

ATTACHMENT Q – DIPOLE VALIDATION

■ Validation Data (835MHz Brain)

Dipole 835 MHz

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

Probe: ET3DV6 - SN1607; ConvF(6.22,6.22,6.22); Crest factor: 1.0; Head 835 MHz: $\sigma = 0.90$ mho/m $\epsilon_r = 43.2$ $\rho = 1.00$ g/cm³

Cubes (2): SAR(1g): 10.2 mW/g ± 0.01 dB, SAR(10g): 6.43 mW/g ± 0.07 dB

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

Powerdrift: -0.02 dB

Comment:

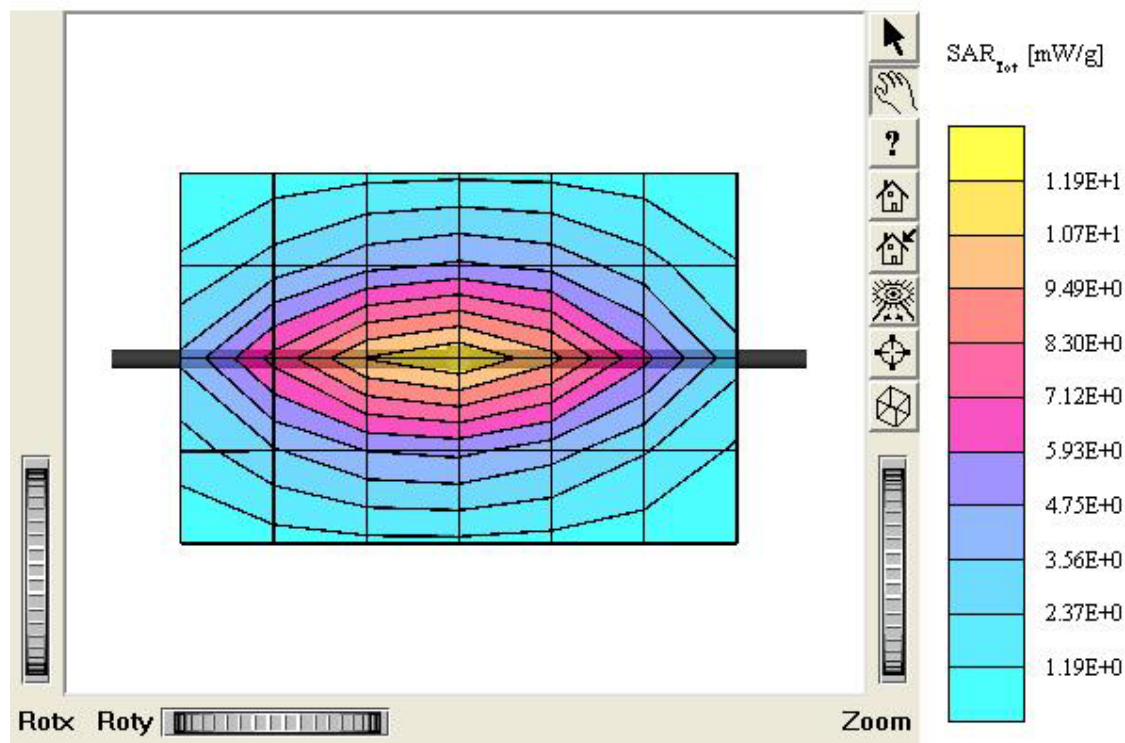
835MHz Brain Dipole Validation (D835V2/ S.N: 441)

Antenna Input Power: 30 dBm (1 W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature: 21.7°C

Date Tested : September 6, 2004



■ Validation Data (835MHz Brain)

Dipole 835 MHz

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

Probe: ET3DV6 - SN1607; ConvF(6.22,6.22,6.22); Crest factor: 1.0; Head 835 MHz: $\sigma = 0.90 \text{ mho/m}$ $\epsilon_r = 43.2$ $\rho = 1.00 \text{ g/cm}^3$

Cubes (2): SAR (1g): $10.3 \text{ mW/g} \pm 0.02 \text{ dB}$, SAR (10g): $6.58 \text{ mW/g} \pm 0.01 \text{ dB}$

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

Powerdrift: 0.02 dB

Comment:

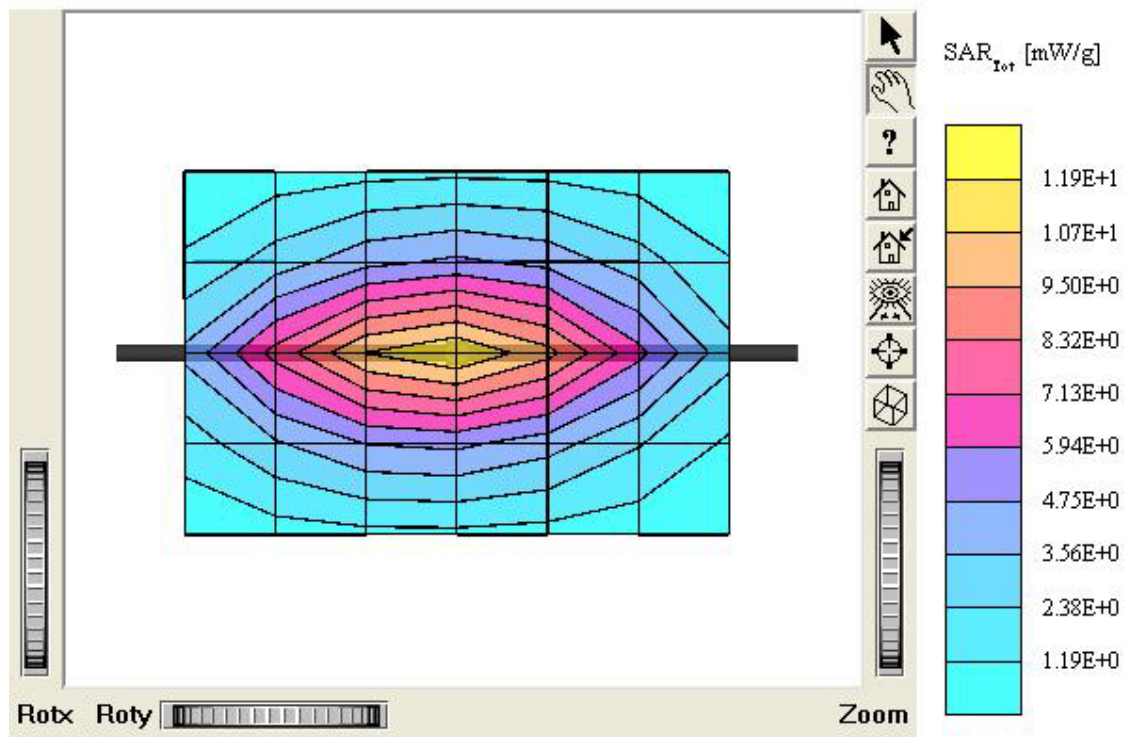
835MHz Brain Dipole Validation (D835V2/ S.N: 441)

Antenna Input Power: 30 dBm (1 W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature : 21.3°C

Date Tested : September 7, 2004



■ Validation Data (1900MHz Brain)

Dipole 1900 MHz

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

Probe: ET3DV6 - SN1798; ConvF(5.20,5.20,5.20); Crest factor: 1.0; Brain 1900 MHz: $\sigma = 1.39 \text{ mho/m}$ $\epsilon_r = 40.3$ $\rho = 1.00 \text{ g/cm}^3$

Cubes (2): SAR (1g): $41.6 \text{ mW/g} \pm 0.09 \text{ dB}$, SAR (10g): $21.2 \text{ mW/g} \pm 0.11 \text{ dB}$

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

Powerdrift: -0.01 dB

Comment:

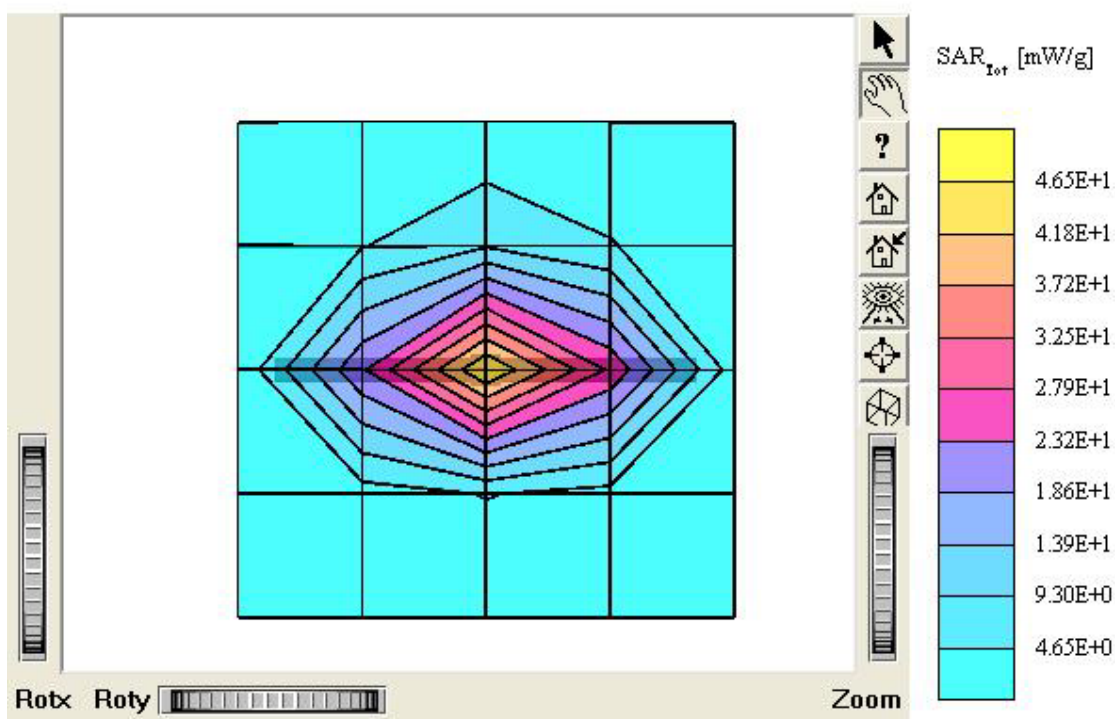
1900 MHz Brain Dipole Validation (D1900V2/ S.N: 5d032)

Antenna Input Power: 30 dBm (1 W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature : 21.5°C

Date Tested : September 8, 2004



Dipole 835 MHz

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

Probe: ET3DV6 - SN1607; ConvF(6.22,6.22,6.22); Crest factor: 1.0; Head 835 MHz: $\sigma = 0.90 \text{ mho/m}$ $\epsilon_r = 43.2$ $\rho = 1.00 \text{ g/cm}^3$

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

Comment:

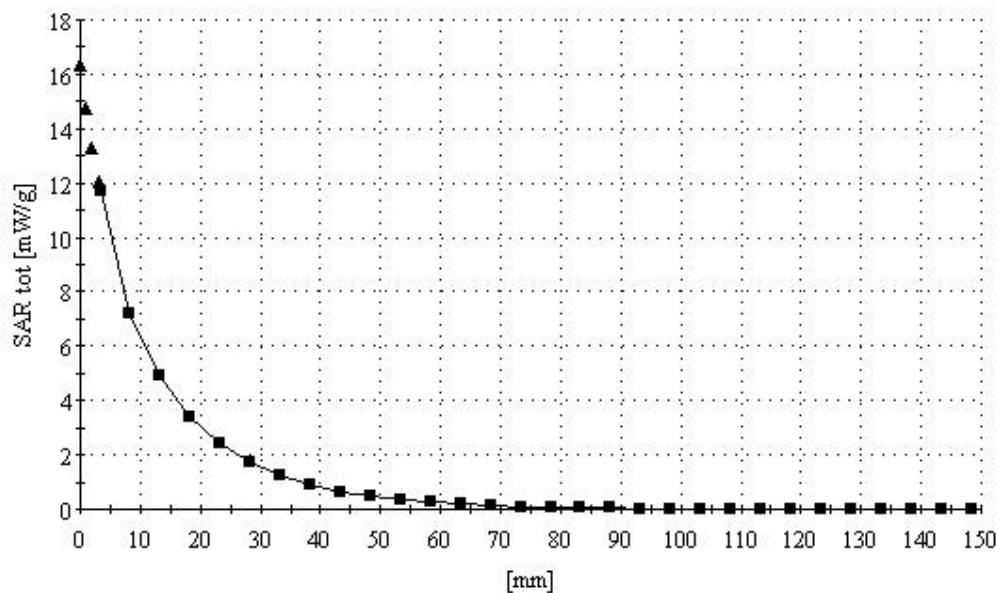
835MHz Brain Dipole Validation (D835V2/ S.N: 441)

Antenna Input Power: 30 dBm (1 W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature: 21.7°C

Date Tested : September 6, 2004



Dipole 835 MHz

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

Probe: ET3DV6 - SN1607; ConvF(6.22,6.22,6.22); Crest factor: 1.0; Head 835 MHz: $\sigma = 0.90 \text{ mho/m}$ $\epsilon_r = 43.2$ $\rho = 1.00 \text{ g/cm}^3$

:

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

Comment:

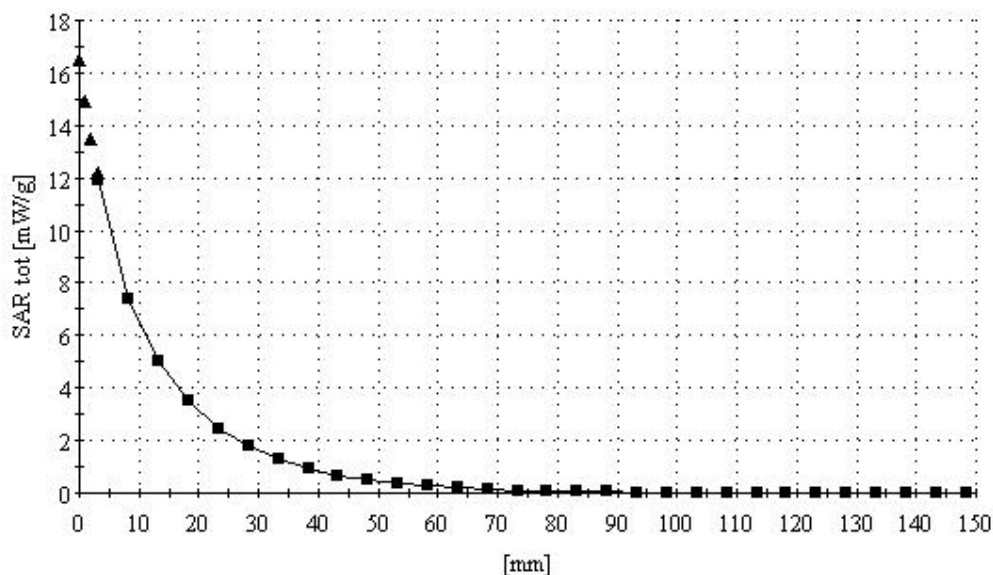
835MHz Brain Dipole Validation (D835V2/ S.N: 441)

Antenna Input Power: 30 dBm (1 W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature : 21.3°C

Date Tested : September 7, 2004



Dipole 1900 MHz

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

Probe: ET3DV6 - SN1798; ConvF(5.20,5.20,5.20); Crest factor: 1.0; Brain 1900 MHz: $\sigma = 1.39 \text{ mho/m}$ $\epsilon_r = 40.3$ $\rho = 1.00 \text{ g/cm}^3$

:

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

Comment:

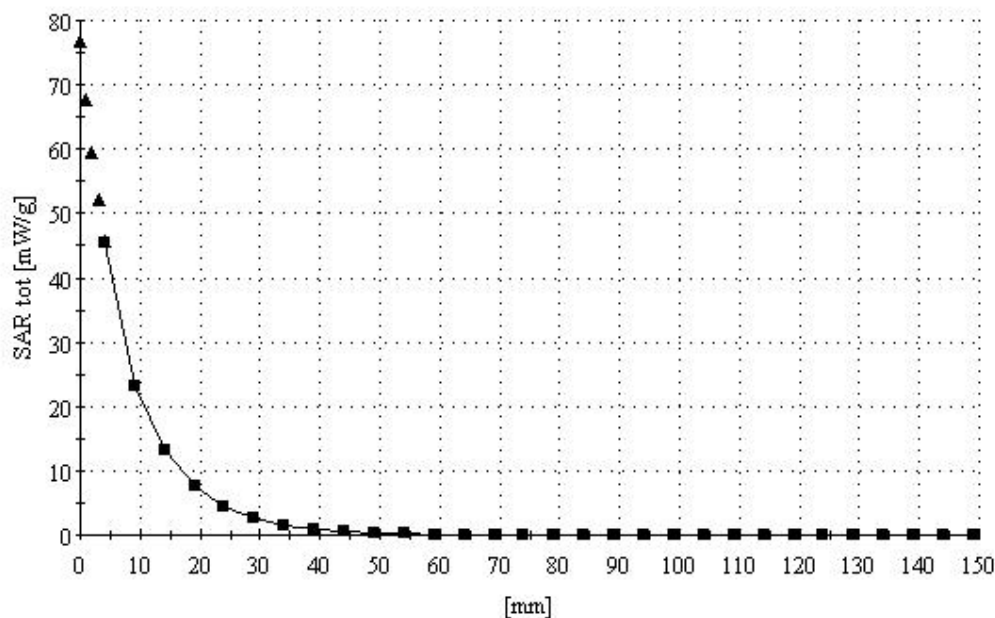
1900 MHz Brain Dipole Validation (D1900V2/ S.N: 5d032)

Antenna Input Power: 30 dBm (1 W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature : 21.5°C

Date Tested : September 8, 2004



■ Dielectric Parameter (835MHz Brain)

Title : TX-110C**SubTitle : AMPS Brain**

September 06, 2004 09:20 AM

Frequency	e'	e''
800.000000 MHz	43.8979	19.4665
805.000000 MHz	43.8447	19.3913
810.000000 MHz	43.6922	19.4211
815.000000 MHz	43.5774	19.3866
820.000000 MHz	43.4903	19.3877
825.000000 MHz	43.4237	19.3992
830.000000 MHz	43.3504	19.4021
835.000000 MHz	43.2218	19.3738
840.000000 MHz	43.1727	19.3966
845.000000 MHz	43.1133	19.3805
850.000000 MHz	43.0566	19.4055
855.000000 MHz	42.9981	19.4206
860.000000 MHz	43.0316	19.4290
865.000000 MHz	43.0162	19.4104
870.000000 MHz	43.0482	19.3776
875.000000 MHz	43.0339	19.4608
880.000000 MHz	42.9778	19.4036
885.000000 MHz	42.9718	19.3924
890.000000 MHz	42.9090	19.3584
895.000000 MHz	42.8790	19.3147
900.000000 MHz	42.8490	19.3013

■ Dielectric Parameter (835MHz Brain)

Title : TX-110C**SubTitle : CDMA Brain**

September 07, 2004 09:42 AM

Frequency	e'	e''
800.000000 MHz	43.7811	19.3245
805.000000 MHz	43.7369	19.2804
810.000000 MHz	43.6093	19.2823
815.000000 MHz	43.5161	19.2856
820.000000 MHz	43.4272	19.2987
825.000000 MHz	43.3454	19.3312
830.000000 MHz	43.2743	19.2862
835.000000 MHz	43.1630	19.3170
840.000000 MHz	43.1056	19.3111
845.000000 MHz	43.0549	19.3243
850.000000 MHz	43.0605	19.3835
855.000000 MHz	42.9620	19.3691
860.000000 MHz	42.9834	19.3711
865.000000 MHz	42.9775	19.3500
870.000000 MHz	42.9448	19.3065
875.000000 MHz	42.9504	19.3536
880.000000 MHz	42.9394	19.3443
885.000000 MHz	42.8931	19.3003
890.000000 MHz	42.8588	19.2934
895.000000 MHz	42.8142	19.2346
900.000000 MHz	42.7641	19.1882

■ Dielectric Parameter (1900MHz Brain)

Title : TX-110C**SubTitle : PCS Brain**

September 09, 2004 09:19 AM

Frequency	e'	e''
1.800000000 GHz	40.7688	12.9092
1.810000000 GHz	40.6978	12.9728
1.820000000 GHz	40.6745	13.0368
1.830000000 GHz	40.6048	13.0876
1.840000000 GHz	40.6018	13.1355
1.850000000 GHz	40.5897	13.1859
1.860000000 GHz	40.5825	13.1996
1.870000000 GHz	40.5660	13.2253
1.880000000 GHz	40.5104	13.2401
1.890000000 GHz	40.4476	13.2419
1.900000000 GHz	40.3366	13.2098
1.910000000 GHz	40.2599	13.2278
1.920000000 GHz	40.1719	13.2538
1.930000000 GHz	40.0693	13.2870
1.940000000 GHz	39.9940	13.3234
1.950000000 GHz	39.9487	13.4024
1.960000000 GHz	39.9392	13.4663
1.970000000 GHz	39.9244	13.5159
1.980000000 GHz	39.9355	13.5537
1.990000000 GHz	39.9413	13.6037
2.000000000 GHz	39.9378	13.6126

■ Dielectric Parameter (835MHz Muscle)**Title : TX-110C****SubTitle : AMPS Body**

September 06, 2004 05:14 PM

Frequency	e'	e''
800.000000 MHz	53.7326	22.1473
805.000000 MHz	53.4095	22.3688
810.000000 MHz	53.3694	22.2191
815.000000 MHz	53.0904	22.2223
820.000000 MHz	53.0088	22.1239
825.000000 MHz	53.0684	22.0438
830.000000 MHz	53.3091	22.0211
835.000000 MHz	53.3919	21.8100
840.000000 MHz	53.1326	22.0871
845.000000 MHz	53.2196	21.7658
850.000000 MHz	52.9349	22.1062
855.000000 MHz	52.7380	22.2281
860.000000 MHz	52.8412	22.0667
865.000000 MHz	52.9060	21.7475
870.000000 MHz	52.6698	21.8641
875.000000 MHz	52.7187	21.5490
880.000000 MHz	52.4359	21.8703
885.000000 MHz	52.4627	21.6932
890.000000 MHz	52.3019	21.7882
895.000000 MHz	52.4203	21.4785
900.000000 MHz	52.3141	21.5171

■ Dielectric Parameter (835MHz Muscle)

Title : TX-110C**SubTitle : CDMA Body**

September 07, 2004 05:17 PM

Frequency	e'	e''
800.000000 MHz	53.1470	22.7040
805.000000 MHz	53.5276	22.3162
810.000000 MHz	53.6352	22.1373
815.000000 MHz	53.3453	22.1781
820.000000 MHz	53.3384	22.0414
825.000000 MHz	53.4617	21.8483
830.000000 MHz	53.3382	22.1331
835.000000 MHz	53.6276	21.5147
840.000000 MHz	53.3542	22.0290
845.000000 MHz	53.3153	21.5777
850.000000 MHz	53.3296	21.5146
855.000000 MHz	52.8551	22.1311
860.000000 MHz	53.1040	21.8399
865.000000 MHz	53.1112	21.4884
870.000000 MHz	52.8290	21.7728
875.000000 MHz	52.8170	21.3844
880.000000 MHz	52.5590	21.8296
885.000000 MHz	52.2446	22.0291
890.000000 MHz	52.6297	21.4851
895.000000 MHz	52.5609	21.5719
900.000000 MHz	52.4108	21.4698

■ Dielectric Parameter (1900MHz Muscle)

Title : TX-110C**SubTitle : PCS Body**

September 08, 2004 05:16 PM

Frequency	e'	e''
1.800000000 GHz	52.0175	13.2792
1.806666667 GHz	51.9514	13.3081
1.813333333 GHz	49.9668	12.8405
1.820000000 GHz	51.7987	13.3784
1.826666667 GHz	51.8547	13.4443
1.833333333 GHz	51.2172	13.3412
1.840000000 GHz	51.5250	13.4755
1.846666667 GHz	51.8478	13.6281
1.853333333 GHz	51.7877	13.6928
1.860000000 GHz	51.7681	13.7290
1.866666667 GHz	51.7481	13.8083
1.873333333 GHz	51.7175	13.8579
1.880000000 GHz	51.6837	13.9069
1.886666667 GHz	51.6777	13.9457
1.893333333 GHz	51.5977	14.0042
1.900000000 GHz	51.5191	14.0191
1.906666667 GHz	51.5578	14.0929
1.913333333 GHz	51.5014	14.1347
1.920000000 GHz	51.4897	14.1933
1.926666667 GHz	51.4872	14.2296
1.933333333 GHz	51.4629	14.2643
1.940000000 GHz	51.4087	14.3157
1.946666667 GHz	51.3865	14.3701
1.953333333 GHz	51.2773	14.3979
1.960000000 GHz	51.1527	14.4192