

ATTACHMENT Q – DIPOLE VALIDATION

■ Validation Data (835MHz Head)

Test Laboratory: HCT

835 Dipole Validation test: Input power(1W)

Liquid Temperature : 21.4 °C

Date Tested : December 11, 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: $f = 835 \text{ MHz}$; $\sigma = 0.879 \text{ mho/m}$; $\epsilon_r = 41.6$; $\rho = 1000 \text{ kg/m}^3$

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: DAE3 Sn446; Calibrated: 2006-11-15

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

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

Maximum value of SAR (interpolated) = 11.1 mW/g

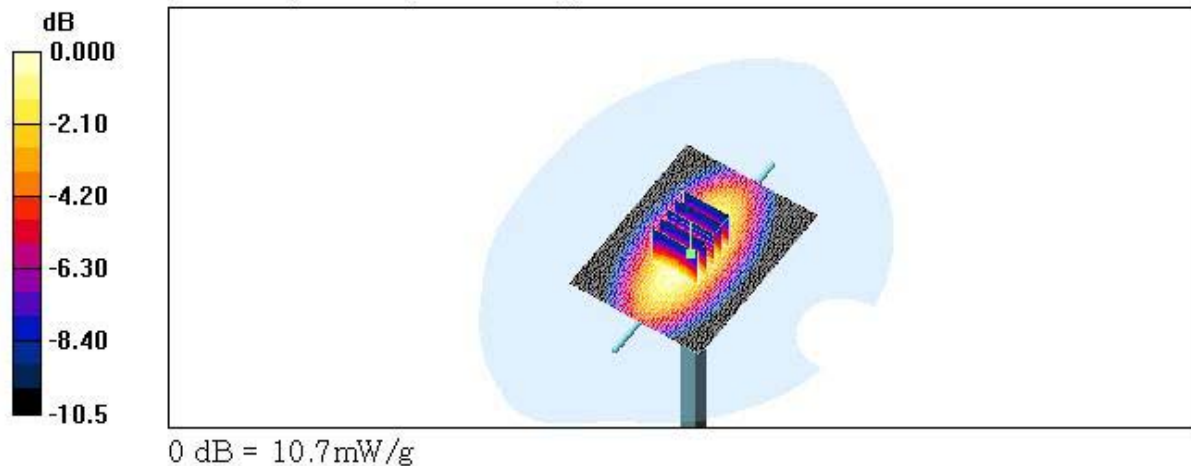
Validatoin 835 MHz/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 114.5 V/m; Power Drift = -0.059 dB

Peak SAR (extrapolated) = 14.5 W/kg

SAR(1 g) = 9.88 mW/g; SAR(10 g) = 6.5 mW/g

Maximum value of SAR (measured) = 10.7 mW/g



■ Validation Data (1900MHz Head)

Test Laboratory: HCT

1900 Dipole Validation test: Input power(1W)

Liquid Temperature : 21.5℃

Date Tested : December 12, 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; $\epsilon_r = 39.1$; $\rho = 1000$ 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: DAE3 Sn446; Calibrated: 2006-11-15

- 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) = 50.0 mW/g

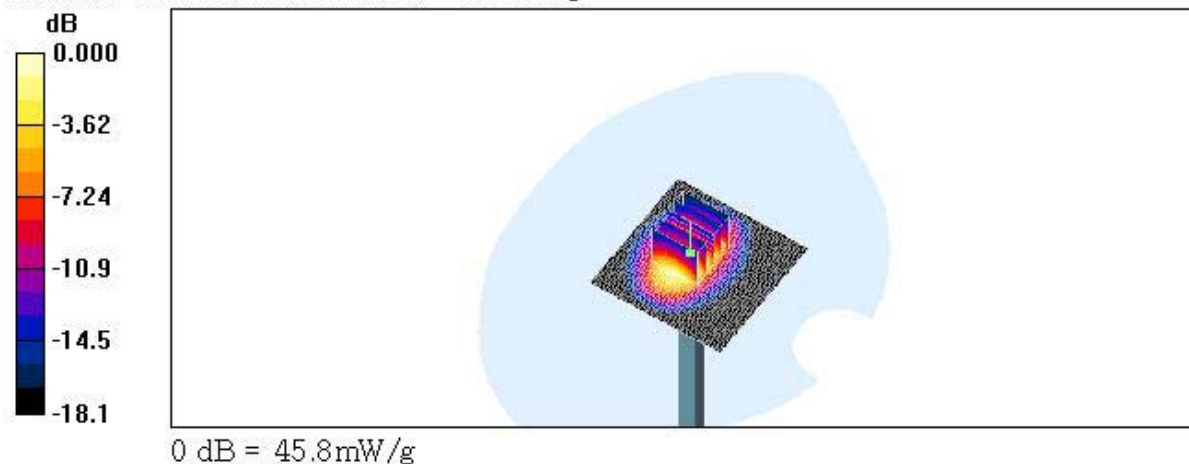
Validation 1900MHz/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 177.3 V/m; Power Drift = -0.006 dB

Peak SAR (extrapolated) = 72.9 W/kg

SAR(1 g) = 41.2 mW/g; SAR(10 g) = 21.6 mW/g

Maximum value of SAR (measured) = 45.8 mW/g



■ Dielectric Parameter (835MHz Head)

Title : OVAL

SubTitle : CDMA835(Head)

December 11, 2006 09:05 AM

Frequency	e'	e''
800.000000 MHz	42.0227	18.9181
805.000000 MHz	41.9513	18.9428
810.000000 MHz	41.8956	18.9415
815.000000 MHz	41.8194	18.9781
820.000000 MHz	41.7725	18.9426
825.000000 MHz	41.7507	18.9377
830.000000 MHz	41.6409	18.9362
835.000000 MHz	41.5848	18.9148
840.000000 MHz	41.5835	18.8992
845.000000 MHz	41.5193	18.8807
850.000000 MHz	41.5011	18.9114
855.000000 MHz	41.3544	18.8859
860.000000 MHz	41.4044	18.8970
865.000000 MHz	41.3262	18.8528
870.000000 MHz	41.2614	18.8865
875.000000 MHz	41.1613	18.8294
880.000000 MHz	41.1533	18.7914
885.000000 MHz	41.0847	18.8016
890.000000 MHz	40.9744	18.8192
895.000000 MHz	40.9223	18.8099
900.000000 MHz	40.8601	18.7643

■ Dielectric Parameter (1900MHz Head)**Title : OVAL****SubTitle : PCS1900(Head)**

December 12, 2006 03:59 AM

Frequency	e'	e''
1.800000000 GHz	39.6039	13.4780
1.810000000 GHz	39.5411	13.4971
1.820000000 GHz	39.5059	13.5147
1.830000000 GHz	39.4386	13.4828
1.840000000 GHz	39.4095	13.5212
1.850000000 GHz	39.3260	13.5572
1.860000000 GHz	39.2806	13.5700
1.870000000 GHz	39.2205	13.6100
1.880000000 GHz	39.1808	13.6137
1.890000000 GHz	39.1645	13.6624
1.900000000 GHz	39.1423	13.6998
1.910000000 GHz	39.1178	13.7268
1.920000000 GHz	39.0735	13.7397
1.930000000 GHz	39.0357	13.7517
1.940000000 GHz	38.9950	13.7804
1.950000000 GHz	38.9298	13.7693
1.960000000 GHz	38.8831	13.8169
1.970000000 GHz	38.8407	13.8152
1.980000000 GHz	38.7715	13.8691
1.990000000 GHz	38.7332	13.9060
2.000000000 GHz	38.6827	13.9045

■ Dielectric Parameter (835MHz Body)**Title : OVAL****SubTitle : CDMA835(Body)**

December 11, 2006 12:48 PM

Frequency	e'	e''
800.000000 MHz	53.7939	21.3733
805.000000 MHz	53.7277	21.3607
810.000000 MHz	53.7147	21.4312
815.000000 MHz	53.6572	21.4043
820.000000 MHz	53.6052	21.3424
825.000000 MHz	53.5538	21.3420
830.000000 MHz	53.5182	21.3360
835.000000 MHz	53.4685	21.3186
840.000000 MHz	53.4480	21.2579
845.000000 MHz	53.4132	21.2466
850.000000 MHz	53.3577	21.2647
855.000000 MHz	53.3397	21.1172
860.000000 MHz	53.2812	21.1801
865.000000 MHz	53.2358	21.1303
870.000000 MHz	53.1597	21.0818
875.000000 MHz	53.1758	21.1057
880.000000 MHz	53.1133	21.0740
885.000000 MHz	53.0383	21.0211
890.000000 MHz	53.0050	21.0056
895.000000 MHz	52.9654	21.0397
900.000000 MHz	52.9148	21.0152

■ Dielectric Parameter (1900MHz Body)

Title : OVAL
SubTitle : PCS1900(Body)
December 12, 2006 01:10 PM

Frequency	e'	e''
1.800000000 GHz	52.4426	14.3331
1.810000000 GHz	52.0709	14.6815
1.820000000 GHz	51.7729	14.8775
1.830000000 GHz	52.0402	14.7179
1.840000000 GHz	51.9984	14.6810
1.850000000 GHz	51.9298	14.6491
1.860000000 GHz	51.6648	14.8026
1.870000000 GHz	51.6851	14.6670
1.880000000 GHz	51.5661	14.6252
1.890000000 GHz	51.4416	14.7177
1.900000000 GHz	51.3005	14.6835
1.910000000 GHz	51.3149	14.5986
1.920000000 GHz	51.2087	14.5929
1.930000000 GHz	51.2191	14.5971
1.940000000 GHz	51.1442	14.6109
1.950000000 GHz	51.1123	14.6041
1.960000000 GHz	51.0339	14.6223
1.970000000 GHz	51.0128	14.6278
1.980000000 GHz	50.9255	14.6097
1.990000000 GHz	50.8010	14.5953
2.000000000 GHz	50.6770	14.5571