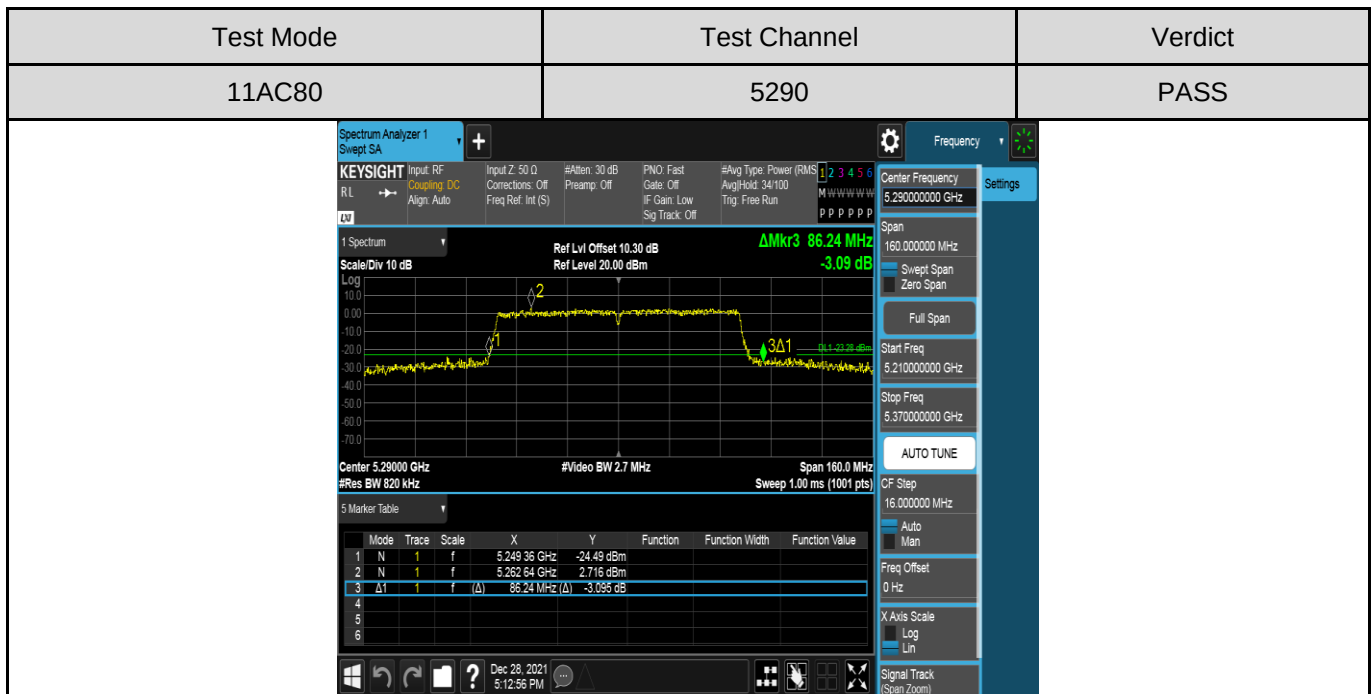
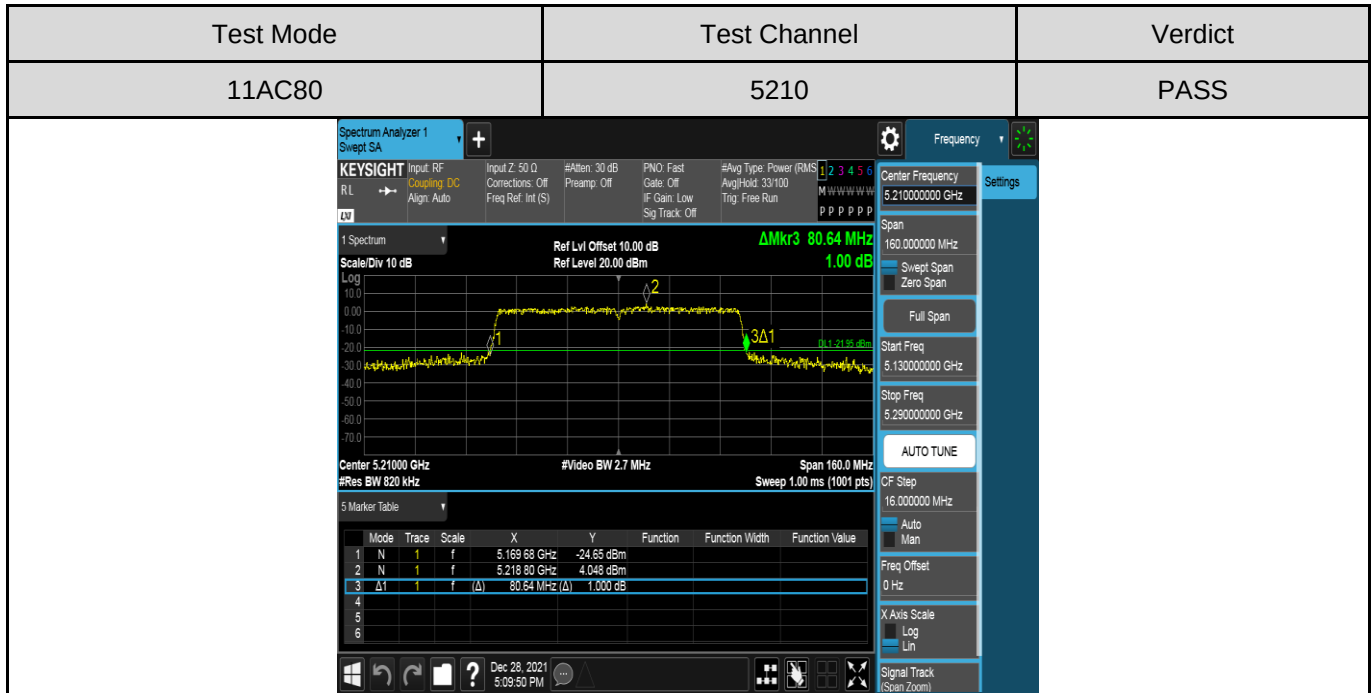
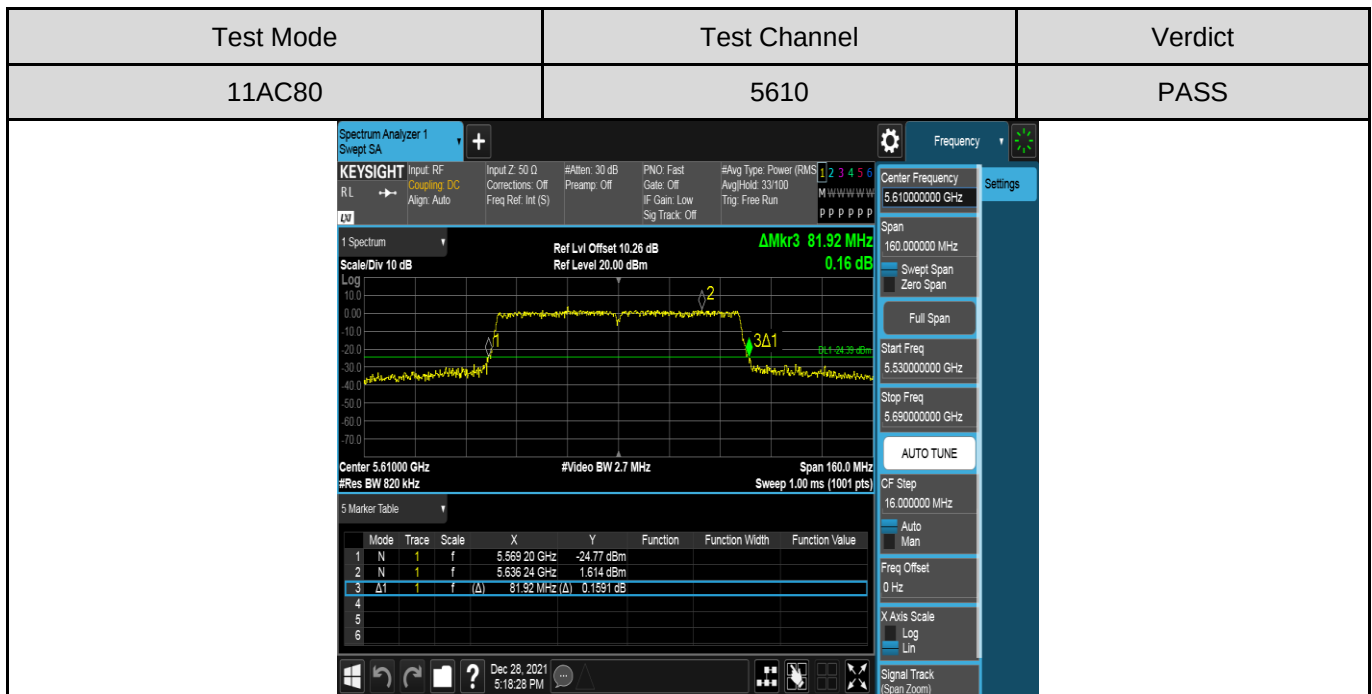
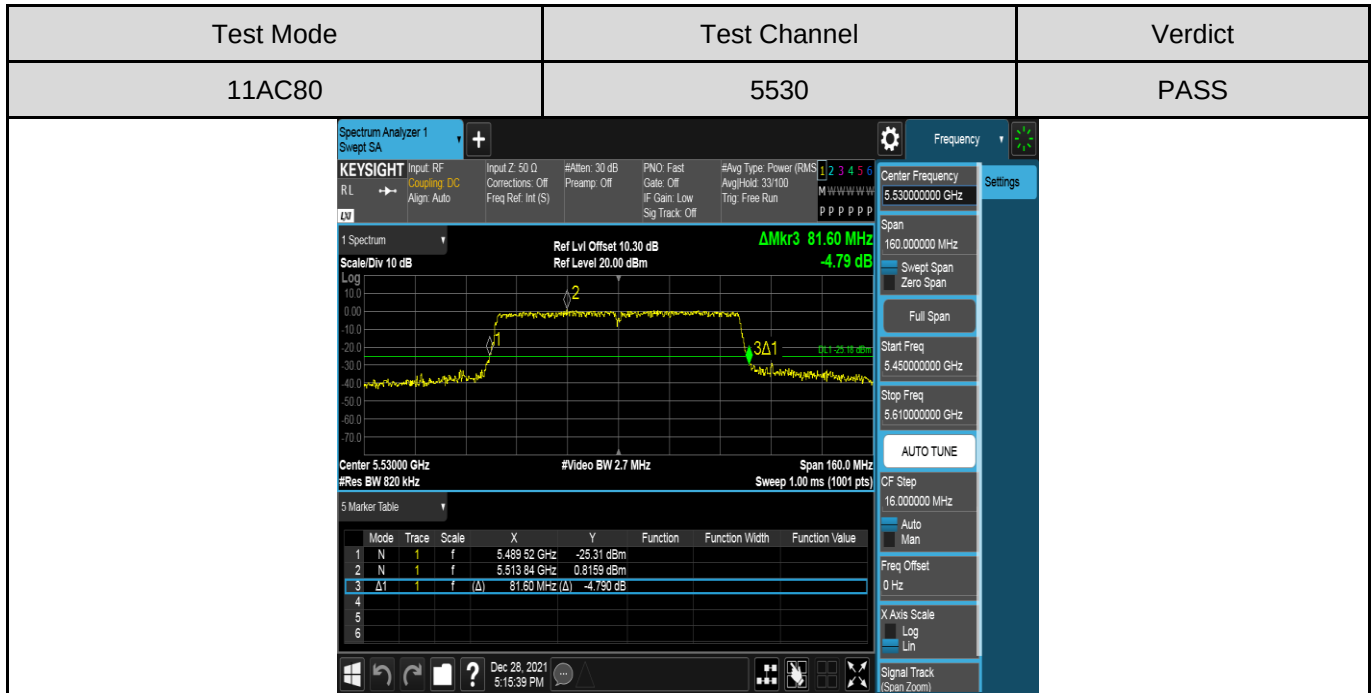
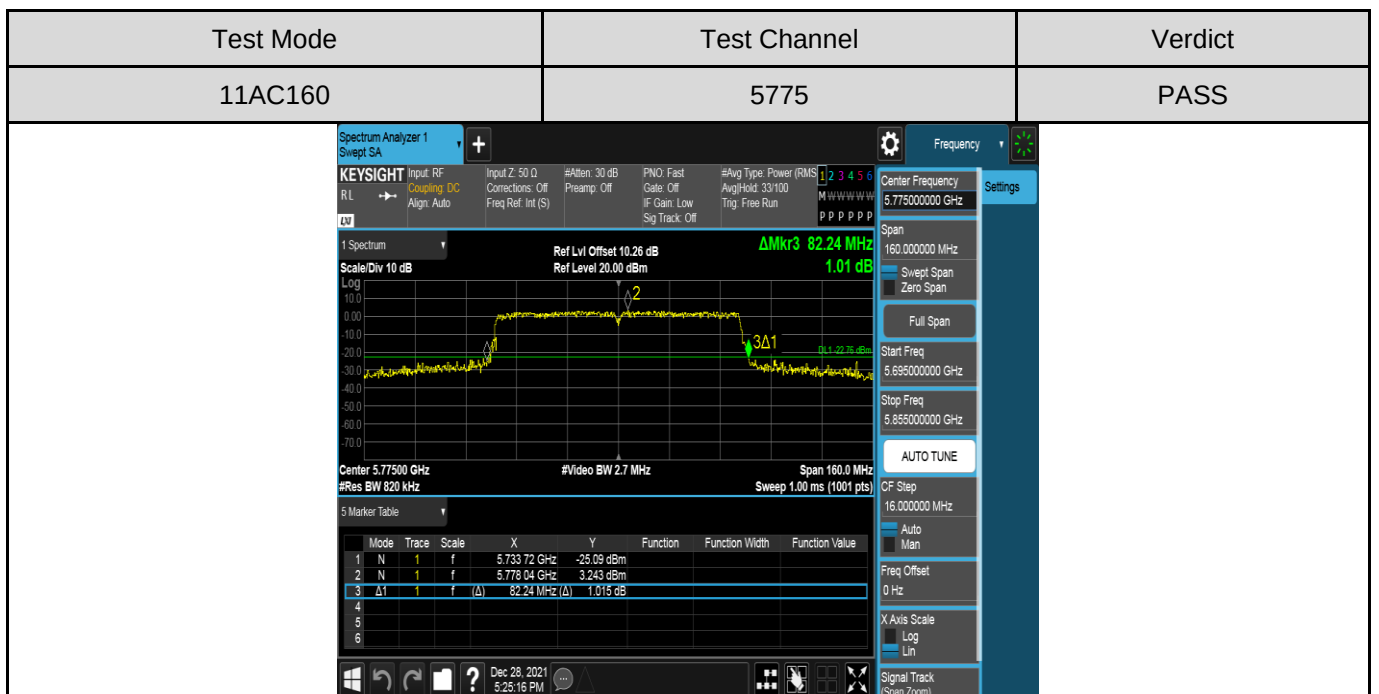
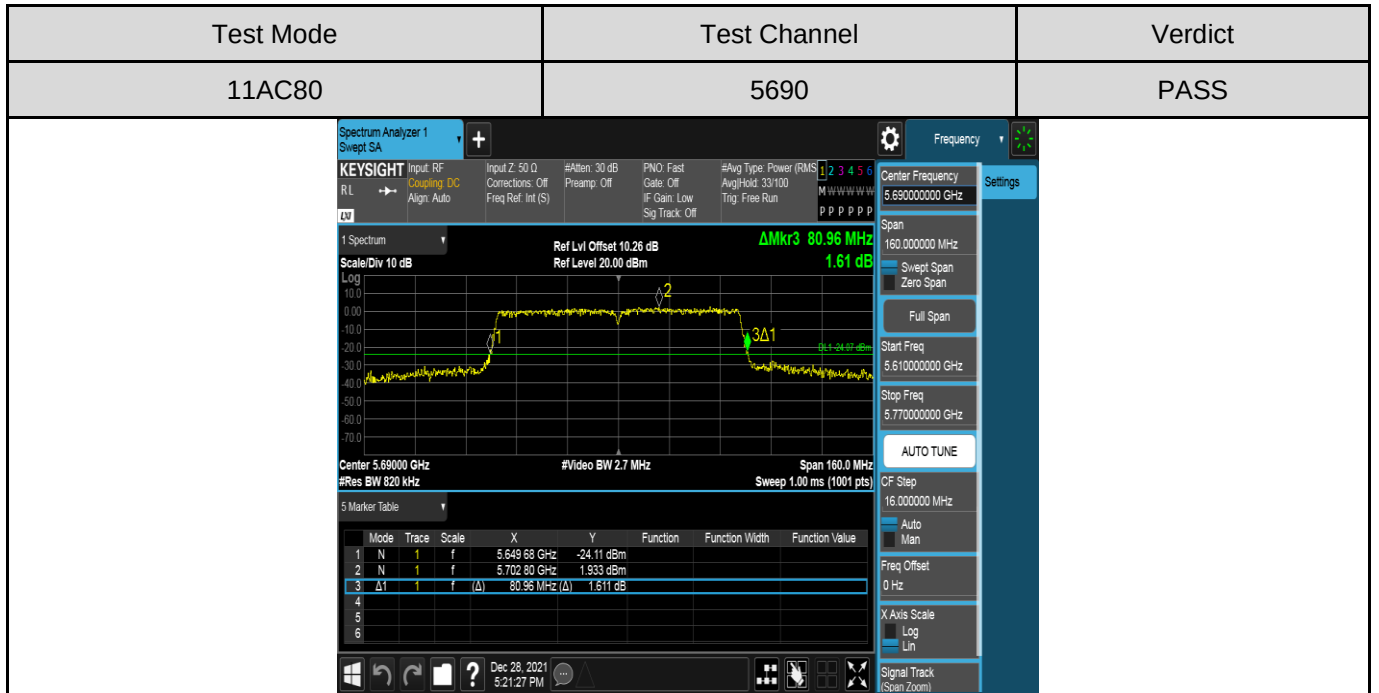


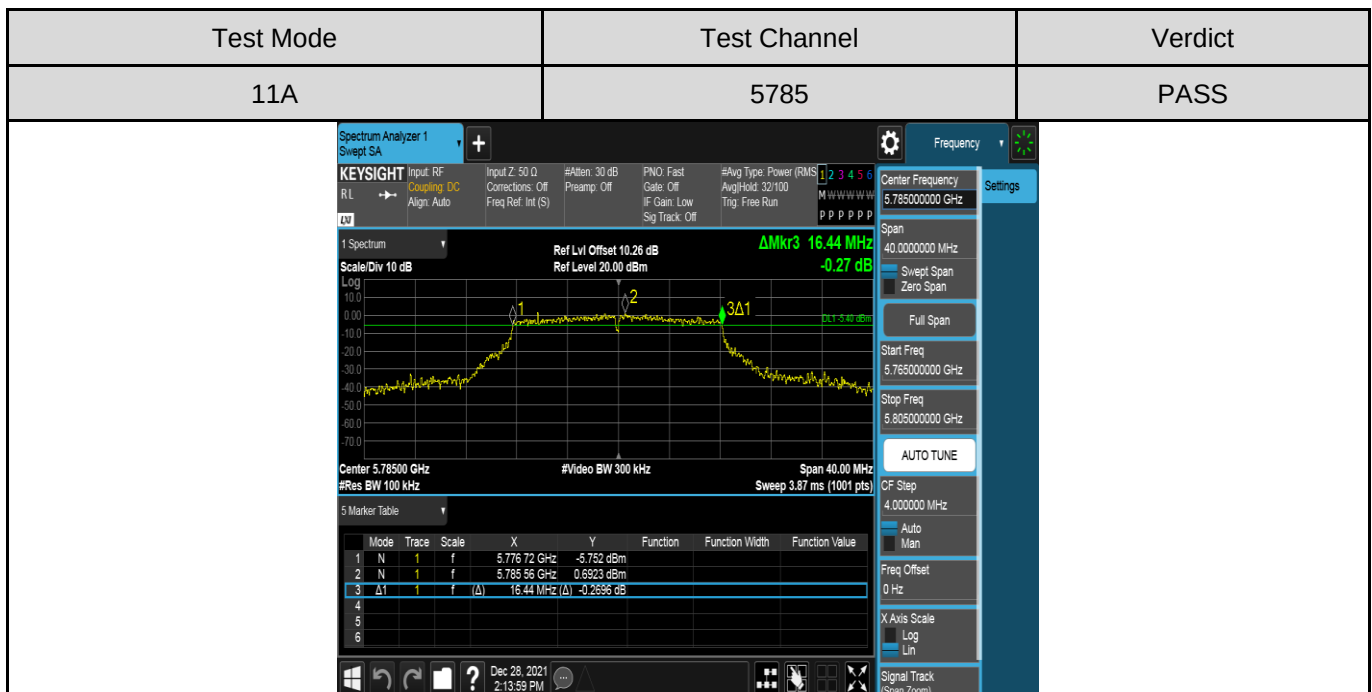
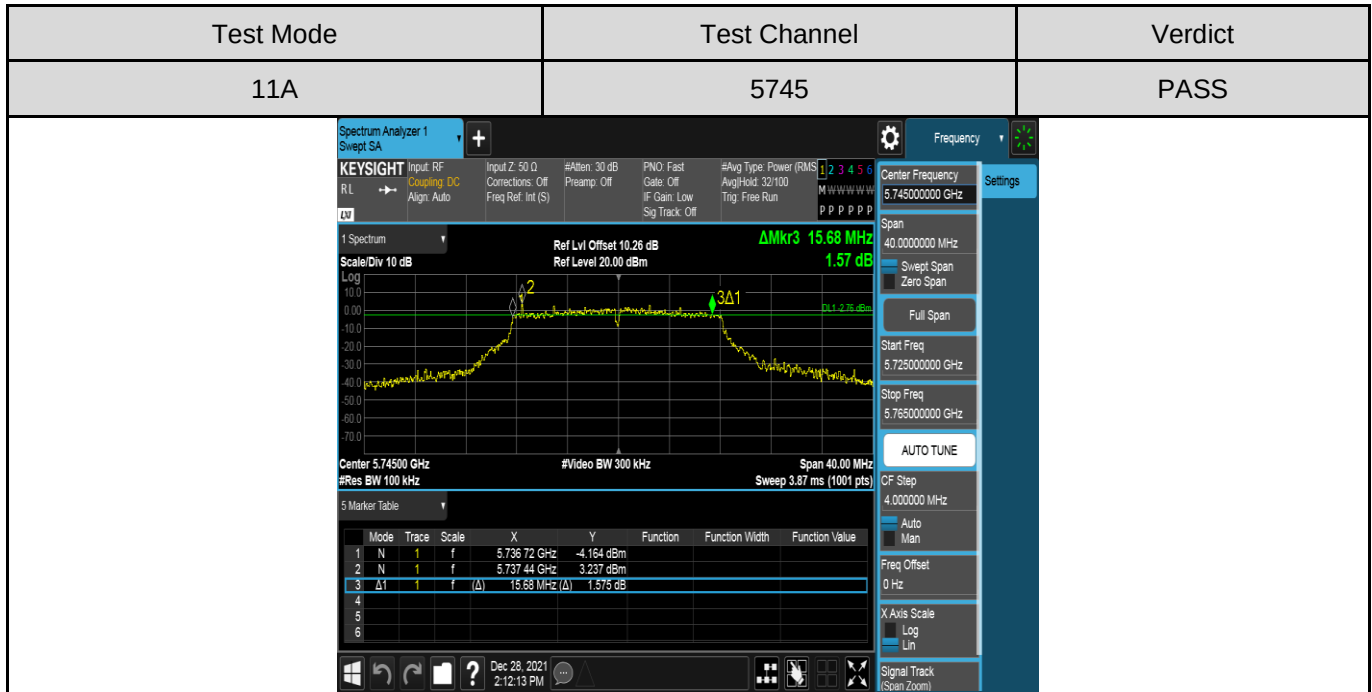


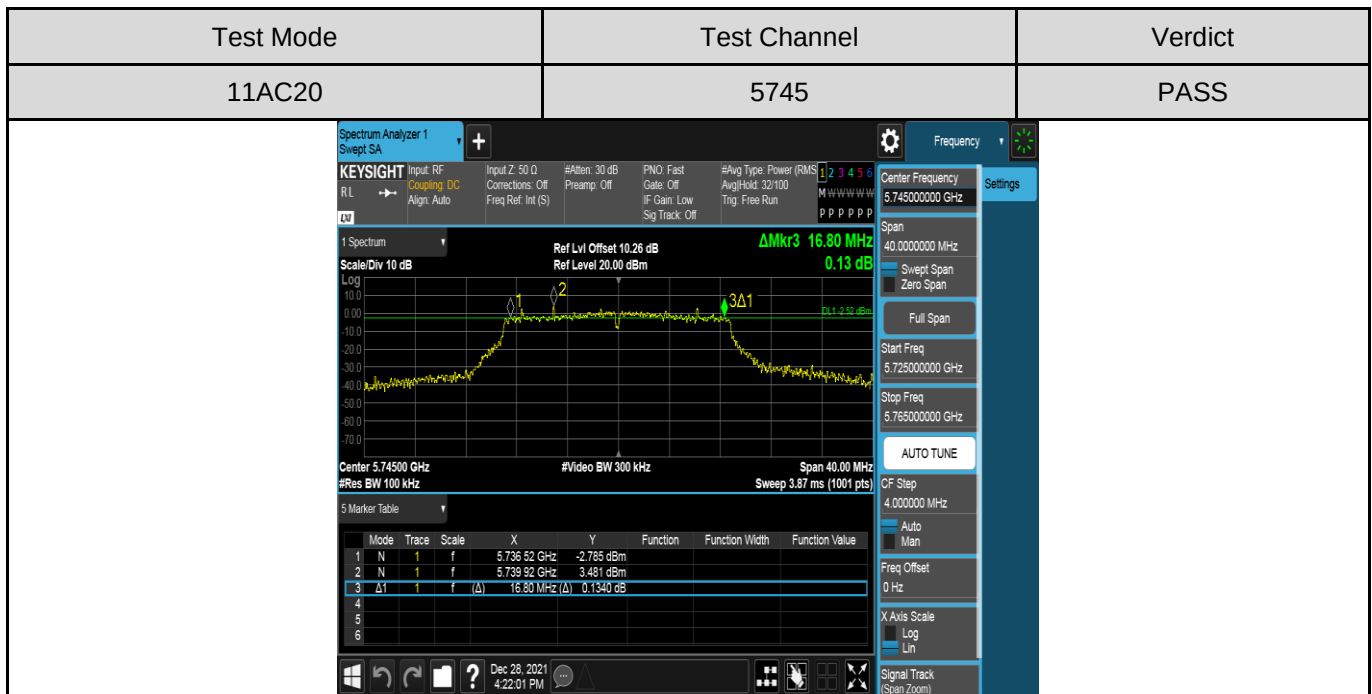
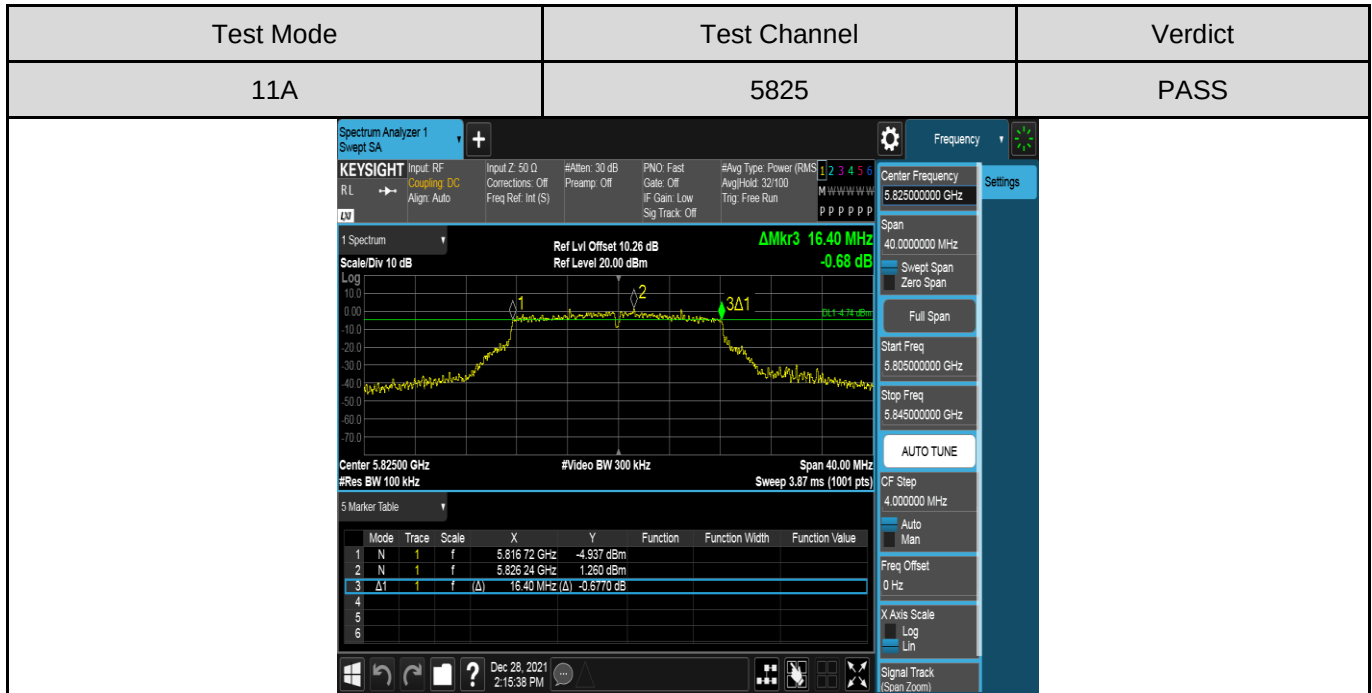


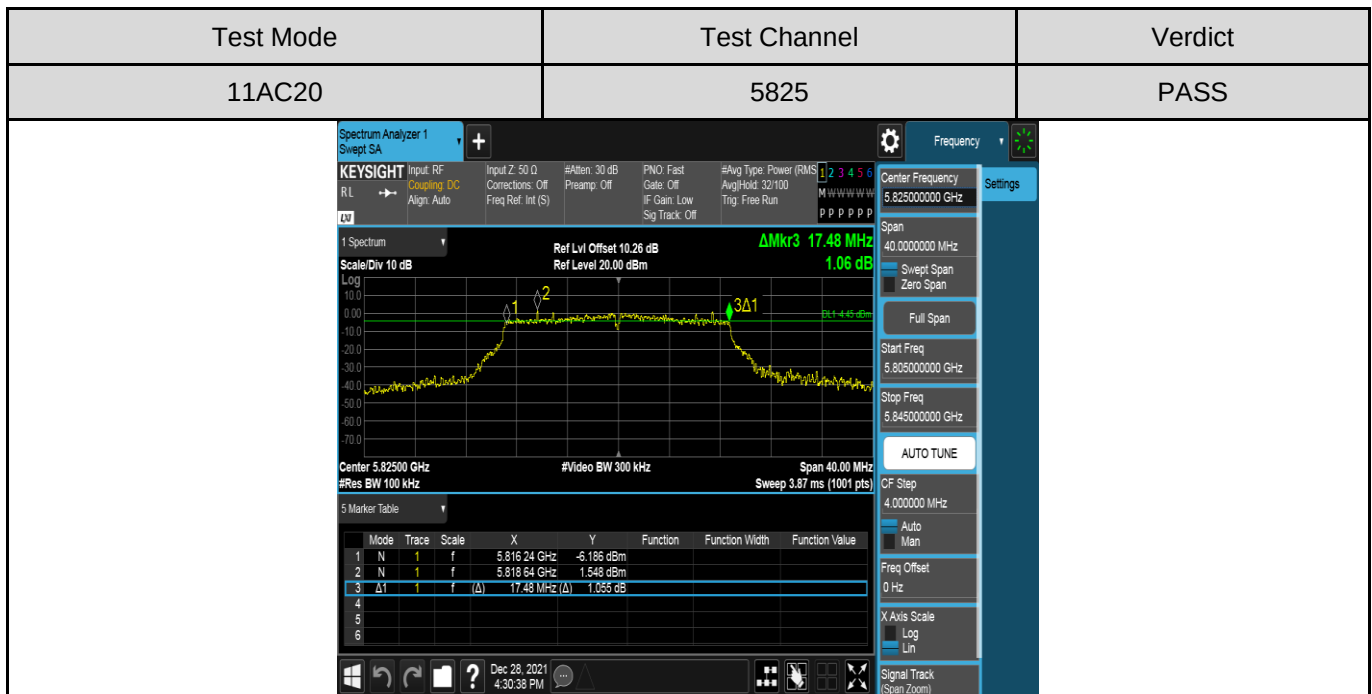
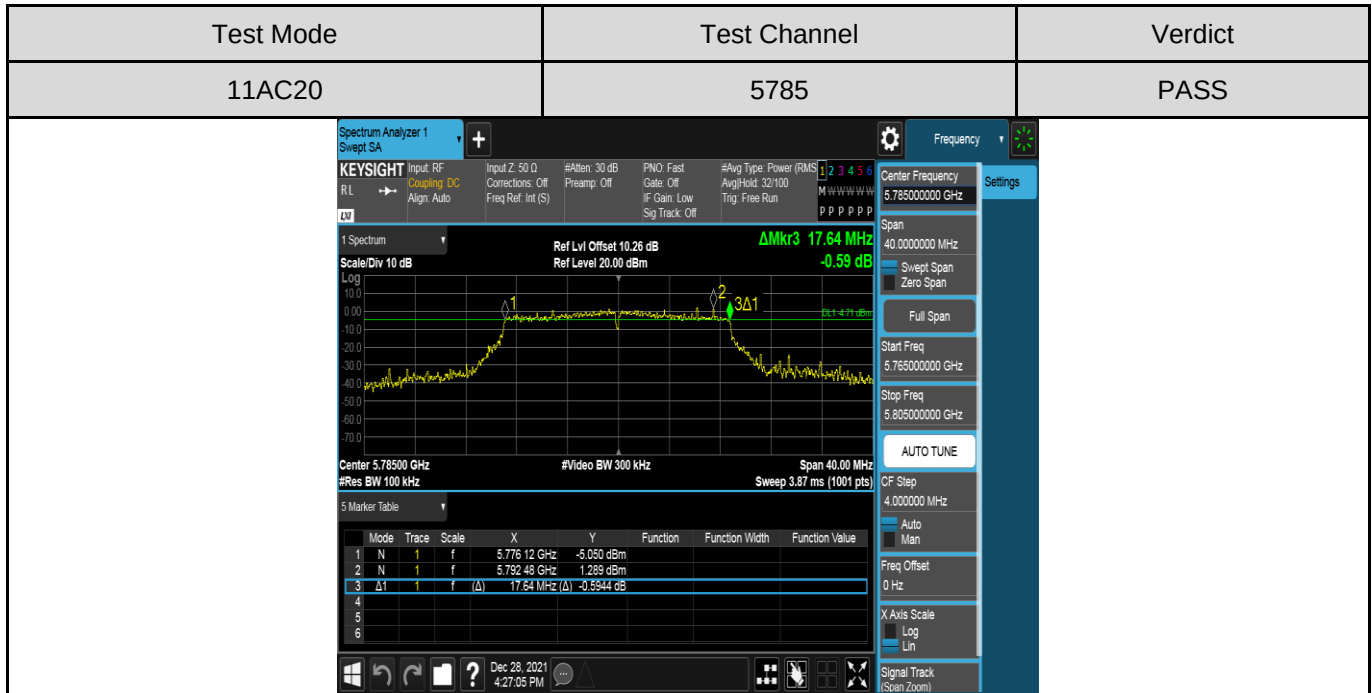


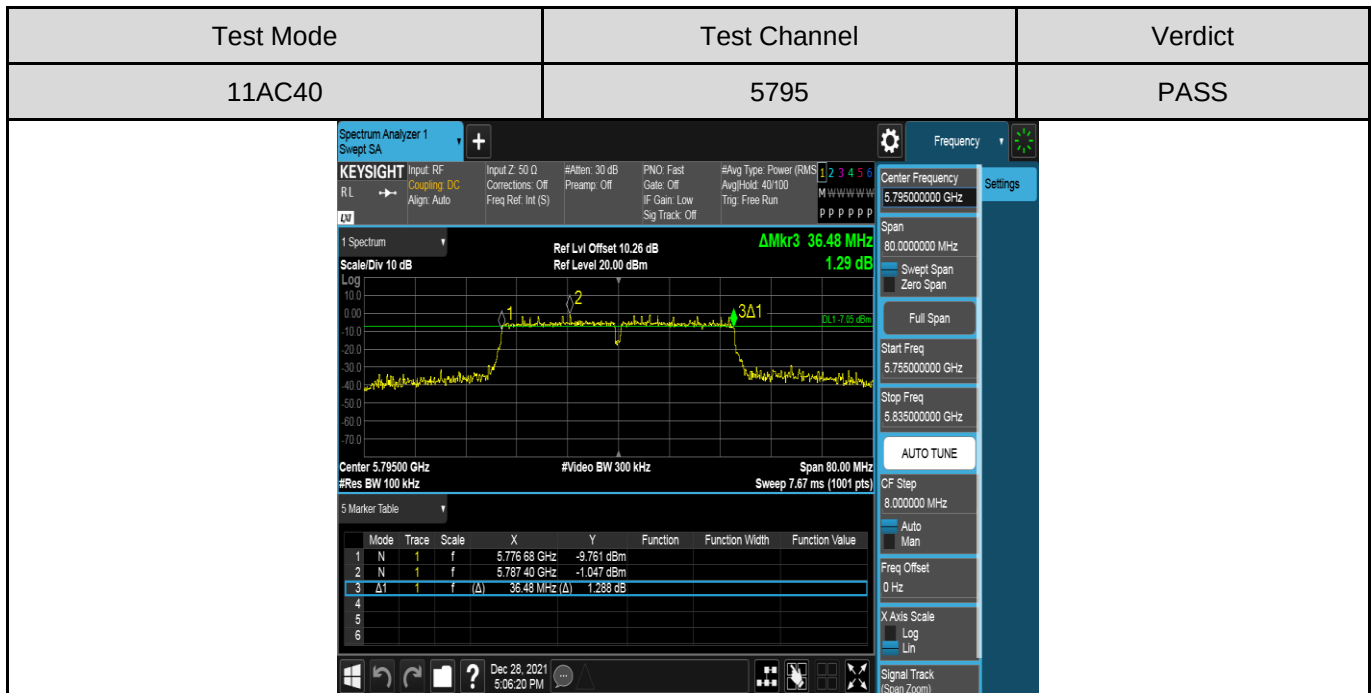
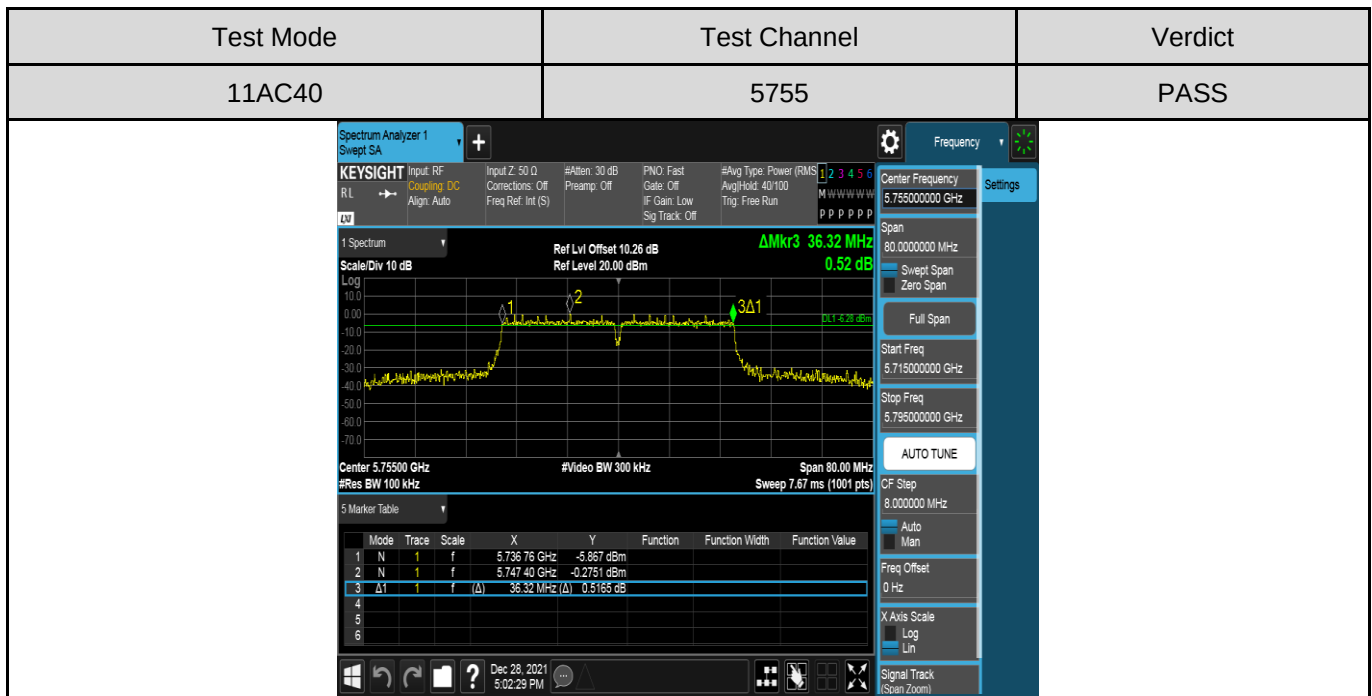


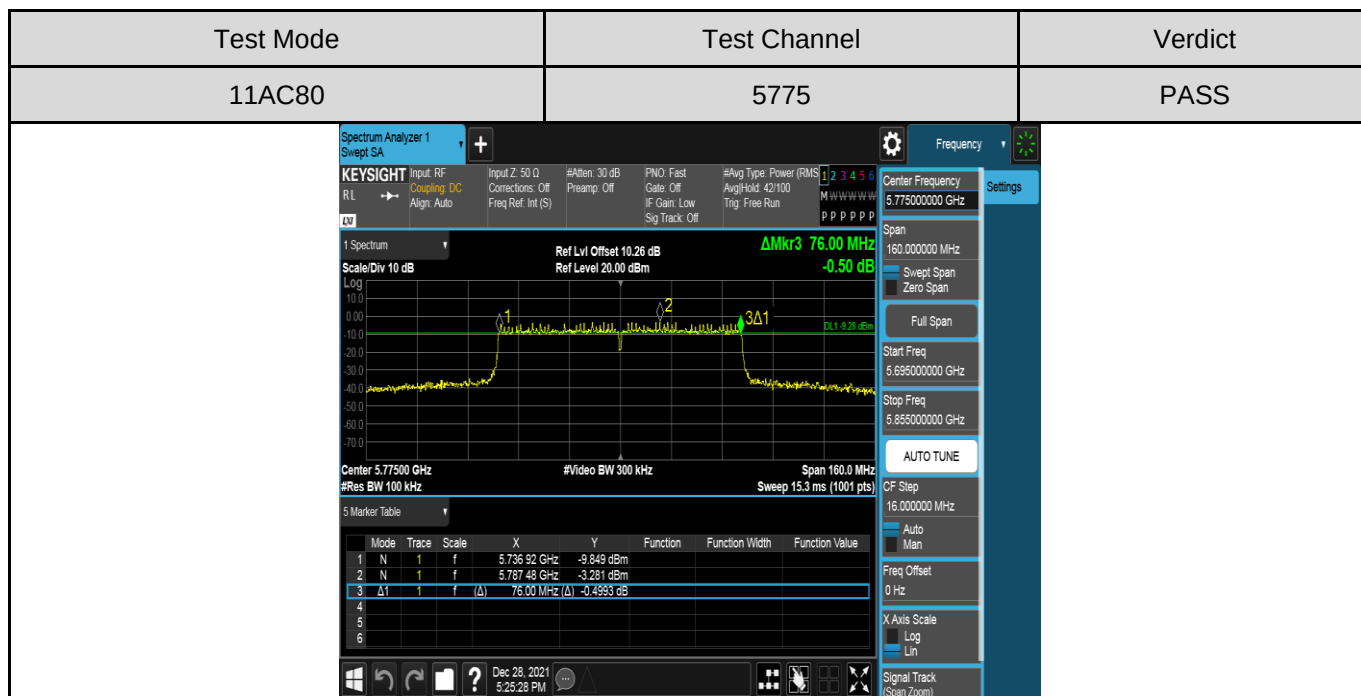
2) For 6 dB Emission Bandwidth Part:





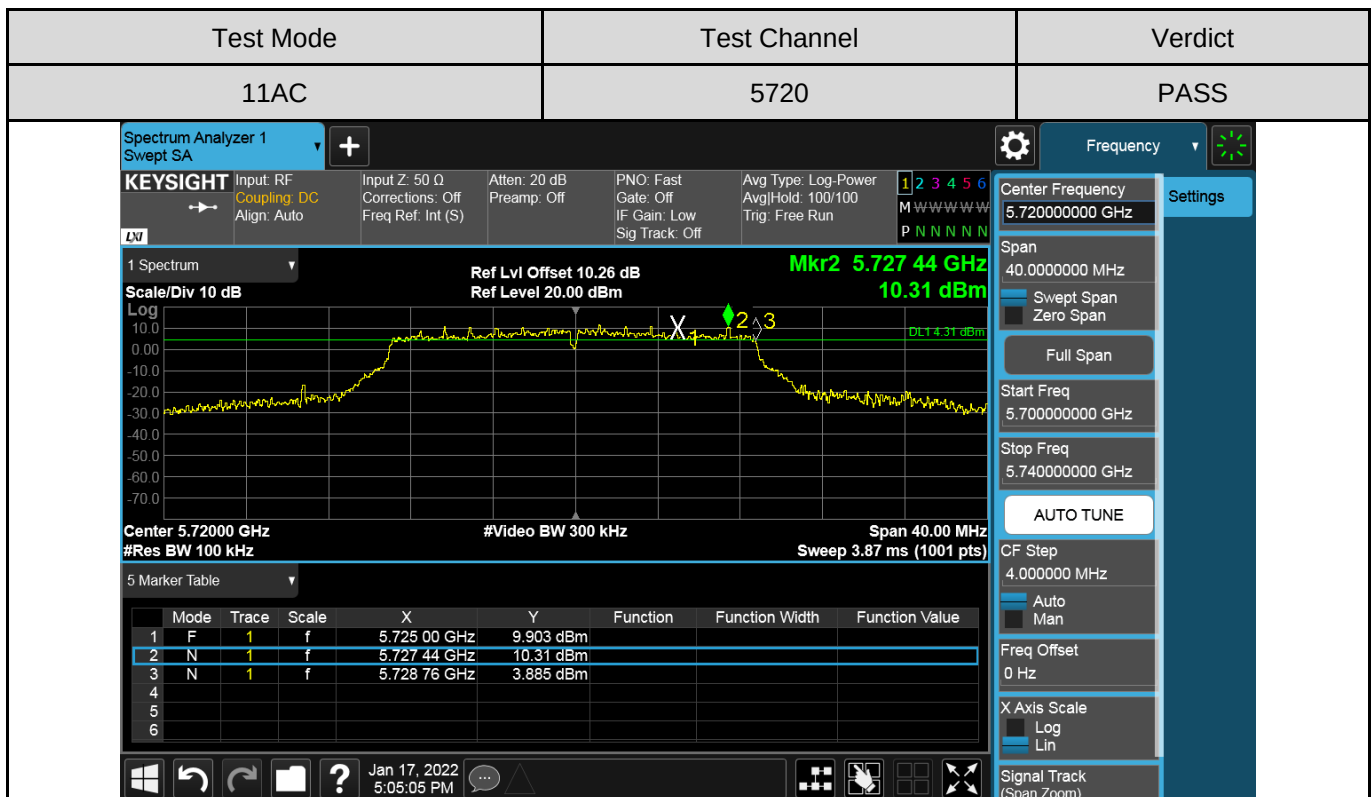
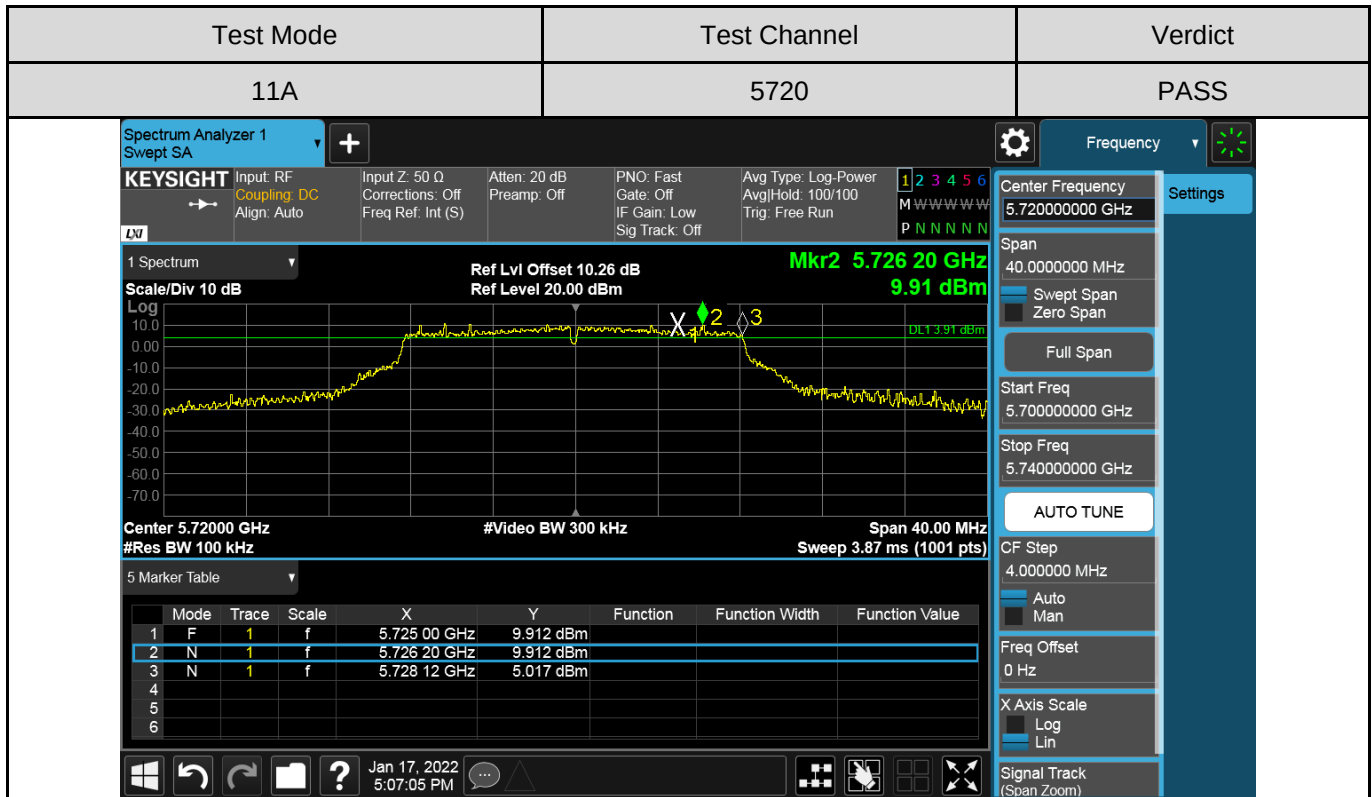








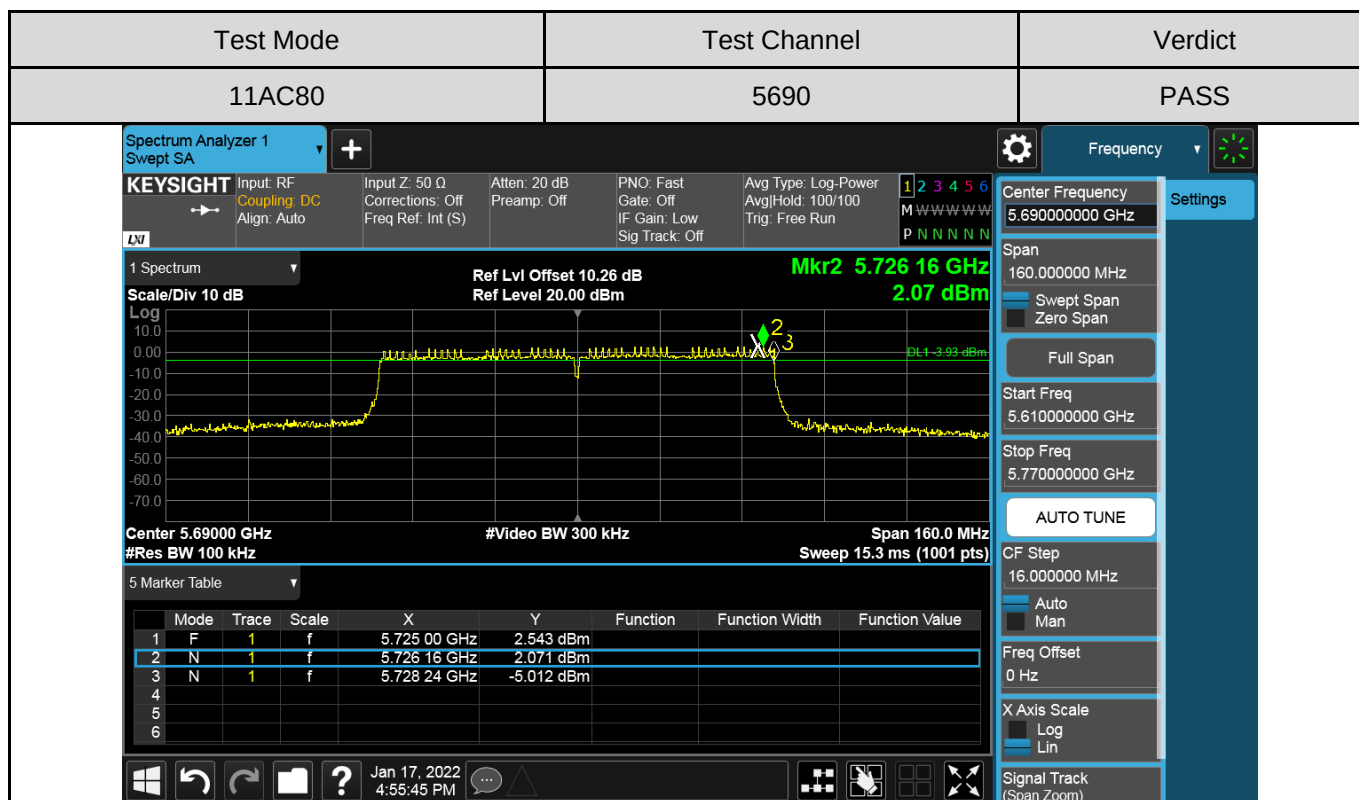
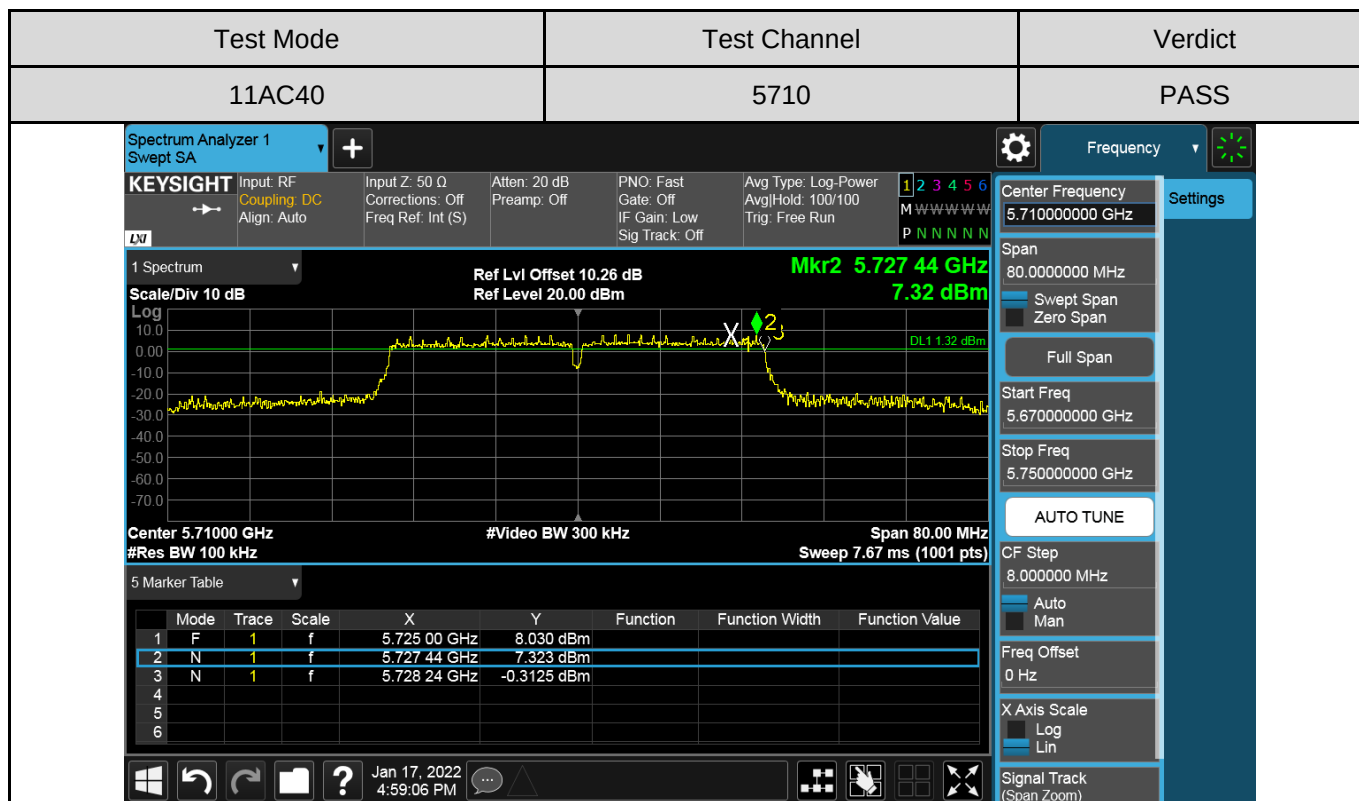
For UNII-2C Band Part:



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6.4. MAXIMUM CONDUCTED AVERAGE OUTPUT POWER

LIMITS

CFR 47 FCC Part15, Subpart E		
Test Item	Limit	Frequency Range (MHz)
Conducted Output Power	☐ Outdoor Access Point: 1 W (30 dBm) ☐ Indoor Access Point: 1 W (30 dBm) ☐ Fixed Point-To-Point Access Points: 1 W (30 dBm) ☒ Client Devices: 250 mW (24 dBm)	5150 ~ 5250
	Shall not exceed the lesser of 250 mW (24dBm) or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz.	5250 ~ 5350 5470 ~ 5725
	Shall not exceed 1 Watt (30 dBm).	5725 ~ 5850

Remark:

The above limits are based upon the maximum antenna gain does not exceed 6 dBi.

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



TEST PROCEDURE

Refer to KDB 789033 D02 General U-NII Test Procedures New Rules v02r01 section II.E.

Method SA-1 (trace averaging with the EUT transmitting at full power throughout each sweep):

- (i) Set span to encompass the entire emission bandwidth (EBW) (or, alternatively, the entire 99% occupied bandwidth) of the signal.
- (ii) Set RBW = 1 MHz.
- (iii) Set VBW $\geq$ 3 MHz.
- (iv) Number of points in sweep $\geq 2 \times \text{span} / \text{RBW}$. (This ensures that bin-to-bin spacing is $\leq \text{RBW}/2$, so that narrowband signals are not lost between frequency bins.)
- (v) Sweep time = auto.
- (vi) Detector = power averaging (rms), if available. Otherwise, use sample detector mode.
- (vii) If transmit duty cycle $< 98\%$, use a video trigger with the trigger level set to enable triggering only on full power pulses. Transmitter must operate at maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no off intervals) or at duty cycle $\geq 98\%$, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to "free run."
- (viii) Trace average at least 100 traces in power averaging (rms) mode.
- (ix) Compute power by integrating the spectrum across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal using the instrument's band power measurement function with band limits set equal to the EBW (or occupied bandwidth) band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at 1 MHz intervals extending across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the spectrum.

Method PM (Measurement using an RF average power meter):

- (i) Measurements may be performed using a wideband RF power meter with a thermocouple detector or equivalent if all of the following conditions are satisfied:
 - a. The EUT is configured to transmit continuously or to transmit with a constant duty cycle.
 - b. At all times when the EUT is transmitting, it must be transmitting at its maximum power control level.
 - c. The integration period of the power meter exceeds the repetition period of the transmitted signal by at least a factor of five.
- (ii) If the transmitter does not transmit continuously, measure the duty cycle, x , of the transmitter output signal as described in II.B.
- (iii) Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter.
- (iv) Adjust the measurement in dBm by adding $10 \log (1/x)$ where x is the duty cycle (e.g., $10 \log (1/0.25)$ if the duty cycle is 25 %).

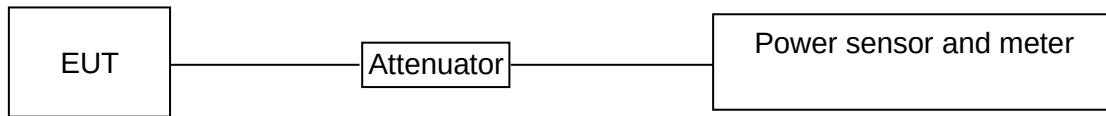
Method PM-G (Measurement using a gated RF average power meter):

Measurements may be performed using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

Straddle channel power was measured using spectrum analyzer.



TEST SETUP



TEST RESULT TABLE

Mode	Frequency (MHz)	Average Conducted Output Power-Measurement(dBm)		Correct Factor (dB)	Average Conducted Output Power-Final (dBm)		Average Conducted Output Power-Total (dBm)	FCC Conducted Power Limit (dBm)
		ANT 1	ANT 2		ANT 1	ANT 2		
802.11a	5180	13.68	11.81	0.32	14.00	12.13	/	24.00
	5200	13.66	11.95	0.32	13.98	12.27	/	24.00
	5240	13.62	12.30	0.32	13.94	12.62	/	24.00
	5260	13.69	12.65	0.32	14.01	12.97	/	24.00
	5280	13.83	12.71	0.32	14.15	13.03	/	24.00
	5320	13.92	12.61	0.32	14.24	12.93	/	24.00
	5500	14.36	13.32	0.32	14.68	13.64	/	24.00
	5580	15.86	14.14	0.32	16.18	14.46	/	24.00
	5700	16.19	14.84	0.32	16.51	15.16	/	24.00
	5720_UNII-2C	14.78	13.41	0.32	15.10	13.73	/	24.00
	5720_UNII-3	7.26	5.75	0.32	7.58	6.07	/	30.00
	5745	15.28	14.22	0.32	15.60	14.54	/	30.00
	5785	14.40	13.97	0.32	14.72	14.29	/	30.00
	5825	13.70	13.45	0.32	14.02	13.77	/	30.00

Mode	Frequency (MHz)	Average Conducted Output Power-Measurement(dBm)		Correct Factor (dB)	Average Conducted Output Power-Final (dBm)		Average Conducted Output Power-Total (dBm)	FCC Conducted Power Limit (dBm)
		ANT 1	ANT 2		ANT 1	ANT 2		
802.11 ac HT20	5180	13.55	11.81	0.36	13.91	12.17	16.14	24.00
	5200	13.43	11.47	0.36	13.79	11.83	15.93	24.00
	5240	13.36	12.05	0.36	13.72	12.41	16.12	24.00
	5260	13.64	12.44	0.36	14.00	12.80	16.45	24.00
	5280	13.48	12.48	0.36	13.84	12.84	16.38	24.00
	5320	13.86	12.42	0.36	14.22	12.78	16.57	24.00
	5500	14.46	13.15	0.36	14.82	13.51	17.22	23.51
	5580	15.85	14.23	0.36	16.21	14.59	18.49	23.51



	5700	16.00	14.57	0.36	16.36	14.93	18.71	23.51
	5720_UNII-2C	14.57	13.23	0.36	14.93	13.59	17.32	23.51
	5720_UNII-3	7.74	6.49	0.36	8.10	6.85	10.53	30.00
	5745	15.08	14.06	0.36	15.44	14.42	17.97	30.00
	5785	14.37	13.68	0.36	14.73	14.04	17.41	30.00
	5825	13.26	12.92	0.36	13.62	13.28	16.46	30.00
802.11 ac HT40	5190	13.56	11.66	0.60	14.16	12.26	16.32	24.00
	5230	13.52	12.13	0.60	14.12	12.73	16.49	24.00
	5270	13.88	12.45	0.60	14.48	13.05	16.83	24.00
	5310	13.88	12.33	0.60	14.48	12.93	16.78	24.00
	5510	14.16	12.99	0.60	14.76	13.59	17.22	23.51
	5550	14.80	13.65	0.60	15.40	14.25	17.87	23.51
	5670	15.80	14.84	0.60	16.40	15.44	18.96	23.51
	5710_UNII-2C	15.77	14.41	0.60	16.37	15.01	18.75	23.51
	5710_UNII-3	4.79	3.22	0.60	5.39	3.82	7.69	30.00
	5755	15.24	14.30	0.60	15.84	14.90	18.41	30.00
	5795	14.32	13.99	0.60	14.92	14.59	17.77	30.00
802.11 ac HT80	5210	13.94	12.09	1.19	15.13	13.28	17.31	24.00
	5290	13.68	12.51	1.19	14.87	13.70	17.33	24.00
	5530	11.82	10.45	1.19	13.01	11.64	15.39	23.51
	5610	13.15	11.67	1.19	14.34	12.86	16.67	23.51
	5690_UNII-2C	13.21	11.70	1.19	14.40	12.89	16.72	23.51
	5690_UNII-3	-1.22	-3.09	1.19	-0.03	-1.90	2.15	30.00
	5775	14.60	14.19	1.19	15.79	15.38	18.60	30.00

Note: 1. 802.11a does not support MIMO mode.

2. The test results have already included the duty cycle correction factor. About correction factor please refer to section 6.2.

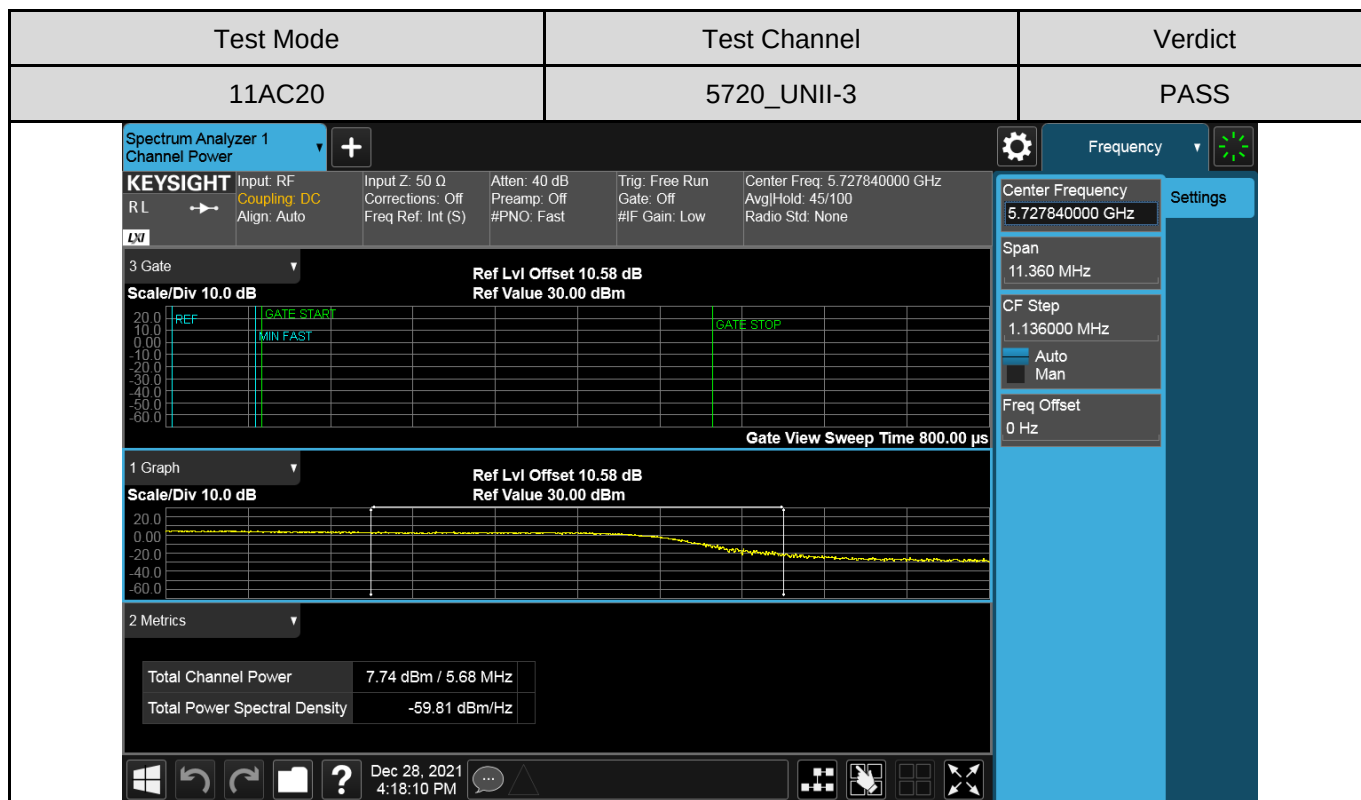
4. SISO mode and MIMO mode use the same power setting, only the worst data IS recorded in the report, for more about the antenna gain/directional gain, please refer to clause 5.4.

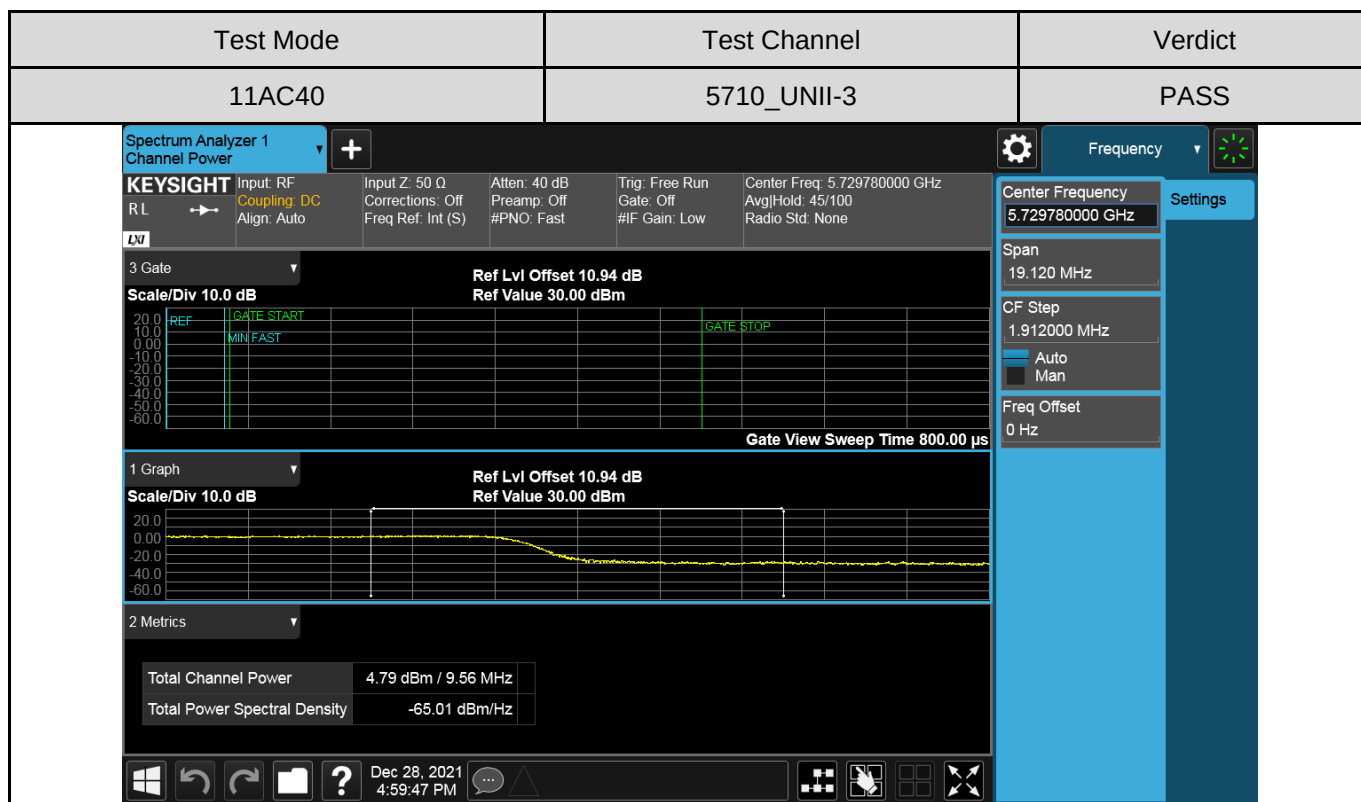
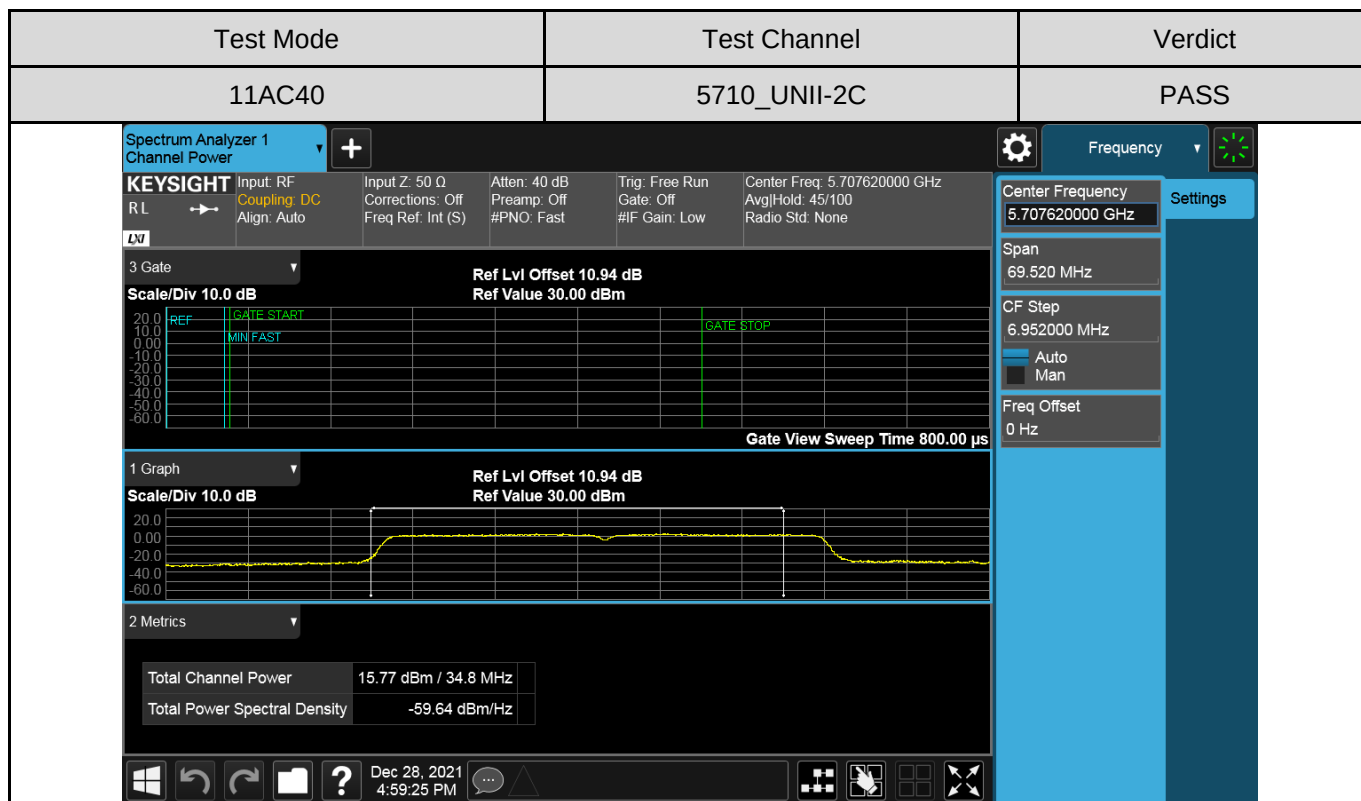


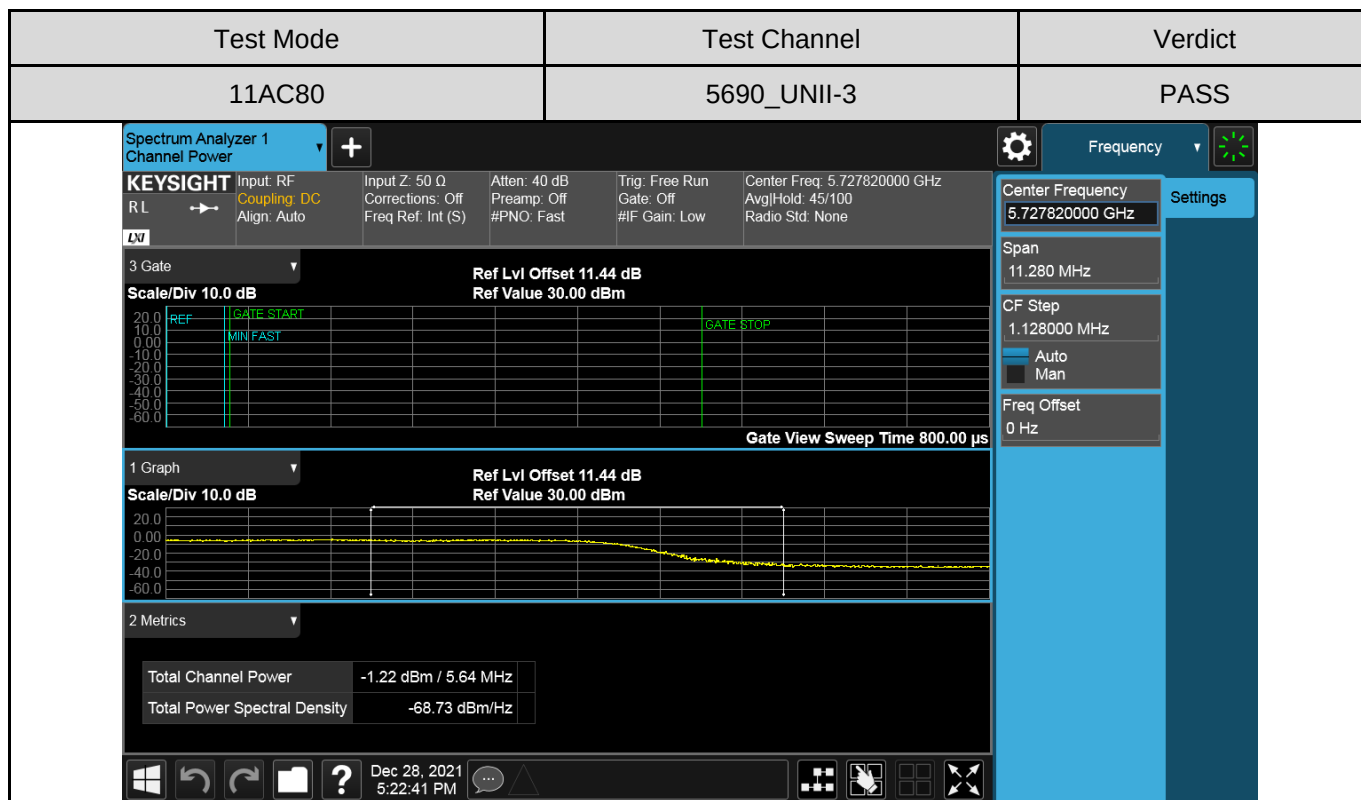
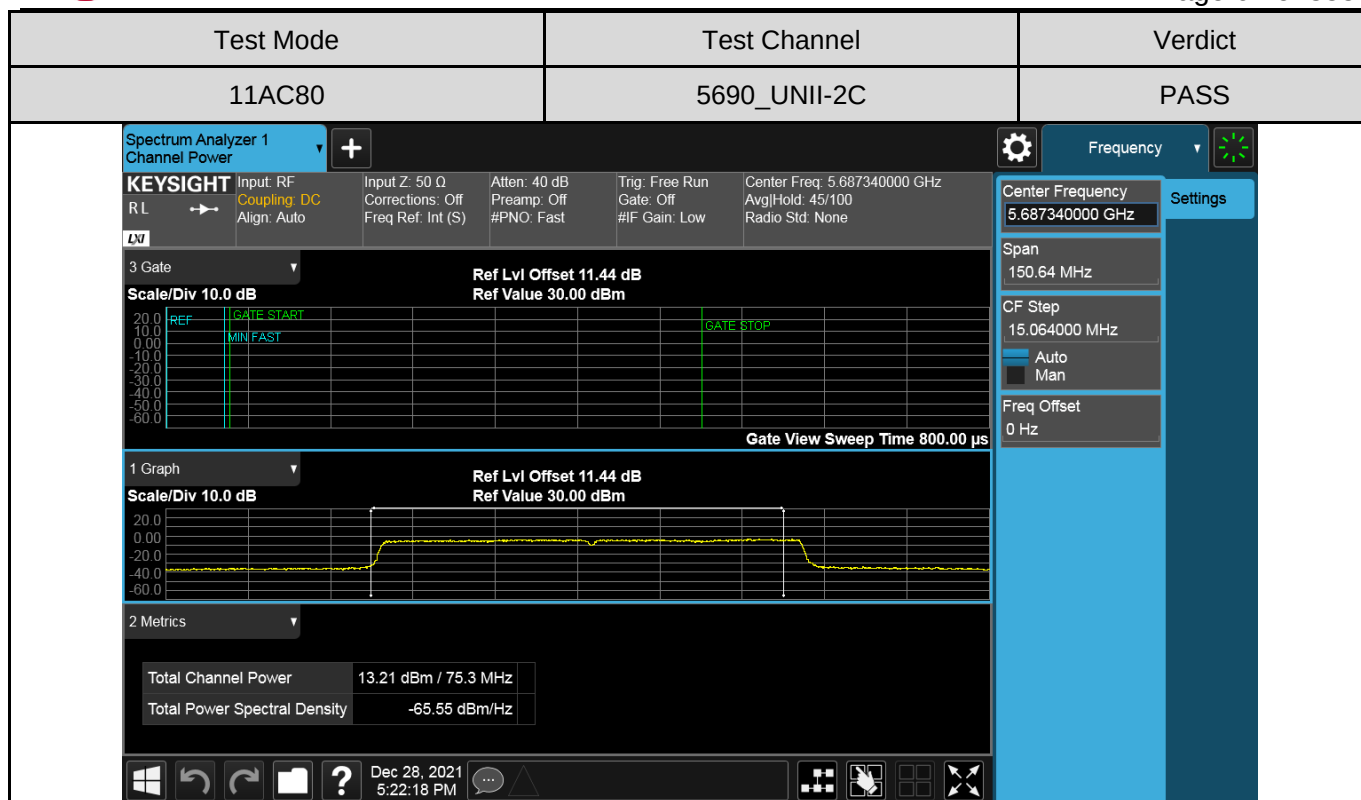
TEST GRAPHS FOR STRADDLE CHANNELS:

Antenna 1 Part:





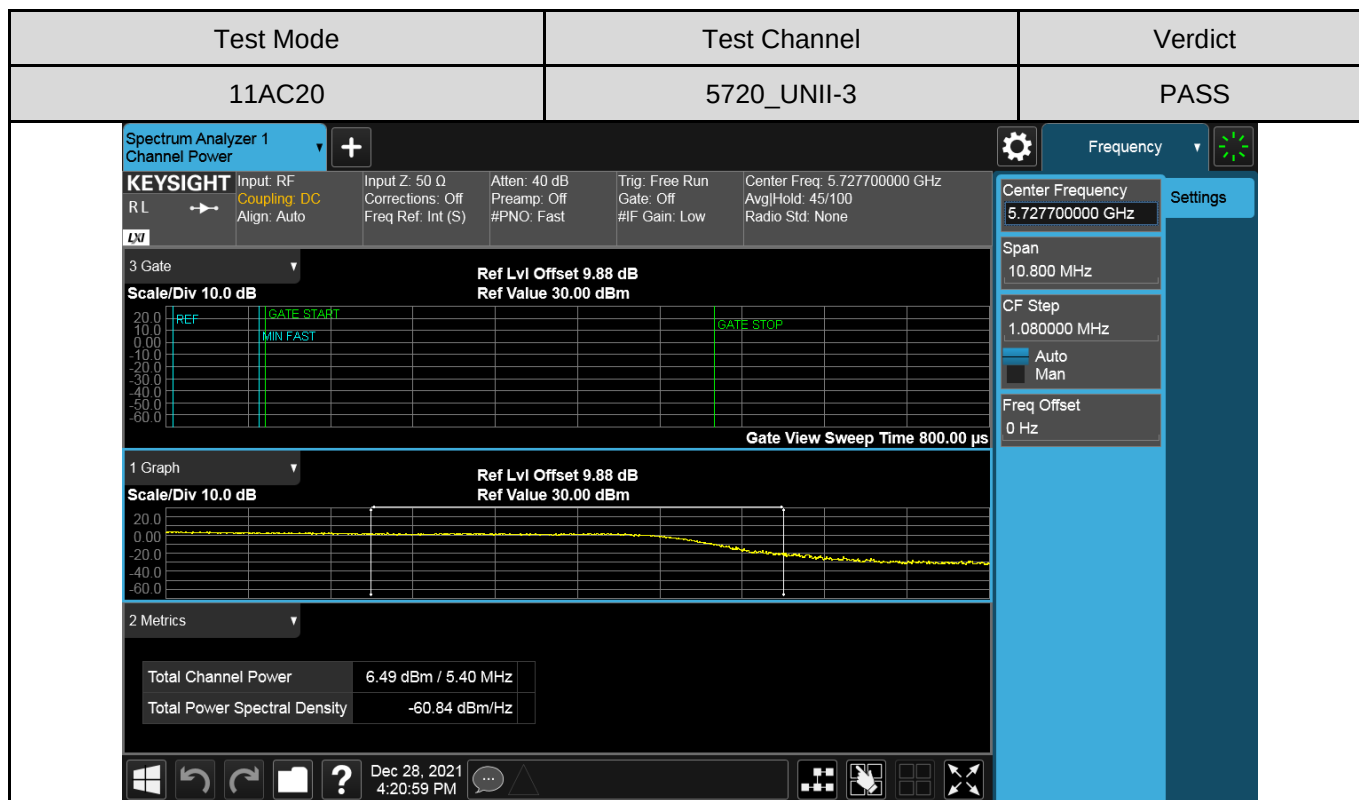
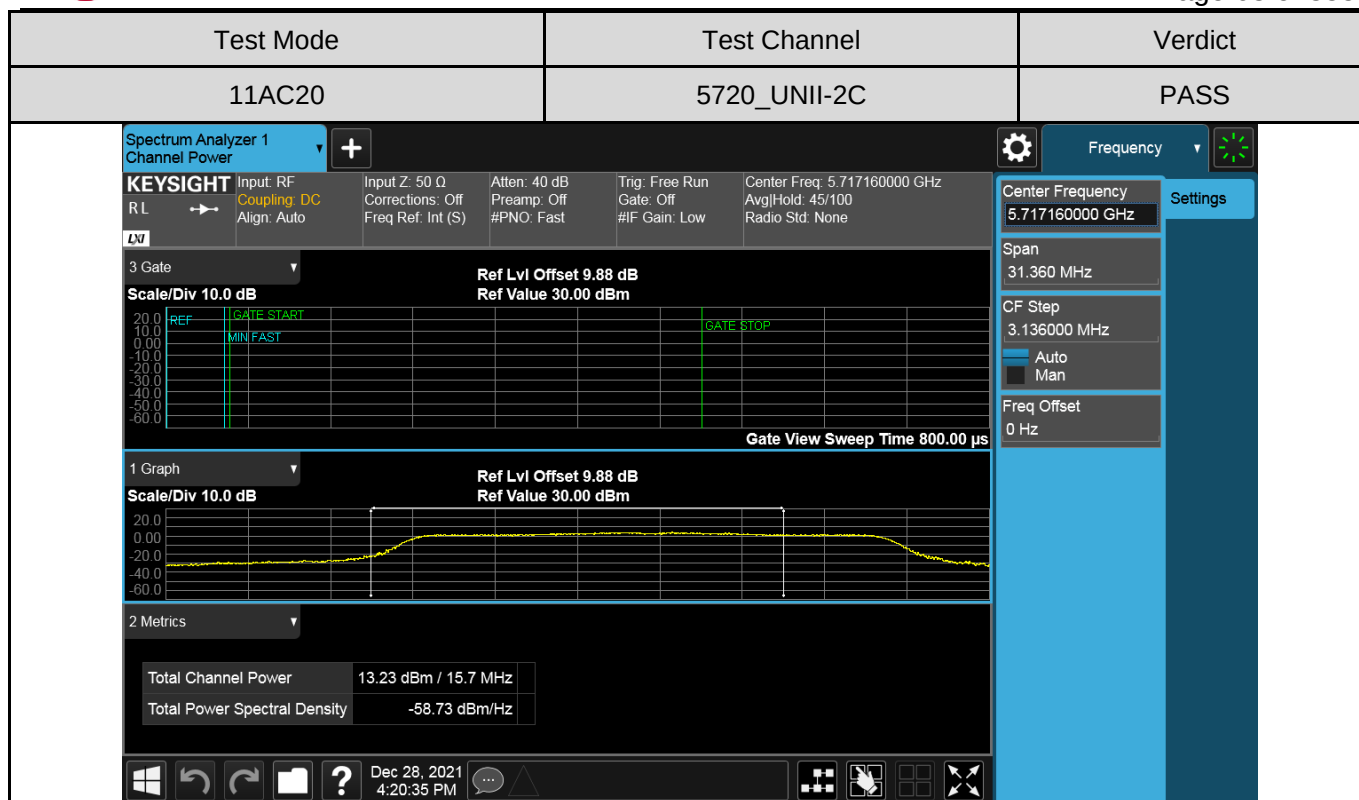


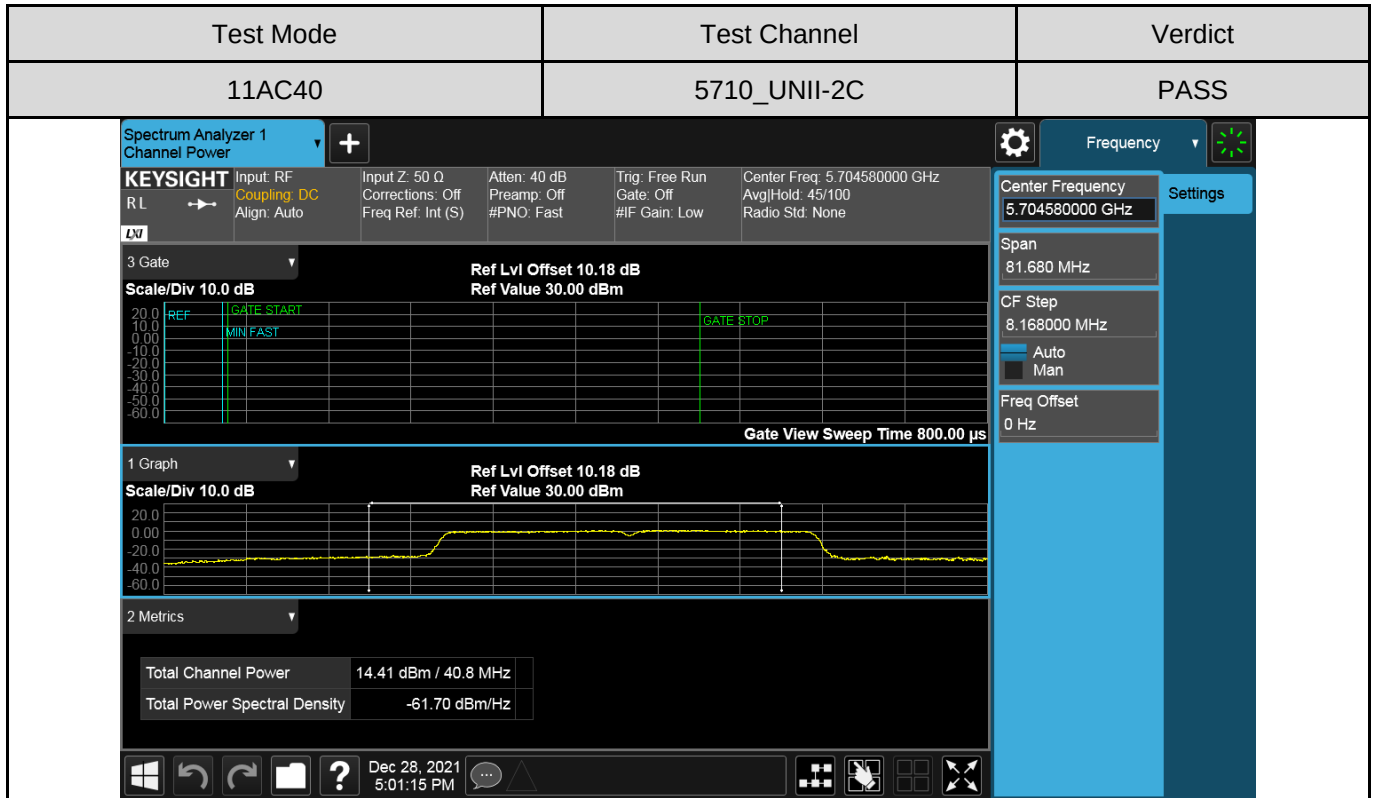


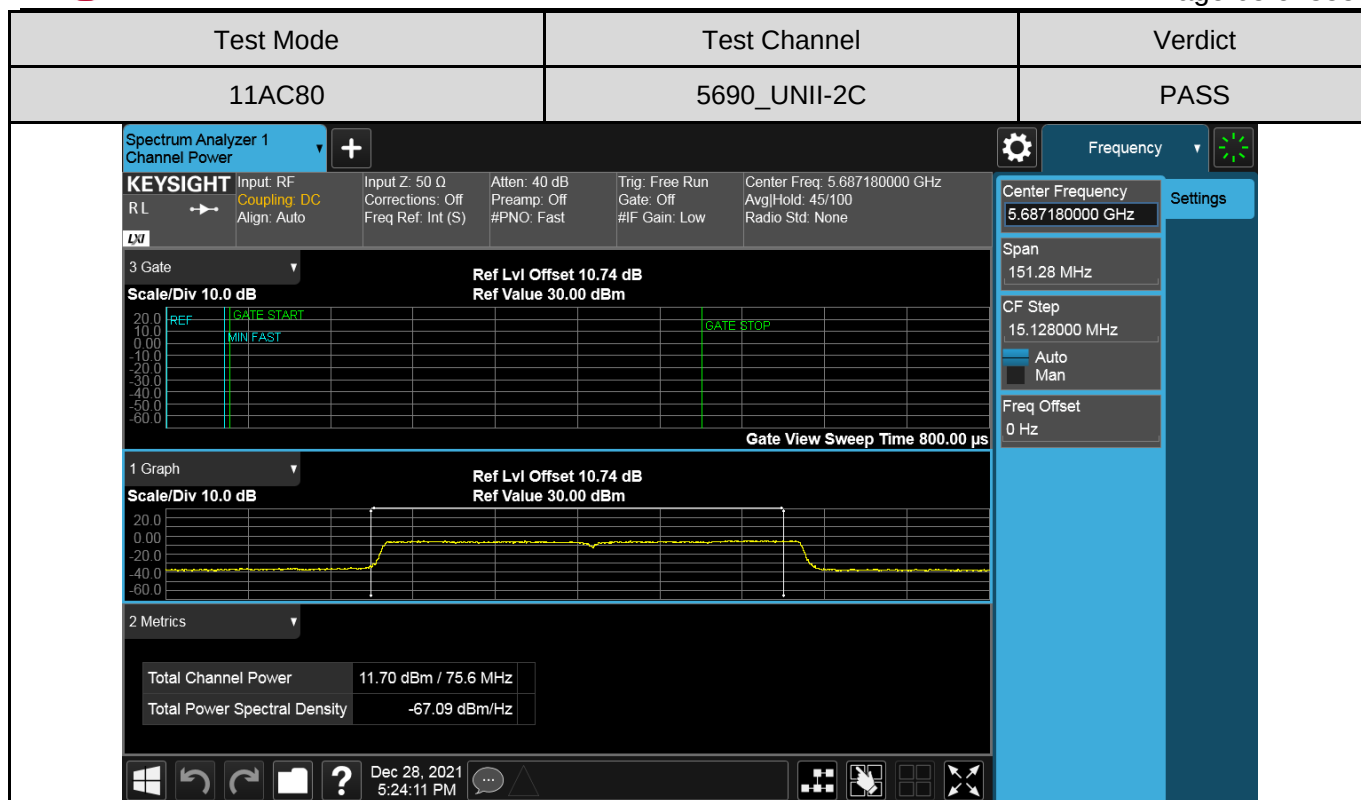


Antenna 2 Part:











6.5. POWER SPECTRAL DENSITY

LIMITS

CFR 47 FCC Part15, Subpart E		
Test Item	Limit	Frequency Range (MHz)
Power Spectral Density	☐ Outdoor Access Point: 17 dBm/MHz ☐ Indoor Access Point: 17 dBm/MHz ☐ Fixed Point-To-Point Access Points: 17 dBm/MHz ☒ Client Devices: 11 dBm/MHz	5150 ~ 5250
	11 dBm/MHz	5250 ~ 5350 5470 ~ 5725
	30 dBm/500kHz	5725 ~ 5850

Note:

The above limits are based upon the maximum antenna gain does not exceed 6 dBi.

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

TEST PROCEDURE

Refer to KDB 789033 D02 General U-NII Test Procedures New Rules v02r01 section II.F.



Connect the EUT to the spectrum analyser and use the following settings:

For U-NII-1, U-NII-2A and U-NII-2C band:

Center Frequency	The center frequency of the channel under test
Detector	RMS
RBW	1 MHz
VBW	$\geq 3 \times \text{RBW}$
Span	Encompass the entire emissions bandwidth (EBW) of the signal
Trace	Max hold
Sweep time	Auto

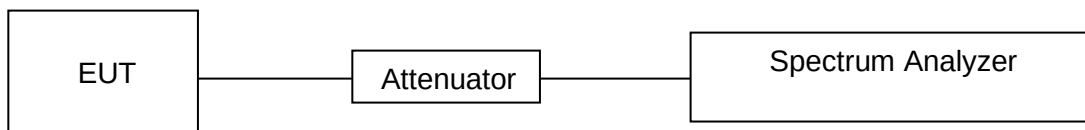
For U-NII-3:

Center Frequency	The center frequency of the channel under test
Detector	RMS
RBW	500 kHz
VBW	$\geq 3 \times \text{RBW}$
Span	Encompass the entire emissions bandwidth (EBW) of the signal
Trace	Max hold
Sweep time	Auto

Allow trace to fully stabilize and Use the peak search function on the instrument to find the peak of the spectrum and record its value.

Add $10 \log (1/x)$, where x is the duty cycle, to the peak of the spectrum, the result is the Maximum PSD over 1 MHz / 500 kHz reference bandwidth.

TEST SETUP



**RESULTS**

Test Mode	Antenna	Channel	Power [dBm/MHz]	Factor1 (Remark 5)	Factor2 (Remark 5)	Final Power [dBm/MHz]	Limit [dBm/MHz]	Verdict
11A	Ant1	5180	4.422	/	/	4.422	<=11	PASS
	Ant2		2.177	/	/	2.177	<=11	PASS
	Ant1	5200	4.199	/	/	4.199	<=11	PASS
	Ant2		2.520	/	/	2.520	<=11	PASS
	Ant1	5240	4.243	/	/	4.243	<=11	PASS
	Ant2		3.308	/	/	3.308	<=11	PASS
	Ant1	5260	3.858	/	/	3.858	<=11	PASS
	Ant2		3.054	/	/	3.054	<=11	PASS
	Ant1	5280	3.744	/	/	3.744	<=11	PASS
	Ant2		2.809	/	/	2.809	<=11	PASS
	Ant1	5320	4.744	/	/	4.744	<=11	PASS
	Ant2		2.987	/	/	2.987	<=11	PASS
	Ant1	5500	4.671	/	/	4.671	<=11	PASS
	Ant2		3.223	/	/	3.223	<=11	PASS
	Ant1	5580	6.417	/	/	6.417	<=11	PASS
	Ant2		4.228	/	/	4.228	<=11	PASS
	Ant1	5700	6.847	/	/	6.847	<=11	PASS
	Ant2		4.667	/	/	4.667	<=11	PASS
	Ant1	5720_	6.529	/	/	6.529	<=11	PASS
	Ant2	UNII-2C	4.686	/	/	4.686	<=11	PASS
	Ant1	5720_	0.667	/	2.218	2.885	<=30	PASS
	Ant2	UNII-3	-0.191	/	2.218	2.027	<=30	PASS
	Ant1	5745	3.157	/	2.218	5.375	<=30	PASS
	Ant2		1.445	/	2.218	3.663	<=30	PASS
	Ant1	5785	2.411	/	2.218	4.629	<=30	PASS
	Ant2		1.618	/	2.218	3.836	<=30	PASS
	Ant1	5825	1.822	/	2.218	4.040	<=30	PASS
	Ant2		0.336	/	2.218	2.554	<=30	PASS
11AC20MIMO	Ant1	5180	4.121	0.04	/	4.125	<=11	PASS
	Ant2		2.102	0.04	/	2.106	<=11	PASS
	total		6.24	/	/	6.242	<=11	PASS
	Ant1	5200	3.947	0.04	/	3.951	<=11	PASS
	Ant2		1.516	0.04	/	1.520	<=11	PASS
	total		5.91	/	/	5.914	<=11	PASS
	Ant1	5240	3.863	0.04	/	3.867	<=11	PASS
	Ant2		1.940	0.04	/	1.944	<=11	PASS
	total		6.02	/	/	6.021	<=11	PASS
	Ant1	5260	3.463	0.04	/	3.467	<=11	PASS
	Ant2		2.793	0.04	/	2.797	<=11	PASS
	total		6.15	/	/	6.154	<=11	PASS
	Ant1	5280	3.920	0.04	/	3.924	<=11	PASS
	Ant2		3.664	0.04	/	3.668	<=11	PASS
	total		6.80	/	/	6.808	<=11	PASS
	Ant1	5320	4.235	0.04	/	4.239	<=11	PASS
	Ant2		2.832	0.04	/	2.836	<=11	PASS
	total		6.60	/	/	6.604	<=11	PASS
	Ant1	5500	4.801	0.04	/	4.805	<=11	PASS
	Ant2		2.735	0.04	/	2.739	<=11	PASS
	total		6.90	/	/	6.904	<=10.51	PASS
	Ant1	5580	5.587	0.04	/	5.591	<=11	PASS
	Ant2		3.597	0.04	/	3.601	<=11	PASS
	total		7.715	/	/	7.719	<=10.51	PASS
	Ant1	5700	6.748	0.04	/	6.752	<=11	PASS
	Ant2		4.306	0.04	/	4.310	<=11	PASS

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	total		8.71	/	/	8.711	<=10.51	PASS
	Ant1	5720_UNII-2C	5.690	0.04	/	5.694	<=11	PASS
	Ant2		4.981	0.04	/	4.985	<=11	PASS
	total		8.36	/	/	8.364	<=10.51	PASS
	Ant1	5720_UNII-3	0.895	0.04	2.218	3.117	<=30	PASS
	Ant2		-0.617	0.04	2.218	1.606	<=30	PASS
	total		3.21	/	/	5.437	<=30	PASS
	Ant1	5745	3.313	0.04	2.218	5.535	<=30	PASS
	Ant2		1.382	0.04	2.218	3.604	<=30	PASS
	total		5.46	/	/	7.686	<=30	PASS
	Ant1	5785	1.881	0.04	2.218	4.103	<=30	PASS
	Ant2		1.774	0.04	2.218	3.996	<=30	PASS
	total		4.84	/	/	7.060	<=30	PASS
	Ant1	5825	1.693	0.04	2.218	3.915	<=30	PASS
	Ant2		0.527	0.04	2.218	2.749	<=30	PASS
	total		4.16	/	/	6.381	<=30	PASS
11AC40MIMO	Ant1	5190	-0.232	/	/	-0.232	<=11	PASS
	Ant2		-2.222	/	/	-2.222	<=11	PASS
	total		1.90	/	/	1.90	<=11	PASS
	Ant1	5230	0.035	/	/	0.035	<=11	PASS
	Ant2		-1.601	/	/	-1.601	<=11	PASS
	total		2.30	/	/	2.30	<=11	PASS
	Ant1	5270	0.219	/	/	0.219	<=11	PASS
	Ant2		-0.982	/	/	-0.982	<=11	PASS
	total		2.67	/	/	2.67	<=11	PASS
	Ant1	5310	0.531	/	/	0.531	<=11	PASS
	Ant2		-1.192	/	/	-1.192	<=11	PASS
	total		2.76	/	/	2.76	<=11	PASS
	Ant1	5510	1.082	/	/	1.082	<=11	PASS
	Ant2		-0.957	/	/	-0.957	<=11	PASS
	total		3.19	/	/	3.19	<=10.51	PASS
	Ant1	5550	1.247	/	/	1.247	<=11	PASS
	Ant2		0.134	/	/	0.134	<=11	PASS
	total		3.74	/	/	3.74	<=10.51	PASS
	Ant1	5670	1.977	/	/	1.977	<=11	PASS
	Ant2		0.985	/	/	0.985	<=11	PASS
	total		4.52	/	/	4.52	<=10.51	PASS
	Ant1	5710_UNII-2C	2.632	/	/	2.632	<=11	PASS
	Ant2		0.543	/	/	0.543	<=11	PASS
	total		4.72	/	/	4.72	<=10.51	PASS
	Ant1	5710_UNII-3	-0.670	/	2.218	1.548	<=30	PASS
	Ant2		-1.821	/	2.218	0.397	<=30	PASS
	total		1.80	/	/	4.02	<=30	PASS
	Ant1	5755	-1.423	/	2.218	0.795	<=30	PASS
	Ant2		-2.773	/	2.218	-0.555	<=30	PASS
	total		0.96	/	/	3.18	<=30	PASS
	Ant1	5795	-1.661	/	2.218	0.557	<=30	PASS
	Ant2		-2.573	/	2.218	-0.355	<=30	PASS
	total		0.92	/	/	3.14	<=30	PASS
11AC80MIMO	Ant1	5210	-2.365	/	/	-2.365	<=11	PASS
	Ant2		-4.107	/	/	-4.107	<=11	PASS
	total		-0.14	/	/	-0.14	<=11	PASS
	Ant1	5290	-2.856	/	/	-2.856	<=11	PASS
	Ant2		-3.873	/	/	-3.873	<=11	PASS
	total		-0.32	/	/	-0.32	<=11	PASS
	Ant1	5530	-4.798	/	/	-4.798	<=11	PASS
	Ant2		-5.679	/	/	-5.679	<=11	PASS
	total		-2.21	/	/	-2.21	<=10.51	PASS
	Ant1	5610	-3.182	/	/	-3.182	<=11	PASS
	Ant2		-4.983	/	/	-4.983	<=11	PASS



	total	5690 UNII-2C	-0.98	/	/	-0.98	<=10.51	PASS
	Ant1		-3.368	/	/	-3.368	<=11	PASS
	Ant2		-5.197	/	/	-5.197	<=11	PASS
	total		-1.18	/	/	-1.18	<=10.51	PASS
	Ant1	5690 UNII-3	-6.501	/	2.218	-4.283	<=30	PASS
	Ant2		-8.623	/	2.218	-6.405	<=30	PASS
	total		-4.42	/	/	-2.21	<=30	PASS
	Ant1		-4.687	/	2.218	-2.469	<=30	PASS
	Ant2	5775	-5.166	/	2.218	-2.948	<=30	PASS
	total		-1.91	/	/	0.31	<=30	PASS

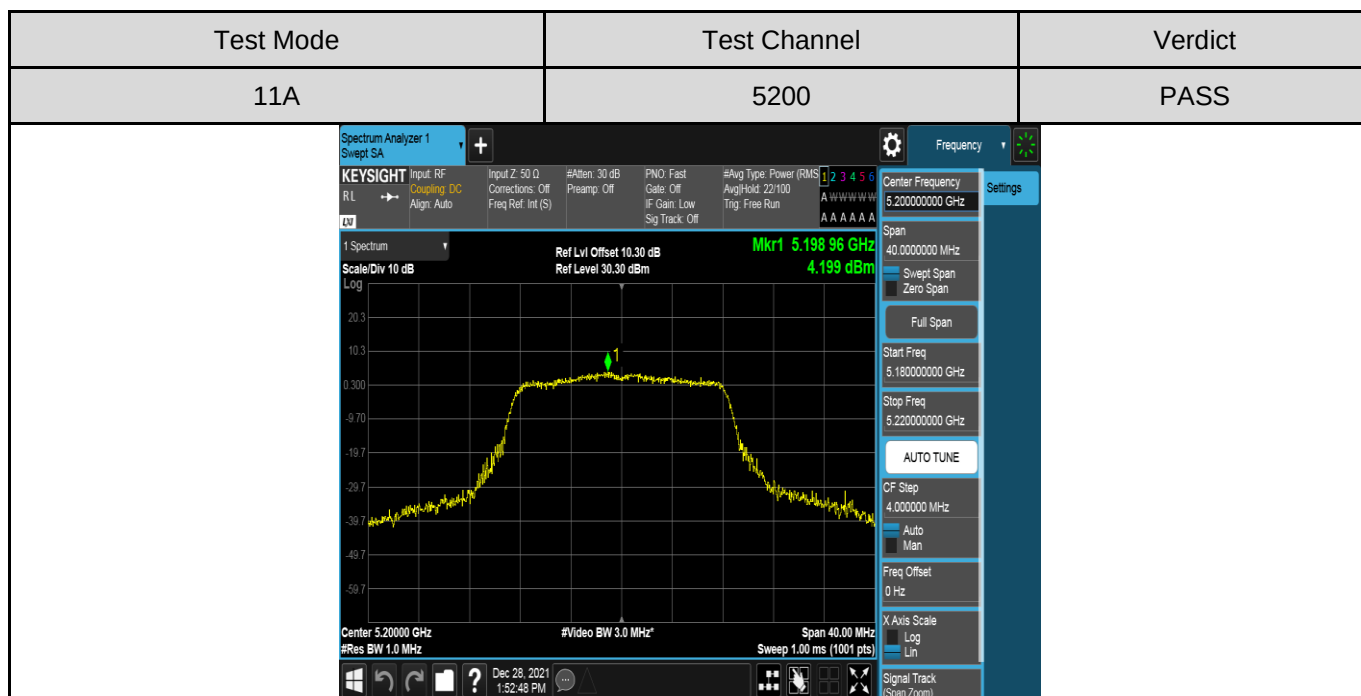
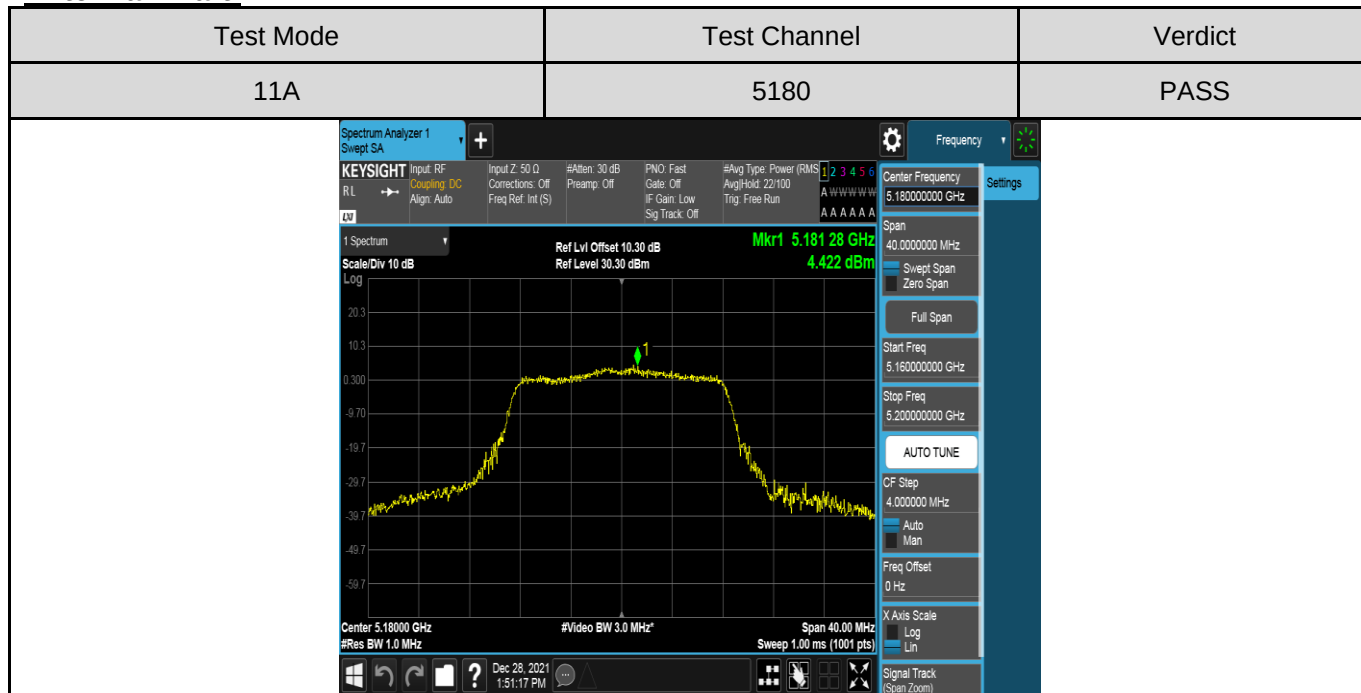
Remark :

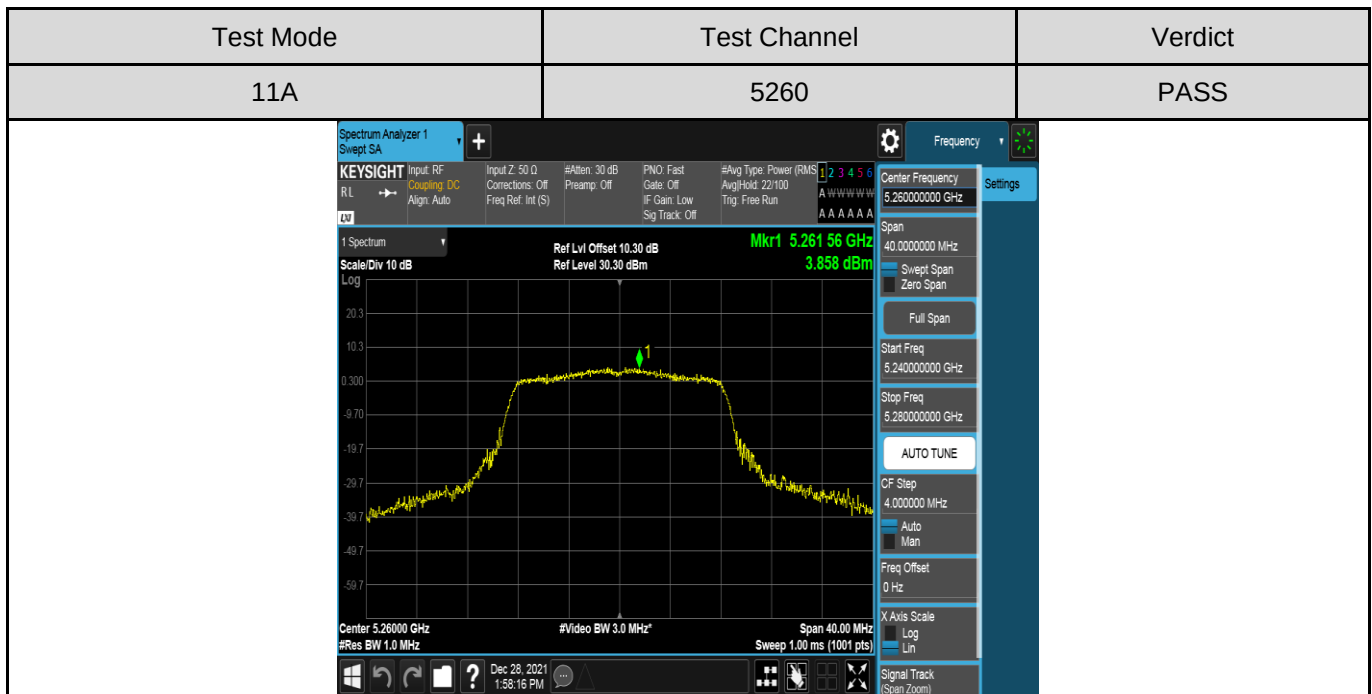
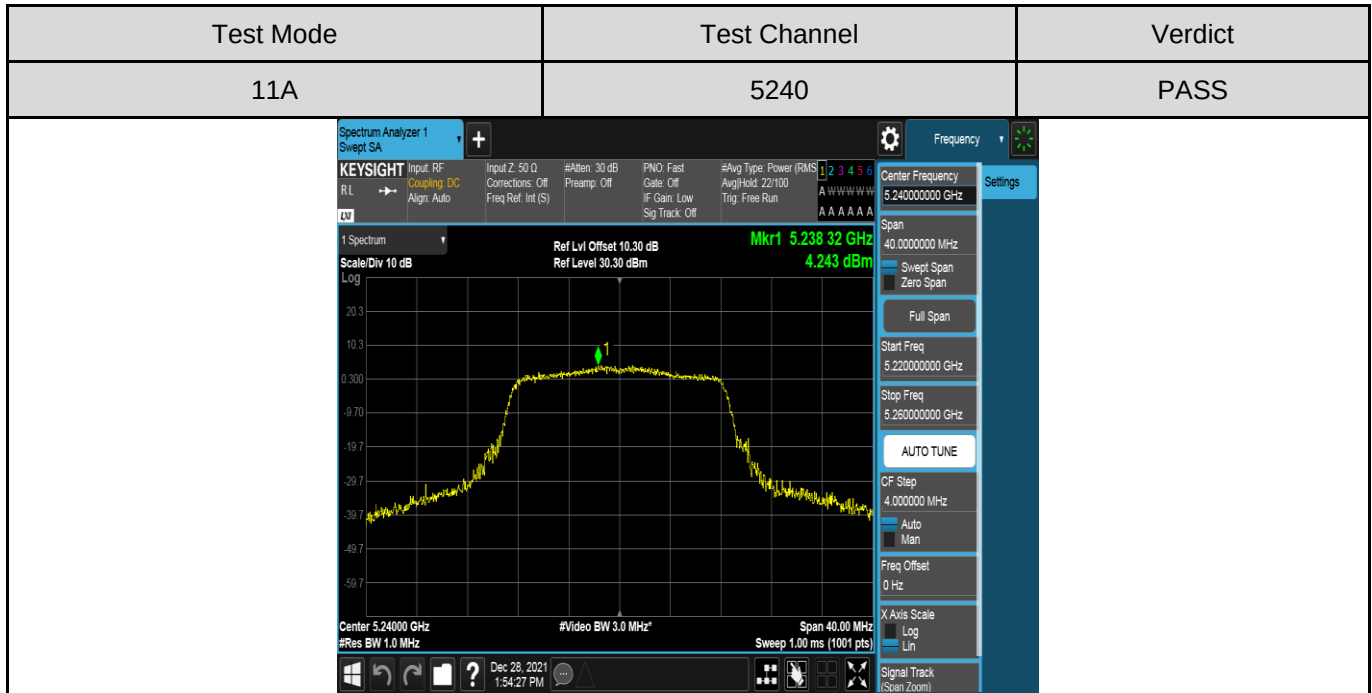
1. The Result and Limit Unit is dBm/500 kHz in the band 5.725 ~ 5.85 GHz.
2. The Duty Cycle Factor and RBW Factor is compensated in the graph.
3. For 802.11a mode, both the two antennas had been tested, but only the worst data was recorded in the report.
4. All the modes had been teste, but only the worst data was recorded in the report.
5. Correct the duty cycle factor of 11AC20 mode from 0.32dB to 0.36 dB, so there is an additional 0.04dB revision factor added to test results of 11AC20 mode.
6. UNII-3 Band PSD testing set RBW=300kHz for testing, so the final result needs to add additional RBW factor= $10\log(500/300)$ dB=2.218 dB.

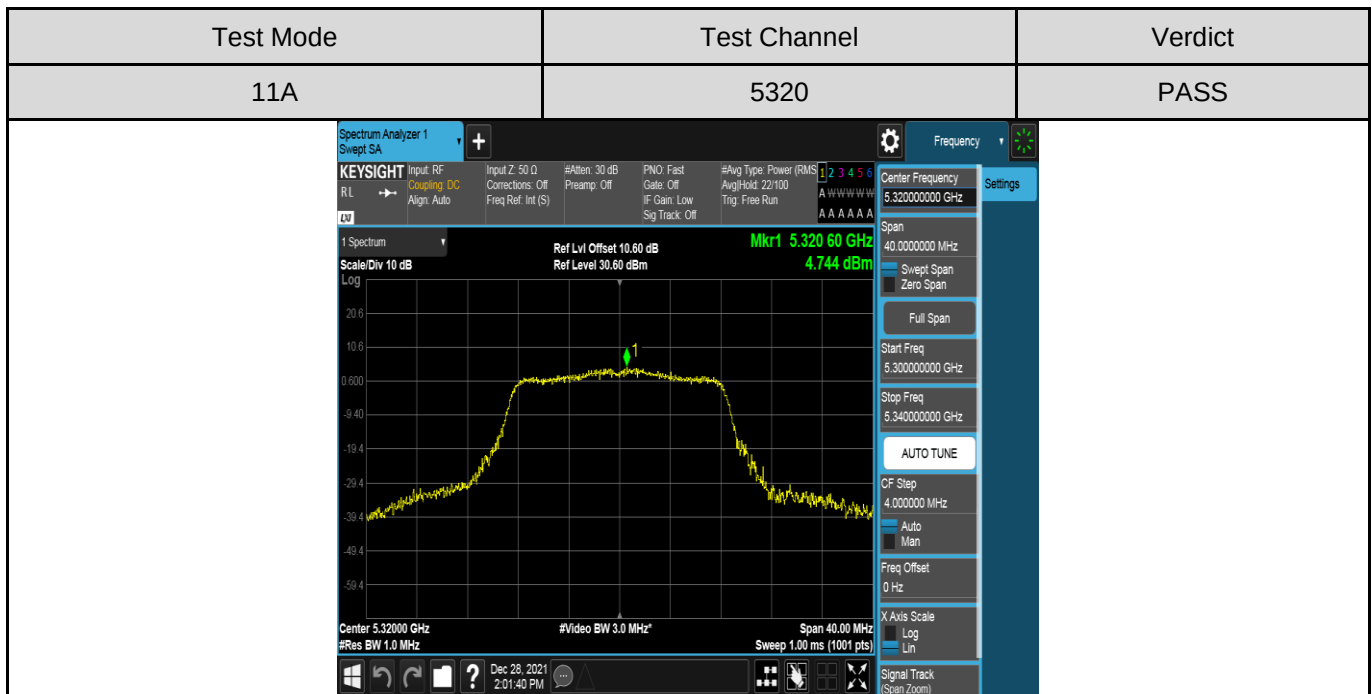
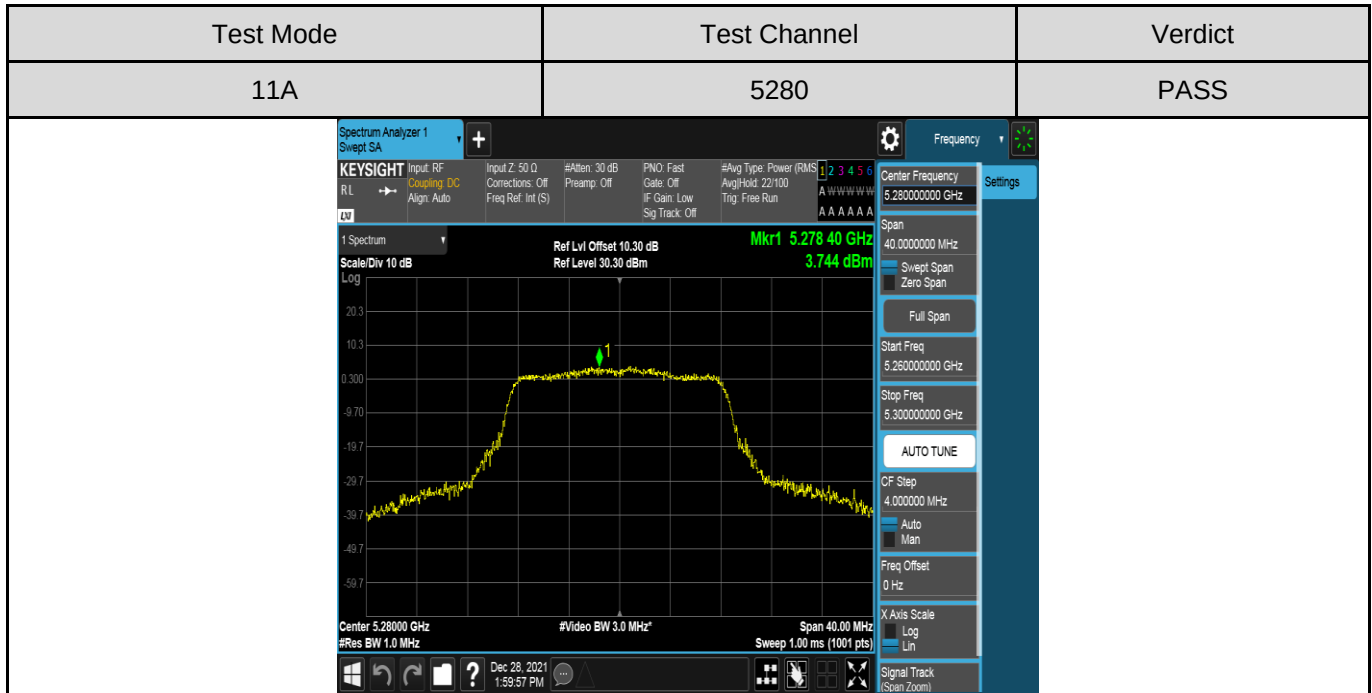


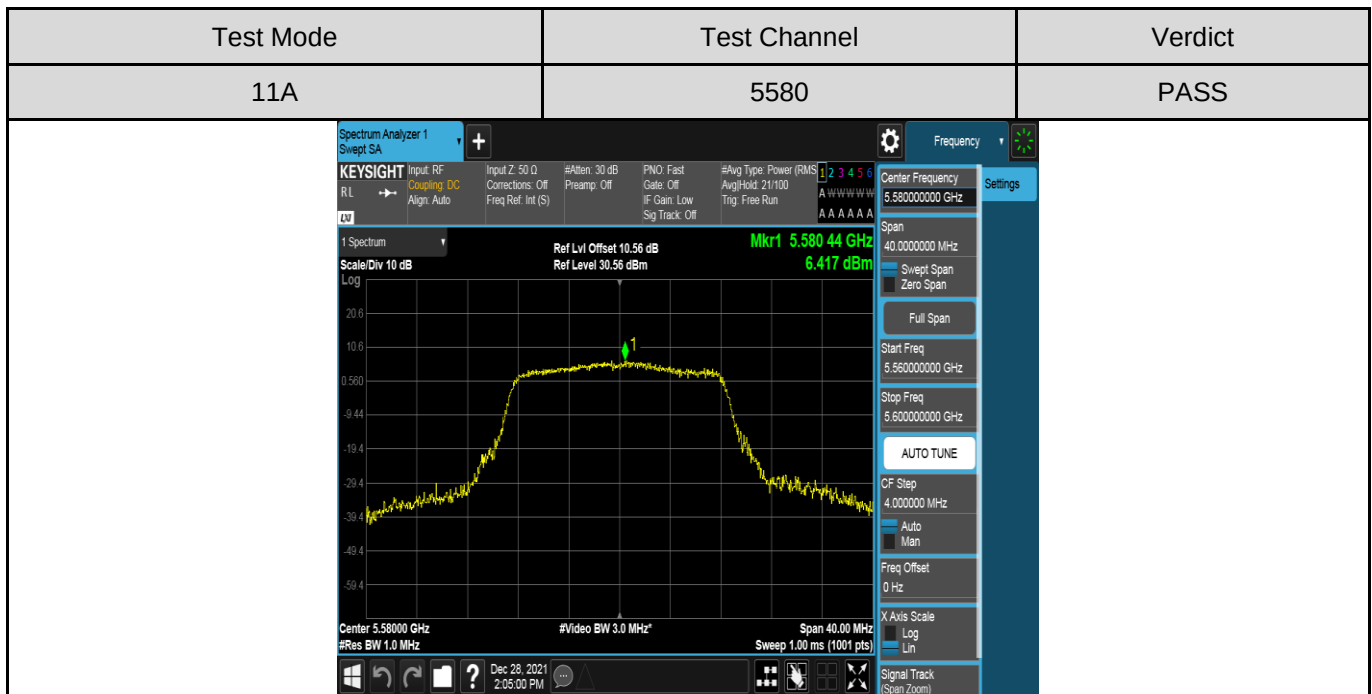
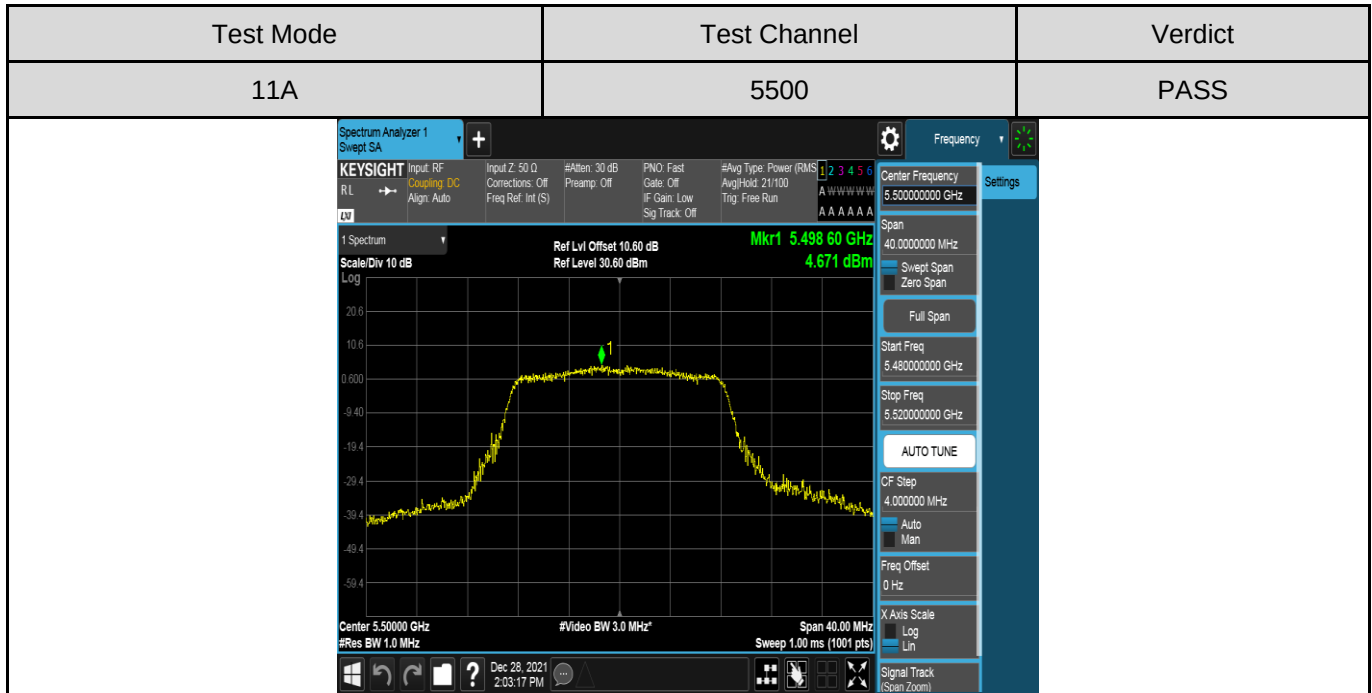
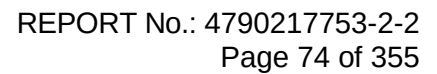
TEST GRAPHS

Antenna 1 Part:

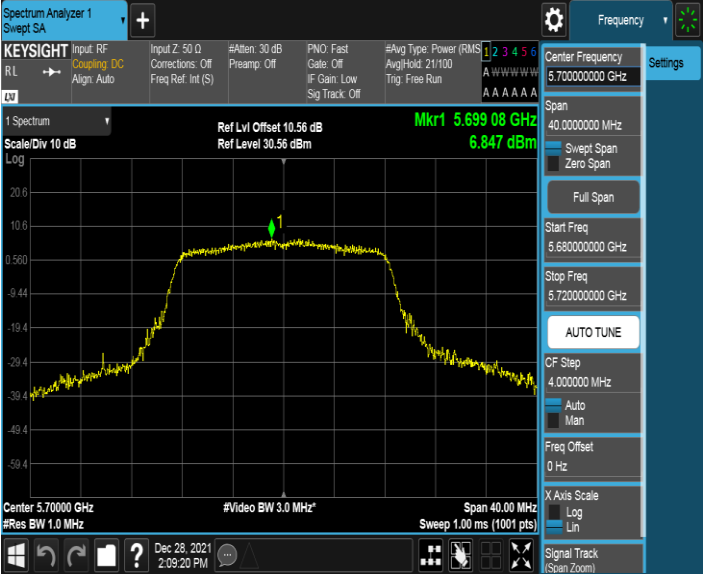










Test Mode	Test Channel	Verdict
11A	5700	PASS
		

Test Mode	Test Channel	Verdict
11A	5720_UNII-2C	PASS
		

