

## 11. Photos of test setup

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### 11.1 Photos of DUT

Figure 11-1 External View of Notebook (closed)



Figure 11-2 External View of Notebook (open)



Figure 11-3 Bottom view of notebook showing WWAN module location



Figure 11-4 Photos of DUT positioned under Phantom



## 12. System Check

### 12.1 General System Check Procedure

System check scans were performed prior to testing of each different medium used. Prior to installing a body medium, a system check scan is performed using a corresponding body medium. A validation dipole antenna was selected that roughly matched the center frequency of the band being tested. A CW sine wave with a matching frequency is then applied to the antenna from a signal generator through an amplifier for a power level of 250 mW (20 dBm). Measured data is scaled to 30 dBm to correspond with values provided by manufacturer's calibration data. System check SAR has a tolerance of  $\pm 10\%$ .

If testing of a particular frequency band took more than one day, a new validation scan was done prior to commencing with testing for the subsequent day.

### 12.2 System Check Data

Table 12-1 shows system check data for the respective days of the test program.

**Table 12-1 SAR System Check Data Gobi2000 Test Program (Body TSL)**

Date	Frequency (MHz)	1 g SAR (mW/g)			
		Measured	Scaled to 30 dBm	Target	Difference (%)
9/1/2009	835	0.929	9.29	9.8	-5.2%
9/1/2009	1900	4.09	40.9	39.5	+3.5%

The following pages show system check plots for the respective days of the test program.

### 12.3 835 MHz System Check

Date/Time: 9/2/2009 1:46:27 PM Date/Time: 9/2/2009 1:52:50 PM

Test Laboratory: QUALCOMM Incorporated

File Name: [20090901\\_Val835\\_20dBm.da5](#)

**DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:466**

**Program Name: System Performance Check at 900 MHz**

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

Medium parameters used (interpolated):  $f = 835$  MHz;  $\sigma = 0.956$  mho/m;  $\epsilon_r = 55.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1543; ConvF(5.85, 5.85, 5.85); Calibrated: 4/23/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn566; Calibrated: 4/20/2009
- Phantom: SAM with CRP; Type: SAM; Serial: 209
- Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**d=15mm, Pin=20 dBm, dist=4.0mm (ET-Probe)/Area Scan (61x81x1):** Measurement grid: dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 1.04 mW/g

**d=15mm, Pin=20 dBm, dist=4.0mm (ET-Probe)/Zoom Scan (7x7x7) (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

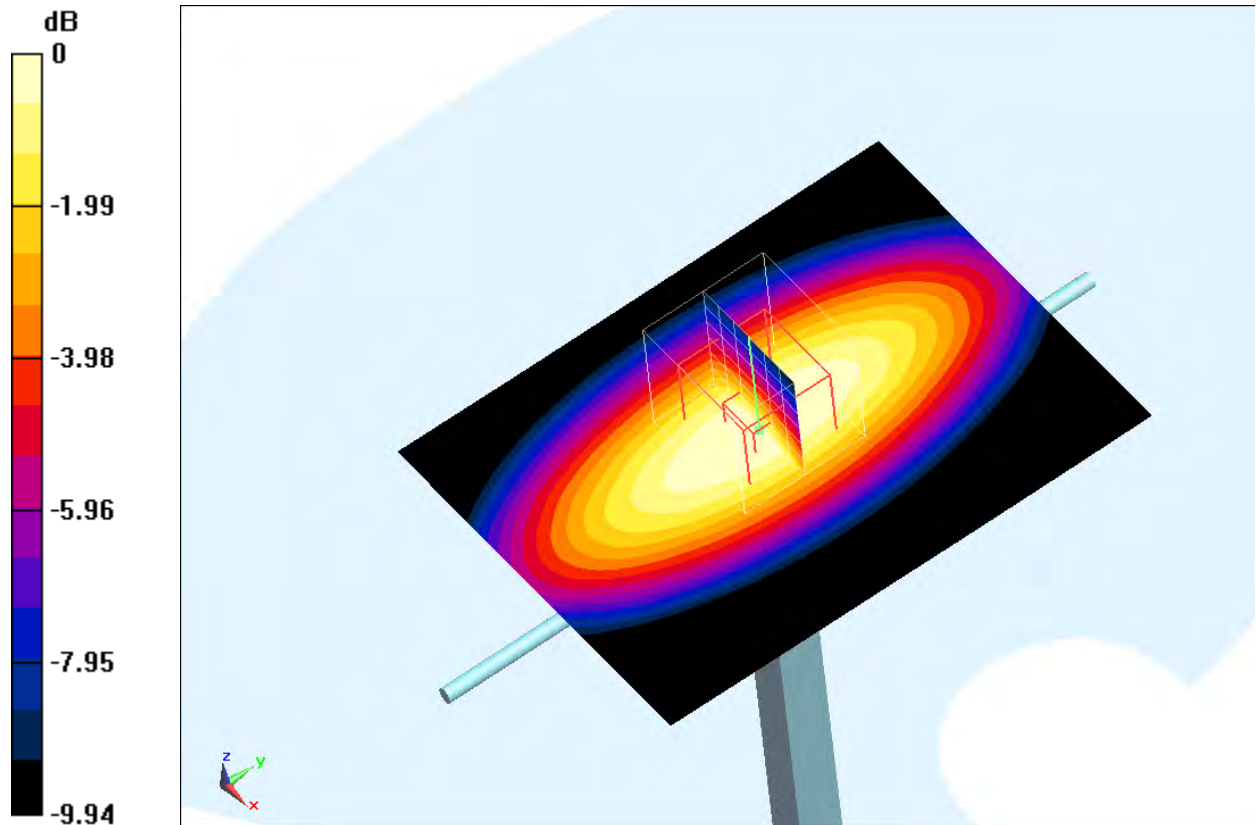
Reference Value = 34.6 V/m; Power Drift = -0.200 dB

Peak SAR (extrapolated) = 1.32 W/kg

**SAR(1 g) = 0.929 mW/g; SAR(10 g) = 0.616 mW/g**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1 mW/g



0 dB = 1mW/g

## 12.4 1900 MHz System Check

Date/Time: 9/1/2009 1:49:13 PM Date/Time: 9/1/2009 1:55:36 PM

Test Laboratory: QUALCOMM Incorporated

File Name: [20090901\\_Val1900\\_20dBm.da5](#)

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d096

Program Name: System Performance Check at 1900 MHz

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1900$  MHz;  $\sigma = 1.57$  mho/m;  $\epsilon_r = 52.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1543; ConvF(4.33, 4.33, 4.33); Calibrated: 4/23/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn566; Calibrated: 4/20/2009
- Phantom: SAM with CRP; Type: SAM; Serial: 209
- Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**d=15mm, Pin=20 dBm, dist=4.0mm (ET-Probe)/Area Scan (61x81x1):** Measurement grid: dx=15mm, dy=15mm  
Maximum value of SAR (interpolated) = 5.1 mW/g

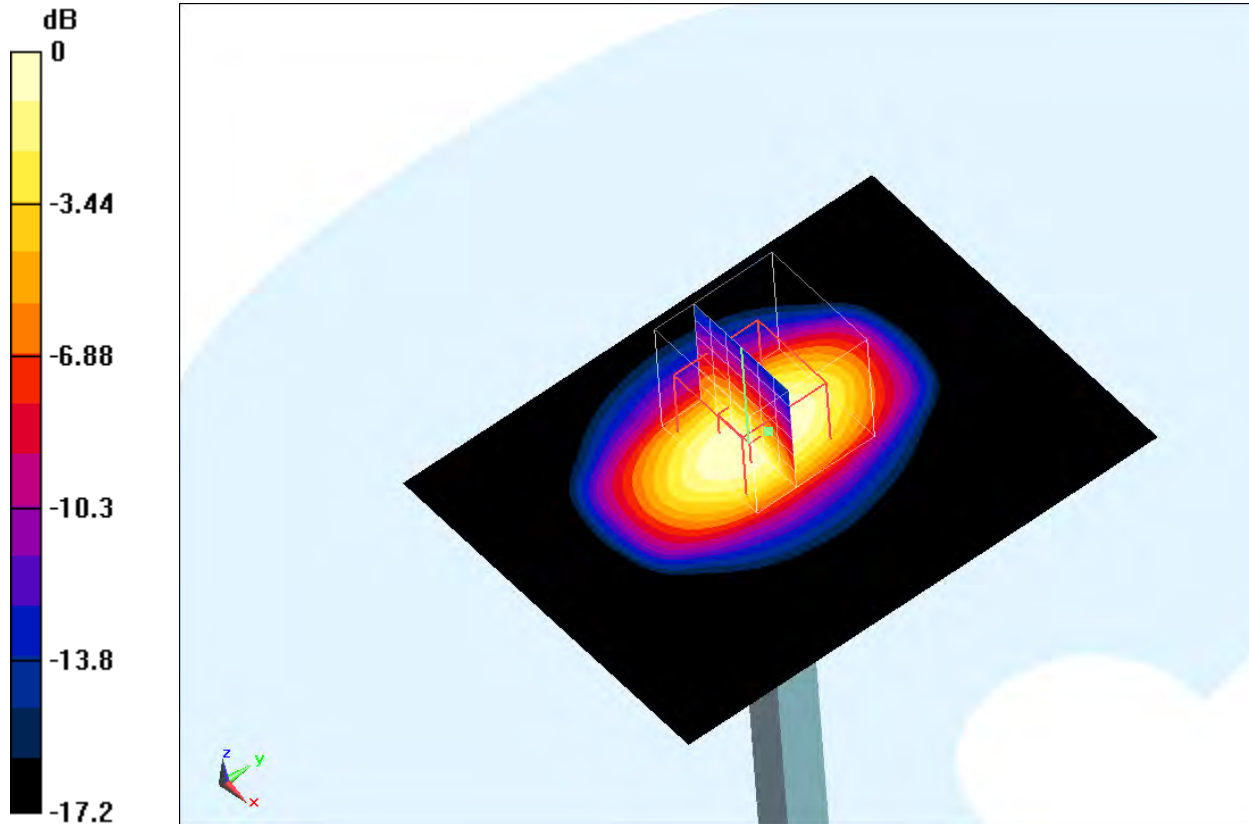
**d=15mm, Pin=20 dBm, dist=4.0mm (ET-Probe)/Zoom Scan (7x7x7) (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 57.7 V/m; Power Drift = -0.00213 dB

Peak SAR (extrapolated) = 6.7 W/kg

**SAR(1 g) = 4.09 mW/g; SAR(10 g) = 2.19 mW/g**

Maximum value of SAR (measured) = 4.63 mW/g



0 dB = 4.63mW/g

## **13. SAR Plot Reports**

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The following pages show DASY5-generated data and plots.



### 13.1 GPRS-2UL (Cell band)

Date/Time: 9/3/2009 2:25:04 PM Date/Time: 9/3/2009 2:42:17 PM

Test Laboratory: QUALCOMM Incorporated

File Name: [20090901\\_GOBI2000-MiniCooper\\_GPRS2UL-CELL.da5](#)

DUT: Dell model Latitude E4200/Gobi2000; Type: Laptop; Serial: 36993663649

Program Name: Compliance Testing: P1528 Protocol (Left-Hand Side)

Communication System: US GSM-GPRS850-2UL; Frequency: 848.8 MHz; Duty Cycle: 1:4.1

Medium parameters used:  $f = 848.8$  MHz;  $\sigma = 0.971$  mho/m;  $\epsilon_r = 55.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1543; ConvF(5.85, 5.85, 5.85); Calibrated: 4/23/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn566; Calibrated: 4/20/2009
- Phantom: SAM with CRP; Type: SAM; Serial: 209
- Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

Lapheld - High/Area Scan (121x121x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.057 mW/g

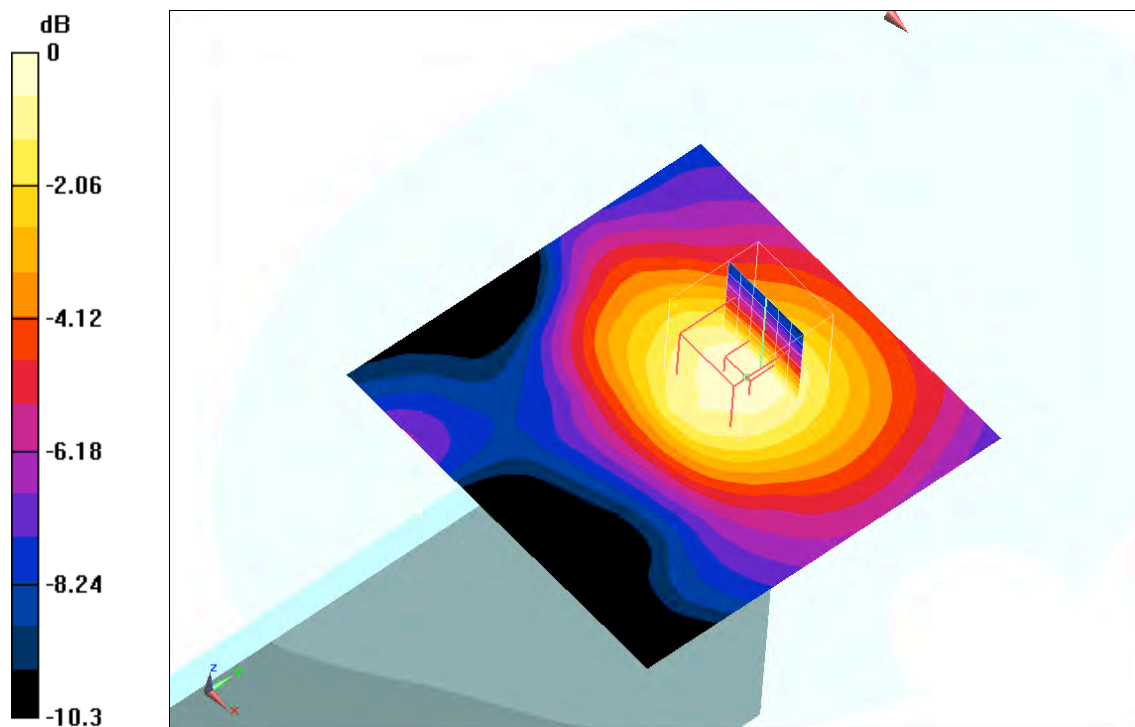
Lapheld - High/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 7.91 V/m; Power Drift = 0.076 dB

Peak SAR (extrapolated) = 0.081 W/kg

**SAR(1 g) = 0.054 mW/g; SAR(10 g) = 0.037 mW/g**

Maximum value of SAR (measured) = 0.058 mW/g



0 dB = 0.056mW/g

## 13.2 EV-DO r0 (PCS band)

Date/Time: 9/2/2009 11:03:29 AM Date/Time: 9/2/2009 11:23:07 AM

Test Laboratory: QUALCOMM Incorporated

File Name: [20090901\\_GOBI2000-MiniCooper\\_EVDOr0-PCS.da5](#)

**DUT: Dell model Latitude E4200/Gobi2000; Type: Laptop; Serial: 36993663649**

**Program Name: Compliance Testing: P1528 Protocol (Left-Hand Side)**

Communication System: CDMA PCS; Frequency: 1851.25 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1851.25$  MHz;  $\sigma = 1.51$  mho/m;  $\epsilon_r = 53.1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1543; ConvF(4.33, 4.33, 4.33); Calibrated: 4/23/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn566; Calibrated: 4/20/2009
- Phantom: SAM with CRP; Type: SAM; Serial: 209
- Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**Lapheld - Low/Area Scan (121x141x1):** Measurement grid: dx=10mm, dy=10mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.064 mW/g

**Lapheld - Low/Zoom Scan (7x7x7) (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

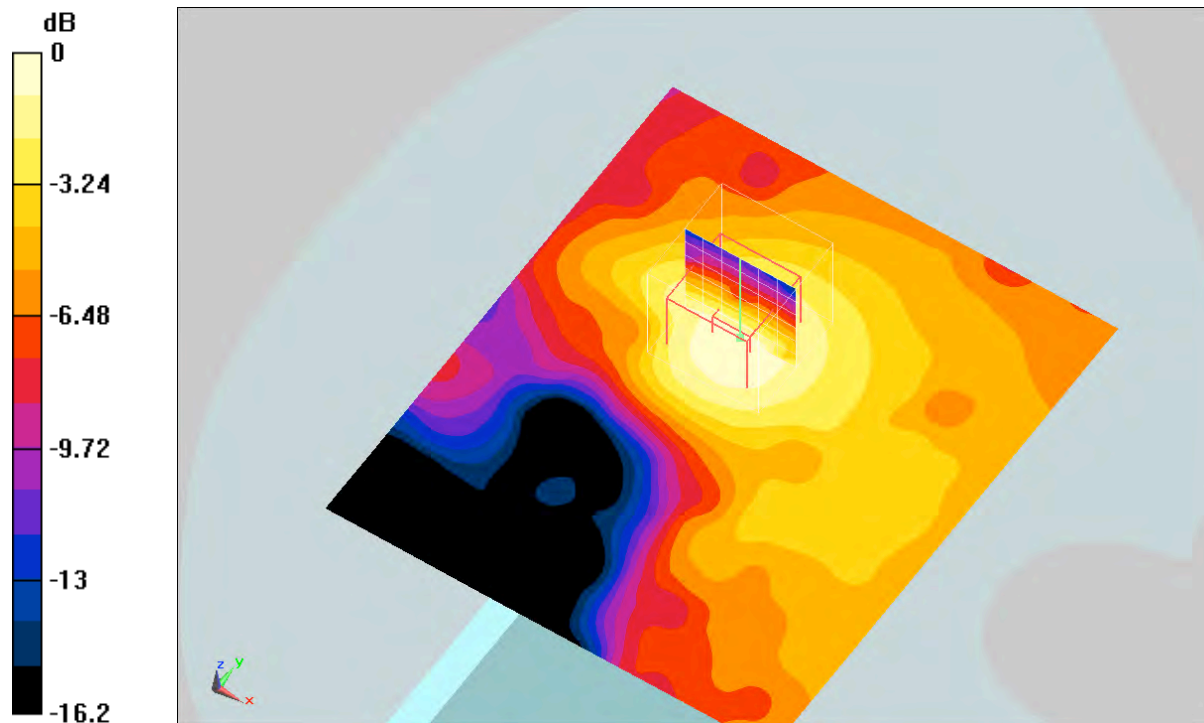
Reference Value = 4.75 V/m; Power Drift = 0.624 dB

Peak SAR (extrapolated) = 0.157 W/kg

**SAR(1 g) = 0.061 mW/g; SAR(10 g) = 0.037 mW/g**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.065 mW/g



0 dB = 0.064mW/g

Date/Time: 9/2/2009 11:39:40 AM Date/Time: 9/2/2009 11:59:19 AM

### Test Laboratory: QUALCOMM Incorporated

File Name: [20090901\\_GOBI2000-MiniCooper\\_EVDOr0-PCS.da5](#)

**DUT: Dell model Latitude E4200/Gobi2000; Type: Laptop; Serial: 36993663649**

**Program Name: Compliance Testing: P1528 Protocol (Left-Hand Side)**

Communication System: CDMA PCS; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1880$  MHz;  $\sigma = 1.54$  mho/m;  $\epsilon_r = 53$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1543; ConvF(4.33, 4.33, 4.33); Calibrated: 4/23/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn566; Calibrated: 4/20/2009
- Phantom: SAM with CRP; Type: SAM; Serial: 209
- Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**Lapheld - Middle/Area Scan (121x141x1):** Measurement grid: dx=10mm, dy=10mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.099 mW/g

**Lapheld - Middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

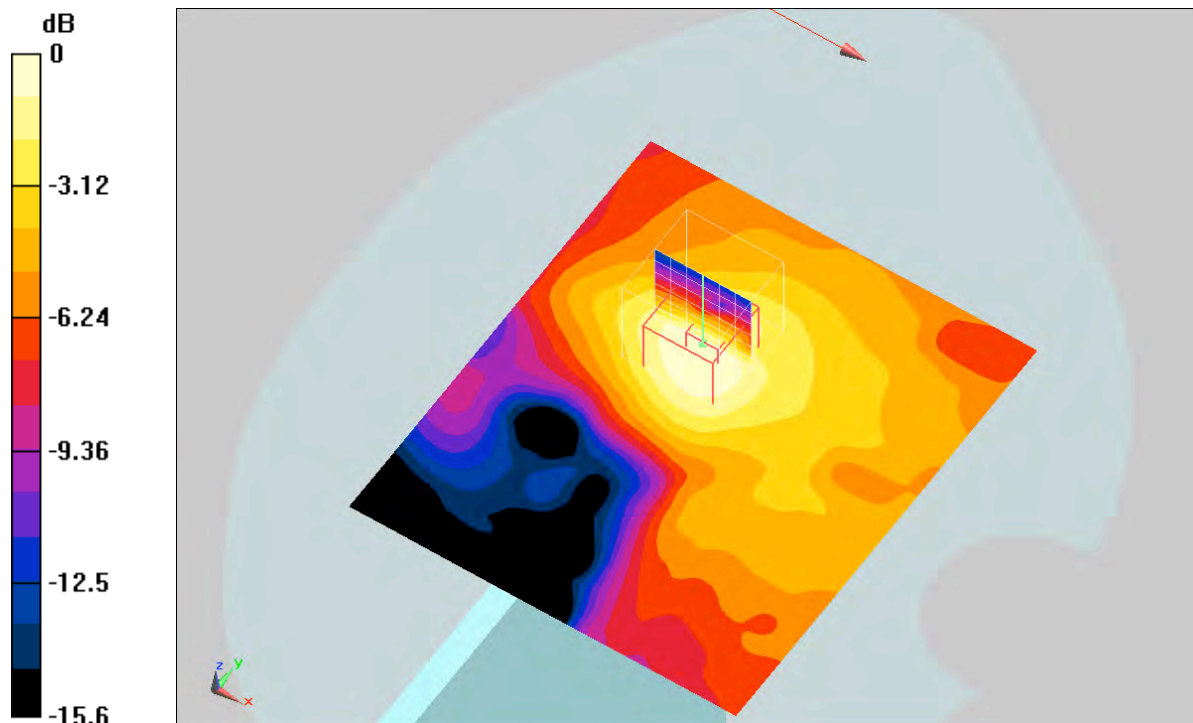
Reference Value = 6.26 V/m; Power Drift = 0.174 dB

Peak SAR (extrapolated) = 0.220 W/kg

**SAR(1 g) = 0.091 mW/g; SAR(10 g) = 0.057 mW/g**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.100 mW/g



0 dB = 0.099mW/g

Date/Time: 9/2/2009 12:16:00 PM Date/Time: 9/2/2009 12:35:42 PM

Test Laboratory: QUALCOMM Incorporated

File Name: [20090901\\_GOBI2000-MiniCooper\\_EVDOr0-PCS.da5](#)

**DUT: Dell model Latitude E4200/Gobi2000; Type: Laptop; Serial: 36993663649**

**Program Name: Compliance Testing: P1528 Protocol (Left-Hand Side)**

Communication System: CDMA PCS; Frequency: 1908.75 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1908.75$  MHz;  $\sigma = 1.58$  mho/m;  $\epsilon_r = 52.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1543; ConvF(4.33, 4.33, 4.33); Calibrated: 4/23/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn566; Calibrated: 4/20/2009
- Phantom: SAM with CRP; Type: SAM; Serial: 209
- Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**Lapheld - High/Area Scan (121x141x1):** Measurement grid: dx=10mm, dy=10mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.113 mW/g

**Lapheld - High/Zoom Scan (7x7x7) (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

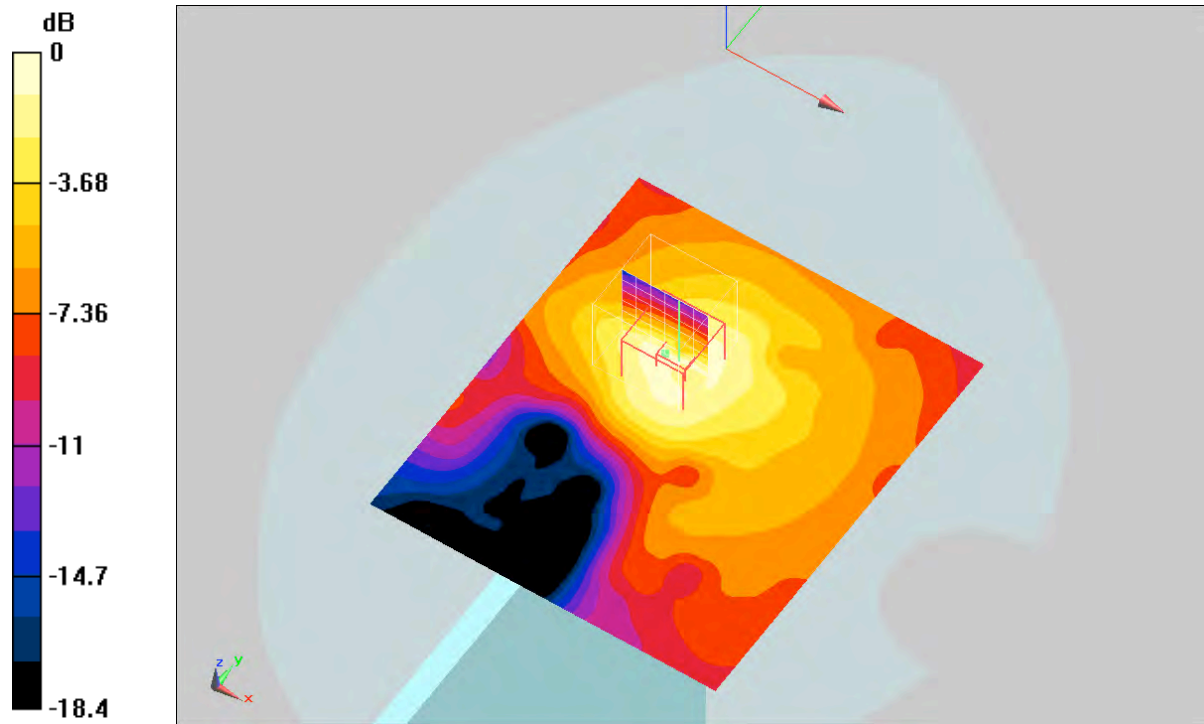
Reference Value = 6.75 V/m; Power Drift = 0.155 dB

Peak SAR (extrapolated) = 0.261 W/kg

**SAR(1 g) = 0.117 mW/g; SAR(10 g) = 0.070 mW/g**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.124 mW/g



0 dB = 0.123mW/g