DASY/EASY - Parameters of Probe: EX3DV4 - SN:7631

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$)[A]	0.57	0.61	0.56	± 10.1 %
DCP (mV)[B]	109.2	108.6	109.8	

Calibration Results for Modulation Response

UID	Communication System Name		A dB	B dB√μV	C	D dB	VR mV	Max dev.	Max Unc[E] (k=2)
0	CW	X	0.00	0.00	1.00	0.00	178.5	± 3.3 %	± 4.7 %
		Y	0.00	0.00	1.00		178.2		
		Z	0.00	0.00	1.00		160.0		
10352-AAA	Pulse Waveform (200Hz, 10%)	X	1.36	60.00	5.96	10.00	60.0	± 3.6 %	± 9.6 %
		Y	1.59	61.16	7.03		60.0		
		Z	1.59	60.77	6.20		60.0		
10353-AAA	Pulse Waveform (200Hz, 20%)	X	0.87	60.00	4.94	6.99	80.0	± 2.8 %	± 9.6 %
		Y	0.83	60.00	5.33		80.0		
		Z	0.85	60.00	4.73		80.0		
10354-AAA	Pulse Waveform (200Hz, 40%)	X	0.50	60.00	3.95	3.98	95.0	± 2.0 %	± 9.6 %
		Y	2.00	64.00	5.00		95.0		
		Z	0.48	60.00	3.52		95.0		
10355-AAA	Pulse Waveform (200Hz, 60%)	X	15.11	149.95	2.36	2.22	120.0	± 1.9 %	± 9.6 %
		Y	9.12	158.36	14.54		120.0		
		Z	9.49	84.30	0.54		120.0		
10387-AAA	QPSK Waveform, 1 MHz	X	0.66	63.80	11.78	1.00	150.0	± 4.9 %	± 9.6 %
		Y	0.58	62.14	10.35		150.0		
		Z	0.56	65.41	13.25		150.0		
10388-AAA	QPSK Waveform, 10 MHz	X	1.40	65.24	13.54	0.00	150.0	± 1.2 %	± 9.6 %
		Y	1.26	63.78	12.64		150.0		
		Z	1.38	67.17	14.43		150.0		
10396-AAA	64-QAM Waveform, 100 kHz	X	1.84	65.65	16.40	3.01	150.0	± 0.7 %	± 9.6 %
		Y	1.82	65.69	16.48		150.0		
		Z	1.86	66.50	16.93		150.0		
10399-AAA	64-QAM Waveform, 40 MHz	X	2.88	66.07	14.84	0.00	150.0	± 3.0 %	± 9.6 %
		Y	2.74	65.19	14.31		150.0		
		Z	2.83	66.81	15.31		150.0		
10414-AAA	WLAN CCDF, 64-QAM, 40MHz	X	3.94	65.73	15.09	0.00	150.0	± 5.3 %	± 9.6 %
		Y	4.02	65.83	15.11		150.0		
		Z	3.76	66.29	15.35		150.0		

Note: For details on UID parameters see Appendix

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 Pages 5 and 6).
[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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Sensor Model Parameters

	C1 fF	C2 fF	α V^{-1}	T1 $ms.V^{-2}$	T2 $ms.V^{-1}$	T3 ms	T4 V^{-2}	T5 V^{-1}	T6
X	11.9	85.26	32.65	6.52	0.00	4.90	0.62	0.00	1.00
Y	13.1	94.65	33.40	4.53	0.00	4.98	0.74	0.00	1.01
Z	9.1	64.06	32.20	4.70	0.00	4.90	0.66	0.00	1.00

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	-151.6
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	9 mm
Tip Diameter	2.5 mm
Probe Tip to Sensor X Calibration Point	1 mm
Probe Tip to Sensor Y Calibration Point	1 mm
Probe Tip to Sensor Z Calibration Point	1 mm
Recommended Measurement Distance from Surface	1.4 mm

Note: Measurement distance from surface can be increased to 3-4 mm for an *Area Scan* job.

DASY/EASY - Parameters of Probe: EX3DV4 - SN:7631

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)	Unc (k=2)
450	43.5	0.87	11.88	11.88	11.88	0.16	1.30	± 13.3 %
750	41.9	0.89	10.47	10.47	10.47	0.49	0.84	± 12.0 %
835	41.5	0.90	10.12	10.12	10.12	0.43	0.88	± 12.0 %
900	41.5	0.97	10.01	10.01	10.01	0.49	0.81	± 12.0 %
1450	40.5	1.20	9.15	9.15	9.15	0.55	0.80	± 12.0 %
1640	40.2	1.31	9.10	9.10	9.10	0.32	0.86	± 12.0 %
1750	40.1	1.37	8.76	8.76	8.76	0.27	0.86	± 12.0 %
1950	40.0	1.40	8.35	8.35	8.35	0.25	0.86	± 12.0 %
2000	40.0	1.40	8.28	8.28	8.28	0.25	0.86	± 12.0 %
2300	39.5	1.67	8.33	8.33	8.33	0.30	0.90	± 12.0 %
2450	39.2	1.80	8.24	8.24	8.24	0.32	0.90	± 12.0 %
2600	39.0	1.96	8.04	8.04	8.04	0.21	0.90	± 12.0 %
3300	38.2	2.71	7.50	7.50	7.50	0.30	1.35	± 13.1 %
3500	37.9	2.91	7.45	7.45	7.45	0.35	1.30	± 13.1 %
3700	37.7	3.12	7.20	7.20	7.20	0.35	1.30	± 13.1 %
3900	37.5	3.32	7.10	7.10	7.10	0.40	1.60	± 13.1 %
4100	37.2	3.53	6.98	6.98	6.98	0.40	1.60	± 13.1 %
4200	37.1	3.63	6.75	6.75	6.75	0.40	1.70	± 13.1 %
4400	36.9	3.84	6.68	6.68	6.68	0.40	1.70	± 13.1 %
4600	36.7	4.04	6.65	6.65	6.65	0.40	1.70	± 13.1 %
4800	36.4	4.25	6.46	6.46	6.46	0.40	1.80	± 13.1 %
4950	36.3	4.40	6.27	6.27	6.27	0.40	1.80	± 13.1 %
5250	35.9	4.71	5.94	5.94	5.94	0.40	1.80	± 13.1 %
5600	35.5	5.07	5.24	5.24	5.24	0.40	1.80	± 13.1 %
5800	35.3	5.27	5.40	5.40	5.40	0.40	1.80	± 13.1 %

[C] Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the 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. Validity of ConvF assessed at 6 MHz is 4-9 MHz, and ConvF assessed at 13 MHz is 9-19 MHz. Above 5 GHz frequency validity can be extended to ± 110 MHz.

[F] At frequencies 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 frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

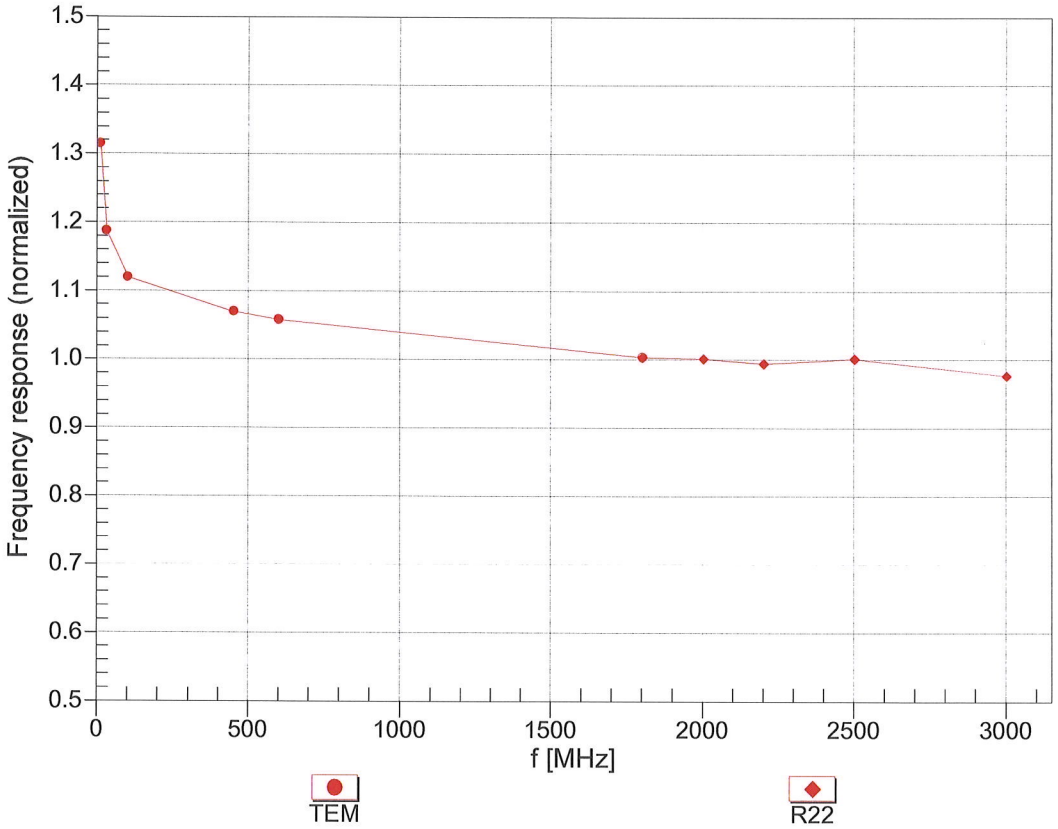
DASY/EASY - Parameters of Probe: EX3DV4 - SN:7631

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)	Unc (k=2)
6500	34.5	6.07	5.60	5.60	5.60	0.20	2.50	± 18.6 %

[C] Frequency validity above 6GHz is ± 700 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.
[F] At frequencies 6-10 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; 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.

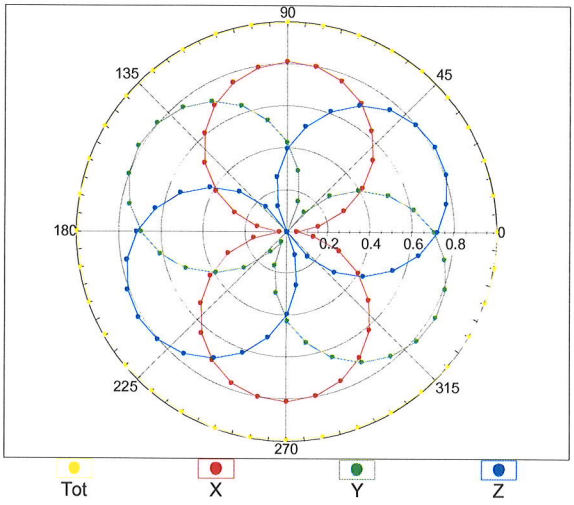
Frequency Response of E-Field
(TEM-Cell:ifi110 EXX, Waveguide: R22)



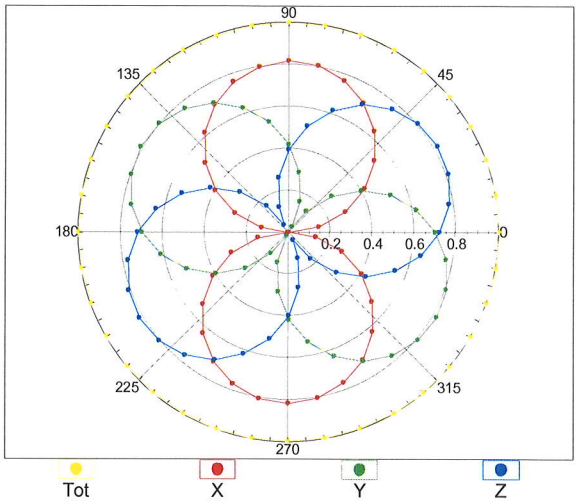
Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

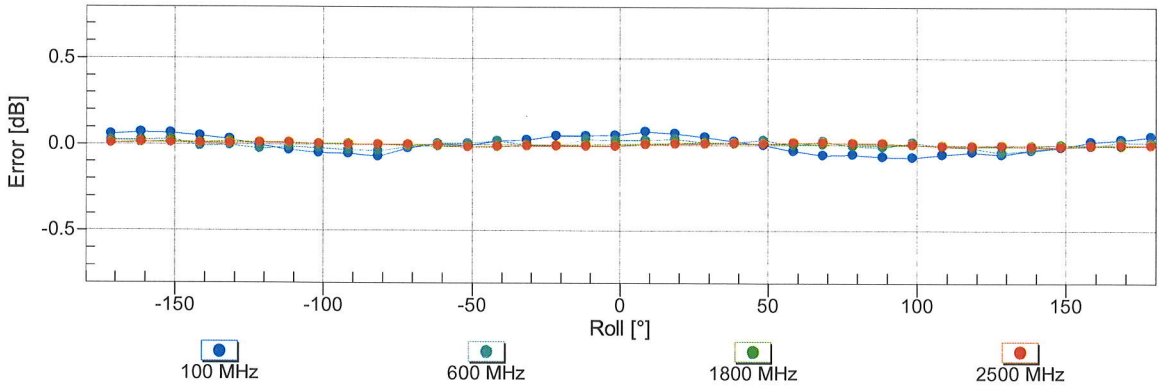
Receiving Pattern (ϕ), ϑ = 0°

f=600 MHz,TEM



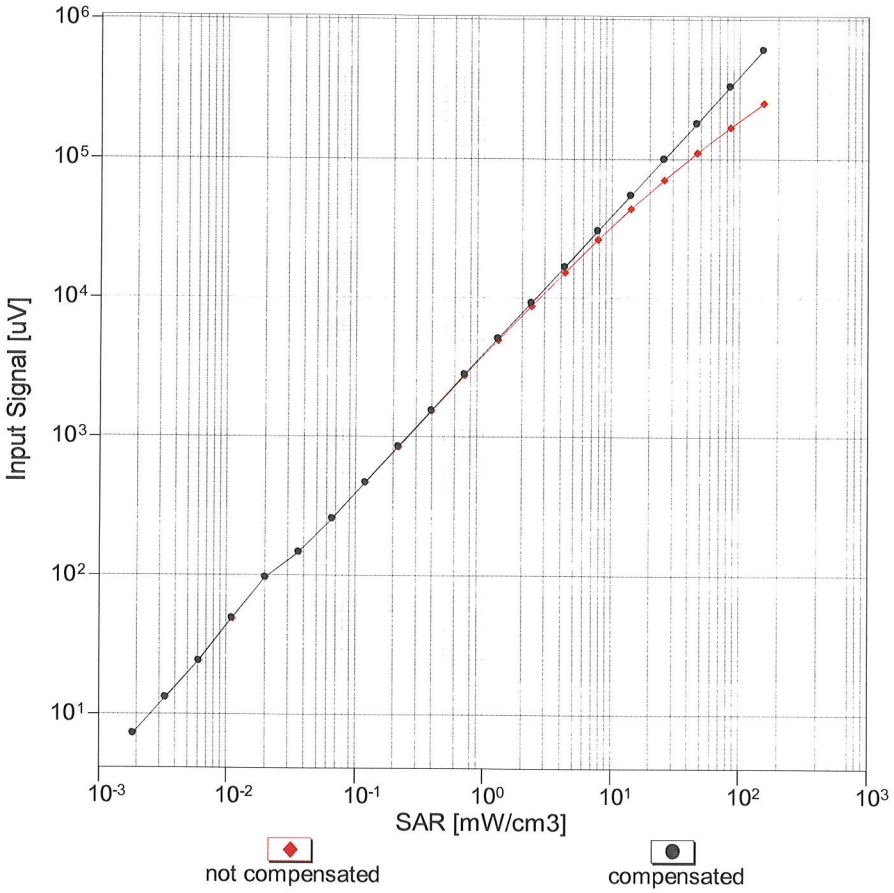
f=1800 MHz,R22

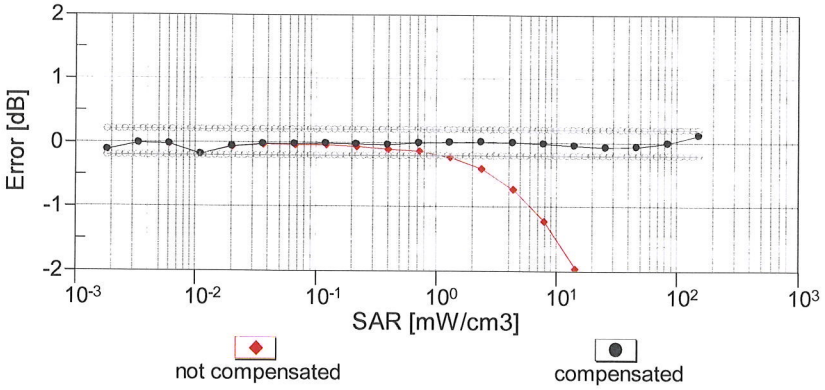




Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

Dynamic Range f(SAR$_{head}$)
(TEM cell , f_{eval}= 1900 MHz)

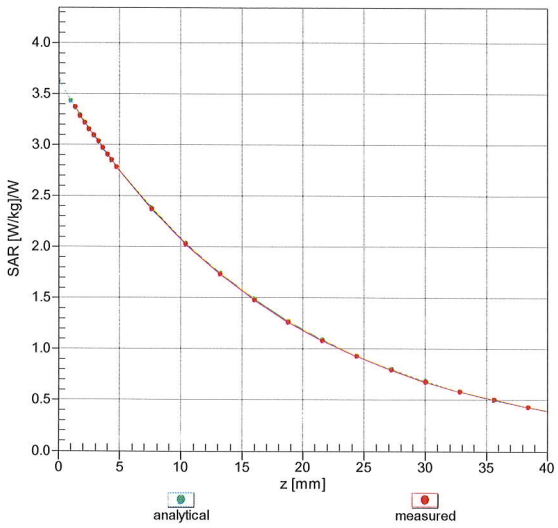




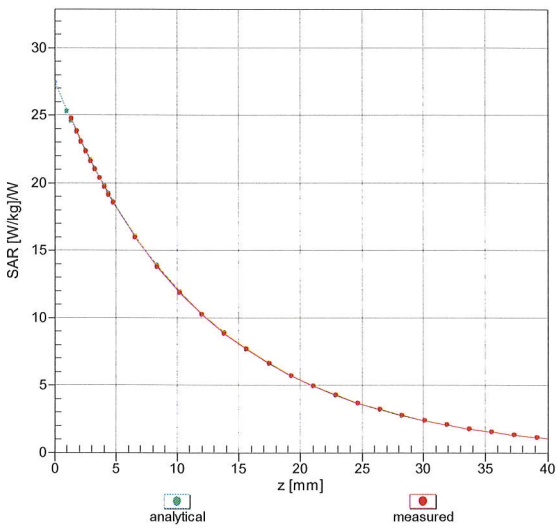
Uncertainty of Linearity Assessment: ± 0.6% (k=2)

Conversion Factor Assessment

f = 835 MHz,WGLS R9 (H_convF)

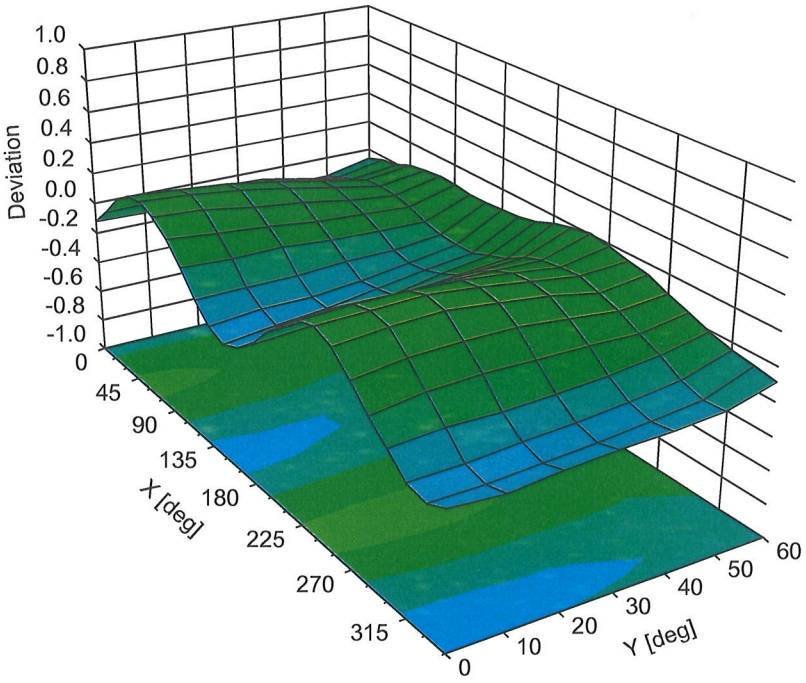


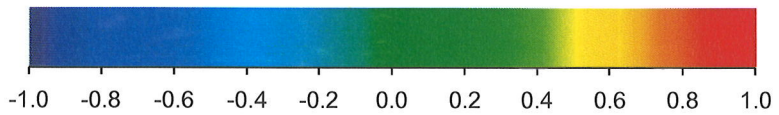
f = 1750 MHz,WGLS R22 (H_convF)



Deviation from Isotropy in Liquid

Error (ϕ, ϑ), f = 900 MHz





Uncertainty of Spherical Isotropy Assessment: ± 2.6% (k=2)