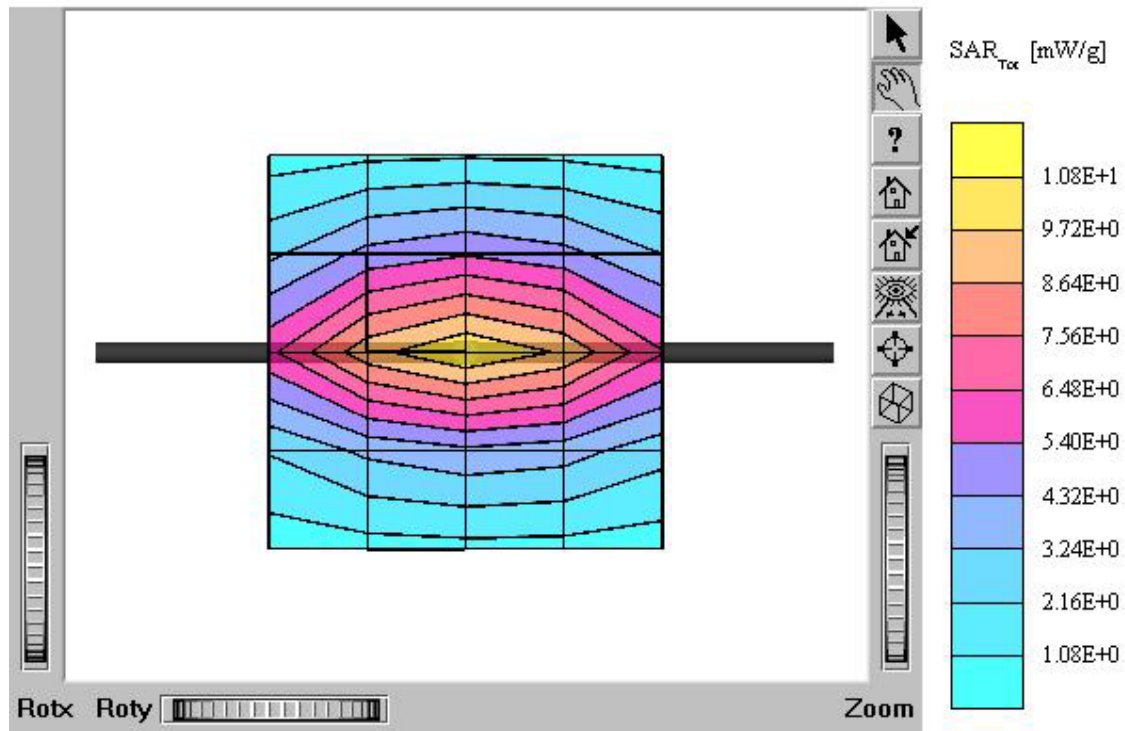


ATTACHMENT Q – DIPOLE VALIDATION

■ Validation Data (835MHz Brain)

Dipole 835 MHz

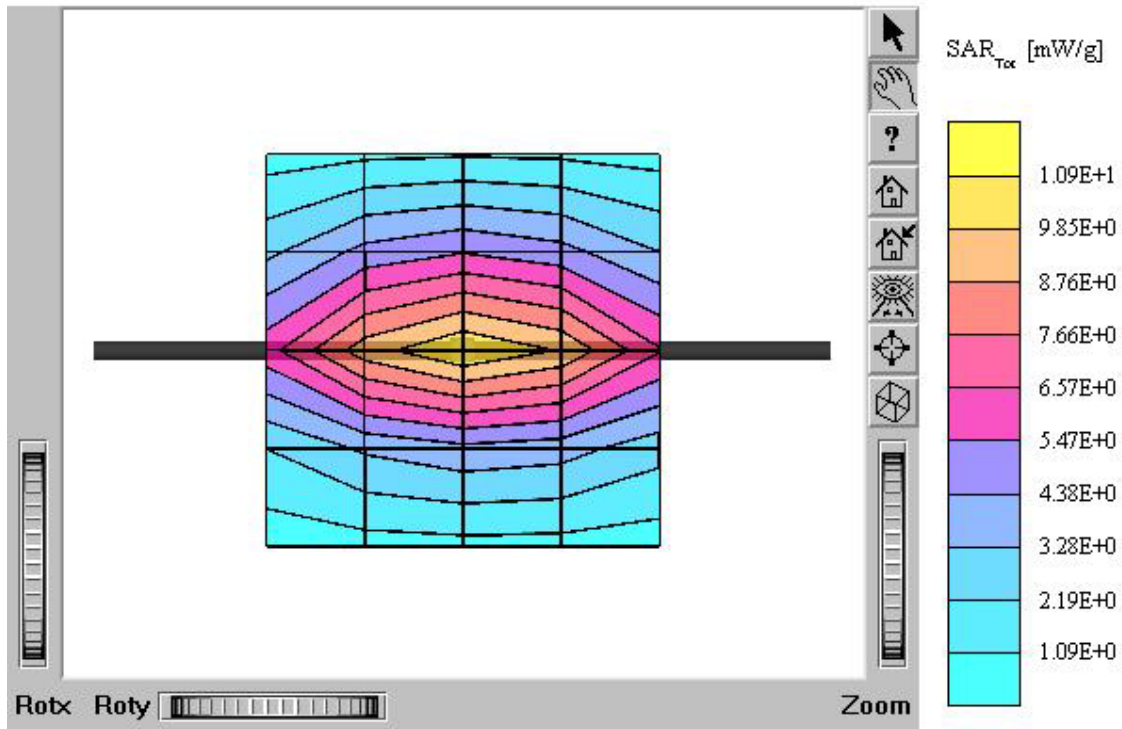
SAM: 1 Phantom; Flat Section; Position: (90°,90°); Frequency: 835 MHz
Probe: ET3DV6 - SN1609; ConvF(6.63,6.63,6.63); Crest factor: 1.0; Brain 835 MHz: $s = 0.87$
 $\rho_{ho}/m e_r = 41.0 r = 1.00 g/cm^3$
Cubes (2): SAR (1g): $10.3 mW/g \pm 0.04 dB$, SAR (10g): $6.59 mW/g \pm 0.04 dB$
Coarse: $D_x = 20.0, D_y = 20.0, D_z = 10.0$
Powerdrift: $-0.03 dB$
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 : February 23, 2005



■ Validation Data (835MHz Brain)

Dipole 835 MHz

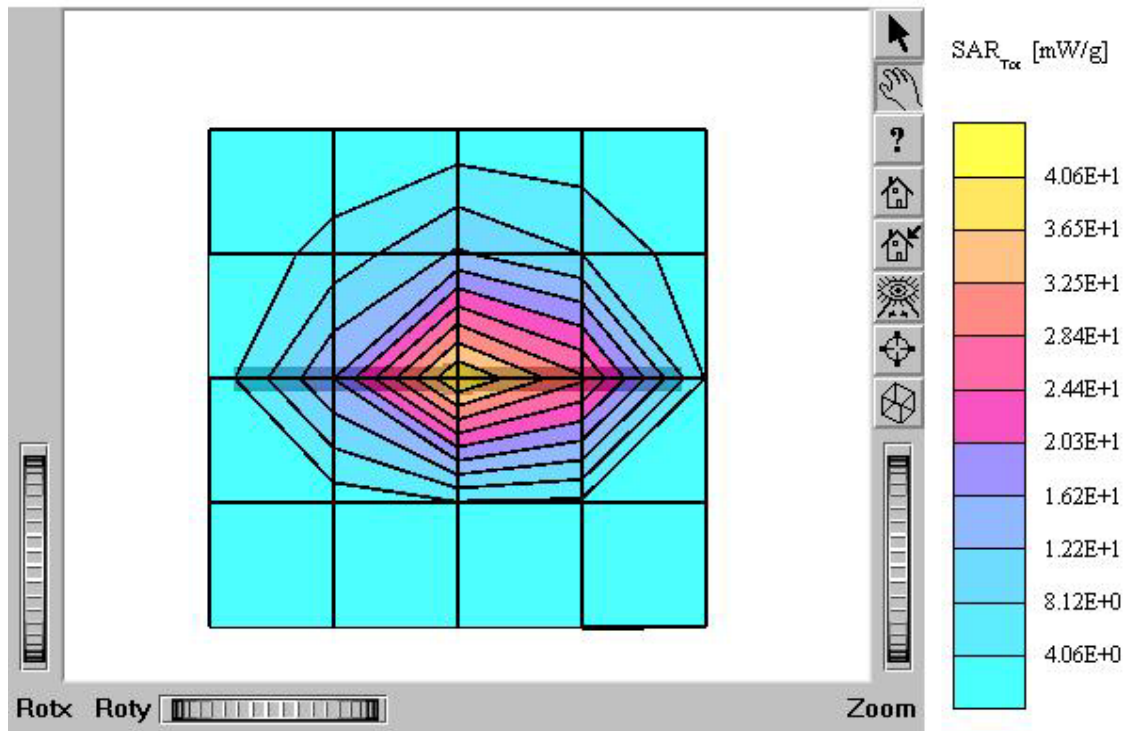
SAM 1 Phantom: Flat Section: Position: (90°,90°); Frequency: 835 MHz
Probe: ET3DV6 - SN1609; ConvF(6.63,6.63,6.63); Crest factor: 1.0; Brain 835 MHz: $s = 0.88$
 $\rho_{ho}/m e_r = 42.4 r = 1.00 g/cm^3$
Cubes (2): SAR (1g): $10.3 mW/g \pm 0.01 dB$, SAR (10g): $6.61 mW/g \pm 0.00 dB$
Coarse: $D_x = 20.0, D_y = 20.0, D_z = 10.0$
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°C
Date Tested : February 24, 2005



■ Validation Data (1900MHz Brain)

Dipole 1800 MHz

SAM II Phantom; Flat Section; Position: (90°,90°); Frequency: 1800 MHz
Probe: ET3DV6 - SN1609; ConvF(5.34,5.34,5.34); Crest factor: 1.0; Brain 1800 MHz: $s = 1.39$
 $\rho_{\text{ho/m}} e_r = 40.4$ $r = 1.00$ g/cm^3
Cubes (2): SAR (1g): $39.6 \text{ mW/g} \pm 0.03 \text{ dB}$, SAR (10g): $20.4 \text{ mW/g} \pm 0.03 \text{ dB}$
Coarse: $D_x = 20.0$, $D_y = 20.0$, $D_z = 10.0$
Powerdrift: -0.07 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°C
Date Tested : February 25, 2005

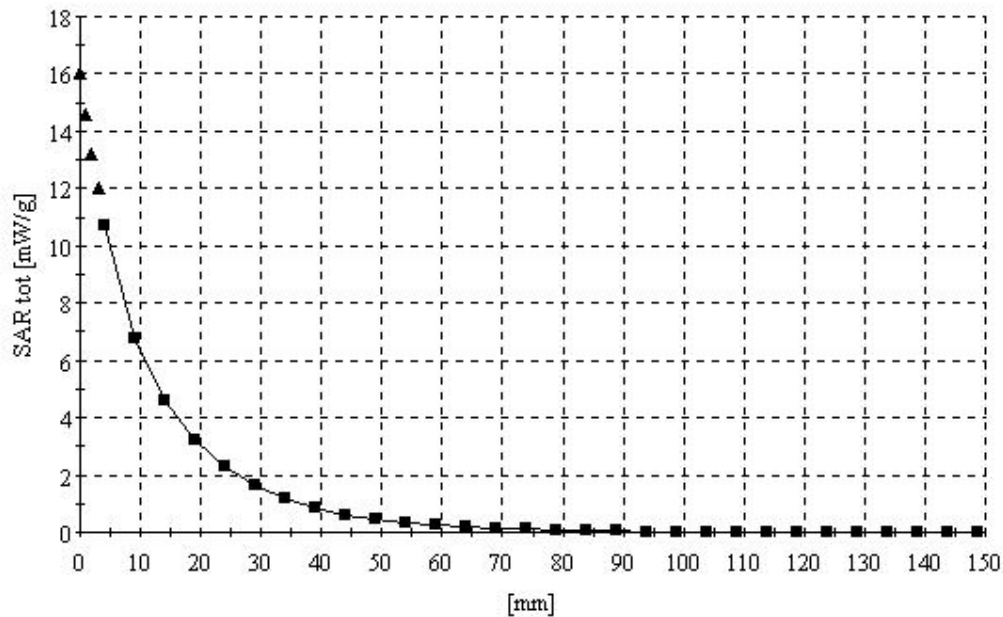


Dipole 835 MHz

SAM 1 Phantom; Section; Position: ; Frequency: 835 MHz
Probe: ET3DV6 - SN1609; ConvF(6.63,6.63,6.63); Crest factor: 1.0; Brain 835 MHz: $s = 0.87$
 ρ/m $\epsilon_r = 41.0$ $r = 1.00$ g/cm^3

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

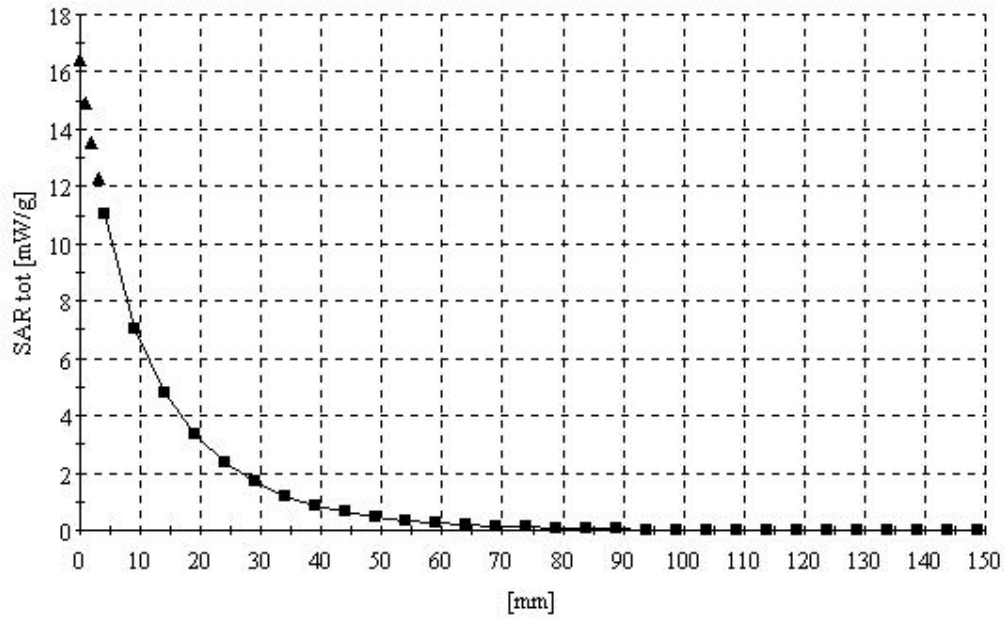
Comment:
835MHz Brain Dipole Validation (D835V2/ S.N: 441)
Antenna Input Power: 30 dBm (1 W)
HCT Co., Ltd. Brain Tissue Simulating Liquid
Liquid Temperature: 21.3°C
Date Tested : February 23, 2005



Dipole 835 MHz

SAM 1 Phantom; Section; Position; ; Frequency: 835 MHz
Probe: ET3DV6 - SN1609; ConvF(6.63,6.63,6.63); Crest factor: 1.0; Brain 835 MHz: $s = 0.88$
 ρ/m $\epsilon_r = 42.4$ $r = 1.00$ 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 : 21.5°C
Date Tested : February 24, 2005



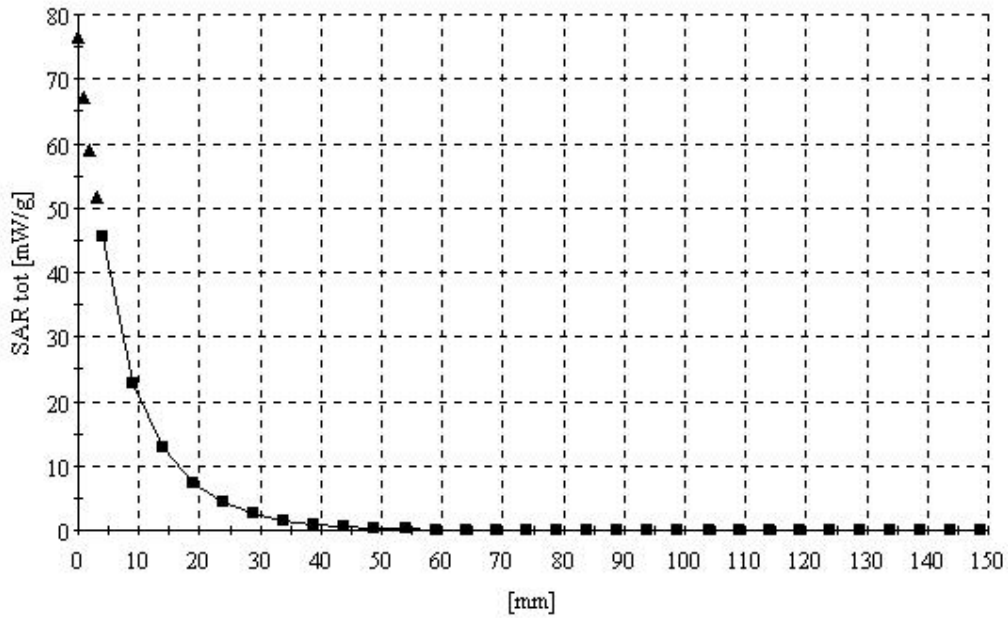
Dipole 1800 MHz

SAM II Phantom: Section: Position: ; Frequency: 1800 MHz
Probe: ET3DV6 - SN1609; ConvF(5.34,5.34,5.34); Crest factor: 1.0; Brain 1800 MHz: $s = 1.39$
 $\rho_{\text{mho/m}}$ $\epsilon_r = 40.4$ $r = 1.00$ g/cm³

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 : 21.8°C
Date Tested : February 25, 2005



■ Dielectric Parameter (835MHz Brain)

Title : TX-215A

SubTitle : AMPS BRAIN

February 23, 2005 09:52 AM

Frequency	e'	e''
800.000000 MHz	41.7661	18.9333
805.000000 MHz	41.6099	19.0787
810.000000 MHz	41.5845	18.9834
815.000000 MHz	41.5026	19.0328
820.000000 MHz	41.3530	18.9462
825.000000 MHz	41.2797	18.9196
830.000000 MHz	41.2199	18.7476
835.000000 MHz	41.0248	18.8610
840.000000 MHz	40.9681	18.8627
845.000000 MHz	40.9560	18.6862
850.000000 MHz	40.9314	18.5768
855.000000 MHz	40.8292	18.6647
860.000000 MHz	40.8608	18.7859
865.000000 MHz	40.6752	18.6419
870.000000 MHz	40.5904	18.8458
875.000000 MHz	40.4884	18.8414
880.000000 MHz	40.4658	18.6892
885.000000 MHz	40.4187	18.6604
890.000000 MHz	40.3322	18.7675
895.000000 MHz	40.2721	18.6536
900.000000 MHz	40.1983	18.7615

■ Dielectric Parameter (835MHz Brain)

Title : TX-215A

SubTitle : CDMA BRAIN

February 23, 2005 02:09 PM

Frequency	e'	e''
800.000000 MHz	43.1185	18.9866
805.000000 MHz	43.0101	18.9751
810.000000 MHz	42.8889	18.9892
815.000000 MHz	42.8489	18.9807
820.000000 MHz	42.7405	19.0291
825.000000 MHz	42.6337	19.0398
830.000000 MHz	42.5564	19.0370
835.000000 MHz	42.4331	19.0530
840.000000 MHz	42.3488	19.0895
845.000000 MHz	42.3897	19.1210
850.000000 MHz	42.2800	19.1334
855.000000 MHz	42.2277	19.1603
860.000000 MHz	42.1831	19.1745
865.000000 MHz	42.1378	19.1479
870.000000 MHz	42.1014	19.1496
875.000000 MHz	42.0780	19.1576
880.000000 MHz	42.0102	19.1333
885.000000 MHz	41.9845	19.1119
890.000000 MHz	41.9698	19.0423
895.000000 MHz	41.8774	19.0117
900.000000 MHz	41.8561	18.9503

■ Dielectric Parameter (1900MHz Brain)

Title : TX-215A

SubTitle : PCS BRAIN

February 26, 2005 09:21 AM

Frequency	e'	e''
1.800000000 GHz	40.9130	12.9046
1.810000000 GHz	40.8281	12.9612
1.820000000 GHz	40.8147	13.0123
1.830000000 GHz	40.7437	13.0664
1.840000000 GHz	40.7300	13.0840
1.850000000 GHz	40.7110	13.1384
1.860000000 GHz	40.6720	13.1600
1.870000000 GHz	40.6733	13.1949
1.880000000 GHz	40.5859	13.1940
1.890000000 GHz	40.5254	13.2090
1.900000000 GHz	40.3966	13.1914
1.910000000 GHz	40.3140	13.2101
1.920000000 GHz	40.2769	13.2321
1.930000000 GHz	40.1670	13.2729
1.940000000 GHz	40.1305	13.3009
1.950000000 GHz	40.0772	13.3729
1.960000000 GHz	40.0475	13.4292
1.970000000 GHz	40.0412	13.4785
1.980000000 GHz	40.0151	13.5057
1.990000000 GHz	40.0172	13.5549
2.000000000 GHz	39.9896	13.5506

■ Dielectric Parameter (835MHz Muscle)

Title : TX-215A

SubTitle : AMPS BODY

February 23, 2005 02:47 AM

Frequency	e'	e''
800.000000 MHz	54.3912	20.5499
805.000000 MHz	54.3241	20.5508
810.000000 MHz	54.2969	20.6275
815.000000 MHz	54.2287	20.6174
820.000000 MHz	54.1404	20.6093
825.000000 MHz	54.0441	20.6211
830.000000 MHz	53.9095	20.6747
835.000000 MHz	53.8373	20.6671
840.000000 MHz	53.7497	20.6436
845.000000 MHz	53.7311	20.7150
850.000000 MHz	53.6689	20.6065
855.000000 MHz	53.6392	20.6707
860.000000 MHz	53.6200	20.7304
865.000000 MHz	53.5442	20.7786
870.000000 MHz	53.5126	20.7138
875.000000 MHz	53.5220	20.6712
880.000000 MHz	53.5009	20.6032
885.000000 MHz	53.4742	20.5747
890.000000 MHz	53.4683	20.5436
895.000000 MHz	53.4189	20.5608
900.000000 MHz	53.3749	20.4821

■ Dielectric Parameter (835MHz Muscle)

Title : TX-215A**SubTitle : CDMA BODY**

February 24, 2005 01:46 PM

Frequency	e'	e''
800.000000 MHz	54.5078	20.8153
805.000000 MHz	54.3890	20.7651
810.000000 MHz	54.3311	20.8179
815.000000 MHz	54.2703	20.8266
820.000000 MHz	54.1923	20.8304
825.000000 MHz	54.0893	20.8379
830.000000 MHz	53.9645	20.8868
835.000000 MHz	53.8720	20.8525
840.000000 MHz	53.7767	20.8966
845.000000 MHz	53.7483	20.8505
850.000000 MHz	53.6859	20.8282
855.000000 MHz	53.6638	20.8238
860.000000 MHz	53.6412	20.7871
865.000000 MHz	53.5829	20.7962
870.000000 MHz	53.5748	20.7651
875.000000 MHz	53.5760	20.7570
880.000000 MHz	53.5685	20.7521
885.000000 MHz	53.5534	20.7394
890.000000 MHz	53.5517	20.7320
895.000000 MHz	53.5502	20.6562
900.000000 MHz	53.4566	20.6378

■ Dielectric Parameter (1900MHz Muscle)

Title : TX-215A**SubTitle : PCS BODY**

February 27, 2005 02:05 AM

Frequency	e'	e''
1.800000000 GHz	51.3772	14.6757
1.810000000 GHz	51.3311	14.6848
1.820000000 GHz	51.3110	14.7404
1.830000000 GHz	51.2834	14.8058
1.840000000 GHz	51.2714	14.8404
1.850000000 GHz	51.2165	14.8936
1.860000000 GHz	51.1911	14.9078
1.870000000 GHz	51.1267	14.9451
1.880000000 GHz	51.1139	14.9739
1.890000000 GHz	51.0219	14.9544
1.900000000 GHz	50.9488	14.9547
1.910000000 GHz	50.9266	14.9468
1.920000000 GHz	50.8420	14.9869
1.930000000 GHz	50.8122	15.0430
1.940000000 GHz	50.7327	15.0446
1.950000000 GHz	50.7315	15.1007
1.960000000 GHz	50.6798	15.1809
1.970000000 GHz	50.6920	15.2004
1.980000000 GHz	50.6610	15.2521
1.990000000 GHz	50.6473	15.2742
2.000000000 GHz	50.6060	15.2759