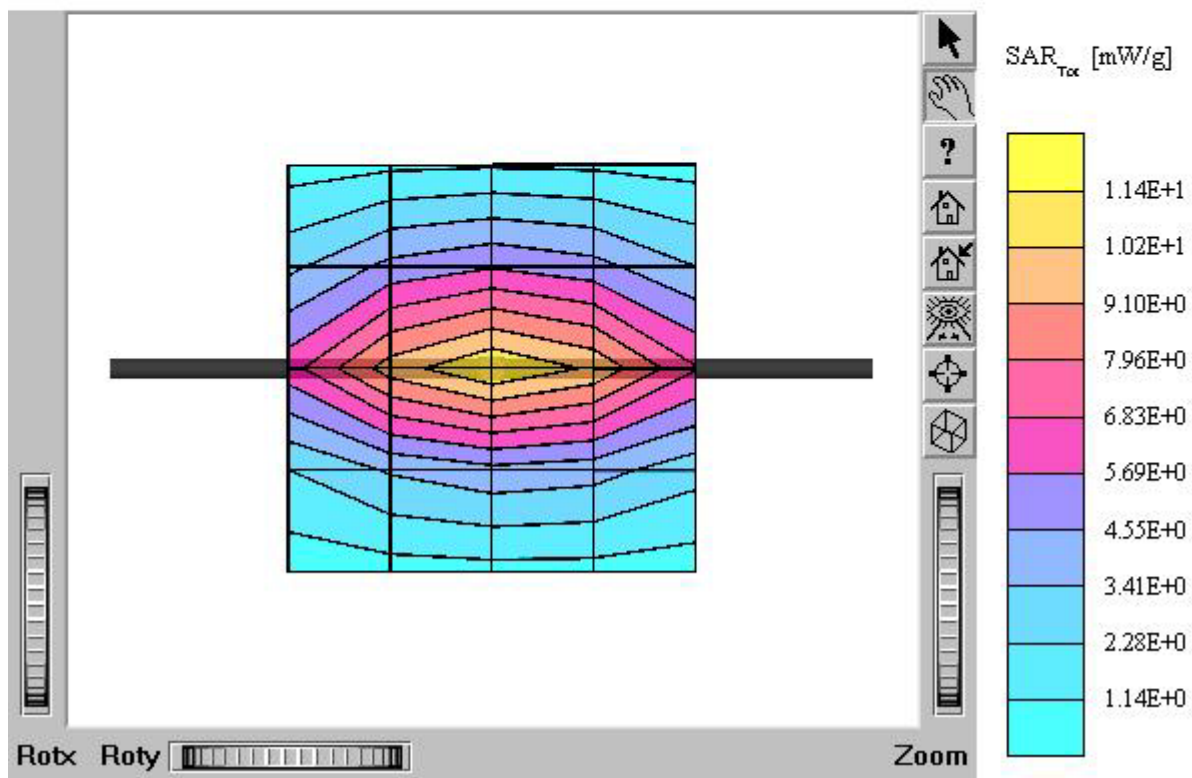


ATTACHMENT Q – DIPOLE VALIDATION

■ Validation Data (835MHz Brain)

Dipole 835 MHz

SAM I 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: $s = 0.90$
 $\text{mho/m } e_r = 41.7$ $r = 1.00$ g/cm^3
Cubes (2): SAR (1g): $10.3 \text{ mW/g} \pm 0.04 \text{ dB}$, SAR (10g): $6.60 \text{ mW/g} \pm 0.04 \text{ dB}$
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 : 22.0°C
Date Tested : February 21, 2005



■ 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 $e_r = 40.4$ $r = 1.00$ g/cm^3

Cubes (2): SAR (1g): $41.8 \text{ mW/g} \pm 0.04 \text{ dB}$, SAR (10g): $20.8 \text{ mW/g} \pm 0.04 \text{ dB}$

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

Powerdrift: 0.06 dB

Comment:

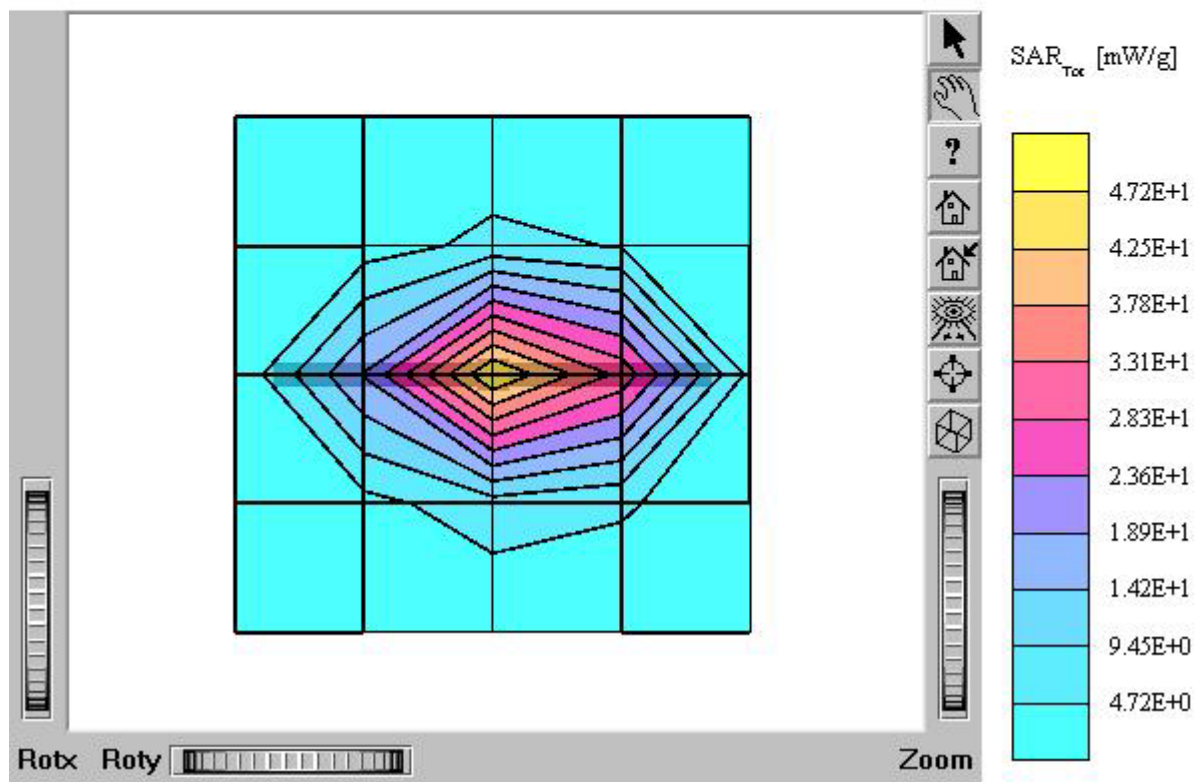
1900 MHz Brain Dipole Validation (D1900V2/ S.N: 5d032)

Antenna Input Power: 30 dBm (1 W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature : 21.8°C

Date Tested : February 22, 2005



Dipole 835 MHz

SAM I Phantom; Section; Position: ; Frequency: 835 MHz

Probe: ET3DV6 - SN1609; ConvF(6.63,6.63,6.63); Crest factor: 1.0; Brain 835 MHz: $s = 0.90$
 $\rho_{\text{ho/m}} e_r = 41.7$ $r = 1.00$ g/cm^3

.

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

Comment:

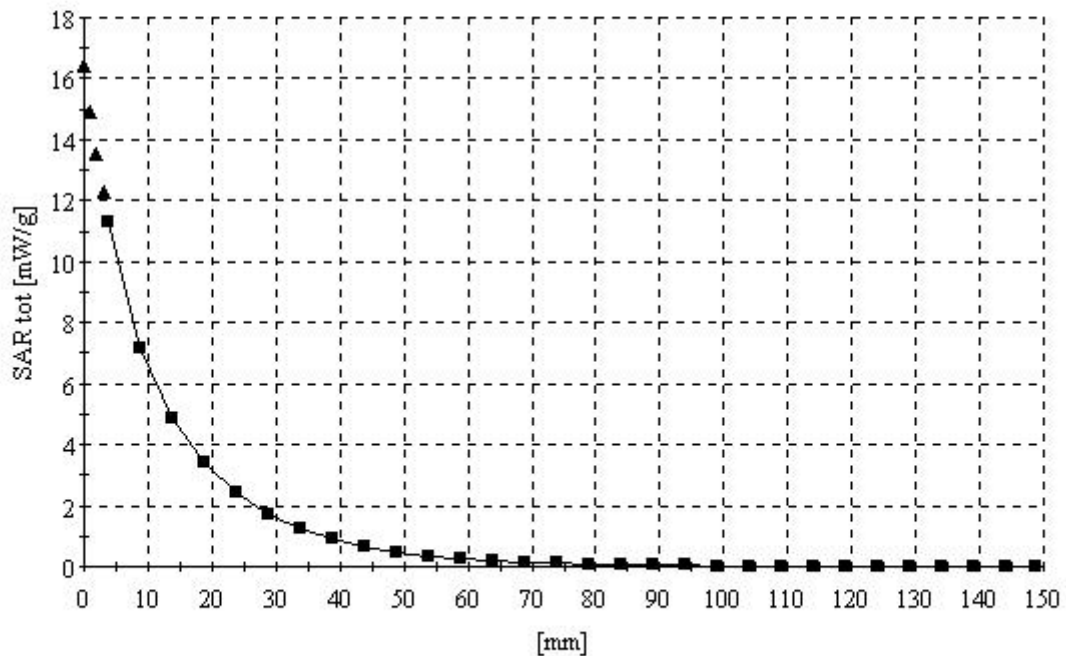
835MHz Brain Dipole Validation (D835V2/ S.N: 441)

Antenna Input Power: 30 dBm (1 W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature : 22.0°C

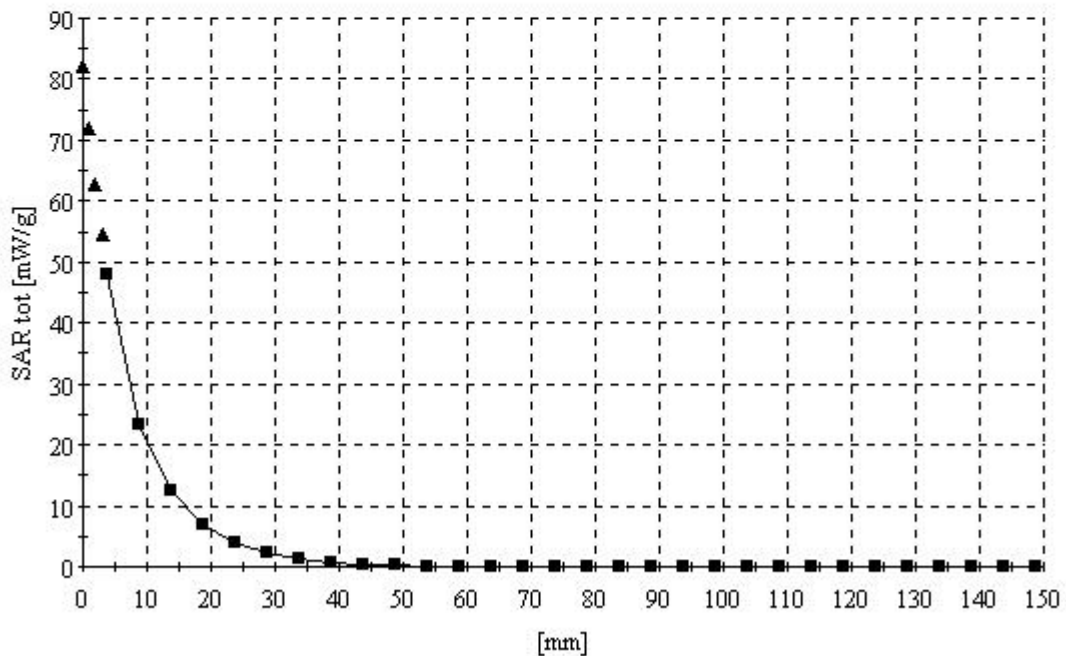
Date Tested : February 21, 2005



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: $s = 1.39$
 $\rho_{\text{ho/m}} e_r = 40.4$ $r = 1.00$ 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 : February 22, 2005



■ Dielectric Parameter (835MHz Brain)

Title : TX-230**SubTitle : CDMA BRAIN**

February 21, 2005 09:12 AM

Frequency	e'	e''
800.000000 MHz	43.5355	18.1085
805.000000 MHz	43.5495	18.1630
810.000000 MHz	43.3481	18.2136
815.000000 MHz	43.1633	18.3131
820.000000 MHz	42.8873	18.5874
825.000000 MHz	42.4033	18.8821
830.000000 MHz	42.0423	19.0876
835.000000 MHz	41.7063	19.3852
840.000000 MHz	41.3124	19.4983
845.000000 MHz	41.3929	19.2805
850.000000 MHz	41.3771	19.4233
855.000000 MHz	41.4987	19.3189
860.000000 MHz	40.9883	19.4161
865.000000 MHz	41.2520	19.5896
870.000000 MHz	40.8222	19.3382
875.000000 MHz	40.8304	19.3296
880.000000 MHz	40.9542	19.3530
885.000000 MHz	40.6253	19.3063
890.000000 MHz	40.7659	19.5394
895.000000 MHz	40.4487	19.2269
900.000000 MHz	40.6547	19.2402

■ Dielectric Parameter (835MHz Brain)

Title : TX-230**SubTitle : PCS BRAIN**

February 22, 2005 09:09 AM

Frequency	e'	e''
1.800000000 GHz	40.8915	12.8997
1.810000000 GHz	40.8010	12.9232
1.820000000 GHz	40.7985	13.0011
1.830000000 GHz	40.7366	13.0648
1.840000000 GHz	40.7039	13.0764
1.850000000 GHz	40.6797	13.1464
1.860000000 GHz	40.6258	13.1354
1.870000000 GHz	40.6187	13.1760
1.880000000 GHz	40.5495	13.1845
1.890000000 GHz	40.4732	13.1800
1.900000000 GHz	40.3778	13.1857
1.910000000 GHz	40.2892	13.1906
1.920000000 GHz	40.2382	13.2278
1.930000000 GHz	40.1244	13.2714
1.940000000 GHz	40.0715	13.2927
1.950000000 GHz	40.0382	13.3545
1.960000000 GHz	40.0387	13.4469
1.970000000 GHz	40.0032	13.4924
1.980000000 GHz	39.9828	13.5276
1.990000000 GHz	39.9709	13.5304
2.000000000 GHz	39.9629	13.5718

■ Dielectric Parameter (1900MHz Brain)

Title : TX-230**SubTitle : CDMA BODY**

February 21, 2005 02:43 PM

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-230**SubTitle : PCS BODY**

February 22, 2005 01:03 PM

Frequency	e'	e''
1.800000000 GHz	51.3615	14.5958
1.810000000 GHz	51.3007	14.6136
1.820000000 GHz	51.2690	14.6898
1.830000000 GHz	51.2550	14.7547
1.840000000 GHz	51.2474	14.7822
1.850000000 GHz	51.1993	14.8227
1.860000000 GHz	51.1538	14.8472
1.870000000 GHz	51.1385	14.8674
1.880000000 GHz	51.1124	14.9184
1.890000000 GHz	50.9931	14.8800
1.900000000 GHz	50.9167	14.9013
1.910000000 GHz	50.8596	14.8781
1.920000000 GHz	50.8205	14.9139
1.930000000 GHz	50.7748	14.9524
1.940000000 GHz	50.7179	14.9801
1.950000000 GHz	50.6798	15.0268
1.960000000 GHz	50.6455	15.0953
1.970000000 GHz	50.6441	15.1237
1.980000000 GHz	50.6396	15.1622
1.990000000 GHz	50.6180	15.1916
2.000000000 GHz	50.5482	15.2126