

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 : May 12, 2006

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

Program Name: Validation 835 MHz

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

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.884 \text{ mho/m}$; $\epsilon_r = 42.4$; $\rho = 1000 \text{ kg/m}^3$

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

DASY4 Configuration:

- Probe: ET3DV6 - SN1609; ConvF(6.85, 6.85, 6.85); Calibrated: 2006-03-23

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

- Electronics: DAE4 Sn447; Calibrated: 2005-11-30

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

Validatoin 835 MHz/Area Scan (101x101x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Maximum value of SAR (interpolated) = 10.4 mW/g

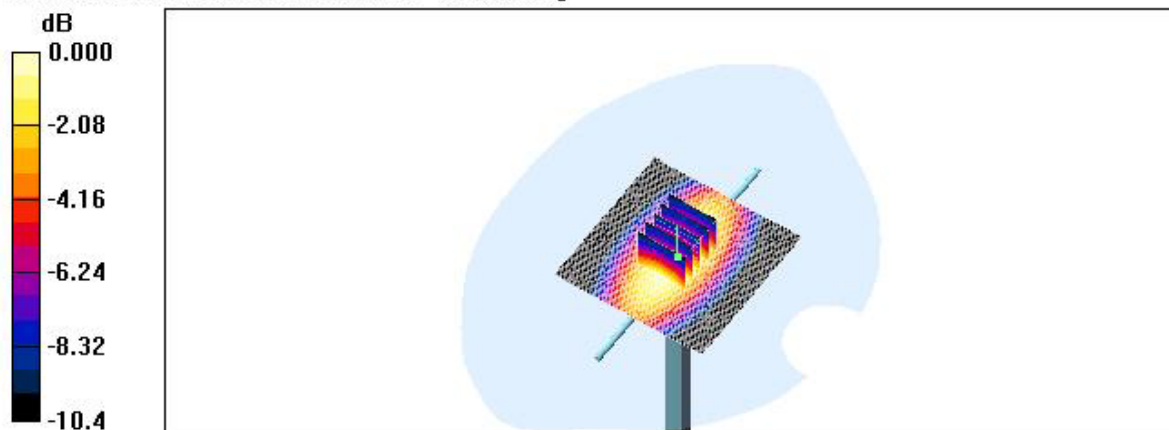
Validatoin 835 MHz/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 111.6 V/m; Power Drift = -0.012 dB

Peak SAR (extrapolated) = 14.0 W/kg

SAR(1 g) = 9.53 mW/g; SAR(10 g) = 6.25 mW/g

Maximum value of SAR (measured) = 10.3 mW/g



0 dB = 10.3mW/g

■ Validation Data (1900MHz Head)

Test Laboratory: HCT

1900 Dipole Validation test: Input power(1W)

Liquid Temperature : 21.7 °C

Date Tested : May 13, 2006

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

Program Name: Validation 1900 MHz

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

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.45$ mho/m; $\epsilon_r = 40.1$; $\rho = 1000$ kg/m³

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

DASY4 Configuration:

- Probe: ET3DV6 - SN1609; ConvF(5.16, 5.16, 5.16); Calibrated: 2006-03-23

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

- Electronics: DAE4 Sn447; Calibrated: 2005-11-30

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

Validation 1900MHz/Area Scan (61x61x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 50.1 mW/g

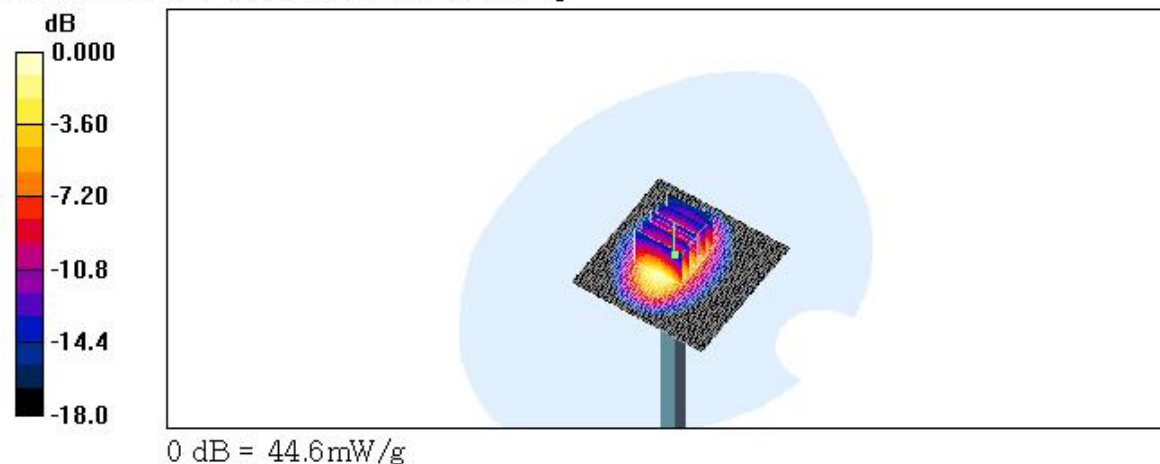
Validation 1900MHz/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 185.4 V/m; Power Drift = -0.022 dB

Peak SAR (extrapolated) = 69.7 W/kg

SAR(1 g) = 40 mW/g; SAR(10 g) = 21.2 mW/g

Maximum value of SAR (measured) = 44.6 mW/g



■ Dielectric Parameter (835MHz Head)

Title : PN-320

SubTitle : CDMA835

May 12, 2006 09:03 AM

Frequency	e'	e''
800.000000 MHz	42.8392	19.1186
805.000000 MHz	42.7537	19.1441
810.000000 MHz	42.7129	19.0924
815.000000 MHz	42.6525	19.1218
820.000000 MHz	42.5787	19.0802
825.000000 MHz	42.5311	19.0901
830.000000 MHz	42.4488	19.0677
835.000000 MHz	42.4178	19.0363
840.000000 MHz	42.3211	19.0660
845.000000 MHz	42.3055	19.0098
850.000000 MHz	42.2699	18.9910
855.000000 MHz	42.1913	18.9643
860.000000 MHz	42.1739	19.0023
865.000000 MHz	42.0691	18.9839
870.000000 MHz	42.0648	18.9566
875.000000 MHz	41.9716	18.9357
880.000000 MHz	41.9249	18.9316
885.000000 MHz	41.8721	18.9044
890.000000 MHz	41.7651	18.8938
895.000000 MHz	41.7220	18.8595
900.000000 MHz	41.6460	18.8455

■ Dielectric Parameter (1900MHz Head)

Title : PN-320

SubTitle : PCS1900 Head

May 13, 2006 08:56 AM

Frequency	e'	e''
1.800000000 GHz	40.4557	13.3123
1.810000000 GHz	40.3424	13.3535
1.820000000 GHz	40.3181	13.3977
1.830000000 GHz	40.2676	13.5435
1.840000000 GHz	40.2724	13.6238
1.850000000 GHz	40.2742	13.7209
1.860000000 GHz	40.2267	13.8093
1.870000000 GHz	40.2116	13.8224
1.880000000 GHz	40.1521	13.7975
1.890000000 GHz	40.0863	13.7380
1.900000000 GHz	40.0527	13.6855
1.910000000 GHz	39.9744	13.6418
1.920000000 GHz	39.8883	13.6307
1.930000000 GHz	39.8378	13.6267
1.940000000 GHz	39.7891	13.7141
1.950000000 GHz	39.6920	13.8067
1.960000000 GHz	39.6813	13.9105
1.970000000 GHz	39.6826	14.0388
1.980000000 GHz	39.6930	14.1072
1.990000000 GHz	39.6544	14.1314
2.000000000 GHz	39.6594	14.1351

■ Dielectric Parameter (835MHz Body)**Title : PN-320****SubTitle : CDMA835 Body**

May 12, 2006 02:10 PM

Frequency	e'	e''
800.000000 MHz	53.5007	21.5776
805.000000 MHz	53.4340	21.3954
810.000000 MHz	53.3672	21.3729
815.000000 MHz	53.3045	21.3269
820.000000 MHz	53.3042	21.2650
825.000000 MHz	53.2190	21.2447
830.000000 MHz	53.1467	21.2258
835.000000 MHz	53.1112	21.1831
840.000000 MHz	53.0420	21.1967
845.000000 MHz	53.0486	21.2048
850.000000 MHz	52.9921	21.2463
855.000000 MHz	52.9820	21.2923
860.000000 MHz	52.9607	21.3634
865.000000 MHz	52.9100	21.3804
870.000000 MHz	52.8827	21.3993
875.000000 MHz	52.8814	21.4135
880.000000 MHz	52.8644	21.4546
885.000000 MHz	52.8136	21.4869
890.000000 MHz	52.7220	21.4503
895.000000 MHz	52.6760	21.4336
900.000000 MHz	52.6274	21.4078

■ Dielectric Parameter (1900MHz Body)

Title : PN-320

SubTitle : PCS1900 Body

May 13, 2006 01:42 AM

Frequency	e'	e''
1.800000000 GHz	52.8076	13.7182
1.810000000 GHz	52.7721	13.7941
1.820000000 GHz	52.7416	13.8729
1.830000000 GHz	52.6377	13.9475
1.840000000 GHz	52.6229	14.0096
1.850000000 GHz	52.5635	14.0391
1.860000000 GHz	52.4788	14.0987
1.870000000 GHz	52.4197	14.1399
1.880000000 GHz	52.3827	14.1473
1.890000000 GHz	52.3115	14.1825
1.900000000 GHz	52.2883	14.2250
1.910000000 GHz	52.2429	14.2882
1.920000000 GHz	52.2115	14.3603
1.930000000 GHz	52.1819	14.4203
1.940000000 GHz	52.1532	14.4942
1.950000000 GHz	52.1459	14.5772
1.960000000 GHz	52.1041	14.6207
1.970000000 GHz	52.0613	14.6763
1.980000000 GHz	52.0169	14.7088
1.990000000 GHz	51.9441	14.7436
2.000000000 GHz	51.9063	14.7528