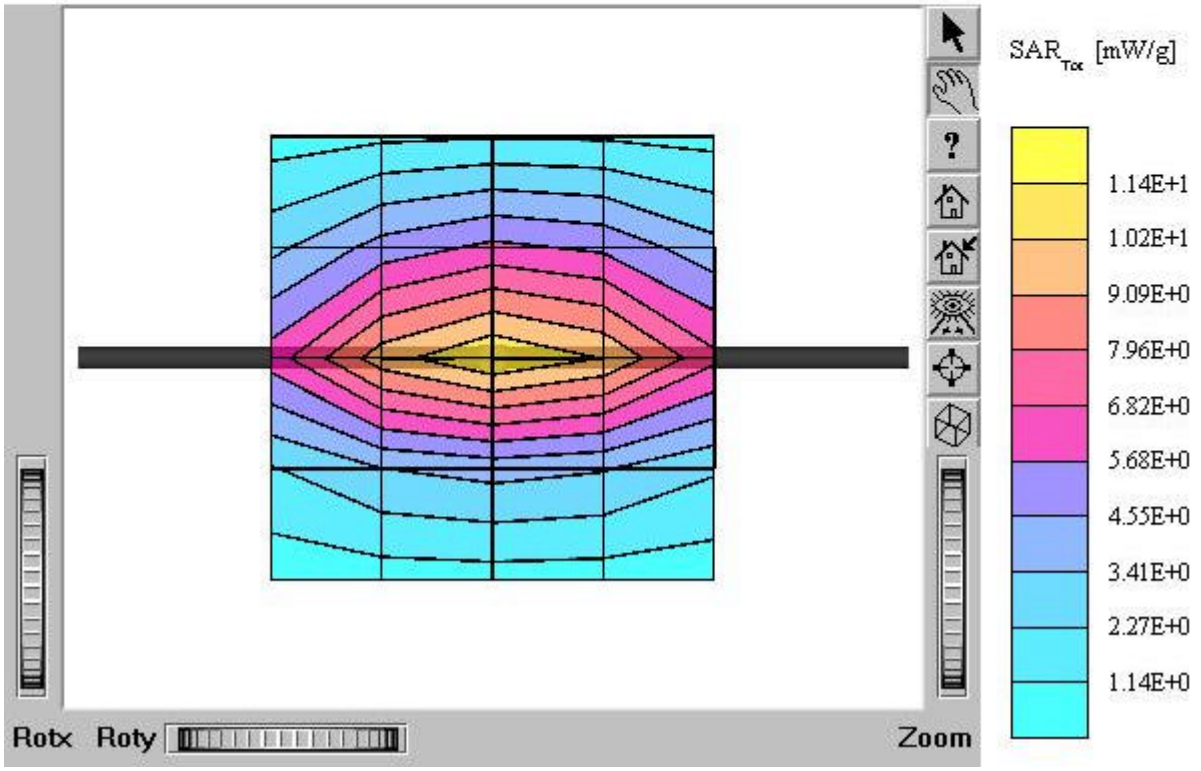
ATTACHMENT Q – DIPOLE VALIDATION

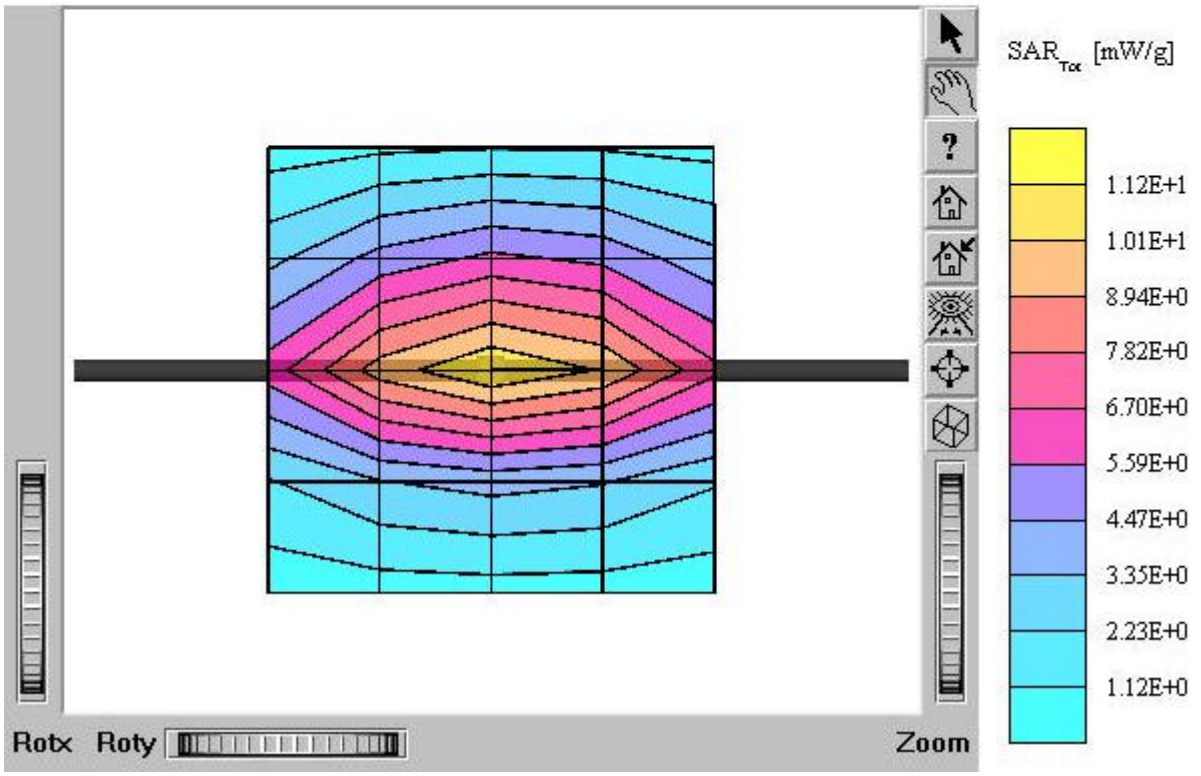
■ Validation Data (835MHz Brain)

Dipole 835 MHz
SAM I Phantom; Flat Section; Position: (90°,90°); Frequency: 835 MHz
Probe: ET3DV6 - SN1608; ConvF(6.50,6.50,6.50); Crest factor: 1.0; Brain 835 MHz: σ = 0.88 mho/m ε_r = 41.4 ρ = 1.00 g/cm^3
Cubes (2): SAR (1g): 10.3 mW/g ± 0.01 dB, SAR (10g): 6.53 mW/g ± 0.00 dB
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0
Powerdrift: 0.05 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 ℃
Date Tested : July 14, 2003



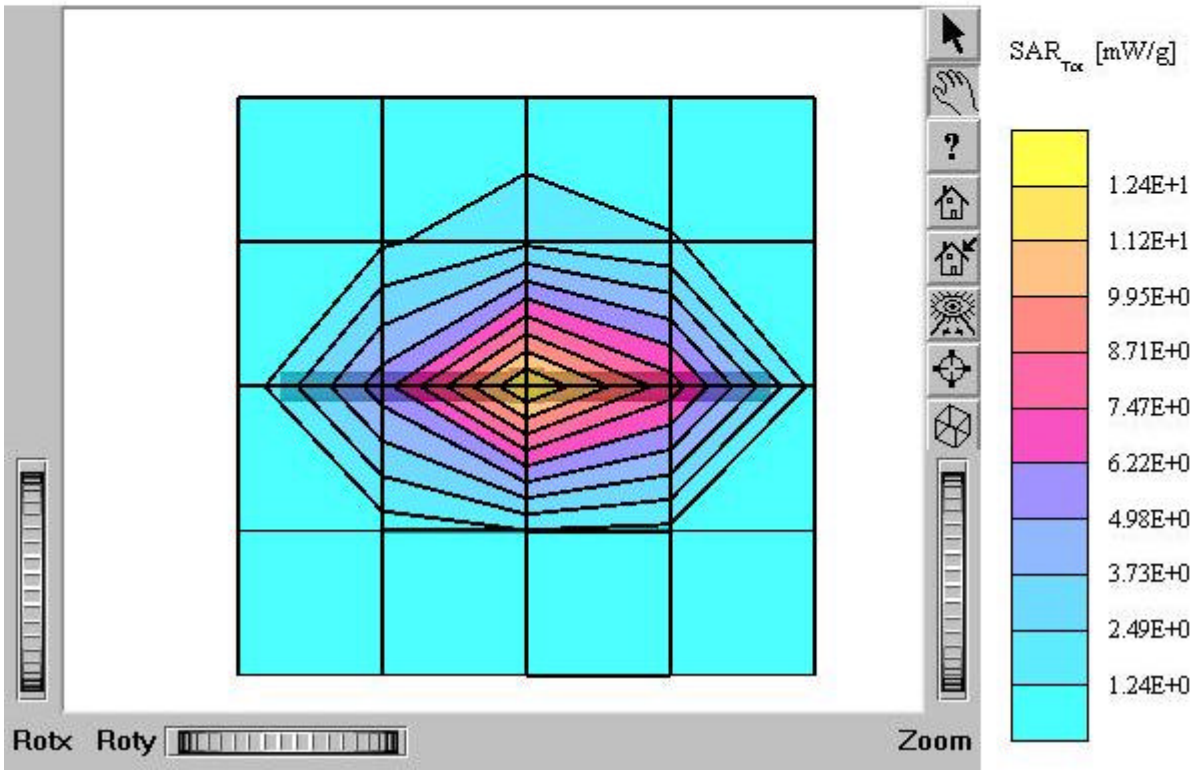
■ Validation Data (835MHz Brain)

Dipole 835 MHz
SAM I Phantom; Flat Section; Position: (90°,90°); Frequency: 835 MHz
Probe: ET3DV6 - SN1608; ConvF(6.50,6.50,6.50); Crest factor: 1.0; Brain 835 MHz: σ = 0.88 mho/m ε_r = 41.4 ρ = 1.00 g/cm^3
Cubes (2): SAR (1g): 10.0 mW/g ± 0.01 dB, SAR (10g): 6.38 mW/g ± 0.01 dB
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0
Powerdrift: 0.01 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 ℃
Date Tested : July 14, 2003



■ Validation Data (1900MHz Brain)

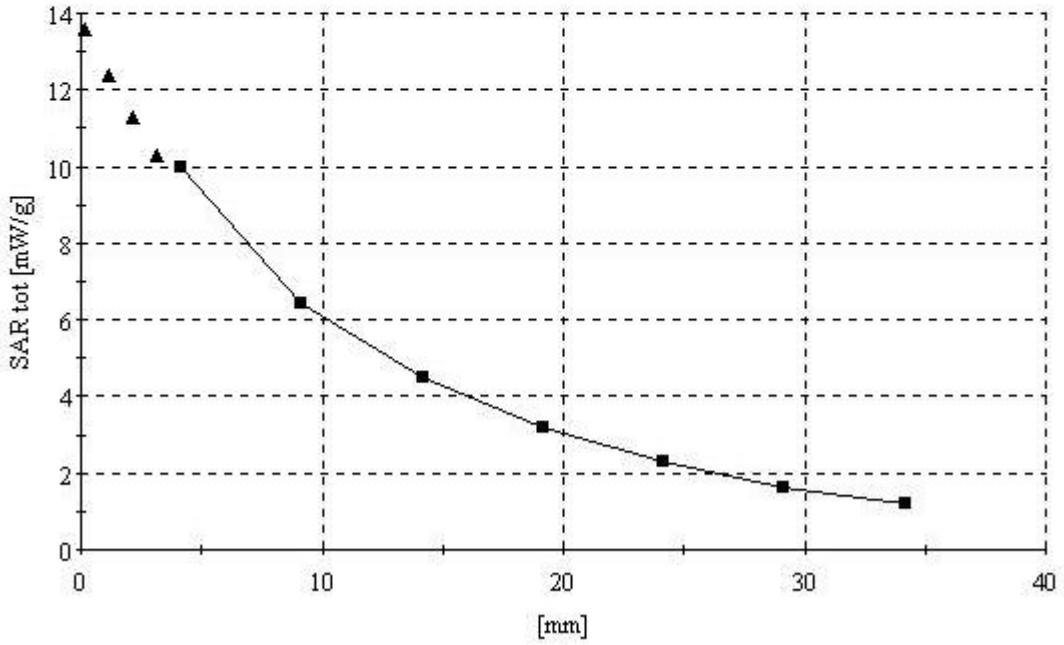
Dipole 1900 MHz
SAM II Phantom; Flat Section; Position: (90°,90°); Frequency: 1900 MHz
Probe: ET3DV6 - SN1608; ConvF(5.20,5.20,5.20); Crest factor: 1.0; Brain 1900 MHz: σ = 1.44 mho/m ε_r = 39.3 ρ = 1.00 g/cm^3
Cubes (2): SAR (1g): 10.1 mW/g ± 0.02 dB, SAR (10g): 5.07 mW/g ± 0.02 dB
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0
Powerdrift: 0.21 dB
Comment:
1900 MHz Brain Dipole Validation (D1900V2/ S.N: 5d032)
Antenna Input Power: 24 dBm (0.25 W)
HCT Co., Ltd. Brain Tissue Simulating Liquid
Liquid Temperature: 21.2 ℃
Date Tested : July 14, 2003



Dipole 835 MHz

SAM I Phantom; Flat Section; Position: (90°,90°); Frequency: 835 MHz
Probe: ET3DV6 - SN1608; ConvF(6.50,6.50,6.50); Crest factor: 1.0; Brain 835 MHz: σ = 0.88 mho/m ε_r = 41.4 ρ = 1.00 g/cm^3
Cubes (2): SAR (1g): 10.3 mW/g ± 0.01 dB, SAR (10g): 6.53 mW/g ± 0.00 dB
Cube 5x5x7: Dx = 8.0, Dy = 8.0, Dz = 5.0

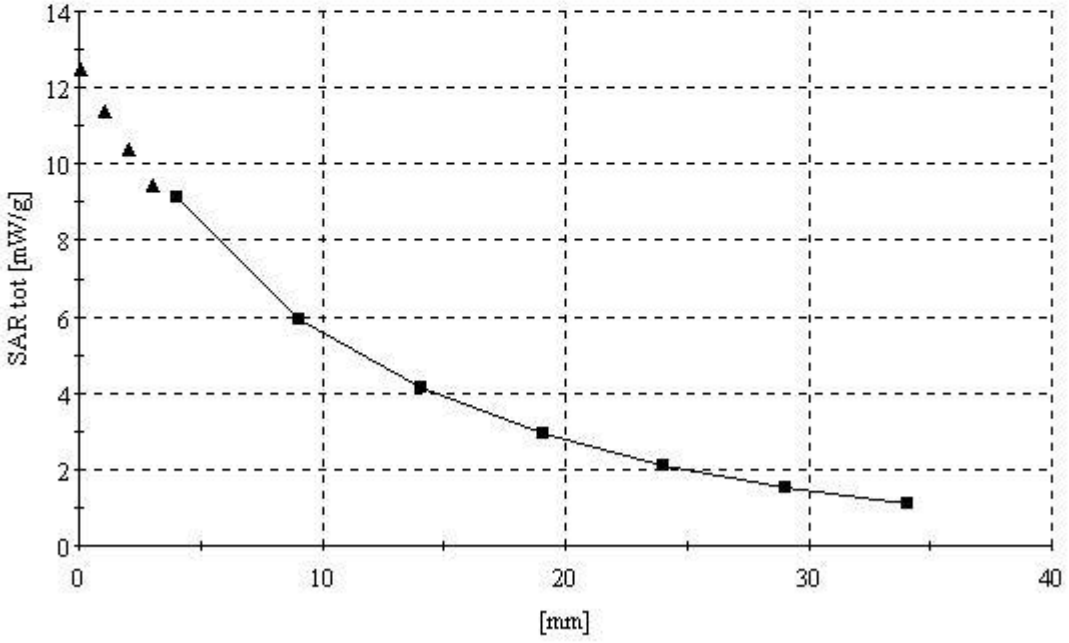
Comment:
835MHz Brain Dipole Validation (D835V2/ S.N: 441)
Antenna Input Power: 30 dBm (1 W)
HCT Co., Ltd. Brain Tissue Simulating Liquid
Liquid Temperature: 21.4 ℃
Date Tested : July 14, 2003



Dipole 835 MHz

SAM I Phantom; Flat Section; Position: (90°,90°); Frequency: 835 MHz
Probe: ET3DV6 - SN1608; ConvF(6.50,6.50,6.50); Crest factor: 1.0; Brain 835 MHz: σ = 0.88 mho/m ε_r = 41.4 ρ = 1.00 g/cm^3
Cubes (2): SAR (1g): 10.0 mW/g ± 0.01 dB, SAR (10g): 6.38 mW/g ± 0.01 dB
Cube 5x5x7: Dx = 8.0, Dy = 8.0, Dz = 5.0

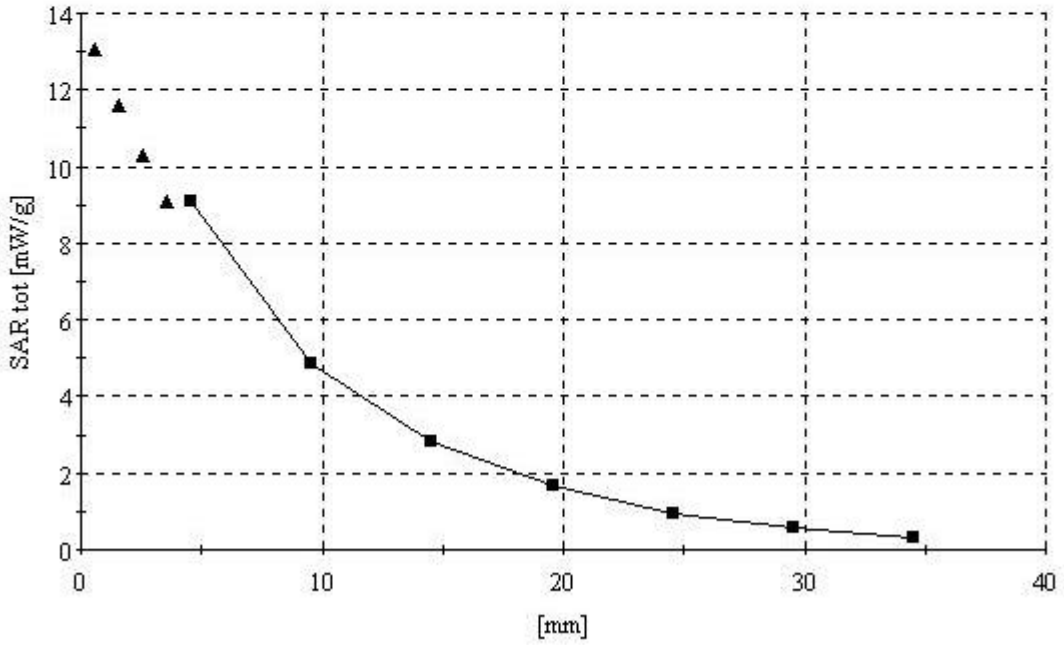
Comment:
835MHz Brain Dipole Validation (D835V2/ S.N: 441)
Antenna Input Power: 30 dBm (1 W)
HCT Co., Ltd. Brain Tissue Simulating Liquid
Liquid Temperature: 21.5 ℃
Date Tested : July 14, 2003



Dipole 1900 MHz

SAM II Phantom; Flat Section; Position: (90°,90°); Frequency: 1900 MHz
Probe: ET3DV6 - SN1608; ConvF(5.20,5.20,5.20); Crest factor: 1.0; Brain 1900 MHz: σ = 1.44 mho/m ε_r = 39.3 ρ = 1.00 g/cm^3
Cubes (2): SAR (1g): 10.1 mW/g ± 0.02 dB, SAR (10g): 5.07 mW/g ± 0.02 dB
Cube 5x5x7: Dx = 8.0, Dy = 8.0, Dz = 5.0

Comment:
1900 MHz Brain Dipole Validation (D1900V2/ S.N: 5d032)
Antenna Input Power: 24 dBm (0.25 W)
HCT Co., Ltd. Brain Tissue Simulating Liquid
Liquid Temperature: 21.2 ℃
Date Tested : July 14, 2003



■ Dielectric Parameter (835MHz Brain)

Title : TX-120C

SubTitle 835 MHz Brain

July 14, 2003 09:10 AM

Frequency	e'	e''
800.000000 MHz	41.9506	19.1333
805.000000 MHz	41.8789	19.1139
810.000000 MHz	41.7929	19.0772
815.000000 MHz	41.6810	19.0590
820.000000 MHz	41.6090	19.0836
825.000000 MHz	41.5013	19.0704
830.000000 MHz	41.4446	19.0646
835.000000 MHz	41.3967	19.0303
840.000000 MHz	41.2815	19.0885
845.000000 MHz	41.2534	19.0804
850.000000 MHz	41.2341	19.1010
855.000000 MHz	41.1310	19.1142
860.000000 MHz	41.1269	19.1097
865.000000 MHz	41.0746	19.0781
870.000000 MHz	41.0501	19.0694
875.000000 MHz	40.9421	19.0849
880.000000 MHz	40.9090	19.0235
885.000000 MHz	40.8621	19.0169
890.000000 MHz	40.7945	19.0215
895.000000 MHz	40.7364	18.9540
900.000000 MHz	40.6626	18.9314

■ Dielectric Parameter (835MHz Brain)

Title : TX-120C
SubTitle : 835 MHZ Brain
July 15, 2003 08:56 AM

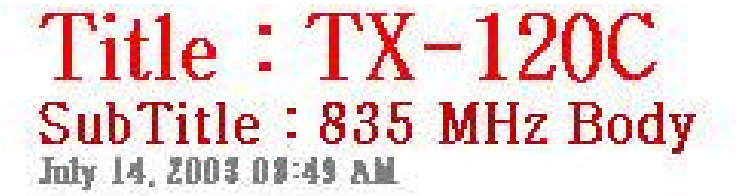
Frequency	e'	e''
800.000000 MHz	41.9396	19.0928
805.000000 MHz	41.8844	19.1340
810.000000 MHz	41.7811	19.1127
815.000000 MHz	41.6827	19.0264
820.000000 MHz	41.6293	19.0993
825.000000 MHz	41.5609	19.0751
830.000000 MHz	41.5088	19.0679
835.000000 MHz	41.4189	19.0346
840.000000 MHz	41.3838	19.0807
845.000000 MHz	41.2919	19.0696
850.000000 MHz	41.2478	19.0764
855.000000 MHz	41.1610	19.0748
860.000000 MHz	41.1377	19.0758
865.000000 MHz	41.1178	19.0861
870.000000 MHz	41.0622	19.0761
875.000000 MHz	41.0116	19.1154
880.000000 MHz	40.9263	19.0487
885.000000 MHz	40.8583	19.0381
890.000000 MHz	40.8274	19.0318
895.000000 MHz	40.7574	18.9577
900.000000 MHz	40.6615	18.9613

■ Dielectric Parameter (1900MHz Brain)

Title : TX-120C
SubTitle : 1900 MHz Brain
July 16, 2003 08:40 AM

Frequency	e'	e''
1.700000000 GHz	40.1067	13.0978
1.710000000 GHz	40.1334	13.1567
1.720000000 GHz	40.2099	13.2293
1.730000000 GHz	40.2859	13.2512
1.740000000 GHz	40.2980	13.2634
1.750000000 GHz	40.2611	13.2487
1.760000000 GHz	40.1601	13.1925
1.770000000 GHz	40.0058	13.1940
1.780000000 GHz	39.8547	13.2130
1.790000000 GHz	39.7349	13.2202
1.800000000 GHz	39.6115	13.2789
1.810000000 GHz	39.5758	13.3790
1.820000000 GHz	39.5977	13.4467
1.830000000 GHz	39.6364	13.5489
1.840000000 GHz	39.7092	13.6110
1.850000000 GHz	39.7592	13.6441
1.860000000 GHz	39.7881	13.6323
1.870000000 GHz	39.7117	13.6385
1.880000000 GHz	39.6139	13.6467
1.890000000 GHz	39.4687	13.6109
1.900000000 GHz	39.3243	13.6117
1.910000000 GHz	39.1878	13.6410
1.920000000 GHz	39.0843	13.6915
1.930000000 GHz	39.0371	13.7537
1.940000000 GHz	39.0470	13.8383
1.950000000 GHz	39.0785	13.9085
1.960000000 GHz	39.1526	13.9740
1.970000000 GHz	39.2163	14.0218
1.980000000 GHz	39.2247	14.0465
1.990000000 GHz	39.1775	14.0080
2.000000000 GHz	39.0567	13.9986

■ Dielectric Parameter (835MHz Muscle)



Frequency	e'	e''
800.000000 MHz	54.5889	20.9799
805.000000 MHz	54.4942	20.9653
810.000000 MHz	54.4618	20.9627
815.000000 MHz	54.3159	20.9224
820.000000 MHz	54.2536	20.8920
825.000000 MHz	54.1763	20.8785
830.000000 MHz	54.0622	20.8513
835.000000 MHz	54.0442	20.8115
840.000000 MHz	53.9750	20.7798
845.000000 MHz	53.9116	20.7902
850.000000 MHz	53.9234	20.7944
855.000000 MHz	53.8514	20.7754
860.000000 MHz	53.8148	20.7327
865.000000 MHz	53.8203	20.7711
870.000000 MHz	53.7967	20.7023
875.000000 MHz	53.7681	20.7583
880.000000 MHz	53.7206	20.7203
885.000000 MHz	53.6790	20.7227
890.000000 MHz	53.7269	20.6956
895.000000 MHz	53.6463	20.6607
900.000000 MHz	53.5954	20.6460

■ Dielectric Parameter (835MHz Muscle)

Title : TX-120C

SubTitle : 835 MHz Body

July 15, 2003 08:39 AM

Frequency	e'	e''
800.000000 MHz	54.5867	20.6850
805.000000 MHz	54.4880	20.6620
810.000000 MHz	54.4180	20.6517
815.000000 MHz	54.3457	20.6314
820.000000 MHz	54.2282	20.6055
825.000000 MHz	54.1328	20.6056
830.000000 MHz	54.0611	20.5753
835.000000 MHz	53.9941	20.5547
840.000000 MHz	53.9598	20.5006
845.000000 MHz	53.9355	20.5305
850.000000 MHz	53.9144	20.5370
855.000000 MHz	53.8918	20.4790
860.000000 MHz	53.8440	20.4956
865.000000 MHz	53.8325	20.5197
870.000000 MHz	53.7547	20.4513
875.000000 MHz	53.8011	20.4690
880.000000 MHz	53.7487	20.4764
885.000000 MHz	53.6924	20.4431
890.000000 MHz	53.6930	20.4459
895.000000 MHz	53.6267	20.3962
900.000000 MHz	53.6062	20.3811

■ Dielectric Parameter (1900MHz Muscle)

Title : TX-120C
SubTitle : 835 MHz Body
July 16, 2003 08:51 AM

Frequency	e'	e''
1.700000000 GHz	53.1236	14.1678
1.710000000 GHz	53.0849	14.2189
1.720000000 GHz	53.0859	14.2303
1.730000000 GHz	53.0437	14.2404
1.740000000 GHz	52.9926	14.2728
1.750000000 GHz	52.9462	14.2687
1.760000000 GHz	52.9244	14.3138
1.770000000 GHz	52.9056	14.3382
1.780000000 GHz	52.8589	14.3789
1.790000000 GHz	52.8214	14.4194
1.800000000 GHz	52.7880	14.4749
1.810000000 GHz	52.7620	14.5024
1.820000000 GHz	52.7461	14.5394
1.830000000 GHz	52.6851	14.5722
1.840000000 GHz	52.6564	14.6064
1.850000000 GHz	52.6376	14.6247
1.860000000 GHz	52.6320	14.6642
1.870000000 GHz	52.5635	14.7162
1.880000000 GHz	52.5166	14.7494
1.890000000 GHz	52.4785	14.7860
1.900000000 GHz	52.4332	14.8006
1.910000000 GHz	52.4393	14.8377
1.920000000 GHz	52.3991	14.8737
1.930000000 GHz	52.3157	14.8919
1.940000000 GHz	52.3010	14.9160
1.950000000 GHz	52.2798	14.9429
1.960000000 GHz	52.2272	14.9921
1.970000000 GHz	52.2320	15.0349
1.980000000 GHz	52.1674	15.0711
1.990000000 GHz	52.1711	15.0972
2.000000000 GHz	52.1160	15.1544