



In Collaboration with

s p e a g**CALIBRATION LABORATORY**

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DASY/EASY – Parameters of Probe: EX3DV4 – SN:3982

Calibration Parameter Determined in Head Tissue Simulating Media

f [MHz] ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha ^G	Depth ^G (mm)	Unct. (k=2)
750	41.9	0.89	10.40	10.40	10.40	0.11	1.54	±12.1%
835	41.5	0.90	10.02	10.02	10.02	0.18	1.17	±12.1%
1750	40.1	1.37	8.50	8.50	8.50	0.21	1.02	±12.1%
1900	40.0	1.40	8.33	8.33	8.33	0.25	1.08	±12.1%
2300	39.5	1.67	8.06	8.06	8.06	0.43	0.86	±12.1%
2450	39.2	1.80	7.77	7.77	7.77	0.40	0.93	±12.1%
2600	39.0	1.96	7.58	7.58	7.58	0.49	0.80	±12.1%
3300	38.2	2.71	7.34	7.34	7.34	0.36	1.01	±13.3%
3500	37.9	2.91	7.07	7.07	7.07	0.30	1.05	±13.3%
3700	37.7	3.12	6.75	6.75	6.75	0.42	1.01	±13.3%
3900	37.5	3.32	6.62	6.62	6.62	0.35	1.35	±13.3%
4100	37.2	3.53	6.65	6.65	6.65	0.40	1.15	±13.3%
4400	36.9	3.84	6.46	6.46	6.46	0.35	1.35	±13.3%
4600	36.7	4.04	6.34	6.34	6.34	0.45	1.20	±13.3%
4800	36.4	4.25	6.29	6.29	6.29	0.40	1.30	±13.3%
4950	36.3	4.40	6.03	6.03	6.03	0.40	1.35	±13.3%
5250	35.9	4.71	5.55	5.55	5.55	0.45	1.35	±13.3%
5600	35.5	5.07	5.00	5.00	5.00	0.50	1.25	±13.3%
5750	35.4	5.22	5.10	5.10	5.10	0.55	1.15	±13.3%

^C 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.

^F At frequency below 3 GHz, the validity of tissue parameters (ϵ and σ) 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 (ϵ and σ) is restricted to ±5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

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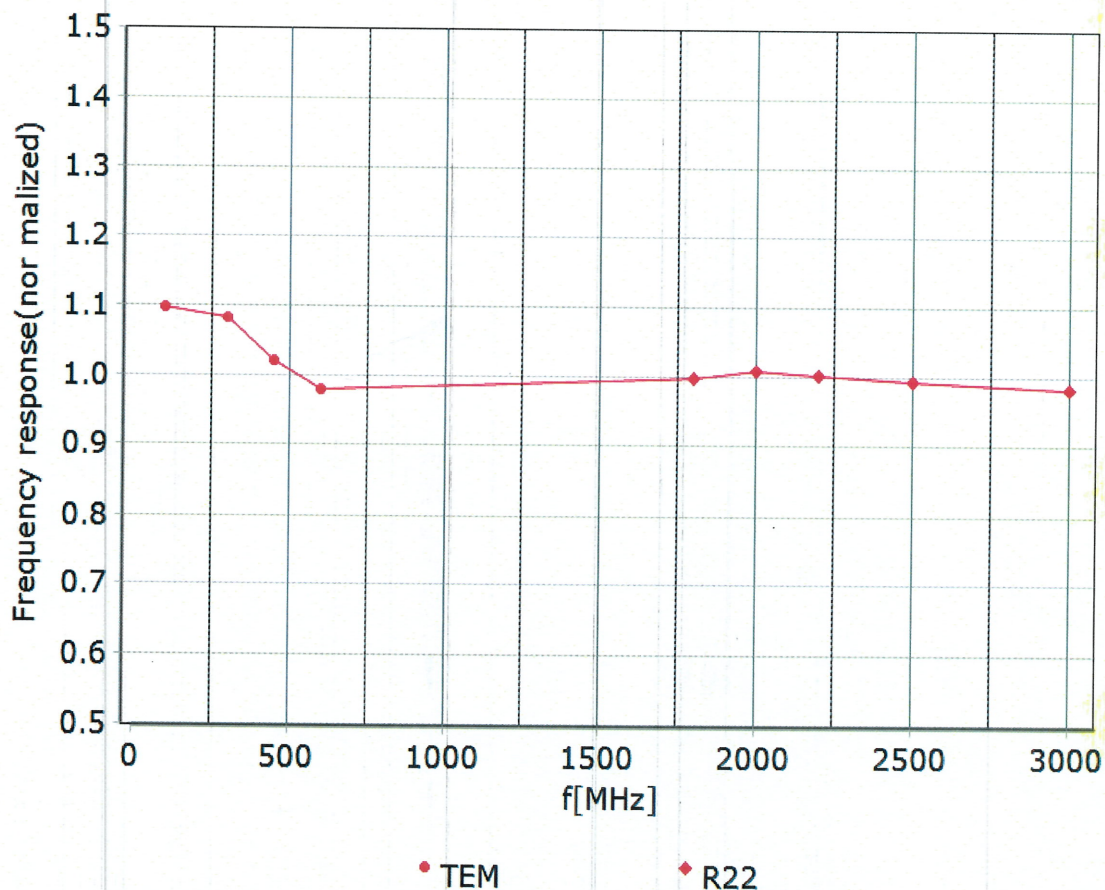
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Frequency Response of E-Field (TEM-Cell: ifi110 EXX, Waveguide: R22)



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

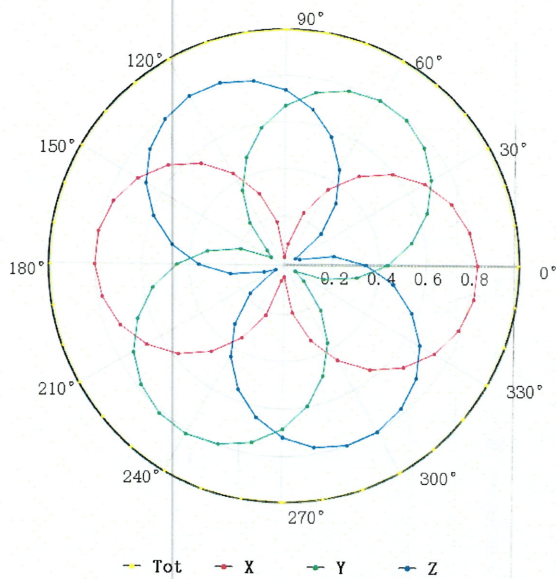


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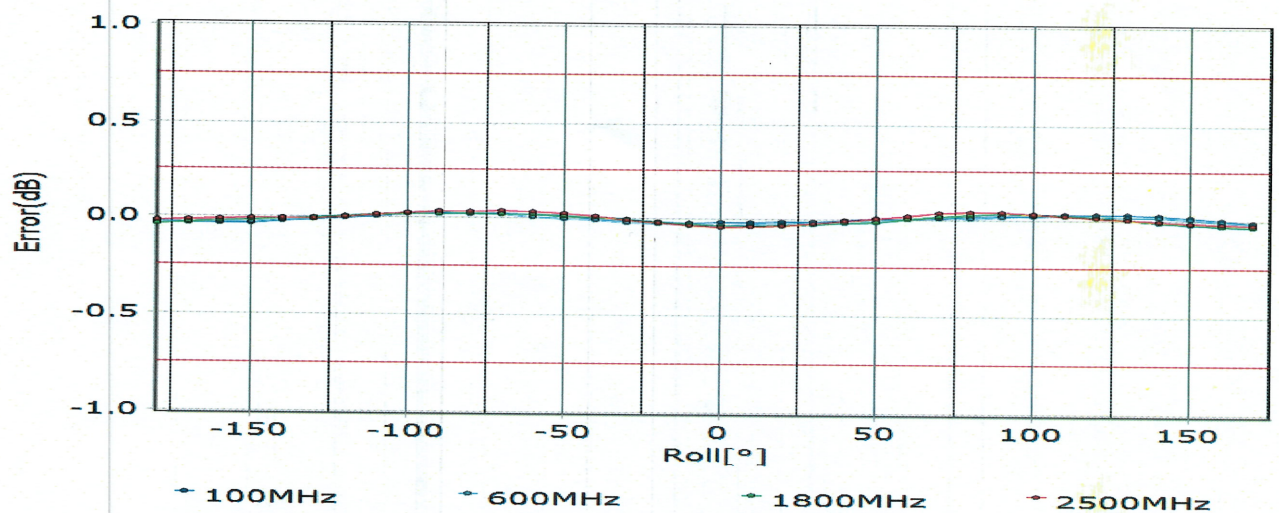
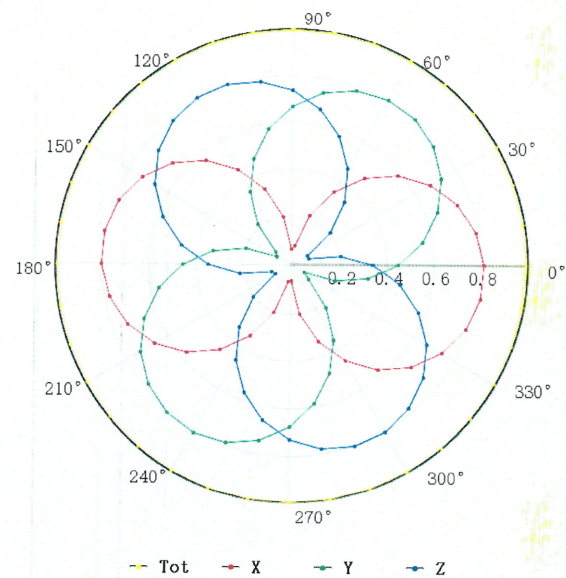
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Receiving Pattern (Φ), $\theta=0^\circ$

f=600 MHz, TEM



f=1800 MHz, R22



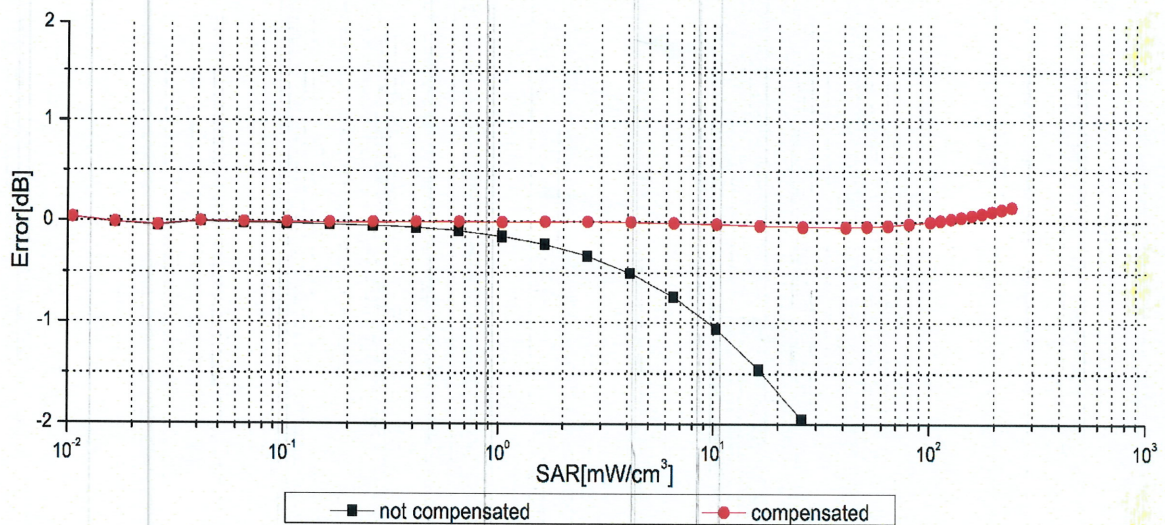
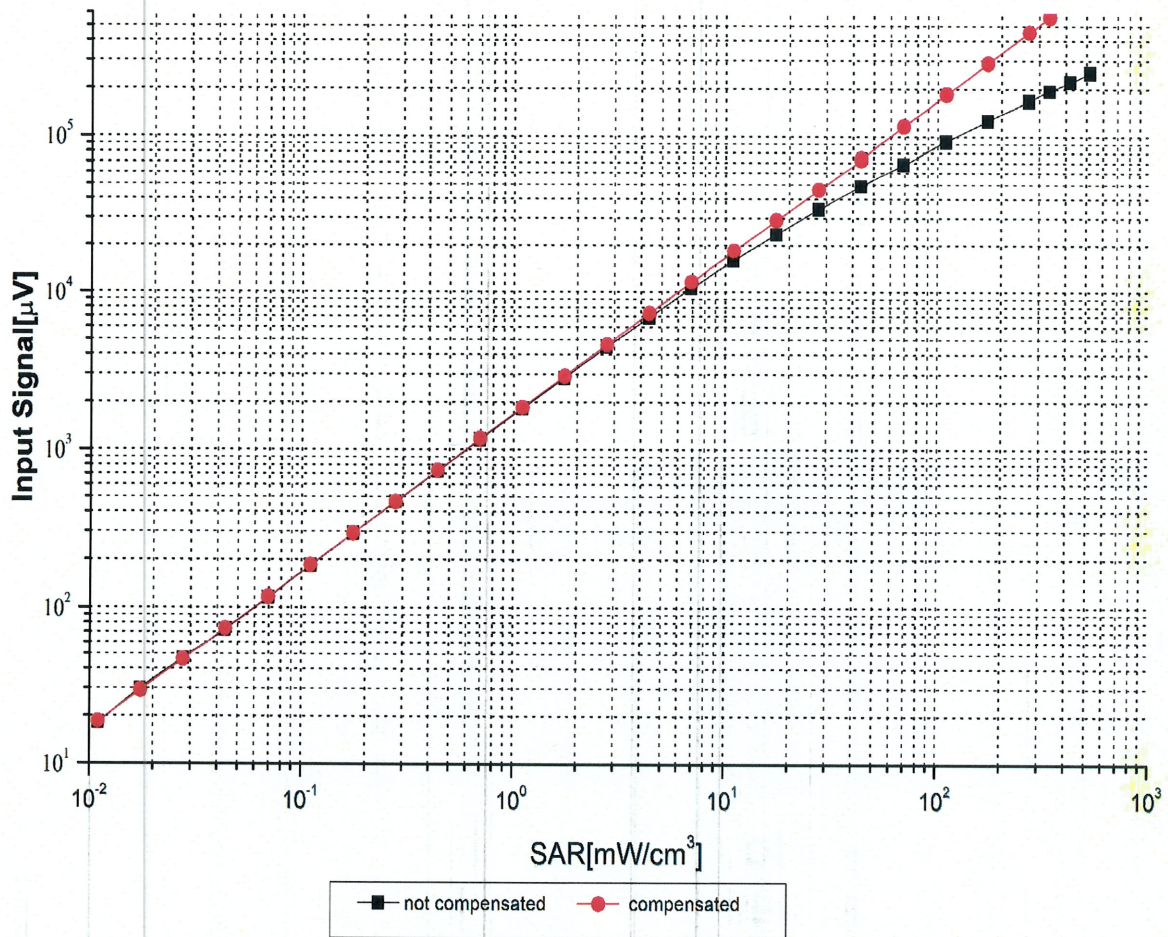
Uncertainty of Axial Isotropy Assessment: $\pm 1.2\%$ ($k=2$)



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Dynamic Range f(SAR_{head}) (TEM cell, f = 900 MHz)



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