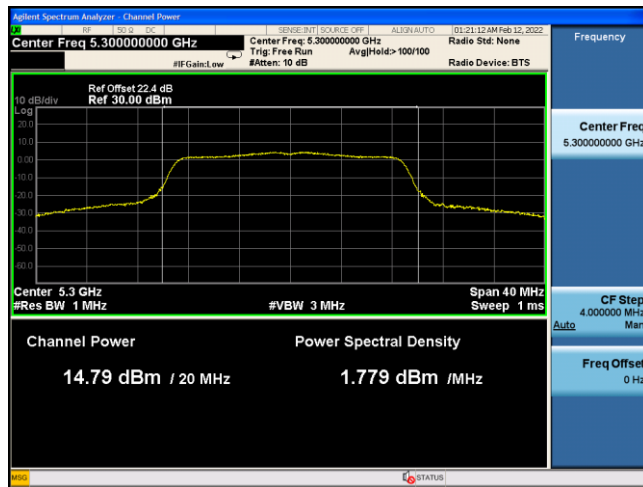
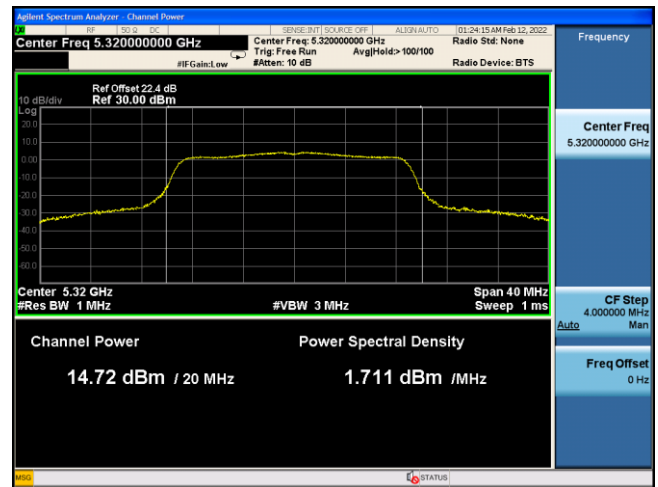


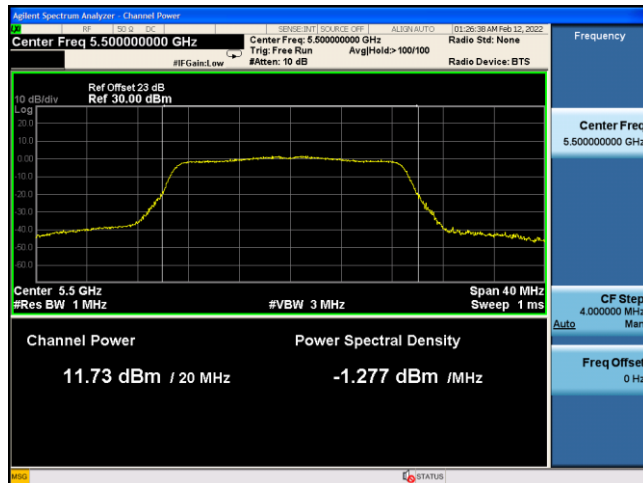
802.11ac-VHT20 CH60 (5300MHz)



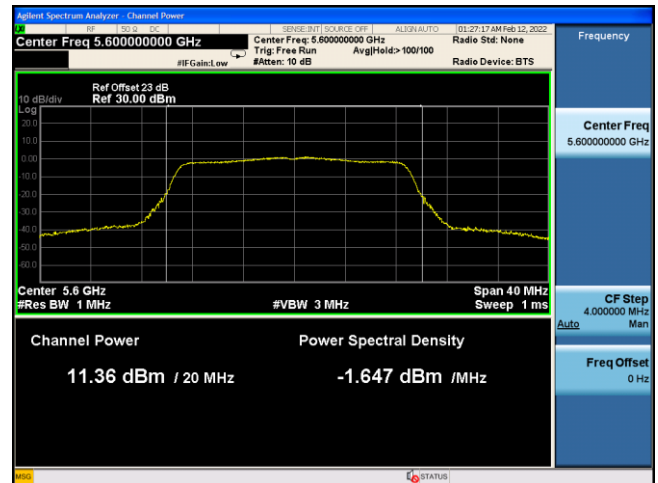
802.11ac-VHT20 CH64 (5320MHz)



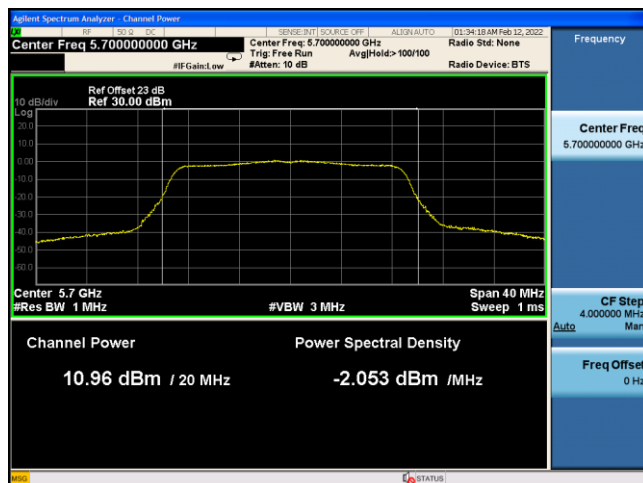
802.11ac-VHT20 CH100 (5500MHz)



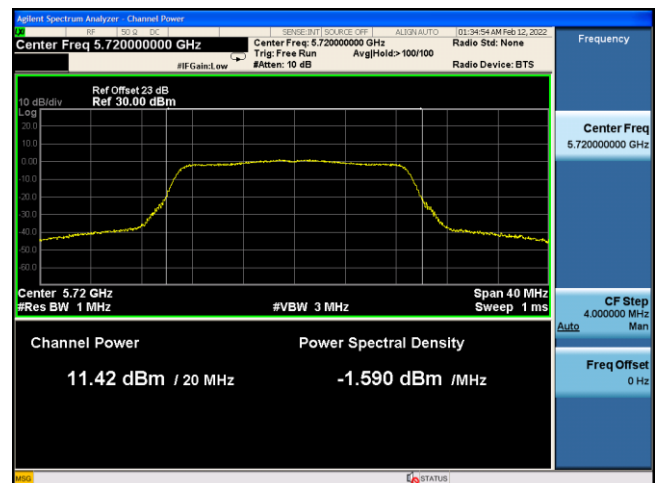
802.11ac-VHT20 CH120 (5600MHz)



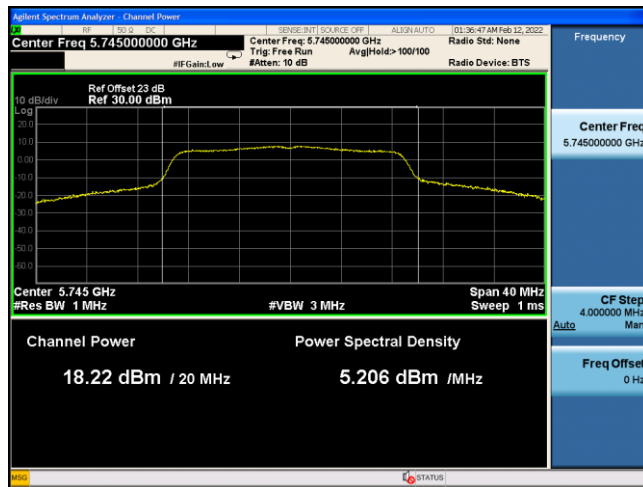
802.11ac-VHT20 CH140 (5700MHz)



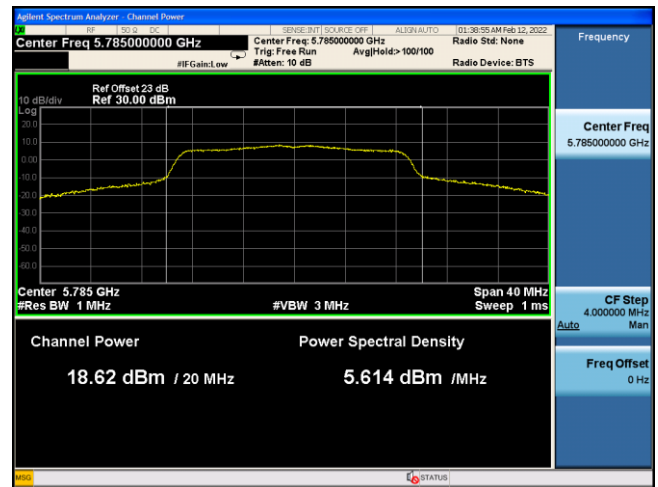
802.11ac-VHT20 CH144 (5720MHz)



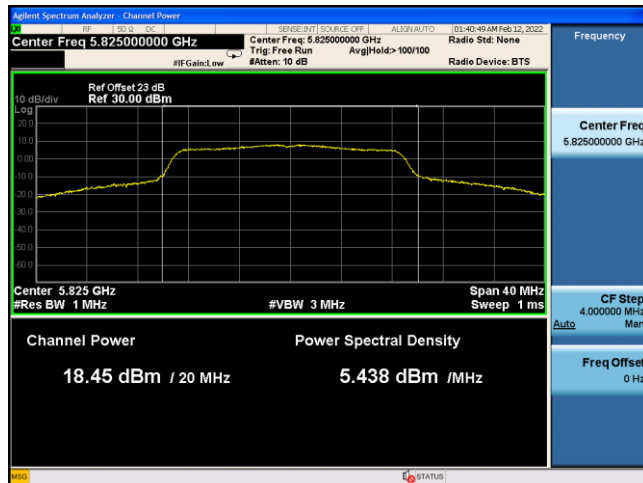
802.11ac-VHT20 CH149 (5745MHz)



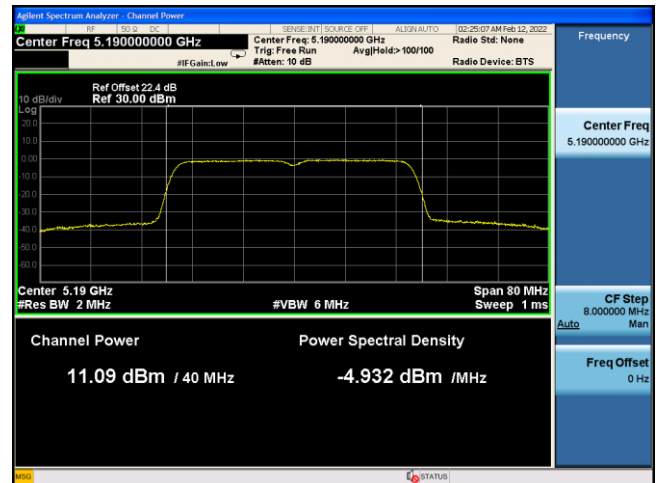
802.11ac-VHT20 CH157 (5785MHz)



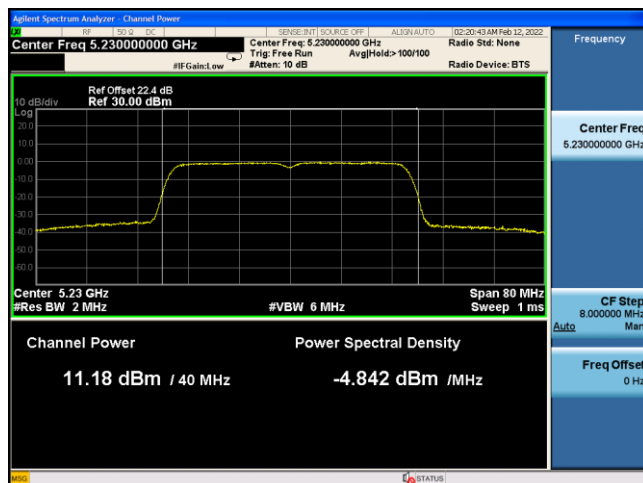
802.11ac-VHT20 CH165 (5825MHz)



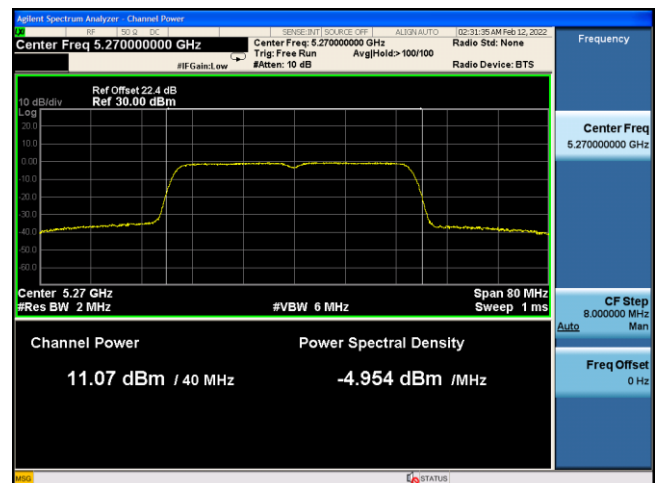
802.11 n-HT40 CH38 (5190MHz)



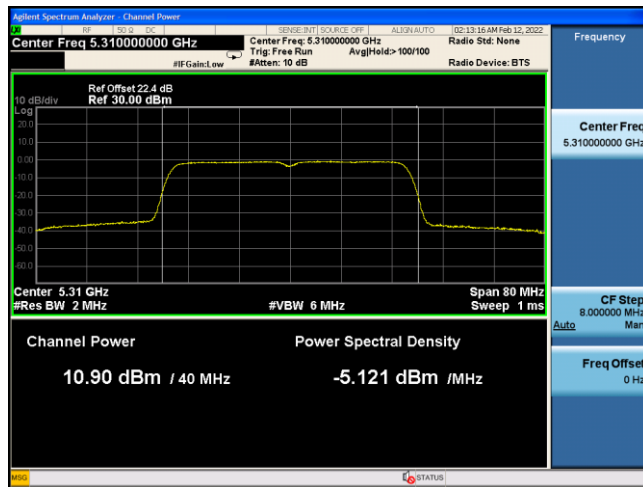
802.11 n-HT40 CH46 (5230MHz)



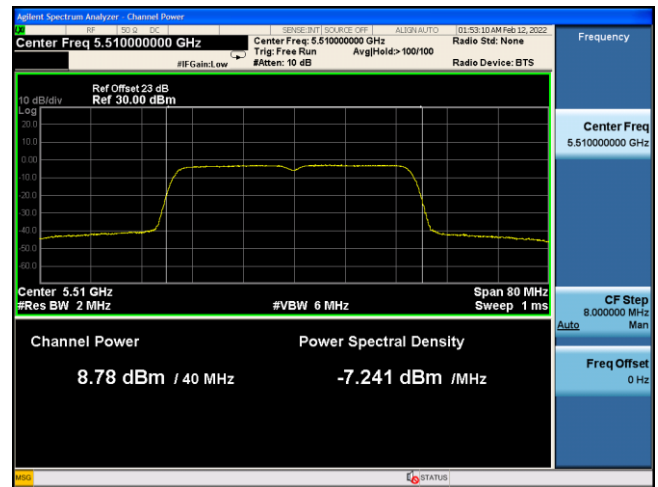
802.11 n-HT40 CH54 (5270MHz)



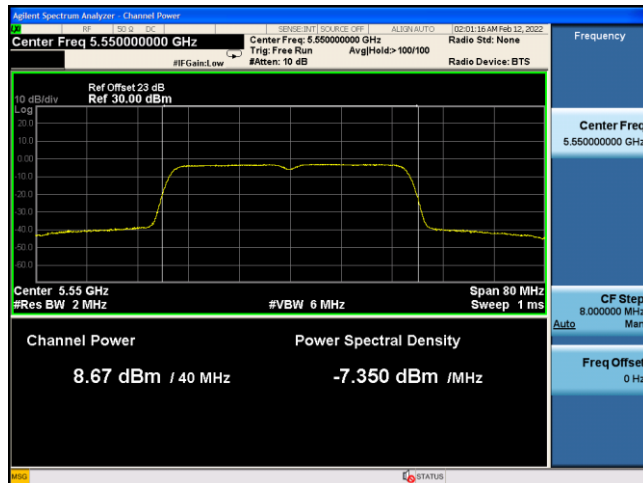
802.11 n-HT40 CH62 (5310MHz)



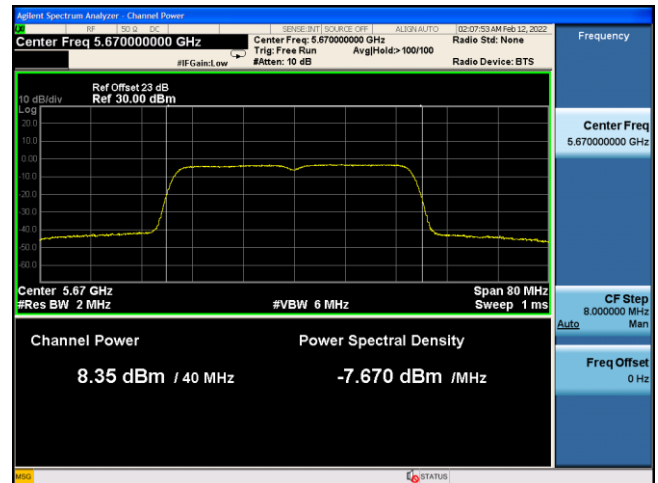
802.11 n-HT40 CH102 (5510MHz)



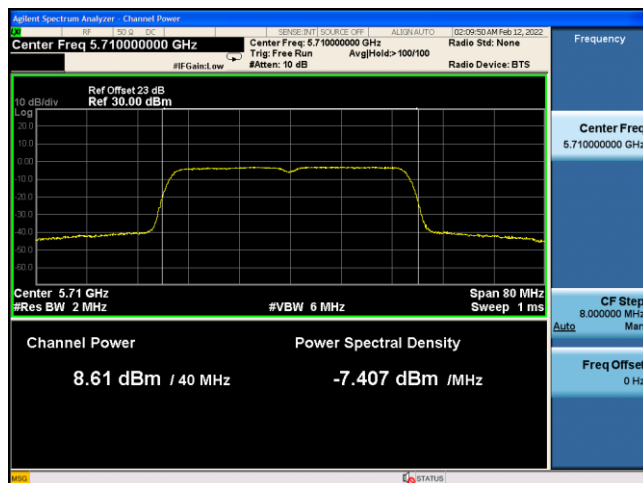
802.11 n-HT40 CH110 (5550MHz)



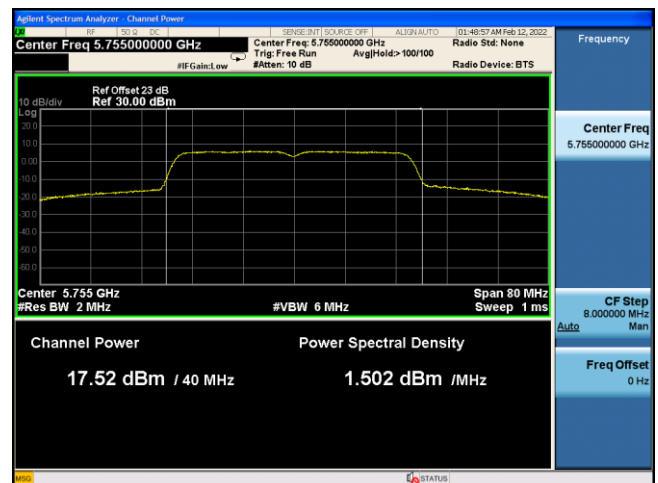
802.11 n-HT40 CH134 (5670MHz)



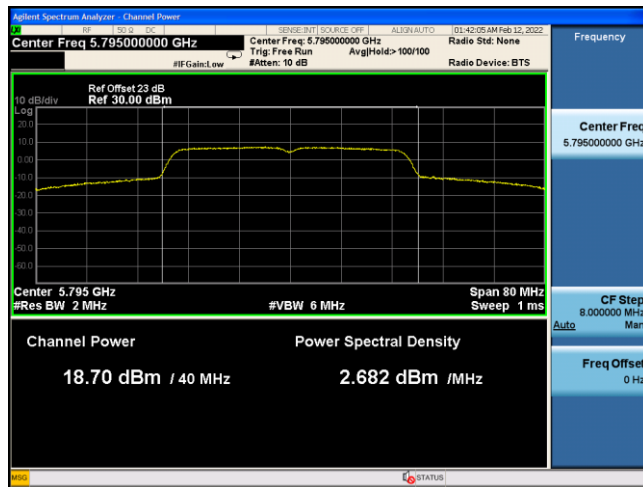
802.11 n-HT40 CH142 (5710MHz)



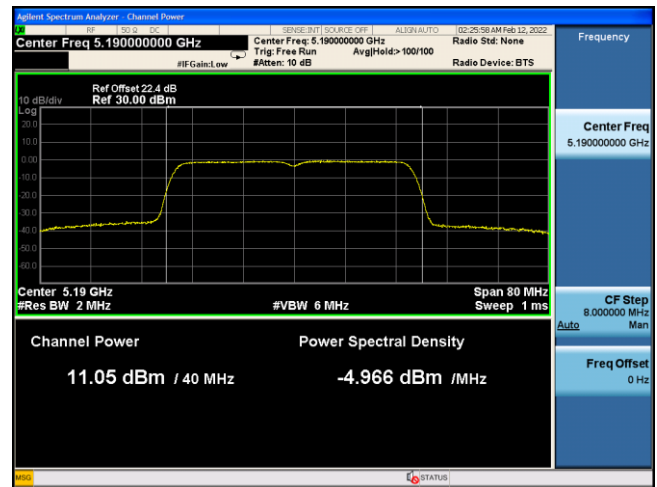
802.11 n-HT40 CH151 (5755MHz)



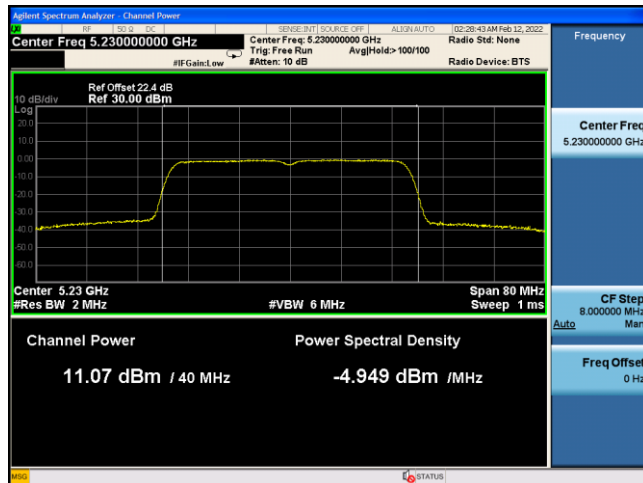
802.11 n-HT40 CH159 (5795MHz)



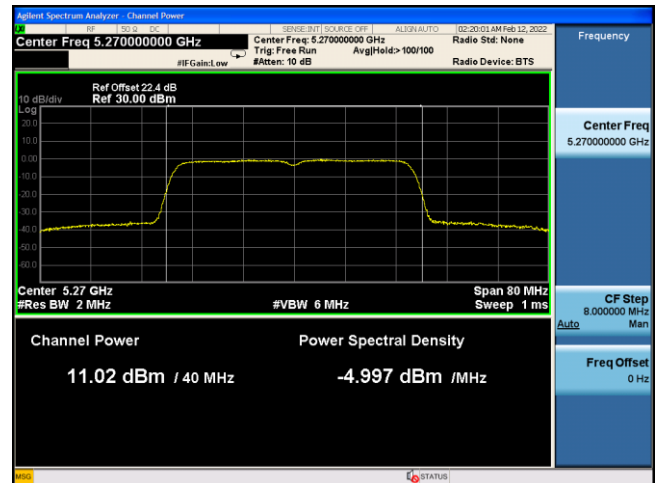
802.11 ac-VHT40 CH38 (5190MHz)



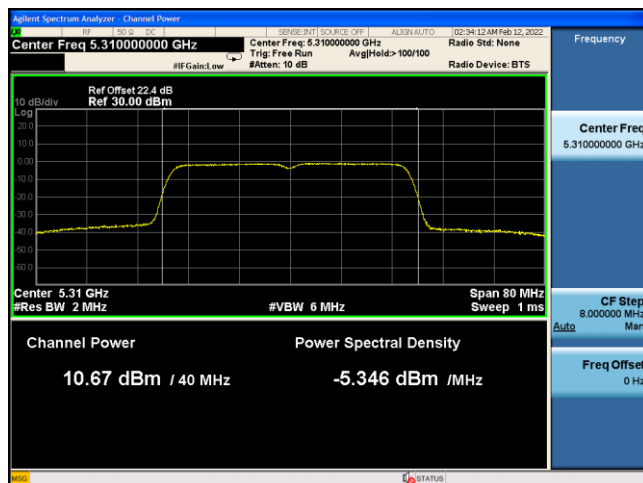
802.11ac-VHT40 CH46 (5230MHz)



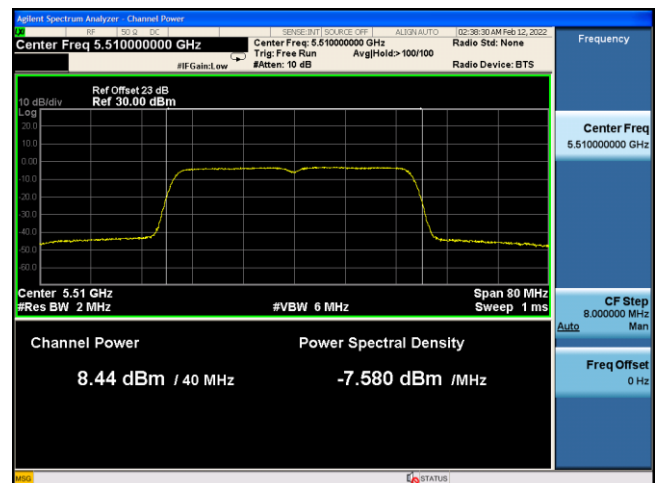
802.11ac-VHT40 CH54 (5270MHz)



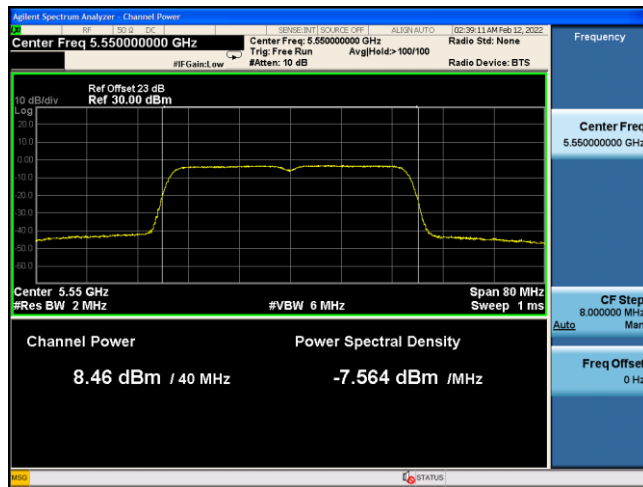
802.11ac-VHT40 CH62 (5310MHz)



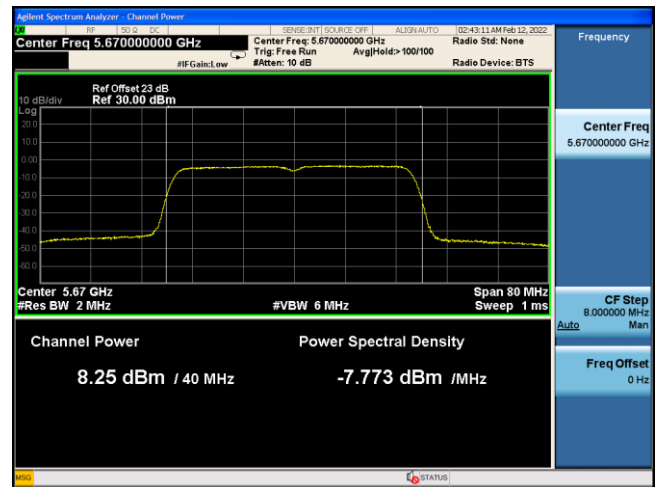
802.11ac-VHT40 CH102 (5510MHz)



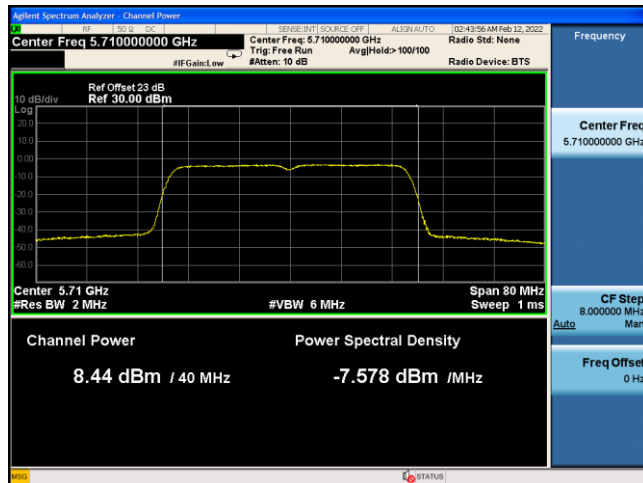
802.11ac-VHT40 CH110 (5550MHz)



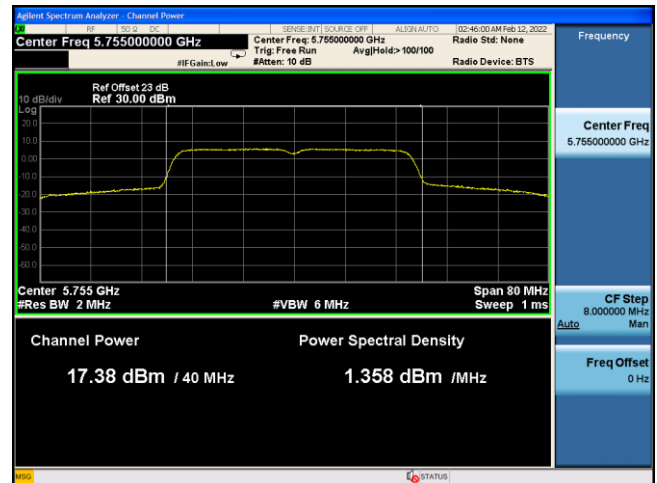
802.11ac-VHT40 CH134 (5670MHz)



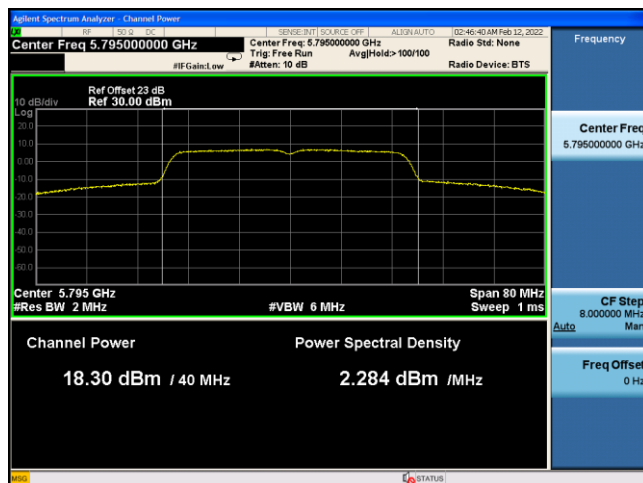
802.11ac-VHT40 CH142 (5710MHz)



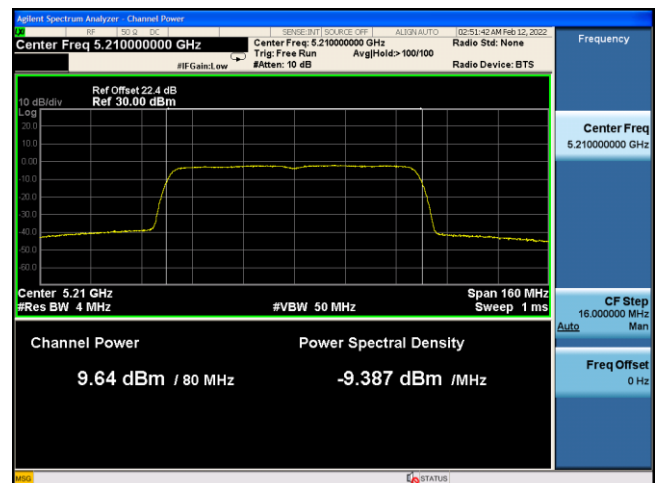
802.11ac-VHT40 CH151 (5755MHz)



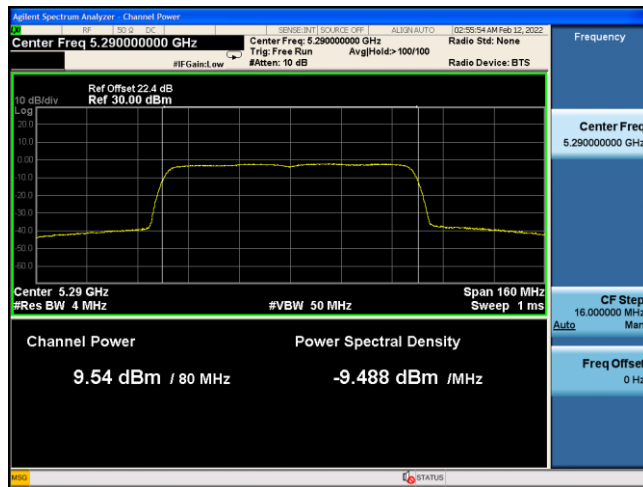
802.11ac-VHT40 CH159 (5795MHz)



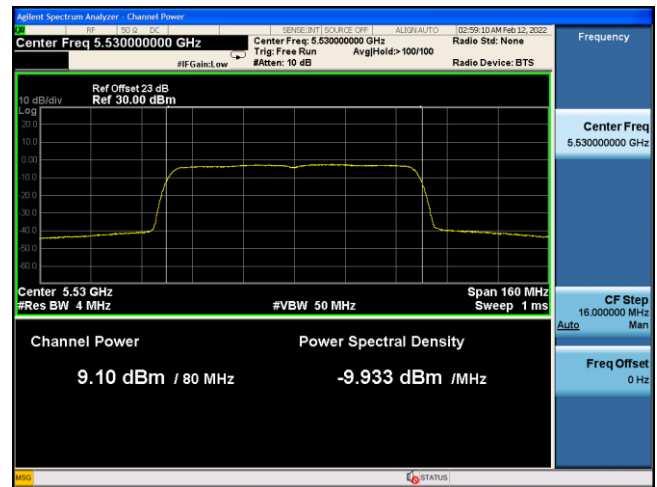
802.11 ac-VHT80 CH42 (5210MHz)



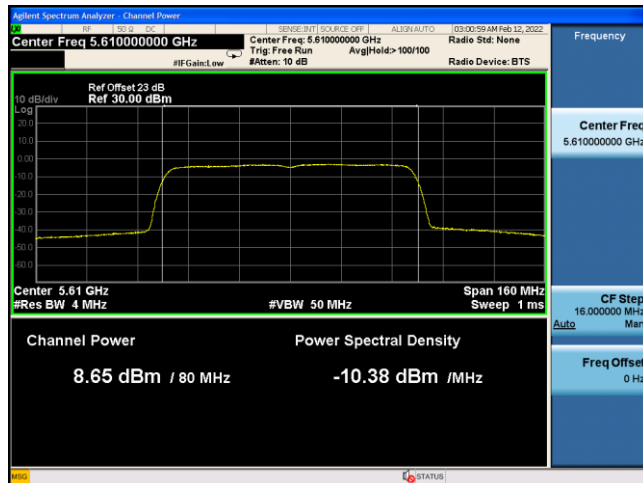
802.11 ac-VHT80 CH58 (5290MHz)



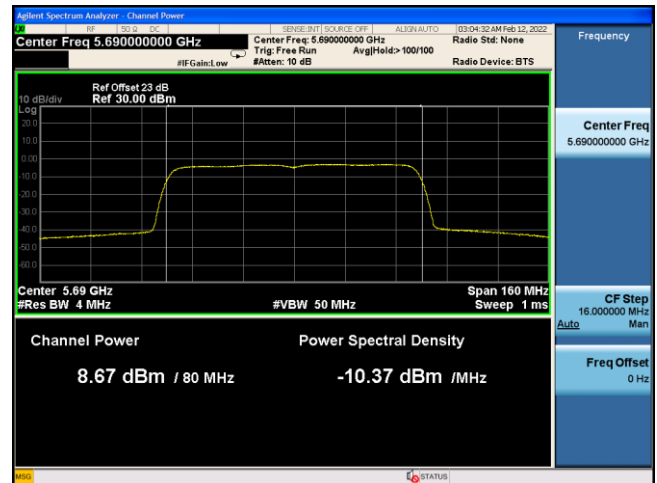
802.11 ac-VHT80 CH106 (5530MHz)



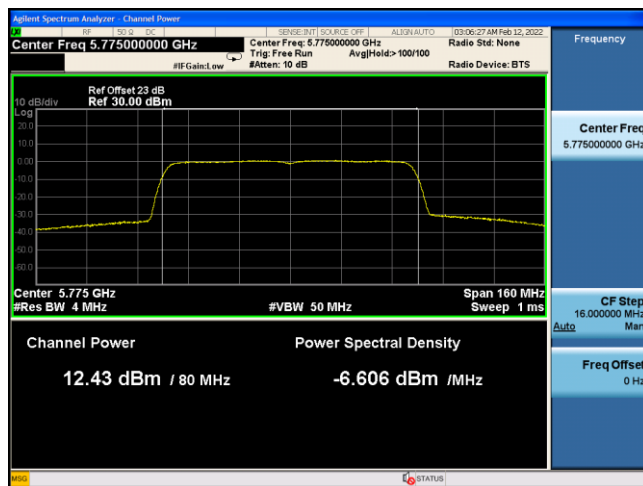
802.11 ac-VHT80 CH122(5610MHz)



802.11 ac-VHT80 CH138 (5690MHz)



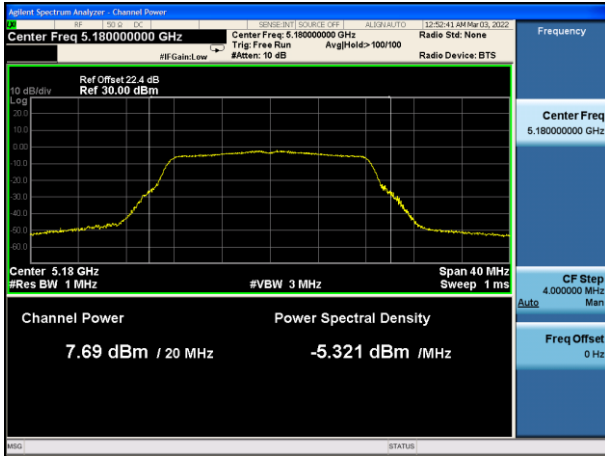
802.11 ac-VHT80 CH155 (5775MHz)



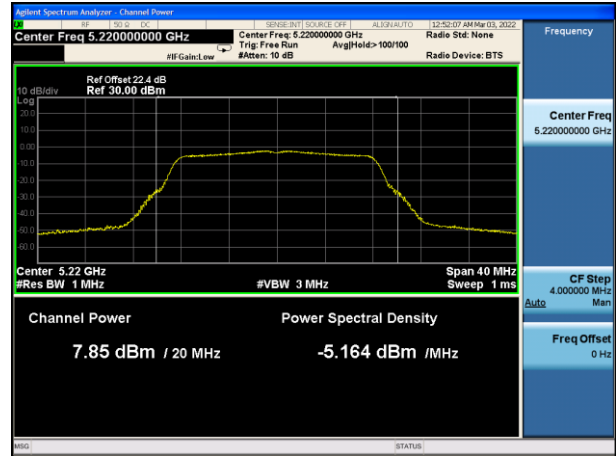
IC

Ant 0

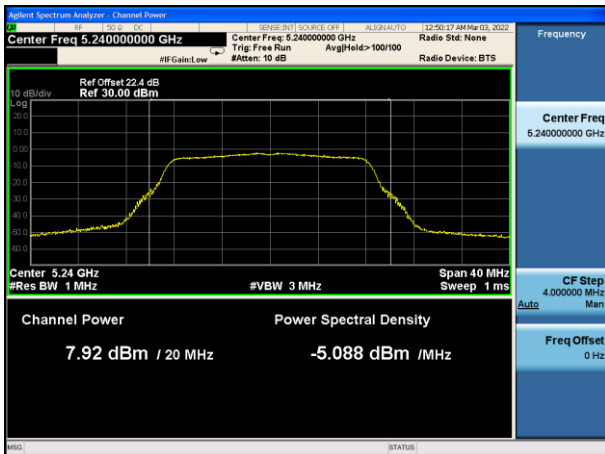
802.11 a CH36 (5180MHz)



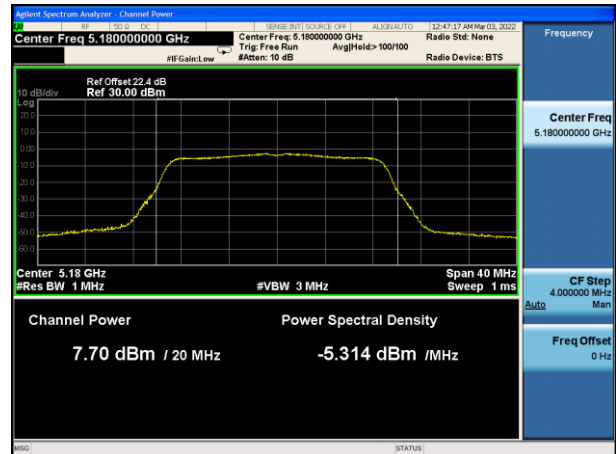
802.11 a CH44 (5220MHz)



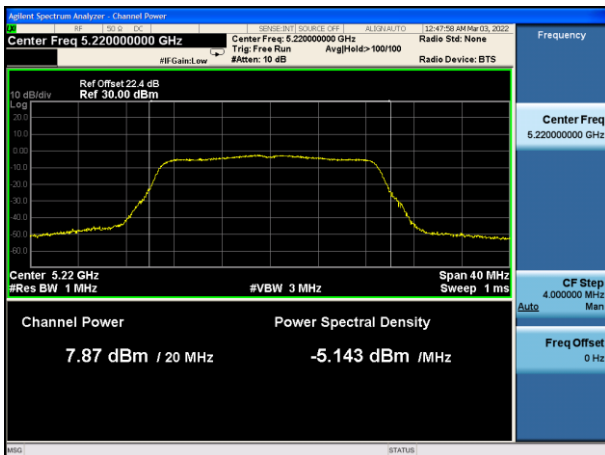
802.11 a CH48 (5240MHz)



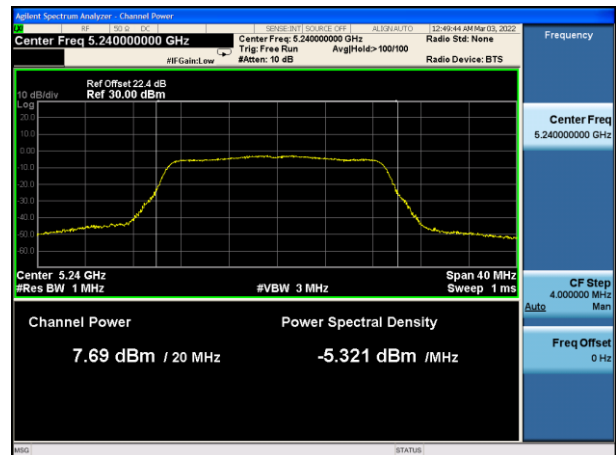
802.11 n-HT20 CH36 (5180MHz)



802.11 n-HT20 CH44 (5220MHz)

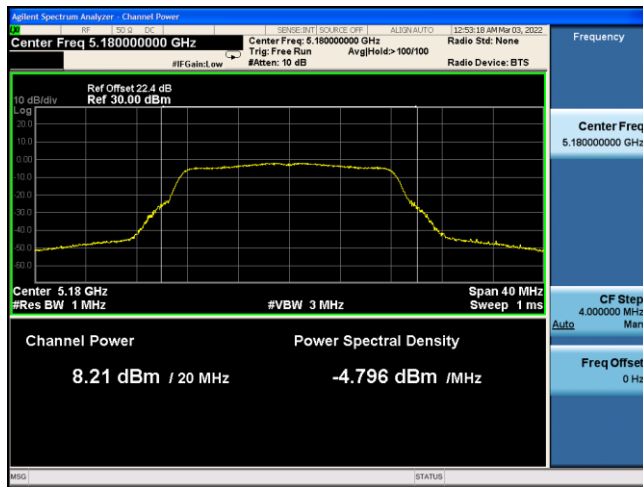


802.11 n-HT20 CH48 (5240MHz)

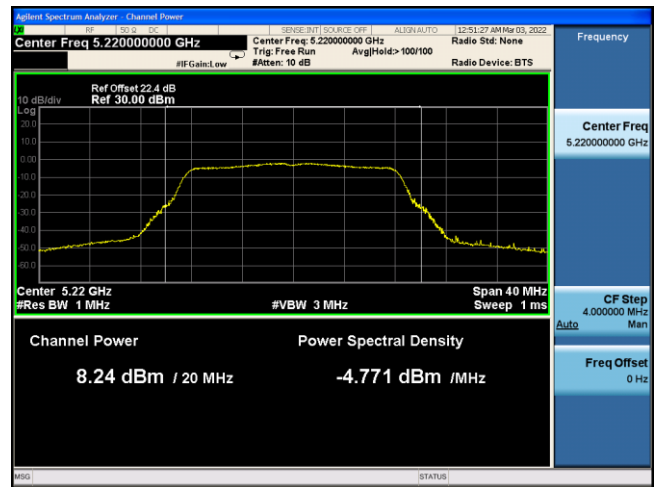


Ant 1

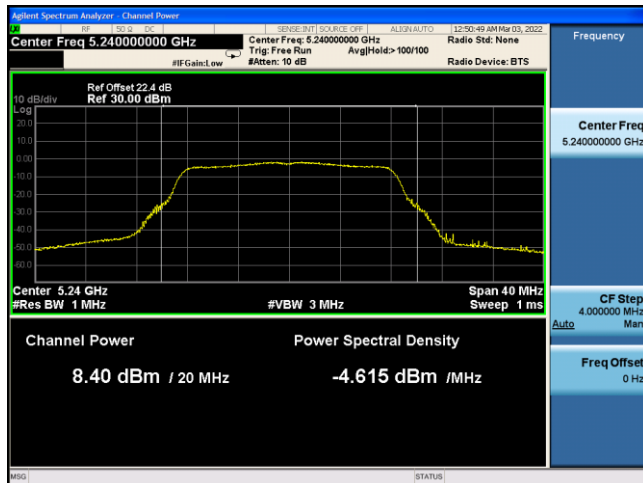
802.11 a CH36 (5180MHz)



802.11 a CH44 (5220MHz)



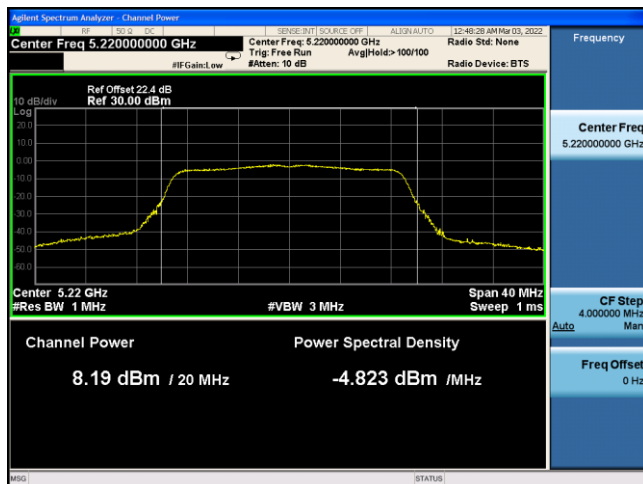
802.11 a CH48 (5240MHz)



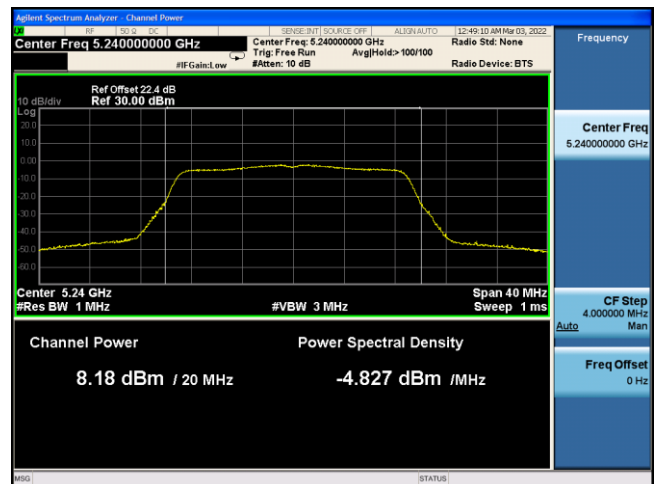
802.11 n-HT20 CH36 (5180MHz)



802.11 n-HT20 CH44 (5220MHz)



802.11 n-HT20 CH48 (5240MHz)



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.

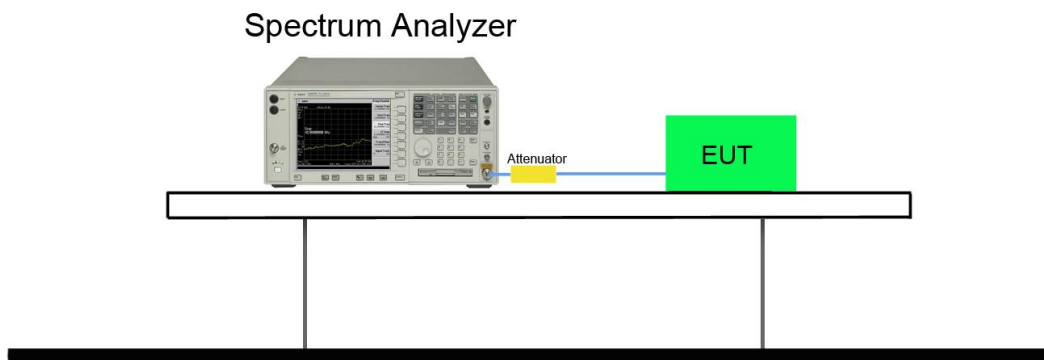
7.5.2. Test Procedure Used

KDB 789033 D02v02r01 - 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

Note: TPC mechanism is not required for systems with an e.i.r.p. of less than 500 mW.

7.6. Power Spectral Density Measurement

7.6.1. Test Limit

For FCC Power Spectral Density Limit

For an outdoor access point operating in 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 the antenna exceeds 6dBi.

For IC Power Spectral Density Limit

For the band 5.15-5.25 GHz, the e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

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

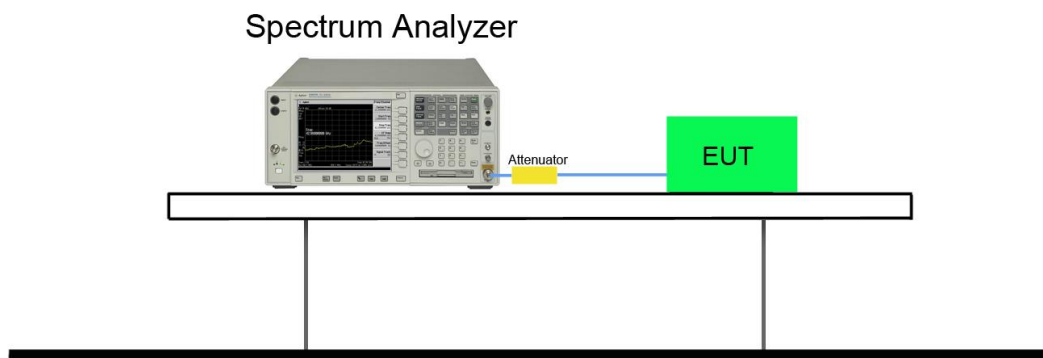
7.6.2. Test Procedure Used

KDB 789033 D02v02r01 - Section F

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,
4. RBW = 100 kHz
5. VBW = 3MHz
6. Number of sweep points $\geq 2 \times (\text{span} / \text{RBW})$
7. Detector = power averaging (Average)
8. Sweep time = auto
9. Trigger = free run
10. Use the peak search function on the instrument to find the peak of the spectrum and record its value.
11. Add $10 \cdot \log(1/x)$, 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 $10 \cdot \log(1/0.25) = 6 \text{ dB}$ if the duty cycle is 25 percent.
12. When the measurement bandwidth of Maximum PSD is specified in 500 kHz, add a constant factor $10 \cdot \log(500\text{kHz}/100\text{kHz}) = 7 \text{ dB}$ to the measured result

7.6.4. Test Setup



7.6.5. Test Result

Product	Module	Test Engineer	Peter
Test Site	SR2	Test Date	2022/2/15
Test Item	Power Spectral Density		

FCC: U-NII-1

FCC & IC: U-NII-2A & U-NII-2C

Test Mode	Data Rate (Mbps)	Channel No.	Freq. (MHz)	PSD (dBm/MHz) Ant0	PSD (dBm/MHz) Ant1	Duty Cycle (%)	Total PSD (dBm/MHz)	PSD Limit (dBm/MHz)	Result
11a	6	36	5180	4.144	4.229	98%	7.281	≤ 9.07	Pass
11a	6	44	5220	4.326	4.252	98%	7.383	≤ 9.07	Pass
11a	6	48	5240	4.573	3.906	98%	7.346	≤ 9.07	Pass
11a	6	52	5260	4.911	5.457	98%	8.287	≤ 9.07	Pass
11a	6	60	5300	5.032	5.288	98%	8.256	≤ 9.07	Pass
11a	6	64	5320	5.021	4.582	98%	7.901	≤ 9.07	Pass
11a	6	100	5500	1.013	1.388	98%	4.299	≤ 9.07	Pass
11a	6	120	5600	1.518	1.610	98%	4.658	≤ 9.07	Pass
11a	6	140	5700	2.093	1.564	98%	4.931	≤ 9.07	Pass
11a	6	144	5720	1.399	1.776	98%	4.686	≤ 9.07	Pass
11n-HT20	6.5	36	5180	3.880	4.048	99%	7.031	≤ 9.07	Pass
11n-HT20	6.5	44	5220	3.475	3.983	99%	6.803	≤ 9.07	Pass
11n-HT20	6.5	48	5240	4.357	4.529	99%	7.510	≤ 9.07	Pass
11n-HT20	6.5	52	5260	4.487	5.150	99%	7.897	≤ 9.07	Pass
11n-HT20	6.5	60	5300	4.248	5.479	99%	7.973	≤ 9.07	Pass
11n-HT20	6.5	64	5320	4.394	5.222	99%	7.894	≤ 9.07	Pass
11n-HT20	6.5	100	5500	1.869	2.391	99%	5.204	≤ 9.07	Pass
11n-HT20	6.5	120	5600	1.844	1.499	99%	4.741	≤ 9.07	Pass
11n-HT20	6.5	140	5700	0.619	0.667	99%	3.709	≤ 9.07	Pass
11n-HT20	6.5	144	5720	1.238	1.457	99%	4.415	≤ 9.07	Pass

Note: Total PSD (dBm/MHz) = $10 \cdot \log\{10^{\text{Ant 0 PSD}/10} + 10^{\text{Ant 1 PSD}/10}\}$ (dBm/MHz) + $10 \cdot \log(1/\text{duty cycle})$.

Test Mode	Data Rate (Mbps)	Channel No.	Freq. (MHz)	PSD (dBm/MHz) Ant0	PSD (dBm/MHz) Ant1	Duty Cycle (%)	Total PSD (dBm/MHz)	PSD Limit (dBm/MHz)	Result
11n-HT40	13.5	38	5190	-3.407	-2.724	97%	0.107	≤ 9.07	Pass
11n-HT40	13.5	46	5230	-2.802	-2.619	97%	0.449	≤ 9.07	Pass
11n-HT40	13.5	54	5270	-3.599	-3.200	97%	-0.236	≤ 9.07	Pass
11n-HT40	13.5	62	5310	-3.734	-2.940	97%	-0.160	≤ 9.07	Pass
11n-HT40	13.5	102	5510	-5.699	-4.878	97%	-2.110	≤ 9.07	Pass
11n-HT40	13.5	110	5550	-5.730	-5.432	97%	-2.420	≤ 9.07	Pass
11n-HT40	13.5	134	5670	-5.861	-5.707	97%	-2.625	≤ 9.07	Pass
11n-HT40	13.5	142	5710	-4.746	-5.559	97%	-1.975	≤ 9.07	Pass
11ac-VHT80	29.3	42	5210	-7.277	-7.475	98%	-4.283	≤ 9.07	Pass
11ac-VHT80	29.3	58	5290	-7.824	-7.261	98%	-4.442	≤ 9.07	Pass
11ac-VHT80	29.3	106	5530	-8.131	-7.852	98%	-4.898	≤ 9.07	Pass
11ac-VHT80	29.3	122	5610	-8.814	-7.932	98%	-5.259	≤ 9.07	Pass
11ac-VHT80	29.3	138	5690	-8.762	-8.475	98%	-5.525	≤ 9.07	Pass

Note: Total PSD (dBm/MHz) = $10 \cdot \log\{10^{\text{Ant 0 PSD}/10} + 10^{\text{Ant 1 PSD}/10}\}$ (dBm/MHz) + $10 \cdot \log(1/\text{duty cycle})$.

IC: U-NII-1

Test Mode	Channel No.	Freq. (MHz)	PSD (Ant0) (dBm/MHz)	PSD (Ant1) (dBm/MHz)	Duty Cycles (%)	Total PSD (dBm/MHz)	Directional Ant Gain (dBi)	E.I.R.P PSD (dBm/MHz)	E.I.R.P Limit (dBm/MHz)
11a	36	5180	-1.276	-1.274	98.09%	1.819	7.93	9.75	≤ 10.00
	44	5220	-1.330	-1.105	98.09%	1.878	7.93	9.81	≤ 10.00
	48	5240	-1.375	-1.169	98.09%	1.823	7.93	9.75	≤ 10.00
11n-HT20	36	5180	-1.136	-1.340	98.72%	1.829	7.93	9.76	≤ 10.00
	44	5220	-1.426	-1.309	98.72%	1.699	7.93	9.63	≤ 10.00
	48	5240	-1.337	-1.255	98.72%	1.770	7.93	9.70	≤ 10.00
11n-HT40	38	5190	-3.407	-2.724	96.64%	0.107	7.93	8.04	≤ 10.00
	46	5230	-2.802	-2.619	96.64%	0.449	7.93	8.38	≤ 10.00
11ac-VHT80	42	5210	-7.277	-7.475	98.15%	-4.283	7.93	3.65	≤ 10.00

Note: E.I.R.P PSD (dBm/MHz) = $10 \cdot \log\{10^{\text{Ant 0 PSD} / 10} + 10^{\text{Ant 1 PSD} / 10}\}$ (dBm/MHz) + $10 \cdot \log(1/\text{duty cycle})$ + Directional Antenna Gain (dBi).

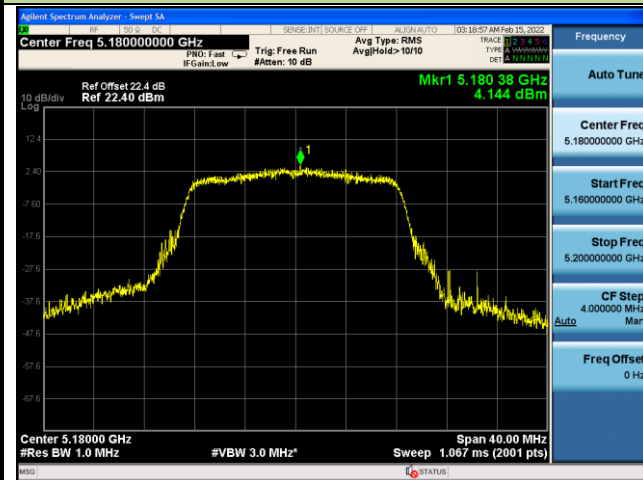
FCC & IC: U-NII-3

Test Mode	Data Rate (Mbps)	Channel No.	Freq. (MHz)	PSD (dBm/500kHz) Ant0	PSD (dBm/500kHz) Ant1	Duty Cycle (%)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Result
11a	6	149	5745	6.200	6.180	98%	9.284	≤ 28.07	Pass
11a	6	157	5785	5.728	5.020	98%	8.482	≤ 28.07	Pass
11a	6	165	5825	5.590	5.478	98%	8.628	≤ 28.07	Pass
11n-HT20	6.5	149	5745	5.585	6.165	99%	8.951	≤ 28.07	Pass
11n-HT20	6.5	157	5785	5.982	4.496	99%	8.368	≤ 28.07	Pass
11n-HT20	6.5	165	5825	4.900	4.364	99%	7.707	≤ 28.07	Pass
11n-HT40	13.5	151	5755	1.012	1.134	97%	4.232	≤ 28.07	Pass
11n-HT40	13.5	159	5795	1.925	2.185	97%	5.216	≤ 28.07	Pass
11ac-VHT80	29.3	155	5775	-7.237	-7.271	98%	-4.163	≤ 28.07	Pass

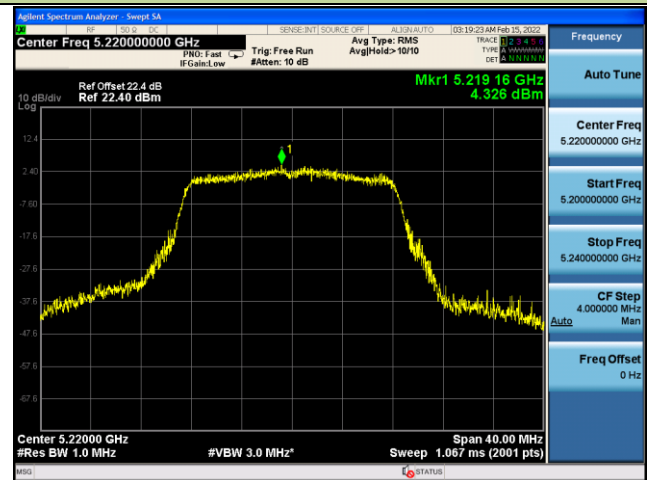
Note: Total PSD (dBm/500kHz) = $10 \cdot \log\{10^{\text{Ant 0 PSD}/10} + 10^{\text{Ant 1 PSD}/10}\}$ (dBm/500kHz) + $10 \cdot \log(1/\text{duty cycle})$.

802.11a Power Spectral Density - Ant 0

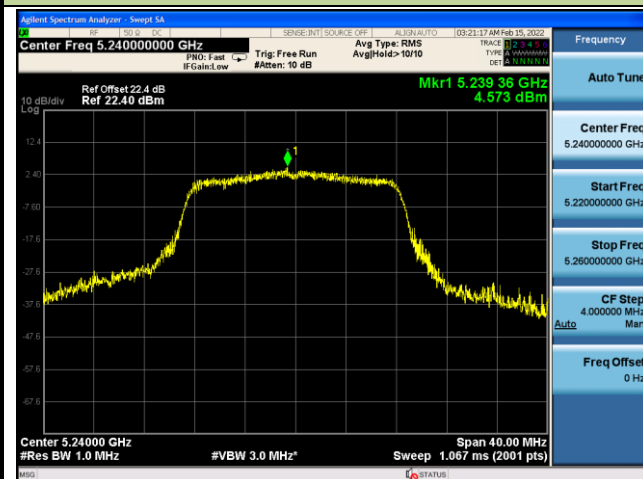
Channel 36 (5180MHz)



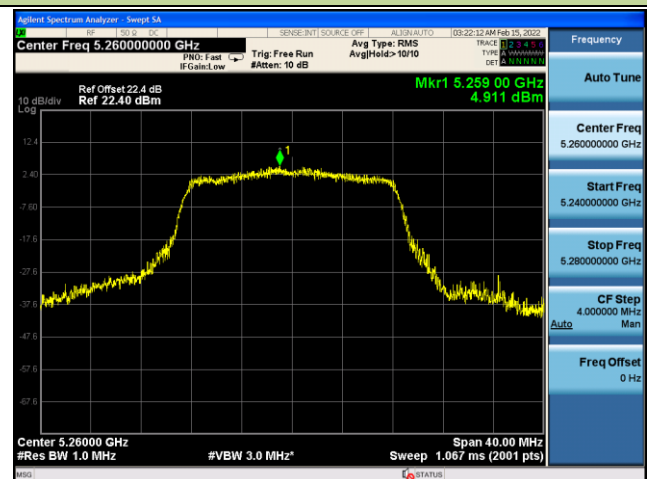
Channel 44 (5220MHz)



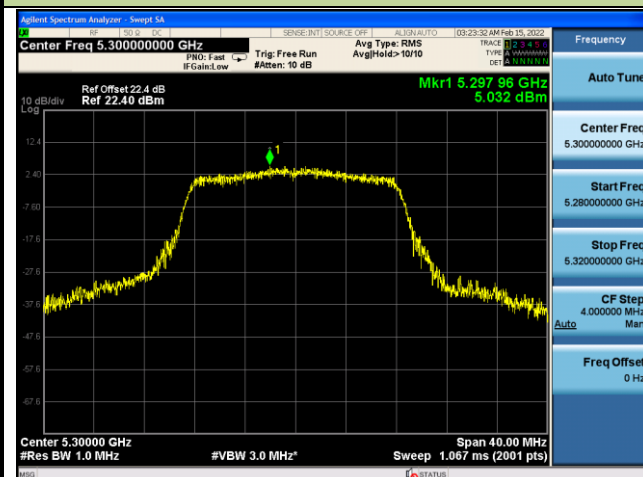
Channel 48 (5240MHz)



Channel 52 (5260MHz)



Channel 60 (5300MHz)



Channel 64 (5320MHz)

