

## ATTACHMENT Q – DIPOLE VALIDATION

---

## ■ Validation Data (835MHz Brain)

### Dipole 835 MHz

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

Probe: ET3DV6 - SN1609; ConvF(6.62,6.62,6.62); Crest factor: 1.0; Brain 835 MHz:  $\sigma = 0.91$

mho/m  $\epsilon_r = 42.8$   $\rho = 1.00$  g/cm<sup>3</sup>

Cubes (2): SAR (1g): 10.1 mW/g  $\pm 0.03$  dB, SAR (10g): 6.43 mW/g  $\pm 0.02$  dB

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

Powerdrift: -0.02 dB

Comment:

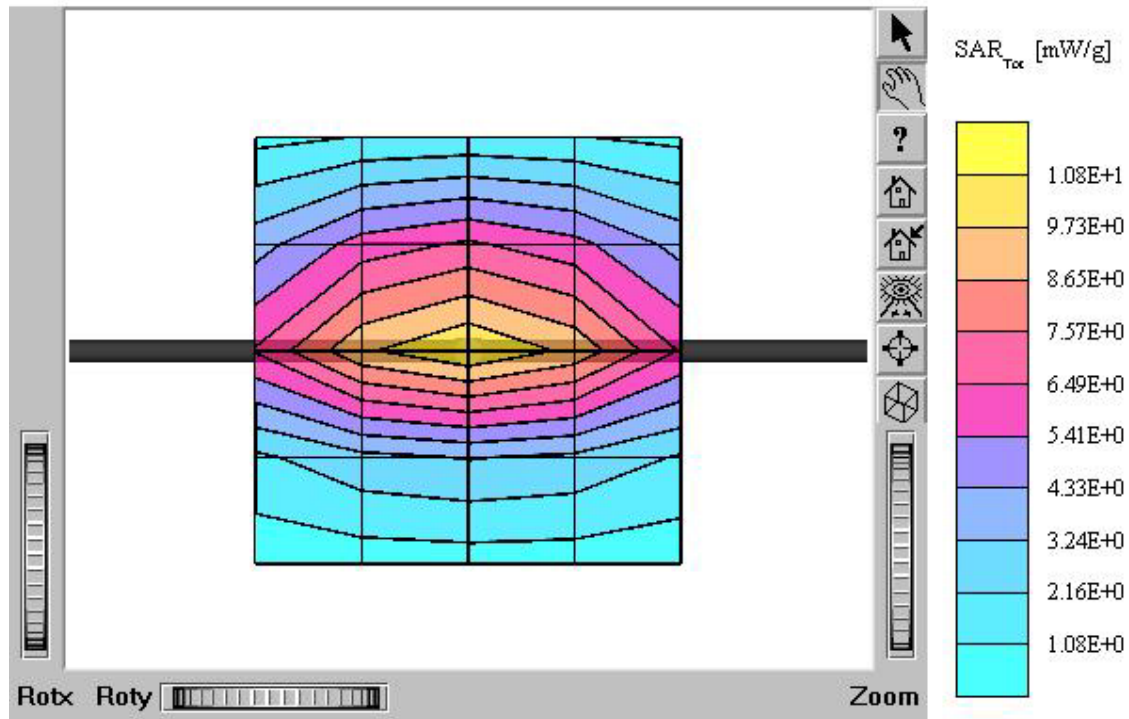
835MHz Brain Dipole Validation (D835V2/ S.N: 441)

Antenna Input Power: 30 dBm (1 W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature : 21.4°C

Date Tested : February 02, 2004



## ■ Validation Data (1900MHz Brain)

### Dipole 1900 MHz

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

Probe: ET3DV6 - SN1609; ConvF(5.29,5.29,5.29); Crest factor: 1.0; Brain 1900 MHz:  $\sigma = 1.38$

mho/m  $\epsilon_r = 40.0$   $\rho = 1.00$  g/cm<sup>3</sup>

Cubes (2): SAR (1g): 40.4 mW/g  $\pm 0.03$  dB, SAR (10g): 20.4 mW/g  $\pm 0.02$  dB

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

Powerdrift: -0.01 dB

Comment:

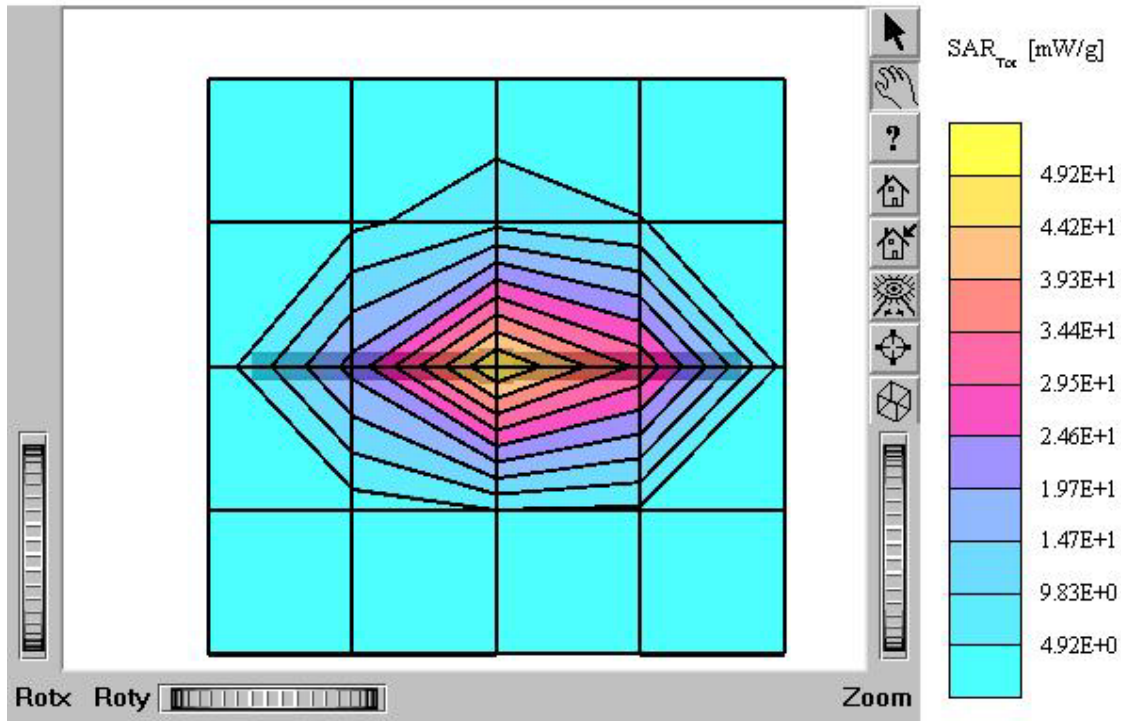
1900 MHz Brain Dipole Validation (D1900V2/ S.N: 5d032)

Antenna Input Power: 30 dBm (1 W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature : 21.6°C

Date Tested : February 03, 2004



### Dipole 835 MHz

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

Probe: ET3DV6 - SN1609; ConvF(6.62,6.62,6.62); Crest factor: 1.0; Brain 835 MHz:  $\sigma = 0.91$

mho/m  $\epsilon_r = 42.8$   $\rho = 1.00$  g/cm<sup>3</sup>

:

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

#### Comment:

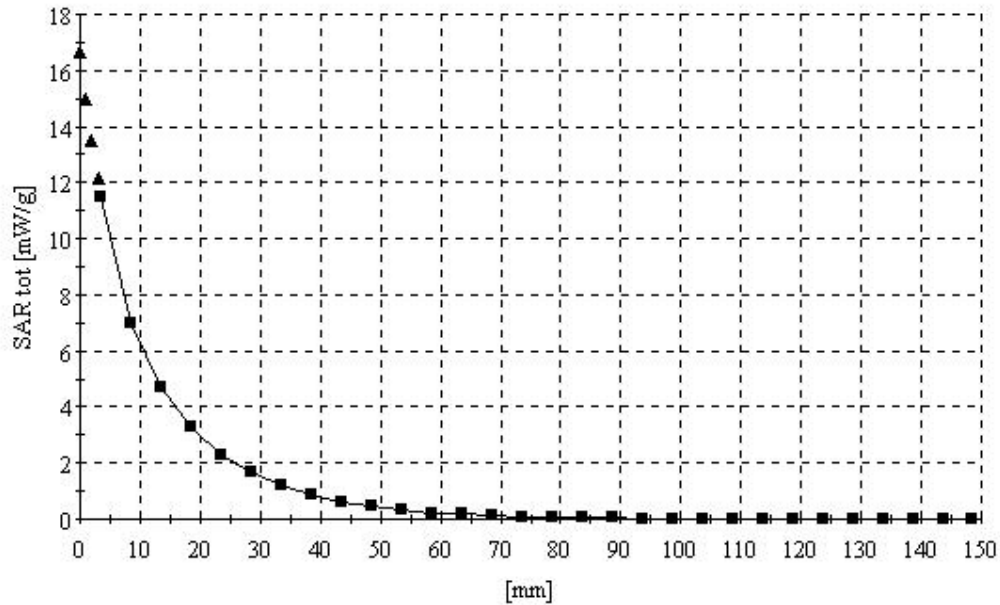
835MHz Brain Dipole Validation (D835V2/ S.N: 441)

Antenna Input Power: 30 dBm (1 W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature : 21.4°C

Date Tested : February 02, 2004



## Dipole 1900 MHz

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

Probe: ET3DV6 - SN1609; ConvF(5.29,5.29,5.29); Crest factor: 1.0; Brain 1900 MHz:  $\sigma = 1.38$

mho/m  $\epsilon_r = 40.0$   $\rho = 1.00$  g/cm<sup>3</sup>

:

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

### Comment:

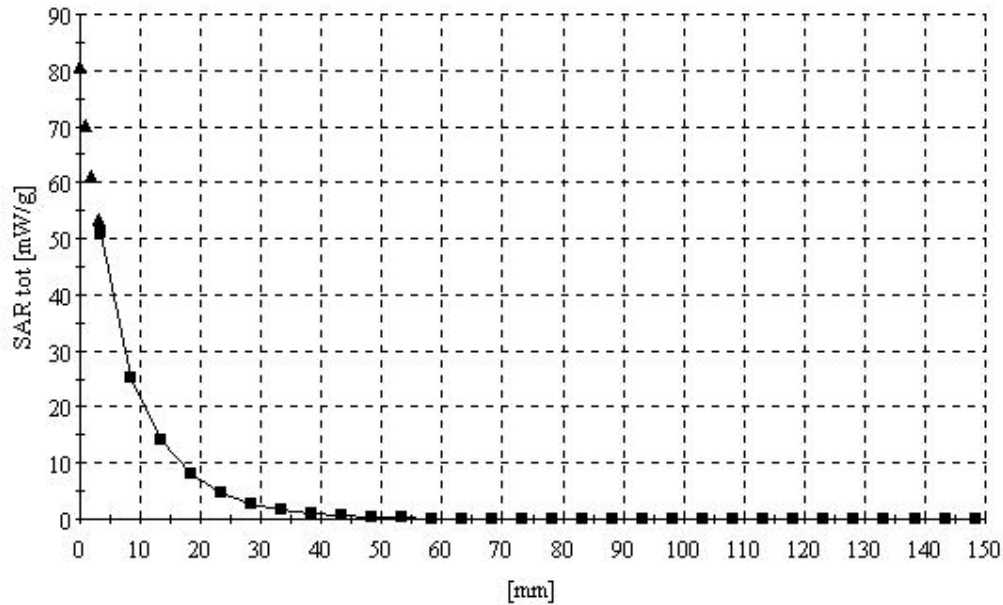
1900 MHz Brain Dipole Validation (D1900V2/ S.N: 5d032)

Antenna Input Power: 30 dBm (1 W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature : 21.6°C

Date Tested : February 03, 2004





■ Dielectric Parameter (835MHz Brain)

**Title : TX-110CA**

**SubTitle : CDMA Brain**

**February 02, 2004 09:32 AM**

Frequency	$e'$	$e''$
800.000000 MHz	43.2501	19.8896
805.000000 MHz	43.1665	19.8444
810.000000 MHz	43.0684	19.7822
815.000000 MHz	43.0129	19.7521
820.000000 MHz	42.9301	19.6605
825.000000 MHz	42.8378	19.6261
830.000000 MHz	42.7804	19.5983
<b>835.000000 MHz</b>	<b>42.7624</b>	<b>19.6125</b>
840.000000 MHz	42.6283	19.5864
845.000000 MHz	42.6065	19.5808
850.000000 MHz	42.5593	19.5931
855.000000 MHz	42.4950	19.5792
860.000000 MHz	42.3898	19.5983
865.000000 MHz	42.3968	19.5743
870.000000 MHz	42.3455	19.6290
875.000000 MHz	42.2616	19.6726
880.000000 MHz	42.2409	19.6516
885.000000 MHz	42.1888	19.6251
890.000000 MHz	42.1565	19.6281
895.000000 MHz	42.0896	19.6466
900.000000 MHz	42.0436	19.5991

■ Dielectric Parameter (1900MHz Brain)

**Title : TX-110CA**  
**SubTitle : PCS CDMA BRAIN**  
February 03, 2004 09:41 AM

Frequency	e'	e''
1.800000000 GHz	40.3918	12.8140
1.810000000 GHz	40.3274	12.8386
1.820000000 GHz	40.3083	12.9140
1.830000000 GHz	40.2272	12.9797
1.840000000 GHz	40.2123	13.0037
1.850000000 GHz	40.1878	13.0489
1.860000000 GHz	40.1875	13.0544
1.870000000 GHz	40.1933	13.1099
1.880000000 GHz	40.1288	13.0964
1.890000000 GHz	40.0739	13.1190
1.900000000 GHz	39.9918	13.1209
1.910000000 GHz	39.9190	13.1350
1.920000000 GHz	39.8539	13.1772
1.930000000 GHz	39.7574	13.1782
1.940000000 GHz	39.6789	13.2270
1.950000000 GHz	39.6315	13.2939
1.960000000 GHz	39.6131	13.3445
1.970000000 GHz	39.5874	13.3999
1.980000000 GHz	39.5768	13.4275
1.990000000 GHz	39.6108	13.4718
2.000000000 GHz	39.6007	13.4841



## ■ Dielectric Parameter (835MHz Muscle)

Title : TX-110CA

SubTitle : CDMA BODY

February 02, 2004 09:12 AM

Frequency	$e'$	$e''$
800.000000 MHz	54.3220	21.6442
805.000000 MHz	54.3586	21.6376
810.000000 MHz	54.2772	21.6160
815.000000 MHz	54.2478	21.6100
820.000000 MHz	54.2312	21.5434
825.000000 MHz	54.1882	21.5258
830.000000 MHz	54.1890	21.5035
835.000000 MHz	54.1238	21.5108
840.000000 MHz	54.0568	21.4199
845.000000 MHz	54.0386	21.3995
850.000000 MHz	53.9757	21.3740
855.000000 MHz	53.9329	21.3414
860.000000 MHz	53.8672	21.2744
865.000000 MHz	53.8216	21.2868
870.000000 MHz	53.7592	21.2519
875.000000 MHz	53.7015	21.2263
880.000000 MHz	53.6126	21.2556
885.000000 MHz	53.5311	21.2451
890.000000 MHz	53.4510	21.2344
895.000000 MHz	53.3830	21.2247
900.000000 MHz	53.3832	21.1992



■ Dielectric Parameter (1900MHz Muscle)

**Title : TX-110CA**  
**SubTitle : PCS CDMA BODY**  
February 03, 2004 09:21 AM

Frequency	e'	e''
1.850000000 GHz	51.7823	14.5110
1.855000000 GHz	51.7145	14.5141
1.860000000 GHz	51.7297	14.5959
1.865000000 GHz	51.6802	14.6229
1.870000000 GHz	51.6339	14.6366
1.875000000 GHz	51.6207	14.6466
1.880000000 GHz	51.6321	14.7210
1.885000000 GHz	51.5909	14.7306
1.890000000 GHz	51.5711	14.7395
1.895000000 GHz	51.6027	14.7496
1.900000000 GHz	51.6085	14.7824
1.905000000 GHz	51.6274	14.7892
1.910000000 GHz	51.6682	14.8120
1.915000000 GHz	51.6511	14.7936
1.920000000 GHz	51.6515	14.8023
1.925000000 GHz	51.6573	14.8204
1.930000000 GHz	51.6501	14.8039
1.935000000 GHz	51.6523	14.8289
1.940000000 GHz	51.6293	14.7982
1.945000000 GHz	51.5861	14.8038
1.950000000 GHz	51.5256	14.8290