

ATTACHMENT Q – DIPOLE VALIDATION

■ Validation Data (835MHz Head)

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; Head 835 MHz: $\sigma = 0.88 \text{ mho/m}$, $\epsilon_r = 42.0$, $\rho = 1.00 \text{ g/cm}^3$

Cube 5x5x7: SAR (1g): 10.1 mW/g, SAR (10g): 6.45 mW/g

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

Powerdrift: -0.01 dB

Comment :

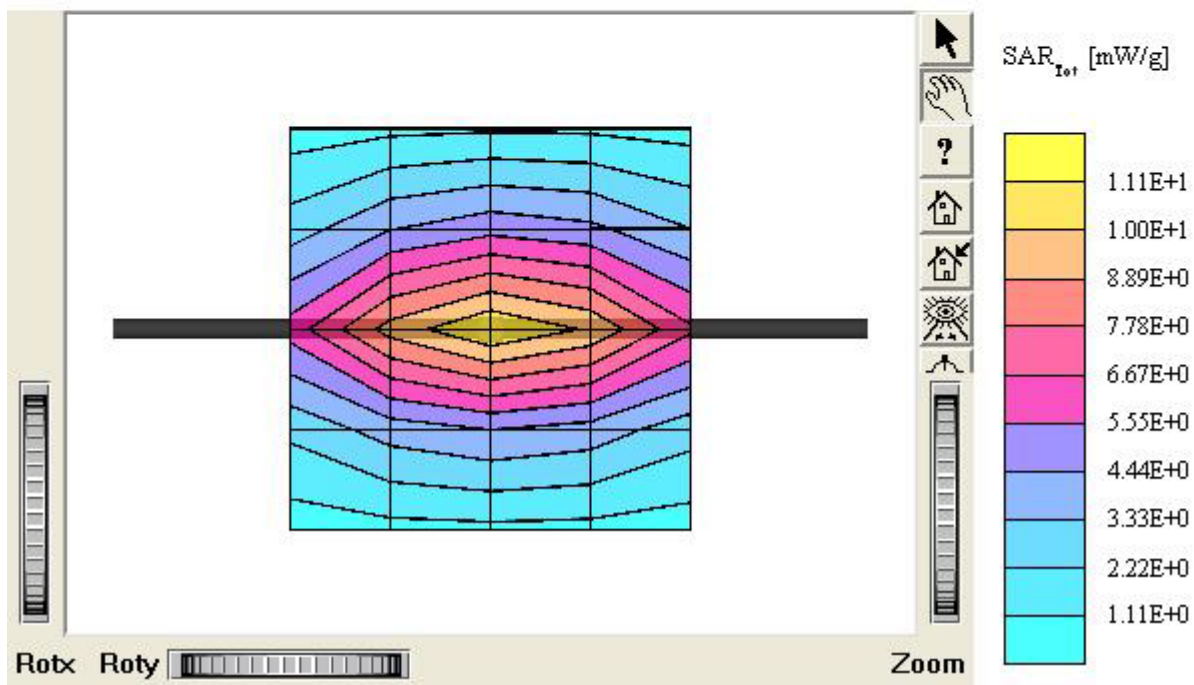
835 MHz Brain Dipole Validation (D835V2/ S.N: 441)

Antenna Input Power : 30 dBm (1W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature: 21.7°C

Date Tested : August 10, 2005



■ Validation Data (1900MHz Head)

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; Head 1900 MHz: $\sigma = 1.46 \text{ mho/m}$, $\epsilon_r = 40.0$ $\rho = 1.00 \text{ g/cm}^3$

Cube 5x5x7: SAR (1g): 41.4 mW/g, SAR (10g): 21.0 mW/g

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

Powerdrift: -0.02 dB

Comment :

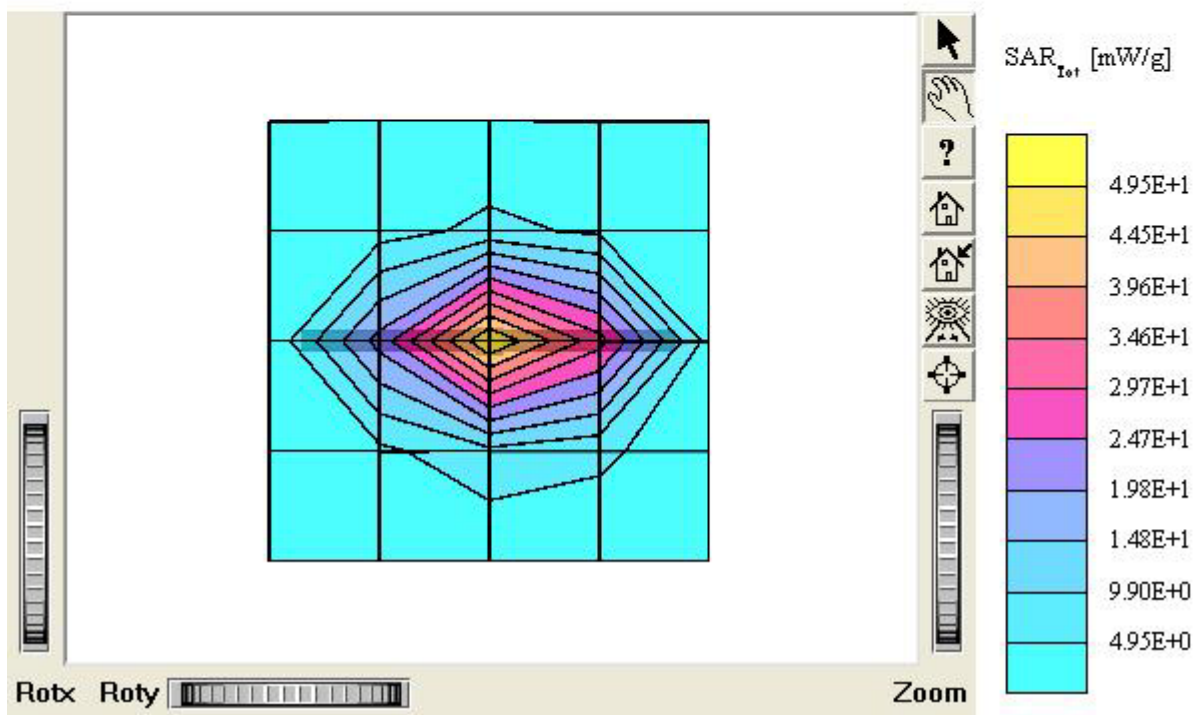
1900 MHz Brain Dipole Validation (D1900V2/ S.N: 5d032)

Antenna Input Power : 30 dBm (1W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature: 21.7°C

Date Tested : August 10, 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; Head 835 MHz: $\sigma = 0.88 \text{ mho/m}$ $\epsilon_r = 42.0$ $\rho = 1.00 \text{ g/cm}^3$

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

Comment :

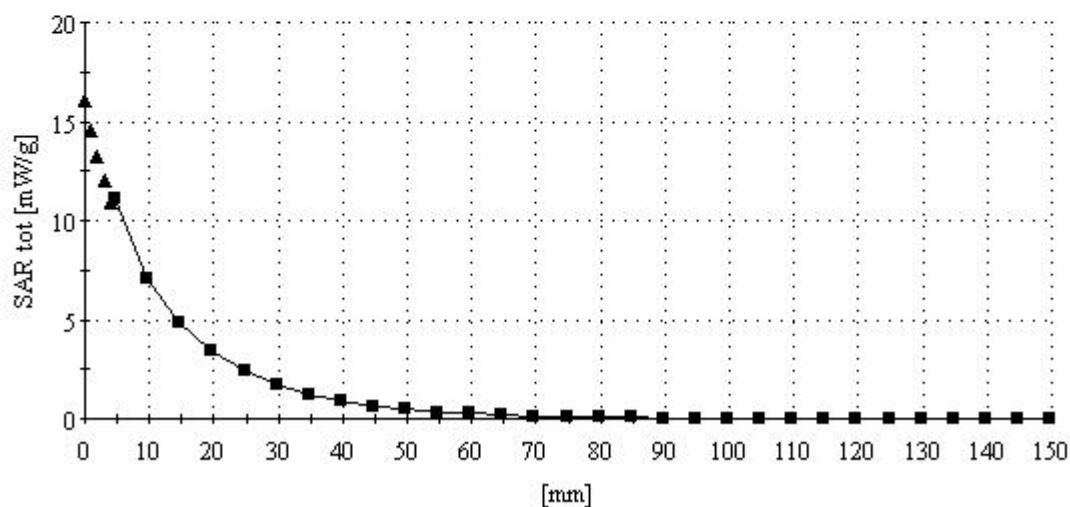
835 MHz Brain Dipole Validation (D835V2/ S.N: 441)

Antenna Input Power : 30 dBm (1W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature: 21.7°C

Date Tested : August 10, 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; Head 1900 MHz: $\sigma = 1.46 \text{ mho/m}$ $\epsilon_r = 40.0$ $\rho = 1.00 \text{ g/cm}^3$

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

Comment :

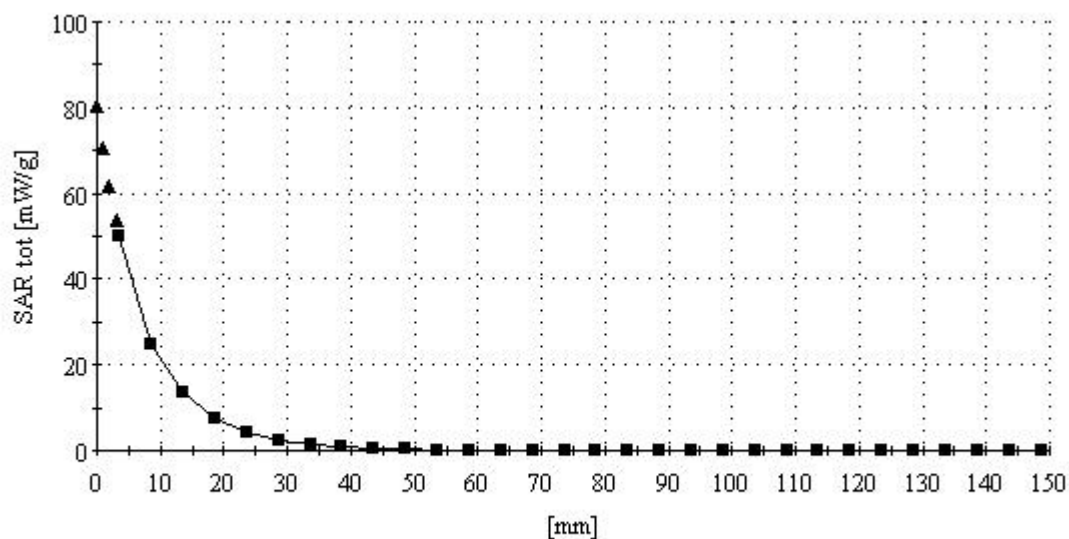
1900 MHz Brain Dipole Validation (D1900V2/ S.N: 54032)

Antenna Input Power : 30 dBm (1W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature: 21.7°C

Date Tested : August 10, 2005



■ Dielectric Parameter (850MHz Head)

Title : SP-740M**SubTitle : GSM850 Head**

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Frequency	e'	e''
800.000000 MHz	42.5084	19.0247
805.000000 MHz	42.4894	19.0114
810.000000 MHz	42.3937	19.0303
815.000000 MHz	42.3354	18.9852
820.000000 MHz	42.2925	19.0111
825.000000 MHz	42.1805	18.9767
830.000000 MHz	42.1697	18.9777
835.000000 MHz	42.0026	18.9442
840.000000 MHz	41.9535	18.9512
845.000000 MHz	41.8325	18.8853
850.000000 MHz	41.7840	18.8513
855.000000 MHz	41.7106	18.8353
860.000000 MHz	41.6694	18.8206
865.000000 MHz	41.5482	18.8090
870.000000 MHz	41.4753	18.7838
875.000000 MHz	41.3612	18.8217
880.000000 MHz	41.3320	18.7492
885.000000 MHz	41.1788	18.7640
890.000000 MHz	41.1028	18.7813
895.000000 MHz	41.0446	18.7539
900.000000 MHz	40.9718	18.7410

■ Dielectric Parameter (1900MHz Head)

Title : SP-740M
SubTitle : GSM1900 Head
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Frequency	e'	e''
1.800000000 GHz	40.4989	13.5312
1.810000000 GHz	40.4254	13.5960
1.820000000 GHz	40.3932	13.6014
1.830000000 GHz	40.3636	13.6970
1.840000000 GHz	40.3283	13.7563
1.850000000 GHz	40.2932	13.8184
1.860000000 GHz	40.2553	13.8640
1.870000000 GHz	40.2074	13.8585
1.880000000 GHz	40.1183	13.8766
1.890000000 GHz	40.0902	13.8469
1.900000000 GHz	40.0317	13.8434
1.910000000 GHz	39.9621	13.8534
1.920000000 GHz	39.8888	13.8514
1.930000000 GHz	39.8815	13.8753
1.940000000 GHz	39.8359	13.9393
1.950000000 GHz	39.7832	14.0080
1.960000000 GHz	39.7639	14.0666
1.970000000 GHz	39.7373	14.1566
1.980000000 GHz	39.7102	14.1816
1.990000000 GHz	39.7036	14.1693
2.000000000 GHz	39.6278	14.1890

■ Dielectric Parameter (850MHz Body)

Title : SP-740M**SubTitle : GSM850 Body**

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Frequency	e'	e''
800.000000 MHz	54.5468	21.0859
805.000000 MHz	54.4833	21.0938
810.000000 MHz	54.4176	21.0914
815.000000 MHz	54.4399	21.0798
820.000000 MHz	54.4037	21.0444
825.000000 MHz	54.3188	21.0715
830.000000 MHz	54.3015	21.0518
835.000000 MHz	54.2463	21.0019
840.000000 MHz	54.1882	21.0305
845.000000 MHz	54.1914	21.0143
850.000000 MHz	54.1426	20.9738
855.000000 MHz	54.0865	20.9690
860.000000 MHz	54.0727	20.9592
865.000000 MHz	54.0088	20.8716
870.000000 MHz	53.8527	20.9056
875.000000 MHz	53.7900	20.8991
880.000000 MHz	53.8017	20.9173
885.000000 MHz	53.7291	20.8936
890.000000 MHz	53.6395	20.8770
895.000000 MHz	53.6105	20.8109
900.000000 MHz	53.5995	20.8428

■ Dielectric Parameter (1900MHz Body)

Title : SP-740M
SubTitle : GSM1900 Body
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Frequency	e'	e''
1.800000000 GHz	51.6256	13.5657
1.810000000 GHz	51.6156	13.6722
1.820000000 GHz	51.6108	13.7776
1.830000000 GHz	51.5567	13.8468
1.840000000 GHz	51.5558	13.9133
1.850000000 GHz	51.5069	13.9502
1.860000000 GHz	51.4651	13.9847
1.870000000 GHz	51.4228	14.0449
1.880000000 GHz	51.3500	14.0717
1.890000000 GHz	51.2707	14.1050
1.900000000 GHz	51.2140	14.1296
1.910000000 GHz	51.1530	14.1833
1.920000000 GHz	51.1200	14.2620
1.930000000 GHz	51.1024	14.3200
1.940000000 GHz	51.0871	14.3938
1.950000000 GHz	51.0695	14.4628
1.960000000 GHz	51.0109	14.5268
1.970000000 GHz	51.0033	14.5941
1.980000000 GHz	50.9828	14.6029
1.990000000 GHz	50.9303	14.6592
2.000000000 GHz	50.9386	14.6840