

# Exhibit 9: **Appendix C Probe Calibration**



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s p e a g

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# Probe ET3DV6

SN:1714

Manufactured:

August 7, 2002

Last calibration:

September 12, 2002

Recalibrated:

October 10, 2003

Calibrated for DASY Systems

(Note: non-compatible with DASY2 system!)

2.82

mm

mm

Depth



ET3DV6 SN:1714 October 10, 2003

#### DASY - Parameters of Probe: ET3DV6 SN:1714

Sensitivity in Free Space				Diode Compression						
	NormX	1.59	$\mu V/(V/m)^2$		DCP X	94	mV			
	NormY	1.54	$\mu V/(V/m)^2$		DCP Y	94	mV			
	NormZ	1.59	$\mu V/(V/m)^2$		DCP Z	94	mV			
Sensitivity in Tissue Simulating Liquid										
Head 900 MHz		$\varepsilon_r$ = 41.5 ± 5%	σ=	0.97 ± 5% mho/m						
Valid for f=800-1000 MHz with Head Tissue Simulating Liquid according to EN 50361, P1528-200X										
	ConvF X 6.6		± 9.5% (k=2)		Boundary effect:					
	ConvF Y	6.6	± 9.5% (k=2)		Alpha	0.30				
	ConvF Z	6.6	± 9.5% (k=2)		Depth	2.75				
Head	1800 MHz		$\varepsilon_r$ = 40.0 ± 5%	σ=	= 1.40 ± 5% mho/m					
Valid for f=1	710-1910 MHz with Hea	d Tissu	e Simulating Liquid accordi	ng to EN 503	61, P1528-200X					
	ConvF X	5.4	± 9.5% (k=2)		Boundary effect	t:				
	ConvF Y	5.4	± 9.5% (k=2)		Alpha	0.45				

 $5.4 \pm 9.5\% (k=2)$ 

#### **Boundary Effect**

Head

Head

Sensor

ConvF Z

90	00 MHz	Typical SAR gradient: 5 %	per mm		
Probe Tip to	Boundary		1 mm	2 mm	
SAR <sub>be</sub> [%]	Without 0	Correction Algorithm	8.9	5.3	
SAR <sub>be</sub> [%]	With Con	rection Algorithm	0.3	0.5	
180	00 MHz	Typical SAR gradient: 10 9	% per mm		
Probe Tip to	Boundary		1 mm	2 mm	
SAR <sub>be</sub> [%]	Without 0	Correction Algorithm	13.7	9.6	
SAR <sub>be</sub> [%]	With Cor	rection Algorithm	0.2	0.2	
Offset					

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Probe Tip to Sensor Center

Optical Surface Detection

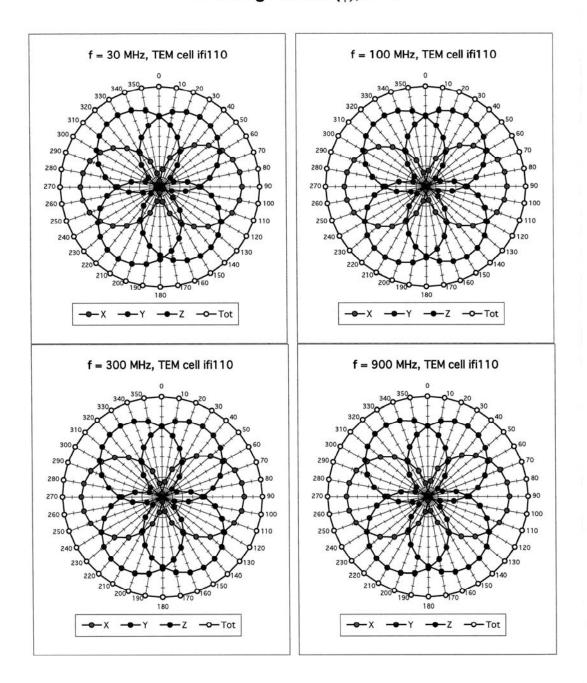
2.7

1.5 ± 0.2



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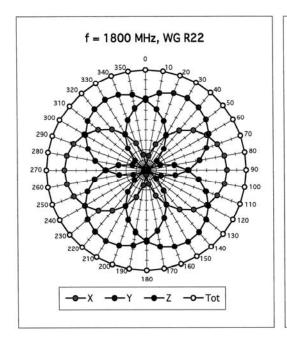
# Receiving Pattern ( $\phi$ ), $\theta$ = 0°

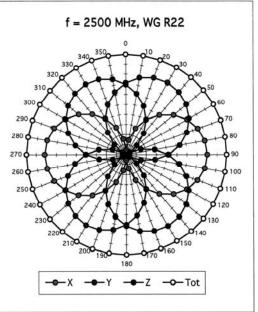


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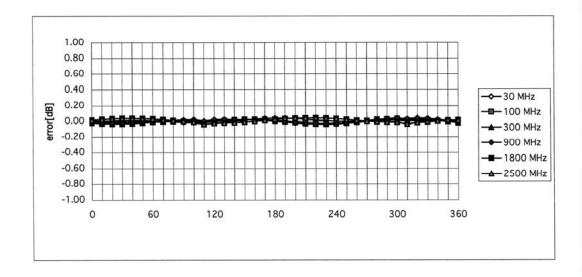


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# Isotropy Error ( $\phi$ ), $\theta = 0^{\circ}$



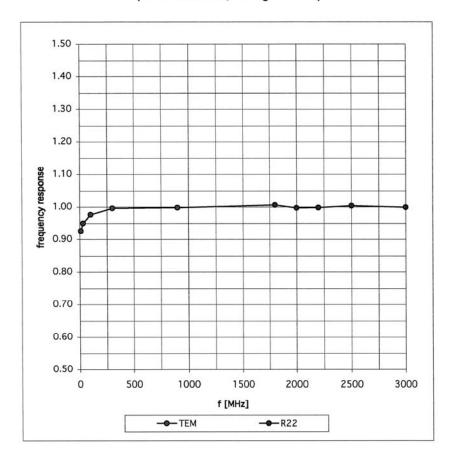
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## Frequency Response of E-Field

(TEM-Cell:ifi110, Waveguide R22)

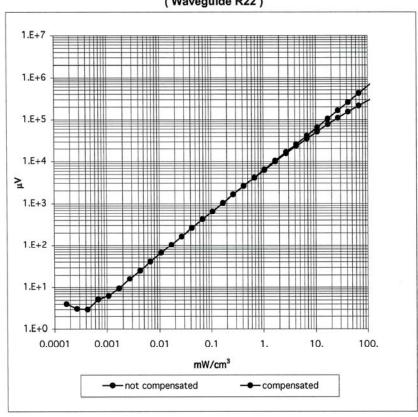


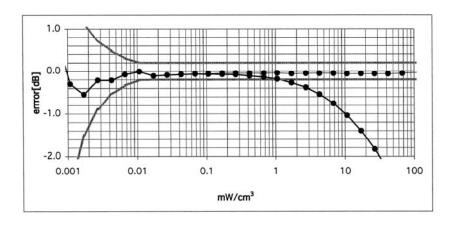


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## Dynamic Range f(SARhead)

(Waveguide R22)



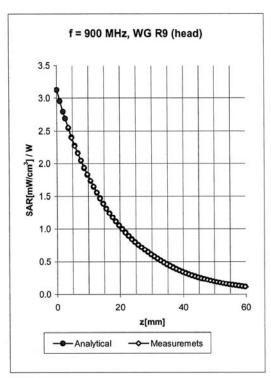


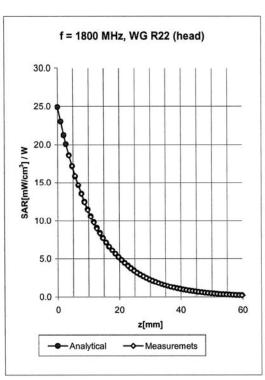
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#### **Conversion Factor Assessment**





Boundary effect:

Head 900 MHz  $\epsilon_r = 41.5 \pm 5\%$   $\sigma = 0.97 \pm 5\%$  mho/m

Valid for f=800-1000 MHz with Head Tissue Simulating Liquid according to EN 50361, P1528-200X

 ConvF X
 6.6  $\pm 9.5\%$  (k=2)
 Boundary effect:

 ConvF Y
 6.6  $\pm 9.5\%$  (k=2)
 Alpha
 0.30

 ConvF Z
 6.6  $\pm 9.5\%$  (k=2)
 Depth
 2.75

Head 1800 MHz  $\epsilon_r = 40.0 \pm 5\%$   $\sigma = 1.40 \pm 5\%$  mho/m

Valid for f=1710-1910 MHz with Head Tissue Simulating Liquid according to EN 50361, P1528-200X

 $5.4 \pm 9.5\% (k=2)$ 

ConvF Y 5.4 ± 9.5% (k=2) Alpha 0.45 ConvF Z 5.4 ± 9.5% (k=2) Depth 2.82

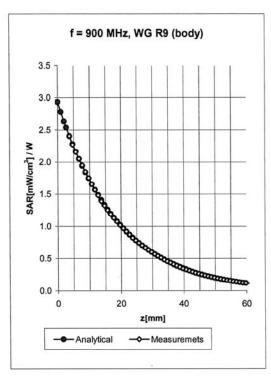
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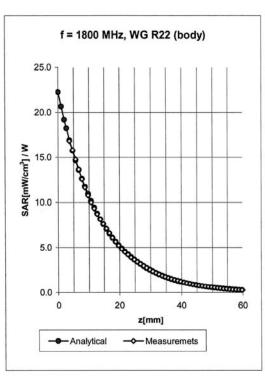
ConvF X



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#### **Conversion Factor Assessment**





Boundary effect:

Body 900 MHz  $\varepsilon_r$  = 55.0 ± 5%  $\sigma = 1.05 \pm 5\% \text{ mho/m}$ 

Valid for f=800-1000 MHz with Body Tissue Simulating Liquid according to OET 65 Suppl. C

ConvF X 6.3 ± 9.5% (k=2) Boundary effect: ConvF Y  $6.3 \pm 9.5\% (k=2)$ Alpha 0.31

6.3  $\pm$  9.5% (k=2) 2.91 ConvF Z Depth

1800 MHz  $\varepsilon_r$  = 53.3 ± 5%  $\sigma$  = 1.52 ± 5% mho/m Body

Valid for f=1710-1910 MHz with Body Tissue Simulating Liquid according to OET 65 Suppl. C 4.8 ± 9.5% (k=2)

> ConvF Y 4.8 ± 9.5% (k=2) Alpha 0.50 ConvF Z 4.8 ± 9.5% (k=2) Depth 2.84

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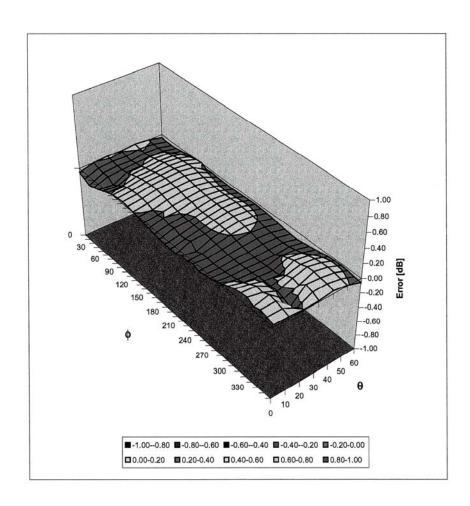
ConvF X



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### **Deviation from Isotropy in HSL**

Error  $(\theta,\phi)$ , f = 900 MHz



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