

11AX20MIMO_Ant2_5785



11AX20MIMO_Ant1_5825



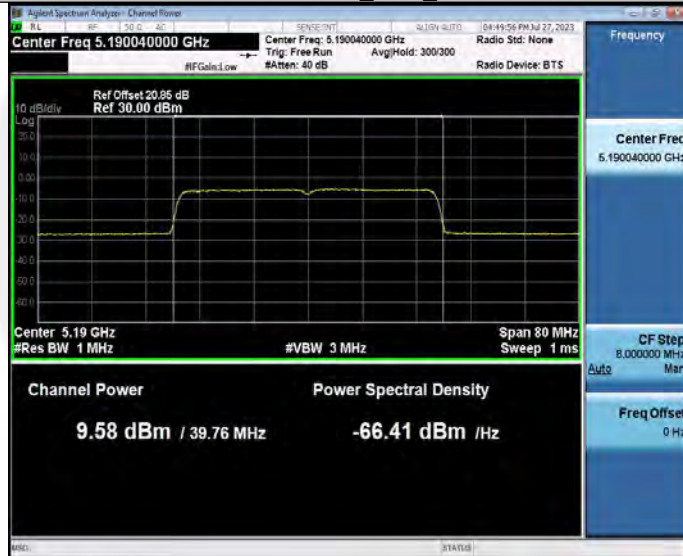
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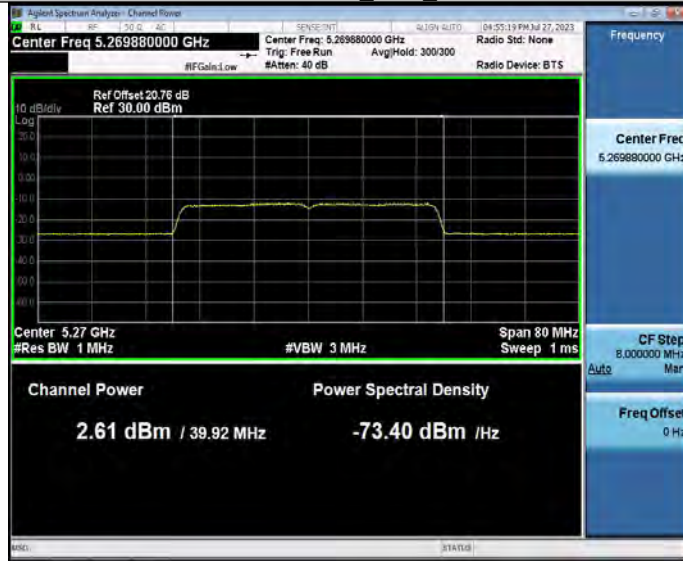
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11AX40MIMO_Ant1_5310



11AX40MIMO_Ant2_5310



11AX40MIMO_Ant2_5310



11AX40MIMO_Ant1_5510



11AX40MIMO_Ant1_5510



11AX40MIMO_Ant2_5510



11AX40MIMO_Ant2_5510



11AX40MIMO_Ant1_5550



11AX40MIMO_Ant1_5550



11AX40MIMO_Ant2_5550



11AX40MIMO_Ant2_5550



11AX40MIMO_Ant1_5670



11AX40MIMO_Ant1_5670



11AX40MIMO_Ant2_5670



11AX40MIMO_Ant2_5670



11AX40MIMO_Ant1_5755



11AX40MIMO_Ant2_5755



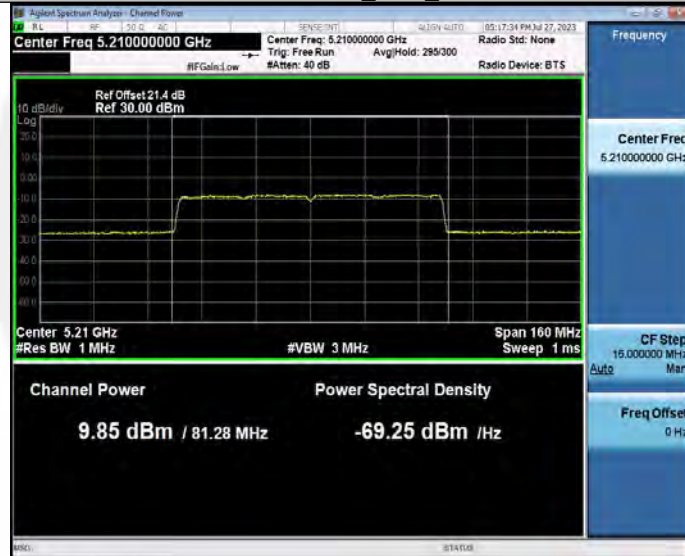
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11AX40MIMO_Ant2_5795



11AX80MIMO_Ant1_5210



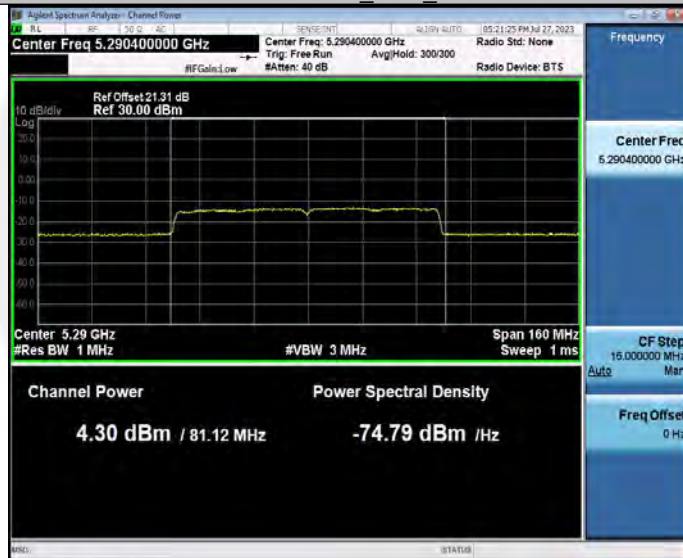
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11AX80MIMO_Ant1_5290



11AX80MIMO_Ant1_5290



11AX80MIMO_Ant2_5290



11AX80MIMO_Ant2_5290



11AX80MIMO_Ant1_5530



11AX80MIMO_Ant1_5530



11AX80MIMO_Ant2_5530



11AX80MIMO_Ant2_5530



11AX80MIMO_Ant1_5610



11AX80MIMO_Ant1_5610



11AX80MIMO_Ant2_5610



11AX80MIMO_Ant2_5610



11AX80MIMO_Ant1_5775



11AX80MIMO_Ant2_5775



8.3 MAXIMUM PEAK POWER DENSITY

8.3.1 Applicable Standard

According to FCC Part 15.407(a)(1) for UNII Band I
According to FCC Part 15.407(a)(2) for UNII Band II-A and UNII Band II-C
According to FCC Part 15.407(a)(3) for UNII Band III
According to 789033 D02 Section II(F)

8.3.2 Conformance Limit

■ For the band 5.15-5.25 GHz

(a) (1) (i) For an outdoor 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. 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. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(a) (1) (ii) 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. 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.

(a) (1) (iii) For fixed point-to-point access points 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. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(a) (1) (iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. 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

(b) (2) the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 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 band 5.725-5.85 GHz

(a) (3) For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz 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.

8.3.3 Test Configuration

Test according to clause 6.1 radio frequency test setup 1.

8.3.4 Test Procedure

Methods refer to FCC KDB 789033.

For devices operating in the bands 5.15-5.25 GHz, 5.25-5.35 GHz, and 5.47-5.725 GHz, the above procedures make use of 1 MHz RBW to satisfy directly the 1 MHz reference bandwidth specified in § 15.407(a)(5). For devices operating in the band 5.725-5.85 GHz, the rules specify a measurement bandwidth of 500 kHz. Many spectrum analyzers do not have 500 kHz RBW, thus a narrower RBW may need to be used. The rules permit the use of a RBWs less than 1 MHz, or 500 kHz, “provided that the measured power is integrated over the full reference bandwidth” to show the total power over the specified measurement bandwidth (i.e., 1 MHz, or 500 kHz). If measurements are performed using a reduced resolution bandwidth (< 1 MHz, or < 500 kHz) and integrated over 1 MHz, or 500 kHz bandwidth, the following adjustments to the procedures apply:

- a) Set $RBW \geq 1/T$, where T is defined in section II.B.I.a).
- b) Set $VBW \geq 3 RBW$.
- c) If measurement bandwidth of Maximum PSD is specified in 500 kHz, add $10\log(500\text{kHz}/RBW)$ to the measured result, whereas RBW (< 500 kHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.
- d) If measurement bandwidth of Maximum PSD is specified in 1 MHz, add $10\log(1\text{MHz}/RBW)$ to the measured result, whereas RBW (< 1 MHz) is the reduced resolution bandwidth of spectrum analyzer set during measurement.
- e) Care must be taken to ensure that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.

Note: As a practical matter, it is recommended to use reduced RBW of 100 kHz for the sections.

5.c) and 5.d) above, since RBW=100 kHz is available on nearly all spectrum analyzers.

8.3.5 Test Results

TestMode	Antenna	Frequency[MHz]	Result [dBm/MHz]	Limit[dBm/MHz]	Verdict	
11A	Ant1	5180	-1.41	≤11.00	PASS	
	Ant2	5180	-0.93	≤11.00	PASS	
	Ant1	5200	-0.66	≤11.00	PASS	
	Ant2	5200	-1.05	≤11.00	PASS	
	Ant1	5240	0.12	≤11.00	PASS	
	Ant2	5240	-1.48	≤11.00	PASS	
	Ant1	5260	0.26	≤11.00	PASS	
	Ant2	5260	-1.94	≤11.00	PASS	
	Ant1	5280	0.26	≤11.00	PASS	
	Ant2	5280	-1.24	≤11.00	PASS	
	Ant1	5320	0.33	≤11.00	PASS	
	Ant2	5320	-1.76	≤11.00	PASS	
	Ant1	5500	1.53	≤11.00	PASS	
	Ant2	5500	-0.86	≤11.00	PASS	
	Ant1	5580	2.34	≤11.00	PASS	
	Ant2	5580	-0.3	≤11.00	PASS	
	Ant1	5700	1.05	≤11.00	PASS	
	Ant2	5700	0.1	≤11.00	PASS	
	Ant1	5745	-1.77	≤30.00	PASS	
	Ant2	5745	-2.36	≤30.00	PASS	
	11N20MIMO	Ant1	5785	-2.58	≤30.00	PASS
		Ant2	5785	-2.42	≤30.00	PASS
Ant1		5825	-1.95	≤30.00	PASS	
Ant2		5825	-2.57	≤30.00	PASS	
Ant1		5180	-1.43	≤11.00	PASS	
Ant2		5180	-1.24	≤11.00	PASS	
total		5180	1.68	≤11.00	PASS	
Ant1		5200	-1.22	≤11.00	PASS	
Ant2		5200	-1.36	≤11.00	PASS	
total		5200	1.72	≤11.00	PASS	
Ant1		5240	0.16	≤11.00	PASS	
Ant2		5240	-0.66	≤11.00	PASS	
total		5240	2.78	≤11.00	PASS	
Ant1		5260	-0.07	≤11.00	PASS	
Ant2		5260	-1.25	≤11.00	PASS	
total		5260	2.39	≤11.00	PASS	
Ant1		5280	0.2	≤11.00	PASS	
Ant2		5280	-1.51	≤11.00	PASS	
total		5280	2.44	≤11.00	PASS	
Ant1		5320	-0.2	≤11.00	PASS	
Ant2		5320	-1.91	≤11.00	PASS	
total		5320	2.04	≤11.00	PASS	
Ant1	5500	1.18	≤11.00	PASS		
Ant2	5500	-1.16	≤11.00	PASS		
total	5500	3.18	≤11.00	PASS		
Ant1	5580	2.14	≤11.00	PASS		
Ant2	5580	-0.4	≤11.00	PASS		
total	5580	4.06	≤11.00	PASS		
Ant1	5700	1.22	≤11.00	PASS		
Ant2	5700	-0.79	≤11.00	PASS		

	total	5700	3.34	≤11.00	PASS
	Ant1	5745	-2.04	≤30.00	PASS
	Ant2	5745	-2.98	≤30.00	PASS
	total	5745	0.53	≤30.00	PASS
	Ant1	5785	-2.61	≤30.00	PASS
	Ant2	5785	-3.35	≤30.00	PASS
	total	5785	0.05	≤30.00	PASS
	Ant1	5825	-2.54	≤30.00	PASS
	Ant2	5825	-3.86	≤30.00	PASS
	total	5825	-0.14	≤30.00	PASS
11N40MIMO	Ant1	5190	-4.64	≤11.00	PASS
	Ant2	5190	-5.11	≤11.00	PASS
	total	5190	-1.86	≤11.00	PASS
	Ant1	5230	-4.26	≤11.00	PASS
	Ant2	5230	-4.64	≤11.00	PASS
	total	5230	-1.44	≤11.00	PASS
	Ant1	5270	-3.6	≤11.00	PASS
	Ant2	5270	-5.58	≤11.00	PASS
	total	5270	-1.47	≤11.00	PASS
	Ant1	5310	-3.78	≤11.00	PASS
	Ant2	5310	-6.61	≤11.00	PASS
	total	5310	-1.96	≤11.00	PASS
	Ant1	5510	-2.54	≤11.00	PASS
	Ant2	5510	-5.2	≤11.00	PASS
	total	5510	-0.66	≤11.00	PASS
	Ant1	5550	-1.93	≤11.00	PASS
	Ant2	5550	-5.09	≤11.00	PASS
	total	5550	-0.22	≤11.00	PASS
	Ant1	5670	-2.28	≤11.00	PASS
	Ant2	5670	-4.78	≤11.00	PASS
	total	5670	-0.34	≤11.00	PASS
	Ant1	5755	-5.78	≤30.00	PASS
	Ant2	5755	-6.81	≤30.00	PASS
	total	5755	-3.25	≤30.00	PASS
	Ant1	5795	-6.45	≤30.00	PASS
	Ant2	5795	-7.02	≤30.00	PASS
	total	5795	-3.72	≤30.00	PASS
11AC20MIMO	Ant1	5180	-1.48	≤11.00	PASS
	Ant2	5180	-1.21	≤11.00	PASS
	total	5180	1.67	≤11.00	PASS
	Ant1	5200	-1.56	≤11.00	PASS
	Ant2	5200	-1.34	≤11.00	PASS
	total	5200	1.56	≤11.00	PASS
	Ant1	5240	0.1	≤11.00	PASS
	Ant2	5240	-1.05	≤11.00	PASS
	total	5240	2.57	≤11.00	PASS
	Ant1	5260	-0.41	≤11.00	PASS
	Ant2	5260	-1.46	≤11.00	PASS
	total	5260	2.11	≤11.00	PASS
	Ant1	5280	-0.07	≤11.00	PASS
	Ant2	5280	-1.67	≤11.00	PASS
	total	5280	2.21	≤11.00	PASS
	Ant1	5320	-0.21	≤11.00	PASS
	Ant2	5320	-1.72	≤11.00	PASS
	total	5320	2.11	≤11.00	PASS

	Ant1	5500	1.1	≤11.00	PASS
	Ant2	5500	-1.39	≤11.00	PASS
	total	5500	3.04	≤11.00	PASS
	Ant1	5580	2.02	≤11.00	PASS
	Ant2	5580	-0.45	≤11.00	PASS
	total	5580	3.97	≤11.00	PASS
	Ant1	5700	0.67	≤11.00	PASS
	Ant2	5700	-0.43	≤11.00	PASS
	total	5700	3.17	≤11.00	PASS
	Ant1	5745	-2.14	≤30.00	PASS
	Ant2	5745	-2.55	≤30.00	PASS
	total	5745	0.67	≤30.00	PASS
	Ant1	5785	-2.71	≤30.00	PASS
	Ant2	5785	-2.85	≤30.00	PASS
	total	5785	0.23	≤30.00	PASS
	Ant1	5825	-2.37	≤30.00	PASS
	Ant2	5825	-3.28	≤30.00	PASS
	total	5825	0.21	≤30.00	PASS
11AC40MIMO	Ant1	5190	-4.8	≤11.00	PASS
	Ant2	5190	-5.23	≤11.00	PASS
	total	5190	-2.00	≤11.00	PASS
	Ant1	5230	-4.09	≤11.00	PASS
	Ant2	5230	-4.92	≤11.00	PASS
	total	5230	-1.47	≤11.00	PASS
	Ant1	5270	-3.75	≤11.00	PASS
	Ant2	5270	-5.23	≤11.00	PASS
	total	5270	-1.42	≤11.00	PASS
	Ant1	5310	-3.92	≤11.00	PASS
	Ant2	5310	-5.74	≤11.00	PASS
	total	5310	-1.73	≤11.00	PASS
	Ant1	5510	-2.71	≤11.00	PASS
	Ant2	5510	-5.11	≤11.00	PASS
	total	5510	-0.74	≤11.00	PASS
	Ant1	5550	-1.96	≤11.00	PASS
	Ant2	5550	-4.72	≤11.00	PASS
	total	5550	-0.11	≤11.00	PASS
	Ant1	5670	-2.36	≤11.00	PASS
	Ant2	5670	-3.93	≤11.00	PASS
	total	5670	-0.06	≤11.00	PASS
	Ant1	5755	-6.32	≤30.00	PASS
	Ant2	5755	-6.92	≤30.00	PASS
	total	5755	-3.60	≤30.00	PASS
Ant1	5795	-6.35	≤30.00	PASS	
Ant2	5795	-7.07	≤30.00	PASS	
total	5795	-3.68	≤30.00	PASS	
11AC80MIMO	Ant1	5210	-7.72	≤11.00	PASS
	Ant2	5210	-7.85	≤11.00	PASS
	total	5210	-4.77	≤11.00	PASS
	Ant1	5290	-6.56	≤11.00	PASS
	Ant2	5290	-8.89	≤11.00	PASS
	total	5290	-4.56	≤11.00	PASS
	Ant1	5530	-5.77	≤11.00	PASS
	Ant2	5530	-7.5	≤11.00	PASS
	total	5530	-3.54	≤11.00	PASS
	Ant1	5610	-4.97	≤11.00	PASS

	Ant2	5610	-6.77	≤11.00	PASS
	total	5610	-2.77	≤11.00	PASS
	Ant1	5775	-9.72	≤30.00	PASS
	Ant2	5775	-10.19	≤30.00	PASS
	total	5775	-6.94	≤30.00	PASS
11AX20MIMO	Ant1	5180	-1.42	≤11.00	PASS
	Ant2	5180	-1.07	≤11.00	PASS
	total	5180	1.77	≤11.00	PASS
	Ant1	5200	-0.88	≤11.00	PASS
	Ant2	5200	-1.03	≤11.00	PASS
	total	5200	2.06	≤11.00	PASS
	Ant1	5240	0.15	≤11.00	PASS
	Ant2	5240	-0.5	≤11.00	PASS
	total	5240	2.85	≤11.00	PASS
	Ant1	5260	-0.16	≤11.00	PASS
	Ant2	5260	-0.71	≤11.00	PASS
	total	5260	2.58	≤11.00	PASS
	Ant1	5280	0.21	≤11.00	PASS
	Ant2	5280	-1.17	≤11.00	PASS
	total	5280	2.58	≤11.00	PASS
	Ant1	5320	0.36	≤11.00	PASS
	Ant2	5320	-2.16	≤11.00	PASS
	total	5320	2.29	≤11.00	PASS
	Ant1	5500	1.47	≤11.00	PASS
	Ant2	5500	-1.02	≤11.00	PASS
	total	5500	3.41	≤11.00	PASS
	Ant1	5580	2.28	≤11.00	PASS
	Ant2	5580	-0.41	≤11.00	PASS
	total	5580	4.15	≤11.00	PASS
	Ant1	5700	0.9	≤11.00	PASS
	Ant2	5700	0.04	≤11.00	PASS
	total	5700	3.50	≤11.00	PASS
	Ant1	5745	-2.22	≤30.00	PASS
	Ant2	5745	-2.66	≤30.00	PASS
	total	5745	0.58	≤30.00	PASS
	Ant1	5785	-2.17	≤30.00	PASS
	Ant2	5785	-2.65	≤30.00	PASS
	total	5785	0.61	≤30.00	PASS
Ant1	5825	-2.47	≤30.00	PASS	
Ant2	5825	-2.62	≤30.00	PASS	
total	5825	0.47	≤30.00	PASS	
11AX40MIMO	Ant1	5190	-4.92	≤11.00	PASS
	Ant2	5190	-4.78	≤11.00	PASS
	total	5190	-1.84	≤11.00	PASS
	Ant1	5230	-3.93	≤11.00	PASS
	Ant2	5230	-4.86	≤11.00	PASS
	total	5230	-1.36	≤11.00	PASS
	Ant1	5270	-3.27	≤11.00	PASS
	Ant2	5270	-5.23	≤11.00	PASS
	total	5270	-1.13	≤11.00	PASS
	Ant1	5310	-3.68	≤11.00	PASS
	Ant2	5310	-5.73	≤11.00	PASS
	total	5310	-1.57	≤11.00	PASS
	Ant1	5510	-2.19	≤11.00	PASS
	Ant2	5510	-4.92	≤11.00	PASS

	total	5510	-0.33	≤11.00	PASS
	Ant1	5550	-1.92	≤11.00	PASS
	Ant2	5550	-4.54	≤11.00	PASS
	total	5550	-0.03	≤11.00	PASS
	Ant1	5670	-2.41	≤11.00	PASS
	Ant2	5670	-4.04	≤11.00	PASS
	total	5670	-0.14	≤11.00	PASS
	Ant1	5755	-5.73	≤30.00	PASS
	Ant2	5755	-6.73	≤30.00	PASS
	total	5755	-3.19	≤30.00	PASS
	Ant1	5795	-6.17	≤30.00	PASS
	Ant2	5795	-7.08	≤30.00	PASS
	total	5795	-3.59	≤30.00	PASS
11AX80MIMO	Ant1	5210	-7.44	≤11.00	PASS
	Ant2	5210	-7.76	≤11.00	PASS
	total	5210	-4.59	≤11.00	PASS
	Ant1	5290	-6.95	≤11.00	PASS
	Ant2	5290	-8.59	≤11.00	PASS
	total	5290	-4.68	≤11.00	PASS
	Ant1	5530	-5.26	≤11.00	PASS
	Ant2	5530	-7.58	≤11.00	PASS
	total	5530	-3.26	≤11.00	PASS
	Ant1	5610	-4.7	≤11.00	PASS
	Ant2	5610	-6.79	≤11.00	PASS
	total	5610	-2.61	≤11.00	PASS
	Ant1	5775	-9.41	≤30.00	PASS
	Ant2	5775	-9.59	≤30.00	PASS
	total	5775	-6.49	≤30.00	PASS

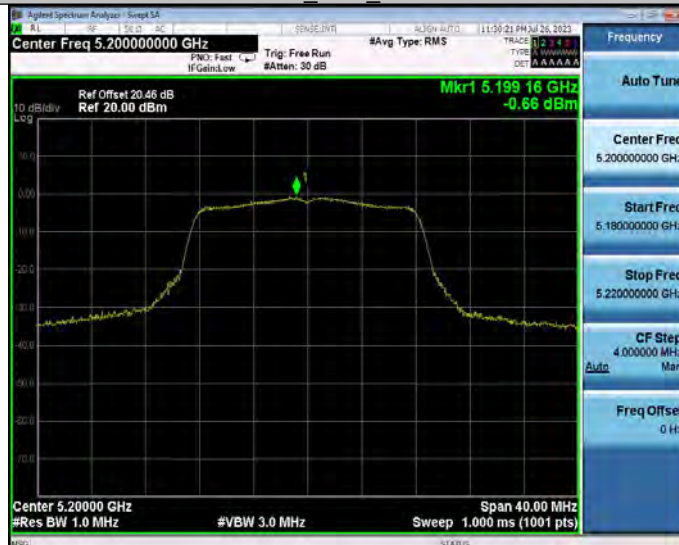
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11A_Ant2_5180



11A_Ant1_5200



11A_Ant2_5200



11A_Ant1_5240



11A_Ant2_5240



11A_Ant1_5260



11A_Ant2_5260



11A_Ant1_5280



11A_Ant2_5280



11A_Ant1_5320



11A_Ant2_5320



11A_Ant1_5500



11A_Ant2_5500



11A_Ant1_5580



11A_Ant2_5580



11A_Ant1_5700



11A_Ant2_5700



11A_Ant1_5745



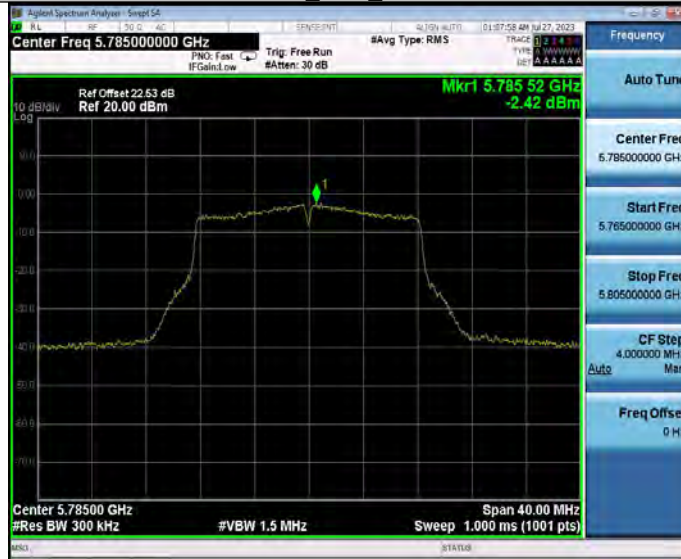
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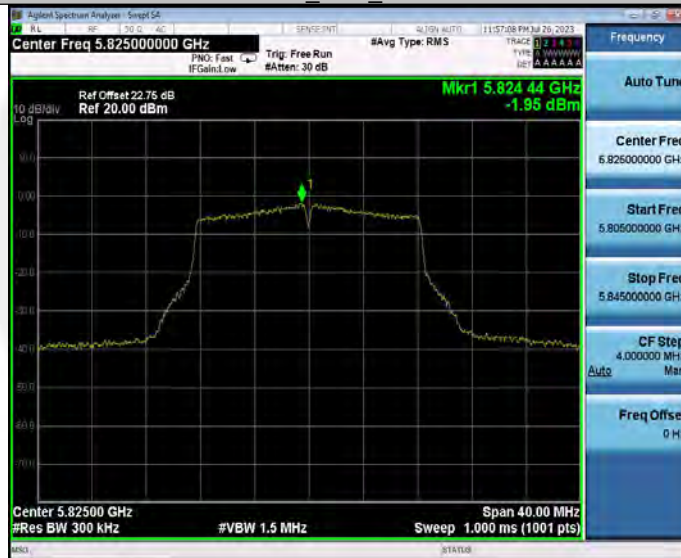
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11A_Ant2_5785



11A_Ant1_5825



11A_Ant2_5825



11N20MIMO_Ant1_5180



11N20MIMO_Ant2_5180



11N20MIMO_Ant1_5200



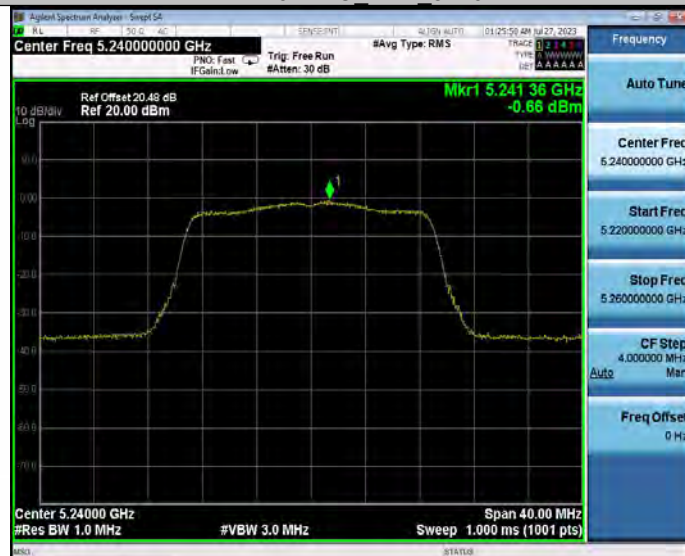
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11N20MIMO_Ant1_5240



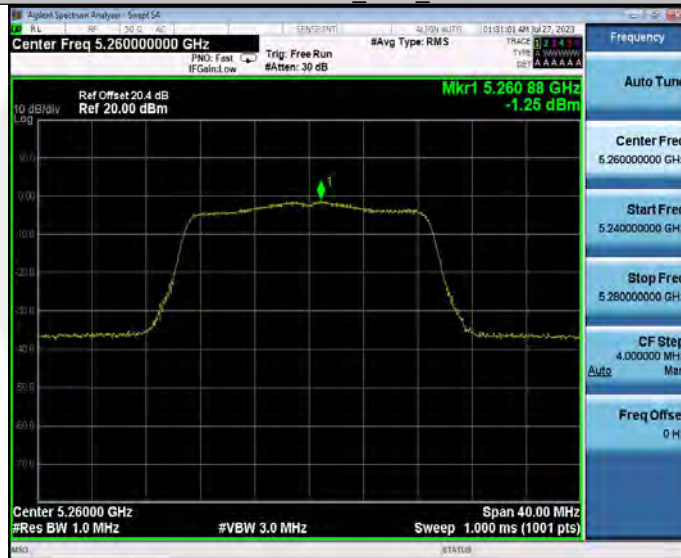
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11N20MIMO Ant1 5260



11N20MIMO Ant2 5260



11N20MIMO Ant1 5280



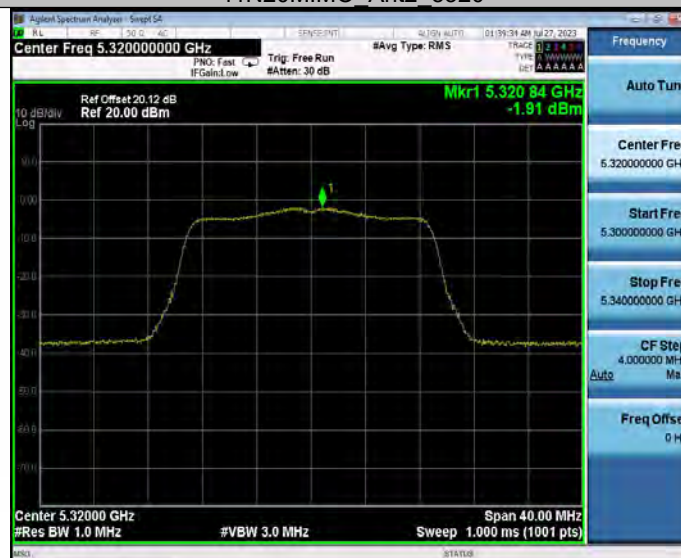
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11N20MIMO_Ant1_5320



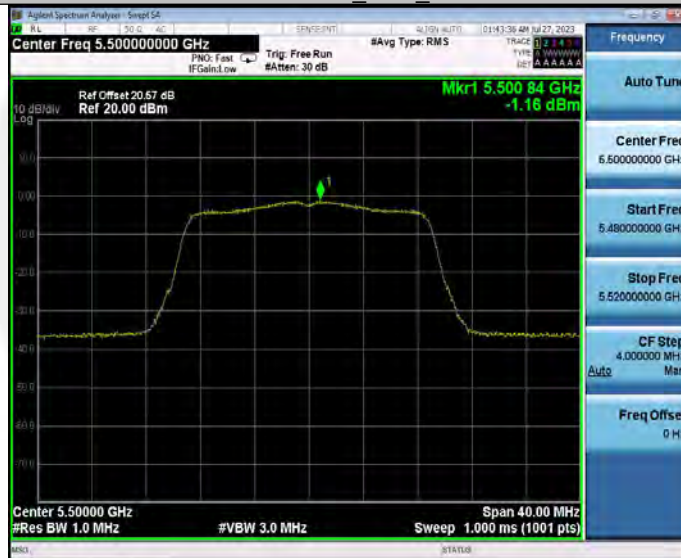
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11N20MIMO_Ant2_5500



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11N20MIMO_Ant2_5580



11N20MIMO_Ant1_5700



11N20MIMO_Ant2_5700



11N20MIMO Ant1 5745



11N20MIMO Ant2 5745



11N20MIMO Ant1 5785



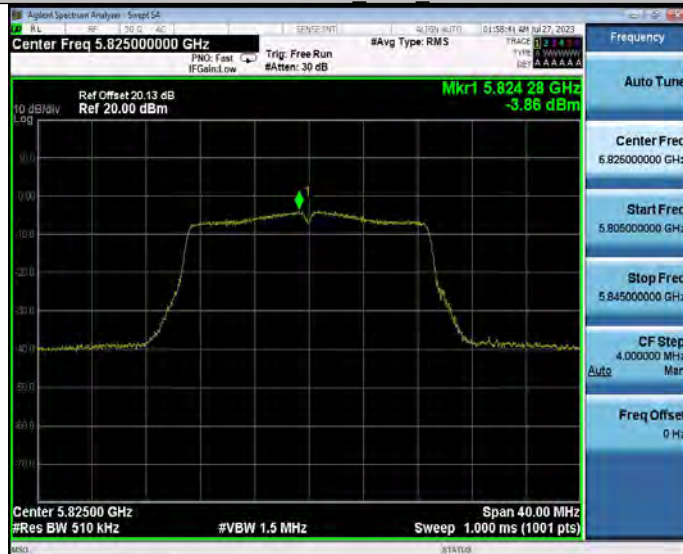
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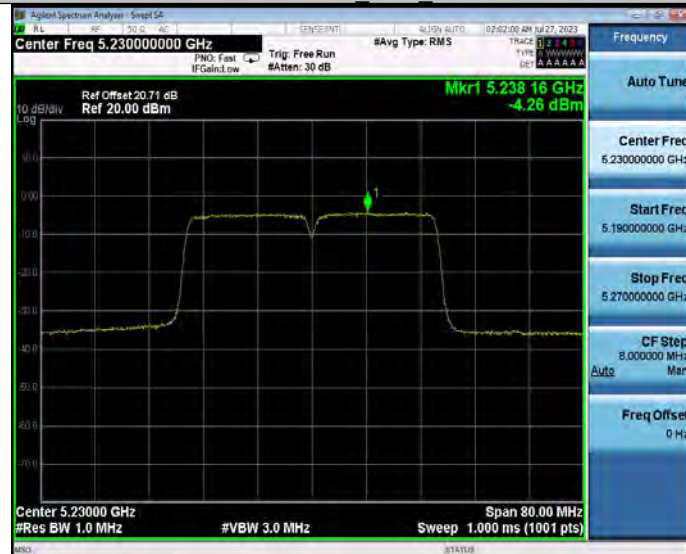
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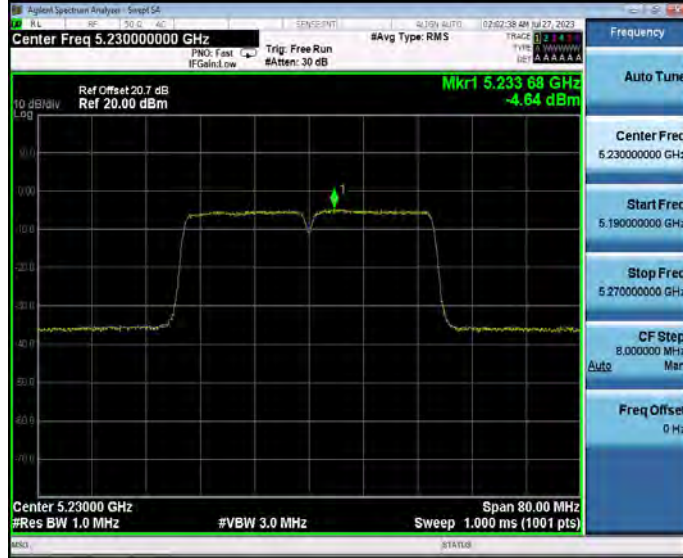
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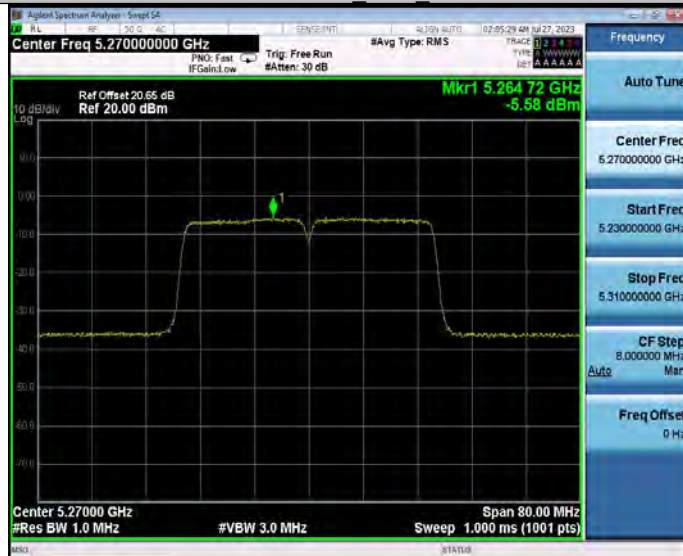
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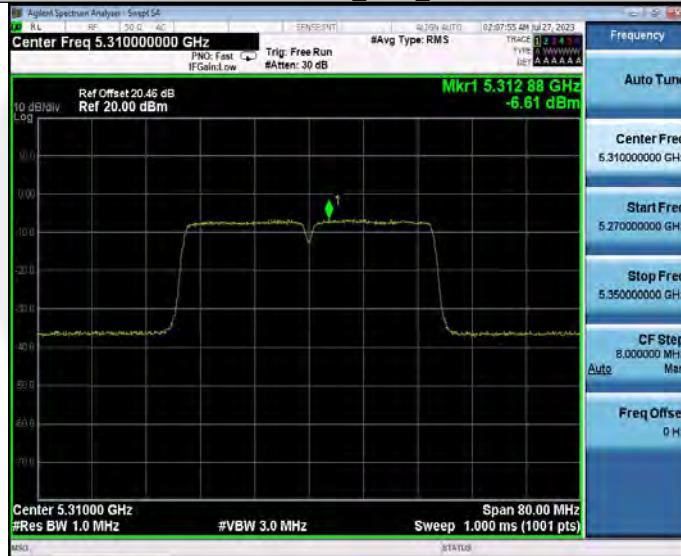
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11N40MIMO Ant1 5310



11N40MIMO Ant2 5310



11N40MIMO Ant1 5510



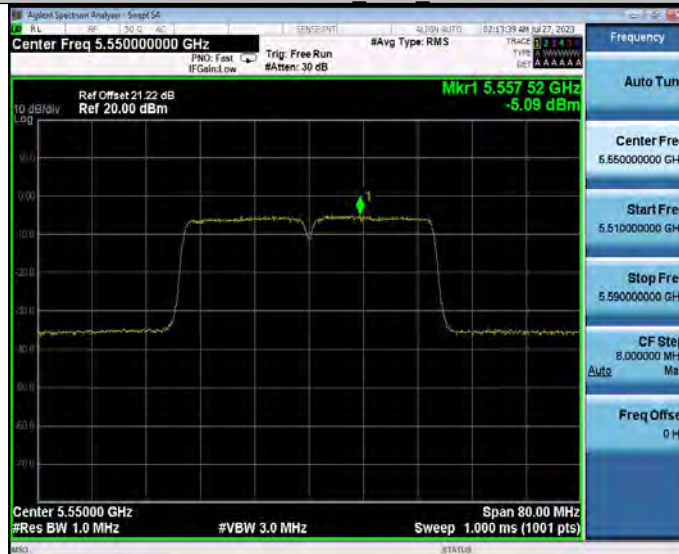
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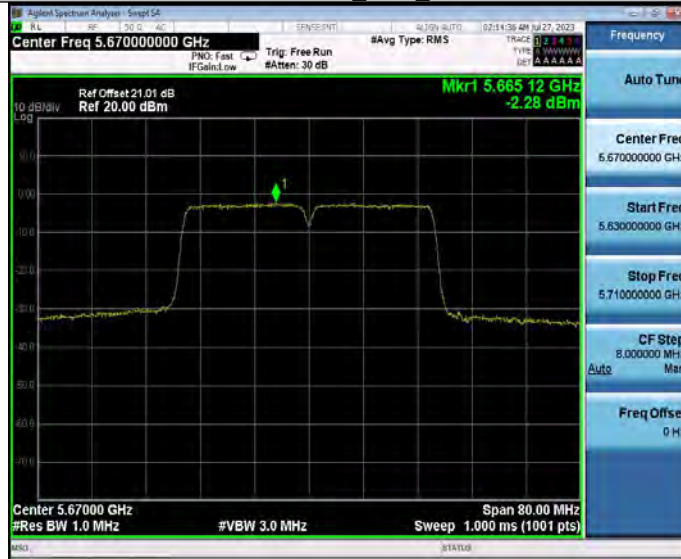
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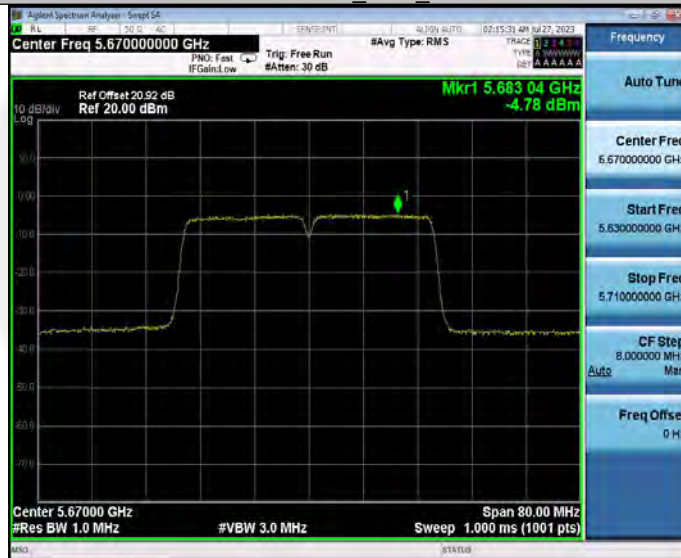
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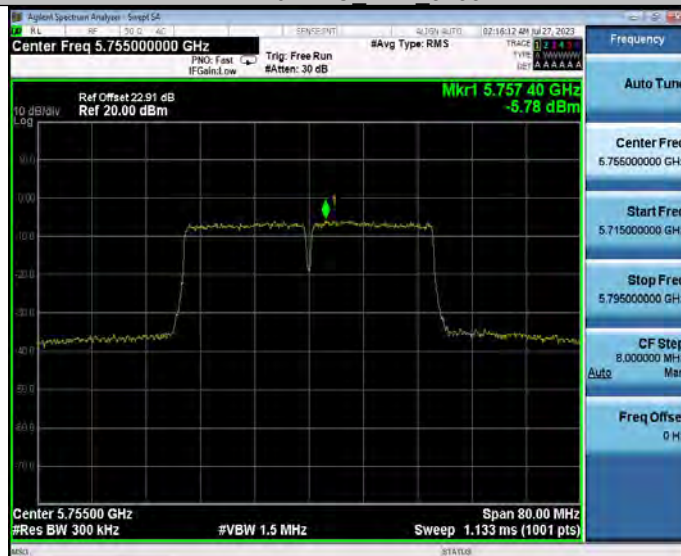
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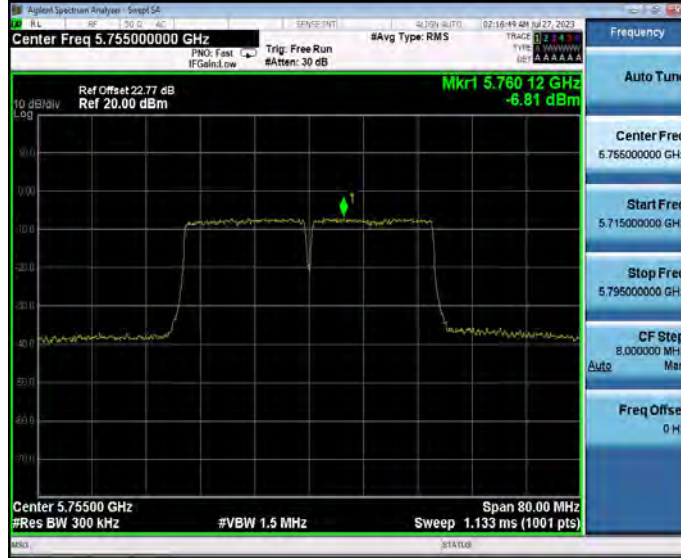
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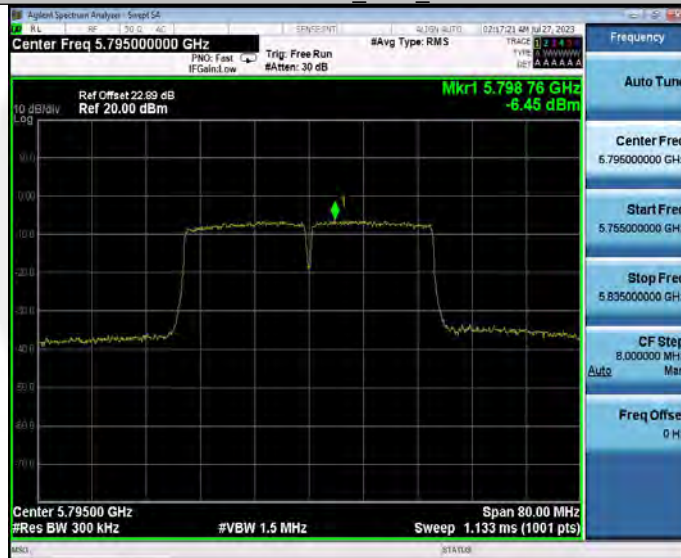
11N40MIMO Ant1 5755



11N40MIMO_Ant2_5755



11N40MIMO_Ant1_5795



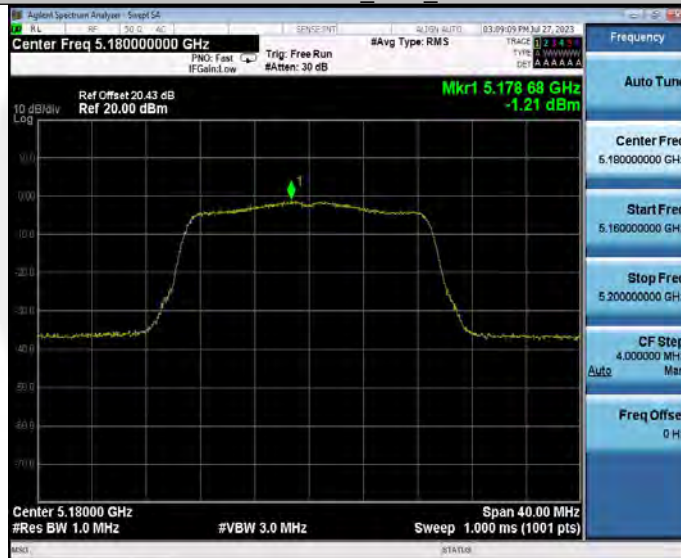
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11AC20MIMO_Ant1_5180



11AC20MIMO_Ant2_5180



11AC20MIMO_Ant1_5200



11AC20MIMO_Ant2_5200



11AC20MIMO_Ant1_5240



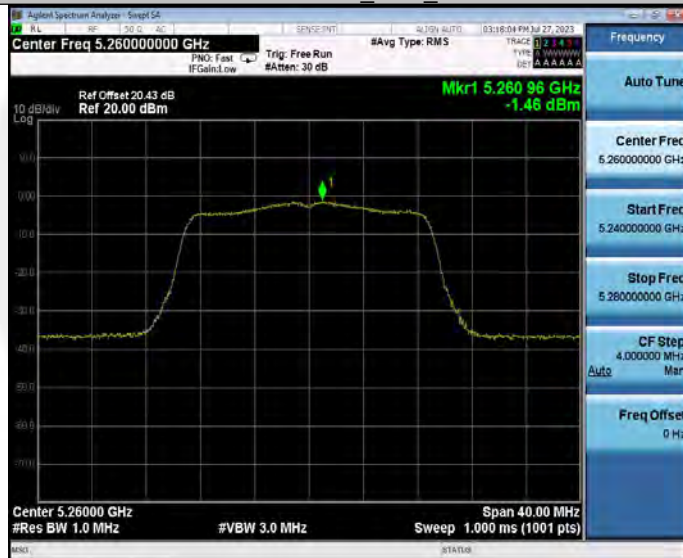
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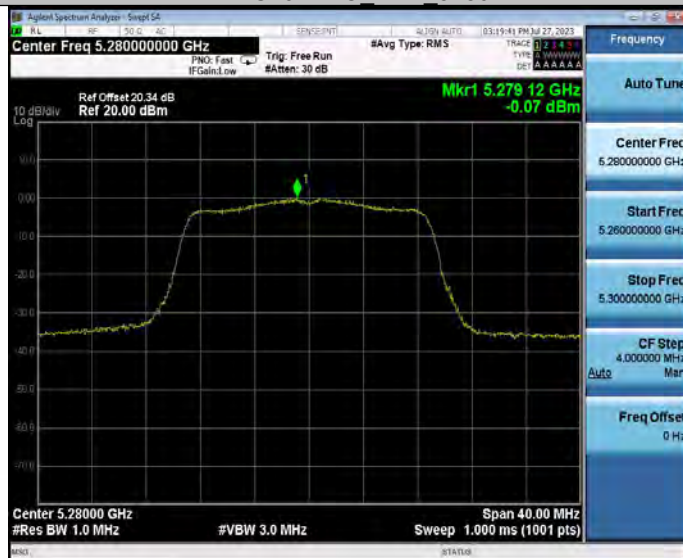
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11AC20MIMO_Ant1_5280



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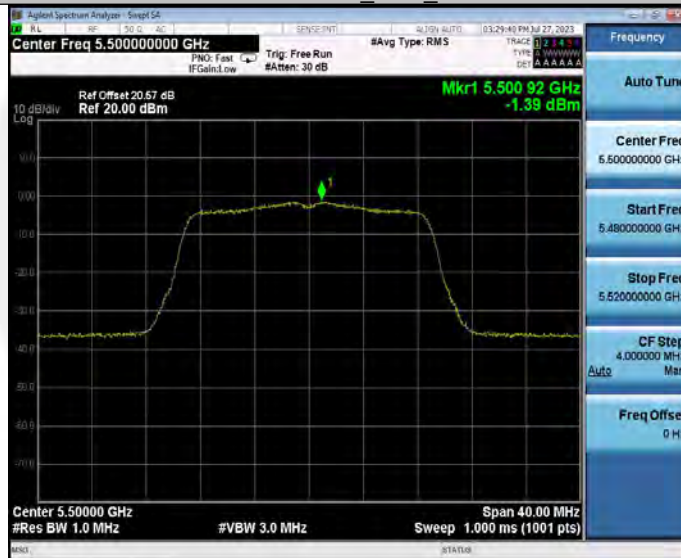
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11AC20MIMO_Ant1_5500



11AC20MIMO_Ant2_5500



11AC20MIMO_Ant1_5580



11AC20MIMO_Ant2_5580



11AC20MIMO_Ant1_5700



11AC20MIMO_Ant2_5700



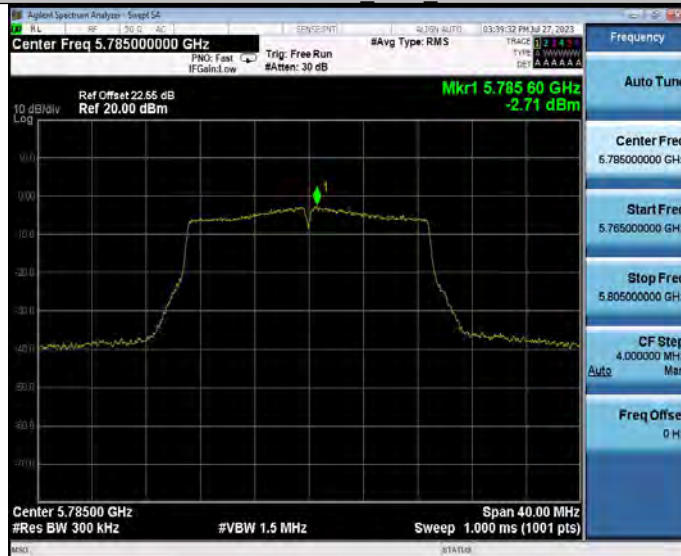
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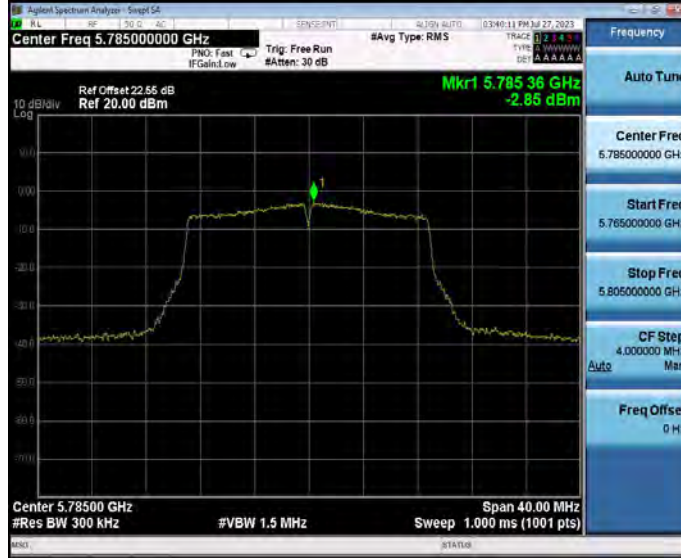
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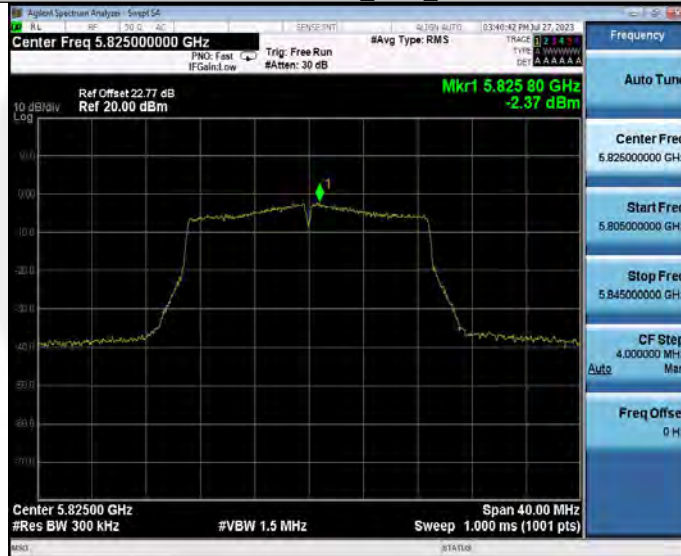
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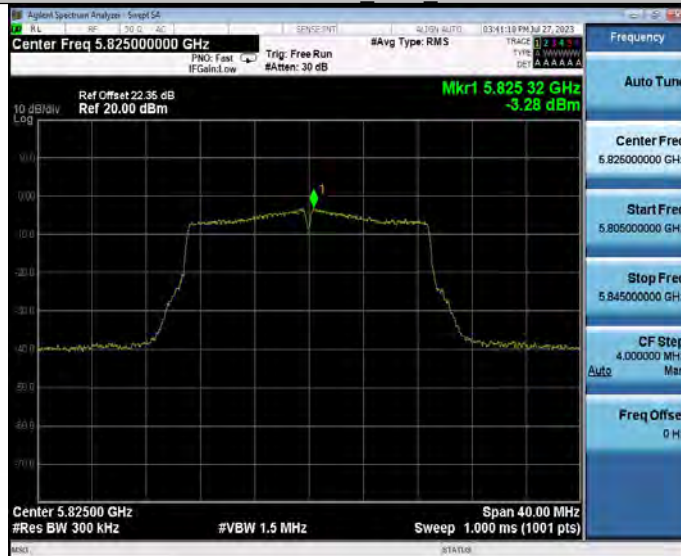
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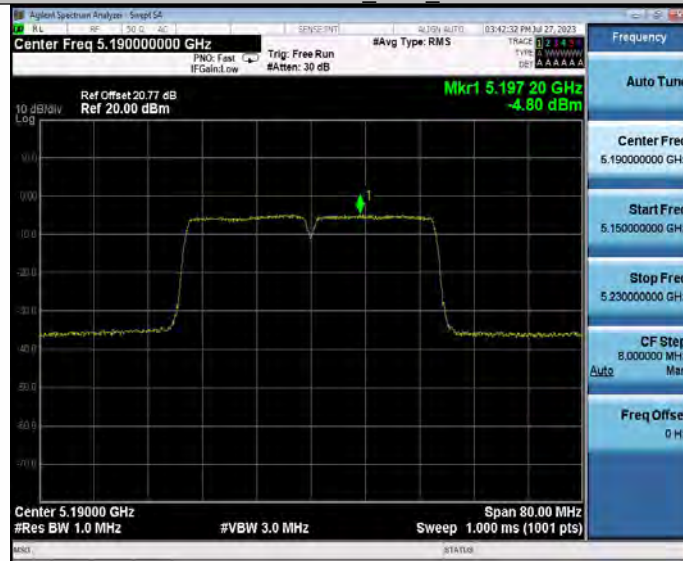
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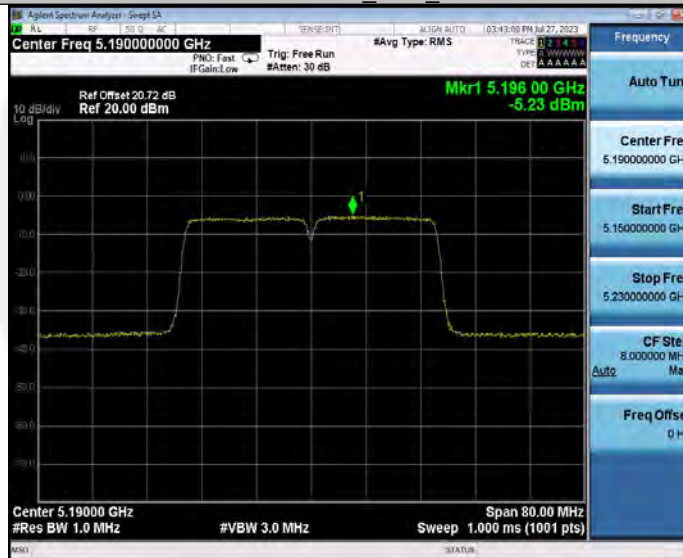
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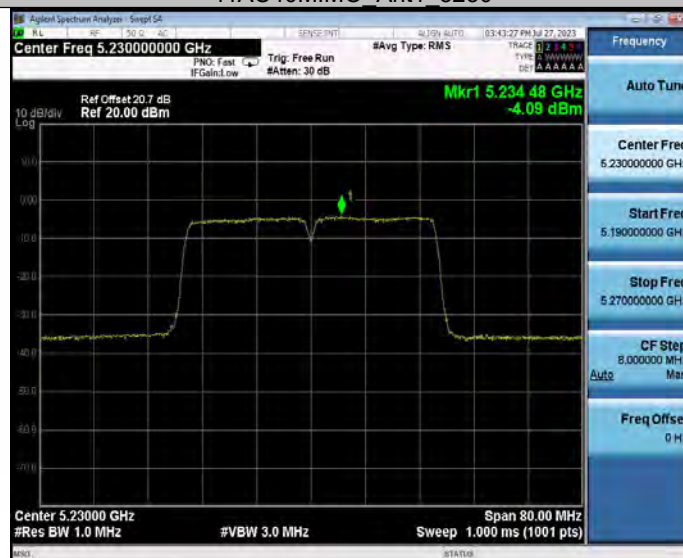
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11AC40MIMO_Ant2_5190



11AC40MIMO_Ant1_5230



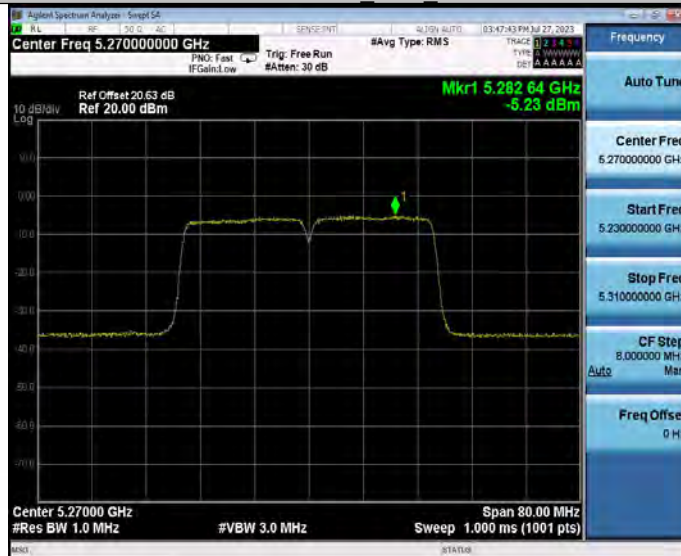
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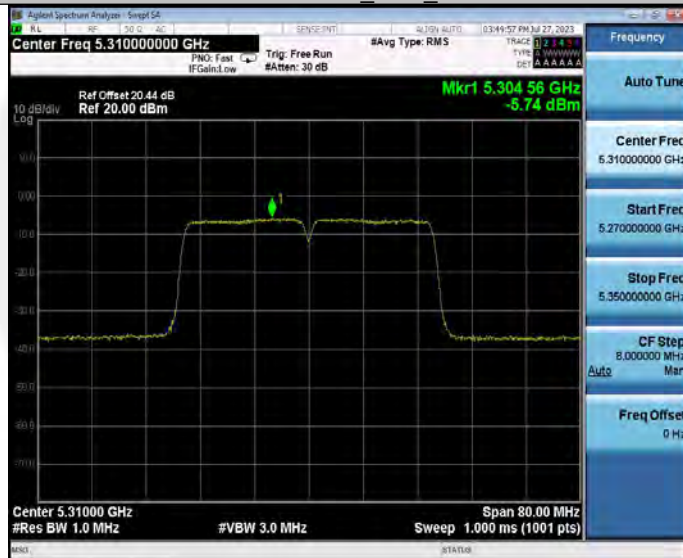
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11AC40MIMO_Ant2_5310



11AC40MIMO_Ant1_5510



11AC40MIMO_Ant2_5510



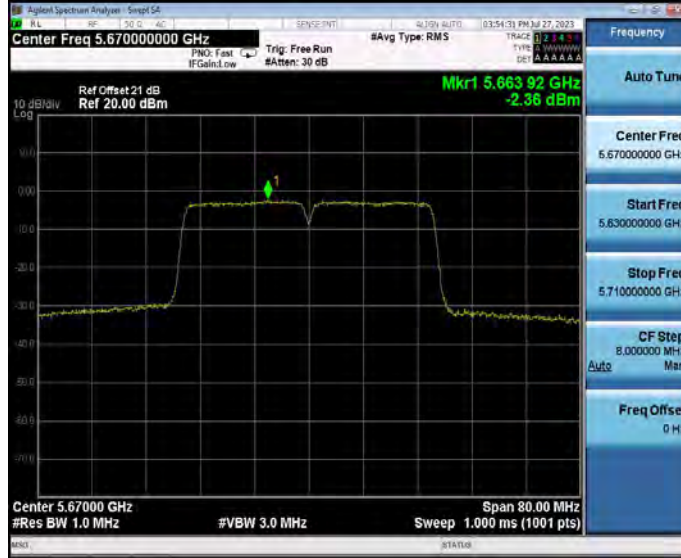
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11AC40MIMO_Ant2_5550



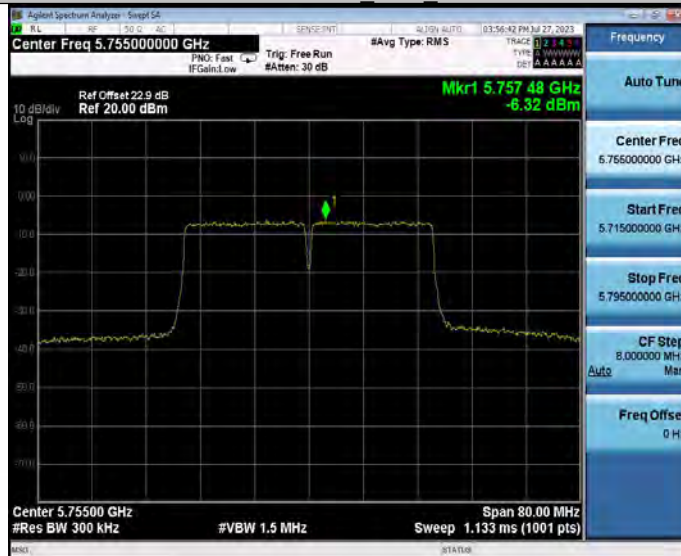
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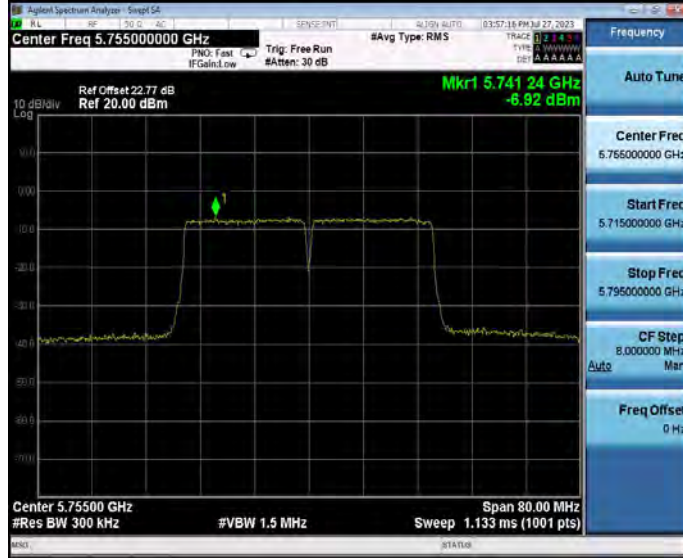
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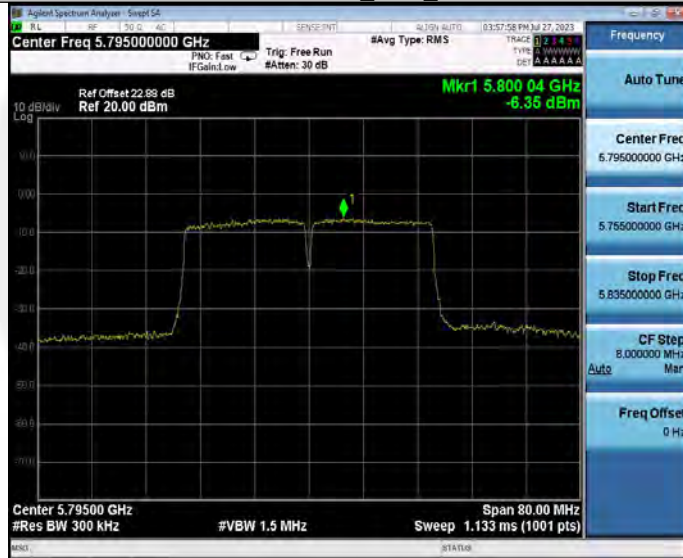
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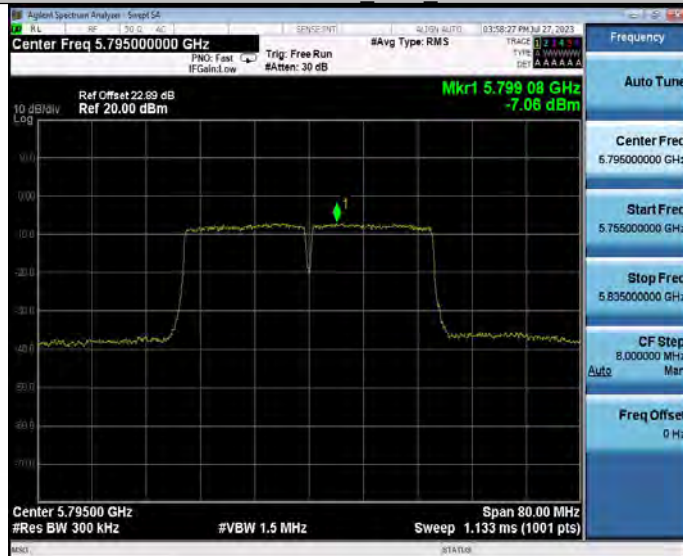
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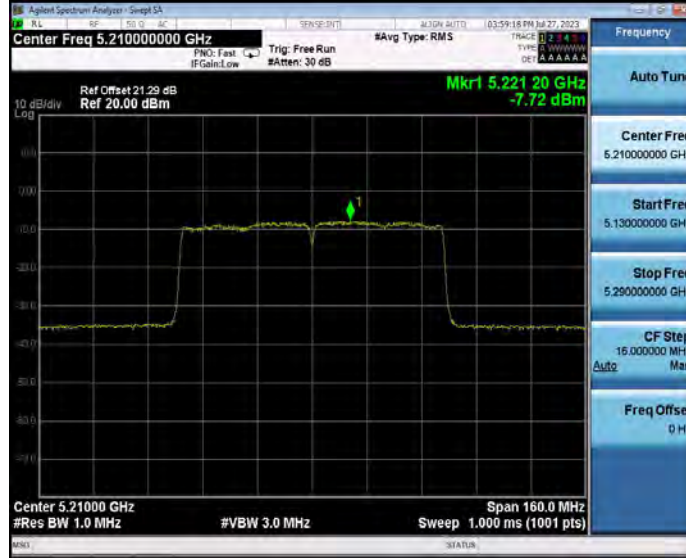
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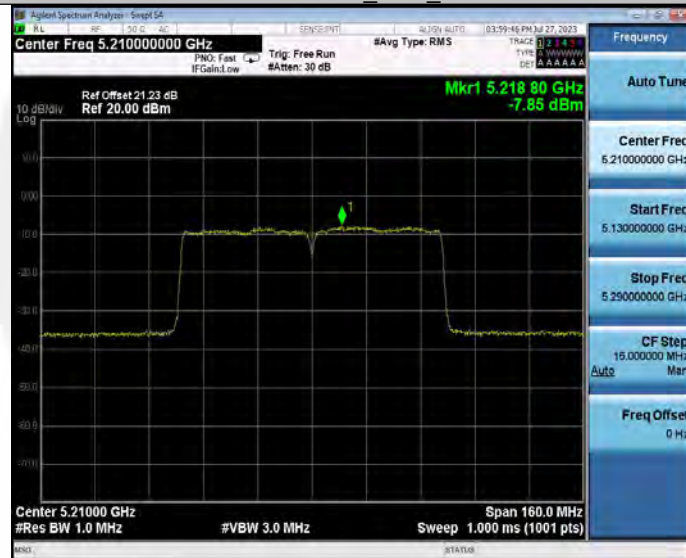
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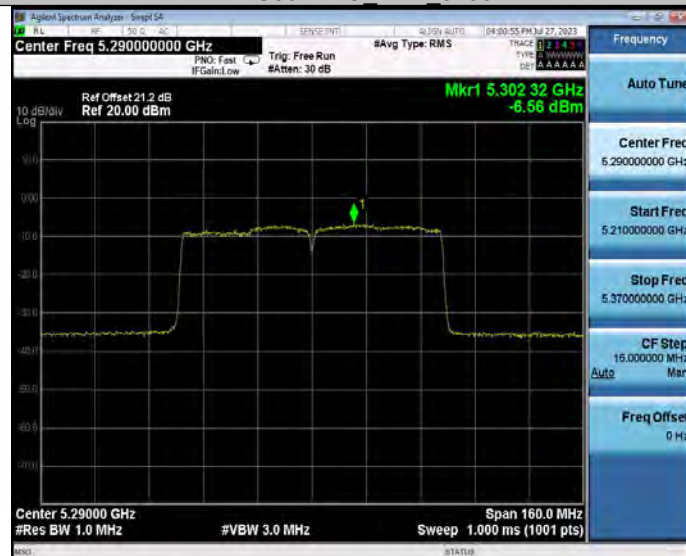
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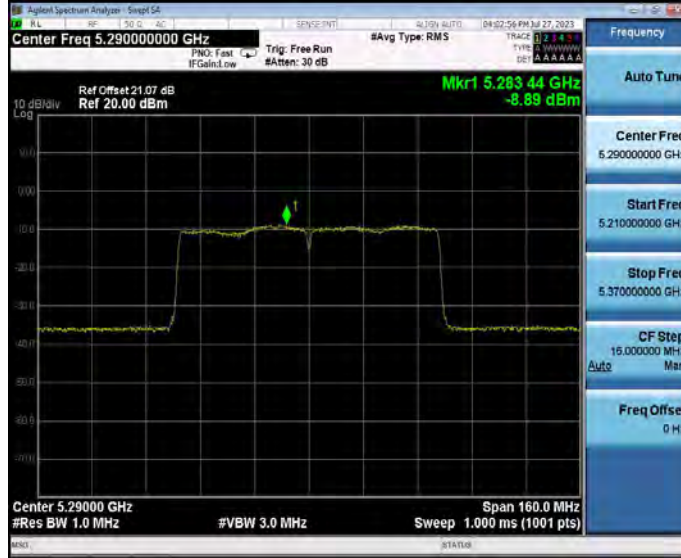
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11AC80MIMO_Ant1_5290



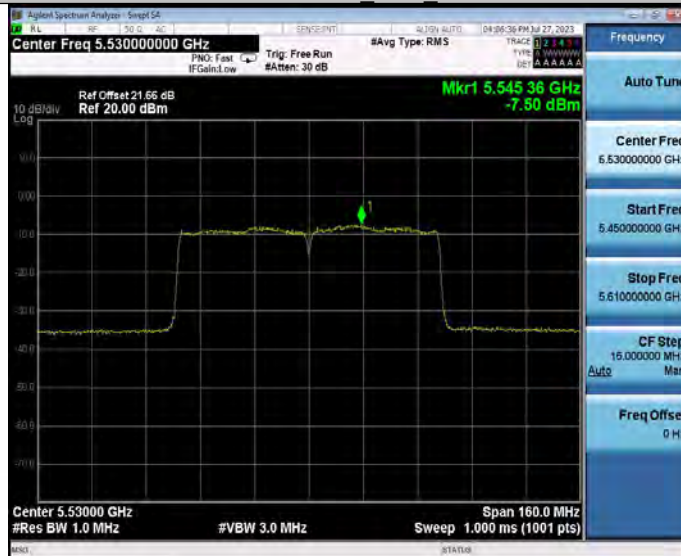
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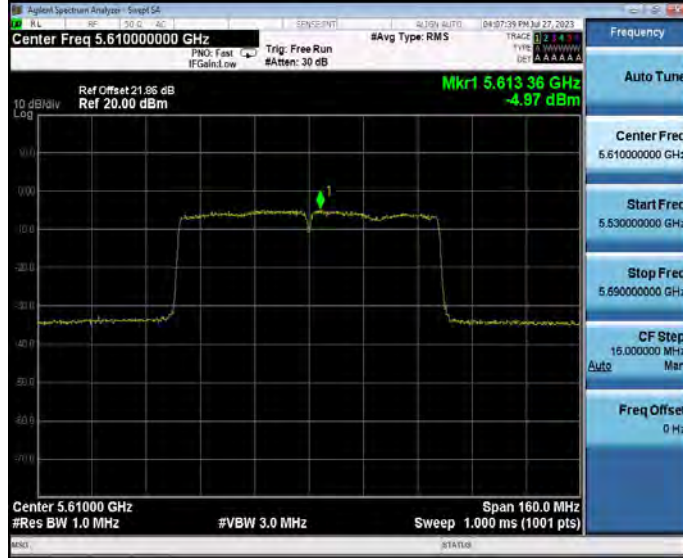
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11AC80MIMO_Ant2_5530



11AC80MIMO_Ant1_5610



11AC80MIMO_Ant2_5610



11AC80MIMO_Ant1_5775



11AC80MIMO_Ant2_5775



11AX20MIMO_Ant1_5180



11AX20MIMO_Ant2_5180



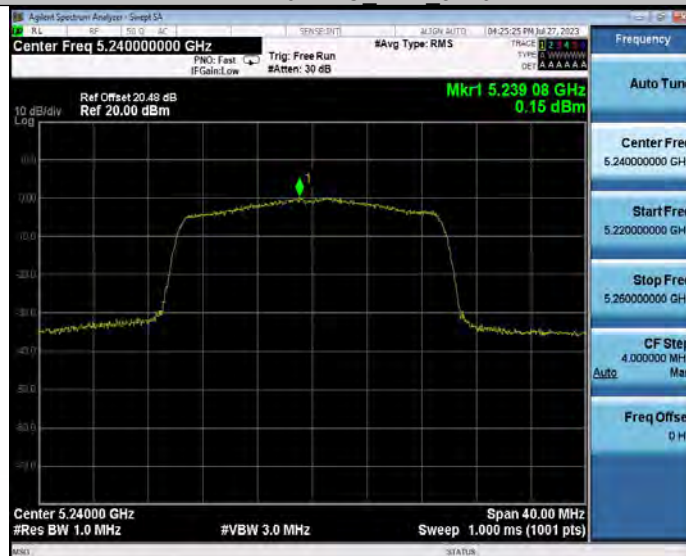
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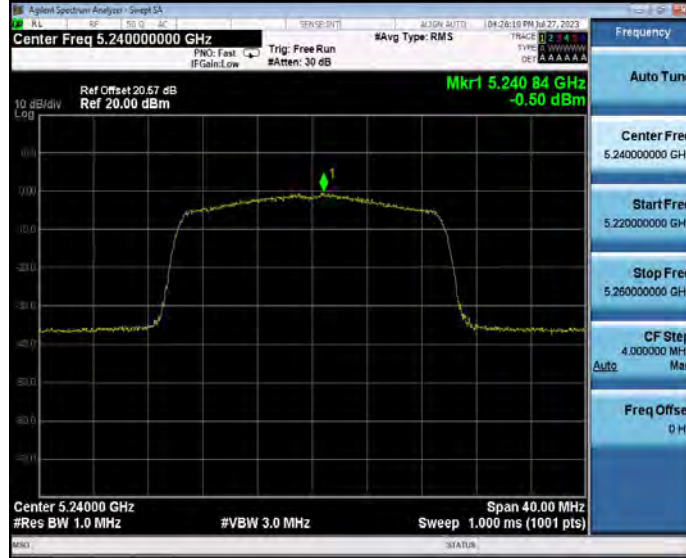
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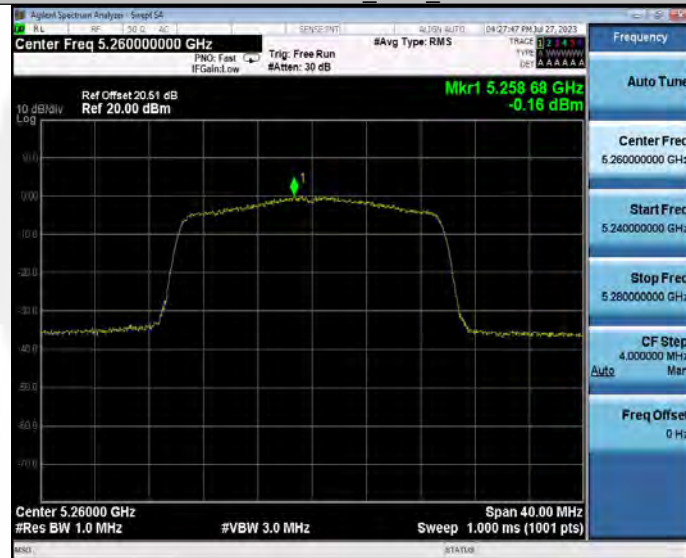
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11AX20MIMO_Ant1_5260



11AX20MIMO_Ant2_5260



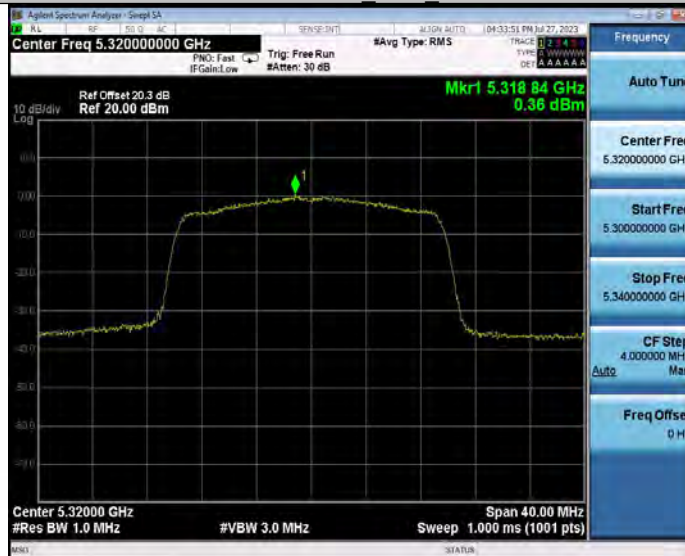
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11AX20MIMO_Ant2_5280



11AX20MIMO_Ant1_5320



11AX20MIMO_Ant2_5320



11AX20MIMO_Ant1_5500



11AX20MIMO_Ant2_5500



11AX20MIMO_Ant1_5580



11AX20MIMO_Ant2_5580



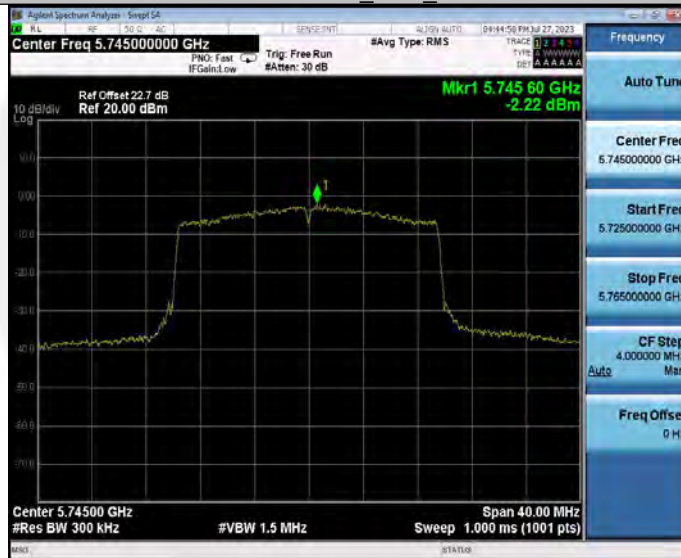
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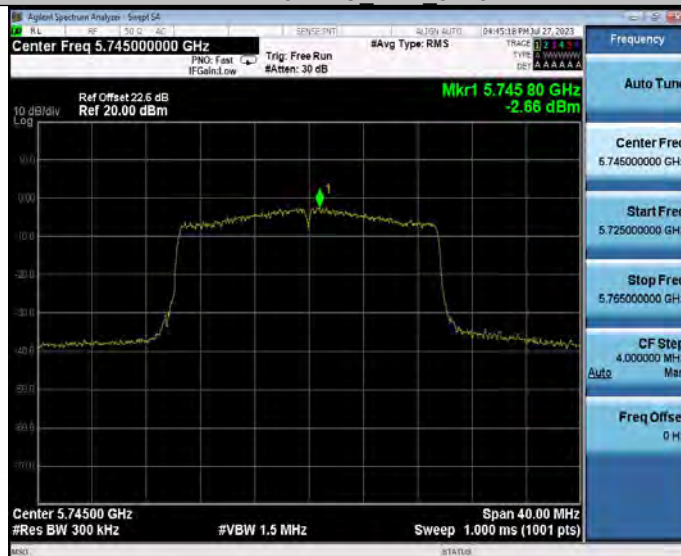
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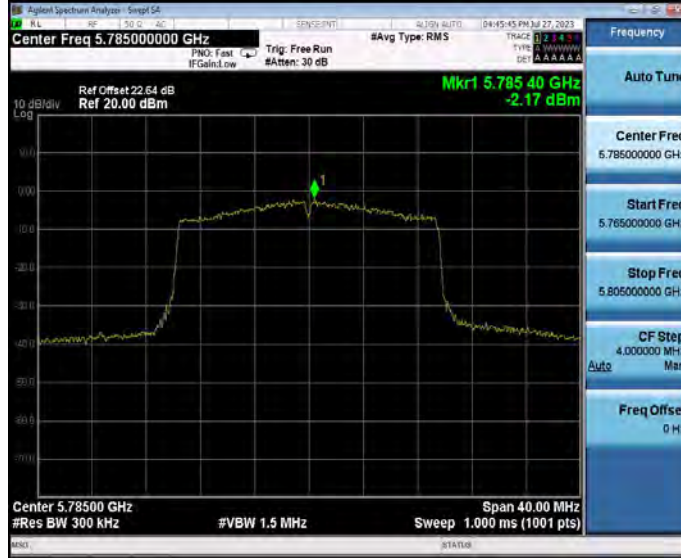
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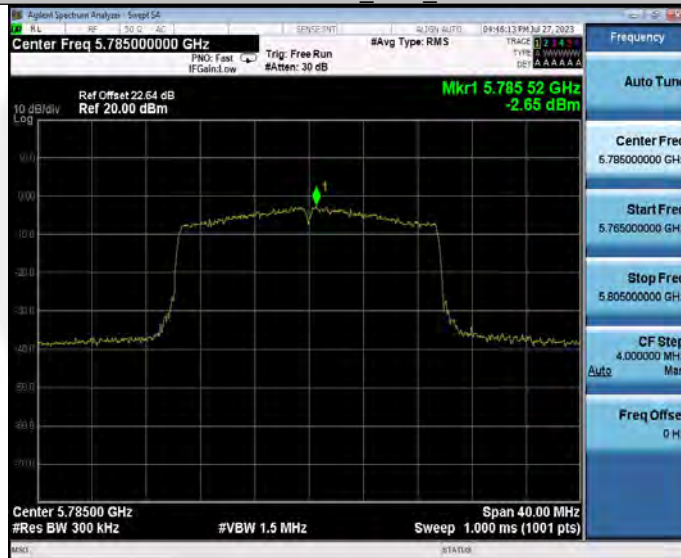
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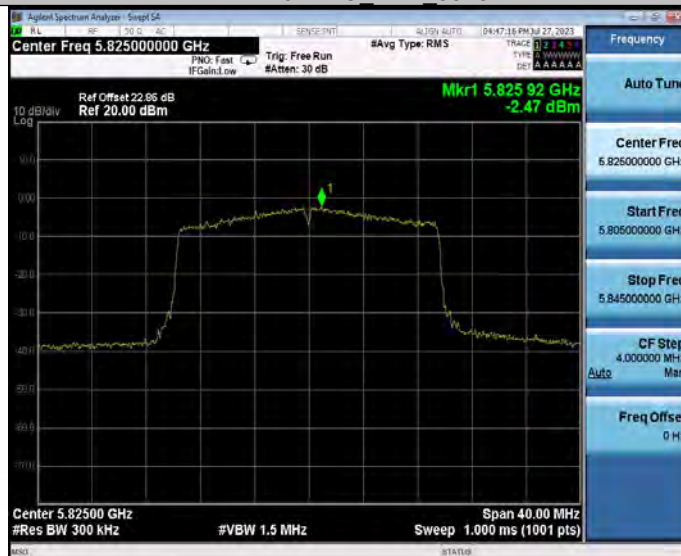
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11AX20MIMO_Ant2_5785



11AX20MIMO_Ant1_5825



11AX20MIMO_Ant2_5825



11AX40MIMO_Ant1_5190



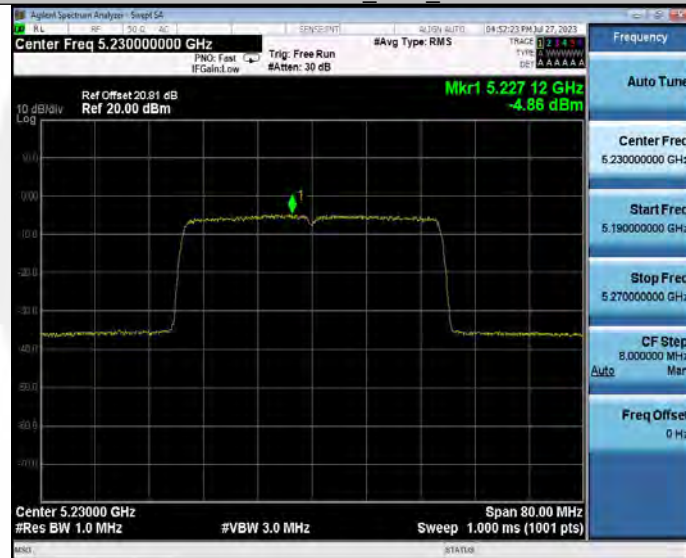
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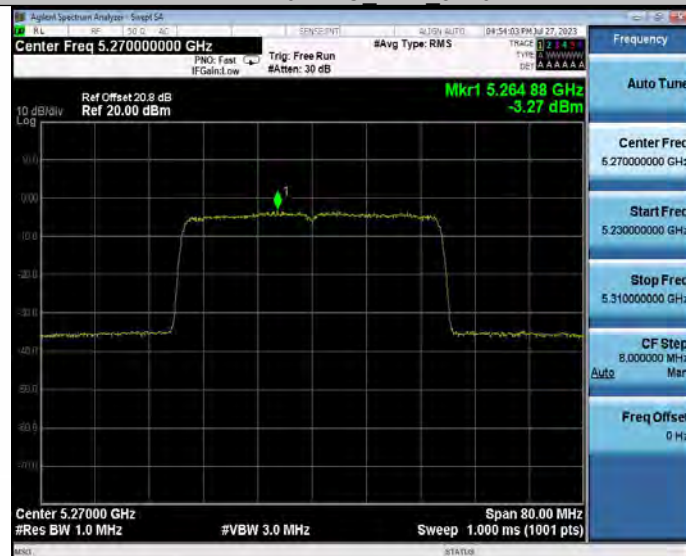
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11AX40MIMO_Ant2_5230



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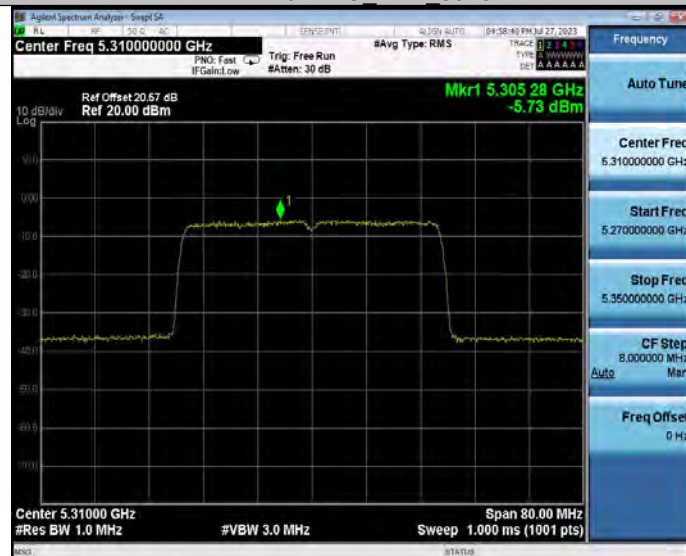
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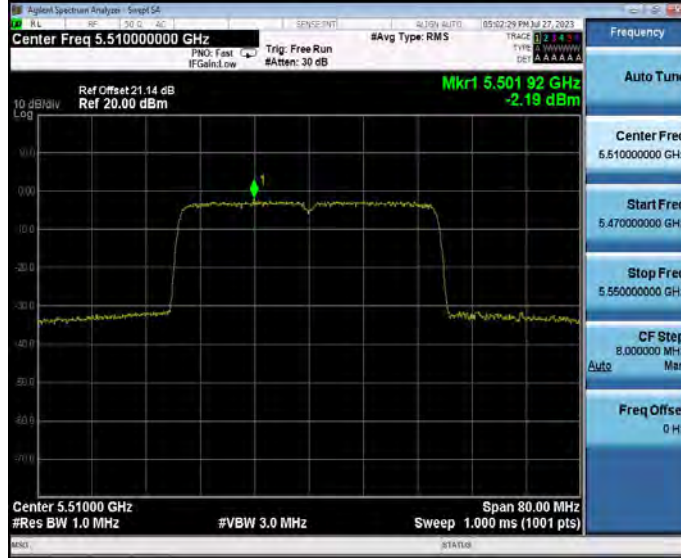
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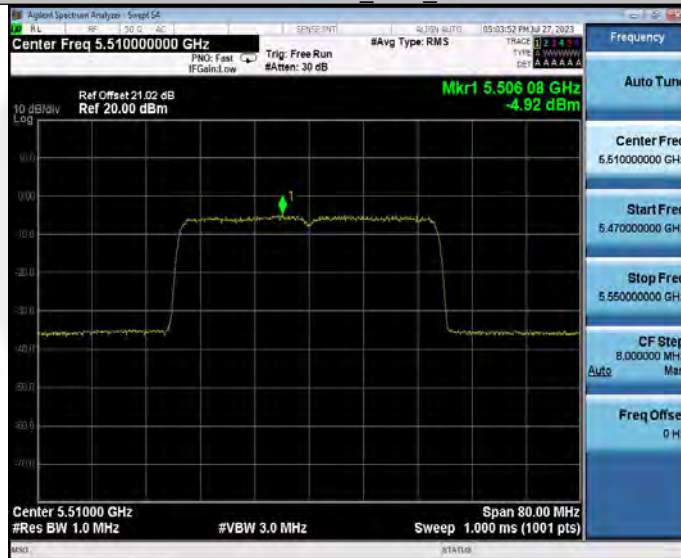
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11AX40MIMO_Ant1_5550



11AX40MIMO_Ant2_5550



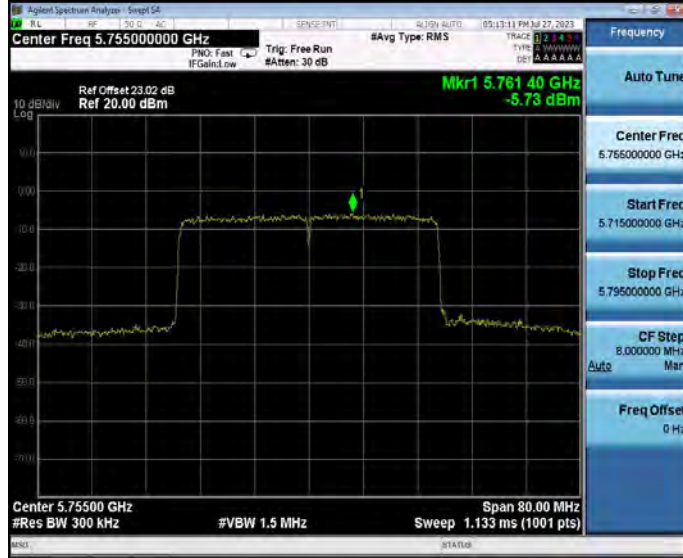
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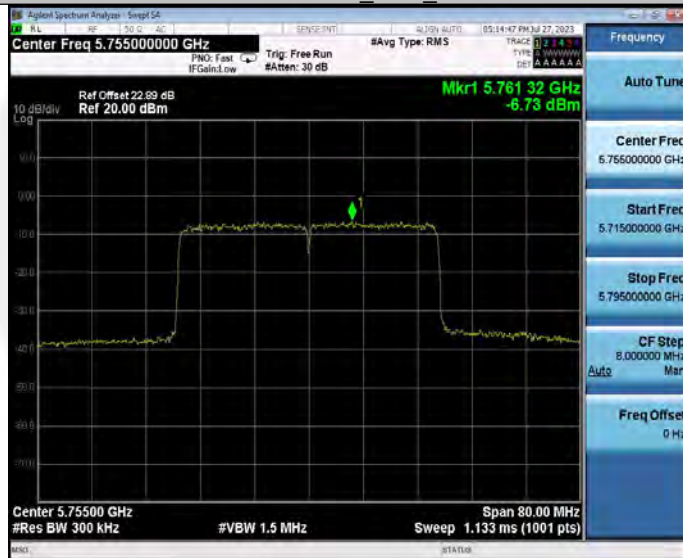
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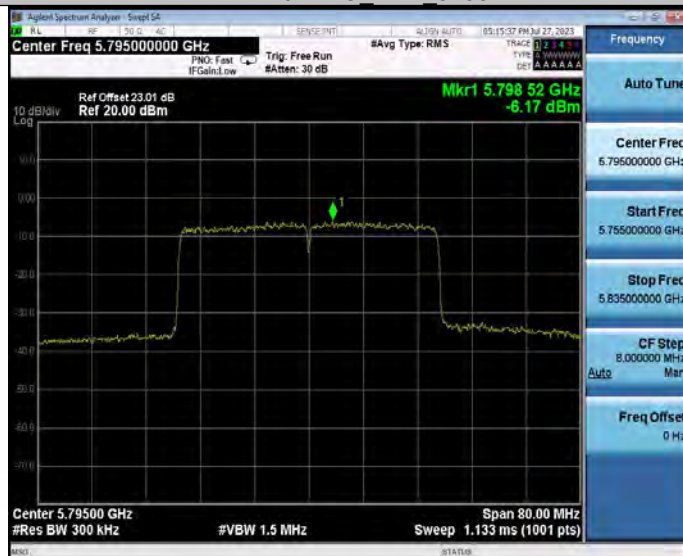
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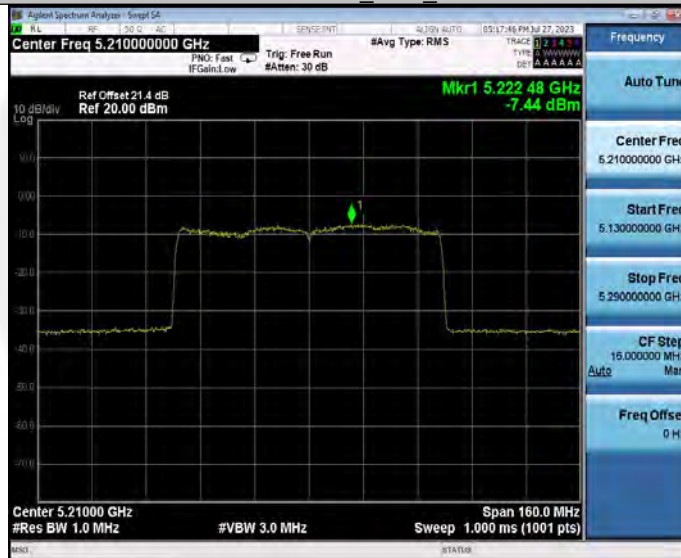
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11AX40MIMO_Ant2_5795



11AX80MIMO_Ant1_5210



11AX80MIMO_Ant2_5210



11AX80MIMO_Ant1_5290



11AX80MIMO_Ant2_5290



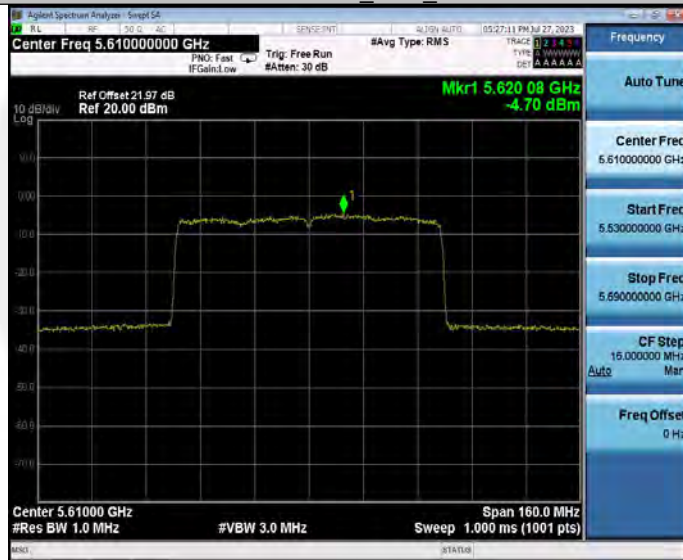
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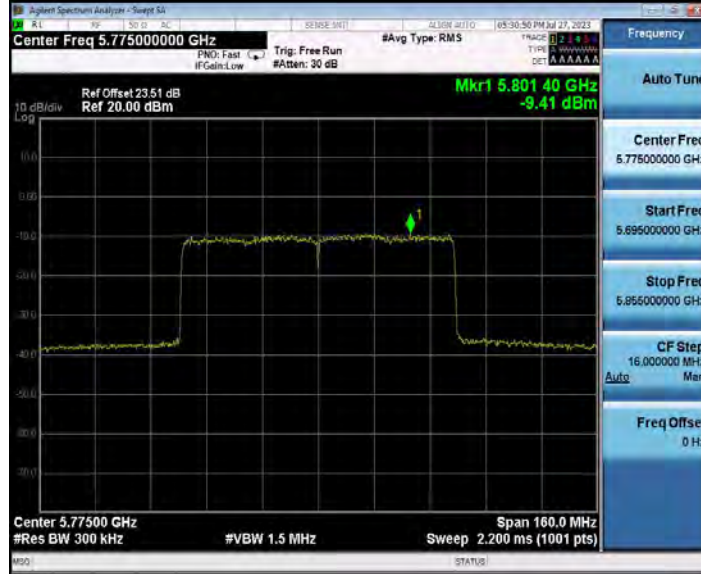
11AX80MIMO_Ant1_5610



11AX80MIMO_Ant2_5610



11AX80MIMO_Ant1_5775



11AX80MIMO_Ant2_5775



8.4 UNDESIRABLE RADIATED SPURIOUS EMISSION

8.4.1 Applicable Standard

According to FCC Part 15.407 (b)
According to 789033 D02 Section II(G)

8.4.2 Conformance Limit

For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

For transmitters operating in the 5.725-5.85 GHz band: All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.

Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209.

The emissions from an intentional radiator shall not exceed the field strength levels specified in the following table 15.209(a):

Restricted Frequency(MHz)	Field Strength ($\mu\text{V}/\text{m}$)	Field Strength ($\text{dB}\mu\text{V}/\text{m}$)	Measurement Distance
0.009-0.490	2400/F(KHz)	20 log (uV/m)	300
0.490-1.705	2400/F(KHz)	20 log (uV/m)	30
1.705-30	30	29.5	30
30-88	100	40	3
88-216	150	43.5	3
216-960	200	46	3
Above 960	500	54	3

The provisions of §15.205 apply to intentional radiators operating under this section, 15.205 Restricted bands of operation

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
10.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(2)
13.36-13.41			

- Remark:
1. Emission level in $\text{dBuV/m} = 20 \log(\mu\text{V/m})$
 2. Measurement was performed at an antenna to the closed point of EUT distance of meters.
 3. Only spurious frequency is permitted to locate within the Restricted Bands specified in provision of ξ 15.205, and the emissions located in restricted bands also comply with 15.209 limit.

8.4.3 Test Configuration

Test according to clause 6.2 radio frequency test setup 2.

8.4.4 Test Procedure

■ Unwanted Emissions Measurements below 1000 MHz

Compliance shall be demonstrated using CISPR quasi-peak detection; however, peak detection is permitted as an alternative to quasi-peak detection.

The EUT was placed on a turn table which is 0.8m above ground plane.

And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.

Repeat above procedures until all frequency measured was complete.

We use software control the EUT, Let EUT hopping on and transmit with highest power, All the modes have been tested and the worst result was reported.

Use the following spectrum analyzer settings:

Set RBW=120kHz for $f < 1 \text{ GHz}$ (30MHz to 1GHz), 200Hz for $f < 150\text{kHz}$ (9kHz to 150kHz), 9kHz for $< 30\text{MHz}$ (150kHz to 30kHz).

Set the VBW > RBW.

Detector = Peak.

Trace mode = max hold.

Follow the guidelines in ANSI C63.10-2013 with respect to maximizing the emission by rotating the EUT, measuring the emission while the EUT is situated in three orthogonal planes (if appropriate), adjusting the measurement antenna height and polarization, etc. A pre-amp and a high pass filter are required for this test, in order to provide the measuring system with sufficient sensitivity. Allow the trace to stabilize. The peak reading of the emission, after being corrected by the antenna factor, cable loss, pre-amp gain, etc., is the peak field strength, which must comply with the limit specified in Section 15.35(b). Submit this data.

Repeat above procedures until all frequency measured was complete.

■ Unwanted Maximum peak Emissions Measurements above 1000 MHz

Maximum emission levels are measured by setting the analyzer as follows:

RBW = 1 MHz.

VBW \geq 3 MHz.

Detector = Peak.

Sweep time = auto.

Trace mode = max hold.

Allow sweeps to continue until the trace stabilizes. Note that if the transmission is not continuous, the time required for the trace to stabilize will increase by a factor of approximately $1/x$, where x is the duty cycle. For example, at 50 percent duty cycle, the measurement time will increase by a factor of two relative to measurement time for continuous transmission.

■ Unwanted Average Emissions Measurements above 1000 MHz

Method VB (Averaging using reduced video bandwidth): Alternative method.

RBW = 1 MHz.

Video bandwidth. • If the EUT is configured to transmit with duty cycle \geq 98 percent, set $\text{VBW} \leq \text{RBW}/100$ (i.e., 10 kHz) but not less than 10 Hz.

• If the EUT duty cycle is $<$ 98 percent, set $\text{VBW} \geq 1/T$, where T is defined in section II.B.1.a).

Video bandwidth mode or display mode • The instrument shall be set to ensure that video filtering is applied in the power domain. Typically, this requires setting the detector mode to RMS and setting the Average-VBW Type to Power (RMS).

• As an alternative, the analyzer may be set to linear detector mode. Ensure that video filtering is applied in linear voltage domain (rather than in a log or dB domain). Some analyzers require linear display mode in order to accomplish this. Others have a setting for Average-VBW Type, which can be set to "Voltage" regardless of the display mode.

Detector = Peak.

Sweep time = auto.

Trace mode = max hold.

Allow max hold to run for at least 50 traces if the transmitted signal is continuous or has at least 98 percent duty cycle. For lower duty cycles, increase the minimum number of traces by a factor of $1/x$, where x is the duty cycle. For example, use at least 200 traces if the duty cycle is 25 percent. (If a specific emission is demonstrated to be continuous—i.e., 100 percent duty cycle—rather than turning on and off with the transmit cycle, at least 50 traces shall be averaged).

■ **Band edge measurements.**

Unwanted band-edge emissions may be measured using either of the special band-edge measurement techniques (the marker-delta or integration methods) described below. Note that the marker-delta method is primarily a radiated measurement technique that requires the 99% occupied bandwidth edge to be within 2 MHz of the authorized band edge, whereas the integration method can be used in either a radiated or conducted measurement without any special requirement with regards to the displacement of the unwanted emission(s) relative to the authorized bandwidth.

Marker-Delta Method.

The marker-delta method, as described in ANSI C63.10, can be used to perform measurements of the radiated unwanted emissions level of emissions provided that the 99% occupied bandwidth of the fundamental is within 2 MHz of the authorized band-edge.

8.4.5 Test Results

The voltage 120V & 240V and the modes 802.11a/n/ac has been tested and the worst result recorded as below:

- For Undesirable radiated Spurious Emission in U-NII – 1
All the modes 802.11a/n/ac has been tested and the worst result 802.11a recorded as below:
- Undesirable radiated Spurious Emission Above 1GHz (1GHz to 40GHz)
Highest gain of each antenna and highest output power is ANT2 and MIMO as below:

ANT2:

Test mode: 802.11n(20) Frequency(MHz): 5180

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11502.7	V	58.37	-36.86	-27	9.86
15159.5	V	63.28	-31.95	-27	4.95
17498.2	V	66.09	-29.14	-27	2.14
11451.7	H	58.28	-36.95	-27	9.95
14717.3	H	62.88	-32.35	-27	5.35
17489.7	H	65.49	-29.74	-27	2.74

Test mode: 802.11n(20) Frequency(MHz): 5200

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11545.2	V	58.66	-36.57	-27	9.57
14615.3	V	62.64	-32.59	-27	5.59
17481.2	V	65.99	-29.24	-27	2.24
11664.3	H	58.71	-36.52	-27	9.52
14674.8	H	62.29	-32.94	-27	5.94
17506.7	H	66.96	-28.27	-27	1.27

Test mode: 802.11n(20) Frequency(MHz): 5240

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11417.7	V	58.66	-36.57	-27	9.57
14649.3	V	62.26	-32.97	-27	5.97
17489.7	V	66.03	-29.2	-27	2.2
11477.2	H	58.83	-36.4	-27	9.4
14564.2	H	62.23	-33	-27	6
17489.7	H	65.97	-29.26	-27	2.26

MIMO:

Test mode: 802.11n(20) Frequency(MHz): 5180

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11501.31	V	58.24	-36.99	-27	9.99
17499.48	V	66.06	-29.17	-27	2.17
15157.32	V	44.27	-50.96	-27	23.96
11463.39	H	58.2	-37.03	-27	10.03
17501.39	H	65.33	-29.90	-27	2.90
14714.04	H	44.76	-50.47	-27	23.47

Test mode: 802.11n(20) Frequency(MHz): 5200

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11543.81	V	58.53	-36.70	-27	9.70
17482.48	V	65.96	-29.27	-27	2.27
14613.05	V	46.69	-48.54	-27	21.54
11676.02	H	58.63	-36.60	-27	9.60
17518.39	H	66.8	-28.43	-27	1.43
14671.52	H	45.17	-50.06	-27	23.06

Test mode: 802.11n(20) Frequency(MHz): 5240

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11416.31	V	58.53	-36.70	-27	9.70
17490.98	V	66	-29.23	-27	2.23
14647.07	V	45.59	-49.64	-27	22.64
11488.89	H	58.75	-36.48	-27	9.48
17501.39	H	65.81	-29.42	-27	2.42
14560.97	H	46.16	-49.07	-27	22.07

- Note:** (1) All Readings are Peak Value (VBW=3MHz) and AV Value (VBW=10Hz).
 (2) Emission Level= Reading Level+Probe Factor +Cable Loss.
 (3) EIRP[dBm] = E[dBμV/m] + 20 log(d[meters]) - 104.77
 d is the measurement distance in 3 meters

ANT2:

Test mode:		802.11n(20)		Frequency(MHz): 5180	
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
11502.7	V	58.37	74.00	15.63	peak
15159.5	V	63.28	74.00	10.72	peak
17498.2	V	66.09	74.00	7.91	peak
11502.75	V	46.85	54.00	7.15	AVG
15159.57	V	44.53	54.00	9.47	AVG
17498.24	V	47.00	54.00	7.00	AVG
11451.7	H	58.28	74.00	15.72	peak
14717.3	H	62.88	74.00	11.12	peak
17489.7	H	65.49	74.00	8.51	peak
11451.72	H	46.98	54.00	7.02	AVG
14717.35	H	44.94	54.00	9.06	AVG
17489.74	H	46.66	54.00	7.34	AVG

Test mode:		802.11n(20)		Frequency(MHz): 5200	
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
11545.2	V	58.66	74.00	15.34	peak
14615.3	V	62.64	74.00	11.36	peak
17481.2	V	65.99	74.00	8.01	peak
11545.2	V	47.11	54.00	6.89	AVG
14615.30	V	46.95	54.00	7.05	AVG
17481.24	V	46.13	54.00	7.87	AVG
11664.33	H	58.71	74.00	15.29	peak
14674.8	H	62.29	74.00	11.71	peak
17506.7	H	66.96	74.00	7.04	peak
11664.33	H	46.71	54.00	7.29	AVG
14674.83	H	45.35	54.00	8.65	AVG
17506.75	H	46.92	54.00	7.08	AVG

Test mode:		802.11n(20)		Frequency(MHz): 5240	
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
11417.7	V	58.66	74.00	15.34	peak
14649.3	V	62.26	74.00	11.74	peak
17489.7	V	66.03	74.00	7.97	peak
11417.70	V	46.70	54.00	7.30	AVG
14649.32	V	45.85	54.00	8.15	AVG
17489.74	V	47.29	54.00	6.71	AVG
11477.2	H	58.83	74.00	15.17	peak
14564.2	H	62.23	74.00	11.77	peak
17489.7	H	65.97	74.00	8.03	peak
11477.23	H	47.11	54.00	6.89	AVG
14564.28	H	46.34	54.00	7.66	AVG
17489.74	H	47.05	54.00	6.95	AVG

MIMO:

Test mode: 802.11n(20)		Frequency(MHz): 5180			
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
11501.310	V	58.24	74.00	15.76	peak
15158.110	V	63.12	74.00	10.88	peak
17499.480	V	66.06	74.00	7.94	peak
11504.030	V	46.83	54.00	7.17	AVG
15157.320	V	44.27	54.00	9.73	AVG
17495.990	V	46.81	54.00	7.19	AVG
11463.390	H	58.2	74.00	15.8	peak
14728.990	H	62.67	74.00	11.33	peak
17501.390	H	65.33	74.00	8.67	peak
11463.410	H	46.84	54.00	7.16	AVG
14714.040	H	44.76	54.00	9.24	AVG
17486.430	H	46.53	54.00	7.47	AVG

Test mode: 802.11n(20)		Frequency(MHz): 5200			
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
11543.810	V	58.53	74.00	15.47	peak
14613.910	V	62.48	74.00	11.52	peak
17482.480	V	65.96	74.00	8.04	peak
11546.480	V	47.09	54.00	6.91	AVG
14613.050	V	46.69	54.00	7.31	AVG
17478.990	V	45.94	54.00	8.06	AVG
11676.020	H	58.63	74.00	15.37	peak
14686.490	H	62.08	74.00	11.92	peak
17518.390	H	66.8	74.00	7.2	peak
11676.020	H	46.57	54.00	7.43	AVG
14671.520	H	45.17	54.00	8.83	AVG
17503.440	H	46.79	54.00	7.21	AVG

Test mode: 802.11n(20)		Frequency(MHz): 5240			
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
11416.310	V	58.53	74.00	15.47	peak
14647.910	V	62.1	74.00	11.9	peak
17490.980	V	66	74.00	8	peak
11418.980	V	46.68	54.00	7.32	AVG
14647.070	V	45.59	54.00	8.41	AVG
17487.490	V	47.1	54.00	6.9	AVG
11488.890	H	58.75	74.00	15.25	peak
14575.890	H	62.02	74.00	11.98	peak
17501.390	H	65.81	74.00	8.19	peak
11488.920	H	46.97	54.00	7.03	AVG
14560.970	H	46.16	54.00	7.84	AVG
17486.430	H	46.92	54.00	7.08	AVG

- Note:**
- (1) All Readings are Peak Value (VBW=3MHz) and Peak Value (VBW=10Hz).
 - (2) Emission Level= Reading Level+Correct Factor +Cable Loss.
 - (3) Correct Factor= Ant_F + Cab_L - Preamp
 - (4) The reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

● Undesirable radiated Undesirable radiated Spurious Emission in Band Edge

Test mode: 802.11n(20) Frequency(MHz): 5180

Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5029.3	H	53.56	-41.67	-27	Pass
5039.5	V	54.05	-41.18	-27	Pass

Test mode: 802.11n(20) Frequency(MHz): 5240

Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5390.13	V	52.28	-42.95	-27	Pass
5390.97	H	52.45	-42.78	-27	Pass

- Note:** (1) All Readings are Peak Value (VBW=3MHz) and Peak Value (VBW=10Hz).
 (2) Emission Level= Reading Level+Correct Factor +Cable Loss.
 (3) Correct Factor= Ant_F + Cab_L - Preamp
 (4) EIRP[dBm] = E[dBμV/m] + 20 log(d[meters]) - 104.77
 d is the measurement distance in 3 meters

Test mode: 802.11n(20) Frequency(MHz): 5180

Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
5039.5	V	54.05	74.00	19.95	peak
5039.5	V	48.72	54.00	5.28	AVG
5029.34	H	53.56	74.00	20.44	peak
5029.34	H	48.52	54.00	5.48	AVG

Test mode: 802.11n(20) Frequency(MHz): 5240

Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
5390.13	V	52.28	74.00	21.72	peak
5390.13	V	49.61	54.00	4.39	AVG
5390.97	H	52.45	74.00	21.55	peak
5390.97	H	49.47	54.00	4.53	AVG

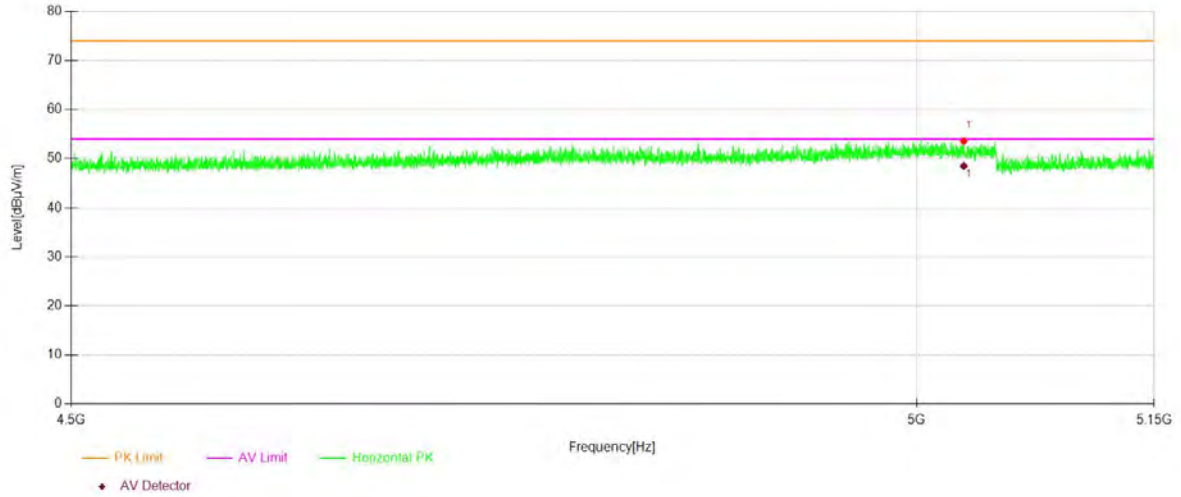
- Note:** (1) All Readings are Peak Value (VBW=3MHz) and Peak Value (VBW=10Hz).
 (2) Emission Level= Reading Level+Correct Factor +Cable Loss.
 (3) Correct Factor= Ant_F + Cab_L - Preamp
 (4) The reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

U-NII - 1

Test Model Undesirable radiated Spurious Emission in Restricted Band (5100-5150MHz)

802.11a 802.11n(HT20) 802.11n(HT40)

5180 5200 5240 Ant.Pol H

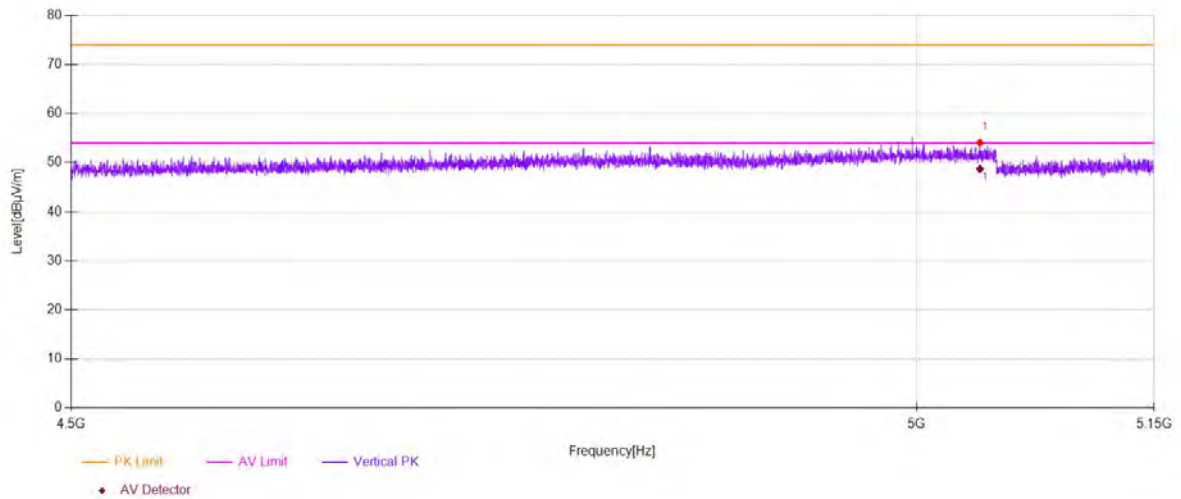


U-NII - 1

Test Model Undesirable radiated Spurious Emission in Restricted Band (5100-5150MHz)

802.11a 802.11n(HT20) 802.11n(HT40)

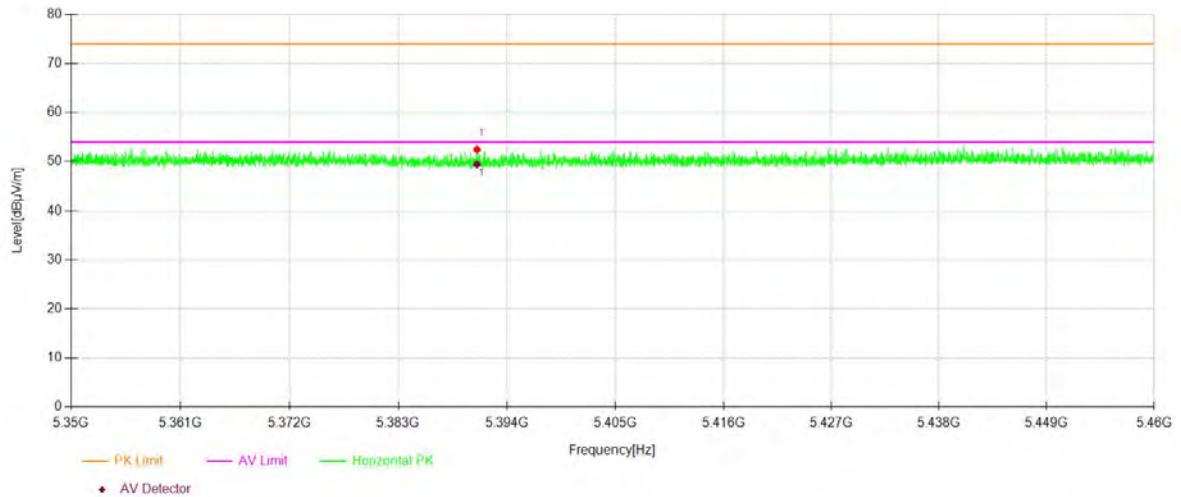
5180 5200 5240 Ant.Pol V



U-NII - 1

Test Model Undesirable radiated Spurious Emission in Restricted Band (5350-5400MHz)

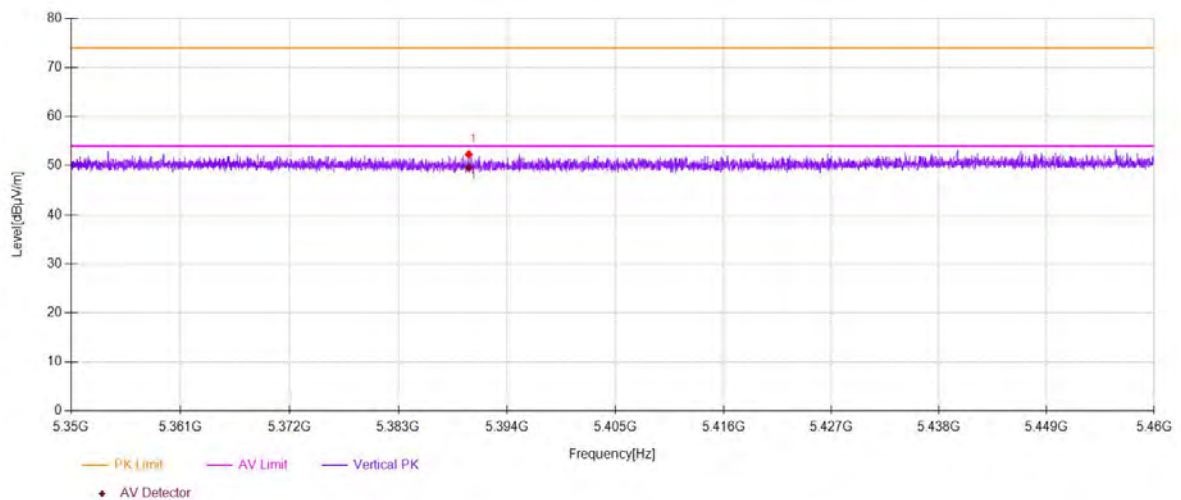
802.11a 802.11n(HT20) 802.11n(HT40)
 5180 5200 5240 Ant.Pol H



U-NII - 1

Test Model Undesirable radiated Spurious Emission in Restricted Band (5350-5400MHz)

802.11a 802.11n(HT20) 802.11n(HT40)
 5180 5200 5240 Ant.Pol V



- For Undesirable radiated Spurious Emission in U-NII -2A
All the modes 802.11a/n/ac has been tested and the worst result 802.11a recorded as below:
- Undesirable radiated Spurious Emission Above 1GHz (1GHz to 40GHz)
Highest gain of each antenna and highest output power is ANT2 and MIMO as below:

ANT2:

Test mode: 802.11n(20) Frequency(MHz): 5260

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11511.2	V	58.35	-36.88	-27	9.88
14700.3	V	63.29	-31.94	-27	4.94
17498.2	V	66.60	-28.63	-27	1.63
11409.2	H	58.76	-36.47	-27	9.47
14555.7	H	62.47	-32.76	-27	5.76
17506.7	H	66.11	-29.12	-27	2.12

Test mode: 802.11n(20) Frequency(MHz): 5280

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11494.2	V	58.60	-36.63	-27	9.63
14827.9	V	62.15	-33.08	-27	6.08
17515.2	V	66.13	-29.1	-27	2.1
11553.7	H	58.28	-36.95	-27	9.95
15125.5	H	62.06	-33.17	-27	6.17
17515.2	H	66.08	-29.15	-27	2.15

Test mode: 802.11n(20) Frequency(MHz): 5320

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11570.7	V	58.81	-36.42	-27	9.42
15142.5	V	62.85	-32.38	-27	5.38
17506.7	V	66.05	-29.18	-27	2.18
10669.3	H	58.60	-36.63	-27	9.63
14572.7	H	62.15	-33.08	-27	6.08
17506.7	H	66.33	-28.9	-27	1.9

MIMO:

Test mode: 802.11n(20) Frequency(MHz): 5260

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11509.81	V	58.22	-37.01	-27	10.01
17499.48	V	66.57	-28.66	-27	1.66
14698.10	V	44.6	-50.63	-27	23.63
11420.89	H	58.68	-36.55	-27	9.55
17518.39	H	65.95	-29.28	-27	2.28
14552.46	H	46.51	-48.72	-27	21.72

Test mode: 802.11n(20) Frequency(MHz): 5280

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11492.61	V	58.47	-36.76	-27	9.76
17516.48	V	66.1	-29.13	-27	2.13
14825.66	V	46.52	-48.71	-27	21.71
11565.39	H	58.2	-37.03	-27	10.03
17526.89	H	65.92	-29.31	-27	2.31
15122.25	H	45.25	-49.98	-27	22.98

Test mode: 802.11n(20) Frequency(MHz): 5320

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11569.31	V	58.68	-36.55	-27	9.55
17507.98	V	66.02	-29.21	-27	2.21
15140.32	V	43.78	-51.45	-27	24.45
10680.99	H	58.52	-36.71	-27	9.71
17518.39	H	66.17	-29.06	-27	2.06
14569.47	H	47.8	-47.43	-27	20.43

- Note:** (1) All Readings are Peak Value (VBW=3MHz) and AV Value (VBW=10Hz).
 (2) Emission Level= Reading Level+Probe Factor +Cable Loss.
 (3) EIRP[dBm] = E[dBμV/m] + 20 log(d[meters]) - 104.77
 d is the measurement distance in 3 meters

ANT2:

Test mode:		802.11n(20)		Frequency(MHz):		5260	
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector		
11511.2	V	58.35	74.00	15.65	peak		
14700.3	V	63.29	74.00	10.71	peak		
17498.2	V	66.60	74.00	7.40	peak		
11511.25	V	47.37	54.00	6.63	AVG		
14700.35	V	44.86	54.00	9.14	AVG		
17498.24	V	47.37	54.00	6.63	AVG		
11409.2	H	58.76	74.00	15.24	peak		
14555.7	H	62.47	74.00	11.53	peak		
17506.7	H	66.11	74.00	7.89	peak		
11409.20	H	46.82	54.00	7.18	AVG		
14555.77	H	46.69	54.00	7.31	AVG		
17506.75	H	46.89	54.00	7.11	AVG		

Test mode:		802.11n(20)		Frequency(MHz):		5280	
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector		
11494.	V	58.60	74.00	15.40	peak		
14827.9	V	62.15	74.00	11.85	peak		
17515.2	V	66.13	74.00	7.87	peak		
11494.24	V	46.79	54.00	7.21	AVG		
14827.91	V	46.78	54.00	7.22	AVG		
17515.25	V	46.64	54.00	7.36	AVG		
11553.7	H	58.28	74.00	15.72	peak		
15125.5	H	62.06	74.00	11.94	peak		
17515.2	H	66.08	74.00	7.92	peak		
11553.77	H	47.22	54.00	6.78	AVG		
15125.56	H	45.43	54.00	8.57	AVG		
17515.25	H	47.01	54.00	6.99	AVG		

Test mode:		802.11n(20)		Frequency(MHz):		5320	
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector		
11570.7	V	58.81	74.00	15.19	peak		
15142.5	V	62.85	74.00	11.15	peak		
17506.7	V	66.05	74.00	7.95	peak		
11570.78	V	47.25	54.00	6.75	AVG		
15142.57	V	44.04	54.00	9.96	AVG		
17506.75	V	47.23	54.00	6.77	AVG		
10669.3	H	58.60	74.00	15.40	peak		
14572.7	H	62.15	74.00	11.85	peak		
17506.7	H	66.33	74.00	7.67	peak		
10669.33	H	46.86	54.00	7.14	AVG		
14572.78	H	47.98	54.00	6.02	AVG		
17506.75	H	46.78	54.00	7.22	AVG		

MIMO:

Test mode: 802.11n(20)		Frequency(MHz): 5260			
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
11509.810	V	58.22	74.00	15.78	peak
14698.910	V	63.13	74.00	10.87	peak
17499.480	V	66.57	74.00	7.43	peak
11512.530	V	47.35	54.00	6.65	AVG
14698.100	V	44.6	54.00	9.4	AVG
17495.990	V	47.18	54.00	6.82	AVG
11420.890	H	58.68	74.00	15.32	peak
14567.390	H	62.26	74.00	11.74	peak
17518.390	H	65.95	74.00	8.05	peak
11420.890	H	46.68	54.00	7.32	AVG
14552.460	H	46.51	54.00	7.49	AVG
17503.440	H	46.76	54.00	7.24	AVG

Test mode: 802.11n(20)		Frequency(MHz): 5280			
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
11492.610	V	58.47	74.00	15.53	peak
14826.510	V	61.99	74.00	12.01	peak
17516.480	V	66.1	74.00	7.9	peak
11495.520	V	46.77	54.00	7.23	AVG
14825.660	V	46.52	54.00	7.48	AVG
17513.000	V	46.45	54.00	7.55	AVG
11565.390	H	58.2	74.00	15.8	peak
15137.190	H	61.85	74.00	12.15	peak
17526.890	H	65.92	74.00	8.08	peak
11565.460	H	47.08	54.00	6.92	AVG
15122.250	H	45.25	54.00	8.75	AVG
17511.940	H	46.88	54.00	7.12	AVG

Test mode: 802.11n(20)		Frequency(MHz): 5320			
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
11569.310	V	58.68	74.00	15.32	peak
15141.110	V	62.69	74.00	11.31	peak
17507.980	V	66.02	74.00	7.98	peak
11572.060	V	47.23	54.00	6.77	AVG
15140.320	V	43.78	54.00	10.22	AVG
17504.500	V	47.04	54.00	6.96	AVG
10680.990	H	58.52	74.00	15.48	peak
14584.390	H	61.94	74.00	12.06	peak
17518.390	H	66.17	74.00	7.83	peak
10681.020	H	46.72	54.00	7.28	AVG
14569.470	H	47.8	54.00	6.2	AVG
17503.440	H	46.65	54.00	7.35	AVG

- Note:** (1) All Readings are Peak Value (VBW=3MHz) and Peak Value (VBW=10Hz).
 (2) Emission Level= Reading Level+Correct Factor +Cable Loss.
 (3) Correct Factor= Ant_F + Cab_L - Preamp
 (4) The reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

● Undesirable radiated Undesirable radiated Spurious Emission in Band Edge

Test mode: 802.11n(20) Frequency(MHz): 5260

Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5010.08	H	55.07	-40.16	-27	Pass
5033.89	V	54.11	-41.12	-27	Pass

Test mode: 802.11n(20) Frequency(MHz): 5320

Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5350.10	H	70.28	-24.95	-27	Pass
5352.42	V	70.74	-24.49	-27	Pass

Note: (1) All Readings are Peak Value (VBW=3MHz) and Peak Value (VBW=10Hz).
 (2) Emission Level= Reading Level+Correct Factor +Cable Loss.
 (3) Correct Factor= Ant_F + Cab_L - Preamp
 (4) EIRP[dBm] = E[dBμV/m] + 20 log(d[meters]) - 104.77
 d is the measurement distance in 3 meters

Test mode: 802.11n(20) Frequency(MHz): 5260

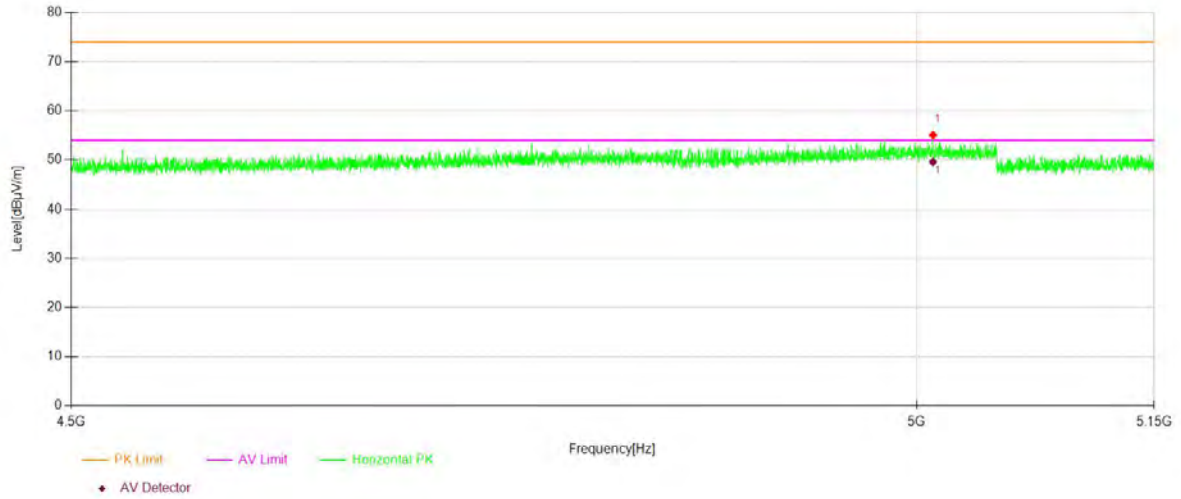
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
5033.89	V	54.11	74.00	19.89	peak
5033.89	V	49.30	54.00	4.70	AVG
5010.08	H	55.07	74.00	18.93	peak
5010.08	H	49.59	54.00	4.41	AVG

Test mode: 802.11n(20) Frequency(MHz): 5320

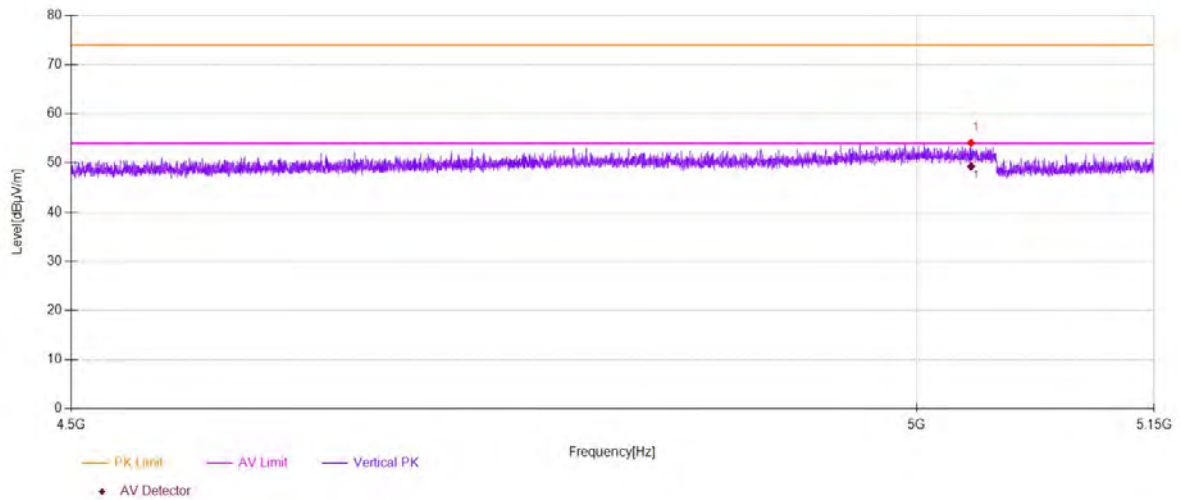
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
5352.42	V	70.74	74.00	3.26	peak
5352.44	V	48.55	54.00	5.45	AVG
5350.10	H	70.28	74.00	3.72	peak
5350.12	H	50.20	54.00	3.80	AVG

Note: (1) All Readings are Peak Value (VBW=3MHz) and Peak Value (VBW=10Hz).
 (2) Emission Level= Reading Level+Correct Factor +Cable Loss.
 (3) Correct Factor= Ant_F + Cab_L - Preamp
 (4)The reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

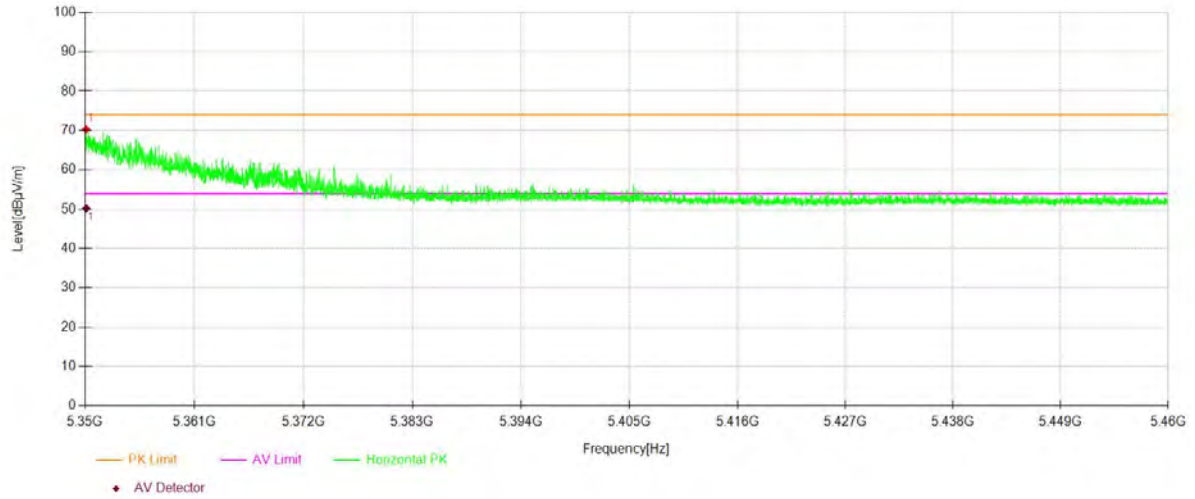
		U-NII -2A			
Test Model	Undesirable radiated Spurious Emission in Restricted Band (5100-5150MHz)				
	<input type="checkbox"/> 802.11a	<input checked="" type="checkbox"/> 802.11n(HT20)	<input type="checkbox"/> 802.11 ac (VHT20)		
	<input checked="" type="checkbox"/> 5260	<input type="checkbox"/> 5300	<input type="checkbox"/> 5320	Ant.Pol	H



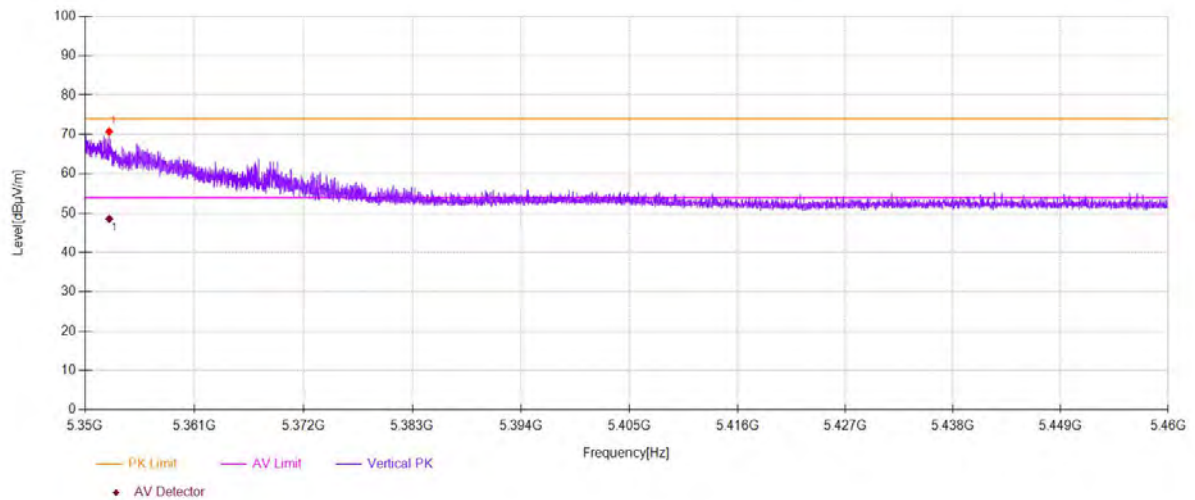
		U-NII -2A			
Test Model	Undesirable radiated Spurious Emission in Restricted Band (5100-5150MHz)				
	<input type="checkbox"/> 802.11a	<input checked="" type="checkbox"/> 802.11n(HT20)	<input type="checkbox"/> 802.11 ac (VHT20)		
	<input checked="" type="checkbox"/> 5260	<input type="checkbox"/> 5300	<input type="checkbox"/> 5320	Ant.Pol	V



		U-NII -2A		
Test Model	Undesirable radiated Spurious Emission in Restricted Band (5350-5400MHz)			
	<input type="checkbox"/> 802.11a	<input checked="" type="checkbox"/> 802.11n(HT20)	<input type="checkbox"/> 802.11 ac (VHT20)	
	<input type="checkbox"/> 5260	<input type="checkbox"/> 5300	<input checked="" type="checkbox"/> 5320	Ant.Pol H



		U-NII -2A		
Test Model	Undesirable radiated Spurious Emission in Restricted Band (5350-5400MHz)			
	<input type="checkbox"/> 802.11a	<input checked="" type="checkbox"/> 802.11n(HT20)	<input type="checkbox"/> 802.11 ac (VHT20)	
	<input type="checkbox"/> 5260	<input type="checkbox"/> 5300	<input checked="" type="checkbox"/> 5320	Ant.Pol V



- For Undesirable radiated Spurious Emission in U-NII -2C
All the modes 802.11a/n/ac has been tested and the worst result 802.11a recorded as below:
- Undesirable radiated Spurious Emission Above 1GHz (1GHz to 40GHz)
Highest gain of each antenna and highest output power is ANT2 and MIMO as below:

ANT2:

Test mode: 802.11n(20) Frequency(MHz): 5500

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11502.7	V	59.61	-35.62	-27	8.62
15142.5	V	62.91	-32.32	-27	5.32
17498.2	V	67.00	-28.23	-27	1.23
11460.2	H	58.84	-36.39	-27	9.39
14530.2	H	63.17	-32.06	-27	5.06
17515.2	H	67.30	-27.93	-27	0.93

Test mode: 802.11n(20) Frequency(MHz): 5580

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11494.2	V	58.52	-36.71	-27	9.71
14589.7	V	62.18	-33.05	-27	6.05
17506.7	V	65.79	-29.44	-27	2.44
11460.2	H	58.42	-36.81	-27	9.81
14623.8	H	62.59	-32.64	-27	5.64
17498.2	H	65.77	-29.46	-27	2.46

Test mode: 802.11n(20) Frequency(MHz): 5700

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11502.7	V	58.47	-36.76	-27	9.76
14666.3	V	62.80	-32.43	-27	5.43
17498.2	V	65.39	-29.84	-27	2.84
10720.3	H	58.43	-36.8	-27	9.8
14691.8	H	62.25	-32.98	-27	5.98
17974.4	H	65.75	-29.48	-27	2.48

MIMO:

Test mode: 802.11n(20) Frequency(MHz): 5500

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11501.31	V	59.48	-35.75	-27	8.75
17499.48	V	66.97	-28.26	-27	1.26
15140.32	V	43.88	-51.35	-27	24.35
11471.89	H	58.76	-36.47	-27	9.47
17526.89	H	67.14	-28.09	-27	1.09
14526.95	H	46.11	-49.12	-27	22.12

Test mode: 802.11n(20) Frequency(MHz): 5580

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11492.81	V	58.39	-36.84	-27	9.84
17507.98	V	65.76	-29.47	-27	2.47
14587.54	V	46.42	-48.81	-27	21.81
11471.89	H	58.34	-36.89	-27	9.89
17509.89	H	65.61	-29.62	-27	2.62
14620.50	H	46.91	-48.32	-27	21.32

Test mode: 802.11n(20) Frequency(MHz): 5700

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11501.31	V	58.34	-36.89	-27	9.89
17499.48	V	65.36	-29.87	-27	2.87
14664.08	V	45.4	-49.83	-27	22.83
10731.99	H	58.35	-36.88	-27	9.88
17986.09	H	65.59	-29.64	-27	2.64
14688.53	H	44.95	-50.28	-27	23.28

- Note:** (1) All Readings are Peak Value (VBW=3MHz) and AV Value (VBW=10Hz).
 (2) Emission Level= Reading Level+Probe Factor +Cable Loss.
 (3) EIRP[dBm] = E[dBuV/m] + 20 log(d[meters]) - 104.77
 d is the measurement distance in 3 meters

ANT2:

Test mode:		802.11n(20)		Frequency(MHz): 5500	
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
11502.7	V	59.61	74.00	14.39	peak
15142.5	V	62.91	74.00	11.09	peak
17498.2	V	67.00	74.00	7.00	peak
11502.75	V	47.30	54.00	6.70	AVG
15142.57	V	44.14	54.00	9.86	AVG
17498.24	V	47.05	54.00	6.95	AVG
11460.2	H	58.84	74.00	15.16	peak
14530.2	H	63.17	74.00	10.83	peak
17515.2	H	67.30	74.00	6.70	peak
11460.23	H	46.96	54.00	7.04	AVG
14530.26	H	46.29	54.00	7.71	AVG
17515.25	H	46.66	54.00	7.34	AVG

Test mode:		802.11n(20)		Frequency(MHz): 5580	
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
11494.2	V	58.52	74.00	15.48	peak
14589.7	V	62.18	74.00	11.82	peak
17506.7	V	65.79	74.00	8.21	peak
11494.24	V	47.36	54.00	6.64	AVG
14589.79	V	46.68	54.00	7.32	AVG
17506.75	V	47.19	54.00	6.81	AVG
11460.2	H	58.42	74.00	15.58	peak
14623.8	H	62.59	74.00	11.41	peak
17498.2	H	65.77	74.00	8.23	peak
11460.23	H	47.06	54.00	6.94	AVG
14623.81	H	47.09	54.00	6.91	AVG
17498.24	H	46.92	54.00	7.08	AVG

Test mode:		802.11n(20)		Frequency(MHz): 5700	
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
11502.7	V	58.47	74.00	15.53	peak
14666.3	V	62.80	74.00	11.20	peak
17498.2	V	65.39	74.00	8.61	peak
11502.75	V	47.18	54.00	6.82	AVG
14666.33	V	45.66	54.00	8.34	AVG
17498.24	V	46.92	54.00	7.08	AVG
10720.3	H	58.43	74.00	15.57	peak
14691.8	H	62.25	74.00	11.75	peak
17974.4	H	65.75	74.00	8.25	peak
10720.36	H	47.44	54.00	6.56	AVG
14691.84	H	45.13	54.00	8.87	AVG
17974.48	H	45.39	54.00	8.61	AVG

MIMO:

Test mode: 802.11n(20)		Frequency(MHz): 5500			
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
11501.310	V	59.48	74.00	14.52	peak
15141.110	V	62.75	74.00	11.25	peak
17499.480	V	66.97	74.00	7.03	peak
11504.030	V	47.28	54.00	6.72	AVG
15140.320	V	43.88	54.00	10.12	AVG
17495.990	V	46.86	54.00	7.14	AVG
11471.890	H	58.76	74.00	15.24	peak
14541.890	H	62.96	74.00	11.04	peak
17526.890	H	67.14	74.00	6.86	peak
11471.920	H	46.82	54.00	7.18	AVG
14526.950	H	46.11	54.00	7.89	AVG
17511.940	H	46.53	54.00	7.47	AVG

Test mode: 802.11n(20)		Frequency(MHz): 5580			
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
11492.810	V	58.39	74.00	15.61	peak
14588.310	V	62.02	74.00	11.98	peak
17507.980	V	65.76	74.00	8.24	peak
11495.520	V	47.34	54.00	6.66	AVG
14587.540	V	46.42	54.00	7.58	AVG
17504.500	V	47	54.00	7	AVG
11471.890	H	58.34	74.00	15.66	peak
14635.490	H	62.38	74.00	11.62	peak
17509.890	H	65.61	74.00	8.39	peak
11471.920	H	46.92	54.00	7.08	AVG
14620.500	H	46.91	54.00	7.09	AVG
17494.930	H	46.79	54.00	7.21	AVG

Test mode: 802.11n(20)		Frequency(MHz): 5700			
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
11501.310	V	58.34	74.00	15.66	peak
14664.910	V	62.64	74.00	11.36	peak
17499.480	V	65.36	74.00	8.64	peak
11504.030	V	47.16	54.00	6.84	AVG
14664.080	V	45.4	54.00	8.6	AVG
17495.990	V	46.73	54.00	7.27	AVG
10731.990	H	58.35	74.00	15.65	peak
14703.490	H	62.04	74.00	11.96	peak
17986.090	H	65.59	74.00	8.41	peak
10732.050	H	47.3	54.00	6.7	AVG
14688.530	H	44.95	54.00	9.05	AVG
17971.170	H	45.26	54.00	8.74	AVG

- Note:**
- (1) All Readings are Peak Value (VBW=3MHz) and Peak Value (VBW=10Hz).
 - (2) Emission Level= Reading Level+Correct Factor +Cable Loss.
 - (3) Correct Factor= Ant_F + Cab_L - Preamp
 - (4) The reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

● Undesirable radiated Undesirable radiated Spurious Emission in Band Edge

Test mode: 802.11n(20) Frequency(MHz): 5500

Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5464.99	H	53.05	-42.18	-27	Pass
5431.67	V	52.58	-42.65	-27	Pass

Test mode: 802.11n(20) Frequency(MHz): 5700

Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5750.11	H	53.59	-41.64	-27	Pass
5739.27	V	54.27	-40.96	-27	Pass

- Note:** (1) All Readings are Peak Value (VBW=3MHz) and Peak Value (VBW=10Hz).
 (2) Emission Level= Reading Level+Correct Factor +Cable Loss.
 (3) Correct Factor= Ant_F + Cab_L - Preamp
 (4) EIRP[dBm] = E[dBμV/m] + 20 log(d[meters]) - 104.77
 d is the measurement distance in 3 meters

Test mode: 802.11n(20) Frequency(MHz): 5500

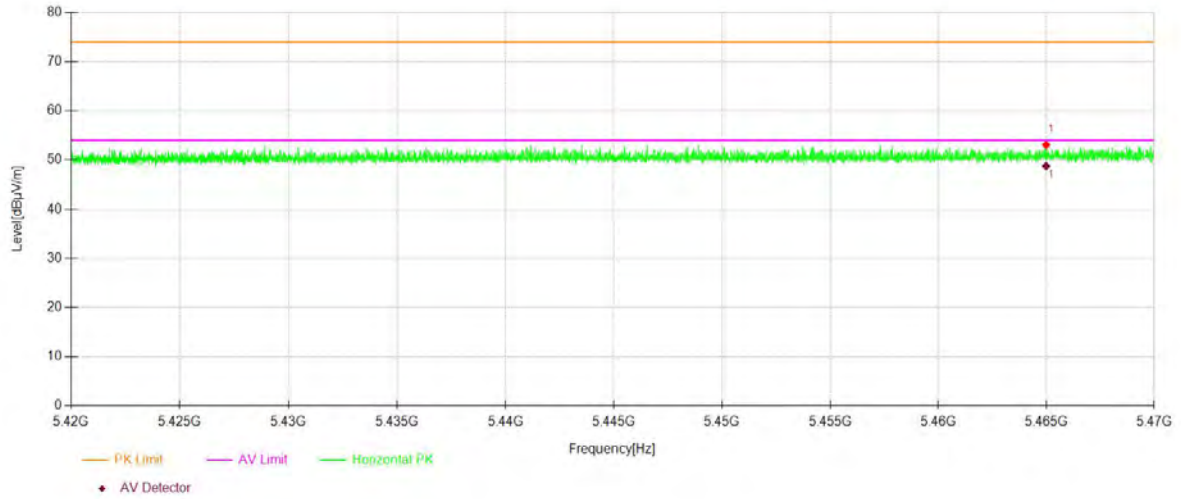
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
5431.67	V	52.58	74.00	21.42	peak
5431.67	V	48.61	54.00	5.39	AVG
5464.99	H	53.05	74.00	20.95	peak
5464.99	H	48.77	54.00	5.23	AVG

Test mode: 802.11n(20) Frequency(MHz): 5700

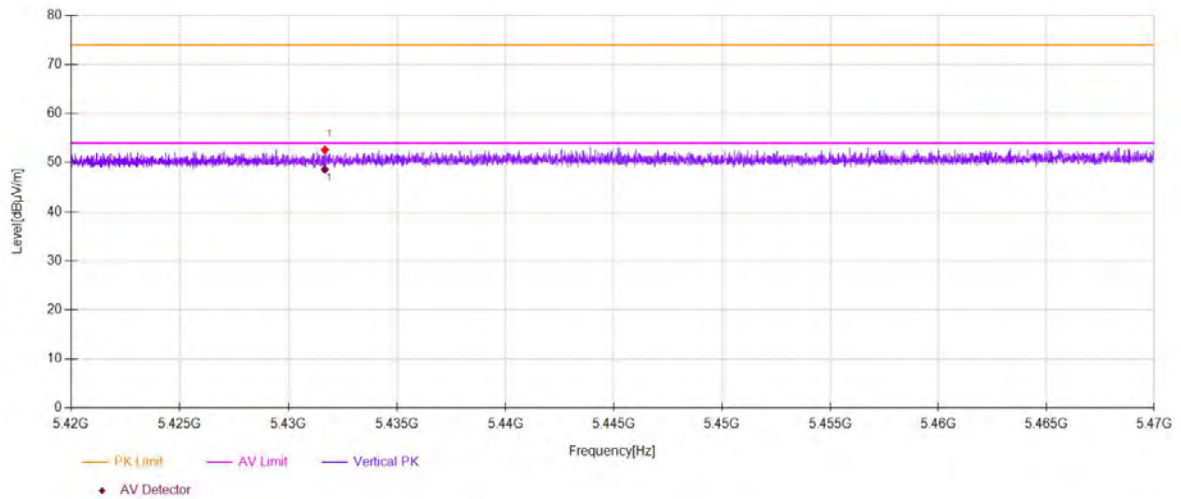
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
5739.27	V	54.27	74.00	19.73	peak
5739.27	V	49.02	54.00	4.98	AVG
5750.11	H	53.59	74.00	20.41	peak
5750.11	H	50.54	54.00	3.46	AVG

- Note:** (1) All Readings are Peak Value (VBW=3MHz) and Peak Value (VBW=10Hz).
 (2) Emission Level= Reading Level+Correct Factor +Cable Loss.
 (3) Correct Factor= Ant_F + Cab_L - Preamp
 (4) The reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

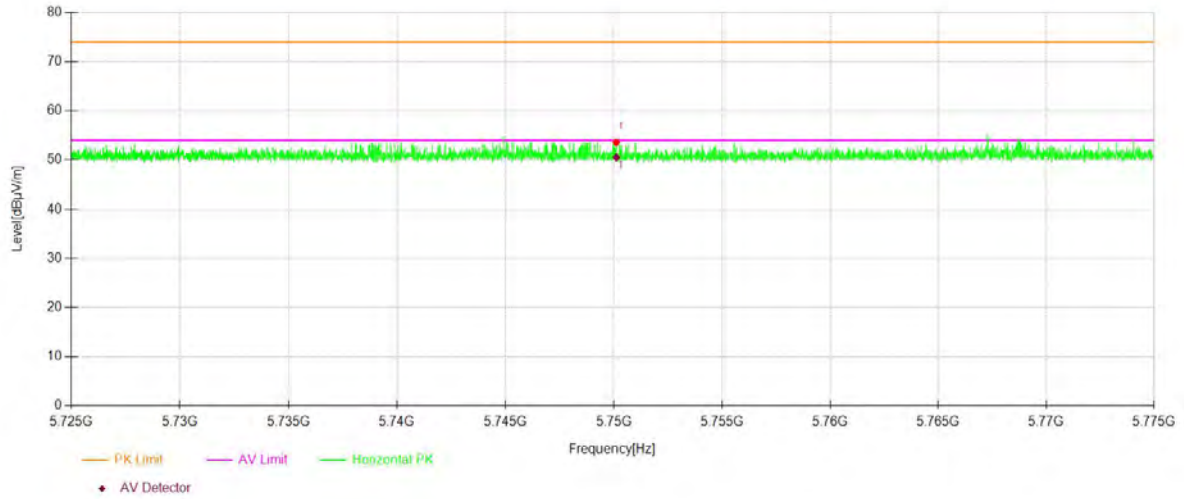
U-NII -2C				
Test Model	Undesirable radiated Spurious Emission in Restricted Band (5100-5150MHz)			
	<input type="checkbox"/> 802.11a	<input checked="" type="checkbox"/> 802.11n(HT20)	<input type="checkbox"/> 802.11 ac (VHT20)	
	<input checked="" type="checkbox"/> 5500	<input type="checkbox"/> 5580	<input type="checkbox"/> 5700	Ant.Pol H



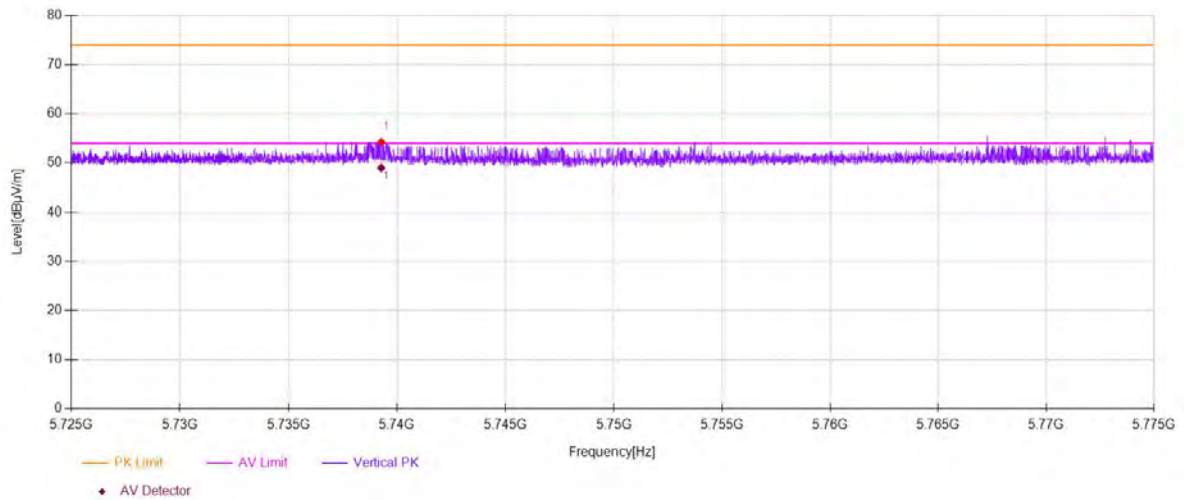
U-NII -2C				
Test Model	Undesirable radiated Spurious Emission in Restricted Band (5100-5150MHz)			
	<input type="checkbox"/> 802.11a	<input checked="" type="checkbox"/> 802.11n(HT20)	<input type="checkbox"/> 802.11 ac (VHT20)	
	<input checked="" type="checkbox"/> 5500	<input type="checkbox"/> 5580	<input type="checkbox"/> 5700	Ant.Pol V



U-NII -2C			
Test Model	Undesirable radiated Spurious Emission in Restricted Band (5350-5400MHz)		
	<input type="checkbox"/> 802.11a	<input checked="" type="checkbox"/> 802.11n(HT20)	<input type="checkbox"/> 802.11 ac (VHT20)
	<input type="checkbox"/> 5500	<input type="checkbox"/> 5580	<input checked="" type="checkbox"/> 5700
			Ant.Pol H



U-NII -2C			
Test Model	Undesirable radiated Spurious Emission in Restricted Band (5350-5400MHz)		
	<input type="checkbox"/> 802.11a	<input checked="" type="checkbox"/> 802.11n(HT20)	<input type="checkbox"/> 802.11 ac (VHT20)
	<input type="checkbox"/> 5500	<input type="checkbox"/> 5580	<input checked="" type="checkbox"/> 5700
			Ant.Pol V



- For Undesirable radiated Spurious Emission in U-NII -3
All the modes 802.11a/n/ac has been tested and the worst result 802.11a recorded as below:
- Undesirable radiated Spurious Emission Above 1GHz (1GHz to 40GHz)
Highest gain of each antenna and highest output power is ANT2 and MIMO as below:

ANT2:

Test mode: 802.11n(20) Frequency(MHz): 5745

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11375.1	V	58.71	-36.52	-27	9.52
14572.7	V	62.19	-33.04	-27	6.04
17506.7	V	65.52	-29.71	-27	2.71
10720.3	H	58.60	-36.63	-27	9.63
15185.0	H	61.96	-33.27	-27	6.27
17506.7	H	65.64	-29.59	-27	2.59

Test mode: 802.11n(20) Frequency(MHz): 5785

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
10728.8	V	58.76	-36.47	-27	9.47
14589.7	V	62.16	-33.07	-27	6.07
17489.7	V	66.06	-29.17	-27	2.17
11477.2	H	58.22	-37.01	-27	10.01
15151.0	H	62.56	-32.67	-27	5.67
17523.7	H	65.71	-29.52	-27	2.52

Test mode: 802.11n(20) Frequency(MHz): 5825

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11451.7	V	59.61	-35.62	-27	8.62
14615.3	V	62.39	-32.84	-27	5.84
17481.2	V	66.49	-28.74	-27	1.74
11477.2	H	58.62	-36.61	-27	9.61
14623.8	H	62.39	-32.84	-27	5.84
17498.2	H	66.06	-29.17	-27	2.17

MIMO:

Test mode: 802.11n(20) Frequency(MHz): 5745

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11373.71	V	58.58	-36.65	-27	9.65
17507.98	V	65.49	-29.74	-27	2.74
14570.53	V	46.31	-48.92	-27	21.92
10731.99	H	58.52	-36.71	-27	9.71
17518.39	H	65.48	-29.75	-27	2.75
15181.78	H	44.2	-51.03	-27	24.03

Test mode: 802.11n(20) Frequency(MHz): 5785

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
10727.41	V	58.63	-36.60	-27	9.60
17490.98	V	66.03	-29.20	-27	2.20
14587.54	V	48.51	-46.72	-27	19.72
11488.89	H	58.14	-37.09	-27	10.09
17535.39	H	65.55	-29.68	-27	2.68
15147.76	H	43.99	-51.24	-27	24.24

Test mode: 802.11n(20) Frequency(MHz): 5825

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11450.31	V	59.48	-35.75	-27	8.75
17482.48	V	66.46	-28.77	-27	1.77
14613.05	V	46.71	-48.52	-27	21.52
11488.89	H	58.54	-36.69	-27	9.69
17509.89	H	65.9	-29.33	-27	2.33
14620.50	H	46.62	-48.61	-27	21.61

- Note:** (1) All Readings are Peak Value (VBW=3MHz) and AV Value (VBW=10Hz).
 (2) Emission Level= Reading Level+Probe Factor +Cable Loss.
 (3) EIRP[dBm] = E[dBμV/m] + 20 log(d[meters]) - 104.77
 d is the measurement distance in 3 meters

ANT2:

Test mode:		802.11n(20)		Frequency(MHz): 5745	
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
11375.1	V	58.71	74.00	15.29	peak
14572.7	V	62.19	74.00	11.81	peak
17506.7	V	65.52	74.00	8.48	peak
11375.18	V	46.55	54.00	7.45	AVG
14572.78	V	46.57	54.00	7.43	AVG
17506.75	V	46.68	54.00	7.32	AVG
10720.3	H	58.60	74.00	15.40	peak
15185.0	H	61.96	74.00	12.04	peak
17506.7	H	65.64	74.00	8.36	peak
10720.36	H	47.00	54.00	7.00	AVG
15185.09	H	44.38	54.00	9.62	AVG
17506.75	H	46.89	54.00	7.11	AVG

Test mode:		802.11n(20)		Frequency(MHz): 5785	
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
10728.8	V	58.76	74.00	15.24	peak
14589.7	V	62.16	74.00	11.84	peak
17489.7	V	66.06	74.00	7.94	peak
10728.86	V	46.90	54.00	7.10	AVG
14589.79	V	48.77	54.00	5.23	AVG
17489.74	V	47.07	54.00	6.93	AVG
11477.2	H	58.22	74.00	15.78	peak
15151.0	H	62.56	74.00	11.44	peak
17523.7	H	65.71	74.00	8.29	peak
11477.23	H	46.61	54.00	7.39	AVG
15151.07	H	44.17	54.00	9.83	AVG
17523.76	H	47.16	54.00	6.84	AVG

Test mode:		802.11n(20)		Frequency(MHz): 5825	
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
11451.7	V	59.61	74.00	14.39	peak
14615.3	V	62.39	74.00	11.61	peak
17481.2	V	66.49	74.00	7.51	peak
11451.72	V	47.20	54.00	6.80	AVG
14615.30	V	46.97	54.00	7.03	AVG
17481.24	V	46.25	54.00	7.75	AVG
11477.2	H	58.62	74.00	15.38	peak
14623.8	H	62.39	74.00	11.61	peak
17498.2	H	66.06	74.00	7.94	peak
11477.23	H	46.77	54.00	7.23	AVG
14623.81	H	46.80	54.00	7.20	AVG
17498.24	H	47.43	54.00	6.57	AVG

MIMO:

Test mode: 802.11n(20)		Frequency(MHz): 5745			
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
11373.710	V	58.58	74.00	15.42	peak
14571.310	V	62.03	74.00	11.97	peak
17507.980	V	65.49	74.00	8.51	peak
11376.460	V	46.53	54.00	7.47	AVG
14570.530	V	46.31	54.00	7.69	AVG
17504.500	V	46.49	54.00	7.51	AVG
10731.990	H	58.52	74.00	15.48	peak
15196.690	H	61.75	74.00	12.25	peak
17518.390	H	65.48	74.00	8.52	peak
10732.050	H	46.86	54.00	7.14	AVG
15181.780	H	44.2	54.00	9.8	AVG
17503.440	H	46.76	54.00	7.24	AVG

Test mode: 802.11n(20)		Frequency(MHz): 5785			
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
10727.410	V	58.63	74.00	15.37	peak
14588.310	V	62	74.00	12	peak
17490.980	V	66.03	74.00	7.97	peak
10730.140	V	46.88	54.00	7.12	AVG
14587.540	V	48.51	54.00	5.49	AVG
17487.490	V	46.88	54.00	7.12	AVG
11488.890	H	58.14	74.00	15.86	peak
15162.690	H	62.35	74.00	11.65	peak
17535.390	H	65.55	74.00	8.45	peak
11488.920	H	46.47	54.00	7.53	AVG
15147.760	H	43.99	54.00	10.01	AVG
17520.450	H	47.03	54.00	6.97	AVG

Test mode: 802.11n(20)		Frequency(MHz): 5825			
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
11450.310	V	59.48	74.00	14.52	peak
14613.910	V	62.23	74.00	11.77	peak
17482.480	V	66.46	74.00	7.54	peak
11453.000	V	47.18	54.00	6.82	AVG
14613.050	V	46.71	54.00	7.29	AVG
17478.990	V	46.06	54.00	7.94	AVG
11488.890	H	58.54	74.00	15.46	peak
14635.490	H	62.18	74.00	11.82	peak
17509.890	H	65.9	74.00	8.1	peak
11488.920	H	46.63	54.00	7.37	AVG
14620.500	H	46.62	54.00	7.38	AVG
17494.930	H	47.3	54.00	6.7	AVG

- Note:**
- (1) All Readings are Peak Value (VBW=3MHz) and Peak Value (VBW=10Hz).
 - (2) Emission Level= Reading Level+Correct Factor +Cable Loss.
 - (3) Correct Factor= Ant_F + Cab_L - Preamp
 - (4) The reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

● Undesirable radiated Spurious Emission in band edge

Test mode: 802.11n(20) Frequency: 5745

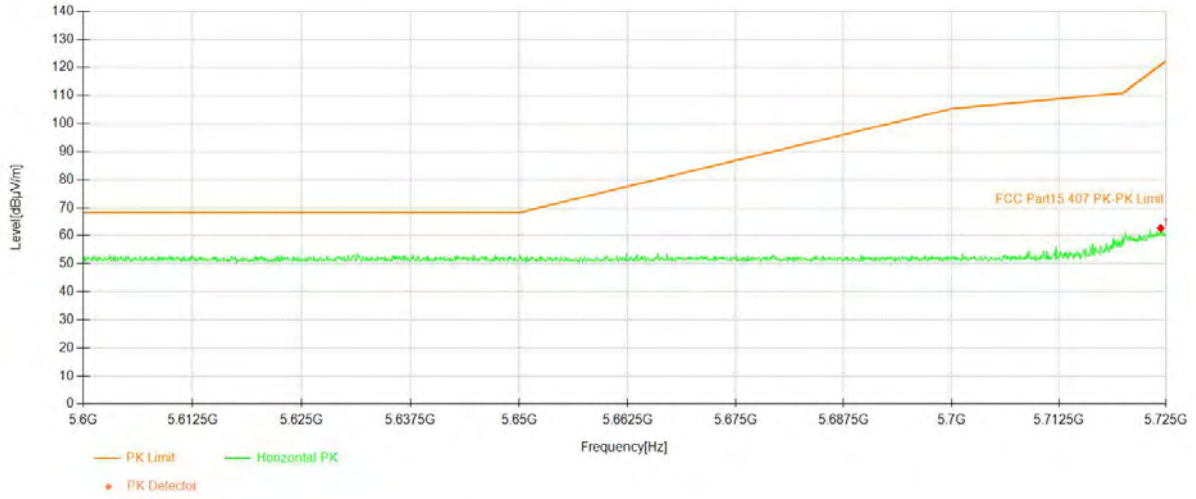
Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5724.37	H	62.71	-32.52	-27	PASS
5724.18	V	57.19	-38.04	-27	PASS

Test mode: 802.11n(20) Frequency: 5825

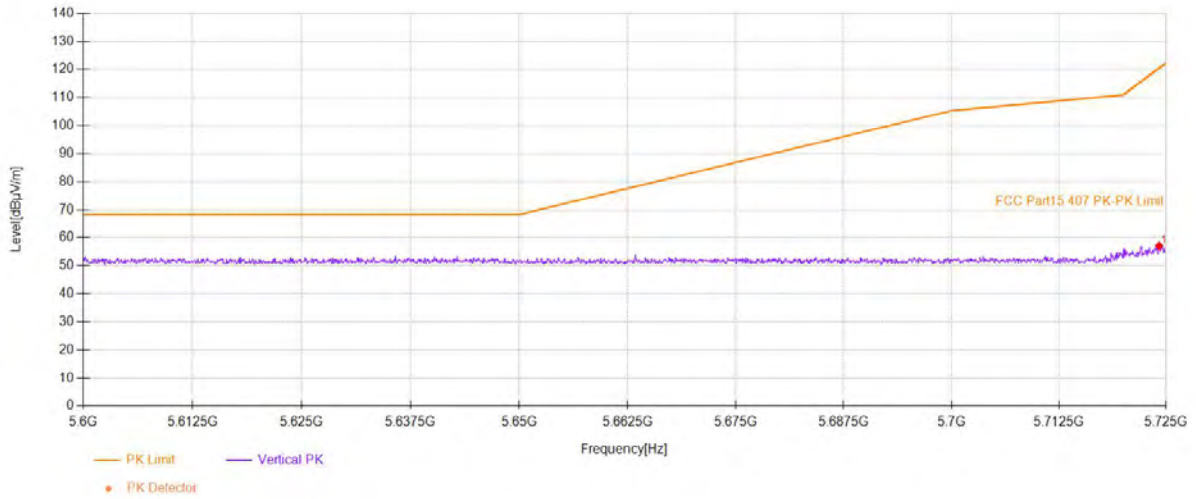
Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5850.56	H	55.37	-39.86	-27	PASS
5850.56	V	55.59	-39.64	-27	PASS

- Note:** (1) All Readings are Peak Value (VBW=3MHz) and Peak Value (VBW=10Hz).
 (2) Emission Level= Reading Level+Correct Factor +Cable Loss.
 (3) Correct Factor= Ant_F + Cab_L - Preamp
 (4) EIRP[dBm] = E[dBμV/m] + 20 log(d[meters]) - 104.77
 d is the measurement distance in 3 meters

Test Model	U-NII -3			
	Undesirable radiated <input type="checkbox"/> 802.11a	Undesirable radiated <input checked="" type="checkbox"/> 5745	Spurious Emission in Band Edge <input checked="" type="checkbox"/> 802.11n(HT20)	<input type="checkbox"/> 802.11n(HT40)
			Ant.Pol	H



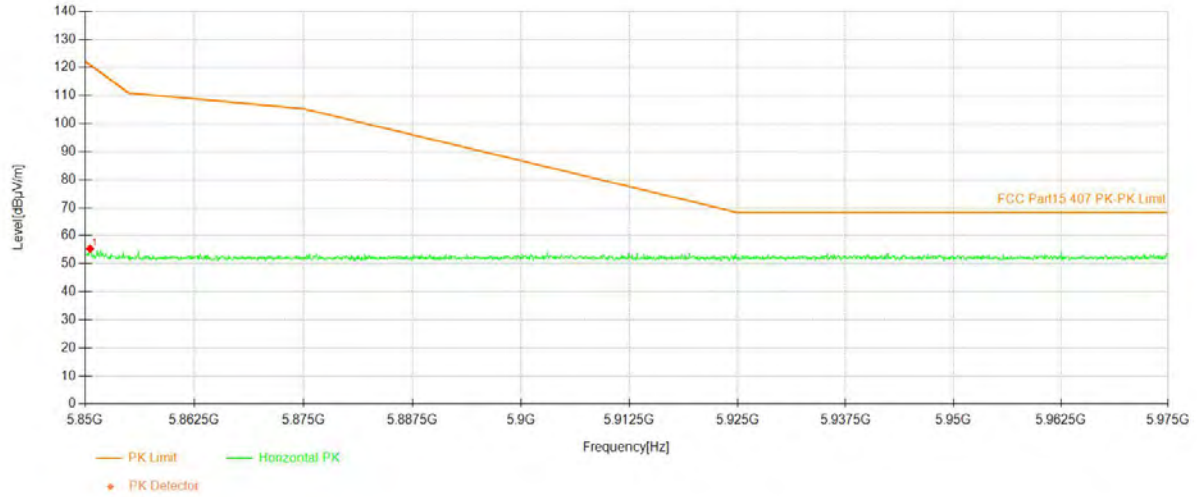
Test Model	U-NII -3			
	Undesirable radiated <input type="checkbox"/> 802.11a	Undesirable radiated <input checked="" type="checkbox"/> 5745	Spurious Emission in Band Edge <input checked="" type="checkbox"/> 802.11n(HT20)	<input type="checkbox"/> 802.11n(HT40)
			Ant.Pol	V



U-NII -3

Test Model Undesirable radiated Undesirable radiated Spurious Emission in Band Edge

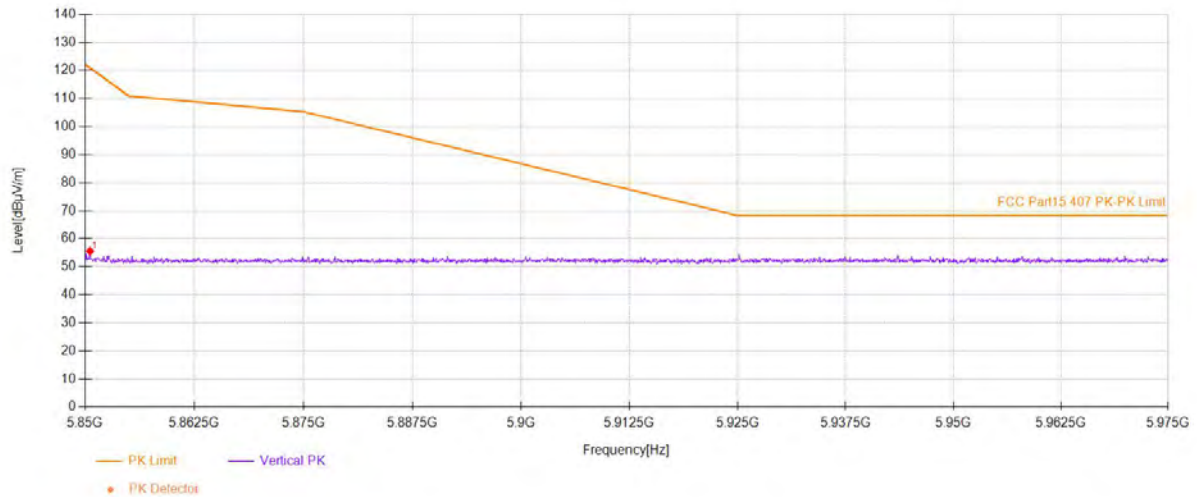
	<input type="checkbox"/> 802.11a	<input checked="" type="checkbox"/> 802.11n(HT20)	<input type="checkbox"/> 802.11n(HT40)
	<input checked="" type="checkbox"/> 5825		Ant.Pol H



U-NII -3

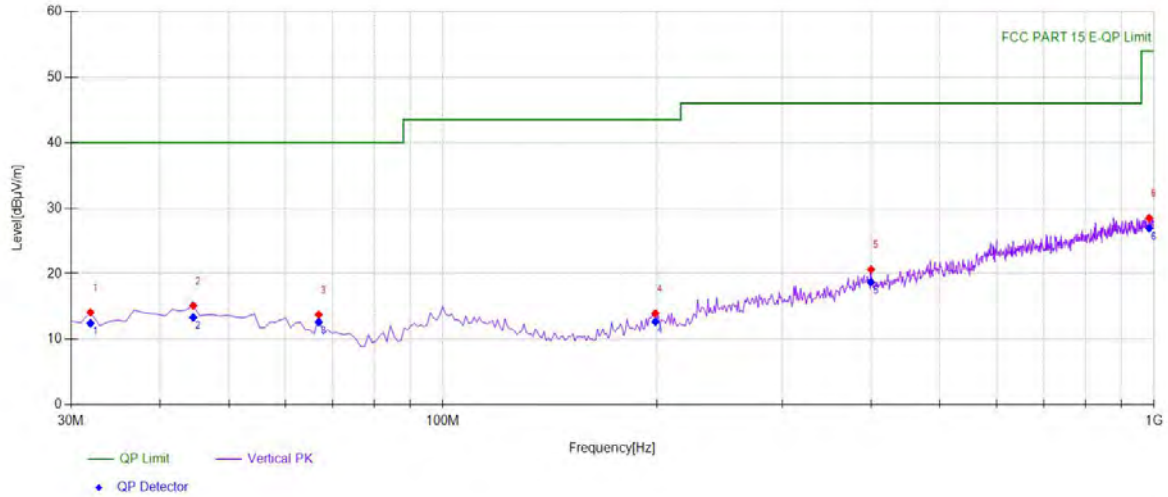
Test Model Undesirable radiated Undesirable radiated Spurious Emission in Band Edge

	<input type="checkbox"/> 802.11a	<input checked="" type="checkbox"/> 802.11n(HT20)	<input type="checkbox"/> 802.11n(HT40)
	<input checked="" type="checkbox"/> 5825		Ant.Pol V

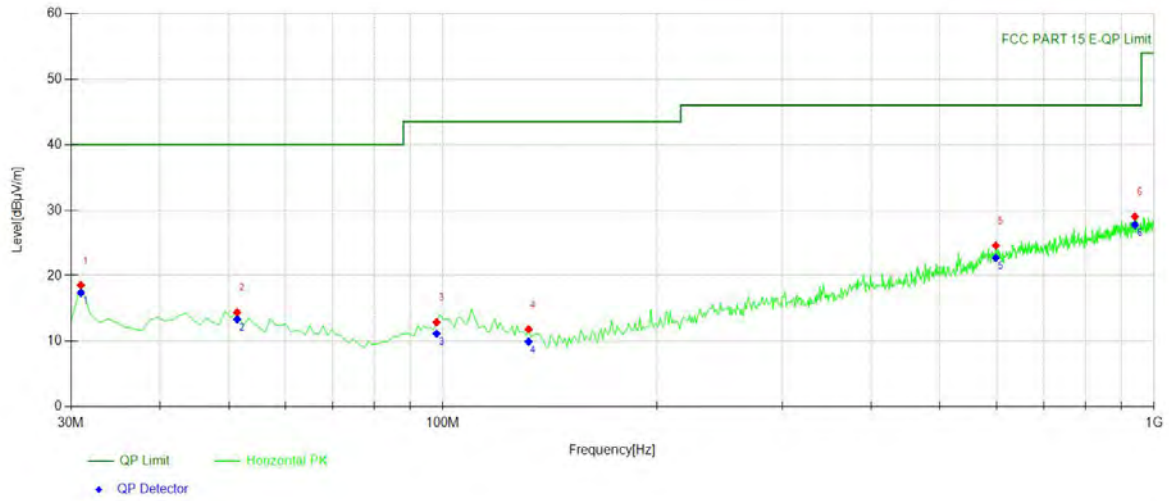


- Undesirable radiated Spurious Emission below 1GHz (30MHz to 1GHz)
All modes have been tested, and the worst result recorded was report as below:

Test mode: 802.11n(20) Frequency(MHz): 5180

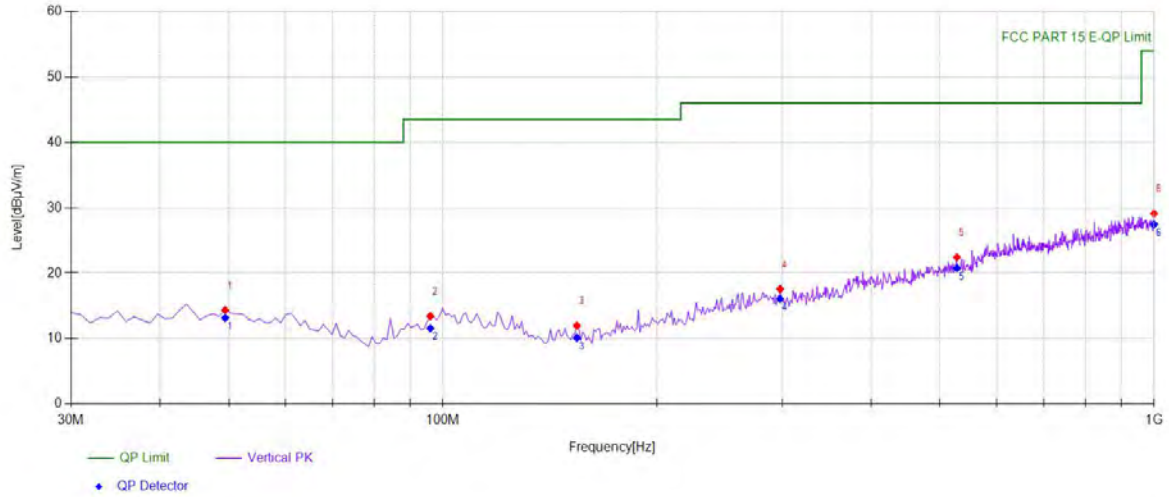


Suspected Data List								
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Detector	Limit [dBμV/m]	Margin [dB]	Polarity
1	31.9419	32.51	-18.41	14.10	PK	40.00	25.90	Vertical
2	44.5646	32.74	-17.59	15.15	PK	40.00	24.85	Vertical
3	66.8969	33.28	-19.53	13.75	PK	40.00	26.25	Vertical
4	198.948	31.16	-17.20	13.96	PK	43.50	29.54	Vertical
5	399.939	32.43	-11.79	20.64	PK	46.00	25.36	Vertical
6	984.464	30.23	-1.75	28.48	PK	54.00	25.52	Vertical

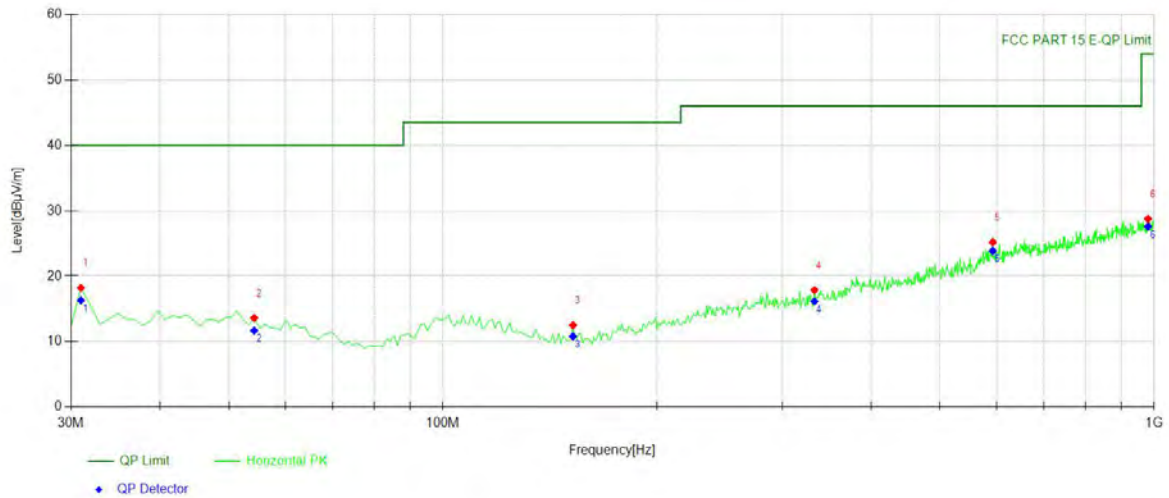


Suspected Data List								
NO.	Freq. [MHz]	Reading [dBµV]	Factor [dB/m]	Level [dBµV/m]	Detector	Limit [dBµV/m]	Margin [dB]	Polarity
1	30.971	37.04	-18.47	18.57	PK	40.00	21.43	Horizontal
2	51.3614	31.81	-17.39	14.42	PK	40.00	25.58	Horizontal
3	97.968	30.17	-17.28	12.89	PK	43.50	30.61	Horizontal
4	131.952	31.03	-19.19	11.84	PK	43.50	31.66	Horizontal
5	598.989	31.74	-7.14	24.60	PK	46.00	21.40	Horizontal
6	939.799	31.48	-2.44	29.04	PK	46.00	16.96	Horizontal

Test mode: 802.11n(20) Frequency(MHz): 5200

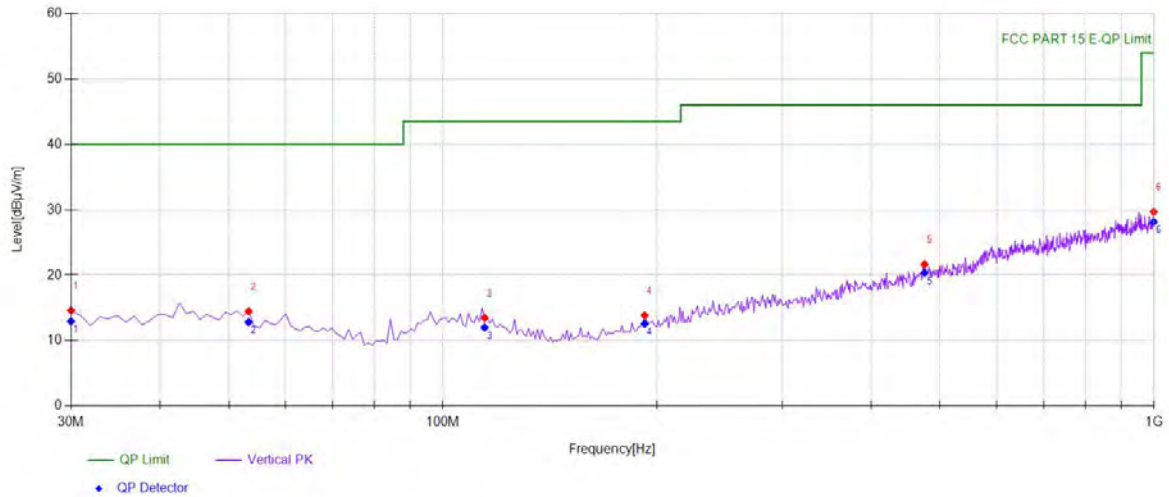


Suspected Data List								
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Detector	Limit [dBμV/m]	Margin [dB]	Polarity
1	49.4194	31.61	-17.25	14.36	PK	40.00	25.64	Vertical
2	96.026	31.15	-17.73	13.42	PK	43.50	30.08	Vertical
3	154.284	31.69	-19.70	11.99	PK	43.50	31.51	Vertical
4	297.988	31.70	-14.14	17.56	PK	46.00	28.44	Vertical
5	528.108	31.99	-9.55	22.44	PK	46.00	23.56	Vertical
6	1000	30.84	-1.72	29.12	PK	54.00	24.88	Vertical

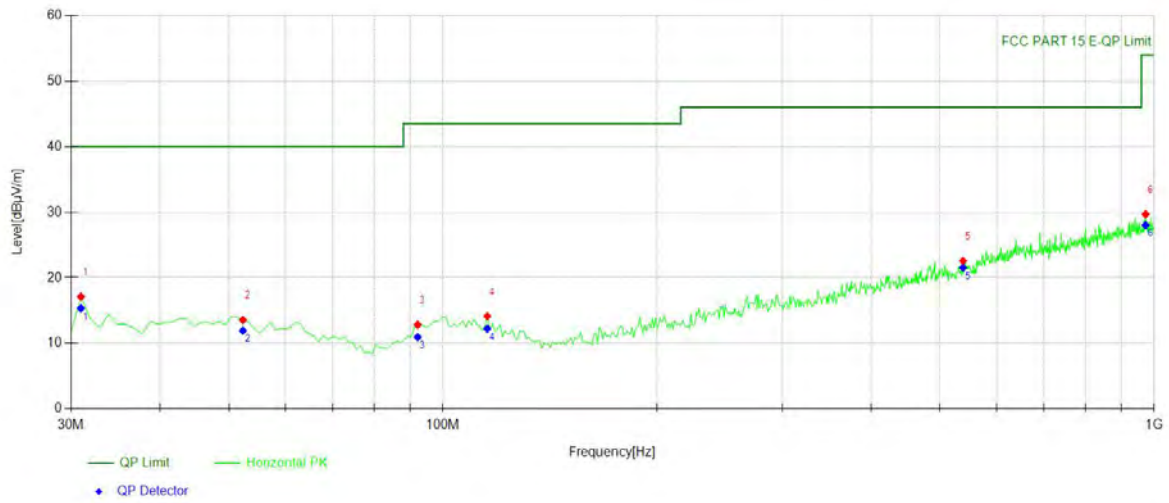


Suspected Data List								
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Detector	Limit [dBμV/m]	Margin [dB]	Polarity
1	30.971	36.68	-18.47	18.21	PK	40.00	21.79	Horizontal
2	54.2743	31.37	-17.78	13.59	PK	40.00	26.41	Horizontal
3	152.342	32.23	-19.72	12.51	PK	43.50	30.99	Horizontal
4	332.942	31.53	-13.67	17.86	PK	46.00	28.14	Horizontal
5	593.163	32.35	-7.14	25.21	PK	46.00	20.79	Horizontal
6	980.580	30.54	-1.78	28.76	PK	54.00	25.24	Horizontal

Test mode: 802.11n(20) Frequency(MHz): 5240



Suspected Data List								
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Detector	Limit [dBμV/m]	Margin [dB]	Polarity
1	30	33.14	-18.53	14.61	PK	40.00	25.39	Vertical
2	53.3033	32.12	-17.65	14.47	PK	40.00	25.53	Vertical
3	114.474	31.06	-17.59	13.47	PK	43.50	30.03	Vertical
4	192.152	31.47	-17.61	13.86	PK	43.50	29.64	Vertical
5	475.675	31.71	-10.06	21.65	PK	46.00	24.35	Vertical
6	999.029	31.41	-1.72	29.69	PK	54.00	24.31	Vertical



Suspected Data List								
NO.	Freq. [MHz]	Reading [dBµV]	Factor [dB/m]	Level [dBµV/m]	Detector	Limit [dBµV/m]	Margin [dB]	Polarity
1	30.971	35.57	-18.47	17.10	PK	40.00	22.90	Horizontal
2	52.3323	31.05	-17.52	13.53	PK	40.00	26.47	Horizontal
3	92.1421	31.48	-18.66	12.82	PK	43.50	30.68	Horizontal
4	115.445	31.77	-17.65	14.12	PK	43.50	29.38	Horizontal
5	538.788	31.83	-9.26	22.57	PK	46.00	23.43	Horizontal
6	972.812	31.65	-1.96	29.69	PK	54.00	24.31	Horizontal

8.5 POWER LINE CONDUCTED EMISSIONS

8.5.1 Applicable Standard

According to FCC Part 15.207(a)

8.5.2 Conformance Limit

Frequency(MHz)	Conducted Emission Limit	
	Quasi-peak	Average
0.15-0.5	66-56	56-46
0.5-5.0	56	46
5.0-30.0	60	50

Note: 1. The lower limit shall apply at the transition frequencies
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

8.5.3 Test Configuration

Test according to clause 6.3 conducted emission test setup

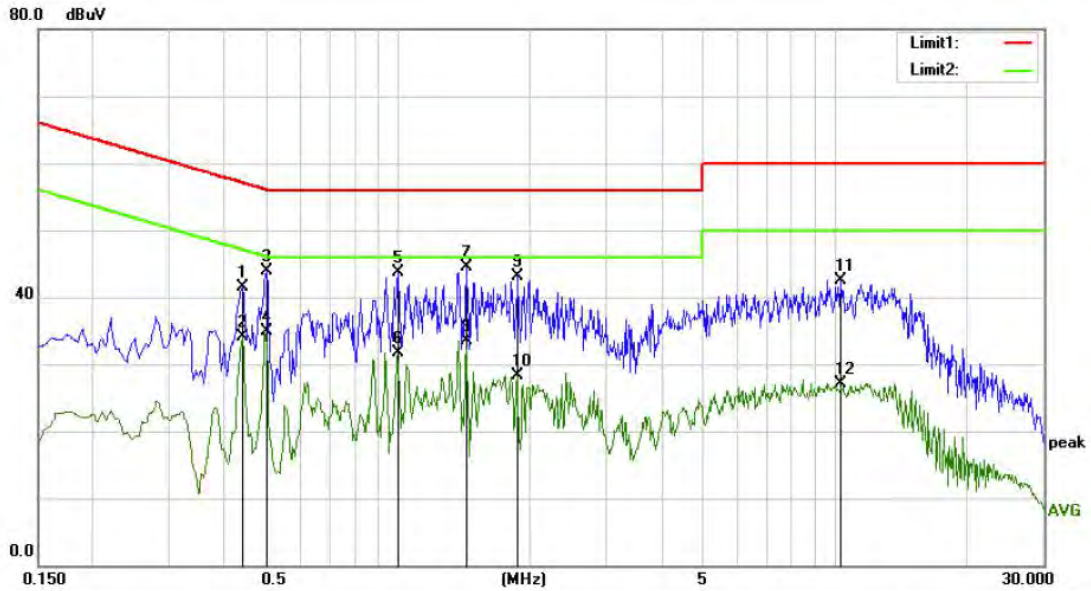
8.5.4 Test Procedure

The EUT was placed on a table which is 0.8m above ground plane.
Maximum procedure was performed on the highest emissions to ensure EUT compliance.
Repeat above procedures until all frequency measured were complete.

8.5.5 Test Results

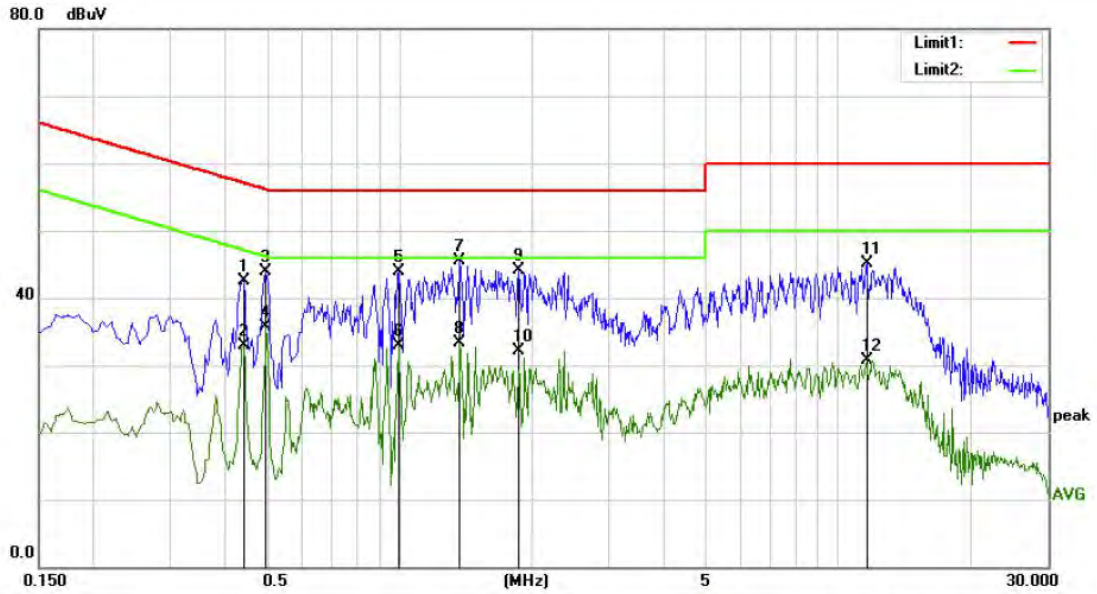
Pass

The 120V &240V voltage have been tested, and the worst result recorded was report as below:



Site: Conduction #1 Phase: **L1** Temperature: 21.9

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.4400	31.80	9.76	41.56	57.06	-15.50	QP	
2		0.4400	24.25	9.76	34.01	47.06	-13.05	AVG	
3		0.5000	34.17	9.67	43.84	56.00	-12.16	QP	
4	*	0.5000	25.30	9.67	34.97	46.00	-11.03	AVG	
5		1.0000	33.89	9.85	43.74	56.00	-12.26	QP	
6		1.0000	21.90	9.85	31.75	46.00	-14.25	AVG	
7		1.4350	34.67	9.78	44.45	56.00	-11.55	QP	
8		1.4350	23.63	9.78	33.41	46.00	-12.59	AVG	
9		1.8800	33.44	9.72	43.16	56.00	-12.84	QP	
10		1.8800	18.51	9.72	28.23	46.00	-17.77	AVG	
11		10.3300	32.40	10.03	42.43	60.00	-17.57	QP	
12		10.3300	17.07	10.03	27.10	50.00	-22.90	AVG	



Site Conduction #1 Phase: **N** Temperature: 21.9

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.4400	32.74	9.76	42.50	57.06	-14.56	QP	
2		0.4400	23.19	9.76	32.95	47.06	-14.11	AVG	
3		0.4950	34.24	9.68	43.92	56.08	-12.16	QP	
4	*	0.4950	26.08	9.68	35.76	46.08	-10.32	AVG	
5		0.9900	34.15	9.84	43.99	56.00	-12.01	QP	
6		0.9900	22.99	9.84	32.83	46.00	-13.17	AVG	
7		1.3700	35.79	9.79	45.58	56.00	-10.42	QP	
8		1.3700	23.60	9.79	33.39	46.00	-12.61	AVG	
9		1.8650	34.44	9.72	44.16	56.00	-11.84	QP	
10		1.8650	22.41	9.72	32.13	46.00	-13.87	AVG	
11		11.5800	35.20	10.00	45.20	60.00	-14.80	QP	
12		11.5800	20.72	10.00	30.72	50.00	-19.28	AVG	

8.6 ANTENNA APPLICATION

8.6.1 Antenna Requirement

Standard	Requirement
FCC CRF Part 15.203	An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.407 (a), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

8.6.2 Result

PASS

The EUT is integrated antenna, the antenna gain as below:

ANT1: 3.32dBi, ANT2: 3.32dBi

- Antennas use a permanently attached antenna which is not replaceable.
- Not using a standard antenna jack or electrical connector for antenna replacement
- The antenna has to be professionally installed (please provide method of installation)

Which in accordance to section 15.203, please refer to the internal photos.

Detail of factor for radiated emission:

Frequency(MHz)	Ant_F(dB)	Cab_L(dB)	Preamp(dB)	Correct Factor(dB)
0.009	20.6	0.03	\	20.63
0.15	20.7	0.1	\	20.8
1	20.9	0.15	\	21.05
10	20.1	0.28	\	20.38
30	18.8	0.45	\	19.25
30	11.7	0.62	27.9	-15.58
100	12.5	1.02	27.8	-14.28
300	12.9	1.91	27.5	-12.69
600	19.2	2.92	27	-4.88
800	21.1	3.54	26.6	-1.96
1000	22.3	4.17	26.2	0.27
1000	25.6	1.76	41.4	-14.04
3000	28.9	3.27	43.2	-11.03
5000	31.1	4.2	44.6	-9.3
8000	36.2	5.95	44.7	-2.55
10000	38.4	6.3	43.9	0.8
12000	38.5	7.14	42.3	3.34
15000	40.2	8.15	41.4	6.95
18000	45.4	9.02	41.3	13.12
18000	37.9	1.81	47.9	-8.19
21000	37.9	1.95	48.7	-8.85
25000	39.3	2.01	42.8	-1.49
28000	39.6	2.16	46.0	-4.24
31000	41.2	2.24	44.5	-1.06
34000	41.5	2.29	46.6	-2.81
37000	43.8	2.30	46.4	-0.3
40000	43.2	2.50	42.2	3.5

--- End of Report ---