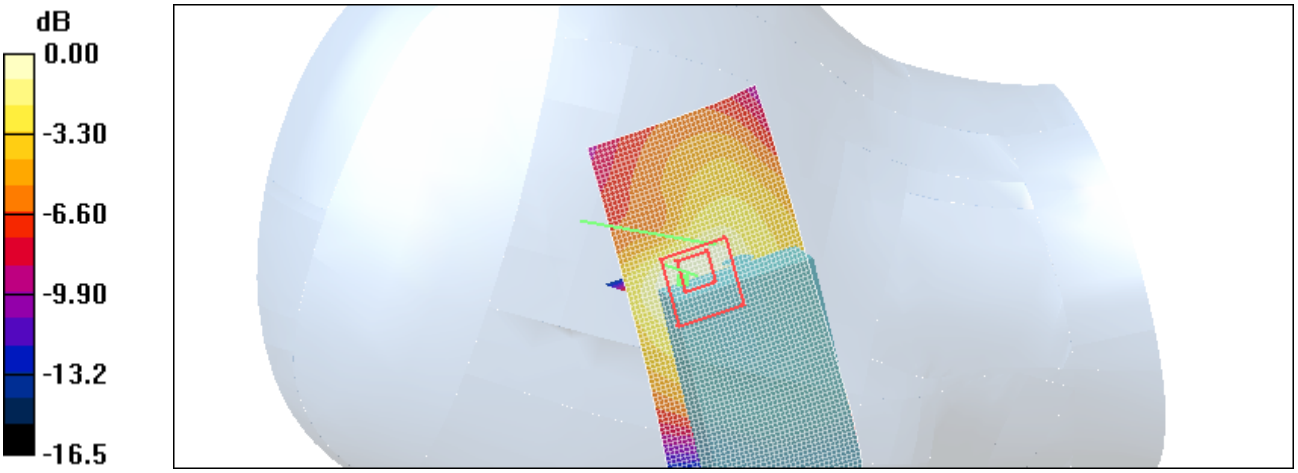
Info: Extrapolated medium parameters used for SAR evaluation!
Maximum value of SAR (interpolated) = 0.265 mW/g

Touch Middle Channel/Z Scan (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=20mm

Info: Extrapolated medium parameters used for SAR evaluation!
Maximum value of SAR (interpolated) = 0.296 mW/g

Touch Middle Channel/Zoom Scan: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.5 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.353 W/kg
SAR(1 g) = 0.233 mW/g; SAR(10 g) = 0.142 mW/g

Info: Extrapolated medium parameters used for SAR evaluation!
Maximum value of SAR (measured) = 0.253 mW/g



0 dB = 0.253mW/g

Plot #7

Date/Time: 7/26/2005 6:35:27 PM

Test Laboratory: Bay Area Compliance Lab Corp.

Left Head 1900 Tilt

DUT: Mobicom; Serial: 2188A-2

Communication System: PCS 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3

Medium parameters used (extrapolated): f = 1880 MHz; σ = 1.37 mho/m; ε_r = 40; ρ = 1000 kg/m^3

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1604; ConvF(5.19, 5.19, 5.19); Calibrated: 3/18/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn456; Calibrated: 6/1/2004
- Phantom: SAM with CRP; Type: Twin SAM; Serial: TP-1032
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

Tilt Middle Channel/Area Scan (41x91x1): Measurement grid: dx=15mm, dy=15mm

Info: Extrapolated medium parameters used for SAR evaluation!

Maximum value of SAR (interpolated) = 0.193 mW/g

Tilt Middle Channel/Z Scan (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=20mm

Info: Extrapolated medium parameters used for SAR evaluation!

Maximum value of SAR (interpolated) = 0.222 mW/g

Tilt Middle Channel/Zoom Scan: Measurement grid: dx=5mm, dy=5mm, dz=5mm

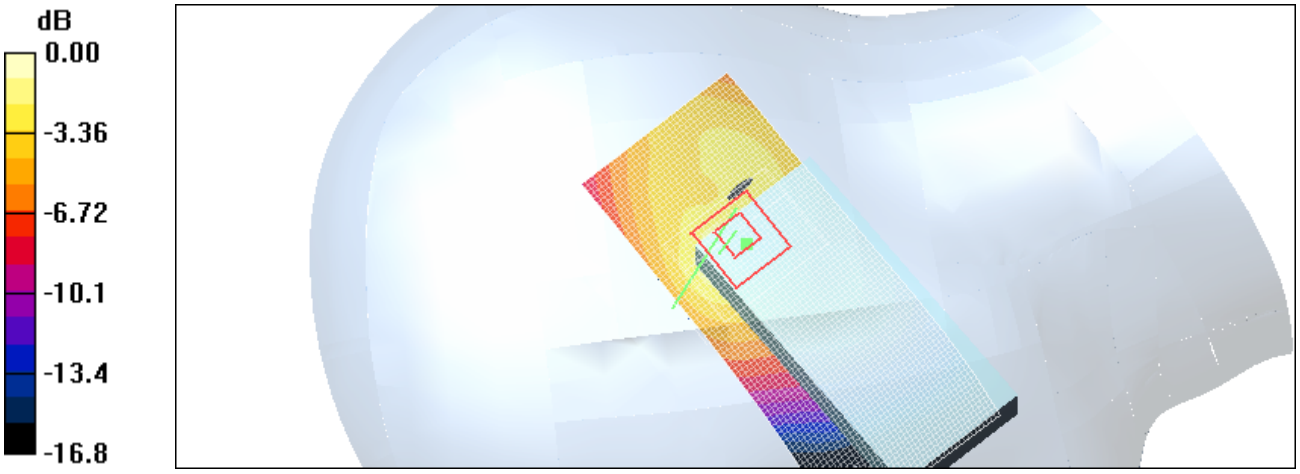
Reference Value = 11.5 V/m; Power Drift = -0.00 dB

Peak SAR (extrapolated) = 0.281 W/kg

SAR(1 g) = 0.176 mW/g; SAR(10 g) = 0.100 mW/g

Info: Extrapolated medium parameters used for SAR evaluation!

Maximum value of SAR (measured) = 0.194 mW/g



0 dB = 0.194mW/g

Plot #8

Date/Time: 7/26/2005 3:14:13 PM

Test Laboratory: Bay Area Compliance Lab Corp.

Right Head 1900 Touch
DUT: Mobicom; Serial: 2188A-2
Communication System: PCS 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium parameters used (extrapolated): f = 1880 MHz; σ = 1.37 mho/m; ε_r = 40; ρ = 1000 kg/m^3
Phantom section: Right Section
DASY4 Configuration:

- Probe: ET3DV6 - SN1604; ConvF(5.19, 5.19, 5.19); Calibrated: 3/18/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn456; Calibrated: 6/1/2004
- Phantom: SAM with CRP; Type: Twin SAM; Serial: TP-1032
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

Touch Middle Channel/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

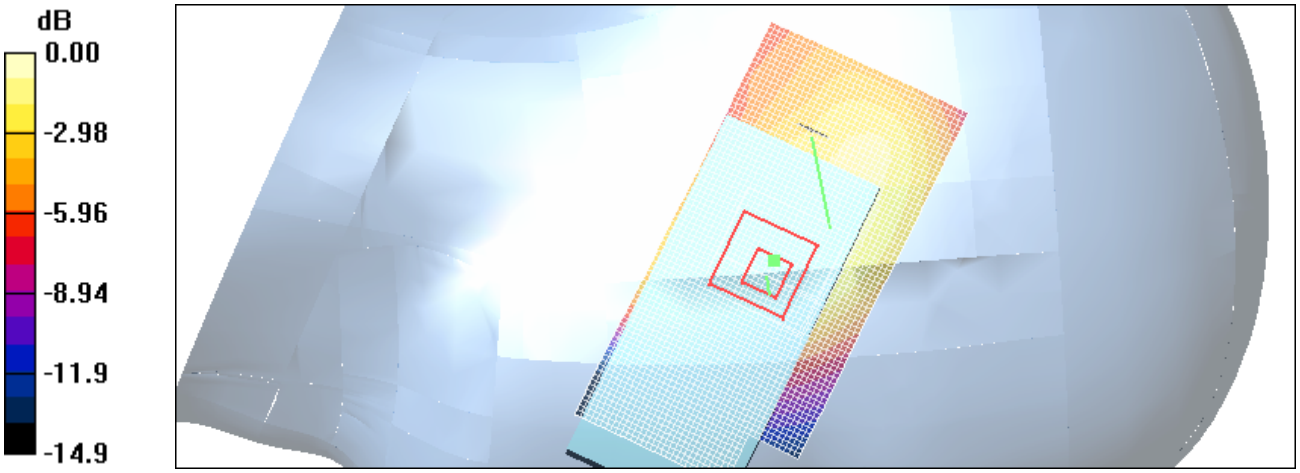
Info: Extrapolated medium parameters used for SAR evaluation!
Maximum value of SAR (interpolated) = 0.291 mW/g

Touch Middle Channel/Z Scan (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=20mm

Info: Extrapolated medium parameters used for SAR evaluation!
Maximum value of SAR (interpolated) = 0.251 mW/g

Touch Middle Channel/Zoom Scan: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.3 V/m; Power Drift = -0.048 dB
Peak SAR (extrapolated) = 0.412 W/kg
SAR(1 g) = 0.268 mW/g; SAR(10 g) = 0.162 mW/g

Info: Extrapolated medium parameters used for SAR evaluation!
Maximum value of SAR (measured) = 0.300 mW/g



0 dB = 0.300mW/g

Plot #9

Date/Time: 7/26/2005 4:48:36 PM

Test Laboratory: Bay Area Compliance Lab Corp.

Right Head 1900 Tilt

DUT: Mobicom; Serial: 2188A-2

Communication System: PCS 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3

Medium parameters used (extrapolated): f = 1880 MHz; σ = 1.37 mho/m; ε_r = 40; ρ = 1000 kg/m^3

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1604; ConvF(5.19, 5.19, 5.19); Calibrated: 3/18/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn456; Calibrated: 6/1/2004
- Phantom: SAM with CRP; Type: Twin SAM; Serial: TP-1032
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

Tilt Middle Channel/Area Scan (41x91x1): Measurement grid: dx=15mm, dy=15mm

Info: Extrapolated medium parameters used for SAR evaluation!

Maximum value of SAR (interpolated) = 0.164 mW/g

Tilt Middle Channel/Z Scan (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=20mm

Info: Extrapolated medium parameters used for SAR evaluation!

Maximum value of SAR (interpolated) = 0.178 mW/g

Tilt Middle Channel/Zoom Scan: Measurement grid: dx=5mm, dy=5mm, dz=5mm

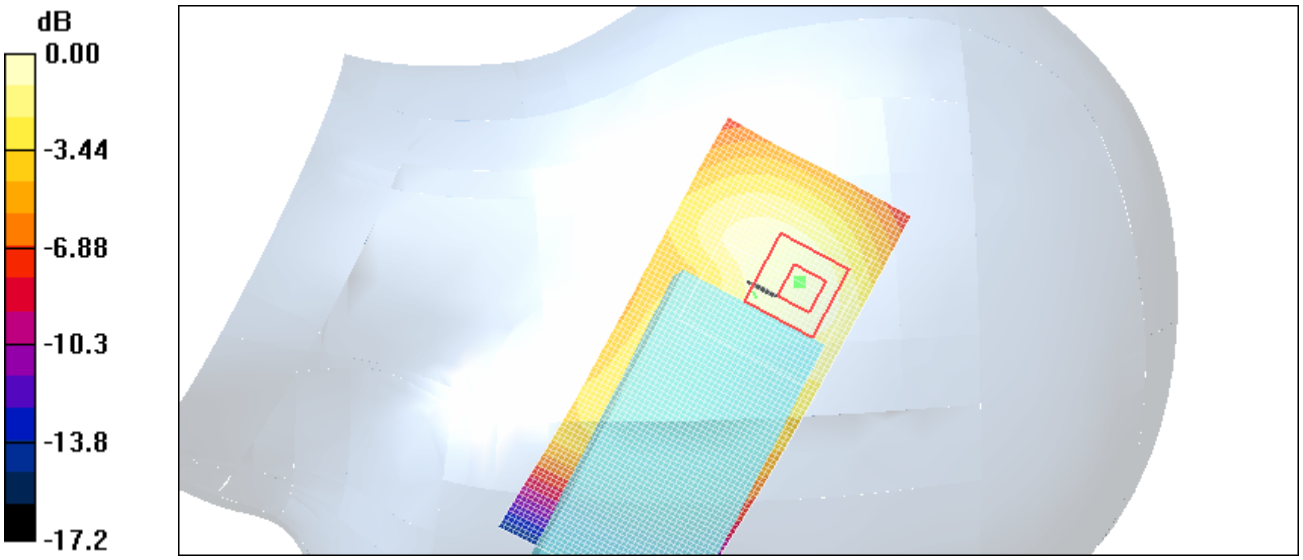
Reference Value = 10.5 V/m; Power Drift = -0.025 dB

Peak SAR (extrapolated) = 0.250 W/kg

SAR(1 g) = 0.149 mW/g; SAR(10 g) = 0.089 mW/g

Info: Extrapolated medium parameters used for SAR evaluation!

Maximum value of SAR (measured) = 0.160 mW/g



0 dB = 0.160mW/g

Plot #10

APPENDIX F – CONDUCTED OUTPUT POWER MEASUREMENT

Provision Applicable

The measured peak output power should be greater and within 5% than EMI measurement.

Test Procedure

The RF output of the transmitter was connected to the input of the spectrum analyzer through sufficient attenuation.

Test equipment

Hewlett Packard HP8564E Spectrum Analyzer, Calibration Due Date: 2005-10-04.
Hewlett Packard HP 7470A Plotter, Calibration not required.
R&S SMU-200 Antenna, Calibration Due Date: 2005-05-24.

Test Results

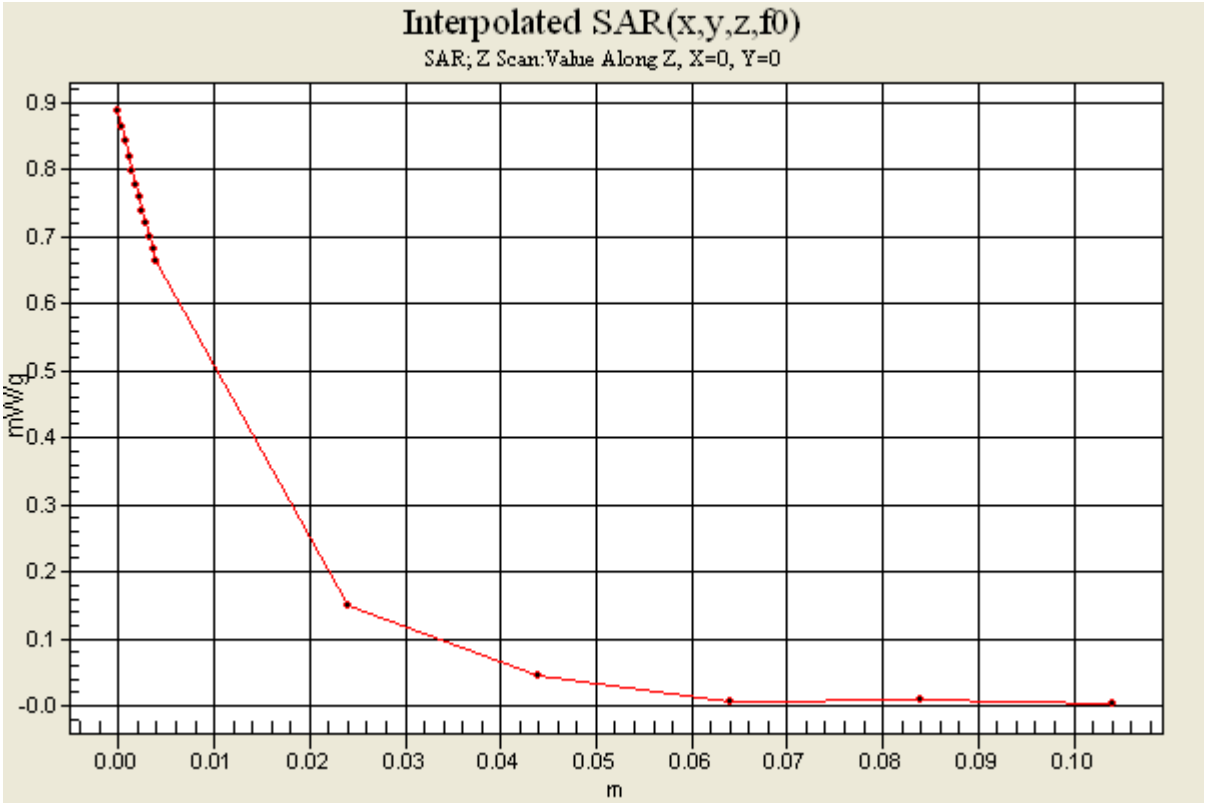
GSM 850:

Channel	Frequency (MHz)	Output Power in dBm	Output Power in W
MIDDLE	836.60	31.55	1.429

GSM 1900:

Channel	Frequency (MHz)	Output Power in dBm	Output Power in W
MIDDLE	1880	28.15	0.653

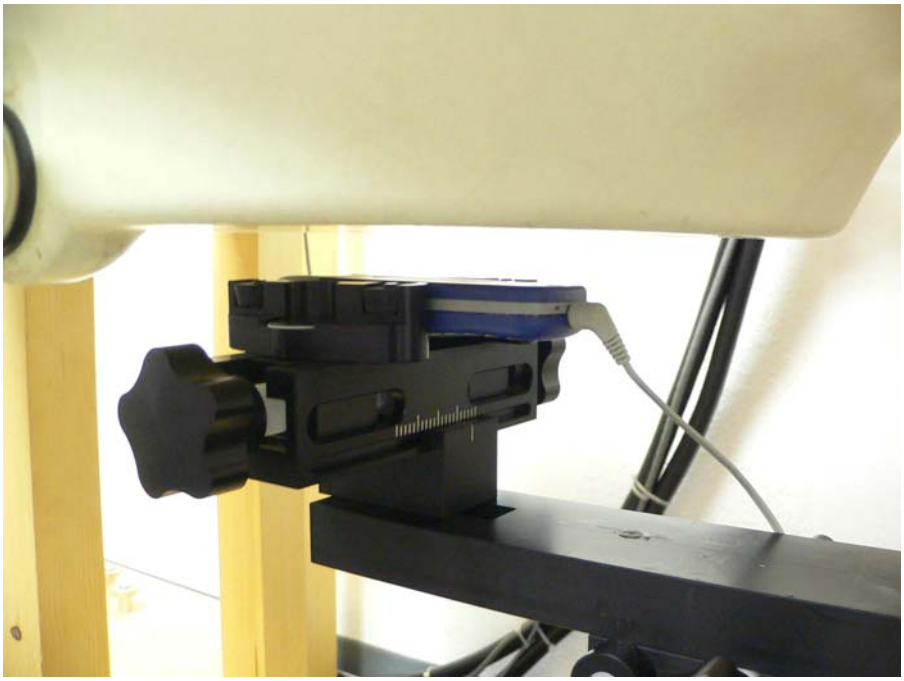
APPENDIX G – Z-AXIS PLOT



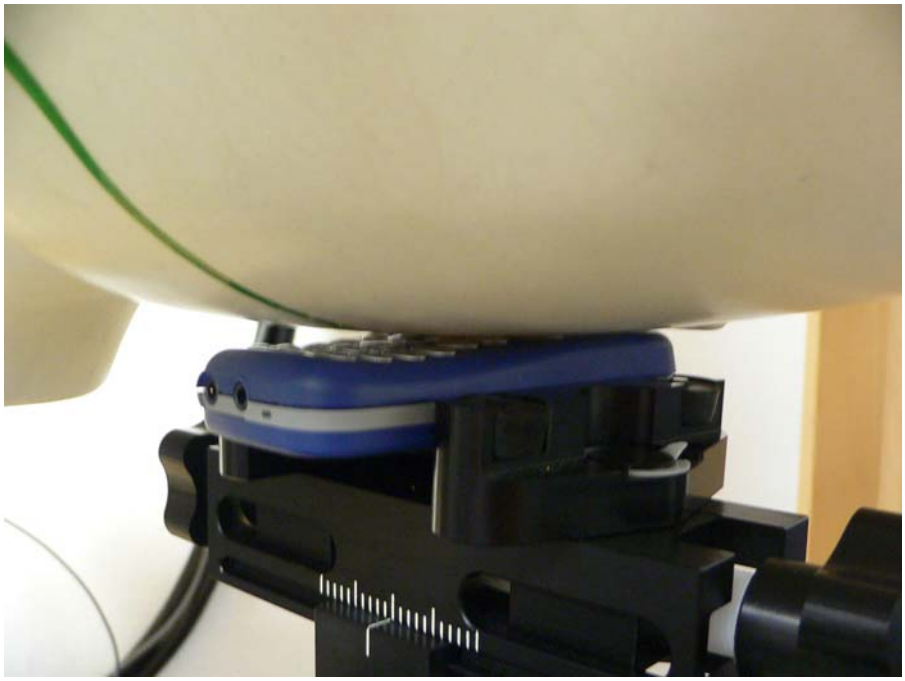
APPENDIX H – EUT TEST POSITION PHOTOS

Body Worn 1.5cm Separation Setup View 1

Body Worn 1.5cm Separation Setup View 2

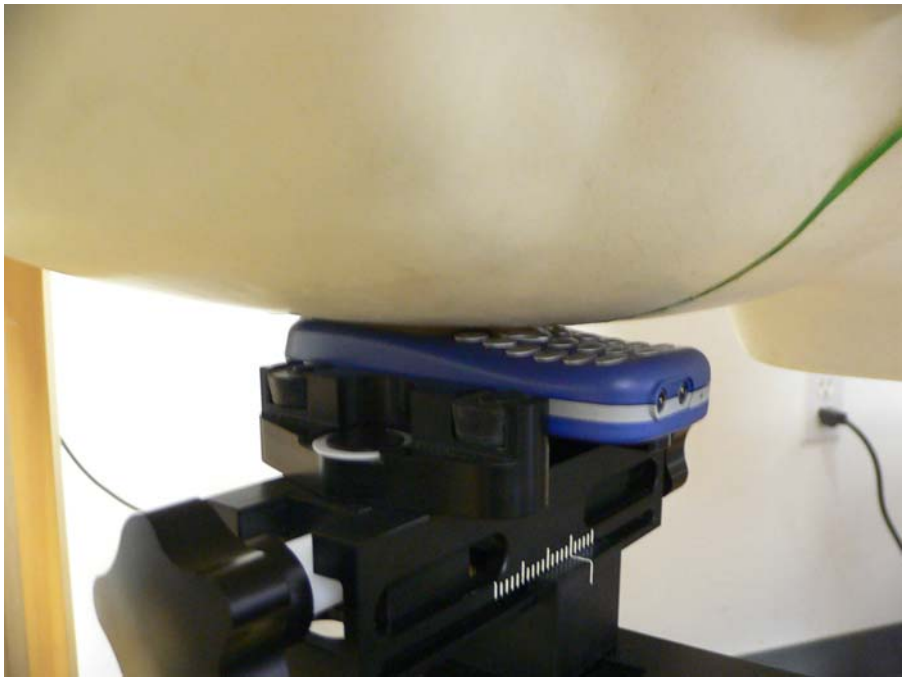


Left Head Touch



Left Head Tilted

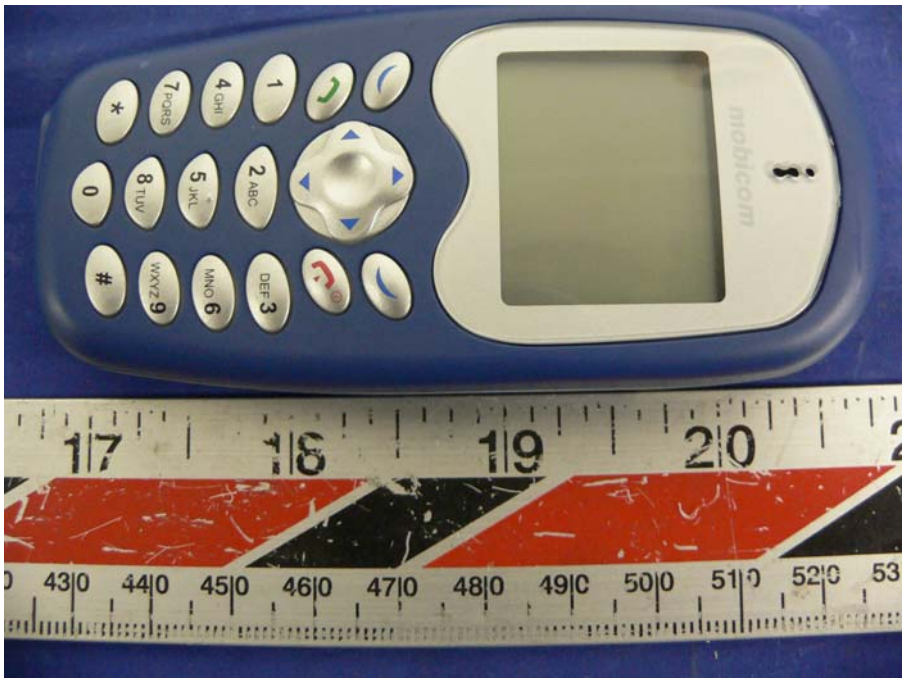
Right Head Touch



Right Head Tilted

APPENDIX I – EUT & ACCESSORIES PHOTOS

EUT Front View

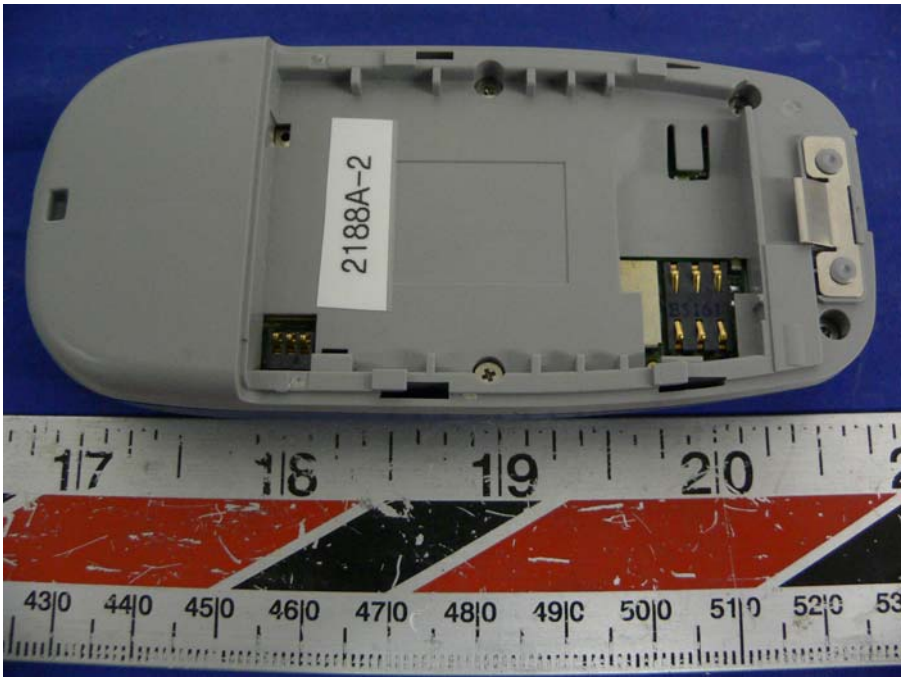


EUT Rear View

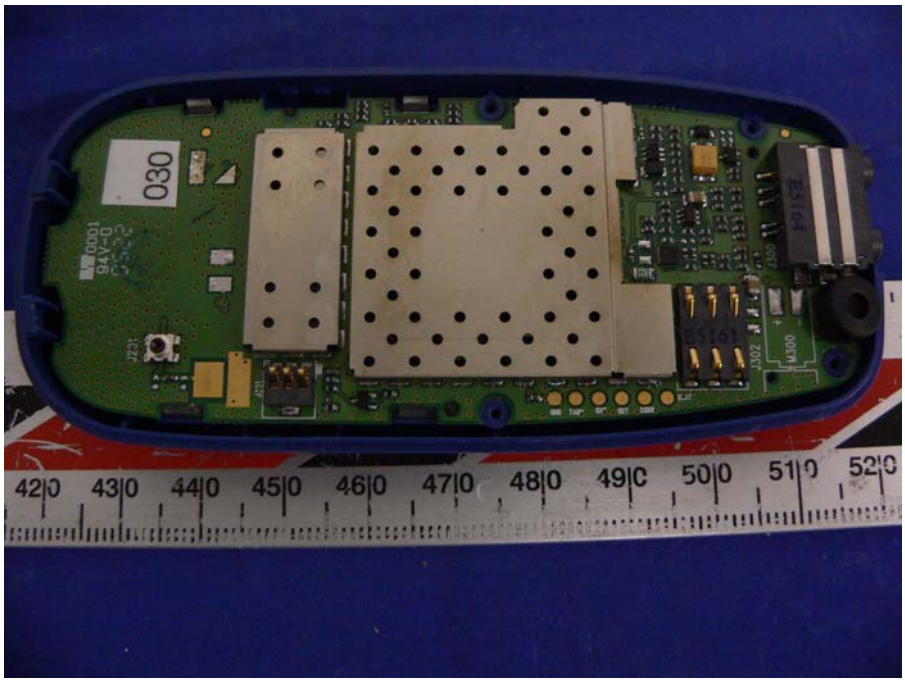
EUT Port View

EUT Label Close View

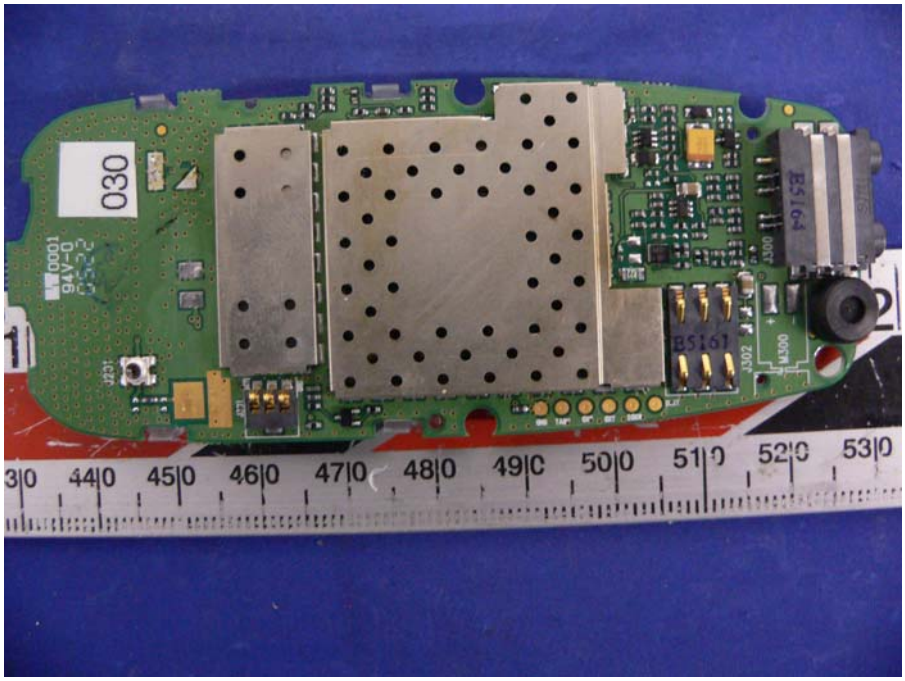
EUT Rear View Battery off



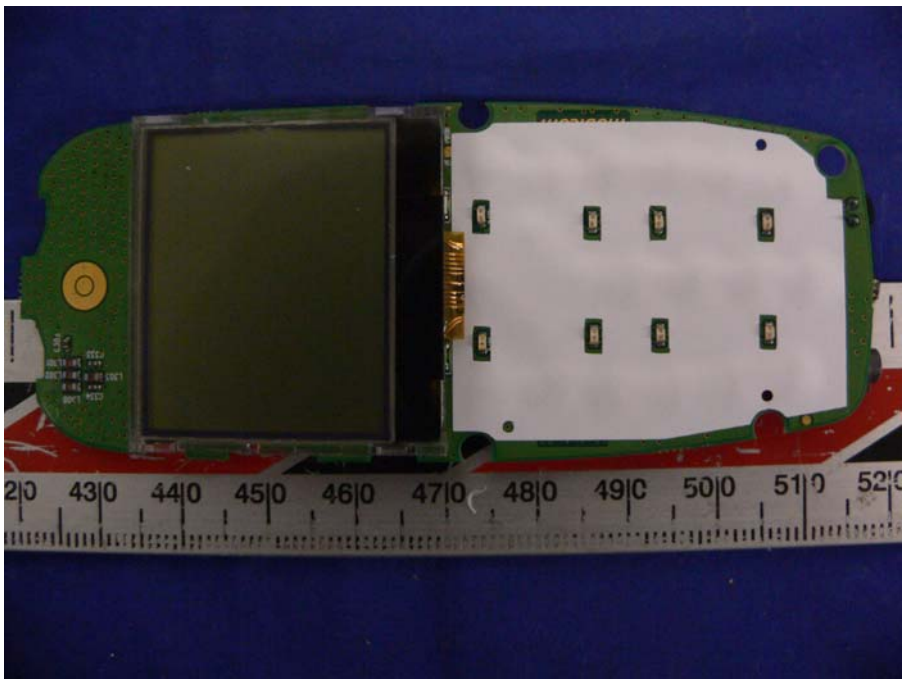
EUT Cover off View



EUT Component View



EUT Solder View



APPENDIX J - INFORMATIVE REFERENCES

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