

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 9, 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: $f = 835 \text{ MHz}$; $\sigma = 0.877 \text{ mho/m}$; $\epsilon_r = 41.1$; $\rho = 1000 \text{ kg/m}^3$

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) = 10.5 mW/g

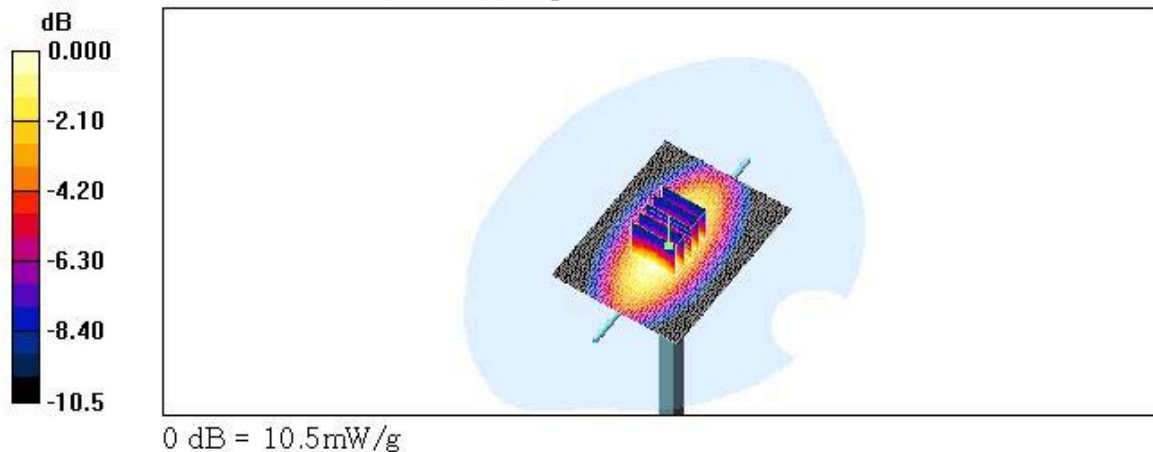
Validatoin 835 MHz/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 113.0 V/m; Power Drift = -0.011 dB

Peak SAR (extrapolated) = 14.3 W/kg

SAR(1 g) = 9.68 mW/g; SAR(10 g) = 6.35 mW/g

Maximum value of SAR (measured) = 10.5 mW/g



■ Validation Data (1900MHz Head)

Test Laboratory: HCT

1900 Dipole Validation test: Input power(1W)

Liquid Temperature : 21.4 °C

Date Tested : December 10, 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; $\epsilon_r = 39.2$; $\rho = 1000$ 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) = 50.2 mW/g

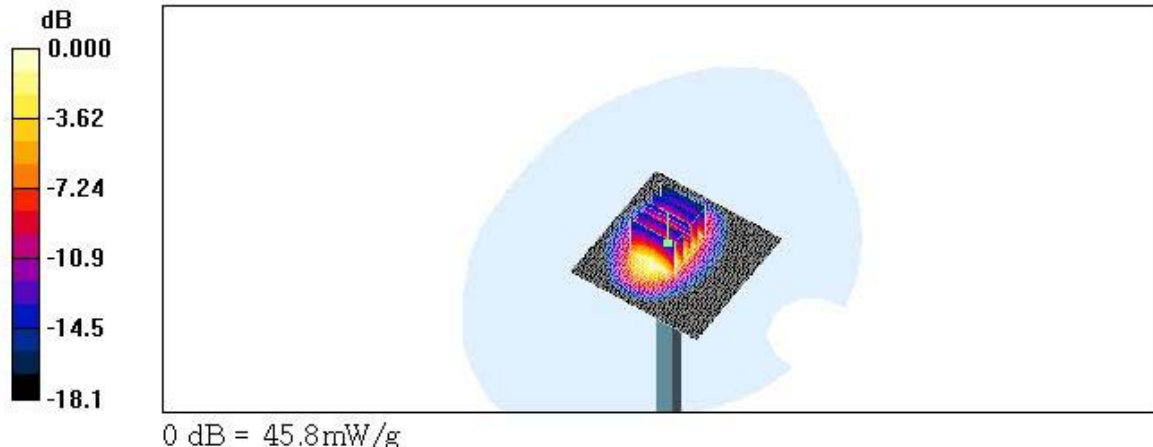
Validation 1900MHz/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 177.7 V/m; Power Drift = -0.008 dB

Peak SAR (extrapolated) = 73.1 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 :L1****SubTitle :CDMA835(Head)**

December 09, 2006 08:50 AM

Frequency	e'	e''
800.000000 MHz	41.5439	18.8737
805.000000 MHz	41.4340	18.8669
810.000000 MHz	41.4083	18.8486
815.000000 MHz	41.3227	18.8039
820.000000 MHz	41.2536	18.8352
825.000000 MHz	41.2299	18.8539
830.000000 MHz	41.1410	18.8430
835.000000 MHz	41.1355	18.8827
840.000000 MHz	41.1128	18.8955
845.000000 MHz	41.0745	18.8501
850.000000 MHz	41.0366	18.8774
855.000000 MHz	41.0227	18.8772
860.000000 MHz	40.9809	18.8848
865.000000 MHz	40.9574	18.8465
870.000000 MHz	40.8715	18.8365
875.000000 MHz	40.8496	18.8690
880.000000 MHz	40.7770	18.8456
885.000000 MHz	40.7014	18.8084
890.000000 MHz	40.6712	18.8382
895.000000 MHz	40.5534	18.7696
900.000000 MHz	40.5348	18.7320

■ Dielectric Parameter (1900MHz Head)

Title :L1

SubTitle : PCS1900(Head)

December 10, 2006 03:30 AM

Frequency	e'	e''
1.800000000 GHz	39.6326	13.5459
1.810000000 GHz	39.5765	13.5606
1.820000000 GHz	39.5521	13.5957
1.830000000 GHz	39.4570	13.5772
1.840000000 GHz	39.4375	13.5914
1.850000000 GHz	39.3582	13.6095
1.860000000 GHz	39.2928	13.6284
1.870000000 GHz	39.2241	13.6496
1.880000000 GHz	39.2274	13.6979
1.890000000 GHz	39.1720	13.7172
1.900000000 GHz	39.1553	13.7629
1.910000000 GHz	39.1410	13.8010
1.920000000 GHz	39.0915	13.8052
1.930000000 GHz	39.0492	13.8375
1.940000000 GHz	39.0085	13.8336
1.950000000 GHz	38.9545	13.8532
1.960000000 GHz	38.8817	13.8647
1.970000000 GHz	38.8275	13.8939
1.980000000 GHz	38.7682	13.9179
1.990000000 GHz	38.7795	13.9543
2.000000000 GHz	38.7212	13.9897

■ Dielectric Parameter (835MHz Body)

Title :L1

SubTitle :CDMA835(Body)

December 09, 2006 12:20 PM

Frequency	e'	e''
800.000000 MHz	53.7153	21.3437
805.000000 MHz	53.6359	21.3249
810.000000 MHz	53.5589	21.3732
815.000000 MHz	53.5492	21.3527
820.000000 MHz	53.4583	21.3220
825.000000 MHz	53.3566	21.3346
830.000000 MHz	53.3990	21.3124
835.000000 MHz	53.3268	21.2927
840.000000 MHz	53.2550	21.2403
845.000000 MHz	53.2738	21.2538
850.000000 MHz	53.2503	21.2389
855.000000 MHz	53.2158	21.1630
860.000000 MHz	53.1677	21.1359
865.000000 MHz	53.1168	21.1854
870.000000 MHz	53.0812	21.1005
875.000000 MHz	53.0697	21.0925
880.000000 MHz	53.0610	21.0620
885.000000 MHz	52.9725	21.0145
890.000000 MHz	52.9373	21.0209
895.000000 MHz	52.9134	20.9863
900.000000 MHz	52.8338	20.9944

■ Dielectric Parameter (1900MHz Body)

Title :L1

SubTitle : PCS1900(Body)

December 10, 2006 01:05 PM

Frequency	e'	e''
1.800000000 GHz	51.5787	13.3568
1.810000000 GHz	51.5198	13.4020
1.820000000 GHz	51.4758	13.4667
1.830000000 GHz	51.4850	13.5040
1.840000000 GHz	51.4523	13.5559
1.850000000 GHz	51.4355	13.5871
1.860000000 GHz	51.3710	13.6138
1.870000000 GHz	51.3676	13.6195
1.880000000 GHz	51.3387	13.6546
1.890000000 GHz	51.3031	13.6959
1.900000000 GHz	51.2546	13.7522
1.910000000 GHz	51.2079	13.7686
1.920000000 GHz	51.1610	13.8103
1.930000000 GHz	51.1043	13.8507
1.940000000 GHz	51.0582	13.8889
1.950000000 GHz	51.0346	13.9036
1.960000000 GHz	51.0194	13.9180
1.970000000 GHz	51.0056	13.9663
1.980000000 GHz	50.9981	14.0158
1.990000000 GHz	50.9621	14.0324
2.000000000 GHz	50.9391	14.0686