

## Calibration Results Summary

<b>Probe Type:</b>	E-Field Probe E-020
<b>Serial Number:</b>	225
<b>Frequency:</b>	1900 MHz
<b>Sensor Offset:</b>	1.56 mm
<b>Sensor Length:</b>	2.5 mm
<b>Tip Enclosure:</b>	Ertalyte*
<b>Tip Diameter:</b>	<5 mm
<b>Tip Length:</b>	60 mm
<b>Total Length:</b>	290 mm

\*Resistive to recommended tissue recipes per IEEE-1528

## Sensitivity in Air

<b>Channel X:</b>	1.2 $\mu\text{V}/(\text{V}/\text{m})^2$
<b>Channel Y:</b>	1.2 $\mu\text{V}/(\text{V}/\text{m})^2$
<b>Channel Z:</b>	1.2 $\mu\text{V}/(\text{V}/\text{m})^2$
<b>Diode Compression Point:</b>	95 mV

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### **Sensitivity in Body Tissue**

**Frequency:** 1900 MHz

**Epsilon:** 54.0 (+/-5%)

**Sigma:** 1.45 S/m (+/-10%)

#### **ConvF**

**Channel X:** 3.8

**Channel Y:** 3.8

**Channel Z:** 3.8

Tissue sensitivity values were calculated using the load impedance of the APREL Laboratories Daq-Paq.

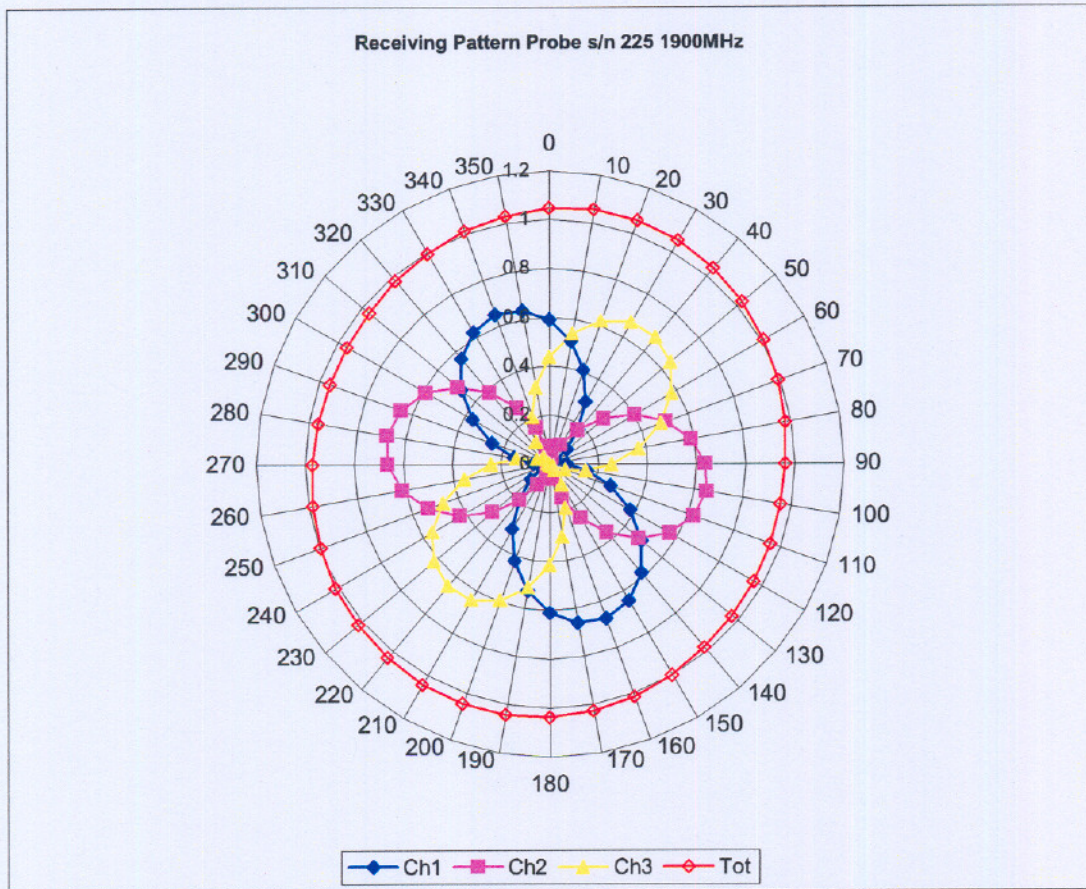
#### **Boundary Effect:**

Uncertainty resulting from the boundary effect is less than 2% for the distance between the tip of the probe and the tissue boundary, when less than 2.44mm.

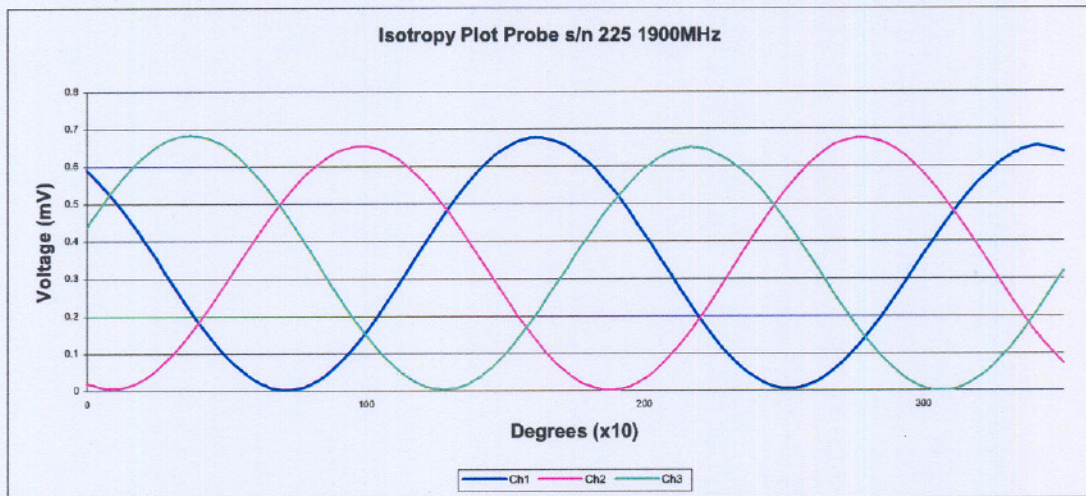
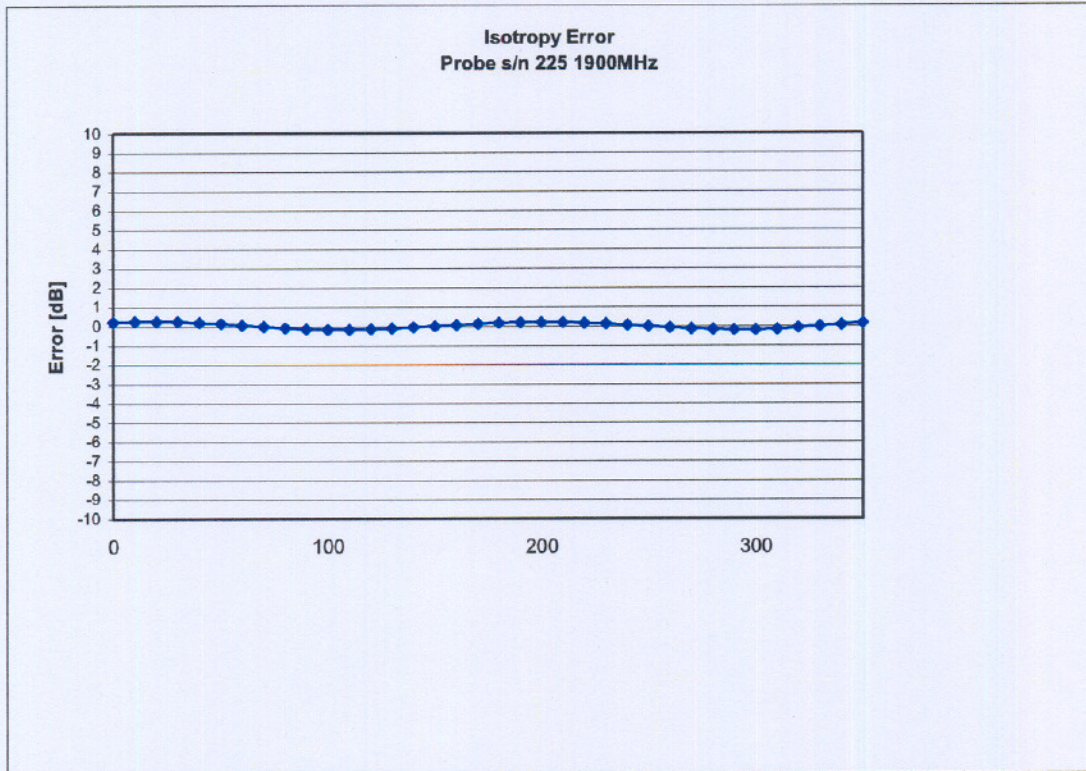
#### **Spatial Resolution:**

The measured probe tip diameter is 5 mm (+/- 0.01 mm) and therefore meets the requirements of SSI/DRB-TP-D01-032 for spatial resolution.

### Receiving Pattern 1900 MHz (Air)



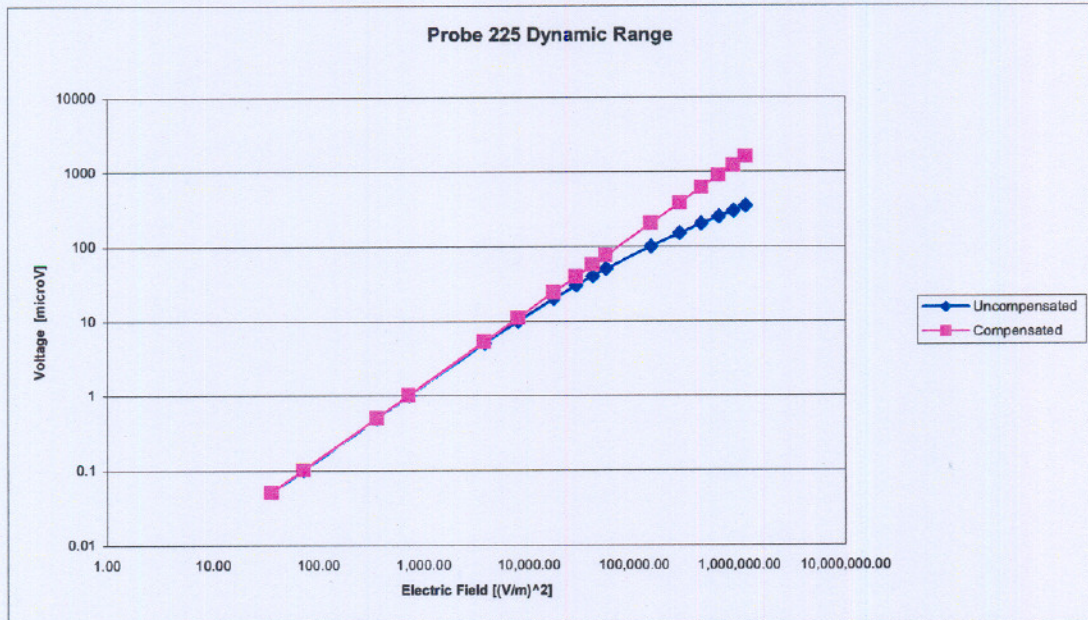
### Isotropy Error 1900 MHz (Air)



**Isotropy:**

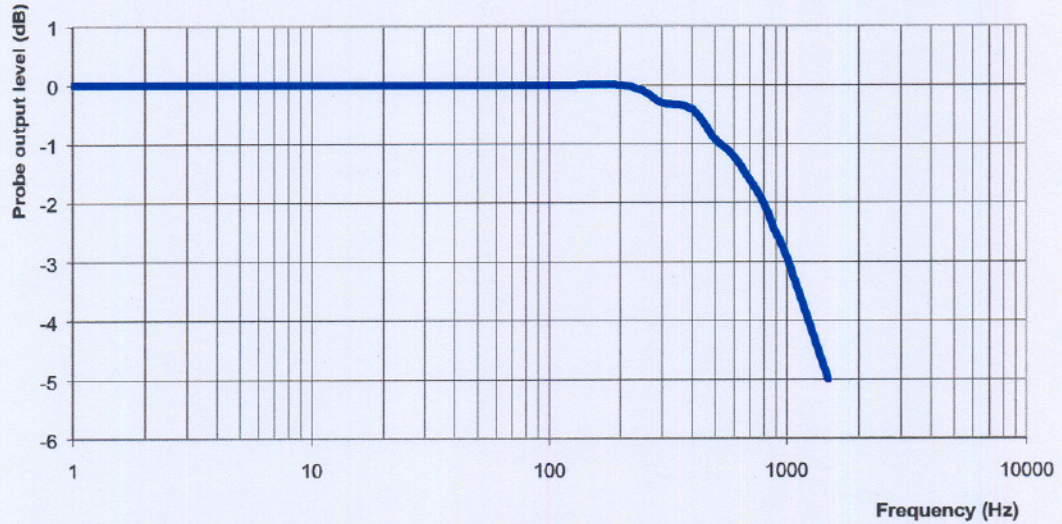
0.10 dB

## Dynamic Range



## Video Bandwidth

**Probe Frequency Characteristics**



**Video Bandwidth at 500 Hz**                      1 dB  
**Video Bandwidth at 1.02 KHz:**                3 dB

**Conversion Factor Uncertainty Assessment**

<b>Frequency:</b>		1900MHz	
<b>Epsilon:</b>	54.0 (+/-5%)	<b>Sigma:</b>	1.45 S/m (+/-10%)
<b>ConvF</b>			
<b>Channel X:</b>	3.8	7%(K=2)	
<b>Channel Y:</b>	3.8	7%(K=2)	
<b>Channel Z:</b>	3.8	7%(K=2)	

To minimize the uncertainty calculation all tissue sensitivity values were calculated using a load impedance of 5 M $\Omega$ .

**Boundary Effect:**

For a distance of 2.4mm the evaluated uncertainty (increase in the probe sensitivity) is less than 2%.

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### **Test Equipment**

The test equipment used during Probe Calibration, manufacturer, model number and, current calibration status are listed and located on the main APREL server R:\NCL\Calibration Equipment\Instrument List May 2004.



**Dipole Calibration**