

## **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; Brain 835

MHz:  $\sigma = 0.88 \text{ mho/m}$   $\epsilon_r = 42.0$   $\rho = 1.00 \text{ g/cm}^3$ Cubes (2): SAR (1g):  $10.0 \text{ mW/g} \pm 0.01 \text{ dB}$ , SAR (10g):  $6.44 \text{ mW/g} \pm 0.01 \text{ dB}$ 

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

Powerdrift: -0.03 dB

Comment :

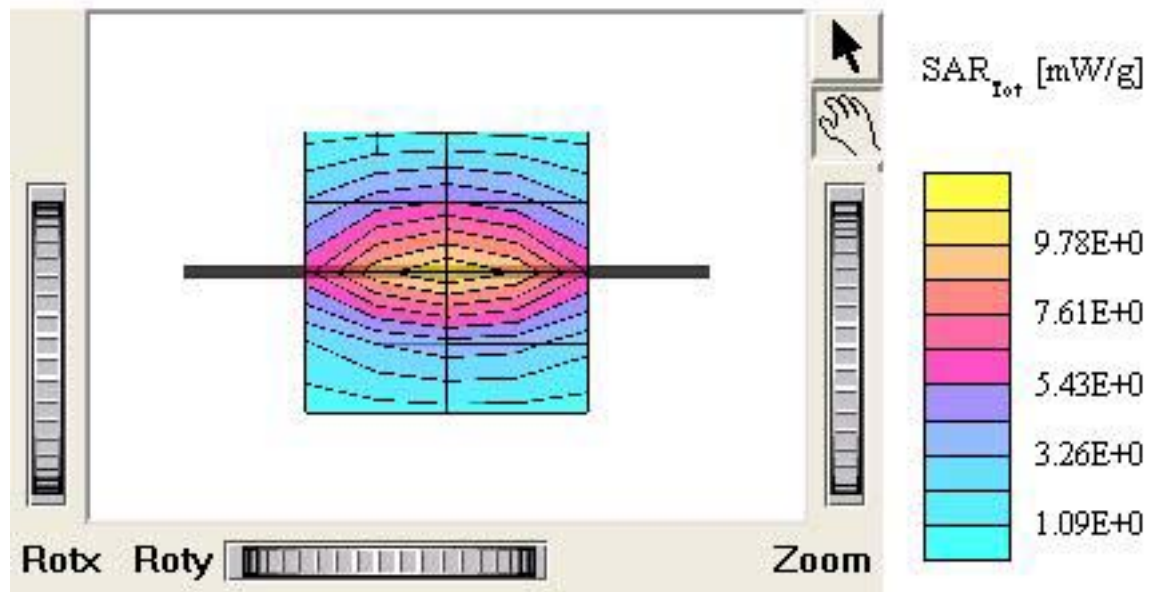
835MHz Brain Dipole Validation (D835V2/ S.N: 441)

Antenna Input Power: 30 dBm (1 W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature : 21.5°C

Date Tested : April 25, 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; Brain

1900 MHz:  $\sigma = 1.45$  mho/m  $\epsilon_r = 38.5$   $\rho = 1.00$  g/cm<sup>3</sup>Cubes (2): SAR (1g): 41.3 mW/g  $\pm 0.02$  dB, SAR (10g): 20.6 mW/g  $\pm 0.01$  dB

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

Powerdrift: 0.07 dB

Comment :

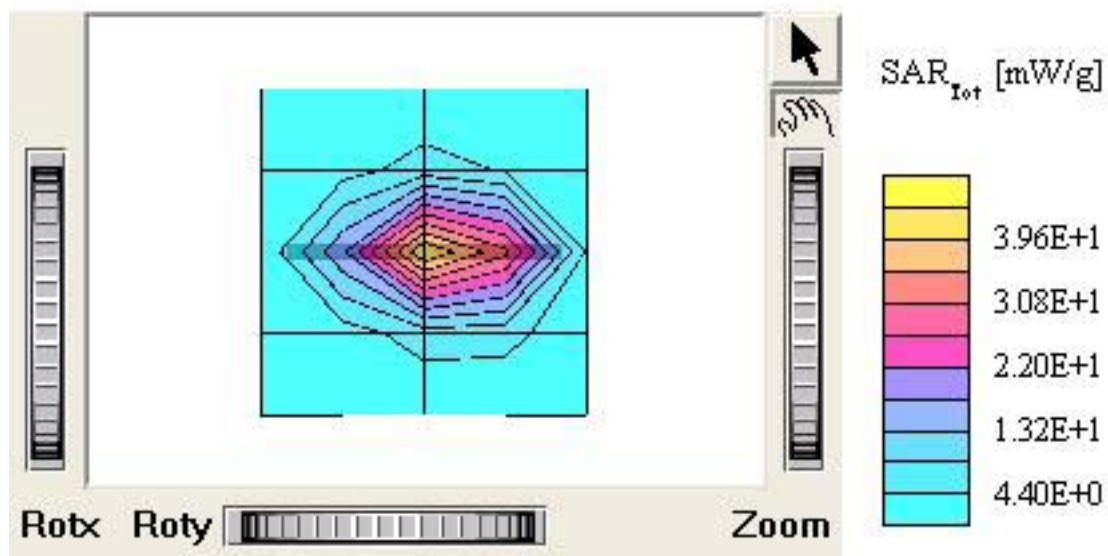
1900 MHz Brain Dipole Validation (D1900V2/ S.N: 5d032)

Antenna Input Power: 30 dBm (1 W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature : 21.7°C

Date Tested : April 26, 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:  $\sigma = 0.88 \text{ mho/m}$   $\epsilon_r = 42.0$   $\rho = 1.00 \text{ g/cm}^3$

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

Comment :

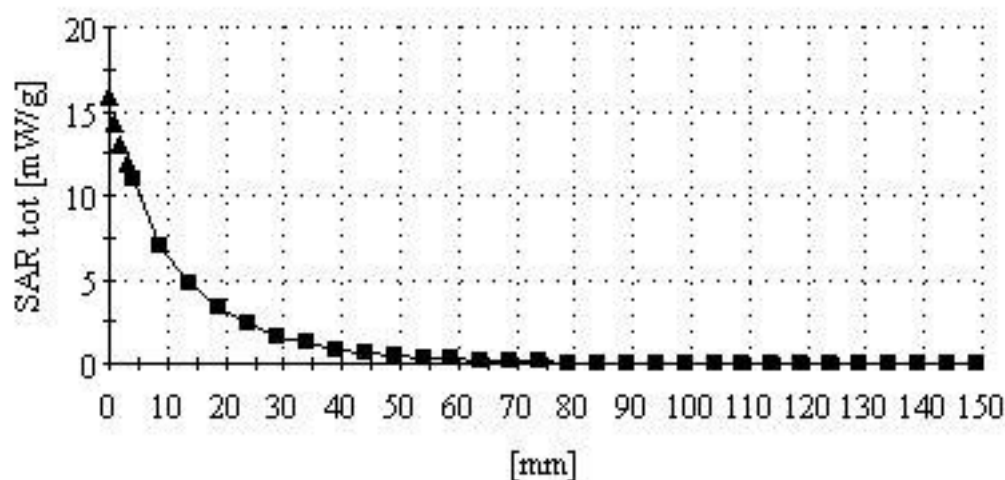
835MHz Brain Dipole Validation (D835V2/ S.N: 441)

Antenna Input Power: 30 dBm (1 W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature : 21.5°C

Date Tested : April 25, 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:  $\sigma = 1.45 \text{ mho/m}$   $\epsilon_r = 38.5$   $\rho = 1.00 \text{ g/cm}^3$

:

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

Comment :

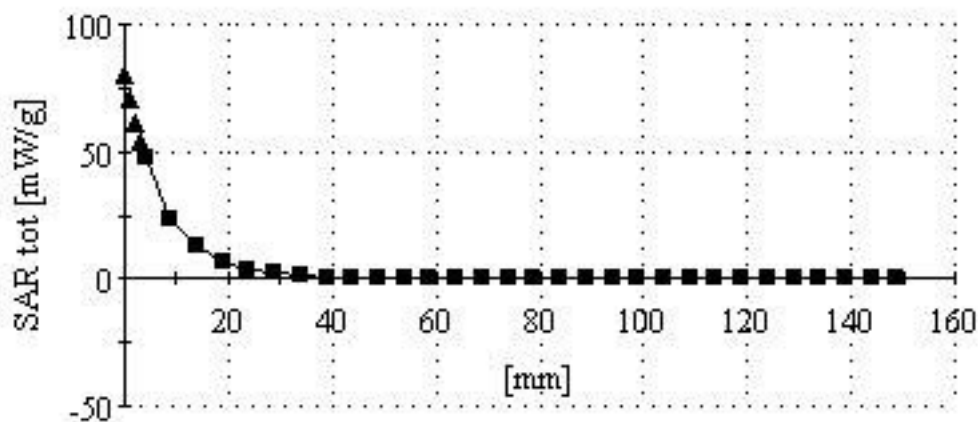
1900 MHz Brain Dipole Validation (D1900V2/ S.N: 5d032)

Antenna Input Power: 30 dBm (1 W)

HCT Co., Ltd. Brain Tissue Simulating Liquid

Liquid Temperature : 21.7°C

Date Tested : April 26, 2005





## ■ Dielectric Parameter (835MHz Head)

**Title : TX-215****SubTitle : CDMA Head**

April 25, 2005 09:10 AM

| Frequency      | e'      | e''     |
|----------------|---------|---------|
| 800.000000 MHz | 42.6762 | 19.1201 |
| 805.000000 MHz | 42.6162 | 19.1172 |
| 810.000000 MHz | 42.4532 | 19.0892 |
| 815.000000 MHz | 42.4256 | 19.0780 |
| 820.000000 MHz | 42.2934 | 19.0909 |
| 825.000000 MHz | 42.2270 | 19.0856 |
| 830.000000 MHz | 42.1316 | 19.1047 |
| 835.000000 MHz | 42.0134 | 19.0567 |
| 840.000000 MHz | 41.9478 | 19.0784 |
| 845.000000 MHz | 41.8255 | 19.0433 |
| 850.000000 MHz | 41.7568 | 19.0455 |
| 855.000000 MHz | 41.6838 | 19.0286 |
| 860.000000 MHz | 41.6564 | 18.9885 |
| 865.000000 MHz | 41.5867 | 19.0122 |
| 870.000000 MHz | 41.5044 | 18.9887 |
| 875.000000 MHz | 41.4047 | 18.9708 |
| 880.000000 MHz | 41.3627 | 18.9566 |
| 885.000000 MHz | 41.2702 | 18.9726 |
| 890.000000 MHz | 41.2185 | 18.9367 |
| 895.000000 MHz | 41.1599 | 18.9083 |
| 900.000000 MHz | 41.1012 | 18.9101 |

## ■ Dielectric Parameter (1900MHz Head)

**Title : TX-215****SubTitle : PCS Head**

April 26, 2005 10:28 AM

| Frequency       | e'      | e''     |
|-----------------|---------|---------|
| 1.800000000 GHz | 38.8372 | 13.3294 |
| 1.810000000 GHz | 38.7711 | 13.3810 |
| 1.820000000 GHz | 38.7416 | 13.4560 |
| 1.830000000 GHz | 38.7091 | 13.5686 |
| 1.840000000 GHz | 38.7217 | 13.6686 |
| 1.850000000 GHz | 38.7204 | 13.7526 |
| 1.860000000 GHz | 38.6797 | 13.8184 |
| 1.870000000 GHz | 38.6682 | 13.8513 |
| 1.880000000 GHz | 38.6389 | 13.8148 |
| 1.890000000 GHz | 38.5940 | 13.7470 |
| 1.900000000 GHz | 38.5209 | 13.7237 |
| 1.910000000 GHz | 38.4450 | 13.6705 |
| 1.920000000 GHz | 38.3372 | 13.6732 |
| 1.930000000 GHz | 38.2677 | 13.7024 |
| 1.940000000 GHz | 38.2363 | 13.7809 |
| 1.950000000 GHz | 38.2033 | 13.8546 |
| 1.960000000 GHz | 38.1907 | 13.9764 |
| 1.970000000 GHz | 38.1858 | 14.0667 |
| 1.980000000 GHz | 38.1772 | 14.1214 |
| 1.990000000 GHz | 38.1886 | 14.1195 |
| 2.000000000 GHz | 38.1349 | 14.1277 |



## ■ Dielectric Parameter (835MHz Body)

**Title : TX-215****SubTitle : CDMA Body**

April 25, 2005 01:46 PM

| Frequency      | $e'$    | $e''$   |
|----------------|---------|---------|
| 800.000000 MHz | 54.1359 | 21.5042 |
| 805.000000 MHz | 54.0207 | 21.2918 |
| 810.000000 MHz | 53.9266 | 21.4241 |
| 815.000000 MHz | 53.8161 | 21.3143 |
| 820.000000 MHz | 53.7281 | 21.2483 |
| 825.000000 MHz | 53.7482 | 21.1554 |
| 830.000000 MHz | 53.7874 | 21.1613 |
| 835.000000 MHz | 53.7130 | 21.0206 |
| 840.000000 MHz | 53.5791 | 21.0456 |
| 845.000000 MHz | 53.5013 | 21.0396 |
| 850.000000 MHz | 53.4163 | 21.0691 |
| 855.000000 MHz | 53.3426 | 21.0079 |
| 860.000000 MHz | 53.3611 | 20.9025 |
| 865.000000 MHz | 53.3279 | 20.8598 |
| 870.000000 MHz | 53.2380 | 20.8067 |
| 875.000000 MHz | 53.0375 | 20.9503 |
| 880.000000 MHz | 53.0031 | 20.9091 |
| 885.000000 MHz | 52.8674 | 21.0017 |
| 890.000000 MHz | 52.9800 | 20.7210 |
| 895.000000 MHz | 52.9485 | 20.6695 |
| 900.000000 MHz | 52.8884 | 20.6503 |



## ■ Dielectric Parameter (1900MHz Body)

**Title : TX-215****SubTitle : PCS Body**

April 26, 2005 04:31 PM

| Frequency       | e'      | e''     |
|-----------------|---------|---------|
| 1.800000000 GHz | 54.2843 | 13.6684 |
| 1.810000000 GHz | 54.3052 | 13.7378 |
| 1.820000000 GHz | 54.3430 | 13.7619 |
| 1.830000000 GHz | 54.3498 | 13.8064 |
| 1.840000000 GHz | 54.4052 | 13.8208 |
| 1.850000000 GHz | 54.4364 | 13.8308 |
| 1.860000000 GHz | 54.4547 | 13.8450 |
| 1.870000000 GHz | 54.4505 | 13.9357 |
| 1.880000000 GHz | 54.4598 | 14.0025 |
| 1.890000000 GHz | 54.4853 | 14.0797 |
| 1.900000000 GHz | 54.5345 | 14.1712 |
| 1.910000000 GHz | 54.5677 | 14.2778 |
| 1.920000000 GHz | 54.6173 | 14.3944 |
| 1.930000000 GHz | 54.6427 | 14.4297 |
| 1.940000000 GHz | 54.6390 | 14.4483 |
| 1.950000000 GHz | 54.6118 | 14.4866 |
| 1.960000000 GHz | 54.5690 | 14.4771 |
| 1.970000000 GHz | 54.4769 | 14.4990 |
| 1.980000000 GHz | 54.3695 | 14.5148 |
| 1.990000000 GHz | 54.2452 | 14.5637 |
| 2.000000000 GHz | 54.1560 | 14.6083 |