



## DASY/EASY – Parameters of Probe: EX3DV4 – SN: 3661

### Calibration Parameter Determined in Head 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	41.9	0.89	9.62	9.62	9.62	0.30	0.80	± 12%
835	41.5	0.90	9.35	9.35	9.35	0.10	1.69	± 12%
900	41.5	0.97	9.57	9.57	9.57	0.20	1.79	± 12%
1450	40.5	1.20	8.54	8.54	8.54	0.10	1.45	± 12%
1750	40.1	1.37	8.37	8.37	8.37	0.15	1.58	± 12%
1900	40.0	1.40	8.10	8.10	8.10	0.17	1.58	± 12%
2000	40.0	1.40	8.11	8.11	8.11	0.16	1.58	± 12%
2300	39.5	1.67	7.83	7.83	7.83	0.34	0.91	± 12%
2450	39.2	1.80	7.32	7.32	7.32	0.31	1.05	± 12%
2600	39.0	1.96	7.17	7.17	7.17	0.38	0.93	± 12%
3500	37.9	2.91	7.14	7.14	7.14	0.39	1.08	± 13%
5300	35.9	4.76	5.29	5.29	5.29	0.40	1.38	± 13%
5600	35.5	5.07	4.95	4.95	4.95	0.40	1.30	± 13%
5800	35.3	5.27	4.90	4.90	4.90	0.45	1.33	± 13%

<sup>C</sup> Frequency validity 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.

<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.



## DASY/EASY – Parameters of Probe: EX3DV4 – SN: 3661

### 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	9.83	9.83	9.83	0.40	0.83	± 12%
835	55.2	0.97	9.65	9.65	9.65	0.12	1.79	± 12%
900	55.0	1.05	9.52	9.52	9.52	0.18	1.31	± 12%
1450	54.0	1.30	8.33	8.33	8.33	0.11	1.71	± 12%
1750	53.4	1.49	8.11	8.11	8.11	0.17	1.73	± 12%
1900	53.3	1.52	7.79	7.79	7.79	0.16	1.84	± 12%
2000	53.3	1.52	7.88	7.88	7.88	0.16	2.36	± 12%
2300	52.9	1.81	7.72	7.72	7.72	0.48	0.84	± 12%
2450	52.7	1.95	7.44	7.44	7.44	0.37	1.06	± 12%
2600	52.5	2.16	7.29	7.29	7.29	0.50	0.82	± 12%
3500	51.3	3.31	6.52	6.52	6.52	0.55	1.00	± 13%
5300	48.9	5.42	4.69	4.69	4.69	0.45	1.68	± 13%
5600	48.5	5.77	4.28	4.28	4.28	0.50	1.52	± 13%
5800	48.2	6.00	4.37	4.37	4.37	0.50	1.55	± 13%

<sup>C</sup> Frequency validity 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.

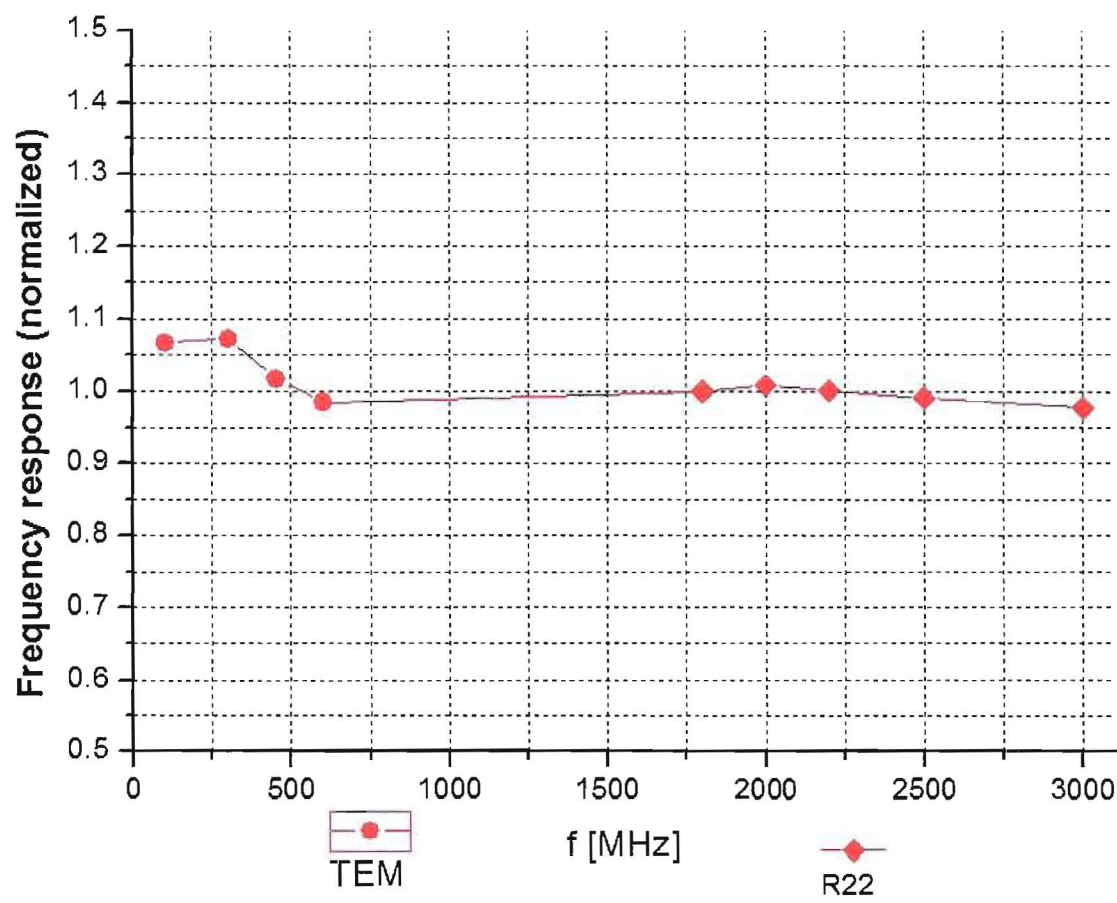
<sup>F</sup> At frequency below 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) can be relaxed to ±10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) is restricted to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



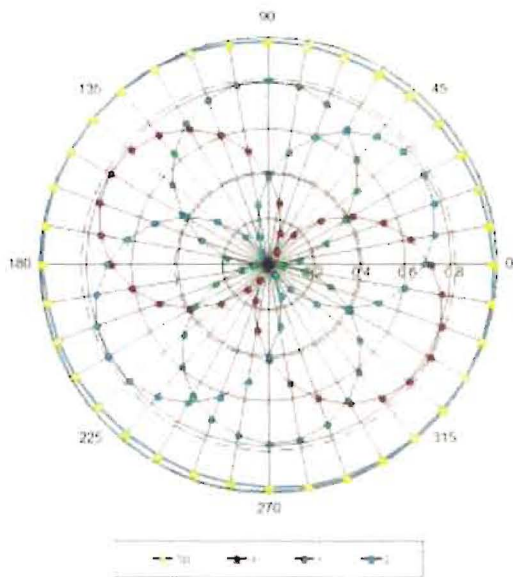
Uncertainty of Frequency Response of E-field:  $\pm 7.5\%$  ( $k=2$ )



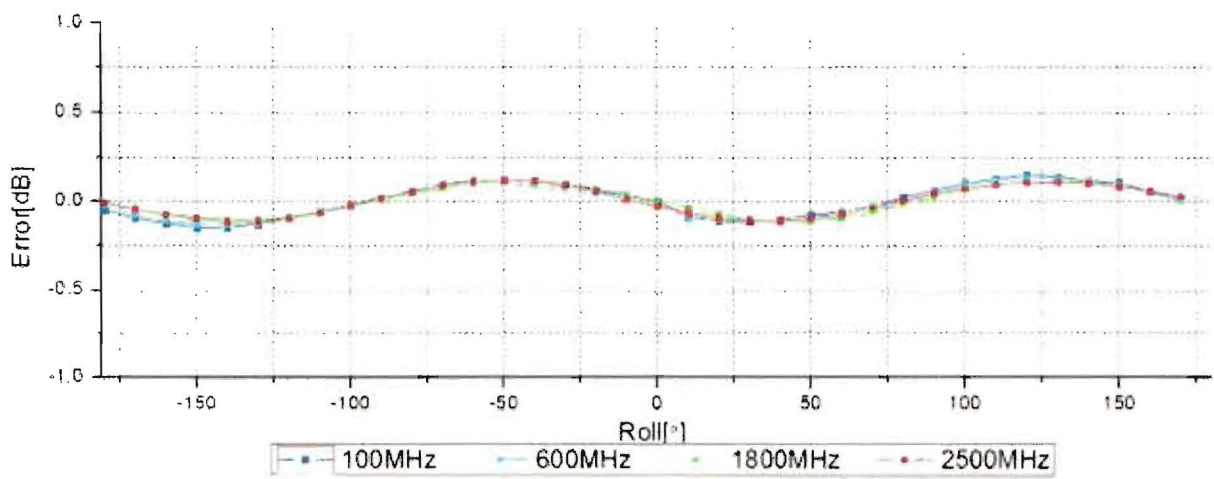
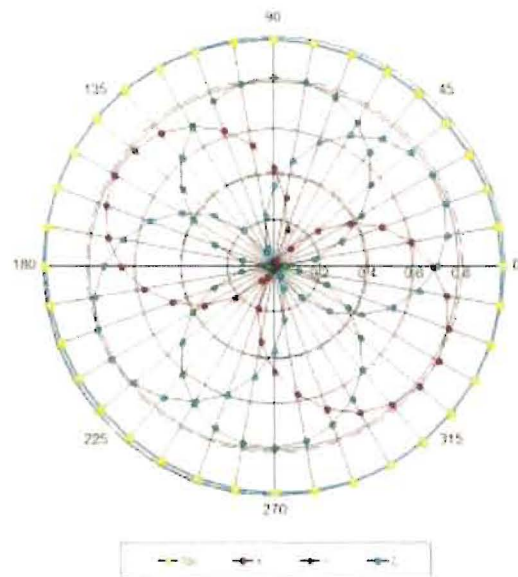


## Receiving Pattern ( $\Phi$ ), $\theta=0^\circ$

**f=600 MHz, TEM**



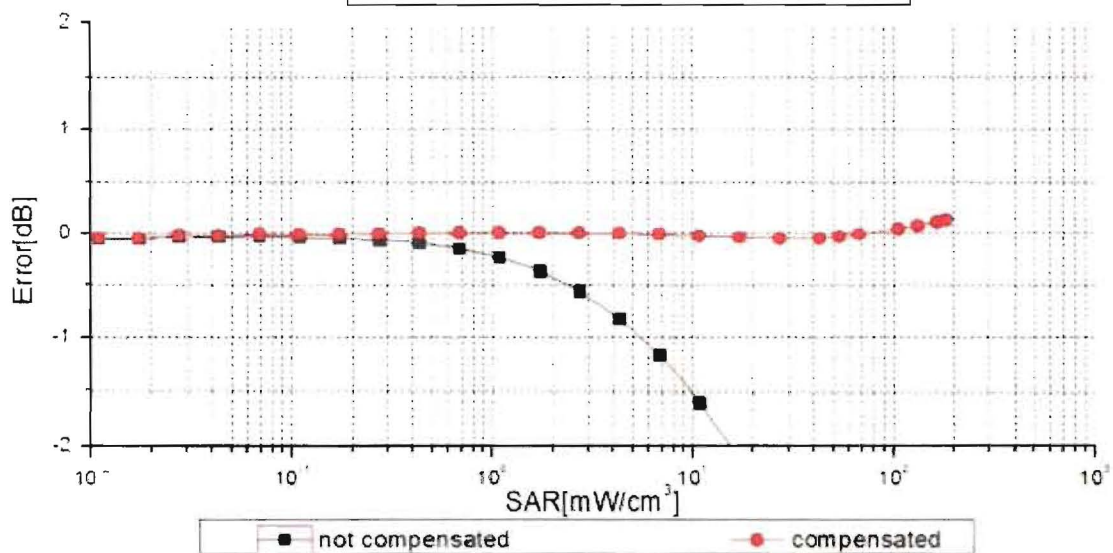
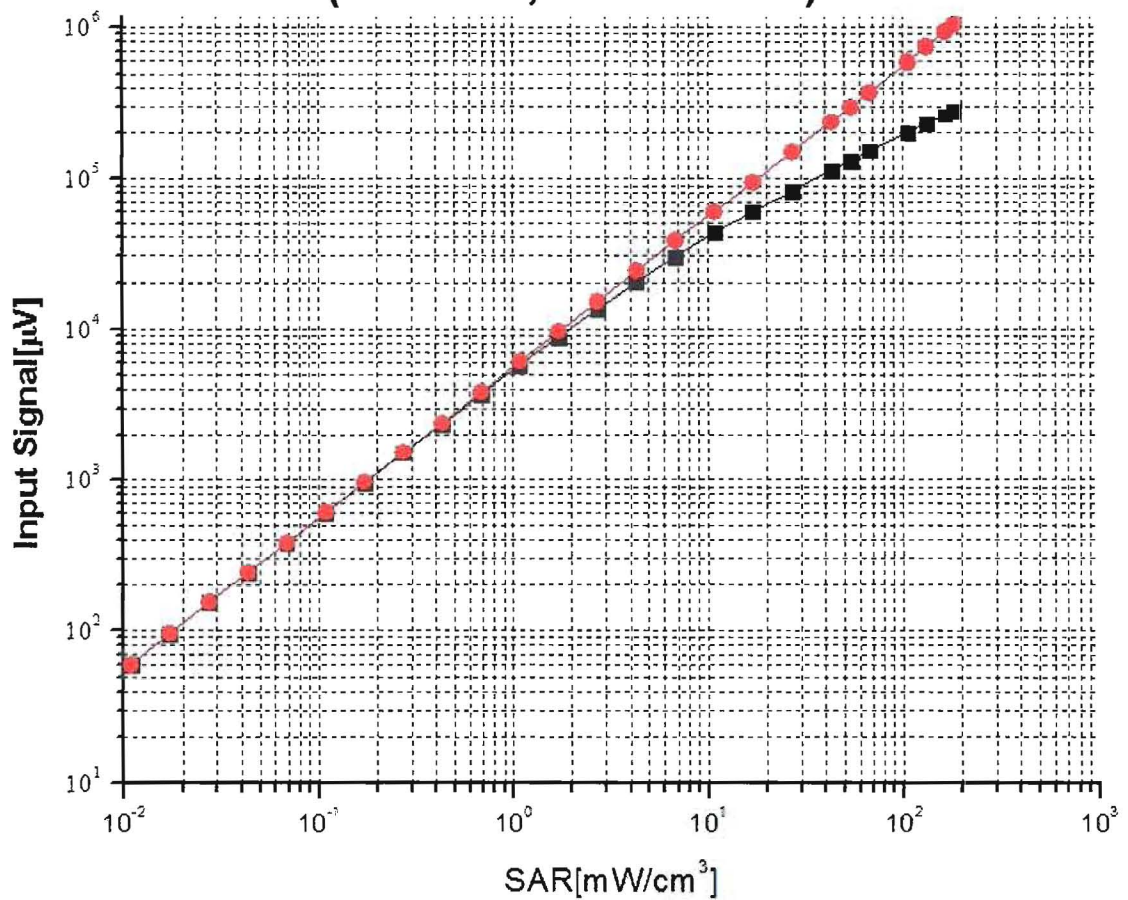
**f=1800 MHz, R22**



Uncertainty of Axial Isotropy Assessment:  $\pm 0.9\%$  (k=2)



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

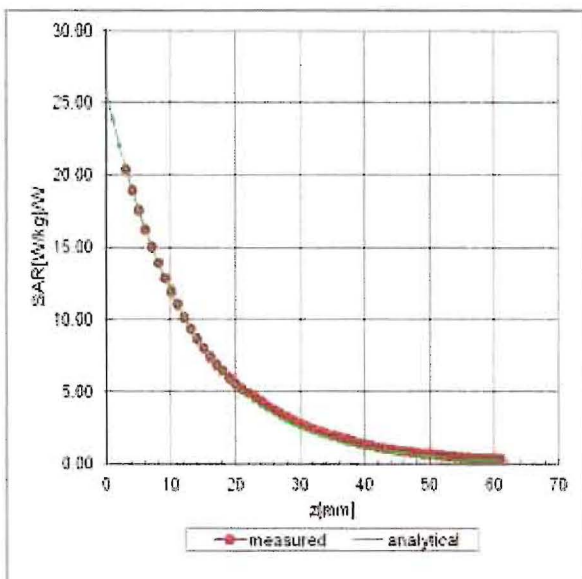
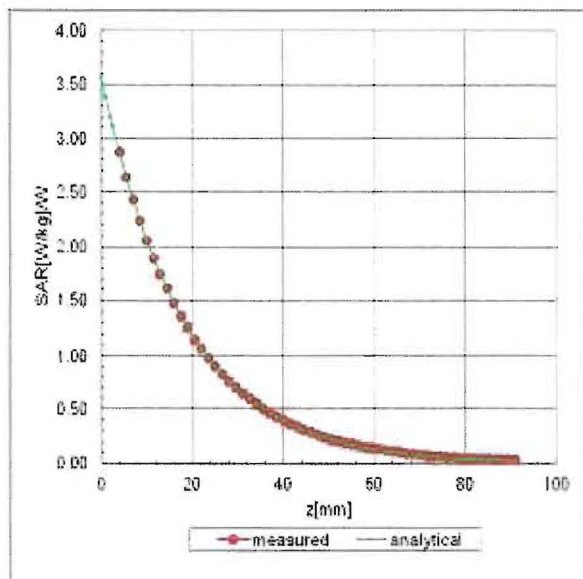


Uncertainty of Linearity Assessment:  $\pm 0.9\%$  ( $k=2$ )

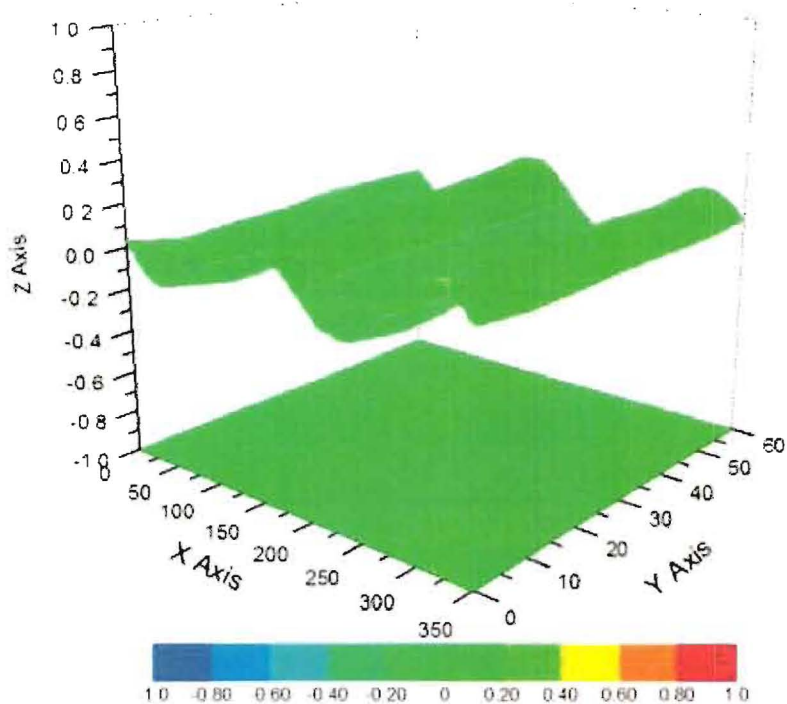
## Conversion Factor Assessment

**f=900 MHz, WGLS R9(H\_convF)**

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



## Deviation from Isotropy in Liquid



**Uncertainty of Spherical Isotropy Assessment:  $\pm 2.8\%$  (K=2)**



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Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	130
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disable
Probe Overall Length	337mm
Probe Body Diameter	10mm
Tip Length	9mm
Tip Diameter	2.5mm
Probe Tip to Sensor X Calibration Point	1mm
Probe Tip to Sensor Y Calibration Point	1mm
Probe Tip to Sensor Z Calibration Point	1mm
Recommended Measurement Distance from Surface	1.4mm