TEST RESULTS

PASS

Please refer to the following test plots.

U-NII-1 Band							
Frequency MHz	Data Rate Mbps		Duty Cycle Factor (dB)	PSD dBm/MHz		Total PSD with duty cycle factor	Limit dBm/ MHz
IEEE 802.11a Mode (OFDM, Antenna Gain=2.0dBi)							
Channel: 5180	6		0	8.112		9.472	11
Channel: 5200	6			9.410		10.770	11
Channel: 5240	6			8.619		9.979	11
IEEE 802.11n(HT20)Mode (OFDM, Antenna Gain=2.0dBi)							
Channel: 5180	SISO	MIMO	0	ANT_1 (SISO)	ANT_2 (SISO)	Ant_1+ANT_2 (MIMO)	---
	MCS 0	MCS 8		7.190	7.034	10.123	11
Channel: 5200	MCS 0	MCS 8		7.293	7.013	10.166	11
Channel: 5240	MCS 0	MCS 8		7.116	6.977	10.057	11
IEEE 802.11n(HT40) Mode (OFDM, Antenna Gain=2.0Bi)							
Channel: 5190	MCS 0	MCS 8	0	3.701	4.315	7.029	11
Channel: 5230	MCS 0	MCS 8		4.295	4.188	7.252	11
IEEE 802.11ac(VHT20) Mode (OFDM, Antenna Gain=2.0dBi)							
Channel: 5180	MCS 0	MCS 8	0	6.338	6.979	9.681	11
Channel: 5200	MCS 0	MCS 8		6.959	7.028	10.004	11
Channel: 5240	MCS 0	MCS 8		6.471	7.561	10.060	11
IEEE 802.11ac(VHT40) Mode (OFDM, Antenna Gain=2.0dBi)							
Channel: 5190	MCS 0	MCS 8	0	3.172	4.296	6.781	11
Channel: 5230	MCS 0	MCS 8		3.875	4.009	6.953	11
IEEE 802.11ac(VHT80) Mode (OFDM, Antenna Gain=2.0dBi)							
Channel: 5210	MCS 0	MCS 8	0	1.161	1.643	4.419	11

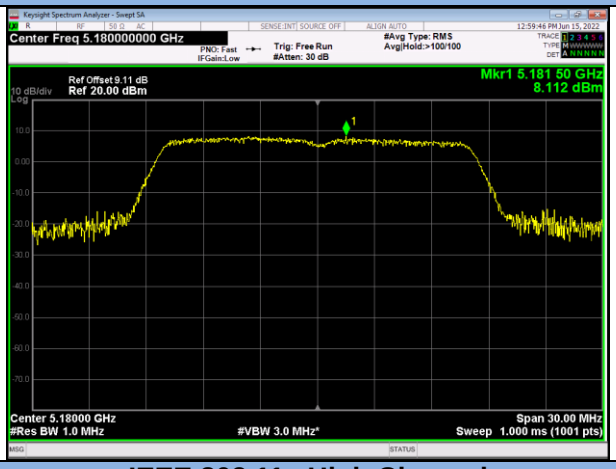
Note:
1. As for IEEE 802.11a mode, both of antennas have considered during pre-test, but only the worst case (ANT_1) was recorded. As the others modes, only the worst case(ANT_1)was recorded.
2. As for IEEE 802.11n/ac mode, EUT working in SISO and MIMO mode.
3. The duty cycle factor has considered during the test.
4. Directional Gain = 2.0dBi + 10log(2) = 5.01 dBi<6 dBi, Therefore the limit doesn't change.

U-NII-3 Band							
Frequency MHz	Data Rate Mbps		Duty Cycle Factor (dB)	PSD dBm/500kHz		Total PSD with duty cycle factor	Limit dBm/ MHz
IEEE 802.11a Mode (OFDM, Antenna Gain=2.0dBi)							
Channel: 5745	6		0	6.145		7.525	30
Channel: 5785	6			7.733		9.113	30
Channel: 5825	6			6.540		7.920	30
IEEE 802.11n(HT20)Mode (OFDM, Antenna Gain=2.0dBi)							
Channel: 5745	SISO	MIMO	0	ANT_1 (SISO)	ANT_2 (SISO)	Ant_1+ANT_2 (MIMO)	---
	MCS 0	MCS 8		4.714	5.232	7.991	30
Channel: 5785	MCS 0	MCS 8		5.822	5.911	8.877	30
Channel: 5825	MCS 0	MCS 8		4.655	5.711	8.225	30
IEEE 802.11n(HT40) Mode (OFDM, Antenna Gain=2.0Bi)							
Channel: 5755	MCS 0	MCS 8	0	2.087	2.320	5.215	30
Channel: 5795	MCS 0	MCS 8		3.309	2.705	6.028	30
IEEE 802.11ac (VHT20) Mode (OFDM, Antenna Gain=2.0dBi)							
Channel: 5745	MCS 0	MCS 8	0	4.889	5.192	8.053	30
Channel: 5785	MCS 0	MCS 8		5.841	5.781	8.821	30
Channel: 5825	MCS 0	MCS 8		4.819	5.448	8.155	30
IEEE 802.11ac (VHT40) Mode (OFDM, Antenna Gain=2.0dBi)							
Channel: 5755	MCS 0	MCS 8	0	2.21	3.838	6.110	30
Channel: 5795	MCS 0	MCS 8		3.396	3.287	6.352	30
IEEE 802.11ac (VHT80) Mode (OFDM, Antenna Gain=2.0dBi)							
Channel: 5775	MCS 0	MCS 8	0	2.838	0.199	4.726	30

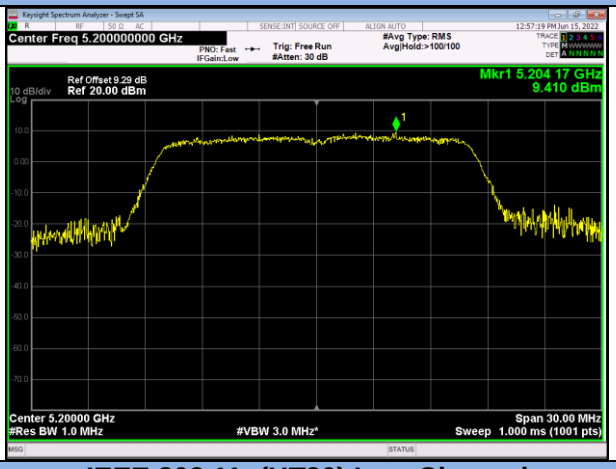
Note:
1. As for IEEE 802.11a mode, both of antennas have considered during pre-test, but only the worst case (ANT_1) was recorded. As the others modes, only the worst case(ANT_1)was recorded.
2. As for IEEE 802.11n/ac mode, EUT working in both SISO and MIMO modes.
3. The duty cycle factor has considered during the test.
4. Directional Gain = 2.0dBi + 10log(2) = 5.01 dBi<6 dBi, Therefore the limit doesn't change.

U-NII-1 Band

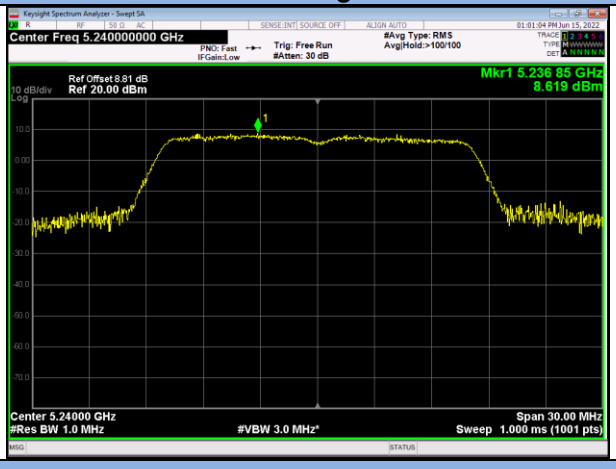
IEEE 802.11a Low Channel



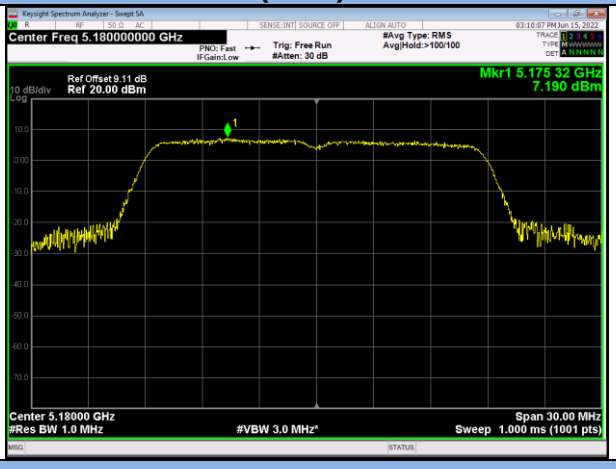
IEEE 802.11a Middle Channel



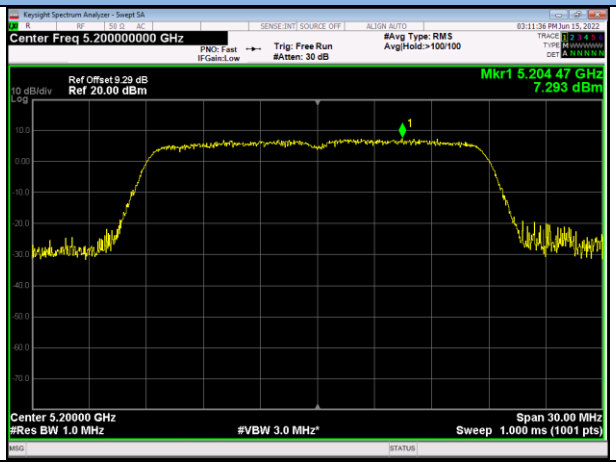
IEEE 802.11a High Channel



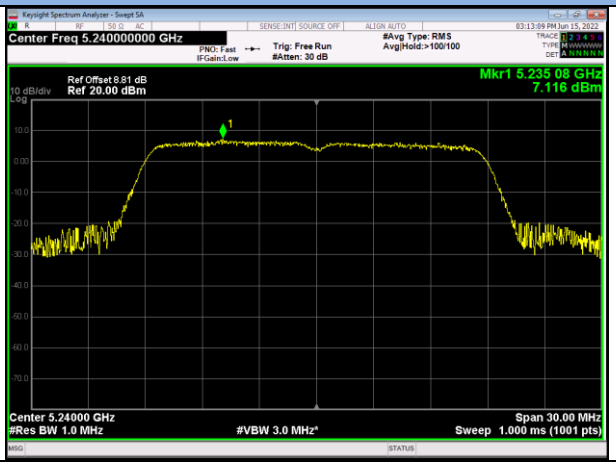
IEEE 802.11n(HT20) Low Channel

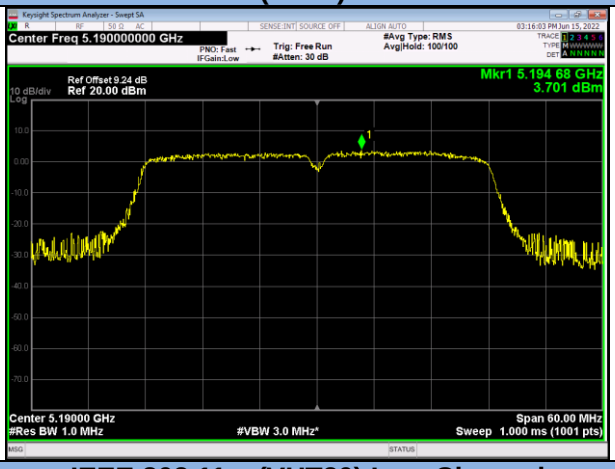
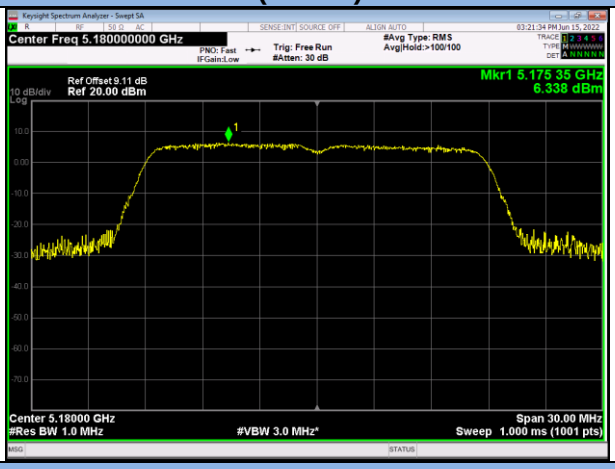
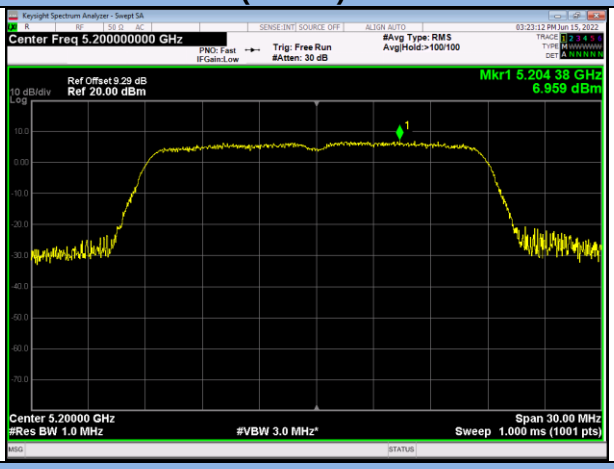
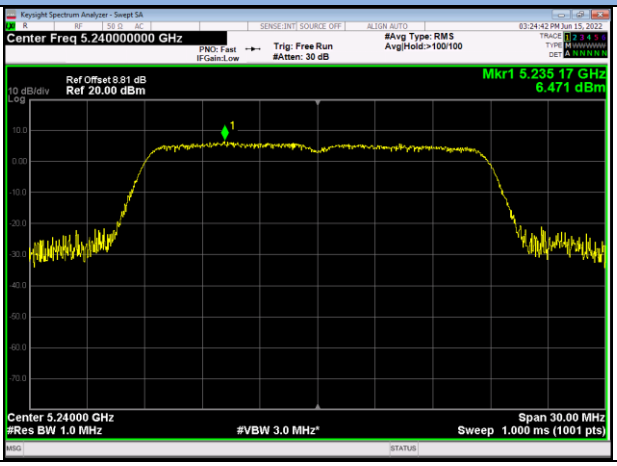
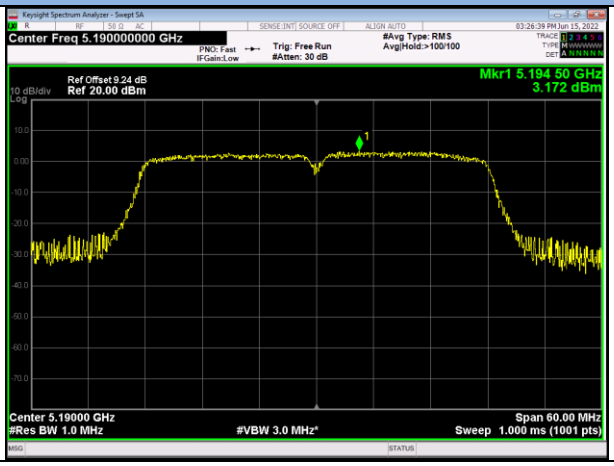


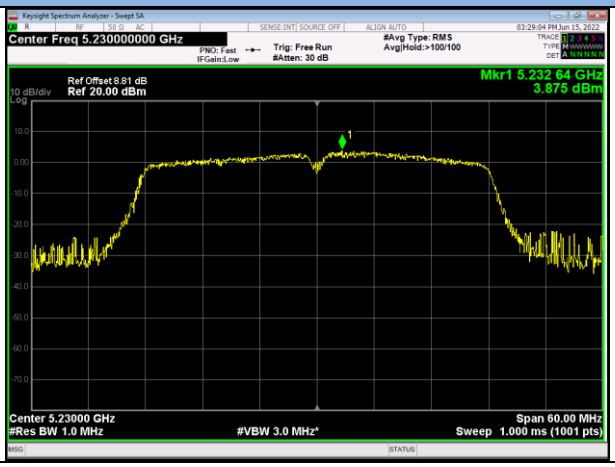
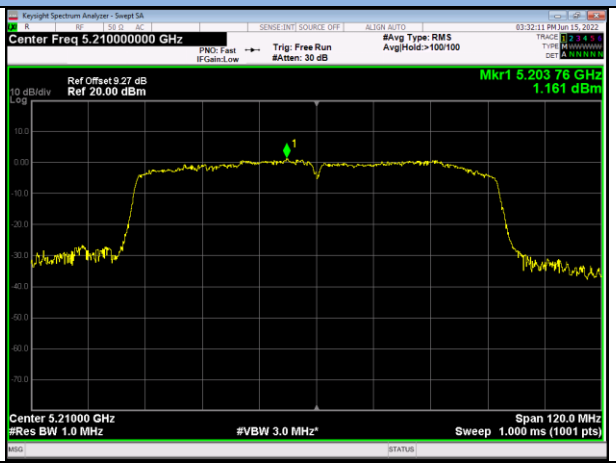
IEEE 802.11n(HT20) Middle Channel

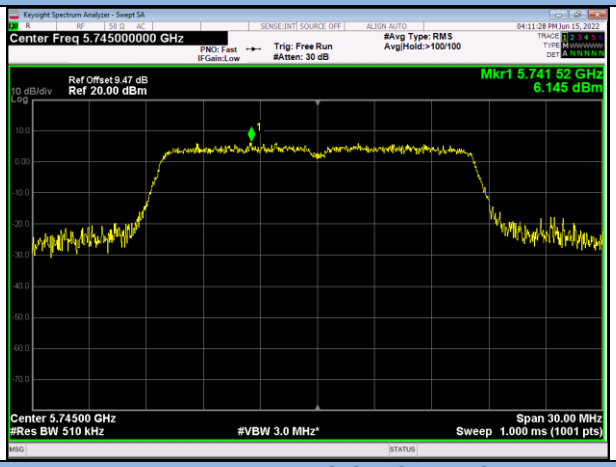
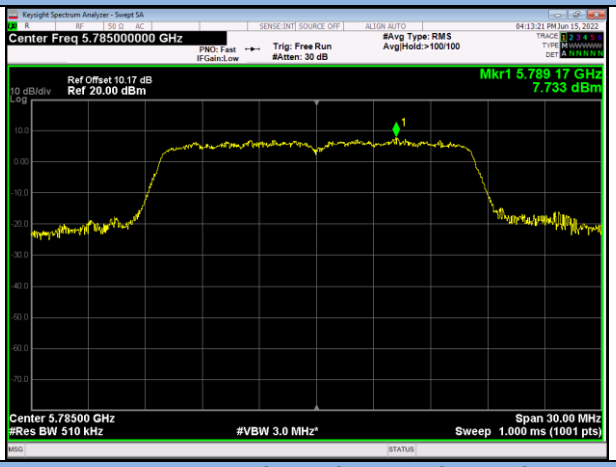
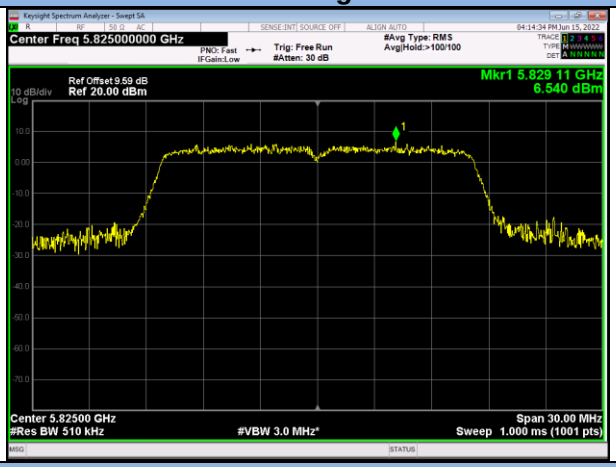
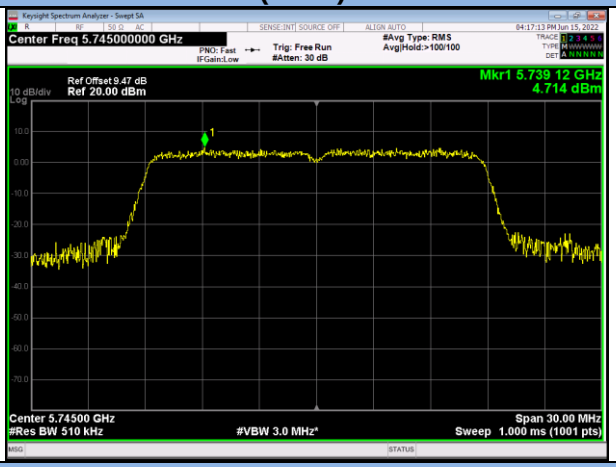
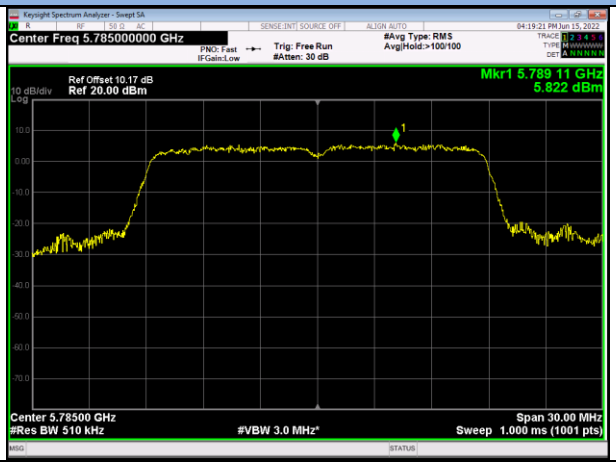
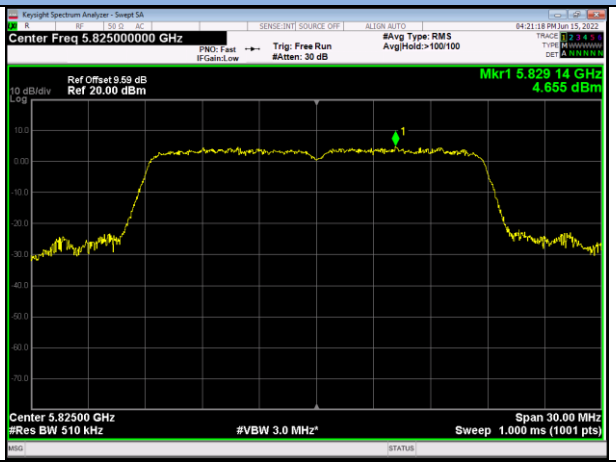


IEEE 802.11n(HT20) High Channel



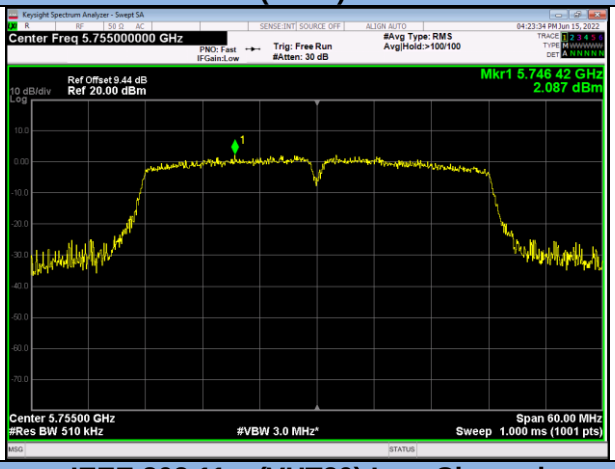
U-NII-1 Band	
IEEE 802.11n(HT40) Low Channel	IEEE 802.11n(HT40) High Channel
	
IEEE 802.11ac(VHT20) Low Channel	IEEE 802.11ac(VHT20) Middle Channel
	
IEEE 802.11ac(VHT20) High Channel	IEEE 802.11ac(VHT40) Low Channel
	

U-NII-1 Band	
IEEE 802.11ac(VHT40) High Channel	IEEE 802.11ac(VHT80)
	

U-NII-3 Band	
IEEE 802.11a Low Channel	IEEE 802.11a Middle Channel
	
IEEE 802.11a High Channel	IEEE 802.11n(HT20) Low Channel
	
IEEE 802.11n(HT20) Middle Channel	IEEE 802.11n(HT20) High Channel
	

U-NII-3 Band

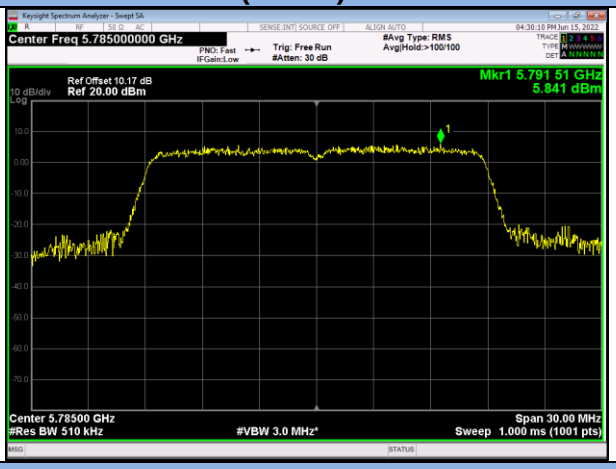
IEEE 802.11n(HT40) Low Channel



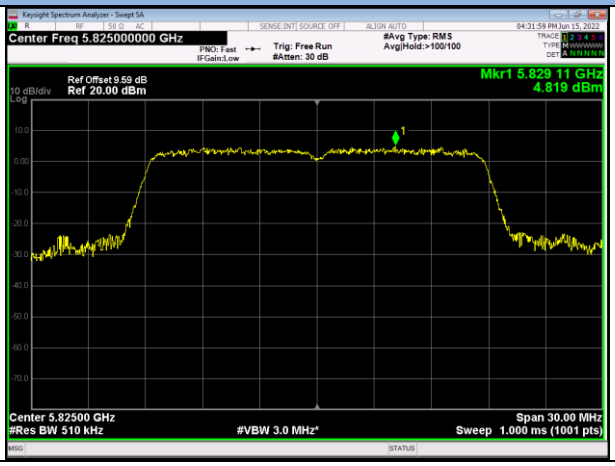
IEEE 802.11n(HT40) High Channel

IEEE 802.11ac(VHT20) Low Channel

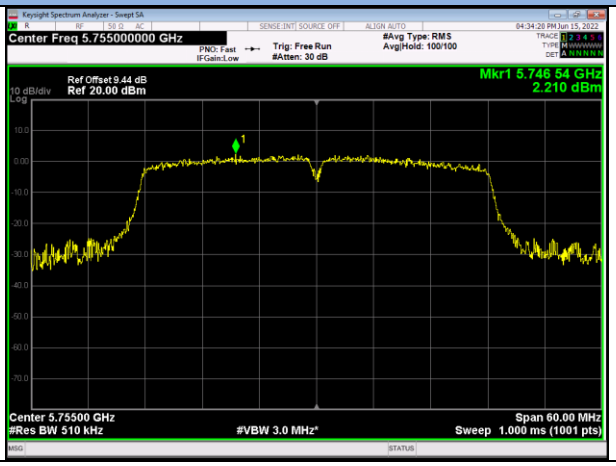
IEEE 802.11ac(VHT20) Middle Channel

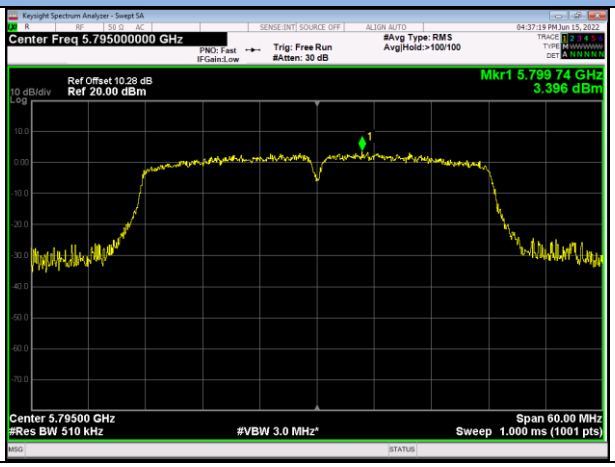
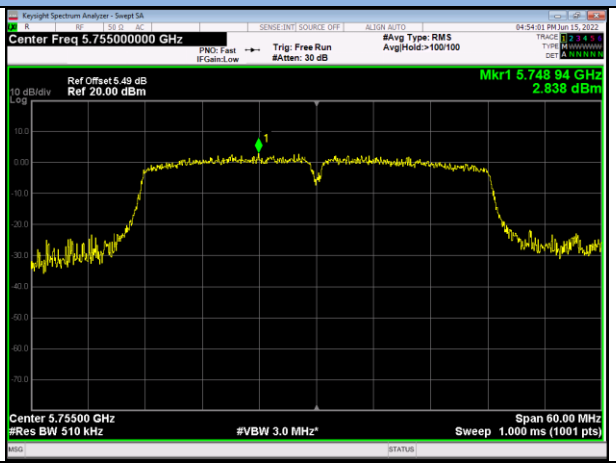


IEEE 802.11ac(VHT20) High Channel



IEEE 802.11ac(VHT40) Low Channel



U-NII-3 Band	
IEEE 802.11ac(VHT40) High Channel	IEEE 802.11ac(VHT80)
	

14.6 Band Edge

LIMITS

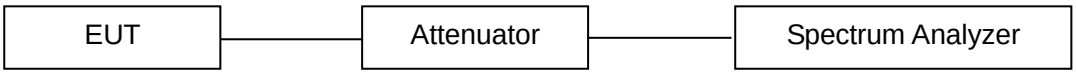
For transmitters operating in the 5.15-5.25 GHz band:
All emissions outside of the 5.15-5.35GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

For transmitters operating in the 5.25-5.35 GHz band:
All emissions outside of the 5.15-5.35GHz 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 25MHz 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 27dBm/MHz at the band edge.

BLOCK DIAGRAM OF TEST SETUP



TEST PROCEDURES

a.Check the calibration of the measuring instrument using either an internal calibration or a known signal from an external generator.
b. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
c. Set RBW to 1MHz and VBW to 3MHz of spectrum analyzer.
d. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
e. Repeat above procedures until all measured frequencies were complete.

TEST RESULTS

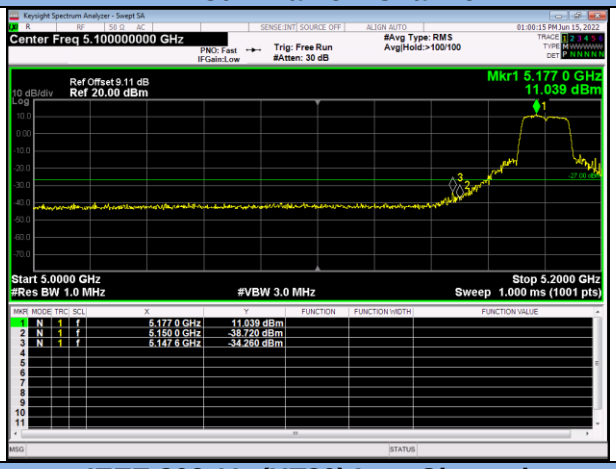
PASS

For 802.11a, 802.11n, 802.11ac, both ANT1 and ANT 2 have been considered and tested, only the worst case ANT 1 was recorded;

For 802.11n/ac, both SISO and MIMO modes have been considered and tested, and only the worst case recorded;

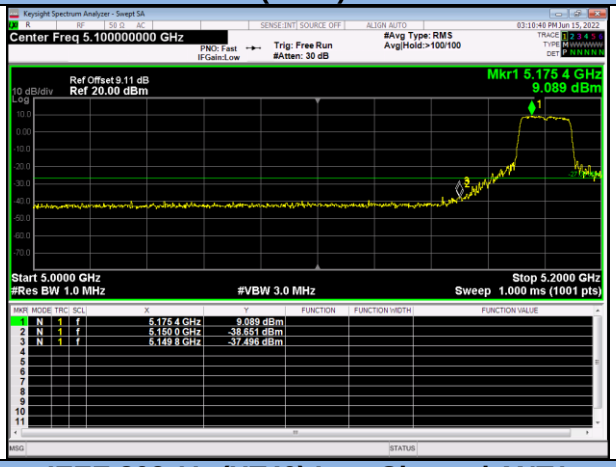
U-NII-1 Band

IEEE 802.11a Low Channel

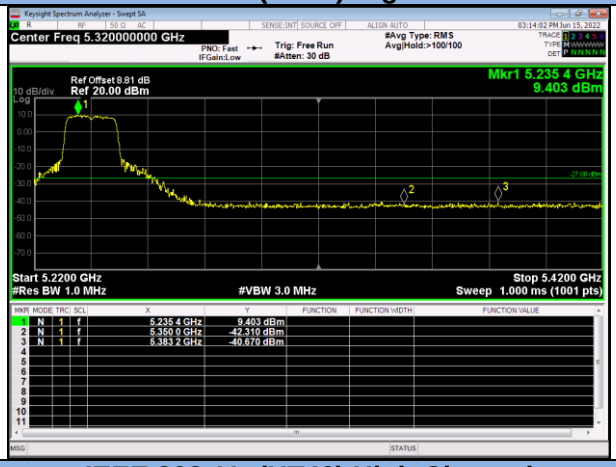


IEEE 802.11a High Channel

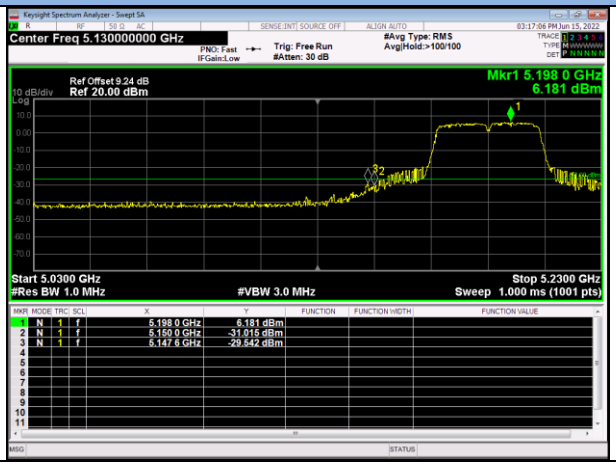
IEEE 802.11n(HT20) Low Channel



IEEE 802.11n(HT20) High Channel

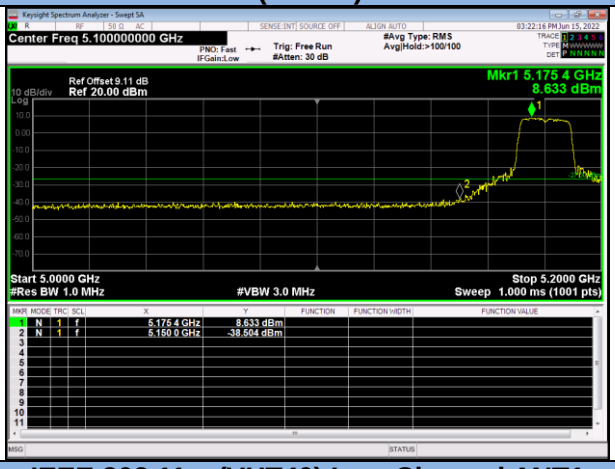
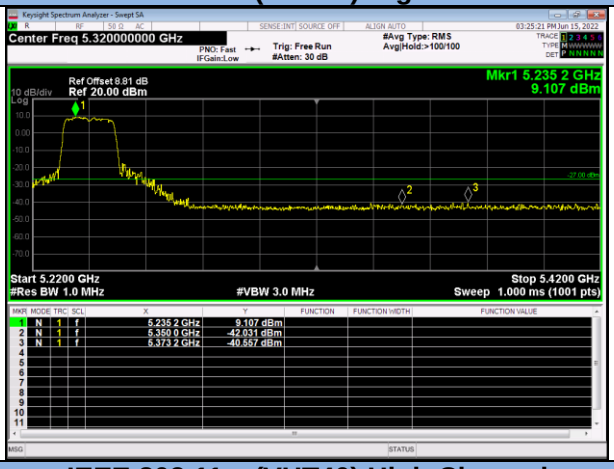
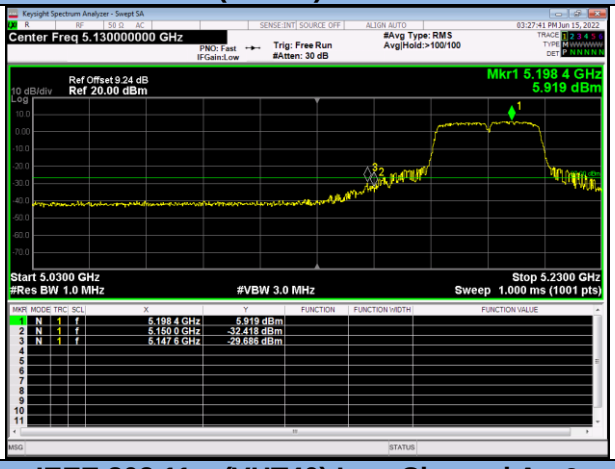
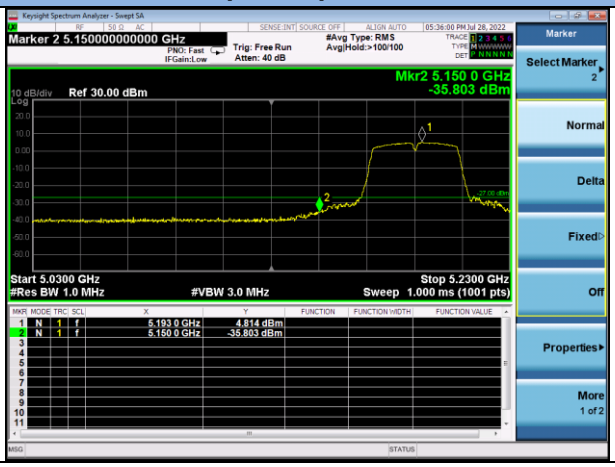


IEEE 802.11n(HT40) Low Channel ANT1



IEEE 802.11n(HT40) High Channel

IEEE 802.11n(HT40) Low Channel ANT2	
	Note: For IEEE 802.11n(HT40) Low Channel: ANT_1: -29.542dBm, ANT_2: -33.996dBm MIMO (Ant_1+Ant_2): -28.22dBm
IEEE 802.11ac(VHT80) Low Channel Ant1	**IEEE 802.11ac(VHT80) Low Channel Ant2**
	

U-NII-1 Band	
IEEE 802.11ac(VHT20) Low Channel	**IEEE 802.11ac(VHT20) High Channel**
	
IEEE 802.11ac(VHT40) Low Channel ANT1	**IEEE 802.11ac(VHT40) High Channel**
	
IEEE 802.11ac(VHT40) Low Channel Ant2	
	Note: For IEEE 802.11ac(VHT40) Low Channel, ANT_1: -29.686dBm, ANT_2: -35.803dBm MIMO (Ant_1+Ant_2): -28.75dBm

U-NII-3 Band

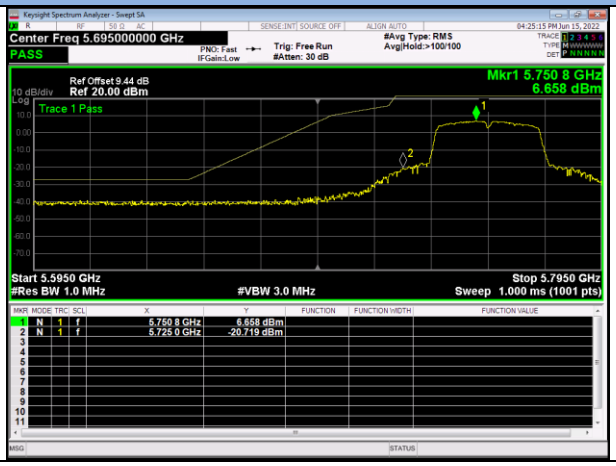
IEEE 802.11a Low Channel

IEEE 802.11a High Channel

IEEE 802.11n(HT20) Low Channel

IEEE 802.11n(HT20) High Channel

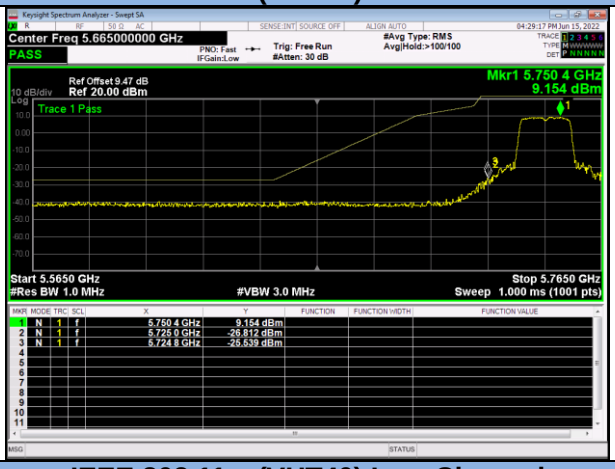
IEEE 802.11n(HT40) Low Channel



IEEE 802.11n(HT40) High Channel

U-NII-3 Band

IEEE 802.11ac(VHT20) Low Channel

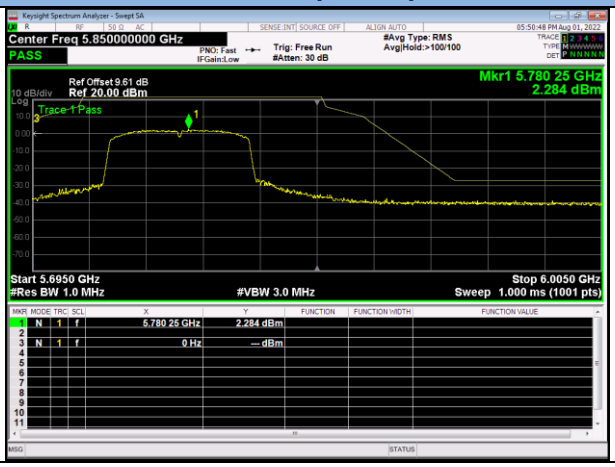


IEEE 802.11ac(VHT20) High Channel

IEEE 802.11ac(VHT40) Low Channel

IEEE 802.11ac(VHT40) High Channel

IEEE 802.11ac(VHT80) Ant1



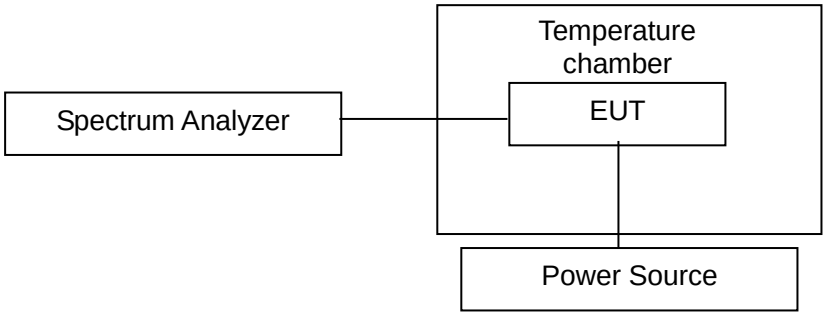
IEEE 802.11ac(VHT80) Ant2

14.7 Frequency Stability

LIMITS

Manufactures of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

BLOCK DIAGRAM OF TEST SETUP



TEST PROCEDURES

a. The EUT was placed inside the environmental test chamber and powered byPower source.
b. Turn the EUT on and couple its output to a spectrum analyzer.
c. Turn the EUT off and set the chamber to the highest temperature specified.
d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
e. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
f. The chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.
Note: The EUT set at un-modulation mode during frequency stability test.

TEST RESULTS

PASS

Both ANT1 and ANT2 have been considered and tested, only the worst case ANT_1 was recorded.

U-NII-1 Band						
Lowest channel 5180MHz						
Temperature (℃)	Power Supplied (Vac)	Measured Frequency (MHz)				Test Result
		0 Minute	2 Minute	5 Minute	10 Minute	
0	120	5179.9800	5180.0122	5180.0163	5180.0124	Pass
20		5180.0123	5180.0154	5180.0142	5180.0124	Pass
40		5180.0135	5180.0147	5180.0123	5180.0154	Pass
20	132	5180.0163	5180.0153	5180.0140	5180.0132	Pass
20	108	5180.0172	5180.0164	5180.0123	5180.0164	Pass
Highest channel 5240MHz						
Temperature (℃)	Power Supplied (Vac)	Measured Frequency (MHz)				Test Result
		0 Minute	2 Minute	5 Minute	10 Minute	
0	120	5240.0111	5240.0227	5240.0141	5240.0135	Pass
20		5240.0149	5240.0124	5240.0124	5240.0141	Pass
40		5240.0133	5240.0137	5240.0158	5240.0148	Pass
20	132	5240.0163	5240.0123	5240.0155	5240.0152	Pass
20	108	5240.0145	5240.0134	5240.0145	5240.0153	Pass

Note: EUT temperature working range is 0 to 40.

U-NII-3 Band						
Lowest channel 5745MHz						
Temperature (℃)	Power Supplied (Vac)	Measured Frequency (MHz)				Test Result
		0 Minute	2 Minute	5 Minute	10 Minute	
0	120	5745.0122	5745.0142	5745.0155	5745.0124	Pass
20		5745.0147	5745.0147	5745.0148	5745.0115	Pass
40		5745.0112	5745.0126	5745.0126	5745.0149	Pass
20	132	5745.0148	5745.0157	5745.0144	5745.0177	Pass
20	108	5745.0124	5745.0178	5745.0135	5745.0167	Pass
Highest channel 5825MHz						
Temperature (℃)	Power Supplied (Vac)	Measured Frequency (MHz)				Test Result
		0 Minute	2 Minute	5 Minute	10 Minute	
0	120	5825.0113	5825.0111	5825.0124	5825.0145	Pass
20		5825.0135	5825.0128	5825.0117	5825.0121	Pass
40		5825.0146	5825.0142	5825.0144	5825.0142	Pass
20	132	5825.0144	5825.0140	5825.0143	5825.0136	Pass
20	108	5825.0123	5825.0116	5825.0112	5825.0114	Pass

Note: EUT temperature working range is 0 to 40.

14.8 Radiated Spurious Emissions and Restricted Bands Measurement and Band Edge

LIMITS

Frequency range MHz	Distance Meters	Field Strengths Limit (15.209)
		μV/m
0.009 ~ 0.490	300	2400/F(kHz)
0.490 ~ 1.705	30	24000/F(kHz)
1.705 ~ 30	30	30
30 ~ 88	3	100
88 ~ 216	3	150
216 ~ 960	3	200
Above 960	3	500

Remark: (1) Emission level (dB)μV = 20 log Emission level μV/m

(2) The smaller limit shall apply at the cross point between two frequency bands.

(3) As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

(4) The frequency range scanned is from the lowest radio frequency signal generated in the device which is greater than 9 kHz to the tenth harmonic of the highest fundamental frequency or 40 GHz, whichever is lower.

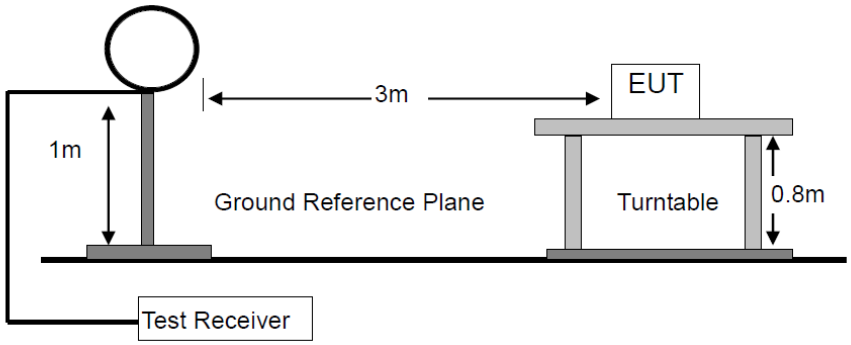
(5) §15.407 specifies that emissions which fall in the restricted bands, as defined in §15.205 comply with radiated emission limits specified in §15.209.

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

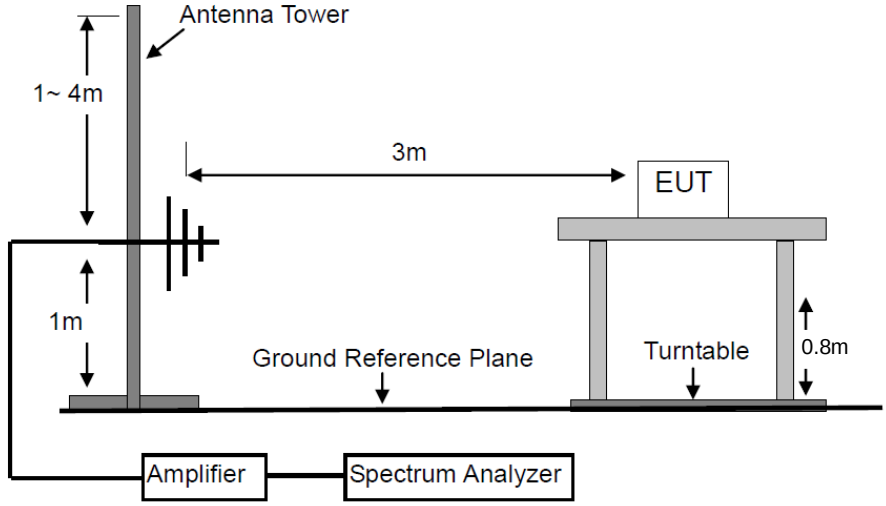
For transmitters operating in the 5.725-5.85 GHz band:
All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25MHz above or below the band edge increasing linearly to a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

BLOCK DIAGRAM OF TEST SETUP

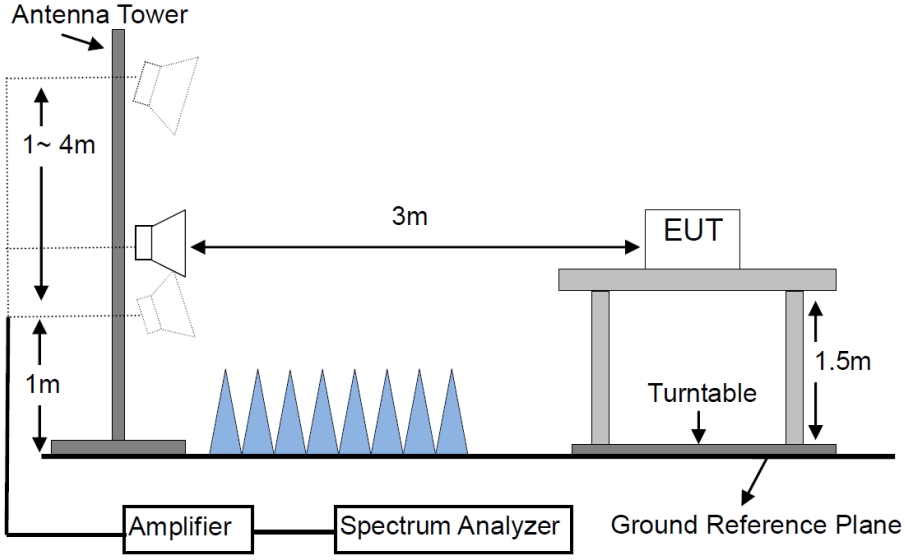
For Radiated Emission below 30MHz



For Radiated Emission 30-1000MHz



For Radiated Emission Above 1000MHz.



TEST PROCEDURES

a. Below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi- anechoic chamber room.

b. For the radiated emission test above 1GHz:

The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter full anechoic chamber room. The table was rotated 360 degrees to determine the position of the highest radiation. Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.

c. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

d. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

e. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. The test-receiver system was set to peak detect function and specified bandwidth with maximum hold mode.

f. A Quasi-peak measurement was then made for that frequency point for below 1GHz test. PK and AV for above 1GHz emission test.

During the radiated emission test, the spectrum analyzer was set with the following configurations:

Frequency Band (MHz)	Detector	Resolution Bandwidth	Video Bandwidth
30 to 1000	QP	120 kHz	300 kHz
Above 1000	Peak	1 MHz	3 MHz
	Average	1 MHz	10 Hz

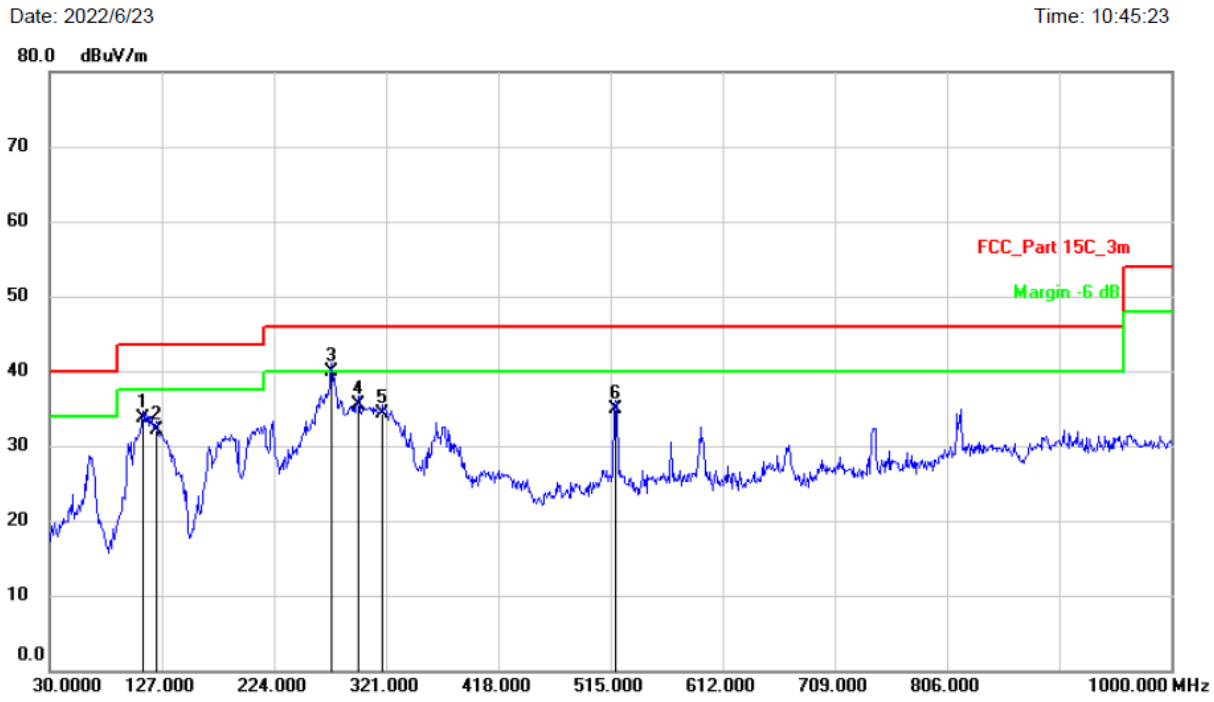
TEST RESULTS

PASS

Please refer to the following pages of the worst case.

M/N: M22	Testing Voltage: AC 120V 60Hz
Polarization: Horizontal	Detector: QP
Test Mode: 2	Distance: 3m

Radiated Emission Measurement

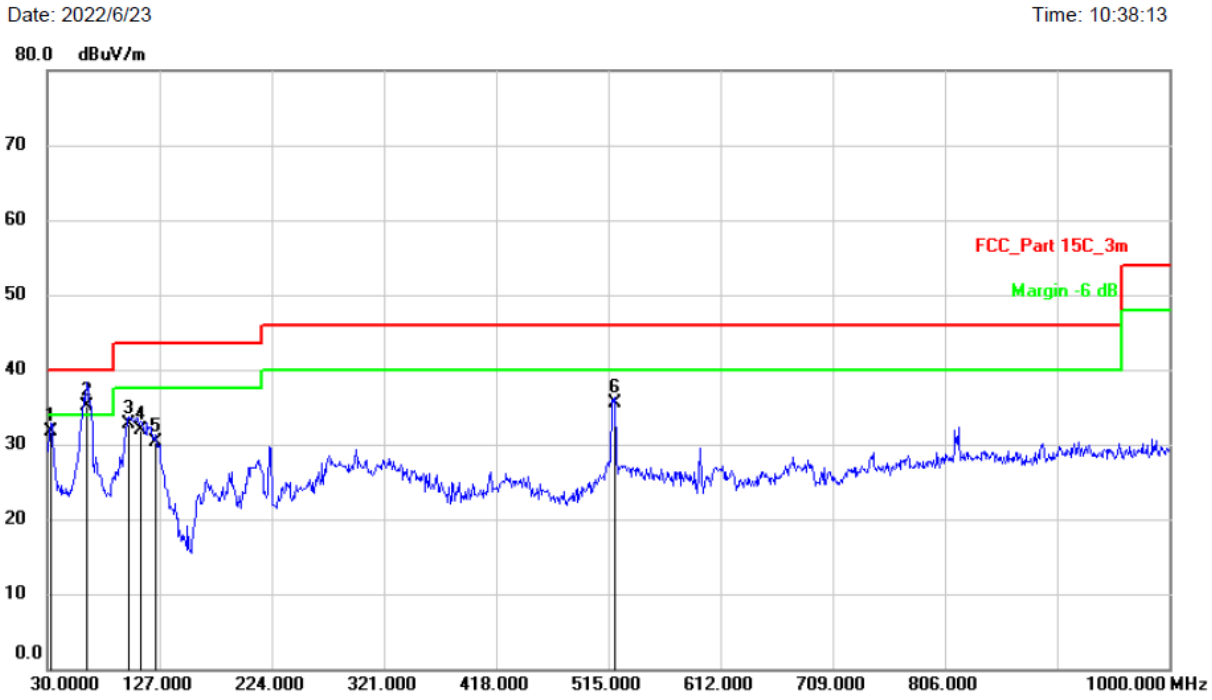


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		110.5100	41.32	-7.62	33.70	43.50	-9.80	QP	
2		122.1500	41.86	-9.66	32.20	43.50	-11.30	QP	
3	*	273.4700	45.96	-5.96	40.00	46.00	-6.00	QP	
4		296.7500	41.19	-5.59	35.60	46.00	-10.40	QP	
5		318.0900	39.43	-5.03	34.40	46.00	-11.60	QP	
6		519.8500	36.43	-1.43	35.00	46.00	-11.00	QP	

Note: Below 30MHz, the emissions are lower than 20dB below the allowable limit.

M/N: M22	Testing Voltage: AC 120V 60Hz
Polarization: Vertical	Detector: QP
Test Mode: 2	Distance: 3m

Radiated Emission Measurement



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		32.9100	41.29	-9.49	31.80	40.00	-8.20	QP	
2	*	63.9500	44.26	-9.06	35.20	40.00	-4.80	QP	
3		99.8399	41.10	-8.40	32.70	43.50	-10.80	QP	
4		110.5100	42.57	-10.57	32.00	43.50	-11.50	QP	
5		124.0900	41.50	-11.20	30.30	43.50	-13.20	QP	
6		520.8200	37.92	-2.42	35.50	46.00	-10.50	QP	

Note: Below 30MHz, the emissions are lower than 20dB below the allowable limit.

Modulation: N-UII-1(5180-5240 MHz) TX (IEEE 802.11n(HT20) the worst case -MIMO)				Test Result: PASS			Test frequency range: 1-40GHz			
Freq. (MHz)	Ant. Pol. (H/V)	Reading Level(dBuV)		Factor (dB/m)	Emission Level (dBuV/m)		Limit 3m (dBuV/m)		Margin (dB)	
		PK	AV		PK	AV	PK	AV	PK	AV
Operation Mode: TX Mode (Low)										
10360	V	49.37	---	14.04	63.41	---	68.20	---	-4.79	---
15540	V	43.16	29.07	21.12	64.28	50.19	74.00	54.00	-9.72	-3.81

10360	H	49.20	---	14.04	63.24	---	68.20	---	-4.96	---
15540	H	42.99	28.40	21.12	64.11	49.52	74.00	54.00	-9.89	-4.48

Operation Mode: TX Mode (Mid)										
10400	V	48.16	---	14.12	62.28	---	68.20	---	-5.92	---
15600	V	43.49	29.80	20.82	64.31	50.62	74.00	54.00	-9.69	-3.38

10400	H	47.15	---	14.12	61.27	---	68.20	---	-6.93	---
15600	H	42.60	28.74	20.82	63.42	49.56	74.00	54.00	-10.58	-4.44

Operation Mode: TX Mode (High)										
10480	V	48.46	---	14.29	62.75	---	68.20	---	-5.45	---
15720	V	44.02	30.52	20.20	64.22	50.72	74.00	54.00	-9.78	-3.28

10480	H	48.15	---	14.29	62.44	---	68.20	---	-5.76	---
15720	H	45.01	29.47	20.20	65.21	49.67	74.00	54.00	-8.79	-4.33

Remark:
1. Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits.
2. Others emissions are attenuated 20dB below the limits, so it does not record in report.
3. Both SISO and MIMO modes have been considered and tested.

Modulation: N-UII-3 (5745-5825 MHz) TX (IEEE 802.11n(HT20) the worst case) -MIMO		Test Result: PASS					Test frequency range: 1-40GHz			
Freq. (MHz)	Ant. Pol. (H/V)	Reading Level(dBuV)		Factor (dB/m)	Emission Level (dBuV/m)		Limit 3m (dBuV/m)		Margin (dB)	
		PK	AV		PK	AV	PK	AV	PK	AV
Operation Mode: TX Mode (Low)										
11490	V	45.86	33.41	16.86	62.72	50.27	74.00	54.00	-11.28	-3.73
17235	V	41.78	---	22.23	64.01	---	68.20	---	-4.19	---

11490	H	45.74	33.78	16.81	62.55	50.59	74.00	54.00	-11.45	-3.41
17235	H	41.52	---	22.23	63.75	---	68.20	---	-4.45	---

Operation Mode: TX Mode (Mid)										
11570	V	45.70	33.35	17.01	62.71	50.36	74.00	54.00	-11.29	-3.64
17355	V	40.09	---	22.62	62.71	---	68.20	---	-5.49	---

11570	H	44.27	31.26	17.01	61.28	48.27	74.00	54.00	-12.72	-5.73
17355	H	39.96	---	22.62	62.58	---	68.20	---	-5.62	---

Operation Mode: TX Mode (High)										
11650	V	45.93	33.16	17.16	63.09	50.32	74.00	54.00	-10.91	-3.68
17475	V	40.76	---	23.01	63.77	---	68.20	---	-4.43	---

11650	H	45.05	33.20	17.16	62.21	50.36	74.00	54.00	-11.79	-3.64
17475	H	40.26	---	23.01	63.27	---	68.20	---	-4.93	---

Remark:
1. Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits.
2. Others emissions are attenuated 20dB below the limits, so it does not record in report.
3. Both SISO and MIMO modes have been considered and tested.

14.9 Antenna Requirement

STANDARD APPLICABLE

According to of FCC part 15C section 15.203:

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, 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. The structure and application of the EUT were analyzed to determine compliance with section 15.203 of the rules.

And according to 47 CFR section 15.407(a), if the transmitting antennas of directional gain greater than 6dBi are used, the transmit power and power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

ANTENNA CONNECTED CONSTRUCTION

The EUT is an Integral antenna that no antenna other than furnished by the responsible party shall be used with the device, and the best case gain of the antenna is 2.0dBi, therefore, the antenna is considered to meet the requirement.

15. Test Equipment List

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESCI7	100837	Mar. 13, 2022	1 Year
2.	Antenna	Schwarzbeck	VULB9162	9162-010	Mar. 23, 2022	2 Year
3.	Spectrum Analyzer	Rohde & Schwarz	FSU26	200409/026	Mar. 13, 2022	1 Year
4.	Spectrum Analyzer	Keysight	N9020A	MY54200831	Mar. 13, 2022	1 Year
5.	Spectrum Analyzer	Rohde & Schwarz	FSV40	101094	Mar. 13, 2022	1 Year
6.	Horn Antenna	Schwarzbeck	BBHA9170	9170-172	Mar. 23, 2022	2 Year
7.	Power Sensor	DARE	RPR3006W	15I00041SNO64	Mar. 13, 2022	1 Year
8.	Horn Antenna	COM-Power	AH-118	071078	Mar. 23, 2022	2 Year
9.	Pre-Amplifier	HP	HP 8449B	3008A00964	Mar. 13, 2022	1 Year
10.	Pre-Amplifier	HP	HP 8447D	1145A00203	Mar. 13, 2022	1 Year
11.	Loop Antenna	Schwarzbeck	FMZB 1513	1513-272	Mar. 23, 2022	2 Year
12.	Test Receiver	Rohde & Schwarz	ESCI	101152	Mar. 13, 2022	1 Year
13.	L.I.S.N	Rohde & Schwarz	ENV 216	101317	Mar. 13, 2022	1 Year
14.	RF Switching Unit	Compliance Direction Systems Inc.	RSU-M2	38311	Mar.13, 2022	1 Year
15.	Temporary antenna connector	TESCOM	SS402	N/A	N/A	N/A
16.	Test Software	EZ	EZ_EMC	N/A	N/A	N/A

Note: For photographs of EUT and measurement, please refer to appendix in separate documents.

---End---