

Prepared (also subject responsible if other) EUS/CV/RF/P Dulce Altabella		No. EUS/CV/R-01:0701/REP		
Approved EUS/CV/RF/P Mark Douglas	Checked MGD	2001-6-28	A	E:\FCC Submittals\FCC_413 carmen nicole\XHIBIT11\Source\tr413 sar rpt.doc

Appendix 1: SAR distribution comparison for system accuracy verification

Dipole 900 MHz

Generic Twin B; Flat

Probe: ET3DV6 - SN1539; ConvF(6.15,6.15,6.15); Crest factor: 1.0; Brain 900 MHz: $\sigma = 0.98 \text{ mho/m}$ $\epsilon_r = 41.7$ $\rho = 1.00 \text{ g/cm}^3$

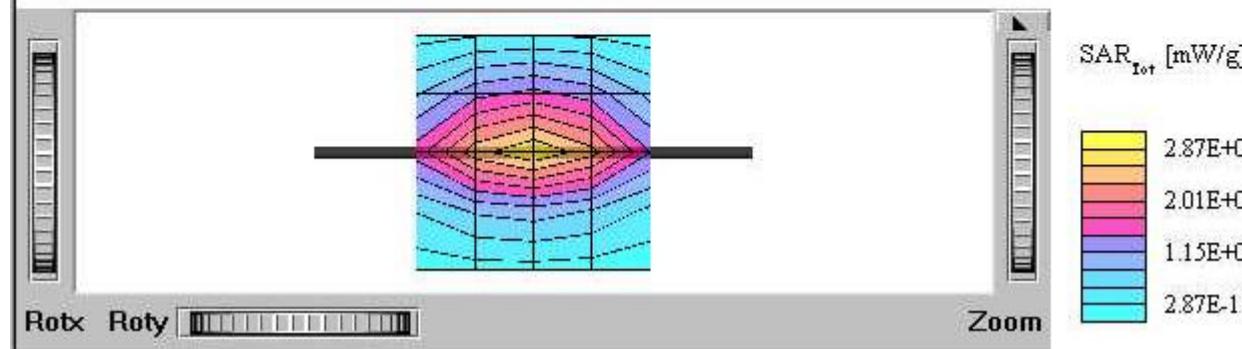
Cubes (2): Peak: 4.34 mW/g ± 0.03 dB, SAR (1g): 2.70 mW/g ± 0.01 dB, SAR (10g): 1.71 mW/g ± 0.01 dB, (Worst-case extrapolation)

Penetration depth: 11.5 (10.3, 13.1) [mm]

Powerdrift: 0.01 dB

Pout=250 mW

File name: Validation 900 MHz 06_25_01_SN049, Date: 06/25/01



900 MHz SAR distribution of validation dipole antenna from system accuracy verification test on June 25, 2001.
Using head tissue.

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Dipole 900 MHz

Generic Twin B, Flat

Probe: ET3DV6 - SN1539; ConvF(6.15,6.15,6.15); Crest factor: 1.0; Brain 900 MHz: $\sigma = 0.96 \text{ mho/m}$ $\epsilon_r = 40.7$ $\rho = 1.00 \text{ g/cm}^3$

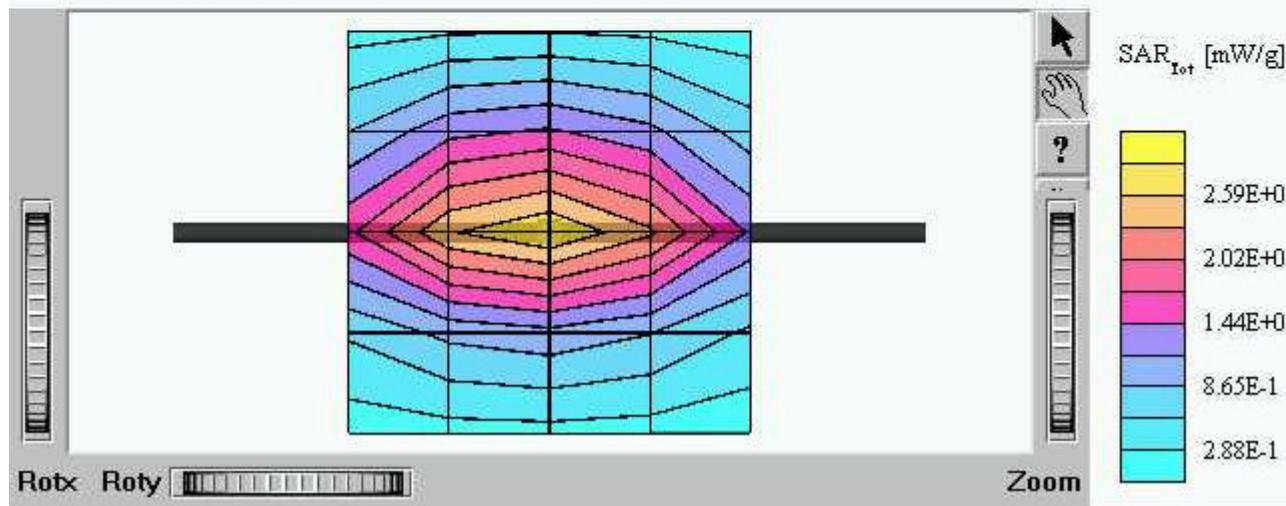
Cubes (2): Peak: 4.37 mW/g ± 0.04 dB, SAR (1g): 2.71 mW/g ± 0.02 dB, SAR (10g): 1.71 mW/g ± 0.01 dB, (Worst-case extrapolation)

Penetration depth: 11.5 (10.4, 13.0) [mm]

Powerdrift: 0.02 dB

Pout=250 mW

File name: Validation 900 MHz 06_26_01_SN049, Date: 06/26/01



900 MHz SAR distribution of validation dipole antenna from system accuracy verification test on June 26, 2001.
Using head tissue.

Prepared (also subject responsible if other) EUS/CV/RF/P Dulce Altabella	No. EUS/CV/R-01:0701/REP			
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Validation Dipole D900V2 SN:049, $d = 15$ mm

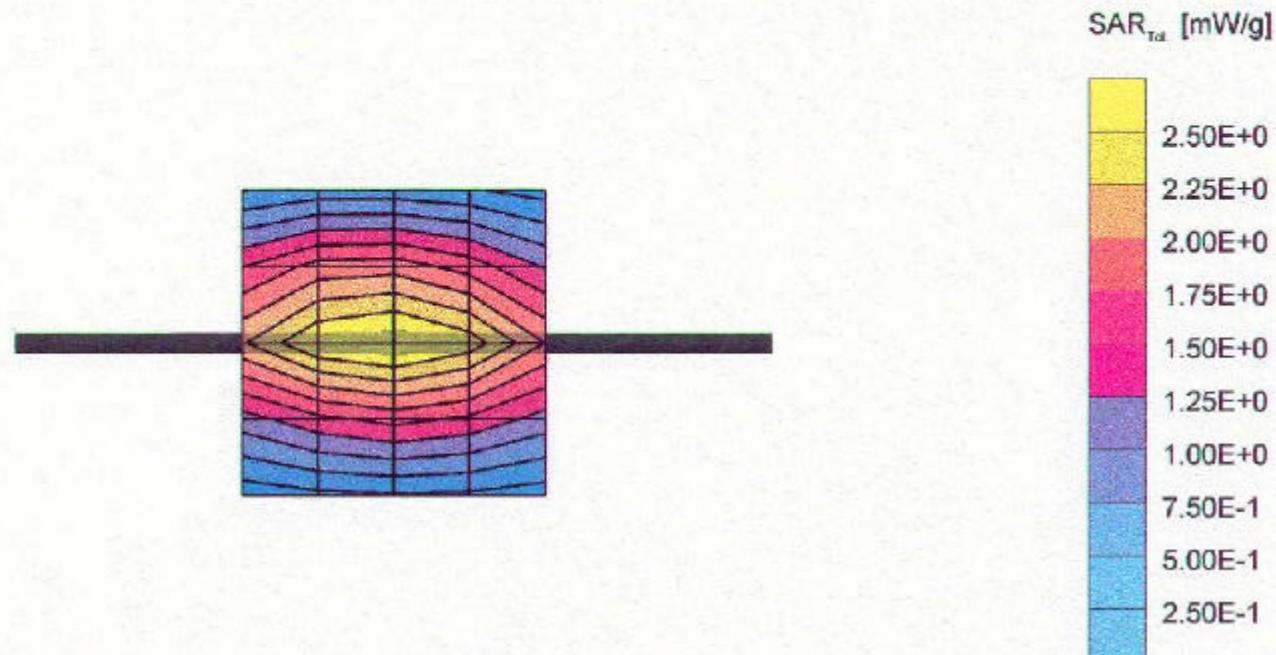
Frequency: 900 MHz; Antenna Input Power: 250 [mW]

Generic Twin Phantom; Flat Section; Grid Spacing: Dx = 15.0, Dy = 15.0, Dz = 10.0

Probe: ET3DV6 - SN1507; ConvF(6.35,6.35,6.35) at 900 MHz; IEEE1528 900 MHz; $\sigma = 0.94$ mho/m; $\epsilon_r = 41.7$; $\rho = 1.00$ g/cm³Cubes (2): Peak: 4.43 mW/g ± 0.03 dB, SAR (1g): 2.74 mW/g ± 0.02 dB, SAR (10g): 1.73 mW/g ± 0.02 dB, (Worst-case extrapolation)

Penetration depth: 11.6 (10.4, 13.2) [mm]

Powerdrift: -0.00 dB

**900 MHz SAR distribution of validation dipole antenna from reference measurement. Using head tissue.**

Prepared (also subject responsible if other) EUS/CV/RF/P Dulce Altabella	No. EUS/CV/R-01:0701/REP		
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Dipole 900 MHz

Generic Twin A; Flat

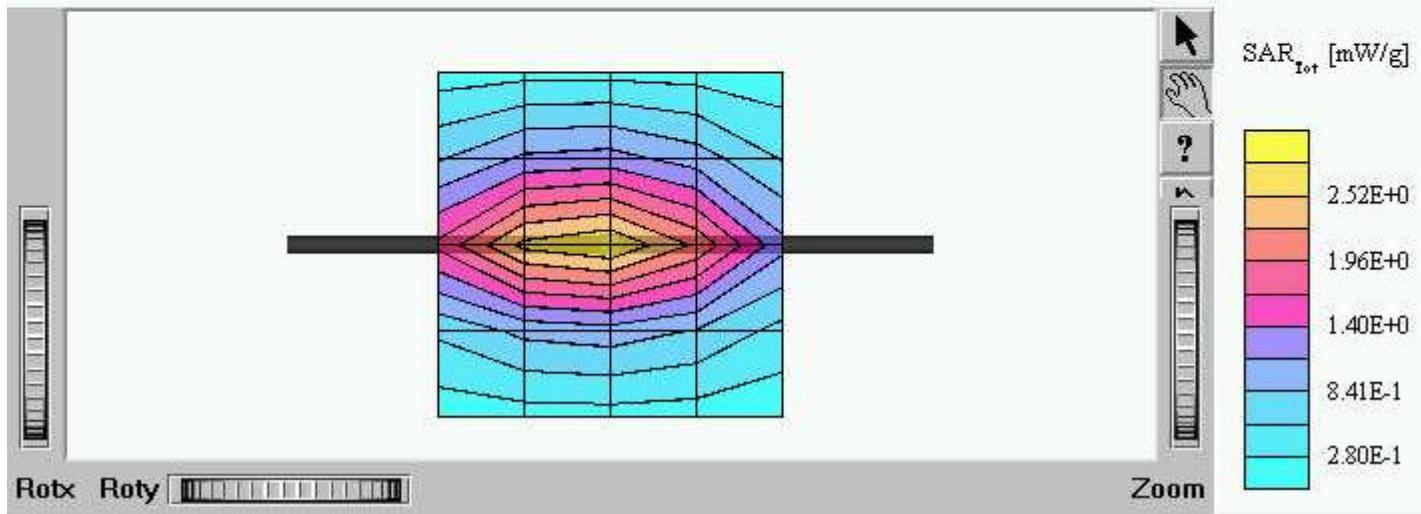
Probe: ET3DV5 - SN1324; ConvF(4.63,4.63,4.63); Crest factor: 1.0; Muscle 900 MHz: $\sigma = 1.03 \text{ mho/m}$ $\epsilon_r = 54.9$ $\rho = 1.00 \text{ g/cm}^3$
Cubes (2): Peak: 4.61 mW/g ± 0.20 dB, SAR (1g): 2.89 mW/g ± 0.14 dB, SAR (10g): 1.82 mW/g ± 0.10 dB, (Worst-case extrapolation)

Penetration depth: 12.1 (11.0, 13.6) [mm]

Powerdrift: 0.03 dB

Pout=255 mW

File name: Validation 900 MHz Muscle 06_26_01_SN049, Date: 06/26/01



900 MHz SAR distribution of validation dipole antenna from system accuracy verification test on June 26, 2001. Using muscle tissue.

Prepared (also subject responsible if other) EUS/CV/RF/P Dulce Altabella	No. EUS/CV/R-01:0701/REP			
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Dipole 900 MHz

Generic Twin A; Flat

Probe: ET3DV5 - SN1324; ConvF(4.63,4.63,4.63); Crest factor: 1.0; Muscle 900 MHz: $\sigma = 1.04 \text{ mho/m}$ $\epsilon_r = 54.8$ $\rho = 1.00 \text{ g/cm}^3$

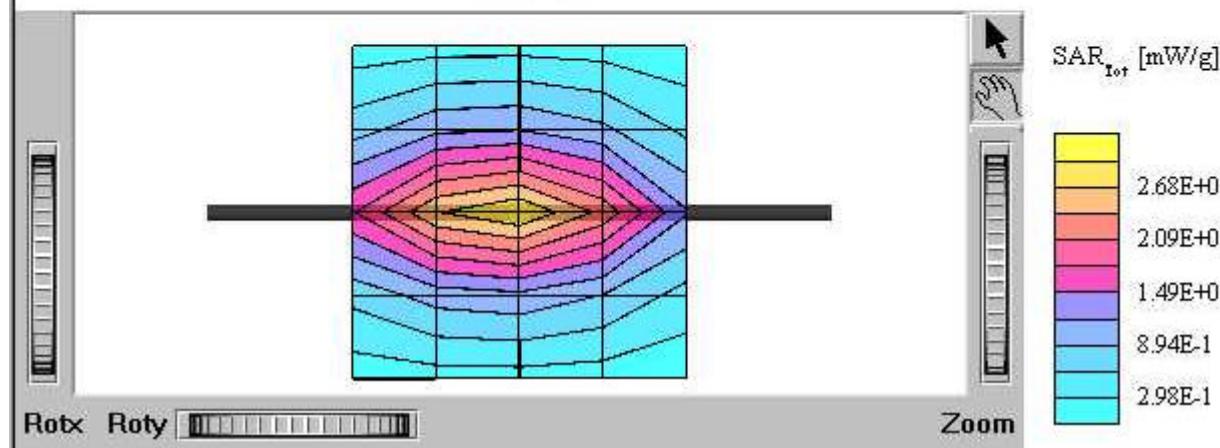
Cubes (2): Peak: 4.87 mW/g ± 0.01 dB, SAR(1g): 2.99 mW/g ± 0.01 dB, SAR(10g): 1.87 mW/g ± 0.04 dB, (Worst-case extrapolation)

Penetration depth: 11.7 (10.3, 13.5) [mm]

Powerdrift: -0.03 dB

Pout=260 mW

File name: Validation 900 MHz Muscle 06_27_01_SN049, Date: 06/27/01



900 MHz SAR distribution of validation dipole antenna from system accuracy verification test on June 27, 2001. Using muscle tissue.

Prepared (also subject responsible if other) EUS/CV/RF/P Dulce Altabella	No. EUS/CV/R-01:0701/REP			
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Validation Dipole D900V2 SN:049, d = 15 mm

Frequency: 900 MHz; Antenna Input Power: 250 [mW]

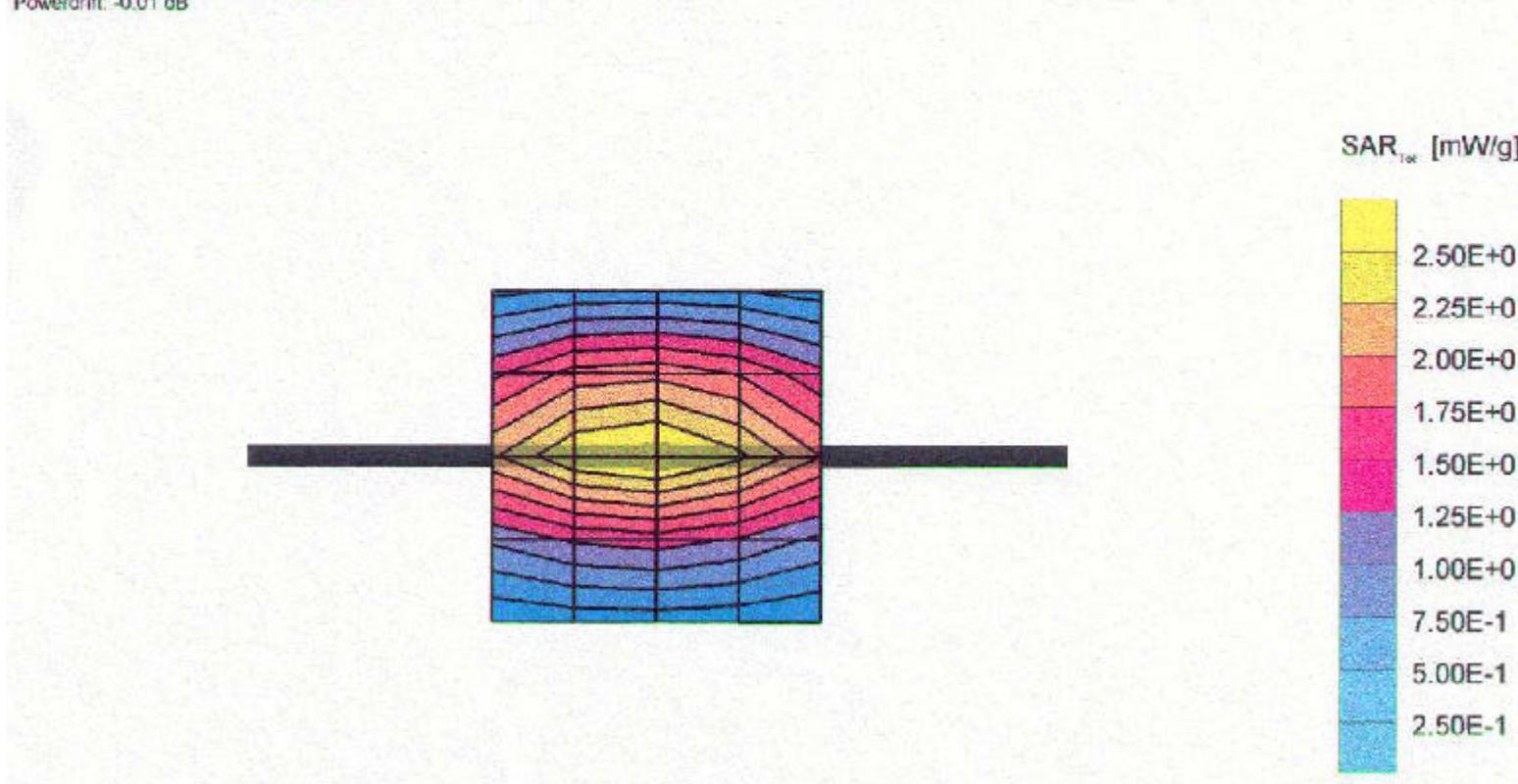
Generic Twin Phantom, Flat Section; Grid Spacing: Dx = 15.0, Dy = 15.0, Dz = 10.0

Probe: ET3DV6 - SN1507; ConvF(6.17,6.17,6.17) at 900 MHz; Muscle 900 MHz; $\sigma = 0.99 \text{ mho/m}$ $c_r = 56.1$ $\rho = 1.00 \text{ g/cm}^3$

Cubes (2): Peak: 4.42 mW/g ± 0.03 dB, SAR (1g): 2.77 mW/g ± 0.02 dB, SAR (10g): 1.77 mW/g ± 0.02 dB, (Worst-case extrapolation)

Penetration depth: 12.2 (10.7, 14.2) [mm]

Powerdrift: -0.01 dB



Schmid & Partner Engineering AG, Zurich, Switzerland

900 MHz SAR distribution of validation dipole antenna from reference measurement. Using muscle tissue.

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Dipole 1800 MHz

Generic Twin A; Flat

Probe: ET3DV5 - SN1324; ConvF(4.17,4.17,4.17); Crest factor: 1.0; Brain 1800 MHz: $\sigma = 1.76 \text{ mho/m}$ $\epsilon_r = 40.0$ $\rho = 1.00 \text{ g/cm}^3$

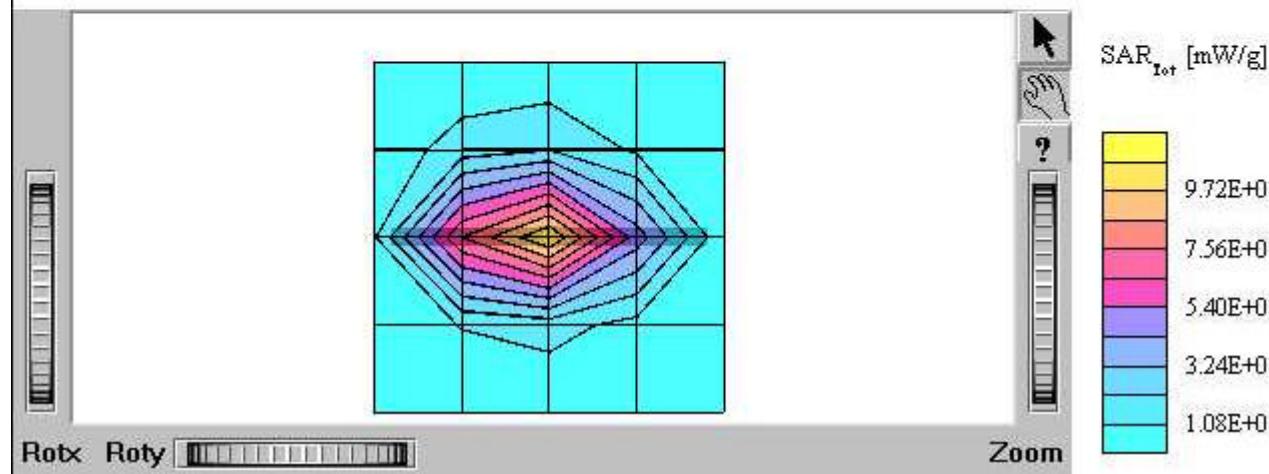
Cubes (2): Peak: 21.2 mW/g ± 0.04 dB, SAR(1g): 10.8 mW/g ± 0.06 dB, SAR(10g): 5.35 mW/g ± 0.06 dB, (Worst-case extrapolation)

Penetration depth: 7.0 (6.8, 7.6) [mm]

Powerdrift: 0.05 dB

Pout=260mW

File name: Validation 1800 MHz 06_20_01_SN217, Date: 06/20/01



**1800 MHz SAR distribution of validation dipole antenna from system accuracy verification test on June 20. 2001.
Using head/muscle tissue.**

Prepared (also subject responsible if other) EUS/CV/RF/P Dulce Altabella	No. EUS/CV/R-01:0701/REP			
Approved EUS/CV/RF/P Mark Douglas	Checked MGD	2001-6-28	A	E:\FCC Submittals\FCC_413 carmen nicole\XHIBIT11\Source\tr413 sar rpt.doc

Dipole 1800 MHz

Generic Twin A; Flat

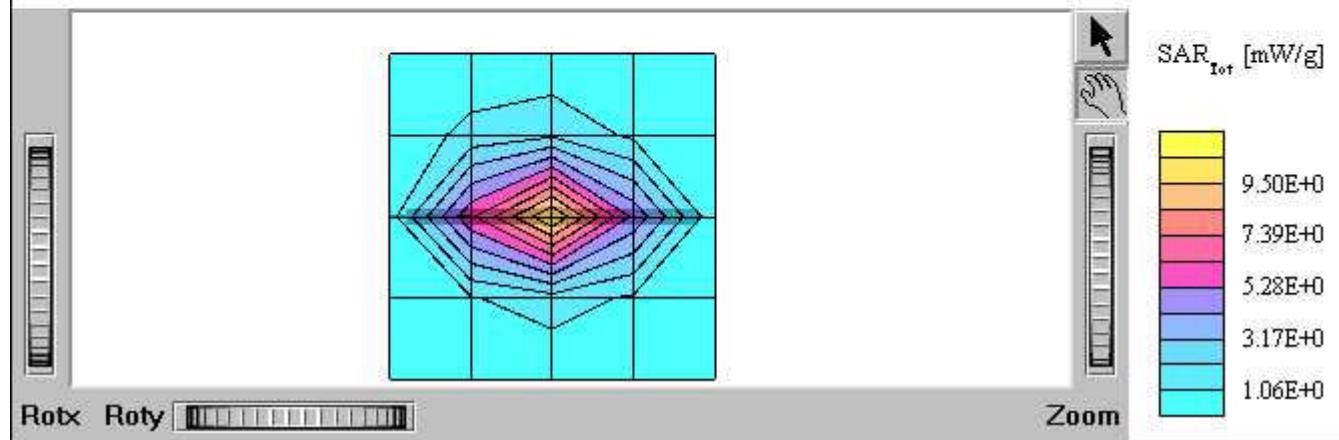
Probe: ET3DV5 - SN1324; ConvF(4.17,4.17,4.17); Crest factor: 1.0; Brain 1800 MHz: $\sigma = 1.75 \text{ mho/m}$ $\epsilon_r = 40.0$ $\rho = 1.00 \text{ g/cm}^3$
Cubes (2): Peak: 20.9 mW/g ± 0.09 dB, SAR (1g): 10.6 mW/g ± 0.09 dB, SAR (10g): 5.21 mW/g ± 0.10 dB, (Worst-case extrapolation)

Penetration depth: 7.0 (6.8, 7.6) [mm]

Powerdrift: 0.03 dB

Pout=255 mW

File name: Validation 1800 MHz 06_21_01_SN217, Date: 06/21/01



**1800 MHz SAR distribution of validation dipole antenna from system accuracy verification test on June 21, 2001.
Using head/muscle tissue.**

Prepared (also subject responsible if other) EUS/CV/RF/P Dulce Altabella	No. EUS/CV/R-01:0701/REP
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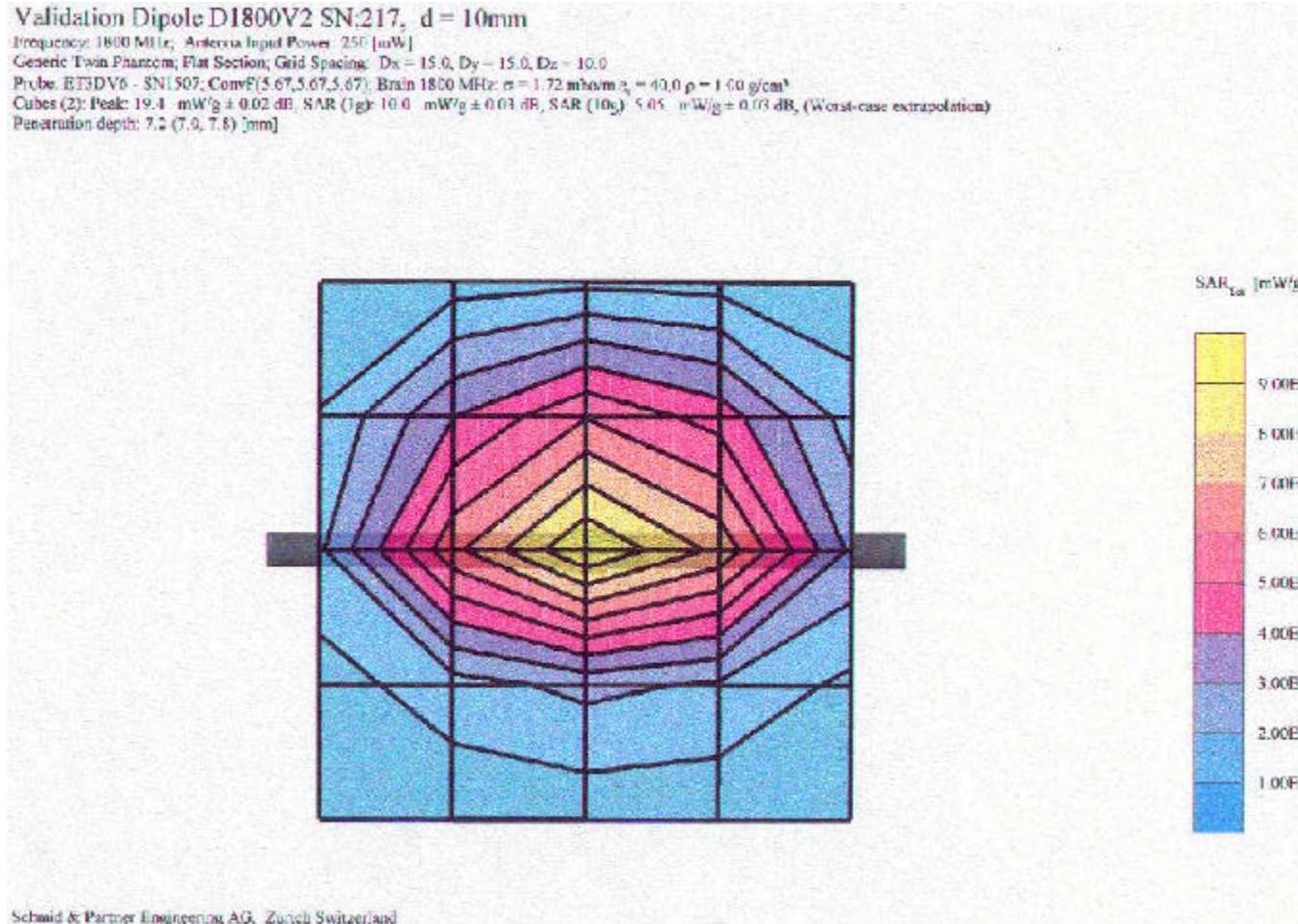
Validation Dipole D1800V2 SN:217, d = 10mm

Frequency: 1800 MHz, Antenna Input Power: 250 [mW]

Generic Twin Phantom; Flat Section; Grid Spacing: Dx = 15.0, Dy = 15.0, Dz = 10.0

Probe: BT3DV6 - SN1507; ConvF[5.67,5.67,5.67]; Brain 1800 MHz: $\sigma = 1.72 \text{ mho/m}$ $\rho_s = 40.0 \text{ p} = 1.00 \text{ g/cm}^3$ Cubes (2): Peak: 19.4 mW/g ± 0.02 dB, SAR (1g): 10.0 mW/g ± 0.03 dB, SAR (10g): 5.05 mW/g ± 0.03 dB, (Worst-case extrapolation)

Penetration depth: 7.5 (7.5, 7.5) [mm]

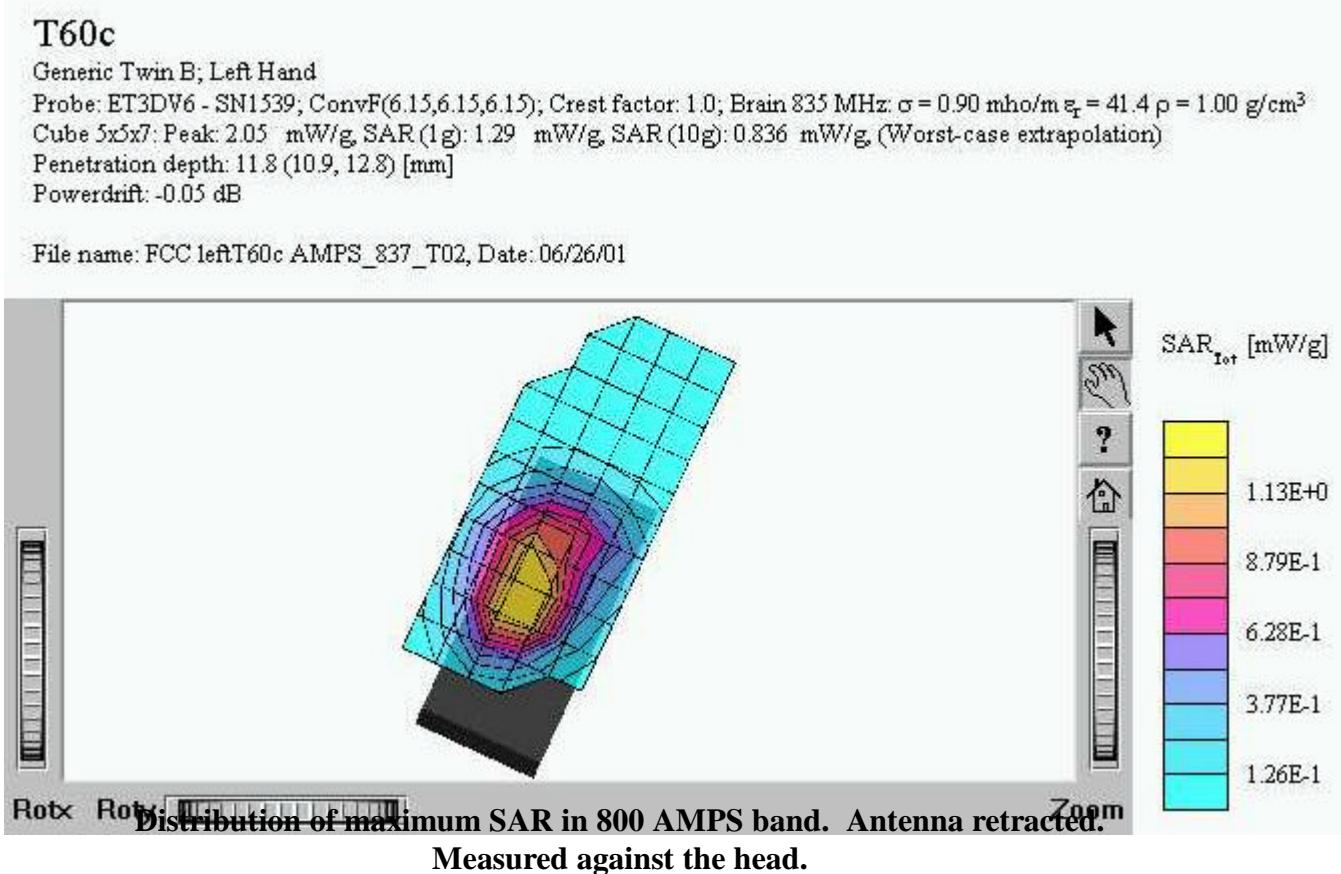


Schmid & Partner Engineering AG, Zurich Switzerland

**1800 MHz SAR distribution of validation dipole antenna from reference measurement.
Using head/muscle tissue.**

Prepared (also subject responsible if other) EUS/CV/RF/P Dulce Altabella	No. EUS/CV/R-01:0701/REP			
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Appendix 2: SAR distribution plots



Prepared (also subject responsible if other) EUS/CV/RF/P Dulce Altabella	No. EUS/CV/R-01:0701/REP			
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T60c

Generic Twin A; Right Hand

Probe: ET3DV5 - SN1324; ConvF(4.17,4.17,4.17); Crest factor: 1.0; Brain 1800 MHz; $\sigma = 1.75 \text{ mho/m}$ $\epsilon_r = 40.0$ $\rho = 1.00 \text{ g/cm}^3$

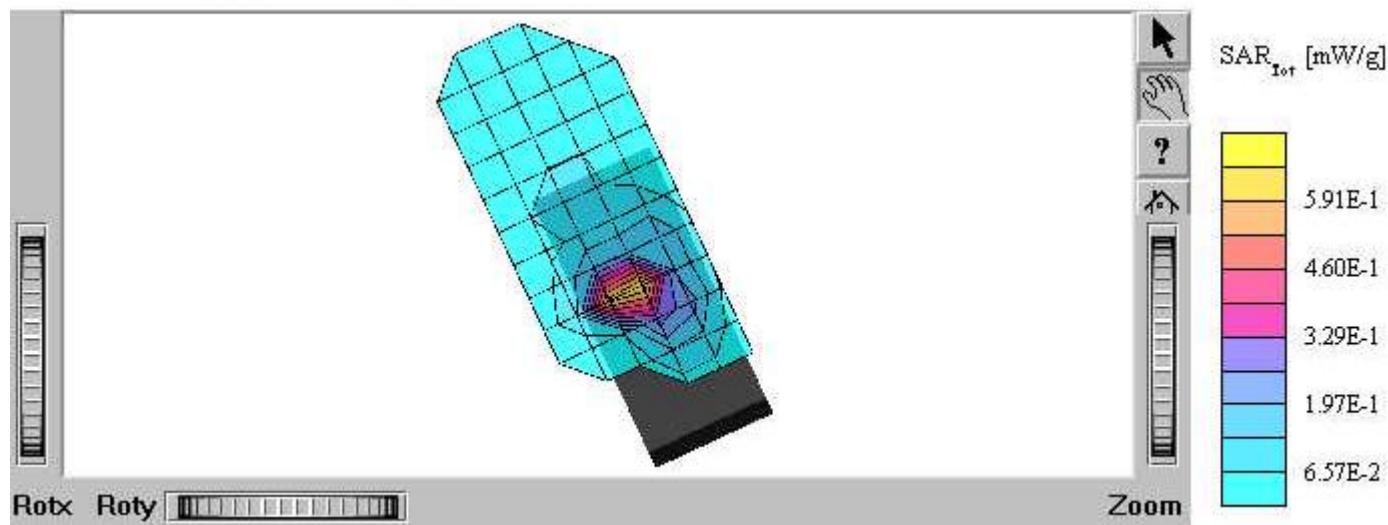
Cube 5x5x7; Peak: 1.88 mW/g, SAR (1g): 0.882 mW/g, SAR (10g): 0.367 mW/g, (Worst-case extrapolation)

Penetration depth: 6.5 (6.4, 6.7) [mm]

Powerdrift: 0.04 dB

UA202092T8 antenna in

File name: FCC right_CDMAPCS_1851_touch_T02, Date: 06/21/01



Distribution of maximum SAR in 1900 CDMA band. Antenna retracted. Measured against the head.

Prepared (also subject responsible if other) EUS/CV/RF/P Dulce Altabella		No. EUS/CV/R-01:0701/REP		
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T60c

Generic Twin A; Flat

Probe: ET3DV5 - SN1324; ConvF(4.63,4.63,4.63); Crest factor: 1.0; Muscle 835 MHz: $\sigma = 0.97 \text{ mho/m}$ $\epsilon_r = 55.4$ $\rho = 1.00 \text{ g/cm}^3$

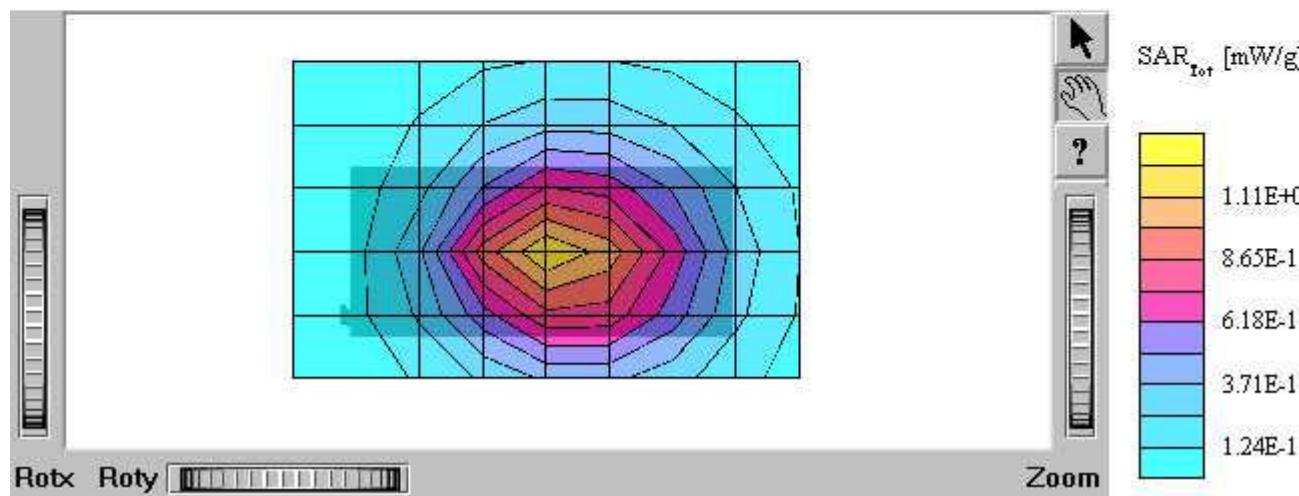
Cube 5x5x7: Peak: 1.77 mW/g, SAR (1g): 1.20 mW/g, SAR (10g): 0.830 mW/g, (Worst-case extrapolation)

Penetration depth: 15.2 (13.6, 17.0) [mm]

Powerdrift: -0.04 dB

Holster: case with clip

File name: FCC body holster sxk-109-451812_824_T01, Date: 06/26/01



Distribution of maximum SAR in 800 AMPS band. Measured against the body using product # SXK –109-4518/2 as a carry case.

Prepared (also subject responsible if other) EUS/CV/RF/P Dulce Altabella		No. EUS/CV/R-01:0701/REP		
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T60c

Generic Twin A; Flat

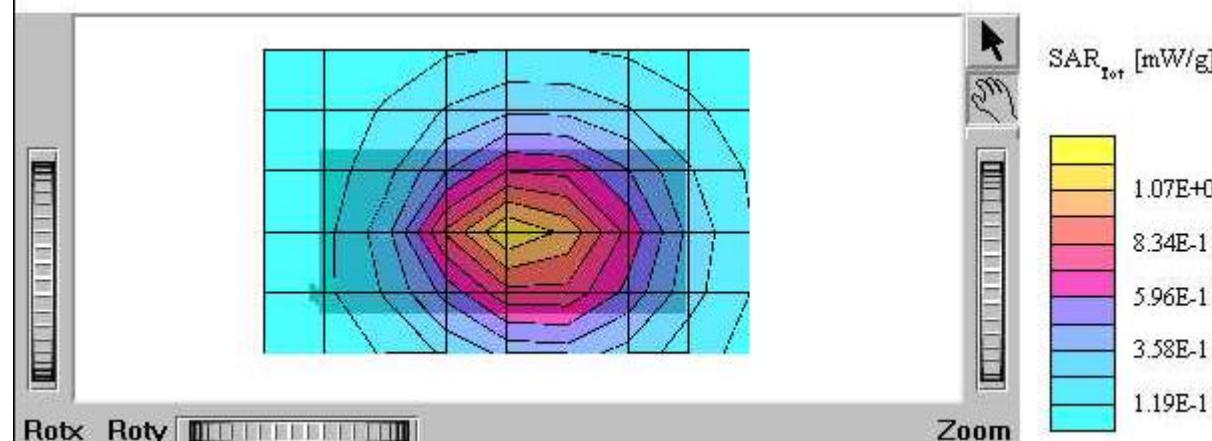
Probe: ET3DV5 - SN1324; ConvF(4.63,4.63,4.63); Crest factor: 1.0; Muscle 835 MHz: $\sigma = 0.97 \text{ mho/m}$ $\epsilon_f = 55.4 \text{ p}$
 $= 1.00 \text{ g/cm}^3$

Cube 5x5x7: Peak: 1.76 mW/g, SAR (1g): 1.20 mW/g, SAR (10g): 0.825 mW/g, (Worst-case extrapolation)

Penetration depth: 15.5 (13.8, 17.3) [mm]

Powerdrift: -0.01 dB

File name: FCC body holster 6820 55_824_T01, Date: 06/26/01



Distribution of maximum SAR in 800 AMPS band. Measured against the body using product # SXK -107-6820/55 as a carry case.

Prepared (also subject responsible if other) EUS/CV/RF/P Dulce Altabella		No. EUS/CV/R-01:0701/REP		
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T60c

Generic Twin A; Flat

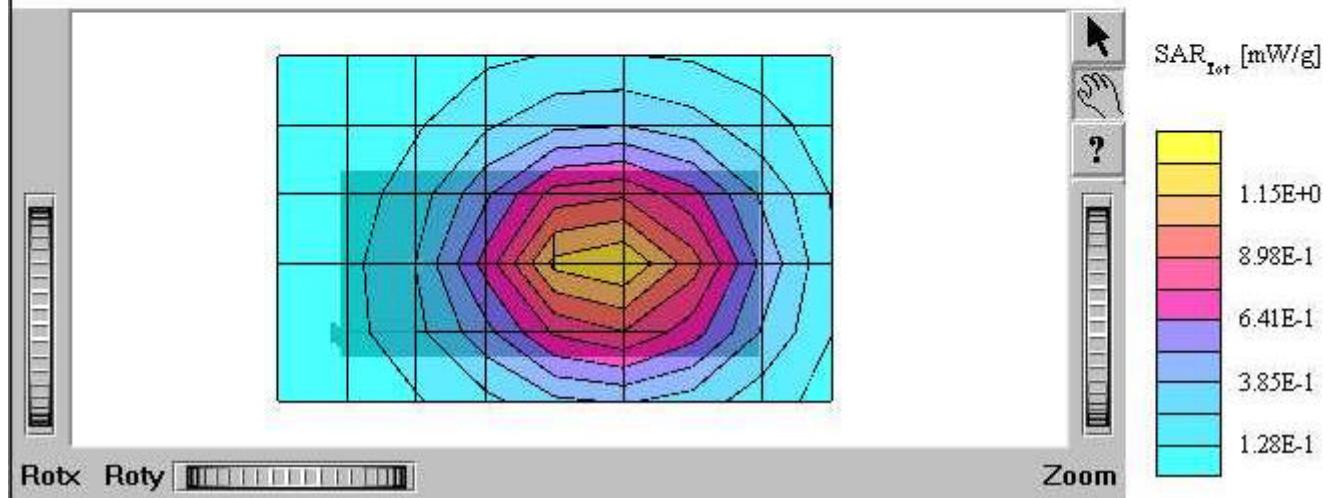
Probe: ET3DV5 - SN1324; ConvF(4.63,4.63,4.63); Crest factor: 1.0; Muscle 835 MHz: $\sigma = 0.98 \text{ mho/m}$ $\sigma_t = 55.1 \text{ p} = 1.00 \text{ g/cm}^3$

Cube 5x5x7: Peak: 1.75 mW/g, SAR (1g): 1.24 mW/g, SAR (10g): 0.878 mW/g, (Worst-case extrapolation)

Penetration depth: 16.1 (14.6, 17.7) [mm]

Powerdrift: -0.00 dB

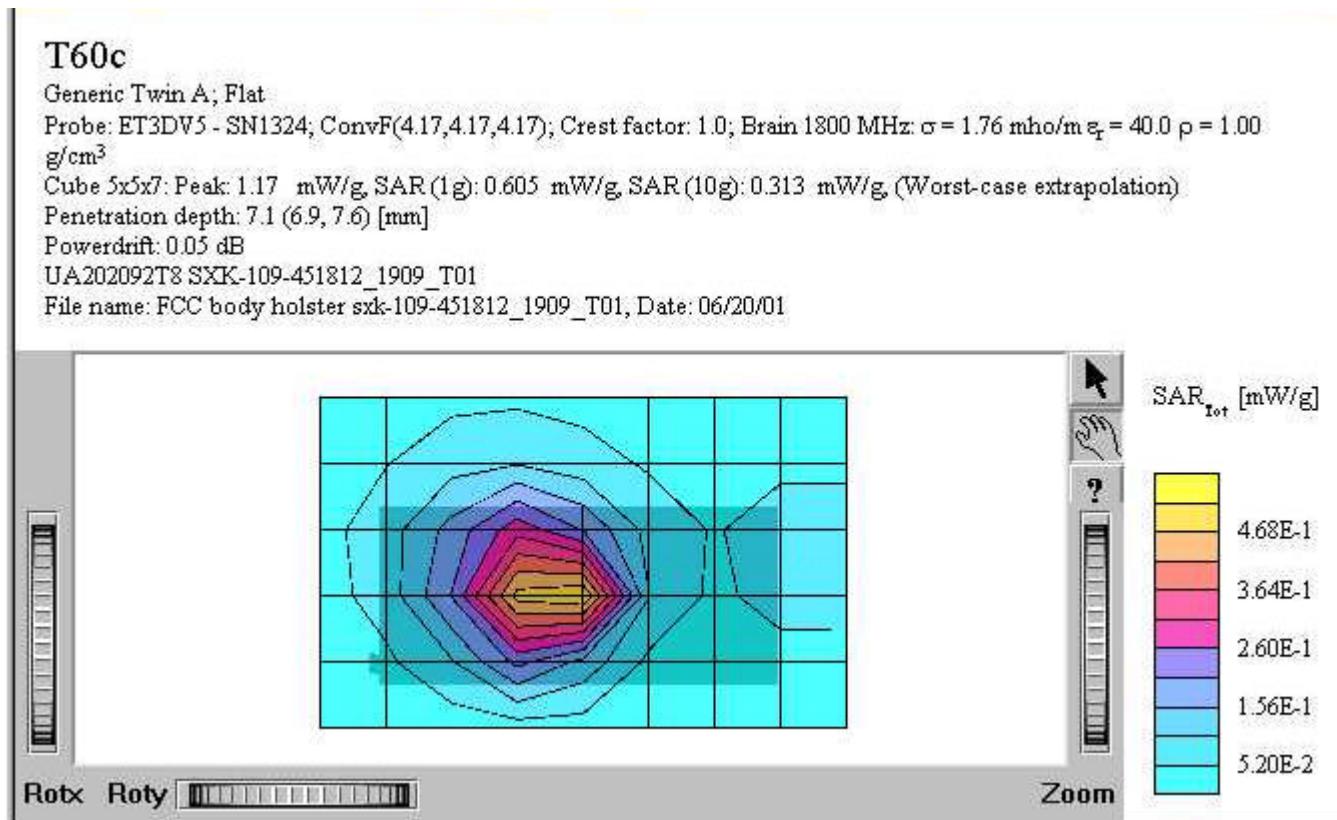
File name: FCC body holster back SXK-109 4705_824_T01, Date: 06/27/01



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**Distribution of maximum SAR in 800 AMPS band. Measured against the body using
product # SXK -109-4705 as a carry case.**

Prepared (also subject responsible if other) EUS/CV/RF/P Dulce Altabella		No. EUS/CV/R-01:0701/REP		
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**Distribution of maximum SAR in 1900 CDMA band. Measured against the body using
product # SXK -109-4518/2 as a carry case.**

Prepared (also subject responsible if other) EUS/CV/RF/P Dulce Altabella		No. EUS/CV/R-01:0701/REP		
Approved EUS/CV/RF/P Mark Douglas	Checked MGD	2001-6-28	A	E:\FCC Submittals\FCC_413 carmen nicole\XHIBIT11\Source\tr413 sar rpt.doc

T60c

Generic Twin A; Flat

Probe: ET3DV5 - SN1324; ConvF(4.17,4.17,4.17); Crest factor: 1.0; Brain 1800 MHz: $\sigma = 1.76 \text{ mho/m}$ $\epsilon_r = 40.0$ $\rho = 1.00 \text{ g/cm}^3$

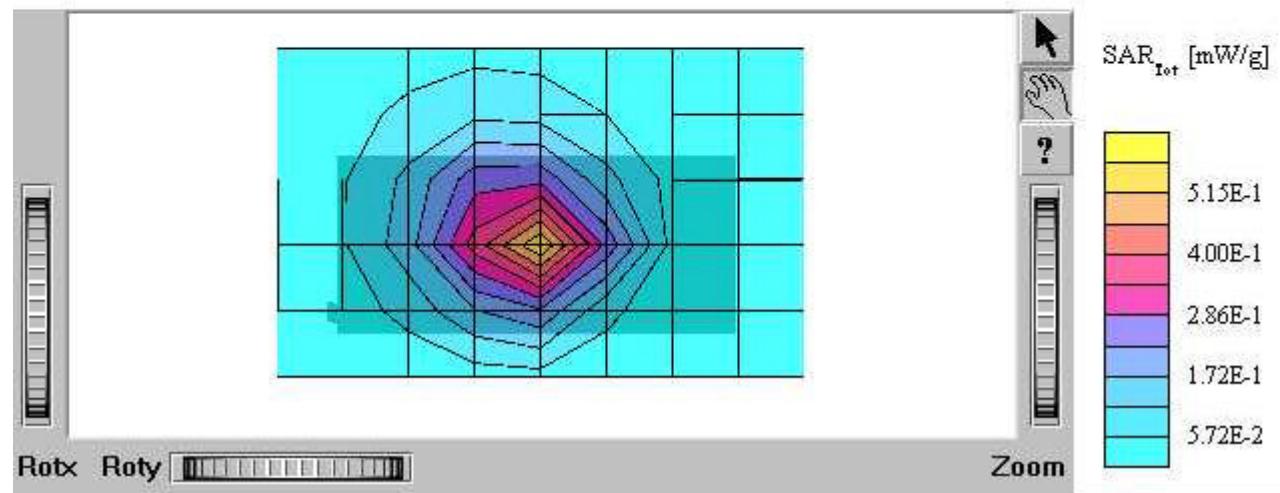
Cube 5x5x7: Peak: 1.05 mW/g, SAR (1g): 0.546 mW/g, SAR (10g): 0.290 mW/g (Worst-case extrapolation)

Penetration depth: 7.0 (6.8, 7.6) [mm]

Powerdrift: -0.10 dB

UA202092T8 SXK-107 6820/55

File name: FCC body holster sxk-107 6820_55_1909_T01, Date: 06/20/01



Distribution of maximum SAR in 1900 CDMA band. Measured against the body using product # SXK -107-6820/55 as a carry case.

Prepared (also subject responsible if other) EUS/CV/RF/P Dulce Altabella	No. EUS/CV/R-01:0701/REP			
Approved EUS/CV/RF/P Mark Douglas	Checked MGD	2001-6-28	A	E:\FCC Submittals\FCC_413 carmen nicole\XHIBIT11\Source\tr413 sar rpt.doc

T60c

Generic Twin A; Flat

Probe: ET3DV5 - SN1324; ConvF(4.17,4.17,4.17); Crest factor: 1.0; Brain 1800 MHz: $\sigma = 1.76 \text{ mho/m}$ $\epsilon_r = 40.0$ $\rho = 1.00 \text{ g/cm}^3$

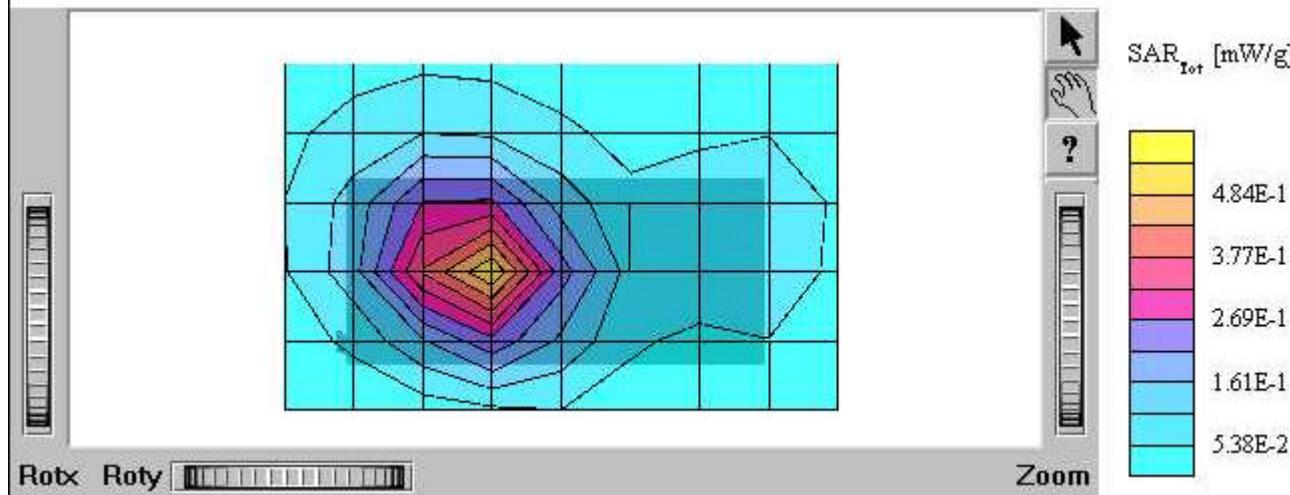
Cube 5x5x7: Peak: 1.06 mW/g, SAR (1g): 0.555 mW/g, SAR (10g): 0.296 mW/g, (Worst-case extrapolation)

Penetration depth: 7.2 (6.9, 7.8) [mm]

Powerdrift: -0.03 dB

holster SXK-109 4705

File name: FCC body holster back SXK-109 4705 _1909_T01, Date: 06/20/01



Distribution of maximum SAR in 1900 CDMA band. Measured against the body using product # SXK -109-4705 as a carry case. Back of phone is against holster.