

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: $\sigma = 0.91 \text{ mho/m}$, $\epsilon_r = 40.4$, $\rho = 1.00 \text{ g/cm}^3$

Cubes (2): SAR (1g): $10.2 \text{ mW/g} \pm 0.01 \text{ dB}$, SAR (10g): $6.44 \text{ mW/g} \pm 0.00 \text{ dB}$

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

Powerdrift: 0.04 dB

Comment :

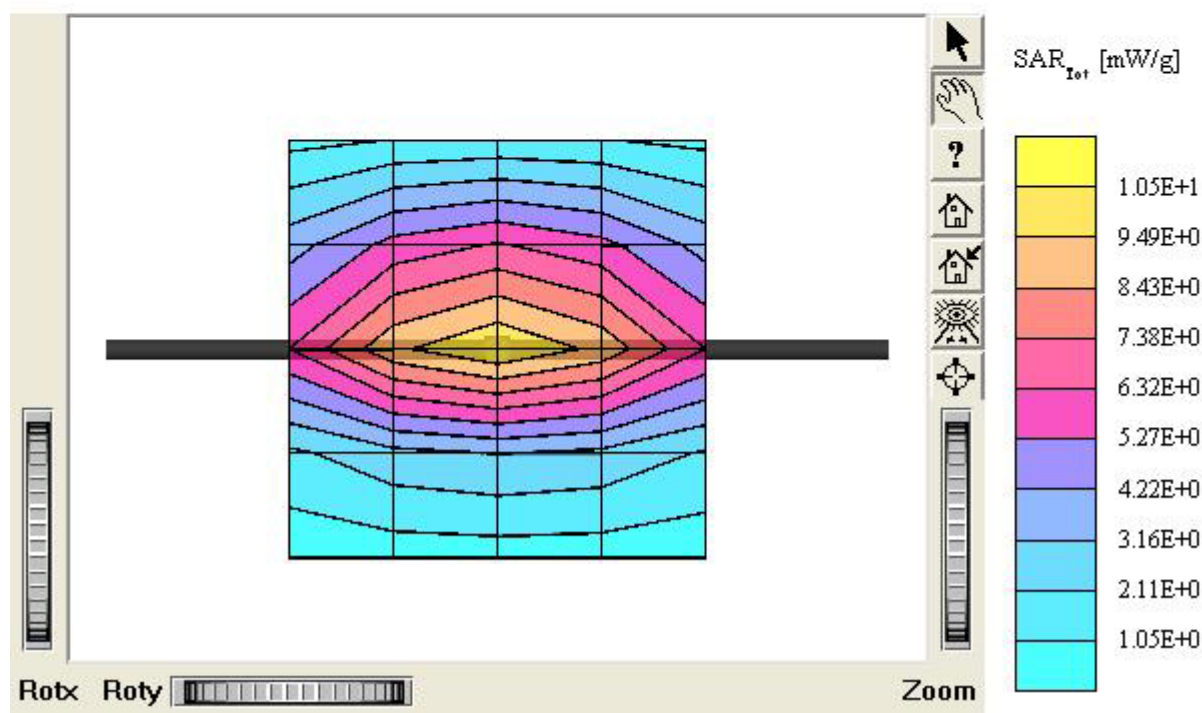
835 MHz Brain Dipole Validation (D835V2/ S.N: 441)

Antenna Input Power : 30 dBm (1W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature: 21.4°C

Date Tested : August 20, 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: $\sigma = 1.46 \text{ mho/m}$ $\epsilon_r = 38.6$ $\rho = 1.00 \text{ g/cm}^3$

Cube 5x5x7: SAR (1g): 41.6 mW/g, SAR (10g): 21.0 mW/g

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

Powerdrift: 0.02 dB

Comment :

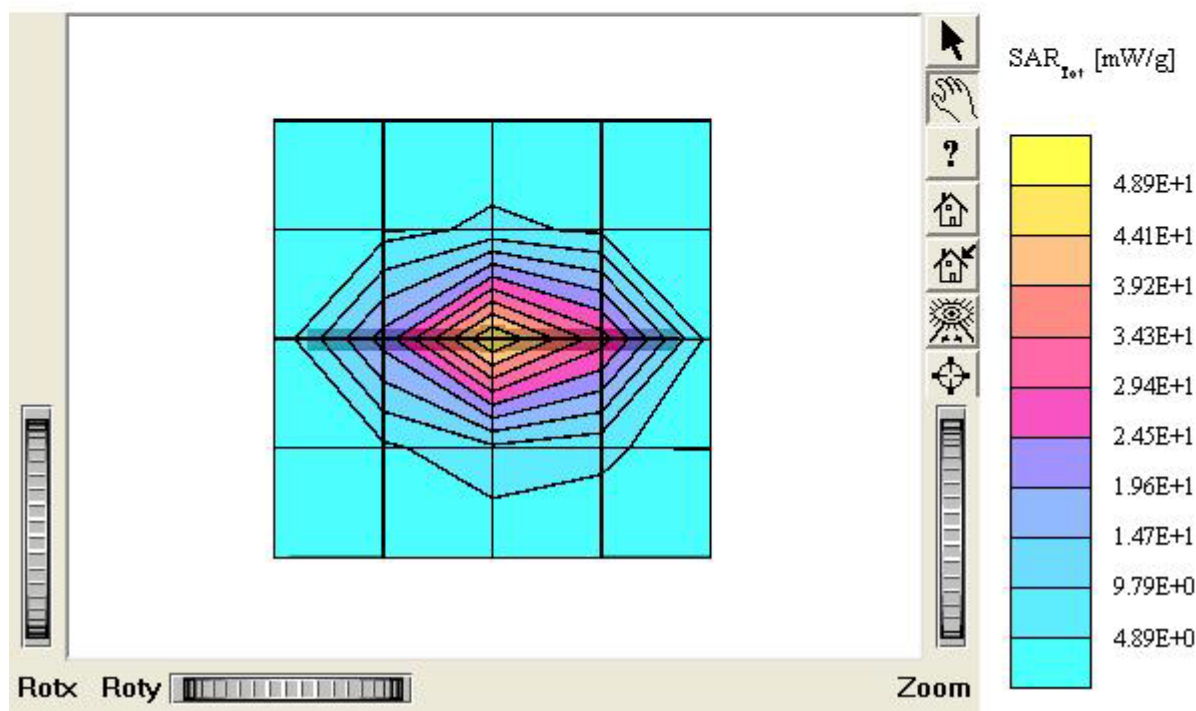
1900 MHz Brain Dipole Validation (D1900V2/ S.N: 5d032)

Antenna Input Power : 30 dBm (1W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature: 21.4°C

Date Tested : August 20, 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: $\sigma = 0.91$ mho/m $\epsilon_r = 40.4$ $\rho = 1.00$ g/cm³

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

Comment :

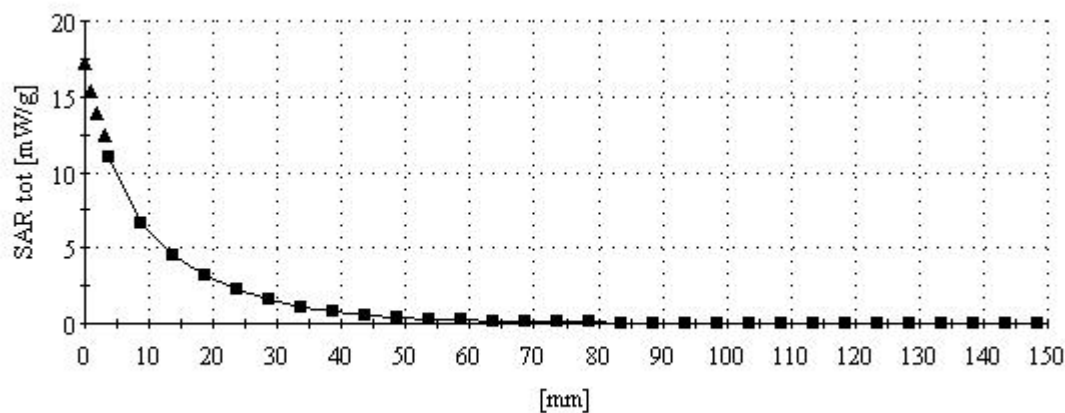
835 MHz Brain Dipole Validation (D835V2/ S.N: 441)

Antenna Input Power : 30 dBm (1W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature: 21.4°C

Date Tested : August 20, 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: $\sigma = 1.46 \text{ mho/m}$ $\epsilon_r = 38.6$ $\rho =$

1.00 g/cm³

:

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

Comment :

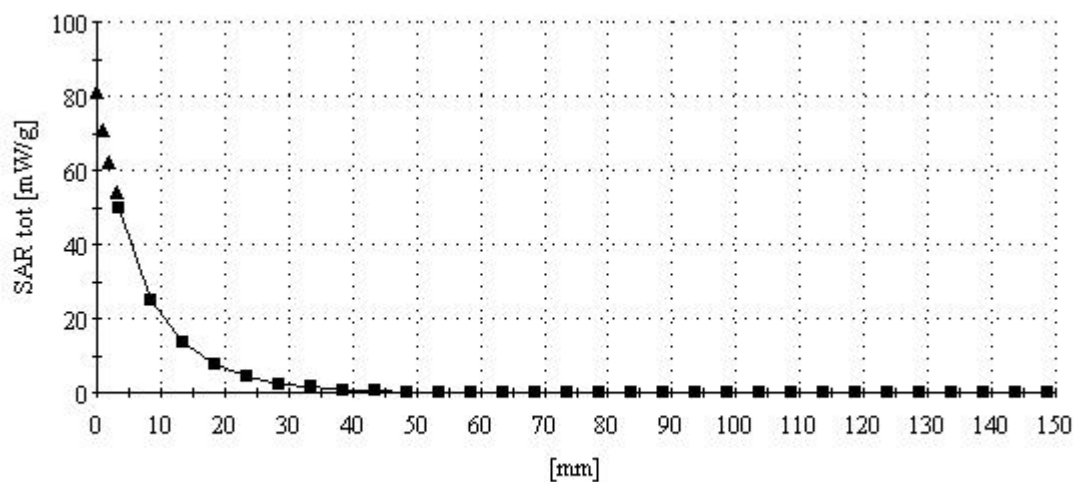
1900 MHz Brain Dipole Validation (D1900V2/ S.N: 5d032)

Antenna Input Power : 30 dBm (1W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature: 21.4°C

Date Tested : August 20, 2005



■ Dielectric Parameter (835MHz Head)

Title : ES803**SubTitle : GSM850 HEAD**

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Frequency	e'	e''
800.000000 MHz	40.6181	19.6838
805.000000 MHz	40.5942	19.6090
810.000000 MHz	40.5413	19.5857
815.000000 MHz	40.4666	19.5578
820.000000 MHz	40.5037	19.5059
825.000000 MHz	40.4607	19.4916
830.000000 MHz	40.4357	19.5412
835.000000 MHz	40.3635	19.5874
840.000000 MHz	40.2730	19.6384
845.000000 MHz	40.1680	19.6307
850.000000 MHz	40.0277	19.6021
855.000000 MHz	39.9449	19.5893
860.000000 MHz	39.8945	19.5784
865.000000 MHz	39.7344	19.5368
870.000000 MHz	39.7024	19.5114
875.000000 MHz	39.6106	19.5231
880.000000 MHz	39.5398	19.4438
885.000000 MHz	39.4235	19.4132
890.000000 MHz	39.3407	19.4087
895.000000 MHz	39.3142	19.3540
900.000000 MHz	39.2020	19.3438

■ Dielectric Parameter (1900MHz Head)**Title : ES803****SubTitle : GSM1900 HEAD**

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Frequency	e'	e''
1.800000000 GHz	38.9632	13.5326
1.810000000 GHz	38.9109	13.5661
1.820000000 GHz	38.8949	13.6984
1.830000000 GHz	38.8846	13.8118
1.840000000 GHz	38.9229	13.8684
1.850000000 GHz	38.8597	13.9139
1.860000000 GHz	38.8028	13.9228
1.870000000 GHz	38.7421	13.8897
1.880000000 GHz	38.7170	13.8501
1.890000000 GHz	38.6873	13.8167
1.900000000 GHz	38.6161	13.8774
1.910000000 GHz	38.5468	13.8722
1.920000000 GHz	38.4478	13.8508
1.930000000 GHz	38.3914	13.9471
1.940000000 GHz	38.3695	14.0629
1.950000000 GHz	38.3983	14.1405
1.960000000 GHz	38.4052	14.2228
1.970000000 GHz	38.3578	14.2546
1.980000000 GHz	38.3136	14.2437
1.990000000 GHz	38.2992	14.2372
2.000000000 GHz	38.2750	14.1966

■ Dielectric Parameter (835MHz Body)

Title : ES803
SubTitle : GSM850 BODY
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Frequency	e'	e''
800.000000 MHz	53.5023	20.6008
805.000000 MHz	53.4290	20.5390
810.000000 MHz	53.3983	20.5640
815.000000 MHz	53.3470	20.4955
820.000000 MHz	53.3299	20.5210
825.000000 MHz	53.2705	20.5337
830.000000 MHz	53.2753	20.5067
835.000000 MHz	53.2193	20.5071
840.000000 MHz	53.1968	20.5064
845.000000 MHz	53.2170	20.5008
850.000000 MHz	53.1672	20.5097
855.000000 MHz	53.1305	20.4923
860.000000 MHz	53.1310	20.5148
865.000000 MHz	53.0725	20.4627
870.000000 MHz	53.0277	20.5018
875.000000 MHz	52.9561	20.5084
880.000000 MHz	52.9322	20.4284
885.000000 MHz	52.8442	20.3998
890.000000 MHz	52.7924	20.3944
895.000000 MHz	52.7130	20.3009
900.000000 MHz	52.6069	20.2705

■ Dielectric Parameter (1900MHz Body)**Title : ES803****SubTitle : GSM1900 BODY**

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Frequency	e'	e''
1.800000000 GHz	54.2055	13.7459
1.810000000 GHz	54.3038	13.7981
1.820000000 GHz	54.5498	13.8223
1.830000000 GHz	54.7166	13.8341
1.840000000 GHz	54.7954	13.8730
1.850000000 GHz	54.8309	13.8952
1.860000000 GHz	54.8781	13.9393
1.870000000 GHz	54.6866	13.9853
1.880000000 GHz	54.3984	14.0832
1.890000000 GHz	54.2623	14.1540
1.900000000 GHz	53.8812	14.2405
1.910000000 GHz	53.7170	14.3339
1.920000000 GHz	53.7232	14.4218
1.930000000 GHz	53.6151	14.4647
1.940000000 GHz	53.5647	14.5268
1.950000000 GHz	53.6300	14.5882
1.960000000 GHz	53.5696	14.6128
1.970000000 GHz	53.5128	14.6050
1.980000000 GHz	53.4887	14.6026
1.990000000 GHz	53.3412	14.6525
2.000000000 GHz	53.1916	14.7130