

ATTACHMENT Q – DIPOLE VALIDATION

■ Validation Data (835MHz Brain)

Test Laboratory: HCT

835 Dipole Validation test: Input power(1W)
Liquid Temperature : 21.7 °C
Date Tested : October 25, 2006

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

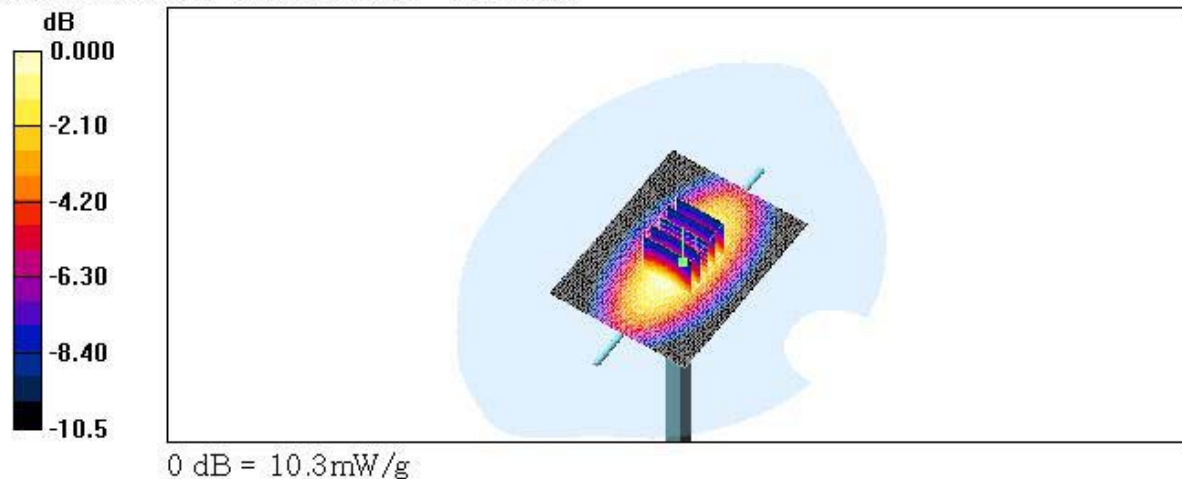
Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.877 \text{ mho/m}$; $\epsilon_r = 41.1$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 44

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: 2005-11-30
- 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) = 10.4 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 = 109.6 V/m; Power Drift = 0.144 dB
Peak SAR (extrapolated) = 14.1 W/kg
SAR(1 g) = 9.56 mW/g; SAR(10 g) = 6.27 mW/g
Maximum value of SAR (measured) = 10.3 mW/g



■ Validation Data (1900MHz Brain)

Test Laboratory: HCT

1900 Dipole Validation test: Input power(1W)
Liquid Temperature : 21.6℃
Date Tested : October 26, 2006

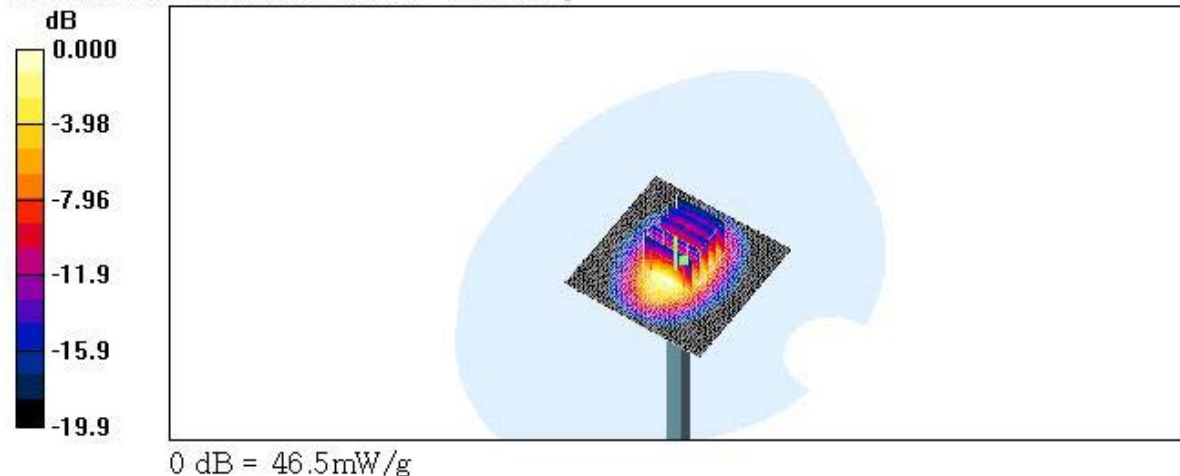
DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d032
Program Name: Validation

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 1900 \text{ MHz}$; $\sigma = 1.4 \text{ mho/m}$; $\epsilon_r = 40.3$; $\rho = 1000 \text{ kg/m}^3$
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: 2005-11-30
- Phantom: SAM 1800/1900 MHz; Type: SAM

Dipole 1900MHz Validation/Area Scan (61x61x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
Maximum value of SAR (interpolated) = 49.3 mW/g

Dipole 1900MHz Validation/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$,
 $dz=5\text{mm}$
Reference Value = 194.7 V/m; Power Drift = 0.042 dB
Peak SAR (extrapolated) = 74.5 W/kg
SAR(1 g) = 41.9 mW/g; SAR(10 g) = 21.6 mW/g
Maximum value of SAR (measured) = 46.5 mW/g



■ Dielectric Parameter (835MHz Brain)**Title : PN-810****SubTitle : CDMA835(HEAD)**

October 25, 2006 03:11 AM

Frequency	e'	e''
800.000000 MHz	41.5743	18.8655
805.000000 MHz	41.4494	18.8843
810.000000 MHz	41.4056	18.8386
815.000000 MHz	41.3127	18.8066
820.000000 MHz	41.2581	18.8127
825.000000 MHz	41.2537	18.8632
830.000000 MHz	41.1508	18.8403
835.000000 MHz	41.1328	18.8730
840.000000 MHz	41.1197	18.8831
845.000000 MHz	41.1103	18.8297
850.000000 MHz	41.0695	18.8475
855.000000 MHz	40.9778	18.9002
860.000000 MHz	41.0066	18.8673
865.000000 MHz	40.9682	18.8842
870.000000 MHz	40.9118	18.9061
875.000000 MHz	40.8655	18.8543
880.000000 MHz	40.8214	18.8427
885.000000 MHz	40.7067	18.8269
890.000000 MHz	40.6723	18.8080
895.000000 MHz	40.6071	18.7836
900.000000 MHz	40.5086	18.7102

■ Dielectric Parameter (835MHz Body)**Title : PN-810****SubTitle : CDMA835(BODY)**

October 25, 2006 01:30 PM

Frequency	e'	e''
800.000000 MHz	53.7670	21.3940
805.000000 MHz	53.6949	21.4288
810.000000 MHz	53.6232	21.3958
815.000000 MHz	53.6103	21.3985
820.000000 MHz	53.5107	21.3592
825.000000 MHz	53.4414	21.3544
830.000000 MHz	53.4586	21.3242
835.000000 MHz	53.4056	21.2973
840.000000 MHz	53.3167	21.2289
845.000000 MHz	53.3220	21.2362
850.000000 MHz	53.2554	21.1935
855.000000 MHz	53.2419	21.1750
860.000000 MHz	53.1972	21.1574
865.000000 MHz	53.1251	21.1501
870.000000 MHz	53.1000	21.0935
875.000000 MHz	53.0726	21.0860
880.000000 MHz	53.0284	21.0320
885.000000 MHz	52.9749	21.0347
890.000000 MHz	52.9324	20.9808
895.000000 MHz	52.8770	21.0003
900.000000 MHz	52.8302	20.9853

■ Dielectric Parameter (1900MHz Head)

Title : PN-810
SubTitle : PCS1900(HEAD)
October 26, 2006 09:00 AM

Frequency	e'	e''
1.800000000 GHz	40.7875	12.9097
1.810000000 GHz	40.7213	12.9519
1.820000000 GHz	40.6982	13.0067
1.830000000 GHz	40.6364	13.0797
1.840000000 GHz	40.6153	13.0995
1.850000000 GHz	40.5606	13.1500
1.860000000 GHz	40.5644	13.1810
1.870000000 GHz	40.5276	13.1987
1.880000000 GHz	40.4877	13.2006
1.890000000 GHz	40.4498	13.2223
1.900000000 GHz	40.3235	13.2034
1.910000000 GHz	40.2586	13.2167
1.920000000 GHz	40.1870	13.2677
1.930000000 GHz	40.0844	13.2919
1.940000000 GHz	40.0242	13.3241
1.950000000 GHz	39.9801	13.3696
1.960000000 GHz	39.9501	13.4561
1.970000000 GHz	39.9433	13.4913
1.980000000 GHz	39.9239	13.5409
1.990000000 GHz	39.9171	13.5553
2.000000000 GHz	39.9106	13.5900

■ Dielectric Parameter (1900MHz Body)**Title : PN-810****SubTitle : PCS1900(BODY)**

October 26, 2006 12:40 PM

Frequency	e'	e''
1.800000000 GHz	51.5409	13.8564
1.810000000 GHz	51.5290	13.9080
1.820000000 GHz	51.4724	13.9546
1.830000000 GHz	51.4643	13.9640
1.840000000 GHz	51.4341	13.9994
1.850000000 GHz	51.4187	14.0540
1.860000000 GHz	51.3716	14.0653
1.870000000 GHz	51.3256	14.1043
1.880000000 GHz	51.2771	14.1422
1.890000000 GHz	51.2611	14.1627
1.900000000 GHz	51.2198	14.1844
1.910000000 GHz	51.1801	14.2299
1.920000000 GHz	51.1387	14.2594
1.930000000 GHz	51.0868	14.2987
1.940000000 GHz	51.0672	14.3130
1.950000000 GHz	51.0252	14.3513
1.960000000 GHz	51.0152	14.3609
1.970000000 GHz	50.9938	14.3986
1.980000000 GHz	50.9956	14.4327
1.990000000 GHz	50.9197	14.4684
2.000000000 GHz	50.9188	14.4806