

ATTACHMENT Q – DIPOLE VALIDATION

■ Validation Data (835MHz Head)

Test Laboratory: HCT

835 Dipole Validation test: Input power(1W)

Liquid Temperature : 21.7 °C

Date Tested : May 17, 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: $f = 835 \text{ MHz}$; $\sigma = 0.884 \text{ mho/m}$; $\epsilon_r = 42.4$; $\rho = 1000 \text{ kg/m}^3$

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: DAE4 Sn447; Calibrated: 2005-11-30

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

Validatoin 835 MHz/Area Scan (101x101x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Maximum value of SAR (interpolated) = 10.3 mW/g

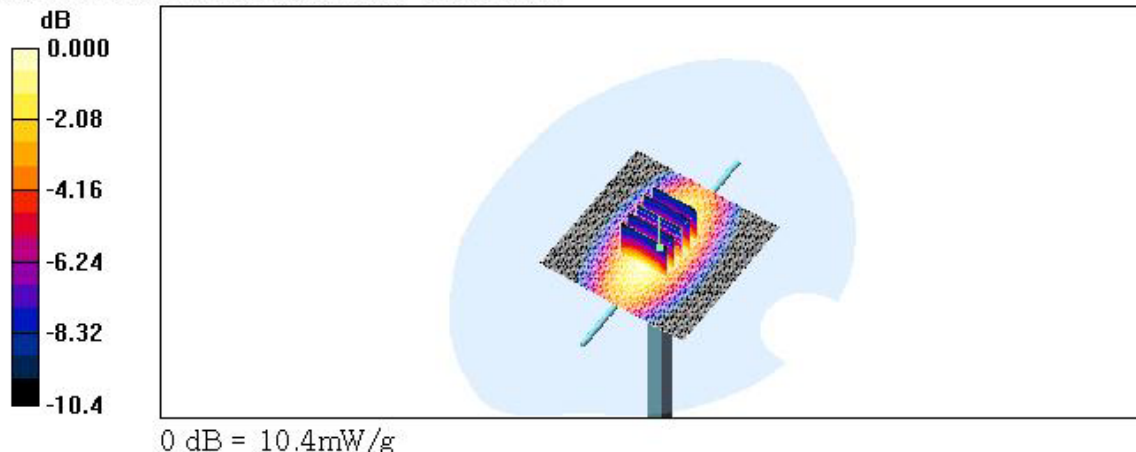
Validatoin 835 MHz/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 111.6 V/m; Power Drift = 0.012 dB

Peak SAR (extrapolated) = 14.0 W/kg

SAR(1 g) = 9.57 mW/g; SAR(10 g) = 6.27 mW/g

Maximum value of SAR (measured) = 10.4 mW/g



■ Validation Data (1900MHz Head)

Test Laboratory: HCT

1900 Dipole Validation test: Input power(1W)

Liquid Temperature : 21.7 °C

Date Tested : May 17, 2006

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d0032

Program Name: Validation 1900 MHz

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.46$ mho/m; $\epsilon_r = 38.2$; $\rho = 1000$ 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: DAE4 Sn447; Calibrated: 2005-11-30

- 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) = 50.6 mW/g

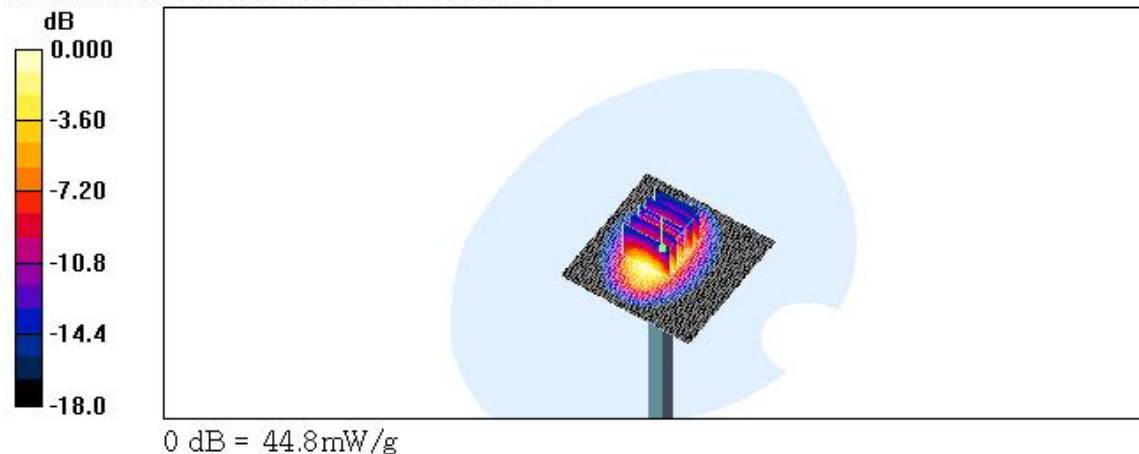
Validation 1900MHz/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 185.1 V/m; Power Drift = -0.020 dB

Peak SAR (extrapolated) = 70.1 W/kg

SAR(1 g) = 40.3 mW/g; SAR(10 g) = 21.4 mW/g

Maximum value of SAR (measured) = 44.8 mW/g



■ Dielectric Parameter (835MHz Head)

Title : PX-500

SubTitle : CDMA835 Head

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Frequency	ϵ'	ϵ''
800.000000 MHz	42.7802	19.1023
805.000000 MHz	42.6838	19.0876
810.000000 MHz	42.6601	19.0963
815.000000 MHz	42.6087	19.0805
820.000000 MHz	42.5583	19.0646
825.000000 MHz	42.4793	19.0198
830.000000 MHz	42.4126	19.0145
835.000000 MHz	42.4248	19.0238
840.000000 MHz	42.2935	19.0425
845.000000 MHz	42.3055	19.0098
850.000000 MHz	42.2412	18.9994
855.000000 MHz	42.1790	18.9575
860.000000 MHz	42.1277	18.9850
865.000000 MHz	42.0608	18.9556
870.000000 MHz	42.0340	18.9556
875.000000 MHz	41.9343	18.9467
880.000000 MHz	41.8674	18.9588
885.000000 MHz	41.8578	18.9237
890.000000 MHz	41.7532	18.8874
895.000000 MHz	41.6864	18.8404
900.000000 MHz	41.6378	18.8182

■ Dielectric Parameter (1900MHz Head)

Title : PX-500

SubTitle : PCS1900 Head

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Frequency	ϵ'	ϵ''
1.800000000 GHz	38.6441	13.5753
1.810000000 GHz	38.6024	13.6097
1.820000000 GHz	38.5750	13.6357
1.830000000 GHz	38.5084	13.6490
1.840000000 GHz	38.5008	13.6991
1.850000000 GHz	38.4345	13.7038
1.860000000 GHz	38.4286	13.7378
1.870000000 GHz	38.3507	13.7589
1.880000000 GHz	38.2991	13.7674
1.890000000 GHz	38.2673	13.7728
1.900000000 GHz	38.2395	13.7879
1.910000000 GHz	38.2011	13.8270
1.920000000 GHz	38.1388	13.8255
1.930000000 GHz	38.1032	13.8369
1.940000000 GHz	38.0780	13.8449
1.950000000 GHz	38.0181	13.8516
1.960000000 GHz	37.9945	13.8821
1.970000000 GHz	37.9421	13.9019
1.980000000 GHz	37.9183	13.9241
1.990000000 GHz	37.8683	13.9486
2.000000000 GHz	37.8351	13.9798

■ Dielectric Parameter (835MHz Body)

Title : PX-500

SubTitle : CDMA835 Body

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Frequency	e'	e''
800.000000 MHz	53.7869	20.6375
805.000000 MHz	53.6513	20.5627
810.000000 MHz	53.6624	20.5495
815.000000 MHz	53.5783	20.5811
820.000000 MHz	53.5637	20.5378
825.000000 MHz	53.4965	20.5469
830.000000 MHz	53.5063	20.5668
835.000000 MHz	53.4333	20.5833
840.000000 MHz	53.3810	20.5924
845.000000 MHz	53.4110	20.6148
850.000000 MHz	53.4092	20.6374
855.000000 MHz	53.3560	20.6355
860.000000 MHz	53.3004	20.6238
865.000000 MHz	53.3292	20.5486
870.000000 MHz	53.2239	20.5987
875.000000 MHz	53.1688	20.5661
880.000000 MHz	53.1402	20.5450
885.000000 MHz	53.0344	20.4851
890.000000 MHz	52.9748	20.4608
895.000000 MHz	52.8855	20.3701
900.000000 MHz	52.7912	20.3448

■ Dielectric Parameter (1900MHz Body)

Title : PX-500

SubTitle : PCS1900 Body

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Frequency	e'	e''
1.800000000 GHz	53.0351	13.7468
1.810000000 GHz	53.0072	13.8439
1.820000000 GHz	52.9421	13.9120
1.830000000 GHz	52.8707	13.9535
1.840000000 GHz	52.8268	13.9786
1.850000000 GHz	52.7801	14.0065
1.860000000 GHz	52.7104	14.0590
1.870000000 GHz	52.6373	14.0971
1.880000000 GHz	52.5978	14.1381
1.890000000 GHz	52.5081	14.1852
1.900000000 GHz	52.4714	14.2643
1.910000000 GHz	52.4374	14.3123
1.920000000 GHz	52.4132	14.3842
1.930000000 GHz	52.4296	14.4548
1.940000000 GHz	52.4137	14.5229
1.950000000 GHz	52.4053	14.5696
1.960000000 GHz	52.3128	14.6054
1.970000000 GHz	52.2772	14.6533
1.980000000 GHz	52.1921	14.6584
1.990000000 GHz	52.0816	14.7030
2.000000000 GHz	52.0284	14.7227