

ATTACHMENT Q – DIPOLE VALIDATION

€ Validation Data (835MHz Brain)

Dipole 835 MHz

SAM (835MHz) Phantom: Flat Section: Position: (90°,90°): Frequency: 835 MHz

Probe: ET3DV6 – SN1608: ConvF(6.70,6.70,6.70): Crest factor: 1.0: Brain 835 MHz: $s = 0.91$ mho/m $\epsilon_r = 40.8$ $\rho = 1.00$ g/cm³

Cubes (2): SAR (1g): 10.2 mW/g ± 0.03 dB, SAR (10g): 6.42 mW/g ± 0.02 dB, (Worst-case extrapolation)

Coarse: $D_x = 20.0$, $D_y = 20.0$, $D_z = 10.0$

: Powerdrift: 0.01 dB

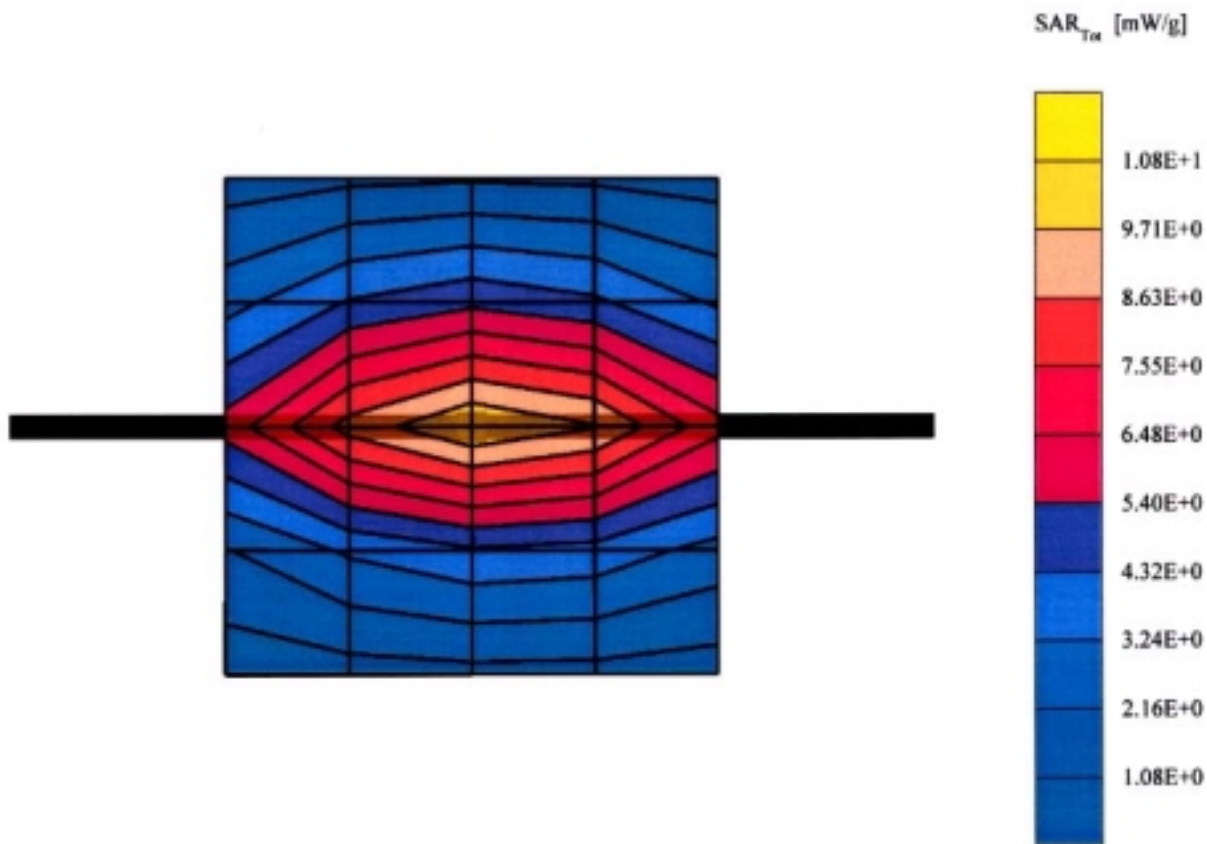
Comment:

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

Antenna Input Power: 30dBm (1 W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

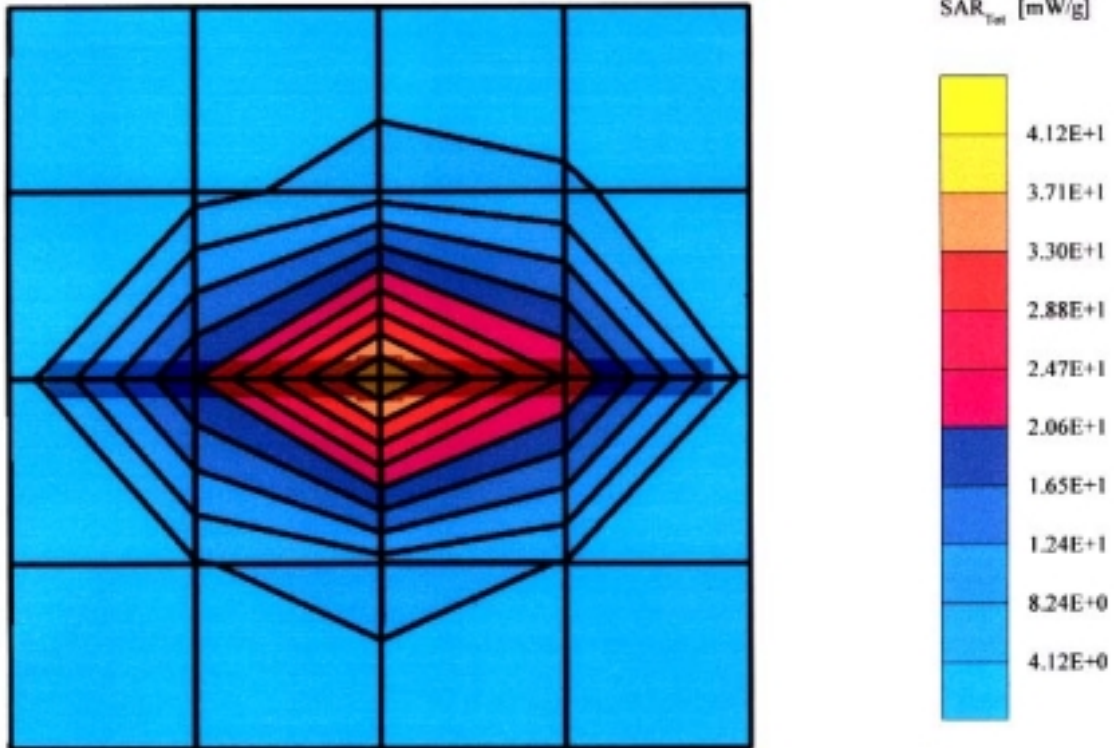
Date Tested: April 24, 2002



€ Validation Data (1800MHz Brain)

Dipole 1800 MHz

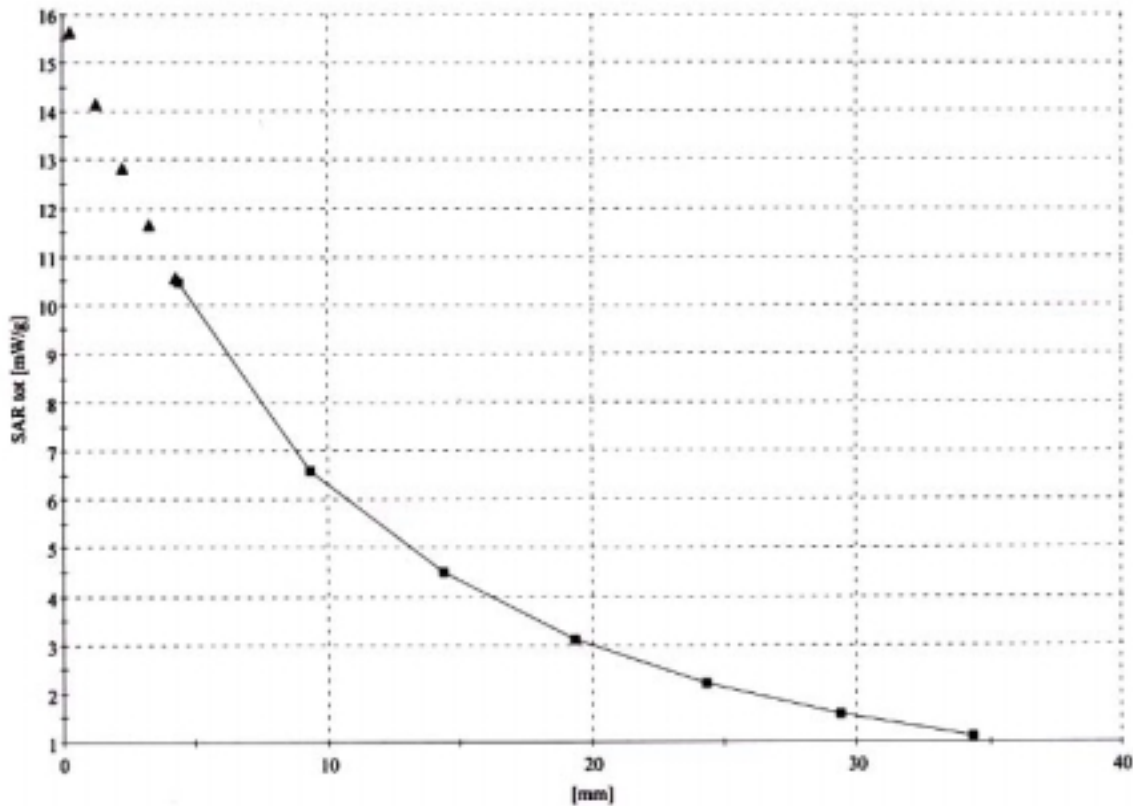
SAM (1800MHz) Phantom: Flat Section: Position: (90°,90°): Frequency: 1800 MHz
Probe: ET3DV6 - SN1608: ConvF(5.60,5.60,5.60): Crest factor: 1.0: Brain 1800 MHz: $s = 1.35 \text{ mho/m}$, $\epsilon = 40.2$
 $r = 1.00 \text{ g/cm}^3$
Cubes (2): SAR (1g): $36.8 \text{ mW/g} \pm 0.00 \text{ dB}$, SAR (10g): $19.0 \text{ mW/g} \pm 0.00 \text{ dB}$, (Worst-case extrapolation)
Coarse: $D_x = 20.0$, $D_y = 20.0$, $D_z = 10.0$
: Powerdrift: 0.02 dB
Comment:
1800MHz Brain Dipole Validation (D1800V2/ S.N: 2D007)
Antenna Input Power: 1 W (30dBm)
HCT Co., Ltd Brain Tissue Simulating Liquid
Date Tested: April 29, 2002



Dipole 835 MHz

SAM (835MHz) Phantom: Flat Section: Position: (90°,90°): Frequency: 835 MHz
Probe: ET3DV6 - SN1608: ConvF(6.70,6.70,6.70): Crest factor: 1.0: Brain 835 MHz: $s = 0.91 \text{ mho/m}$, $\epsilon_r = 40.8$, $\rho = 1.00 \text{ g/cm}^3$
Cube (2): SAR (1g): $10.2 \text{ mW/g} \pm 0.03 \text{ dB}$, SAR (10g): $6.42 \text{ mW/g} \pm 0.02 \text{ dB}$, (Worst-case extrapolation)
Cube 5x5x7: $D_x = 8.0$, $D_y = 8.0$, $D_z = 5.0$

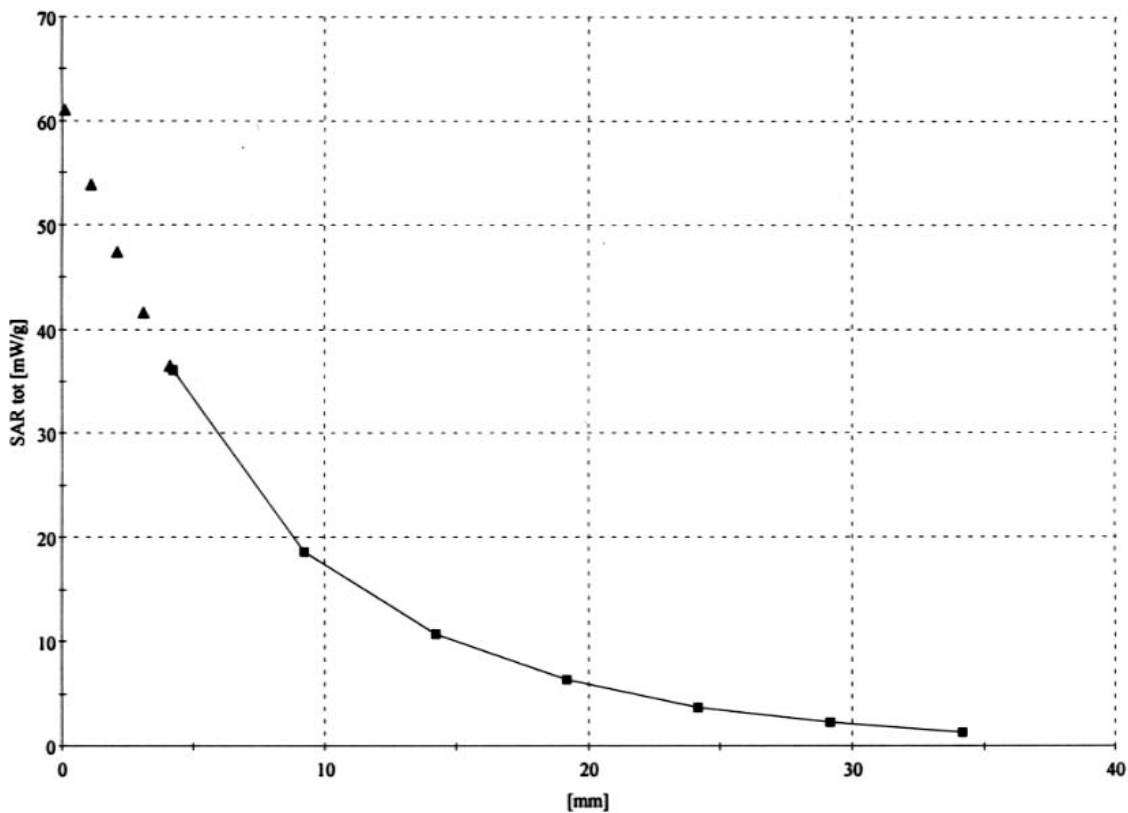
Comment:
835MHz Brain Dipole Validation (D835V2/ S.N: 441)
Antenna Input Power: 30dBm (1 W)
HCT Co., Ltd. Brain Tissue Simulating Liquid
Date Tested: April 24, 2002



Dipole 1800 MHz

SAM (1800MHz) Phantom: Flat Section: Position: (90°,90°): Frequency: 1800 MHz
Probe: ET3DV6 - SN1608: ConvF(5.60,5.60,5.60): Crest factor: 1.0: Brain 1800 MHz: $s = 1.35 \text{ mho/m}$, $\epsilon_r = 40.2$
 $\rho = 1.00 \text{ g/cm}^3$
Cubes (2): SAR (1g): $36.8 \text{ mW/g} \pm 0.00 \text{ dB}$, SAR (10g): $19.0 \text{ mW/g} \pm 0.00 \text{ dB}$, (Worst-case extrapolation)
Cube 5x5x7: $D_x = 8.0$, $D_y = 8.0$, $D_z = 5.0$

Comment:
1800MHz Brain Dipole Validation (D1800V2/ S.N: 2D007)
Antenna Input Power: 1 W (30dBm)
HCT Co., Ltd Brain Tissue Simulating Liquid
Date Tested: April 29, 2002



€ Dielectric Parameter (835MHz Brain)

FCC ID: PP4TX-50C

SubTitle: 835MHz BRAIN

April 24, 2002 08:55 AM

Frequency	e'	e''
800.00000 MHz	41.1794	19.6665
805.00000 MHz	41.1355	19.6497
810.00000 MHz	41.0689	19.5853
815.00000 MHz	41.0640	19.5480
820.00000 MHz	41.0137	19.5980
825.00000 MHz	40.9061	19.5304
830.00000 MHz	40.8682	19.5399
835.00000 MHz	40.8169	19.5163
840.00000 MHz	40.7577	19.5370
845.00000 MHz	40.7045	19.4624
850.00000 MHz	40.6131	19.4717
855.00000 MHz	40.5708	19.4676
860.00000 MHz	40.5417	19.3983
865.00000 MHz	40.4645	19.3739
870.00000 MHz	40.4004	19.3564
875.00000 MHz	40.3572	19.3737
880.00000 MHz	40.3342	19.3702
885.00000 MHz	40.2521	19.3335
890.00000 MHz	40.1481	19.3386
895.00000 MHz	40.0480	19.2834
900.00000 MHz	40.0026	19.2428

€ Dielectric Parameter (835MHz Muscle)

FCC ID: PP4TX-50C

SubTitle: 835MHz BODY

May 26, 2002 19:12 AM

Frequency	e'	e''
800.000000 MHz	54.0155	21.4211
805.000000 MHz	53.9305	21.3575
810.000000 MHz	53.9877	21.2783
815.000000 MHz	53.9293	21.2852
820.000000 MHz	53.8966	21.2662
825.000000 MHz	53.9170	21.2226
830.000000 MHz	53.8745	21.2184
835.000000 MHz	53.8343	21.1417
840.000000 MHz	53.7702	21.1183
845.000000 MHz	53.7362	21.0843
850.000000 MHz	53.6969	21.0634
855.000000 MHz	53.6169	21.0469
860.000000 MHz	53.5382	21.0304
865.000000 MHz	53.4396	21.0433
870.000000 MHz	53.3261	21.0407
875.000000 MHz	53.2299	21.0374
880.000000 MHz	53.1436	20.9724
885.000000 MHz	52.9633	21.0180
890.000000 MHz	52.8084	20.9861
895.000000 MHz	52.8167	20.8979
900.000000 MHz	52.7227	20.9225

€ Dielectric Parameter (1800MHz Brain)

FCC ID: PP4TX-50C

SubTitle: 1800MHz BRAIN

April 29, 2002 08:35 AM

Frequency	e'	e''
1.70000000 GHz	40.6200	13.3398
1.71000000 GHz	40.7029	13.3815
1.72000000 GHz	40.7496	13.4027
1.73000000 GHz	40.8127	13.4132
1.74000000 GHz	40.8067	13.4269
1.75000000 GHz	40.7768	13.3737
1.76000000 GHz	40.6856	13.3923
1.77000000 GHz	40.5478	13.4182
1.78000000 GHz	40.3860	13.4319
1.79000000 GHz	40.2446	13.4556
1.80000000 GHz	40.1572	13.5144
1.81000000 GHz	40.1384	13.5528
1.82000000 GHz	40.1562	13.6233
1.83000000 GHz	40.1707	13.6618
1.84000000 GHz	40.2621	13.6850
1.85000000 GHz	40.3309	13.6666
1.86000000 GHz	40.3131	13.6875
1.87000000 GHz	40.2734	13.7011
1.88000000 GHz	40.1823	13.6845
1.89000000 GHz	40.0282	13.6943
1.90000000 GHz	39.8992	13.7218
1.91000000 GHz	39.7712	13.7436
1.92000000 GHz	39.6884	13.7726
1.93000000 GHz	39.6569	13.8372
1.94000000 GHz	39.6856	13.9098
1.95000000 GHz	39.7056	13.9491
1.96000000 GHz	39.7654	13.9882
1.97000000 GHz	39.8289	14.0004
1.98000000 GHz	39.7945	14.0244
1.99000000 GHz	39.7789	14.0002
2.00000000 GHz	39.6598	13.9875

€ Dielectric Parameter (1800MHz Muscle)

FCC ID: PP4TX-50C

SubTitle: 1800MHz BODY

May 06, 2002 12:28 PM

Frequency	e'	e''
1.70000000 GHz	53.4659	14.5744
1.71000000 GHz	53.4358	14.5792
1.72000000 GHz	53.3643	14.6032
1.73000000 GHz	53.3771	14.6284
1.74000000 GHz	53.3513	14.6448
1.75000000 GHz	53.3100	14.6448
1.76000000 GHz	53.2788	14.6808
1.77000000 GHz	53.2481	14.7018
1.78000000 GHz	53.2208	14.7202
1.79000000 GHz	53.1929	14.7613
1.80000000 GHz	53.1243	14.8082
1.81000000 GHz	53.1003	14.8318
1.82000000 GHz	53.0803	14.8704
1.83000000 GHz	53.0146	14.9089
1.84000000 GHz	52.9857	14.9118
1.85000000 GHz	52.9862	14.9294
1.86000000 GHz	52.9181	14.9788
1.87000000 GHz	52.9041	14.9802
1.88000000 GHz	52.8925	14.9943
1.89000000 GHz	52.8840	15.0423
1.90000000 GHz	52.8273	15.0831
1.91000000 GHz	52.7843	15.1047
1.92000000 GHz	52.7184	15.1113
1.93000000 GHz	52.6785	15.1638
1.94000000 GHz	52.6504	15.1875
1.95000000 GHz	52.6313	15.1995
1.96000000 GHz	52.6077	15.2745
1.97000000 GHz	52.5722	15.2807
1.98000000 GHz	52.5203	15.3175
1.99000000 GHz	52.5049	15.3601
2.00000000 GHz	52.4671	15.3661