

ATTACHMENT Q – DIPOLE VALIDATION

■ Validation Data (835MHz Brain)

Test Laboratory: HCT

835Dipole Validation test: Input power(1W)
Liquid Temperature : 21.6℃
Date Tested : October 10, 2006

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

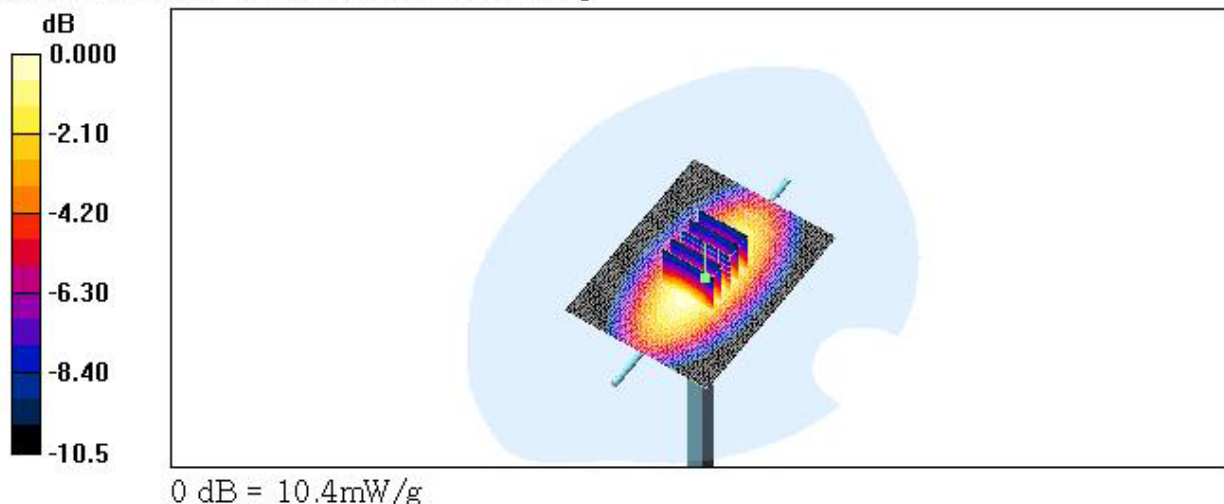
Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.87 \text{ mho/m}$; $\epsilon_r = 40.7$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section ; Measurement SW: DASY4, V4.7 Build 44

DASY4 Configuration:

- Probe: ET3DV6 - SN1798; ConvF(6.73, 6.73, 6.73); Calibrated: 2006-08-25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: 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) = 10.8 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 = 113.5 V/m; Power Drift = -0.132 dB
Peak SAR (extrapolated) = 14.3 W/kg
SAR(1 g) = 9.64 mW/g; SAR(10 g) = 6.32 mW/g
Maximum value of SAR (measured) = 10.4 mW/g



■ Validation Data (1900MHz Brain)

Test Laboratory: HCT

1900 Dipole Validation test: Input power(1W)

Liquid Temperature : 21.6 °C

Date Tested : October 11, 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, V4.7 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: DAE3 Sn446; Calibrated: 2006-03-17

- 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) = 48.0 mW/g

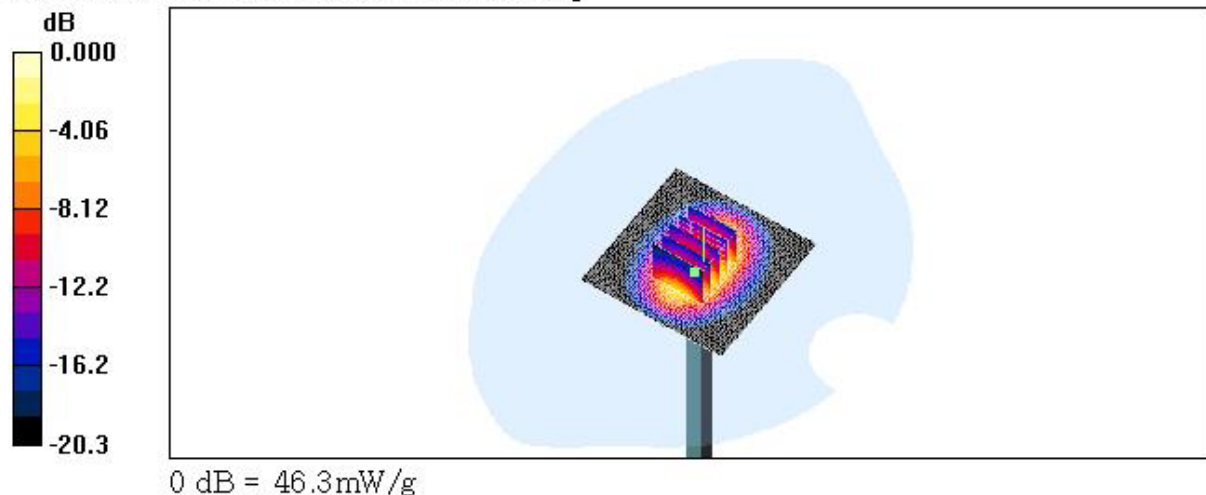
Dipole 1900MHz Validation/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 189.2 V/m; Power Drift = -0.016 dB

Peak SAR (extrapolated) = 73.3 W/kg

SAR(1 g) = 41 mW/g; SAR(10 g) = 21.1 mW/g

Maximum value of SAR (measured) = 46.3 mW/g



■ Dielectric Parameter (835MHz Brain)**Title : PN-310****SubTitle : CDMA835(HEAD)**

October 10, 2006 09:01 AM

Frequency	e'	e''
800.000000 MHz	41.0906	18.7995
805.000000 MHz	40.9984	18.8110
810.000000 MHz	40.9297	18.7843
815.000000 MHz	40.8421	18.7630
820.000000 MHz	40.8271	18.7704
825.000000 MHz	40.7747	18.7931
830.000000 MHz	40.7112	18.7714
835.000000 MHz	40.7085	18.7387
840.000000 MHz	40.6597	18.8021
845.000000 MHz	40.6280	18.7360
850.000000 MHz	40.6182	18.7468
855.000000 MHz	40.5178	18.7623
860.000000 MHz	40.5325	18.7457
865.000000 MHz	40.4573	18.7340
870.000000 MHz	40.4207	18.7118
875.000000 MHz	40.3540	18.7588
880.000000 MHz	40.2990	18.7019
885.000000 MHz	40.1862	18.6674
890.000000 MHz	40.1863	18.7102
895.000000 MHz	40.0881	18.6673
900.000000 MHz	40.0221	18.5961

■ Dielectric Parameter (835MHz Body)**Title : PN-310****SubTitle : CDMA835(BODY)**

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Frequency	e'	e''
800.000000 MHz	53.6977	21.2930
805.000000 MHz	53.6324	21.3148
810.000000 MHz	53.5714	21.3125
815.000000 MHz	53.5046	21.2900
820.000000 MHz	53.4407	21.2724
825.000000 MHz	53.3707	21.2962
830.000000 MHz	53.3590	21.2936
835.000000 MHz	53.2835	21.2642
840.000000 MHz	53.2639	21.2041
845.000000 MHz	53.2765	21.2310
850.000000 MHz	53.2503	21.2388
855.000000 MHz	53.2183	21.1404
860.000000 MHz	53.1937	21.1479
865.000000 MHz	53.1628	21.1360
870.000000 MHz	53.1187	21.0865
875.000000 MHz	53.0726	21.0860
880.000000 MHz	53.0818	21.0329
885.000000 MHz	52.9909	21.0075
890.000000 MHz	52.9888	20.9907
895.000000 MHz	52.9177	20.9429
900.000000 MHz	52.8484	20.9783

■ Dielectric Parameter (1900MHz Head)

Title : PN-310

SubTitle : PCS1900(HEAD)

October 11, 2006 03:50 AM

Frequency	e'	e''
1.800000000 GHz	40.3881	13.3418
1.810000000 GHz	40.2987	13.4112
1.820000000 GHz	40.2552	13.4582
1.830000000 GHz	40.2358	13.5755
1.840000000 GHz	40.2488	13.7026
1.850000000 GHz	40.2298	13.7854
1.860000000 GHz	40.2128	13.8545
1.870000000 GHz	40.1893	13.8397
1.880000000 GHz	40.1185	13.8251
1.890000000 GHz	40.0705	13.7602
1.900000000 GHz	39.9839	13.7091
1.910000000 GHz	39.9085	13.6786
1.920000000 GHz	39.8117	13.6687
1.930000000 GHz	39.7634	13.6903
1.940000000 GHz	39.7336	13.7654
1.950000000 GHz	39.6532	13.8738
1.960000000 GHz	39.6763	13.9612
1.970000000 GHz	39.6702	14.1004
1.980000000 GHz	39.6849	14.1570
1.990000000 GHz	39.6586	14.1552
2.000000000 GHz	39.6358	14.1658

■ Dielectric Parameter (1900MHz Body)

Title : PN-310

SubTitle : PCS1900(BODY)

October 11, 2006 01:03 PM

Frequency	e'	e''
1.800000000 GHz	51.6354	13.8417
1.810000000 GHz	51.6250	13.8952
1.820000000 GHz	51.5600	13.9448
1.830000000 GHz	51.5578	13.9487
1.840000000 GHz	51.5342	14.0169
1.850000000 GHz	51.5151	14.0424
1.860000000 GHz	51.4304	14.0431
1.870000000 GHz	51.4184	14.0521
1.880000000 GHz	51.3815	14.1079
1.890000000 GHz	51.3484	14.1252
1.900000000 GHz	51.2899	14.1758
1.910000000 GHz	51.2411	14.2111
1.920000000 GHz	51.1956	14.2441
1.930000000 GHz	51.1740	14.2701
1.940000000 GHz	51.1453	14.3097
1.950000000 GHz	51.1080	14.3222
1.960000000 GHz	51.0902	14.3349
1.970000000 GHz	51.0797	14.3693
1.980000000 GHz	51.0507	14.4313
1.990000000 GHz	51.0017	14.4277
2.000000000 GHz	50.9894	14.4467