

PANASONIC FCC ID: NWJ10A003A -- FM Body SAR

Generic Twin Phantom; Flat Section; Probe: ET3DV6 - SN1560 -- Probe Cal Date 20/02/01

Med. Parameters 835 MHz Muscle: $\sigma = 0.95$ mho/m $\epsilon_r = 56.2$ $\rho = 1.00$ g/cm³; Antenna Position -- Out; Crest Factor 1.0

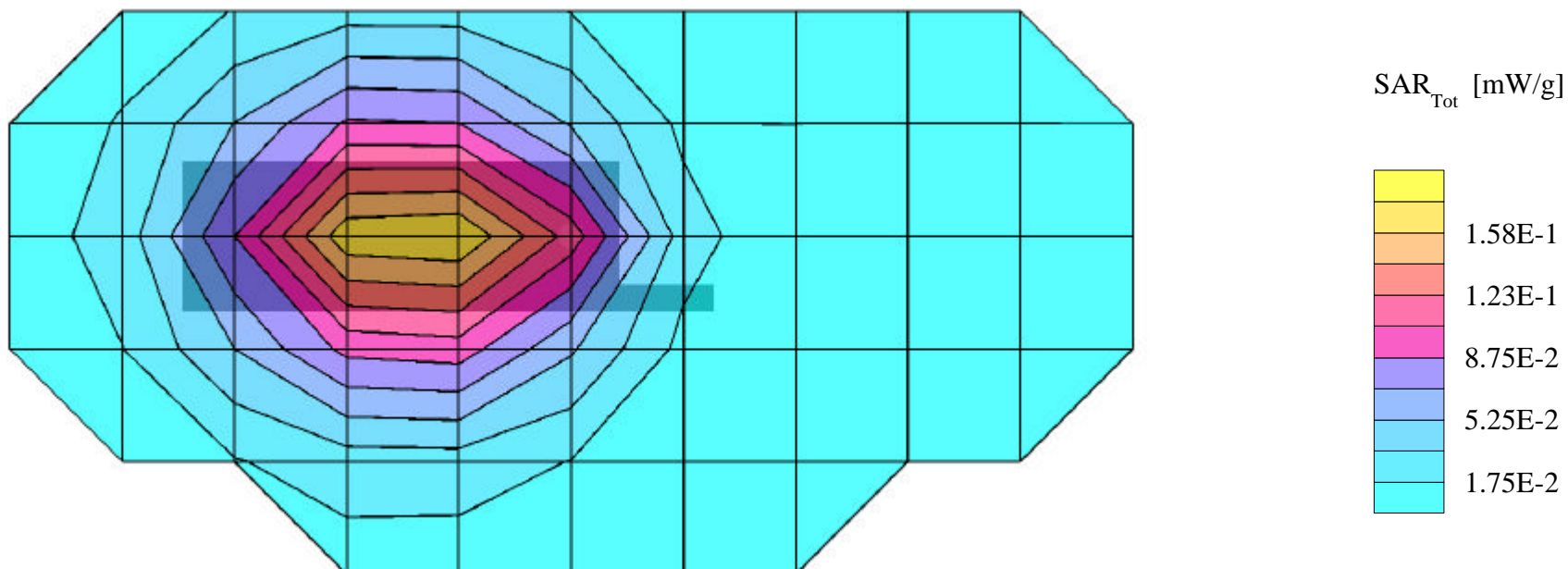
SAR (1g): 0.184 mW/g, SAR (10g): 0.129 mW/g

PANASONIC Tri-mode Model: ATLAS CE

FM Mode, Ch.0991 [824.04MHz]

Conducted Power = 22.6dBm; Spacing = 2.0cm from flat phantom, w/beltclip

Test Date -- 03-29-2001



PANASONIC FCC ID: NWJ10A003A -- FM Body SAR

Generic Twin Phantom; Flat Section; Probe: ET3DV6 - SN1560 -- Probe Cal Date 20/02/01

Med. Parameters 835 MHz Muscle: $\sigma = 0.95$ mho/m $\epsilon_r = 56.2$ $\rho = 1.00$ g/cm³; Antenna Position -- Out; Crest Factor 1.0

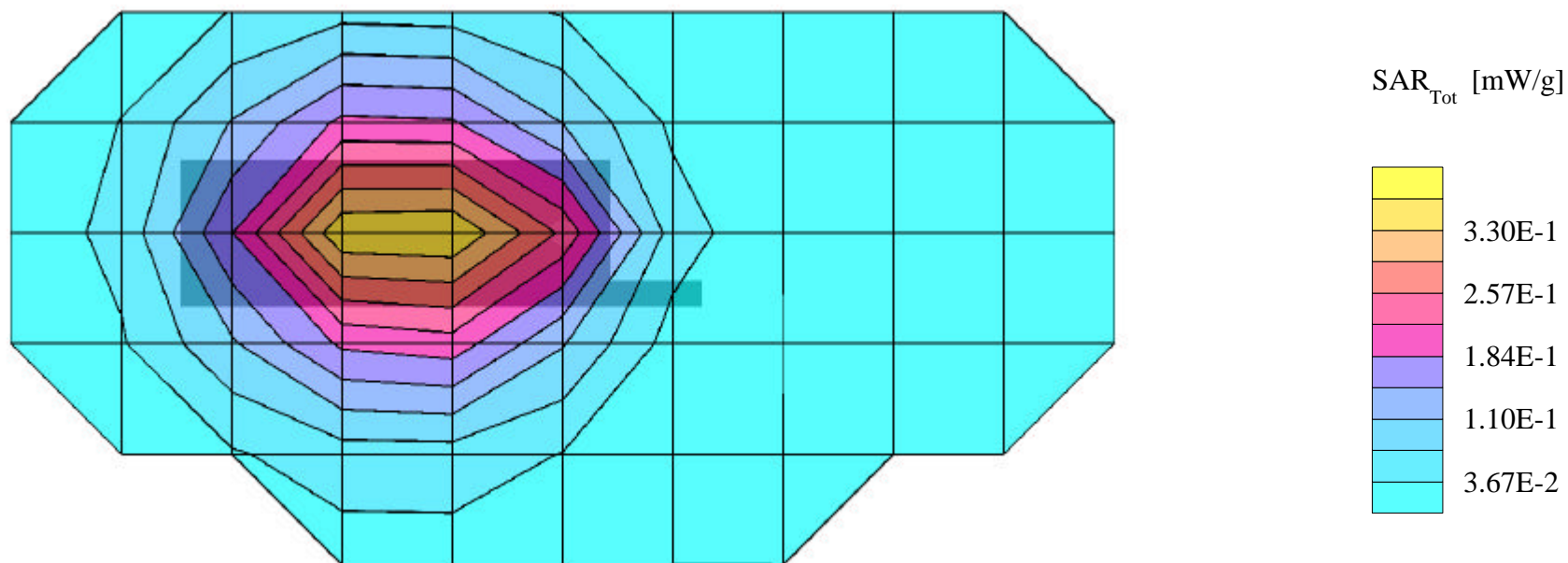
SAR (1g): 0.382 mW/g, SAR (10g): 0.269 mW/g

PANASONIC Tri-mode Model: ATLAS CE

FM Mode, Ch.0383 [836.49MHz]

Conducted Power = 22.6dBm; Spacing = 2.0cm from flat phantom, w/beltclip

Test Date -- 03-29-2001



PANASONIC FCC ID: NWJ10A003A -- FM Body SAR

Generic Twin Phantom; Flat Section; Probe: ET3DV6 - SN1560 -- Probe Cal Date 20/02/01

Med. Parameters 835 MHz Muscle: $\sigma = 0.95$ mho/m $\epsilon_r = 56.2$ $\rho = 1.00$ g/cm³; Antenna Position -- Out; Crest Factor 1.0

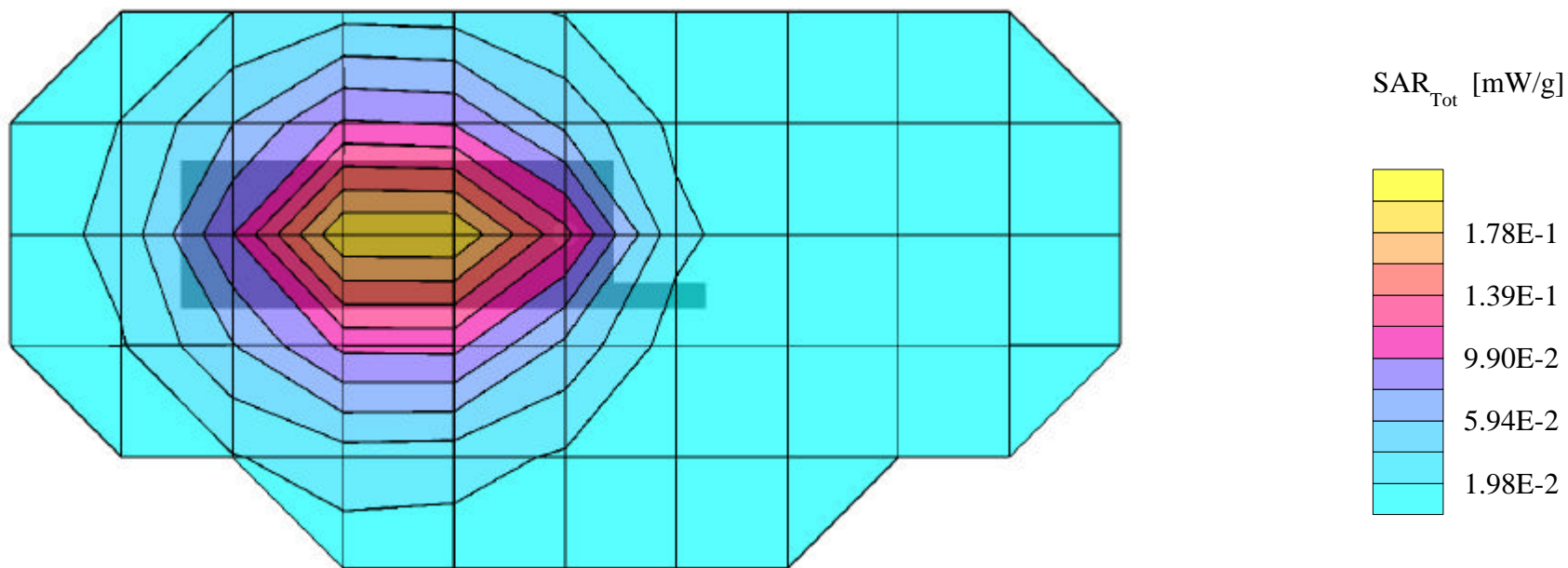
SAR (1g): 0.208 mW/g, SAR (10g): 0.145 mW/g

PANASONIC Tri-mode Model: ATLAS CE

FM Mode, Ch.0799 [848.97MHz]

Conducted Power = 22.6dBm; Spacing = 2.0cm from flat phantom, w/beltclip

Test Date -- 03-29-2001



PANASONIC FCC ID:NWJ10A003A -- Cellular TDMA Body SAR

Generic Twin Phantom; Flat Section; Probe: ET3DV6 - SN1560 -- Probe Cal Date 20/02/01

Med. Parameters 835 MHz Muscle: $\sigma = 0.95$ mho/m $\epsilon_r = 56.2$ $\rho = 1.00$ g/cm³; Antenna Position -- Out; Crest Factor 3.0

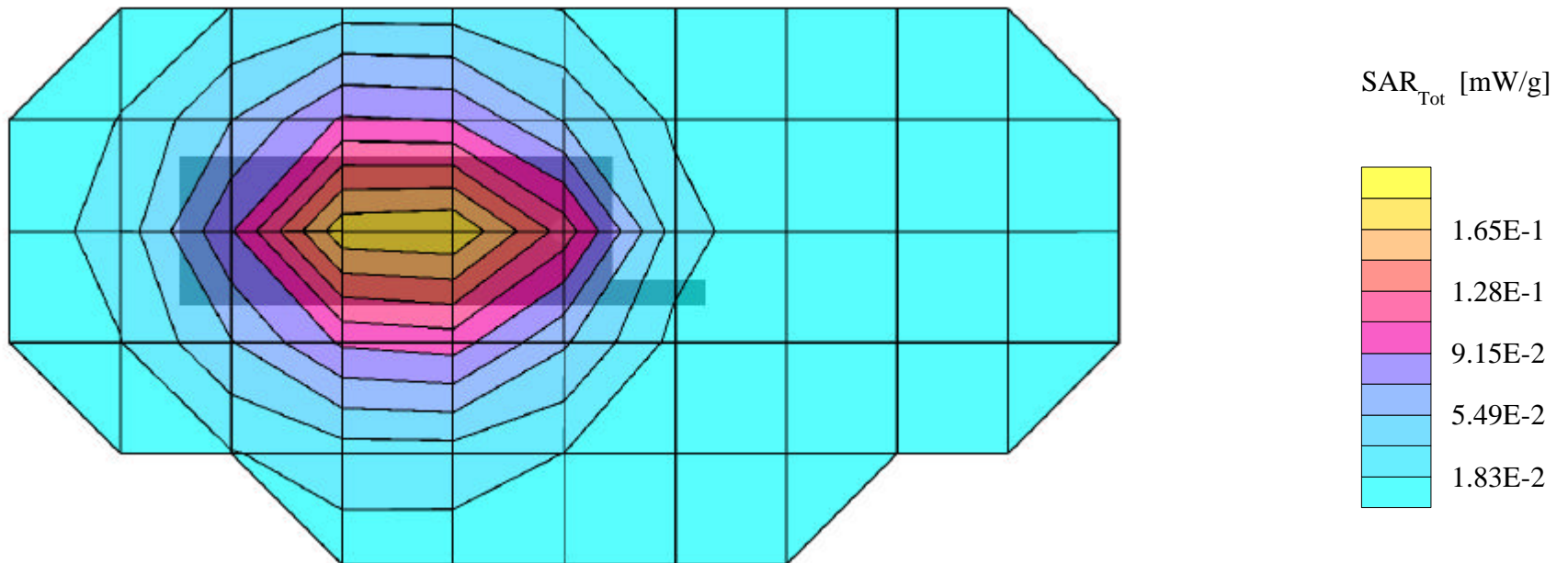
SAR (1g): 0.188 mW/g, SAR (10g): 0.132 mW/g

PANASONIC Tri-mode Model: ATLAS CE

Cellular TDMA Mode, Ch.0991 [824.04MHz]

Conducted Power = 27.4dBm; Spacing = 2.0cm from flat phantom, w/beltclip

Test Date -- 03-29-2001



PANASONIC FCC ID:NWJ10A003A -- Cellular TDMA Body SAR

Generic Twin Phantom; Flat Section; Probe: ET3DV6 - SN1560 -- Probe Cal Date 20/02/01

Med. Parameters 835 MHz Muscle: $\sigma = 0.95$ mho/m $\epsilon_r = 56.2$ $\rho = 1.00$ g/cm³; Antenna Position -- Out; Crest Factor 3.0

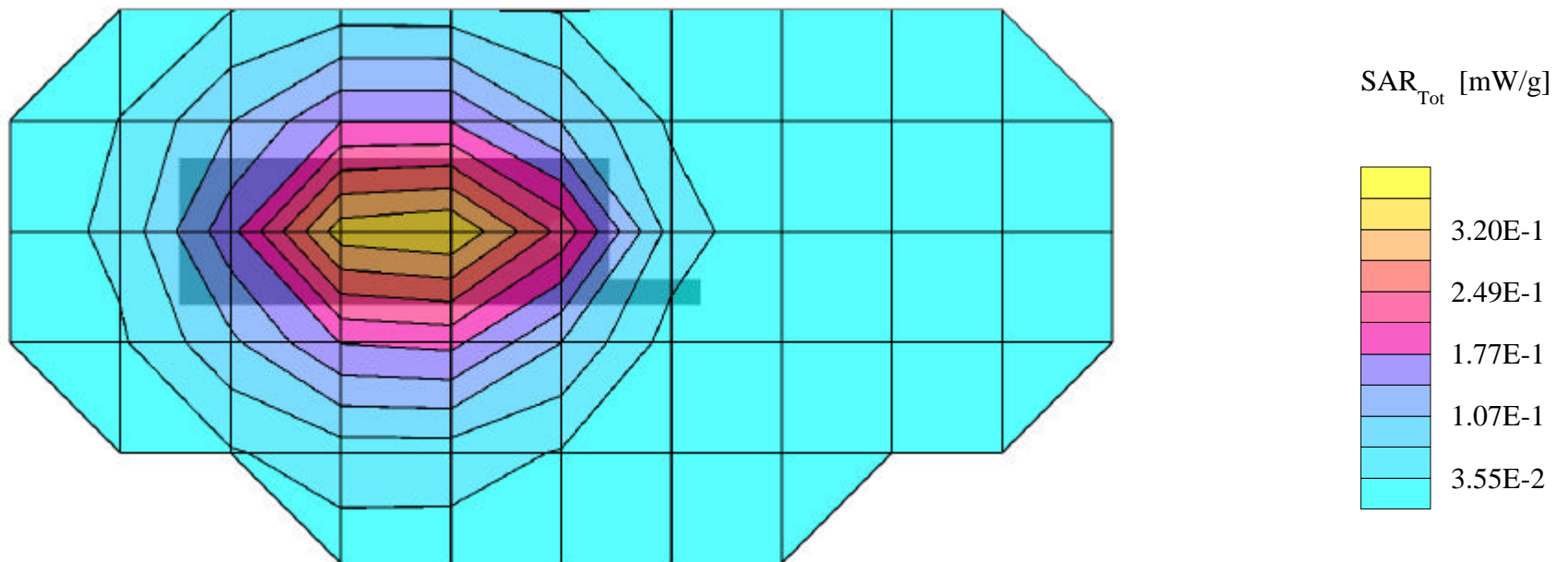
SAR (1g): 0.359 mW/g, SAR (10g): 0.254 mW/g

PANASONIC Tri-mode Model: ATLAS CE

Cellular TDMA Mode, Ch.0383 [836.49MHz]

Conducted Power = 27.4dBm; Spacing = 2.0cm from flat phantom, w/beltclip

Test Date -- 03-29-2001



PANASONIC FCC ID:NWJ10A003A -- Cellular TDMA Body SAR

Generic Twin Phantom; Flat Section; Probe: ET3DV6 - SN1560 -- Probe Cal Date 20/02/01

Med. Parameters 835 MHz Muscle: $\sigma = 0.95$ mho/m $\epsilon_r = 56.2$ $\rho = 1.00$ g/cm³; Antenna Position -- Out; Crest Factor 3.0

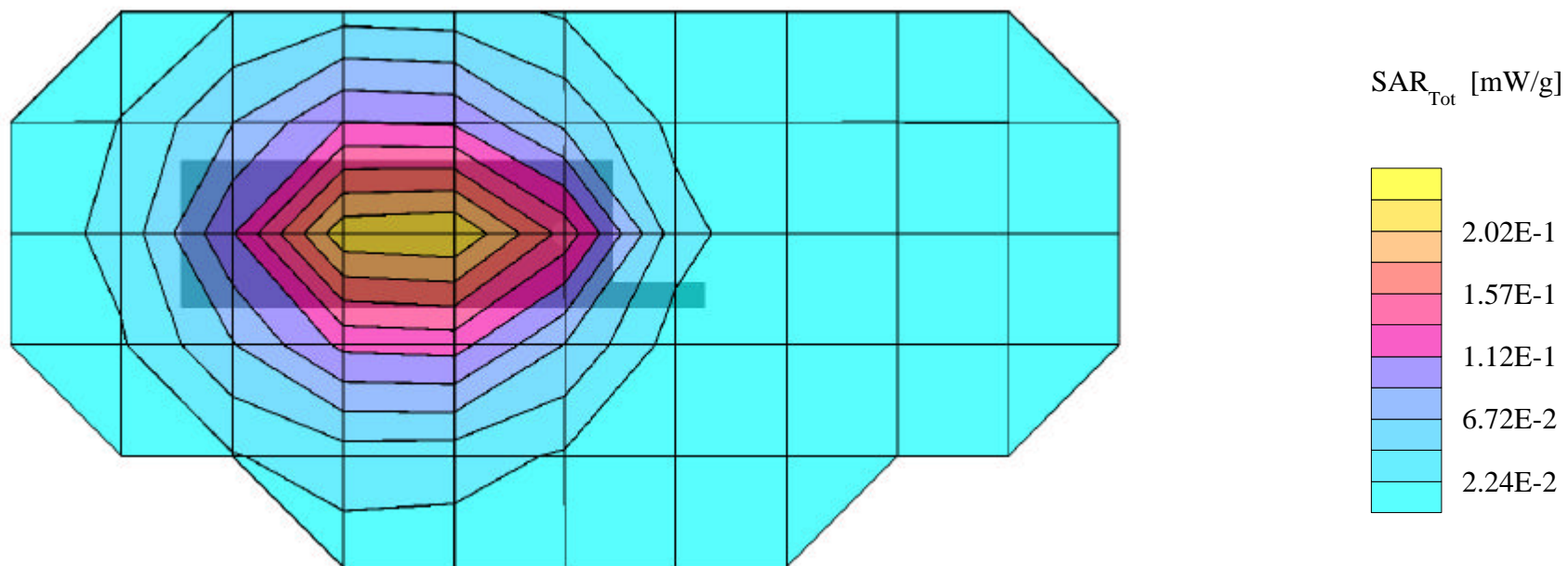
SAR (1g): 0.233 mW/g, SAR (10g): 0.163 mW/g

PANASONIC Tri-mode Model: ATLAS CE

Cellular TDMA Mode, Ch.0799 [848.97MHz]

Conducted Power = 27.4dBm; Spacing = 2.0cm from flat phantom, w/beltclip

Test Date -- 03-29-2001



PANASONIC FCC ID:NWJ10A003A -- PCS TDMA Body SAR

Generic Twin Phantom; Flat Section; Probe: ET3DV6 - SN1560 -- Probe Cal Date 20/02/01

Med. Parameters 1900 MHz Muscle: $\sigma = 1.85$ mho/m $\epsilon_r = 54.2$ $\rho = 1.00$ g/cm³; Antenna Position -- Out; Crest Factor 3.0

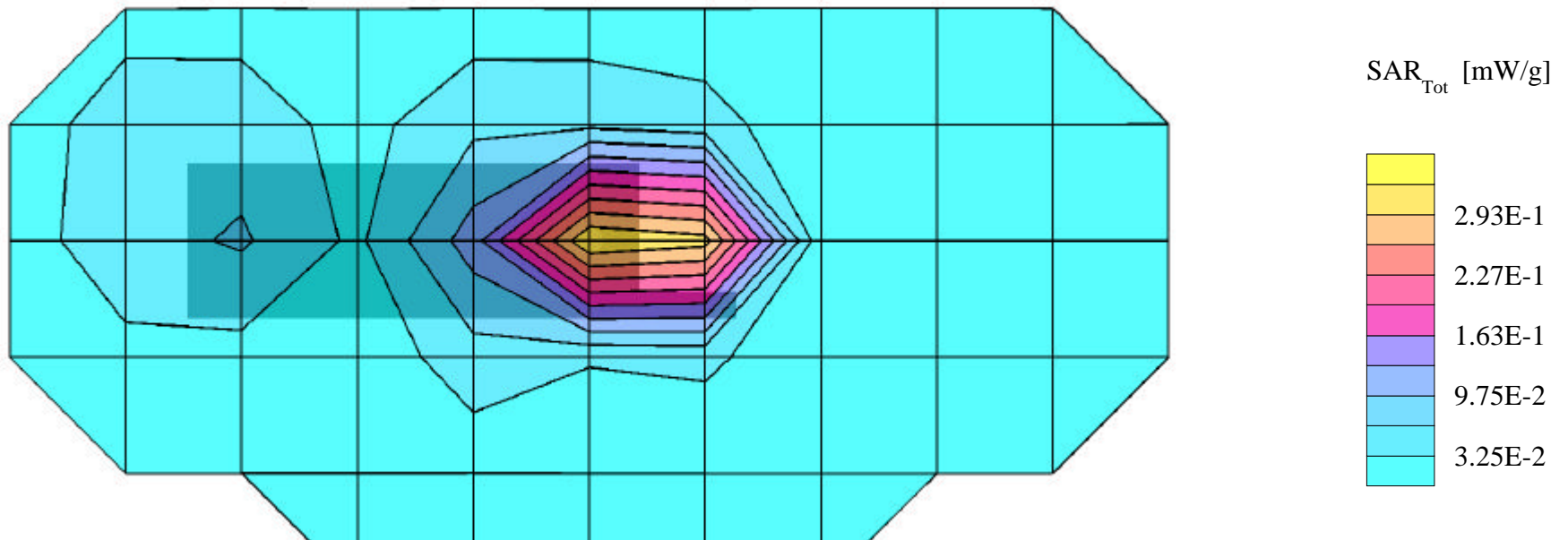
SAR (1g): 0.563 mW/g, SAR (10g): 0.295 mW/g

PANASONIC Tri-mode Model: ATLAS CE

PCS TDMA Mode, Ch.0002 [1850.01MHz]

Conducted Power = 26.4dBm; Spacing = 2.0cm from flat phantom, w/beltclip

Test Date -- 03-29-2001



PANASONIC FCC ID:NWJ10A003A -- PCS TDMA Body SAR

Generic Twin Phantom; Flat Section; Probe: ET3DV6 - SN1560 -- Probe Cal Date 20/02/01

Med. Parameters 1900 MHz Muscle: $\sigma = 1.85$ mho/m $\epsilon_r = 54.2$ $\rho = 1.00$ g/cm³; Antenna Position -- Out; Crest Factor 3.0

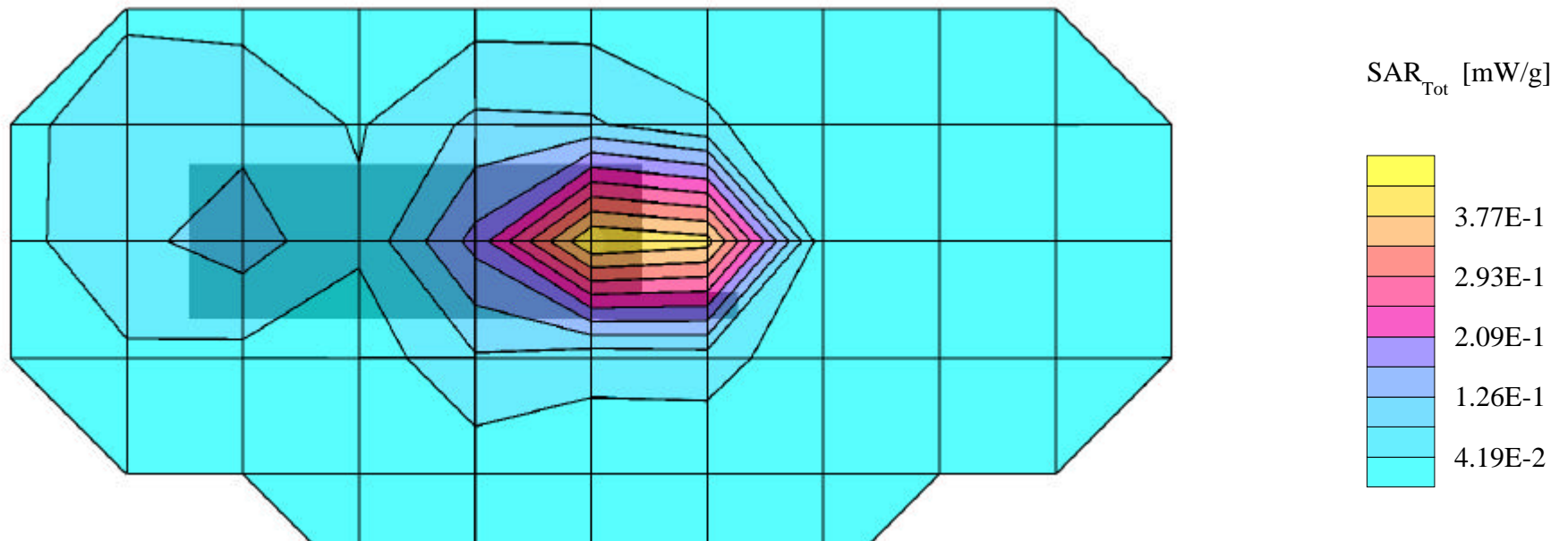
SAR (1g): 0.747 mW/g, SAR (10g): 0.400 mW/g

PANASONIC Tri-mode Model: ATLAS CE

PCS TDMA Mode, Ch.1000 [1880.00MHz]

Conducted Power = 26.4dBm; Spacing = 2.0cm from flat phantom, w/beltclip

Test Date -- 03-29-2001



PANASONIC FCC ID:NWJ10A003A -- PCS TDMA Body SAR

Generic Twin Phantom; Flat Section; Probe: ET3DV6 - SN1560 -- Probe Cal Date 20/02/01

Med. Parameters 1900 MHz Muscle: $\sigma = 1.85$ mho/m $\epsilon_r = 54.2$ $\rho = 1.00$ g/cm³; Antenna Position -- Out; Crest Factor 3.0

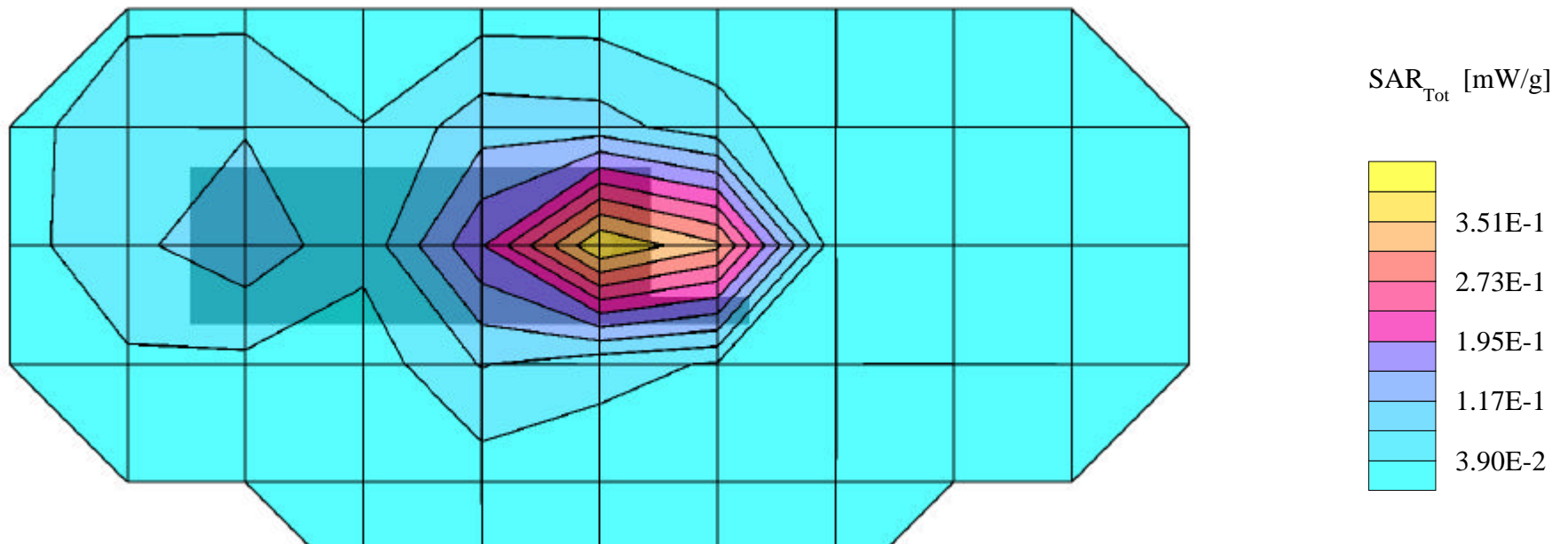
SAR (1g): 0.625 mW/g, SAR (10g): 0.336 mW/g

PANASONIC Tri-mode Model: ATLAS CE

PCS TDMA Mode, Ch.1998 [1909.56MHz]

Conducted Power = 26.4dBm; Spacing = 2.0cm from flat phantom, w/beltclip

Test Date -- 03-29-2001



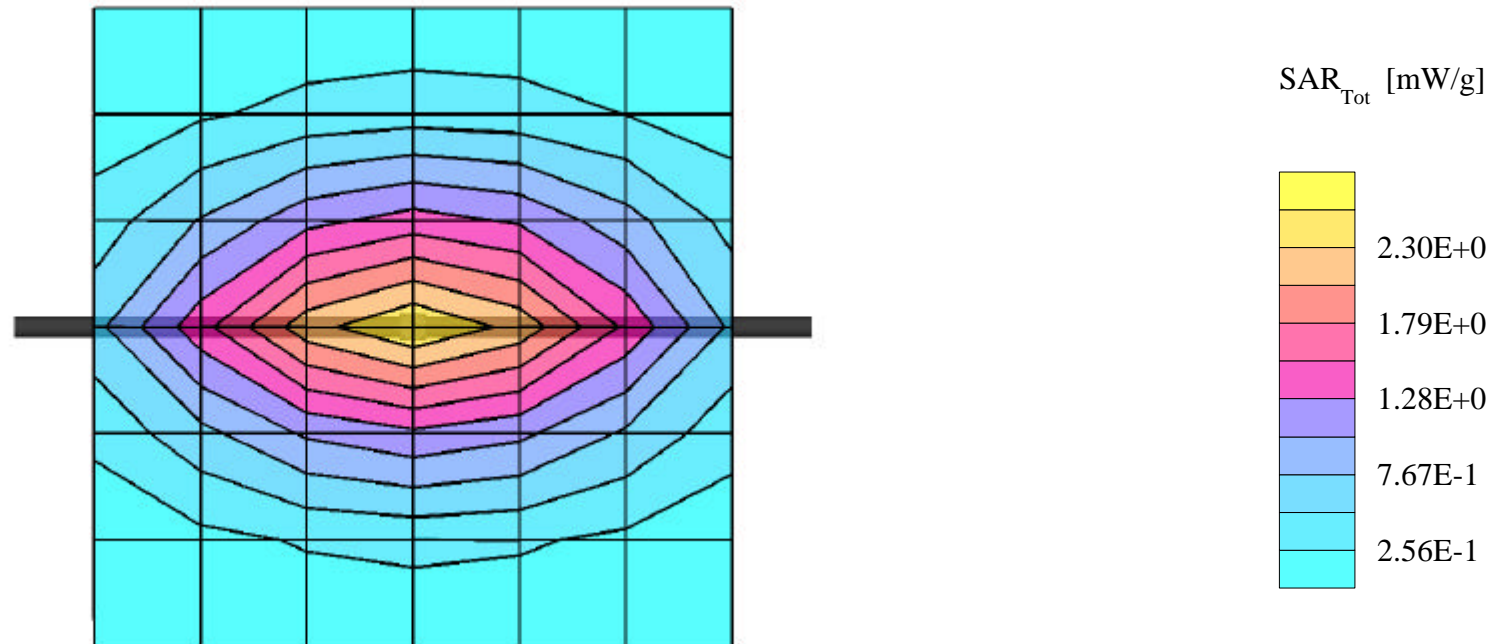
835MHz Brain Dipole Validation

Generic Twin Phantom; Flat Section; Probe: ET3DV6 - SN1560 -- Probe Cal Date 20/02/01

Med. Parameters 835 MHz Brain: $\sigma = 0.90$ mho/m $\epsilon_r = 41.5$ $\rho = 1.00$ g/cm³; Antenna Position -- Out; Crest Factor 1.0

SAR (1g): 2.15 mW/g, SAR (10g): 1.44 mW/g

835MHz Brain Dipole Validation (D835V2 S/N: 406)
Frequency: 835 MHz; Antenna Input Power: 250 [mW]
PCTEST Brain Tissue Simulating Liquid



835MHz Muscle Dipole Validation

Generic Twin Phantom; Flat Section; Probe: ET3DV6 - SN1560 -- Probe Cal Date 20/02/01

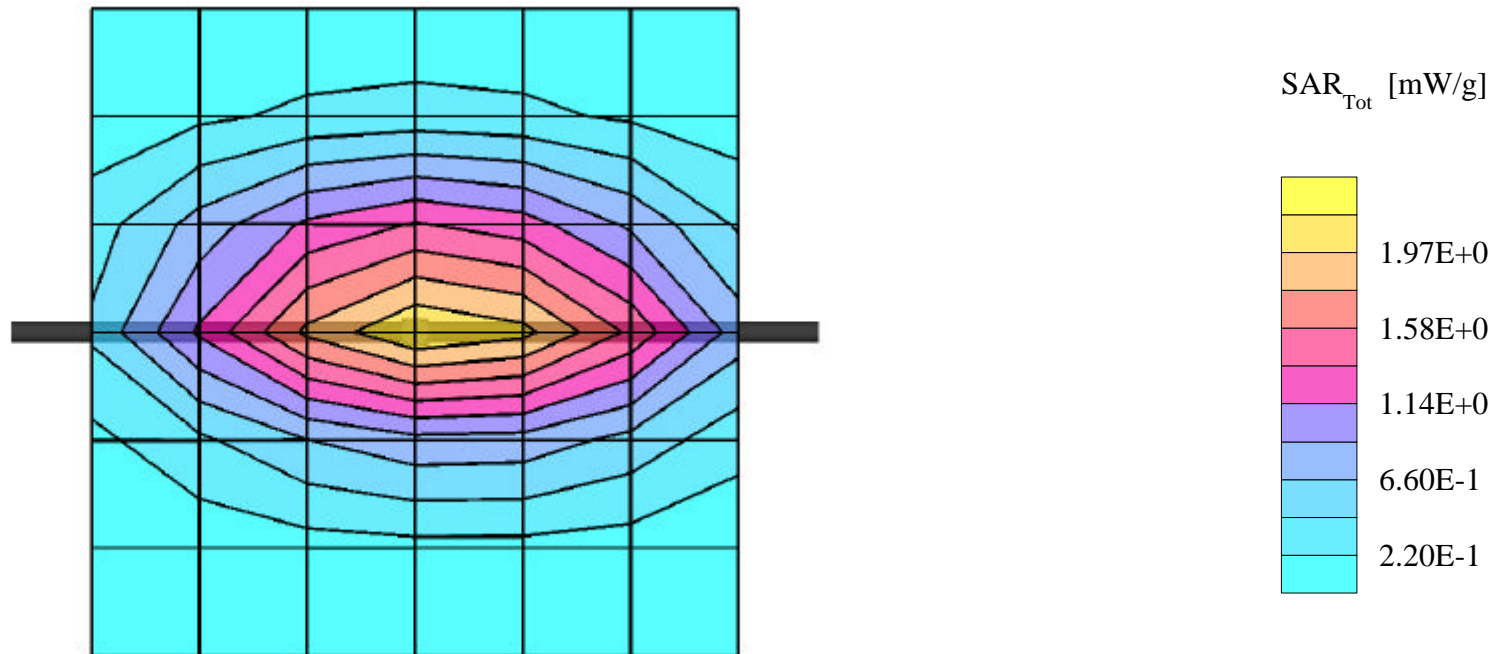
Med. Parameters 835 MHz Muscle: $\sigma = 0.95$ mho/m $\epsilon_r = 56.2$ $\rho = 1.00$ g/cm³; Antenna Position -- Out; Crest Factor 1.0

SAR (1g): 2.18 mW/g, SAR (10g): 1.45 mW/g

835MHz Muscle Dipole Validation (D835V2 S/N: 406)

Frequency: 835 MHz; Antenna Input Power: 250 [mW]

PCTEST Muscle Tissue Simulating Liquid



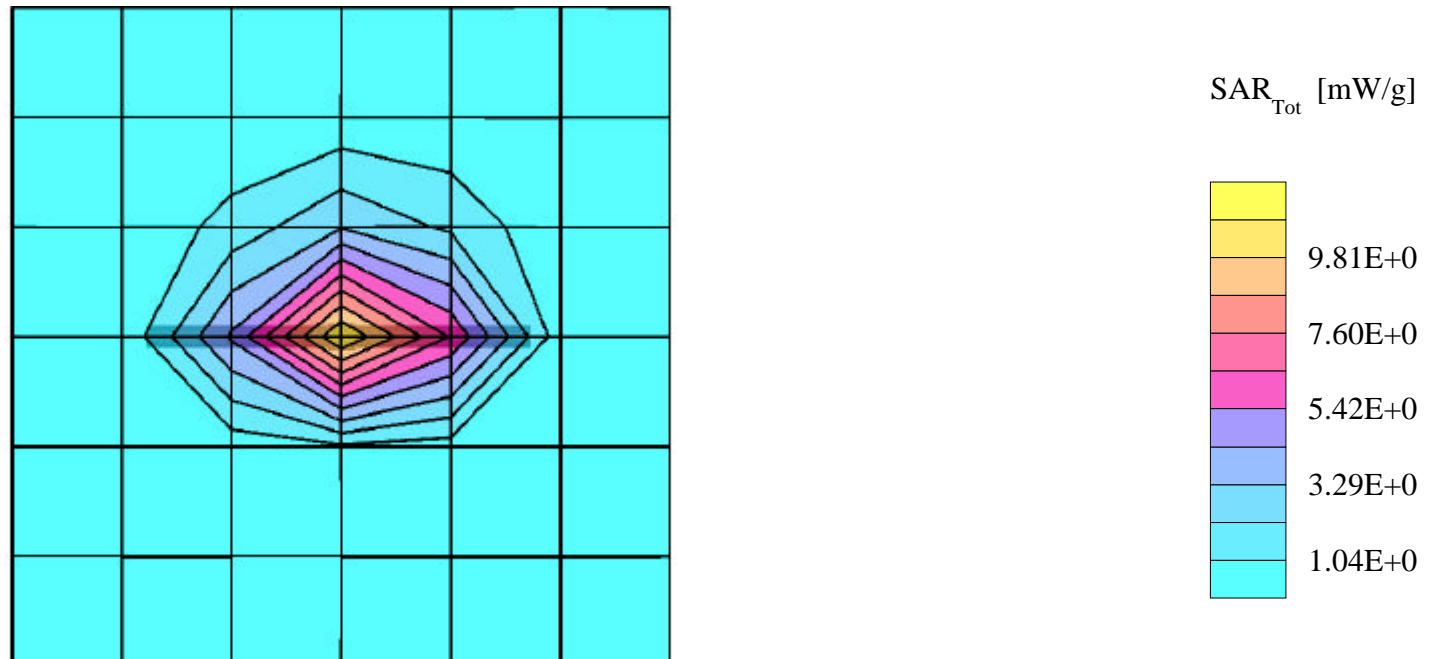
1900MHz Brain Dipole Validation

Generic Twin Phantom; Flat Section; Probe: ET3DV6 - SN1560 -- Probe Cal Date 20/02/01

Med. Parameters 1900 MHz Brain: $\sigma = 1.82$ mho/m $\epsilon_r = 40.4$ $\rho = 1.00$ g/cm³; Antenna Position -- Out; Crest Factor 1.0

SAR (1g): 10.5 mW/g, SAR (10g): 5.43 mW/g

1900MHz Brain Dipole Validation (D1900V2 S/N: 502)
Frequency: 1900 MHz; Antenna Input Power: 250 [mW]
PCTEST Brain Tissue Simulating Liquid



1900MHz Muscle Dipole Validation

Generic Twin Phantom; Flat Section; Probe: ET3DV6 - SN1560 -- Probe Cal Date 20/02/01

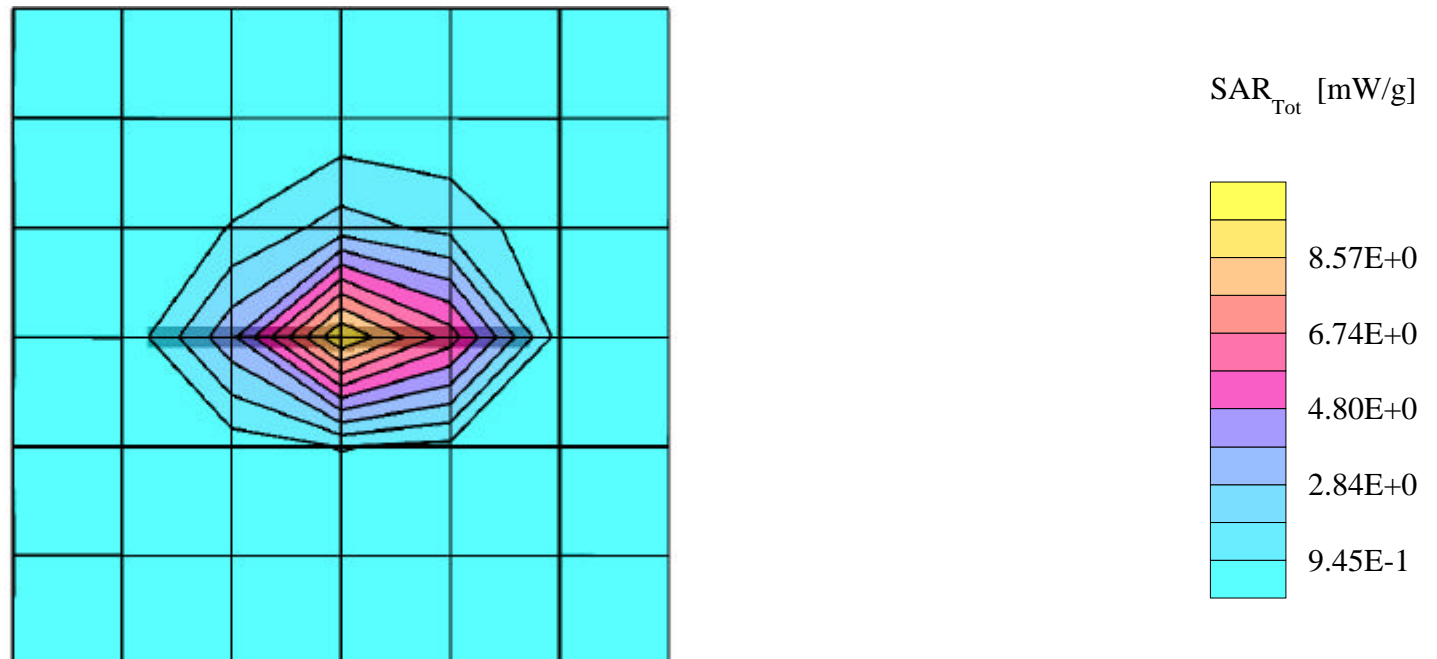
Med. Parameters 1900 MHz Muscle: $\sigma = 1.85$ mho/m $\epsilon_r = 54.2$ $\rho = 1.00$ g/cm³; Antenna Position -- Out; Crest Factor 1.0

SAR (1g): 10.7 mW/g, SAR (10g): 5.48 mW/g

1900MHz Muscle Dipole Validation (D1900V2 S/N: 502)

Frequency: 1900 MHz; Antenna Input Power: 250 [mW]

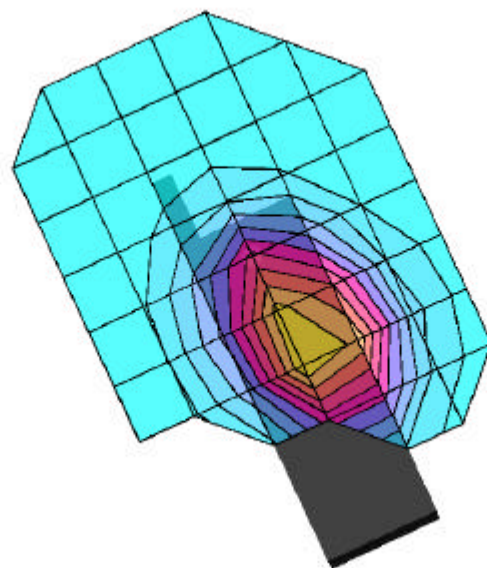
PCTEST Muscle Tissue Simulating Liquid



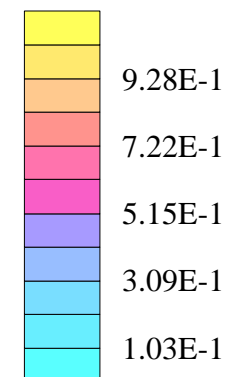
PANASONIC FCC ID: NWJ10A003A -- FM Head SAR

Generic Twin Phantom; Right Hand Section; Probe: ET3DV6 - SN1560 -- Probe Cal Date 20/02/01
Med. Parameters 835 MHz Brain: $\sigma = 0.90$ mho/m $\epsilon_r = 41.5$ $\rho = 1.00$ g/cm³; Antenna Position -- Out; Crest Factor 1.0
SAR (1g): 1.11 mW/g, SAR (10g): 0.779 mW/g

PANASONIC Tri-mode Model: ATLAS CE
FM Mode, Ch.0991 [824.04MHz]
Conducted Power = 22.6dBm
Test Date -- 03-29-2001



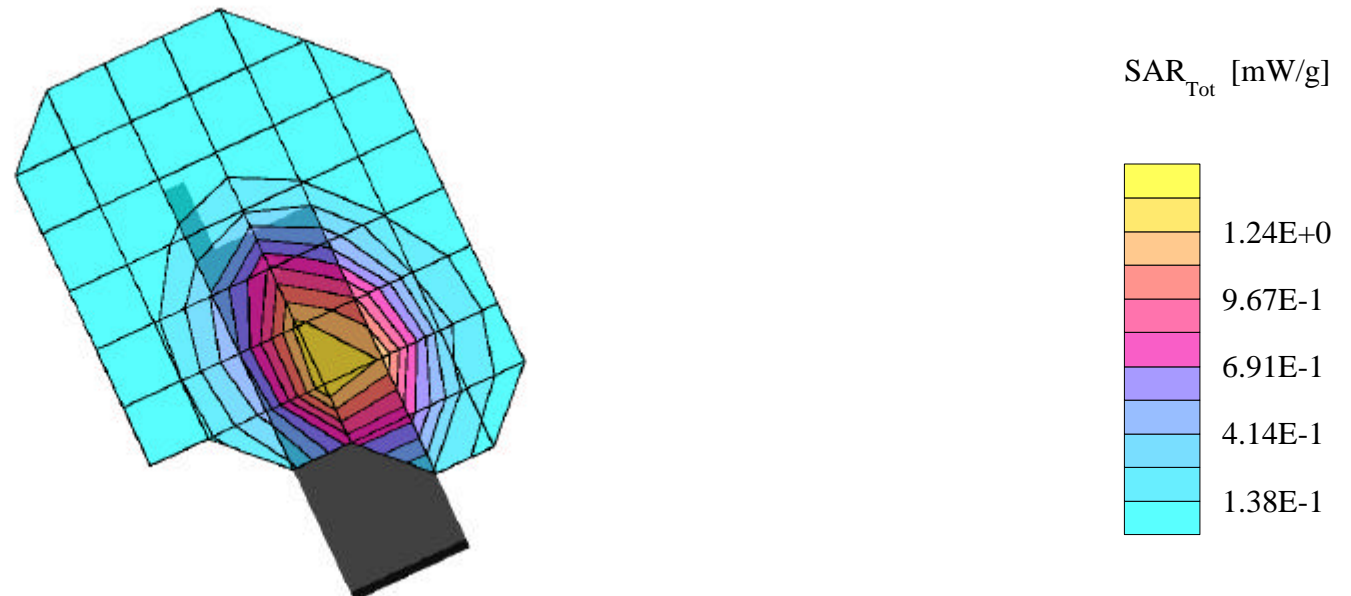
SAR_{Tot} [mW/g]



PANASONIC FCC ID: NWJ10A003A -- FM Head SAR

Generic Twin Phantom; Right Hand Section; Probe: ET3DV6 - SN1560 -- Probe Cal Date 20/02/01
Med. Parameters 835 MHz Brain: $\sigma = 0.90$ mho/m $\epsilon_r = 41.5$ $\rho = 1.00$ g/cm³; Antenna Position -- Out; Crest Factor 1.0
SAR (1g): 1.51 mW/g, SAR (10g): 1.05 mW/g

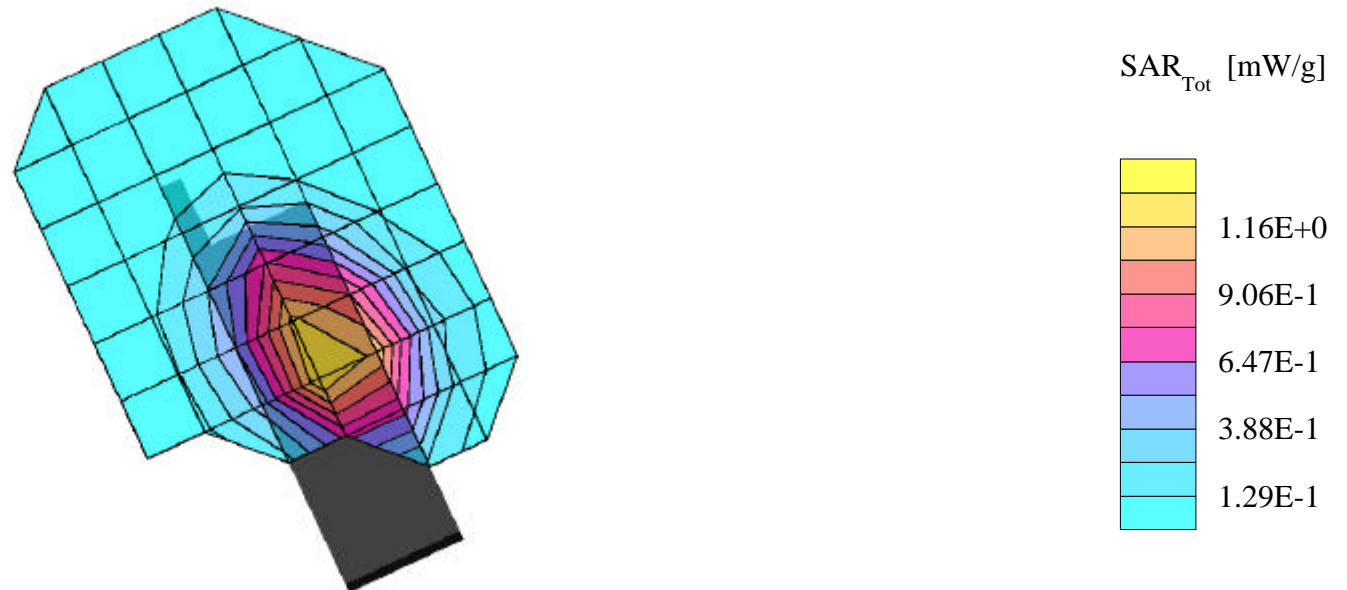
PANASONIC Tri-mode Model: ATLAS CE
FM Mode, Ch.0383 [836.49MHz]
Conducted Power = 22.6dBm
Test Date -- 03-29-2001



PANASONIC FCC ID: NWJ10A003A -- FM Head SAR

Generic Twin Phantom; Right Hand Section; Probe: ET3DV6 - SN1560 -- Probe Cal Date 20/02/01
Med. Parameters 835 MHz Brain: $\sigma = 0.90$ mho/m $\epsilon_r = 41.5$ $\rho = 1.00$ g/cm³; Antenna Position -- Out; Crest Factor 1.0
SAR (1g): 1.40 mW/g, SAR (10g): 0.963 mW/g

PANASONIC Tri-mode Model: ATLAS CE
FM Mode, Ch.0799 [848.97MHz]
Conducted Power = 22.6dBm
Test Date -- 03-29-2001



PANASONIC FCC ID:NWJ10A003A -- Cellular TDMA Head SAR

Generic Twin Phantom; Right Hand Section; Probe: ET3DV6 - SN1560 -- Probe Cal Date 20/02/01

Med. Parameters 835 MHz Brain: $\sigma = 0.90$ mho/m $\epsilon_r = 41.5$ $\rho = 1.00$ g/cm³; Antenna Position -- Out; Crest Factor 3.0

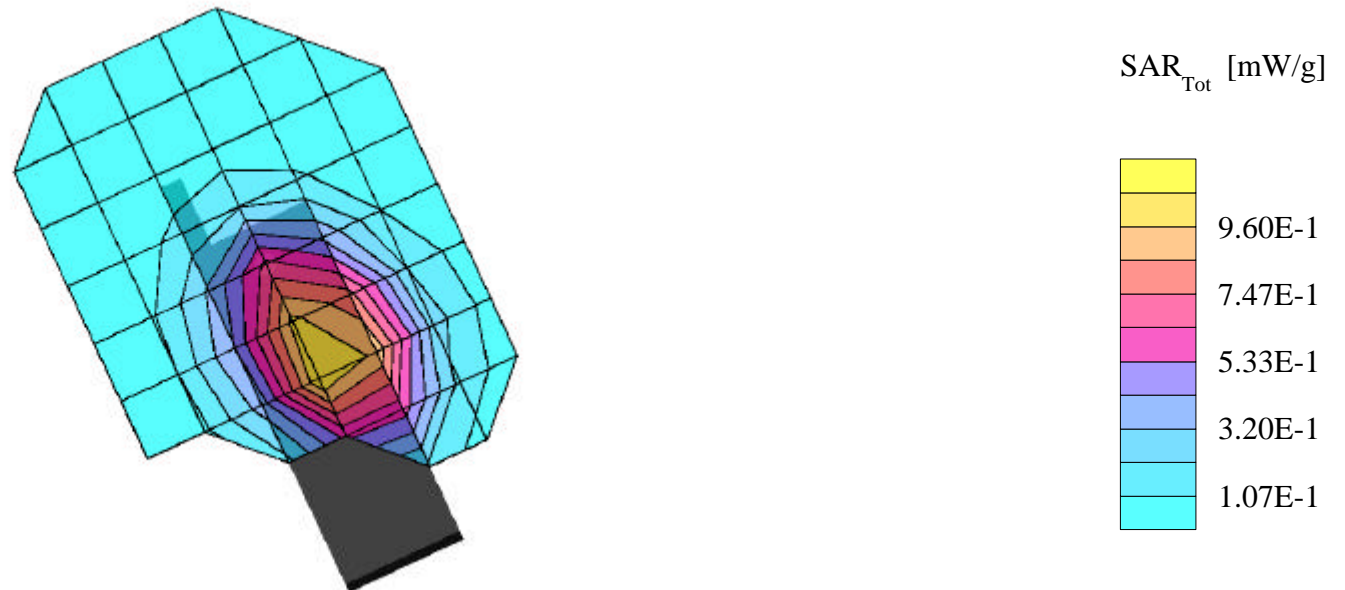
SAR (1g): 1.15 mW/g, SAR (10g): 0.800 mW/g

PANASONIC Tri-mode Model: ATLAS CE

Cellular TDMA Mode, Ch.0991 [824.04MHz]

Conducted Power = 27.4dBm

Test Date -- 03-29-2001



PANASONIC FCC ID:NWJ10A003A -- Cellular TDMA Head SAR

Generic Twin Phantom; Right Hand Section; Probe: ET3DV6 - SN1560 -- Probe Cal Date 20/02/01

Med. Parameters 835 MHz Brain: $\sigma = 0.90$ mho/m $\epsilon_r = 41.5$ $\rho = 1.00$ g/cm³; Antenna Position -- Out; Crest Factor 3.0

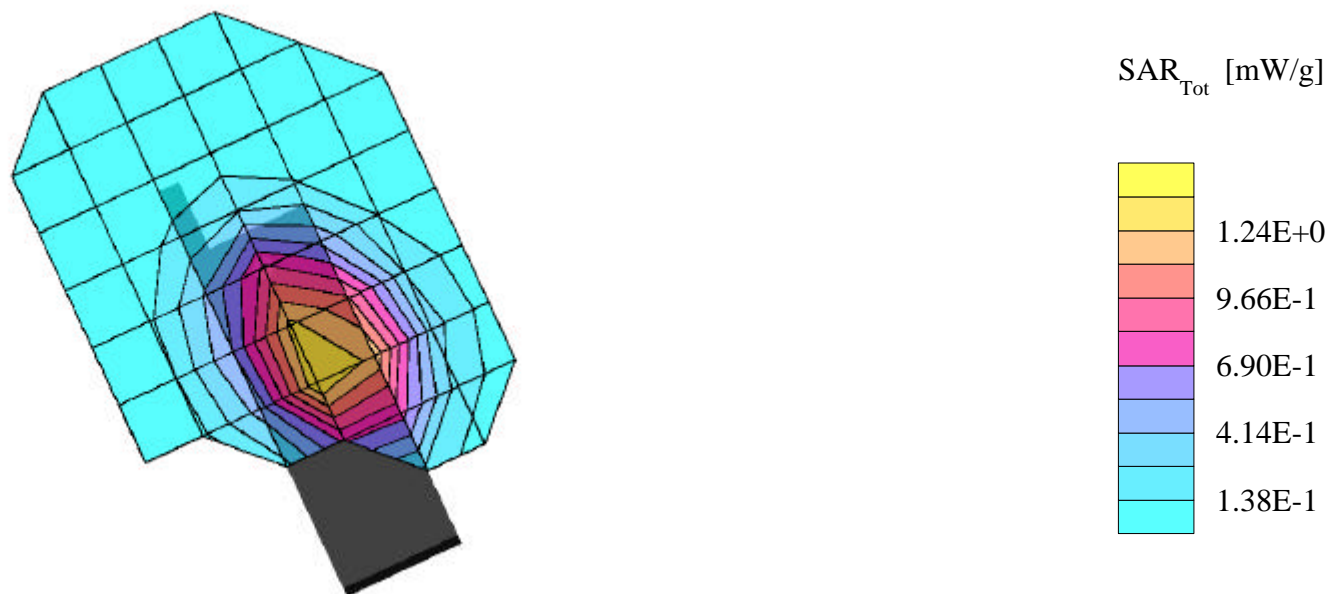
SAR (1g): 1.48 mW/g, SAR (10g): 1.03 mW/g

PANASONIC Tri-mode Model: ATLAS CE

Cellular TDMA Mode, Ch.0383 [836.49MHz]

Conducted Power = 27.4dBm

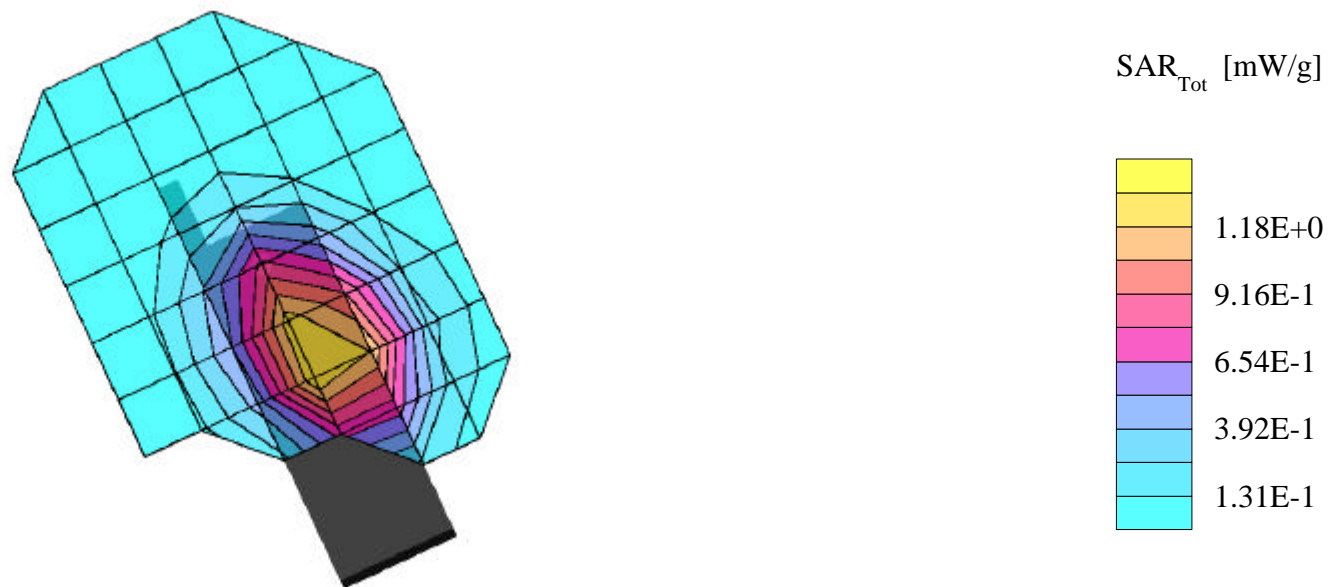
Test Date -- 03-29-2001



PANASONIC FCC ID:NWJ10A003A -- Cellular TDMA Head SAR

Generic Twin Phantom; Right Hand Section; Probe: ET3DV6 - SN1560 -- Probe Cal Date 20/02/01
Med. Parameters 835 MHz Brain: $\sigma = 0.90$ mho/m $\epsilon_r = 41.5$ $\rho = 1.00$ g/cm³; Antenna Position -- Out; Crest Factor 3.0
SAR (1g): 1.40 mW/g, SAR (10g): 0.971 mW/g

PANASONIC Tri-mode Model: ATLAS CE
Cellular TDMA Mode, Ch.0799 [848.97MHz]
Conducted Power = 27.4dBm
Test Date -- 03-29-2001



PANASONIC FCC ID:NWJ10A003A -- PCS TDMA Head SAR

Generic Twin Phantom; Right Hand Section; Probe: ET3DV6 - SN1560 -- Probe Cal Date 20/02/01

Med. Parameters 1900 MHz Brain: $\sigma = 1.82$ mho/m $\epsilon_r = 40.4$ $\rho = 1.00$ g/cm³; Antenna Position -- Out; Crest Factor 3.0

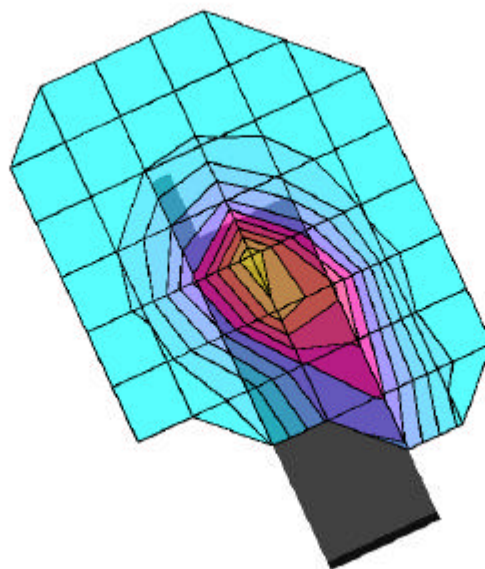
SAR (1g): 1.49 mW/g, SAR (10g): 0.844 mW/g

PANASONIC Tri-mode Model: ATLAS CE

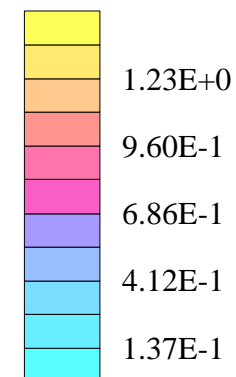
PCS TDMA Mode, Ch.0002 [1850.01MHz]

Conducted Power = 26.4dBm

Test Date -- 03-28-2001



SAR_{Tot} [mW/g]



PANASONIC FCC ID: NWJ10A003A -- PCS TDMA Head SAR

Generic Twin Phantom; Right Hand Section; Probe: ET3DV6 - SN1560 -- Probe Cal Date 20/02/01

Med. Parameters 1900 MHz Brain: $\sigma = 1.82$ mho/m $\epsilon_r = 40.4$ $\rho = 1.00$ g/cm³; Antenna Position -- Out; Crest Factor 3.0

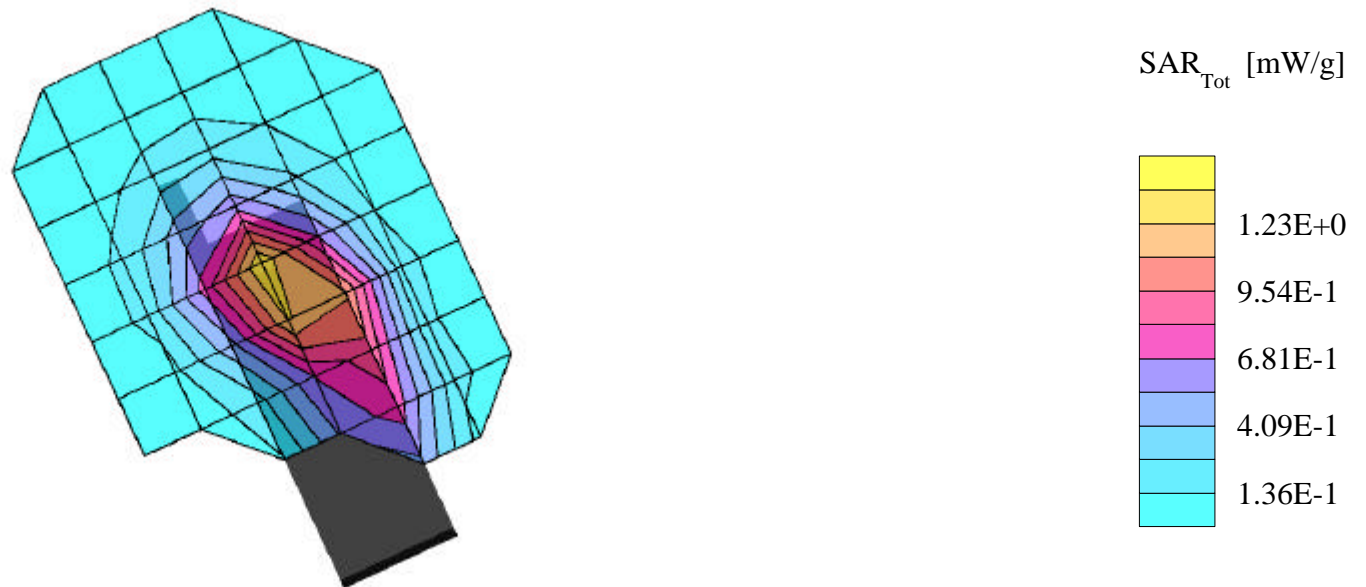
SAR (1g): 1.47 mW/g, SAR (10g): 0.834 mW/g

PANASONIC Tri-mode Model: ATLAS CE

PCS TDMA Mode, Ch.1000 [1880.00MHz]

Conducted Power = 26.4dBm

Test Date -- 03-28-2001



PANASONIC FCC ID:NWJ10A003A -- PCS TDMA Head SAR

Generic Twin Phantom; Right Hand Section; Probe: ET3DV6 - SN1560 -- Probe Cal Date 20/02/01

Med. Parameters 1900 MHz Brain: $\sigma = 1.82$ mho/m $\epsilon_r = 40.4$ $\rho = 1.00$ g/cm³; Antenna Position -- Out; Crest Factor 3.0

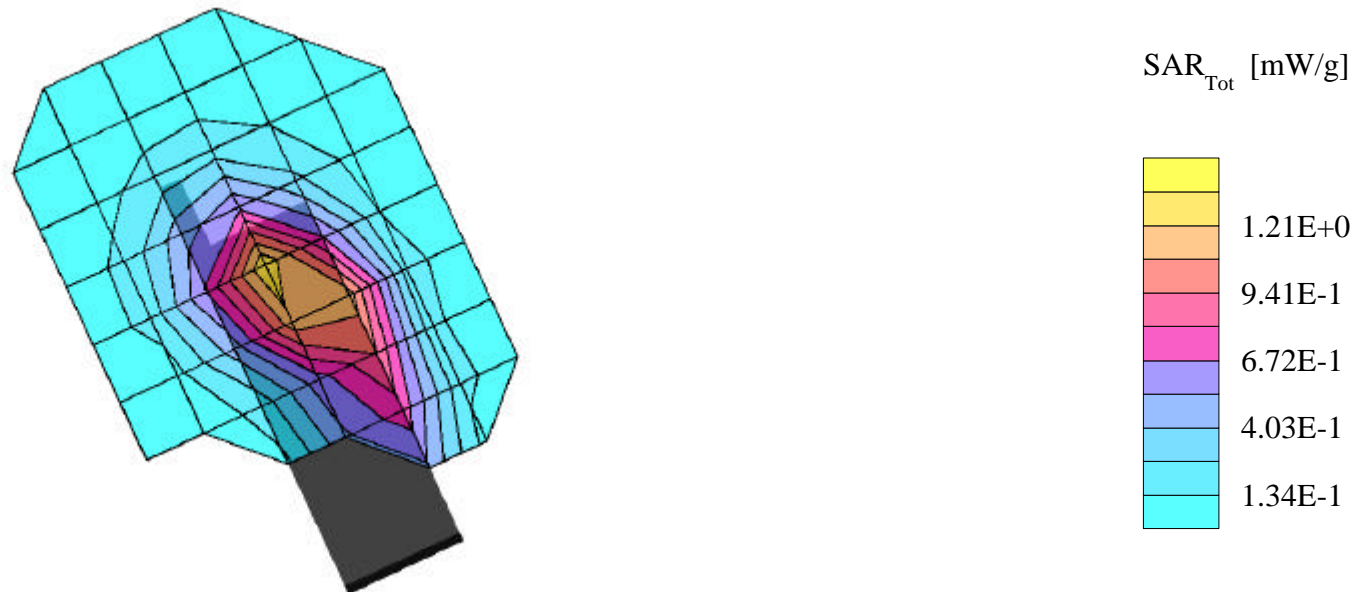
SAR (1g): 1.40 mW/g, SAR (10g): 0.802 mW/g

PANASONIC Tri-mode Model: ATLAS CE

PCS TDMA Mode, Ch.1998 [1909.56MHz]

Conducted Power = 26.4dBm

Test Date -- 03-28-2001



Probe ET3DV6

SN:1560

Manufactured:	December 1, 2000
Calibrated:	February 20, 2001

Calibrated for System DASY3

DASY3 - Parameters of Probe: ET3DV6 SN:1560

Sensitivity in Free Space

NormX	1.48 $\mu\text{V}/(\text{V}/\text{m})^2$
NormY	1.51 $\mu\text{V}/(\text{V}/\text{m})^2$
NormZ	1.43 $\mu\text{V}/(\text{V}/\text{m})^2$

Diode Compression

DCP X	98 mV
DCP Y	98 mV
DCP Z	98 mV

Sensitivity in Tissue Simulating Liquid

Head **450 MHz** $\epsilon_r = 43.5 \pm 5\%$ $S = 0.87 \pm 10\%$ mho/m

ConvF X	7.17 extrapolated	Boundary effect:
ConvF Y	7.17 extrapolated	Alpha 0.25
ConvF Z	7.17 extrapolated	Depth 3.21

Head **900 MHz** $\epsilon_r = 42 \pm 5\%$ $S = 0.97 \pm 10\%$ mho/m

ConvF X	6.59 $\pm 7\%$ (k=2)	Boundary effect:
ConvF Y	6.59 $\pm 7\%$ (k=2)	Alpha 0.32
ConvF Z	6.59 $\pm 7\%$ (k=2)	Depth 2.93

Head **1500 MHz** $\epsilon_r = 40.4 \pm 5\%$ $S = 1.23 \pm 10\%$ mho/m

ConvF X	5.82 interpolated	Boundary effect:
ConvF Y	5.82 interpolated	Alpha 0.41
ConvF Z	5.82 interpolated	Depth 2.55

Head **1800 MHz** $\epsilon_r = 40 \pm 5\%$ $S = 1.40 \pm 10\%$ mho/m

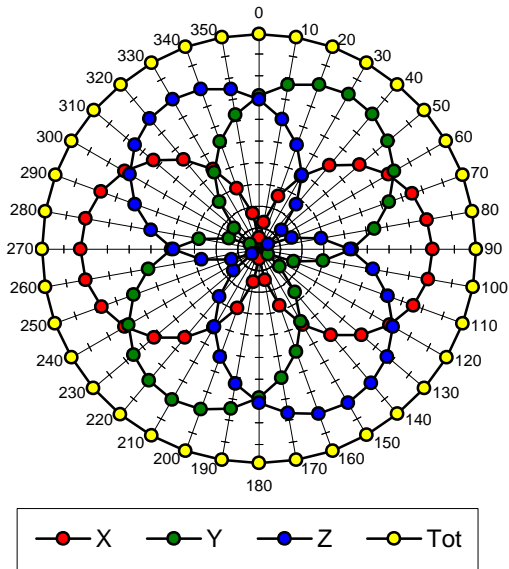
ConvF X	5.43 $\pm 7\%$ (k=2)	Boundary effect:
ConvF Y	5.43 $\pm 7\%$ (k=2)	Alpha 0.46
ConvF Z	5.43 $\pm 7\%$ (k=2)	Depth 2.36

Sensor Offset

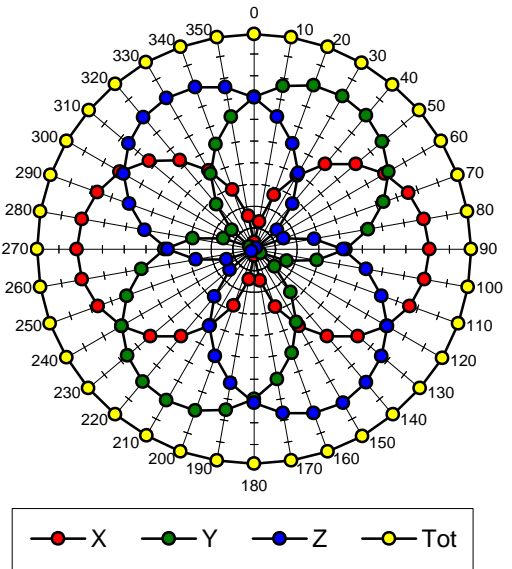
Probe Tip to Sensor Center	2.7	mm
Optical Surface Detection	2.0 \pm 0.2	mm

Receiving Pattern (f), q = 0°

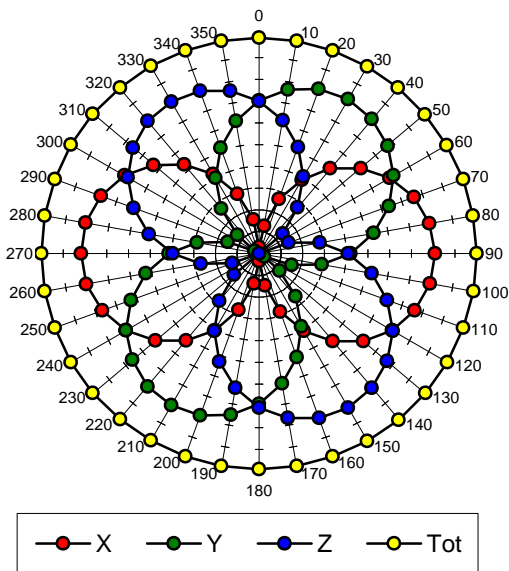
f = 30 MHz, TEM cell ifi110



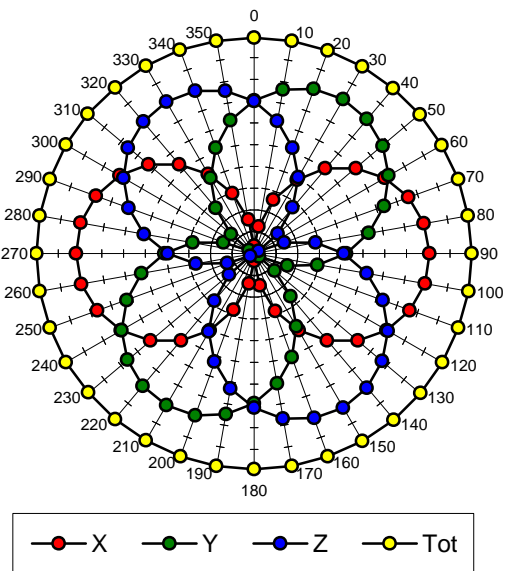
f = 100 MHz, TEM cell ifi110

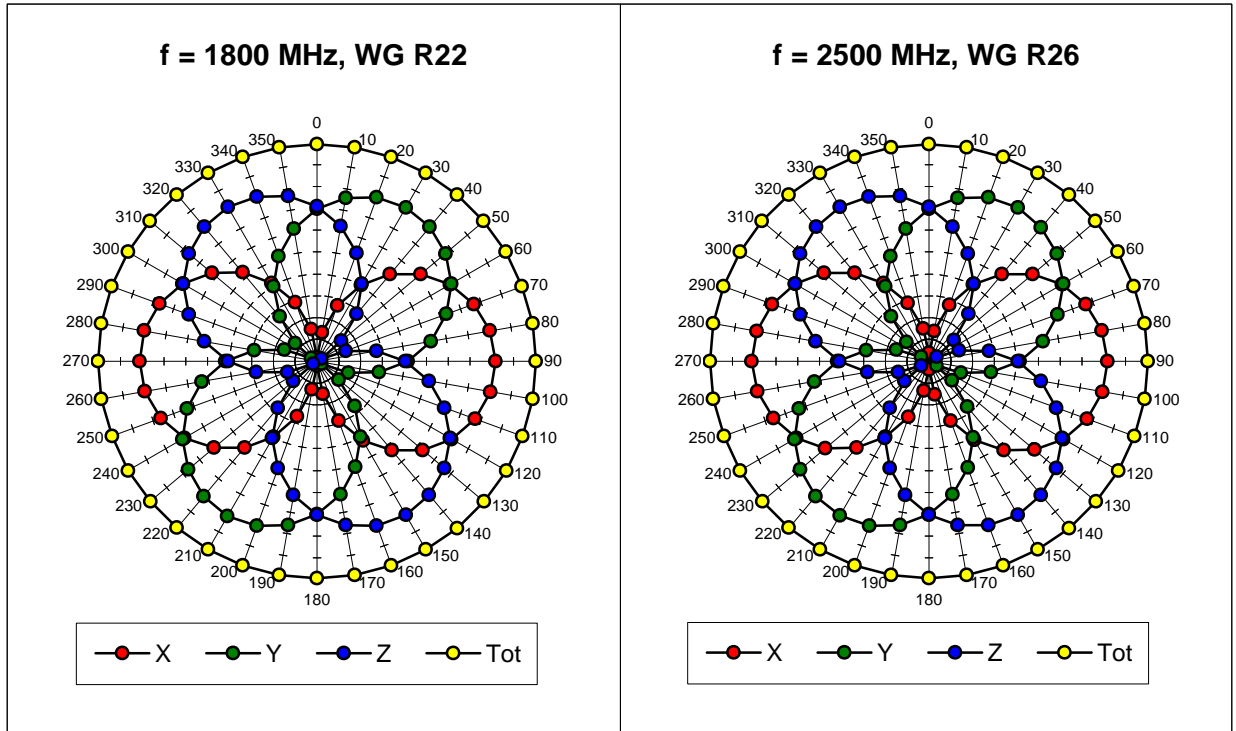


f = 300 MHz, TEM cell ifi110

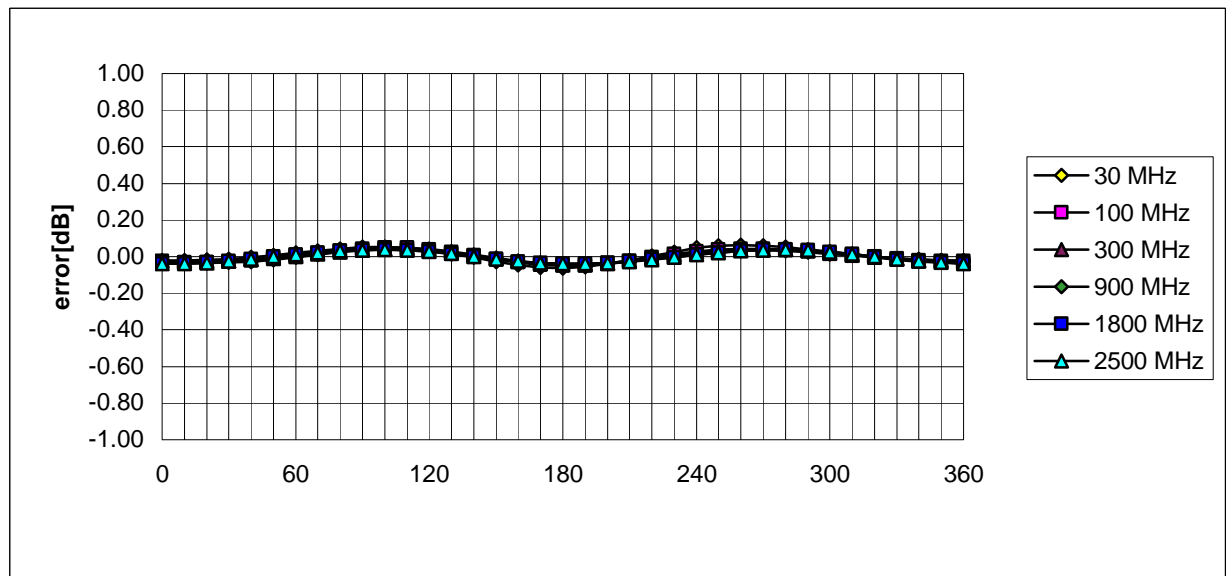


f = 900 MHz, TEM cell ifi110



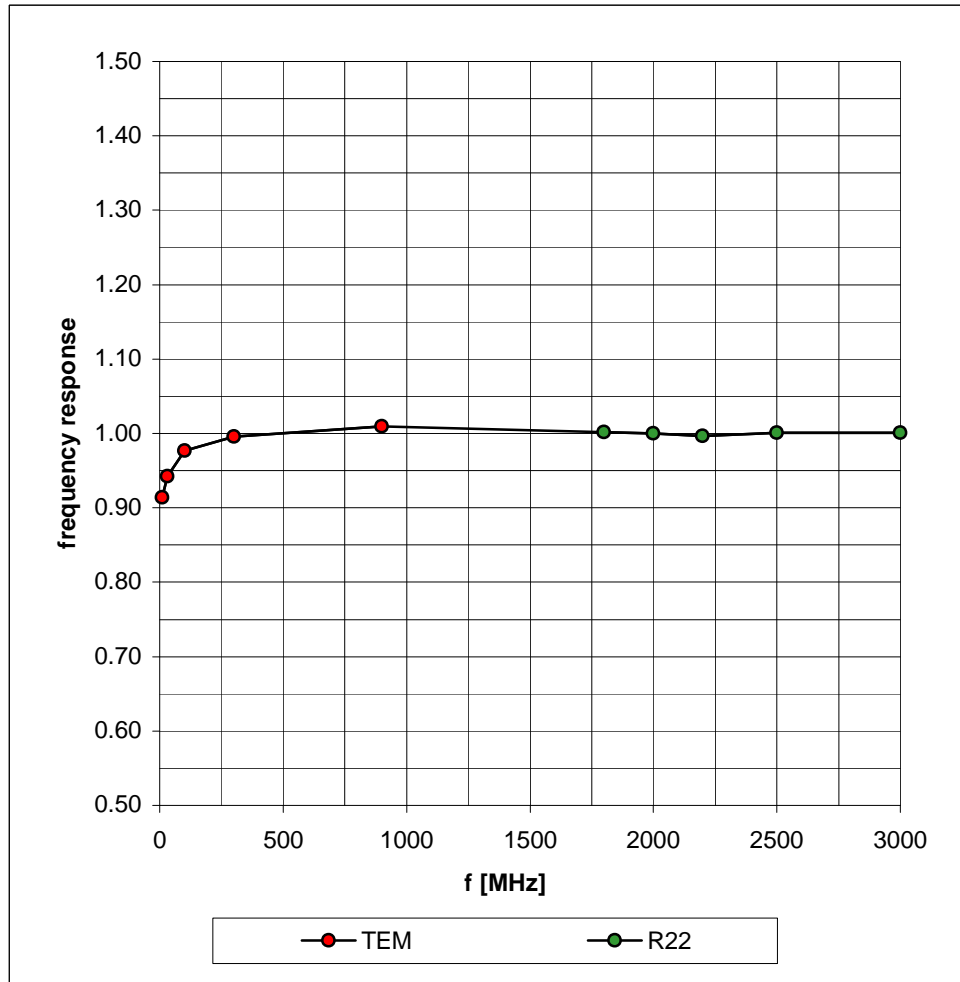


Isotropy Error (f), $q = 0^\circ$

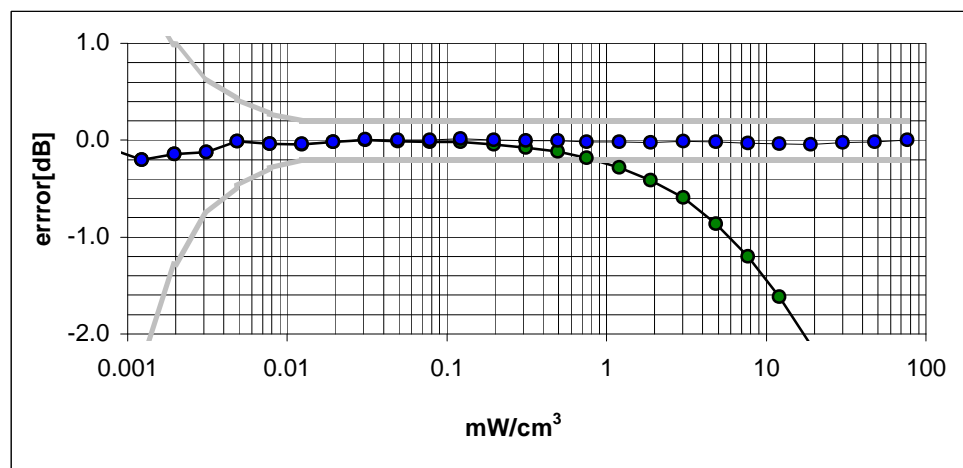
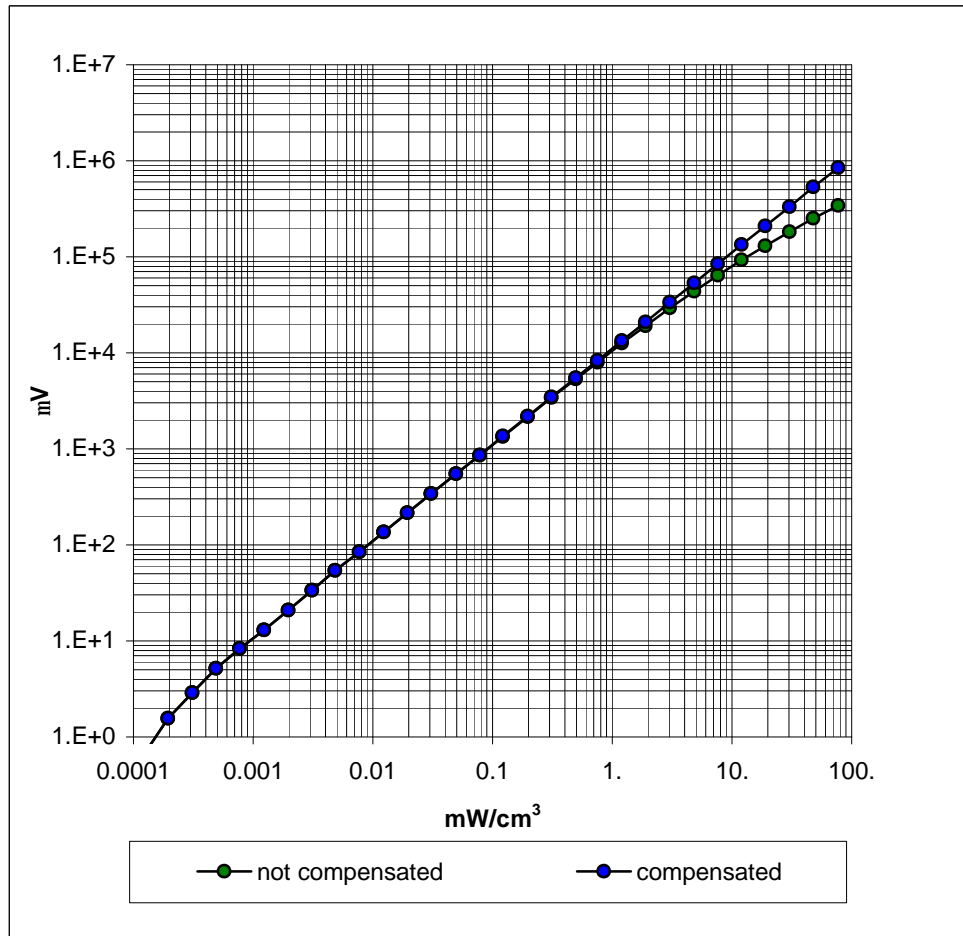


Frequency Response of E-Field

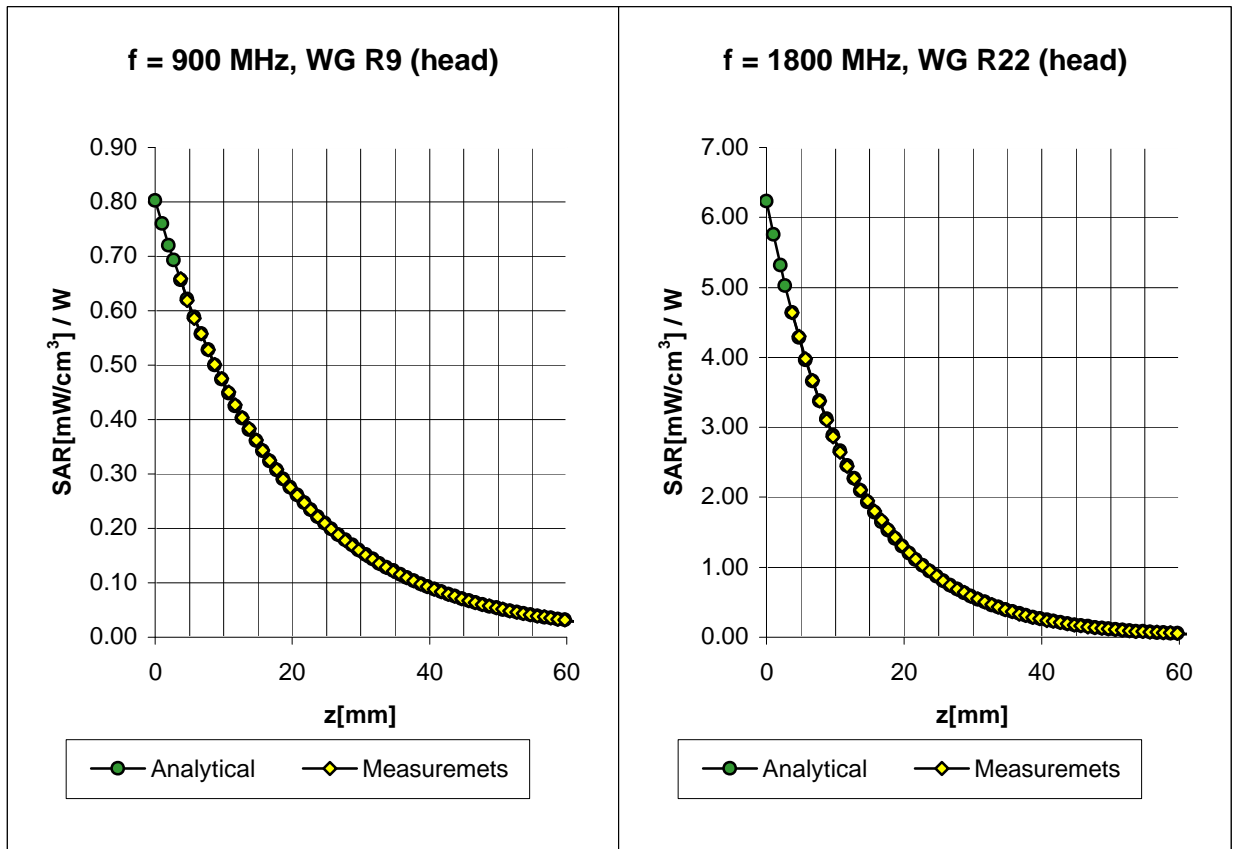
(TEM-Cell:ifi110, Waveguide R22)



Dynamic Range f(SAR_{brain}) (TEM-Cell:ifi110)



Conversion Factor Assessment



Head	900 MHz	$\epsilon_r = 42 \pm 5\%$	$S = 0.97 \pm 10\% \text{ mho/m}$
	ConvF X	6.59 $\pm 7\%$ (k=2)	Boundary effect:
	ConvF Y	6.59 $\pm 7\%$ (k=2)	Alpha 0.32
	ConvF Z	6.59 $\pm 7\%$ (k=2)	Depth 2.93

Head	1800 MHz	$\epsilon_r = 40 \pm 5\%$	$S = 1.40 \pm 10\% \text{ mho/m}$
	ConvF X	5.43 $\pm 7\%$ (k=2)	Boundary effect:
	ConvF Y	5.43 $\pm 7\%$ (k=2)	Alpha 0.46
	ConvF Z	5.43 $\pm 7\%$ (k=2)	Depth 2.36

ET3DV6 SN:1560

Deviation from Isotropy in HSL

Error (q,f), f = 900 MHz

