ATTACHMENT Q – DIPOLE VALIDATION

■ Validation Data (835MHz Head)

Test Laboratory: HCT

835 Dipole Validation test: Input power(1W)
Liquid Temperature : 21.4 ℃
Date Tested : February 16, 2006

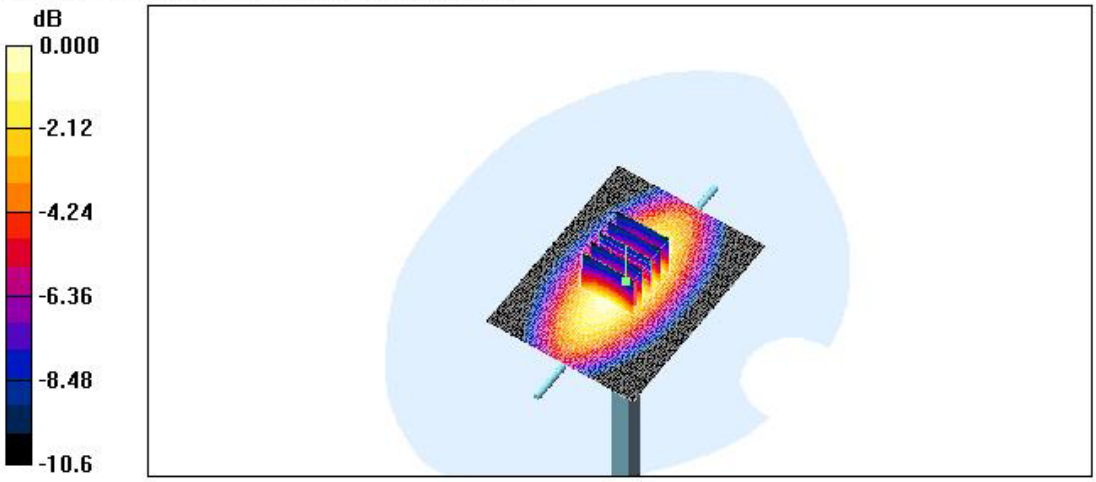
DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:441
Program Name: Validation

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used: f = 835 MHz; σ = 0.884 mho/m; ε_r = 41.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ET3DV6 - SN1607; ConvF(6.18, 6.18, 6.18); Calibrated: 2005-08-30
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn614; Calibrated: 2005-04-21
- Phantom: SAM 835/900 MHz; Type: SAM

Validation 835 MHz/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 10.7 mW/g

Validation 835 MHz/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 112.9 V/m; Power Drift = -0.029 dB
Peak SAR (extrapolated) = 14.6 W/kg
SAR(1 g) = 9.82 mW/g; SAR(10 g) = 6.41 mW/g
Maximum value of SAR (measured) = 10.5 mW/g



0 dB = 10.5mW/g

■ Validation Data (1900MHz Head)

Test Laboratory: HCT

1900 Dipole Validation test: Input power(1W)
Liquid Temperature : 21.7 ℃
Date Tested : February 17, 2006

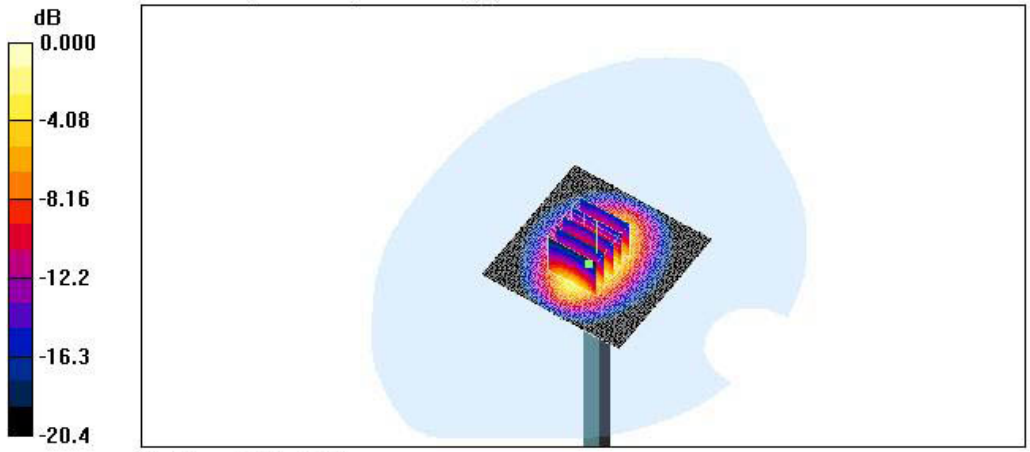
DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d032
Program Name: Validation

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.44 mho/m; ε_r = 40; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ET3DV6 - SN1607; ConvF(5.14, 5.14, 5.14); Calibrated: 2005-08-30
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn614; Calibrated: 2005-04-21
- Phantom: SAM 1800/1900 MHz; Type: SAM

Dipole 1900MHz Validation/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 46.9 mW/g

Dipole 1900MHz Validation/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 189.1 V/m; Power Drift = 0.009 dB
Peak SAR (extrapolated) = 72.1 W/kg
SAR(1 g) = 39.9 mW/g; SAR(10 g) = 20.5 mW/g
Maximum value of SAR (measured) = 44.8 mW/g



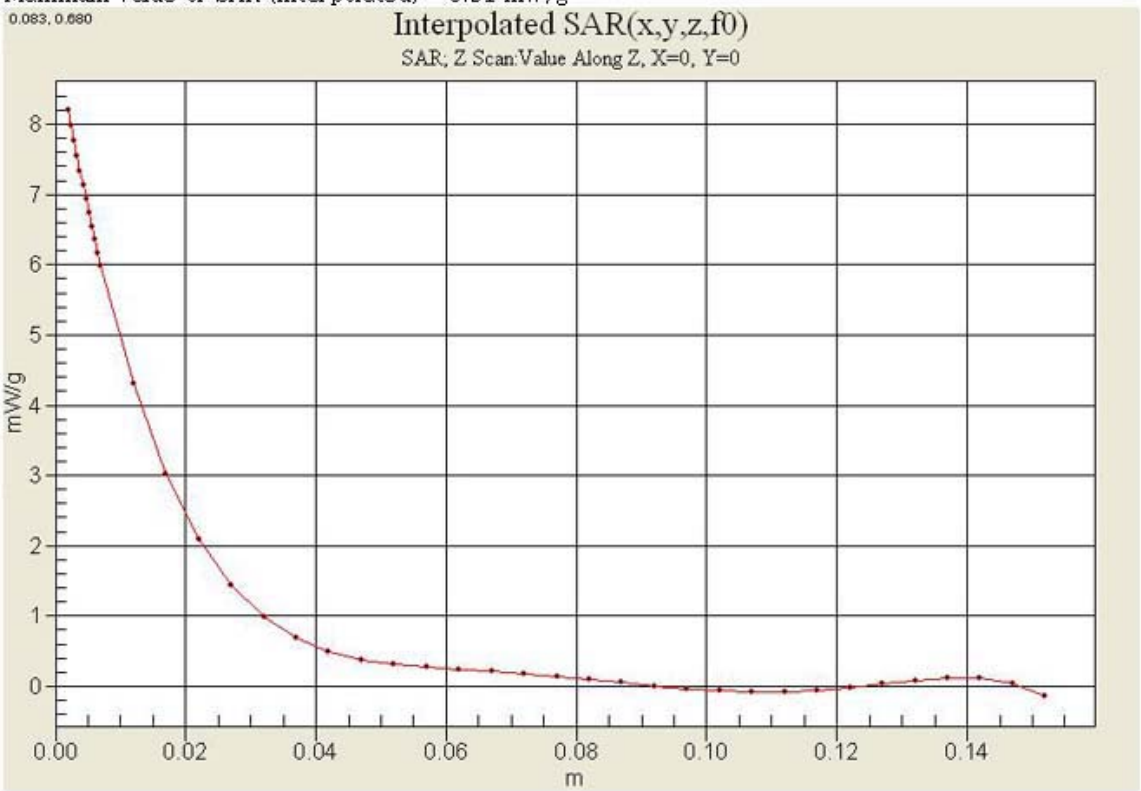
0 dB = 44.8mW/g

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 MHz; σ = 0.884 mho/m; ε_r = 41.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ET3DV6 - SN1607; ConvF(6.18, 6.18, 6.18); Calibrated: 2005-08-30
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn614; Calibrated: 2005-04-21
- Phantom: SAM 835/900 MHz; Type: SAM

Validation 835 MHz/Z Scan (1x1x41): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Maximum value of SAR (interpolated) = 8.21 mW/g

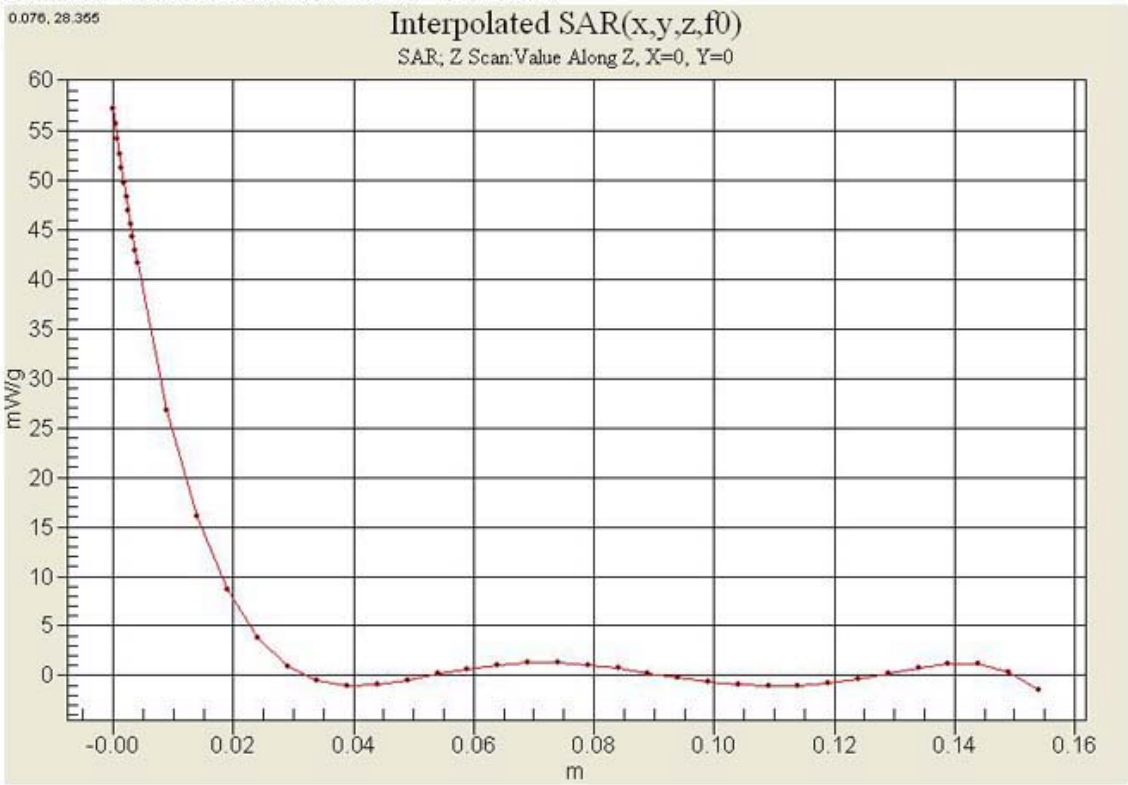


DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d032
Program Name: Validation

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.44 mho/m; ε_r = 40; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ET3DV6 - SN1607; ConvF(5.14, 5.14, 5.14); Calibrated: 2005-08-30
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn614; Calibrated: 2005-04-21
- Phantom: SAM 1800/1900 MHz; Type: SAM

Dipole 1900MHz Validation/Z Scan (1x1x42): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Maximum value of SAR (interpolated) = 57.3 mW/g



■ Dielectric Parameter (835MHz Head)

Title : PN-315

SubTitle : CDMA835 Head

February 16, 2006 09:09 AM

Frequency	e'	e''
800.000000 MHz	42.4431	19.0644
805.000000 MHz	42.4044	19.0566
810.000000 MHz	42.2892	19.0808
815.000000 MHz	42.2498	19.0627
820.000000 MHz	42.1575	19.0435
825.000000 MHz	42.0904	19.0338
830.000000 MHz	41.9474	19.0509
835.000000 MHz	41.8606	19.0368
840.000000 MHz	41.7709	19.0449
845.000000 MHz	41.6812	19.0116
850.000000 MHz	41.6310	18.9676
855.000000 MHz	41.5462	18.9444
860.000000 MHz	41.5358	18.9617
865.000000 MHz	41.4126	18.9401
870.000000 MHz	41.3702	18.9464
875.000000 MHz	41.2590	18.9222
880.000000 MHz	41.2600	18.8810
885.000000 MHz	41.1337	18.9175
890.000000 MHz	41.0921	18.9141
895.000000 MHz	41.0415	18.8441
900.000000 MHz	40.9934	18.8136

■ Dielectric Parameter (1900MHz Head)

Title : PN-315

SubTitle : PCS1900 Head

February 17, 2006 09:43 AM

Frequency	e'	e''
1.800000000 GHz	40.3452	13.2029
1.810000000 GHz	40.2142	13.2894
1.820000000 GHz	40.2030	13.3840
1.830000000 GHz	40.1693	13.5226
1.840000000 GHz	40.2392	13.6629
1.850000000 GHz	40.2641	13.7819
1.860000000 GHz	40.2656	13.8514
1.870000000 GHz	40.2489	13.8380
1.880000000 GHz	40.2048	13.8090
1.890000000 GHz	40.1320	13.6875
1.900000000 GHz	40.0135	13.5880
1.910000000 GHz	39.9143	13.5493
1.920000000 GHz	39.7813	13.5396
1.930000000 GHz	39.6782	13.5826
1.940000000 GHz	39.6291	13.6648
1.950000000 GHz	39.5801	13.8033
1.960000000 GHz	39.5997	13.9260
1.970000000 GHz	39.6346	14.0825
1.980000000 GHz	39.7006	14.1583
1.990000000 GHz	39.6816	14.1367
2.000000000 GHz	39.6925	14.1274

■ Dielectric Parameter (835MHz Body)

Title : PN-315
SubTitle : CDMA835 Body
February 16, 2006 02:12 PM

Frequency	e'	e''
800.000000 MHz	55.1118	21.2954
805.000000 MHz	55.1089	21.2559
810.000000 MHz	55.0230	21.2352
815.000000 MHz	55.0009	21.2931
820.000000 MHz	54.9842	21.2699
825.000000 MHz	54.8756	21.2527
830.000000 MHz	54.8000	21.2905
835.000000 MHz	54.7426	21.2385
840.000000 MHz	54.7562	21.3149
845.000000 MHz	54.7295	21.3395
850.000000 MHz	54.6810	21.3611
855.000000 MHz	54.6369	21.3047
860.000000 MHz	54.5631	21.2819
865.000000 MHz	54.5591	21.2975
870.000000 MHz	54.4737	21.3227
875.000000 MHz	54.3526	21.2653
880.000000 MHz	54.3481	21.2437
885.000000 MHz	54.2845	21.2186
890.000000 MHz	54.2155	21.1907
895.000000 MHz	54.1643	21.0983
900.000000 MHz	54.0937	21.0879

■ Dielectric Parameter (1900MHz Body)

Title : PN-315
SubTitle : PCS1900 Body
February 17, 2006 02:45 PM

Frequency	e'	e''
1.800000000 GHz	52.9004	13.7252
1.810000000 GHz	52.8632	13.7949
1.820000000 GHz	52.8461	13.8725
1.830000000 GHz	52.7961	13.9138
1.840000000 GHz	52.7663	13.9920
1.850000000 GHz	52.7059	14.0288
1.860000000 GHz	52.6213	14.0805
1.870000000 GHz	52.5491	14.1074
1.880000000 GHz	52.4631	14.1727
1.890000000 GHz	52.3754	14.1897
1.900000000 GHz	52.3416	14.2164
1.910000000 GHz	52.2915	14.2942
1.920000000 GHz	52.2792	14.3558
1.930000000 GHz	52.2673	14.4388
1.940000000 GHz	52.2852	14.5087
1.950000000 GHz	52.2772	14.5522
1.960000000 GHz	52.2532	14.6108
1.970000000 GHz	52.2549	14.6526
1.980000000 GHz	52.2808	14.6569
1.990000000 GHz	52.2345	14.7085
2.000000000 GHz	52.2213	14.7287