

ATTACHMENT Q – DIPOLE VALIDATION

■ Validation Data (835MHz Head)

Test Laboratory: HCT

835 Dipole Validation test: Input power(1W)

Liquid Temperature : 21.3℃

Date Tested : December 12, 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: $f = 835 \text{ MHz}$; $\sigma = 0.886 \text{ mho/m}$; $\epsilon_r = 41.8$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 44

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(6.73, 6.73, 6.73); Calibrated: 2006-08-25

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

- Electronics: DAE4 Sn447; Calibrated: 2006-11-17

- 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) = 10.5 mW/g

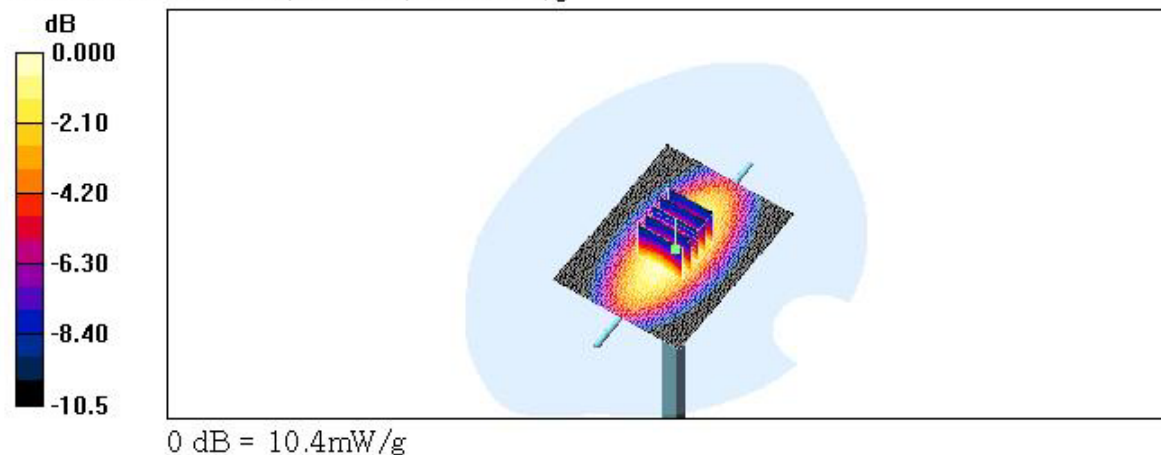
Validation 835 MHz/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 111.9 V/m; Power Drift = 0.003 dB

Peak SAR (extrapolated) = 14.2 W/kg

SAR(1 g) = 9.6 mW/g; SAR(10 g) = 6.29 mW/g

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



■ Validation Data (1900MHz Head)

Test Laboratory: HCT

1900 Dipole Validation test: Input power(1W)

Liquid Temperature : 21.4℃

Date Tested : December 13, 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: $f = 1900$ MHz; $\sigma = 1.43$ mho/m; $\epsilon_r = 39.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 44

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(5.6, 5.6, 5.6); Calibrated: 2006-08-25

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

- Electronics: DAE4 Sn447; Calibrated: 2006-11-17

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

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

Maximum value of SAR (interpolated) = 48.8 mW/g

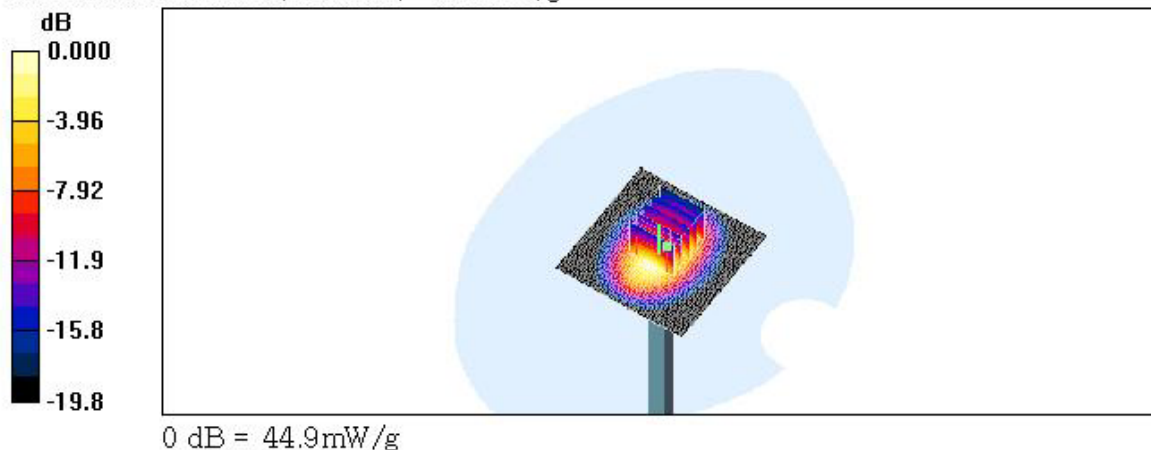
Dipole 1900MHz Validation/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $\Delta x = 8$ mm, $\Delta y = 8$ mm, $\Delta z = 5$ mm

Reference Value = 192.7 V/m; Power Drift = -0.166 dB

Peak SAR (extrapolated) = 70.1 W/kg

SAR(1 g) = 40.2 mW/g; SAR(10 g) = 20.9 mW/g

Maximum value of SAR (measured) = 44.9 mW/g



■ Dielectric Parameter (835MHz Head)

Title : PN-E335

SubTitle : CDMA835(Head)

December 12, 2006 08:23 AM

Frequency	e'	e''
800.000000 MHz	42.1485	19.2211
805.000000 MHz	42.1116	19.2128
810.000000 MHz	42.0509	19.2327
815.000000 MHz	41.9703	19.2151
820.000000 MHz	41.9232	19.1407
825.000000 MHz	41.9059	19.1331
830.000000 MHz	41.8131	19.0991
835.000000 MHz	41.7855	19.0685
840.000000 MHz	41.6909	18.9839
845.000000 MHz	41.6317	18.9840
850.000000 MHz	41.5995	18.9662
855.000000 MHz	41.4768	18.8818
860.000000 MHz	41.4206	18.8821
865.000000 MHz	41.3505	18.8662
870.000000 MHz	41.3122	18.8515
875.000000 MHz	41.2385	18.8170
880.000000 MHz	41.2051	18.7964
885.000000 MHz	41.0828	18.8122
890.000000 MHz	40.9982	18.8321
895.000000 MHz	40.9368	18.8255
900.000000 MHz	40.9180	18.8261

■ Dielectric Parameter (1900MHz Head)**Title : PN-E335****SubTitle : PCS1900(Head)**

December 13, 2006 09:10 AM

Frequency	e'	e''
1.800000000 GHz	39.7996	13.2683
1.810000000 GHz	39.7594	13.3068
1.820000000 GHz	39.7132	13.3187
1.830000000 GHz	39.6474	13.3065
1.840000000 GHz	39.5855	13.3377
1.850000000 GHz	39.5371	13.3547
1.860000000 GHz	39.4426	13.3677
1.870000000 GHz	39.4145	13.3845
1.880000000 GHz	39.3970	13.4068
1.890000000 GHz	39.3559	13.4795
1.900000000 GHz	39.3337	13.5046
1.910000000 GHz	39.3097	13.5159
1.920000000 GHz	39.2629	13.5360
1.930000000 GHz	39.2457	13.5638
1.940000000 GHz	39.2015	13.5708
1.950000000 GHz	39.1422	13.5936
1.960000000 GHz	39.0908	13.6176
1.970000000 GHz	39.0411	13.6201
1.980000000 GHz	38.9846	13.6596
1.990000000 GHz	38.9427	13.6839
2.000000000 GHz	38.9083	13.7178

■ Dielectric Parameter (835MHz Body)

Title : PN-E335

SubTitle : CDMA835(Body)

December 12, 2006 01:05 PM

Frequency	e'	e''
800.000000 MHz	53.7705	21.4042
805.000000 MHz	53.7005	21.3476
810.000000 MHz	53.6970	21.3810
815.000000 MHz	53.6502	21.3844
820.000000 MHz	53.5369	21.3388
825.000000 MHz	53.4612	21.3473
830.000000 MHz	53.4880	21.3136
835.000000 MHz	53.4260	21.3230
840.000000 MHz	53.3801	21.2826
845.000000 MHz	53.3676	21.2414
850.000000 MHz	53.2921	21.2344
855.000000 MHz	53.2716	21.1966
860.000000 MHz	53.2457	21.1717
865.000000 MHz	53.1745	21.1961
870.000000 MHz	53.1199	21.1181
875.000000 MHz	53.1029	21.0959
880.000000 MHz	53.0623	21.0933
885.000000 MHz	53.0089	21.0270
890.000000 MHz	52.9464	21.0175
895.000000 MHz	52.9331	21.0102
900.000000 MHz	52.8771	20.9985

■ Dielectric Parameter (1900MHz Body)

Title : PN-E335

SubTitle : PCS1900(Body)

December 13, 2006 01:30 PM

Frequency	e'	e''
1.800000000 GHz	51.6235	13.8445
1.810000000 GHz	51.5917	13.8769
1.820000000 GHz	51.5610	13.9333
1.830000000 GHz	51.5483	13.9709
1.840000000 GHz	51.4982	14.0122
1.850000000 GHz	51.5110	14.0458
1.860000000 GHz	51.4281	14.0733
1.870000000 GHz	51.4351	14.0836
1.880000000 GHz	51.3858	14.1006
1.890000000 GHz	51.3437	14.1399
1.900000000 GHz	51.2938	14.1723
1.910000000 GHz	51.2293	14.2217
1.920000000 GHz	51.2061	14.2558
1.930000000 GHz	51.1509	14.2837
1.940000000 GHz	51.1568	14.3029
1.950000000 GHz	51.1094	14.3315
1.960000000 GHz	51.1026	14.3447
1.970000000 GHz	51.0864	14.3843
1.980000000 GHz	51.0809	14.4106
1.990000000 GHz	51.0070	14.4334
2.000000000 GHz	50.9759	14.4663