

ES3DV3- SN:3335

July 26, 2018

10607-AAB	IEEE 802.11ac WiFi (20MHz, MCS0, 90pc duty cycle)	X	4.80	66.04	16.11	0.46	130.0	± 9.6 %
		Y	4.72	66.30	16.25		130.0	
		Z	4.64	66.03	16.03		130.0	
10608-AAB	IEEE 802.11ac WiFi (20MHz, MCS1, 90pc duty cycle)	X	5.02	66.47	16.27	0.46	130.0	± 9.6 %
		Y	4.92	66.72	16.42		130.0	
		Z	4.83	66.43	16.20		130.0	
10609-AAB	IEEE 802.11ac WiFi (20MHz, MCS2, 90pc duty cycle)	X	4.91	66.35	16.13	0.46	130.0	± 9.6 %
		Y	4.81	66.59	16.28		130.0	
		Z	4.72	66.28	16.04		130.0	
10610-AAB	IEEE 802.11ac WiFi (20MHz, MCS3, 90pc duty cycle)	X	4.96	66.51	16.29	0.46	130.0	± 9.6 %
		Y	4.86	66.74	16.43		130.0	
		Z	4.77	66.44	16.20		130.0	
10611-AAB	IEEE 802.11ac WiFi (20MHz, MCS4, 90pc duty cycle)	X	4.89	66.36	16.16	0.46	130.0	± 9.6 %
		Y	4.78	66.57	16.29		130.0	
		Z	4.69	66.26	16.05		130.0	
10612-AAB	IEEE 802.11ac WiFi (20MHz, MCS5, 90pc duty cycle)	X	4.90	66.49	16.18	0.46	130.0	± 9.6 %
		Y	4.80	66.74	16.34		130.0	
		Z	4.70	66.41	16.09		130.0	
10613-AAB	IEEE 802.11ac WiFi (20MHz, MCS6, 90pc duty cycle)	X	4.92	66.42	16.10	0.46	130.0	± 9.6 %
		Y	4.81	66.65	16.24		130.0	
		Z	4.70	66.31	15.98		130.0	
10614-AAB	IEEE 802.11ac WiFi (20MHz, MCS7, 90pc duty cycle)	X	4.85	66.61	16.33	0.46	130.0	± 9.6 %
		Y	4.74	66.80	16.45		130.0	
		Z	4.64	66.48	16.20		130.0	
10615-AAB	IEEE 802.11ac WiFi (20MHz, MCS8, 90pc duty cycle)	X	4.89	66.16	15.93	0.46	130.0	± 9.6 %
		Y	4.79	66.41	16.09		130.0	
		Z	4.69	66.09	15.83		130.0	
10616-AAB	IEEE 802.11ac WiFi (40MHz, MCS0, 90pc duty cycle)	X	5.45	66.65	16.33	0.46	130.0	± 9.6 %
		Y	5.37	66.80	16.44		130.0	
		Z	5.29	66.54	16.25		130.0	
10617-AAB	IEEE 802.11ac WiFi (40MHz, MCS1, 90pc duty cycle)	X	5.52	66.76	16.35	0.46	130.0	± 9.6 %
		Y	5.43	66.93	16.48		130.0	
		Z	5.36	66.73	16.32		130.0	
10618-AAB	IEEE 802.11ac WiFi (40MHz, MCS2, 90pc duty cycle)	X	5.41	66.83	16.40	0.46	130.0	± 9.6 %
		Y	5.32	66.98	16.52		130.0	
		Z	5.24	66.71	16.32		130.0	
10619-AAB	IEEE 802.11ac WiFi (40MHz, MCS3, 90pc duty cycle)	X	5.43	66.63	16.24	0.46	130.0	± 9.6 %
		Y	5.35	66.83	16.38		130.0	
		Z	5.27	66.56	16.19		130.0	
10620-AAB	IEEE 802.11ac WiFi (40MHz, MCS4, 90pc duty cycle)	X	5.56	66.78	16.36	0.46	130.0	± 9.6 %
		Y	5.45	66.89	16.46		130.0	
		Z	5.36	66.59	16.25		130.0	
10621-AAB	IEEE 802.11ac WiFi (40MHz, MCS5, 90pc duty cycle)	X	5.53	66.83	16.50	0.46	130.0	± 9.6 %
		Y	5.43	66.94	16.59		130.0	
		Z	5.35	66.69	16.42		130.0	
10622-AAB	IEEE 802.11ac WiFi (40MHz, MCS6, 90pc duty cycle)	X	5.52	66.93	16.54	0.46	130.0	± 9.6 %
		Y	5.43	67.09	16.66		130.0	
		Z	5.37	66.87	16.50		130.0	

ES3DV3- SN:3335

July 26, 2018

10623-AAB	IEEE 802.11ac WiFi (40MHz, MCS7, 90pc duty cycle)	X	5.43	66.56	16.25	0.46	130.0	± 9.6 %
		Y	5.32	66.66	16.33		130.0	
		Z	5.24	66.39	16.14		130.0	
10624-AAB	IEEE 802.11ac WiFi (40MHz, MCS8, 90pc duty cycle)	X	5.60	66.69	16.37	0.46	130.0	± 9.6 %
		Y	5.51	66.85	16.49		130.0	
		Z	5.44	66.60	16.31		130.0	
10625-AAB	IEEE 802.11ac WiFi (40MHz, MCS9, 90pc duty cycle)	X	5.99	67.68	16.92	0.46	130.0	± 9.6 %
		Y	5.92	67.95	17.09		130.0	
		Z	5.84	67.69	16.90		130.0	
10626-AAB	IEEE 802.11ac WiFi (80MHz, MCS0, 90pc duty cycle)	X	5.70	66.68	16.26	0.46	130.0	± 9.6 %
		Y	5.64	66.83	16.38		130.0	
		Z	5.58	66.59	16.21		130.0	
10627-AAB	IEEE 802.11ac WiFi (80MHz, MCS1, 90pc duty cycle)	X	5.96	67.23	16.49	0.46	130.0	± 9.6 %
		Y	5.89	67.41	16.62		130.0	
		Z	5.84	67.21	16.48		130.0	
10628-AAB	IEEE 802.11ac WiFi (80MHz, MCS2, 90pc duty cycle)	X	5.78	66.88	16.25	0.46	130.0	± 9.6 %
		Y	5.70	67.00	16.36		130.0	
		Z	5.62	66.72	16.17		130.0	
10629-AAB	IEEE 802.11ac WiFi (80MHz, MCS3, 90pc duty cycle)	X	5.88	66.97	16.29	0.46	130.0	± 9.6 %
		Y	5.78	67.07	16.39		130.0	
		Z	5.72	66.83	16.22		130.0	
10630-AAB	IEEE 802.11ac WiFi (80MHz, MCS4, 90pc duty cycle)	X	6.47	68.88	17.24	0.46	130.0	± 9.6 %
		Y	6.31	68.82	17.26		130.0	
		Z	6.23	68.53	17.06		130.0	
10631-AAB	IEEE 802.11ac WiFi (80MHz, MCS5, 90pc duty cycle)	X	6.32	68.53	17.25	0.46	130.0	± 9.6 %
		Y	6.15	68.45	17.25		130.0	
		Z	6.05	68.12	17.05		130.0	
10632-AAB	IEEE 802.11ac WiFi (80MHz, MCS6, 90pc duty cycle)	X	5.95	67.33	16.67	0.46	130.0	± 9.6 %
		Y	5.85	67.43	16.76		130.0	
		Z	5.80	67.23	16.62		130.0	
10633-AAB	IEEE 802.11ac WiFi (80MHz, MCS7, 90pc duty cycle)	X	5.90	67.20	16.44	0.46	130.0	± 9.6 %
		Y	5.76	67.15	16.46		130.0	
		Z	5.68	66.85	16.26		130.0	
10634-AAB	IEEE 802.11ac WiFi (80MHz, MCS8, 90pc duty cycle)	X	5.87	67.16	16.48	0.46	130.0	± 9.6 %
		Y	5.74	67.15	16.52		130.0	
		Z	5.66	66.87	16.33		130.0	
10635-AAB	IEEE 802.11ac WiFi (80MHz, MCS9, 90pc duty cycle)	X	5.74	66.47	15.88	0.46	130.0	± 9.6 %
		Y	5.64	66.57	15.98		130.0	
		Z	5.55	66.25	15.76		130.0	
10636-AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 90pc duty cycle)	X	6.11	67.09	16.37	0.46	130.0	± 9.6 %
		Y	6.05	67.22	16.47		130.0	
		Z	6.00	66.98	16.31		130.0	
10637-AAC	IEEE 802.11ac WiFi (160MHz, MCS1, 90pc duty cycle)	X	6.29	67.52	16.56	0.46	130.0	± 9.6 %
		Y	6.21	67.60	16.64		130.0	
		Z	6.16	67.38	16.49		130.0	
10638-AAC	IEEE 802.11ac WiFi (160MHz, MCS2, 90pc duty cycle)	X	6.28	67.45	16.51	0.46	130.0	± 9.6 %
		Y	6.21	67.58	16.61		130.0	
		Z	6.16	67.35	16.45		130.0	

ES3DV3- SN:3335

July 26, 2018

10639-AAC	IEEE 802.11ac WiFi (160MHz, MCS3, 90pc duty cycle)	X	6.29	67.50	16.58	0.46	130.0	± 9.6 %
		Y	6.20	67.55	16.64		130.0	
		Z	6.13	67.29	16.47		130.0	
10640-AAC	IEEE 802.11ac WiFi (160MHz, MCS4, 90pc duty cycle)	X	6.33	67.60	16.57	0.46	130.0	± 9.6 %
		Y	6.22	67.62	16.62		130.0	
		Z	6.15	67.33	16.43		130.0	
10641-AAC	IEEE 802.11ac WiFi (160MHz, MCS5, 90pc duty cycle)	X	6.31	67.30	16.44	0.46	130.0	± 9.6 %
		Y	6.24	67.42	16.54		130.0	
		Z	6.18	67.20	16.39		130.0	
10642-AAC	IEEE 802.11ac WiFi (160MHz, MCS6, 90pc duty cycle)	X	6.38	67.64	16.78	0.46	130.0	± 9.6 %
		Y	6.29	67.69	16.83		130.0	
		Z	6.22	67.45	16.68		130.0	
10643-AAC	IEEE 802.11ac WiFi (160MHz, MCS7, 90pc duty cycle)	X	6.21	67.32	16.52	0.46	130.0	± 9.6 %
		Y	6.13	67.41	16.60		130.0	
		Z	6.06	67.16	16.43		130.0	
10644-AAC	IEEE 802.11ac WiFi (160MHz, MCS8, 90pc duty cycle)	X	6.46	68.08	16.92	0.46	130.0	± 9.6 %
		Y	6.33	68.03	16.94		130.0	
		Z	6.24	67.70	16.72		130.0	
10645-AAC	IEEE 802.11ac WiFi (160MHz, MCS9, 90pc duty cycle)	X	6.74	68.44	17.04	0.46	130.0	± 9.6 %
		Y	6.80	68.96	17.35		130.0	
		Z	6.69	68.60	17.13		130.0	
10646-AAE	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,7)	X	20.11	100.60	33.03	9.30	60.0	± 9.6 %
		Y	67.00	132.52	43.08		60.0	
		Z	45.69	123.89	40.58		60.0	
10647-AAE	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,7)	X	20.57	101.80	33.52	9.30	60.0	± 9.6 %
		Y	71.00	134.86	43.86		60.0	
		Z	45.61	124.78	40.99		60.0	
10648-AAA	CDMA2000 (1x Advanced)	X	0.74	63.52	11.16	0.00	150.0	± 9.6 %
		Y	0.73	64.36	11.36		150.0	
		Z	0.61	62.32	9.54		150.0	
10652-AAC	LTE-TDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	X	4.47	68.36	17.23	2.23	80.0	± 9.6 %
		Y	4.40	69.06	17.51		80.0	
		Z	4.19	68.31	16.99		80.0	
10653-AAC	LTE-TDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%)	X	4.95	67.74	17.30	2.23	80.0	± 9.6 %
		Y	4.84	68.16	17.52		80.0	
		Z	4.68	67.60	17.14		80.0	
10654-AAC	LTE-TDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%)	X	4.88	67.44	17.30	2.23	80.0	± 9.6 %
		Y	4.78	67.80	17.51		80.0	
		Z	4.64	67.27	17.15		80.0	
10655-AAD	LTE-TDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	X	4.93	67.49	17.35	2.23	80.0	± 9.6 %
		Y	4.84	67.81	17.55		80.0	
		Z	4.70	67.26	17.19		80.0	
10658-AAA	Pulse Waveform (200Hz, 10%)	X	11.24	83.51	22.79	10.00	50.0	± 9.6 %
		Y	16.10	90.15	24.02		50.0	
		Z	16.34	90.14	23.70		50.0	
10659-AAA	Pulse Waveform (200Hz, 20%)	X	19.80	93.92	24.71	6.99	60.0	± 9.6 %
		Y	100.00	116.23	29.49		60.0	
		Z	100.00	114.94	28.73		60.0	

ES3DV3- SN:3335

July 26, 2018

10660-AAA	Pulse Waveform (200Hz, 40%)	X	100.00	115.97	28.34	3.98	80.0	± 9.6 %
		Y	100.00	114.00	26.90		80.0	
		Z	100.00	111.84	25.78		80.0	
10661-AAA	Pulse Waveform (200Hz, 60%)	X	100.00	115.58	26.61	2.22	100.0	± 9.6 %
		Y	100.00	114.73	25.82		100.0	
		Z	100.00	110.72	23.93		100.0	
10662-AAA	Pulse Waveform (200Hz, 80%)	X	100.00	115.84	24.73	0.97	120.0	± 9.6 %
		Y	100.00	117.86	25.24		120.0	
		Z	100.00	107.82	20.96		120.0	

<sup>F</sup> Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

### System check uncertainty

The uncertainty budget has been determined for the DASY5 measurement system according to the SPEAG documents and is given in the following Table.

#### Repeatability Budget for System Check

<0.3 – 3GHz range Body>

Error Description	Uncertainty value ± %	Probability distribution	divisor	(ci) lg	Standard (lg)	vi or v <sub>eff</sub>
<b>Measurement System</b>						
Probe calibration	± 1.8	Normal	1	1	± 1.8	∞
Axial isotropy of the probe	± 0.0	Rectangular	√3	1	± 0.0	∞
Spherical isotropy of the probe	± 0.0	Rectangular	√3	1	± 0.0	∞
Boundary effects	± 0.0	Rectangular	√3	1	± 0.0	∞
Probe linearity	± 0.0	Rectangular	√3	1	± 0.0	∞
Detection limit	± 0.0	Rectangular	√3	1	± 0.0	∞
Modulation response	± 0.0	Rectangular	√3	1	± 0.0	∞
Readout electronics	± 0.0	Normal	1	1	± 0.0	∞
Response time	± 0.0	Rectangular	√3	1	± 0.0	∞
Integration time	± 0.0	Rectangular	√3	1	± 0.0	∞
RF ambient Noise	± 0.0	Rectangular	√3	1	± 0.0	∞
RF ambient Reflections	± 0.0	Rectangular	√3	1	± 0.0	∞
Probe Positioner	± 0.4	Rectangular	√3	1	± 0.2	∞
Probe positioning	± 2.9	Rectangular	√3	1	± 1.7	∞
Max.SAR Eval.	± 0.0	Rectangular	√3	1	± 0.0	∞
<b>Test Sample Related</b>						
Deviation of wxp.dipole	± 0.0	Rectangular	√3	1	± 0.0	∞
Dipole Axis to Liquid Distance	± 2.0	Rectangular	√3	1	± 1.2	∞
Input power and SAR drift meas.	± 3.4	Rectangular	√3	1	± 2.0	∞
<b>Phantom and Setup</b>						
Phantom uncertainty	± 4.0	Rectangular	√3	1	± 2.3	∞
Algorithm for correcting SAR for deviations in permittivity and conductivity	± 1.9	Rectangular	√3	1	± 1.1	∞
Liquid conductivity (meas.)	± 5.0	Normal	1	0.78	+ 3.9	∞
Liquid permittivity (meas.)	± 5.0	Normal	1	0.26	- 1.3	∞
Liquid conductivity - temp.unc (below 2deg.C.)	± 1.7	Rectangular	√3	0.78	± 0.8	∞
Liquid permittivity - temp.unc (below 2deg.C.)	± 0.3	Rectangular	√3	0.23	± 0.0	∞
<b>Combined Standard Uncertainty</b>					± 5.945	
<b>Expanded Uncertainty (k=2)</b>					± 11.9	