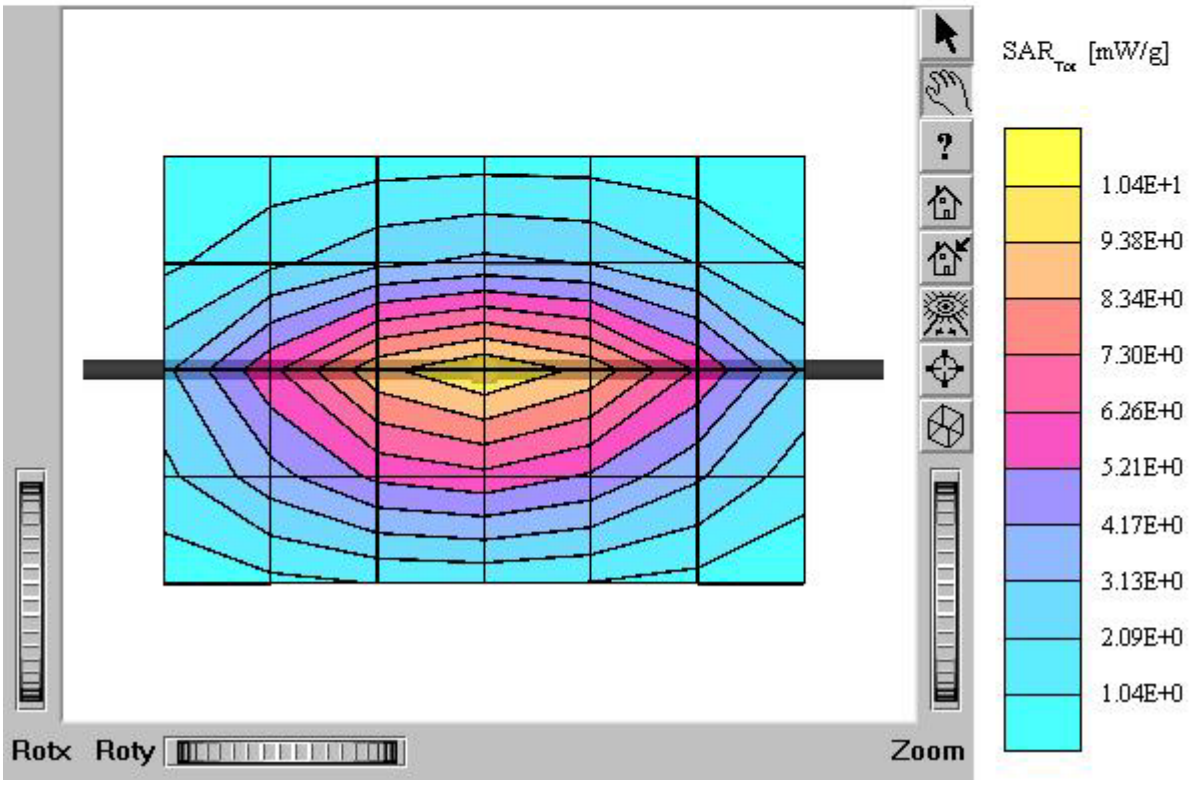
ATTACHMENT Q – DIPOLE VALIDATION

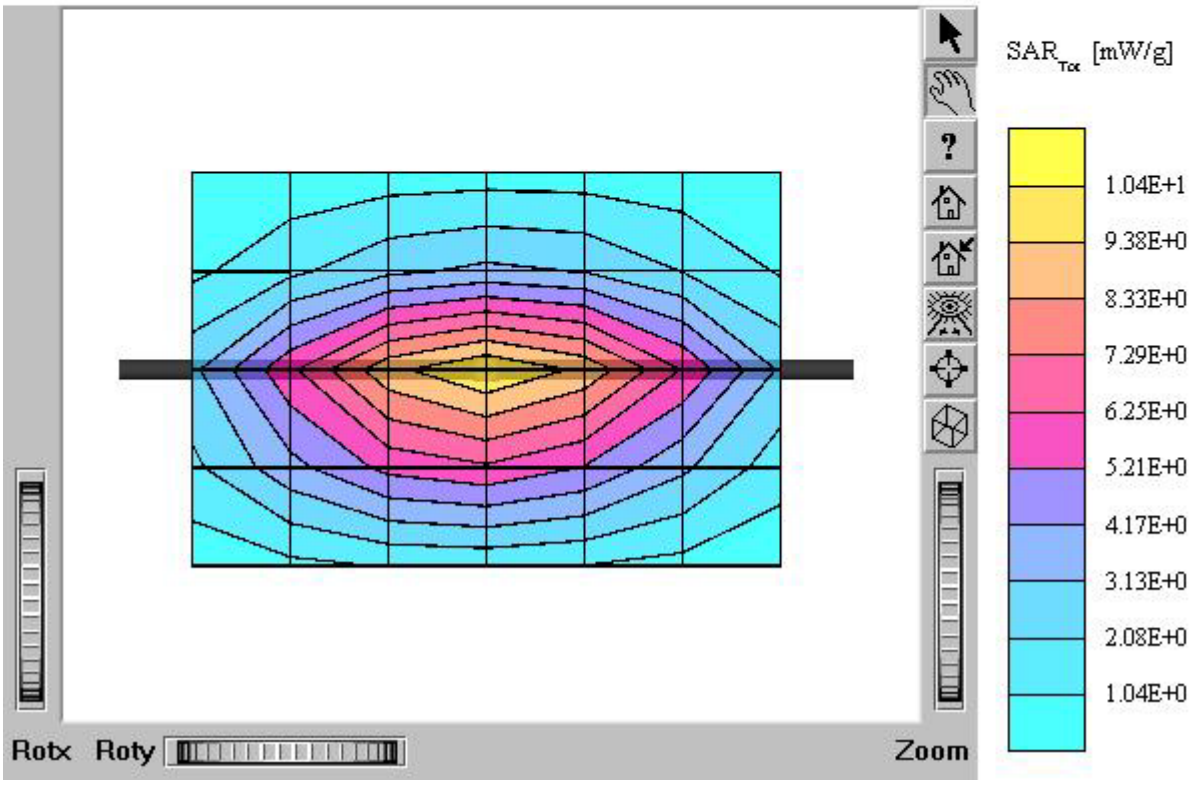
■ Validation Data (835MHz Brain)

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: s = 0.88 mho/m e_r = 42.3 r = 1.00 g/cm³
Cubes (2): SAR (1g): 9.89 mW/g ± 0.04 dB, SAR (10g): 6.30 mW/g ± 0.04 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: 21.6℃
Date Tested : December 14, 2004



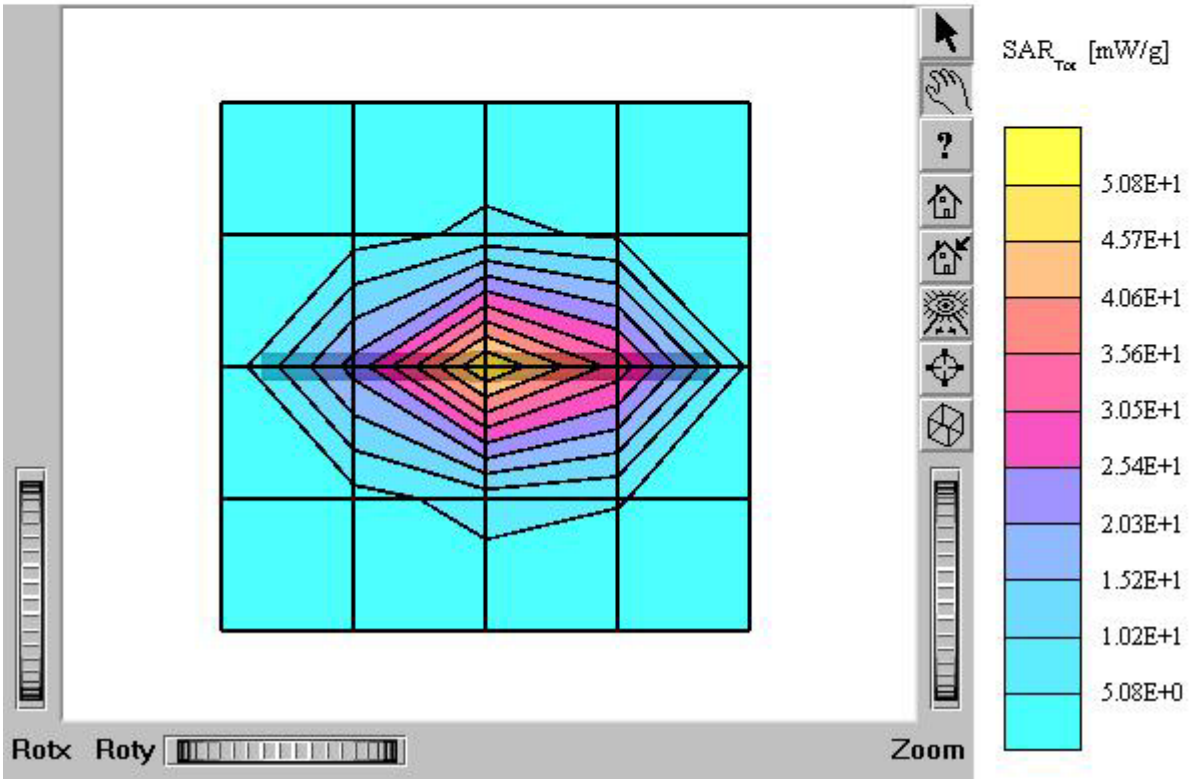
■ Validation Data (835MHz Brain)

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: s = 0.88 mho/m e_r = 41.8 r = 1.00 g/cm³
Cubes (2): SAR (1g): 9.98 mW/g ± 0.04 dB, SAR (10g): 6.36 mW/g ± 0.04 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 : 21.7℃
Date Tested : December 15, 2004



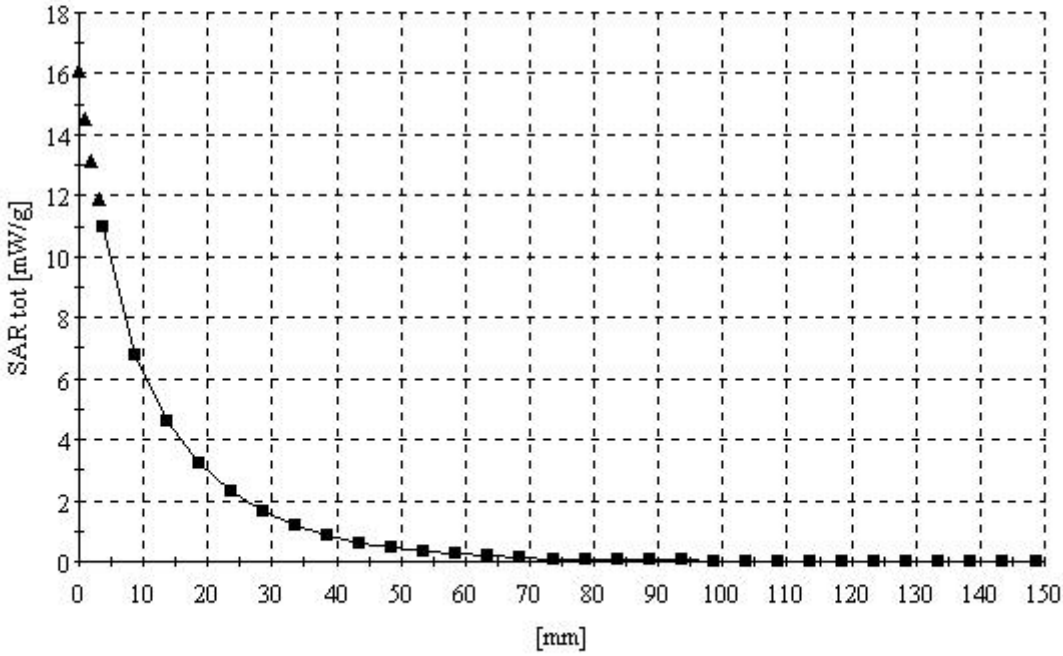
■ Validation Data (1900MHz Brain)

Dipole 1900 MHz
SAM II Phantom; Flat Section; Position: (90°,90°); Frequency: 1900 MHz
Probe: ET3DV6 - SN1609; ConvF(5.34,5.34,5.34); Crest factor: 1.0; Brain 1900 MHz: s = 1.39 mho/m e_r = 40.5 r = 1.00 g/cm³
Cubes (2): SAR (1g): 42.0 mW/g ± 0.01 dB, SAR (10g): 21.1 mW/g ± 0.01 dB
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0
Powerdrift: 0.00 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 : 21.8℃
Date Tested : December 16, 2004



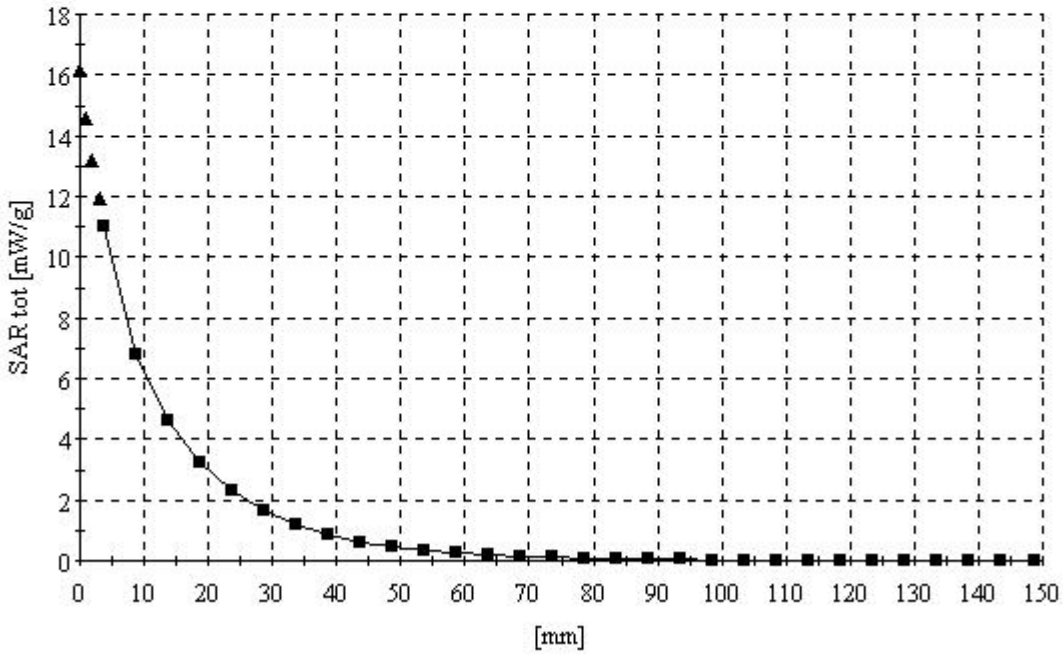
Dipole 835 MHz
SAM II Phantom; Section; Position: ; Frequency: 835 MHz
Probe: ET3DV6 - SN1607; ConvF(6.22,6.22,6.22); Crest factor: 1.0; Head 835 MHz: s = 0.88 mho/m e_r = 42.3 r = 1.00 g/cm³
:
Z-Axis: Dx = 0.0, Dy = 0.0, Dz = 5.0

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: 21.6℃
Date Tested : December 14, 2004



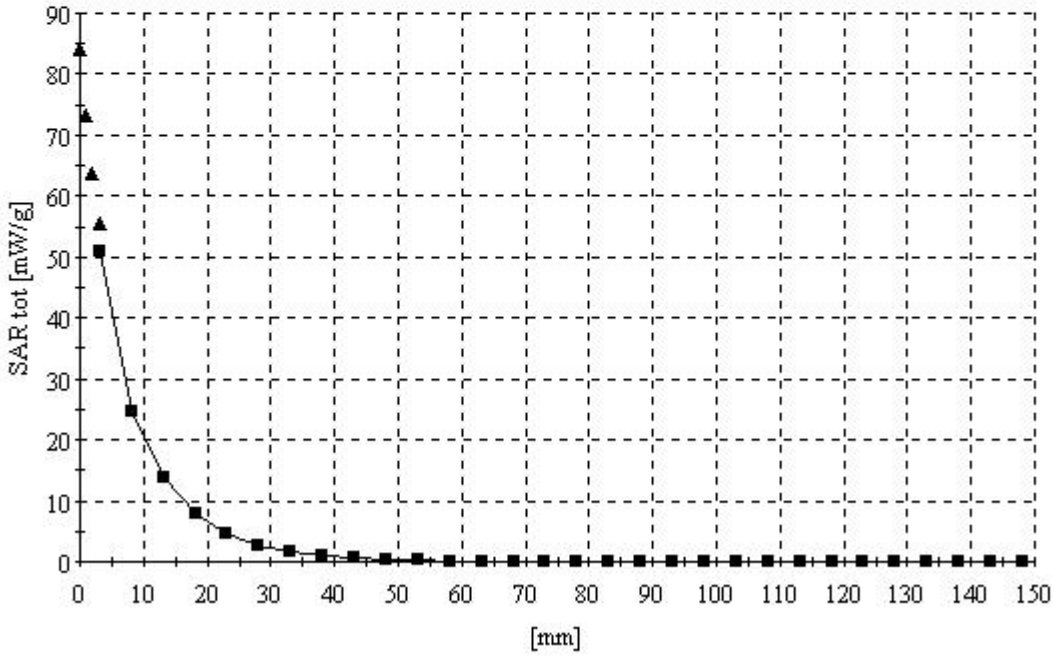
Dipole 835 MHz
SAM II Phantom; Section; Position: ; Frequency: 835 MHz
Probe: ET3DV6 - SN1607; ConvF(6.22,6.22,6.22); Crest factor: 1.0; Head 835 MHz: s = 0.88 mho/m e_r = 41.8 r = 1.00 g/cm³
:
Z-Axis: Dx = 0.0, Dy = 0.0, Dz = 5.0

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℃
Date Tested : December 15, 2004



Dipole 1900 MHz
SAM II Phantom; Section; Position: ; Frequency: 1900 MHz
Probe: ET3DV6 - SN1609; ConvF(5.34,5.34,5.34); Crest factor: 1.0; Brain 1900 MHz: s = 1.39 mho/m e, = 40.5 r = 1.00 g/cm³
:
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 : 21.8℃
Date Tested : December 16, 2004



■ Dielectric Parameter (835MHz Brain)

Title : TX-110C
SubTitle : AMPS BRAIN
December 14, 2004 09:07 AM

Frequency	e'	e''
800.000000 MHz	42.8854	18.9316
805.000000 MHz	42.8112	18.9222
810.000000 MHz	42.7070	18.8784
815.000000 MHz	42.6011	18.9003
820.000000 MHz	42.5551	18.9587
825.000000 MHz	42.4535	18.9475
830.000000 MHz	42.3679	19.0061
835.000000 MHz	42.3219	19.0321
840.000000 MHz	42.2202	19.0426
845.000000 MHz	42.2342	19.1242
850.000000 MHz	42.1444	19.1311
855.000000 MHz	42.0574	19.1787
860.000000 MHz	41.9730	19.1947
865.000000 MHz	41.9958	19.1179
870.000000 MHz	41.9161	19.1431
875.000000 MHz	41.8665	19.1289
880.000000 MHz	41.8319	19.0601
885.000000 MHz	41.7304	19.0521
890.000000 MHz	41.6770	19.0002
895.000000 MHz	41.6362	18.9052
900.000000 MHz	41.5833	18.8347

■ Dielectric Parameter (835MHz Brain)

Title : TX-110C
SubTitle : CDMA BRAIN
December 15, 2004 08:55 AM

Frequency	e'	e''
800.000000 MHz	42.3831	18.8851
805.000000 MHz	42.2932	18.8491
810.000000 MHz	42.2129	18.8435
815.000000 MHz	42.1664	18.8394
820.000000 MHz	42.0735	18.8378
825.000000 MHz	41.9940	18.8221
830.000000 MHz	41.9218	18.8470
835.000000 MHz	41.8237	18.8687
840.000000 MHz	41.7326	18.9094
845.000000 MHz	41.6923	18.9044
850.000000 MHz	41.6105	18.9320
855.000000 MHz	41.5993	18.9497
860.000000 MHz	41.5682	18.9319
865.000000 MHz	41.5472	18.9113
870.000000 MHz	41.5107	18.9055
875.000000 MHz	41.4350	18.9012
880.000000 MHz	41.4298	18.8765
885.000000 MHz	41.3255	18.8711
890.000000 MHz	41.2417	18.8800
895.000000 MHz	41.2021	18.8163
900.000000 MHz	41.1069	18.7304

■ Dielectric Parameter (1900MHz Brain)

Title : TX-110C
SubTitle : PCS BRAIN
December 16, 2004 09:09 AM

Frequency	e'	e''
1.800000000 GHz	39.6296	12.8378
1.806666667 GHz	39.6780	12.8781
1.813333333 GHz	39.6475	12.9663
1.820000000 GHz	39.6416	13.0241
1.826666667 GHz	39.5839	13.0896
1.833333333 GHz	39.5326	13.0909
1.840000000 GHz	39.6064	13.2254
1.846666667 GHz	39.7495	13.3341
1.853333333 GHz	39.7409	13.3865
1.860000000 GHz	39.7860	13.3988
1.866666667 GHz	39.7571	13.4455
1.873333333 GHz	39.7729	13.4337
1.880000000 GHz	39.7191	13.4392
1.886666667 GHz	39.6623	13.4110
1.893333333 GHz	39.5968	13.3917
1.900000000 GHz	39.4945	13.3607
1.906666667 GHz	39.2681	13.2735
1.913333333 GHz	38.9892	13.1801
1.920000000 GHz	39.0178	13.2446
1.926666667 GHz	39.0519	13.2849
1.933333333 GHz	38.9475	13.3143
1.940000000 GHz	38.8221	13.3368
1.946666667 GHz	38.7172	13.3671
1.953333333 GHz	38.8839	13.5233
1.960000000 GHz	38.9392	13.5960

■ Dielectric Parameter (835MHz Muscle)

Title : TX-110C
SubTitle : AMPS BODY
December 14, 2004 02:48 PM

Frequency	e'	e''
800.000000 MHz	56.5210	20.7382
805.000000 MHz	56.4558	20.7073
810.000000 MHz	56.3906	20.6429
815.000000 MHz	56.3289	20.7358
820.000000 MHz	56.2366	20.6823
825.000000 MHz	56.1567	20.6583
830.000000 MHz	55.9421	20.6860
835.000000 MHz	55.8523	20.6559
840.000000 MHz	55.7506	20.6200
845.000000 MHz	55.6094	20.5342
850.000000 MHz	55.6374	20.5157
855.000000 MHz	55.5659	20.4919
860.000000 MHz	55.4560	20.5051
865.000000 MHz	55.5176	20.4839
870.000000 MHz	55.4473	20.4819
875.000000 MHz	55.3937	20.5056
880.000000 MHz	55.3763	20.5095
885.000000 MHz	55.2363	20.3765
890.000000 MHz	55.2471	20.3802
895.000000 MHz	55.1860	20.4389
900.000000 MHz	55.1245	20.5184

■ Dielectric Parameter (835MHz Muscle)

Title : TX-110C
SubTitle : CDMA BODY
December 16, 2004 02:17 PM

Frequency	e'	e''
800.000000 MHz	54.0546	20.6571
805.000000 MHz	53.9593	20.6686
810.000000 MHz	53.9185	20.6386
815.000000 MHz	53.8007	20.5468
820.000000 MHz	53.7613	20.4839
825.000000 MHz	53.6975	20.4747
830.000000 MHz	53.6181	20.4493
835.000000 MHz	53.4996	20.3728
840.000000 MHz	53.4412	20.3083
845.000000 MHz	53.3612	20.2416
850.000000 MHz	53.2677	20.2240
855.000000 MHz	53.1911	20.1899
860.000000 MHz	53.1873	20.2043
865.000000 MHz	53.1432	20.1373
870.000000 MHz	53.1011	20.1871
875.000000 MHz	53.0316	20.1886
880.000000 MHz	52.9556	20.1559
885.000000 MHz	52.9277	20.0950
890.000000 MHz	52.9255	20.1134
895.000000 MHz	52.8624	20.0664
900.000000 MHz	52.8097	20.1508

■ Dielectric Parameter (1900MHz Muscle)

Title : TX-110C
SubTitle : PCS BODY
December 16, 2004 02:38 PM

Frequency	e'	e''
1.700000000 GHz	52.1425	14.2565
1.710000000 GHz	52.0968	14.2784
1.720000000 GHz	52.0644	14.2827
1.730000000 GHz	52.0492	14.3242
1.740000000 GHz	51.9884	14.3336
1.750000000 GHz	51.9693	14.3386
1.760000000 GHz	51.9316	14.3805
1.770000000 GHz	51.9187	14.4238
1.780000000 GHz	51.9007	14.4496
1.790000000 GHz	51.8470	14.4908
1.800000000 GHz	51.8216	14.5374
1.810000000 GHz	51.8012	14.5620
1.820000000 GHz	51.7816	14.6148
1.830000000 GHz	51.7164	14.6453
1.840000000 GHz	51.6834	14.6775
1.850000000 GHz	51.6370	14.7001
1.860000000 GHz	51.6268	14.7419
1.870000000 GHz	51.5700	14.7812
1.880000000 GHz	51.5417	14.8427
1.890000000 GHz	51.4846	14.8403
1.900000000 GHz	51.4355	14.8493
1.910000000 GHz	51.4031	14.8832
1.920000000 GHz	51.3492	14.9509
1.930000000 GHz	51.2894	14.9459
1.940000000 GHz	51.2521	14.9641
1.950000000 GHz	51.2300	14.9974