DASY/EASY - Parameters of Probe: EX3DV4 - SN:3820

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)
750	41.9	0.89	9.42	9.42	9.42	0.34	1.06	± 12.0 %
835	41.5	0.90	9.00	9.00	9.00	0.47	0.80	± 12.0 %
900	41.5	0.97	8.88	8.88	8.88	0.37	0.95	± 12.0 %
1450	40.5	1.20	8.37	8.37	8.37	0.32	0.80	± 12.0 %
1750	40.1	1.37	7.95	7.95	7.95	0.30	0.80	± 12.0 %
1900	40.0	1.40	7.80	7.80	7.80	0.32	0.85	± 12.0 %
2000	40.0	1.40	7.74	7.74	7.74	0.34	0.84	± 12.0 %
2450	39.2	1.80	6.78	6.78	6.78	0.21	1.17	± 12.0 %
2600	39.0	1.96	6.49	6.49	6.49	0.25	1.26	± 12.0 %
5200	36.0	4.66	4.66	4.66	4.66	0.40	1.80	± 13.1 %
5300	35.9	4.76	4.41	4.41	4.41	0.45	1.80	± 13.1 %
5500	35.6	4.96	4.32	4.32	4.32	0.45	1.80	± 13.1 %
5600	35.5	5.07	4.14	4.14	4.14	0.50	1.80	± 13.1 %
5800	35.3	5.27	4.14	4.14	4.14	0.50	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. 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:3820

Calibration Parameter Determined in Body Tissue Simulating Media

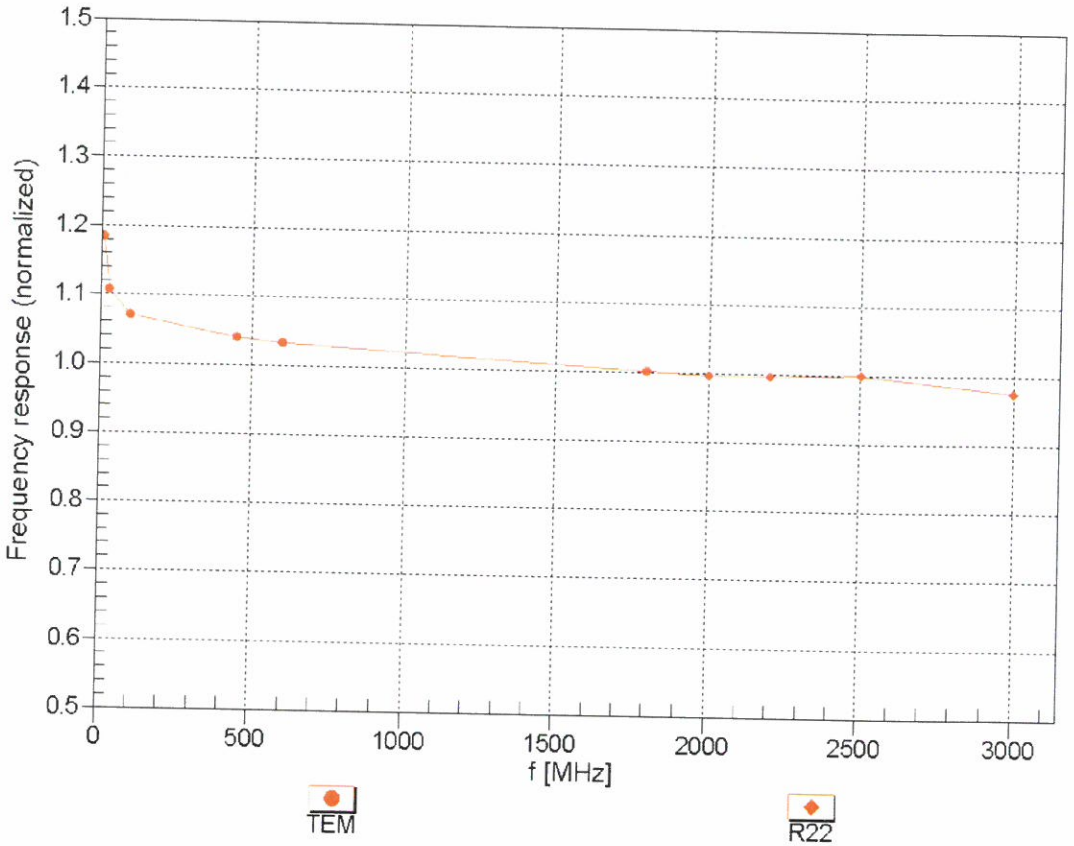
f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha [G]	Depth [G] (mm)	Unc (k=2)
750	55.5	0.96	8.87	8.87	8.87	0.30	1.02	± 12.0 %
835	55.2	0.97	8.86	8.86	8.86	0.27	1.13	± 12.0 %
900	55.0	1.05	8.94	8.94	8.94	0.36	0.93	± 12.0 %
1450	54.0	1.30	8.02	8.02	8.02	0.28	0.80	± 12.0 %
1750	53.4	1.49	7.65	7.65	7.65	0.39	0.82	± 12.0 %
1900	53.3	1.52	7.41	7.41	7.41	0.19	1.30	± 12.0 %
2000	53.3	1.52	7.51	7.51	7.51	0.26	1.05	± 12.0 %
2450	52.7	1.95	6.79	6.79	6.79	0.38	0.93	± 12.0 %
2600	52.5	2.16	6.52	6.52	6.52	0.48	0.83	± 12.0 %
5200	49.0	5.30	4.19	4.19	4.19	0.50	1.90	± 13.1 %
5300	48.9	5.42	3.95	3.95	3.95	0.55	1.90	± 13.1 %
5500	48.6	5.65	3.71	3.71	3.71	0.55	1.90	± 13.1 %
5600	48.5	5.77	3.54	3.54	3.54	0.55	1.90	± 13.1 %
5800	48.2	6.00	3.70	3.70	3.70	0.60	1.90	± 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. 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.

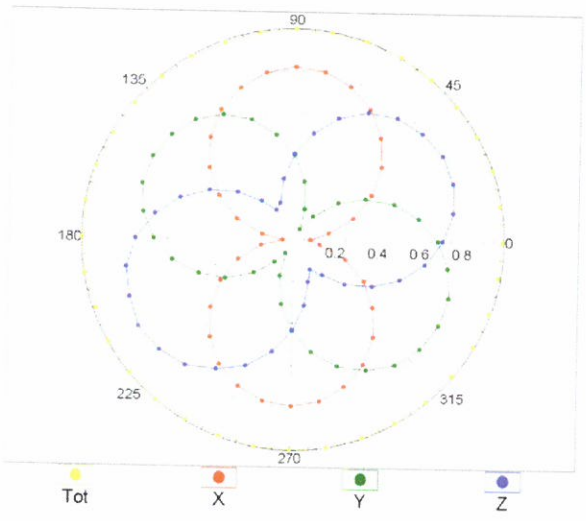
Frequency Response of E-Field
(TEM-Cell:ifi110 EXX, Waveguide: R22)



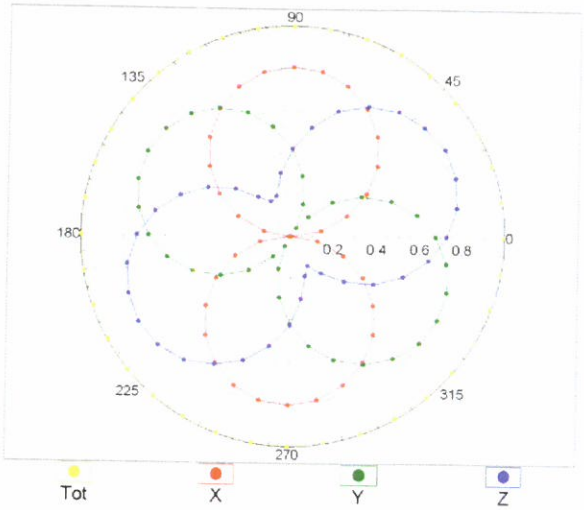
Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

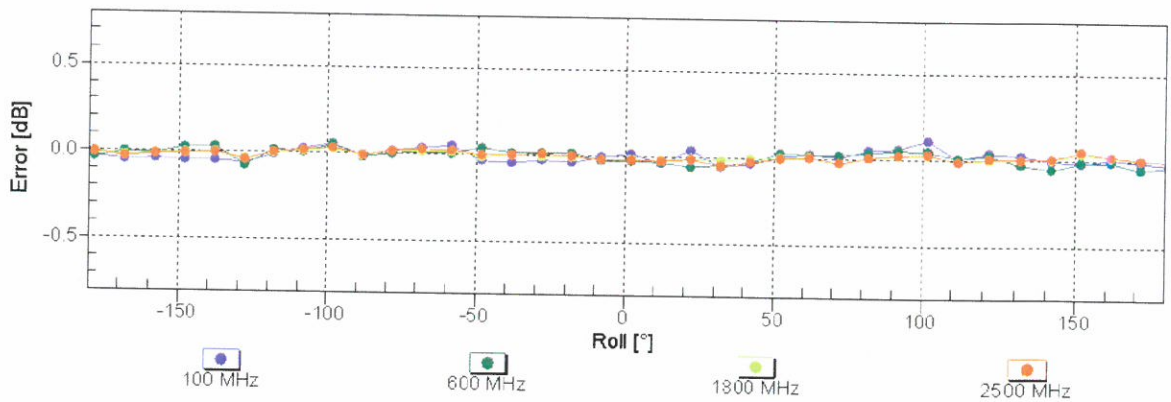
Receiving Pattern (ϕ), ϑ = 0°

f=600 MHz,TEM



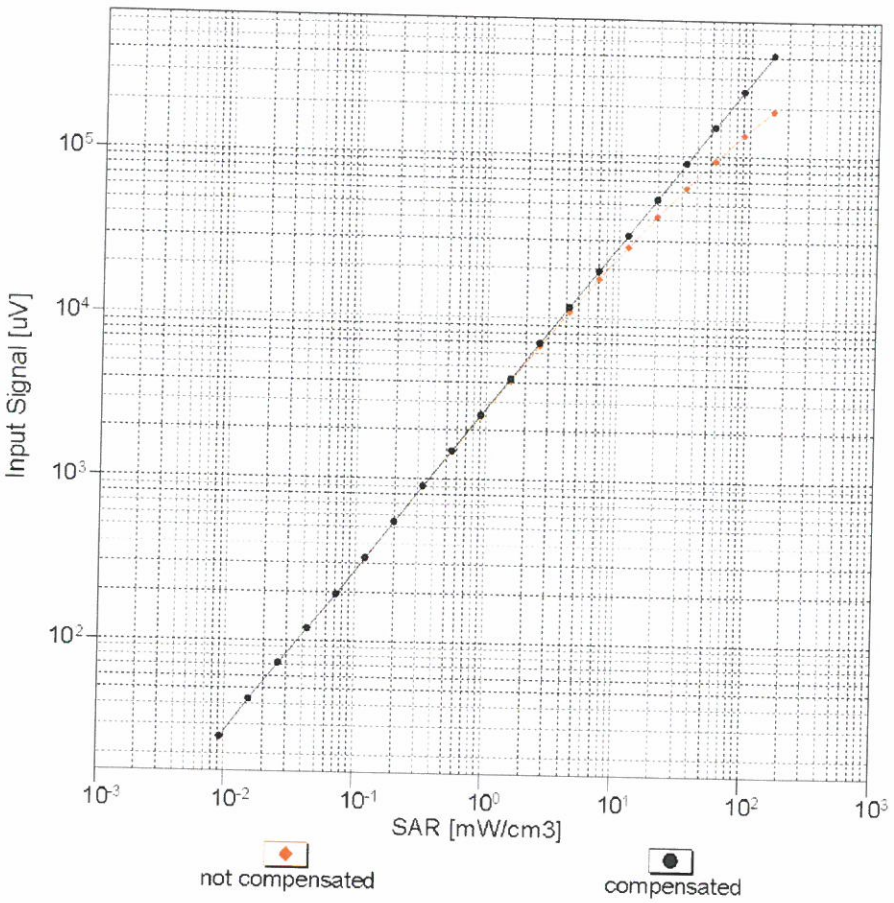
f=1800 MHz,R22

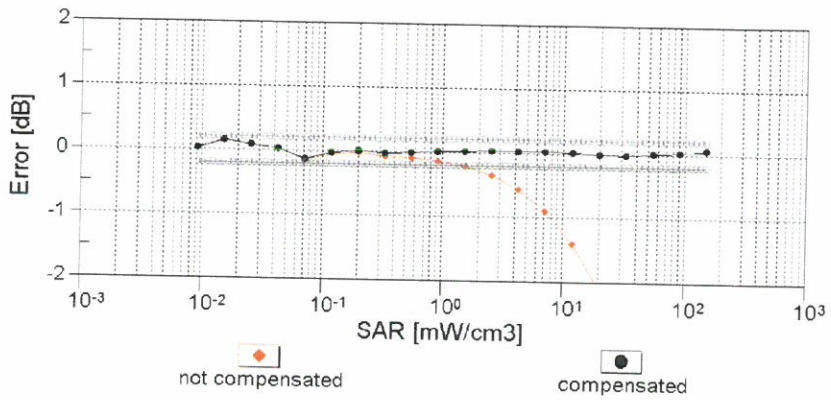




Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

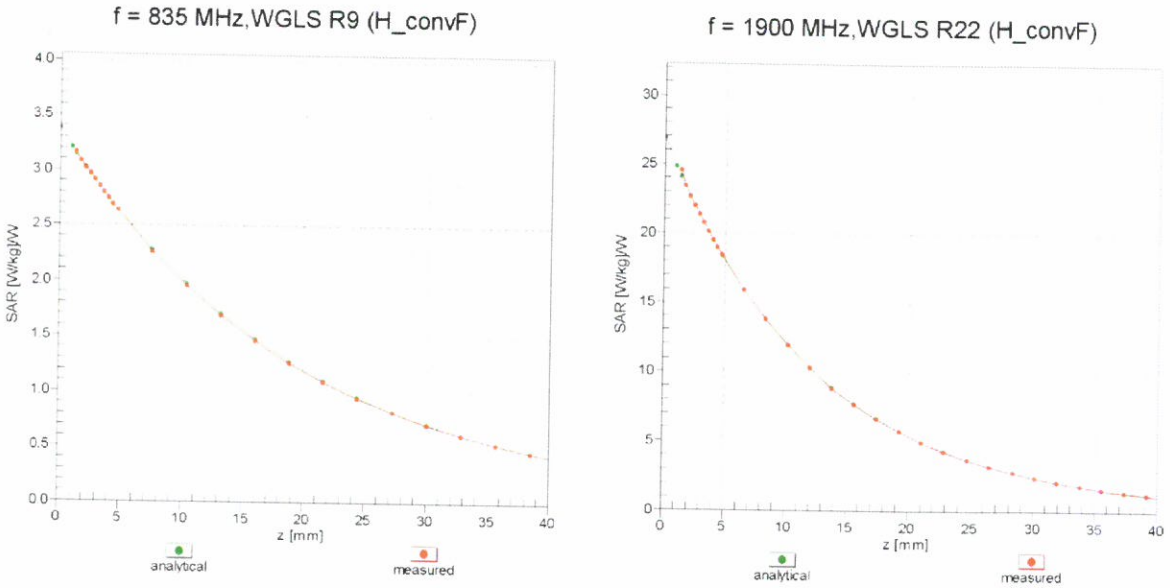
Dynamic Range f(SAR$_{head}$)
(TEM cell , f_{eval}= 1900 MHz)





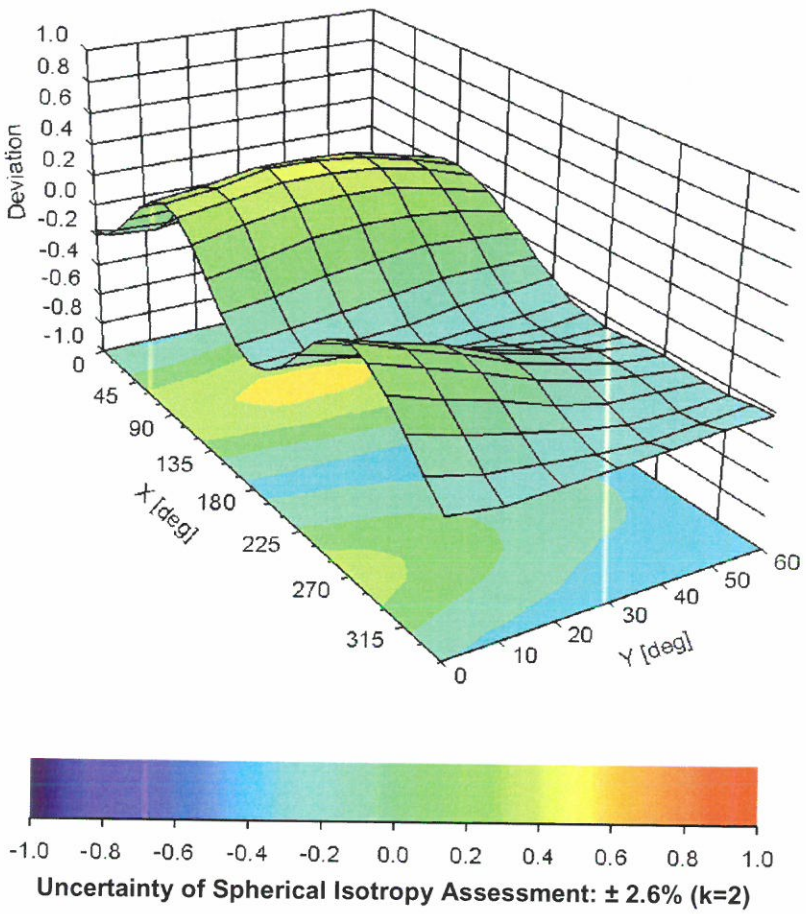
Uncertainty of Linearity Assessment: ± 0.6% (k=2)

Conversion Factor Assessment



Deviation from Isotropy in Liquid

Error (ϕ, ϑ), f = 900 MHz



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

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3820

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	31.9
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

Appendix: Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB√μV	C	D dB	VR mV	Max Unc^E (k=2)
0	CW	X	0.00	0.00	1.00	0.00	148.5	± 3.8 %
		Y	0.00	0.00	1.00		134.3	
		Z	0.00	0.00	1.00		135.9	
10010-CAA	SAR Validation (Square, 100ms, 10ms)	X	2.91	66.95	11.40	10.00	20.0	± 9.6 %
		Y	4.24	71.80	13.80		20.0	
		Z	13.20	88.04	20.85		20.0	
10011-CAB	UMTS-FDD (WCDMA)	X	1.07	67.78	15.67	0.00	150.0	± 9.6 %
		Y	1.52	74.89	19.60		150.0	
		Z	0.94	63.95	13.11		150.0	
10012-CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps)	X	1.19	63.84	15.24	0.41	150.0	± 9.6 %
		Y	1.24	65.55	16.88		150.0	
		Z	1.16	62.20	14.01		150.0	
10013-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps)	X	4.91	66.44	16.89	1.46	150.0	± 9.6 %
		Y	4.97	66.85	17.38		150.0	
		Z	5.04	66.28	16.95		150.0	
10021-DAB	GSM-FDD (TDMA, GMSK)	X	12.66	85.74	19.85	9.39	50.0	± 9.6 %
		Y	100.00	115.62	28.70		50.0	
		Z	100.00	123.67	32.95		50.0	
10023-DAB	GPRS-FDD (TDMA, GMSK, TN 0)	X	10.49	83.18	19.06	9.57	50.0	± 9.6 %
		Y	100.00	115.37	28.65		50.0	
		Z	100.00	123.24	32.82		50.0	
10024-DAB	GPRS-FDD (TDMA, GMSK, TN 0-1)	X	30.89	96.11	21.36	6.56	60.0	± 9.6 %
		Y	100.00	115.76	27.51		60.0	
		Z	100.00	126.38	32.70		60.0	
10025-DAB	EDGE-FDD (TDMA, 8PSK, TN 0)	X	4.99	72.36	25.92	12.57	50.0	± 9.6 %
		Y	12.74	102.33	40.28		50.0	
		Z	5.30	73.69	27.65		50.0	
10026-DAB	EDGE-FDD (TDMA, 8PSK, TN 0-1)	X	9.44	89.33	30.51	9.56	60.0	± 9.6 %
		Y	12.46	98.80	35.19		60.0	
		Z	7.86	86.03	30.51		60.0	
10027-DAB	GPRS-FDD (TDMA, GMSK, TN 0-1-2)	X	100.00	108.03	23.23	4.80	80.0	± 9.6 %
		Y	100.00	117.95	27.58		80.0	
		Z	100.00	129.63	33.06		80.0	
10028-DAB	GPRS-FDD (TDMA, GMSK, TN 0-1-2-3)	X	100.00	108.32	22.71	3.55	100.0	± 9.6 %
		Y	100.00	122.16	28.60		100.0	
		Z	100.00	132.93	33.53		100.0	
10029-DAB	EDGE-FDD (TDMA, 8PSK, TN 0-1-2)	X	6.28	80.96	26.28	7.80	80.0	± 9.6 %
		Y	6.96	85.32	29.11		80.0	
		Z	5.29	77.61	25.92		80.0	
10030-CAA	IEEE 802.15.1 Bluetooth (GFSK, DH1)	X	23.05	92.26	19.61	5.30	70.0	± 9.6 %
		Y	100.00	115.32	26.76		70.0	
		Z	100.00	126.49	32.09		70.0	
10031-CAA	IEEE 802.15.1 Bluetooth (GFSK, DH3)	X	100.00	107.60	21.20	1.88	100.0	± 9.6 %
		Y	100.00	131.06	30.63		100.0	
		Z	100.00	132.96	31.77		100.0	