



## DASY/EASY – Parameters of Probe: ES3DV3 - SN: 3154

### Calibration Parameter Determined in Body Tissue Simulating Media

f [MHz] <sup>C</sup>	Relative Permittivity <sup>F</sup>	Conductivity (S/m) <sup>F</sup>	ConvF X	ConvF Y	ConvF Z	Alpha <sup>G</sup>	Depth <sup>G</sup> (mm)	Unct. (k=2)
750	55.5	0.96	6.34	6.34	6.34	0.40	1.40	± 12.1%
900	55.0	1.05	6.08	6.08	6.08	0.43	1.58	± 12.1%
1750	53.4	1.49	4.90	4.90	4.90	0.74	1.28	± 12.1%
1900	53.3	1.52	4.74	4.74	4.74	0.50	1.40	± 12.1%
2100	53.2	1.62	4.94	4.94	4.94	0.70	1.35	± 12.1%
2300	52.9	1.81	4.51	4.51	4.51	0.63	1.50	± 12.1%
2450	52.7	1.95	4.39	4.39	4.39	0.70	1.38	± 12.1%
2600	52.5	2.16	4.22	4.22	4.22	0.80	1.20	± 12.1%

<sup>C</sup> Frequency validity above 300 MHz of ±100MHz only applies for DASY v4.4 and higher (Page 2), else it is restricted to ±50MHz. The uncertainty is the RSS of ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Above 5 GHz frequency validity can be extended to ± 110 MHz.

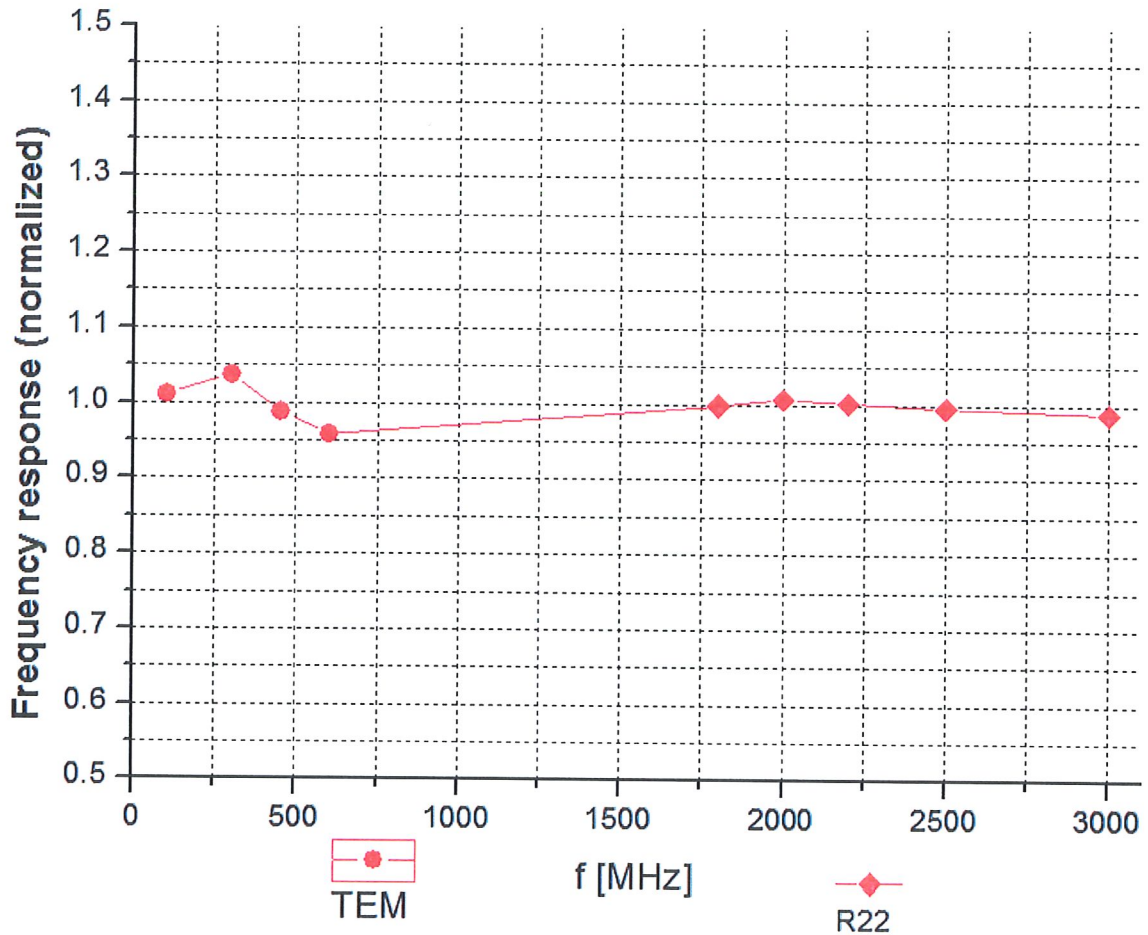
<sup>F</sup> At frequency below 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) can be relaxed to ±10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) is restricted to ±5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

<sup>G</sup> Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for the frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.



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## Frequency Response of E-Field (TEM-Cell: ifi110 EXX, Waveguide: R22)

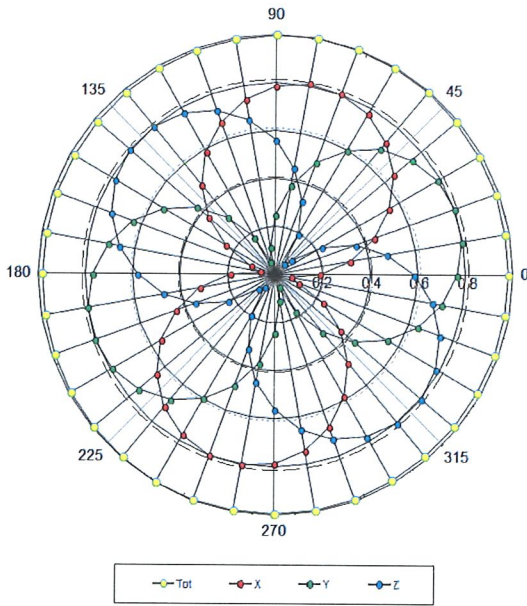


Uncertainty of Frequency Response of E-field:  $\pm 7.4\%$  (k=2)

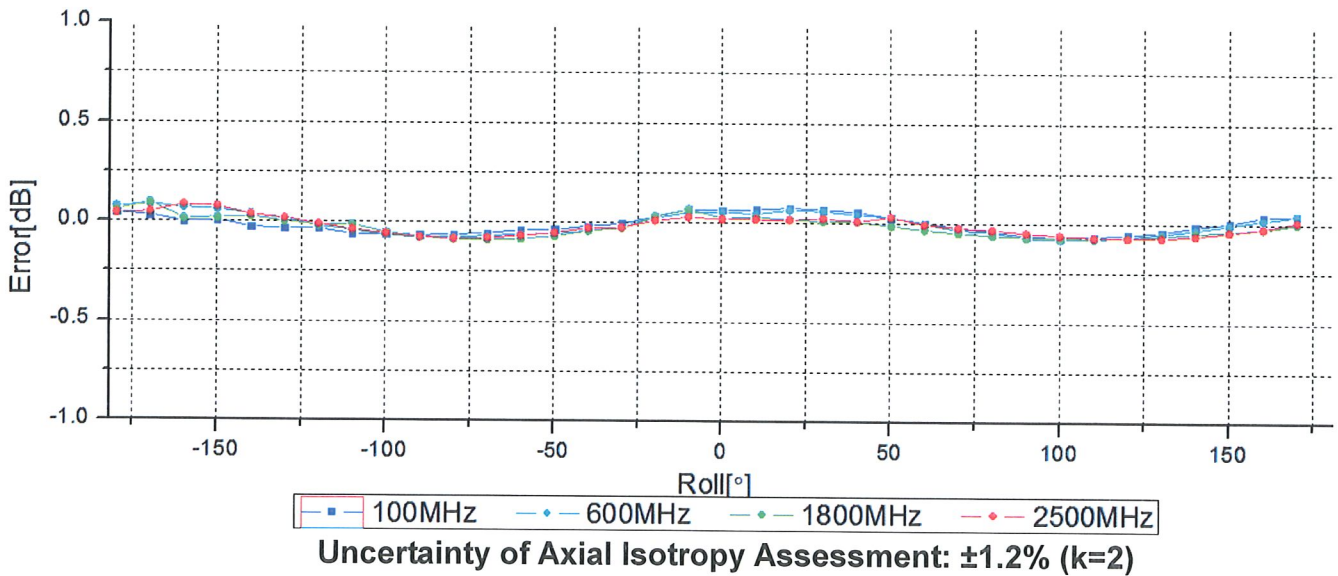
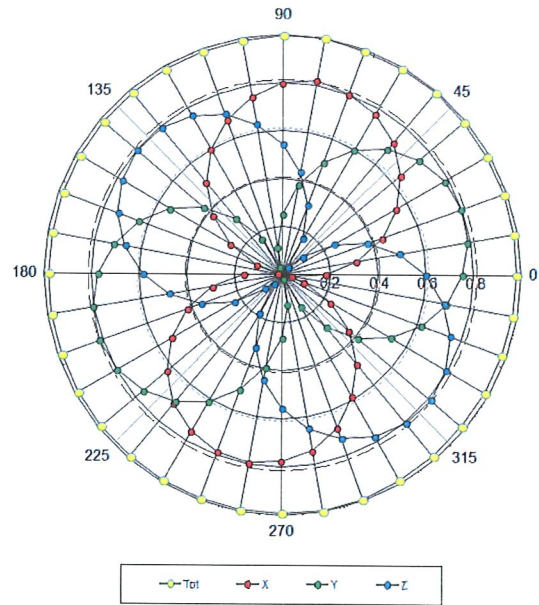


## Receiving Pattern ( $\Phi$ ), $\theta=0^\circ$

### f=600 MHz, TEM



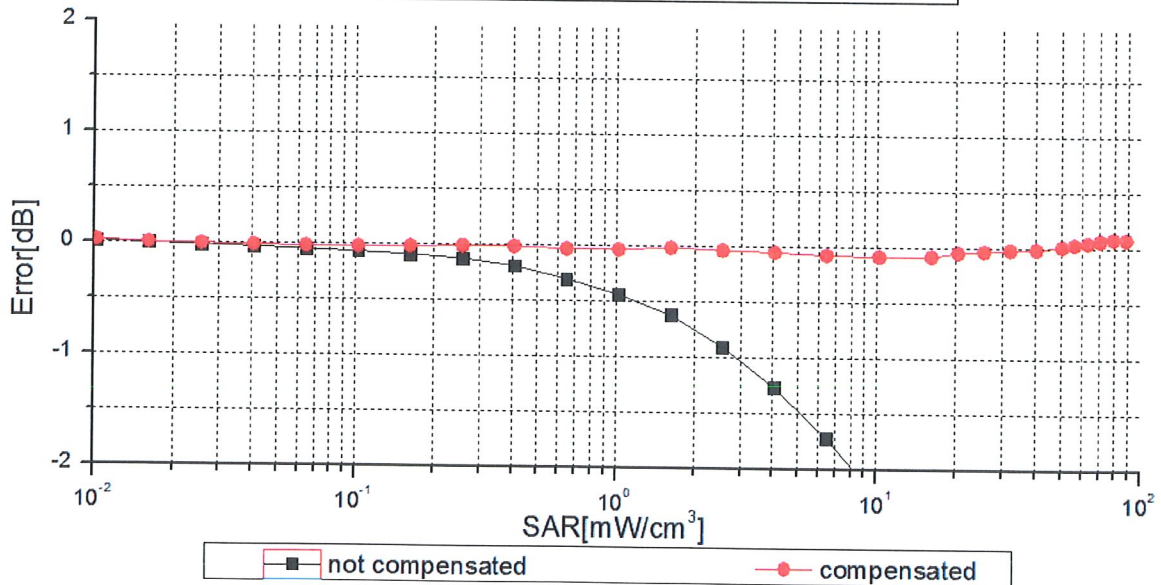
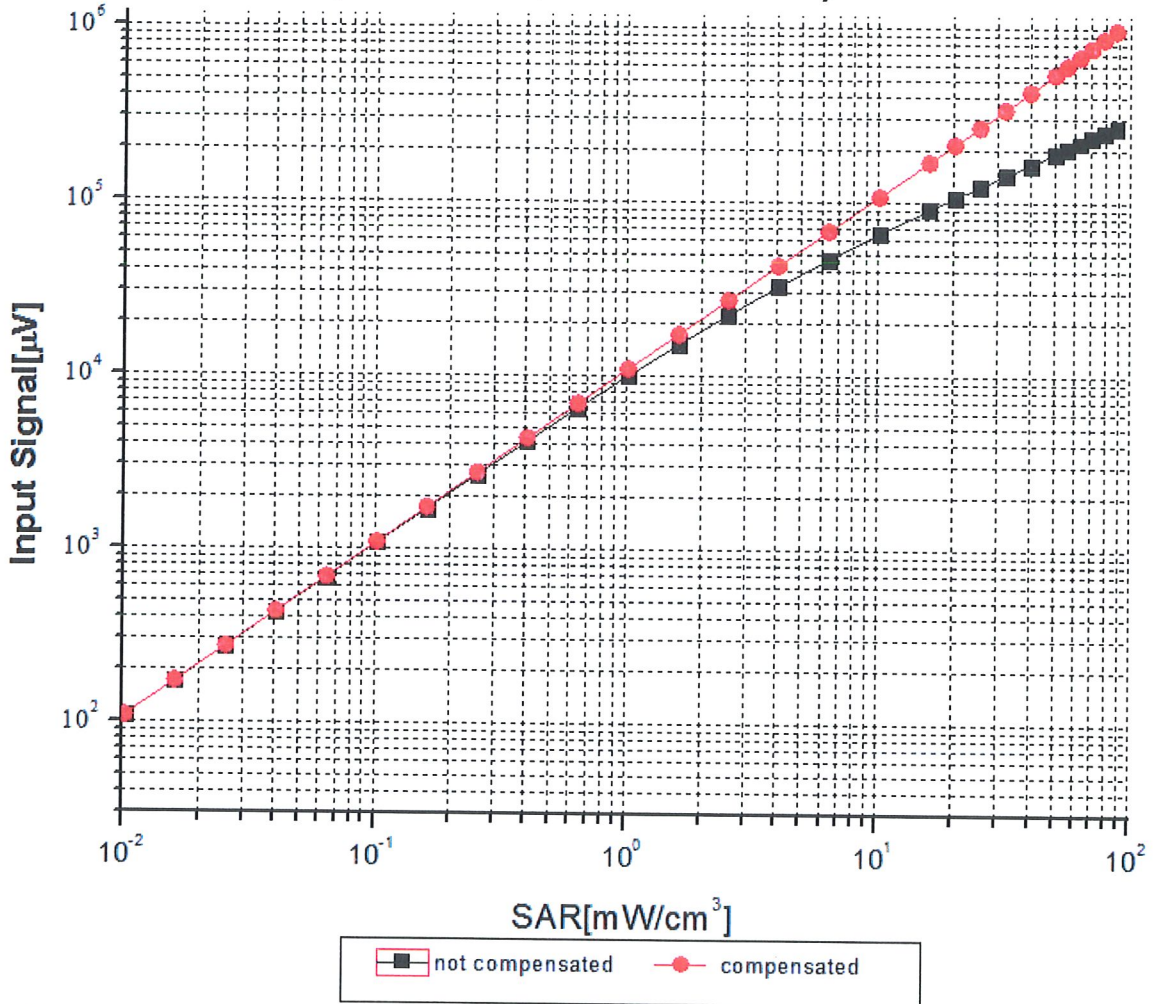
### f=1800 MHz, R22







### Dynamic Range f(SAR<sub>head</sub>) (TEM cell, f = 900 MHz)



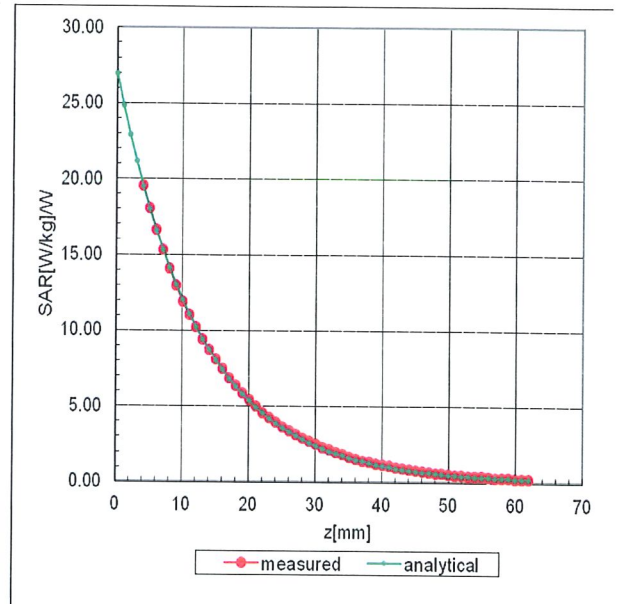
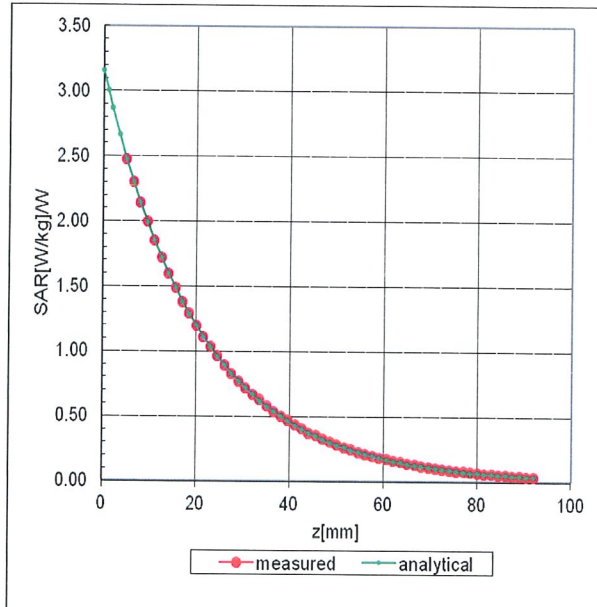
Uncertainty of Linearity Assessment: ±0.9% (k=2)



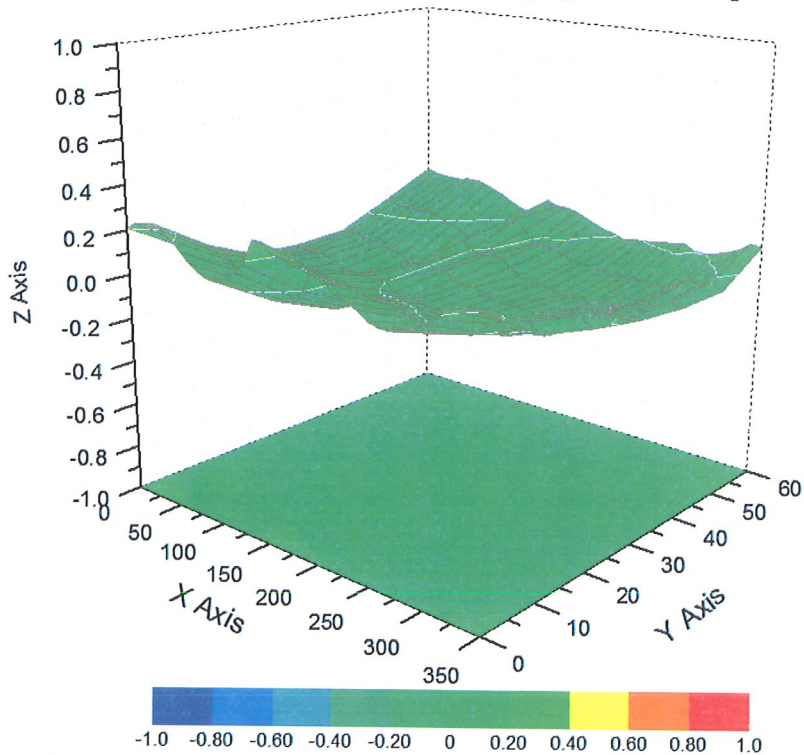
## Conversion Factor Assessment

f=750 MHz, WGLS R9(H\_convF)

f=1750 MHz, WGLS R22(H\_convF)



## Deviation from Isotropy in Liquid



Uncertainty of Spherical Isotropy Assessment:  $\pm 3.2\%$  (K=2)



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### Other Probe Parameters

<b>Sensor Arrangement</b>	<b>Triangular</b>
<b>Connector Angle (°)</b>	<b>63.2</b>
<b>Mechanical Surface Detection Mode</b>	<b>enabled</b>
<b>Optical Surface Detection Mode</b>	<b>disable</b>
<b>Probe Overall Length</b>	<b>337mm</b>
<b>Probe Body Diameter</b>	<b>10mm</b>
<b>Tip Length</b>	<b>10mm</b>
<b>Tip Diameter</b>	<b>4mm</b>
<b>Probe Tip to Sensor X Calibration Point</b>	<b>2mm</b>
<b>Probe Tip to Sensor Y Calibration Point</b>	<b>2mm</b>
<b>Probe Tip to Sensor Z Calibration Point</b>	<b>2mm</b>
<b>Recommended Measurement Distance from Surface</b>	<b>3mm</b>