

10477-AAE	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	9.10	82.47	17.07	3.23	80.0	± 9.6 %
		Y	100.00	111.24	25.54		80.0	
		Z	0.74	60.00	7.42		80.0	
10478-AAE	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	1.93	66.47	11.14	3.23	80.0	± 9.6 %
		Y	96.81	106.44	23.40		80.0	
		Z	0.77	60.00	6.80		80.0	
10479-AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	9.68	90.97	25.10	3.23	80.0	± 9.6 %
		Y	13.83	97.37	27.65		80.0	
		Z	12.23	94.71	25.17		80.0	
10480-AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	11.91	88.02	22.17	3.23	80.0	± 9.6 %
		Y	19.25	95.65	25.10		80.0	
		Z	7.50	81.30	18.54		80.0	
10481-AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	9.15	83.59	20.38	3.23	80.0	± 9.6 %
		Y	15.12	91.18	23.39		80.0	
		Z	4.40	74.24	15.71		80.0	
10482-AAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	4.76	79.70	20.44	2.23	80.0	± 9.6 %
		Y	3.53	74.74	18.45		80.0	
		Z	2.62	71.60	16.13		80.0	
10483-AAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	5.87	78.17	19.16	2.23	80.0	± 9.6 %
		Y	8.24	83.44	21.55		80.0	
		Z	2.93	69.04	14.15		80.0	
10484-AAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	5.35	76.61	18.60	2.23	80.0	± 9.6 %
		Y	7.24	81.28	20.83		80.0	
		Z	2.73	67.94	13.69		80.0	
10485-AAD	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	4.47	78.87	21.04	2.23	80.0	± 9.6 %
		Y	3.68	75.23	19.49		80.0	
		Z	3.15	74.27	18.50		80.0	
10486-AAD	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	3.79	72.50	18.04	2.23	80.0	± 9.6 %
		Y	3.38	70.29	17.05		80.0	
		Z	2.84	69.02	15.57		80.0	
10487-AAD	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	3.74	71.89	17.77	2.23	80.0	± 9.6 %
		Y	3.37	69.86	16.85		80.0	
		Z	2.81	68.50	15.32		80.0	
10488-AAD	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	4.24	75.86	20.43	2.23	80.0	± 9.6 %
		Y	3.83	73.65	19.40		80.0	
		Z	3.28	72.72	18.85		80.0	
10489-AAD	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	3.72	70.49	18.27	2.23	80.0	± 9.6 %
		Y	3.53	69.26	17.66		80.0	
		Z	3.19	68.97	17.14		80.0	
10490-AAD	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	3.79	70.18	18.14	2.23	80.0	± 9.6 %
		Y	3.62	69.04	17.58		80.0	
		Z	3.27	68.77	17.05		80.0	
10491-AAD	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	4.23	73.19	19.42	2.23	80.0	± 9.6 %
		Y	3.95	71.65	18.67		80.0	
		Z	3.47	70.90	18.25		80.0	
10492-AAD	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	3.97	69.24	17.95	2.23	80.0	± 9.6 %
		Y	3.85	68.36	17.51		80.0	
		Z	3.50	68.04	17.11		80.0	

10493-AAD	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	4.03	69.04	17.87	2.23	80.0	± 9.6 %
		Y	3.92	68.21	17.46		80.0	
		Z	3.56	67.90	17.04		80.0	
10494-AAE	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	4.79	75.46	20.14	2.23	80.0	± 9.6 %
		Y	4.38	73.53	19.24		80.0	
		Z	3.78	72.48	18.78		80.0	
10495-AAE	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	4.03	69.76	18.19	2.23	80.0	± 9.6 %
		Y	3.90	68.85	17.73		80.0	
		Z	3.53	68.35	17.31		80.0	
10496-AAE	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	4.08	69.35	18.04	2.23	80.0	± 9.6 %
		Y	3.97	68.51	17.62		80.0	
		Z	3.60	68.09	17.22		80.0	
10497-AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	3.72	75.87	18.08	2.23	80.0	± 9.6 %
		Y	2.64	70.76	15.98		80.0	
		Z	1.51	64.60	11.77		80.0	
10498-AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	2.30	66.27	12.99	2.23	80.0	± 9.6 %
		Y	2.02	64.31	12.06		80.0	
		Z	1.20	60.00	8.21		80.0	
10499-AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	2.18	65.35	12.41	2.23	80.0	± 9.6 %
		Y	1.97	63.70	11.62		80.0	
		Z	1.22	60.00	8.05		80.0	
10500-AAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	4.19	76.87	20.53	2.23	80.0	± 9.6 %
		Y	3.63	74.04	19.27		80.0	
		Z	3.15	73.35	18.54		80.0	
10501-AAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	3.74	71.57	18.07	2.23	80.0	± 9.6 %
		Y	3.44	69.83	17.26		80.0	
		Z	3.03	69.25	16.29		80.0	
10502-AAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	3.79	71.34	17.92	2.23	80.0	± 9.6 %
		Y	3.50	69.66	17.14		80.0	
		Z	3.07	69.05	16.12		80.0	
10503-AAD	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	4.18	75.62	20.32	2.23	80.0	± 9.6 %
		Y	3.77	73.43	19.30		80.0	
		Z	3.23	72.50	18.74		80.0	
10504-AAD	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	3.70	70.40	18.21	2.23	80.0	± 9.6 %
		Y	3.52	69.18	17.61		80.0	
		Z	3.17	68.86	17.07		80.0	
10505-AAD	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	3.77	70.08	18.09	2.23	80.0	± 9.6 %
		Y	3.60	68.95	17.53		80.0	
		Z	3.25	68.67	16.99		80.0	
10506-AAD	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	4.74	75.29	20.06	2.23	80.0	± 9.6 %
		Y	4.34	73.37	19.17		80.0	
		Z	3.74	72.32	18.70		80.0	
10507-AAD	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	4.01	69.69	18.15	2.23	80.0	± 9.6 %
		Y	3.88	68.79	17.69		80.0	
		Z	3.51	68.29	17.27		80.0	

10508-AAD	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	4.07	69.28	18.00	2.23	80.0	± 9.6 %
		Y	3.96	68.45	17.58		80.0	
		Z	3.59	68.02	17.17		80.0	
10509-AAD	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	4.87	73.12	19.15	2.23	80.0	± 9.6 %
		Y	4.57	71.69	18.46		80.0	
		Z	4.08	70.95	18.12		80.0	
10510-AAD	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	4.46	69.19	17.97	2.23	80.0	± 9.6 %
		Y	4.36	68.46	17.61		80.0	
		Z	3.98	67.93	17.23		80.0	
10511-AAD	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	4.49	68.83	17.85	2.23	80.0	± 9.6 %
		Y	4.40	68.15	17.52		80.0	
		Z	4.03	67.70	17.16		80.0	
10512-AAE	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	5.35	75.53	19.95	2.23	80.0	± 9.6 %
		Y	4.89	73.64	19.09		80.0	
		Z	4.27	72.56	18.64		80.0	
10513-AAE	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	4.37	69.62	18.15	2.23	80.0	± 9.6 %
		Y	4.26	68.83	17.75		80.0	
		Z	3.86	68.15	17.33		80.0	
10514-AAE	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	4.36	69.04	17.95	2.23	80.0	± 9.6 %
		Y	4.26	68.32	17.60		80.0	
		Z	3.89	67.75	17.20		80.0	
10515-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle)	X	0.98	64.01	15.52	0.00	150.0	± 9.6 %
		Y	0.90	62.52	14.23		150.0	
		Z	0.95	63.71	15.08		150.0	
10516-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle)	X	0.96	80.43	22.24	0.00	150.0	± 9.6 %
		Y	0.52	69.16	15.73		150.0	
		Z	0.74	75.71	19.80		150.0	
10517-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle)	X	0.87	66.95	16.73	0.00	150.0	± 9.6 %
		Y	0.75	64.30	14.64		150.0	
		Z	0.81	66.10	15.98		150.0	
10518-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle)	X	4.59	66.88	16.37	0.00	150.0	± 9.6 %
		Y	4.55	66.43	16.12		150.0	
		Z	4.41	66.91	16.25		150.0	
10519-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle)	X	4.79	67.13	16.49	0.00	150.0	± 9.6 %
		Y	4.75	66.71	16.26		150.0	
		Z	4.57	67.10	16.35		150.0	
10520-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle)	X	4.64	67.11	16.43	0.00	150.0	± 9.6 %
		Y	4.60	66.67	16.18		150.0	
		Z	4.43	67.05	16.27		150.0	
10521-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 99pc duty cycle)	X	4.57	67.12	16.42	0.00	150.0	± 9.6 %
		Y	4.53	66.66	16.16		150.0	
		Z	4.36	67.04	16.26		150.0	
10522-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle)	X	4.63	67.16	16.48	0.00	150.0	± 9.6 %
		Y	4.59	66.70	16.22		150.0	
		Z	4.42	67.17	16.36		150.0	

10523-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle)	X	4.51	67.05	16.34	0.00	150.0	± 9.6 %
		Y	4.46	66.56	16.06		150.0	
		Z	4.33	67.10	16.24		150.0	
10524-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle)	X	4.58	67.09	16.46	0.00	150.0	± 9.6 %
		Y	4.53	66.64	16.20		150.0	
		Z	4.37	67.10	16.33		150.0	
10525-AAB	IEEE 802.11ac WiFi (20MHz, MCS0, 99pc duty cycle)	X	4.55	66.14	16.05	0.00	150.0	± 9.6 %
		Y	4.50	65.66	15.78		150.0	
		Z	4.38	66.18	15.95		150.0	
10526-AAB	IEEE 802.11ac WiFi (20MHz, MCS1, 99pc duty cycle)	X	4.74	66.53	16.19	0.00	150.0	± 9.6 %
		Y	4.69	66.05	15.93		150.0	
		Z	4.52	66.50	16.07		150.0	
10527-AAB	IEEE 802.11ac WiFi (20MHz, MCS2, 99pc duty cycle)	X	4.66	66.50	16.15	0.00	150.0	± 9.6 %
		Y	4.61	66.01	15.87		150.0	
		Z	4.45	66.47	16.02		150.0	
10528-AAB	IEEE 802.11ac WiFi (20MHz, MCS3, 99pc duty cycle)	X	4.67	66.52	16.18	0.00	150.0	± 9.6 %
		Y	4.62	66.03	15.91		150.0	
		Z	4.47	66.48	16.05		150.0	
10529-AAB	IEEE 802.11ac WiFi (20MHz, MCS4, 99pc duty cycle)	X	4.67	66.52	16.18	0.00	150.0	± 9.6 %
		Y	4.62	66.03	15.91		150.0	
		Z	4.47	66.48	16.05		150.0	
10531-AAB	IEEE 802.11ac WiFi (20MHz, MCS6, 99pc duty cycle)	X	4.67	66.65	16.20	0.00	150.0	± 9.6 %
		Y	4.63	66.16	15.93		150.0	
		Z	4.44	66.54	16.04		150.0	
10532-AAB	IEEE 802.11ac WiFi (20MHz, MCS7, 99pc duty cycle)	X	4.53	66.51	16.14	0.00	150.0	± 9.6 %
		Y	4.48	66.01	15.86		150.0	
		Z	4.32	66.41	15.98		150.0	
10533-AAB	IEEE 802.11ac WiFi (20MHz, MCS8, 99pc duty cycle)	X	4.68	66.56	16.16	0.00	150.0	± 9.6 %
		Y	4.63	66.06	15.89		150.0	
		Z	4.48	66.56	16.05		150.0	
10534-AAB	IEEE 802.11ac WiFi (40MHz, MCS0, 99pc duty cycle)	X	5.19	66.60	16.20	0.00	150.0	± 9.6 %
		Y	5.16	66.20	15.99		150.0	
		Z	5.01	66.50	16.09		150.0	
10535-AAB	IEEE 802.11ac WiFi (40MHz, MCS1, 99pc duty cycle)	X	5.26	66.75	16.27	0.00	150.0	± 9.6 %
		Y	5.22	66.35	16.06		150.0	
		Z	5.06	66.65	16.16		150.0	
10536-AAB	IEEE 802.11ac WiFi (40MHz, MCS2, 99pc duty cycle)	X	5.13	66.73	16.24	0.00	150.0	± 9.6 %
		Y	5.09	66.32	16.02		150.0	
		Z	4.95	66.64	16.13		150.0	
10537-AAB	IEEE 802.11ac WiFi (40MHz, MCS3, 99pc duty cycle)	X	5.19	66.69	16.22	0.00	150.0	± 9.6 %
		Y	5.15	66.30	16.01		150.0	
		Z	5.00	66.59	16.11		150.0	
10538-AAB	IEEE 802.11ac WiFi (40MHz, MCS4, 99pc duty cycle)	X	5.28	66.73	16.28	0.00	150.0	± 9.6 %
		Y	5.26	66.36	16.08		150.0	
		Z	5.08	66.58	16.14		150.0	
10540-AAB	IEEE 802.11ac WiFi (40MHz, MCS6, 99pc duty cycle)	X	5.21	66.72	16.29	0.00	150.0	± 9.6 %
		Y	5.17	66.33	16.08		150.0	
		Z	5.01	66.56	16.15		150.0	

10541-AAB	IEEE 802.11ac WiFi (40MHz, MCS7, 99pc duty cycle)	X	5.18	66.60	16.22	0.00	150.0	± 9.6 %
		Y	5.14	66.20	16.01		150.0	
		Z	4.99	66.47	16.09		150.0	
10542-AAB	IEEE 802.11ac WiFi (40MHz, MCS8, 99pc duty cycle)	X	5.33	66.65	16.26	0.00	150.0	± 9.6 %
		Y	5.31	66.28	16.07		150.0	
		Z	5.14	66.55	16.15		150.0	
10543-AAB	IEEE 802.11ac WiFi (40MHz, MCS9, 99pc duty cycle)	X	5.41	66.68	16.29	0.00	150.0	± 9.6 %
		Y	5.39	66.31	16.11		150.0	
		Z	5.20	66.56	16.18		150.0	
10544-AAB	IEEE 802.11ac WiFi (80MHz, MCS0, 99pc duty cycle)	X	5.49	66.70	16.18	0.00	150.0	± 9.6 %
		Y	5.45	66.31	15.98		150.0	
		Z	5.34	66.58	16.07		150.0	
10545-AAB	IEEE 802.11ac WiFi (80MHz, MCS1, 99pc duty cycle)	X	5.68	67.09	16.32	0.00	150.0	± 9.6 %
		Y	5.66	66.76	16.15		150.0	
		Z	5.51	66.98	16.23		150.0	
10546-AAB	IEEE 802.11ac WiFi (80MHz, MCS2, 99pc duty cycle)	X	5.57	66.94	16.26	0.00	150.0	± 9.6 %
		Y	5.54	66.57	16.08		150.0	
		Z	5.38	66.73	16.11		150.0	
10547-AAB	IEEE 802.11ac WiFi (80MHz, MCS3, 99pc duty cycle)	X	5.64	66.98	16.27	0.00	150.0	± 9.6 %
		Y	5.63	66.66	16.11		150.0	
		Z	5.45	66.79	16.14		150.0	
10548-AAB	IEEE 802.11ac WiFi (80MHz, MCS4, 99pc duty cycle)	X	5.90	67.92	16.71	0.00	150.0	± 9.6 %
		Y	5.97	67.87	16.68		150.0	
		Z	5.63	67.50	16.47		150.0	
10550-AAB	IEEE 802.11ac WiFi (80MHz, MCS6, 99pc duty cycle)	X	5.59	66.92	16.26	0.00	150.0	± 9.6 %
		Y	5.55	66.54	16.07		150.0	
		Z	5.42	66.82	16.17		150.0	
10551-AAB	IEEE 802.11ac WiFi (80MHz, MCS7, 99pc duty cycle)	X	5.60	66.98	16.25	0.00	150.0	± 9.6 %
		Y	5.56	66.60	16.06		150.0	
		Z	5.40	66.75	16.10		150.0	
10552-AAB	IEEE 802.11ac WiFi (80MHz, MCS8, 99pc duty cycle)	X	5.51	66.77	16.16	0.00	150.0	± 9.6 %
		Y	5.47	66.37	15.96		150.0	
		Z	5.35	66.67	16.06		150.0	
10553-AAB	IEEE 802.11ac WiFi (80MHz, MCS9, 99pc duty cycle)	X	5.60	66.81	16.21	0.00	150.0	± 9.6 %
		Y	5.56	66.43	16.01		150.0	
		Z	5.41	66.65	16.08		150.0	
10554-AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 99pc duty cycle)	X	5.89	67.05	16.26	0.00	150.0	± 9.6 %
		Y	5.86	66.69	16.08		150.0	
		Z	5.75	66.91	16.14		150.0	
10555-AAC	IEEE 802.11ac WiFi (160MHz, MCS1, 99pc duty cycle)	X	6.02	67.35	16.38	0.00	150.0	± 9.6 %
		Y	6.00	67.02	16.22		150.0	
		Z	5.86	67.17	16.25		150.0	
10556-AAC	IEEE 802.11ac WiFi (160MHz, MCS2, 99pc duty cycle)	X	6.04	67.39	16.40	0.00	150.0	± 9.6 %
		Y	6.02	67.06	16.23		150.0	
		Z	5.88	67.24	16.28		150.0	
10557-AAC	IEEE 802.11ac WiFi (160MHz, MCS3, 99pc duty cycle)	X	6.01	67.32	16.38	0.00	150.0	± 9.6 %
		Y	5.99	66.98	16.22		150.0	
		Z	5.85	67.13	16.24		150.0	

10558-AAC	IEEE 802.11ac WiFi (160MHz, MCS4, 99pc duty cycle)	X	6.07	67.49	16.48	0.00	150.0	± 9.6 %
		Y	6.05	67.17	16.33		150.0	
		Z	5.88	67.26	16.33		150.0	
10560-AAC	IEEE 802.11ac WiFi (160MHz, MCS6, 99pc duty cycle)	X	6.06	67.34	16.44	0.00	150.0	± 9.6 %
		Y	6.04	66.99	16.28		150.0	
		Z	5.88	67.13	16.30		150.0	
10561-AAC	IEEE 802.11ac WiFi (160MHz, MCS7, 99pc duty cycle)	X	5.98	67.30	16.46	0.00	150.0	± 9.6 %
		Y	5.96	66.96	16.30		150.0	
		Z	5.81	67.11	16.32		150.0	
10562-AAC	IEEE 802.11ac WiFi (160MHz, MCS8, 99pc duty cycle)	X	6.11	67.72	16.67	0.00	150.0	± 9.6 %
		Y	6.12	67.46	16.55		150.0	
		Z	5.89	67.37	16.45		150.0	
10563-AAC	IEEE 802.11ac WiFi (160MHz, MCS9, 99pc duty cycle)	X	6.43	68.23	16.87	0.00	150.0	± 9.6 %
		Y	6.50	68.16	16.85		150.0	
		Z	5.96	67.23	16.35		150.0	
10564-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 99pc duty cycle)	X	4.91	66.93	16.51	0.46	150.0	± 9.6 %
		Y	4.88	66.54	16.31		150.0	
		Z	4.73	66.93	16.37		150.0	
10565-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 99pc duty cycle)	X	5.16	67.40	16.83	0.46	150.0	± 9.6 %
		Y	5.13	67.02	16.64		150.0	
		Z	4.93	67.35	16.69		150.0	
10566-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 99pc duty cycle)	X	4.99	67.26	16.66	0.46	150.0	± 9.6 %
		Y	4.96	66.87	16.45		150.0	
		Z	4.77	67.18	16.50		150.0	
10567-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 99pc duty cycle)	X	5.02	67.67	17.02	0.46	150.0	± 9.6 %
		Y	4.98	67.25	16.79		150.0	
		Z	4.81	67.60	16.88		150.0	
10568-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 99pc duty cycle)	X	4.90	67.00	16.42	0.46	150.0	± 9.6 %
		Y	4.87	66.62	16.22		150.0	
		Z	4.67	66.94	16.26		150.0	
10569-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 99pc duty cycle)	X	4.97	67.73	17.07	0.46	150.0	± 9.6 %
		Y	4.93	67.29	16.83		150.0	
		Z	4.78	67.78	16.99		150.0	
10570-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 99pc duty cycle)	X	5.01	67.57	17.00	0.46	150.0	± 9.6 %
		Y	4.97	67.15	16.77		150.0	
		Z	4.80	67.57	16.89		150.0	
10571-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle)	X	1.17	65.22	16.39	0.46	130.0	± 9.6 %
		Y	1.09	63.89	15.30		130.0	
		Z	1.10	64.48	15.68		130.0	
10572-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle)	X	1.19	65.91	16.81	0.46	130.0	± 9.6 %
		Y	1.10	64.45	15.65		130.0	
		Z	1.12	65.08	16.07		130.0	
10573-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle)	X	11.95	118.97	33.95	0.46	130.0	± 9.6 %
		Y	2.10	86.50	22.92		130.0	
		Z	2.78	93.83	26.37		130.0	
10574-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle)	X	1.42	73.69	20.72	0.46	130.0	± 9.6 %
		Y	1.20	70.19	18.52		130.0	
		Z	1.24	71.54	19.44		130.0	

10575-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle)	X	4.69	66.71	16.57	0.46	130.0	± 9.6 %
		Y	4.67	66.34	16.38		130.0	
		Z	4.50	66.68	16.40		130.0	
10576-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle)	X	4.72	66.88	16.64	0.46	130.0	± 9.6 %
		Y	4.69	66.50	16.44		130.0	
		Z	4.53	66.88	16.48		130.0	
10577-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle)	X	4.94	67.20	16.81	0.46	130.0	± 9.6 %
		Y	4.91	66.83	16.62		130.0	
		Z	4.71	67.13	16.63		130.0	
10578-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle)	X	4.83	67.37	16.92	0.46	130.0	± 9.6 %
		Y	4.81	66.98	16.72		130.0	
		Z	4.61	67.29	16.74		130.0	
10579-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle)	X	4.60	66.66	16.24	0.46	130.0	± 9.6 %
		Y	4.57	66.30	16.05		130.0	
		Z	4.37	66.49	16.00		130.0	
10580-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle)	X	4.64	66.67	16.25	0.46	130.0	± 9.6 %
		Y	4.62	66.31	16.06		130.0	
		Z	4.41	66.55	16.03		130.0	
10581-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle)	X	4.73	67.42	16.87	0.46	130.0	± 9.6 %
		Y	4.70	67.02	16.65		130.0	
		Z	4.52	67.36	16.71		130.0	
10582-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle)	X	4.54	66.41	16.03	0.46	130.0	± 9.6 %
		Y	4.53	66.07	15.85		130.0	
		Z	4.30	66.25	15.78		130.0	
10583-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 90pc duty cycle)	X	4.69	66.71	16.57	0.46	130.0	± 9.6 %
		Y	4.67	66.34	16.38		130.0	
		Z	4.50	66.68	16.40		130.0	
10584-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 90pc duty cycle)	X	4.72	66.88	16.64	0.46	130.0	± 9.6 %
		Y	4.69	66.50	16.44		130.0	
		Z	4.53	66.88	16.48		130.0	
10585-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 90pc duty cycle)	X	4.94	67.20	16.81	0.46	130.0	± 9.6 %
		Y	4.91	66.83	16.62		130.0	
		Z	4.71	67.13	16.63		130.0	
10586-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 90pc duty cycle)	X	4.83	67.37	16.92	0.46	130.0	± 9.6 %
		Y	4.81	66.98	16.72		130.0	
		Z	4.61	67.29	16.74		130.0	
10587-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 90pc duty cycle)	X	4.60	66.66	16.24	0.46	130.0	± 9.6 %
		Y	4.57	66.30	16.05		130.0	
		Z	4.37	66.49	16.00		130.0	
10588-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 90pc duty cycle)	X	4.64	66.67	16.25	0.46	130.0	± 9.6 %
		Y	4.62	66.31	16.06		130.0	
		Z	4.41	66.55	16.03		130.0	
10589-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 90pc duty cycle)	X	4.73	67.42	16.87	0.46	130.0	± 9.6 %
		Y	4.70	67.02	16.65		130.0	
		Z	4.52	67.36	16.71		130.0	
10590-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 90pc duty cycle)	X	4.54	66.41	16.03	0.46	130.0	± 9.6 %
		Y	4.53	66.07	15.85		130.0	
		Z	4.30	66.25	15.78		130.0	

10591-AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS0, 90pc duty cycle)	X	4.84	66.77	16.66	0.46	130.0	± 9.6 %
		Y	4.82	66.41	16.48		130.0	
		Z	4.66	66.76	16.51		130.0	
10592-AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS1, 90pc duty cycle)	X	5.01	67.12	16.79	0.46	130.0	± 9.6 %
		Y	4.99	66.76	16.61		130.0	
		Z	4.79	67.07	16.64		130.0	
10593-AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS2, 90pc duty cycle)	X	4.93	67.04	16.68	0.46	130.0	± 9.6 %
		Y	4.91	66.69	16.51		130.0	
		Z	4.71	66.95	16.50		130.0	
10594-AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS3, 90pc duty cycle)	X	4.98	67.20	16.83	0.46	130.0	± 9.6 %
		Y	4.96	66.84	16.65		130.0	
		Z	4.76	67.13	16.67		130.0	
10595-AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS4, 90pc duty cycle)	X	4.95	67.16	16.73	0.46	130.0	± 9.6 %
		Y	4.93	66.80	16.55		130.0	
		Z	4.73	67.10	16.57		130.0	
10596-AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS5, 90pc duty cycle)	X	4.89	67.16	16.74	0.46	130.0	± 9.6 %
		Y	4.87	66.79	16.55		130.0	
		Z	4.66	67.08	16.56		130.0	
10597-AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS6, 90pc duty cycle)	X	4.84	67.08	16.63	0.46	130.0	± 9.6 %
		Y	4.82	66.71	16.44		130.0	
		Z	4.61	66.96	16.43		130.0	
10598-AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS7, 90pc duty cycle)	X	4.82	67.33	16.90	0.46	130.0	± 9.6 %
		Y	4.80	66.95	16.70		130.0	
		Z	4.60	67.20	16.70		130.0	
10599-AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS0, 90pc duty cycle)	X	5.51	67.30	16.83	0.46	130.0	± 9.6 %
		Y	5.50	67.04	16.72		130.0	
		Z	5.31	67.18	16.69		130.0	
10600-AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS1, 90pc duty cycle)	X	5.66	67.75	17.03	0.46	130.0	± 9.6 %
		Y	5.70	67.66	17.00		130.0	
		Z	5.42	67.55	16.85		130.0	
10601-AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS2, 90pc duty cycle)	X	5.54	67.49	16.91	0.46	130.0	± 9.6 %
		Y	5.55	67.29	16.83		130.0	
		Z	5.33	67.34	16.76		130.0	
10602-AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS3, 90pc duty cycle)	X	5.62	67.47	16.82	0.46	130.0	± 9.6 %
		Y	5.64	67.27	16.74		130.0	
		Z	5.46	67.51	16.77		130.0	
10603-AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS4, 90pc duty cycle)	X	5.72	67.83	17.13	0.46	130.0	± 9.6 %
		Y	5.72	67.56	17.01		130.0	
		Z	5.53	67.80	17.05		130.0	
10604-AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS5, 90pc duty cycle)	X	5.51	67.26	16.84	0.46	130.0	± 9.6 %
		Y	5.51	67.00	16.72		130.0	
		Z	5.40	67.44	16.85		130.0	
10605-AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS6, 90pc duty cycle)	X	5.62	67.58	16.99	0.46	130.0	± 9.6 %
		Y	5.63	67.37	16.91		130.0	
		Z	5.43	67.48	16.86		130.0	
10606-AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS7, 90pc duty cycle)	X	5.39	67.04	16.59	0.46	130.0	± 9.6 %
		Y	5.38	66.75	16.46		130.0	
		Z	5.18	66.82	16.39		130.0	

10607-AAB	IEEE 802.11ac WiFi (20MHz, MCS0, 90pc duty cycle)	X	4.69	66.11	16.30	0.46	130.0	± 9.6 %
		Y	4.65	65.70	16.09		130.0	
		Z	4.51	66.12	16.16		130.0	
10608-AAB	IEEE 802.11ac WiFi (20MHz, MCS1, 90pc duty cycle)	X	4.89	66.54	16.47	0.46	130.0	± 9.6 %
		Y	4.86	66.13	16.26		130.0	
		Z	4.67	66.48	16.32		130.0	
10609-AAB	IEEE 802.11ac WiFi (20MHz, MCS2, 90pc duty cycle)	X	4.78	66.40	16.32	0.46	130.0	± 9.6 %
		Y	4.74	65.99	16.10		130.0	
		Z	4.56	66.32	16.14		130.0	
10610-AAB	IEEE 802.11ac WiFi (20MHz, MCS3, 90pc duty cycle)	X	4.83	66.56	16.48	0.46	130.0	± 9.6 %
		Y	4.80	66.15	16.27		130.0	
		Z	4.61	66.49	16.31		130.0	
10611-AAB	IEEE 802.11ac WiFi (20MHz, MCS4, 90pc duty cycle)	X	4.74	66.37	16.33	0.46	130.0	± 9.6 %
		Y	4.71	65.96	16.12		130.0	
		Z	4.52	66.28	16.15		130.0	
10612-AAB	IEEE 802.11ac WiFi (20MHz, MCS5, 90pc duty cycle)	X	4.76	66.53	16.38	0.46	130.0	± 9.6 %
		Y	4.73	66.12	16.16		130.0	
		Z	4.52	66.43	16.20		130.0	
10613-AAB	IEEE 802.11ac WiFi (20MHz, MCS6, 90pc duty cycle)	X	4.76	66.43	16.27	0.46	130.0	± 9.6 %
		Y	4.74	66.03	16.06		130.0	
		Z	4.52	66.26	16.05		130.0	
10614-AAB	IEEE 802.11ac WiFi (20MHz, MCS7, 90pc duty cycle)	X	4.70	66.62	16.50	0.46	130.0	± 9.6 %
		Y	4.67	66.19	16.28		130.0	
		Z	4.48	66.49	16.31		130.0	
10615-AAB	IEEE 802.11ac WiFi (20MHz, MCS8, 90pc duty cycle)	X	4.74	66.19	16.10	0.46	130.0	± 9.6 %
		Y	4.72	65.79	15.90		130.0	
		Z	4.52	66.11	15.92		130.0	
10616-AAB	IEEE 802.11ac WiFi (40MHz, MCS0, 90pc duty cycle)	X	5.34	66.61	16.47	0.46	130.0	± 9.6 %
		Y	5.32	66.28	16.32		130.0	
		Z	5.14	66.47	16.32		130.0	
10617-AAB	IEEE 802.11ac WiFi (40MHz, MCS1, 90pc duty cycle)	X	5.40	66.74	16.51	0.46	130.0	± 9.6 %
		Y	5.38	66.41	16.35		130.0	
		Z	5.21	66.65	16.39		130.0	
10618-AAB	IEEE 802.11ac WiFi (40MHz, MCS2, 90pc duty cycle)	X	5.29	66.79	16.56	0.46	130.0	± 9.6 %
		Y	5.27	66.46	16.39		130.0	
		Z	5.11	66.70	16.43		130.0	
10619-AAB	IEEE 802.11ac WiFi (40MHz, MCS3, 90pc duty cycle)	X	5.31	66.61	16.40	0.46	130.0	± 9.6 %
		Y	5.30	66.30	16.25		130.0	
		Z	5.11	66.46	16.24		130.0	
10620-AAB	IEEE 802.11ac WiFi (40MHz, MCS4, 90pc duty cycle)	X	5.41	66.67	16.47	0.46	130.0	± 9.6 %
		Y	5.41	66.38	16.34		130.0	
		Z	5.19	66.48	16.30		130.0	
10621-AAB	IEEE 802.11ac WiFi (40MHz, MCS5, 90pc duty cycle)	X	5.40	66.76	16.64	0.46	130.0	± 9.6 %
		Y	5.38	66.43	16.48		130.0	
		Z	5.21	66.64	16.50		130.0	
10622-AAB	IEEE 802.11ac WiFi (40MHz, MCS6, 90pc duty cycle)	X	5.41	66.91	16.70	0.46	130.0	± 9.6 %
		Y	5.39	66.60	16.55		130.0	
		Z	5.20	66.74	16.55		130.0	

10623-AAB	IEEE 802.11ac WiFi (40MHz, MCS7, 90pc duty cycle)	X	5.29	66.45	16.36	0.46	130.0	± 9.6 %
		Y	5.27	66.12	16.20		130.0	
		Z	5.08	66.28	16.19		130.0	
10624-AAB	IEEE 802.11ac WiFi (40MHz, MCS8, 90pc duty cycle)	X	5.48	66.64	16.51	0.46	130.0	± 9.6 %
		Y	5.47	66.35	16.38		130.0	
		Z	5.28	66.51	16.36		130.0	
10625-AAB	IEEE 802.11ac WiFi (40MHz, MCS9, 90pc duty cycle)	X	5.87	67.67	17.07	0.46	130.0	± 9.6 %
		Y	5.92	67.56	17.03		130.0	
		Z	5.48	66.99	16.66		130.0	
10626-AAB	IEEE 802.11ac WiFi (80MHz, MCS0, 90pc duty cycle)	X	5.62	66.65	16.41	0.46	130.0	± 9.6 %
		Y	5.59	66.32	16.26		130.0	
		Z	5.46	66.52	16.28		130.0	
10627-AAB	IEEE 802.11ac WiFi (80MHz, MCS1, 90pc duty cycle)	X	5.86	67.19	16.64	0.46	130.0	± 9.6 %
		Y	5.87	66.96	16.54		130.0	
		Z	5.68	67.07	16.52		130.0	
10628-AAB	IEEE 802.11ac WiFi (80MHz, MCS2, 90pc duty cycle)	X	5.67	66.78	16.37	0.46	130.0	± 9.6 %
		Y	5.65	66.49	16.24		130.0	
		Z	5.47	66.52	16.18		130.0	
10629-AAB	IEEE 802.11ac WiFi (80MHz, MCS3, 90pc duty cycle)	X	5.76	66.87	16.41	0.46	130.0	± 9.6 %
		Y	5.74	66.55	16.26		130.0	
		Z	5.55	66.62	16.22		130.0	
10630-AAB	IEEE 802.11ac WiFi (80MHz, MCS4, 90pc duty cycle)	X	6.21	68.41	17.17	0.46	130.0	± 9.6 %
		Y	6.36	68.57	17.26		130.0	
		Z	5.84	67.72	16.78		130.0	
10631-AAB	IEEE 802.11ac WiFi (80MHz, MCS5, 90pc duty cycle)	X	6.11	68.22	17.27	0.46	130.0	± 9.6 %
		Y	6.15	68.07	17.21		130.0	
		Z	5.81	67.73	16.97		130.0	
10632-AAB	IEEE 802.11ac WiFi (80MHz, MCS6, 90pc duty cycle)	X	5.83	67.26	16.81	0.46	130.0	± 9.6 %
		Y	5.82	66.98	16.68		130.0	
		Z	5.67	67.19	16.73		130.0	
10633-AAB	IEEE 802.11ac WiFi (80MHz, MCS7, 90pc duty cycle)	X	5.73	66.95	16.48	0.46	130.0	± 9.6 %
		Y	5.72	66.66	16.35		130.0	
		Z	5.54	66.74	16.32		130.0	
10634-AAB	IEEE 802.11ac WiFi (80MHz, MCS8, 90pc duty cycle)	X	5.72	66.98	16.56	0.46	130.0	± 9.6 %
		Y	5.70	66.65	16.41		130.0	
		Z	5.52	66.78	16.40		130.0	
10635-AAB	IEEE 802.11ac WiFi (80MHz, MCS9, 90pc duty cycle)	X	5.60	66.32	15.97	0.46	130.0	± 9.6 %
		Y	5.59	66.03	15.84		130.0	
		Z	5.39	66.04	15.76		130.0	
10636-AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 90pc duty cycle)	X	6.03	67.02	16.50	0.46	130.0	± 9.6 %
		Y	6.02	66.74	16.37		130.0	
		Z	5.89	66.87	16.36		130.0	
10637-AAC	IEEE 802.11ac WiFi (160MHz, MCS1, 90pc duty cycle)	X	6.19	67.40	16.66	0.46	130.0	± 9.6 %
		Y	6.19	67.15	16.56		130.0	
		Z	6.02	67.21	16.51		130.0	
10638-AAC	IEEE 802.11ac WiFi (160MHz, MCS2, 90pc duty cycle)	X	6.19	67.38	16.63	0.46	130.0	± 9.6 %
		Y	6.19	67.12	16.52		130.0	
		Z	6.03	67.21	16.49		130.0	

10639-AAC	IEEE 802.11ac WiFi (160MHz, MCS3, 90pc duty cycle)	X	6.18	67.36	16.66	0.46	130.0	± 9.6 %
		Y	6.17	67.09	16.55		130.0	
		Z	6.00	67.13	16.50		130.0	
10640-AAC	IEEE 802.11ac WiFi (160MHz, MCS4, 90pc duty cycle)	X	6.19	67.39	16.62	0.46	130.0	± 9.6 %
		Y	6.20	67.16	16.53		130.0	
		Z	5.99	67.11	16.43		130.0	
10641-AAC	IEEE 802.11ac WiFi (160MHz, MCS5, 90pc duty cycle)	X	6.21	67.22	16.56	0.46	130.0	± 9.6 %
		Y	6.20	66.94	16.44		130.0	
		Z	6.05	67.08	16.43		130.0	
10642-AAC	IEEE 802.11ac WiFi (160MHz, MCS6, 90pc duty cycle)	X	6.27	67.52	16.87	0.46	130.0	± 9.6 %
		Y	6.26	67.23	16.75		130.0	
		Z	6.09	67.31	16.72		130.0	
10643-AAC	IEEE 802.11ac WiFi (160MHz, MCS7, 90pc duty cycle)	X	6.10	67.19	16.61	0.46	130.0	± 9.6 %
		Y	6.09	66.93	16.50		130.0	
		Z	5.93	67.00	16.46		130.0	
10644-AAC	IEEE 802.11ac WiFi (160MHz, MCS8, 90pc duty cycle)	X	6.29	67.77	16.92	0.46	130.0	± 9.6 %
		Y	6.32	67.61	16.86		130.0	
		Z	6.02	67.30	16.63		130.0	
10645-AAC	IEEE 802.11ac WiFi (160MHz, MCS9, 90pc duty cycle)	X	6.72	68.61	17.29	0.46	130.0	± 9.6 %
		Y	6.81	68.60	17.31		130.0	
		Z	6.13	67.29	16.58		130.0	
10646-AAE	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,7)	X	26.22	119.06	40.53	9.30	60.0	± 9.6 %
		Y	23.98	116.77	40.23		60.0	
		Z	13.39	105.96	36.68		60.0	
10647-AAE	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,7)	X	21.91	115.56	39.67	9.30	60.0	± 9.6 %
		Y	20.79	114.08	39.59		60.0	
		Z	11.12	102.25	35.63		60.0	
10648-AAA	CDMA2000 (1x Advanced)	X	0.80	65.60	12.34	0.00	150.0	± 9.6 %
		Y	0.65	62.69	10.17		150.0	
		Z	0.58	62.96	9.61		150.0	
10652-AAC	LTE-TDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	X	3.70	67.38	17.08	2.23	80.0	± 9.6 %
		Y	3.59	66.56	16.66		80.0	
		Z	3.39	66.83	16.41		80.0	
10653-AAC	LTE-TDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%)	X	4.17	66.50	17.03	2.23	80.0	± 9.6 %
		Y	4.11	65.95	16.76		80.0	
		Z	3.90	66.02	16.55		80.0	
10654-AAC	LTE-TDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%)	X	4.13	66.12	17.00	2.23	80.0	± 9.6 %
		Y	4.07	65.60	16.75		80.0	
		Z	3.90	65.62	16.55		80.0	
10655-AAD	LTE-TDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	X	4.19	66.12	17.04	2.23	80.0	± 9.6 %
		Y	4.13	65.62	16.79		80.0	
		Z	3.96	65.57	16.58		80.0	
10658-AAA	Pulse Waveform (200Hz, 10%)	X	100.00	111.27	26.15	10.00	50.0	± 9.6 %
		Y	100.00	112.15	26.71		50.0	
		Z	14.35	85.50	18.40		50.0	
10659-AAA	Pulse Waveform (200Hz, 20%)	X	100.00	110.66	24.83	6.99	60.0	± 9.6 %
		Y	100.00	110.25	24.76		60.0	
		Z	100.00	105.29	22.07		60.0	

10660-AAA	Pulse Waveform (200Hz, 40%)	X	100.00	112.93	24.53	3.98	80.0	± 9.6 %
		Y	100.00	108.47	22.64		80.0	
		Z	100.00	104.83	20.58		80.0	
10661-AAA	Pulse Waveform (200Hz, 60%)	X	100.00	118.71	25.68	2.22	100.0	± 9.6 %
		Y	100.00	104.33	19.70		100.0	
		Z	100.00	104.48	19.32		100.0	
10662-AAA	Pulse Waveform (200Hz, 80%)	X	100.00	138.66	31.49	0.97	120.0	± 9.6 %
		Y	0.19	60.00	4.09		120.0	
		Z	100.00	91.23	12.90		120.0	

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

APPENDIX D: SAR TISSUE SPECIFICATIONS

Measurement Procedure for Tissue verification:

- 1) The network analyzer and probe system was configured and calibrated.
- 2) The probe was immersed in the tissue. The tissue was placed in a nonmetallic container. Trapped air bubbles beneath the flange were minimized by placing the probe at a slight angle.
- 3) The complex admittance with respect to the probe aperture was measured
- 4) The complex relative permittivity ϵ' can be calculated from the below equation (Pournaropoulos and Misra):

$$Y = \frac{j2\omega\epsilon_r\epsilon_0}{[\ln(b/a)]^2} \int_a^b \int_a^b \int_0^\pi \cos\phi' \frac{\exp[-j\omega r(\mu_0\epsilon_r'\epsilon_0)^{1/2}]}{r} d\phi' d\rho' d\rho$$

where Y is the admittance of the probe in contact with the sample, the primed and unprimed coordinates refer to source and observation points, respectively, $r^2 = \rho^2 + \rho'^2 - 2\rho\rho'\cos\phi'$, ω is the angular frequency, and $j = \sqrt{-1}$.

Table D-I
Composition of the Tissue Equivalent Matter

Frequency (MHz)	750	750	835	835	1750	1750	1900	1900	2450	2450	3500 - 5800	3500 - 5800
Tissue	Head	Body	Head	Body	Head	Body	Head	Body	Head	Body	Head	Body
Ingredients (% by weight)												
Bactericide			0.1	0.1								
DCBE					47	31	44.92	29.44		26.7		
HEC	See page 2-3	See page 2-3	1	1					See page 2		See page 3	See page 4
NaCl			1.45	0.94	0.4	0.2	0.18	0.39		0.1		
Sucrose			57	44.9								
Water			40.45	53.06	52.6	68.8	54.9	70.17		73.2		

FCC ID: ZNFV450VM



SAR EVALUATION REPORT



Approved by:
Quality Manager

Test Dates:
01/21/19 - 02/20/19

DUT Type:
Portable Handset

APPENDIX D:
Page 1 of 6

2 Composition / Information on ingredients

The Item is composed of the following ingredients:

H ₂ O	Water, 35 – 58%
Sucrose	Sugar, white, refined, 40 – 60%
NaCl	Sodium Chloride, 0 – 6%
Hydroxyethyl-cellulose	Medium Viscosity (CAS# 9004-62-0), <0.3%
Preventol-D7	Preservative: aqueous preparation, (CAS# 55965-84-9), containing 5-chloro-2-methyl-3(2H)-isothiazolone and 2-methyl-3(2H)-isothiazolone, 0.1 – 0.7%
Relevant for safety; Refer to the respective Safety Data Sheet*.	

Figure D-1

Composition of 750 MHz Head and Body Tissue Equivalent Matter

Note: 750MHz liquid recipes are proprietary SPEAG. Since the composition is approximate to the actual liquids utilized, the manufacturer tissue-equivalent liquid data sheets are provided below.

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s p e a g

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info@speag.com, http://www.speag.com

Measurement Certificate / Material Test

Item Name	Body Tissue Simulating Liquid (MSL750V2)
Product No.	SL AAM 075 AA (Batch: 170608-1)
Manufacturer	SPEAG

Measurement Method

TSL dielectric parameters measured using calibrated DAK probe.

Setup Validation

Validation results were within $\pm 2.5\%$ towards the target values of Methanol.

Target Parameters

Target parameters as defined in the IEEE 1528 and IEC 62209 compliance standards.

Test Condition

Ambient	Environment temperatur (22 ± 3)°C and humidity < 70%.
TSL Temperature	22°C
Test Date	20-Jun-17
Operator	CL

Additional Information

TSL Density	1.212 g/cm ³
TSL Heat-capacity	3.006 kJ/(kg·K)

f [MHz]	Measured			Target		Diff.to Target [%]	
	e'	e''	sigma	eps	sigma	Δ-eps	Δ-sigma
600	57.3	25.02	0.84	56.1	0.95	2.2	-12.2
625	57.1	24.67	0.86	56.0	0.95	1.9	-10.1
650	56.8	24.32	0.88	55.9	0.96	1.6	-8.0
675	56.6	24.02	0.90	55.8	0.96	1.3	-5.8
700	56.3	23.71	0.92	55.7	0.96	1.1	-3.8
725	56.1	23.48	0.95	55.6	0.96	0.8	-1.5
750	55.9	23.25	0.97	55.5	0.96	0.6	0.7
775	55.6	23.04	0.99	55.4	0.97	0.3	2.9
800	55.4	22.82	1.02	55.3	0.97	0.1	5.0
825	55.2	22.65	1.04	55.2	0.98	-0.1	6.3
838	55.1	22.56	1.05	55.2	0.98	-0.3	6.9
850	54.9	22.47	1.06	55.2	0.99	-0.4	7.5
875	54.7	22.34	1.09	55.1	1.02	-0.7	6.7
900	54.5	22.21	1.11	55.0	1.05	-0.9	5.9
925	54.3	22.08	1.14	55.0	1.06	-1.3	6.9
950	54.1	21.95	1.16	54.9	1.08	-1.6	7.9
975	53.8	21.86	1.19	54.9	1.09	-1.9	9.1
1000	53.6	21.76	1.21	54.8	1.10	-2.2	10.2

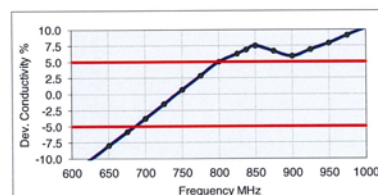
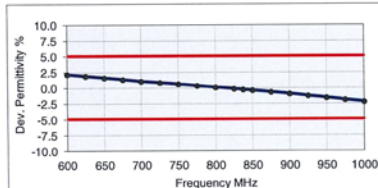


Figure D-2

750MHz Body Tissue Equivalent Matter

FCC ID: ZNFV450VM		SAR EVALUATION REPORT		Approved by: Quality Manager
Test Dates: 01/21/19 - 02/20/19	DUT Type: Portable Handset			APPENDIX D: Page 2 of 6

Measurement Certificate / Material Test

Item Name **Head Tissue Simulating Liquid (HSL750V2)**
 Product No. SL AAH 075 AA (Batch: 170612-4)
 Manufacturer **SPEAG**

Measurement Method

TSL dielectric parameters measured using calibrated DAK probe.

Setup Validation

Validation results were within $\pm 2.5\%$ towards the target values of Methanol.

Target Parameters

Target parameters as defined in the IEEE 1528 and IEC 62209 compliance standards.

Test Condition

Ambient Environment temperatur ($22 \pm 3^\circ\text{C}$ and humidity $< 70\%$).
 TSL Temperature 22°C
 Test Date 20-Jun-17
 Operator CL

Additional Information

TSL Density 1.284 g/cm^3
 TSL Heat-capacity $2.701 \text{ kJ/(kg}^\circ\text{K)}$

f [MHz]	Measured			Target		Diff.to Target [%]	
	e'	e''	sigma	eps	sigma	$\Delta\text{-eps}$	$\Delta\text{-sigma}$
600	45.6	22.97	0.77	42.7	0.88	6.7	-13.1
625	45.2	22.73	0.79	42.6	0.88	6.2	-10.6
650	44.9	22.49	0.81	42.5	0.89	5.6	-8.2
675	44.5	22.27	0.84	42.3	0.89	5.1	-5.8
700	44.2	22.05	0.86	42.2	0.89	4.6	-3.5
725	43.8	21.88	0.88	42.1	0.89	4.2	-1.0
750	43.5	21.72	0.91	41.9	0.89	3.8	1.4
775	43.2	21.55	0.93	41.8	0.90	3.4	3.7
800	42.9	21.38	0.95	41.7	0.90	2.9	6.0
825	42.6	21.24	0.97	41.6	0.91	2.4	7.5
838	42.5	21.17	0.99	41.5	0.91	2.2	8.2
850	42.3	21.09	1.00	41.5	0.92	2.0	8.9
875	42.0	20.98	1.02	41.5	0.94	1.2	8.3
900	41.7	20.87	1.05	41.5	0.97	0.5	7.7
925	41.5	20.76	1.07	41.5	0.98	0.0	8.7
950	41.2	20.64	1.09	41.4	0.99	-0.6	9.7
975	40.9	20.55	1.11	41.4	1.00	-1.1	10.9
1000	40.6	20.46	1.14	41.3	1.01	-1.7	12.1

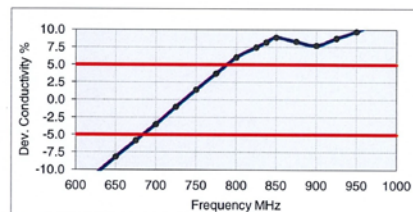
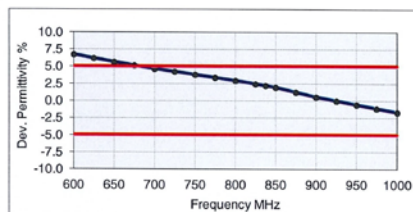


Figure D-3
750MHz Head Tissue Equivalent Matter

FCC ID: ZNFV450VM		SAR EVALUATION REPORT		Approved by: Quality Manager
Test Dates: 01/21/19 - 02/20/19	DUT Type: Portable Handset			APPENDIX D: Page 3 of 6

3 Composition / Information on ingredients

The Item is composed of the following ingredients:

Water	50 – 73 %	
Non-ionic detergents	25 – 50 %	polyoxyethylenesorbitan monolaurate
NaCl	0 – 2 %	
Preservative	0.05 – 0.1 %	Preventol-D7

Safety relevant ingredients:

CAS-No. 55965-84-9	< 0.1 %	aqueous preparation, containing 5-chloro-2-methyl-3(2H)-isothiazolone and 2-methyl-3(2H)-isothiazolone
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CAS-No. 9005-64-5	< 50 %	polyoxyethylenesorbitan monolaurate
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According to international guidelines, the product is not a dangerous mixture and therefore not required to be marked by symbols.

Figure D-4
Composition of 2.4 GHz Head Tissue Equivalent Matter

Note: 2.4 GHz head liquid recipes are proprietary SPEAG. Since the composition is approximate to the actual liquids utilized, the manufacturer tissue-equivalent liquid data sheets are provided below.

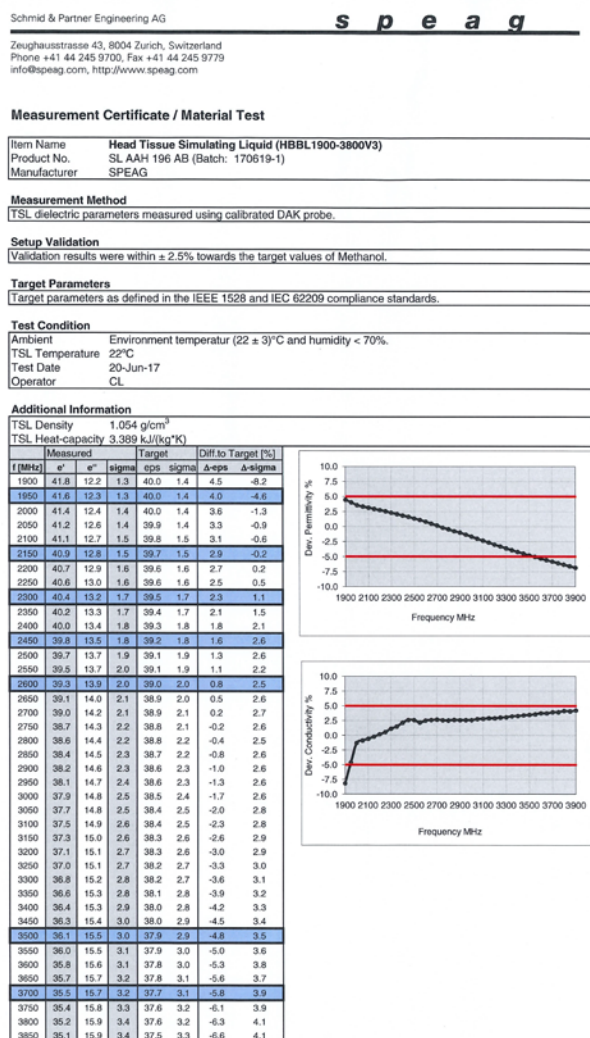


Figure D-5
2.4 GHz Head Tissue Equivalent Matter

FCC ID: ZNFV450VM		SAR EVALUATION REPORT		Approved by: Quality Manager
Test Dates: 01/21/19 - 02/20/19	DUT Type: Portable Handset			APPENDIX D: Page 4 of 6

2 Composition / Information on ingredients

The Item is composed of the following ingredients:

Water	50 – 65%
Mineral oil	10 – 30%
Emulsifiers	8 – 25%
Sodium salt	0 – 1.5%

Figure D-6

Composition of 3.5 – 5 GHz Head Tissue Equivalent Matter

Note: 3.5 – 5 GHz head liquid recipes are proprietary SPEAG. Since the composition is approximate to the actual liquids utilized, the manufacturer tissue-equivalent liquid data sheets are provided below.

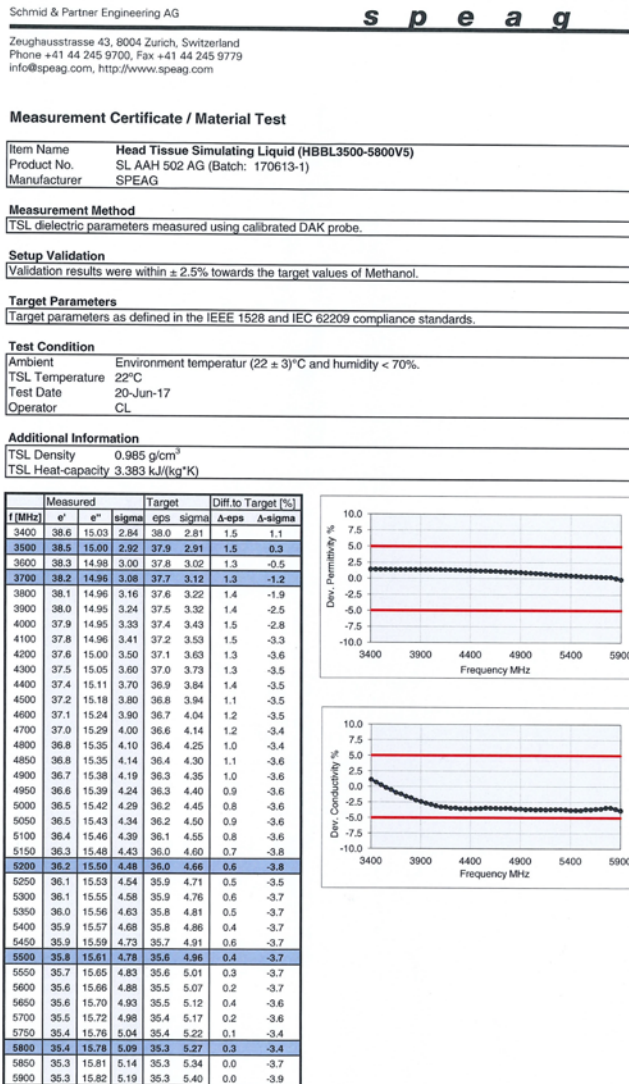


Figure D-7

3.5 – 5 GHz Head Tissue Equivalent Matter

FCC ID: ZNFV450VM		SAR EVALUATION REPORT		Approved by: Quality Manager
Test Dates: 01/21/19 - 02/20/19	DUT Type: Portable Handset			APPENDIX D: Page 5 of 6

3 Composition / Information on ingredients

The Item is composed of the following ingredients:

Water	60 – 80%
Esters, Emulsifiers, Inhibitors	20 – 40%
Sodium salt	0 – 1.5%

Figure D-8
Composition of 3.5 – 5 GHz Body Tissue Equivalent Matter

Note: 3.5 – 5 GHz Body liquid recipes are proprietary SPEAG. Since the composition is approximate to the actual liquids utilized, the manufacturer tissue-equivalent liquid data sheets are provided below.

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Measurement Certificate / Material Test

Item Name: Body Tissue Simulating Liquid (MBBL3500-5800V5)
Product No.: SL AAM 501 EA (Batch: 180423-2)
Manufacturer: SPEAG

Measurement Method

TSL dielectric parameters measured using calibrated DAK probe.

Setup Validation

Validation results were within $\pm 2.5\%$ towards the target values of Methanol.

Target Parameters

Target parameters as defined in the KDB 865664 compliance standard.

Test Condition

Ambient: Environment temperatur (22 ± 3)°C and humidity < 70%.
TSL Temperature: 22°C
Test Date: 25-Apr-18
Operator: WM

Additional Information

TSL Density: 0.996 g/cm³
TSL Heat-capacity: 3.765 kJ/(kg·K)

f [MHz]	Measured			Target		Diff.to Target [%]	
	e'	e''	sigma	eps	sigma	Δ-eps	Δ-sigma
3400	50.7	16.46	3.11	51.5	3.20	-1.5	-2.7
3500	50.5	16.50	3.21	51.3	3.31	-1.6	-3.1
3600	50.4	16.56	3.32	51.2	3.43	-1.5	-3.2
3700	50.3	16.62	3.42	51.1	3.55	-1.5	-3.6
3800	50.2	16.72	3.53	50.9	3.66	-1.4	-3.7
3900	50.1	16.81	3.65	50.8	3.78	-1.3	-3.5
4000	49.9	16.93	3.77	50.6	3.90	-1.5	-3.3
4100	49.8	17.05	3.89	50.5	4.01	-1.4	-3.1
4200	49.6	17.18	4.01	50.4	4.13	-1.5	-2.9
4300	49.5	17.32	4.14	50.2	4.25	-1.5	-2.5
4400	49.3	17.46	4.27	50.1	4.37	-1.6	-2.2
4500	49.2	17.59	4.40	50.0	4.48	-1.5	-1.8
4600	49.0	17.73	4.54	49.8	4.60	-1.7	-1.3
4700	48.8	17.86	4.67	49.7	4.72	-1.8	-1.0
4800	48.6	17.99	4.80	49.6	4.83	-1.9	-0.7
4850	48.5	18.05	4.87	49.5	4.89	-2.0	-0.4
4900	48.4	18.11	4.94	49.4	4.95	-2.1	-0.2
4950	48.3	18.17	5.00	49.4	5.01	-2.1	-0.1
5000	48.2	18.23	5.07	49.3	5.07	-2.2	0.1
5050	48.1	18.29	5.14	49.2	5.12	-2.3	0.3
5100	48.0	18.34	5.20	49.2	5.18	-2.3	0.3
5150	47.9	18.39	5.27	49.1	5.24	-2.4	0.6
5200	47.9	18.45	5.34	49.0	5.30	-2.3	0.8
5250	47.8	18.50	5.40	48.9	5.36	-2.3	0.8
5300	47.7	18.56	5.47	48.9	5.42	-2.4	1.0
5350	47.6	18.61	5.54	48.8	5.47	-2.5	1.2
5400	47.5	18.67	5.61	48.7	5.53	-2.5	1.4
5450	47.4	18.72	5.68	48.7	5.59	-2.6	1.6
5500	47.3	18.77	5.74	48.6	5.65	-2.7	1.6
5550	47.2	18.83	5.81	48.5	5.71	-2.8	1.8
5600	47.1	18.88	5.88	48.5	5.77	-2.8	2.0
5650	47.1	18.93	5.95	48.4	5.82	-2.7	2.1
5700	47.0	18.99	6.02	48.3	5.88	-2.8	2.3
5750	46.9	19.04	6.09	48.3	5.94	-2.8	2.5
5800	46.8	19.10	6.16	48.2	6.00	-2.9	2.7
5850	46.7	19.16	6.23	48.1	6.06	-3.0	2.8
5900	46.6	19.22	6.31	48.1	6.12	-3.0	3.2

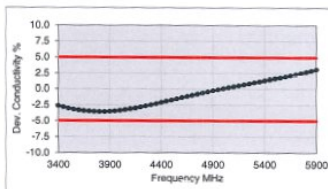
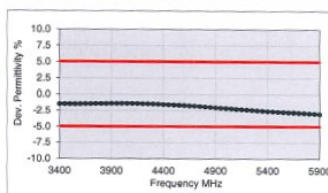


Figure D-9
3.5 – 5 GHz Body Tissue Equivalent Matter

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APPENDIX E: SAR SYSTEM VALIDATION

Per FCC KDB Publication 865664 D02v01r02, SAR system validation status should be documented to confirm measurement accuracy. The SAR systems (including SAR probes, system components and software versions) used for this device were validated against its performance specifications prior to the SAR measurements. Reference dipoles were used with the required tissue- equivalent media for system validation, according to the procedures outlined in FCC KDB Publication 865664 D01v01r04 and IEEE 1528-2013. Since SAR probe calibrations are frequency dependent, each probe calibration point was validated at a frequency within the valid frequency range of the probe calibration point, using the system that normally operates with the probe for routine SAR measurements and according to the required tissue-equivalent media.

A tabulated summary of the system validation status including the validation date(s), measurement frequencies, SAR probes and tissue dielectric parameters has been included.

Table E-1
SAR System Validation Summary – 1g

SAR SYSTEM #	FREQ. [MHz]	DATE	PROBE SN	PROBE CAL. POINT		COND.	PERM.	CW VALIDATION			MOD. VALIDATION		
						(σ)	(ε _r)	SENSITIVITY	PROBE LINEARITY	PROBE ISOTROPY	MOD. TYPE	DUTY FACTOR	PAR
G	750	8/9/2018	7410	750	Head	0.888	41.769	PASS	PASS	PASS	N/A	N/A	N/A
G	835	8/9/2018	7410	835	Head	0.889	40.915	PASS	PASS	PASS	GMSK	PASS	N/A
H	1750	7/16/2018	7409	1750	Head	1.331	41.186	PASS	PASS	PASS	N/A	N/A	N/A
G	1900	8/9/2018	7410	1900	Head	1.429	38.607	PASS	PASS	PASS	GMSK	PASS	N/A
G	2450	8/7/2018	7410	2450	Head	1.865	39.618	PASS	PASS	PASS	OFDM/TDD	PASS	PASS
H	3500	10/30/2018	3949	3500	Head	2.803	38.5	PASS	PASS	PASS	TDD	PASS	N/A
H	3700	10/30/2018	3949	3700	Head	2.997	38.156	PASS	PASS	PASS	TDD	PASS	N/A
H	5250	7/5/2018	7409	5250	Head	4.492	34.994	PASS	PASS	PASS	OFDM	N/A	PASS
H	5600	7/5/2018	7409	5600	Head	4.839	34.496	PASS	PASS	PASS	OFDM	N/A	PASS
H	5750	7/5/2018	7409	5750	Head	4.995	34.288	PASS	PASS	PASS	OFDM	N/A	PASS
E	750	2/5/2019	3589	750	Body	0.984	54.096	PASS	PASS	PASS	N/A	N/A	N/A
D	835	8/15/2018	7357	835	Body	1	53.368	PASS	PASS	PASS	GMSK	PASS	N/A
J	1750	9/5/2018	3347	1750	Body	1.454	53.515	PASS	PASS	PASS	N/A	N/A	N/A
G	1750	8/29/2018	7410	1750	Body	1.464	52.807	PASS	PASS	PASS	N/A	N/A	N/A
J	1900	2/8/2019	7488	1900	Body	1.571	52.538	PASS	PASS	PASS	GMSK	PASS	N/A
K	2450	4/3/2018	3319	2450	Body	2.043	51.13	PASS	PASS	PASS	OFDM/TDD	PASS	PASS
L	3500	11/1/2018	3914	3500	Body	3.336	51.607	PASS	PASS	PASS	TDD	PASS	N/A
L	3700	11/2/2018	3914	3700	Body	3.55	51.31	PASS	PASS	PASS	TDD	PASS	N/A
L	5250	10/29/2018	7308	5250	Body	5.511	48.77	PASS	PASS	PASS	OFDM	N/A	PASS
L	5600	10/29/2018	7308	5600	Body	5.994	48.2	PASS	PASS	PASS	OFDM	N/A	PASS
L	5750	10/29/2018	7308	5750	Body	6.219	47.96	PASS	PASS	PASS	OFDM	N/A	PASS

Table E-2
SAR System Validation Summary – 10g

SAR SYSTEM #	FREQ. [MHz]	DATE	PROBE SN	PROBE CAL. POINT		COND.	PERM.	CW VALIDATION			MOD. VALIDATION		
						(σ)	(ε _r)	SENSITIVITY	PROBE LINEARITY	PROBE ISOTROPY	MOD. TYPE	DUTY FACTOR	PAR
J	1750	9/5/2018	3347	1750	Body	1.454	53.515	PASS	PASS	PASS	N/A	N/A	N/A
J	1900	2/8/2019	7488	1900	Body	1.571	52.538	PASS	PASS	PASS	GMSK	PASS	N/A
L	5250	10/29/2018	7308	5250	Body	5.511	48.77	PASS	PASS	PASS	OFDM	N/A	PASS
L	5600	10/29/2018	7308	5600	Body	5.994	48.2	PASS	PASS	PASS	OFDM	N/A	PASS

NOTE: While the probes have been calibrated for both CW and modulated signals, all measurements were performed using communication systems calibrated for CW signals only. Modulations in the table above represent test configurations for which the measurement system has been validated per FCC KDB Publication 865664 D01v01r04 for scenarios when CW probe calibrations are used with other signal types. SAR systems were validated for modulated signals with a periodic duty cycle, such as GMSK, or with a high peak to average ratio (>5 dB), such as OFDM according to FCC KDB Publication 865664 D01v01r04.

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APPENDIX G POWER REDUCTION VERIFICATION

Per the May 2017 TCBC Workshop Notes, demonstration of proper functioning of the power reduction mechanisms is required to support the corresponding SAR configurations. The verification process was divided into two parts: (1) evaluation of output power levels for individual or multiple triggering mechanisms and (2) evaluation of the triggering distances for proximity-based sensors.

G.1 Power Verification Procedure

The power verification was performed according to the following procedure:

1. A base station simulator was used to establish a conducted RF connection and the output power was monitored. The power measurements were confirmed to be within expected tolerances for all states before and after a power reduction mechanism was triggered.
2. Step 1 was repeated for all relevant modes and frequency bands for the mechanism being investigated.
3. Steps 1 and 2 were repeated for all individual power reduction mechanisms and combinations thereof. For the combination cases, one mechanism was switched to a 'triggered' state at a time; powers were confirmed to be within tolerances after each additional mechanism was activated.

G.2 Distance Verification Procedure

The distance verification procedure was performed according to the following procedure:

1. A base station simulator was used to establish an RF connection and to monitor the power levels. The device being tested was placed below the relevant section of the phantom with the relevant side or edge of the device facing toward the phantom.
2. The device was moved toward and away from the phantom to determine the distance at which the mechanism triggers and the output power is reduced, per KDB Publication 616217 D04v01r02 and FCC Guidance. Each applicable test position was evaluated. The distances were confirmed to be the same or larger (more conservative) than the minimum distances provided by the manufacturer.
3. Steps 1 and 2 were repeated for low, mid, and high bands, as appropriate (see note below Table G-2 for more details).
4. Steps 1 through 3 were repeated for all distance-based power reduction mechanisms.

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G.3 Main Antenna Verification Summary

Table G-1
Power Measurement Verification for Main Antenna

Mechanism(s)	Mode/Band	Conducted Power (dBm)	
1st		Un-triggered (Max)	Mechanism #1 (Reduced)
Grip	UMTS 1900	24.68	23.35
Grip	LTE FDD Band 4	24.89	23.69
Grip	LTE FDD Band 66	24.77	23.61
Grip	LTE FDD Band 2	24.95	23.47

Table G-2
Distance Measurement Verification for Main Antenna

Mechanism(s)	Test Condition	Band	Distance Measurements (mm)		Minimum Distance per Manufacturer (mm)
			Moving Toward	Moving Away	
Grip	Phablet - Back Side	Mid	3	4	3
Grip	Phablet - Front Side	Mid	2	3	2
Grip	Phablet - Bottom Edge	Mid	4	5	4

*Note: Mid band refers to: UMTS B2, LTE B2/4/66.

G.4 WIFI Verification Summary

Table G-3
Power Measurement Verification WIFI

Mechanism(s)	Mode/Band	Conducted Power (dBm)	
1st		Un-triggered (Max)	Mechanism #1 (Reduced)
Held-to-Ear	802.11b	19.89	16.76
Held-to-Ear	802.11g	18.62	16.82
Held-to-Ear	802.11n (2.4GHz)	17.31	17.23

*Note: IEEE 802.11ax & MIMO WIFI modes were not evaluated due to equipment limitations.

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Table G-4
Power Measurement Verification WIFI for Conditions with 5G NR – Antenna 1

	Mechanism(s)	Mode/Band	Conducted Power (dBm)	
	1st		Un-triggered (Max)	Mechanism #1 (Reduced)
2.4 GHz WLAN	mmWave Active	802.11b	19.77	17.17
	mmWave Active	802.11g	18.58	17.12
	mmWave Active	802.11n (2.4 GHz)	17.57	17.10
5 GHz WLAN	mmWave Active	802.11a	17.28	14.33
	mmWave Active	802.11n (5GHz, 20 MHz BW)	17.32	14.12
	mmWave Active	802.11ac (20 MHz BW)	17.18	14.10
	mmWave Active	802.11n (40 MHz BW)	15.84	14.28
	mmWave Active	802.11ac (40 MHz BW)	15.92	14.31
	mmWave Active	802.11ac (80 MHz BW)	12.44	12.41

*Note: IEEE 802.11ax & MIMO WIFI modes were not evaluated due to equipment limitations.

Table G-5
Power Measurement Verification WIFI for Conditions with 5G NR – Antenna 2

	Mechanism(s)	Mode/Band	Conducted Power (dBm)	
	1st		Un-triggered (Max)	Mechanism #1 (Reduced)
2.4 GHz WLAN	mmWave Active	802.11b	19.43	16.92
	mmWave Active	802.11g	18.37	16.97
	mmWave Active	802.11n (2.4 GHz)	17.42	17.01
5 GHz WLAN	mmWave Active	802.11a	16.88	13.93
	mmWave Active	802.11n (5GHz, 20 MHz BW)	16.77	13.82
	mmWave Active	802.11ac (20 MHz BW)	16.81	13.79
	mmWave Active	802.11n (40 MHz BW)	15.87	14.14
	mmWave Active	802.11ac (40 MHz BW)	15.71	14.15
	mmWave Active	802.11ac (80 MHz BW)	12.31	12.33

*Note: IEEE 802.11ax & MIMO WIFI modes were not evaluated due to equipment limitations.

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APPENDIX H: DOWNLINK LTE CA RF CONDUCTED POWERS

1.1 LTE Downlink Only Carrier Aggregation Test Reduction Methodology

SAR test exclusion for LTE downlink Carrier Aggregation is determined by power measurements according to the number of component carriers (CCs) supported by the product implementation. Per April 2018 TCBC Workshop Notes, the following test reduction methodology was applied to determine the combinations required for conducted power measurements.

LTE DLCA Test Reduction Methodology:

- The supported combinations were arranged by the number of component carriers in columns.
- Any limitations on the PCC or SCC for each combination were identified alongside the combination (e.g. CA_2A-2A-4A-12A, but B12 can only be configured as a SCC).
- Power measurements were performed for "supersets" (LTE CA combinations with multiple components carriers) and any "subsets" (LTE CA combinations with fewer component carriers) that were not completely covered by the supersets.
- Only subsets that have the exact same components as a superset were excluded for measurement.
- When there were certain restrictions on component carriers that existed in the superset that were not applied for the subset, the subset configuration was additionally evaluated.
- Both inter-band and intra-band downlink carrier aggregation scenarios were considered.
- Downlink CA combinations for SISO and 4x4 Downlink MIMO operations were measured independently, per May 2017 TCBC Workshop notes.

Table 1 – Example of Exclusion Table for SISO Configurations

[illegible]

Table 2 – Example of Exclusion Table for 4x4 Downlink MIMO Configurations

Table 2: Example 1 - Table 2 for 100 MHz Channel Bandwidth Configurations						Table 3: Example 2 - Table 3 for 100 MHz Channel Bandwidth Configurations							
Index	ACC	Supported Channel Bandwidth [MHz]		Restriction	Completely Covered by Measurement Superset	Index	ACC	Supported Channel Bandwidth [MHz]				Restriction	Completely Covered by Measurement Superset
		CC1	CC2					CC1	CC2	CC3	CC4		
ACC #M1	CA [2C]	5, 10, 15, 20	5, 10, 15, 20		ACC #M6	ACC #M1	CA [2A]-58-66A	5, 10, 15, 20	5, 10	5, 10, 15, 20		No	
ACC #M2	CA [2A]-2A	5, 10, 15, 20	5, 10, 15, 20		ACC #M1	ACC #M2	CA 2A-58-66A	5, 10, 15, 20	5, 10	5, 10, 15, 20		No	
ACC #M3	CA [2A]-12A	5, 10, 15, 20	5, 10, 15, 20	No	ACC #M2	ACC #M3	CA [2A]-58-66A	5, 10, 15, 20	5, 10, 15	5, 10, 15, 20		No	
ACC #M4	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	No	ACC #M3	ACC #M4	CA 2A-58-66A	5, 10, 15	5, 10, 15	5, 10, 15		No	
ACC #M5	CA [2A]-4A (2)	5, 10, 15, 20	5, 10, 15, 20	No	ACC #M4	ACC #M5	CA [2A]-58-66C	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		No	
ACC #M6	CA [2A]-5A	5, 10, 15, 20	5, 10		ACC #M5	ACC #M6	CA 2A-58-66C	5, 10, 15, 20	5, 10	5, 10, 15, 20		No	
ACC #M7	CA [2A]-12A (1)	5, 10, 15, 20	5, 10		ACC #M7	ACC #M7	CA 2C-66A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		No	
ACC #M8	CA [2A]-13A	5, 10, 15, 20	5, 10		ACC #M8	ACC #M8	CA [2C]-66A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		No	
ACC #M9	CA [2A]-17A	5, 10	5, 10	No	ACC #M9	ACC #M9	CA [2A]-66A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		No	
ACC #M10	CA [2A]-29A (2)	5, 10, 15, 20	5, 10	B29 SCC Only	ACC #M10	ACC #M10	CA 2A-66A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		No	
ACC #M11	CA [2A]-66A (2)	5, 10, 15, 20	5, 10, 15, 20		ACC #M11	ACC #M11	CA [2A]-2A-7A	5, 10, 15, 20	5, 10	5, 10, 15, 20		No	
ACC #M12	CA [2A]-66A (2)	5, 10, 15, 20	5, 10, 15, 20		ACC #M12	ACC #M12	CA [2A]-4A-29A	5, 10, 15, 20	5, 10, 15, 20	5, 10	B29 SCC Only	No	
ACC #M13	CA [2A]-66A (2)	5, 10, 15, 20	5, 10, 15, 20		ACC #M13	ACC #M13	CA [4A]-47A	5, 10, 15, 20	5, 10, 15, 20	5, 10, 15, 20		No	
ACC #M14	CA [2A]-66A (2)	5, 10, 15, 20	5, 10, 15, 20		ACC #M14	ACC #M14	CA [2A]-58	5, 10, 15, 20	5, 10	5, 10		ACC #M1	
ACC #M15	CA [2A]-71A	5, 10, 15, 20	5, 10, 15, 20		ACC #M15	ACC #M15	CA [2A]-66A	5, 10, 15, 20	5, 10	5, 10, 15, 20		No	
ACC #M16	CA [5A]-66A	5, 10	5, 10, 15, 20		ACC #M16	ACC #M16	CA 2A-5A-66A	5, 10, 15, 20	5, 10	5, 10, 15, 20		No	
ACC #M17	CA [12A]-66A (4)	5, 10	5, 10, 15, 20		ACC #M17	ACC #M17	CA 2A-12A-66A	5, 10, 15, 20	5, 10	5, 10, 15, 20		No	
ACC #M18	CA [13A]-66A	5, 10	5, 10, 15, 20		ACC #M18	ACC #M18	CA [13A]-66A	5, 10, 15, 20	5, 10	5, 10, 15, 20		No	
ACC #M19	CA [2A]-66A	5, 10	5, 10, 15, 20		ACC #M19	ACC #M19	CA 2A-13A-66A	5, 10, 15, 20	5, 10	5, 10, 15, 20		No	
ACC #M20	CA [66B]	5, 10, 15	5, 10, 15		ACC #M20	ACC #M20	CA 2A-10A-66A	5, 10, 15, 20	5, 10, 15	5, 10, 15, 20		No	
ACC #M21	CA [66C]	5, 10, 15, 20	5, 10, 15, 20		ACC #M21	ACC #M21	CA [2A]-66B	5, 10, 15, 20	5, 10, 15	5, 10, 15		ACC #M3	
ACC #M22	CA [66A]-66A	5, 10, 15, 20	5, 10, 15, 20		ACC #M22	ACC #M22	CA 2A-66B	5, 10, 15, 20	5, 10, 15	5, 10, 15		ACC #M4	
ACC #M23	CA [66A]-66A	5, 10, 15, 20	5, 10, 15, 20		ACC #M23	ACC #M23	CA [1A]-66B	5, 10, 15, 20	5, 10, 15	5, 10, 15			

Note: [CC] indicates component carrier with 4x4 DL MIMO antenna configuration

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1.2 LTE Downlink Only Carrier Aggregation Test Selection and Setup

SAR test exclusion for LTE downlink Carrier Aggregation is determined by power measurements according to the number component carriers (CCs) supported by the product implementation. For those configurations required by April 2018 TCBC Workshop Notes, conducted power measurements with LTE Carrier Aggregation (CA) (downlink only) active are made in accordance to KDB Publication 941225 D05Av01r02. The RRC connection is only handled by one cell, the primary component carrier (PCC) for downlink and uplink communications. After making a data connection to the PCC, the UE device adds secondary component carrier(s) (SCC) on the downlink only. All uplink communications and acknowledgements remain identical to specifications when downlink carrier aggregation is inactive on the PCC. Additional conducted output powers are measured with the downlink carrier aggregation active for the configuration with highest measured maximum conducted power with downlink carrier aggregation inactive measured among the channel bandwidth, modulation, and RB combinations in each frequency band.

This device supports LAA with downlink carrier aggregation only. It uses carrier aggregation in the downlink to combine LTE in the unlicensed spectrum (i.e. LTE Band 46) with LTE in the licensed band (served as PCC). All uplink communications and acknowledgements on the PCC remain identical to specifications when downlink carrier aggregation is inactive.

Per FCC KDB Publication 941225 D05Av01r02, no SAR measurements are required for carrier aggregation configurations when the maximum average output power with downlink only carrier aggregation active is not more than 0.25 dB higher than the average output power with downlink only carrier aggregation inactive. All bands required for SAR testing per FCC KDB procedures were considered. Based on the measured maximum powers below, no additional SAR tests were required for DLCA SAR configurations.

General PCC and SCC configuration selection procedure

- PCC uplink channel, channel bandwidth, modulation and RB configurations were selected based on section C)3)b)ii) of KDB 941225 D05 V01r02. The downlink PCC channel was paired with the selected PCC uplink channel according to normal configurations without carrier aggregation.
- To maximize aggregated bandwidth, highest channel bandwidth available for that CA combination was selected for SCC. For inter-band CA, the SCC downlink channels were selected near the middle of their transmission bands. For contiguous intra-band CA, the downlink channel spacing between the component carriers was set to multiple of 300 kHz less than the nominal channel spacing defined in section 5.4.1A of 3GPP TS 36.521. For non-contiguous intra-band CA, the downlink channel spacing between the component carriers was set to be larger than the nominal channel spacing and provided maximum separation between the component carriers.
- All selected PCC and SCC(s) remained fully within the uplink/downlink transmission band of the respective component carrier.

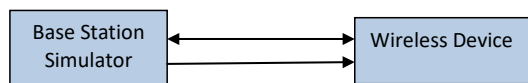


Figure 1
DL CA Power Measurement Setup

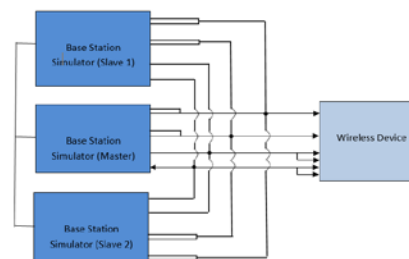


Figure 2
DL CA with DL 4x4 MIMO
Power Measurement Setup

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1.3 Downlink Carrier Aggregation RF Conducted Powers

1.3.1 LTE Band 13 as PCC

Table 1
Maximum Output Powers

Combination	PCC Band	PCC										SCC 1			SCC 2			SCC 3			SCC 4			Power			
		PCC BW [MHz]	PCC (UL) Ch	PCC (UL) Freq. [MHz]	Mod.	PCC UL RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	LTE Tx Power with DC CA (enabled) [dBm]	LTE Single Carrier Tx Power [dBm]
CA 13A-46A-66A	LTE B13	5	23230	782	QPSK	1	12	5230	751	LTE B46	20	50665	5537.5	LTE B66	20	66786	2145	-	-	-	-	-	-	-	-	25.28	25.22
CA 2A-13A-46A	LTE B13	5	23230	782	QPSK	1	12	5230	751	LTE B2	20	900	1900	LTE B46	20	50665	5537.5	-	-	-	-	-	-	-	-	25.28	25.22
CA 2A-4A-13A	LTE B13	10	23230	782	QPSK	1	48	5230	751	LTE B2	20	900	1900	LTE B4	20	2175	2132.5	-	-	-	-	-	-	-	-	25.36	25.35
CA 4A-4A-13A	LTE B13	10	23230	782	QPSK	1	48	5230	751	LTE B4	20	2175	2132.5	LTE B4	20	2175	2132.5	-	-	-	-	-	-	-	-	25.34	25.35
CA 13A-46C-66A	LTE B13	5	23230	782	QPSK	1	12	5230	751	LTE B46	20	50665	5537.5	LTE B46	20	50647	5517.7	LTE B66	20	66786	2145	-	-	-	-	25.36	25.22
CA 13A-46A-66B	LTE B13	5	23230	782	QPSK	1	12	5230	751	LTE B46	20	50660	3625	LTE B66	15	66786	2145	LTE B66	5	66879	2154.3	-	-	-	-	25.26	25.22
CA 13A-46A-66C	LTE B13	5	23230	782	QPSK	1	12	5230	751	LTE B46	20	50660	3625	LTE B66	20	66734	2139.8	LTE B66	20	66536	2120	-	-	-	-	25.31	25.22
CA 13A-46C-46C	LTE B13	5	23230	782	QPSK	1	12	5230	751	LTE B46	20	50660	3625	LTE B46	20	50665	5537.5	LTE B46	20	50667	5517.7	-	-	-	-	25.30	25.22
CA 2A-13A-66A-66A	LTE B13	5	23230	782	QPSK	1	12	5230	751	LTE B2	20	900	1900	LTE B46	20	50660	5537.5	LTE B66	20	67236	2190	-	-	-	-	25.29	25.22
CA 2A-13A-66B	LTE B13	5	23230	782	QPSK	1	12	5230	751	LTE B2	20	900	1900	LTE B46	15	66879	2154.3	-	-	-	-	-	-	-	25.30	25.22	
CA 2A-13A-66C	LTE B13	5	23230	782	QPSK	1	12	5230	751	LTE B2	20	900	1900	LTE B46	20	66786	2145	LTE B66	20	66884	2154.8	-	-	-	-	25.28	25.22
CA 2A-2A-13A-66A	LTE B13	5	23230	782	QPSK	1	12	5230	751	LTE B2	20	900	1900	LTE B2	20	700	1940	LTE B66	20	66786	2145	-	-	-	-	25.29	25.22
CA 13A-46D-66A	LTE B13	5	23230	782	QPSK	1	12	5230	751	LTE B46	20	50665	5537.5	LTE B46	20	50667	5517.7	LTE B46	20	50663	5557.3	LTE B66	20	66786	2145	25.30	25.22
CA 13A-46E	LTE B13	5	23230	782	QPSK	1	12	5230	751	LTE B46	20	50665	5537.5	LTE B46	20	50667	5517.7	LTE B46	20	50663	5557.3	-	-	-	-	25.31	25.22
CA 13A-46A-46D	LTE B13	5	23230	782	QPSK	1	12	5230	751	LTE B46	20	50660	3625	LTE B46	20	55340	3660	LTE B46	20	55336	3579.8	LTE B46	20	55376	3599.6	25.27	25.22
CA 13A-46C-46C	LTE B13	5	23230	782	QPSK	1	12	5230	751	LTE B46	20	50660	3625	LTE B46	20	56138	3644.8	LTE B46	20	55340	3660	LTE B46	20	55338	3579.8	25.29	25.22
CA 13A-46E	LTE B13	5	23230	782	QPSK	1	12	5230	751	LTE B46	20	50660	3625	LTE B46	20	56138	3644.8	LTE B46	20	56138	3644.8	LTE B46	20	56138	3644.8	25.28	25.22
CA 2A-13A-46A-46A	LTE B13	5	23230	782	QPSK	1	12	5230	751	LTE B2	20	900	1900	LTE B46	20	50660	3625	LTE B46	20	56138	3644.8	LTE B66	20	66786	2145	25.31	25.22
CA 2A-13A-46A-46C	LTE B13	5	23230	782	QPSK	1	12	5230	751	LTE B2	20	900	1900	LTE B46	20	50660	3625	LTE B46	20	56138	3644.8	LTE B46	20	56442	3670.2	25.32	25.22
CA 2A-13A-46C-66A	LTE B13	5	23230	782	QPSK	1	12	5230	751	LTE B2	20	900	1900	LTE B46	20	50660	3625	LTE B46	20	56138	3644.8	LTE B66	20	66636	2120	25.29	25.22
CA 2A-13A-46D	LTE B13	5	23230	782	QPSK	1	12	5230	751	LTE B2	20	900	1900	LTE B46	20	50660	3625	LTE B46	20	56138	3644.8	LTE B46	20	56138	3644.8	25.31	25.22

1.3.2 LTE Band 5 as PCC

Table 2
Maximum Output Powers

Combination	PCC Band	PCC										SCC 1				SCC 2				SCC 3				SCC 4				Power	
		PCC BW [MHz]	PCC (UL) Ch	PCC (UL) Freq. [MHz]	Mod.	PCC UL RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	LTE Tx Power with DC CA (dBm)	LTE Single Carrier Tx Power (dBm)		
CA 5A-46A (1)	LTE B5	10	20525	836.5	QPSK	1	48	2525	881.5	LTE B46	20	50665	5537.5	-	-	-	-	-	-	-	-	-	-	-	-	25.41	25.36		
CA 5A-46A	LTE B5	10	20525	836.5	QPSK	1	48	2525	881.5	LTE B46	20	50660	3625	-	-	-	-	-	-	-	-	-	-	-	-	25.35	25.36		
CA 5A-6A (1)	LTE B5	5	20415	825.5	QPSK	5	14	2415	870.5	LTE B5	5	2625	891.5	-	-	-	-	-	-	-	-	-	-	-	-	25.30	25.35		
CA 2A-5A-46A	LTE B5	10	20525	836.5	QPSK	1	48	2525	881.5	LTE B2	20	900	1900	LTE B46	20	50665	5537.5	-	-	-	-	-	-	-	-	25.32	25.36		
CA 5A-46A-66A	LTE B5	10	20525	836.5	QPSK	1	48	2525	881.5	LTE B46	20	50665	5537.5	LTE B66	20	66786	2145	-	-	-	-	-	-	-	-	25.40	25.36		
CA 5A-46C (1)	LTE B5	10	20525	836.5	QPSK	1	48	2525	881.5	LTE B46	20	50665	5537.5	LTE B46	20	50667	5517.7	-	-	-	-	-	-	-	-	25.32	25.36		
CA 5A-46C	LTE B5	10	20525	836.5	QPSK	1	48	2525	881.5	LTE B46	20	50660	3625	LTE B46	20	56138	3644.8	-	-	-	-	-	-	-	-	25.33	25.36		
CA 2A-2A-4A-5A	LTE B5	10	20525	836.5	QPSK	1	48	2525	881.5	LTE B2	20	900	1900	LTE B2	20	700	1940	LTE B4	20	2175	2132.5	-	-	-	-	-	25.32	25.36	
CA 2A-4A-4A-5A	LTE B5	10	20525	836.5	QPSK	1	48	2525	881.5	LTE B2	20	900	1900	LTE B4	20	2175	2132.5	LTE B4	20	2190	2190	-	-	-	-	-	25.33	25.36	
CA 2A-4A-5B	LTE B5	10	20525	836.5	QPSK	1	48	2525	881.5	LTE B5	5	2453	874.3	LTE B2	20	900	1900	LTE B4	20	2175	2132.5	-	-	-	-	-	25.35	25.36	
CA 2A-5A-46C	LTE B5	10	20525	836.5	QPSK	1	48	2525	881.5	LTE B2	20	900	1900	LTE B46	20	50665	5537.5	LTE B46	20	50667	5517.7	-	-	-	-	-	25.38	25.36	
CA 4A-4A-5B	LTE B5	10	20525	836.5	QPSK	1	48	2525	881.5	LTE B5	5	2453	874.3	LTE B4	20	2175	2132.5	LTE B4	20	2250	2190	-	-	-	-	-	25.30	25.36	
CA 5A-46C-66A	LTE B5	10	20525	836.5	QPSK	1	48	2525	881.5	LTE B46	20	50665	5537.5	LTE B66	20	50667	5517.7	LTE B66	20	66786	2145	-	-	-	-	25.39	25.36		
CA 5A-46D (1)	LTE B5	10	20525	836.5	QPSK	1	48	2525	881.5	LTE B46	20	50665	5537.5	LTE B46	20	50667	5517.7	LTE B46	20	50663	5557.3	-	-	-	-	25.41	25.36		
CA 5A-46E	LTE B5	10	20525	836.5	QPSK	1	48	2525	881.5	LTE B46	20	50665	5537.5	LTE B46	20	50667	5517.7	LTE B46	20	50663	5557.3	-	-	-	-	25.40	25.36		
CA 5A-5A-66B	LTE B5	10	20525	836.5	QPSK	1	48	2525	881.5	LTE B5	5	2425	871.5	LTE B66	15	66786	2145	LTE B66	5	66879	2154.3	-	-	-	-	25.42	25.36		
CA 5A-5A-66C	LTE B5	10	20525	836.5	QPSK	1	48	2525	881.5	LTE B5	5	2425	871.5	LTE B66	20	66786	2145	LTE B66	20	66884	2154.8	-	-	-	-	25.41	25.36		
CA 2A-2A-5A-6A-66A	LTE B5	10	20525	836.5	QPSK	1	48	2525	881.5	LTE B2	20	900	1900	LTE B2	20	700	1940	LTE B66	20	66786	2145	LTE B66	20	67236	2190	25.29	25.36		
CA 2A-2A-5A-66B	LTE B5	10	20525	836.5	QPSK	1	48	2525	881.5	LTE B2	20	900	1900	LTE B2	20	700	1940	LTE B66	15	66786	2145	LTE B66	5	66879	2154.3	25.34	25.36		
CA 2A-5A-66C	LTE B5	10	20525	836.5	QPSK	1	48	2525	881.5	LTE B2	20	900	1900	LTE B2	20	700	1940	LTE B66	20	66786	2145	LTE B66	20	66884	2154.8	25.38	25.36		
CA 2A-5A-46D	LTE B5	10	20525	836.5	QPSK	1	48	2525	881.5	LTE B2	20	900	1900	LTE B46	20	50665	5537.5	LTE B46	20	50667	5517.7	LTE B46	20	50663	5557.3	25.19	25.36		
CA 2A-5B-66A-66A	LTE B5	10	20525	836.5	QPSK	1	48	2525	881.5	LTE B5	5	2453	874.3	LTE B2	20	900	1900	LTE B66	20	66786	2145	LTE B66	20	67236	2190	25.33	25.36		
CA 2A-5B-66B	LTE B5	10	20525	836.5	QPSK	1	48	2525	881.5	LTE B5	5	2453	874.3	LTE B2	20	900	1900	LTE B66	15	66879	2154.3	-	-	-	-	25.28	25.36		
CA 2A-5B-66C	LTE B5	10	20525	836.5	QPSK	1	48	2525	881.5	LTE B5	5	2453	874.3	LTE B2	20	900	1900	LTE B66											

1.3.3 LTE Band 66 as PCC

Table 3
Maximum Output Powers

[illegible]

1.3.4 LTE Band 2 as PCC

Table 4
Maximum Output Powers

[illegible]

1.3.5 LTE Band 48 as PCC

Table 5
Maximum Output Powers

Combination	PCC Band	PCC										SCC 1										SCC 2										SCC 3										SCC 4										Power	
		PCC BW [MHz]	PCC [UL] Ch Freq. [MHz]	Mod.	PCC UL RB	PCC UL RB Offset	PCC [DL] Channel	PCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [DL] Channel	SCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [DL] Channel	SCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [DL] Channel	SCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [DL] Channel	SCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [DL] Channel	SCC [DL] Freq. [MHz]	LTE Tx Power with CA Enabled [dBm]	LTE Single Carrier Tx Power [dBm]																							
CA_4B1-4B1	LTE B48	5	55248	3600.8	CPX1	1	0	55748	3600.8	LTE B48	20	55865	3612.5	LTE B48	20	55640	3690	LTE B48	20	56442	3602	LTE B48	20	56344	3550.4					23.6	23.6																						
CA_4B1-4B1	LTE B48	5	55248	3600.8	CPX1	1	0	55748	3600.8	LTE B48	20	55865	3612.5	LTE B48	20	55640	3692	LTE B48	20	56340	3620	LTE B48	20	55538	3575.8			23.6	23.6	23.6	23.6																						

FCC ID: ZNFV450VM	 PCTEST INFORMATION LABORATORY, INC.	SAR EVALUATION REPORT	 LG	Reviewed by: Quality Manager
Test Dates: 01/21/19 – 02/20/19	DUT Type: Portable Handset			APPENDIX H: Page 4 of 6

1.4 DL CA with DL 4x4 MIMO RF Conduction Powers

This device supports downlink 4x4 MIMO operations for some LTE bands. Uplink transmission is limited to a single output stream. When carrier aggregation was applicable, the general test selection and setup procedures described in Section 1.2 were applied.

Per May 2017 TCB Workshop Notes, SAR for 4x4 DL MIMO was not needed since the maximum average output power in 4x4 DL MIMO mode was not more than 0.25 dB higher than the maximum output power with 4x4 DL MIMO inactive. Additionally, SAR for 4x4 MIMO Downlink Carrier Aggregation was not needed since the maximum average output power in 4x4 MIMO Downlink Carrier Aggregation mode was not more than 0.25 dB higher than the maximum output power with 4x4 MIMO Downlink and downlink carrier aggregation inactive.

1.4.1 LTE 4x4 MIMO DL Standalone Powers

Table 6
Maximum Output Powers

LTE Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Modulation	RB Size	RB Offset	4x4 DL MIMO Tx. Power [dBm]	Single Antenna Tx. Power [dBm]
66	20	132322	1745	QPSK	1	50	25.14	25.09
2	15	19125	1902.5	QPSK	1	36	25.10	25.09

1.4.2 LTE Band 13 as PCC

Table 7
Maximum Output Powers

Combination	PCC Band	PCC BW [MHz]	PCC [UL] Ch.	PCC [UL] Freq. [MHz]	Mod.	PCC				DL Ant. Config.	SCC 1				DL Ant. Config.	SCC 2				DL Ant. Config.	SCC 3				DL Ant. Config.	Power	
						PCC UL RB Offset	PCC UL RB	PCC [DL] Ch.	PCC [DL] Freq. [MHz]		SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]		SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]		SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]		LTE Tx Power with DL CA Enabled	LTE Single Carrier Tx Power (dBm)
CA 13A-66A-66A	LTE B13	5	23230	782	QPSK	1	12	5230	751	2x2	LTE B66	20	66786	2145	4x4	LTE B66	20	67236	2190	2x2	-	-	-	-	-	25.28	25.22
CA 12A-13A-66A	LTE B13	5	23230	782	QPSK	1	12	5230	751	2x2	LTE B62	20	900	1960	4x4	LTE B66	20	66786	2145	2x2	-	-	-	-	-	25.26	25.22
CA 12A-13A-13A	LTE B13	10	23230	782	QPSK	1	49	5230	751	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	2x2	-	-	-	-	-	25.20	25.15
CA 12A-4A-13A	LTE B13	10	23230	782	QPSK	1	49	5230	751	2x2	LTE B2	20	900	1960	4x4	LTE B4	20	2175	2132.5	2x2	-	-	-	-	-	25.14	25.15
CA 2A-13A-66A	LTE B13	5	23230	782	QPSK	1	12	5230	751	2x2	LTE B62	20	900	1960	4x4	LTE B66	20	66786	2145	4x4	-	-	-	-	-	25.24	25.22
CA 4A-13A-13A	LTE B13	10	23230	782	QPSK	1	49	5230	751	2x2	LTE B4	20	2175	2132.5	4x4	LTE B4	10	2350	2150	2x2	-	-	-	-	-	25.23	25.15
CA 12A-13A-66A-66A	LTE B13	5	23230	782	QPSK	1	12	5230	751	2x2	LTE B2	20	900	1960	4x4	LTE B66	20	66786	2145	4x4	LTE B66	20	67236	2190	4x4	25.23	25.22
CA 2A-13A-66B	LTE B13	5	23230	782	QPSK	1	12	5230	751	2x2	LTE B2	20	900	1960	4x4	LTE B66	15	66786	2145	4x4	LTE B66	5	66879	2154.3	4x4	25.20	25.22
CA 12A-13A-66C	LTE B13	5	23230	782	QPSK	1	12	5230	751	2x2	LTE B2	20	900	1960	4x4	LTE B66	20	66786	2145	4x4	LTE B66	20	66984	2164.8	4x4	25.27	25.22
CA 12A-13A-13A-66A	LTE B13	5	23230	782	QPSK	1	12	5230	751	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B66	20	66786	2145	4x4	25.31	25.22

1.4.3 LTE Band 5 as PCC

Table 8
Maximum Output Powers

Combination	PCC Band	PCC BW [MHz]	PCC [UL] Ch.	PCC [UL] Freq. [MHz]	Mod.	PCC				DL Ant. Config.	SCC 1				DL Ant. Config.	SCC 2				DL Ant. Config.	SCC 3				DL Ant. Config.	Power	
						PCC UL RB Offset	PCC UL RB	PCC [DL] Ch.	PCC [DL] Freq. [MHz]		SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]		SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]		SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]		LTE Tx Power with DL CA Enabled	LTE Single Carrier Tx Power (dBm)
CA 12A-2A-5A	LTE B5	10	20525	836.5	QPSK	1	49	2525	881.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1960	2x2	-	-	-	-	-	25.29	25.26
CA 12A-4A-5A	LTE B5	10	20525	836.5	QPSK	1	49	2525	881.5	2x2	LTE B2	20	900	1960	4x4	LTE B4	20	2175	2132.5	2x2	-	-	-	-	-	25.21	25.26
CA 12A-5A-66A	LTE B5	10	20525	836.5	QPSK	1	49	2525	881.5	2x2	LTE B2	20	900	1960	4x4	LTE B66	20	66786	2145	2x2	-	-	-	-	-	25.27	25.26
CA 2A-5A-66A	LTE B5	10	20525	836.5	QPSK	1	49	2525	881.5	2x2	LTE B2	20	900	1960	4x4	LTE B66	20	66786	2145	4x4	-	-	-	-	-	25.26	25.26
CA 4A-4A-5A	LTE B5	10	20525	836.5	QPSK	1	49	2525	881.5	2x2	LTE B4	20	2175	2132.5	4x4	LTE B4	20	2350	2150	2x2	-	-	-	-	-	25.31	25.26
CA 5A-66A-66A	LTE B5	10	20525	836.5	QPSK	1	49	2525	881.5	2x2	LTE B66	20	66786	2145	4x4	LTE B66	20	67236	2190	2x2	-	-	-	-	-	25.28	25.26
CA 12A-12A-4A-5A	LTE B5	10	20525	836.5	QPSK	1	49	2525	881.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B4	20	2175	2132.5	4x4	25.24	25.26
CA 12A-12A-66A-66A	LTE B5	10	20525	836.5	QPSK	1	49	2525	881.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B66	20	66786	2145	4x4	25.29	25.26
CA 12A-14A-4A-5A	LTE B5	10	20525	836.5	QPSK	1	49	2525	881.5	2x2	LTE B5	5	3453	874.3	2x2	LTE B5	5	3453	874.3	2x2	LTE B66	20	66786	2145	4x4	25.32	25.26
CA 12A-14A-66B	LTE B5	10	20525	836.5	QPSK	1	49	2525	881.5	2x2	LTE B2	20	900	1960	4x4	LTE B66	20	66786	2145	4x4	LTE B66	20	67236	2190	4x4	25.31	25.26
CA 12A-5A-66B	LTE B5	10	20525	836.5	QPSK	1	49	2525	881.5	2x2	LTE B2	20	900	1960	4x4	LTE B66	15	66786	2145	4x4	LTE B66	5	66879	2154.3	4x4	25.24	25.26
CA 12A-5A-66C	LTE B5	10	20525	836.5	QPSK	1	49	2525	881.5	2x2	LTE B2	20	900	1960	4x4	LTE B66	20	66786	2145	4x4	LTE B66	20	66984	2164.8	4x4	25.29	25.26
CA 14A-14A-5B	LTE B5	10	20525	836.5	QPSK	1	49	2525	881.5	2x2	LTE B5	5	3453	874.3	2x2	LTE B2	20	900	1960	4x4	LTE B66	20	66786	2145	4x4	25.35	25.26
CA 14A-14A-5B	LTE B5	10	20525	836.5	QPSK	1	49	2525	881.5	2x2	LTE B5	5	3453	874.3	2x2	LTE B2	20	900	1960	4x4	LTE B66	20	66786	2145	4x4	25.34	25.26
CA 5A-5A-66A-66A	LTE B5	10	20525	836.5	QPSK	1	49	2525	881.5	2x2	LTE B5	5	3453	874.3	2x2	LTE B66	20	66786	2145	4x4	LTE B66	20	67236	2190	4x4	25.28	25.26
CA 5A-5A-66B	LTE B5	10	20525	836.5	QPSK	1	49	2525	881.5	2x2	LTE B5	5	3453	874.3	2x2	LTE B66	15	66786	2145	4x4	LTE B66	5	66879	2154.3	4x4	25.32	25.26
CA 5A-5A-66C	LTE B5	10	20525	836.5	QPSK	1	49	2525	881.5	2x2	LTE B5	5	3453	874.3	2x2	LTE B66	20	66786	2145	4x4	LTE B66	20	66984	2164.8	4x4	25.28	25.26
CA 8B-66A-66A	LTE B5	10	20525	836.5	QPSK	1	49	2525	881.5	2x2	LTE B5	5	3453	874.3	2x2	LTE B66	20	66786	2145	4x4	LTE B66	20	67236	2190	4x4	25.30	25.26
CA 12A-8B-66B	LTE B5	10	20525	836.5	QPSK	1	49	2525	881.5	2x2	LTE B5	5	3453	874.3	2x2	LTE B2	20	900	1960	4x4	LTE B66	15	66786	2145	4x4	25.28	25.26
CA 12A-8B-66C	LTE B5	10	20525	836.5	QPSK	1	49	2525	881.5	2x2	LTE B5	5	3453	874.3	2x2	LTE B2	20	900	1960	4x4	LTE B66	20	66786	2145	4x4	25.23	25.26

FCC ID: ZNFV450VM		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Test Dates: 01/21/19 – 02/20/19	DUT Type: Portable Handset	APPENDIX H: Page 5 of 6		

