802.11ac-VHT40 6dB Bandwidth	
Channel 151 (5755MHz)	Channel 159 (5795MHz)

802.11ac-VHT80 6dB Bandwidth	
Channel 155 (5775MHz)	
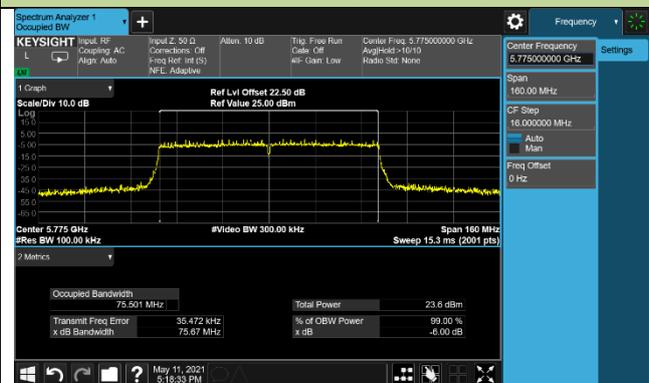
802.11ax-HE20 6dB Bandwidth	
Channel 149 (5745MHz)	Channel 157 (5785MHz)

Channel 165 (5825MHz)

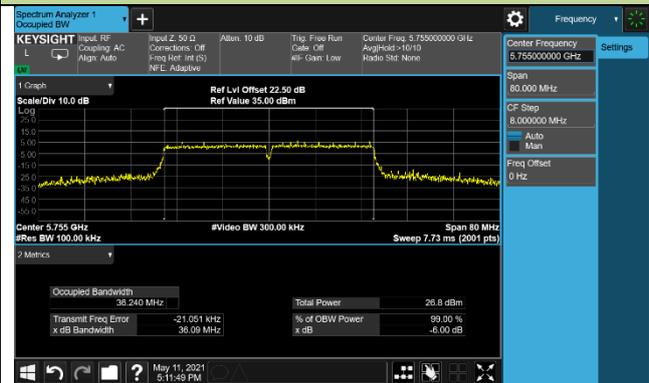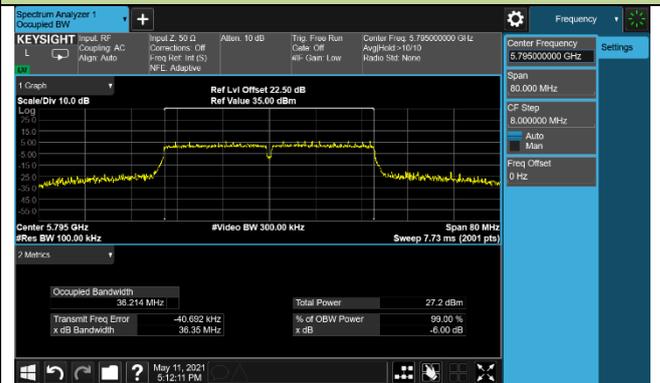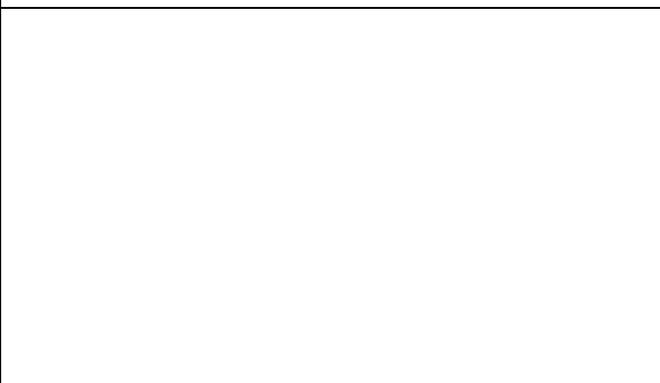| Occupied Bandwidth | 19.025 MHz | Total Power | 27.5 dBm |
| Transmit Freq Error | -60.008 kHz | % of OBW Power | 99.00 % |
| x dB Bandwidth | 18.88 MHz | x dB | -6.00 dB |
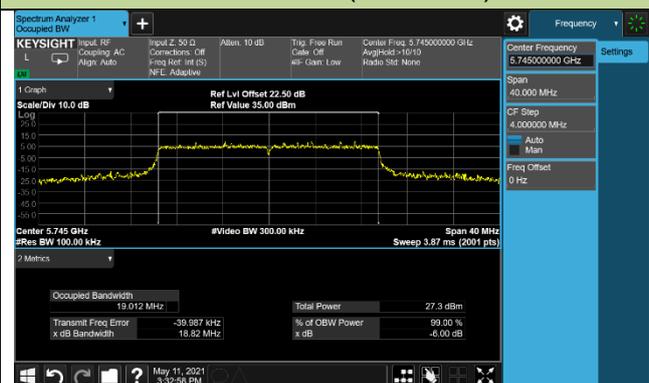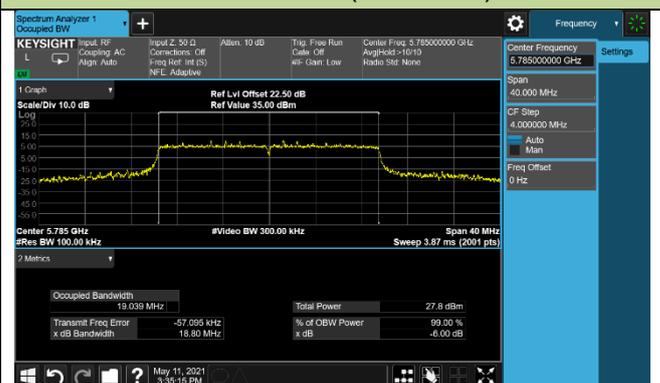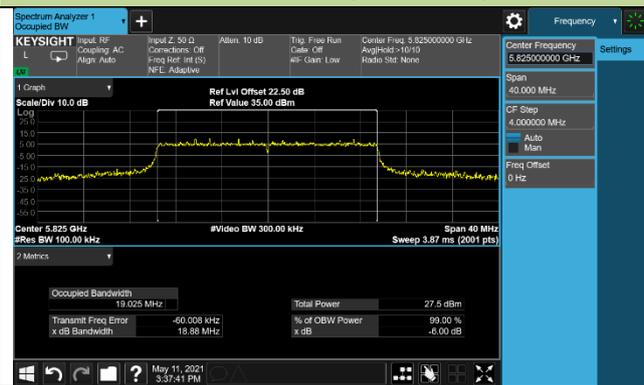
802.11ax-HE 40 6dB Bandwidth

Channel 151 (5755MHz)	Channel 159 (5795MHz)

Occupied Bandwidth	37.573 MHz	Total Power	26.6 dBm
Transmit Freq Error	-44.223 kHz	% of OBW Power	99.00 %
x dB Bandwidth	37.04 MHz	x dB	-6.00 dB

Occupied Bandwidth	37.611 MHz	Total Power	27.5 dBm
Transmit Freq Error	-56.748 kHz	% of OBW Power	99.00 %
x dB Bandwidth	37.62 MHz	x dB	-6.00 dB
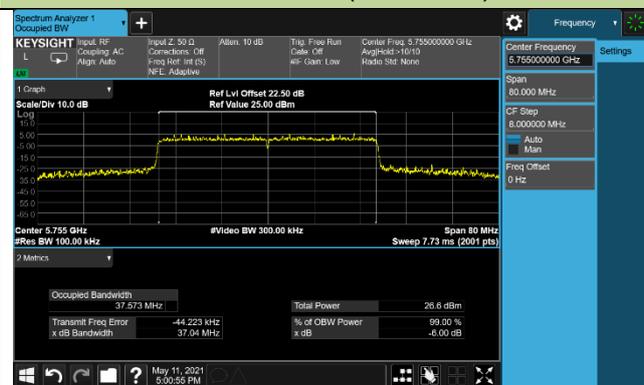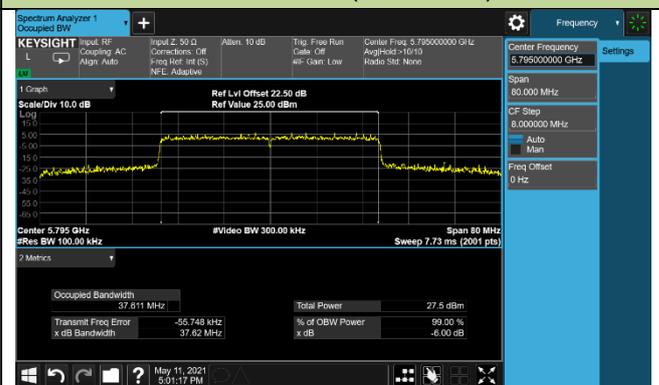
802.11ax-HE 80 6dB Bandwidth

Channel 155 (5775MHz)

Occupied Bandwidth	76.724 MHz	Total Power	24.0 dBm
Transmit Freq Error	40.620 kHz	% of OBW Power	99.00 %
x dB Bandwidth	76.93 MHz	x dB	-6.00 dB
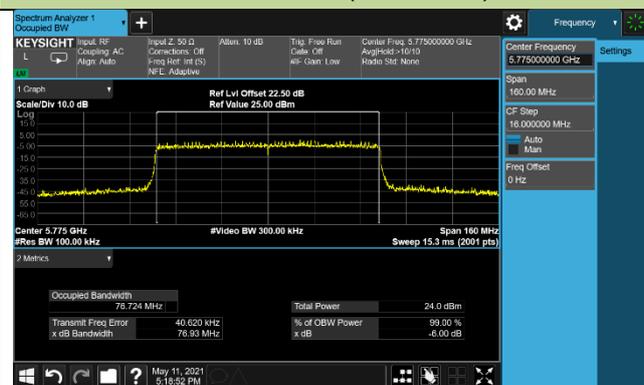
7.4. Output Power Measurement

7.4.1.Test Limit

For the band 5.15-5.25 GHz, the maximum conductedoutput power over the frequency band of operation shall not exceed 1 W provided the maximumantenna gain does not exceed 6 dBi.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz.

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm).

If transmitting antennas of directional gain greater than 6dBi are used, the maximumconducted output power shall be reduced by the amount in dB that the directional gain of theantenna exceeds 6dBi.

7.4.2.Test Procedure Used

KDB 789033D02v02r01- Section E)3) b) Method PM-G

7.4.3.Test Setting

Average power measurements were performed only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor. The power meter implemented triggering and gating capabilities which were set up such that power measurements were recorded only during the ON time of the transmitter.

7.4.4.Test Setup
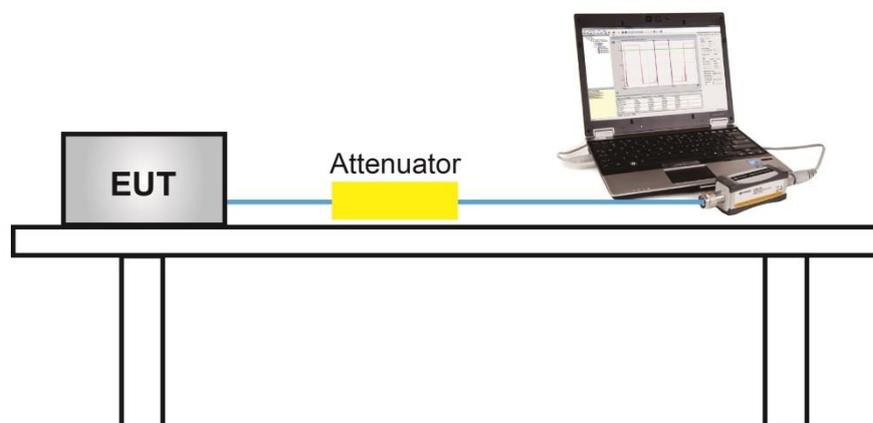
7.4.5.Test Result

Product	AX1500 Wi-Fi 6 Range Extender	Temperature	25°C
Test Engineer	Eric Lin	Relative Humidity	54%
Test Site	SR2	Test Date	2021/05/10

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Total Average Power(dBm)	Average Power Limit (dBm)	Result
CDD mode								
11a	6Mbps	36	5180	16.92	16.33	19.65	≤ 30.00	Pass
11a	6Mbps	44	5220	20.78	20.58	23.69	≤ 30.00	Pass
11a	6Mbps	48	5240	20.38	20.55	23.48	≤ 30.00	Pass
11a	6Mbps	52	5260	18.23	18.04	21.15	≤ 23.98	Pass
11a	6Mbps	60	5300	17.75	17.96	20.87	≤ 23.98	Pass
11a	6Mbps	64	5320	17.11	17.36	20.25	≤ 23.98	Pass
11a	6Mbps	100	5500	14.62	14.75	17.70	≤ 23.98	Pass
11a	6Mbps	116	5580	17.54	17.85	20.71	≤ 23.98	Pass
11a	6Mbps	140	5700	17.21	17.16	20.20	≤ 23.98	Pass
11a	6Mbps	149	5745	19.84	20.47	23.18	≤ 30.00	Pass
11a	6Mbps	157	5785	21.14	21.68	24.43	≤ 30.00	Pass
11a	6Mbps	165	5825	20.83	21.19	24.02	≤ 30.00	Pass
CDD and Beamforming mode								
11ac-VHT20	MCS0	36	5180	16.89	16.34	19.63	≤ 30.00	Pass
11ac-VHT20	MCS0	40	5220	21.63	21.82	24.74	≤ 30.00	Pass
11ac-VHT20	MCS0	48	5240	21.59	21.35	24.48	≤ 30.00	Pass
11ac-VHT20	MCS0	52	5260	18.73	18.61	21.68	≤ 23.98	Pass
11ac-VHT20	MCS0	60	5300	18.34	18.49	21.43	≤ 23.98	Pass
11ac-VHT20	MCS0	64	5320	17.12	17.24	20.19	≤ 23.98	Pass
11ac-VHT20	MCS0	100	5500	15.64	15.98	18.82	≤ 23.98	Pass
11ac-VHT20	MCS0	116	5580	17.75	18.03	20.90	≤ 23.98	Pass
11ac-VHT20	MCS0	140	5700	17.92	17.86	20.90	≤ 23.98	Pass
11ac-VHT20	MCS0	149	5745	20.77	21.69	24.26	≤ 30.00	Pass
11ac-VHT20	MCS0	157	5785	21.61	21.35	24.49	≤ 30.00	Pass
11ac-VHT20	MCS0	165	5825	20.94	21.28	24.12	≤ 30.00	Pass

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Total Average Power (dBm)	Average Power Limit (dBm)	Result
CDD and Beamforming mode								
11ac-VHT40	MCS0	38	5190	14.43	13.76	17.12	≤ 30.00	Pass
11ac-VHT40	MCS0	46	5230	21.08	21.58	24.35	≤ 30.00	Pass
11ac-VHT40	MCS0	54	5270	20.88	20.53	23.72	≤ 23.98	Pass
11ac-VHT40	MCS0	62	5310	14.57	14.38	17.49	≤ 23.98	Pass
11ac-VHT40	MCS0	102	5510	13.71	14.03	16.88	≤ 23.98	Pass
11ac-VHT40	MCS0	110	5550	20.38	20.85	23.63	≤ 23.98	Pass
11ac-VHT40	MCS0	134	5670	19.84	19.92	22.89	≤ 23.98	Pass
11ac-VHT40	MCS0	151	5755	20.73	21.19	23.98	≤ 30.00	Pass
11ac-VHT40	MCS0	159	5795	20.83	20.92	23.89	≤ 30.00	Pass
11ac-VHT80	MCS0	42	5210	14.29	13.93	17.12	≤ 30.00	Pass
11ac-VHT80	MCS0	58	5290	14.31	13.48	16.93	≤ 23.98	Pass
11ac-VHT80	MCS0	106	5530	12.84	13.45	16.17	≤ 23.98	Pass
11ac-VHT80	MCS0	122	5610	20.58	20.94	23.77	≤ 23.98	Pass
11ac-VHT80	MCS0	155	5775	19.52	20.10	22.83	≤ 30.00	Pass
11ax-HE20	MCS0	36	5180	16.72	16.38	19.56	≤ 30.00	Pass
11ax-HE20	MCS0	40	5220	21.09	21.44	24.28	≤ 30.00	Pass
11ax-HE20	MCS0	48	5240	20.97	21.35	24.17	≤ 30.00	Pass
11ax-HE20	MCS0	52	5260	18.93	18.51	21.74	≤ 23.98	Pass
11ax-HE20	MCS0	60	5300	18.61	18.55	21.59	≤ 23.98	Pass
11ax-HE20	MCS0	64	5320	17.18	16.99	20.10	≤ 23.98	Pass
11ax-HE20	MCS0	100	5500	18.40	18.68	21.55	≤ 23.98	Pass
11ax-HE20	MCS0	116	5580	18.47	18.43	21.46	≤ 23.98	Pass
11ax-HE20	MCS0	140	5700	16.05	16.12	19.10	≤ 23.98	Pass
11ax-HE20	MCS0	149	5745	21.01	21.89	24.48	≤ 30.00	Pass
11ax-HE20	MCS0	157	5785	21.80	22.34	25.09	≤ 30.00	Pass
11ax-HE20	MCS0	165	5825	21.82	22.28	25.07	≤ 30.00	Pass

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Total Average Power (dBm)	Average Power Limit (dBm)	Result
CDD and Beamforming mode								
11ax-HE40	MCS0	38	5190	13.31	13.42	16.38	≤ 30.00	Pass
11ax-HE40	MCS0	46	5230	19.02	18.50	21.78	≤ 30.00	Pass
11ax-HE40	MCS0	54	5270	20.86	20.61	23.75	≤ 23.98	Pass
11ax-HE40	MCS0	62	5310	15.12	14.63	17.89	≤ 23.98	Pass
11ax-HE40	MCS0	102	5510	12.72	13.22	15.99	≤ 23.98	Pass
11ax-HE40	MCS0	110	5550	20.16	20.97	23.59	≤ 23.98	Pass
11ax-HE40	MCS0	134	5670	19.35	19.47	22.42	≤ 23.98	Pass
11ax-HE40	MCS0	151	5755	20.02	20.45	23.25	≤ 30.00	Pass
11ax-HE40	MCS0	159	5795	20.79	20.82	23.82	≤ 30.00	Pass
11ax-HE80	MCS0	42	5210	14.39	13.78	17.11	≤ 30.00	Pass
11ax-HE80	MCS0	58	5290	14.46	14.72	17.60	≤ 23.98	Pass
11ax-HE80	MCS0	106	5530	12.98	13.69	16.36	≤ 23.98	Pass
11ax-HE80	MCS0	122	5610	20.10	20.36	23.24	≤ 23.98	Pass
11ax-HE80	MCS0	155	5775	19.89	20.43	23.18	≤ 30.00	Pass

Note 1: Total Average Power (dBm) = 10*log {10$^{(Ant\ 0\ Average\ Power\ /10)}$ + 10$^{(Ant\ 1\ Average\ Power\ /10)}$}.

Note 2: Average Power Limit Calculation as below:

802.11a/ac-VHT20/ac-VHT40/ac-VHT80: Limit = 23.98dBm.

Note 3: CDD and Beamforming mode have the same power setting.

7.5. Transmit Power Control

7.5.1.Test Limit

The U-NII device is required to have the capability to operate at least 6 dB below the mean EIRP value of 30 dBm.

7.5.2.Test Procedure Used

KDB 789033 D02v01- Section E)3) b) Method PM-G

7.5.3.Test Setting

Average power measurements were performed only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor. The power meter implemented triggering and gating capabilities which were set up such that power measurements were recorded only during the ON time of the transmitter. The trace was averaged over 100 traces to obtain the final measured average power.

7.5.4.Test Setup
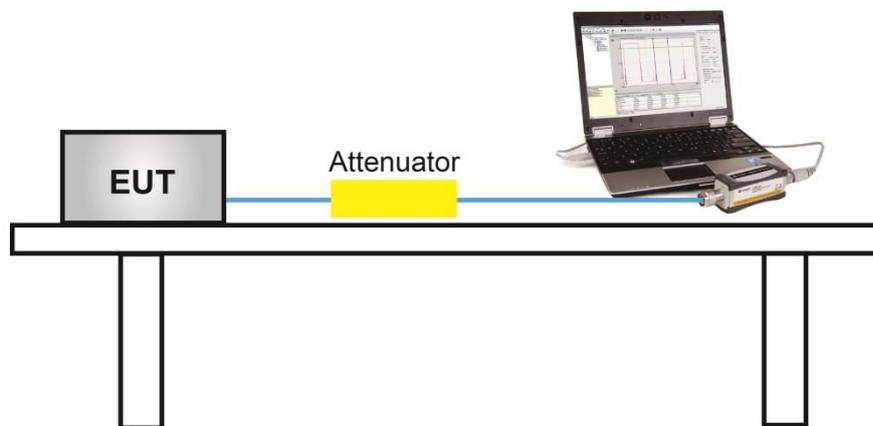
7.5.5.Test Result

Device supports TPC mechanism, details refer to the operational description.

7.6. Power Spectral Density Measurement

7.6.1. Test Limit

For the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band.

For the band 5.725-5.85 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band.

If transmitting antennas of directional gain greater than 6dBi are used, the peak power spectral density shall be reduced by the amount in dB that the directional gain of theantenna exceeds 6dBi.

7.6.2. Test Procedure Used

KDB 789033 D02v02r01-SectionF

7.6.3. Test Setting

1. Analyzer was set to the center frequency of the UNII channel under investigation

2. Span was set to encompass the entire 26dB EBW of the signal.

3. RBW = 1MHz, if measurement bandwidth of Maximum PSD is specified in 500 kHz, RBW = 510 kHz

4. VBW = 3MHz

5. Number of sweep points ≥ 2 × (span / RBW)

6. Detector = power averaging (Average)

7. Sweep time = auto

8. Trigger = free run

9. Use the peak search function on the instrument to find the peak of the spectrum and record its value.

10. Add 10*log(1/x), where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times (because the measurement represents an average over both the on and off times of the transmission). For example, add 10*log (1/0.25) = 6 dB if the duty cycle is 25 percent.

7.6.4.Test Setup
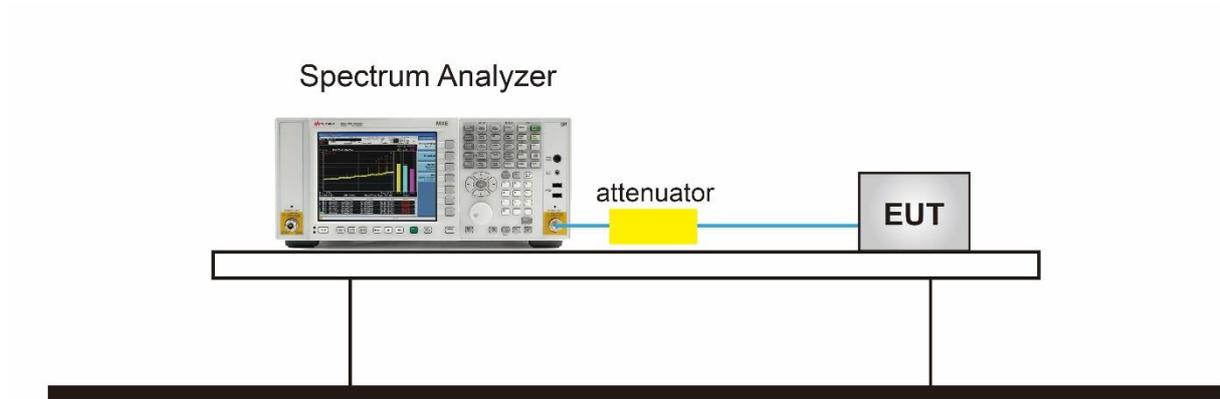
7.6.5.Test Result

Product	AX1500 Wi-Fi 6 Range Extender	Temperature	25°C
Test Engineer	Eric Lin	Relative Humidity	54%
Test Site	SR2	Test Date	2021/01/05~2021/05/11
Test Item	Power Spectral Density (U-NII -2a / -2c)		

Test Mode	Data Rate /MCS	Ch. No.	Freq. (MHz)	Ant 0 PSD (dBm/MHz)	Ant 1 PSD (dBm/MHz)	Duty Cycle (%)	Total PSD (dBm/ MHz)	PSD Limit (dBm/MHz)	Result
11a	6Mbps	36	5180	5.03	4.79	95.16	8.14	≤ 17.00	Pass
11a	6Mbps	44	5220	9.28	8.70	95.16	12.22	≤ 17.00	Pass
11a	6Mbps	48	5240	8.85	8.22	95.16	11.77	≤ 17.00	Pass
11a	6Mbps	52	5260	7.72	7.46	95.16	10.82	≤ 11.00	Pass
11a	6Mbps	60	5300	7.65	7.34	95.16	10.72	≤ 11.00	Pass
11a	6Mbps	64	5320	7.34	7.33	95.16	10.56	≤ 11.00	Pass
11a	6Mbps	100	5500	4.70	4.63	95.16	7.89	≤ 11.00	Pass
11a	6Mbps	116	5580	6.45	6.62	95.16	9.76	≤ 11.00	Pass
11a	6Mbps	140	5700	6.03	6.05	95.16	9.27	≤ 11.00	Pass
11ac-VHT20	MCS0	36	5180	4.85	4.56	98.47	7.71	≤ 17.00	Pass
11ac-VHT20	MCS0	40	5220	9.62	9.30	98.47	12.47	≤ 17.00	Pass
11ac-VHT20	MCS0	48	5240	9.39	8.87	98.47	12.15	≤ 17.00	Pass
11ac-VHT20	MCS0	52	5260	7.89	7.56	98.47	10.74	≤ 11.00	Pass
11ac-VHT20	MCS0	60	5300	7.82	7.53	98.47	10.69	≤ 11.00	Pass
11ac-VHT20	MCS0	64	5320	7.75	7.74	98.47	10.75	≤ 11.00	Pass
11ac-VHT20	MCS0	100	5500	5.44	5.62	98.47	8.54	≤ 11.00	Pass
11ac-VHT20	MCS0	116	5580	6.64	6.52	98.47	9.59	≤ 11.00	Pass
11ac-VHT20	MCS0	140	5700	6.53	6.39	98.47	9.47	≤ 11.00	Pass
11ac-VHT40	MCS0	38	5190	-0.46	-1.18	97.05	2.34	≤ 17.00	Pass
11ac-VHT40	MCS0	46	5230	6.55	6.08	97.05	9.46	≤ 17.00	Pass
11ac-VHT40	MCS0	54	5270	6.32	5.91	97.05	9.26	≤ 11.00	Pass
11ac-VHT40	MCS0	62	5310	0.18	0.29	97.05	3.37	≤ 11.00	Pass
11ac-VHT40	MCS0	102	5510	-0.64	-0.51	97.05	2.57	≤ 11.00	Pass
11ac-VHT40	MCS0	110	5550	5.74	6.26	97.05	9.15	≤ 11.00	Pass
11ac-VHT40	MCS0	134	5670	5.22	5.44	97.05	8.47	≤ 11.00	Pass

Test Mode	Data Rate /MCS	Ch. No.	Freq. (MHz)	Ant 0 PSD (dBm/MHz)	Ant 1 PSD (dBm/MHz)	Duty Cycle (%)	Total PSD (dBm/ MHz)	PSD Limit (dBm/MHz)	Result
11ac-VHT80	MCS0	42	5210	-3.68	-3.76	94.07	-0.44	≤ 17.00	Pass
11ac-VHT80	MCS0	58	5290	-3.13	-3.72	94.07	-0.14	≤ 11.00	Pass
11ac-VHT80	MCS0	106	5530	-4.71	-4.12	94.07	-1.13	≤ 11.00	Pass
11ac-VHT80	MCS0	122	5610	3.34	3.49	94.07	6.69	≤ 11.00	Pass
11ax-HE20	MCS0	36	5180	4.71	4.55	97.89	7.73	≤ 17.00	Pass
11ax-HE20	MCS0	40	5220	8.92	8.58	97.89	11.86	≤ 17.00	Pass
11ax-HE20	MCS0	48	5240	8.55	8.18	97.89	11.47	≤ 17.00	Pass
11ax-HE20	MCS0	52	5260	7.60	7.49	97.89	10.65	≤ 11.00	Pass
11ax-HE20	MCS0	60	5300	7.77	7.45	97.89	10.71	≤ 11.00	Pass
11ax-HE20	MCS0	64	5320	5.37	5.31	97.89	8.44	≤ 11.00	Pass
11ax-HE20	MCS0	100	5500	6.92	6.89	97.89	10.01	≤ 11.00	Pass
11ax-HE20	MCS0	116	5580	6.69	6.48	97.89	9.69	≤ 11.00	Pass
11ax-HE20	MCS0	140	5700	4.43	4.65	97.89	7.64	≤ 11.00	Pass
11ax-HE40	MCS0	38	5190	-1.50	-1.96	96.09	1.46	≤ 17.00	Pass
11ax-HE40	MCS0	46	5230	3.95	3.82	96.09	7.07	≤ 17.00	Pass
11ax-HE40	MCS0	54	5270	6.31	6.02	96.09	9.35	≤ 11.00	Pass
11ax-HE40	MCS0	62	5310	0.67	-0.12	96.09	3.48	≤ 11.00	Pass
11ax-HE40	MCS0	102	5510	-2.03	-1.30	96.09	1.54	≤ 11.00	Pass
11ax-HE40	MCS0	110	5550	5.74	5.97	96.09	9.04	≤ 11.00	Pass
11ax-HE40	MCS0	134	5670	4.64	4.66	96.09	7.84	≤ 11.00	Pass
11ax-HE80	MCS0	42	5210	-3.56	-4.13	92.78	-0.50	≤ 17.00	Pass
11ax-HE80	MCS0	58	5290	-2.48	-2.76	92.78	0.71	≤ 11.00	Pass
11ax-HE80	MCS0	106	5530	-4.46	-3.58	92.78	-0.66	≤ 11.00	Pass
11ax-HE80	MCS0	122	5610	2.70	2.94	92.78	6.16	≤ 11.00	Pass

Note:

When EUT duty cycle > 98%, the total PSD (dBm/MHz) = 10*log {$10^{(Ant\ 0\ PSD/10)}$ + $10^{(Ant\ 1\ PSD/10)}$} (dBm/MHz).

When EUT duty cycle < 98%, the total PSD (dBm/MHz) = 10*log {$10^{(Ant\ 0\ PSD/10)}$ + $10^{(Ant\ 1\ PSD/10)}$} (dBm/MHz) + 10*log (1/Duty Cycle).

Product	AC1200 Wi-Fi Range Extender	Temperature	25°C
Test Engineer	Eric Lin	Relative Humidity	54%
Test Site	SR2	Test Date	2021/04/16
Test Item	Power Spectral Density (U-NII-3)		

Test Mode	Data Rate/ MCS	Ch. No.	Freq. (MHz)	Ant 0 PSD (dBm/ 510KHz)	Ant 1 PSD (dBm/ 510KHz)	Duty Cycle (%)	Total PSD (dBm/ 510kHz)	Limit (dBm/ 500kHz)	Result
11a	6Mbps	149	5745	5.40	5.71	95.16	8.78	≤ 30.00	Pass
11a	6Mbps	157	5785	6.64	6.60	95.16	9.84	≤ 30.00	Pass
11a	6Mbps	165	5825	6.49	6.47	95.16	9.71	≤ 30.00	Pass
11ac-VHT20	MCS0	149	5745	6.77	6.85	98.47	9.82	≤ 30.00	Pass
11ac-VHT20	MCS0	157	5785	7.25	7.32	98.47	10.29	≤ 30.00	Pass
11ac-VHT20	MCS0	165	5825	6.83	6.58	98.47	9.72	≤ 30.00	Pass
11ac-VHT40	MCS0	151	5755	3.34	3.97	97.05	6.81	≤ 30.00	Pass
11ac-VHT40	MCS0	159	5795	3.53	3.85	97.05	6.83	≤ 30.00	Pass
11ac-VHT80	MCS0	155	5775	0.85	0.40	94.07	3.91	≤ 30.00	Pass
11ax-HE20	MCS0	149	5745	6.91	6.80	97.89	9.96	≤ 30.00	Pass
11ax-HE20	MCS0	157	5785	7.67	7.21	97.89	10.55	≤ 30.00	Pass
11ax-HE20	MCS0	165	5825	7.33	7.18	97.89	10.36	≤ 30.00	Pass
11ax-HE40	MCS0	151	5755	2.87	3.37	96.09	6.31	≤ 30.00	Pass
11ax-HE40	MCS0	159	5795	3.29	3.73	96.09	6.70	≤ 30.00	Pass
11ax-HE80	MCS0	155	5775	0.87	0.62	92.78	4.08	≤ 30.00	Pass

Note:

When EUT duty cycle < 98%, the total PSD (dBm/MHz) = 10*log $\{10^{(Ant\ 0\ PSD/10)} + 10^{(Ant\ 1\ PSD/10)}\}$ (dBm/MHz) + 10*log (1/Duty Cycle).

802.11a Power Spectral Density – Ant 0/Ant 0 + 1

Channel 36 (5180MHz)

Channel 44 (5220MHz)
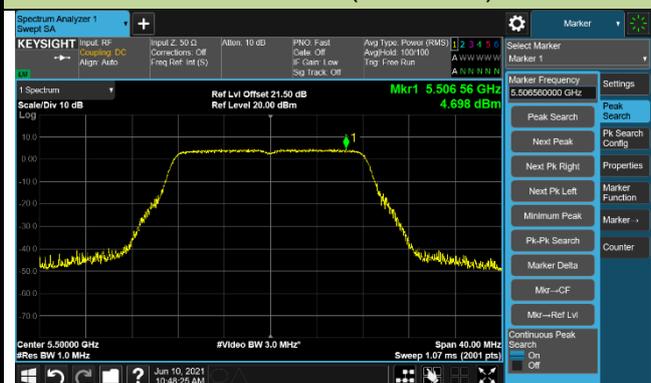
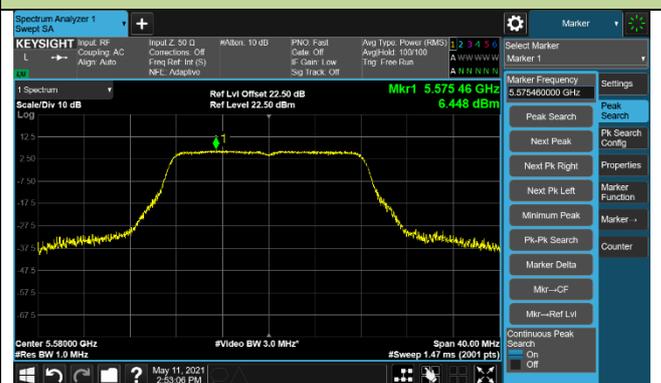

Channel 48 (5240MHz)

Channel 52 (5260MHz)

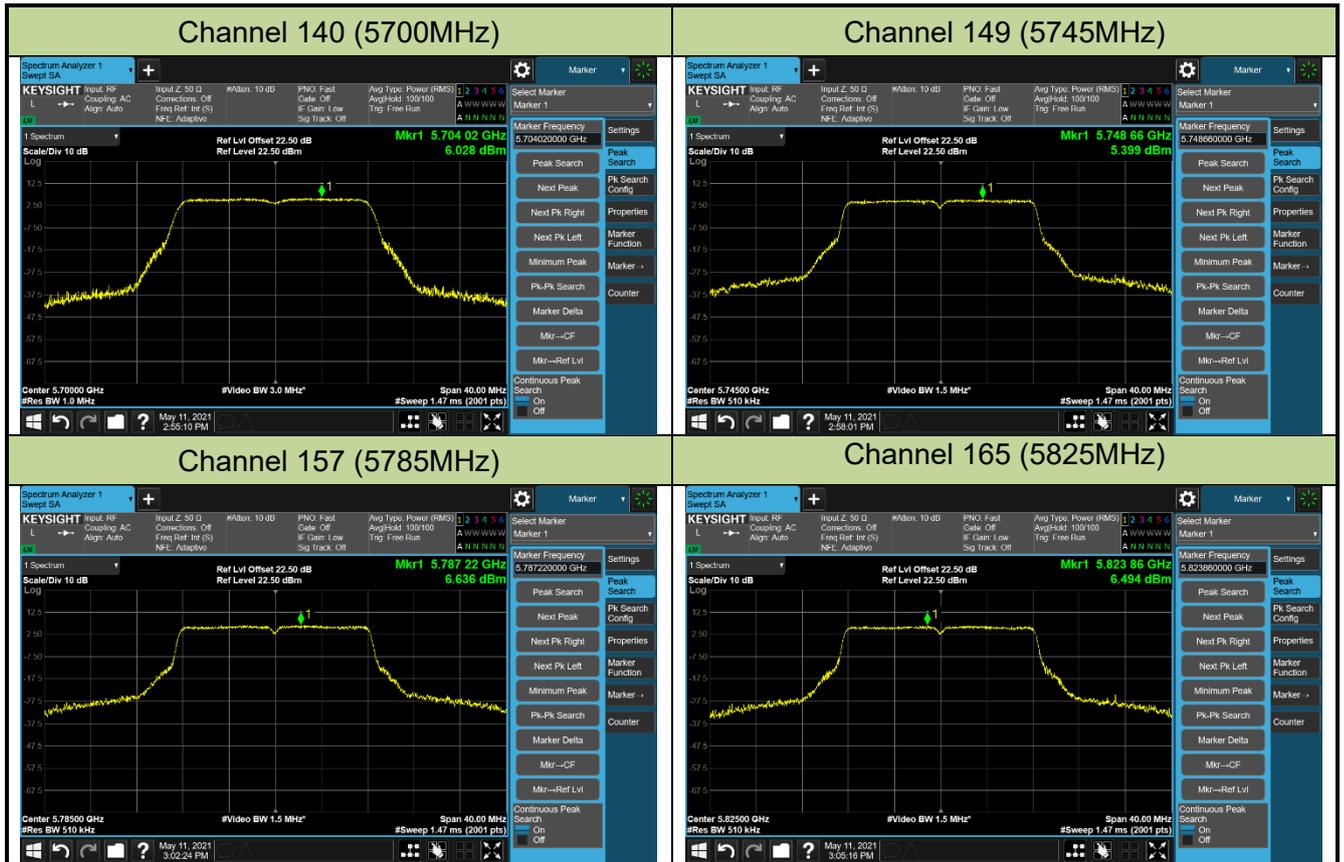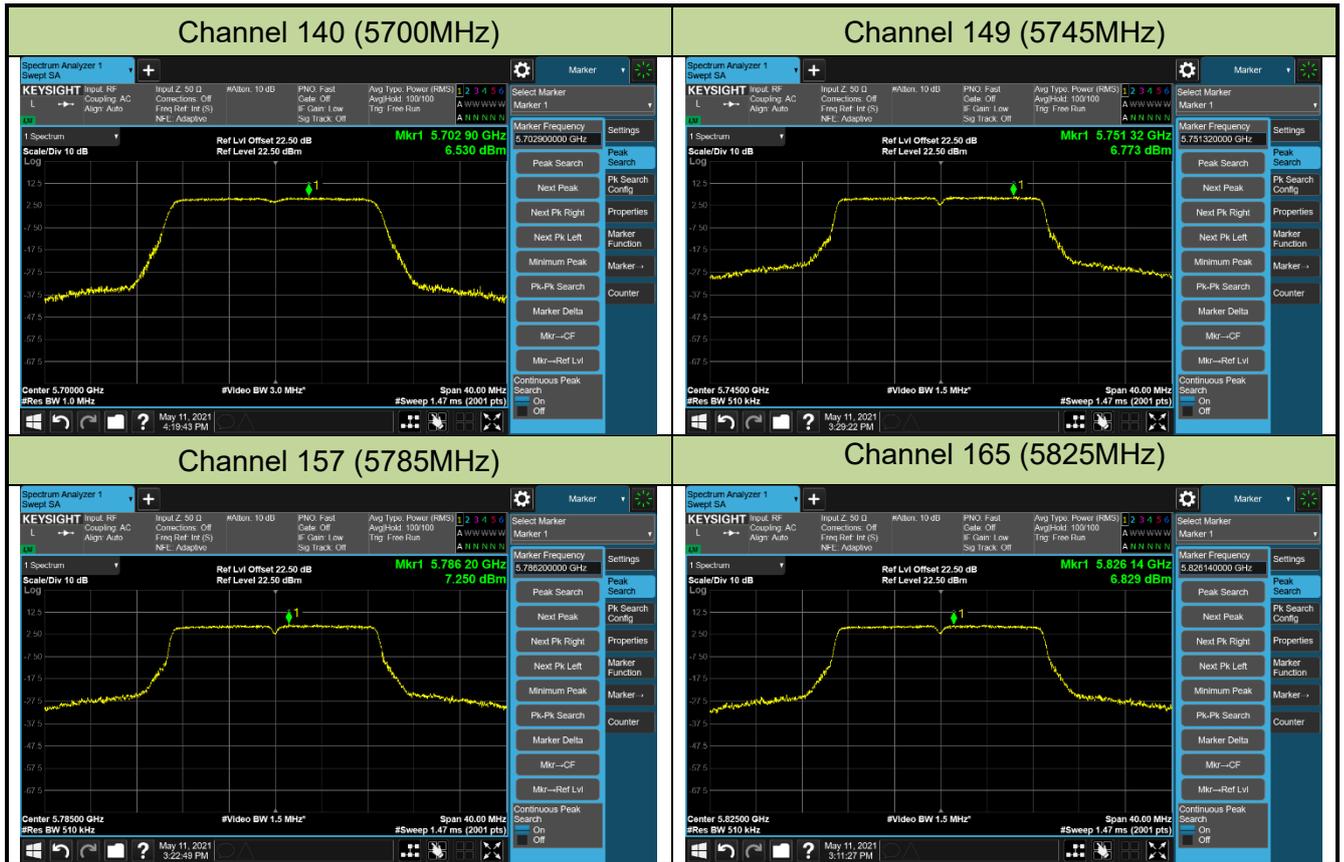

Channel 60 (5300MHz)

Channel 64 (5320MHz)

Channel 100 (5500MHz)

Channel 116 (5580MHz)

Channel 140 (5700MHz)

Channel 149 (5745MHz)

Channel 157 (5785MHz)

Channel 165 (5825MHz)

802.11ac-VHT20 Power Spectral Density – Ant 0/Ant 0 + 1
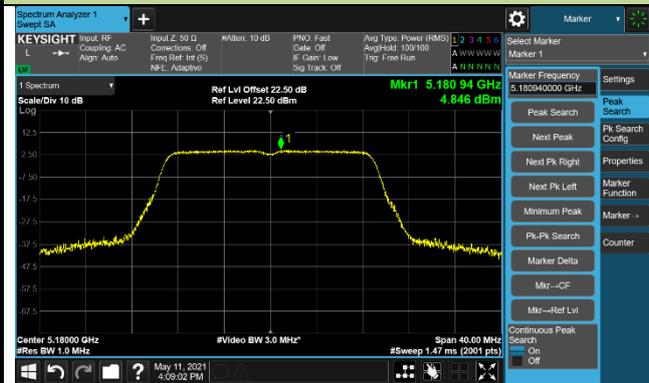
Channel 36 (5180MHz)

Channel 44 (5220MHz)

Channel 48 (5240MHz)

Channel 52 (5260MHz)

Channel 60 (5300MHz)

Channel 64 (5320MHz)

Channel 100 (5500MHz)

Channel 116 (5580MHz)

Channel 140 (5700MHz)

Channel 149 (5745MHz)

Channel 157 (5785MHz)

Channel 165 (5825MHz)

802.11ac-VHT40 Power Spectral Density – Ant 0/Ant 0 + 1

Channel 38 (5190MHz)

Channel 46 (5230MHz)

Channel 54 (5270MHz)

Channel 62 (5310MHz)
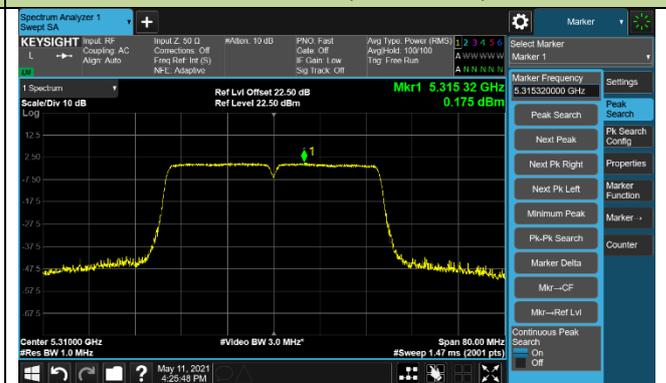
Channel 102 (5510MHz)
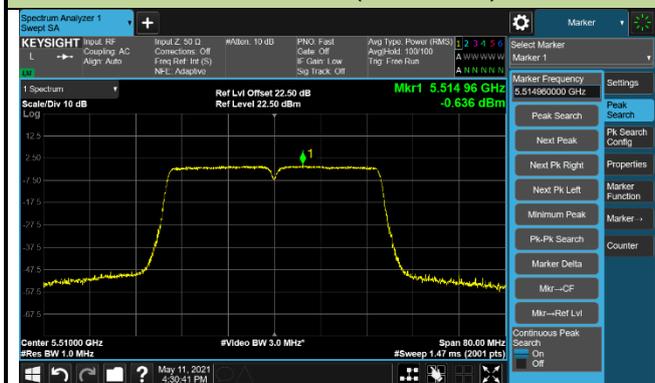
Channel 110 (5550MHz)

Channel 134 (5670MHz)

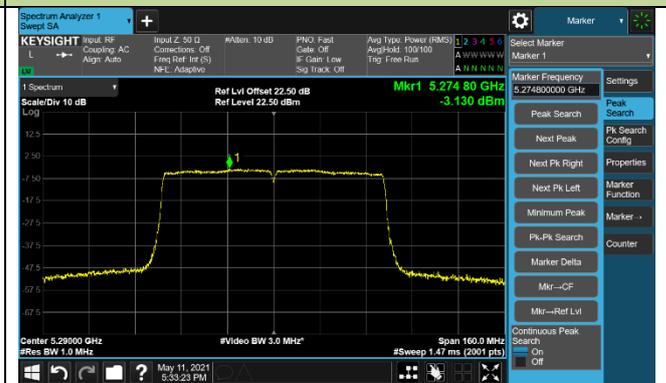

Channel 151 (5755MHz)

Channel 159 (5795MHz)

802.11ac-VHT80 Power Spectral Density – Ant 0/Ant 0 + 1

Channel 42 (5210MHz)	Channel 58 (5290MHz)

Channel 106 (5530MHz)	Channel 122 (5610MHz)
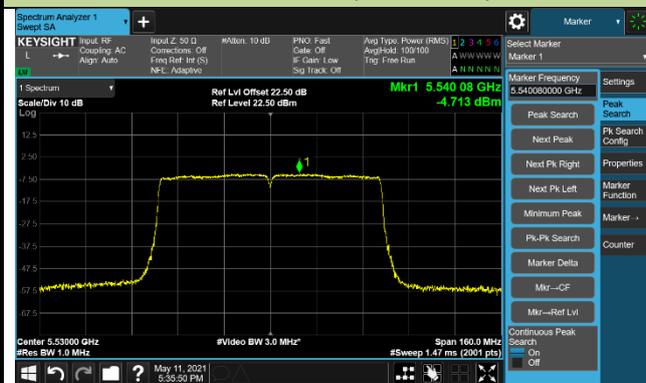
Channel 155 (5775MHz)

802.11ax-HE20 Power Spectral Density – Ant 0/Ant 0 + 1

Channel 36 (5180MHz)

Channel 44 (5220MHz)

Channel 48 (5240MHz)

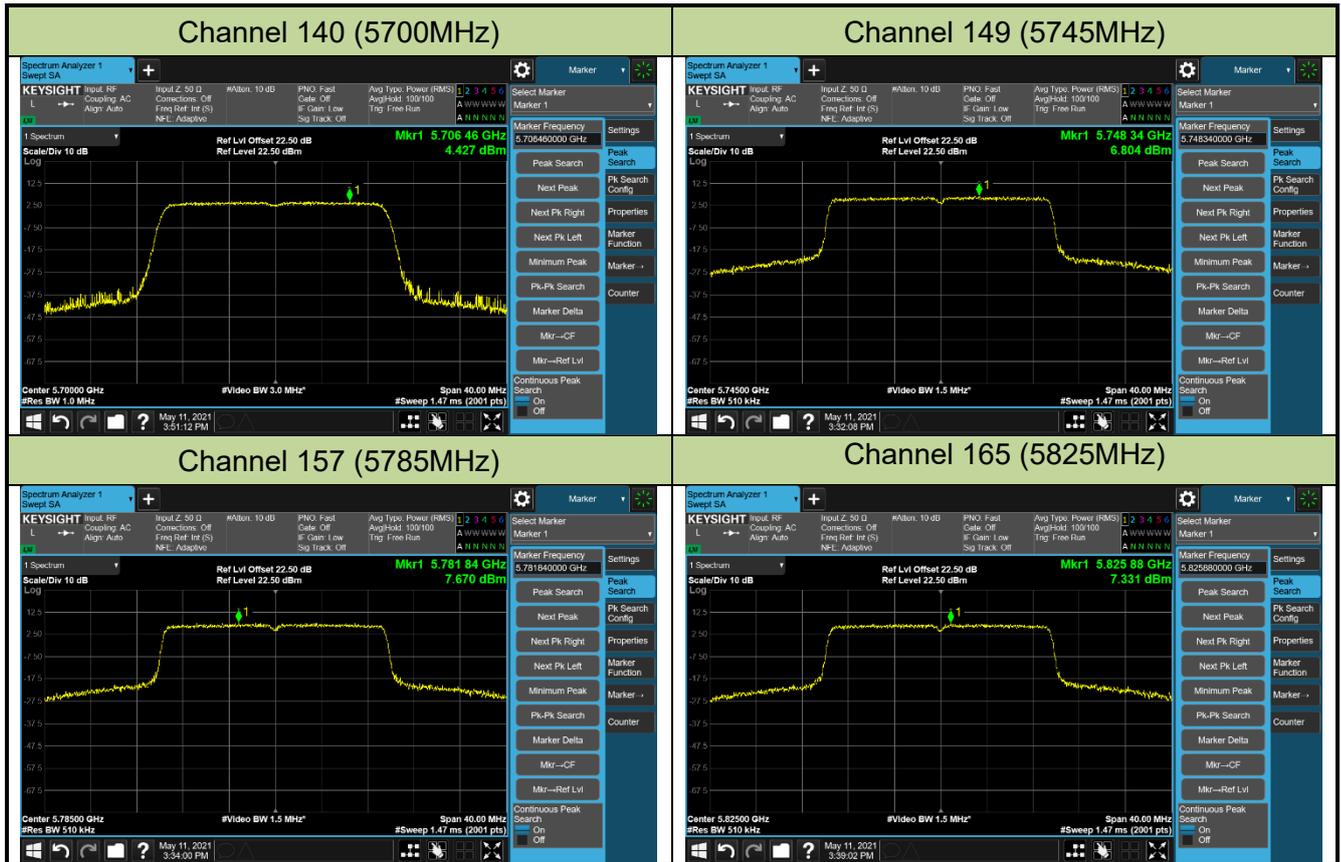### Channel 52 (5260MHz)

Channel 60 (5300MHz)

Channel 64 (5320MHz)

Channel 100 (5500MHz)

Channel 116 (5580MHz)

Channel 140 (5700MHz)

Channel 149 (5745MHz)

Channel 157 (5785MHz)

Channel 165 (5825MHz)

802.11ax-HE40 Power Spectral Density – Ant 0/Ant 0 + 1

Channel 38 (5190MHz)
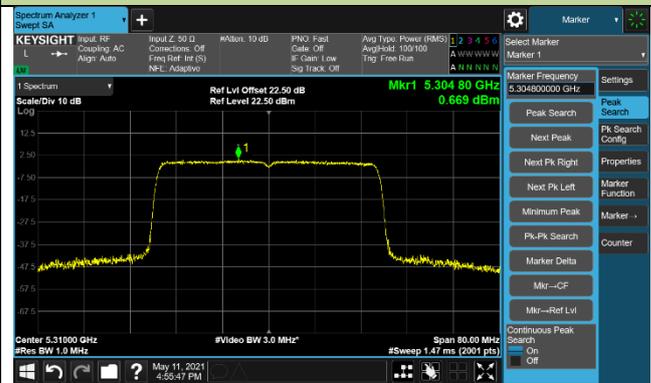

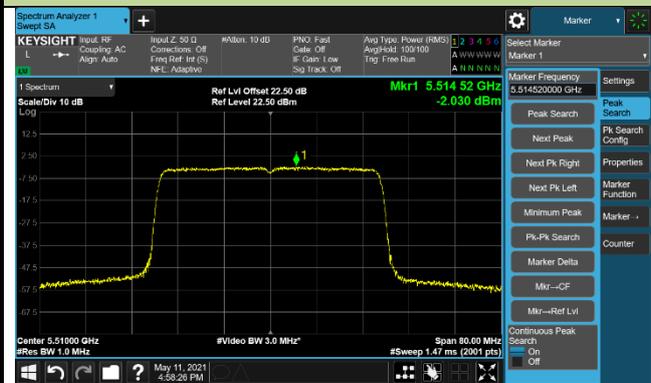### Channel 46 (5230MHz)

Channel 54 (5270MHz)

Channel 62 (5310MHz)

Channel 102 (5510MHz)

Channel 110 (5550MHz)

Channel 134 (5670MHz)

Channel 151 (5755MHz)

Channel 159 (5795MHz)

802.11ax-HE80 Power Spectral Density – Ant 0/Ant 0 + 1

Channel 42 (5210MHz)	Channel 58 (5290MHz)

Channel 106 (5530MHz)	Channel 122 (5610MHz)

Channel 155 (5775MHz)