

ATTACHMENT Q – DIPOLE VALIDATION

■ Validation Data (835MHz Brain)

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: $\sigma = 0.89$ mho/m $\epsilon_r = 41.0$ $\rho = 1.00$ g/cm³

Cubes (Z): SAR (1g): 10.1 mW/g ± 0.10 dB, SAR (10g): 6.45 mW/g ± 0.11 dB

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

Powerdrift: 0.02 dB

Comment :

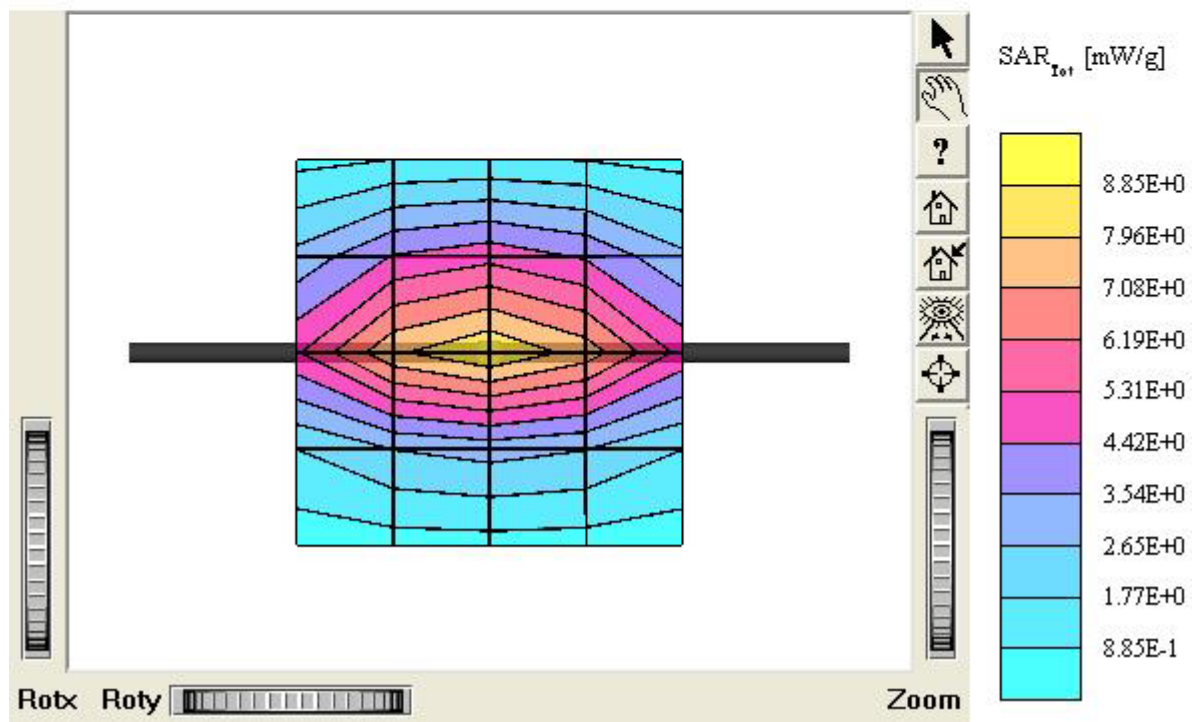
835MHz Brain Dipole Validation (D835V2/ S.N: 441)

Antenna Input Power: 30 dBm (1 W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature : 21.4 °C

Date Tested : December 17, 2005



■ Validation Data (1900MHz Brain)

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: $\sigma = 1.45 \text{ mho/m}$ $\epsilon_r = 40.0$ $\rho = 1.00 \text{ g/cm}^3$

Cube 5x5x7: SAR(1g): 42.6 mW/g, SAR(10g): 22.0 mW/g

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

Powerdrift: 0.01 dB

Comment :

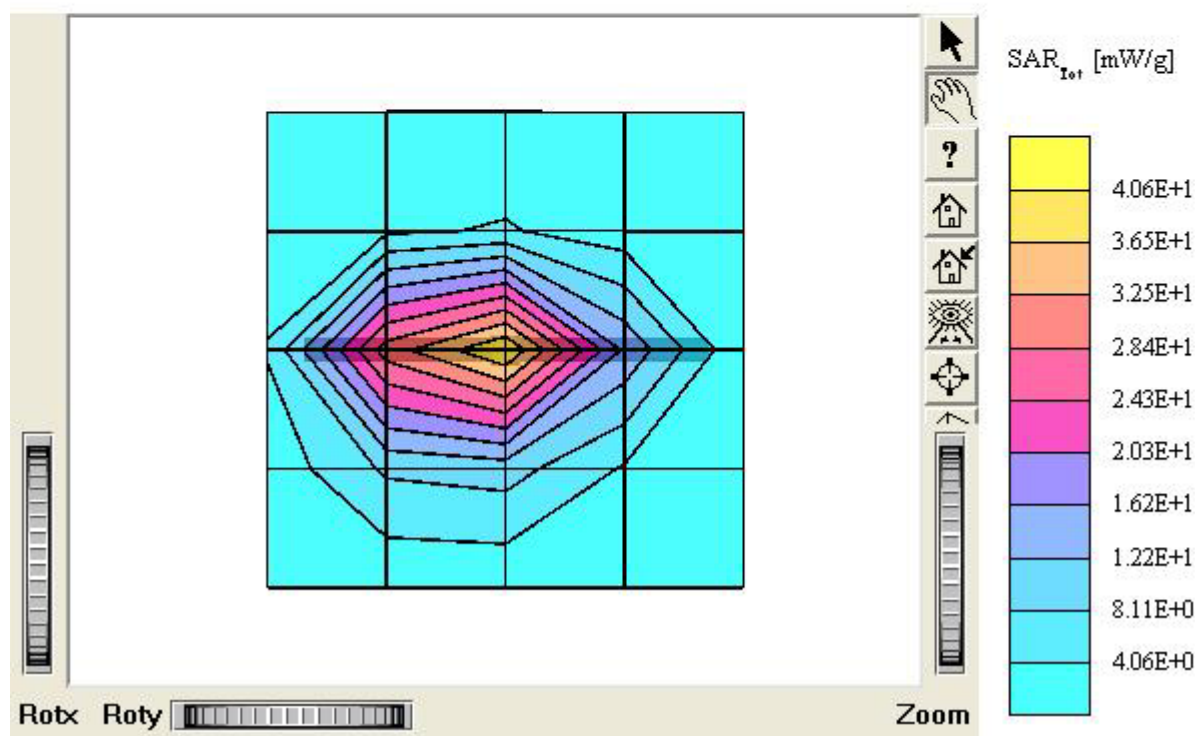
1900 MHz Brain Dipole Validation (D1900V2/ S.N: 5d032)

Antenna Input Power: 30 dBm (1 W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature : 21.4 °C

Date Tested : December 17, 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: $\sigma = 0.89$ mho/m $\epsilon_r = 41.0$ $\rho = 1.00$ g/cm³

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

Comment :

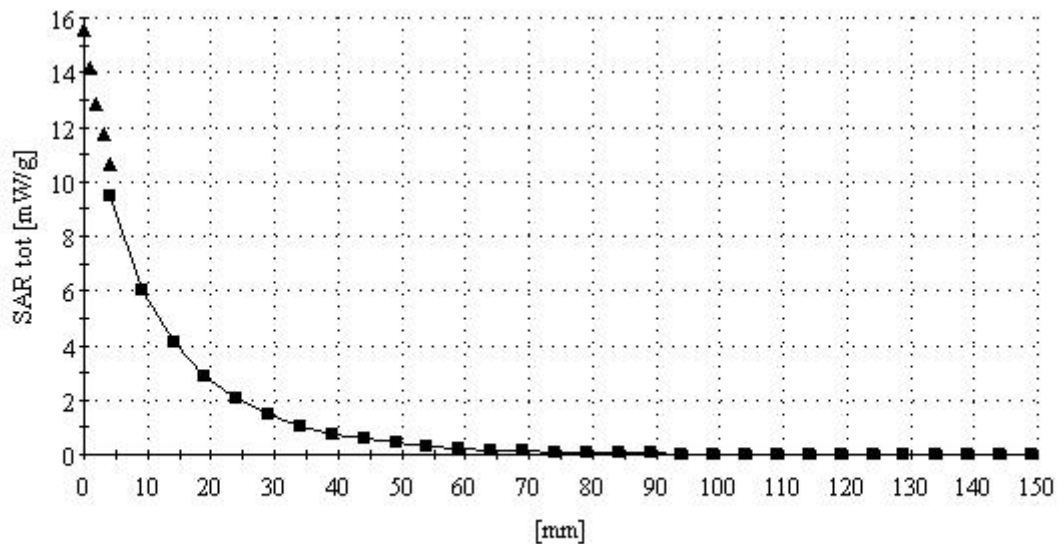
835MHz Brain Dipole Validation (D835V2/ S.N: 441)

Antenna Input Power: 30 dBm (1 W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature : 21.4 °C

Date Tested : December 17, 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: $\sigma = 1.45 \text{ mho/m}$ $\epsilon_r = 40.0$ $\rho = 1.00 \text{ g/cm}^3$

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

Comment :

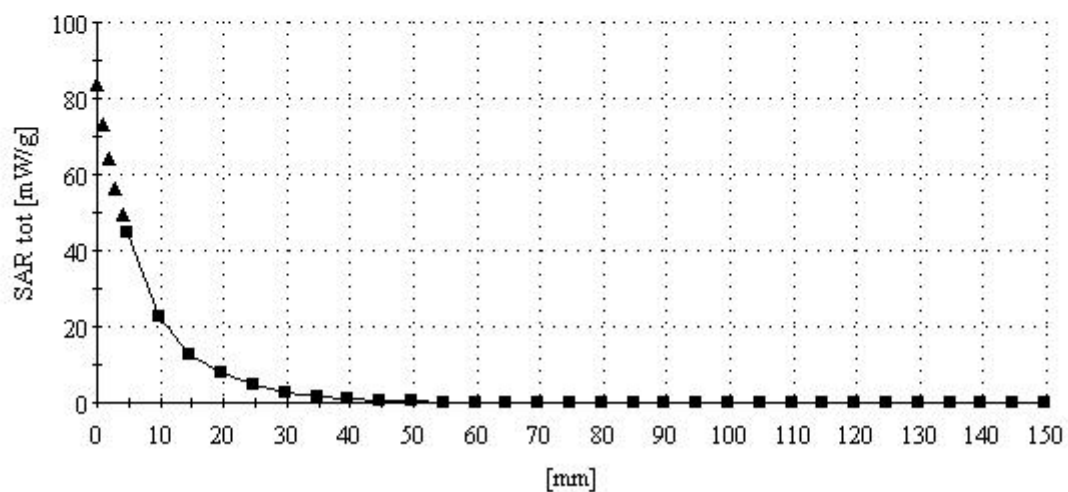
1900 MHz Brain Dipole Validation (D1900V2/ S.N: 5d032)

Antenna Input Power: 30 dBm (1 W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature : 21.4 °C

Date Tested : December 17, 2005



■ Dielectric Parameter (835MHz Brain)

Title : E1400

SubTitle : GSM850 Head

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Frequency	e'	e''
800.000000 MHz	41.7432	19.2111
805.000000 MHz	41.1464	19.6902
810.000000 MHz	41.4091	19.2891
815.000000 MHz	41.2659	19.3434
820.000000 MHz	41.0446	19.4563
825.000000 MHz	41.1411	19.1481
830.000000 MHz	40.9619	19.3032
835.000000 MHz	40.9441	19.1768
840.000000 MHz	40.8868	19.0208
845.000000 MHz	40.7594	19.1352
850.000000 MHz	40.7535	18.9361
855.000000 MHz	40.7402	18.8232
860.000000 MHz	40.4930	19.1148
865.000000 MHz	40.5279	18.9481
870.000000 MHz	40.5101	18.7775
875.000000 MHz	40.3392	18.9546
880.000000 MHz	40.2486	19.0174
885.000000 MHz	40.3318	18.7403
890.000000 MHz	40.0400	19.1005
895.000000 MHz	40.0704	18.8802
900.000000 MHz	39.9419	19.0332

■ Dielectric Parameter (835MHz Body)

Title : E1400

SubTitle : GSM850 Body

December 17, 2005 10:50 AM

Frequency	e'	e''
800.000000 MHz	55.1523	21.2809
805.000000 MHz	55.0808	21.2092
810.000000 MHz	55.0058	21.2188
815.000000 MHz	54.9693	21.2370
820.000000 MHz	54.9323	21.2048
825.000000 MHz	54.8275	21.1978
830.000000 MHz	54.7892	21.2611
835.000000 MHz	54.7693	21.2507
840.000000 MHz	54.7417	21.2762
845.000000 MHz	54.6561	21.2902
850.000000 MHz	54.6342	21.3241
855.000000 MHz	54.5785	21.2942
860.000000 MHz	54.5324	21.3153
865.000000 MHz	54.5084	21.3061
870.000000 MHz	54.4384	21.3147
875.000000 MHz	54.4050	21.3039
880.000000 MHz	54.3460	21.2658
885.000000 MHz	54.2844	21.2186
890.000000 MHz	54.2554	21.2385
895.000000 MHz	54.1533	21.1237
900.000000 MHz	54.0612	21.0588

■ Dielectric Parameter (1900MHz Head)

Title : E1400**SubTitle : GSM1900 Head**

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Frequency	e'	e''
1.800000000 GHz	40.4241	13.4300
1.810000000 GHz	40.3640	13.4624
1.820000000 GHz	40.3238	13.4949
1.830000000 GHz	40.2569	13.5898
1.840000000 GHz	40.2471	13.6611
1.850000000 GHz	40.2323	13.7413
1.860000000 GHz	40.1803	13.7841
1.870000000 GHz	40.1533	13.8021
1.880000000 GHz	40.0584	13.7972
1.890000000 GHz	40.0333	13.7631
1.900000000 GHz	39.9760	13.7292
1.910000000 GHz	39.9148	13.7343
1.920000000 GHz	39.8191	13.7534
1.930000000 GHz	39.7814	13.7589
1.940000000 GHz	39.7595	13.8138
1.950000000 GHz	39.7101	13.8927
1.960000000 GHz	39.6804	13.9586
1.970000000 GHz	39.6784	14.0771
1.980000000 GHz	39.6541	14.1155
1.990000000 GHz	39.6251	14.1097
2.000000000 GHz	39.5704	14.1126

■ Dielectric Parameter (1900MHz Body)

Title : E1400

SubTitle : GSM1900 Body

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Frequency	e'	e''
1.800000000 GHz	53.1093	13.6899
1.810000000 GHz	53.1110	13.7754
1.820000000 GHz	53.0920	13.8717
1.830000000 GHz	53.0318	13.9388
1.840000000 GHz	52.9986	14.0007
1.850000000 GHz	52.9609	14.0632
1.860000000 GHz	52.8916	14.0999
1.870000000 GHz	52.8129	14.1277
1.880000000 GHz	52.6744	14.1632
1.890000000 GHz	52.5473	14.1967
1.900000000 GHz	52.4674	14.2283
1.910000000 GHz	52.3784	14.2871
1.920000000 GHz	52.3395	14.3510
1.930000000 GHz	52.2836	14.4059
1.940000000 GHz	52.2307	14.4693
1.950000000 GHz	52.2290	14.5467
1.960000000 GHz	52.1553	14.5909
1.970000000 GHz	52.1180	14.6447
1.980000000 GHz	52.0796	14.6460
1.990000000 GHz	52.0111	14.7196
2.000000000 GHz	51.9616	14.7468