

## ATTACHMENT Q – DIPOLE VALIDATION

## Validation Data (835MHz Brain)

### Dipole 835 MHz

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

Probe: ET3DV6 - SN1607; ConvF(6.22,6.22,6.22); Crest factor: 1.0; Brain 835 MHz:  $\sigma = 0.89$  mho/m  $\epsilon_r = 41.0$   $\rho = 1.00$  g/cm<sup>3</sup>

Cubes (2): SAR(1g): 10.3 mW/g  $\pm 0.04$  dB, SAR(10g): 6.61 mW/g  $\pm 0.04$  dB

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

Powerdrift: 0.02 dB

Comment:

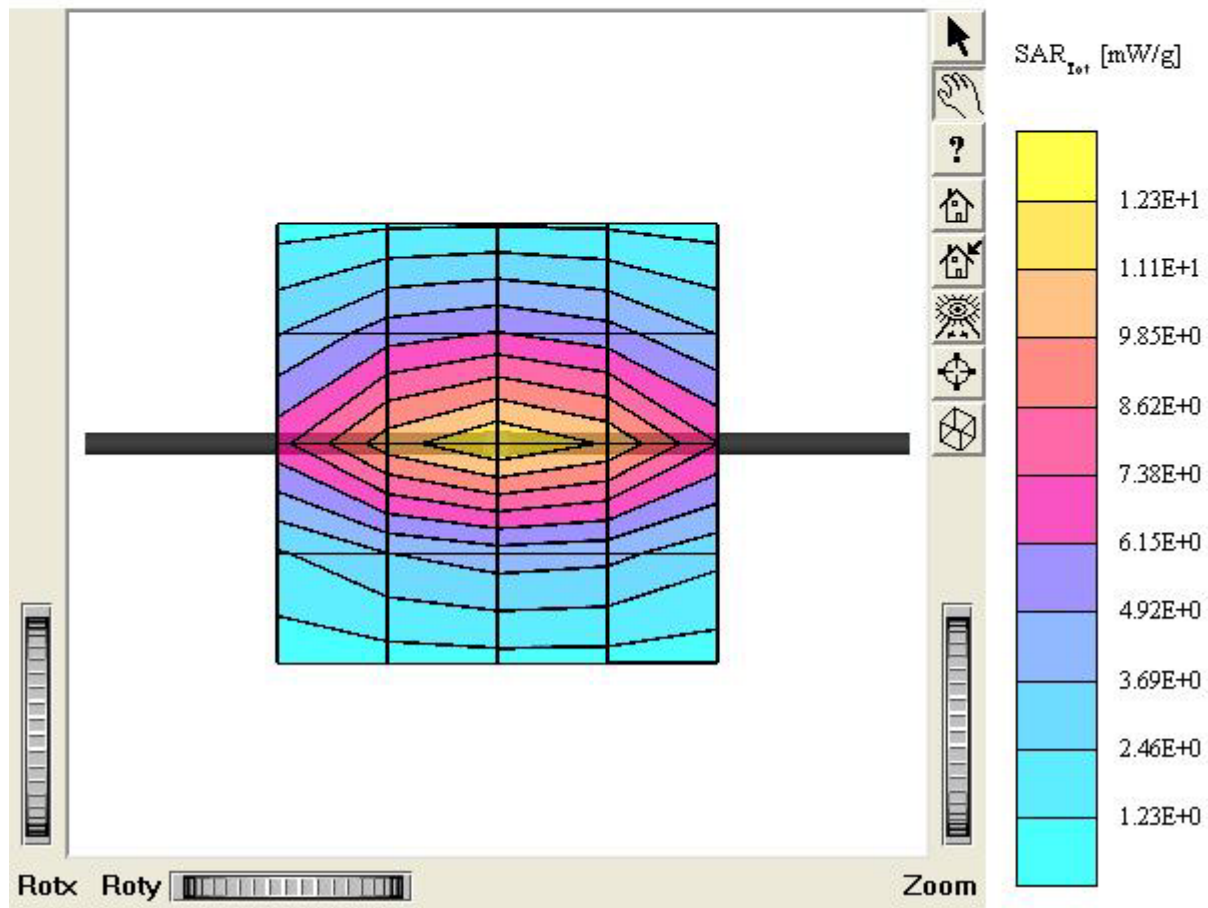
835MHz Brain Dipole Validation (D835V2/ S.N: 441)

Antenna Input Power: 30 dBm (1 W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature : 21.7°C

Date Tested : February 18, 2005



## Validation Data (835MHz Brain)

### Dipole 835 MHz

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

Probe: ET3DV6 - SN1607; ConvF(6.22,6.22,6.22); Crest factor: 1.0; Brain 835 MHz:  $\sigma = 0.88$  mho/m  $\epsilon_r = 41.1$   $\rho = 1.00$  g/cm<sup>3</sup>

Cubes (2): SAR (1g): 10.3 mW/g  $\pm 0.01$  dB, SAR (10g): 6.62 mW/g  $\pm 0.01$  dB

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

Powerdrift: -0.07 dB

Comment:

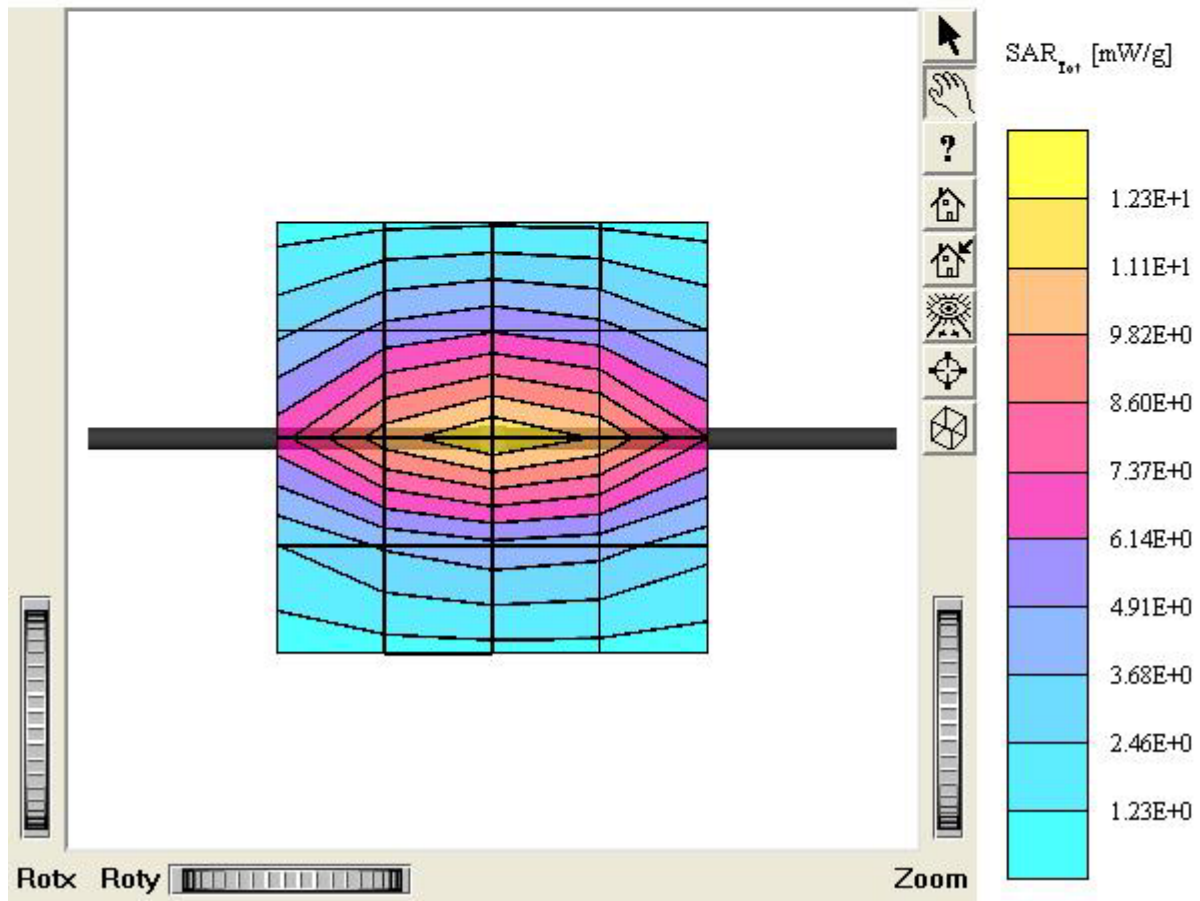
835MHz Brain Dipole Validation (D835V2/ S.N: 441)

Antenna Input Power: 30 dBm (1 W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature : 21.5°C

Date Tested : February 19, 2005



## Validation Data (1900MHz Brain)

### Dipole 1900 MHz

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

Probe: ET3DV6 - SN1607; ConvF(5.10,5.10,5.10); Crest factor: 1.0; Brain 1900 MHz:  $\sigma = 1.39$  mho/m  $\epsilon_r = 40.4$   $\rho = 1.00$  g/cm<sup>3</sup>

Cubes (Z): SAR (1g): 41.8 mW/g  $\pm 0.02$  dB, SAR (10g): 20.8 mW/g  $\pm 0.03$  dB

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

Powerdrift: 0.02 dB

Comment:

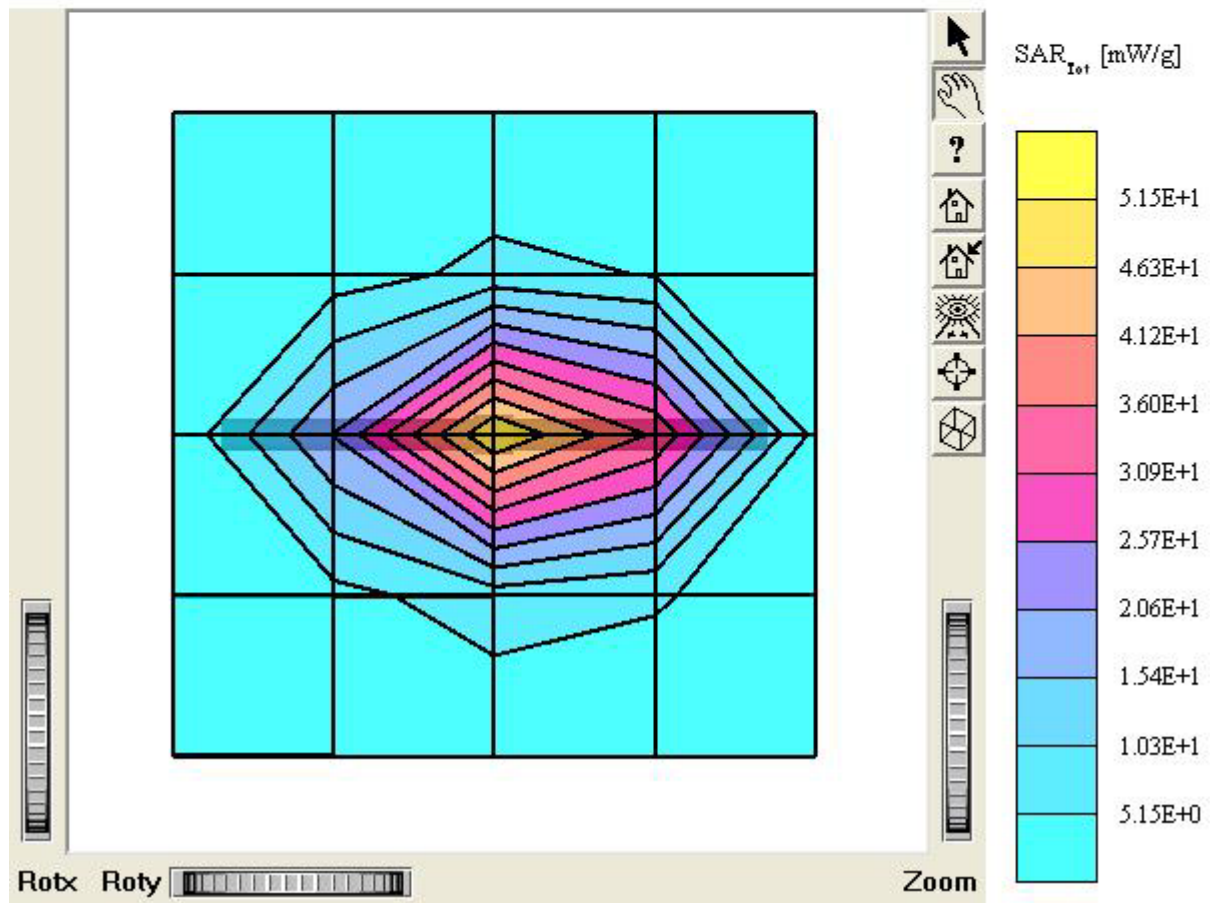
1900 MHz Brain Dipole Validation (D1900V2/ S.N: 5d032)

Antenna Input Power: 30 dBm (1 W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature : 21.1 °C

Date Tested : February 20, 2005



## Dipole 835 MHz

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

Probe: ET3DV6 - SN1607; ConvF(6.22,6.22,6.22); Crest factor: 1.0; Brain 835 MHz:  $\sigma = 0.89$  mho/m  $\epsilon_r = 41.0$   $\rho = 1.00$  g/cm<sup>3</sup>

:

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

### Comment:

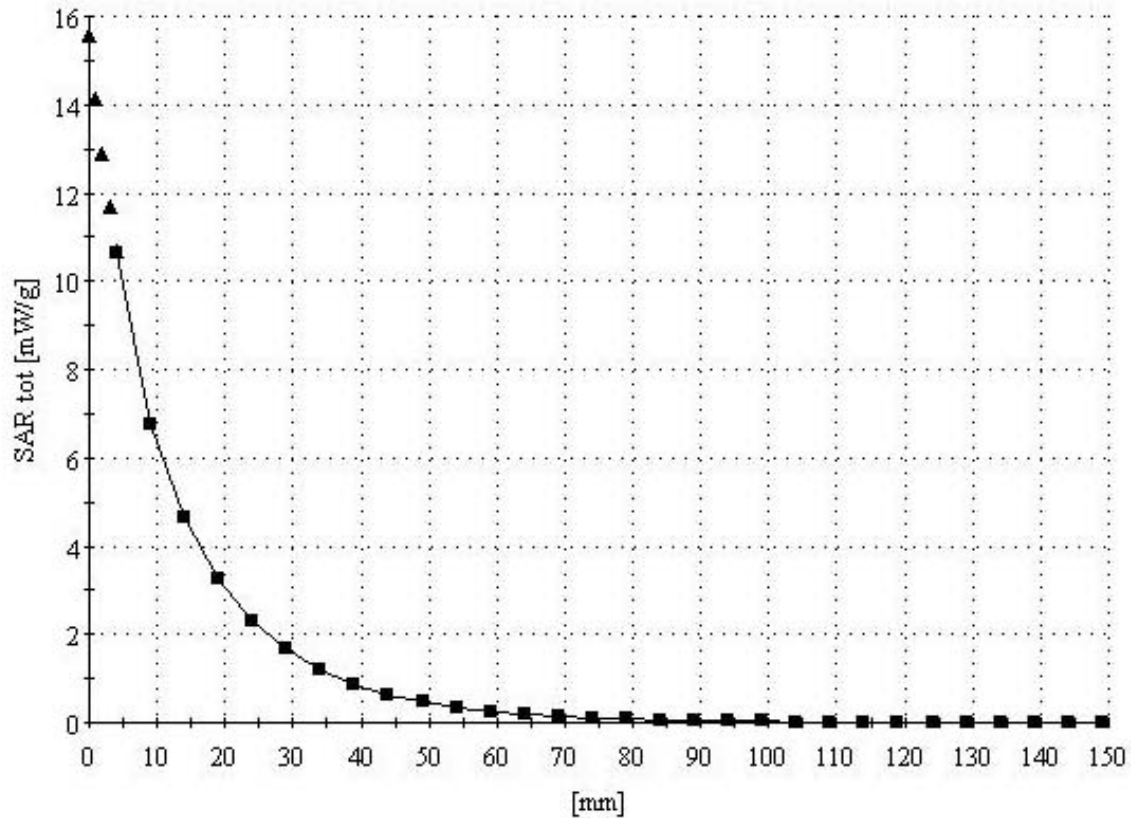
835MHz Brain Dipole Validation (D835V2/ S.N: 441)

Antenna Input Power: 30 dBm (1 W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature : 21.7 °C

Date Tested : February 18, 2005



## Dipole 835 MHz

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

Probe: ET3DV6 - SN1607; ConvF(6.22,6.22,6.22); Crest factor: 1.0; Brain 835 MHz:  $\sigma = 0.88 \text{ mho/m}$   $\epsilon_r = 41.1$   $\rho = 1.00 \text{ g/cm}^3$

:

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

### Comment:

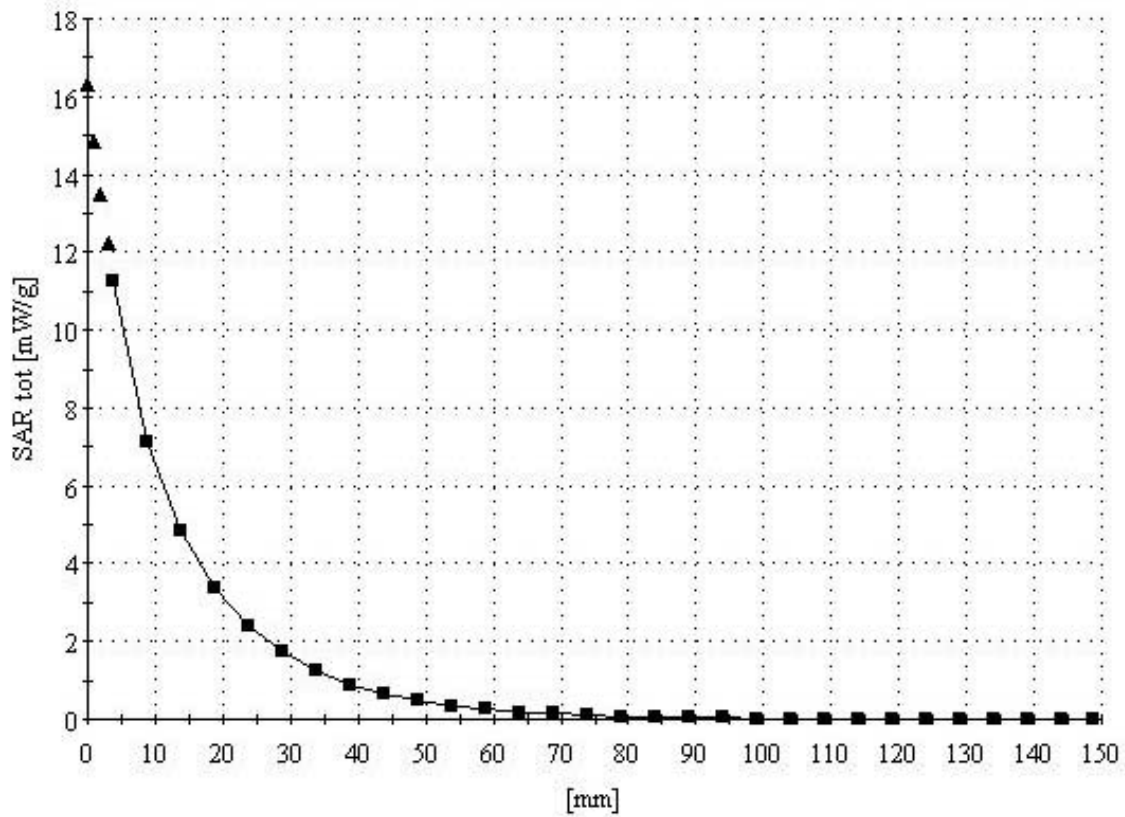
835MHz Brain Dipole Validation (D835V2/ S.N: 441)

Antenna Input Power: 30 dBm (1 W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature : 21.5°C

Date Tested : February 19, 2005



## Dipole 1900 MHz

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

Probe: ET3DV6 - SN1607; ConvF(5.10,5.10,5.10); Crest factor: 1.0; Brain 1900 MHz:  $\sigma = 1.39 \text{ mho/m}$   $\epsilon_r = 40.4$   $\rho = 1.00 \text{ g/cm}^3$

:

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

### Comment:

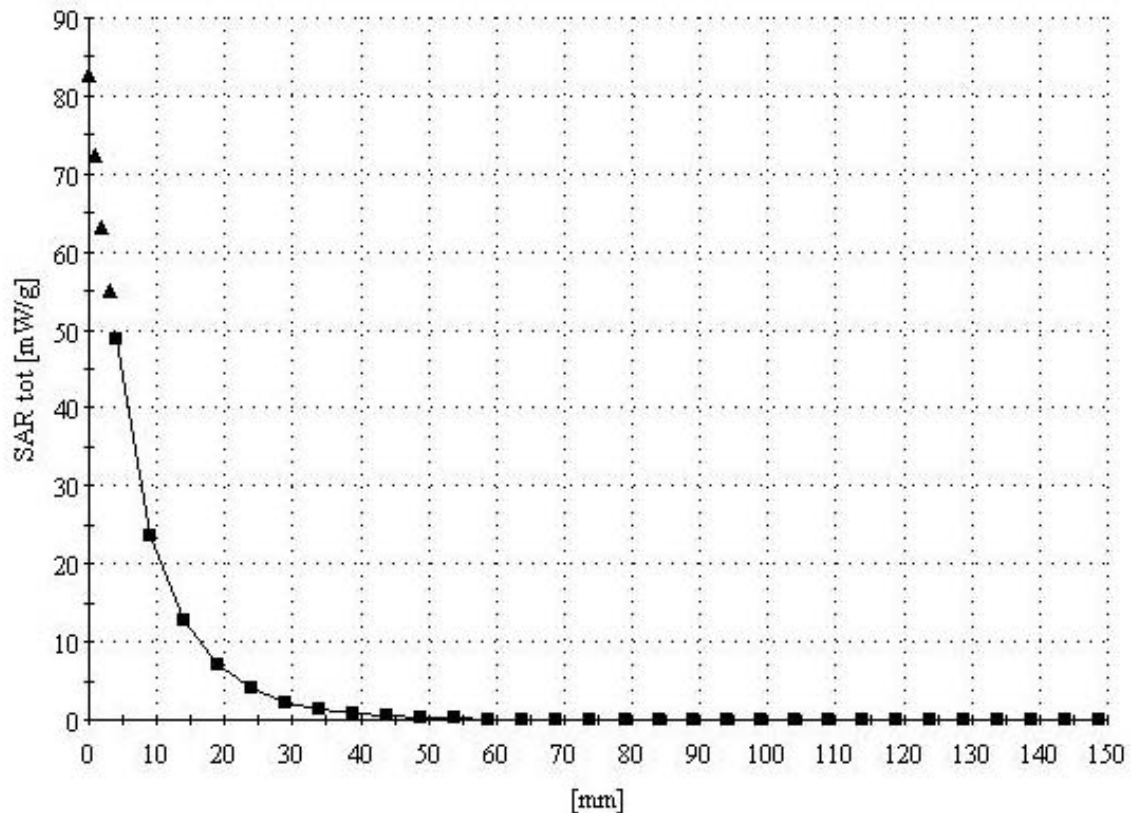
1900 MHz Brain Dipole Validation (D1900V2/ S.N: 5d032)

Antenna Input Power: 30 dBm (1 W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature : 21.1 °C

Date Tested : February 20, 2005



■ Dielectric Parameter (835MHz Brain)

**Title : TX-210**  
**SubTitle : AMPS BRAIN**  
February 18, 2005 09:19 AM

Frequency	e'	e''
800.000000 MHz	41.5886	19.4049
805.000000 MHz	41.5705	19.4139
810.000000 MHz	41.4320	19.2937
815.000000 MHz	41.2277	19.4395
820.000000 MHz	41.3278	19.1074
825.000000 MHz	41.2172	19.0585
830.000000 MHz	41.1081	19.2208
<b>835.000000 MHz</b>	<b>40.9966</b>	<b>19.2148</b>
840.000000 MHz	40.8596	19.2998
845.000000 MHz	40.9119	18.9370
850.000000 MHz	40.8071	19.1279
855.000000 MHz	40.7991	19.0328
860.000000 MHz	40.5953	19.2602
865.000000 MHz	40.4786	19.2066
870.000000 MHz	40.6143	19.0012
875.000000 MHz	40.3656	19.1894
880.000000 MHz	40.3721	19.2033
885.000000 MHz	40.2289	19.1999
890.000000 MHz	40.1098	19.2399
895.000000 MHz	40.1830	18.9269
900.000000 MHz	40.0385	19.0941



■ Dielectric Parameter (835MHz Brain)

**Title : TX-210**  
**SubTitle : CDMA BRAIN**  
February 19, 2005 09:29 AM

Frequency	e'	e''
800.000000 MHz	41.6715	19.1869
805.000000 MHz	41.6469	19.2958
810.000000 MHz	41.4548	19.2983
815.000000 MHz	41.5035	19.3109
820.000000 MHz	41.3428	19.1619
825.000000 MHz	41.0265	19.2908
830.000000 MHz	41.0323	19.2522
<b>835.000000 MHz</b>	<b>41.0563</b>	<b>19.0514</b>
840.000000 MHz	40.9315	18.9563
845.000000 MHz	40.9200	18.9659
850.000000 MHz	40.8431	18.7769
855.000000 MHz	40.7141	18.9128
860.000000 MHz	40.6888	18.8652
865.000000 MHz	40.6646	18.5331
870.000000 MHz	40.6334	18.5703
875.000000 MHz	40.5751	18.8267
880.000000 MHz	40.4302	18.8099
885.000000 MHz	40.1601	19.0645
890.000000 MHz	40.1776	18.9216
895.000000 MHz	40.2058	18.7322
900.000000 MHz	40.0759	18.9845

■ Dielectric Parameter (1900MHz Brain)

**Title : TX-210**  
**SubTitle : PCS BRAIN**  
February 20, 2005 09:20 AM

Frequency	e'	e''
1.800000000 GHz	40.8717	12.8876
1.810000000 GHz	40.7995	12.9547
1.820000000 GHz	40.7852	13.0187
1.830000000 GHz	40.7222	13.0709
1.840000000 GHz	40.7128	13.0950
1.850000000 GHz	40.6628	13.1391
1.860000000 GHz	40.6436	13.1723
1.870000000 GHz	40.6183	13.2034
1.880000000 GHz	40.5348	13.1850
1.890000000 GHz	40.4891	13.1996
<b>1.900000000 GHz</b>	<b>40.3860</b>	<b>13.2073</b>
1.910000000 GHz	40.2974	13.2211
1.920000000 GHz	40.2202	13.2457
1.930000000 GHz	40.1250	13.2858
1.940000000 GHz	40.0688	13.3064
1.950000000 GHz	40.0246	13.3696
1.960000000 GHz	40.0257	13.4408
1.970000000 GHz	40.0288	13.4691
1.980000000 GHz	39.9813	13.5080
1.990000000 GHz	39.9797	13.5303
2.000000000 GHz	39.9562	13.5706

■ Dielectric Parameter (835MHz Muscle)

**Title : TX-210**  
**SubTitle : AMPS BODY**  
February 18, 2005 02:20 PM

Frequency	$e'$	$e''$
800.000000 MHz	54.4282	20.9116
805.000000 MHz	54.3171	20.8811
810.000000 MHz	54.3133	20.9256
815.000000 MHz	54.2483	20.8905
820.000000 MHz	54.2226	20.9143
825.000000 MHz	54.1084	20.9365
830.000000 MHz	54.0578	20.9303
<b>835.000000 MHz</b>	<b>53.9438</b>	<b>20.9584</b>
840.000000 MHz	53.8946	20.9191
845.000000 MHz	53.8490	20.8570
850.000000 MHz	53.7146	20.8176
855.000000 MHz	53.7160	20.8476
860.000000 MHz	53.6908	20.7470
865.000000 MHz	53.5830	20.7962
870.000000 MHz	53.5503	20.7851
875.000000 MHz	53.5707	20.7431
880.000000 MHz	53.5061	20.6860
885.000000 MHz	53.4339	20.7168
890.000000 MHz	53.4116	20.7231
895.000000 MHz	53.3996	20.6729
900.000000 MHz	53.3299	20.6872

## ■ Dielectric Parameter (835MHz Muscle)

**Title : TX-210**  
**SubTitle : CDMA BODY**  
February 19, 2005 02:36 PM

Frequency	e'	e''
800.000000 MHz	41.5886	19.4049
805.000000 MHz	41.5705	19.4139
810.000000 MHz	41.4320	19.2937
815.000000 MHz	41.2277	19.4395
820.000000 MHz	41.3278	19.1074
825.000000 MHz	41.2172	19.0585
830.000000 MHz	41.1081	19.2208
<b>835.000000 MHz</b>	<b>40.9966</b>	<b>19.2148</b>
840.000000 MHz	40.8596	19.2998
845.000000 MHz	40.9119	18.9370
850.000000 MHz	40.8071	19.1279
855.000000 MHz	40.7991	19.0328
860.000000 MHz	40.5953	19.2602
865.000000 MHz	40.4786	19.2066
870.000000 MHz	40.6143	19.0012
875.000000 MHz	40.3656	19.1894
880.000000 MHz	40.3721	19.2033
885.000000 MHz	40.2289	19.1999
890.000000 MHz	40.1098	19.2399
895.000000 MHz	40.1830	18.9269
900.000000 MHz	40.0385	19.0941

■ Dielectric Parameter (1900MHz Brain)

**Title : TX-210**

**SubTitle : PCS BODY**

February 20, 2005 02:04 PM

Frequency	e'	e''
1.800000000 GHz	51.3644	14.6862
1.810000000 GHz	51.3338	14.7183
1.820000000 GHz	51.2944	14.7506
1.830000000 GHz	51.2554	14.8149
1.840000000 GHz	51.2212	14.8399
1.850000000 GHz	51.1907	14.8798
1.860000000 GHz	51.1253	14.9140
1.870000000 GHz	51.1041	14.9394
1.880000000 GHz	51.0709	14.9611
1.890000000 GHz	50.9742	14.9565
1.900000000 GHz	50.9306	14.9704
1.910000000 GHz	50.8564	14.9798
1.920000000 GHz	50.8375	14.9979
1.930000000 GHz	50.8010	15.0423
1.940000000 GHz	50.7563	15.0554
1.950000000 GHz	50.7070	15.1049
1.960000000 GHz	50.6708	15.1748
1.970000000 GHz	50.6772	15.1997
1.980000000 GHz	50.6517	15.2535
1.990000000 GHz	50.6324	15.2772
2.000000000 GHz	50.5763	15.2819