

**1. MEASUREMENT RESULTS****1.1. SYSTEM PERFORMANCE CHECK**

Prior to the assessment, the system validation kit was used to test whether the system was operating within its specifications of  $\pm 10\%$ . The validation results are tabulated below. And also the corresponding SAR plot is attached as well in the SAR plots files.

IEEE P1528 Recommended Reference Value

Frequency (MHz)	1 g SAR	10 g SAR	Local SAR at surface (Above feed point)	Local SAR at surface (y=2cm offset from feed point)
1800	38.1	19.8	69.5	6.8

**SYSTEM PERFORMANCE CHECK RESULTS**

Dipole: D1800V2 SN: 294

Date of measured: August 7, 2003

Ambient condition: Temperature 24.5°C; Relative humidity 46%

Head Simulating Liquid			Parameters	Target	Measured	Deviation[%]	Limited[%]
Frequency	Temp. [°C]	Depth [cm]					
1800 MHz	23.00	15.00	Permittivity:	40	40.0102	0.03	$\pm 10$
			Conductivity:	1.4	1.3824	-1.26	$\pm 5$
			1g SAR:	38.1	36.72	-3.62	$\pm 10$

**1.2. TEST LIQUID CONFIRMATION****SIMULATED TISSUE LIQUID PARAMETER CONFIRMATION**

The dielectric parameters were checked prior to assessment using the HP85070C dielectric probe kit. The dielectric parameters measured are reported in each correspondent section.

**IEEE SCC-34/SC-2 P1528 RECOMMENDED TISSUE DIELECTRIC PARAMETERS**

The head tissue dielectric parameters recommended by the IEEE SCC-34/SC-2 in P1528 have been incorporated in the following table. These head parameters are derived from planar layer models simulating the highest expected SAR for the dielectric properties and tissue thickness variations in a human head. Other head and body tissue parameters that have not been specified in P1528 are derived from the tissue dielectric parameters computed from the 4-Cole-Cole equations and extrapolated according to the head parameters specified in P1528

Target Frequency (MHz)	Head		Body	
	$\epsilon_r$	$\sigma$ (S/m)	$\epsilon_r$	$\sigma$ (S/m)
1800-2000	40.0	1.40	53.3	1.52

( $\epsilon_r$  = relative permittivity,  $\sigma$  = conductivity and  $\rho = 1000 \text{ kg/m}^3$ )

**LIQUID CONFIRMATION RESULTS**

Date of measured: August 7, 2003

Ambient condition: Temperature: 24.5°C; Relative humidity: 46%

Body Simulating Liquid			Parameters	Target	Measured	Deviation[%]	Limited[%]
Frequency	Temp. [°C]	Depth (cm)					
1900 MHz	23	15	Permittivity:	53.3	52.348	-1.79	$\pm 10$
			Conductivity:	1.52	1.5039	-1.06	$\pm 5$

**1.3. EUT SETUP PHOTOS**

**EUT Set-up Configuration 4**

Spacing between the back of the EUT and phantom - 1.5 cm



**1.4. SAR MEASUREMENT RESULTS**

EUT Setup Configuration 4								
Separation Dist._cm	Antenna	Channel	Frequency	*Conducted Pwr_dBm		Liquid Temp [°C]	SAR (W/kg)	Limit (W/kg)
				Before	After			
1.5	Fixed	600	1880.00	25.87	25.79	23.0	0.00498	1.6
Notes: 1. *: Average power 2. Please see attachment for test plots.								

**2. ATTACHMENTS**

Exhibit	Contents	No. of page (s)
1	System Performance Check Plots	1
2	SAR Test Plots	2

Test Laboratory: Compliance Certification Services

File Name: [D1800V2 SN294\\_080703.da4](#)

**DUT: Dipole 1800 MHz; Type: D1800V2; Serial: 294**

**Program: System Performance Check at 1800 MHz**

**Ambient Temperature: 24.5 deg C; Liquid Temperature: 23.0 deg C**

Communication System: CW; Frequency: 1800 MHz; Duty Cycle: 1:1

Medium: Head 1800 MHz ( $\sigma = 1.3824$  mho/m,  $\epsilon_r = 40.0102$ ,  $\rho = 1000$  kg/m<sup>3</sup>)

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1577; ConvF(5.6, 5.6, 5.6); Calibrated: 2/7/2003
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn427; Calibrated: 2/4/2003
- Phantom: SAM 1; Type: SAM 1; Serial: 1185
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

**d=10mm, Pin=250mW/Area Scan (7x7x1):** Measurement grid: dx=15mm, dy=15mm

Reference Value = 91.3 V/m

Power Drift = 0.002 dB

Maximum value of SAR = 8.45 mW/g

**d=10mm, Pin=250mW/Zoom Scan (5x5x7) (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm,

dz=5mm

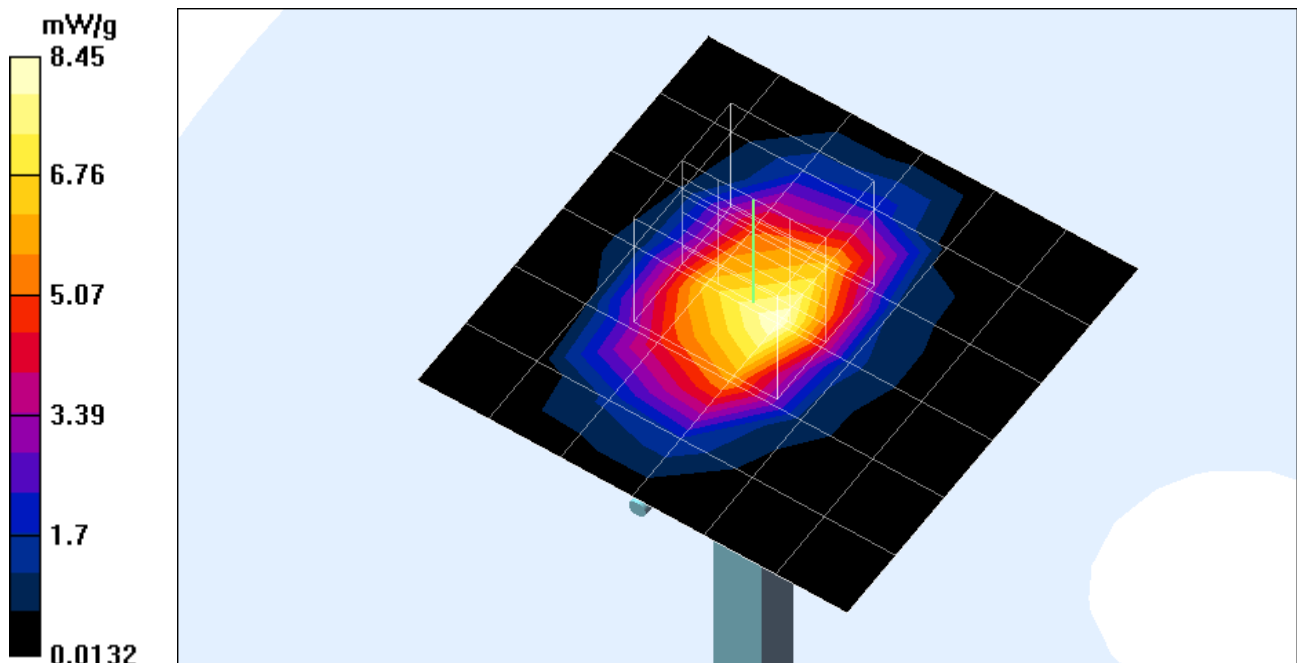
Peak SAR (extrapolated) = 15.4 W/kg

***SAR(1 g) = 9.18 mW/g***; SAR(10 g) = 4.86 mW/g

Reference Value = 91.3 V/m

Power Drift = 0.002 dB

Maximum value of SAR = 10.2 mW/g



Test Laboratory: Compliance Certification Services

File Name: [Conf 4.da4](#)

**DUT: H9PPDT8138; Type: PDT8138; Serial: N/A**

**Program: EUT Set up Configuration 4**

**Ambient Temperature: 24.5 deg C; Liquid Temperature: 23.0 deg C**

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

Medium: Muscle 1900 MHz ( $\sigma = 1.5039$  mho/m,  $\epsilon_r = 52.348$ ,  $\rho = 1000$  kg/m<sup>3</sup>)

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1577; ConvF(5, 5, 5); Calibrated: 2/7/2003
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn427; Calibrated: 2/4/2003
- Phantom: SAM 2; Type: SAM 2; Serial: 1050
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

**Middle/Area Scan (9x9x1):** Measurement grid: dx=15mm, dy=15mm

Reference Value = 1.85 V/m

Power Drift = -0.13 dB

Maximum value of SAR = 0.00492 mW/g

**Middle/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

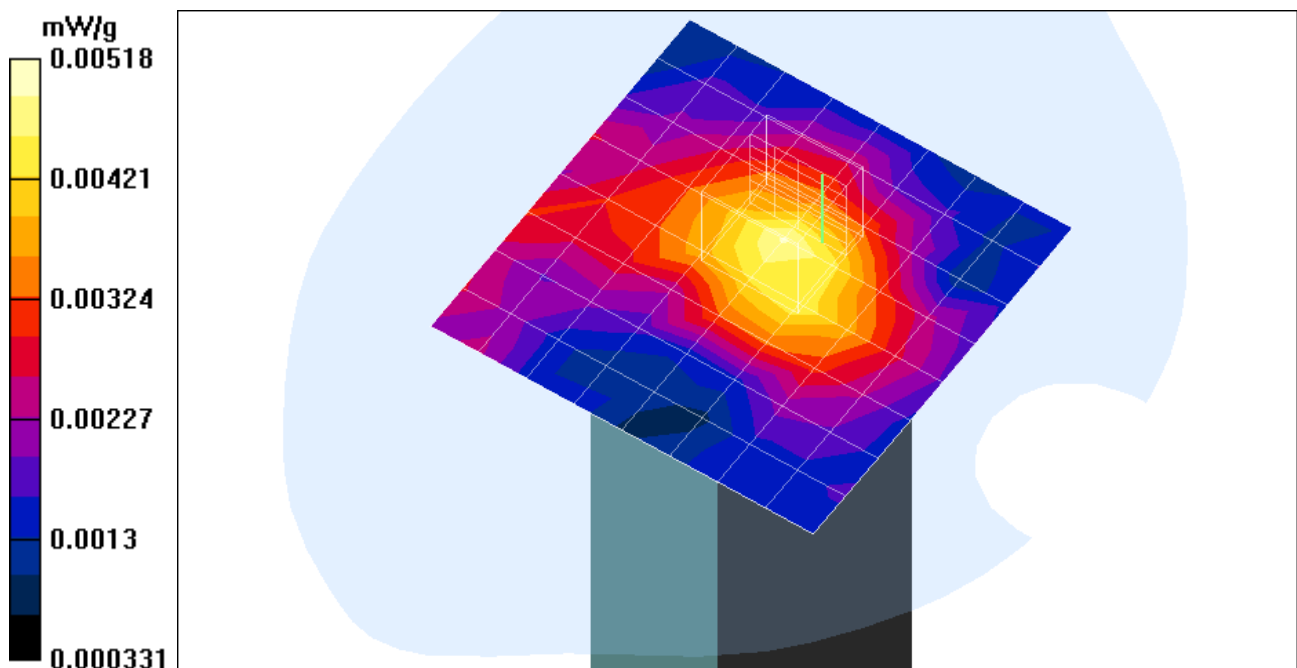
Peak SAR (extrapolated) = 0.0122 W/kg

SAR(1 g) = 0.00498 mW/g; SAR(10 g) = 0.00349 mW/g

Reference Value = 1.85 V/m

Power Drift = -0.13 dB

Maximum value of SAR = 0.00518 mW/g



Test Laboratory: Compliance Certification Services

File Name: [Conf 4.da4](#)

**DUT: H9PPDT8138; Type: PDT8138; Serial: N/A**

**Program: EUT Set up Configuration 4**

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

Medium: Muscle 1900 MHz ( $\sigma = 1.5039$  mho/m,  $\epsilon_r = 52.348$ ,  $\rho = 1000$  kg/m<sup>3</sup>)

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1577; ConvF(5, 5, 5); Calibrated: 2/7/2003
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn427; Calibrated: 2/4/2003
- Phantom: SAM 2; Type: SAM 2; Serial: 1050
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

**Middle/Z Scan 2 (1x1x51):** Measurement grid: dx=20mm, dy=20mm, dz=2mm

Reference Value = 1.85 V/m

Power Drift = -0.12 dB

Maximum value of SAR = 0.00401 mW/g

**Middle/Z Scan (1x1x51):** Measurement grid: dx=20mm, dy=20mm, dz=2mm

Reference Value = 1.85 V/m

Power Drift = -0.12 dB

Maximum value of SAR = 0.00453 mW/g

