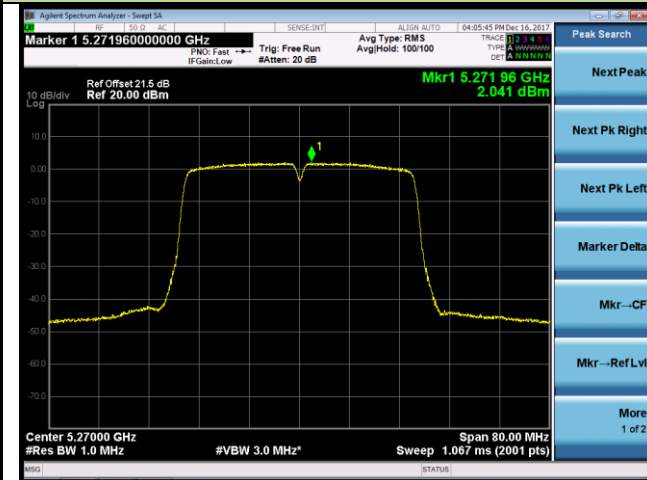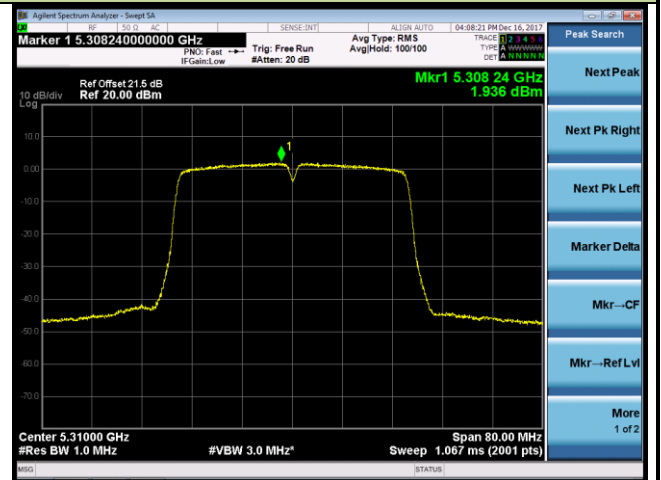## 802.11ac-VHT40 Power Spectral Density - Ant 1 / Ant 0 + 1 (Beam-Forming Mode)

Channel 54 (5270MHz)

Channel 62 (5310MHz)

Channel 102 (5510MHz)

Channel 118 (5590MHz)

Channel 134 (5670MHz)

Channel 142 (5710MHz)

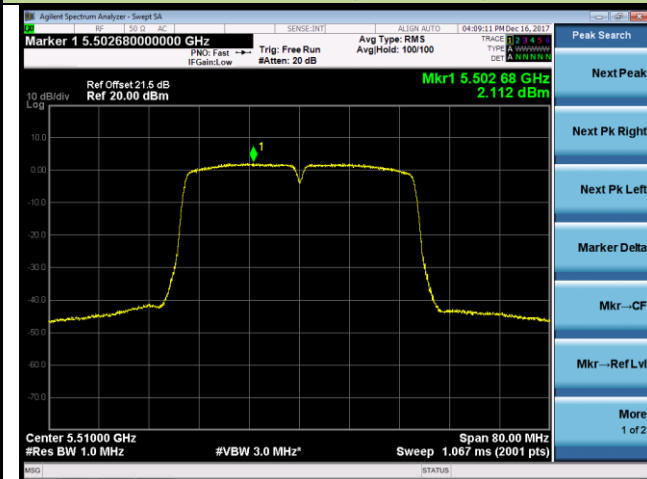## 802.11ac-VHT80 Power Spectral Density - Ant 1 / Ant 0 + 1 (Beam-Forming Mode)
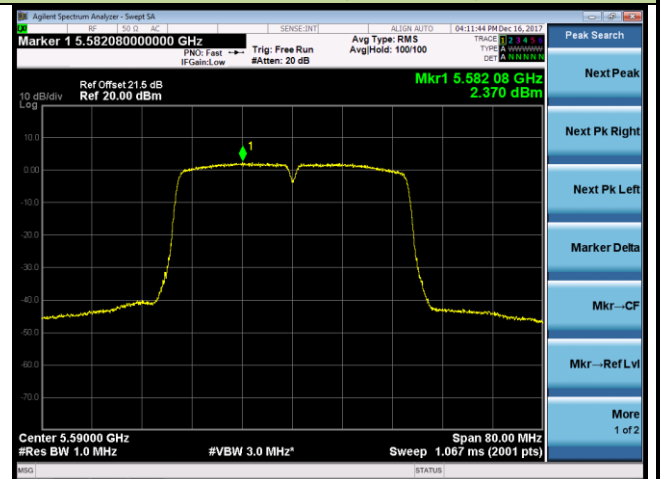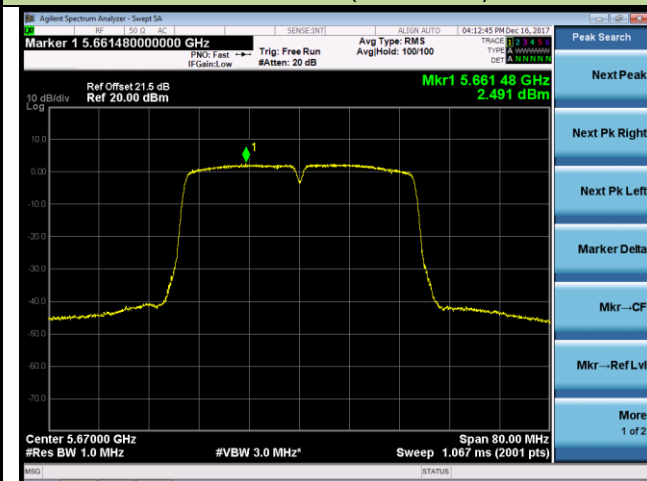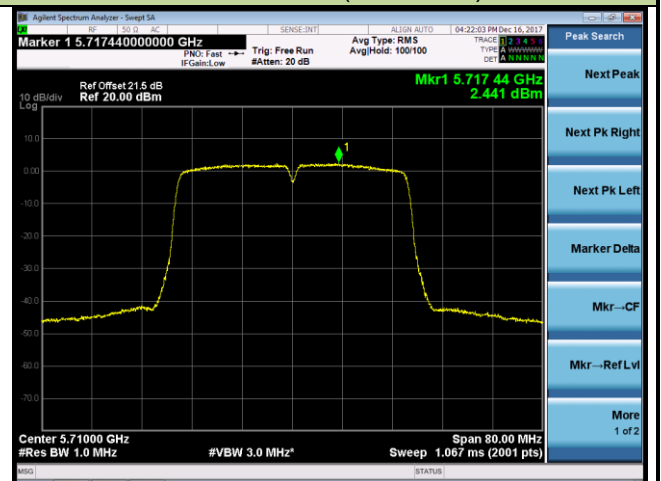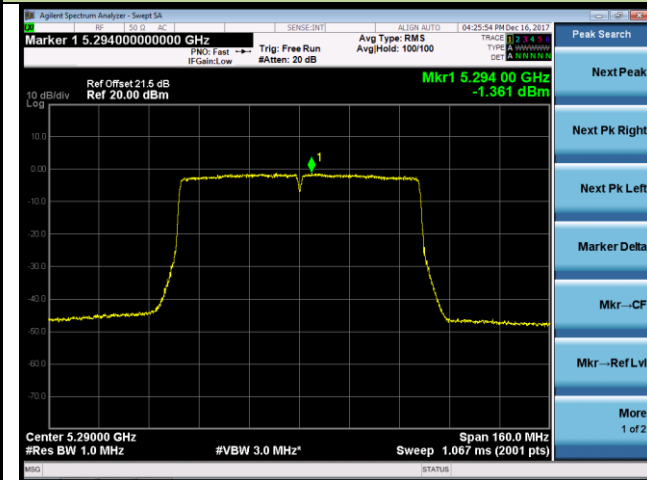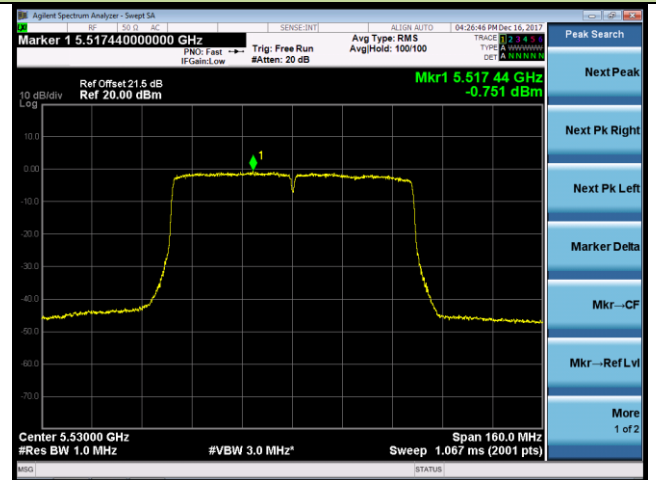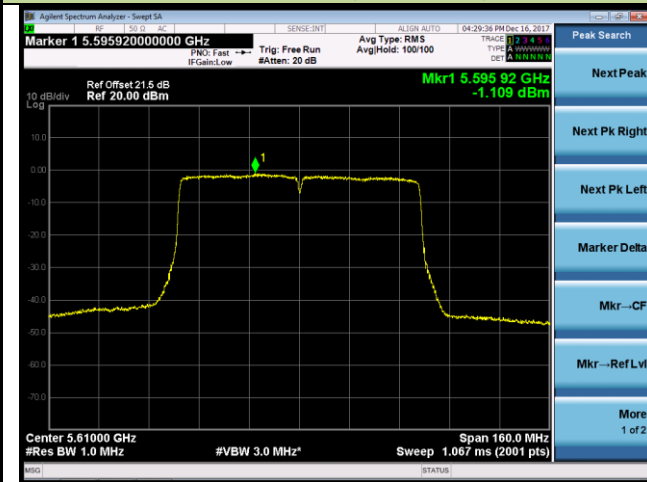
Channel 58 (5290MHz)

Channel 106 (5530MHz)
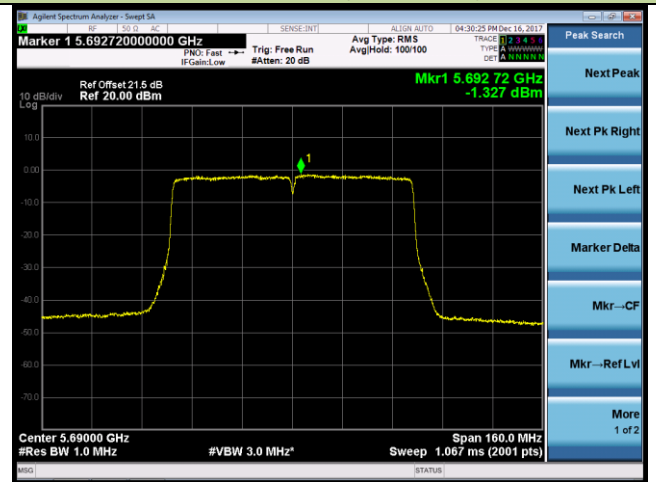

Channel 122 (5610MHz)

Channel 138 (5690MHz)

Product	AC220m Wi-Fi module OD US	Temperature	22°C
Test Engineer	Kervin Ker	Relative Humidity	54%
Test Site	TR3	Test Date	2018/03/20
Antenna Type	WiFi Directional Antenna		
Test Item	Power Spectral Density (NII-Band 1, NII-Band 2A & NII-Band 2C)		

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	PSD (dBm/ MHz)	Duty Cycle (%)	Final PSD (dBm/MHz)	Limit (dBm/ MHz)	Result
Ant 0								
11a	6Mbps	36	5180	2.29	96.27	2.46	≤ 14.70	Pass
11a	6Mbps	44	5220	2.01	96.27	2.18	≤ 14.70	Pass
11a	6Mbps	48	5240	2.17	96.27	2.34	≤ 14.70	Pass
11a	6Mbps	52	5260	8.42	96.27	8.59	≤ 8.90	Pass
11a	6Mbps	60	5300	8.57	96.27	8.74	≤ 8.90	Pass
11a	6Mbps	64	5320	7.22	96.27	7.39	≤ 8.90	Pass
11a	6Mbps	100	5500	6.74	96.27	6.91	≤ 7.10	Pass
11a	6Mbps	120	5600	6.41	96.27	6.58	≤ 7.10	Pass
11a	6Mbps	140	5700	6.72	96.27	6.89	≤ 7.10	Pass
11a	6Mbps	144	5720	6.44	96.27	6.61	≤ 7.10	Pass
11n-HT20	MCS0	36	5180	2.69	98.43	2.69	≤ 14.70	Pass
11n-HT20	MCS0	44	5220	1.99	98.43	1.99	≤ 14.70	Pass
11n-HT20	MCS0	48	5240	1.94	98.43	1.94	≤ 14.70	Pass
11n-HT20	MCS0	52	5260	8.44	98.43	8.44	≤ 8.90	Pass
11n-HT20	MCS0	60	5300	8.48	98.43	8.48	≤ 8.90	Pass
11n-HT20	MCS0	64	5320	7.34	98.43	7.34	≤ 8.90	Pass
11n-HT20	MCS0	100	5500	6.52	98.43	6.52	≤ 7.10	Pass
11n-HT20	MCS0	120	5600	6.67	98.43	6.67	≤ 7.10	Pass
11n-HT20	MCS0	140	5700	6.55	98.43	6.55	≤ 7.10	Pass
11n-HT20	MCS0	144	5720	6.56	98.43	6.56	≤ 7.10	Pass

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	PSD (dBm/ MHz)	Duty Cycle (%)	Final PSD (dBm/MHz)	Limit (dBm/ MHz)	Result
Ant 0								
11n-HT40	MCS0	38	5190	-0.20	96.81	-0.06	≤ 14.70	Pass
11n-HT40	MCS0	46	5230	-0.65	96.81	-0.51	≤ 14.70	Pass
11n-HT40	MCS0	54	5270	7.37	96.81	7.51	≤ 8.90	Pass
11n-HT40	MCS0	62	5310	1.49	96.81	1.63	≤ 8.90	Pass
11n-HT40	MCS0	102	5510	3.11	96.81	3.25	≤ 7.10	Pass
11n-HT40	MCS0	118	5590	5.76	96.81	5.90	≤ 7.10	Pass
11n-HT40	MCS0	134	5670	4.03	96.81	4.17	≤ 7.10	Pass
11n-HT40	MCS0	142	5710	5.82	96.81	5.96	≤ 7.10	Pass
11ac-VHT20	MCS0	36	5180	2.54	98.43	2.54	≤ 14.70	Pass
11ac-VHT20	MCS0	44	5220	2.19	98.43	2.19	≤ 14.70	Pass
11ac-VHT20	MCS0	48	5240	2.23	98.43	2.23	≤ 14.70	Pass
11ac-VHT20	MCS0	52	5260	8.30	98.43	8.30	≤ 8.90	Pass
11ac-VHT20	MCS0	60	5300	8.40	98.43	8.40	≤ 8.90	Pass
11ac-VHT20	MCS0	64	5320	7.36	98.43	7.36	≤ 8.90	Pass
11ac-VHT20	MCS0	100	5500	6.44	98.43	6.44	≤ 7.10	Pass
11ac-VHT20	MCS0	120	5600	6.81	98.43	6.81	≤ 7.10	Pass
11ac-VHT20	MCS0	140	5700	6.80	98.43	6.80	≤ 7.10	Pass
11ac-VHT20	MCS0	144	5720	6.51	98.43	6.51	≤ 7.10	Pass
11ac-VHT40	MCS0	38	5190	-0.20	97.01	-0.07	≤ 14.70	Pass
11ac-VHT40	MCS0	46	5230	-0.81	97.01	-0.68	≤ 14.70	Pass
11ac-VHT40	MCS0	54	5270	6.89	97.01	7.02	≤ 8.90	Pass
11ac-VHT40	MCS0	62	5310	3.32	97.01	3.45	≤ 8.90	Pass
11ac-VHT40	MCS0	102	5510	2.90	97.01	3.03	≤ 7.10	Pass
11ac-VHT40	MCS0	118	5590	5.67	97.01	5.80	≤ 7.10	Pass
11ac-VHT40	MCS0	134	5670	3.54	97.01	3.67	≤ 7.10	Pass
11ac-VHT40	MCS0	142	5710	5.82	97.01	5.95	≤ 7.10	Pass
11ac-VHT80	MCS0	42	5210	-4.27	93.17	-3.96	≤ 14.70	Pass
11ac-VHT80	MCS0	58	5290	-2.06	93.17	-1.75	≤ 8.90	Pass
11ac-VHT80	MCS0	106	5530	-1.28	93.17	-0.97	≤ 7.10	Pass
11ac-VHT80	MCS0	122	5610	2.24	93.17	2.55	≤ 7.10	Pass
11ac-VHT80	MCS0	138	5690	2.41	93.17	2.72	≤ 7.10	Pass

Note 1: When EUT duty cycle ≥ 98%, the Final PSD (dBm/MHz) = PSD (dBm/MHz).

Note 2: When EUT duty cycle < 98%, the Final PSD (dBm/MHz) = PSD (dBm/MHz) + 10*log(1/Duty Cycle).

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	PSD (dBm/ MHz)	Duty Cycle (%)	Final PSD (dBm/MHz)	Limit (dBm/ MHz)	Result
Ant 1								
11a	6Mbps	36	5180	2.77	96.27	2.94	≤ 13.50	Pass
11a	6Mbps	44	5220	2.58	96.27	2.75	≤ 13.50	Pass
11a	6Mbps	48	5240	2.31	96.27	2.48	≤ 13.50	Pass
11a	6Mbps	52	5260	7.04	96.27	7.21	≤ 7.50	Pass
11a	6Mbps	60	5300	7.08	96.27	7.25	≤ 7.50	Pass
11a	6Mbps	64	5320	6.81	96.27	6.98	≤ 7.50	Pass
11a	6Mbps	100	5500	6.66	96.27	6.83	≤ 7.40	Pass
11a	6Mbps	120	5600	6.99	96.27	7.16	≤ 7.40	Pass
11a	6Mbps	140	5700	6.80	96.27	6.97	≤ 7.40	Pass
11a	6Mbps	144	5720	7.11	96.27	7.28	≤ 7.40	Pass
11n-HT20	MCS0	36	5180	2.73	98.43	2.73	≤ 13.50	Pass
11n-HT20	MCS0	44	5220	2.25	98.43	2.25	≤ 13.50	Pass
11n-HT20	MCS0	48	5240	2.15	98.43	2.15	≤ 13.50	Pass
11n-HT20	MCS0	52	5260	7.03	98.43	7.03	≤ 7.50	Pass
11n-HT20	MCS0	60	5300	7.26	98.43	7.26	≤ 7.50	Pass
11n-HT20	MCS0	64	5320	6.79	98.43	6.79	≤ 7.50	Pass
11n-HT20	MCS0	100	5500	6.81	98.43	6.81	≤ 7.40	Pass
11n-HT20	MCS0	120	5600	6.81	98.43	6.81	≤ 7.40	Pass
11n-HT20	MCS0	140	5700	6.04	98.43	6.04	≤ 7.40	Pass
11n-HT20	MCS0	144	5720	7.03	98.43	7.03	≤ 7.40	Pass
11n-HT40	MCS0	38	5190	-0.44	96.81	-0.30	≤ 13.50	Pass
11n-HT40	MCS0	46	5230	-0.33	96.81	-0.19	≤ 13.50	Pass
11n-HT40	MCS0	54	5270	5.60	96.81	5.74	≤ 7.50	Pass
11n-HT40	MCS0	62	5310	1.14	96.81	1.28	≤ 7.50	Pass
11n-HT40	MCS0	102	5510	1.30	96.81	1.44	≤ 7.40	Pass
11n-HT40	MCS0	118	5590	6.29	96.81	6.43	≤ 7.40	Pass
11n-HT40	MCS0	134	5670	6.20	96.81	6.34	≤ 7.40	Pass
11n-HT40	MCS0	142	5710	6.20	96.81	6.34	≤ 7.40	Pass

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	PSD (dBm/ MHz)	Duty Cycle (%)	Final PSD (dBm/MHz)	Limit (dBm/ MHz)	Result
Ant 1								
11ac-VHT20	MCS0	36	5180	2.86	98.43	2.86	≤ 13.50	Pass
11ac-VHT20	MCS0	44	5220	2.47	98.43	2.47	≤ 13.50	Pass
11ac-VHT20	MCS0	48	5240	2.07	98.43	2.07	≤ 13.50	Pass
11ac-VHT20	MCS0	52	5260	6.93	98.43	6.93	≤ 7.50	Pass
11ac-VHT20	MCS0	60	5300	7.27	98.43	7.27	≤ 7.50	Pass
11ac-VHT20	MCS0	64	5320	6.49	98.43	6.49	≤ 7.50	Pass
11ac-VHT20	MCS0	100	5500	5.58	98.43	5.58	≤ 7.40	Pass
11ac-VHT20	MCS0	120	5600	6.93	98.43	6.93	≤ 7.40	Pass
11ac-VHT20	MCS0	140	5700	5.22	98.43	5.22	≤ 7.40	Pass
11ac-VHT20	MCS0	144	5720	7.08	98.43	7.08	≤ 7.40	Pass
11ac-VHT40	MCS0	38	5190	-0.34	97.01	-0.21	≤ 13.50	Pass
11ac-VHT40	MCS0	46	5230	-0.62	97.01	-0.49	≤ 13.50	Pass
11ac-VHT40	MCS0	54	5270	5.60	97.01	5.73	≤ 7.50	Pass
11ac-VHT40	MCS0	62	5310	1.31	97.01	1.44	≤ 7.50	Pass
11ac-VHT40	MCS0	102	5510	0.59	97.01	0.72	≤ 7.40	Pass
11ac-VHT40	MCS0	118	5590	6.40	97.01	6.53	≤ 7.40	Pass
11ac-VHT40	MCS0	134	5670	4.60	97.01	4.73	≤ 7.40	Pass
11ac-VHT40	MCS0	142	5710	6.24	97.01	6.37	≤ 7.40	Pass
11ac-VHT80	MCS0	42	5210	-4.12	93.17	-3.81	≤ 13.50	Pass
11ac-VHT80	MCS0	58	5290	-3.41	93.17	-3.10	≤ 7.50	Pass
11ac-VHT80	MCS0	106	5530	-4.22	93.17	-3.91	≤ 7.40	Pass
11ac-VHT80	MCS0	122	5610	2.97	93.17	3.28	≤ 7.40	Pass
11ac-VHT80	MCS0	138	5690	2.26	93.17	2.57	≤ 7.40	Pass

Note 1: When EUT duty cycle ≥ 98%, the Final PSD (dBm/MHz) = PSD (dBm/MHz).

Note 2: When EUT duty cycle < 98%, the Final PSD (dBm/MHz) = PSD (dBm/MHz) + 10*log(1/Duty Cycle).

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 PSD (dBm/ MHz)	Ant 1 PSD (dBm/ MHz)	Duty Cycle (%)	Total PSD (dBm/ MHz)	PSD Limit (dBm/ MHz)	Result
Ant 0 + 1 (CDD Mode)									
11a	6Mbps	36	5180	-0.27	-0.32	96.27	2.88	≤ 10.49	Pass
11a	6Mbps	44	5220	-0.54	-0.52	96.27	2.65	≤ 10.49	Pass
11a	6Mbps	48	5240	-0.76	-0.29	96.27	2.66	≤ 10.49	Pass
11a	6Mbps	52	5260	0.79	1.47	96.27	4.32	≤ 4.49	Pass
11a	6Mbps	60	5300	0.92	1.12	96.27	4.20	≤ 4.49	Pass
11a	6Mbps	64	5320	0.76	1.38	96.27	4.26	≤ 4.49	Pass
11a	6Mbps	100	5500	0.63	0.65	96.27	3.82	≤ 4.09	Pass
11a	6Mbps	120	5600	-0.01	0.84	96.27	3.61	≤ 4.09	Pass
11a	6Mbps	140	5700	0.00	1.26	96.27	3.85	≤ 4.09	Pass
11a	6Mbps	144	5720	0.17	1.34	96.27	3.97	≤ 4.09	Pass
11n-HT20	MCS0	36	5180	-0.54	-0.33	98.43	2.58	≤ 10.49	Pass
11n-HT20	MCS0	44	5220	-0.93	-0.77	98.43	2.16	≤ 10.49	Pass
11n-HT20	MCS0	48	5240	-0.96	-0.64	98.43	2.21	≤ 10.49	Pass
11n-HT20	MCS0	52	5260	1.28	1.35	98.43	4.33	≤ 4.49	Pass
11n-HT20	MCS0	60	5300	1.32	0.90	98.43	4.13	≤ 4.49	Pass
11n-HT20	MCS0	64	5320	1.10	1.15	98.43	4.14	≤ 4.49	Pass
11n-HT20	MCS0	100	5500	0.81	0.73	98.43	3.78	≤ 4.09	Pass
11n-HT20	MCS0	120	5600	0.56	0.79	98.43	3.69	≤ 4.09	Pass
11n-HT20	MCS0	140	5700	0.04	0.86	98.43	3.48	≤ 4.09	Pass
11n-HT20	MCS0	144	5720	0.20	1.18	98.43	3.73	≤ 4.09	Pass
11n-HT40	MCS0	38	5190	-3.35	-3.43	96.81	-0.24	≤ 10.49	Pass
11n-HT40	MCS0	46	5230	-3.71	-3.45	96.81	-0.43	≤ 10.49	Pass
11n-HT40	MCS0	54	5270	1.14	1.17	96.81	4.31	≤ 4.49	Pass
11n-HT40	MCS0	62	5310	-0.68	-0.84	96.81	2.39	≤ 4.49	Pass
11n-HT40	MCS0	102	5510	-0.94	-1.33	96.81	2.02	≤ 4.09	Pass
11n-HT40	MCS0	118	5590	0.65	0.80	96.81	3.88	≤ 4.09	Pass
11n-HT40	MCS0	134	5670	0.13	1.37	96.81	3.95	≤ 4.09	Pass
11n-HT40	MCS0	142	5710	0.30	1.09	96.81	3.86	≤ 4.09	Pass

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 PSD (dBm/ MHz)	Ant 1 PSD (dBm/ MHz)	Duty Cycle (%)	Total PSD (dBm/ MHz)	PSD Limit (dBm/ MHz)	Result
Ant 0 + 1 (CDD Mode)									
11ac-VHT20	MCS0	36	5180	-0.38	-0.22	98.43	2.71	≤ 10.49	Pass
11ac-VHT20	MCS0	44	5220	-0.95	-0.71	98.43	2.18	≤ 10.49	Pass
11ac-VHT20	MCS0	48	5240	-1.03	-0.73	98.43	2.13	≤ 10.49	Pass
11ac-VHT20	MCS0	52	5260	0.70	1.37	98.43	4.06	≤ 4.49	Pass
11ac-VHT20	MCS0	60	5300	0.69	1.11	98.43	3.92	≤ 4.49	Pass
11ac-VHT20	MCS0	64	5320	1.00	1.10	98.43	4.06	≤ 4.49	Pass
11ac-VHT20	MCS0	100	5500	0.67	0.34	98.43	3.52	≤ 4.09	Pass
11ac-VHT20	MCS0	120	5600	0.32	0.88	98.43	3.62	≤ 4.09	Pass
11ac-VHT20	MCS0	140	5700	0.19	0.92	98.43	3.58	≤ 4.09	Pass
11ac-VHT20	MCS0	144	5720	0.33	1.08	98.43	3.73	≤ 4.09	Pass
11ac-VHT40	MCS0	38	5190	-3.54	-3.40	97.01	-0.33	≤ 10.49	Pass
11ac-VHT40	MCS0	46	5230	-3.71	-3.41	97.01	-0.42	≤ 10.49	Pass
11ac-VHT40	MCS0	54	5270	0.94	1.12	97.01	4.17	≤ 4.49	Pass
11ac-VHT40	MCS0	62	5310	-1.04	-1.18	97.01	2.03	≤ 4.49	Pass
11ac-VHT40	MCS0	102	5510	-0.04	-0.44	97.01	2.91	≤ 4.09	Pass
11ac-VHT40	MCS0	118	5590	0.46	0.74	97.01	3.74	≤ 4.09	Pass
11ac-VHT40	MCS0	134	5670	0.26	1.37	97.01	3.99	≤ 4.09	Pass
11ac-VHT40	MCS0	142	5710	0.28	1.28	97.01	3.95	≤ 4.09	Pass
11ac-VHT80	MCS0	42	5210	-7.21	-7.28	93.17	-3.93	≤ 10.49	Pass
11ac-VHT80	MCS0	58	5290	-5.98	-6.28	93.17	-2.81	≤ 4.49	Pass
11ac-VHT80	MCS0	106	5530	-6.97	-6.80	93.17	-3.57	≤ 4.09	Pass
11ac-VHT80	MCS0	122	5610	-0.92	-0.44	93.17	2.64	≤ 4.09	Pass
11ac-VHT80	MCS0	138	5690	-1.73	-0.53	93.17	2.23	≤ 4.09	Pass

Note 1: When EUT duty cycle ≥ 98%, Total PSD = 10*log {10$^{(Ant\ 0\ PSD/10)}$ +10$^{(Ant\ 1\ PSD/10)}$}

Note 2: When EUT duty cycle < 98%, Total PSD = 10*log {10$^{(Ant\ 0\ PSD/10)}$ +10$^{(Ant\ 1\ PSD/10)}$} + 10*log (1/duty cycle)

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 PSD (dBm/ MHz)	Ant 1 PSD (dBm/ MHz)	Duty Cycle (%)	Total PSD (dBm/ MHz)	PSD Limit (dBm/ MHz)	Result
Ant 0 + 1 (Beam-Forming Mode)									
11n-HT20	MCS0	36	5180	-3.80	-4.14	98.43	-0.95	≤ 11.07	Pass
11n-HT20	MCS0	44	5220	-4.28	-4.36	98.43	-1.31	≤ 11.07	Pass
11n-HT20	MCS0	48	5240	-4.12	-4.12	98.43	-1.11	≤ 11.07	Pass
11n-HT20	MCS0	52	5260	1.72	1.86	98.43	4.80	≤ 5.16	Pass
11n-HT20	MCS0	60	5300	1.83	1.69	98.43	4.77	≤ 5.16	Pass
11n-HT20	MCS0	64	5320	1.63	1.78	98.43	4.72	≤ 5.16	Pass
11n-HT20	MCS0	100	5500	0.64	0.88	98.43	3.77	≤ 4.24	Pass
11n-HT20	MCS0	116	5580	0.36	1.01	98.43	3.71	≤ 4.24	Pass
11n-HT20	MCS0	120	5600	0.56	0.98	98.43	3.79	≤ 4.24	Pass
11n-HT20	MCS0	144	5720	0.22	1.48	98.43	3.91	≤ 4.24	Pass
11n-HT40	MCS0	38	5190	-6.37	-7.01	96.81	-3.53	≤ 11.07	Pass
11n-HT40	MCS0	46	5230	-6.88	-7.14	96.81	-3.86	≤ 11.07	Pass
11n-HT40	MCS0	54	5270	-0.20	0.03	96.81	3.07	≤ 5.16	Pass
11n-HT40	MCS0	62	5310	0.01	-0.12	96.81	3.10	≤ 5.16	Pass
11n-HT40	MCS0	102	5510	0.04	-0.21	96.81	3.07	≤ 4.24	Pass
11n-HT40	MCS0	118	5590	-0.19	0.27	96.81	3.20	≤ 4.24	Pass
11n-HT40	MCS0	134	5670	-0.65	0.70	96.81	3.23	≤ 4.24	Pass
11n-HT40	MCS0	142	5710	-0.51	0.53	96.81	3.19	≤ 4.24	Pass

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 PSD (dBm/ MHz)	Ant 1 PSD (dBm/ MHz)	Duty Cycle (%)	Total PSD (dBm/ MHz)	PSD Limit (dBm/ MHz)	Result
Ant 0 + 1 (Beam-Forming Mode)									
11ac-VHT20	MCS0	36	5180	-3.85	-4.15	98.43	-0.98	≤ 11.07	Pass
11ac-VHT20	MCS0	44	5220	-3.92	-4.31	98.43	-1.10	≤ 11.07	Pass
11ac-VHT20	MCS0	48	5240	-4.20	-4.35	98.43	-1.26	≤ 11.07	Pass
11ac-VHT20	MCS0	52	5260	1.62	1.95	98.43	4.80	≤ 5.16	Pass
11ac-VHT20	MCS0	60	5300	1.75	1.68	98.43	4.73	≤ 5.16	Pass
11ac-VHT20	MCS0	64	5320	1.56	1.74	98.43	4.66	≤ 5.16	Pass
11ac-VHT20	MCS0	100	5500	0.96	0.53	98.43	3.76	≤ 4.24	Pass
11ac-VHT20	MCS0	120	5600	0.78	0.94	98.43	3.87	≤ 4.24	Pass
11ac-VHT20	MCS0	140	5700	0.25	0.93	98.43	3.61	≤ 4.24	Pass
11ac-VHT20	MCS0	144	5720	0.51	1.34	98.43	3.96	≤ 4.24	Pass
11ac-VHT40	MCS0	38	5190	-6.68	-6.90	97.01	-3.65	≤ 11.07	Pass
11ac-VHT40	MCS0	46	5230	-6.92	-7.06	97.01	-3.84	≤ 11.07	Pass
11ac-VHT40	MCS0	54	5270	-0.01	0.11	97.01	3.19	≤ 5.16	Pass
11ac-VHT40	MCS0	62	5310	0.30	0.03	97.01	3.31	≤ 5.16	Pass
11ac-VHT40	MCS0	102	5510	-0.06	-0.23	97.01	3.00	≤ 4.24	Pass
11ac-VHT40	MCS0	118	5590	-0.02	0.01	97.01	3.14	≤ 4.24	Pass
11ac-VHT40	MCS0	134	5670	-0.87	0.45	97.01	2.98	≤ 4.24	Pass
11ac-VHT40	MCS0	142	5710	-0.64	0.27	97.01	2.98	≤ 4.24	Pass
11ac-VHT80	MCS0	42	5210	-10.32	-10.68	93.17	-7.18	≤ 11.07	Pass
11ac-VHT80	MCS0	58	5290	-3.22	-3.06	93.17	0.18	≤ 5.16	Pass
11ac-VHT80	MCS0	106	5530	-3.72	-3.98	93.17	-0.53	≤ 4.24	Pass
11ac-VHT80	MCS0	122	5610	-3.88	-3.17	93.17	-0.19	≤ 4.24	Pass
11ac-VHT80	MCS0	138	5690	-3.88	-2.80	93.17	0.01	≤ 4.24	Pass

Note 1: When EUT duty cycle ≥ 98%, Total PSD = 10*log {10$^{(Ant\ 0\ PSD/10)}$ +10$^{(Ant\ 1\ PSD/10)}$}

Note 2: When EUT duty cycle < 98%, Total PSD = 10*log {10$^{(Ant\ 0\ PSD/10)}$ +10$^{(Ant\ 1\ PSD/10)}$} + 10*log (1/duty cycle)

Product	AC220m Wi-Fi module OD US	Temperature	22°C
Test Engineer	Kevin Ker	Relative Humidity	54%
Test Site	SR2	Test Date	2018/03/23
Antenna Type	WiFi Directional Antenna		
Test Item	Power Spectral Density (Band 3)		

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	PSD (dBm/ 100KHz)	Duty Cycle (%)	Constant Factor	Final PSD (dBm/ MHz)	PSD Limit (dBm/ MHz)	Result
Ant 0									
11a	6Mbps	149	5745	1.55	96.27	6.99	8.71	≤ 27.00	Pass
11a	6Mbps	157	5785	1.84	96.27	6.99	9.00	≤ 27.00	Pass
11a	6Mbps	165	5825	1.49	96.27	6.99	8.65	≤ 27.00	Pass
11n-HT20	MCS0	149	5745	1.09	98.43	6.99	8.08	≤ 27.00	Pass
11n-HT20	MCS0	157	5785	1.45	98.43	6.99	8.44	≤ 27.00	Pass
11n-HT20	MCS0	165	5825	1.06	98.43	6.99	8.05	≤ 27.00	Pass
11n-HT40	MCS0	151	5755	-0.89	96.81	6.99	6.24	≤ 27.00	Pass
11n-HT40	MCS0	159	5795	-1.01	96.81	6.99	6.12	≤ 27.00	Pass
11ac-VHT20	MCS0	149	5745	1.29	98.43	6.99	8.28	≤ 27.00	Pass
11ac-VHT20	MCS0	157	5785	1.32	98.43	6.99	8.31	≤ 27.00	Pass
11ac-VHT20	MCS0	165	5825	1.89	98.43	6.99	8.88	≤ 27.00	Pass
11ac-VHT40	MCS0	151	5755	-1.10	97.01	6.99	6.02	≤ 27.00	Pass
11ac-VHT40	MCS0	159	5795	-0.90	97.01	6.99	6.22	≤ 27.00	Pass
11ac-VHT80	MCS0	155	5775	-7.75	93.17	6.99	-0.45	≤ 27.00	Pass

Note 1: When EUT duty cycle ≥ 98%, Final PSD (dBm/MHz) = PSD (dBm/100kHz) + Constant Factor.

Note 2: When EUT duty cycle < 98%, Final PSD (dBm/MHz) = PSD (dBm/100k Hz) + 10*log (1/Duty Cycle) + Constant Factor.

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	PSD (dBm/ 100KHz)	Duty Cycle (%)	Constant Factor	Final PSD (dBm/ MHz)	PSD Limit (dBm/ MHz)	Result
Ant 1									
11a	6Mbps	149	5745	2.66	96.27	6.99	9.82	≤ 27.20	Pass
11a	6Mbps	157	5785	2.76	96.27	6.99	9.92	≤ 27.20	Pass
11a	6Mbps	165	5825	2.03	96.27	6.99	9.19	≤ 27.20	Pass
11n-HT20	MCS0	149	5745	2.87	98.43	6.99	9.86	≤ 27.20	Pass
11n-HT20	MCS0	157	5785	2.32	98.43	6.99	9.31	≤ 27.20	Pass
11n-HT20	MCS0	165	5825	2.25	98.43	6.99	9.24	≤ 27.20	Pass
11n-HT40	MCS0	151	5755	-0.45	96.81	6.99	6.68	≤ 27.20	Pass
11n-HT40	MCS0	159	5795	-0.17	96.81	6.99	6.96	≤ 27.20	Pass
11ac-VHT20	MCS0	149	5745	2.77	98.43	6.99	9.76	≤ 27.20	Pass
11ac-VHT20	MCS0	157	5785	2.50	98.43	6.99	9.49	≤ 27.20	Pass
11ac-VHT20	MCS0	165	5825	2.01	98.43	6.99	9.00	≤ 27.20	Pass
11ac-VHT40	MCS0	151	5755	-0.62	97.01	6.99	6.50	≤ 27.20	Pass
11ac-VHT40	MCS0	159	5795	-0.06	97.01	6.99	7.06	≤ 27.20	Pass
11ac-VHT80	MCS0	155	5775	-7.97	93.17	6.99	-0.67	≤ 27.20	Pass

Note 1: When EUT duty cycle ≥ 98%, the Final PSD (dBm/MHz) = PSD (dBm/100kHz) + Constant Factor.

Note 2: When EUT duty cycle < 98%, the Final PSD (dBm/MHz) = PSD (dBm/100k Hz) + 10*log(1/Duty Cycle) + Constant Factor.

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 PSD (dBm/ 100kHz)	Ant 1 PSD (dBm/ 100kHz)	Duty Cycle (%)	Constant Factor	Total PSD(dBm/ 500kHz)	Limit (dBm/ 500kHz)	Result
Ant 0 + 1 (CDD Mode)										
11a	6	149	5745	1.70	3.01	96.27	6.99	12.57	≤ 23.99	Pass
11a	6	157	5785	1.58	3.19	96.27	6.99	12.62	≤ 23.99	Pass
11a	6	165	5825	1.27	2.20	96.27	6.99	11.93	≤ 23.99	Pass
11n-HT20	MCS0	149	5745	1.25	2.82	98.43	6.99	12.11	≤ 23.99	Pass
11n-HT20	MCS0	157	5785	1.32	2.83	98.43	6.99	12.14	≤ 23.99	Pass
11n-HT20	MCS0	165	5825	1.38	2.57	98.43	6.99	12.02	≤ 23.99	Pass
11n-HT40	MCS0	151	5755	-1.80	-1.01	96.81	6.99	8.75	≤ 23.99	Pass
11n-HT40	MCS0	159	5795	-0.88	-0.10	96.81	6.99	9.67	≤ 23.99	Pass
11ac-VHT20	MCS0	149	5745	1.66	2.64	98.43	6.99	12.18	≤ 23.99	Pass
11ac-VHT20	MCS0	157	5785	1.42	2.61	98.43	6.99	12.06	≤ 23.99	Pass
11ac-VHT20	MCS0	165	5825	1.24	2.46	98.43	6.99	11.89	≤ 23.99	Pass
11ac-VHT40	MCS0	151	5755	-2.29	-1.01	97.01	6.99	8.53	≤ 23.99	Pass
11ac-VHT40	MCS0	159	5795	-0.80	-0.04	97.01	6.99	9.73	≤ 23.99	Pass
11ac-VHT80	MCS0	155	5775	-9.13	-8.64	93.17	6.99	1.43	≤ 23.99	Pass

Note 1: When EUT duty cycle ≥ 98%, Total PSD (dBm/500kHz) = 10*log {10$^{(Ant\ 0\ PSD/10)}$ +10$^{(Ant\ 1\ PSD/10)}$} + Constant Factor.

Note 2: When EUT duty cycle < 98%, Total PSD (dBm/500kHz) = 10*log {10$^{(Ant\ 0\ PSD/10)}$ +10$^{(Ant\ 1\ PSD/10)}$} + 10*log (1/duty cycle) + Constant Factor.

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 PSD (dBm/ 100kHz)	Ant 1 PSD (dBm/ 100kHz)	Duty Cycle (%)	Constant Factor	Total PSD(dBm/ 500kHz)	Limit (dBm/ 500kHz)	Result
Ant 0 + 1 (Beam-Forming Mode)										
11n-HT20	MCS0	149	5745	-0.19	1.35	98.43	6.99	10.65	≤ 24.09	Pass
11n-HT20	MCS0	157	5785	-0.24	1.40	98.43	6.99	10.66	≤ 24.09	Pass
11n-HT20	MCS0	165	5825	-0.04	0.87	98.43	6.99	10.44	≤ 24.09	Pass
11n-HT40	MCS0	151	5755	-2.90	-1.64	96.81	6.99	7.92	≤ 24.09	Pass
11n-HT40	MCS0	159	5795	-2.56	-1.72	96.81	6.99	8.02	≤ 24.09	Pass
11ac-VHT20	MCS0	149	5745	-0.34	0.90	98.43	6.99	10.32	≤ 24.09	Pass
11ac-VHT20	MCS0	157	5785	-0.40	1.06	98.43	6.99	10.39	≤ 24.09	Pass
11ac-VHT20	MCS0	165	5825	0.31	1.19	98.43	6.99	10.77	≤ 24.09	Pass
11ac-VHT40	MCS0	151	5755	-2.87	-1.77	97.01	6.99	7.85	≤ 24.09	Pass
11ac-VHT40	MCS0	159	5795	-2.78	-1.98	97.01	6.99	7.77	≤ 24.09	Pass
11ac-VHT80	MCS0	155	5775	-8.28	-7.40	93.17	6.99	2.49	≤ 24.09	Pass

Note 1: When EUT duty cycle ≥ 98%, Total PSD (dBm/500kHz) = 10*log {10$^{(Ant\ 0\ PSD/10)}$ +10$^{(Ant\ 1\ PSD/10)}$} + Constant Factor.

Note 2: When EUT duty cycle < 98%, Total PSD (dBm/500kHz) = 10*log {10$^{(Ant\ 0\ PSD/10)}$ +10$^{(Ant\ 1\ PSD/10)}$} + 10*log (1/duty cycle) + Constant Factor.

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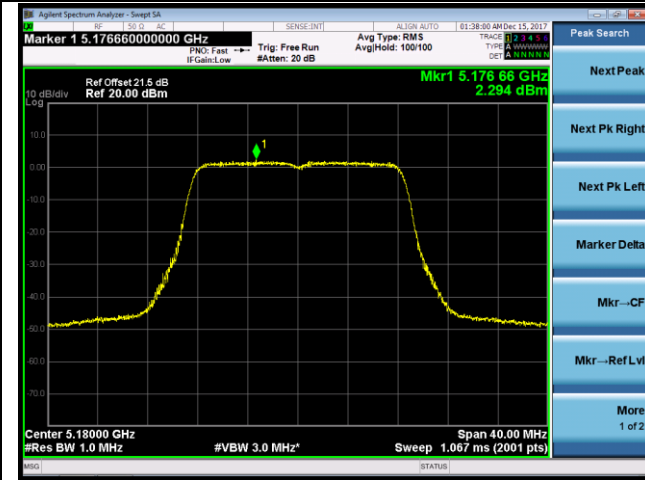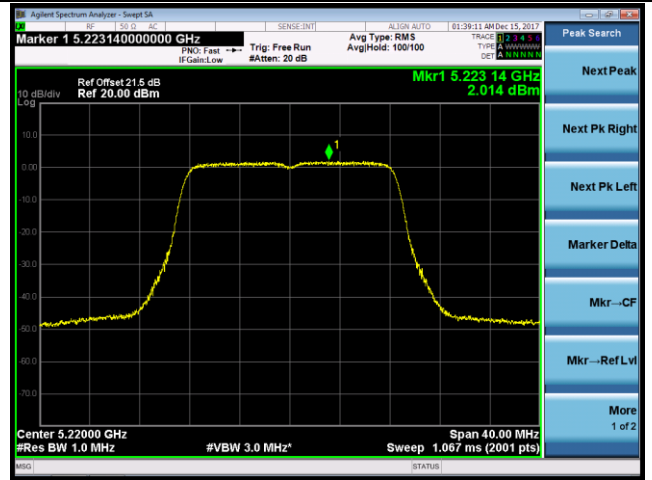
Channel 36 (5180MHz)	Channel 44 (5220MHz)

Channel 48 (5240MHz)	Channel 52 (5260MHz)

Channel 60 (5300MHz)	Channel 64 (5320MHz)

Channel 100 (5500MHz)

Channel 120 (5600MHz)

Channel 140 (5700MHz)
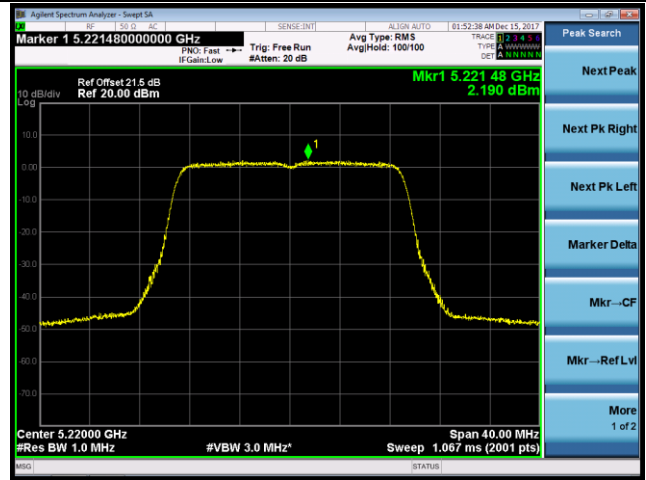

Channel 144 (5720MHz)

Channel 149 (5745MHz)

Channel 157 (5785MHz)
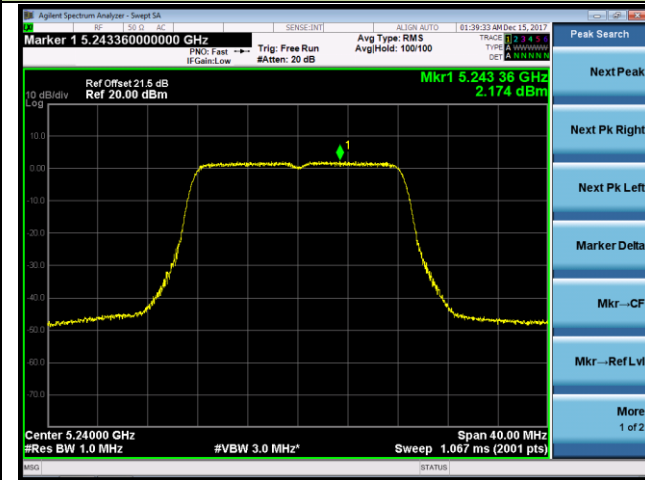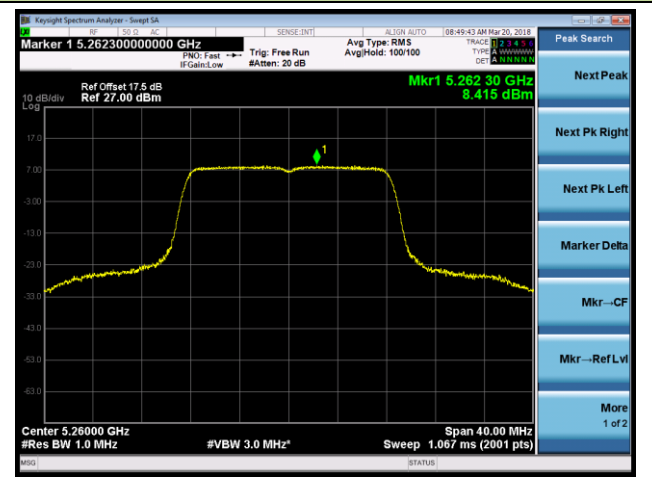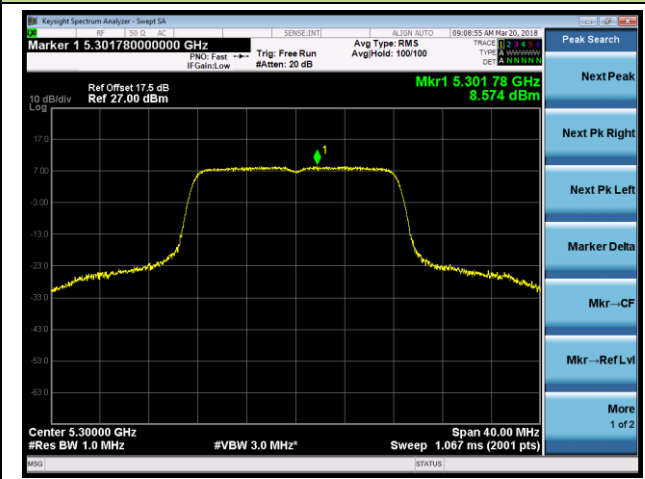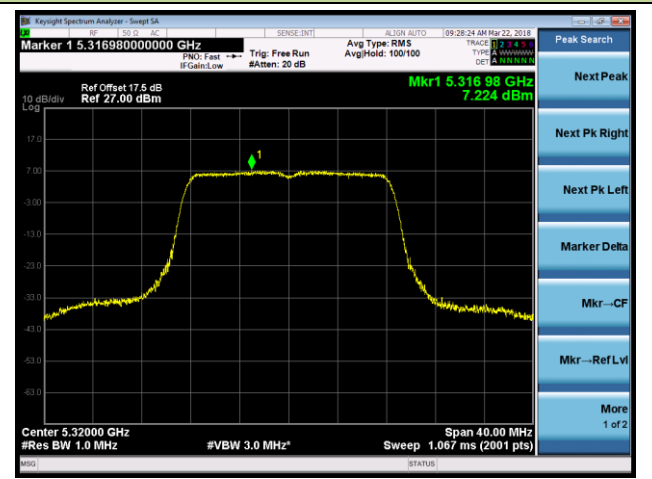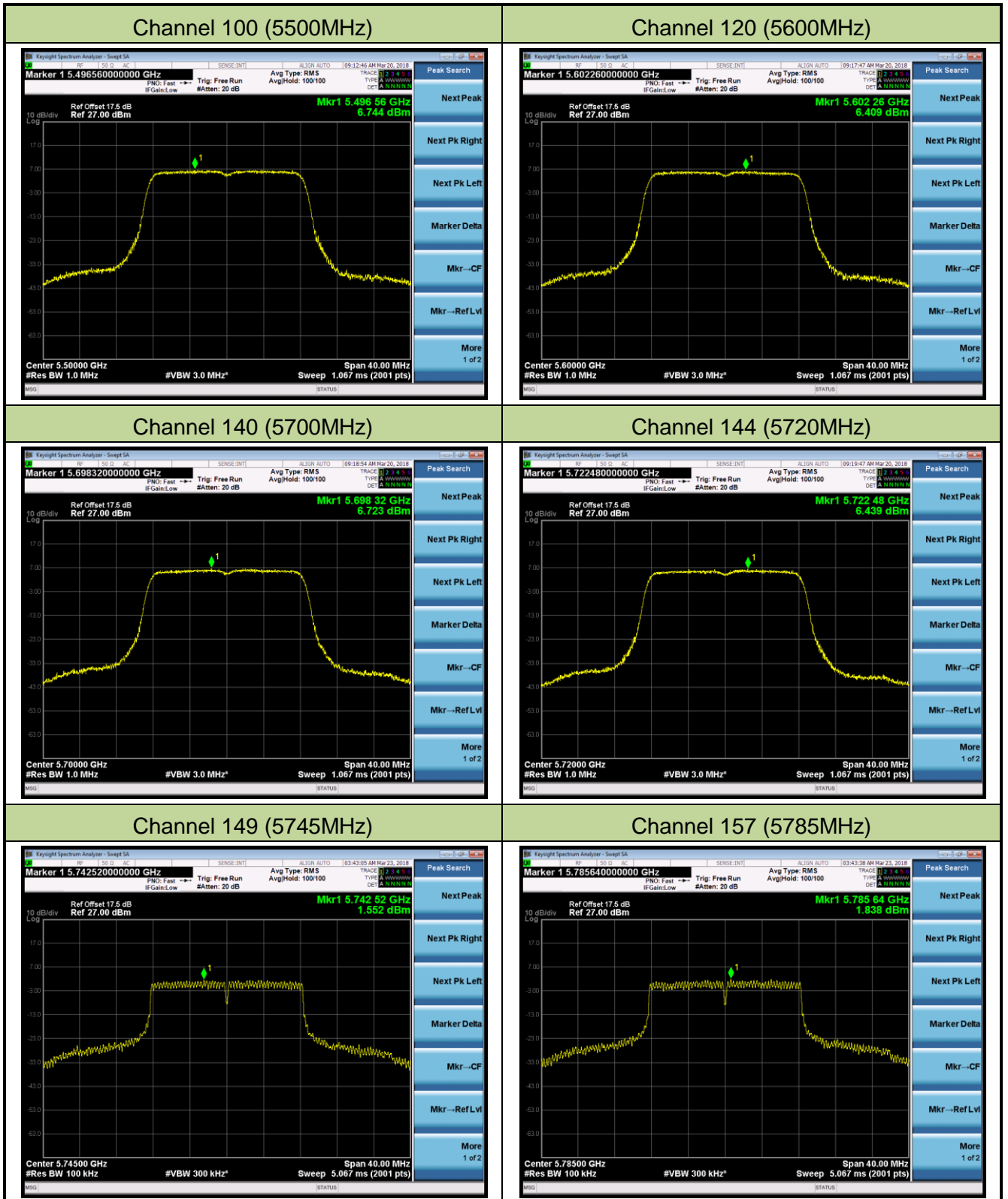
Channel 165 (5825MHz)
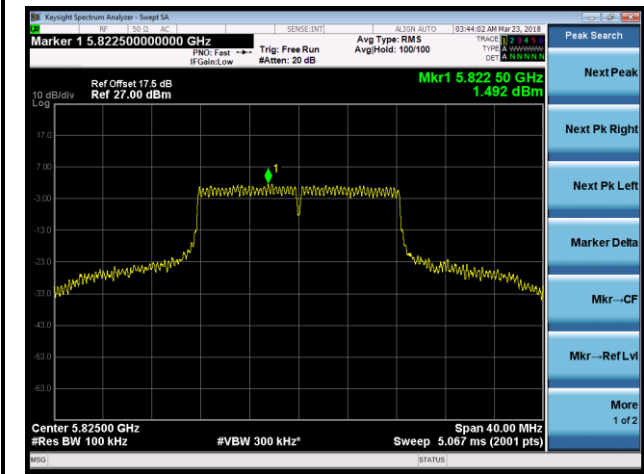
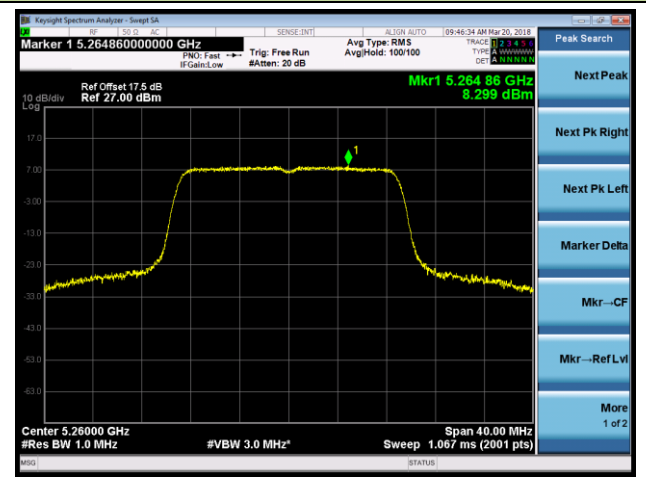## 802.11n-HT20 Power Spectral Density - Ant 0
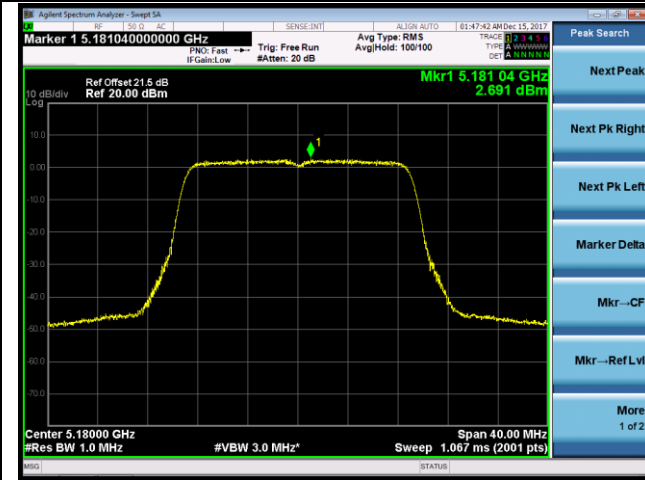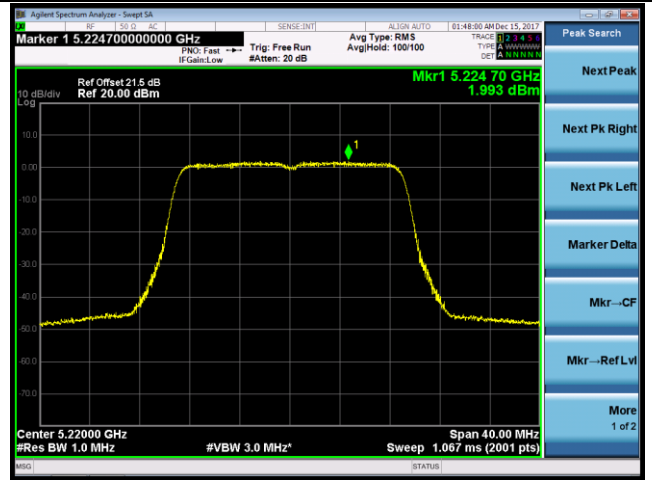
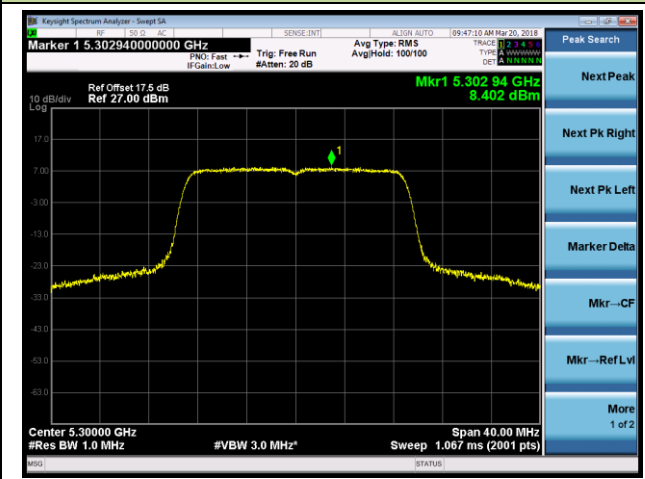| Channel 36 (5180MHz)	Channel 44 (5220MHz)

Channel 48 (5240MHz)	Channel 52 (5260MHz)

Channel 60 (5300MHz)	Channel 64 (5320MHz)

Channel 100 (5500MHz)

Channel 120 (5600MHz)

Channel 140 (5700MHz)

Channel 144 (5720MHz)

Channel 149 (5745MHz)

Channel 157 (5785MHz)
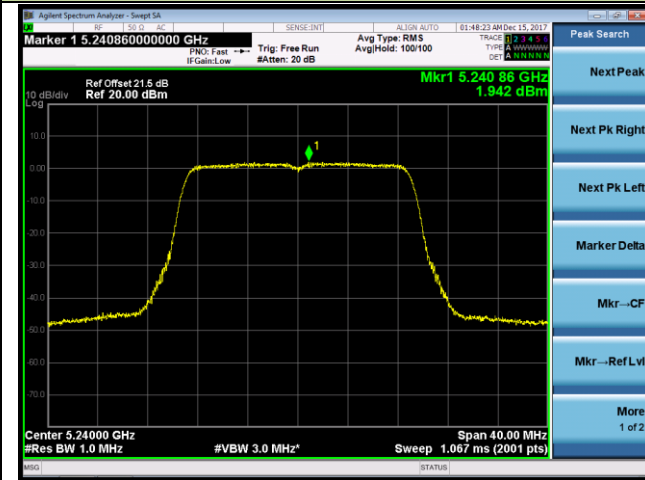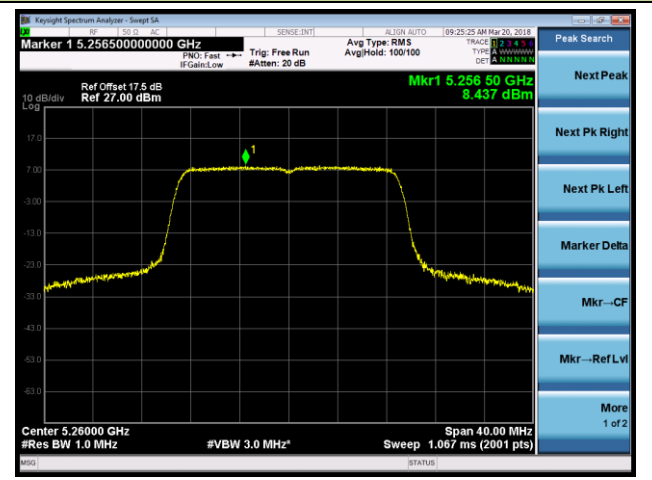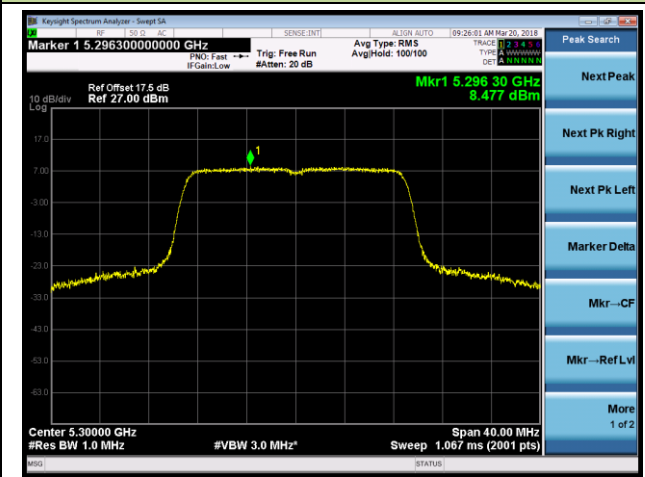
Channel 165 (5825MHz)	
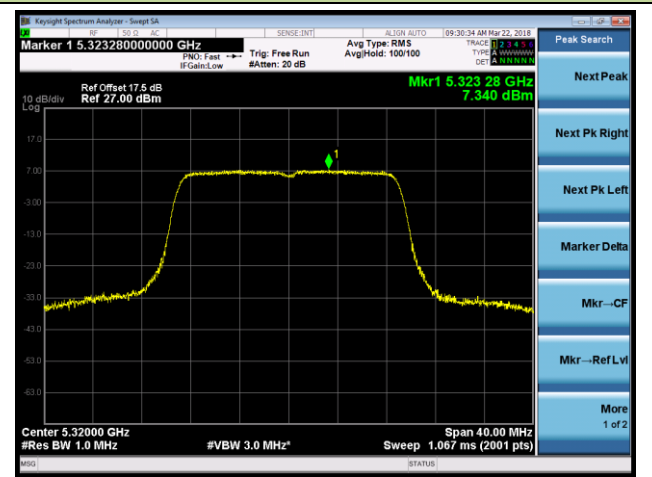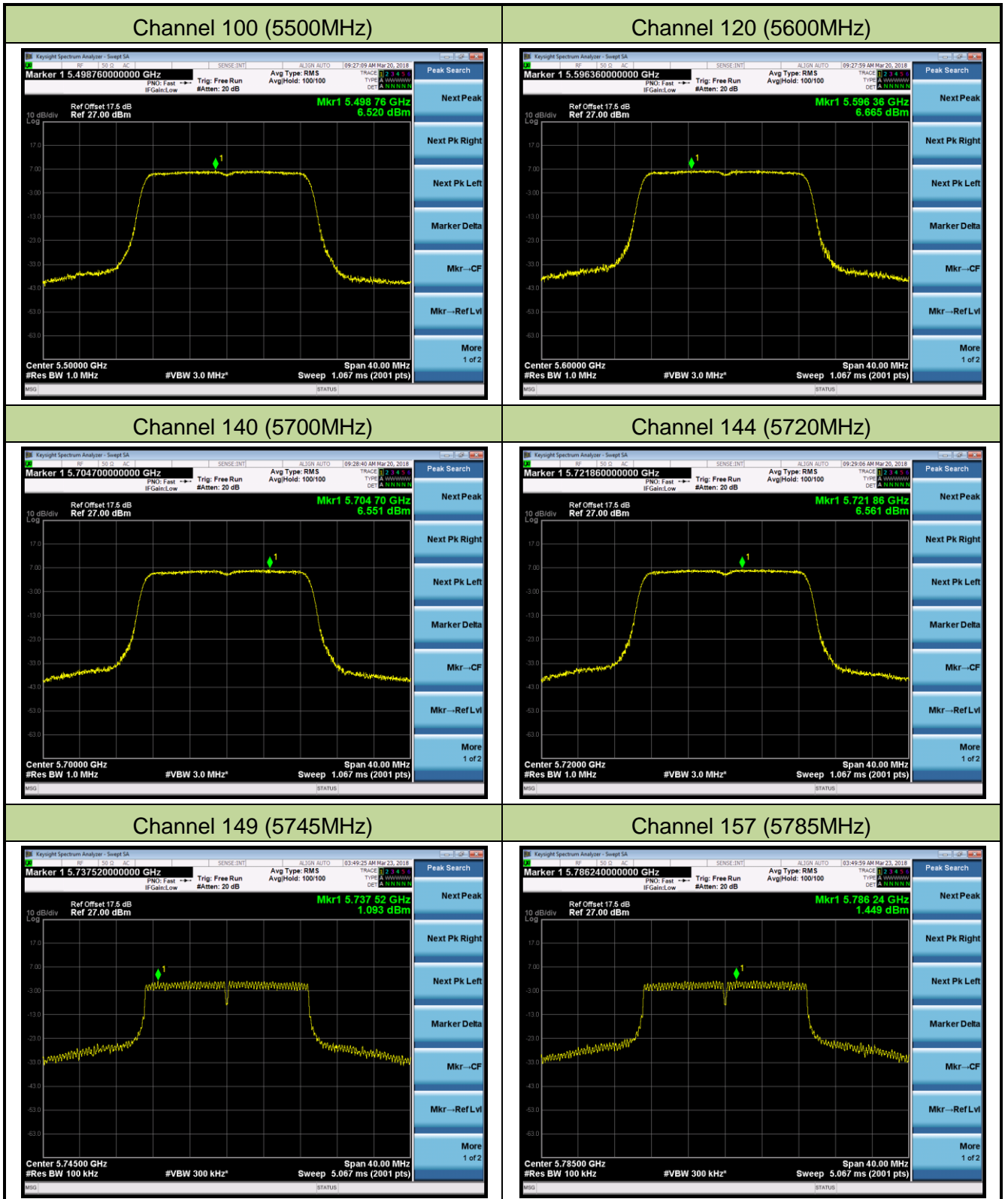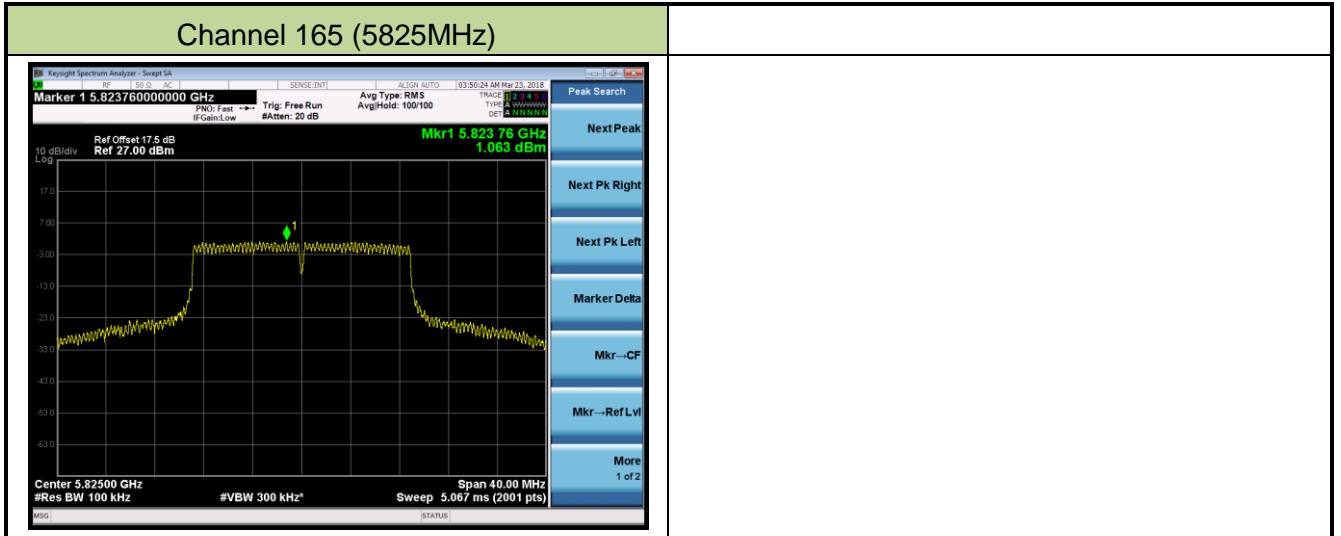
802.11n-HT40 Power Spectral Density - Ant 0
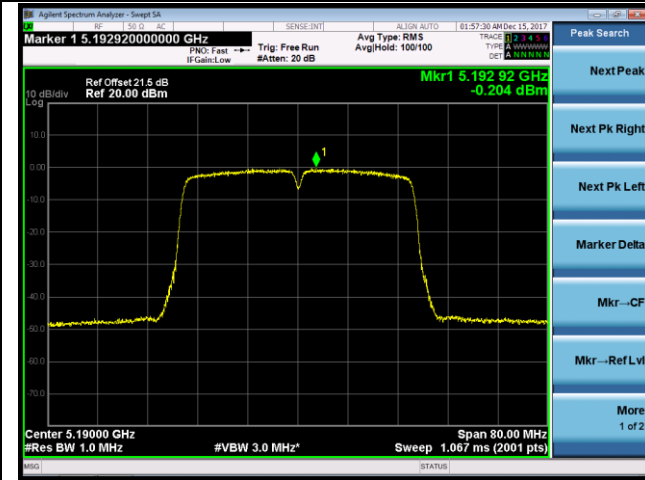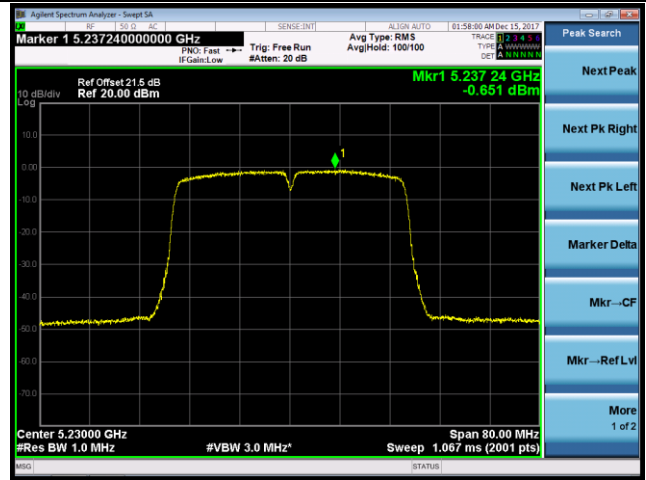
Channel 38 (5190MHz)	Channel 46 (5230MHz)

Channel 54 (5270MHz)	Channel 62 (5310MHz)

Channel 102 (5510MHz)	Channel 118 (5590MHz)

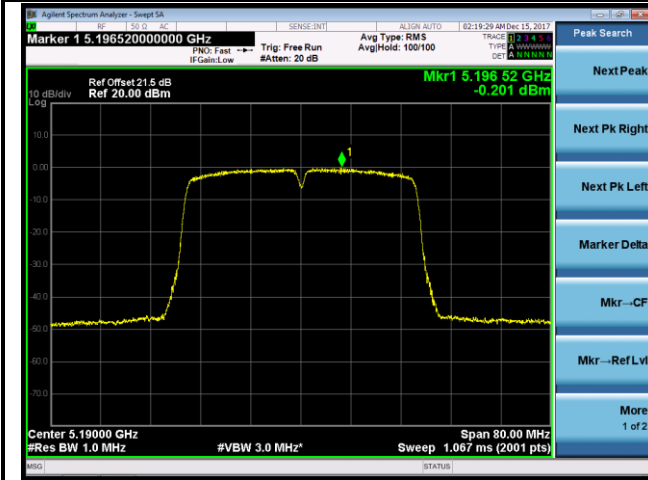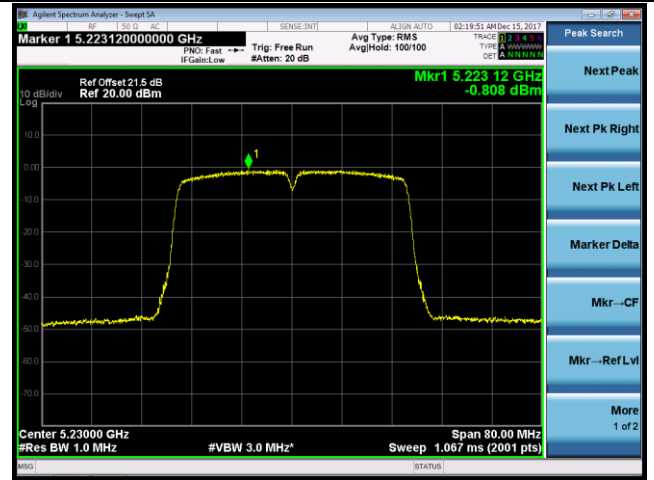## Channel 134 (5670MHz)

Channel 142 (5710MHz)

Channel 151 (5755MHz)
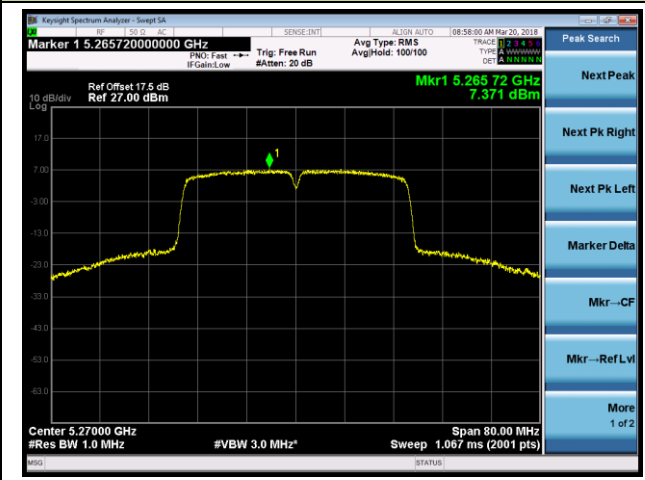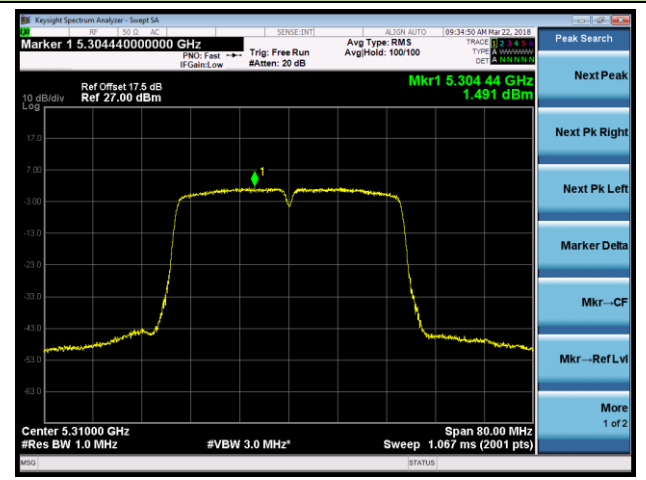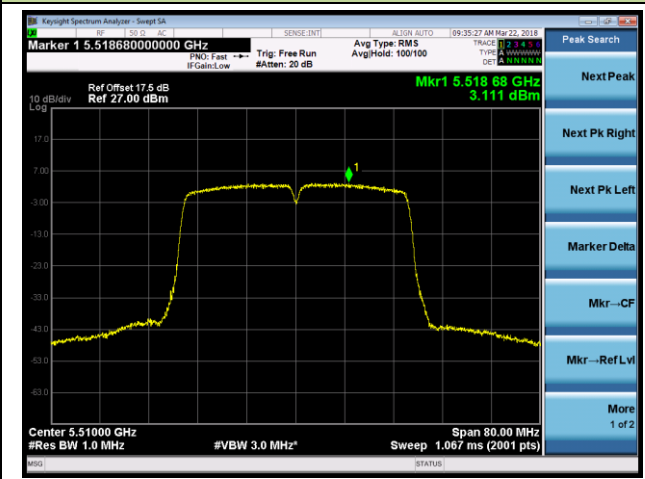
Channel 159 (5795MHz)
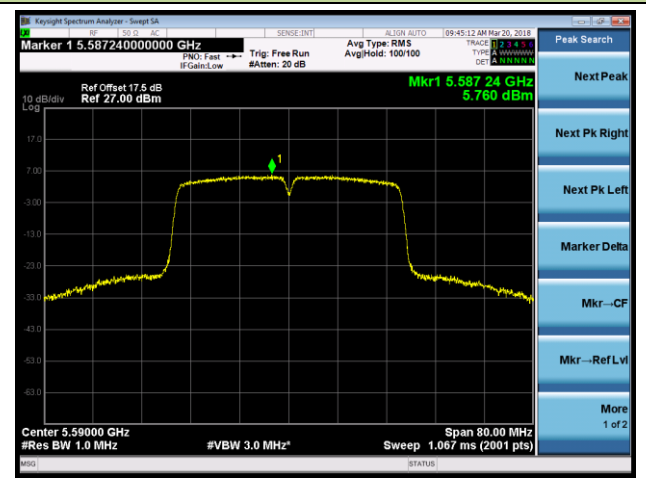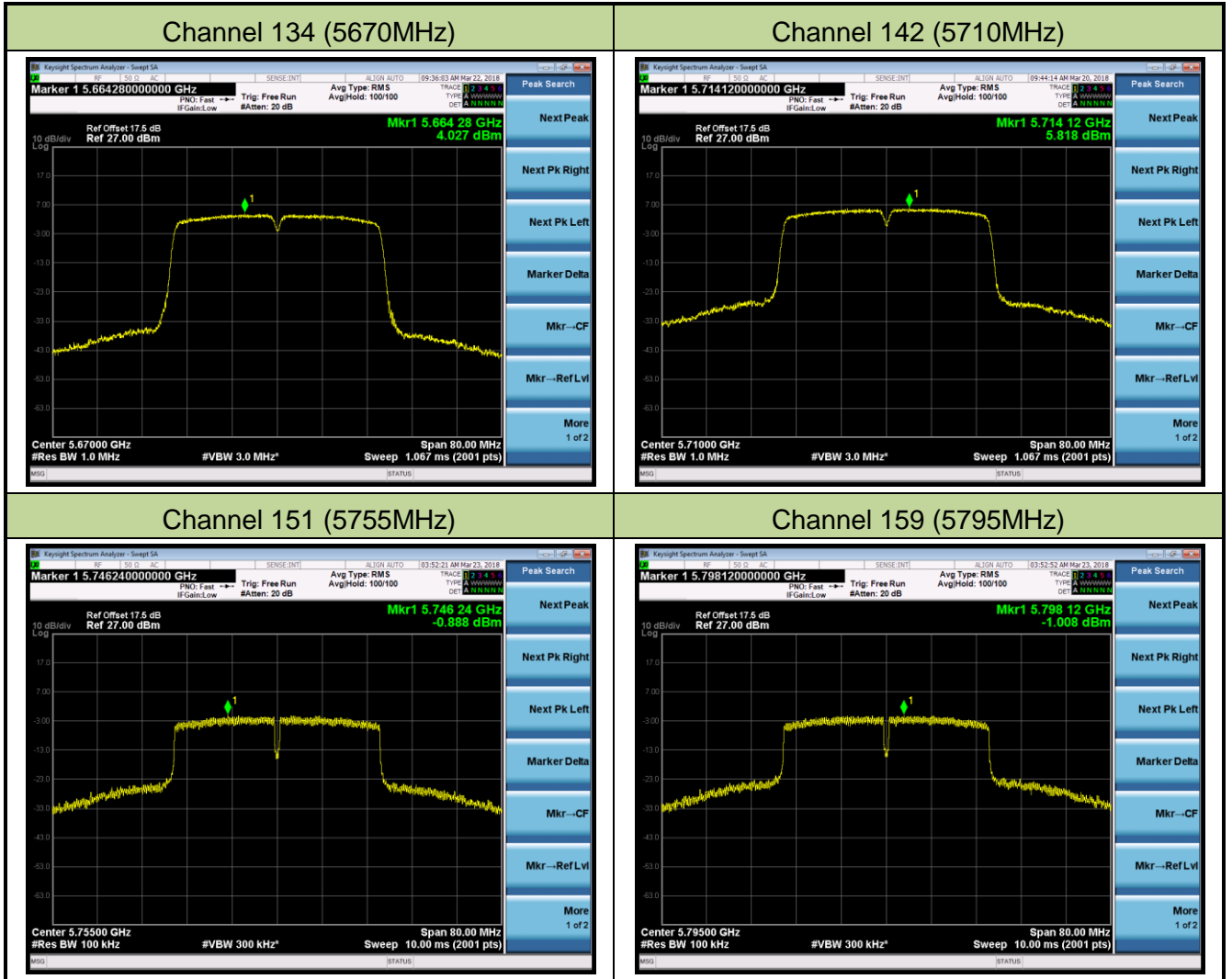
802.11ac-VHT20 Power Spectral Density - Ant 0

Channel 36 (5180MHz)

Channel 44 (5220MHz)

Channel 48 (5240MHz)

Channel 52 (5260MHz)

Channel 60 (5300MHz)

Channel 64 (5320MHz)

Channel 100 (5500MHz)

Channel 120 (5600MHz)

Channel 140 (5700MHz)

Channel 144 (5720MHz)

Channel 149 (5745MHz)

Channel 157 (5785MHz)

Channel 165 (5825MHz)	

802.11ac-VHT40 Power Spectral Density - Ant 0
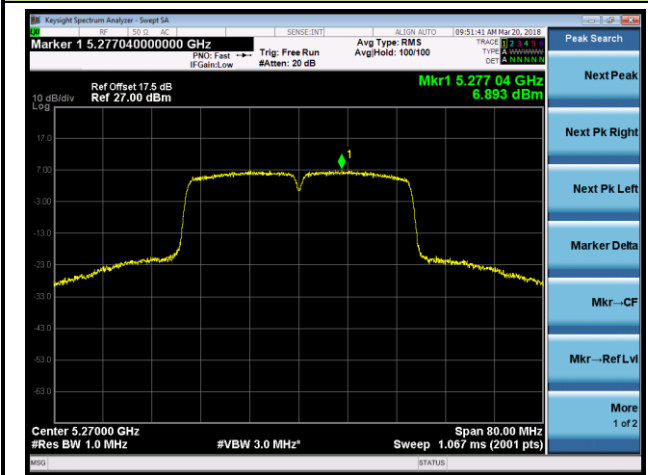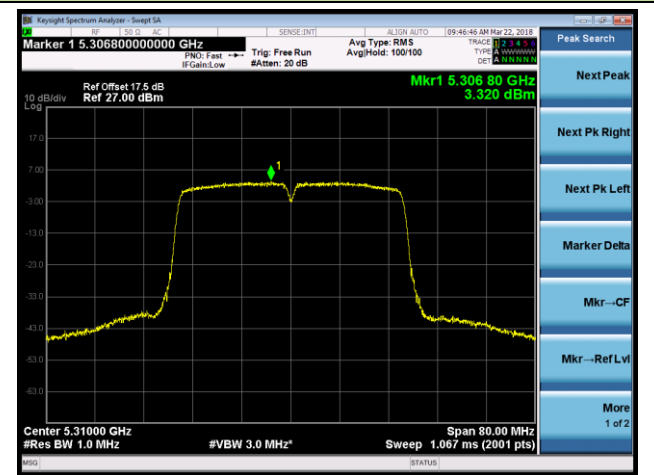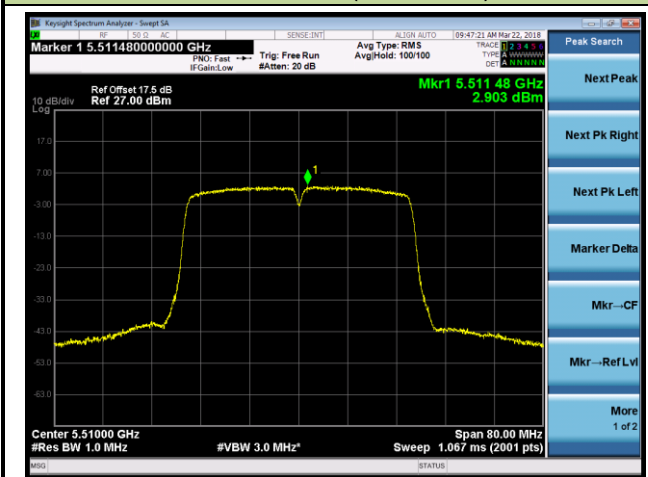
Channel 38 (5190MHz)

Channel 46 (5230MHz)

Channel 54 (5270MHz)

Channel 62 (5310MHz)

Channel 102 (5510MHz)

Channel 118 (5590MHz)

Channel 134 (5670MHz)

Channel 142 (5710MHz)

Channel 151 (5755MHz)

Channel 159 (5795MHz)