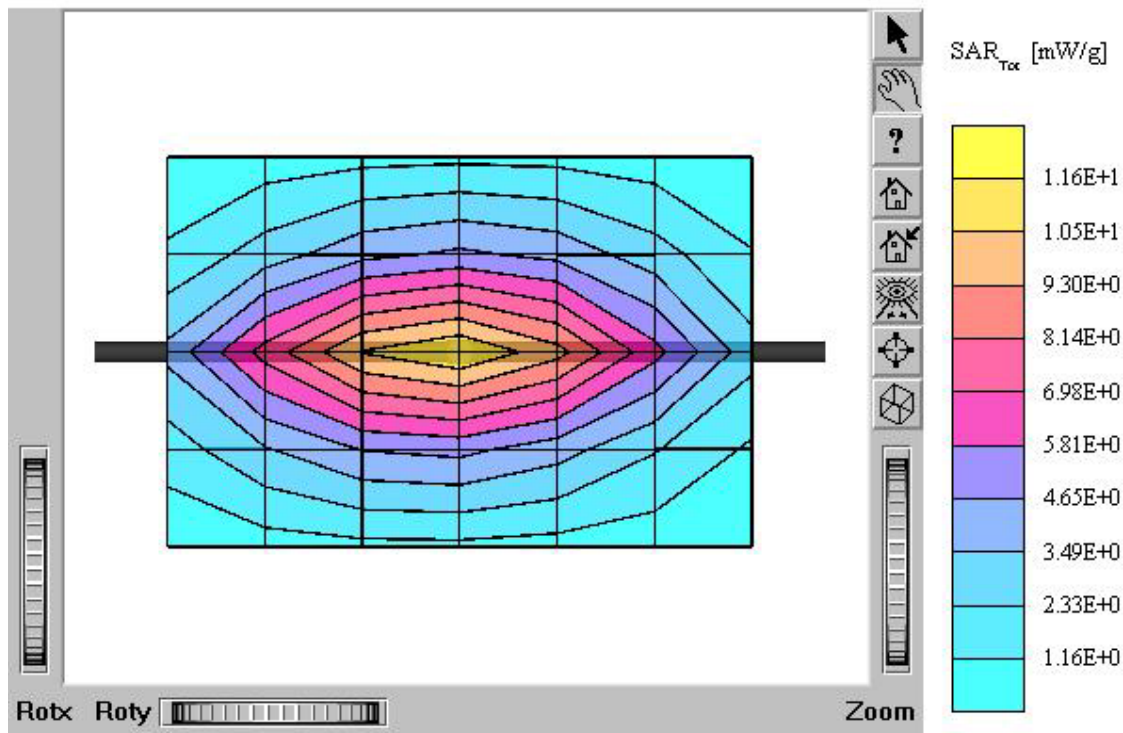


ATTACHMENT Q – DIPOLE VALIDATION

■ 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 $\epsilon_r = 42.4$ $\rho = 1.00 \text{ g/cm}^3$
Cubes (2): SAR (1g): $10.2 \text{ mW/g} \pm 0.00 \text{ dB}$, SAR (10g): $6.44 \text{ mW/g} \pm 0.06 \text{ dB}$
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 (1W)
HCT Co., Ltd. Brain Tissue Simulating Liquid
Liquid Temperature : 21.7°C
Date Tested : October 14, 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: $\sigma = 1.41 \text{ mho/m}$, $\epsilon_r = 39.6$, $\rho = 1.00 \text{ g/cm}^3$

Cubes (2): SAR (1g): $41.8 \text{ mW/g} \pm 0.07 \text{ dB}$, SAR (10g): $21.3 \text{ mW/g} \pm 0.09 \text{ dB}$

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

Powerdrift: 0.00 dB

Comment:

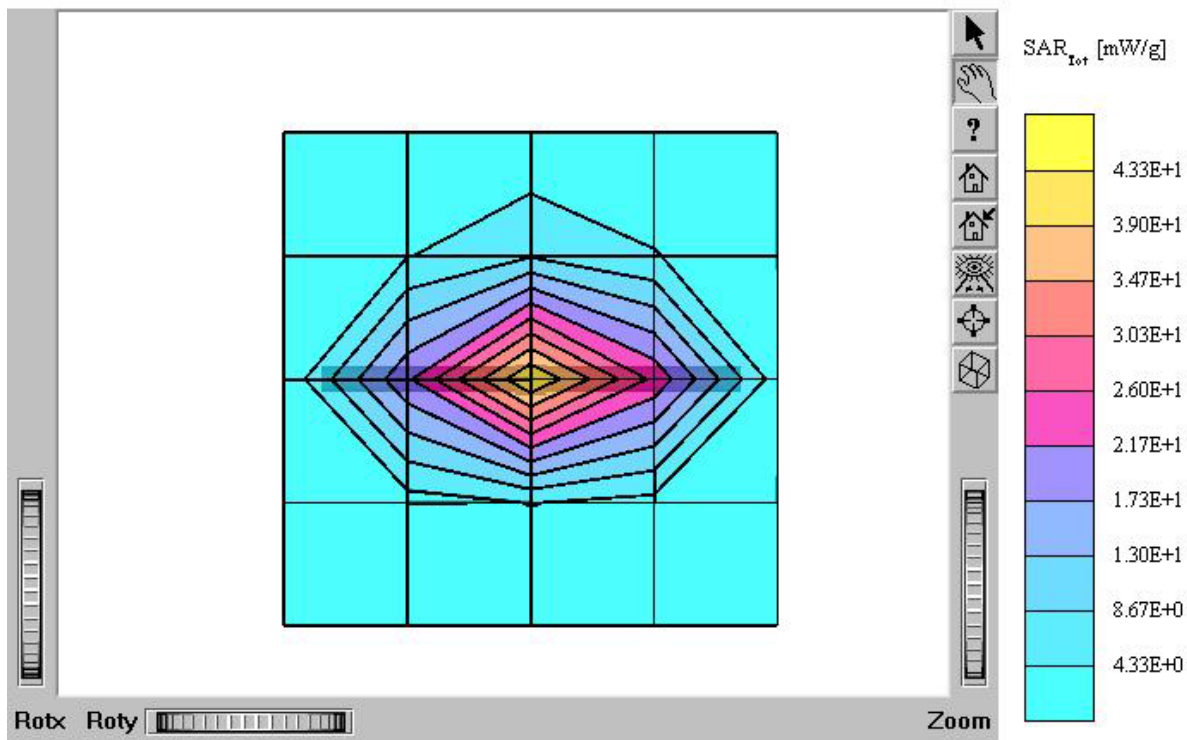
1900MHz Brain Dipole Validation (D1900V2/ S.N: 5d017)

Antenna Input Power: 30dBm (1W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature : 21.8°C

Date Tested : October 15, 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: $\sigma = 0.89 \text{ mho/m}$ $\epsilon_r = 42.4$ $\rho = 1.00 \text{ g/cm}^3$

:

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

Comment:

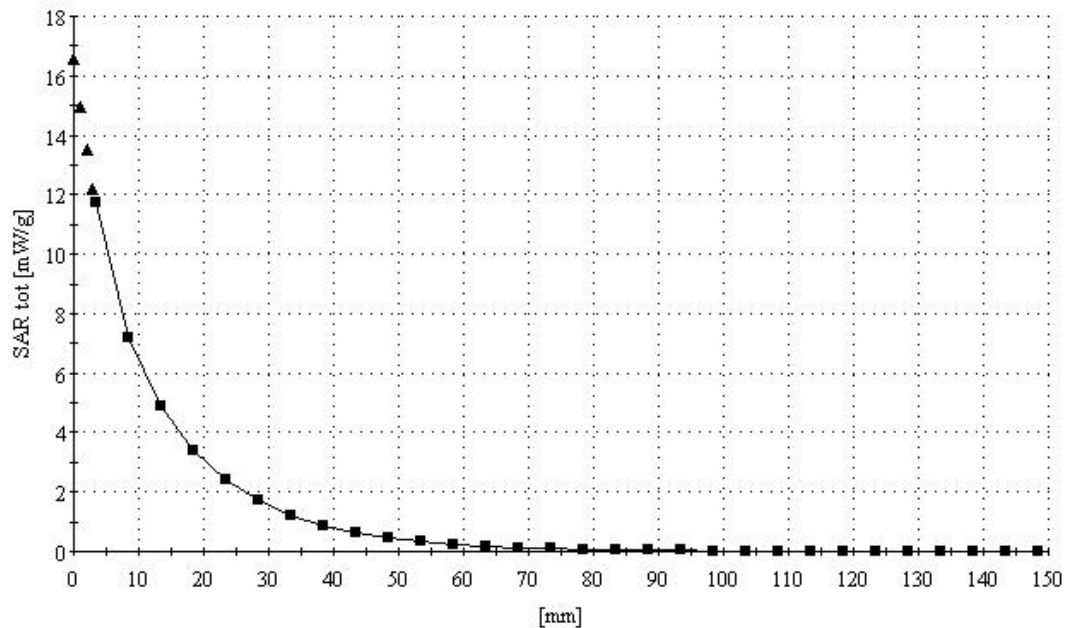
835MHz Brain Dipole Validation (D835V2/ S.N: 441)

Antenna Input Power: 30 dBm (1W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature : 21.7°C

Date Tested : October 14, 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: $\sigma = 1.41$ mho/m $\epsilon_r = 39.6$ $\rho = 1.00$ g/cm³

:

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

Comment:

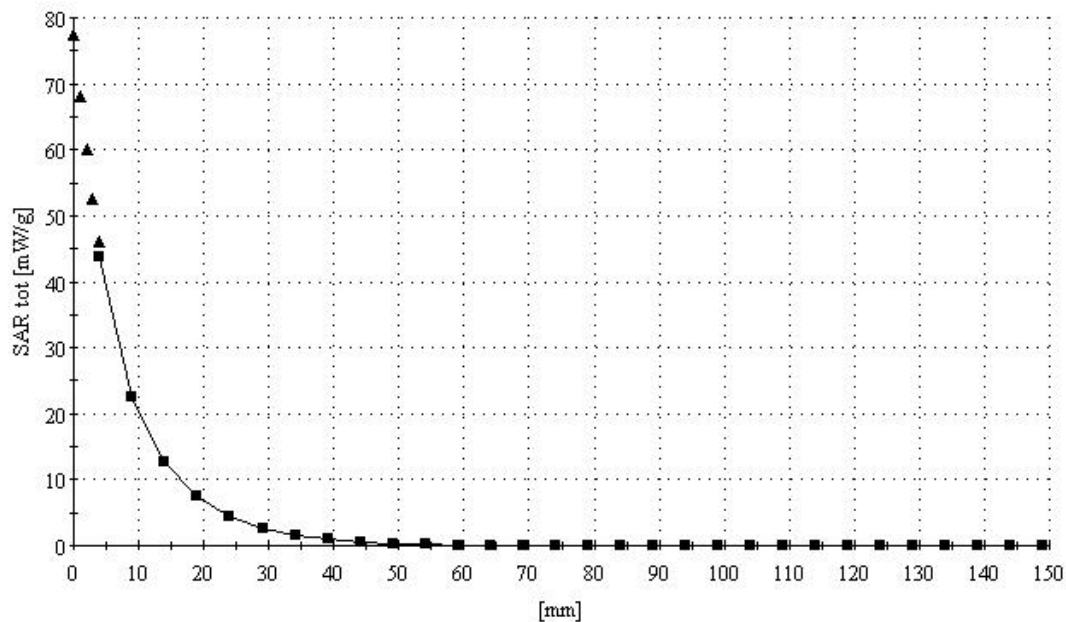
1900MHz Brain Dipole Validation (D1900V2/ S.N: 5d017)

Antenna Input Power: 30dBm (1W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature : 21.8℃

Date Tested : October 15, 2004



■ Dielectric Parameter (835MHz Brain)

Title : PC-1000N**SubTitle : CDMA Brain**

October 14, 2004 09:06 AM

Frequency	e'	e''
800.000000 MHz	42.9843	19.0131
805.000000 MHz	42.8783	18.9685
810.000000 MHz	42.7377	18.9884
815.000000 MHz	42.6986	18.9801
820.000000 MHz	42.6015	19.0097
825.000000 MHz	42.5067	19.0227
830.000000 MHz	42.4544	19.0872
835.000000 MHz	42.3608	19.0947
840.000000 MHz	42.3184	19.1296
845.000000 MHz	42.2783	19.1324
850.000000 MHz	42.2185	19.1720
855.000000 MHz	42.1432	19.1539
860.000000 MHz	42.1452	19.1856
865.000000 MHz	42.1289	19.2222
870.000000 MHz	42.0590	19.2131
875.000000 MHz	42.0248	19.1836
880.000000 MHz	41.9893	19.1648
885.000000 MHz	41.9452	19.0985
890.000000 MHz	41.9138	19.0892
895.000000 MHz	41.8318	19.0255
900.000000 MHz	41.7807	18.9632

■ Dielectric Parameter (1900MHz Brain)

Title : PC-1000N**SubTitle : PCS Brain**

October 18, 2004 09:10 AM

Frequency	e'	e''
1.800000000 GHz	40.0631	12.9921
1.806666667 GHz	40.0451	13.0079
1.813333333 GHz	39.9465	13.0644
1.820000000 GHz	39.9480	13.1439
1.826666667 GHz	39.9040	13.1880
1.833333333 GHz	39.8924	13.2633
1.840000000 GHz	39.9272	13.3245
1.846666667 GHz	39.9143	13.3761
1.853333333 GHz	39.9146	13.4041
1.860000000 GHz	39.9147	13.4502
1.866666667 GHz	39.8856	13.4966
1.873333333 GHz	39.8825	13.4693
1.880000000 GHz	39.8360	13.4817
1.886666667 GHz	39.7776	13.4511
1.893333333 GHz	39.7244	13.4235
1.900000000 GHz	39.6345	13.3752
1.906666667 GHz	39.5555	13.3799
1.913333333 GHz	39.4449	13.3668
1.920000000 GHz	39.3485	13.3747
1.926666667 GHz	39.2738	13.4015
1.933333333 GHz	39.1563	13.4062
1.940000000 GHz	39.1489	13.4665
1.946666667 GHz	39.0858	13.5306
1.953333333 GHz	39.1071	13.6103
1.960000000 GHz	39.1276	13.6786

■ Dielectric Parameter (835MHz Brain)

Title : PC-1000N**SubTitle : CDMA Body**

October 14, 2004 03:46 PM

Frequency	e'	e''
800.000000 MHz	56.3518	20.8690
805.000000 MHz	56.3114	20.8404
810.000000 MHz	56.2148	20.8101
815.000000 MHz	56.2483	20.8222
820.000000 MHz	56.1012	20.8004
825.000000 MHz	56.0559	20.7913
830.000000 MHz	55.9228	20.7823
835.000000 MHz	55.8416	20.7154
840.000000 MHz	55.7268	20.6732
845.000000 MHz	55.6373	20.5784
850.000000 MHz	55.5935	20.5435
855.000000 MHz	55.5129	20.5233
860.000000 MHz	55.4669	20.5333
865.000000 MHz	55.4428	20.5132
870.000000 MHz	55.3785	20.4982
875.000000 MHz	55.3353	20.5607
880.000000 MHz	55.2502	20.5542
885.000000 MHz	55.1119	20.4101
890.000000 MHz	55.0687	20.4622
895.000000 MHz	55.0085	20.5208
900.000000 MHz	54.9441	20.5912

■ Dielectric Parameter (1900MHz Muscle)

Title : PC-1000N**SubTitle : PCS Body**

October 18, 2004 03:37 PM

Frequency	e'	e''
1.800000000 GHz	51.6726	13.0801
1.806666667 GHz	51.6252	13.0981
1.813333333 GHz	51.5652	13.1375
1.820000000 GHz	51.5691	13.1971
1.826666667 GHz	51.5844	13.2645
1.833333333 GHz	51.5493	13.3007
1.840000000 GHz	51.4732	13.3617
1.846666667 GHz	51.4091	13.3986
1.853333333 GHz	51.3956	13.4520
1.860000000 GHz	51.3631	13.5149
1.866666667 GHz	51.3681	13.5912
1.873333333 GHz	51.3342	13.6943
1.880000000 GHz	51.2646	13.7511
1.886666667 GHz	51.2783	13.8092
1.893333333 GHz	51.2746	13.8862
1.900000000 GHz	51.3030	13.9982
1.906666667 GHz	51.2763	14.1025
1.913333333 GHz	51.2236	14.1560
1.920000000 GHz	51.1440	14.1702
1.926666667 GHz	51.1656	14.2177
1.933333333 GHz	51.1775	14.2456
1.940000000 GHz	51.1503	14.3229
1.946666667 GHz	51.1965	14.3867
1.953333333 GHz	51.0980	14.3948
1.960000000 GHz	51.0170	14.4403