

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: $\sigma = 0.92$ mho/m $\epsilon_r = 40.5$ $\rho = 1.00$ g/cm³

Cubes (2): SAR (1g): 10.3 mW/g ± 0.04 dB, SAR (10g): 6.61 mW/g ± 0.04 dB

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

Powerdrift: -0.04 dB

Comment:

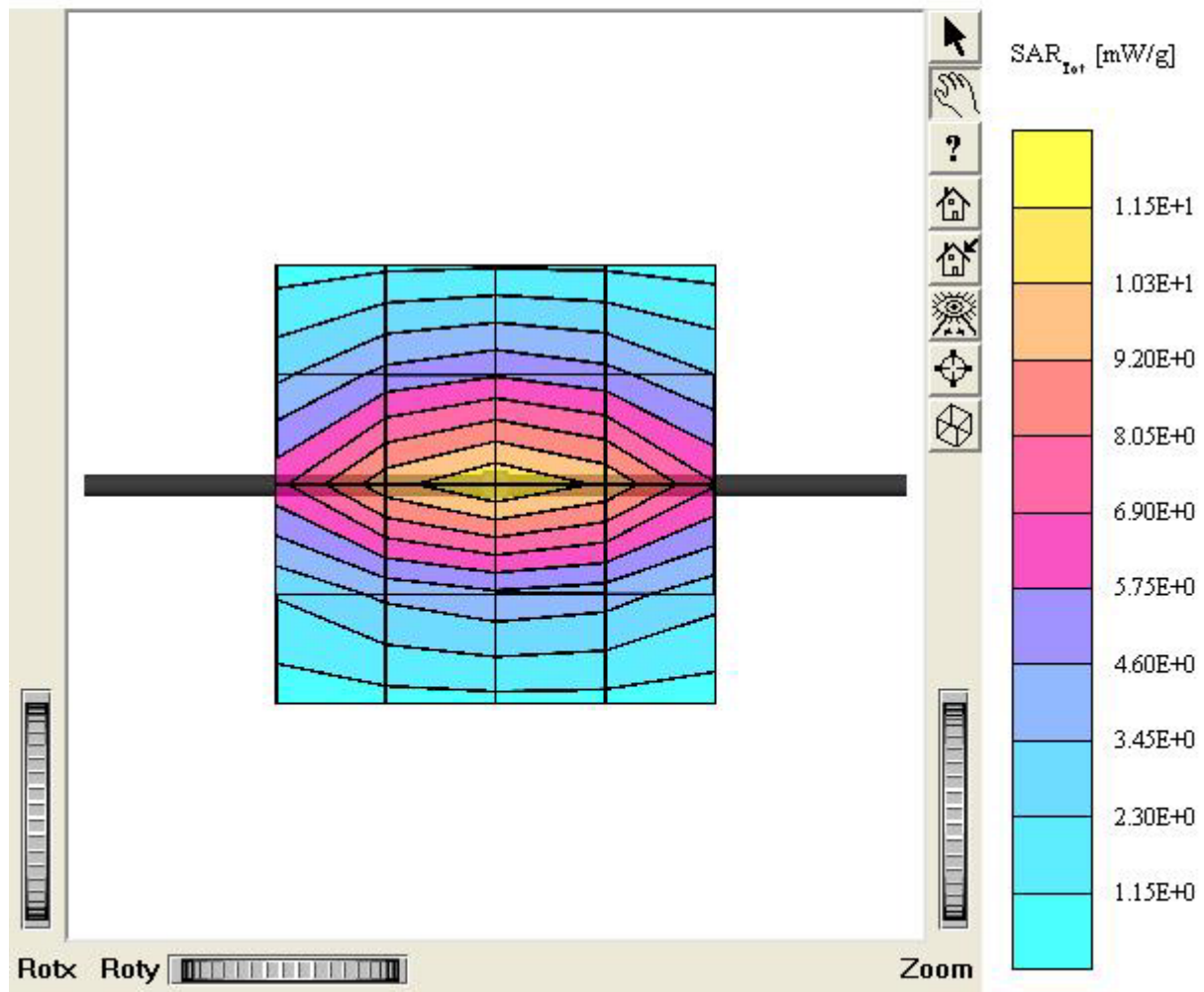
835MHz Brain Dipole Validation (D835V2/ S.N: 441)

Antenna Input Power: 30 dBm (1 W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature: 21.5°C

Date Tested : March 18, 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: $\sigma = 1.41 \text{ mho/m}$ $\epsilon_r = 40.8$ $\rho = 1.00 \text{ g/cm}^3$

Cubes (2): SAR (1g): $42.2 \text{ mW/g} \pm 0.02 \text{ dB}$, SAR (10g): $21.1 \text{ mW/g} \pm 0.01 \text{ dB}$

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

Powerdrift: 0.02 dB

Comment:

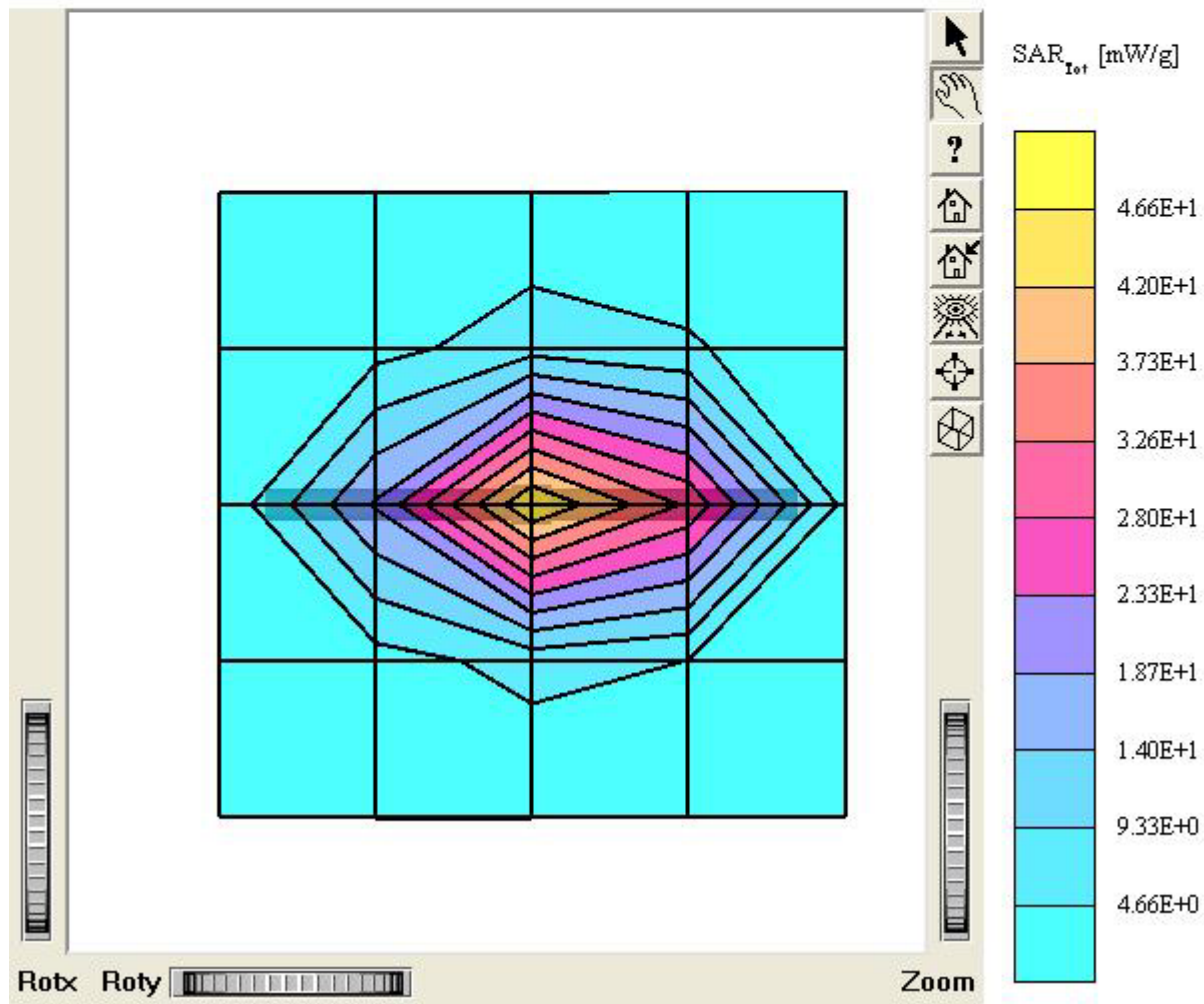
1900 MHz Brain Dipole Validation (D1900V2/ S.N: 5d032)

Antenna Input Power: 30 dBm (1 W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature: 21.5°C

Date Tested : March 18, 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: $\sigma = 0.92 \text{ mho/m}$, $\epsilon_r = 40.5$, $\rho = 1.00 \text{ g/cm}^3$

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

Comment:

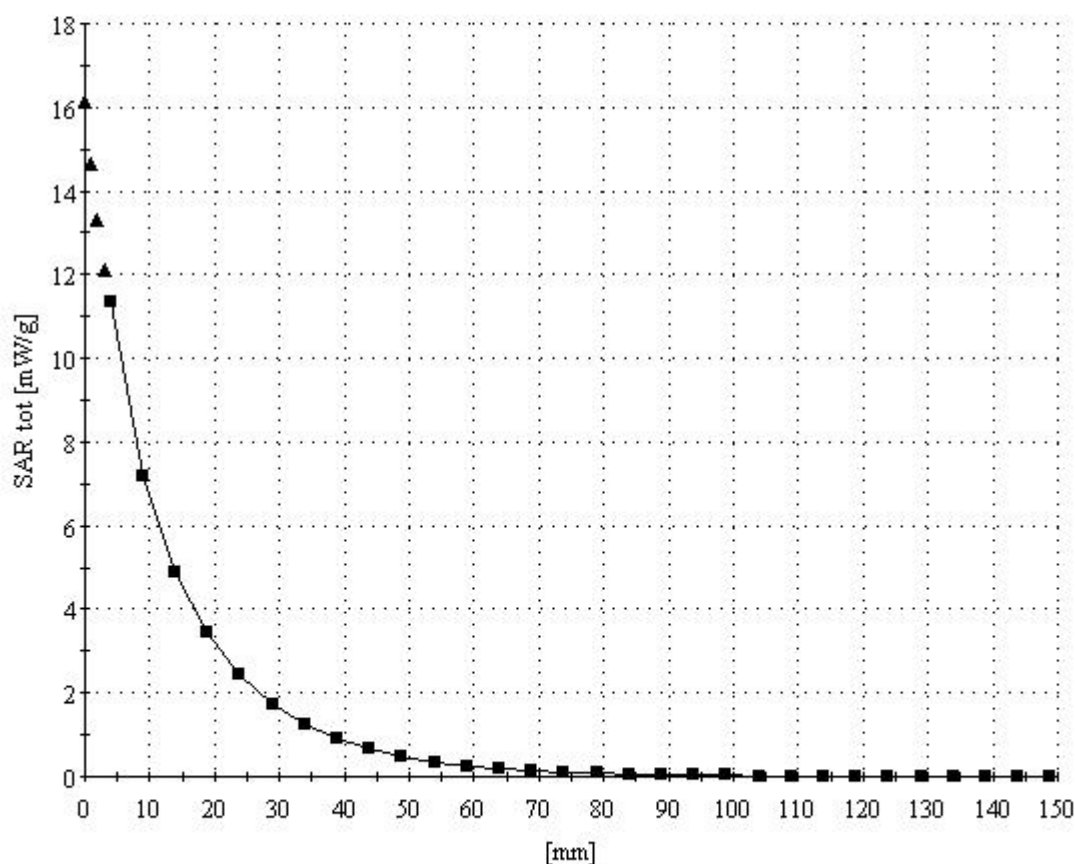
835MHz Brain Dipole Validation (D835V2/ S.N: 441)

Antenna Input Power: 30 dBm (1 W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature: 21.5°C

Date Tested : March 18, 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: $\sigma = 1.41 \text{ mho/m}$ $\epsilon_r = 40.8$ $\rho = 1.00 \text{ g/cm}^3$

:

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

Comment:

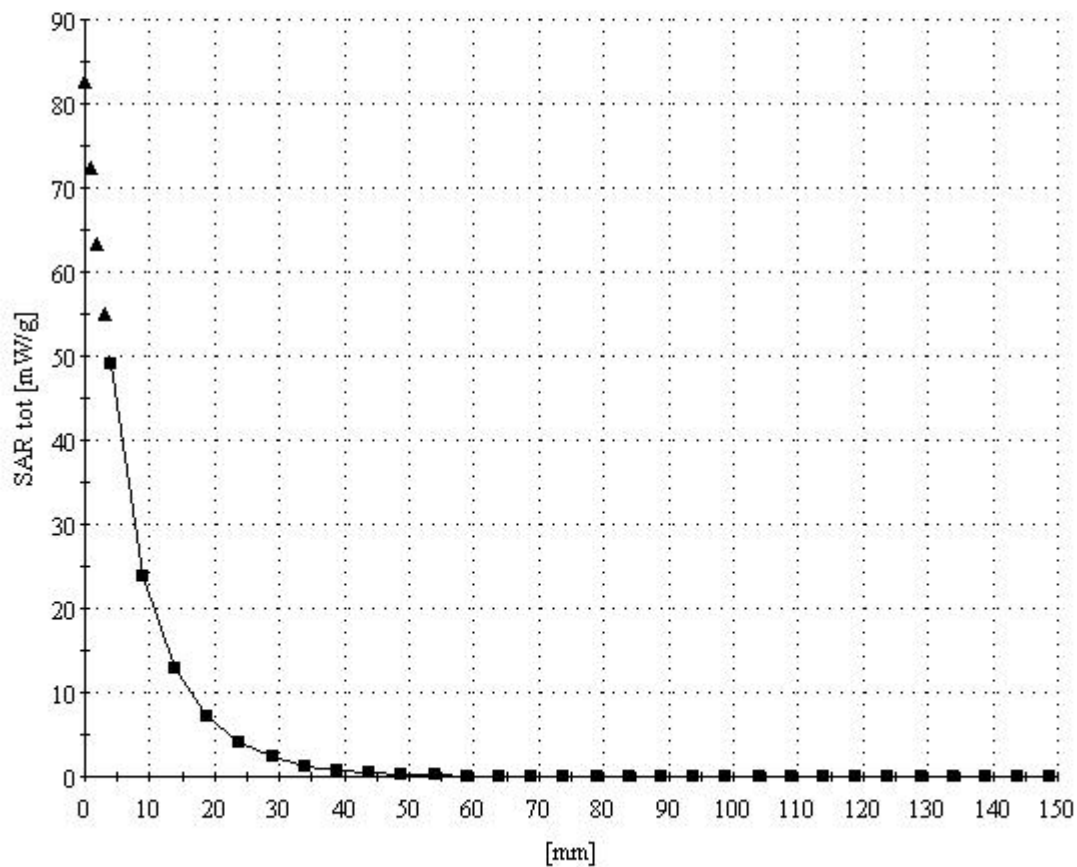
1900 MHz Brain Dipole Validation (D1900V2/ S.N: 5d032)

Antenna Input Power: 30 dBm (1 W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature: 21.5°C

Date Tested : March 18, 2005



■ Dielectric Parameter (835MHz Brain)**Title : C650****SubTitle : GSM850 Brain**

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Frequency	e'	e''
800.000000 MHz	40.3352	20.0187
805.000000 MHz	40.4347	19.8673
810.000000 MHz	40.4063	19.8906
815.000000 MHz	40.2915	19.7863
820.000000 MHz	40.3854	19.6814
825.000000 MHz	40.2168	19.7691
830.000000 MHz	40.4244	19.7343
835.000000 MHz	40.4513	19.7948
840.000000 MHz	40.3792	19.7978
845.000000 MHz	40.2851	19.6403
850.000000 MHz	39.8744	19.9133
855.000000 MHz	39.9433	19.7340
860.000000 MHz	39.8971	19.8855
865.000000 MHz	39.8379	19.7633
870.000000 MHz	39.9186	19.5222
875.000000 MHz	39.7050	19.6080
880.000000 MHz	39.5825	19.5425
885.000000 MHz	39.6537	19.4135
890.000000 MHz	39.7228	19.2807
895.000000 MHz	39.6615	19.2157
900.000000 MHz	39.5489	19.2450

■ Dielectric Parameter (1900MHz Brain)

Title : C650**SubTitle : GSM1900 Brain****March 18, 2005 09:23 AM**

Frequency	e'	e''
1.8000000000 GHz	41.2229	13.0350
1.8100000000 GHz	41.1850	13.0694
1.8200000000 GHz	41.1730	13.1179
1.8300000000 GHz	41.0790	13.1607
1.8400000000 GHz	41.0609	13.1670
1.8500000000 GHz	40.9806	13.2261
1.8600000000 GHz	40.9604	13.2767
1.8700000000 GHz	40.9286	13.2982
1.8800000000 GHz	40.8521	13.3281
1.8900000000 GHz	40.8187	13.3661
1.9000000000 GHz	40.7501	13.3762
1.9100000000 GHz	40.6798	13.4000
1.9200000000 GHz	40.6557	13.4593
1.9300000000 GHz	40.5612	13.4699
1.9400000000 GHz	40.5066	13.4931
1.9500000000 GHz	40.4402	13.5455
1.9600000000 GHz	40.3948	13.5959
1.9700000000 GHz	40.3612	13.6353
1.9800000000 GHz	40.3304	13.6640
1.9900000000 GHz	40.3133	13.6892
2.0000000000 GHz	40.2685	13.7456

■ Dielectric Parameter (835MHz Muscle)

Title : C650**SubTitle : GSM850 Body**

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Frequency	e'	e''
800.000000 MHz	54.5785	20.4381
805.000000 MHz	54.4803	20.4500
810.000000 MHz	54.4278	20.4907
815.000000 MHz	54.3291	20.4918
820.000000 MHz	54.2955	20.5142
825.000000 MHz	54.1631	20.5058
830.000000 MHz	54.0088	20.5833
835.000000 MHz	53.9492	20.5822
840.000000 MHz	53.8695	20.5229
845.000000 MHz	53.7764	20.5130
850.000000 MHz	53.7540	20.4556
855.000000 MHz	53.7308	20.4528
860.000000 MHz	53.6778	20.3967
865.000000 MHz	53.6329	20.4451
870.000000 MHz	53.6354	20.3899
875.000000 MHz	53.6188	20.3952
880.000000 MHz	53.5818	20.3447
885.000000 MHz	53.5211	20.3406
890.000000 MHz	53.5578	20.3409
895.000000 MHz	53.5066	20.2758
900.000000 MHz	53.4503	20.2756

■ Dielectric Parameter (1900MHz Muscle)

Title : C650**SubTitle : GSM1900 Body**

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Frequency	e'	e''
1.8000000000 GHz	51.3868	14.6178
1.8100000000 GHz	51.3463	14.6687
1.8200000000 GHz	51.3029	14.7007
1.8300000000 GHz	51.2718	14.7620
1.8400000000 GHz	51.2775	14.7925
1.8500000000 GHz	51.2440	14.8419
1.8600000000 GHz	51.1808	14.8455
1.8700000000 GHz	51.1491	14.9046
1.8800000000 GHz	51.1039	14.9293
1.8900000000 GHz	51.0177	14.9084
1.9000000000 GHz	50.9689	14.9125
1.9100000000 GHz	50.8921	14.8992
1.9200000000 GHz	50.8450	14.9419
1.9300000000 GHz	50.8194	14.9590
1.9400000000 GHz	50.7596	15.0032
1.9500000000 GHz	50.7349	15.0412
1.9600000000 GHz	50.6999	15.1206
1.9700000000 GHz	50.6768	15.1366
1.9800000000 GHz	50.6629	15.2152
1.9900000000 GHz	50.6363	15.1925
2.0000000000 GHz	50.5825	15.2270