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DASY/EASY – Parameters of Probe: EX3DV4 – SN:3970

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	10.70	10.70	10.70	0.19	1.18	±13%
835	41.5	0.90	10.28	10.28	10.28	0.16	1.32	±13%
900	41.5	0.97	10.26	10.26	10.26	0.14	1.40	±13%
1750	40.1	1.37	8.88	8.88	8.88	0.28	0.96	±13%
1900	40.0	1.40	8.53	8.53	8.53	0.23	1.12	±13%
2300	39.5	1.67	8.29	8.29	8.29	0.62	0.67	±13%
2450	39.2	1.80	8.03	8.03	8.03	0.57	0.71	±13%
2600	39.0	1.96	7.87	7.87	7.87	0.65	0.67	±13%
3500	37.9	2.91	7.22	7.22	7.22	0.41	1.01	±14%
3700	37.7	3.12	7.02	7.02	7.02	0.41	1.07	±14%
3900	37.5	3.32	6.92	6.92	6.92	0.30	1.52	±14%
4100	37.2	3.53	6.82	6.82	6.82	0.40	1.15	±14%
4200	37.1	3.63	6.72	6.72	6.72	0.30	1.52	±14%
4400	36.9	3.84	6.62	6.62	6.62	0.30	1.52	±14%
4600	36.7	4.04	6.55	6.55	6.55	0.40	1.30	±14%
4800	36.4	4.25	6.50	6.50	6.50	0.40	1.38	±14%
4950	36.3	4.40	6.28	6.28	6.28	0.40	1.38	±14%
5250	35.9	4.71	5.67	5.67	5.67	0.40	1.52	±14%
5600	35.5	5.07	5.05	5.05	5.05	0.40	1.52	±14%
5750	35.4	5.22	5.15	5.15	5.15	0.40	1.52	±14%

^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 up to 6 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ±10% if liquid compensation formula is applied to measured SAR values. 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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6500	34.5	6.07	5.78	5.78	5.78	0.15	1.45	± 19%

^C Frequency validity at 6.5 GHz is -600/+700 MHz, and ±700 MHz at or above 7 GHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

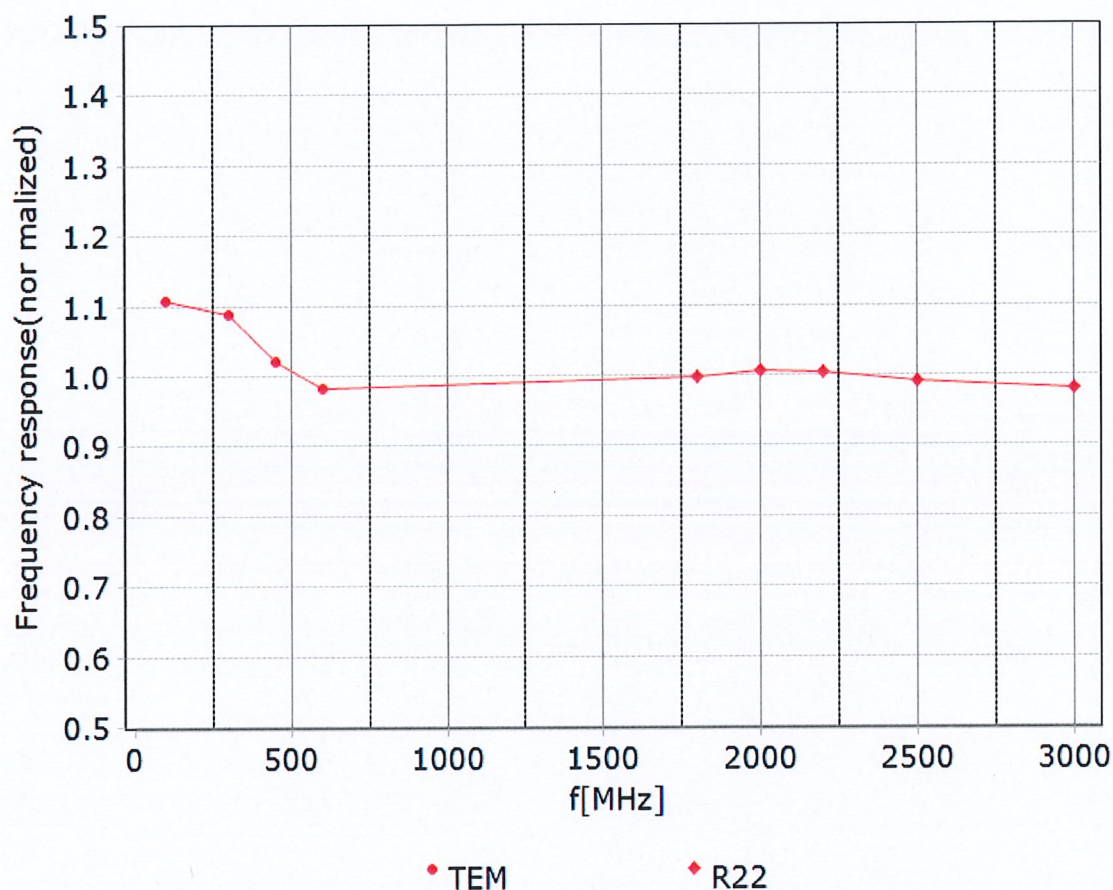
^F The probes are calibrated using tissue simulating liquids (TSL) that deviate for ϵ and σ by less than ±10% from the target values (typically better than ±6%) and are valid for TSL with deviations of up to ±10%.

^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; below ±2% for frequencies between 3-6 GHz; and below ±4% for frequencies between 6-10 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)

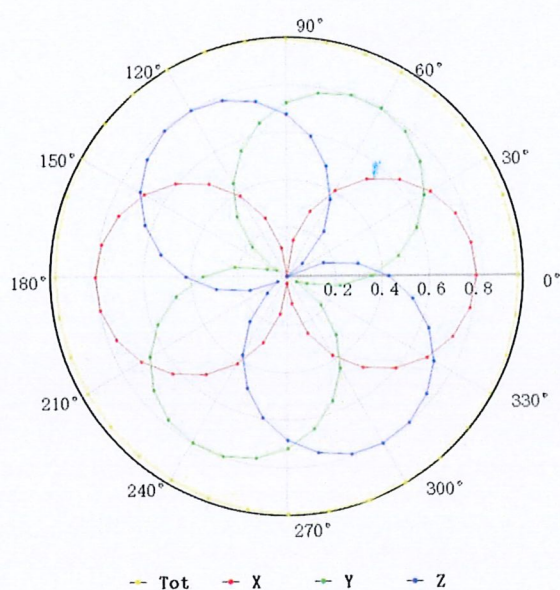


Uncertainty of Frequency Response of E-field: $\pm 7.4\%$ ($k=2$)

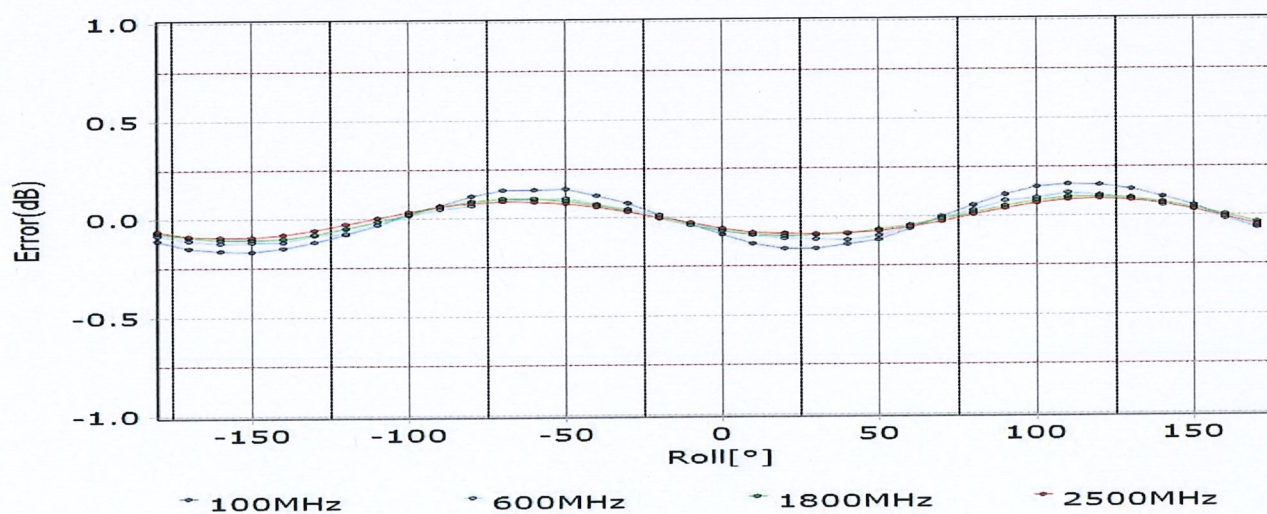
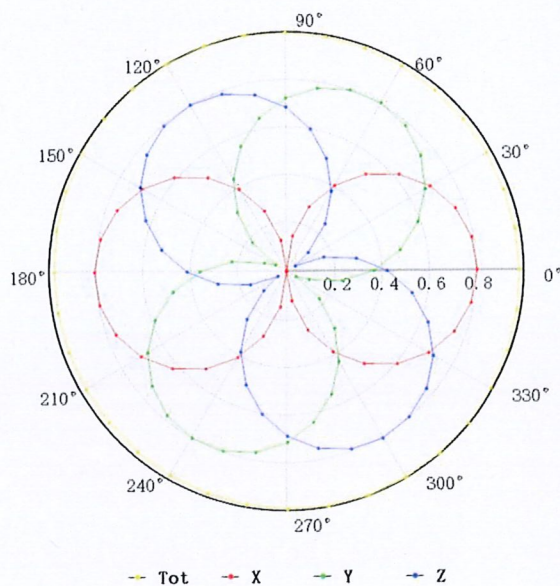
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Receiving Pattern (Φ), $\theta=0^\circ$

f=600 MHz, TEM



f=1800 MHz, R22

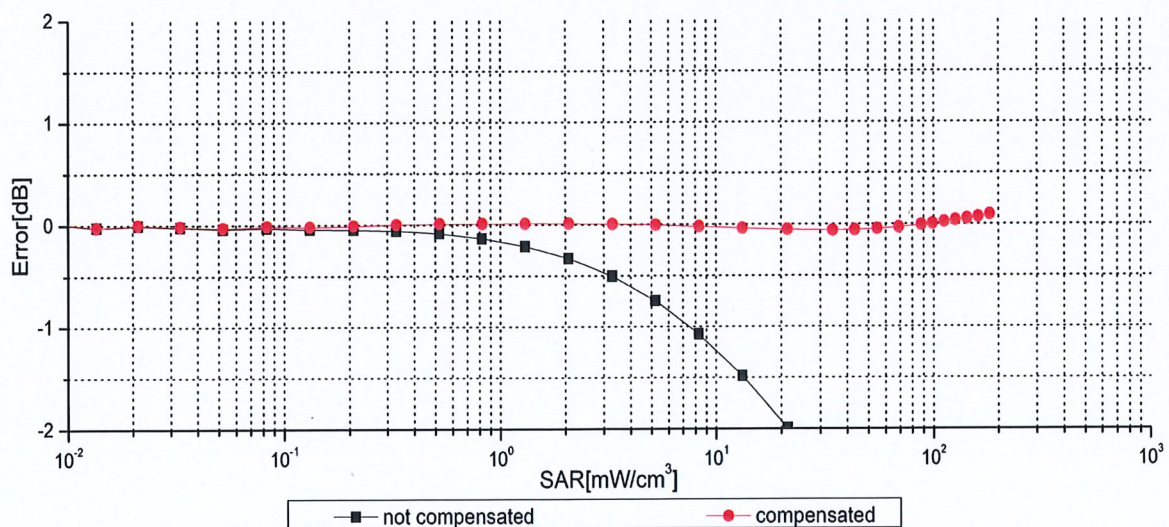
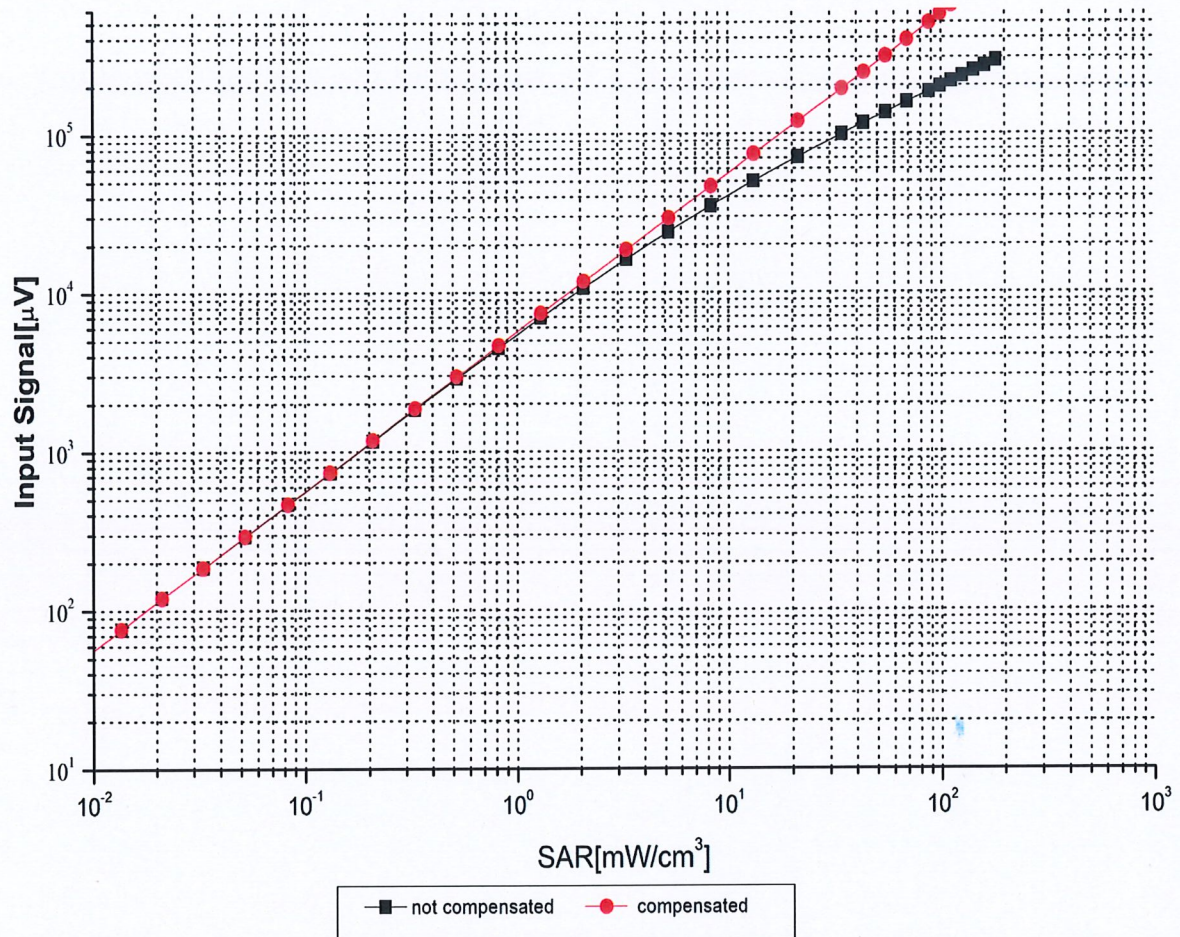


Uncertainty of Axial Isotropy Assessment: $\pm 1.2\%$ ($k=2$)



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Dynamic Range $f(\text{SAR}_{\text{head}})$ (TEM cell, $f = 900 \text{ MHz}$)



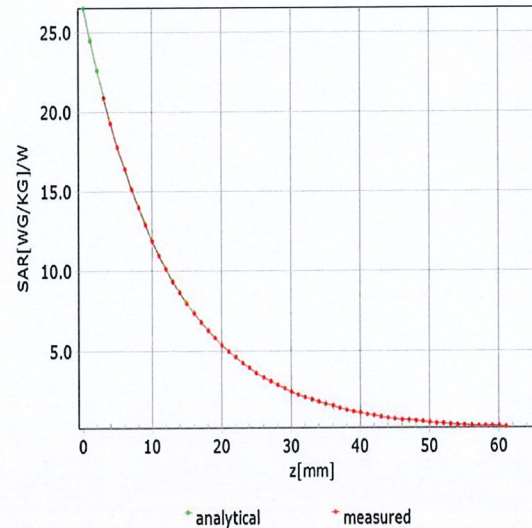
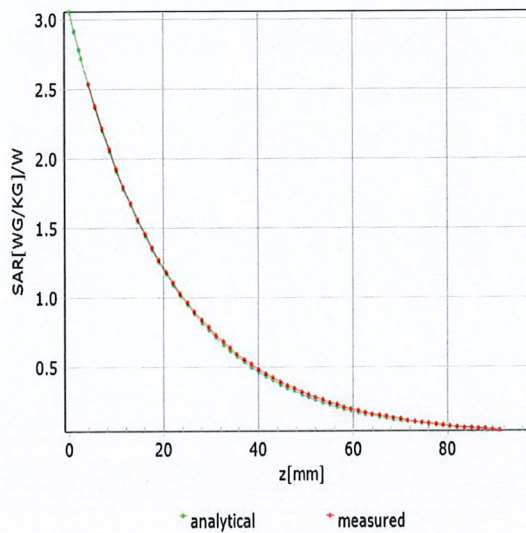
Uncertainty of Linearity Assessment: $\pm 0.9\%$ ($k=2$)

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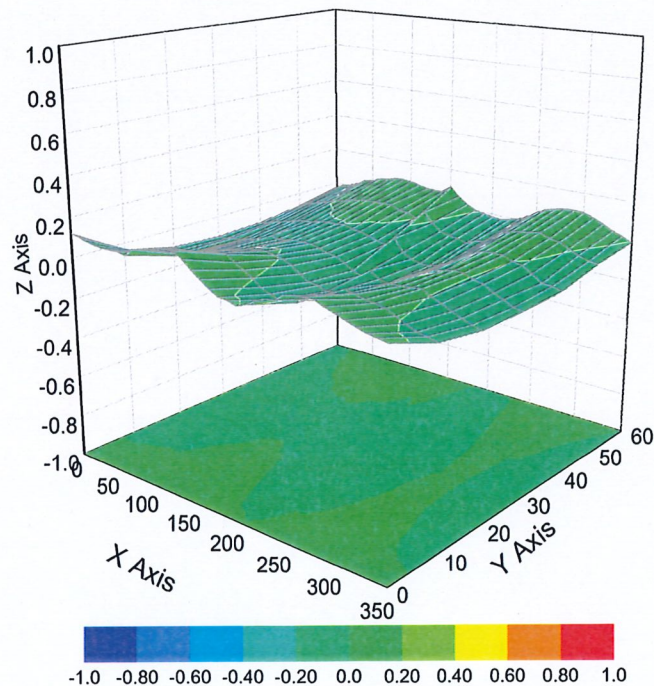
Conversion Factor Assessment

f=750 MHz,WGLS R9(H_convF)

f=1750 MHz,WGLS R22(H_convF)



Deviation from Isotropy in Liquid



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