

## ATTACHMENT Q – DIPOLE VALIDATION

## Validation Data (835MHz Brain)

### Dipole 835 MHz

SAM I Phantom; Flat Section; Position: (90°,90°); Frequency: 835 MHz

Probe: ET3DV6 - SN1798; ConvF(6.91,6.91,6.91); Crest factor: 1.0; Head 835 MHz:  $\sigma = 0.88 \text{ mho/m}$   $\epsilon_r = 41.8$   $\rho = 1.00 \text{ g/cm}^3$

Cube 5x5x7: SAR (1g): 9.96 mW/g, SAR (10g): 6.16 mW/g

Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0

Powerdrift: -0.03 dB

Comment :

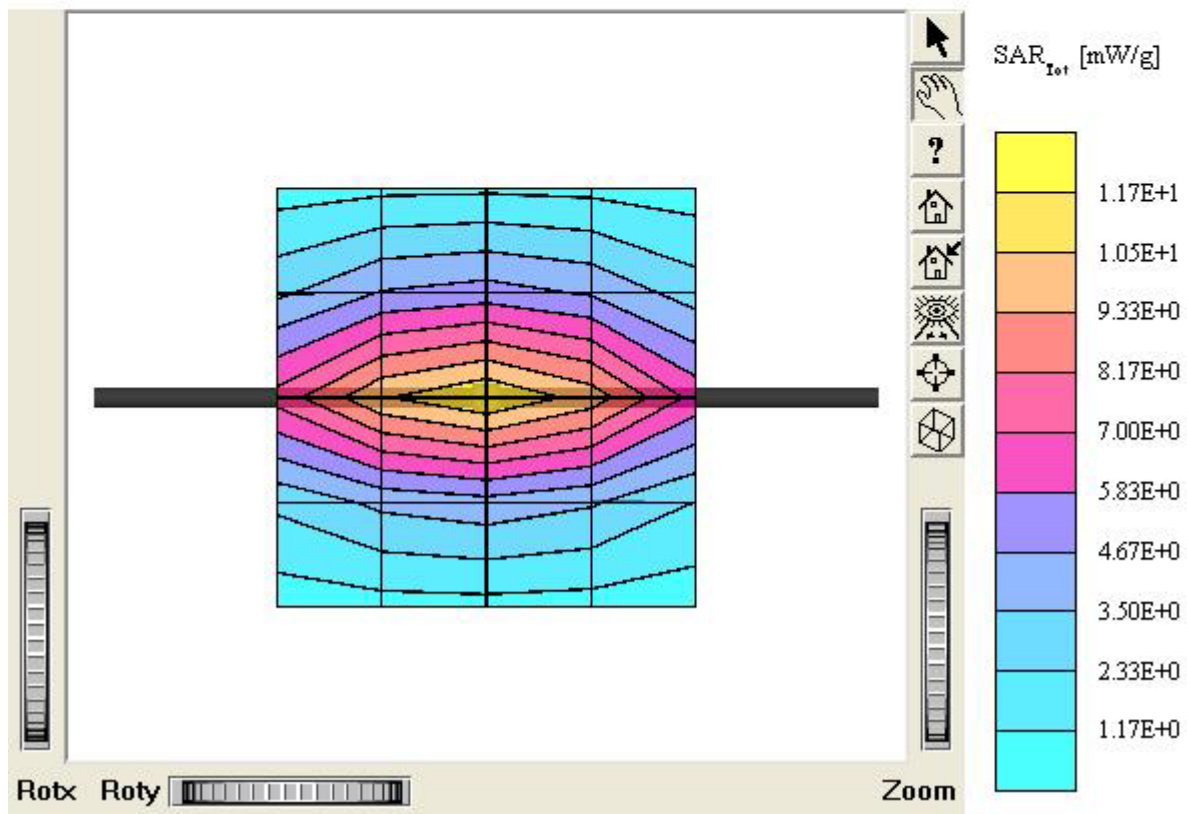
850 MHz Brain Dipole Validation

Antenna Input Power : 33 dBm (1W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature: 21.7 °C

Date Tested : February 15, 2006



■ Validation Data (1900MHz Brain)

**Dipole 1900 MHz**

SAM II Phantom; Flat Section; Position: (90°,90°); Frequency: 1900 MHz

Probe: ET3DV6 - SN1798; ConvF(5.27,5.27,5.27); Crest factor: 1.0; Head 1900 MHz:  $\sigma = 1.45 \text{ mho/m}$   $\epsilon_r = 39.9 \rho = 1.00 \text{ g/cm}^3$

Cube 5x5x7: SAR (1g): 39.9 mW/g, SAR (10g): 20.1 mW/g

Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0

Powerdrift: 0.00 dB

Comment :

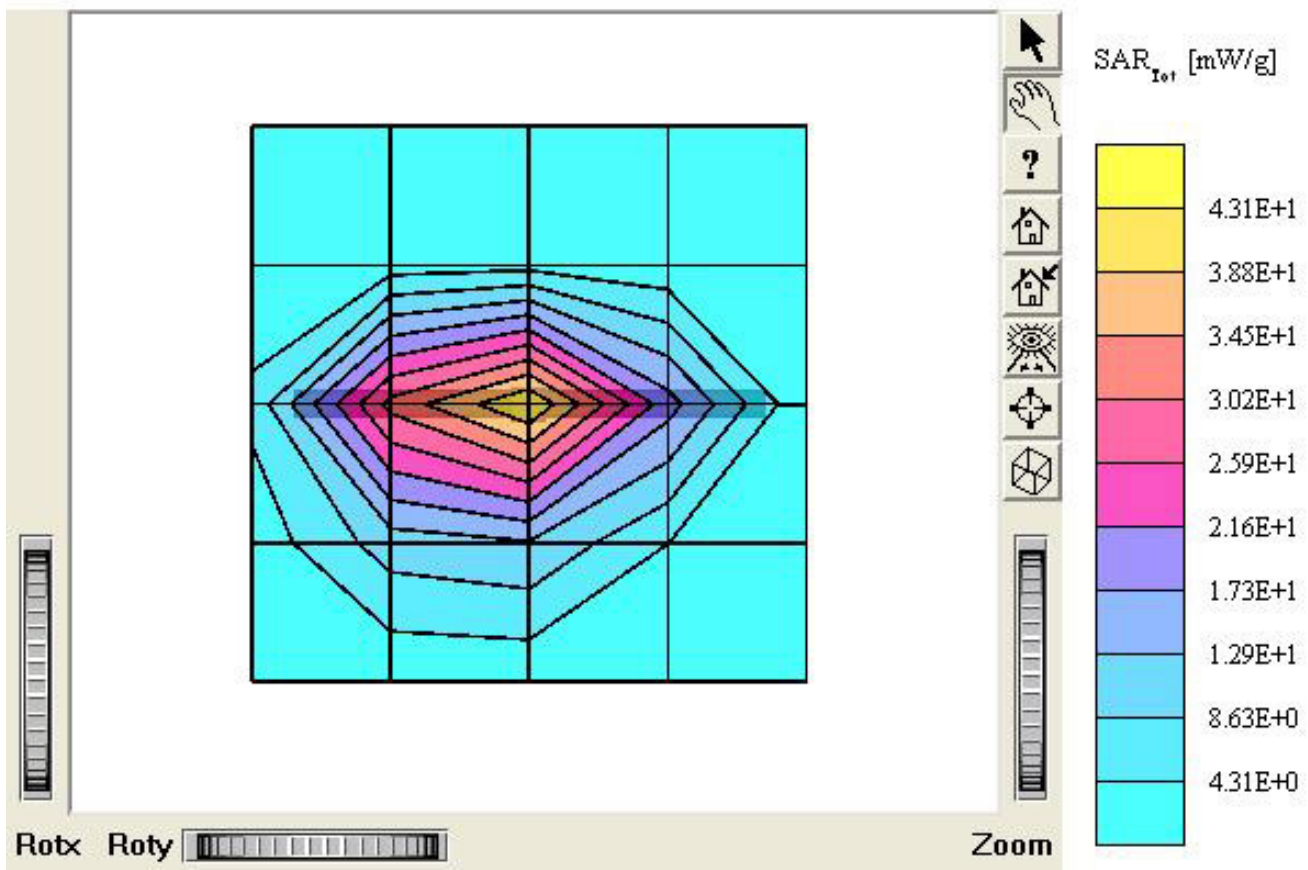
1900 MHz Brain Dipole Validation

Antenna Input Power : 30 dBm (1W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature: 21.7 °C

Date Tested : February 15, 2006



## Dipole 835 MHz

SAM I Phantom; Section; Position; ; Frequency: 835 MHz

Probe: ET3DV6 - SN1798; ConvF(6.91,6.91,6.91); Crest factor: 1.0; Head 835 MHz:  $\sigma = 0.88 \text{ mho/m}$   $\epsilon_r = 41.8$   $\rho = 1.00 \text{ g/cm}^3$

:

Z-Axis:  $D_x = 0.0$ ,  $D_y = 0.0$ ,  $D_z = 5.0$

### Comment :

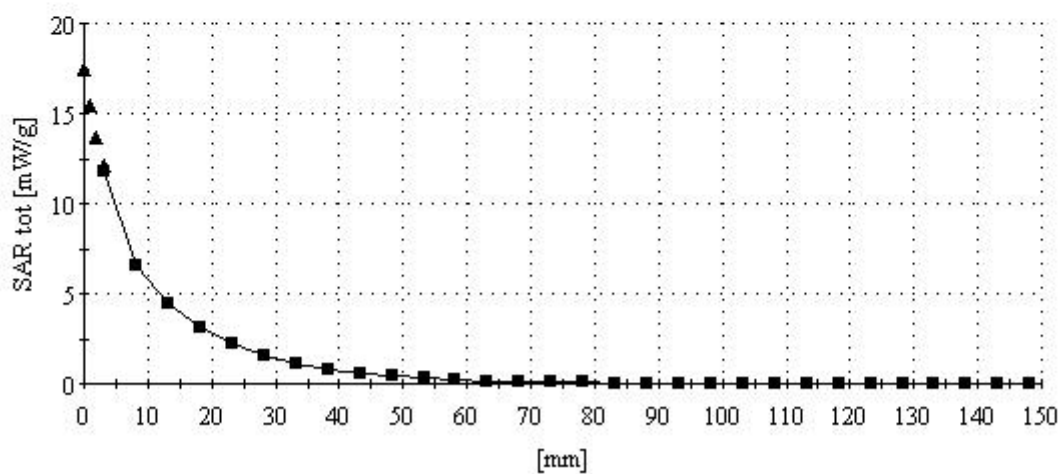
850 MHz Brain Dipole Validation

Antenna Input Power : 33 dBm (1W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature: 21.7 °C

Date Tested : February 15, 2006



## Dipole 1900 MHz

SAM II Phantom; Section; Position: ; Frequency: 1900 MHz

Probe: ET3DV6 - SN1798; ConvF(5.27,5.27,5.27); Crest factor: 1.0; Head 1900 MHz:  $\sigma = 1.45 \text{ mho/m}$   $\epsilon_r = 39.9$   $\rho = 1.00 \text{ g/cm}^3$

:

Z-Axis: Dx = 0.0, Dy = 0.0, Dz = 5.0

Comment :

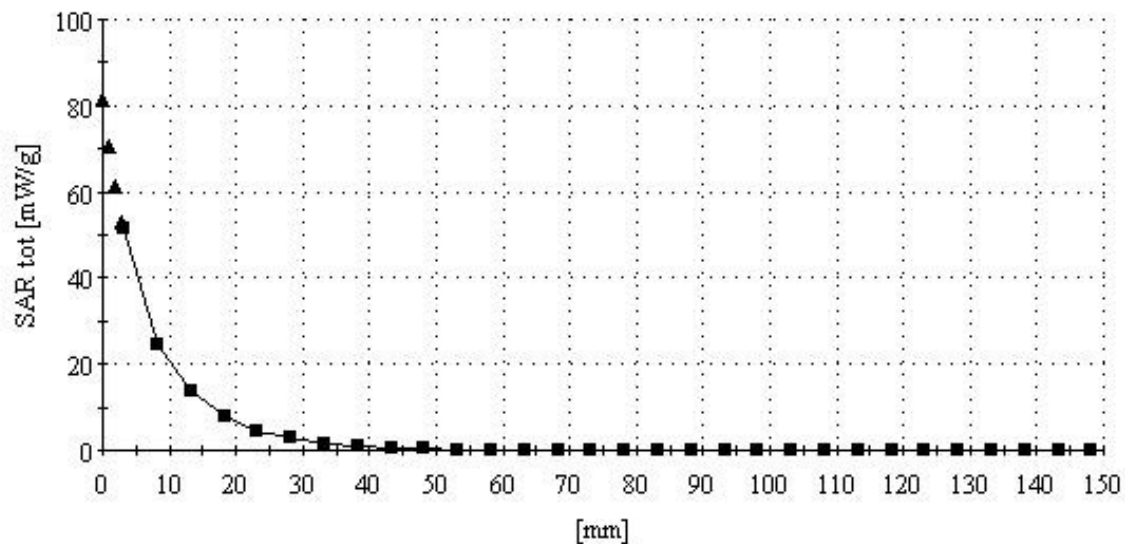
1900 MHz Brain Dipole Validation

Antenna Input Power : 30 dBm (1W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature: 21.7 °C

Date Tested : February 15, 2006



■ Dielectric Parameter (835MHz Brain)

**Title : AXW-PG210**

**SubTitle : GSM850 Head**

February 15, 2006 08:45 AM

Frequency	e'	e''
800.000000 MHz	42.4733	18.9364
805.000000 MHz	42.4169	18.9449
810.000000 MHz	42.2933	18.9396
815.000000 MHz	42.2210	18.9206
820.000000 MHz	42.1068	18.9191
825.000000 MHz	42.0188	18.9106
830.000000 MHz	41.9172	18.9433
<b>835.000000 MHz</b>	<b>41.8265</b>	<b>18.8784</b>
840.000000 MHz	41.7754	18.8763
845.000000 MHz	41.6498	18.8645
850.000000 MHz	41.6556	18.8363
855.000000 MHz	41.5570	18.8383
860.000000 MHz	41.5138	18.8143
865.000000 MHz	41.4635	18.8335
870.000000 MHz	41.3575	18.7978
875.000000 MHz	41.2703	18.7875
880.000000 MHz	41.2397	18.7260
885.000000 MHz	41.1709	18.7713
890.000000 MHz	41.0974	18.7630
895.000000 MHz	41.0392	18.7356
900.000000 MHz	40.9963	18.7238

■ Dielectric Parameter (835MHz Body)

**Title : AXW-PG210**

**SubTitle : GSM850 Body**

February 15, 2006 01:50 PM

Frequency	e'	e''
800.000000 MHz	55.1574	21.3590
805.000000 MHz	55.1243	21.3300
810.000000 MHz	55.0484	21.3052
815.000000 MHz	55.0118	21.3230
820.000000 MHz	54.9951	21.2996
825.000000 MHz	54.9472	21.2654
830.000000 MHz	54.8572	21.3250
<b>835.000000 MHz</b>	<b>54.7874</b>	<b>21.2994</b>
840.000000 MHz	54.8190	21.3355
845.000000 MHz	54.7355	21.3263
850.000000 MHz	54.6893	21.3252
855.000000 MHz	54.6881	21.2962
860.000000 MHz	54.5928	21.3031
865.000000 MHz	54.5721	21.3033
870.000000 MHz	54.5190	21.2729
875.000000 MHz	54.3942	21.2760
880.000000 MHz	54.4209	21.2527
885.000000 MHz	54.3155	21.2437
890.000000 MHz	54.2777	21.1874
895.000000 MHz	54.1696	21.1384
900.000000 MHz	54.1171	21.1206

## ■ Dielectric Parameter (1900MHz Head)

**Title : AXW-PG210****SubTitle : GSM1900 Head**

February 15, 2006 10:55 AM

Frequency	e'	e''
1.800000000 GHz	40.3872	13.4896
1.810000000 GHz	40.3293	13.5299
1.820000000 GHz	40.3088	13.5592
1.830000000 GHz	40.2385	13.6288
1.840000000 GHz	40.2171	13.6860
1.850000000 GHz	40.1854	13.7344
1.860000000 GHz	40.1363	13.7817
1.870000000 GHz	40.0955	13.7874
1.880000000 GHz	40.0063	13.7912
1.890000000 GHz	39.9696	13.7950
1.900000000 GHz	39.9088	13.7786
1.910000000 GHz	39.8697	13.7755
1.920000000 GHz	39.7924	13.7767
1.930000000 GHz	39.7388	13.8076
1.940000000 GHz	39.7356	13.8681
1.950000000 GHz	39.6639	13.9172
1.960000000 GHz	39.6433	13.9653
1.970000000 GHz	39.6141	14.0428
1.980000000 GHz	39.5940	14.0698
1.990000000 GHz	39.5353	14.0991
2.000000000 GHz	39.5066	14.0967



■ Dielectric Parameter (1900MHz Body)**Title : AXW-PG210****SubTitle : GSM1900**

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Frequency	e'	e''
1.800000000 GHz	56.4939	13.3525
1.810000000 GHz	56.4512	13.4272
1.820000000 GHz	56.4741	13.5119
1.830000000 GHz	56.4083	13.5292
1.840000000 GHz	56.3649	13.5673
1.850000000 GHz	55.8571	13.6378
1.860000000 GHz	55.1837	13.7564
1.870000000 GHz	54.9550	13.8431
1.880000000 GHz	54.8825	13.9064
1.890000000 GHz	54.8765	13.9665
1.900000000 GHz	54.9688	14.0326
1.910000000 GHz	54.9762	14.1435
1.920000000 GHz	54.9495	14.1824
1.930000000 GHz	54.8959	14.2335
1.940000000 GHz	54.8022	14.2873
1.950000000 GHz	54.6802	14.3291
1.960000000 GHz	54.5243	14.3835
1.970000000 GHz	54.4246	14.4093
1.980000000 GHz	54.3432	14.4440
1.990000000 GHz	54.2395	14.5284
2.000000000 GHz	54.1816	14.5562