May 16, 2002

Federal Communications Commission
Equipment Approval Services
7435 Oakland Mills Road
Columbia, MD 21046
Attn: Martin Perrine

SUBJECT: **Modottel Co., Ltd.**
FCC ID: POQWPE-1100
731 Confirmation No.: TC791436
Correspondence Ref. No.: 3829

Dear Martin:

On behalf of Modottel Co., Ltd., is our response to your e-mail dated April 16, 2002 requesting additional information for the subject application.

1. The only battery option available for this handset is the "small" battery listed in the Operational Description. Please note that the "small" battery is a standard-life battery referred to as "standard" battery in the test reports. The "standard" battery listed in the Operational Description is considered an extended-life battery and is not available for this handset. Please see attached revised Operational Description attachment.
2. Attached is the retested SAR data using 1900MHz liquid parameters and certified probe conversion factors. The attached data was retested at the two highest SAR points for left and right head, and the highest SAR point for the body. Also attached are dipole validation, printouts of the measured liquid parameters, and the manufacturer's probe calibration certification for the probe used during the evaluation.

If you have any questions or comments concerning the above, please do not hesitate to contact me.

Sincerely,

Shawn McMillen
General Manager
Celltech Research Inc.
Testing & Engineering Lab

cc: Modottel Co., Ltd.
American TCB

1. Summary of Product

RF circuits of WPE-1100 consist of Rx part, Tx part and PLL(Local signal) part. Rx part works for received CDMA signal from base station and demodulate received signal. TX part transmits the CDMA signal modulated by the internal DAC of RFT3100 to base station via antenna. Internal signal source (Local signal) controlled by MSM is produced by PLL block and used for down conversion or up conversion at mixer circuits

The processing of digital level is accomplished by MSM3100. MSM3100 transmits baseband analog signals and receives baseband digital signals. These device performs all of signal processing in the subscriber unit, from baseband to audio.

The MSM3100 processes Rx digital baseband data from the IFR3000. IFR3000 converts the modulated IF signal from the RF section of the subscriber unit into digital baseband data. For transmission, the MSM3100 modulates and sends analog baseband data to the RFT3100. The Tx signal path of the RFT3100 converts Tx analog baseband data into modulated RF. MSM3100 communicates with the external RF and analog baseband circuitry of the subscriber by way of controlling signal gain in the RF Rx and Tx signal paths, reduces baseband offset errors and tunes the system frequency reference. MSM3100 performs baseband digital signal processing, and controls memory, other user interfaces as well as connection RF, baseband and audio circuits. The user interface of the subscriber unit typically includes the keypad, LCD display, ringer, earphone. These are either under the direct or indirect control of the MSM3100. The MSM3100 also contains complete digital modulation and demodulation systems for CDMA

The subscriber unit system software controls most of the functionality and activates the features of the subscriber unit. System software is executed by an embedded ARM microprocessor within the MSM3100.

The CODEC in MSM3100 interfaces directly with the microphone and earphone, converting analog audio signals from the microphone into digital signals for the Vocoder. The CODEC also converts digital audio data from the Vocoder into analog audio signals for the earpiece.

2. Specification

2.1 General Specification

Name of equipment			WPE-1100
Mode			US PCS
Working Frequency Range			Tx: 1851.25~1908.75MHz Rx: 1931.25~1988.75MHz
Duplex Frequency Separation			80MHz
Modulation			OQPSK
Chip Rate			1.2288Mbps
RF Bandwidth per Carrier			1.23MHz
RF Output Power (EIRP)			360mW (Max.)
Battery Type			Li-ion 750mAh
Battery Working Hour	**Standard Battery (Not available)**		
	Small Battery	Busy (10dB,half)	62 Minute
		Standby	65.7 Hours (Slot 1)
			131 Hours (Slot 2)
Operation Temperature			-30℃ ~ +60℃
Size			95 X 44 X 19.6
Weight			75g (With Battery)
Antenna			50 Ω 1/4λ Retractable

2.2 Specification of Transmitting Section

Frequency Range	1851.25 ~ 1908.75MHz	
Lo Frequency Range	1749.62 ± 30MHz	
Intermediate Frequency	130.38MHz	
Rated Conducted Power	24.5dBm	
Frequency Stability	± 150Hz	
Open Loop Output Power Range	@ RX = -25dBm	-60.5 ~ -41.5 dBm
	@ RX = -65dBm	-20.5 ~ -1.5 dBm
	@ RX = -104dBm	+ 13 ~ + 24 dBm
Open Loop Power Control Time Response	20dB/100ms	

2.3 Specification of Receiving Section

Frequency Range	1931.25 ~ 1988.75MHz	
Lo Frequency Range	1749.62 ± 30MHz	
Sensitivity	-104 dBm	
Intermediate Frequency	210.38MHz	
CDMA Input Signal	In 1.23MHz, –105dBm to –25dBm 80dB or more Dynamic Range	
Conductive Spurious Radiation	RX in Band	< -81 dBm
	TX in Band	< -61dBm
	Others	< -47dBm
Spurious Suppression	Max –80dBm	
Interference Rejection	Single Tone	-30dBm at ±1.25MHz
	Two Tone	-43dBm at ± 1.25MHz & ± 2.05MHz

5.1 Overview and Basic Configurations

CDMA Technology adopts Direct Sequence Spread Spectrum (DSSS) which is well established for anti-jam and multipath applications as well as for accurate ranging and tracking. Consequently, CDMA technology can support a large community of users.

The WPE-1100, PCS(Personal Communication Service) phone, works on 1.9GHz frequency band.

5.2 Frequency Allocation

Frequency allocation is as follows;

- ▷ Transmit Frequency : 1851.25MHz ~ 1908.75MHz
- ▷ Receive Frequency : 1931.25MHz ~ 1988.75MHz
- ▷ Channel Separation : 1.23MHz
- ▷ Transmit-Receive Frequency Separation : 80MHz
- ▷ Number of Channels : 43 channels

PCS channel numbers are given in Table 5.2.1. The Center frequency in MHz corresponding to the channel number (expressed as N) is calculated as following Table 5.2.2.

< Table 5.2.1. PCS Channel Numbers and Corresponding Frequencies >

Block Designator	Valid PCS Frequency Assignments	PCS Channel Number	Transmit Frequency Band (MHz)	
			Personal Station	Base Station
A (15 MHz)	Not Valid Valid Cond. Valid	0–24 25–275 276–299	1850.000–1851.200 1851.250–1863.750 1863.800–1864.950	1930.000–1931.200 1931.250–1943.750 1943.800–1944.950
D (5 MHz)	Cond. Valid Valid Cond. Valid	300–324 325–375 376–399	1865.000–1866.200 1866.250–1868.750 1868.800–1869.950	1945.000–1946.200 1946.250–1948.750 1948.800–1949.950
B (15 MHz)	Cond. Valid Valid Cond. Valid	400–424 425–675 676–699	1870.000–1871.200 1871.250–1883.750 1883.800–1884.950	1950.000–1951.200 1951.250–1963.750 1963.800–1964.950
E (5 MHz)	Cond. Valid Valid Cond. Valid	700–724 725–775 776–799	1885.000–1886.200 1886.250–1888.750 1888.800–1889.950	1965.000–1966.200 1966.250–1968.750 1968.800–1969.950
F (5 MHz)	Cond. Valid Valid Cond. Valid	800–824 825–875 876–899	1890.000–1891.200 1891.250–1893.750 1893.800–1894.950	1970.000–1971.200 1971.250–1973.750 1973.800–1974.950
C (15 MHz)	Cond. Valid Valid Not Valid	900–924 925–1175 1176–1199	1895.000–1896.200 1896.250–1908.750 1908.800–1909.950	1975.000–1976.200 1976.250–1988.750 1988.800–1989.950

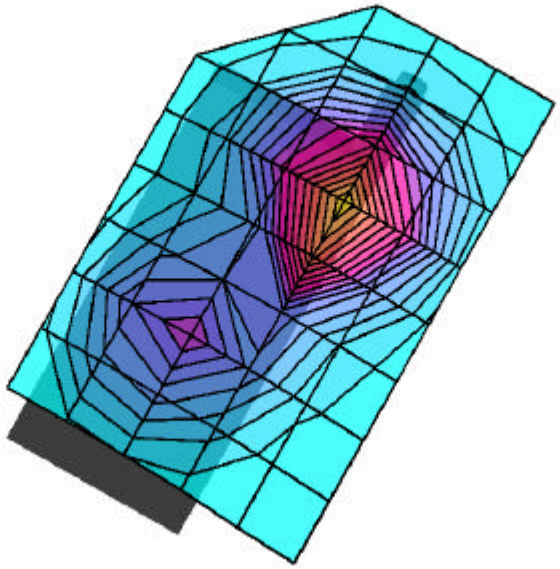
< Table 5.2.2 PCS Channel Frequency Calculation >

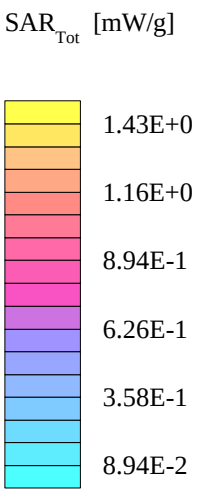
Transmitter	PCS Channel Number	Center Frequency [MHz]
Mobile	0 < N < 1200	1850.000 + 0.050 N
Base	0 < N < 1200	1930.000 + 0.050 N

Modottel Co., Ltd. FCC ID: POQWPE-1100

SAM Phantom; Left Hand Section; Position: (90°,65°)
Probe: ET3DV6 - SN1387; ConvF(5.40,5.40,5.40); Crest factor: 1.0
1900 MHz Brain: σ = 1.42 mho/m ε_r = 40.4 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.11 dB
SAR (1g): 1.27 mW/g, SAR (10g): 0.661 mW/g

Ambient Temp : 22.8°C Fluid Temp : 23.0° C
Head SAR - Left Head/Touch Position
Antenna In
Model: WPE-1100
PCS CDMA Mode
Channel 25 [1851.25 MHz]
Conducted Power: 24.55 dBm
Date Tested: May 15, 2002

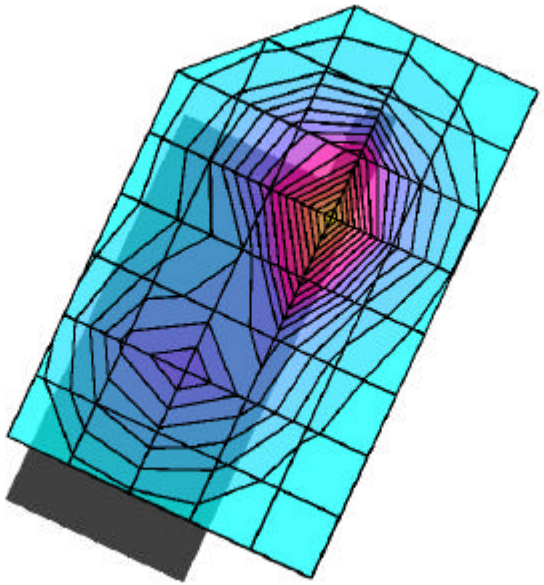


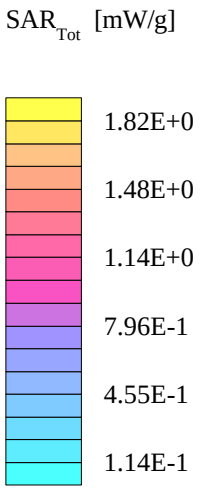


Modottel Co., Ltd. FCC ID: POQWPE-1100

SAM Phantom; Left Hand Section; Position: (90°,65°)
Probe: ET3DV6 - SN1387; ConvF(5.40,5.40,5.40); Crest factor: 1.0
1900 MHz Brain: σ = 1.42 mho/m ε_r = 40.4 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.08 dB
SAR (1g): 1.37 mW/g, SAR (10g): 0.712 mW/g

Ambient Temp : 22.8°C Fluid Temp : 23.0°C
Head SAR - Left Head/Touch Position
Antenna In
Model: WPE-1100
PCS CDMA Mode
Channel 1175 [1908.75 MHz]
Conducted Power: 24.61 dBm
Date Tested: May 15, 2002



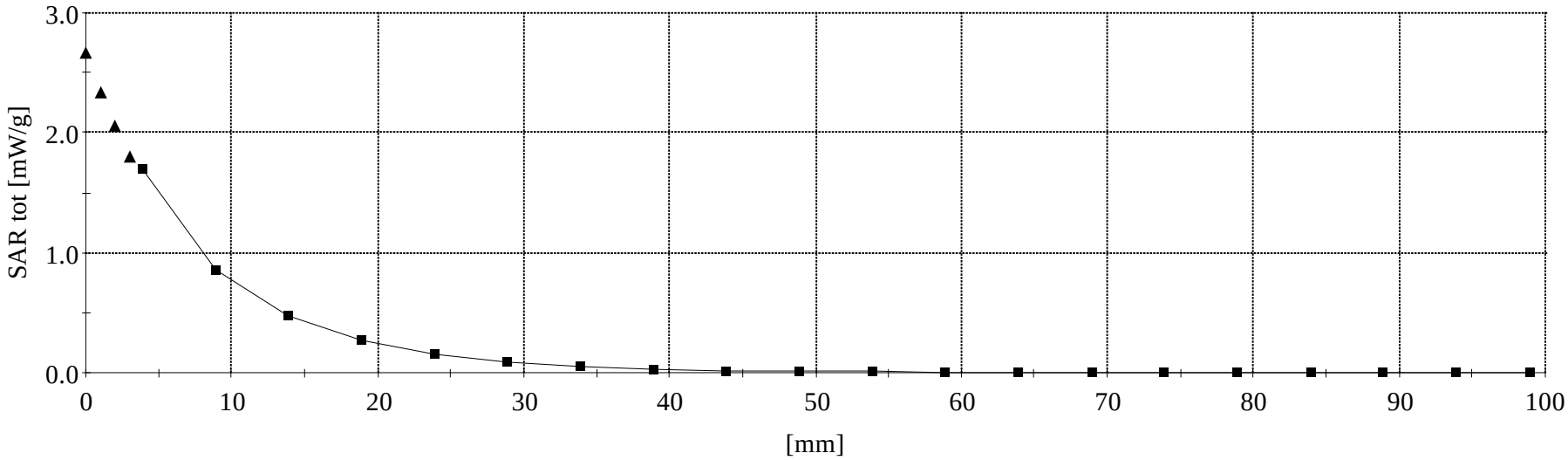


Modottel Co., Ltd. FCC ID: POQWPE-1100

SAM Phantom; Section
Probe: ET3DV6 - SN1387; ConvF(5.40,5.40,5.40); Crest factor: 1.0;
1900 MHz Brain: σ = 1.42 mho/m ε_r = 40.4 ρ = 1.00 g/cm^3

Z-Axis Extrapolation at Peak SAR Location

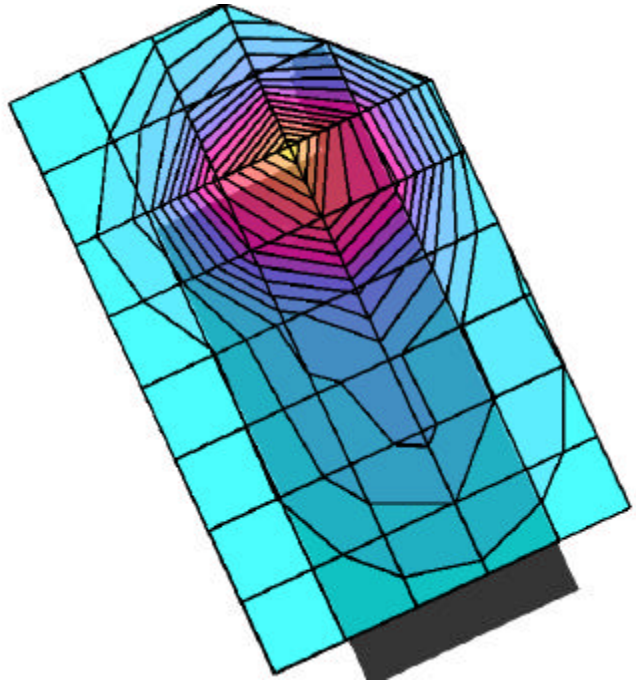
Ambient Temp : 22.8°C Fluid Temp : 23.0°C
Head SAR - Left Head/Touch Position
Antenna In
Model: WPE-1100
PCS CDMA Mode
Channel 1175 [1908.75 MHz]
Conducted Power: 24.61 dBm
Date Tested: May 15, 2002



Modottel Co., Ltd. FCC ID: POQWPE-1100

SAM Phantom; Right Hand Section; Position: (105°,295°)
Probe: ET3DV6 - SN1387; ConvF(5.40,5.40,5.40); Crest factor: 1.0
1900 MHz Brain: σ = 1.42 mho/m ε_r = 40.4 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7; Powerdrift: 0.04 dB
SAR (1g): 1.06 mW/g, SAR (10g): 0.580 mW/g

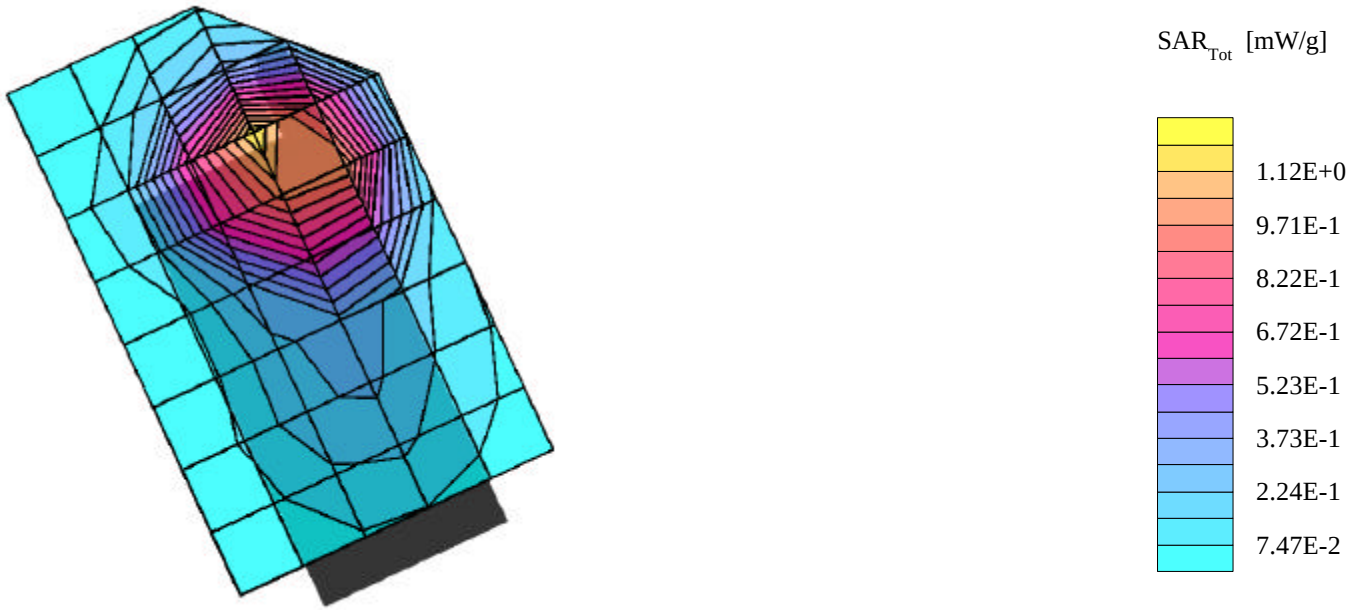
Ambient Temp:22.8°C Fluid Temp:23.0°C
Head SAR - Right Ear/Tilt Position
Antenna In
Model: WPE-1100
PCS CDMA Mode
Channel 25 [1851.25 MHz]
Conducted Power: 24.54 dBm
Date Tested:May 15, 2002



Modottel Co., Ltd. FCC ID: POQWPE-1100

SAM Phantom; Right Hand Section; Position: (105°,295°)
Probe: ET3DV6 - SN1387; ConvF(5.40,5.40,5.40); Crest factor: 1.0
1900 MHz Brain: σ = 1.42 mho/m ε_r = 40.4 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.07 dB
SAR (1g): 0.953 mW/g, SAR (10g): 0.533 mW/g

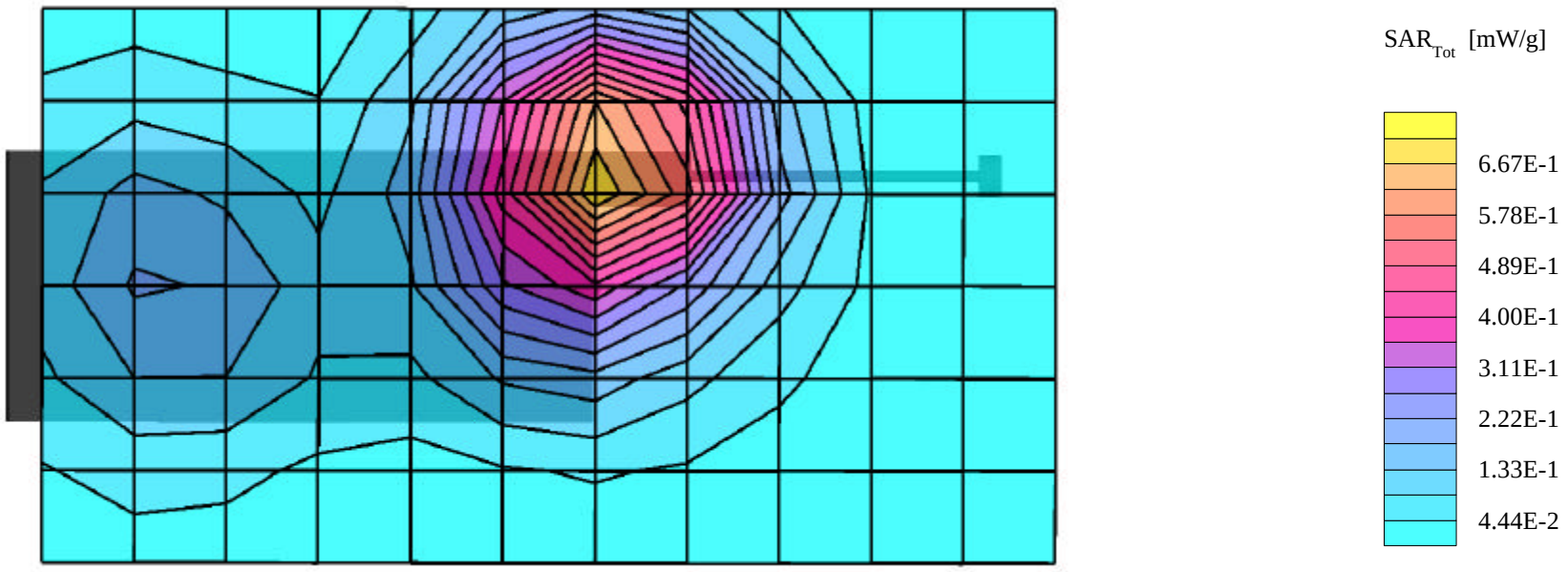
Ambient Temp:22.8°C Fluid Temp:23°C
Head SAR - Right Ear/Tilt Position
Antenna In
Withus Model: WPE-1100
PCS CDMA Mode
Channel 600 [1880.00 MHz]
Conducted Power: 24.59 dBm
Date Tested: May 15, 2002



Modottel Co., Ltd. FCC ID: POQWPE-1100

SAM Phantom; Flat Section; Position: (270°,270°)
Probe: ET3DV6 - SN1387; ConvF(5.00,5.00,5.00); Crest factor: 1.0
1900 MHz Muscle: σ = 1.54 mho/m ε_r = 52.3 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.03 dB
SAR (1g): 0.603 mW/g, SAR (10g): 0.349 mW/g

Ambient Temp: 22.8°C Fluid Temp: 23°C
Body SAR at 1.5 cm Separation Distance
Antenna Out
Withus Model: WPE-1100
PCS CDMA Mode
Channel 25 [1851.25 MHz]
Conducted Power: 24.52 dBm
Date Tested: May 15, 2002

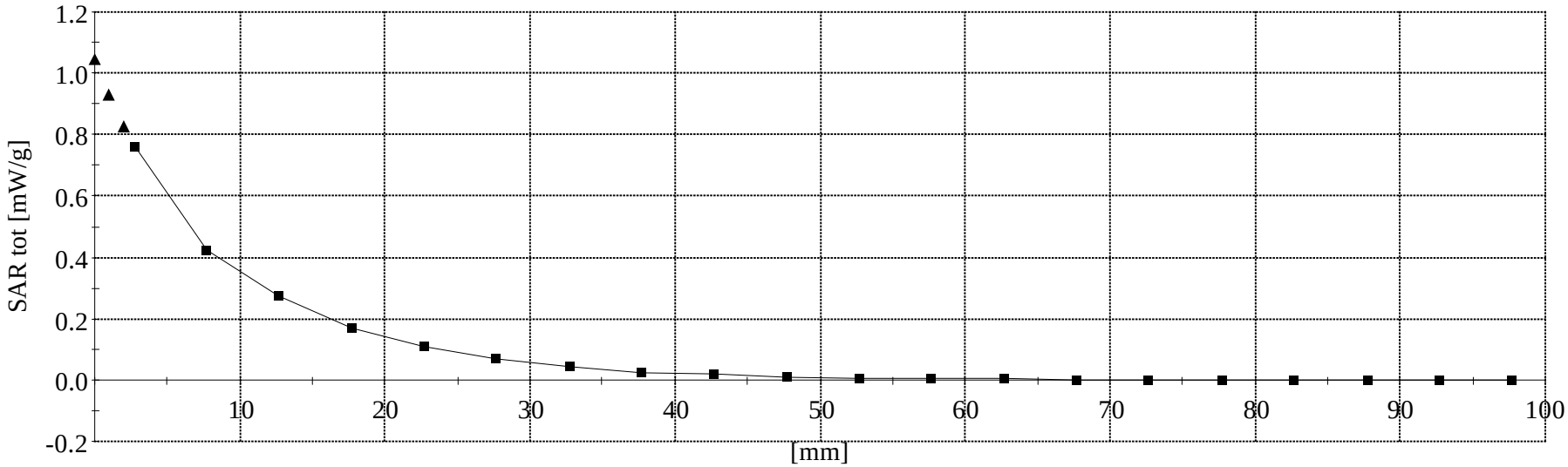


Modottel Co., Ltd. FCC ID: POQWPE-1100

SAM Phantom; Section
Probe: ET3DV6 - SN1387; ConvF(5.00,5.00,5.00); Crest factor: 1.0;
1900 MHz Muscle: σ = 1.54 mho/m ε_r = 52.3 ρ = 1.00 g/cm^3

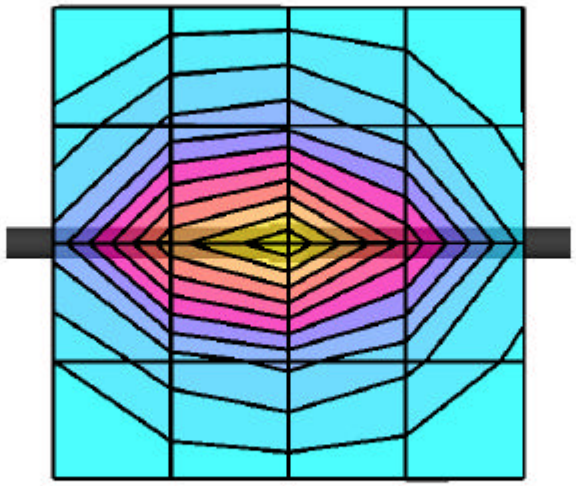
Z-Axis Extrapolation at Peak SAR Location

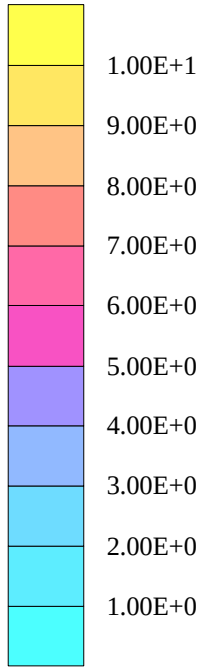
Ambient Temp: 22.8°C Fluid Temp: 23.0°C
Body SAR at 1.5 cm Separation Distance
Antenna Out
Model: WPE-1100
PCS CDMA Mode
Channel 25 [1851.25 MHz]
Conducted Power: 24.52 dBm
Date Tested: May 15, 2002



Validation Dipole D1800V2 SN:247, d = 10 mm

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: ET3DV6 - SN1507; ConvF(5.57,5.57,5.57); Crest factor: 1.0; IEEE1528 1800 MHz : σ = 1.36 mho/m ε_r = 40.0 ρ = 1.00 g/cm^3
Cubes (2): Peak: 18.2 mW/g ± 0.04 dB, SAR (1g): 9.66 mW/g ± 0.03 dB, SAR (10g): 5.02 mW/g ± 0.03 dB, (Worst-case extrapolation)
Penetration depth: 8.2 (7.6, 9.4) [mm]
Powerdrift: -0.01 dB





05/15/02

Dipole 1800MHz

SAM Phantom; Flat Section

Probe: ET3DV6 - SN1387; ConvF(5.40,5.40,5.40); Crest factor: 1.0; 1800 MHz Brain: $\sigma = 1.41$ mho/m $\varepsilon_r = 38.9$ $\rho = 1.00$ g/cm^3

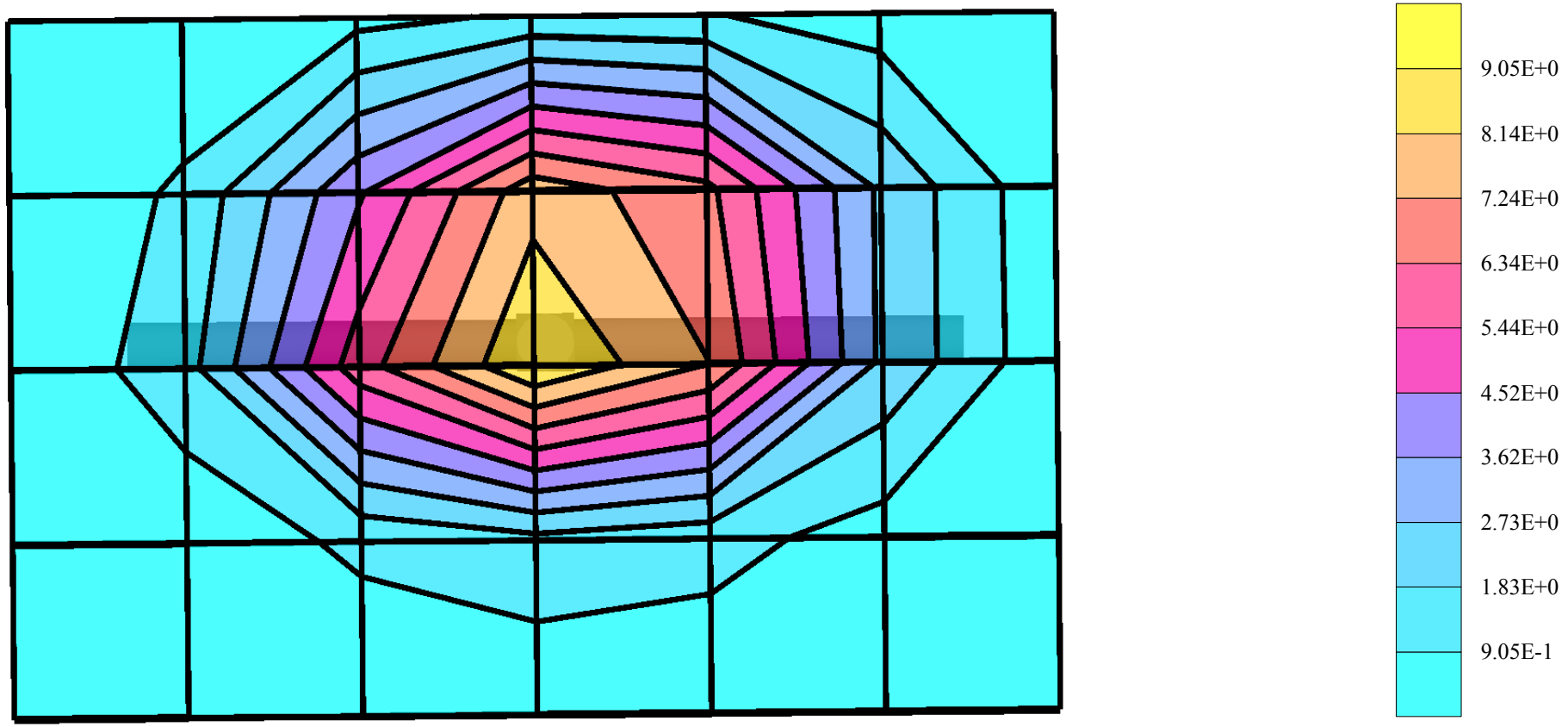
Cube 5x5x7: Peak: 18.8 mW/g, SAR (1g): 9.68 mW/g, SAR (10g): 4.90 mW/g, (Worst-case extrapolation)

Penetration depth: 7.5 (7.2, 8.5) [mm]

Powerdrift: 0.02 dB

Conducted Power: 250mW

Validation Date: May 15, 2002



1800MHz System Validation

Measured Fluid Dielectric Parameters (Brain)

May 15, 2002

Frequency	e'	e''
1.750000000 GHz	39.1252	14.0797
1.755000000 GHz	39.1144	14.0973
1.760000000 GHz	39.0865	14.1062
1.765000000 GHz	39.0646	14.1086
1.770000000 GHz	39.0472	14.1239
1.775000000 GHz	39.0261	14.1321
1.780000000 GHz	38.9943	14.1373
1.785000000 GHz	38.9515	14.1491
1.790000000 GHz	38.9398	14.1458
1.795000000 GHz	38.9174	14.1550
1.800000000 GHz	38.8970	14.1722
1.805000000 GHz	38.8540	14.1814
1.810000000 GHz	38.8395	14.1921
1.815000000 GHz	38.8119	14.1955
1.820000000 GHz	38.7867	14.1974
1.825000000 GHz	38.7560	14.2149
1.830000000 GHz	38.7505	14.2234
1.835000000 GHz	38.7282	14.2238
1.840000000 GHz	38.7116	14.2330
1.845000000 GHz	38.6925	14.2376
1.850000000 GHz	38.6802	14.2382
1.855000000 GHz	38.6606	14.2462
1.860000000 GHz	38.6475	14.2593
1.865000000 GHz	38.6314	14.2623
1.870000000 GHz	38.6111	14.2678
1.875000000 GHz	38.6043	14.2802
1.880000000 GHz	38.5858	14.2877
1.885000000 GHz	38.5650	14.3056
1.890000000 GHz	38.5539	14.3145
1.895000000 GHz	38.5347	14.3196
1.900000000 GHz	38.5211	14.3331
1.905000000 GHz	38.5052	14.3570
1.910000000 GHz	38.4858	14.3652
1.915000000 GHz	38.4499	14.3748
1.920000000 GHz	38.4264	14.3946

1900MHz EUT Evaluation (Head)

Measured Fluid Dielectric Parameters (Brain)

May 15, 2002

Frequency	e'	e''
1.750000000 GHz	40.9900	13.1757
1.755000000 GHz	40.9810	13.1828
1.760000000 GHz	40.9784	13.1796
1.765000000 GHz	40.9615	13.1883
1.770000000 GHz	40.9539	13.1912
1.775000000 GHz	40.9506	13.2008
1.780000000 GHz	40.9200	13.2057
1.785000000 GHz	40.8907	13.2221
1.790000000 GHz	40.8772	13.2287
1.795000000 GHz	40.8642	13.2504
1.800000000 GHz	40.8415	13.2659
1.805000000 GHz	40.8009	13.2865
1.810000000 GHz	40.7752	13.3254
1.815000000 GHz	40.7361	13.3422
1.820000000 GHz	40.6958	13.3566
1.825000000 GHz	40.6650	13.3805
1.830000000 GHz	40.6621	13.3898
1.835000000 GHz	40.6407	13.3986
1.840000000 GHz	40.6271	13.3903
1.845000000 GHz	40.6275	13.4035
1.850000000 GHz	40.6197	13.4036
1.855000000 GHz	40.6234	13.4117
1.860000000 GHz	40.6158	13.4208
1.865000000 GHz	40.6148	13.4256
1.870000000 GHz	40.5956	13.4392
1.875000000 GHz	40.5823	13.4428
1.880000000 GHz	40.5557	13.4582
1.885000000 GHz	40.5371	13.4714
1.890000000 GHz	40.5188	13.4845
1.895000000 GHz	40.5014	13.4940
1.900000000 GHz	40.4744	13.5158
1.905000000 GHz	40.4421	13.5382
1.910000000 GHz	40.3968	13.5632
1.915000000 GHz	40.3499	13.5714
1.920000000 GHz	40.2962	13.6142

1900MHz EUT Evaluation (Body)

Measured Fluid Dielectric Parameters (Muscle)

May 15, 2002

Frequency	e'	e''
1.750000000 GHz	52.7728	14.1604
1.755000000 GHz	52.7741	14.1807
1.760000000 GHz	52.7563	14.1950
1.765000000 GHz	52.7491	14.2040
1.770000000 GHz	52.7259	14.2192
1.775000000 GHz	52.7137	14.2253
1.780000000 GHz	52.6950	14.2405
1.785000000 GHz	52.6628	14.2562
1.790000000 GHz	52.6448	14.2710
1.795000000 GHz	52.6448	14.2850
1.800000000 GHz	52.6299	14.2936
1.805000000 GHz	52.6000	14.3223
1.810000000 GHz	52.5820	14.3517
1.815000000 GHz	52.5523	14.3624
1.820000000 GHz	52.5228	14.3729
1.825000000 GHz	52.5081	14.3998
1.830000000 GHz	52.5055	14.4234
1.835000000 GHz	52.4919	14.4421
1.840000000 GHz	52.4761	14.4411
1.845000000 GHz	52.4632	14.4594
1.850000000 GHz	52.4738	14.4751
1.855000000 GHz	52.4522	14.4866
1.860000000 GHz	52.4381	14.5060
1.865000000 GHz	52.4360	14.5220
1.870000000 GHz	52.4039	14.5322
1.875000000 GHz	52.3932	14.5415
1.880000000 GHz	52.3783	14.5618
1.885000000 GHz	52.3595	14.5893
1.890000000 GHz	52.3323	14.6028
1.895000000 GHz	52.3068	14.6257
1.900000000 GHz	52.2840	14.6390
1.905000000 GHz	52.2584	14.6766
1.910000000 GHz	52.2343	14.6914
1.915000000 GHz	52.2073	14.6945
1.920000000 GHz	52.1832	14.7239

Schmid & Partner
Engineering AG

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

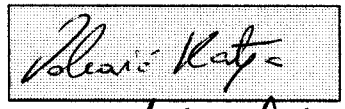
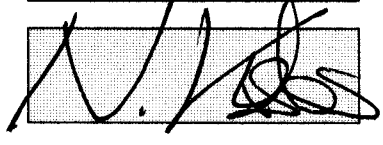
Calibration Certificate

Dosimetric E-Field Probe

Type:	**ET3DV6**
Serial Number:	**1387**
Place of Calibration:	**Zurich**
Date of Calibration:	**February 22, 2002**
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:	
Approved by:	

Probe ET3DV6

SN:1387

Manufactured:	September 21, 1999
Last calibration:	September 22, 1999
Recalibrated:	February 22, 2002

Calibrated for System DASY3

DASY3 - Parameters of Probe: ET3DV6 SN:1387

Sensitivity in Free Space

Diode Compression

NormX	**1.58**	$\mu V/(V/m)^2$	DCP X	**97**	mV
NormY	**1.67**	$\mu V/(V/m)^2$	DCP Y	**97**	mV
NormZ	**1.67**	$\mu V/(V/m)^2$	DCP Z	**97**	mV

Sensitivity in Tissue Simulating Liquid

Head **900 MHz** e_r **= 41.5 ± 5%** s **= 0.97 ± 5% mho/m**
Head **835 MHz** e_r **= 41.5 ± 5%** s **= 0.90 ± 5% mho/m**

ConvF X	**6.6**	± 9.5% (k=2)	Boundary effect:	
ConvF Y	**6.6**	± 9.5% (k=2)	Alpha	**0.40**
ConvF Z	**6.6**	± 9.5% (k=2)	Depth	**2.38**

Head **1800 MHz** e_r **= 40.0 ± 5%** s **= 1.40 ± 5% mho/m**
Head **1900 MHz** e_r **= 40.0 ± 5%** s **= 1.40 ± 5% mho/m**

ConvF X	**5.4**	± 9.5% (k=2)	Boundary effect:	
ConvF Y	**5.4**	± 9.5% (k=2)	Alpha	**0.57**
ConvF Z	**5.4**	± 9.5% (k=2)	Depth	**2.18**

Boundary Effect

Head **900 MHz** **Typical SAR gradient: 5 % per mm**

Probe Tip to Boundary		**1 mm**	**2 mm**
SAR_{be} [%]	Without Correction Algorithm	9.7	5.4
SAR_{be} [%]	With Correction Algorithm	0.3	0.6

Head **1800 MHz** **Typical SAR gradient: 10 % per mm**

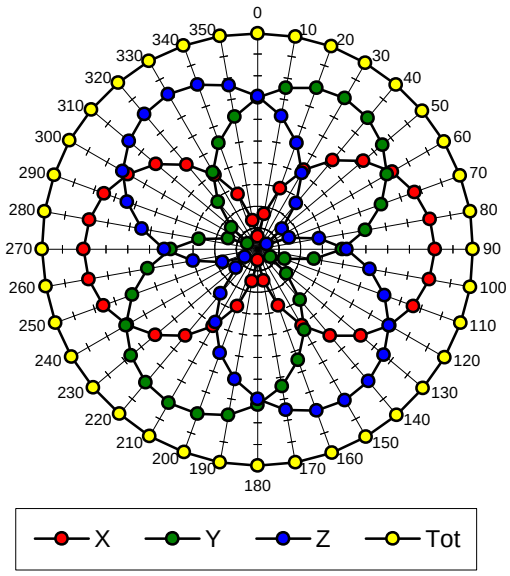
Probe Tip to Boundary		**1 mm**	**2 mm**
SAR_{be} [%]	Without Correction Algorithm	11.5	7.3
SAR_{be} [%]	With Correction Algorithm	0.1	0.3

Sensor Offset

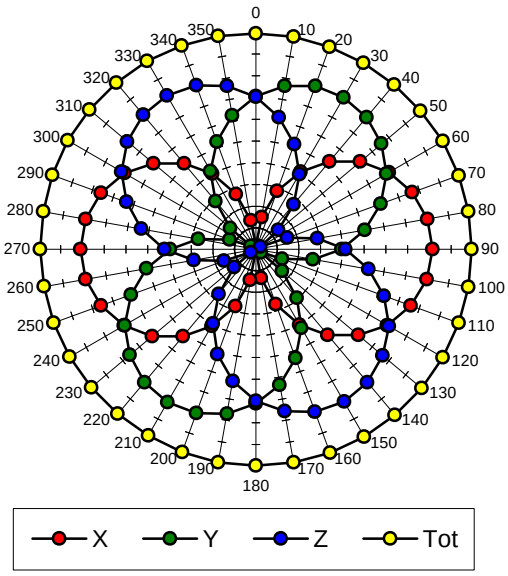
Probe Tip to Sensor Center	**2.7**	mm
Optical Surface Detection	**1.3 ± 0.2**	mm

Receiving Pattern (f) , q = 0°

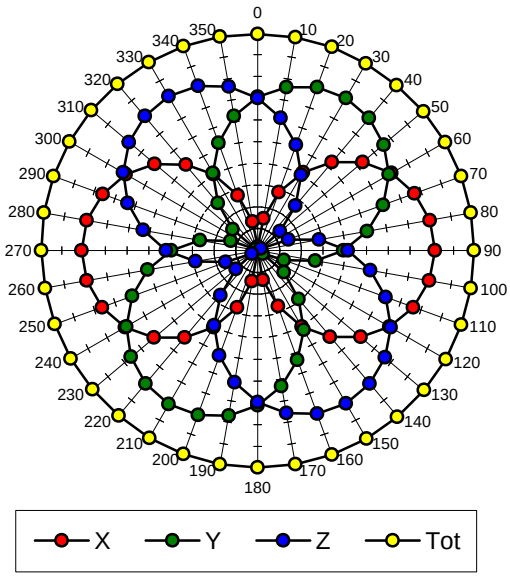
f = 30 MHz, TEM cell ifi110



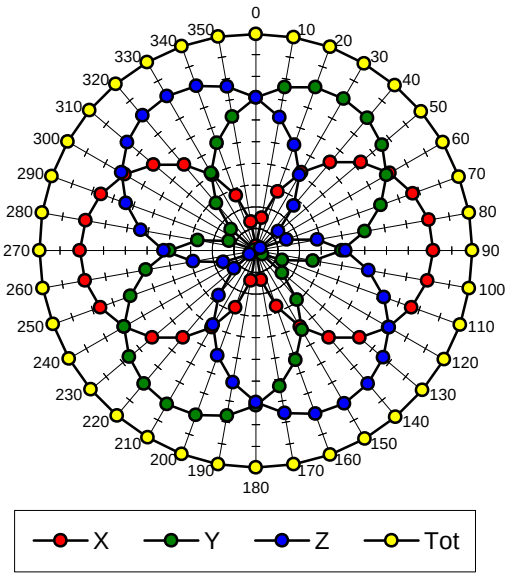
f = 100 MHz, TEM cell ifi110

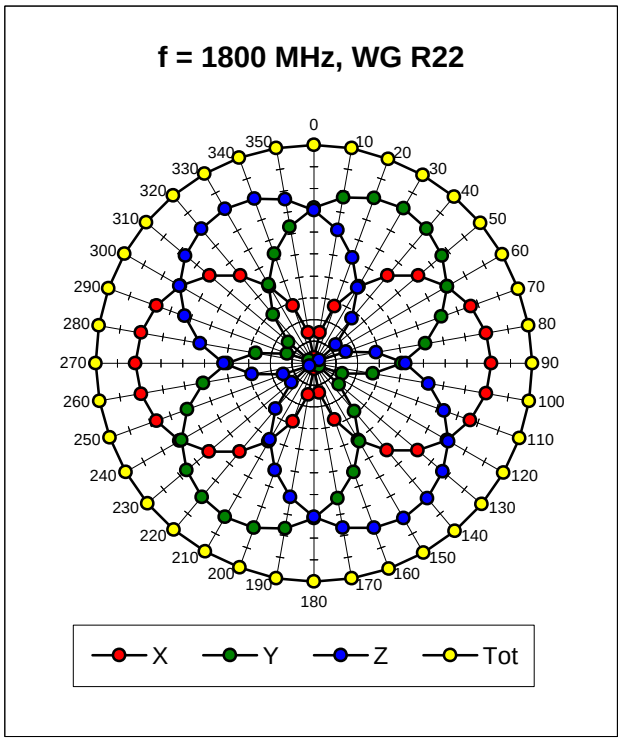


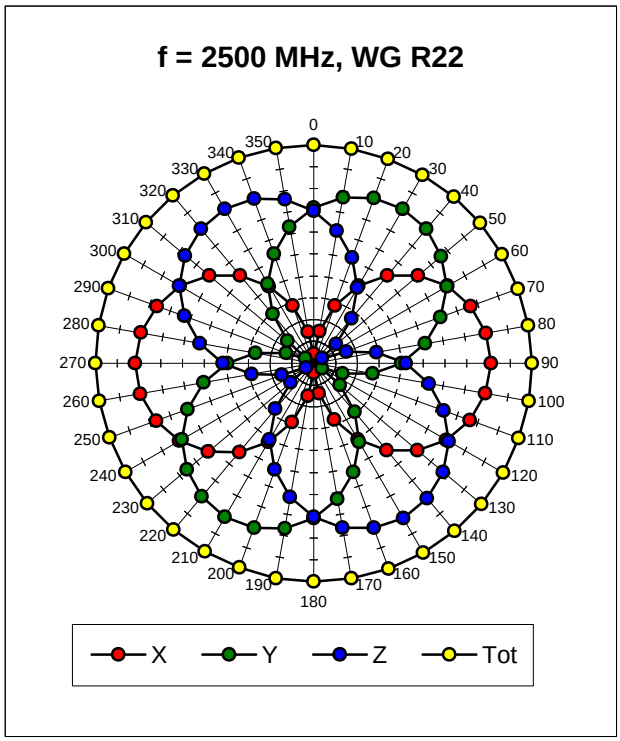
f = 300 MHz, TEM cell ifi110



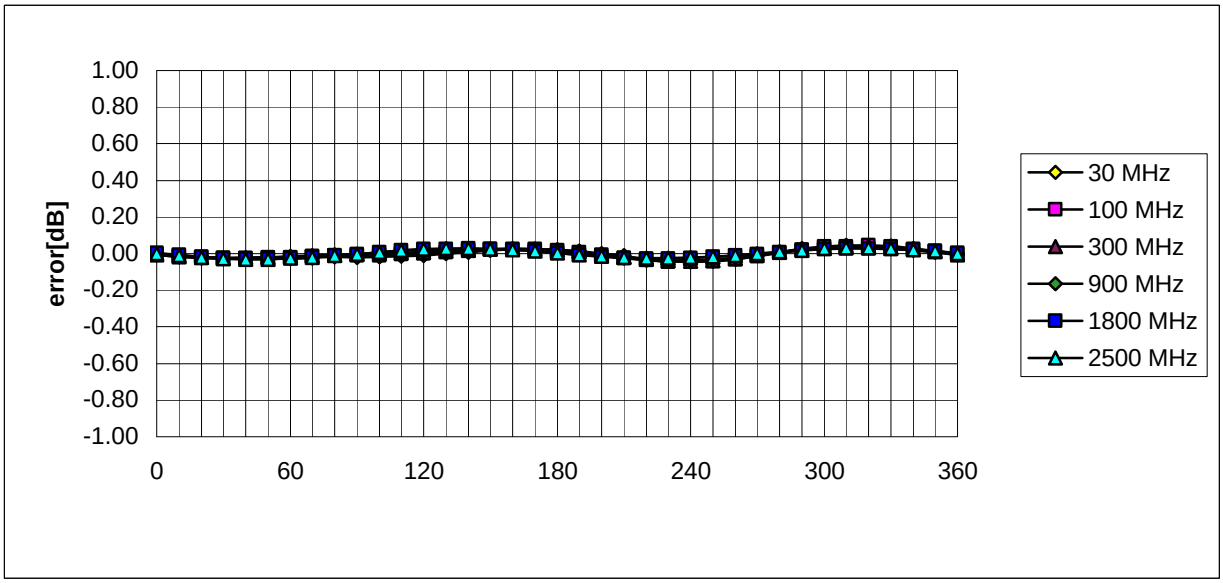
f = 900 MHz, TEM cell ifi110





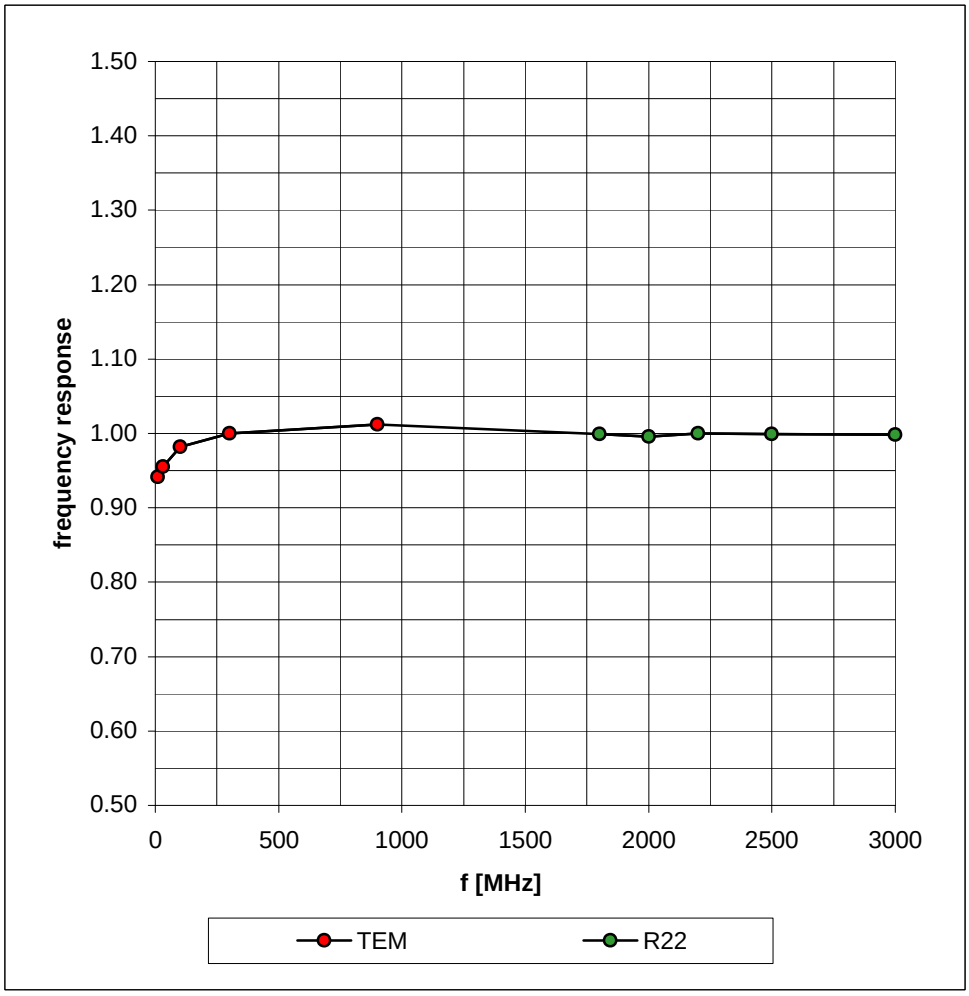


Isotropy Error (f), q = 0°



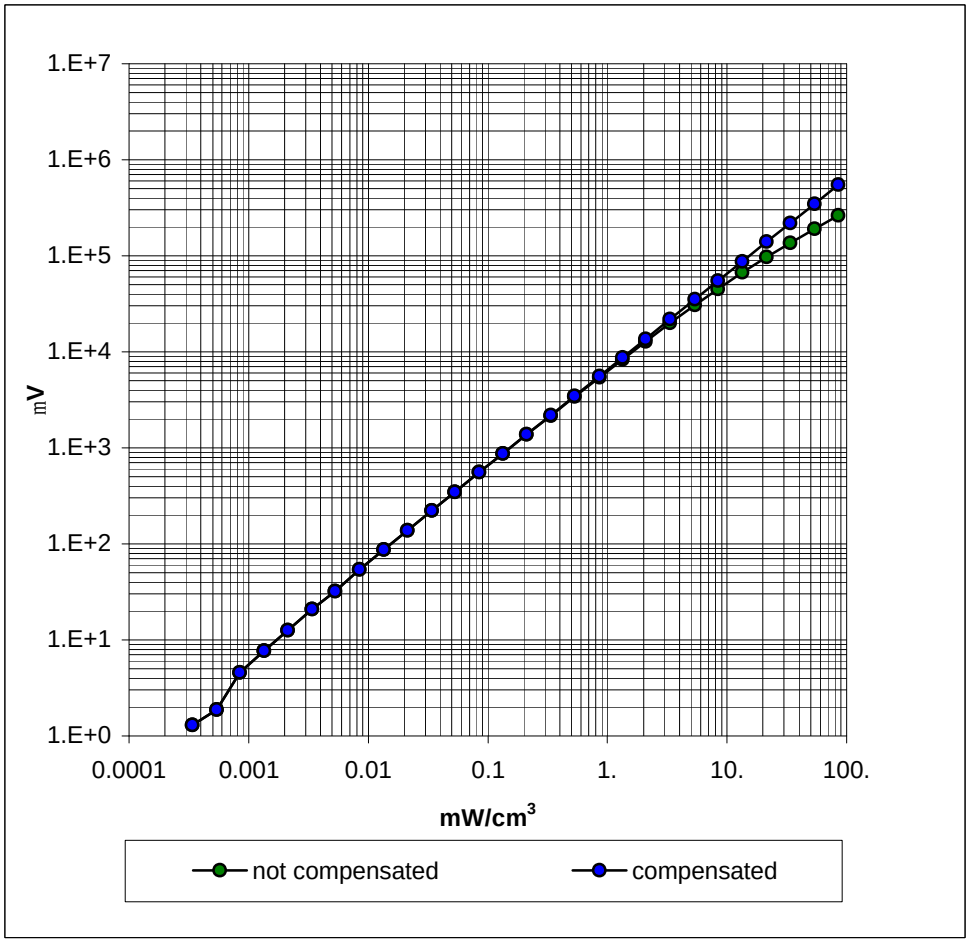
Frequency Response of E-Field

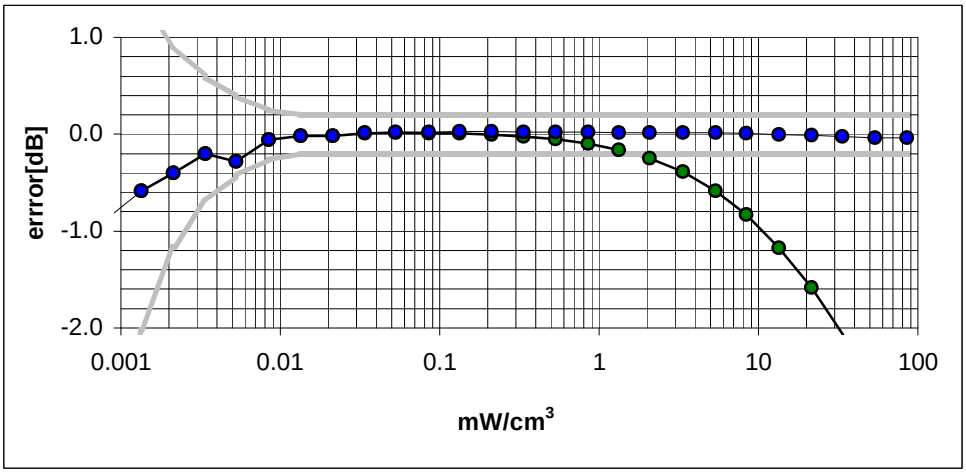
(TEM-Cell:ifi110, Waveguide R22)



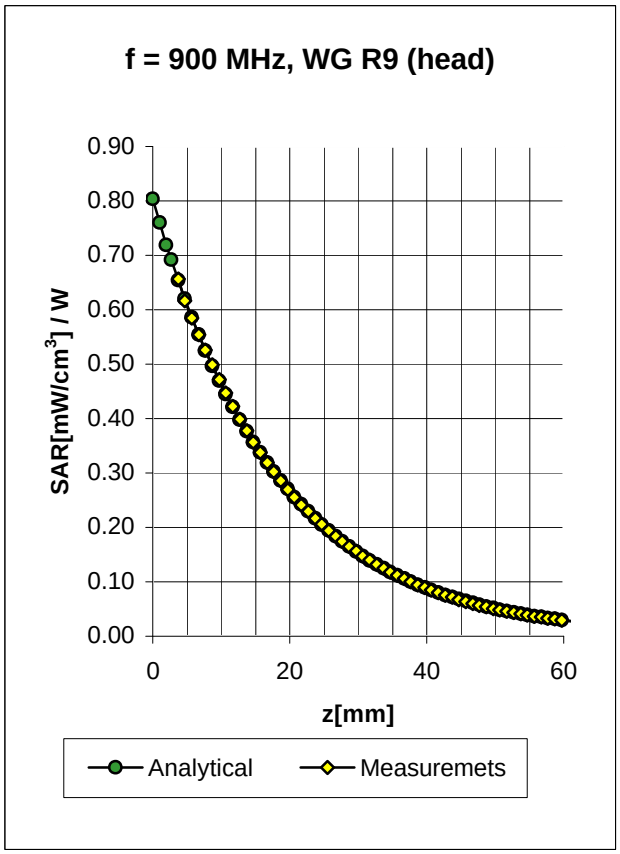
Dynamic Range f(SAR_{brain})

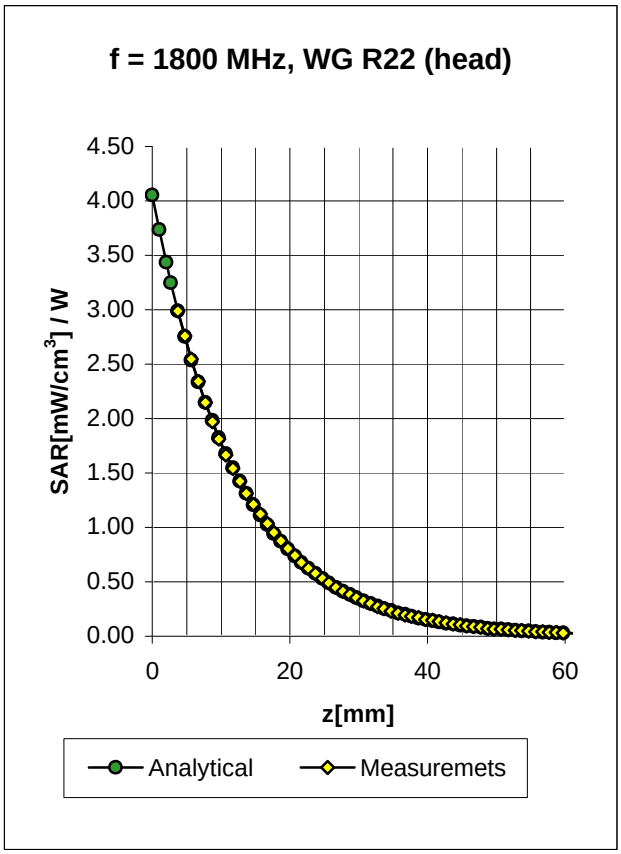
(Waveguide R22)





Conversion Factor Assessment



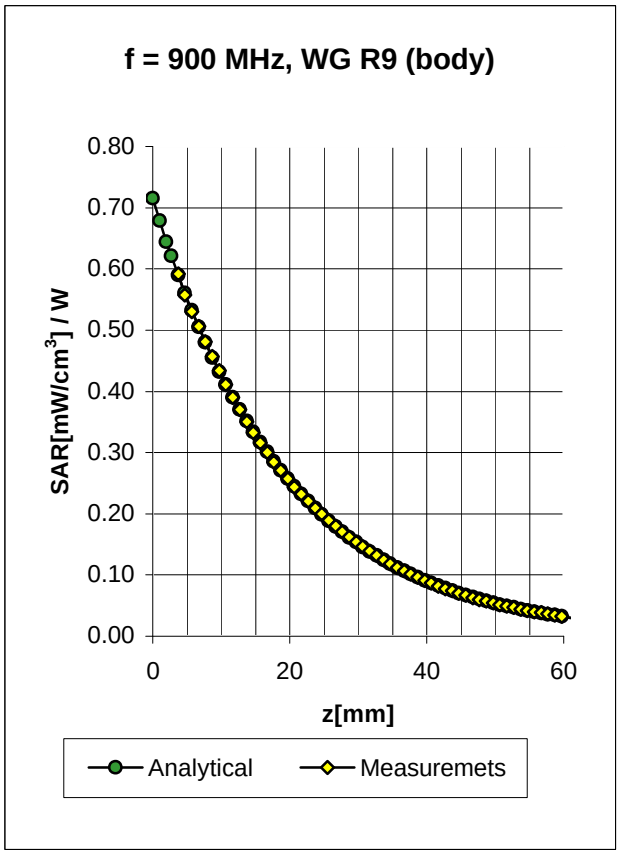


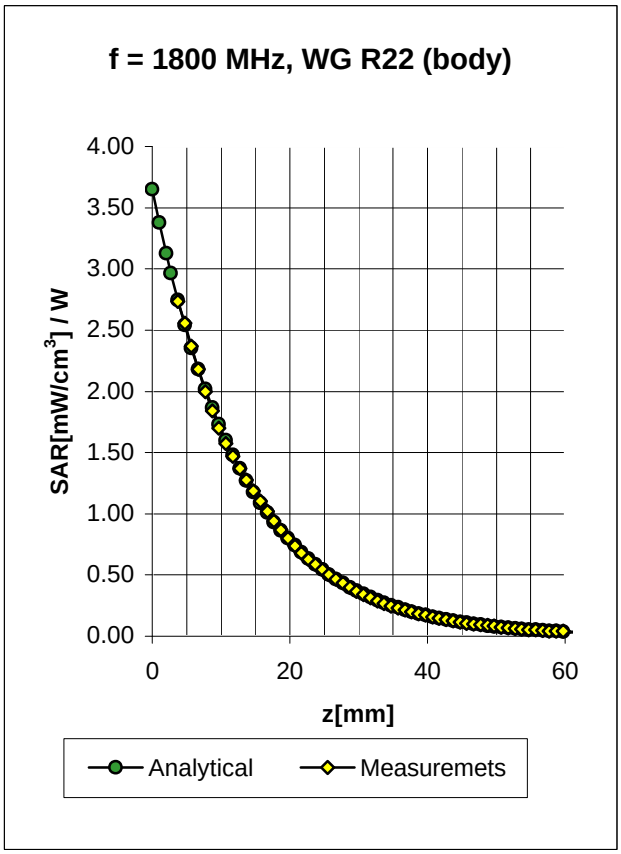
Head	**900 MHz**		e_r **= 41.5 ± 5%**	s **= 0.97 ± 5% mho/m**	
Head	**835 MHz**		e_r **= 41.5 ± 5%**	s **= 0.90 ± 5% mho/m**	
	ConvF X	**6.6** ± 9.5% (k=2)		Boundary effect:	
	ConvF Y	**6.6** ± 9.5% (k=2)		Alpha	**0.40**
	ConvF Z	**6.6** ± 9.5% (k=2)		Depth	**2.38**

Head	**1800 MHz**		e_r **= 40.0 ± 5%**	s **= 1.40 ± 5% mho/m**	
Head	**1900 MHz**		e_r **= 40.0 ± 5%**	s **= 1.40 ± 5% mho/m**	
	ConvF X	**5.4** ± 9.5% (k=2)		Boundary effect:	
	ConvF Y	**5.4** ± 9.5% (k=2)		Alpha	**0.57**
	ConvF Z	**5.4** ± 9.5% (k=2)		Depth	**2.18**

ET3DV6 SN:1387 **February 22, 2002**

Conversion Factor Assessment





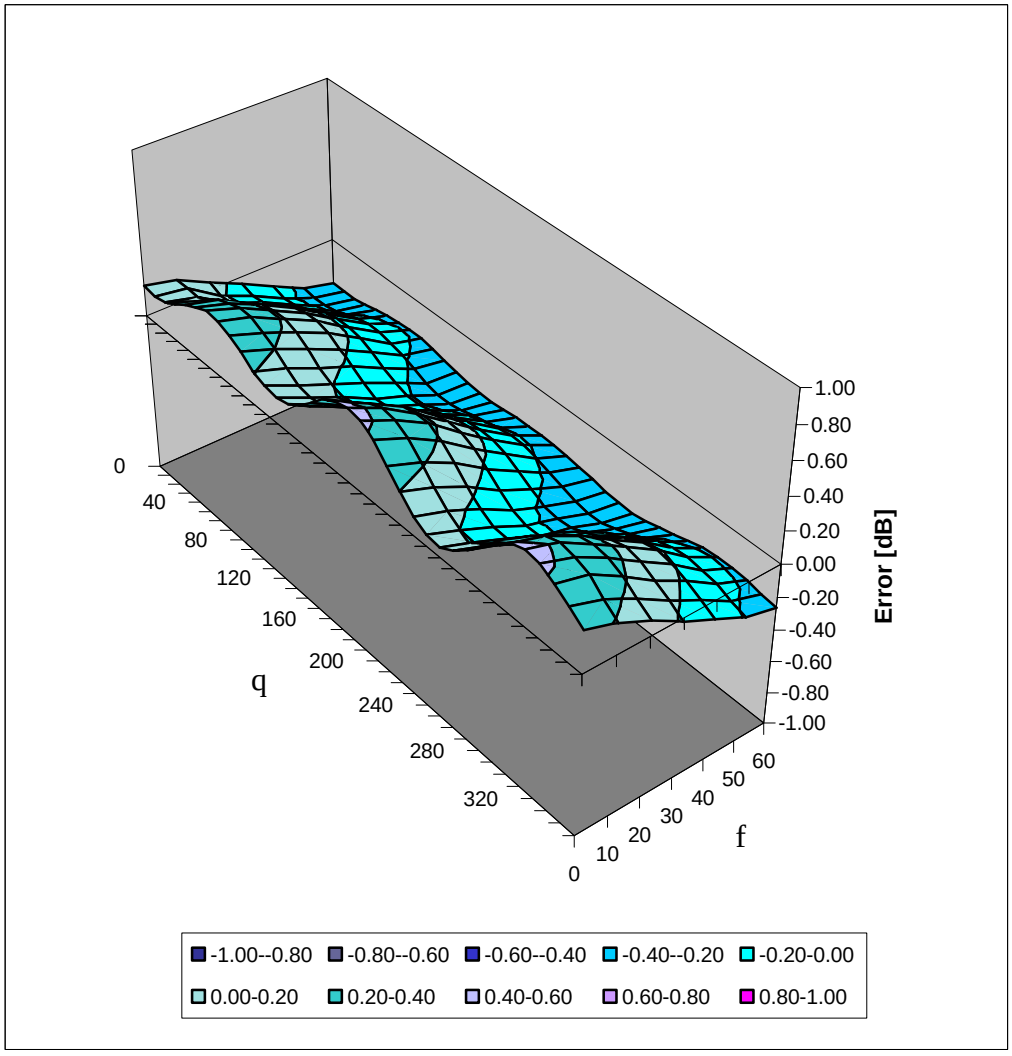
Body	**900 MHz**		e_r **= 55.0 ± 5%**	s **= 1.05 ± 5% mho/m**	
Body	**835 MHz**		e_r **= 55.2 ± 5%**	s **= 0.97 ± 5% mho/m**	
	ConvF X	**6.3** ± 9.5% (k=2)		Boundary effect:	
	ConvF Y	**6.3** ± 9.5% (k=2)		Alpha	**0.42**
	ConvF Z	**6.3** ± 9.5% (k=2)		Depth	**2.44**

Body	**1800 MHz**		e_r **= 53.3 ± 5%**	s **= 1.52 ± 5% mho/m**	
Body	**1900 MHz**		e_r **= 53.3 ± 5%**	s **= 1.52 ± 5% mho/m**	
	ConvF X	**5.0** ± 9.5% (k=2)		Boundary effect:	
	ConvF Y	**5.0** ± 9.5% (k=2)		Alpha	**0.76**
	ConvF Z	**5.0** ± 9.5% (k=2)		Depth	**2.01**

ET3DV6 SN:1387 **February 22, 2002**

Deviation from Isotropy in HSL

Error (q,f), f = 900 MHz



Schmid & Partner
Engineering AG

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Additional Conversion Factors

for Dosimetric E-Field Probe

Type:	**ET3DV6**
Serial Number:	**1387**
Place of Assessment:	**Zurich**
Date of Assessment:	**February 25, 2002**
Probe Calibration Date:	**February 22, 2002**

Schmid & Partner Engineering AG hereby certifies that conversion factor(s) of this probe have been evaluated on the date indicated above. The assessment was performed using the FDTD numerical code SEMCAD of Schmid & Partner Engineering AG. Since the evaluation is coupled with measured conversion factors, it has to be recalculated yearly, i.e., following the re-calibration schedule of the probe. The uncertainty of the numerical assessment is based on the extrapolation from measured value at 900 MHz or at 1800 MHz.

Assessed by:

Dosimetric E-Field Probe ET3DV6 SN:1387

Conversion Factor (± standard deviation)

150 MHz	ConvF	**9.2 ± 8%**	e_r = **52.3** s = **0.76 mho/m** (head tissue)
300 MHz	ConvF	**8.0 ± 8%**	e_r = **45.3** s = **0.87 mho/m** (head tissue)
450 MHz	ConvF	**7.3 ± 8%**	e_r = **43.5** s = **0.87 mho/m** (head tissue)
2450 MHz	ConvF	**4.7 ± 8%**	e_r = **39.2** s = **1.80 mho/m** (head tissue)
150 MHz	ConvF	**8.8 ± 8%**	e_r = **61.9** s = **0.80 mho/m** (body tissue)
450 MHz	ConvF	**7.7 ± 8%**	e_r = **56.7** s = **0.94 mho/m** (body tissue)
2450 MHz	ConvF	**4.3 ± 8%**	e_r = **52.7** s = **1.95 mho/m** (body tissue)