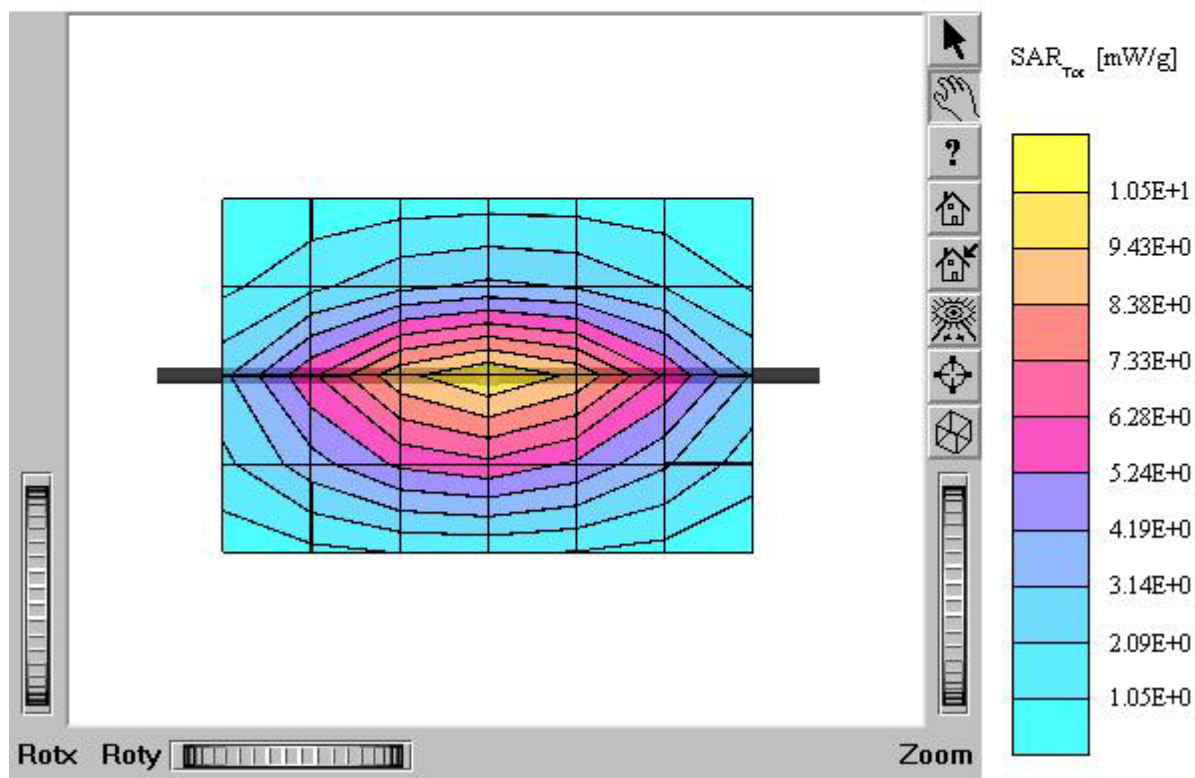


ATTACHMENT Q – DIPOLE VALIDATION

■ 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: $s = 0.89$
 mho/m $e_r = 42.8$ $r = 1.00$ g/cm^3
Cubes (2): SAR (1g): $9.89 \text{ mW/g} \pm 0.04 \text{ dB}$, SAR (10g): $6.30 \text{ mW/g} \pm 0.05 \text{ dB}$
Coarse: $D_x = 20.0$, $D_y = 20.0$, $D_z = 10.0$
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 : 21.5°C
Date Tested : December 6, 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/cm^3

Cubes (2): SAR (1g): $42.4 \text{ mW/g} \pm 0.10 \text{ dB}$, SAR (10g): $21.7 \text{ mW/g} \pm 0.13 \text{ dB}$

Coarse: $D_x = 20.0$, $D_y = 20.0$, $D_z = 10.0$

Powerdrift: -0.04 dB

Comment:

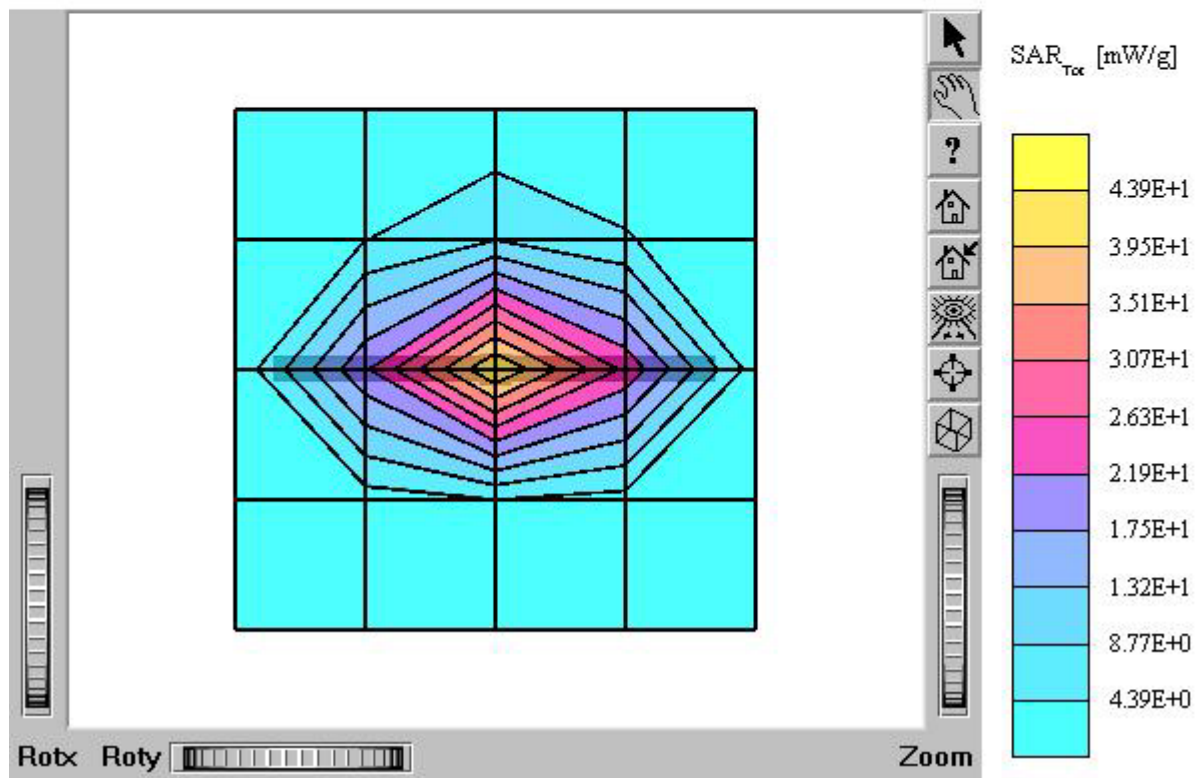
1900 MHz Brain Dipole Validation (D1900V2/ S.N: 5d032)

Antenna Input Power: 30 dBm (1 W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature : 21.8°C

Date Tested : December 7, 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: $s = 0.89$
 ρ_{ho}/m $e_r = 42.8$ $r = 1.00$ g/cm^3

:

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

Comment:

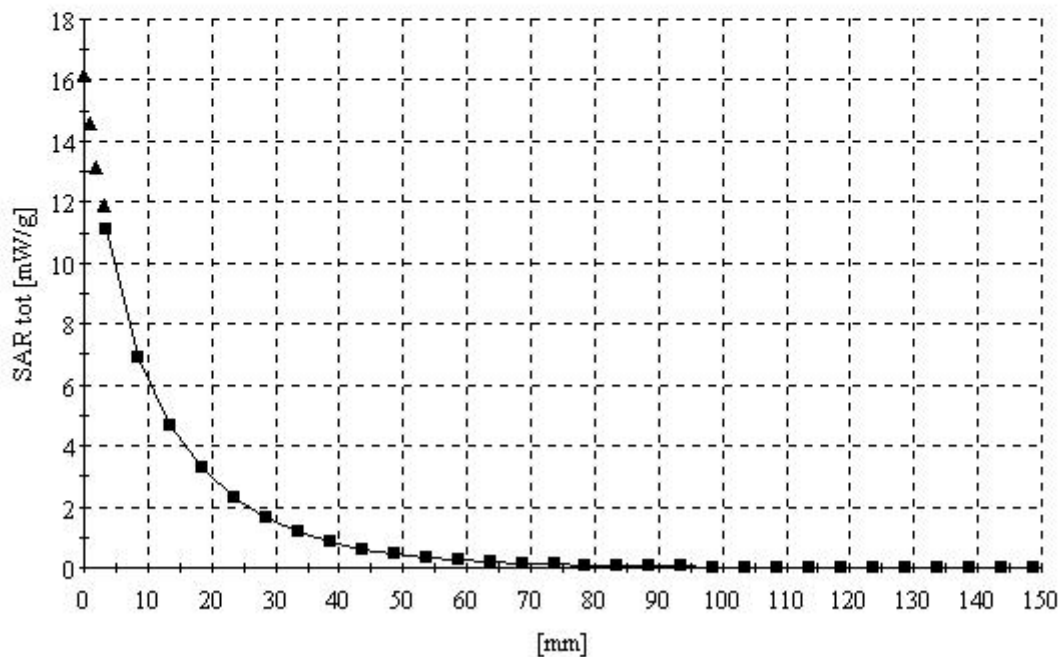
835MHz Brain Dipole Validation (D835V2/ S.N: 441)

Antenna Input Power: 30 dBm (1 W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature : 21.5°C

Date Tested : December 6, 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: $s = 1.39$
 $\rho_{\text{mho/m}}$ $\epsilon_r = 40.5$ $\rho = 1.00 \text{ g/cm}^3$

.

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

Comment:

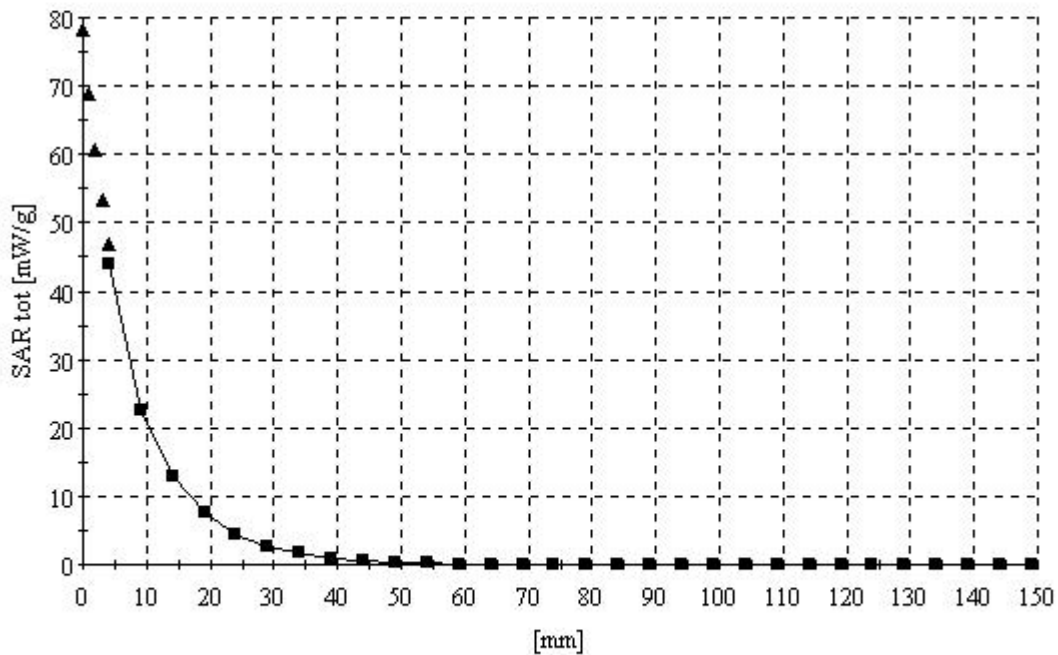
1900 MHz Brain Dipole Validation (D1900V2/ S.N: 5d032)

Antenna Input Power: 30 dBm (1 W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature : 21.8°C

Date Tested : December 7, 2004



■ Dielectric Parameter (835MHz Brain)

Title : PX-100**SubTitle : CDMA BRAIN**

December 06, 2004 09:33 AM

Frequency	e'	e''
800.000000 MHz	43.0422	19.1823
805.000000 MHz	42.9485	19.2201
810.000000 MHz	42.8638	19.1689
815.000000 MHz	42.7788	19.1508
820.000000 MHz	42.6900	19.1716
825.000000 MHz	42.6434	19.1487
830.000000 MHz	42.5354	19.1488
835.000000 MHz	42.4790	19.1767
840.000000 MHz	42.3545	19.1822
845.000000 MHz	42.3720	19.1679
850.000000 MHz	42.2720	19.1773
855.000000 MHz	42.2265	19.1916
860.000000 MHz	42.1452	19.1856
865.000000 MHz	42.1217	19.1629
870.000000 MHz	42.0452	19.1662
875.000000 MHz	42.0127	19.1770
880.000000 MHz	41.9513	19.1559
885.000000 MHz	41.8848	19.1317
890.000000 MHz	41.8624	19.0846
895.000000 MHz	41.7770	19.0421
900.000000 MHz	41.7210	19.0607

■ Dielectric Parameter (1900MHz Brain)

Title : PX-100**SubTitle : PCS BRAIN**

December 07, 2004 03:54 AM

Frequency	e'	e''
1.800000000 GHz	40.9163	12.8902
1.810000000 GHz	40.8700	12.9500
1.820000000 GHz	40.8543	13.0024
1.830000000 GHz	40.7922	13.0660
1.840000000 GHz	40.7464	13.0857
1.850000000 GHz	40.7165	13.1470
1.860000000 GHz	40.7100	13.1718
1.870000000 GHz	40.6726	13.1984
1.880000000 GHz	40.5859	13.1940
1.890000000 GHz	40.5547	13.1988
1.900000000 GHz	40.4626	13.1870
1.910000000 GHz	40.3820	13.1952
1.920000000 GHz	40.2975	13.2543
1.930000000 GHz	40.1883	13.2647
1.940000000 GHz	40.1462	13.3023
1.950000000 GHz	40.1128	13.3729
1.960000000 GHz	40.0864	13.4386
1.970000000 GHz	40.0766	13.4960
1.980000000 GHz	40.0343	13.5252
1.990000000 GHz	40.0616	13.5422
2.000000000 GHz	40.0075	13.5767

■ Dielectric Parameter (835MHz Muscle)

Title : PX-100**SubTitle : CDMA BODY**

December 06, 2004 10:12 AM

Frequency	e'	e''
800.000000 MHz	54.3167	21.5319
805.000000 MHz	54.3625	21.4885
810.000000 MHz	54.2580	21.4985
815.000000 MHz	54.2712	21.4553
820.000000 MHz	54.2122	21.4438
825.000000 MHz	54.1628	21.4402
830.000000 MHz	54.1542	21.4384
835.000000 MHz	54.1050	21.4293
840.000000 MHz	54.0874	21.3535
845.000000 MHz	54.0269	21.3381
850.000000 MHz	53.9734	21.3094
855.000000 MHz	53.9008	21.2556
860.000000 MHz	53.8589	21.2235
865.000000 MHz	53.7957	21.2750
870.000000 MHz	53.7602	21.1979
875.000000 MHz	53.6819	21.1750
880.000000 MHz	53.5831	21.1925
885.000000 MHz	53.5127	21.1833
890.000000 MHz	53.4664	21.1652
895.000000 MHz	53.3679	21.1046
900.000000 MHz	53.3605	21.1139

■ Dielectric Parameter (1900MHz Muscle)

Title : PX-100**SubTitle : PCS BODY**

December 07, 2004 10:39 AM

Frequency	e'	e''
1.800000000 GHz	51.6570	13.2135
1.806666667 GHz	51.6161	13.1587
1.813333333 GHz	51.5776	13.1941
1.820000000 GHz	51.5758	13.2549
1.826666667 GHz	51.5603	13.3027
1.833333333 GHz	51.5254	13.3635
1.840000000 GHz	51.4987	13.4245
1.846666667 GHz	51.4747	13.4832
1.853333333 GHz	51.4427	13.5313
1.860000000 GHz	51.4148	13.5829
1.866666667 GHz	51.4156	13.6663
1.873333333 GHz	51.3715	13.7817
1.880000000 GHz	51.3161	13.8506
1.886666667 GHz	50.7817	13.7792
1.893333333 GHz	51.2434	13.9305
1.900000000 GHz	51.2676	14.0541
1.906666667 GHz	51.2828	14.1179
1.913333333 GHz	51.2499	14.2809
1.920000000 GHz	51.2345	14.2799
1.926666667 GHz	51.1632	14.3257
1.933333333 GHz	51.1627	14.3118
1.940000000 GHz	51.1635	14.4239
1.946666667 GHz	51.1845	14.4399
1.953333333 GHz	51.1633	14.5367
1.960000000 GHz	51.1454	14.5351