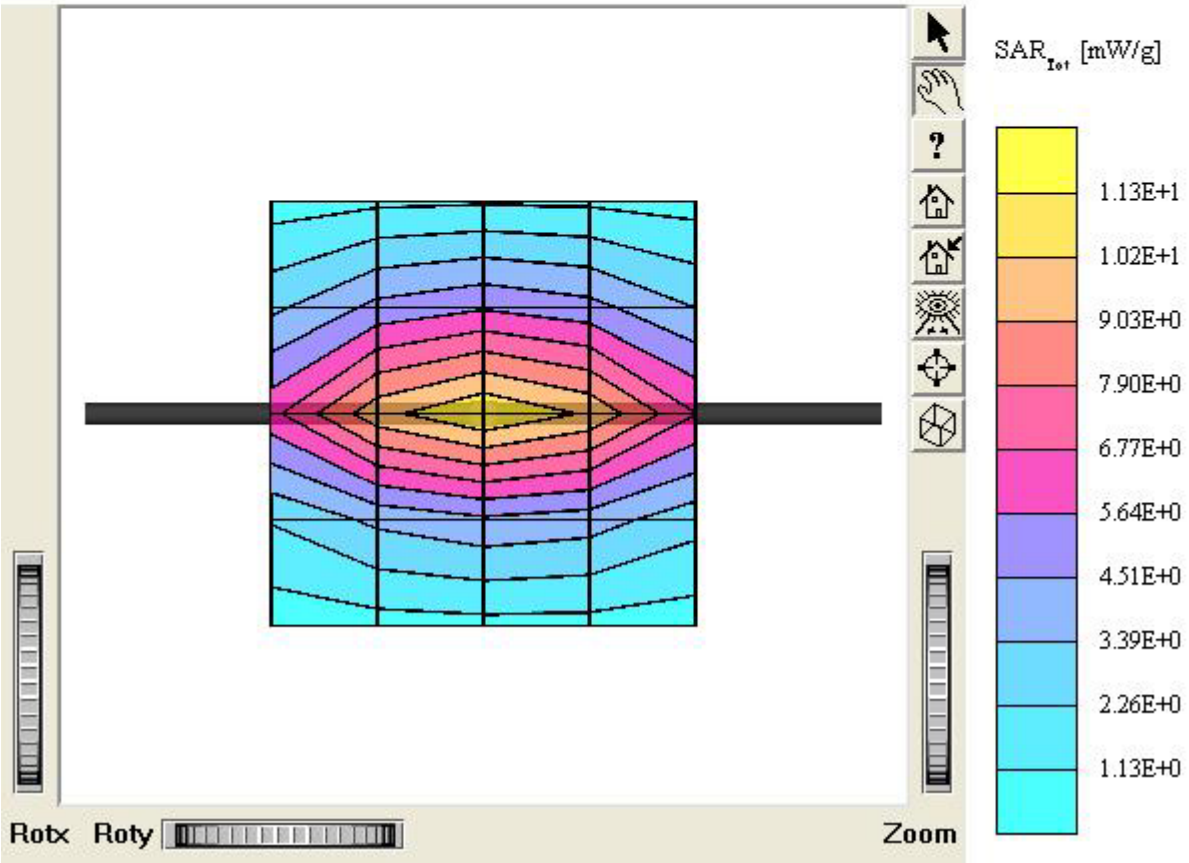
ATTACHMENT Q – DIPOLE VALIDATION

■ Validation Data (835MHz Brain)

Dipole 835 MHz

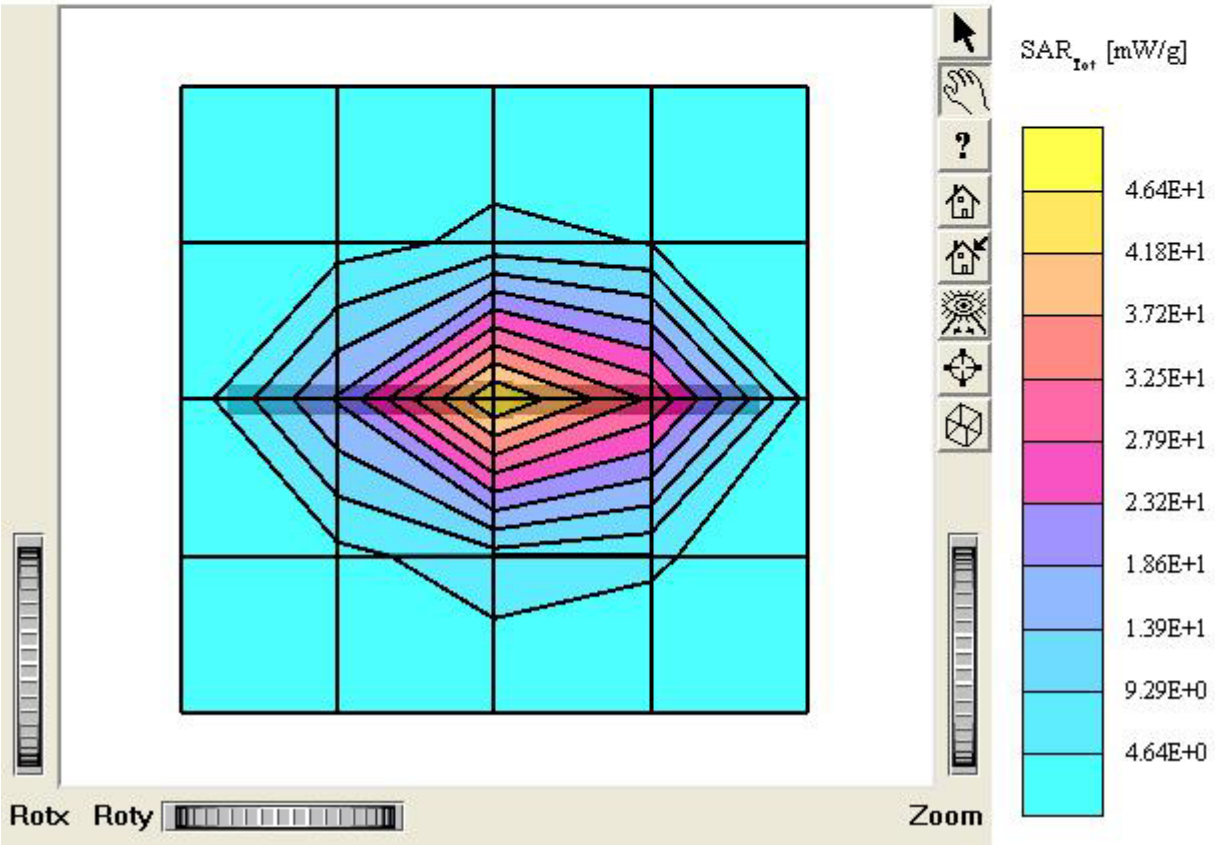
SAM I Phantom; Flat Section; Position: (90°,90°); Frequency: 835 MHz
Probe: ET3DV6 - SN1609; ConvF(6.63,6.63,6.63); Crest factor: 1.0; Brain 835 MHz: σ = 0.91 mho/m ε_r = 39.9 ρ = 1.00 g/cm^3
Cubes (2): SAR (1g): 10.2 mW/g ± 0.03 dB, SAR (10g): 6.58 mW/g ± 0.04 dB
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0
Powerdrift: -0.03 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: 21.4℃
Date Tested : March 21, 2005



■ Validation Data (1900MHz Brain)

Dipole 1900 MHz

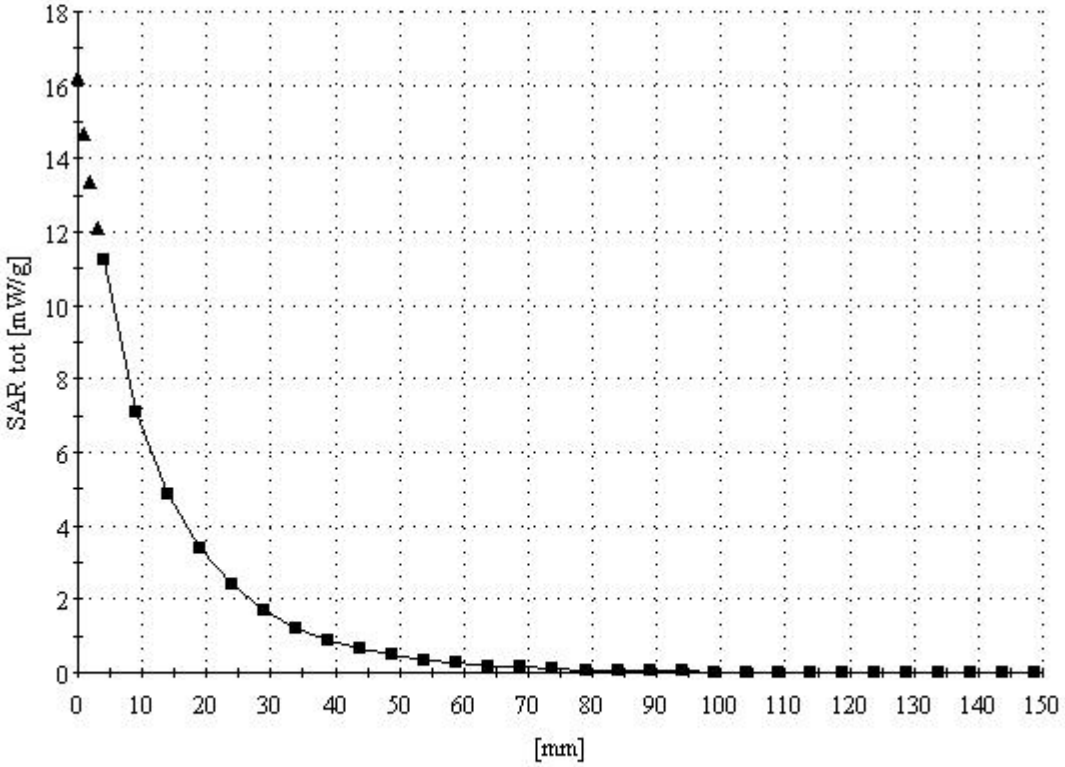
SAM II Phantom; Flat Section; Position: (90°,90°); Frequency: 1900 MHz
Probe: ET3DV6 - SN1609; ConvF(5.34,5.34,5.34); Crest factor: 1.0; Brain 1900 MHz: σ = 1.39 mho/m ε_r = 40.4 ρ = 1.00 g/cm^3
Cubes (2): SAR (1g): 41.3 mW/g ± 0.04 dB, SAR (10g): 20.6 mW/g ± 0.04 dB
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0
Powerdrift: -0.00 dB
Comment:
1900 MHz Brain Dipole Validation (D1900V2/ S.N: 5d032)
Antenna Input Power: 30 dBm (1 W)
HCT Co., Ltd. Brain Tissue Simulating Liquid
Liquid Temperature: 21.4℃
Date Tested : March 21, 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: σ = 0.91 mho/m ε_r = 39.9 ρ = 1.00 g/cm^3
:
Z-Axis: Dx = 0.0, Dy = 0.0, Dz = 5.0

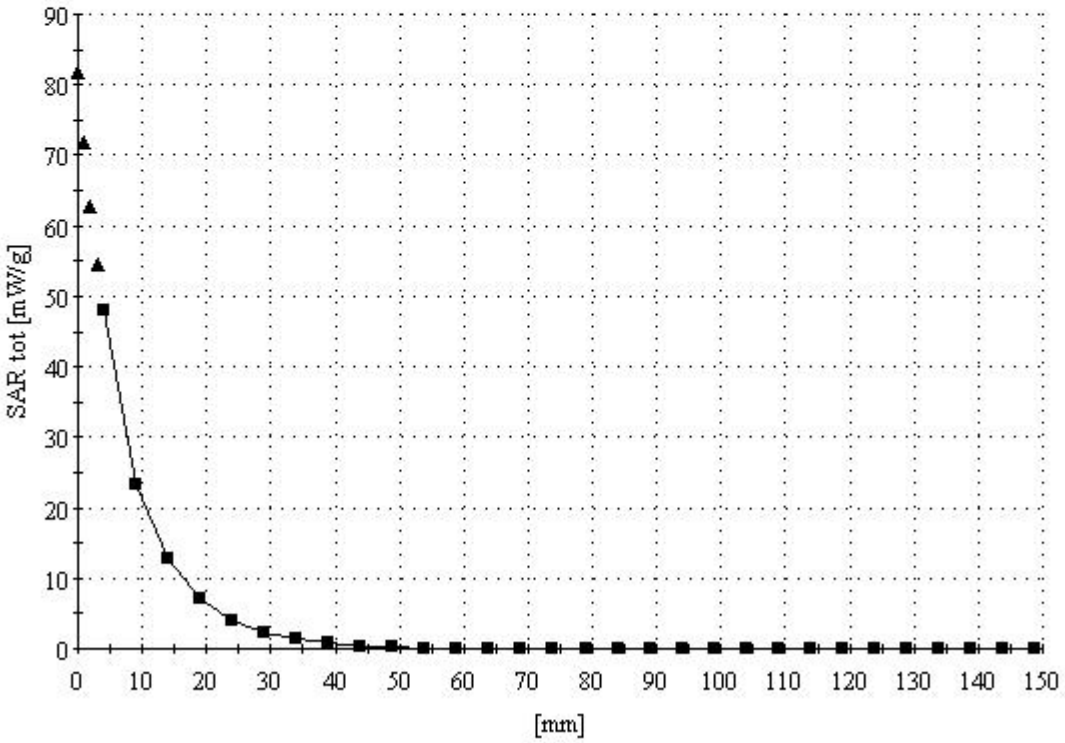
Comment:
835MHz Brain Dipole Validation (D835V2/ S.N: 441)
Antenna Input Power: 30 dBm (1 W)
HCT Co., Ltd. Brain Tissue Simulating Liquid
Liquid Temperature: 21.4℃
Date Tested : March 21, 2005



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: σ = 1.39 mho/m ε_r = 40.4 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 (1 W)
HCT Co., Ltd. Brain Tissue Simulating Liquid
Liquid Temperature: 21.4℃
Date Tested : March 21, 2005



■ Dielectric Parameter (835MHz Brain)

Title : C640

SubTitle : GSM850 BRAIN

March 21, 2005 09:45 AM

Frequency	e'	e''
800.000000 MHz	40.1356	19.6679
805.000000 MHz	40.0917	19.5890
810.000000 MHz	40.0616	19.5611
815.000000 MHz	39.9864	19.4813
820.000000 MHz	40.0216	19.4743
825.000000 MHz	39.9972	19.4618
830.000000 MHz	40.0086	19.5610
835.000000 MHz	39.9463	19.6369
840.000000 MHz	39.8039	19.6816
845.000000 MHz	39.6749	19.6916
850.000000 MHz	39.5424	19.6822
855.000000 MHz	39.4596	19.6600
860.000000 MHz	39.3475	19.6769
865.000000 MHz	39.2214	19.6367
870.000000 MHz	39.1414	19.5746
875.000000 MHz	39.0737	19.5908
880.000000 MHz	39.0183	19.5383
885.000000 MHz	38.9251	19.4370
890.000000 MHz	38.8481	19.4270
895.000000 MHz	38.8072	19.3478
900.000000 MHz	38.7249	19.3304

■ Dielectric Parameter (1900MHz Brain)

Title : C640
SubTitle : GSM1900 BRAIN
March 21, 2005 09:20 AM

Frequency	e'	e''
1.800000000 GHz	40.8761	12.8848
1.810000000 GHz	40.7808	12.9298
1.820000000 GHz	40.7823	12.9900
1.830000000 GHz	40.7039	13.0613
1.840000000 GHz	40.6839	13.0831
1.850000000 GHz	40.6459	13.1317
1.860000000 GHz	40.6200	13.1451
1.870000000 GHz	40.6208	13.1746
1.880000000 GHz	40.5481	13.1914
1.890000000 GHz	40.4550	13.1980
1.900000000 GHz	40.3632	13.1863
1.910000000 GHz	40.2588	13.1807
1.920000000 GHz	40.1955	13.2263
1.930000000 GHz	40.1072	13.2590
1.940000000 GHz	40.0688	13.3064
1.950000000 GHz	40.0225	13.3621
1.960000000 GHz	39.9876	13.4369
1.970000000 GHz	39.9989	13.4598
1.980000000 GHz	39.9819	13.5046
1.990000000 GHz	39.9790	13.5249
2.000000000 GHz	39.9519	13.5558

■ Dielectric Parameter (835MHz Muscle)

Title : C640
SubTitle : GSM850 BODY
March 21, 2005 02:45 PM

Frequency	e'	e''
800.000000 MHz	54.4008	20.8986
805.000000 MHz	54.2941	20.9119
810.000000 MHz	54.2726	20.9064
815.000000 MHz	54.2229	20.9445
820.000000 MHz	54.1862	20.9219
825.000000 MHz	54.1062	20.9151
830.000000 MHz	54.0125	20.9579
835.000000 MHz	53.9473	20.9681
840.000000 MHz	53.8234	20.9343
845.000000 MHz	53.7756	20.8950
850.000000 MHz	53.6905	20.8700
855.000000 MHz	53.6435	20.8854
860.000000 MHz	53.5975	20.8142
865.000000 MHz	53.5395	20.8233
870.000000 MHz	53.4591	20.7982
875.000000 MHz	53.4638	20.7838
880.000000 MHz	53.3883	20.7521
885.000000 MHz	53.3433	20.7832
890.000000 MHz	53.3236	20.7676
895.000000 MHz	53.3142	20.6956
900.000000 MHz	53.2414	20.7009

■ Dielectric Parameter (1900MHz Muscle)

Title : C640
SubTitle : GSM1900 BODY
March 21, 2005 11:05 AM

Frequency	e'	e''
1.800000000 GHz	51.3384	14.6719
1.810000000 GHz	51.3141	14.6988
1.820000000 GHz	51.2885	14.7519
1.830000000 GHz	51.2414	14.7981
1.840000000 GHz	51.2319	14.8273
1.850000000 GHz	51.1920	14.8645
1.860000000 GHz	51.1453	14.9041
1.870000000 GHz	51.1109	14.9514
1.880000000 GHz	51.0704	14.9687
1.890000000 GHz	50.9984	14.9640
1.900000000 GHz	50.9271	14.9664
1.910000000 GHz	50.8730	14.9582
1.920000000 GHz	50.8350	14.9789
1.930000000 GHz	50.8022	15.0236
1.940000000 GHz	50.7550	15.0460
1.950000000 GHz	50.7181	15.1055
1.960000000 GHz	50.6866	15.1571
1.970000000 GHz	50.6472	15.2055
1.980000000 GHz	50.6353	15.2471
1.990000000 GHz	50.6120	15.2781
2.000000000 GHz	50.5748	15.2726