#30

06/01/01

SHARP TQ-CX1

Generic Twin Phantom; Flat Section; Position: (90°,90°); Frequency: 849 MHz

Probe: ET3DV5 - SN1333: ConvF(5.83,5.83,5.83); Crest factor: 1.0; Muscle 840MHz: $\sigma = 0.95$ mho/m $\varepsilon_r = 56.5$ $\rho = 1.00$ g/cm³

Cube 5x5x7: SAR (1g): 0.300 mW/g, SAR (10g): 0.218 mW/g. (Worst-case extrapolation)

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

Powerdrift: -0.08 dB; CDMA

SAR_{2d} [mW/g]

	3.01E-1
	2.71E-1
	2.41E-1
	2.11E-1
	1.81E-1
	1.50E-1
	1.20E-1
	9.03E-2
	6.02E-2
	3.01E-2

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Sharp TQ-CX1

Generic Twin Phantom; Left Hand_X Section; Position: (80°.65°); Frequency: 1880 MHz
Probe: ET3DV5 - SN1333; ConvF(4.99,4.99,4.99); Crest factor: 1.0; Brain 1880 MHz, σ = 1.77 mho/m ε_r = 42.5 ρ = 1.00 g/cm³
Cube 5x5x7: SAR (1g) 0.667 mW/g, SAR (10g) 0.387 mW/g. (Worst-case extrapolation)
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0
Powerdrift: -0.10 dB; one Touch

SAR_Tot [mW/g]

	6.22E-1
	5.60E-1
	4.98E-1
	4.35E-1
	3.73E-1
	3.11E-1
	2.49E-1
	1.87E-1
	1.24E-1
	6.22E-2

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Sharp TQ-CX1

Generic Twin Phantom; Left Hand _ X Section; Position: (80°,65°); Frequency: 1850 MHz
Probe: ET3DV5 - SN1333; ConvF(4.99,4.99,4.99); Crest factor: 1.0; Brain 1850MHz: σ = 1.75 mho/m ε_r = 42.5 ρ = 1.00 g/cm³
Cube 5x5x7 SAR (1g) 0.655 mW/g, SAR (10g) 0.385 mW/g. (Worst-case extrapolation)
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0
Powerdrift: -0.28 dB; One Touch

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Sharp TQ-CX1
Generic Twin Phantom; Left Hand _X Section; Position: (80°,65°); Frequency: 1909 MHz
Probe: ET3DV5 - SN1333; ConvF(4.99,4.99,4.99); Crest factor: 1.0; Brain 1910MHz: σ = 1.80 mho/m ε_r = 42.1 ρ = 1.00 g/cm³
Cube 5x5x7 SAR (1g): 0.851 mW/g, SAR (10g): 0.466 mW/g, (Worst-case extrapolation)
Coarse Dx = 20.0, Dy = 20.0, Dz = 10.0
Powerdrift: -0.03 dB, one Touch

SAR_{Tot} [mW/g]

6.76E-1
6.08E-1
5.41E-1
4.73E-1
4.06E-1
3.38E-1
2.70E-1
2.03E-1
1.35E-1
6.76E-2

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#34

05/31/01

Sharp TQ-CX1
Generic Twin Phantom; Left Hand_X Section; Position: (80°,65°); Frequency: 1850 MHz
Probe: ET3DV5 - SN1333; ConvF(4.99,4.99,4.99); Crest factor: 1.0; Brain 1850MHz: σ = 1.75 mho/m ε_r = 42.5 ρ = 1.00 g/cm³
Cube 5x5x7 SAR (1g) 0.859 mW/g, SAR (10g) 0.450 mW/g. (Worst-case extrapolation)
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0
Powerdrift: 0.04 dB; Two Touch

SAR_Tot [mW/g]

	7.13E-1
	6.42E-1
	5.70E-1
	4.99E-1
	4.28E-1
	3.56E-1
	2.85E-1
	2.14E-1
	1.43E-1
	7.13E-2

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Sharp TQ-CX1
Generic Twin Phantom, Left Hand _X Section; Position: (80°,65°); Frequency: 1880 MHz
Probe: ET3DV5 - SN1333; ConvF(4.99,4.99,4.99); Crest factor: 1.0; Brain 1880 MHz: σ = 1.77 mho/m ε_r = 42.5 ρ = 1.00 g/cm³
Cube 5x5x7: SAR (1g) 0.825 mW/g, SAR (10g) 0.438 mW/g. (Worst-case extrapolation)
Coarse Dx = 20.0, Dy = 20.0, Dz = 10.0
Powerdrift: -0.14 dB, Two touch

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SAR$_{Tot}$ [mW/g]

Color	Value
	7.98E-1
	7.18E-1
	6.38E-1
	5.59E-1
	4.79E-1
	3.99E-1
	3.19E-1
	2.39E-1
	1.60E-1
	7.98E-2

Sharp TQ-CX1
Generic Twin Phantom; Left Hand _X Section; Position: (80°,65°); Frequency: 1909 MHz
Probe: ET3DV5 - SN1333; ConvF(4.99,4.99,4.99); Crest factor: 1.0; Brain 1910MHz: σ = 1.80 mho/m ε$_r$ = 42.1 ρ = 1.00 g/cm³
Cube 5x5x7 SAR (1g) 0.934 mW/g, SAR (10g) 0.504 mW/g, (Worst-case extrapolation)
Coarse Dx = 20.0, Dy = 20.0, Dz = 10.0
Powerdrift: -0.01 dB; Two Touch

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Sharp TQ-CX1

Generic Twin Phantom; Right Hand Section; Position: (86°,65°); Frequency: 1850 MHz
Probe: ET3DV5 - SN1333; ConvF(4.99,4.99,4.99); Crest factor: 1.0; Brain 1850MHz: σ = 1.75 mho/m εᵣ = 42.5, ρ = 1.00 g/cm³
Cube 5x5x7: SAR (1g): 1.12 mW/g; SAR (10g): 0.663 mW/g; (Worst-case extrapolation)
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0
Powerdrift: -0.24 dB; One Touch

SAR$_{Tot}$ [mW/g]

| 9.48E-1 |
| 8.53E-1 |
| 7.58E-1 |
| 6.64E-1 |
| 5.69E-1 |
| 4.74E-1 |
| 3.79E-1 |
| 2.84E-1 |
| 1.90E-1 |
| 9.48E-2 |

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SAR$_{Tot}$ [mW/g]

9.59E-1
8.63E-1
7.67E-1
6.71E-1
5.75E-1
4.79E-1
3.84E-1
2.88E-1
1.92E-1
9.59E-2

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Sharp TQ-CX1

Generic Twin Phantom; Right Hand Section; Position: (80°,65°); Frequency: 1880 MHz

Probe: ET3DV5 - SN1333; ConvF(4.99,4.99,4.99); Crest factor: 1.0; Brain 1880 MHz: σ = 1.77 mho/m ε$_r$ = 42.5 ρ = 1.00 g/cm³

Cube 5x5x7: SAR (1g): 1.14 mW/g, SAR (10g): 0.668 mW/g, (Worst-case extrapolation)

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

Powerdrift: -0.17 dB; one Touch

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#139

Sharp TQ-CX1
Generic Twin Phantom; Right Hand Section; Position: (80°,65°); Frequency: 1909 MHz
Probe: ET3DV5 - SN1333; ConvF(4.99,4.99,4.99); Crest factor: 1.0; Brain 1910MHz: σ = 1.80 mho/m ε$_r$ = 42.1 ρ = 1.00 g/cm³
Cube 5x5x7 SAR (1g): 1.01 mW/g, SAR (10g): 0.586 mW/g; (Worst-case extrapolation)
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0
Powerdrift: -0.04 dB, one Touch

SAR$_{Tot}$ [mW/g]

8.77E-1
7.89E-1
7.02E-1
6.14E-1
5.26E-1
4.39E-1
3.51E-1
2.63E-1
1.75E-1
8.77E-2

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Sharp TQ-CX1

Generic Twin Phantom; Right Hand Section; Position: (80°,65°); Frequency: 1850 MHz
Probe: ET3DV5 - SN1333; ConvF(4.99,4.99,4.99); Crest factor: 1.0; Brain 1850MHz: σ = 1.75 mho/m ε, = 42.5 ρ = 1.00 g/cm³
Cube 5x5x7: SAR (1g): 1.18 mW/g, SAR (10g): 0.701 mW/g, (Worst-case extrapolation)
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0
Powerdrift: -0.37 dB; Two touch

SAR$_{Tot}$ [mW/g]

	1.07E+0
	9.60E-1
	8.54E-1
	7.47E-1
	6.40E-1
	5.33E-1
	4.27E-1
	3.20E-1
	2.13E-1
	1.07E-1

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Sharp TQ-CX1

Generic Twin Phantom; Right Hand Section; Position: (80°,65°); Frequency: 1880 MHz
Probe: ET3DV5 - SN1333; ConvF(4.99,4.99,4.99); Crest factor: 1.0; Brain 1880 MHz: σ = 1.77 mho/m ε_r = 42.5 ρ = 1.00 g/cm³
Cube 5x5x7 SAR (1g): 1.09 mW/g, SAR (10g): 0.637 mW/g, (Worst-case extrapolation)
Coarse Dx = 20.0, Dy = 20.0, Dz = 10.0
Powerdrift: 0.02 dB; Two Touch

SAR_Tot [mW/g]

9.05E-1
8.15E-1
7.24E-1
6.33E-1
5.43E-1
4.53E-1
3.62E-1
2.71E-1
1.81E-1
9.05E-2

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#4'2

Sharp TQ-CX1

Generic Twin Phantom; Right Hand Section; Position: (80°,65°); Frequency: 1909 MHz
Probe: ET3DV5 - SN1333; ConvF(4.99,4.99,4.99); Crest factor: 1.0; Brain 1910MHz σ = 1.80 mho/m ε_r = 42.1 ρ = 1.00 g/cm³
Cube 5x5x7: SAR (1g): 1.03 mW/g; SAR (10g): 0.582 mW/g; (Worst-case extrapolation)
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0
Powerdrift: -0.09 dB; Two Touch

SAR_Tot [mW/g]

9.01E-1
8.11E-1
7.21E-1
6.31E-1
5.41E-1
4.51E-1
3.60E-1
2.70E-1
1.80E-1
9.01E-2

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#4,3

SHARP TQ-CX1

Generic Twin Phantom; Flat Section; Position: (90°,90°); Frequency: 1850 MHz
Probe: ET3DV5 - SN1333; ConvF(4.99,4.99,4.99); Crest factor: 1.0; Muscle 1850 MHz: σ = 1.61 mho/m ε_r = 52.5 ρ = 1.00 g/cm³
Cube 5x5x7: SAR (1g): 0.212 mW/g, SAR (10g): 0.125 mW/g, (Worst-case extrapolation)
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0
Powerdrift: -0.23 dB, With Belt Clip

$SAR_{T\alpha}$ [mW/g]

	2.11E-1
	1.90E-1
	1.69E-1
	1.48E-1
	1.27E-1
	1.06E-1
	8.44E-2
	6.33E-2
	4.22E-2
	2.11E-2

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ITS Intertek Testing Services
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SHARP TQ-CX1

Generic Twin Phantom; Flat Section, Position: (90°,90°); Frequency: 1880 MHz
Probe: ET3DV5 - SN1333; ConvF(4.99,4.99,4.99); Crest factor: 1.0; Muscle 1880 MHz: σ = 1.65 mho/m ε_r = 52.2 ρ = 1.00 g/cm³
Cube 5x5x7. SAR (1g): 0.198 mW/g, SAR (10g): 0.118 mW/g, (Worst-case extrapolation)
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0
Powerdrift: 0.04 dB; With Belt Clip

SAR_Tot [mW/g]

1.90E-1
1.71E-1
1.52E-1
1.33E-1
1.14E-1
9.50E-2
7.60E-2
5.70E-2
3.80E-2
1.90E-2

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SHARP TQ-CX1

Generic Twin Phantom; Flat Section; Position: (90°,90°); Frequency: 1910 MHz
Probe: ET3DV5 - SN1333; ConvF(4.99,4.99,4.99); Crest factor: 1.0; Muscle 1900 MHz: σ = 1.69 mho/m ε_r = 52.1 ρ = 1.00 g/cm³
Cube 5x5x7: SAR (1g): 0.217 mW/g, SAR (10g): 0.129 mW/g. (Worst-case extrapolation)
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0
Powerdrift: -0.08 dB; with Belt Clip

#45

SAR_{Tot} [mW/g]

2.14E-1
1.93E-1
1.71E-1
1.50E-1
1.28E-1
1.07E-1
8.56E-2
6.42E-2
4.28E-2
2.14E-2

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APPENDIX B - E-Field Probe Calibration Data

See attached pages.

Schmid & Partner Engineering AG

Zeughausstrasse 43, 8004 Zurich, Switzerland, Phone +41 1 245 97 00, Fax +41 1 245 97 79

Calibration Certificate

Dosimetric E-Field Probe

Type:	**ET3DV5**
Serial Number:	**1333**
Place of Calibration:	**Zurich**
Date of Calibration:	**April 23, 2001**
Calibration Interval:	**12 months**

Schmid & Partner Engineering AG hereby certifies, that this device has been calibrated on the date indicated above. The calibration was performed in accordance with specifications and procedures of Schmid & Partner Engineering AG.

Wherever applicable, the standards used in the calibration process are traceable to international standards. In all other cases the standards of the Laboratory for EMF and Microwave Electronics at the Swiss Federal Institute of Technology (ETH) in Zurich, Switzerland have been applied.

Calibrated by:	*Nikolosk Neviana*
Approved by:	*Blasic Katja*

Schmid & Partner
Engineering AG

Zeughausstrasse 43, 8004 Zurich, Switzerland, Telephone +41 1 245 97 00, Fax +41 1 245 97 79

Probe ET3DV5

SN:1333

Manufactured:	December 20, 1997
Last calibration:	April 10, 2000
Recalibrated:	April 23, 2001

Calibrated for System DASY3

ET3DV5 SN:1333

DASY3 - Parameters of Probe: ET3DV5 SN:1333

Sensitivity in Free Space   Diode Compression

NormX	$2.37 \ \mu V/(V/m)^2$	DCP X 100 mV
NormY	$2.38 \ \mu V/(V/m)^2$	DCP Y 100 mV
NormZ	$2.33 \ \mu V/(V/m)^2$	DCP Z 100 mV

Sensitivity in Tissue Simulating Liquid

Head   450 MHz $\varepsilon_r = 43.5 \pm 5\%$ $\sigma = 0.87 \pm 10\%$ mho/m

ConvF X	6.25	extrapolated	Boundary effect:
ConvF Y	6.25	extrapolated	Alpha 0.19
ConvF Z	6.25	extrapolated	Depth 3.06

Head   900 MHz $\varepsilon_r = 42 \pm 5\%$ $\sigma = 0.97 \pm 10\%$ mho/m

ConvF X	5.83	± 7% (k=2)	Boundary effect:
ConvF Y	5.83	± 7% (k=2)	Alpha 0.38
ConvF Z	5.83	± 7% (k=2)	Depth 2.70

Brain   1500 MHz $\varepsilon_r = 41 \pm 5\%$ $\sigma = 1.32 \pm 10\%$ mho/m

ConvF X	5.27	interpolated	Boundary effect:
ConvF Y	5.27	interpolated	Alpha 0.63
ConvF Z	5.27	interpolated	Depth 2.23

Brain   1800 MHz $\varepsilon_r = 41 \pm 5\%$ $\sigma = 1.69 \pm 10\%$ mho/m

ConvF X	4.99	± 7% (k=2)	Boundary effect:
ConvF Y	4.99	± 7% (k=2)	Alpha 0.75
ConvF Z	4.99	± 7% (k=2)	Depth 1.99

Sensor Offset

Probe Tip to Sensor Center	2.7	mm
Optical Surface Detection	1.6 ± 0.2	mm

Sharp Labs of America, Model No: SHARP TQ-CX1   Date of Test: April 26 to June 6, 2001
FCC ID: APYHRO00022

ET3DV5 SN:1333

Receiving Pattern (φ), θ = 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

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Sharp Labs of America, Model No: SHARP TQ-CX1   Date of Test: April 26 to June 6, 2001
FCC ID: APYHRO00022

ET3DV5 SN:1333

f = 1800 MHz, WG R22

f = 2500 MHz, WG R26

Isotropy Error (φ), θ = 0°

Report # 20400371   85   FCC Part 2 SAR Evaluation
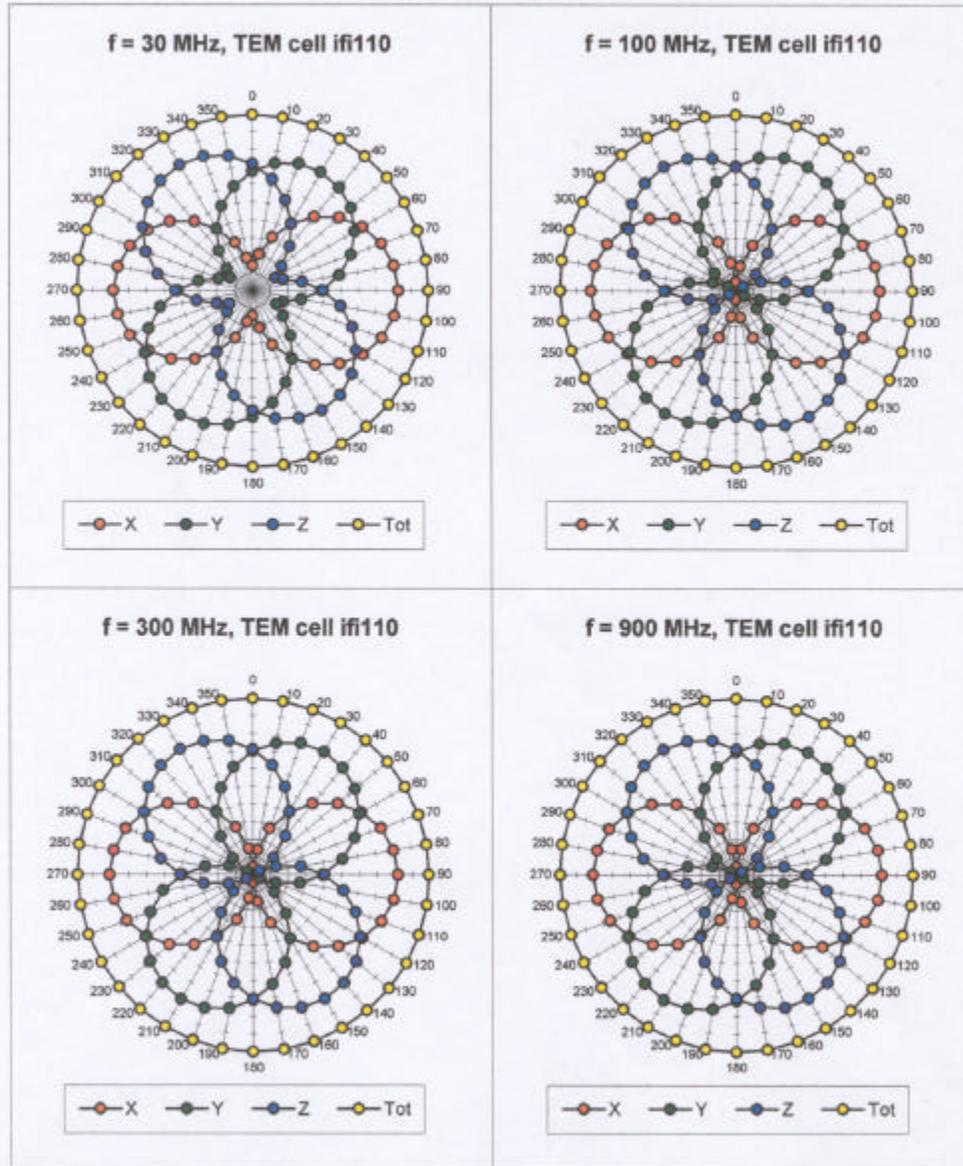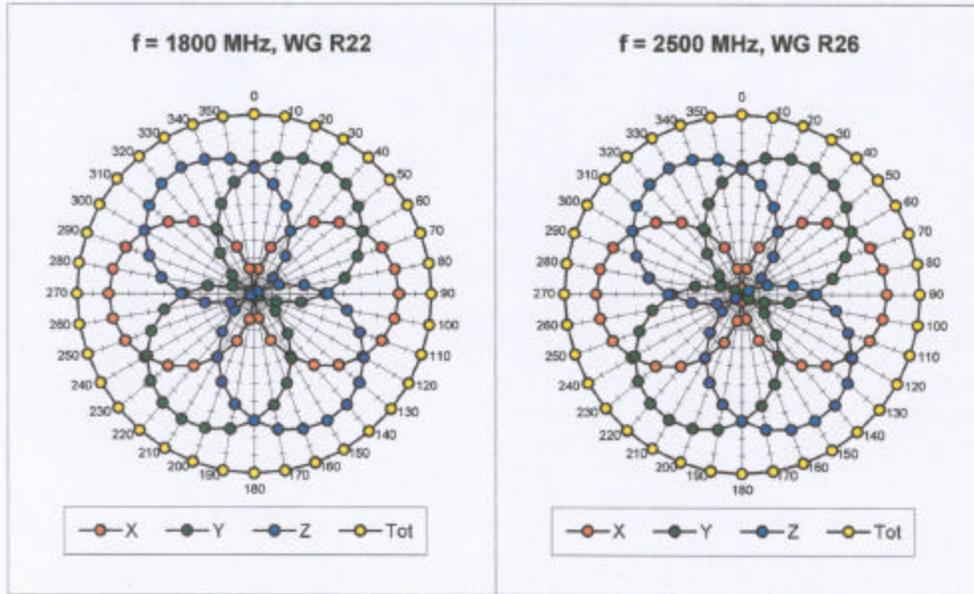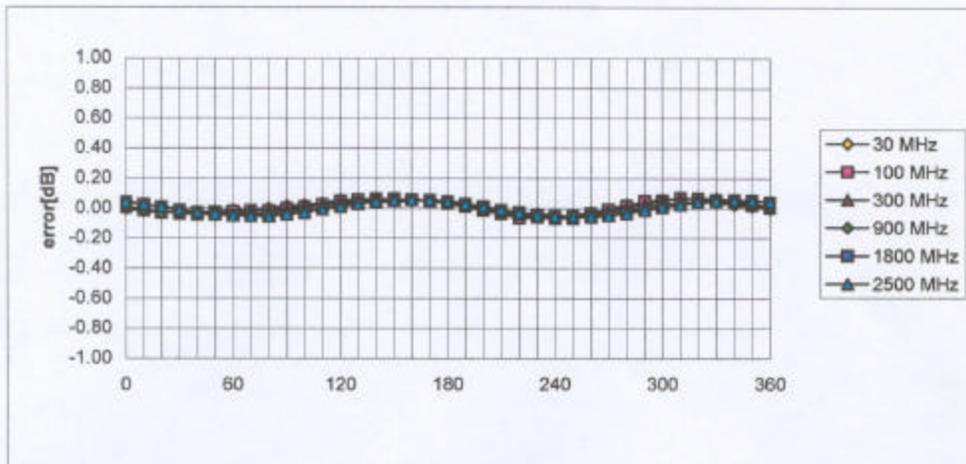
ET3DV5 SN:1333

Frequency Response of E-Field

(TEM-Cell:ifi110, Waveguide R22)
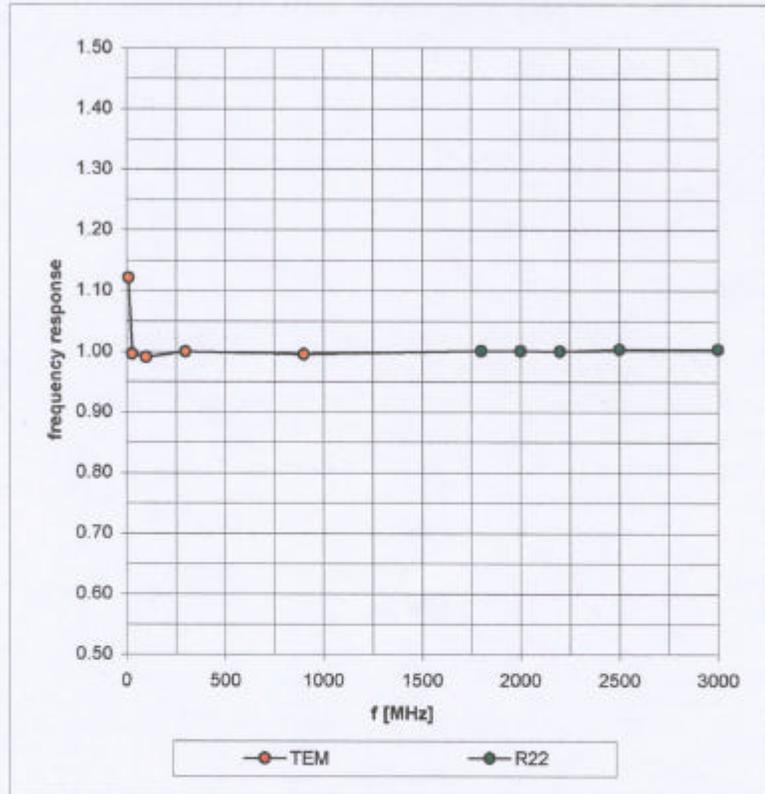
ET3DV5 SN:1333

Dynamic Range f(SAR$_{brain}$)
(TEM-Cell:ifi110)
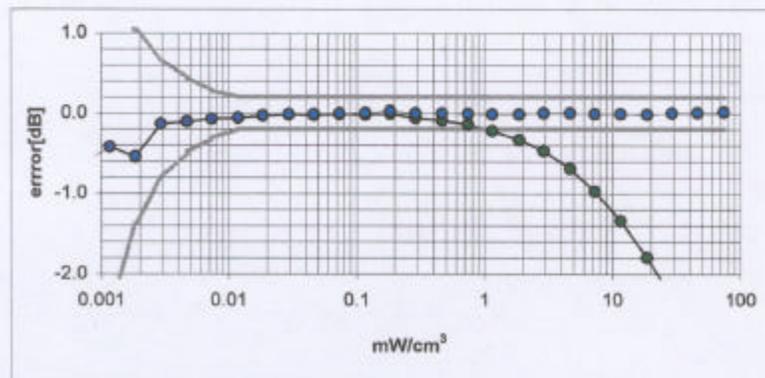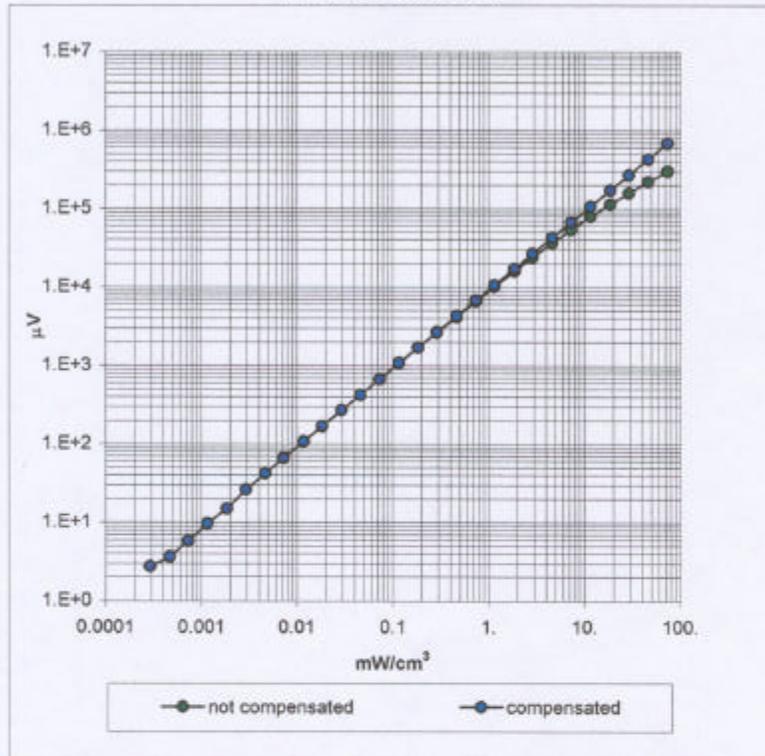
ET3DV5 SN:1333

Conversion Factor Assessment

f = 900 MHz, WG R9 (head)

f = 1800 MHz, WG R22 (brain)

Head	900 MHz	$\varepsilon_r = 42 \pm 5\%$	$\sigma = 0.97 \pm 10\%$ mho/m

ConvF X	**5.83** ± 7% (k=2)	Boundary effect:	
ConvF Y	**5.83** ± 7% (k=2)	Alpha	0.38
ConvF Z	**5.83** ± 7% (k=2)	Depth	2.70

Brain	1800 MHz	$\varepsilon_r = 41 \pm 5\%$	$\sigma = 1.69 \pm 10\%$ mho/m

ConvF X	**4.99** ± 7% (k=2)	Boundary effect:	
ConvF Y	**4.99** ± 7% (k=2)	Alpha	0.75
ConvF Z	**4.99** ± 7% (k=2)	Depth	1.99

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