



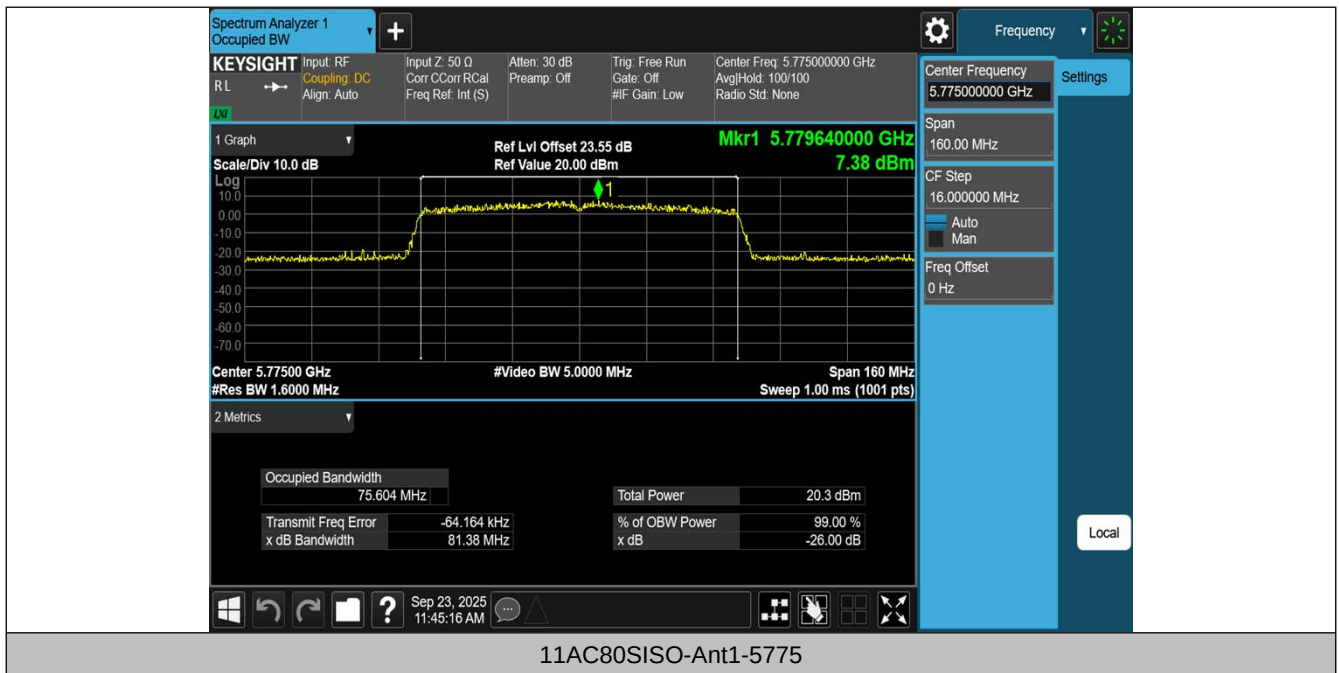








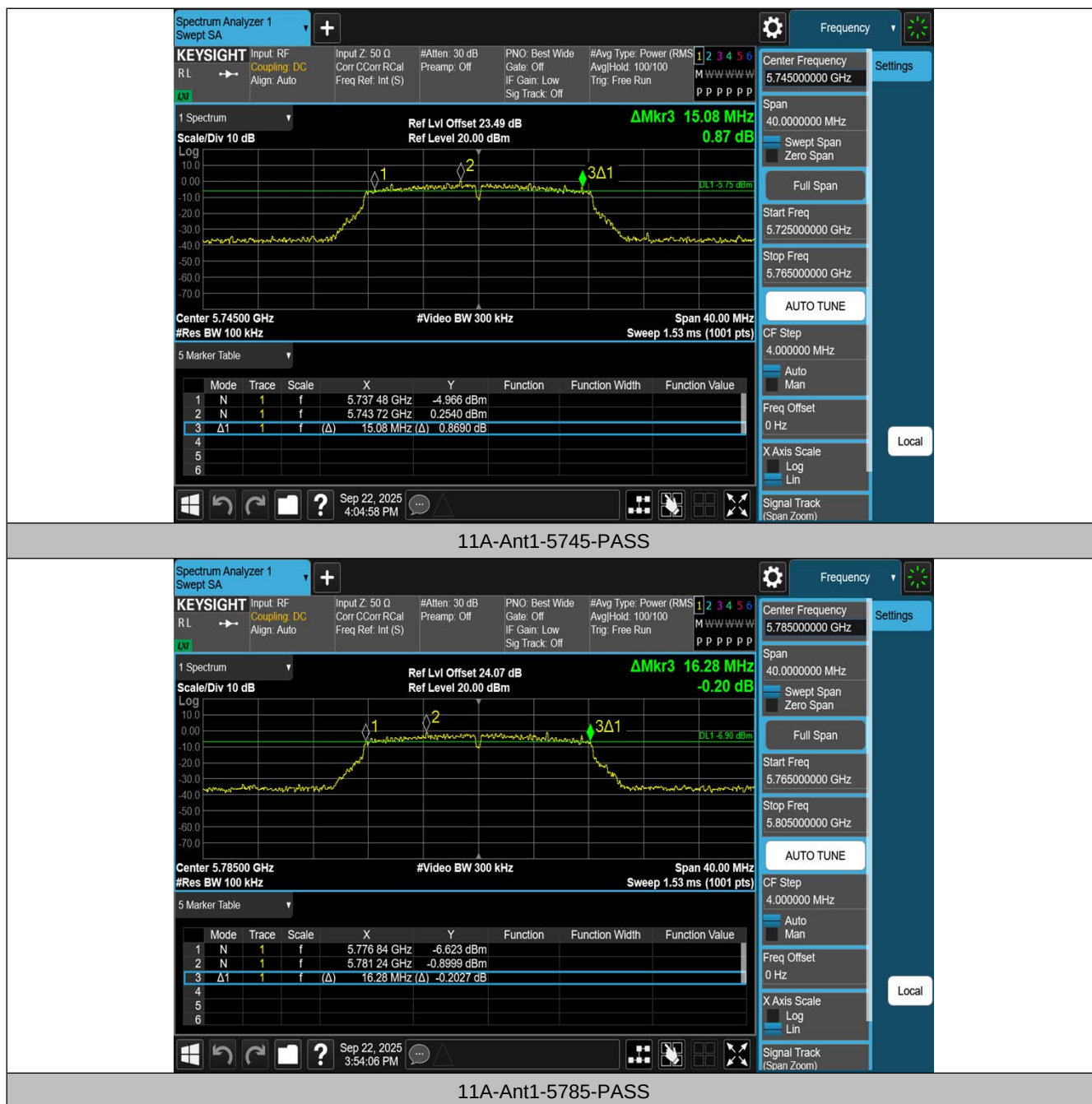


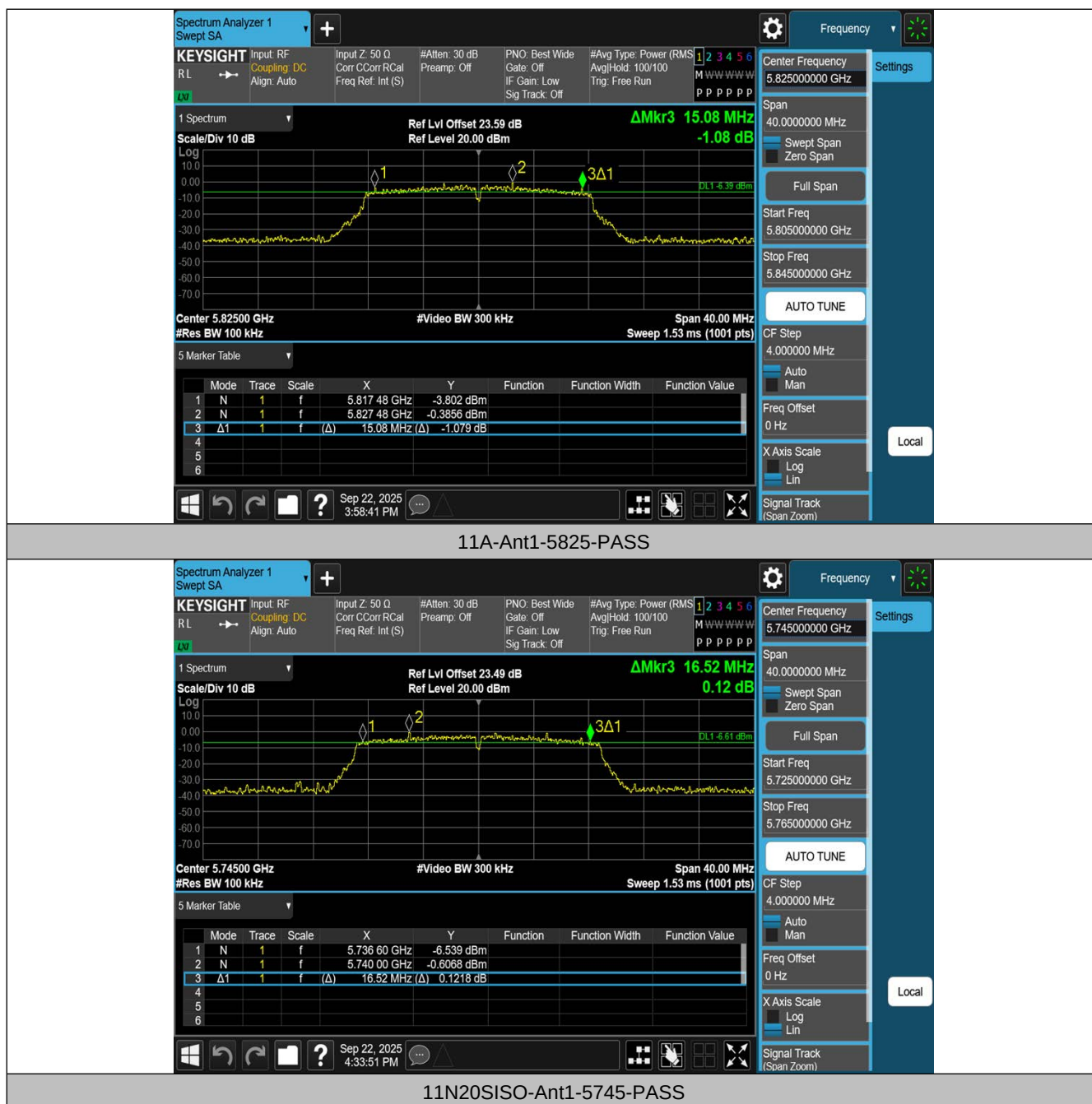


Min emission bandwidth

TestMode	Antenna	Frequency[MHz]	6db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5745	15.080	5737.480	5752.560	0.5	PASS
11A	Ant1	5785	16.280	5776.840	5793.120	0.5	PASS
11A	Ant1	5825	15.080	5817.480	5832.560	0.5	PASS
11N20SISO	Ant1	5745	16.520	5736.600	5753.120	0.5	PASS
11N20SISO	Ant1	5785	15.080	5777.480	5792.560	0.5	PASS
11N20SISO	Ant1	5825	15.040	5817.480	5832.520	0.5	PASS
11N40SISO	Ant1	5755	33.840	5738.680	5772.520	0.5	PASS
11N40SISO	Ant1	5795	35.040	5777.480	5812.520	0.5	PASS
11AC20SISO	Ant1	5745	17.240	5736.240	5753.480	0.5	PASS
11AC20SISO	Ant1	5785	14.400	5777.480	5791.880	0.5	PASS
11AC20SISO	Ant1	5825	14.200	5818.360	5832.560	0.5	PASS
11AC40SISO	Ant1	5755	35.040	5737.480	5772.520	0.5	PASS
11AC40SISO	Ant1	5795	31.600	5778.440	5810.040	0.5	PASS
11AC80SISO	Ant1	5610	75.200	5572.400	5647.600	0.5	PASS
11AC80SISO	Ant1	5775	75.200	5737.400	5812.600	0.5	PASS

Test Graphs







11N20SISO-Ant1-5785-PASS



11N20SISO-Ant1-5825-PASS



11N40SISO-Ant1-5755-PASS



11N40SISO-Ant1-5795-PASS

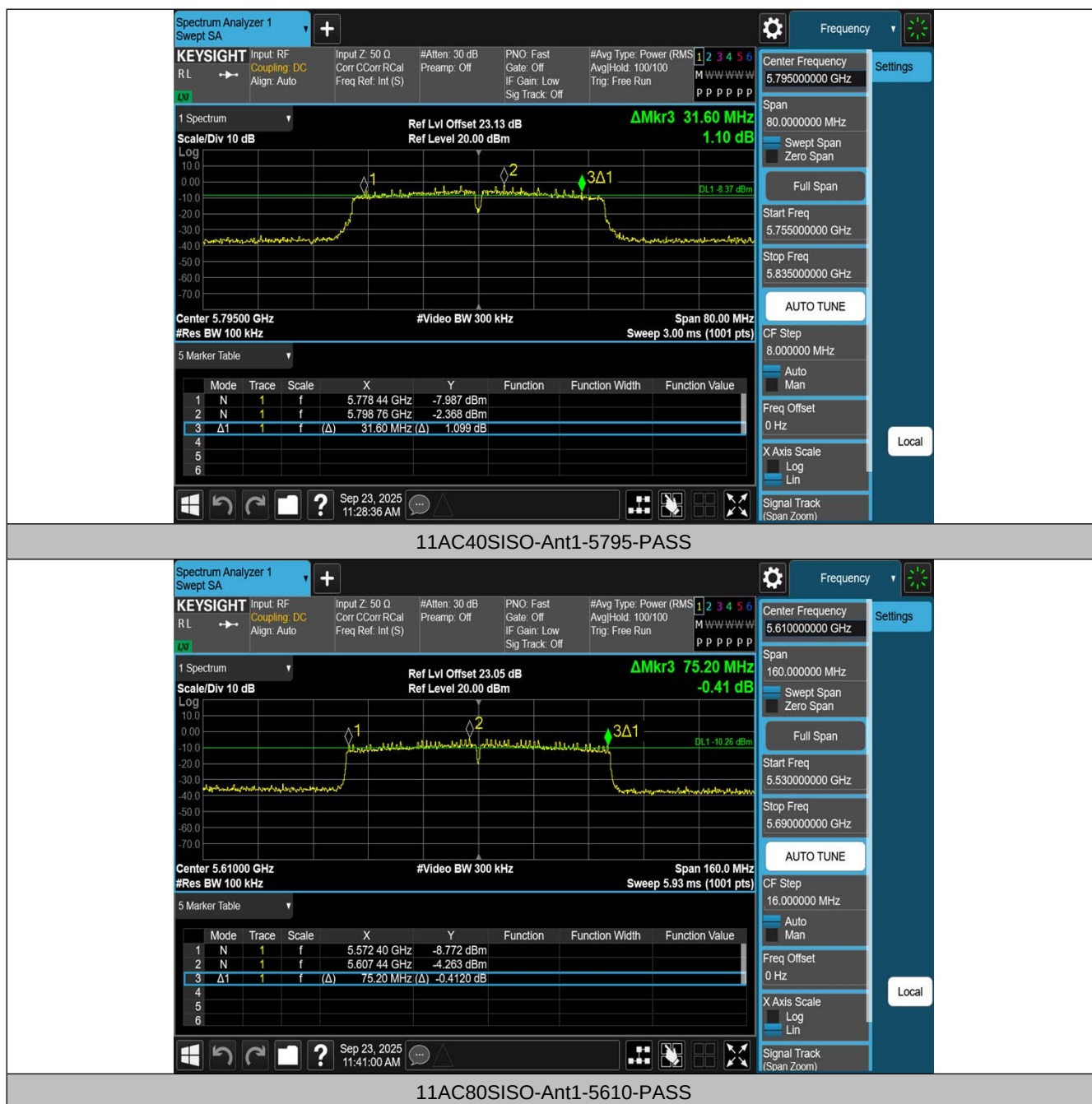


11AC20SISO-Ant1-5745-PASS



11AC20SISO-Ant1-5785-PASS







3.4 Conducted Output Power

3.4.1 Limit

FCC Part15, Subpart E (15.407)			
Section	Test Item	Limit	Frequency Range (MHz)
15.407(a)	Conducted Output Power	Master device: 1 Watt (30 dBm) Client device: 250 mW (23.98 dBm)	5150-5250
		250 mW (23.98 dBm)	5250-5350
		250 mW (23.98 dBm)	5470-5725
		1 Watt (30dBm)	5725-5850

Note:

- For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 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 + 10log B, where B is the 26dB Bandwidth in megahertz.
- Transmit power control (TPC). U-NII devices operating in the 5.25-5.35 GHz band and the 5.47-5.725 GHz band shall employ a TPC mechanism. The U-NII device is required to have the capability to operate at least 6 dB below the mean EIRP value of 30 dBm. A TPC mechanism is not required for systems with an e.i.r.p. of less than 500 mW.

3.4.2 Test Procedure

Test Method	
●Conducted Measurement	○Radiated Measurement
Test Channels	
●Lowest, Middle and Highest Channel	○ Lowest and Highest Channel
Environmental conditions	
●Normal	○Normal and Extreme
Note:●:Test ○:No Test	

- a) The EUT was directly connected to the power meter and antenna output port as show in the block diagram below.
- b) Test was performed in accordance with method of FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

3.4.3 Test Setup



3.4.4 Table of Parameters of Text Software Setting

UNII-1			
Test Software Version	engineering mode		
Frequency (MHz)	5180	5200	5240
IEEE 802.11a	16	16	16
IEEE 802.11n(HT20)	16	16	16
IEEE 802.11ac(VHT20)	16	16	16
Frequency (MHz)	5190	5230	
IEEE 802.11n(HT40)	16	16	
IEEE 802.11ac(VHT40)	16	16	
Frequency (MHz)	5210		
IEEE 802.11ac(VHT80)	16		
Frequency (MHz)	5250		
IEEE 802.11ac(VHT160)	16		

UNII-2A			
Test Software Version	engineering mode		
Frequency (MHz)	5260	5280	5320
IEEE 802.11a	16	16	16
IEEE 802.11n(HT20)	16	16	16
IEEE 802.11ac(VHT20)	16	16	16
Frequency (MHz)	5270	5310	
IEEE 802.11n(HT40)	16	16	
IEEE 802.11ac(VHT40)	16	16	
Frequency (MHz)	5290		
IEEE 802.11ac(VHT80)	16		
Frequency (MHz)	5250		
IEEE 802.11ac(VHT160)	16		

UNII-2C			
Test Software Version	engineering mode		
Frequency (MHz)	5500	5580	5700
IEEE 802.11a	16	16	16
IEEE 802.11n(HT20)	16	16	16
IEEE 802.11ac(VHT20)	16	16	16
Frequency (MHz)	5510	5550	5670
IEEE 802.11n(HT40)	16	16	16
IEEE 802.11ac(VHT40)	16	16	16
Frequency (MHz)	5530	5610	

IEEE 802.11ac(VHT80)	16	16	
Frequency (MHz)	5570		
IEEE 802.11ac(VHT160)	16		

UNII-3			
Test Software Version	engineering mode		
Frequency (MHz)	5745	5785	5825
IEEE 802.11a	16	16	16
IEEE 802.11n(HT20)	16	16	16
IEEE 802.11ac(VHT20)	16	16	16
Frequency (MHz)	5755	5795	
IEEE 802.11n(HT40)	16	16	
IEEE 802.11ac(VHT40)	16	16	
Frequency (MHz)	5775		
IEEE 802.11ac(VHT80)	16		

3.4.5 The Result

Test Mode	Antenna	Frequency [MHz]	TPC Mode	Result [dBm]	Limit [dBm]	Verdict
11A	Ant1	5180	NA	11.33	≤23.98	PASS
11A	Ant1	5200	NA	11.60	≤23.98	PASS
11A	Ant1	5240	NA	11.75	≤23.98	PASS
11A	Ant1	5260	NA	11.60	≤23.96	PASS
11A	Ant1	5280	NA	11.76	≤23.95	PASS
11A	Ant1	5320	NA	12.00	≤23.96	PASS
11A	Ant1	5500	NA	12.30	≤23.94	PASS
11A	Ant1	5580	NA	12.39	≤23.98	PASS
11A	Ant1	5700	NA	11.47	≤23.98	PASS
11A	Ant1	5745	NA	11.66	≤30.00	PASS
11A	Ant1	5785	NA	11.93	≤30.00	PASS
11A	Ant1	5825	NA	11.31	≤30.00	PASS
11N20SISO	Ant1	5180	NA	11.18	≤23.98	PASS
11N20SISO	Ant1	5200	NA	11.63	≤23.98	PASS
11N20SISO	Ant1	5240	NA	11.71	≤23.98	PASS
11N20SISO	Ant1	5260	NA	11.56	≤23.98	PASS
11N20SISO	Ant1	5280	NA	11.82	≤23.98	PASS
11N20SISO	Ant1	5320	NA	11.78	≤23.98	PASS
11N20SISO	Ant1	5500	NA	12.09	≤23.98	PASS
11N20SISO	Ant1	5580	NA	11.93	≤23.98	PASS
11N20SISO	Ant1	5700	NA	11.61	≤23.98	PASS
11N20SISO	Ant1	5745	NA	11.64	≤30.00	PASS
11N20SISO	Ant1	5785	NA	11.63	≤30.00	PASS
11N20SISO	Ant1	5825	NA	11.20	≤30.00	PASS
11N40SISO	Ant1	5190	NA	11.40	≤23.98	PASS
11N40SISO	Ant1	5230	NA	11.72	≤23.98	PASS
11N40SISO	Ant1	5270	NA	11.55	≤23.98	PASS
11N40SISO	Ant1	5310	NA	11.82	≤23.98	PASS
11N40SISO	Ant1	5510	NA	11.92	≤23.98	PASS
11N40SISO	Ant1	5550	NA	12.12	≤23.98	PASS
11N40SISO	Ant1	5670	NA	11.62	≤23.98	PASS
11N40SISO	Ant1	5755	NA	11.49	≤30.00	PASS
11N40SISO	Ant1	5795	NA	11.04	≤30.00	PASS
11AC20SISO	Ant1	5180	NA	10.99	≤23.98	PASS
11AC20SISO	Ant1	5200	NA	11.25	≤23.98	PASS
11AC20SISO	Ant1	5240	NA	11.39	≤23.98	PASS
11AC20SISO	Ant1	5260	NA	11.39	≤23.98	PASS
11AC20SISO	Ant1	5280	NA	11.71	≤23.98	PASS

11AC20SISO	Ant1	5320	NA	11.73	≤23.98	PASS
11AC20SISO	Ant1	5500	NA	11.99	≤23.98	PASS
11AC20SISO	Ant1	5580	NA	11.94	≤23.98	PASS
11AC20SISO	Ant1	5700	NA	11.49	≤23.98	PASS
11AC20SISO	Ant1	5745	NA	11.59	≤30.00	PASS
11AC20SISO	Ant1	5785	NA	11.45	≤30.00	PASS
11AC20SISO	Ant1	5825	NA	10.91	≤30.00	PASS
11AC40SISO	Ant1	5190	NA	12.34	≤23.98	PASS
11AC40SISO	Ant1	5230	NA	12.29	≤23.98	PASS
11AC40SISO	Ant1	5270	NA	11.83	≤23.98	PASS
11AC40SISO	Ant1	5310	NA	12.07	≤23.98	PASS
11AC40SISO	Ant1	5510	NA	12.36	≤23.98	PASS
11AC40SISO	Ant1	5550	NA	12.41	≤23.98	PASS
11AC40SISO	Ant1	5670	NA	11.72	≤23.98	PASS
11AC40SISO	Ant1	5755	NA	11.64	≤30.00	PASS
11AC40SISO	Ant1	5795	NA	11.54	≤30.00	PASS
11AC80SISO	Ant1	5210	NA	12.09	≤23.98	PASS
11AC80SISO	Ant1	5290	NA	11.60	≤23.98	PASS
11AC80SISO	Ant1	5530	NA	11.60	≤23.98	PASS
11AC80SISO	Ant1	5610	NA	11.78	≤23.98	PASS
11AC80SISO	Ant1	5775	NA	12.01	≤30.00	PASS

Note: The Duty Cycle Factor is compensated in the test system

3.5 Power Spectral Density

3.5.1 Limit

FCC Part15, Subpart E (15.407)			
Section	Test Item	Limit	Frequency Range (MHz)
15.407(a)	Power Spectral Density	Master device: 17 dBm/MHz Client device: 11 dBm/MHz	5150-5250
		11 dBm/MHz	5250-5350
		11 dBm/MHz	5470-5725
		30 dBm/500 kHz	5725-5850

Note:

- For UNII-3, according to KDB publication 789033 D02 General UNII Test Procedures New Rules v02r01, section II.F.5., it is acceptable to set RBW at 300kHz and VBW at 1500kHz if the spectrum analyzer does not have 500 kHz RBW. Then, add 10 log (500 kHz/300 kHz) to the measured result, i.e. 2.22 dB.
- During the test of U-NII 3 PSD, the measurement result with RBW=300kHz has been added 2.22 dB by compensating offset, offset=cable loss+duty factor+10log(500kHz/300kHz).

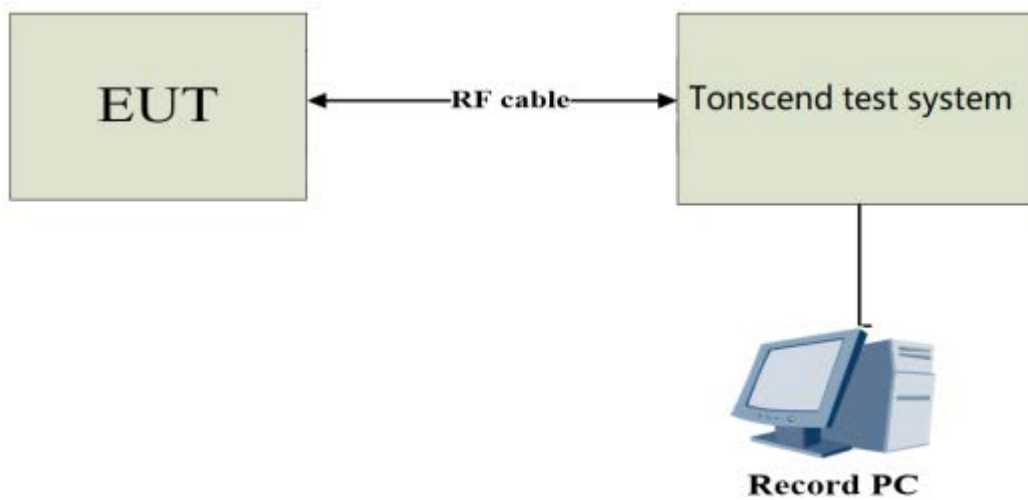
3.5.2 Test Procedure

Test Method	
●Conducted Measurement	○Radiated Measurement
Test Channels	
●Lowest, Middle and Highest Channel	○ Lowest and Highest Channel
Environmental conditions	
●Normal	○Normal and Extreme
Note:●:Test ○:No Test	

a) The EUT was directly connected to the tonscond test system and antenna output port as show in the block diagram below. Spectrum analyser settings as following:

Centre Frequency	The centre frequency of the channel under test
RBW	= 1 MHz (Band1/2/3); = 500kHz (Band4)
VBW	≥3 x RBW
Frequency span	2 x Nominal Channel Bandwidth
Detector Mode	RMS
Trace Mode	Max Hold
Sweep Time	Auto Couple

3.5.3 Test Setup



3.5.4 The Result

TestMode	Antenna	Frequency[MHz]	Result [dBm/MHz]	Limit[dBm/MHz]	Verdict
11A	Ant1	5180	1.32	≤11.00	PASS
11A	Ant1	5200	1.61	≤11.00	PASS
11A	Ant1	5240	1.81	≤11.00	PASS
11A	Ant1	5260	1.34	≤11.00	PASS
11A	Ant1	5280	1.85	≤11.00	PASS
11A	Ant1	5320	2.02	≤11.00	PASS
11A	Ant1	5500	2.38	≤11.00	PASS
11A	Ant1	5580	2.43	≤11.00	PASS
11A	Ant1	5700	1.43	≤11.00	PASS
11A	Ant1	5745	-1.10	≤30.00	PASS
11A	Ant1	5785	-0.89	≤30.00	PASS
11A	Ant1	5825	-1.43	≤30.00	PASS
11N20SISO	Ant1	5180	1.16	≤11.00	PASS
11N20SISO	Ant1	5200	1.31	≤11.00	PASS
11N20SISO	Ant1	5240	1.84	≤11.00	PASS
11N20SISO	Ant1	5260	1.51	≤11.00	PASS
11N20SISO	Ant1	5280	1.89	≤11.00	PASS
11N20SISO	Ant1	5320	1.62	≤11.00	PASS
11N20SISO	Ant1	5500	1.93	≤11.00	PASS
11N20SISO	Ant1	5580	1.97	≤11.00	PASS
11N20SISO	Ant1	5700	1.72	≤11.00	PASS
11N20SISO	Ant1	5745	-1.23	≤30.00	PASS
11N20SISO	Ant1	5785	-1.42	≤30.00	PASS
11N20SISO	Ant1	5825	-1.84	≤30.00	PASS
11N40SISO	Ant1	5190	-1.76	≤11.00	PASS
11N40SISO	Ant1	5230	-1.35	≤11.00	PASS
11N40SISO	Ant1	5270	-1.37	≤11.00	PASS
11N40SISO	Ant1	5310	-0.95	≤11.00	PASS
11N40SISO	Ant1	5510	-1.56	≤11.00	PASS
11N40SISO	Ant1	5550	-0.72	≤11.00	PASS
11N40SISO	Ant1	5670	-0.75	≤11.00	PASS
11N40SISO	Ant1	5755	-4.33	≤30.00	PASS
11N40SISO	Ant1	5795	-4.85	≤30.00	PASS
11AC20SISO	Ant1	5180	0.80	≤11.00	PASS
11AC20SISO	Ant1	5200	0.93	≤11.00	PASS
11AC20SISO	Ant1	5240	1.15	≤11.00	PASS
11AC20SISO	Ant1	5260	1.06	≤11.00	PASS
11AC20SISO	Ant1	5280	1.34	≤11.00	PASS
11AC20SISO	Ant1	5320	1.66	≤11.00	PASS

11AC20SISO	Ant1	5500	1.88	≤11.00	PASS
11AC20SISO	Ant1	5580	1.87	≤11.00	PASS
11AC20SISO	Ant1	5700	1.32	≤11.00	PASS
11AC20SISO	Ant1	5745	-1.44	≤30.00	PASS
11AC20SISO	Ant1	5785	-1.64	≤30.00	PASS
11AC20SISO	Ant1	5825	-2.06	≤30.00	PASS
11AC40SISO	Ant1	5190	-0.54	≤11.00	PASS
11AC40SISO	Ant1	5230	-0.70	≤11.00	PASS
11AC40SISO	Ant1	5270	-1.19	≤11.00	PASS
11AC40SISO	Ant1	5310	-1.06	≤11.00	PASS
11AC40SISO	Ant1	5510	-0.72	≤11.00	PASS
11AC40SISO	Ant1	5550	-0.43	≤11.00	PASS
11AC40SISO	Ant1	5670	-0.93	≤11.00	PASS
11AC40SISO	Ant1	5755	-4.19	≤30.00	PASS
11AC40SISO	Ant1	5795	-4.46	≤30.00	PASS
11AC80SISO	Ant1	5210	-3.99	≤11.00	PASS
11AC80SISO	Ant1	5290	-4.26	≤11.00	PASS
11AC80SISO	Ant1	5530	-4.25	≤11.00	PASS
11AC80SISO	Ant1	5610	-3.91	≤11.00	PASS
11AC80SISO	Ant1	5775	-6.40	≤30.00	PASS

Note: The Duty Cycle Factor is compensated in the test system

For UNII-3, according to KDB publication 789033 D02 General UNII Test Procedures New Rules v02r01, section II.F.5., it is acceptable to set RBW at 300kHz and VBW at 1500kHz if the spectrum analyzer does not have 500 kHz RBW. Then, add $10 \log(500 \text{ kHz}/300 \text{ kHz})$ to the measured result, i.e. 2.22 dB.

During the test of U-NII 3 PSD, the measurement result with RBW=300kHz has been added 2.22 dB by compensating offset, $\text{offset} = \text{cable loss} + \text{duty factor} + 10 \log(500 \text{ kHz}/300 \text{ kHz})$.

Test Graphs





11A-Ant1-5240-PASS



11A-Ant1-5260-PASS