ATTACHMENT Q – DIPOLE VALIDATION

■ Validation Data (835MHz Brain)

Test Laboratory: HCT

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

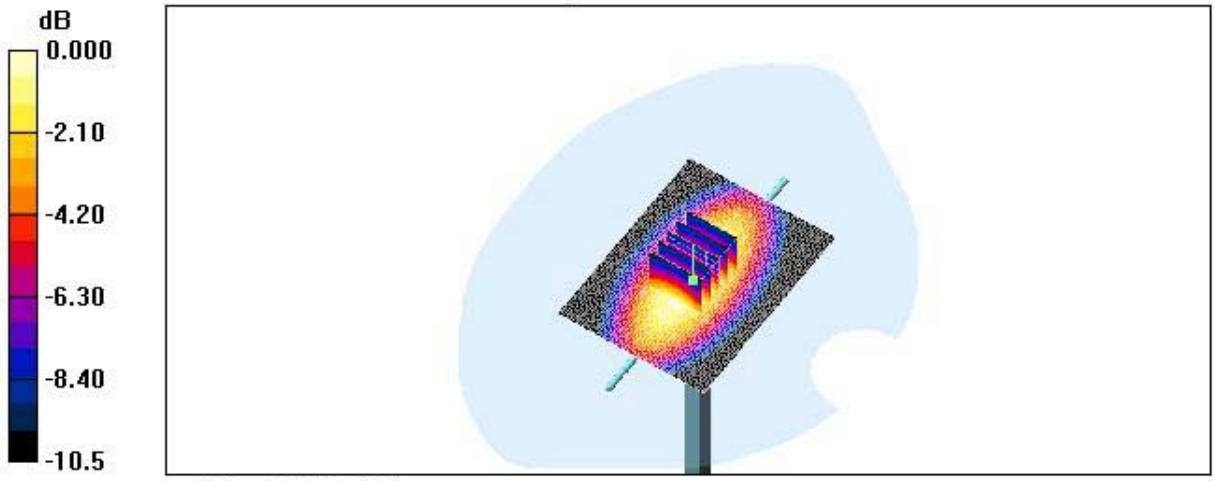
DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:441
Program Name: Validation 835 MHz

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used: f = 835 MHz; σ = 0.872 mho/m; ε_r = 40.8; ρ = 1000 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 Sn479; Calibrated: 2006-02-23
- Phantom: SAM 835/900 MHz; Type: SAM

Validatoin 835 MHz/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 10.4 mW/g

Validatoin 835 MHz/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 112.7 V/m; Power Drift = 0.093 dB
Peak SAR (extrapolated) = 14.3 W/kg
SAR(1 g) = 9.7 mW/g; SAR(10 g) = 6.35 mW/g
Maximum value of SAR (measured) = 10.5 mW/g



0 dB = 10.5mW/g

■ Validation Data (1900MHz Brain)

Test Laboratory: HCT

1900 Dipole Validation test: Input power(1W)
Liquid Temperature : 21.6℃
Date Tested : November 2, 2006

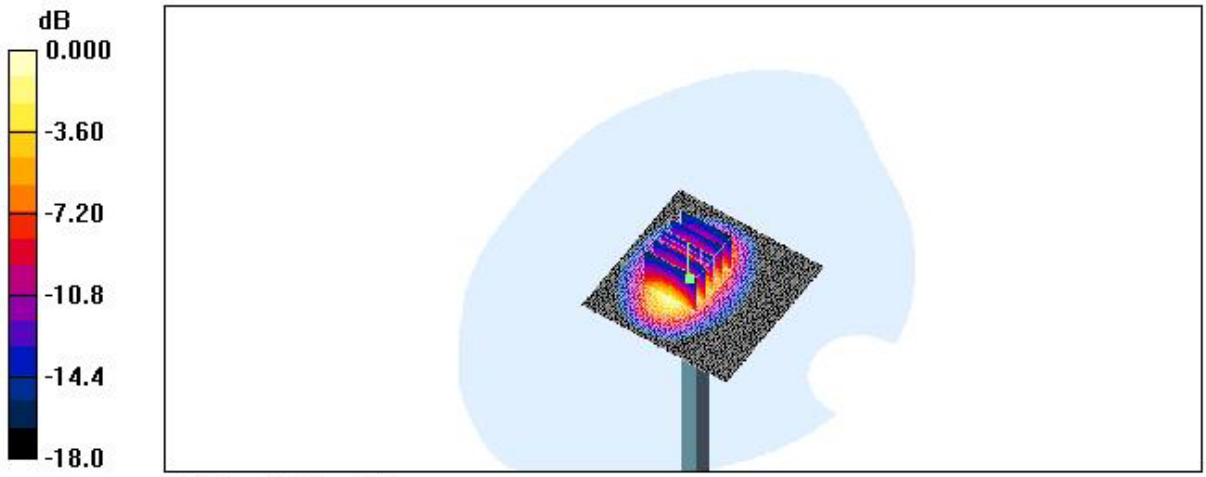
DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d032
Program Name: Validation 1900 MHz

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.4 mho/m; ε_r = 40.2; ρ = 1000 kg/m^3
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 Sn479; Calibrated: 2006-02-23
- Phantom: SAM 1800/1900 MHz; Type: SAM

Validation 1900MHz/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 48.7 mW/g

Validation 1900MHz/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 178.1 V/m; Power Drift = -0.011 dB
Peak SAR (extrapolated) = 72.9 W/kg
SAR(1 g) = 41 mW/g; SAR(10 g) = 21.4 mW/g
Maximum value of SAR (measured) = 45.8 mW/g



0 dB = 45.8mW/g

■ Dielectric Parameter (835MHz Brain)

Title : SP-770
SubTitle : GSM835(Head)
November 01, 2006 08:20 AM

Frequency	e'	e''
800.000000 MHz	41.1290	18.8218
805.000000 MHz	41.0139	18.8285
810.000000 MHz	40.9504	18.8216
815.000000 MHz	40.9377	18.8013
820.000000 MHz	40.8657	18.7759
825.000000 MHz	40.8198	18.8231
830.000000 MHz	40.7530	18.7706
835.000000 MHz	40.7510	18.7793
840.000000 MHz	40.7037	18.8108
845.000000 MHz	40.7113	18.7750
850.000000 MHz	40.6166	18.7782
855.000000 MHz	40.5666	18.7897
860.000000 MHz	40.5662	18.7566
865.000000 MHz	40.5044	18.7207
870.000000 MHz	40.4661	18.7293
875.000000 MHz	40.4099	18.7429
880.000000 MHz	40.3096	18.7039
885.000000 MHz	40.2487	18.6594
890.000000 MHz	40.1864	18.7102
895.000000 MHz	40.1064	18.6620
900.000000 MHz	40.0508	18.6271

■ Dielectric Parameter (835MHz Body)

Title : SP-770
SubTitle : GSM835(Body)
November 01, 2006 01:05 PM

Frequency	e'	e''
800.000000 MHz	53.7224	21.3640
805.000000 MHz	53.6732	21.3345
810.000000 MHz	53.6097	21.3892
815.000000 MHz	53.5521	21.3293
820.000000 MHz	53.5164	21.3125
825.000000 MHz	53.4383	21.2832
830.000000 MHz	53.3955	21.3026
835.000000 MHz	53.3986	21.2778
840.000000 MHz	53.3564	21.2474
845.000000 MHz	53.3220	21.2362
850.000000 MHz	53.3138	21.2046
855.000000 MHz	53.2811	21.1930
860.000000 MHz	53.2541	21.1363
865.000000 MHz	53.1640	21.1678
870.000000 MHz	53.1527	21.0631
875.000000 MHz	53.1029	21.0959
880.000000 MHz	53.0743	21.0411
885.000000 MHz	53.0184	21.0657
890.000000 MHz	52.9775	21.0161
895.000000 MHz	52.9296	21.0011
900.000000 MHz	52.8791	20.9768

■ Dielectric Parameter (1900MHz Head)

Title : SP-770
SubTitle : GSM1900(HEAD)
November 02, 2006 08:50 AM

Frequency	e'	e''
1.800000000 GHz	40.6417	12.8723
1.810000000 GHz	40.5376	12.9267
1.820000000 GHz	40.5549	12.9872
1.830000000 GHz	40.4699	13.0665
1.840000000 GHz	40.4456	13.0952
1.850000000 GHz	40.4180	13.1260
1.860000000 GHz	40.4168	13.1489
1.870000000 GHz	40.3901	13.1820
1.880000000 GHz	40.3515	13.1716
1.890000000 GHz	40.3076	13.2160
1.900000000 GHz	40.2206	13.2018
1.910000000 GHz	40.1284	13.2186
1.920000000 GHz	40.0712	13.2367
1.930000000 GHz	39.9648	13.2729
1.940000000 GHz	39.9242	13.2986
1.950000000 GHz	39.8640	13.3641
1.960000000 GHz	39.8560	13.4303
1.970000000 GHz	39.8522	13.4700
1.980000000 GHz	39.8283	13.5259
1.990000000 GHz	39.8338	13.5324
2.000000000 GHz	39.8390	13.5713

■ Dielectric Parameter (1900MHz Body)

Title : SP-770
SubTitle : GSM1900(BODY)
November 02, 2006 01:20 PM

Frequency	e'	e''
1.800000000 GHz	51.5151	14.3407
1.810000000 GHz	51.5286	14.3639
1.820000000 GHz	51.5420	14.4190
1.830000000 GHz	51.5789	14.4361
1.840000000 GHz	51.6044	14.4838
1.850000000 GHz	51.6517	14.5087
1.860000000 GHz	51.6437	14.5130
1.870000000 GHz	51.6875	14.5256
1.880000000 GHz	51.7215	14.5213
1.890000000 GHz	51.7245	14.5689
1.900000000 GHz	51.7453	14.5862
1.910000000 GHz	51.7250	14.6114
1.920000000 GHz	51.7102	14.6211
1.930000000 GHz	51.7141	14.6533
1.940000000 GHz	51.7484	14.6933
1.950000000 GHz	51.7473	14.7084
1.960000000 GHz	51.7692	14.7271
1.970000000 GHz	51.7957	14.7450
1.980000000 GHz	51.8333	14.7843
1.990000000 GHz	51.8356	14.7957
2.000000000 GHz	51.8698	14.8125