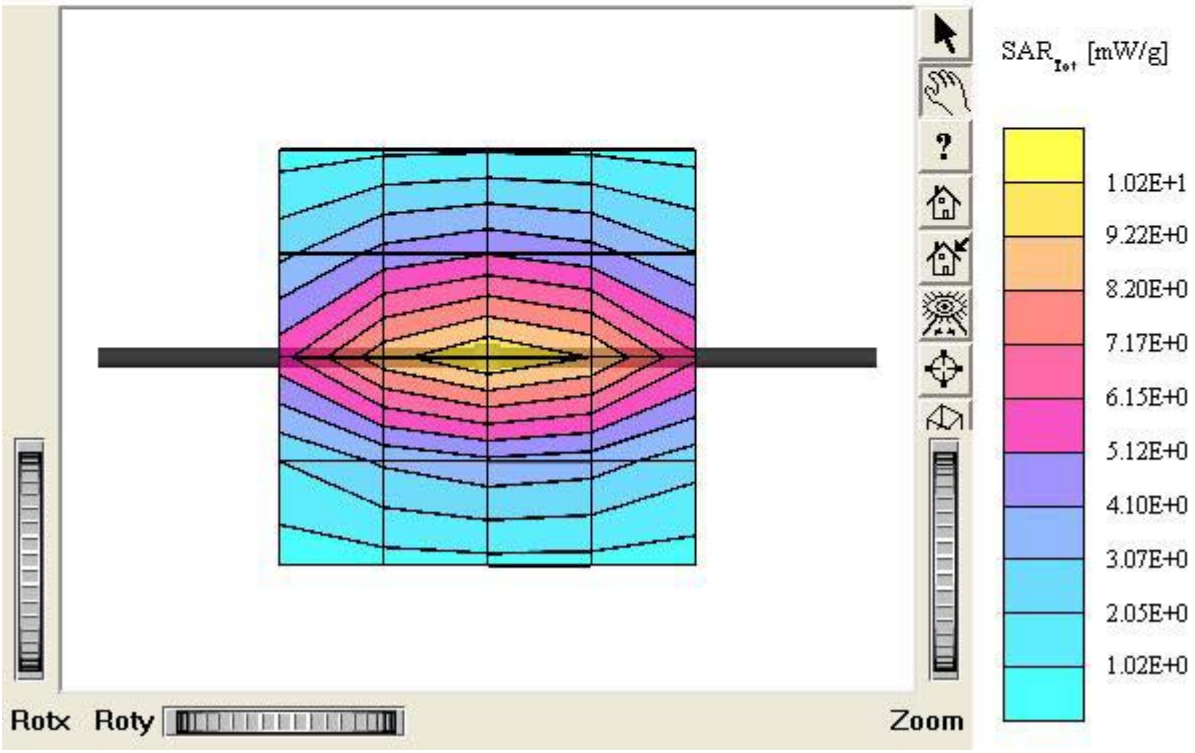
ATTACHMENT Q – DIPOLE VALIDATION

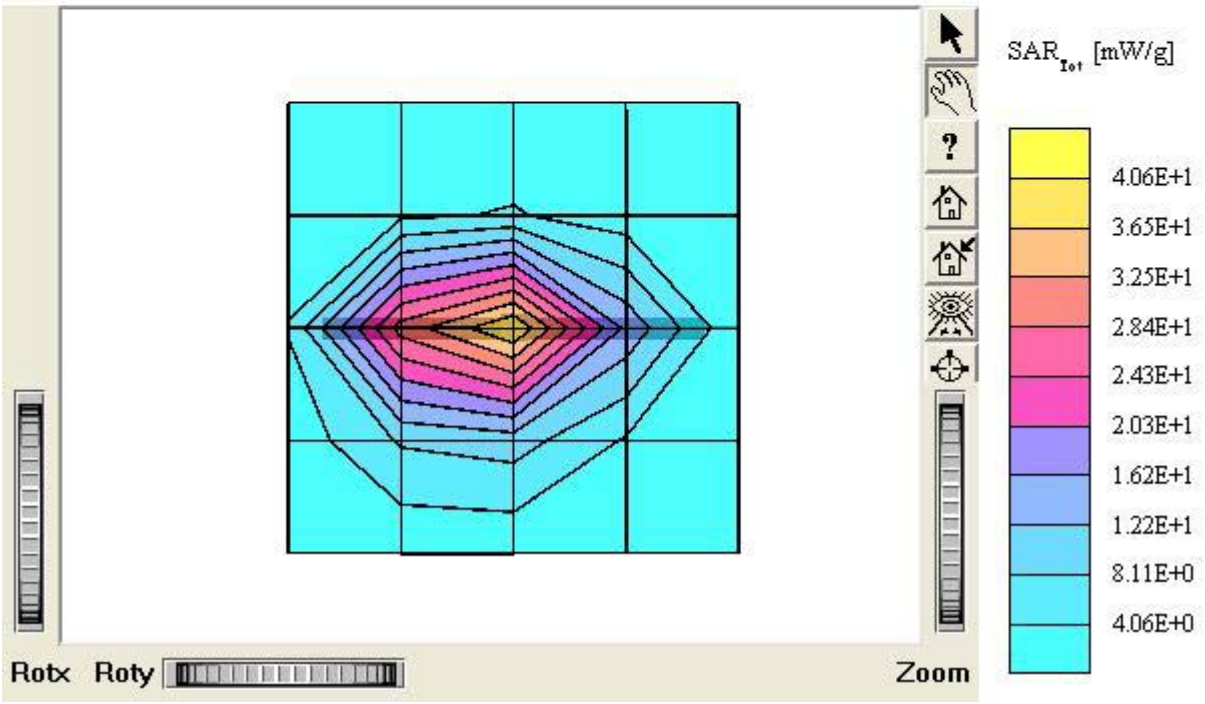
■ Validation Data (835MHz Head)

Dipole 835 MHz
SAM I Phantom; Flat Section; Position: (90°,90°); Frequency: 835 MHz
Probe: ET3DV6 - SN1798; ConvF(6.91,6.91,6.91); Crest factor: 1.0; Brain 835 MHz: σ = 0.88 mho/m ε_r = 41.8 ρ = 1.00 g/cm^3
Cubes (2): SAR (1g): 10.2 mW/g ± 0.02 dB, SAR (10g): 6.59 mW/g ± 0.03 dB
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℃
Date Tested : September 13, 2005



■ Validation Data (1900MHz Head)

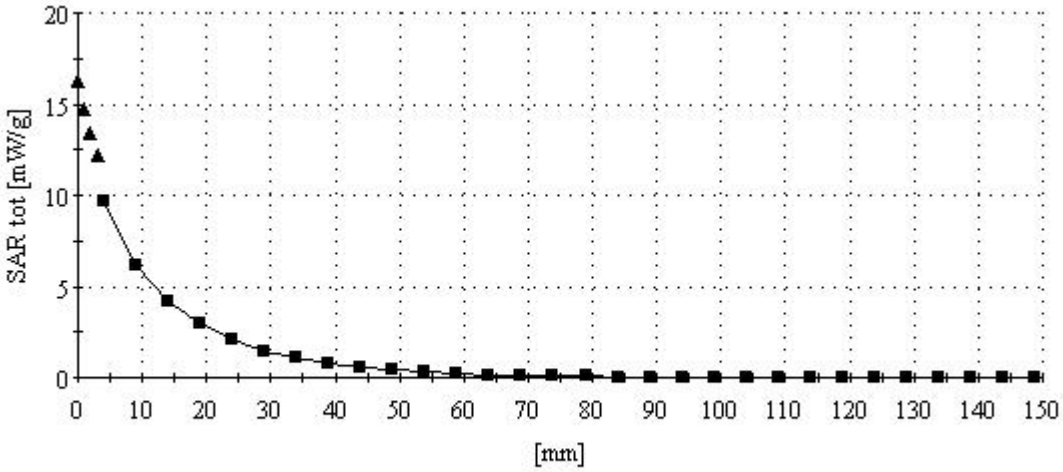
Dipole 1900 MHz
SAM II Phantom; Flat Section; Position: (90°,90°); Frequency: 1900 MHz
Probe: ET3DV6 - SN1798; ConvF(5.27,5.27,5.27); Crest factor: 1.0; Head 1900 MHz: σ = 1.45 mho/m ε_r = 38.3 ρ = 1.00 g/cm^3
Cube 5x5x7: SAR (1g): 42.7 mW/g, SAR (10g): 22.1 mW/g
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0
Powerdrift: 0.00 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: 21.5℃
Date Tested : September 14, 2005



Dipole 835 MHz

SAM I Phantom; Section; Position: ; Frequency: 835 MHz
Probe: ET3DV6 - SN1798; ConvF(6.91,6.91,6.91); Crest factor: 1.0; Brain 835 MHz: σ = 0.88 mho/m ε_r = 41.8 ρ = 1.00 g/cm^3
:
Z-Axis: Dx = 0.0, Dy = 0.0, Dz = 5.0

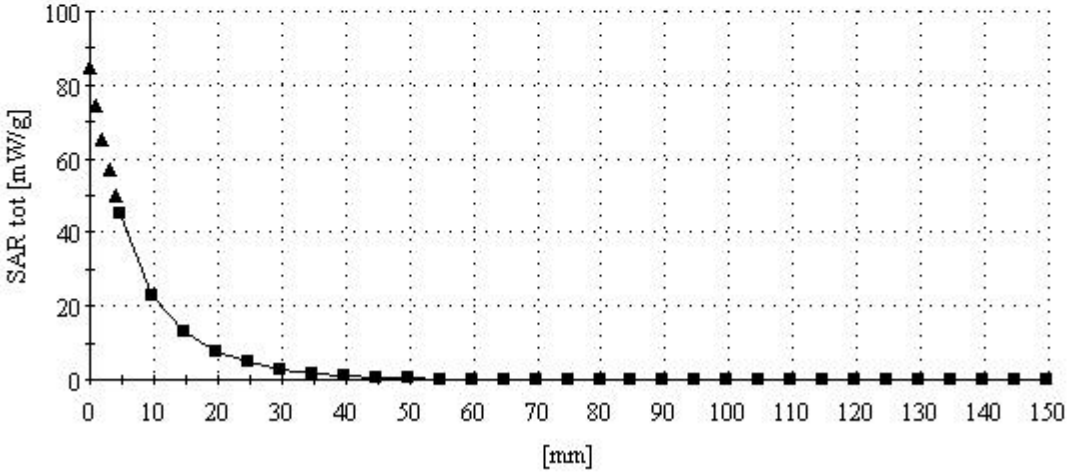
Comment :
835 MHz Brain Dipole Validation (D835V2/ S.N: 441)
Antenna Input Power : 30 dBm (1W)
HCT Co., Ltd. Brain Tissue Simulating Liquid
Liquid Temperature: 21.7℃
Date Tested : September 13, 2005



Dipole 1900 MHz

SAM II Phantom; Section; Position: ; Frequency: 1900 MHz
Probe: ET3DV6 - SN1798; ConvF(5.27,5.27,5.27); Crest factor: 1.0; Head 1900 MHz: σ = 1.45 mho/m ε_r = 38.3 ρ = 1.00 g/cm^3
:
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: 21.5℃
Date Tested : September 14, 2005



■ Dielectric Parameter (850MHz Head)

Title : SP-100
SubTitle : GSM850 Head
September 13, 2005 09:33 AM

Frequency	e'	e''
800.000000 MHz	42.5883	18.9592
805.000000 MHz	42.5213	18.9702
810.000000 MHz	42.4043	18.9519
815.000000 MHz	42.3331	18.9001
820.000000 MHz	42.1922	18.9006
825.000000 MHz	42.0894	18.9545
830.000000 MHz	41.9869	18.9659
835.000000 MHz	41.8484	18.9562
840.000000 MHz	41.7891	18.9247
845.000000 MHz	41.6319	18.9112
850.000000 MHz	41.5968	18.9566
855.000000 MHz	41.5298	18.8872
860.000000 MHz	41.4816	18.9158
865.000000 MHz	41.4597	18.9264
870.000000 MHz	41.3995	18.9074
875.000000 MHz	41.2855	18.8741
880.000000 MHz	41.3312	18.8148
885.000000 MHz	41.2137	18.8489
890.000000 MHz	41.1520	18.8466
895.000000 MHz	41.1429	18.7842
900.000000 MHz	41.0996	18.7721

■ Dielectric Parameter (1900MHz Head)

Title : SP-100
SubTitle : GSM1900 Head
September 14, 2005 09:48 AM

Frequency	e'	e''
1.800000000 GHz	38.6509	13.3606
1.810000000 GHz	38.6108	13.4095
1.820000000 GHz	38.5815	13.4640
1.830000000 GHz	38.5406	13.5821
1.840000000 GHz	38.5383	13.6768
1.850000000 GHz	38.4976	13.7494
1.860000000 GHz	38.4724	13.8007
1.870000000 GHz	38.4492	13.8090
1.880000000 GHz	38.4167	13.8053
1.890000000 GHz	38.3573	13.7416
1.900000000 GHz	38.3045	13.7451
1.910000000 GHz	38.2374	13.7050
1.920000000 GHz	38.1099	13.7030
1.930000000 GHz	38.0533	13.7424
1.940000000 GHz	38.0304	13.7872
1.950000000 GHz	37.9897	13.8665
1.960000000 GHz	38.0011	13.9709
1.970000000 GHz	37.9720	14.0685
1.980000000 GHz	37.9824	14.1207
1.990000000 GHz	37.9568	14.1058
2.000000000 GHz	37.9291	14.1357

■ Dielectric Parameter (850MHz Body)

Title : SP-100
SubTitle : GSM850 Body
September 13, 2005 01:26 PM

Frequency	e'	e''
800.000000 MHz	53.5128	20.6311
805.000000 MHz	53.4601	20.5958
810.000000 MHz	53.3684	20.5745
815.000000 MHz	53.3347	20.5556
820.000000 MHz	53.2880	20.4970
825.000000 MHz	53.2323	20.5196
830.000000 MHz	53.2433	20.5402
835.000000 MHz	53.1514	20.5316
840.000000 MHz	53.1021	20.4861
845.000000 MHz	53.0965	20.4687
850.000000 MHz	53.0318	20.4945
855.000000 MHz	52.9732	20.4748
860.000000 MHz	52.9038	20.4809
865.000000 MHz	52.8933	20.4119
870.000000 MHz	52.8132	20.4119
875.000000 MHz	52.7163	20.3919
880.000000 MHz	52.6382	20.3759
885.000000 MHz	52.5582	20.2824
890.000000 MHz	52.4145	20.3082
895.000000 MHz	52.3322	20.1758
900.000000 MHz	52.2270	20.1986

■ Dielectric Parameter (1900MHz Body)

Title : SP-100
SubTitle : GSM1900 Body
September 14, 2005 02:18 PM

Frequency	e'	e''
1.800000000 GHz	53.0016	13.9354
1.810000000 GHz	53.0342	13.9838
1.820000000 GHz	53.0265	14.0088
1.830000000 GHz	53.0037	14.0143
1.840000000 GHz	53.0039	13.9741
1.850000000 GHz	52.9405	13.9509
1.860000000 GHz	52.7950	13.9837
1.870000000 GHz	52.7014	14.0397
1.880000000 GHz	52.4644	14.1501
1.890000000 GHz	52.2664	14.2483
1.900000000 GHz	52.1481	14.3481
1.910000000 GHz	52.0683	14.4678
1.920000000 GHz	52.0428	14.5928
1.930000000 GHz	52.0765	14.6423
1.940000000 GHz	51.9982	14.6691
1.950000000 GHz	51.9930	14.6720
1.960000000 GHz	51.9256	14.6719
1.970000000 GHz	51.8514	14.6360
1.980000000 GHz	51.7738	14.6256
1.990000000 GHz	51.6648	14.6599
2.000000000 GHz	51.5625	14.7069