



DASY/EASY – Parameters of Probe: EX3DV4 – SN:3826

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm($\mu\text{V}/(\text{V}/\text{m})^2$) ^A	0.48	0.41	0.35	±10.0%
DCP(mV) ^B	99.4	99.4	101.3	

Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB $\sqrt{\mu\text{V}}$	C	D dB	VR mV	Unc ^E (k=2)
0	CW	X	0.0	0.0	1.0	0.00	168.0	±2.0%
		Y	0.0	0.0	1.0		152.4	
		Z	0.0	0.0	1.0		137.5	

The reported uncertainty of measurement is stated as the standard uncertainty of Measurement multiplied by the coverage factor $k=2$, which for a normal distribution Corresponds to a coverage probability of approximately 95%.

^A The uncertainties of Norm X, Y, Z do not affect the E^2 -field uncertainty inside TSL (see Page 4).

^B Numerical linearization parameter: uncertainty not required.

^E Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.



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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	9.43	9.43	9.43	0.40	0.78	± 12.1%
835	41.5	0.90	9.15	9.15	9.15	0.16	1.30	± 12.1%
900	41.5	0.97	9.12	9.12	9.12	0.16	1.35	± 12.1%
1750	40.1	1.37	7.92	7.92	7.92	0.25	0.97	± 12.1%
1900	40.0	1.40	7.75	7.75	7.75	0.22	1.15	± 12.1%
2000	40.0	1.40	7.82	7.82	7.82	0.22	1.11	± 12.1%
2300	39.5	1.67	7.44	7.44	7.44	0.46	0.78	± 12.1%
2450	39.2	1.80	7.22	7.22	7.22	0.43	0.84	± 12.1%
2600	39.0	1.96	6.93	6.93	6.93	0.47	0.81	± 12.1%
3300	38.2	2.71	6.75	6.75	6.75	0.40	0.98	± 13.3%
3500	37.9	2.91	6.61	6.61	6.61	0.44	0.94	± 13.3%
3700	37.7	3.12	6.31	6.31	6.31	0.43	1.02	± 13.3%
3900	37.5	3.32	6.21	6.21	6.21	0.35	1.35	± 13.3%
4100	37.2	3.53	6.30	6.30	6.30	0.35	1.25	± 13.3%
4200	37.1	3.63	6.15	6.15	6.15	0.35	1.35	± 13.3%
4400	36.9	3.84	6.06	6.06	6.06	0.35	1.35	± 13.3%
4600	36.7	4.04	5.92	5.92	5.92	0.40	1.30	± 13.3%
4800	36.4	4.25	5.88	5.88	5.88	0.40	1.32	± 13.3%
4950	36.3	4.40	5.66	5.66	5.66	0.40	1.35	± 13.3%
5250	35.9	4.71	5.06	5.06	5.06	0.45	1.35	± 13.3%
5600	35.5	5.07	4.68	4.68	4.68	0.45	1.40	± 13.3%
5750	35.4	5.22	4.74	4.74	4.74	0.45	1.50	± 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.

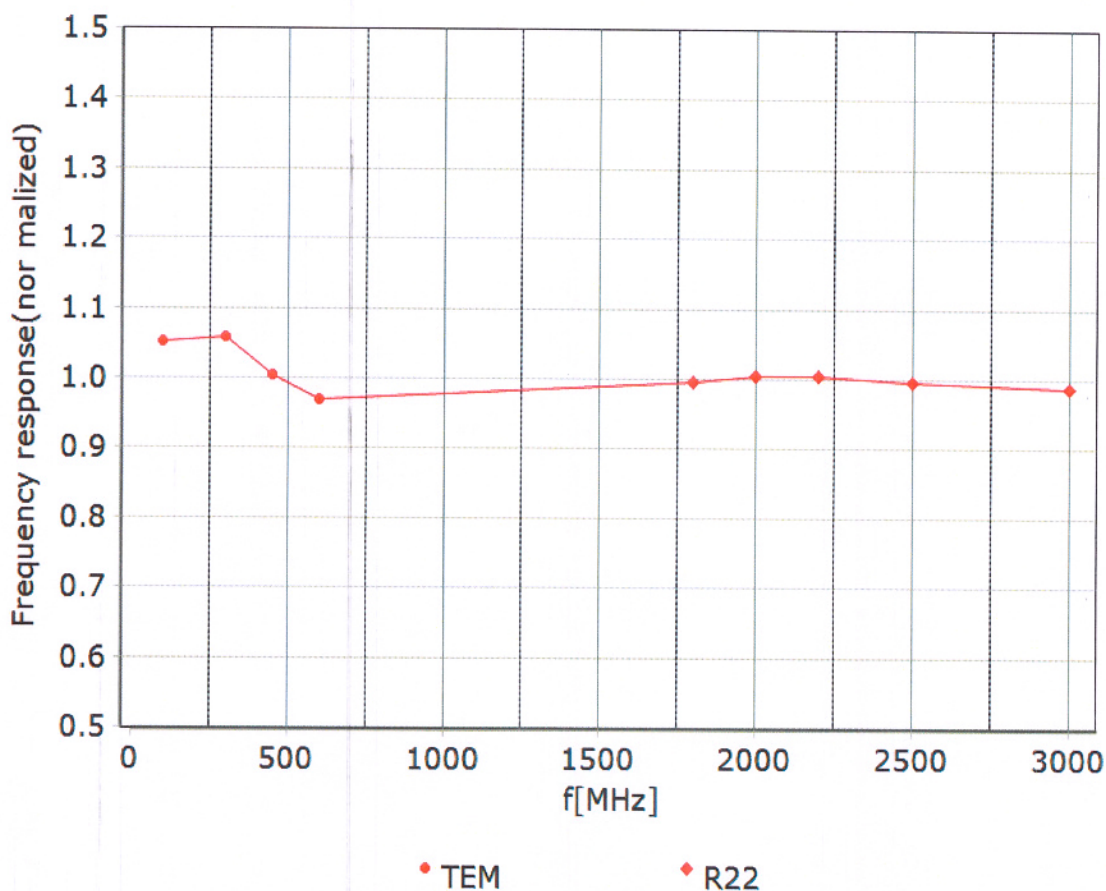
^G Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for the frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from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



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



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

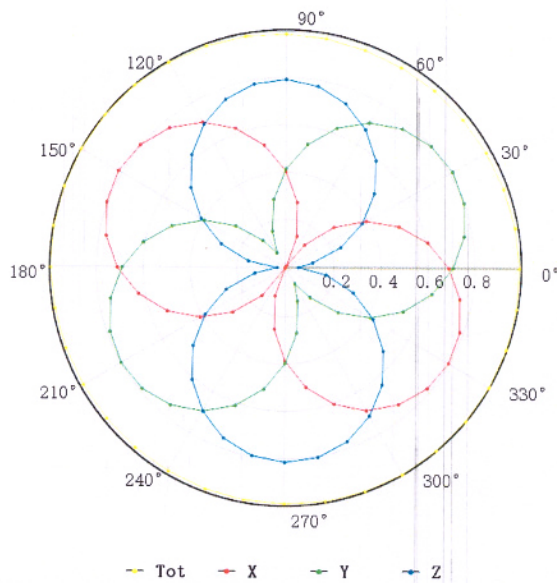


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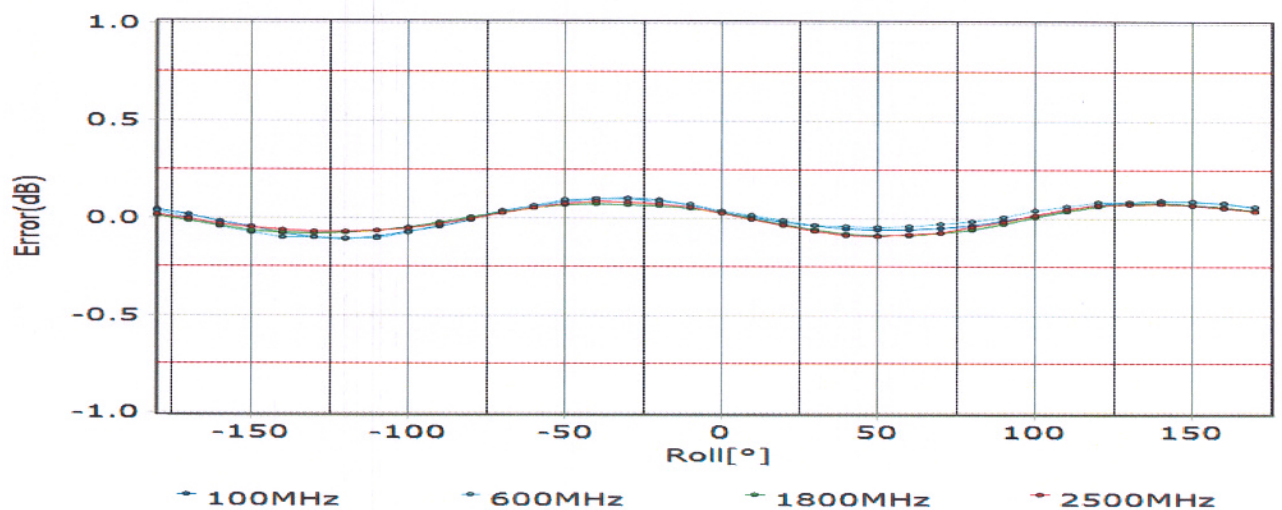
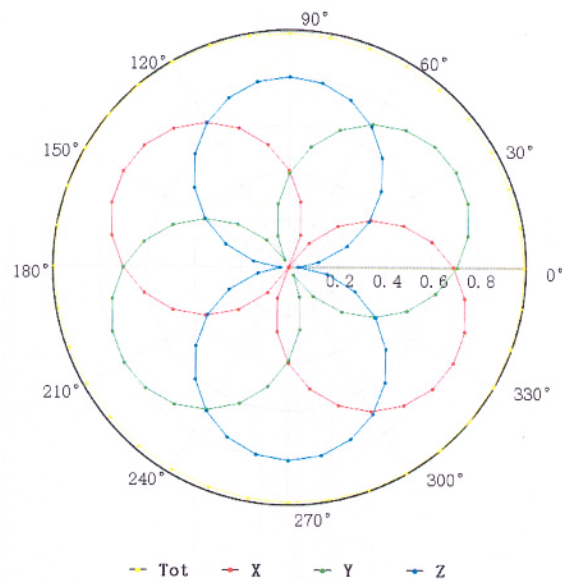
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Receiving Pattern (Φ), $\theta=0^\circ$

f=600 MHz, TEM



f=1800 MHz, R22



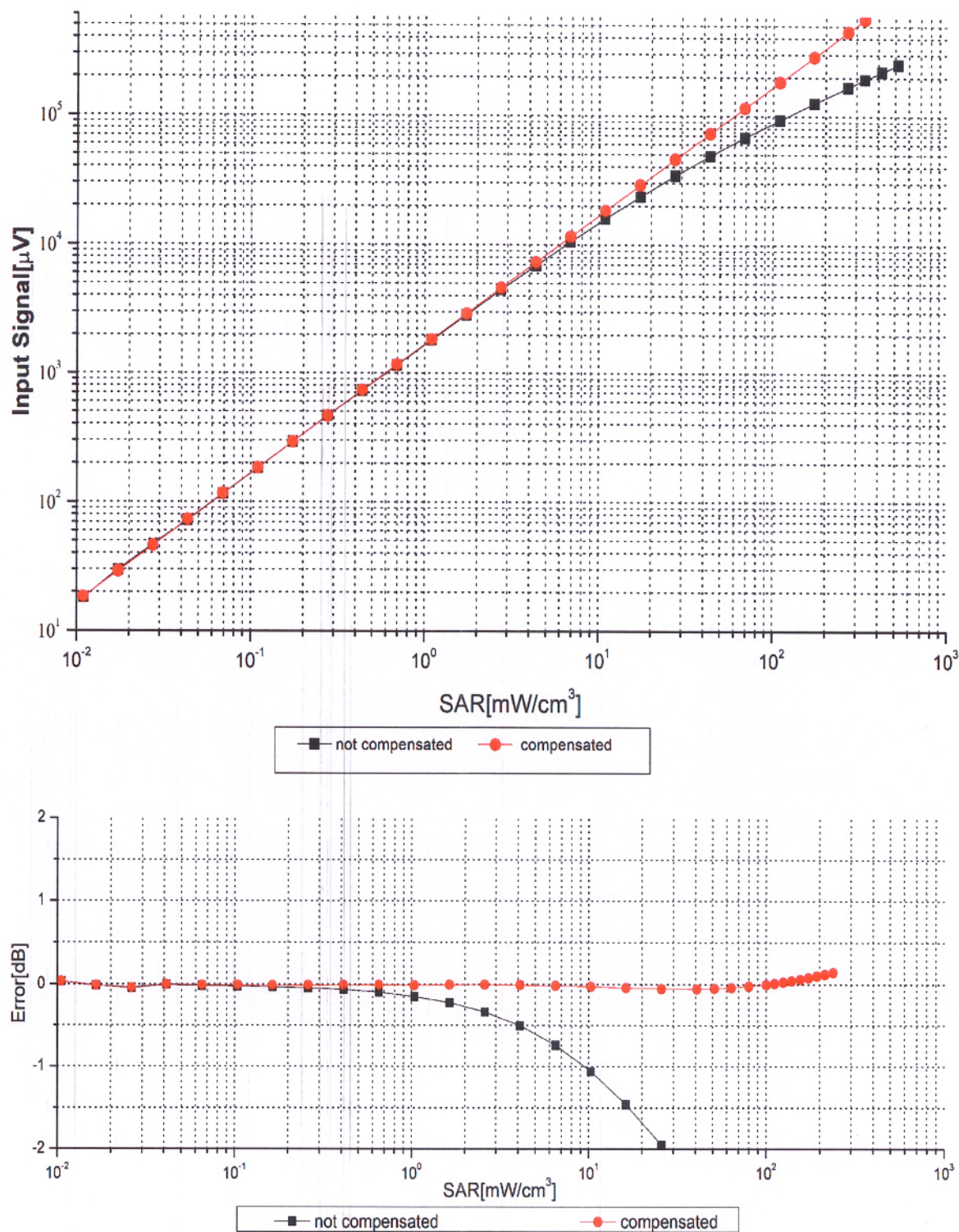
Uncertainty of Axial Isotropy Assessment: $\pm 1.2\%$ ($k=2$)



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



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



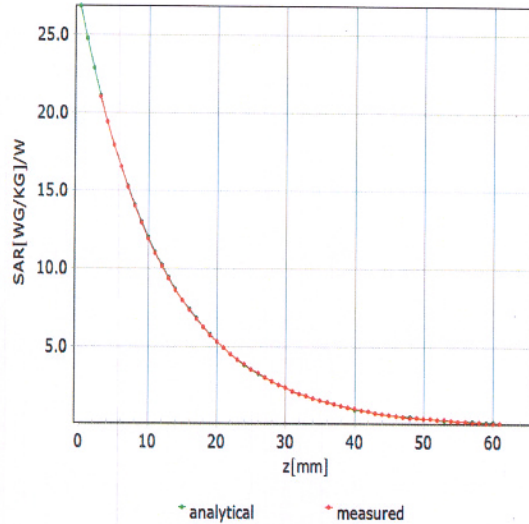
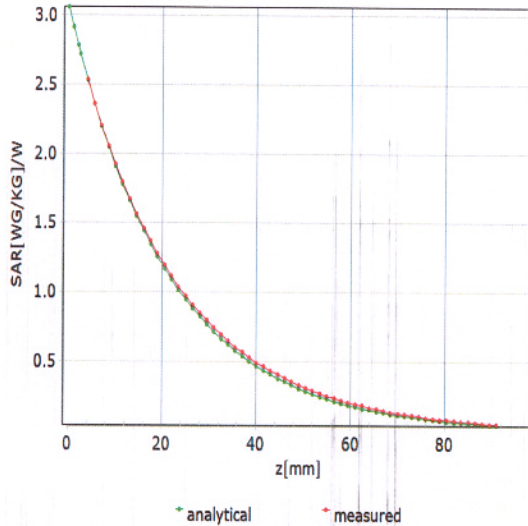
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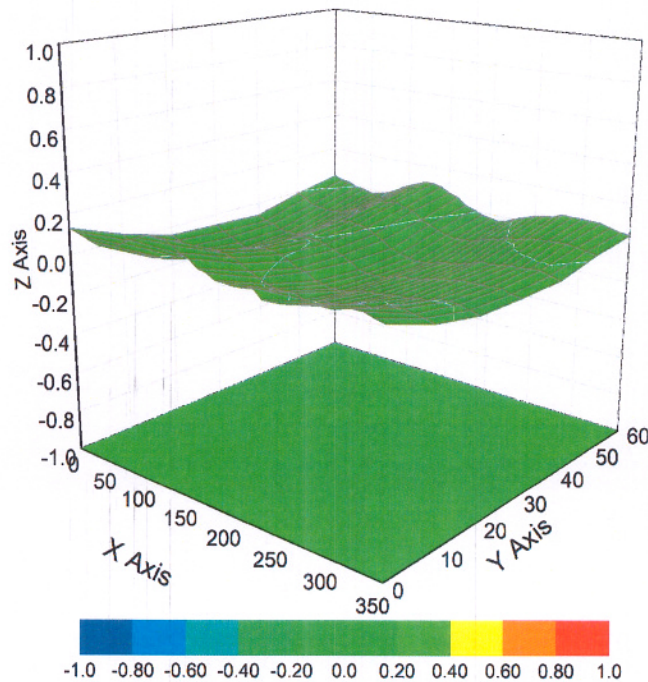
Conversion Factor Assessment

f=750 MHz,WGLS R9(H_convF)

f=1750 MHz,WGLS R22(H_convF)



Deviation from Isotropy in Liquid



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



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Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	52.2
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