

ATTACHMENT Q – DIPOLE VALIDATION

■ Validation Data (835MHz Head)

Test Laboratory: HCT

835 Dipole Validation test: Input power(1W)

Liquid Temperature : 21.6 °C

Date Tested : April 29, 2006

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:441

Program Name: Validation

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

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.89 \text{ mho/m}$; $\epsilon_r = 41.9$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section ; Measurement SW: DASY4, V4.6 Build 23

DASY4 Configuration:

- Probe: ET3DV6 - SN1607; ConvF(6.18, 6.18, 6.18); Calibrated: 2005-08-30

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn446; Calibrated: 2006-03-17

- Phantom: SAM 835/900 MHz; Type: SAM

Validation 835 MHz/Area Scan (61x81x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 10.9 mW/g

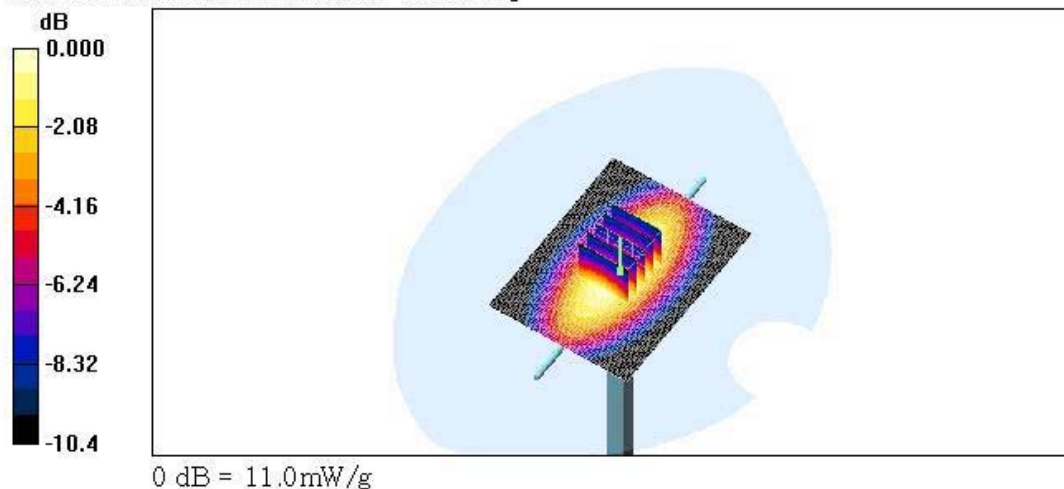
Validation 835 MHz/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 115.3 V/m; Power Drift = -0.062 dB

Peak SAR (extrapolated) = 14.7 W/kg

SAR(1 g) = 10.1 mW/g; SAR(10 g) = 6.67 mW/g

Maximum value of SAR (measured) = 11.0 mW/g



■ Validation Data (1900MHz Head)

Test Laboratory: HCT

1900 Dipole Validation test: Input power(1W)

Liquid Temperature : 21.7 °C

Date Tested : April 30, 2006

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d032

Program Name: Validation

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

Medium parameters used: $f = 1900 \text{ MHz}$; $\sigma = 1.45 \text{ mho/m}$; $\epsilon_r = 40$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section ; Measurement SW: DASY4, V4.6 Build 23

DASY4 Configuration:

- Probe: ET3DV6 - SN1607; ConvF(5.14, 5.14, 5.14); Calibrated: 2005-08-30

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn446; Calibrated: 2006-03-17

- Phantom: SAM 1800/1900 MHz; Type: SAM

Dipole 1900MHz Validation/Area Scan (61x61x1): Measurement grid: $\Delta x = 15\text{mm}$, $\Delta y = 15\text{mm}$

Maximum value of SAR (interpolated) = 47.6 mW/g

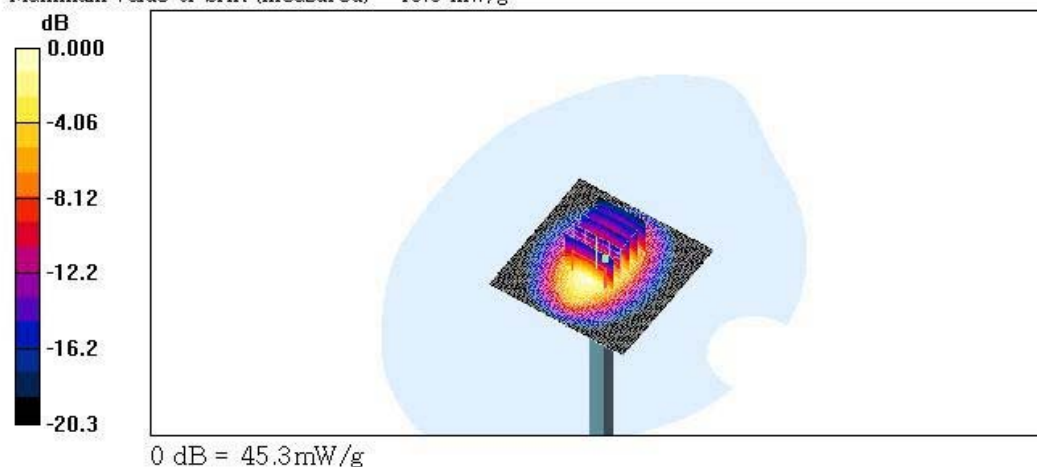
Dipole 1900MHz Validation/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $\Delta x = 8\text{mm}$, $\Delta y = 8\text{mm}$, $\Delta z = 5\text{mm}$

Reference Value = 187.1 V/m; Power Drift = -0.011 dB

Peak SAR (extrapolated) = 73.0 W/kg

SAR(1 g) = 40.5 mW/g; SAR(10 g) = 20.8 mW/g

Maximum value of SAR (measured) = 45.3 mW/g



■ Dielectric Parameter (835MHz Head)**Title : PN-E330****SubTitle : CDMA835 Head**

April 29, 2006 09:18 AM

Frequency	e'	e''
800.000000 MHz	42.5235	19.2384
805.000000 MHz	42.5092	19.2010
810.000000 MHz	42.4309	19.2032
815.000000 MHz	42.3383	19.1882
820.000000 MHz	42.1962	19.1821
825.000000 MHz	42.1375	19.1639
830.000000 MHz	42.0628	19.1981
835.000000 MHz	41.9380	19.1621
840.000000 MHz	41.8522	19.1474
845.000000 MHz	41.7663	19.0914
850.000000 MHz	41.7158	19.1195
855.000000 MHz	41.5844	19.0777
860.000000 MHz	41.5563	19.0687
865.000000 MHz	41.4979	19.0584
870.000000 MHz	41.4322	19.0199
875.000000 MHz	41.2675	19.0209
880.000000 MHz	41.2841	19.0149
885.000000 MHz	41.1933	19.0353
890.000000 MHz	41.1257	18.9941
895.000000 MHz	41.0686	18.9354
900.000000 MHz	41.0339	18.9499

■ Dielectric Parameter (1900MHz Head)**Title : PN-E330****SubTitle : PCS1900 Head**

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Frequency	e'	e''
1.800000000 GHz	40.4462	13.3366
1.810000000 GHz	40.3519	13.3935
1.820000000 GHz	40.3252	13.4482
1.830000000 GHz	40.2676	13.5679
1.840000000 GHz	40.2862	13.6700
1.850000000 GHz	40.2760	13.7623
1.860000000 GHz	40.2404	13.8310
1.870000000 GHz	40.2300	13.8227
1.880000000 GHz	40.1372	13.8071
1.890000000 GHz	40.1128	13.7510
1.900000000 GHz	40.0294	13.7097
1.910000000 GHz	39.9780	13.6933
1.920000000 GHz	39.8781	13.6791
1.930000000 GHz	39.8407	13.6993
1.940000000 GHz	39.7847	13.7616
1.950000000 GHz	39.7247	13.8653
1.960000000 GHz	39.7147	13.9566
1.970000000 GHz	39.7482	14.0661
1.980000000 GHz	39.7183	14.1317
1.990000000 GHz	39.6905	14.1367
2.000000000 GHz	39.6628	14.1358

■ Dielectric Parameter (835MHz Body)

Title : PN-E330

SubTitle : CDMA835 Body

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Frequency	e'	e''
800.000000 MHz	55.1943	21.3344
805.000000 MHz	55.1545	21.3191
810.000000 MHz	55.0684	21.2980
815.000000 MHz	55.0887	21.3175
820.000000 MHz	55.0315	21.2919
825.000000 MHz	54.9630	21.2931
830.000000 MHz	54.8975	21.3435
835.000000 MHz	54.8480	21.3433
840.000000 MHz	54.8299	21.3646
845.000000 MHz	54.7764	21.3768
850.000000 MHz	54.7289	21.3431
855.000000 MHz	54.6881	21.2962
860.000000 MHz	54.6321	21.3207
865.000000 MHz	54.6076	21.3113
870.000000 MHz	54.5486	21.2938
875.000000 MHz	54.4935	21.2697
880.000000 MHz	54.4531	21.2669
885.000000 MHz	54.3882	21.2259
890.000000 MHz	54.3471	21.2025
895.000000 MHz	54.2370	21.1223
900.000000 MHz	54.1843	21.0520

■ Dielectric Parameter (1900MHz Body)

Title : PN-E330

SubTitle : PCS1900 Body

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Frequency	e'	e''
1.800000000 GHz	52.6071	13.7455
1.810000000 GHz	52.5551	13.8438
1.820000000 GHz	52.5031	13.9099
1.830000000 GHz	52.4284	13.9637
1.840000000 GHz	52.3747	14.0141
1.850000000 GHz	52.2986	14.0488
1.860000000 GHz	52.2354	14.0835
1.870000000 GHz	52.1453	14.1139
1.880000000 GHz	52.0646	14.1726
1.890000000 GHz	51.9568	14.2025
1.900000000 GHz	51.8932	14.2474
1.910000000 GHz	51.8426	14.3205
1.920000000 GHz	51.8126	14.3861
1.930000000 GHz	51.7984	14.4627
1.940000000 GHz	51.7526	14.5218
1.950000000 GHz	51.7467	14.5947
1.960000000 GHz	51.6465	14.6406
1.970000000 GHz	51.6018	14.6823
1.980000000 GHz	51.5895	14.6727
1.990000000 GHz	51.5133	14.7378
2.000000000 GHz	51.4587	14.7404