

***APPENDIX C - PROBE CALIBRATION***

# Probe ET3DV6

SN:1590

Manufactured:	March 19, 2001
Calibrated:	March 26, 2001

Calibrated for System DASY3

## DASY3 - Parameters of Probe: ET3DV6 SN:1590

### Sensitivity in Free Space

NormX	<b>1.77</b> $\mu\text{V}/(\text{V}/\text{m})^2$
NormY	<b>1.91</b> $\mu\text{V}/(\text{V}/\text{m})^2$
NormZ	<b>1.67</b> $\mu\text{V}/(\text{V}/\text{m})^2$

### Diode Compression

DCP X	<b>100</b> mV
DCP Y	<b>100</b> mV
DCP Z	<b>100</b> mV

### Sensitivity in Tissue Simulating Liquid

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

ConvF X	<b>7.36</b> extrapolated	Boundary effect:
ConvF Y	<b>7.36</b> extrapolated	Alpha <b>0.29</b>
ConvF Z	<b>7.36</b> extrapolated	Depth <b>2.72</b>

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

ConvF X	<b>6.83</b> $\pm 7\%$ (k=2)	Boundary effect:
ConvF Y	<b>6.83</b> $\pm 7\%$ (k=2)	Alpha <b>0.37</b>
ConvF Z	<b>6.83</b> $\pm 7\%$ (k=2)	Depth <b>2.48</b>

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

ConvF X	<b>6.13</b> interpolated	Boundary effect:
ConvF Y	<b>6.13</b> interpolated	Alpha <b>0.47</b>
ConvF Z	<b>6.13</b> interpolated	Depth <b>2.17</b>

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

ConvF X	<b>5.78</b> $\pm 7\%$ (k=2)	Boundary effect:
ConvF Y	<b>5.78</b> $\pm 7\%$ (k=2)	Alpha <b>0.53</b>
ConvF Z	<b>5.78</b> $\pm 7\%$ (k=2)	Depth <b>2.01</b>

### Sensor Offset

Probe Tip to Sensor Center	<b>2.7</b>	mm
Optical Surface Detection	<b>1.2 <math>\pm</math> 0.2</b>	mm

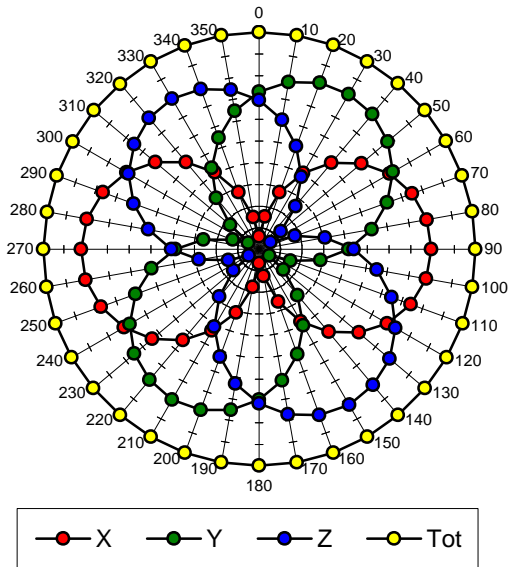
ET3DV6 SN:1590

## DASY3 - Parameters of Probe: ET3DV6 SN: 1590

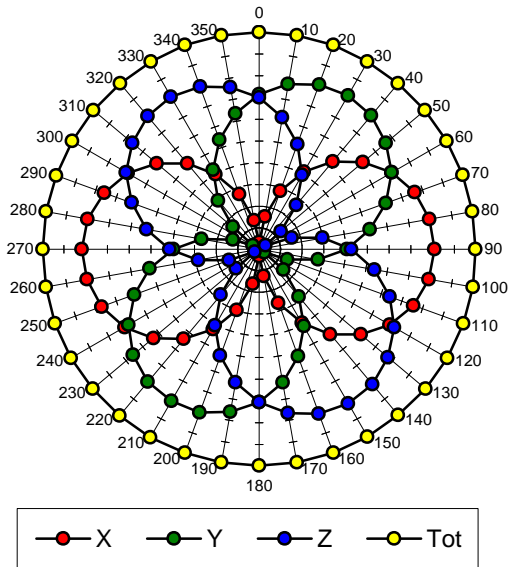
<b>Body</b>	<b>450 MHz</b>	<b><math>e_r = 56.7 \pm 5\%</math></b>	<b><math>\sigma = 0.94 \pm 10\%</math> mho/m</b>
	ConvF X	<b>7.23</b> extrapolated	
	ConvF Y	<b>7.23</b> extrapolated	
	ConvF Z	<b>7.23</b> extrapolated	
<b>Body</b>	<b>900 MHz</b>	<b><math>e_r = 55.0 \pm 5\%</math></b>	<b><math>\sigma = 1.05 \pm 10\%</math> mho/m</b>
	ConvF X	<b>6.61</b> $\pm 7\%$ (k=2)	
	ConvF Y	<b>6.61</b> $\pm 7\%$ (k=2)	
	ConvF Z	<b>6.61</b> $\pm 7\%$ (k=2)	
<b>Body</b>	<b>1500 MHz</b>	<b><math>e_r = 54.0 \pm 5\%</math></b>	<b><math>\sigma = 1.30 \pm 10\%</math> mho/m</b>
	ConvF X	<b>5.78</b> interpolated	
	ConvF Y	<b>5.78</b> interpolated	
	ConvF Z	<b>5.78</b> interpolated	
<b>Body</b>	<b>1800 MHz</b>	<b><math>e_r = 53.3 \pm 5\%</math></b>	<b><math>\sigma = 1.52 \pm 10\%</math> mho/m</b>
	ConvF X	<b>5.36</b> $\pm 7\%$ (k=2)	
	ConvF Y	<b>5.36</b> $\pm 7\%$ (k=2)	
	ConvF Z	<b>5.36</b> $\pm 7\%$ (k=2)	

## Receiving Pattern ( $f$ ), $q = 0^\circ$

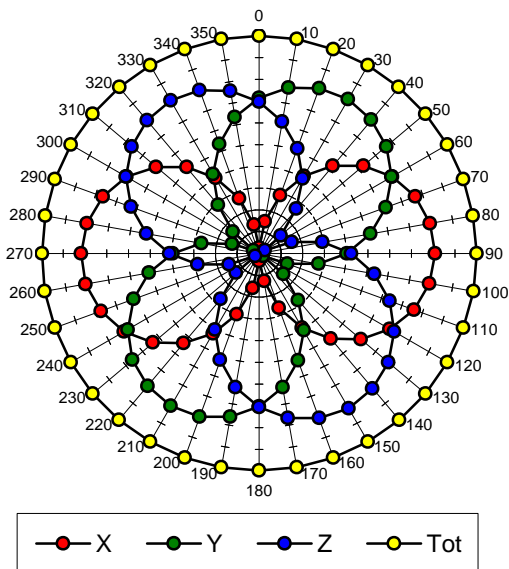
**f = 30 MHz, TEM cell ifi110**



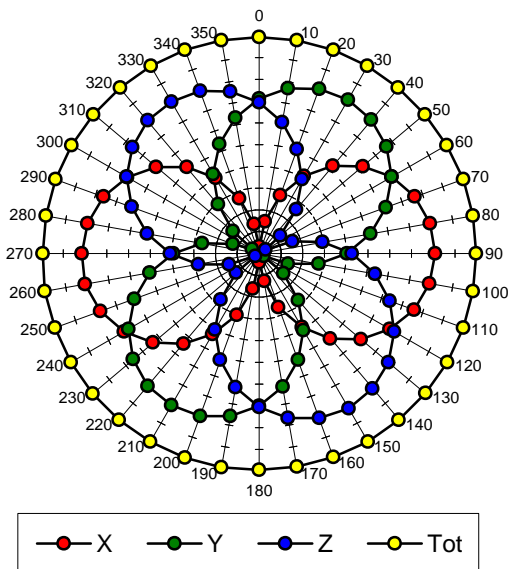
**f = 100 MHz, TEM cell ifi110**

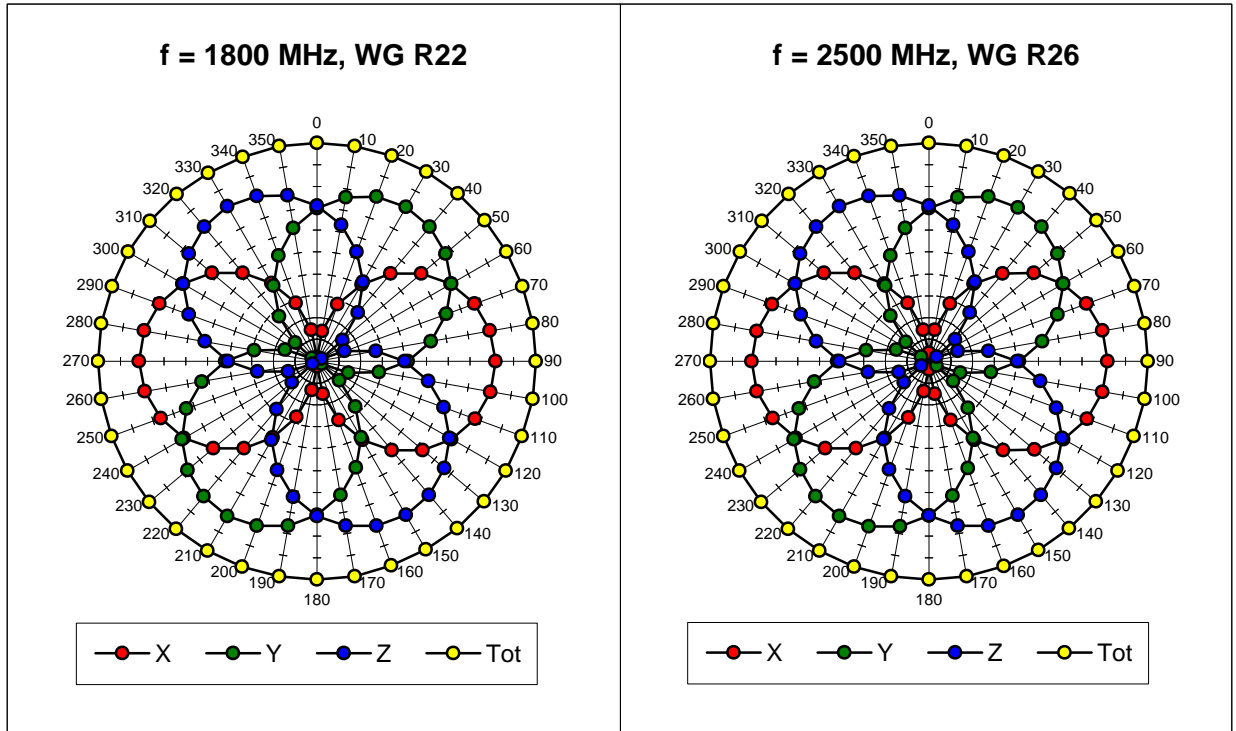


**f = 300 MHz, TEM cell ifi110**

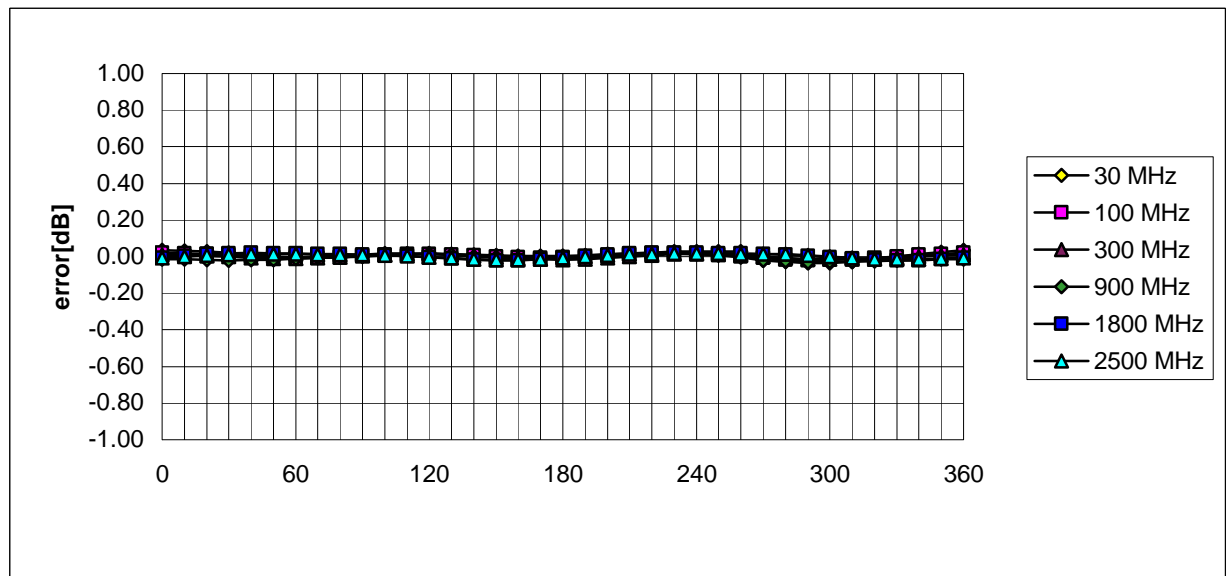


**f = 900 MHz, TEM cell ifi110**



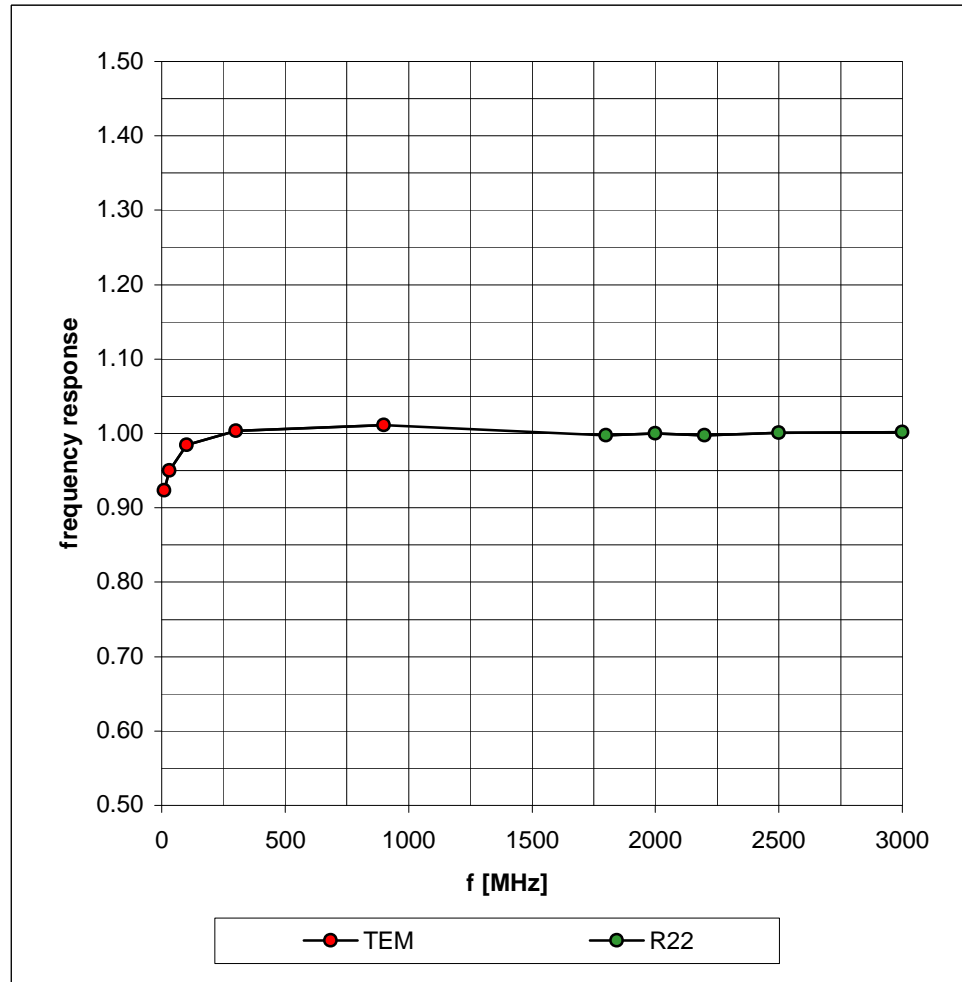


### Isotropy Error (f), q = 0°

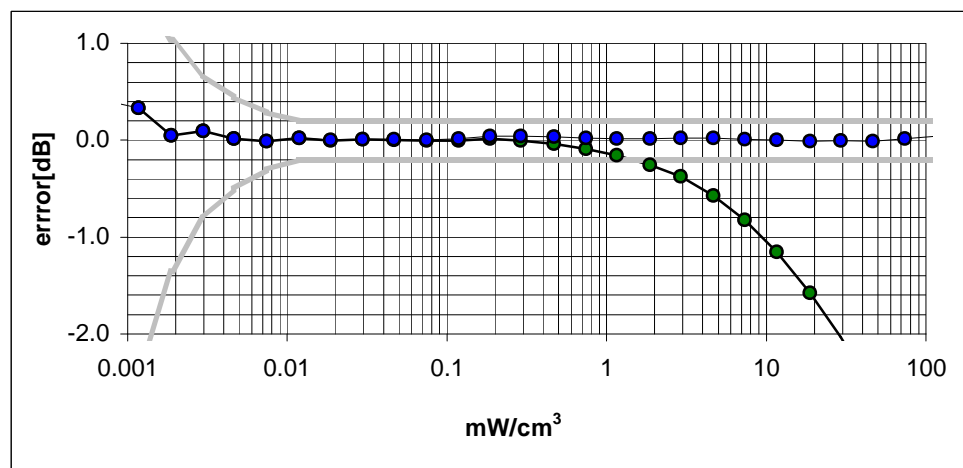
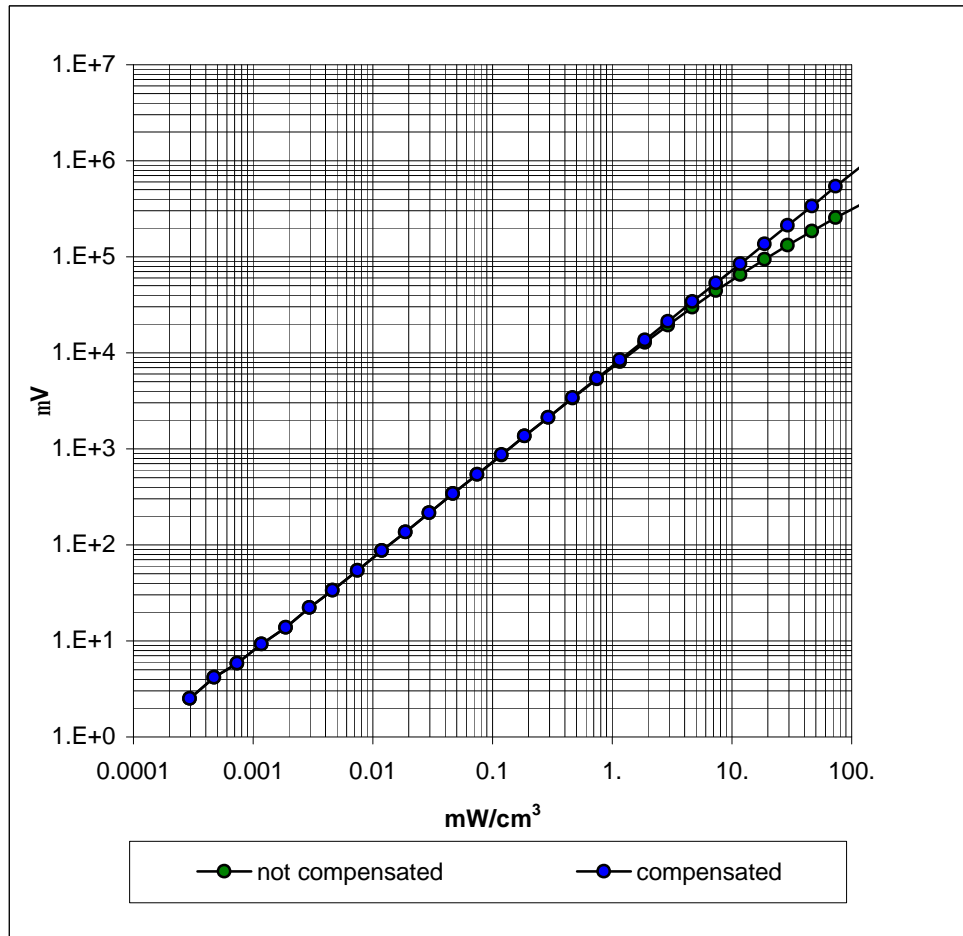


# Frequency Response of E-Field

( TEM-Cell:ifi110, Waveguide R22)

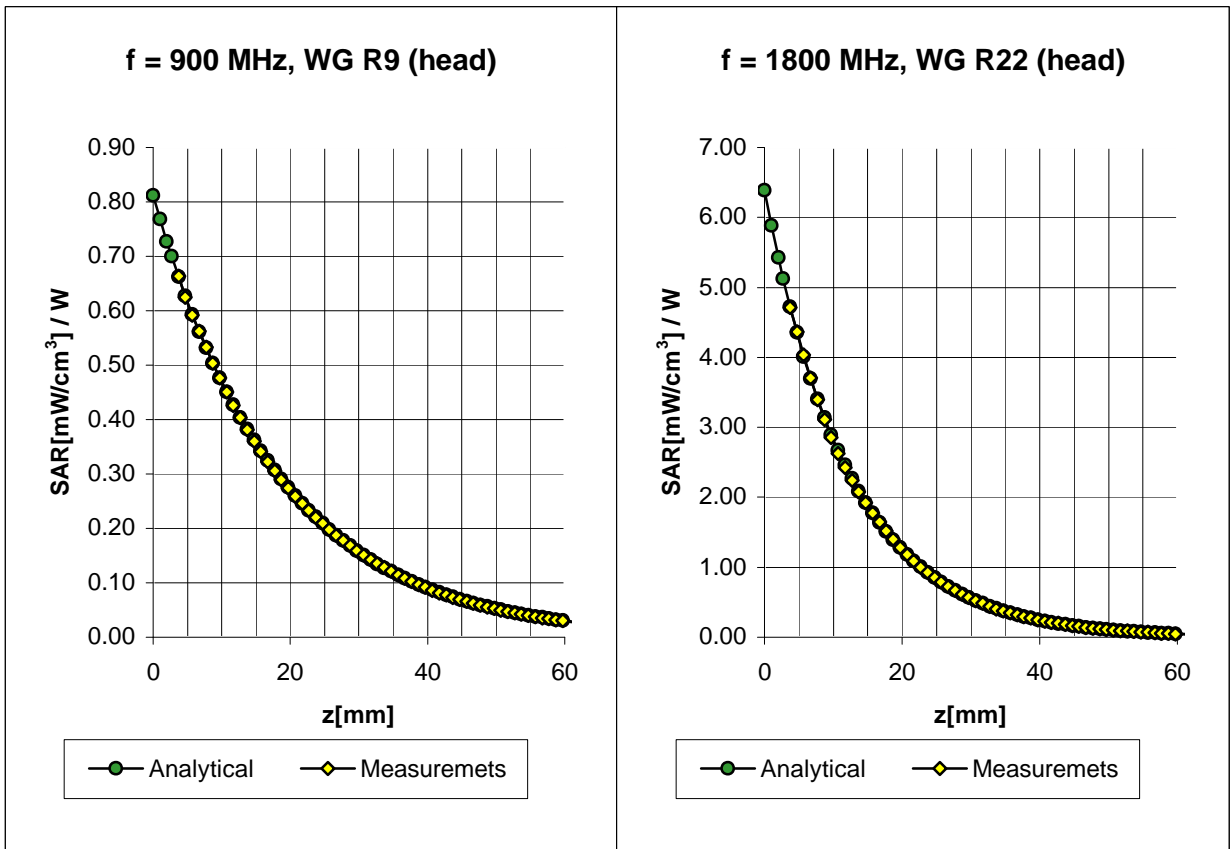


### Dynamic Range f(SAR<sub>brain</sub>) ( TEM-Cell:ifi110 )





# Conversion Factor Assessment



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# Deviation from Isotropy in HSL

Error ( $qf$ ),  $f = 900$  MHz

