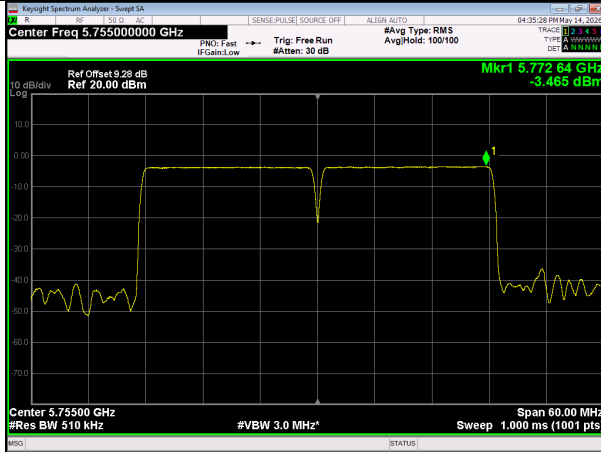
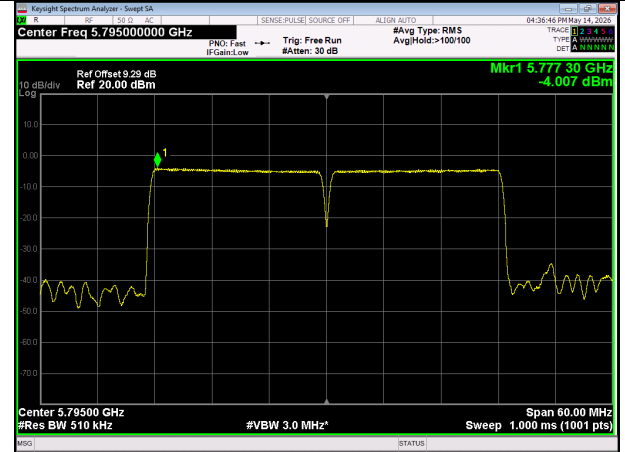


U-NII-3 Band

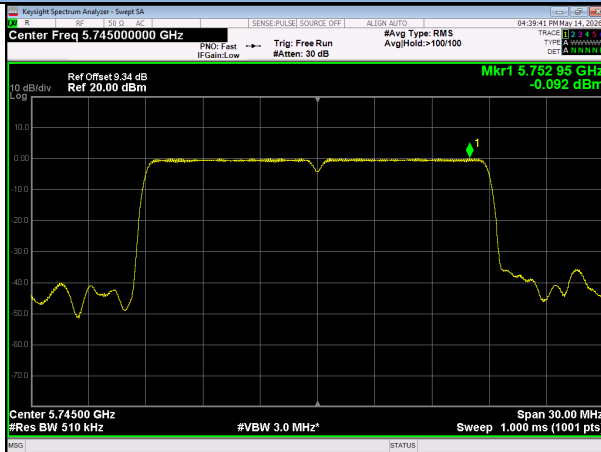
IEEE 802.11n(HT40) Low Channel



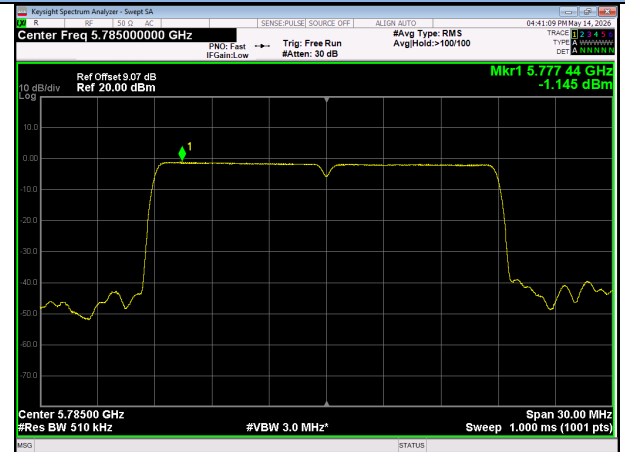
IEEE 802.11n(HT40) High Channel



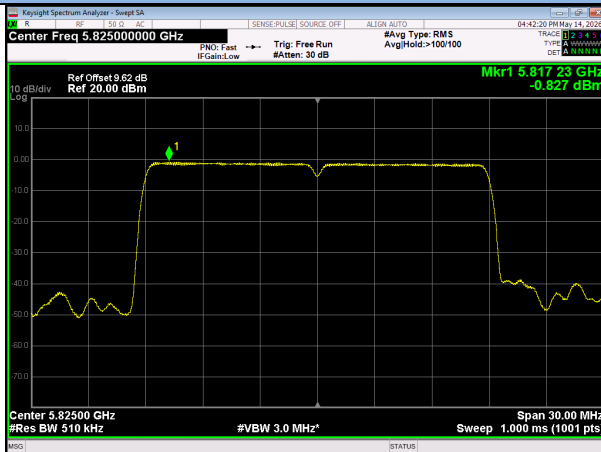
IEEE 802.11ac(VHT20) Low Channel



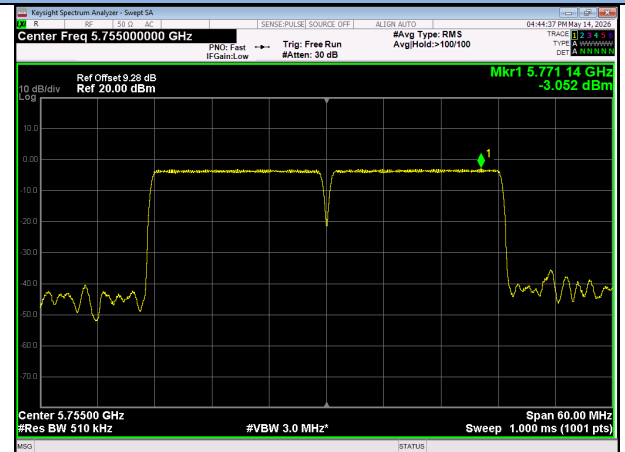
IEEE 802.11ac(VHT20) Middle Channel



IEEE 802.11ac(VHT20) High Channel

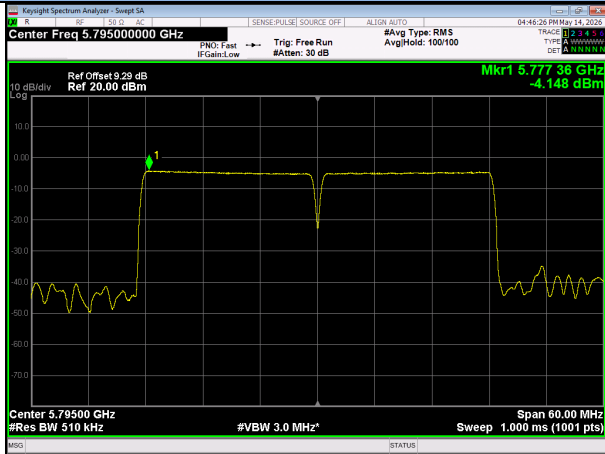


IEEE 802.11ac(VHT40) Low Channel

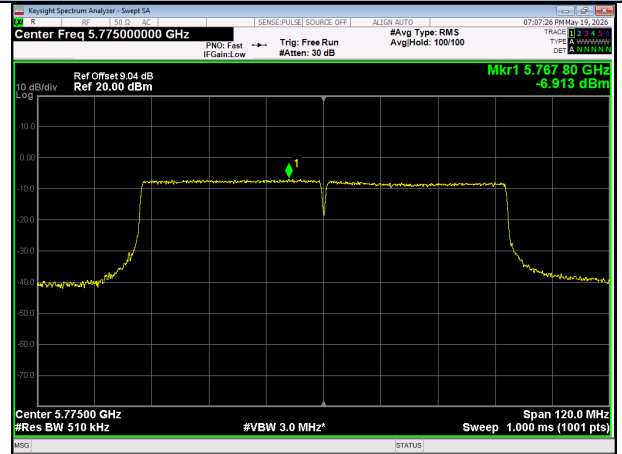


U-NII-3 Band

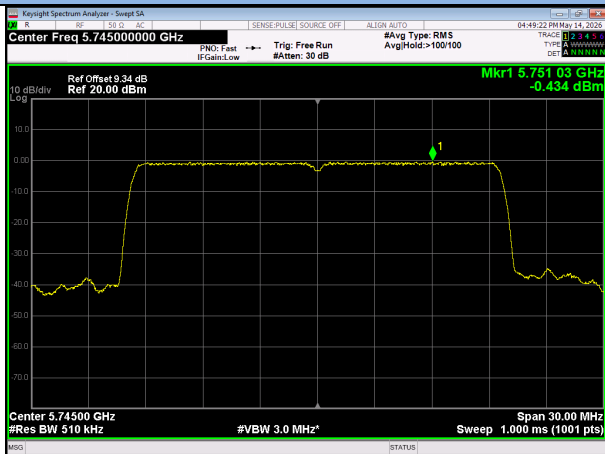
IEEE 802.11ac(VHT40) High Channel



IEEE 802.11ac(VHT80)



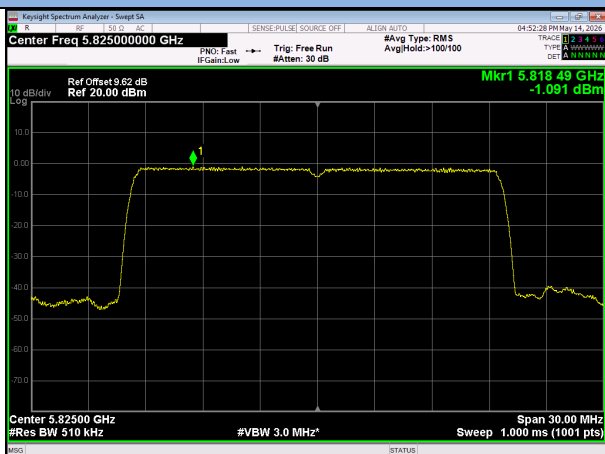
IEEE 802.11ax(HE20) Low Channel



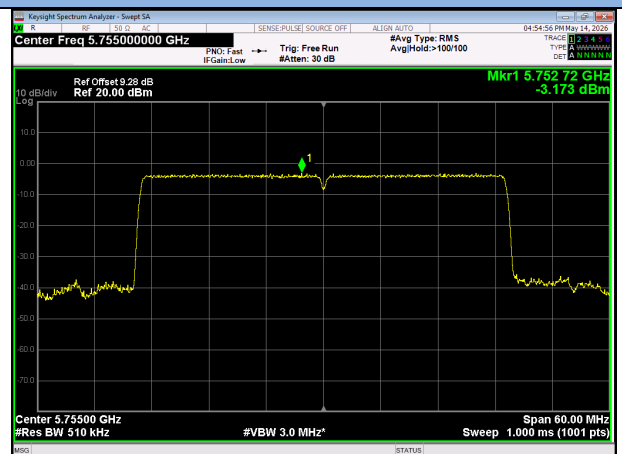
IEEE 802.11ax(HE20) Mid Channel



IEEE 802.11ax(HE20) High Channel

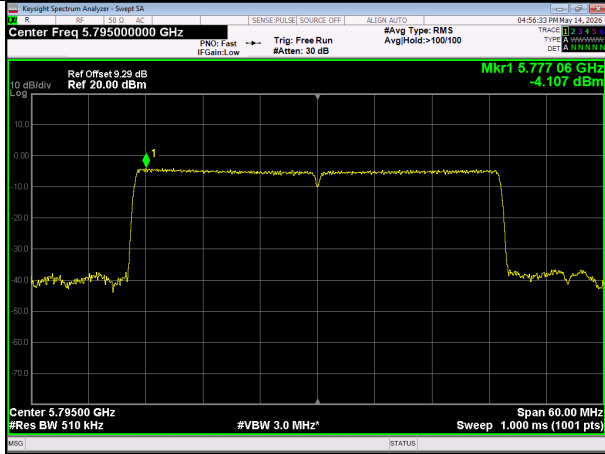


IEEE 802.11ax(HE40) Low Channel

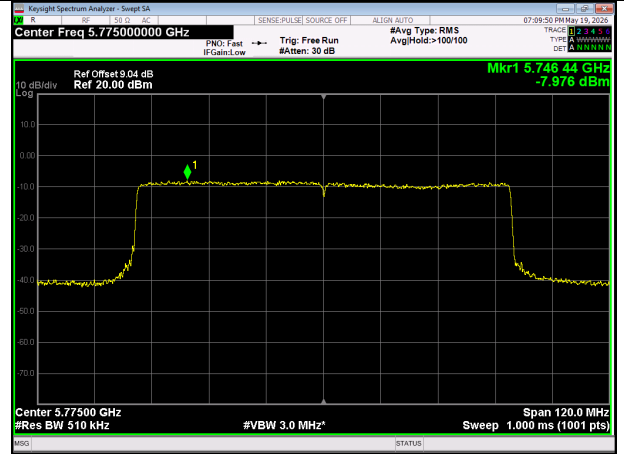


U-NII-3 Band

IEEE 802.11ax(HE40) High Channel



IEEE 802.11ax(HE80)



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.

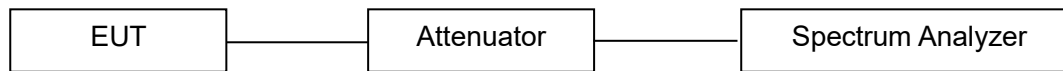
For transmitters operating in the 5.47-5.725 GHz band:

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

- Check the calibration of the measuring instrument using either an internal calibration or a known signal from an external generator.
- 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.
- Set RBW to 1MHz and VBW to 3MHz of spectrum analyzer.
- 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.
- Repeat above procedures until all measured frequencies were complete.

TEST RESULTS

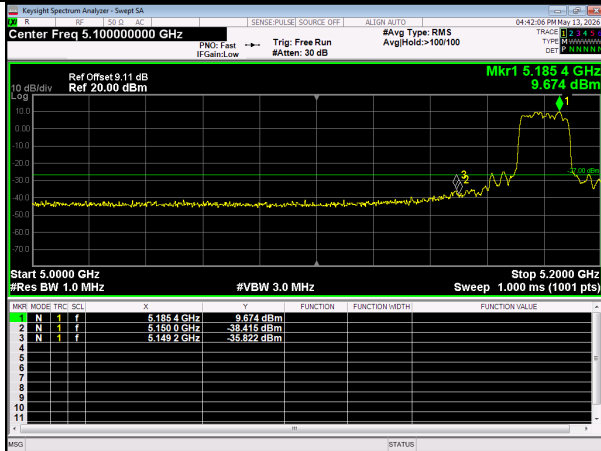
PASS

Please refer to following pages.

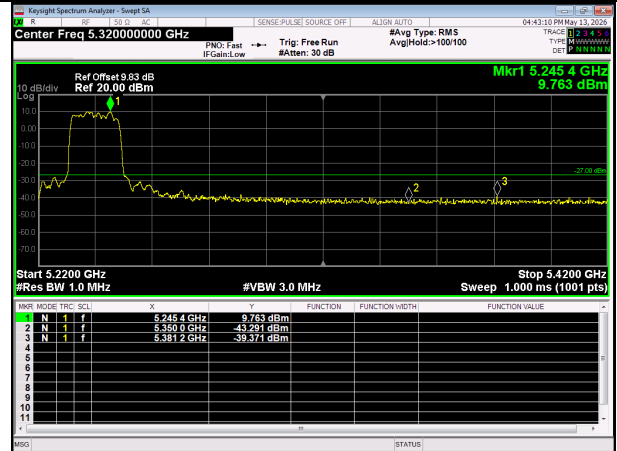
Note: Antenna gain was considered during the test.

U-NII-1 Band

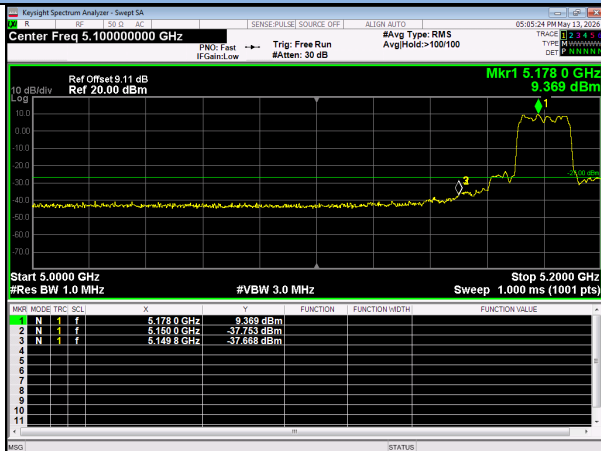
IEEE 802.11a Low Channel



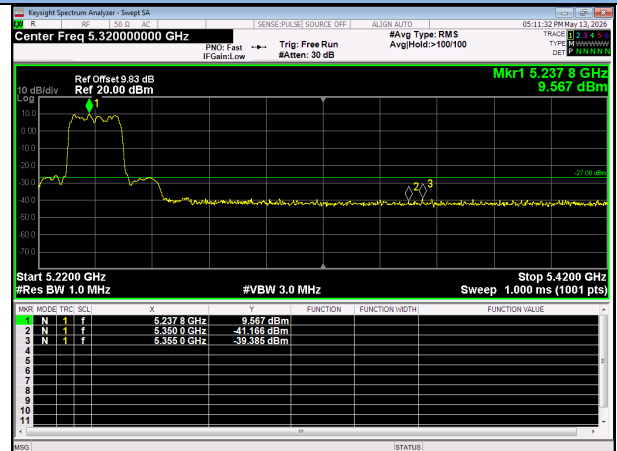
IEEE 802.11a High Channel



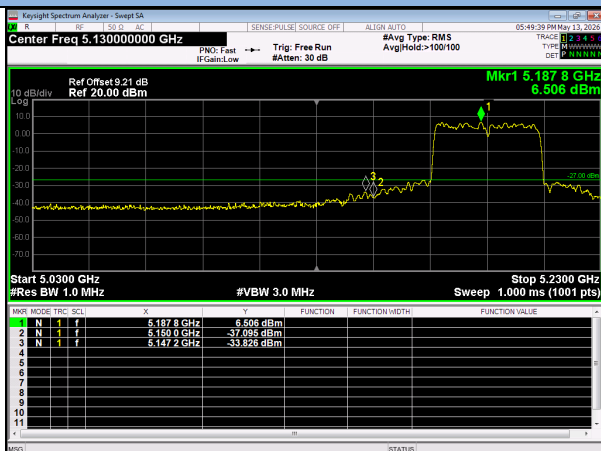
IEEE 802.11n(HT20) Low Channel



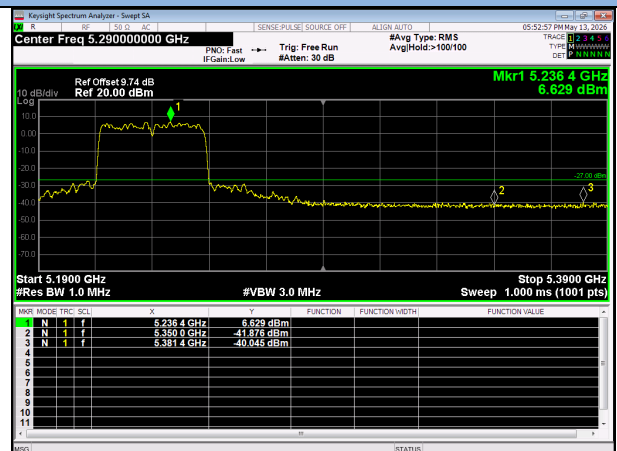
IEEE 802.11n(HT20) High Channel



IEEE 802.11n(HT40) Low Channel

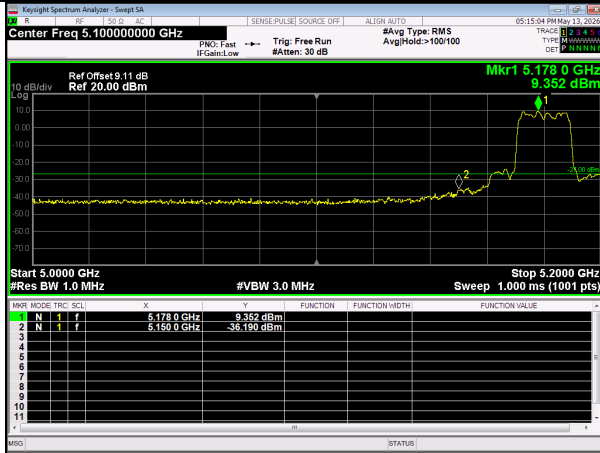


IEEE 802.11n(HT40) High Channel

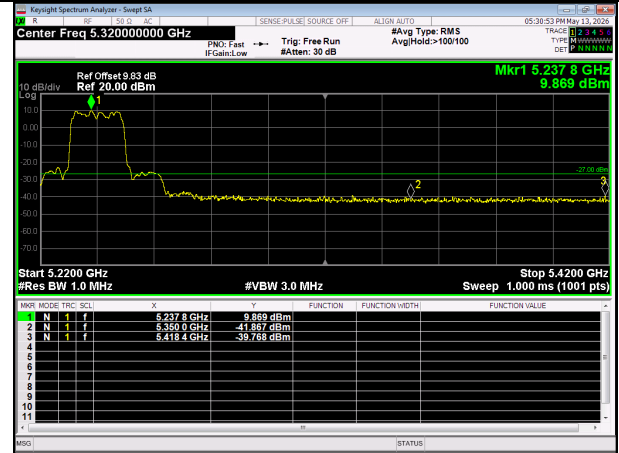


U-NII-1 Band

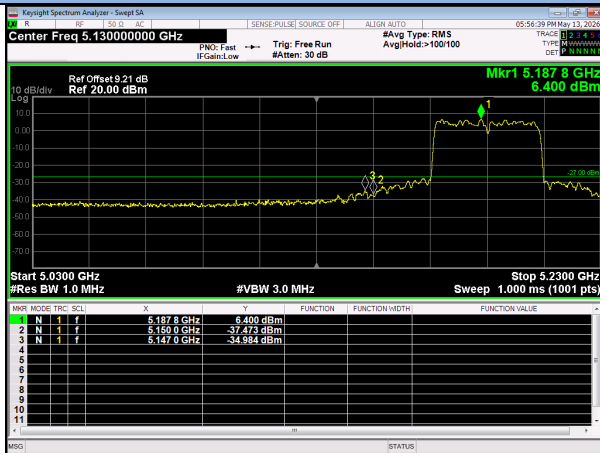
IEEE 802.11ac(VHT20) Low Channel



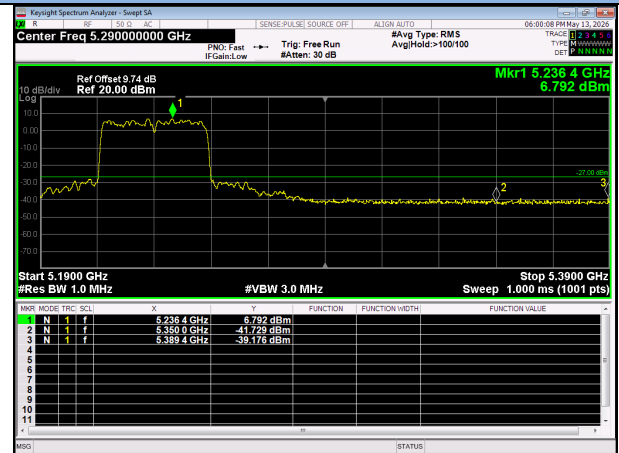
IEEE 802.11ac(VHT20) High Channel



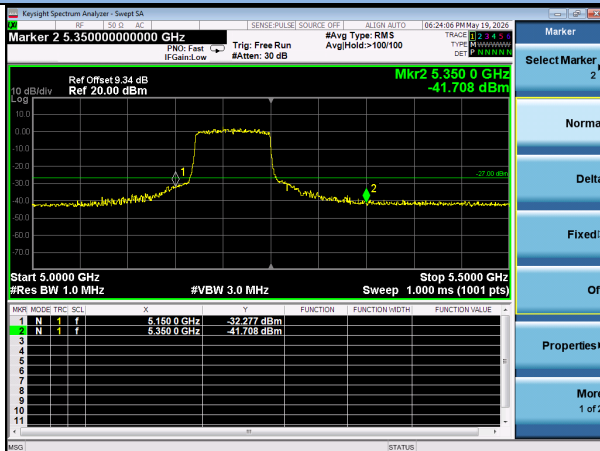
IEEE 802.11ac(VHT40) Low Channel



IEEE 802.11ac(VHT40) High Channel



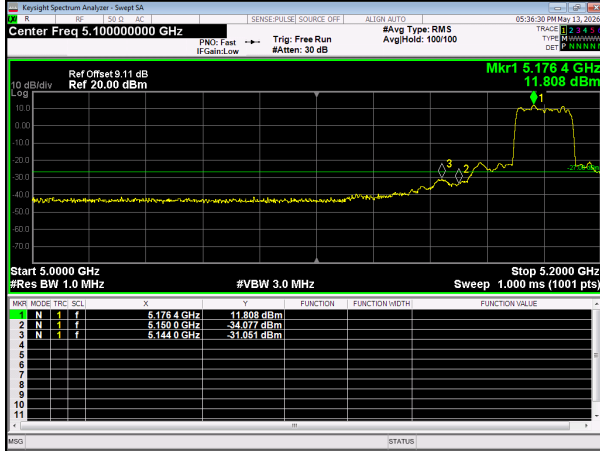
IEEE 802.11ac(VHT80)



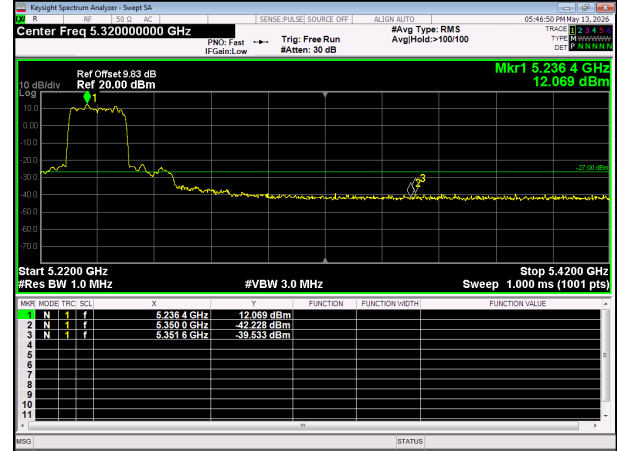
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U-NII-1 Band

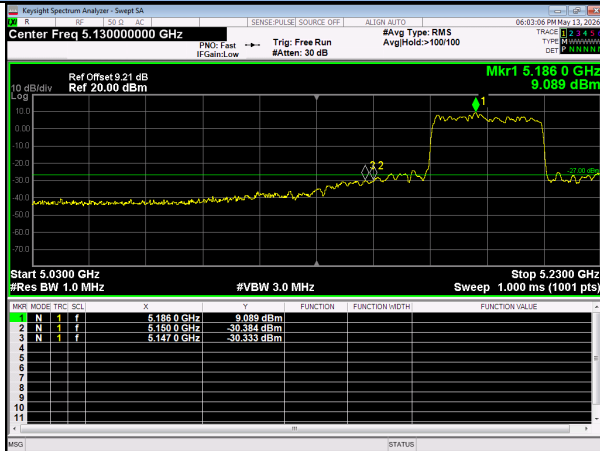
IEEE 802.11ax(HE20) Low Channel



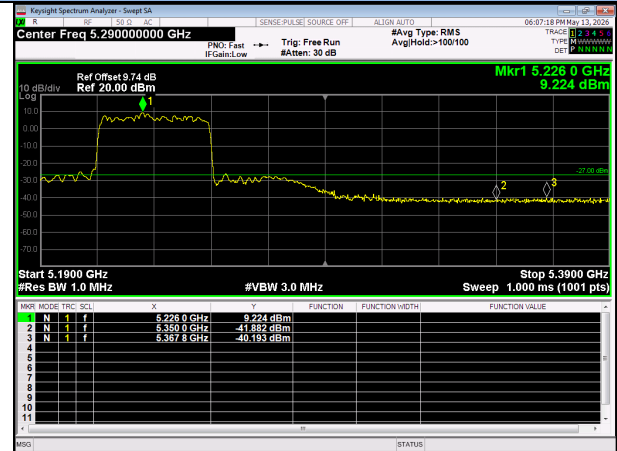
IEEE 802.11ax(HE20) High Channel



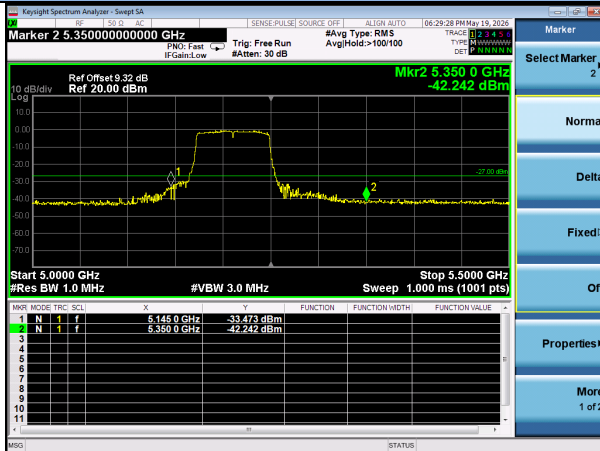
IEEE 802.11ax(HE40) Low Channel



IEEE 802.11ax(HE40) High Channel



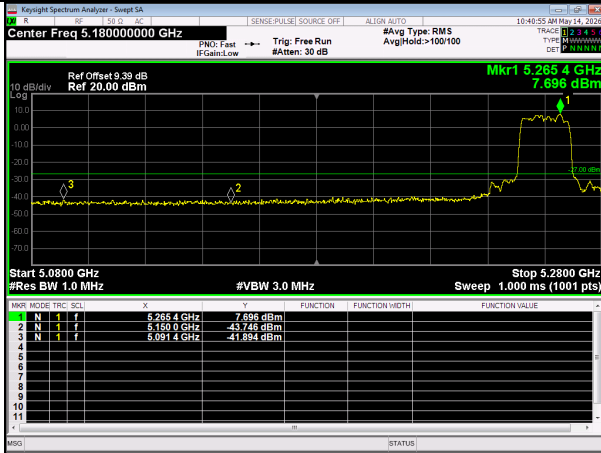
IEEE 802.11ax(HE80)



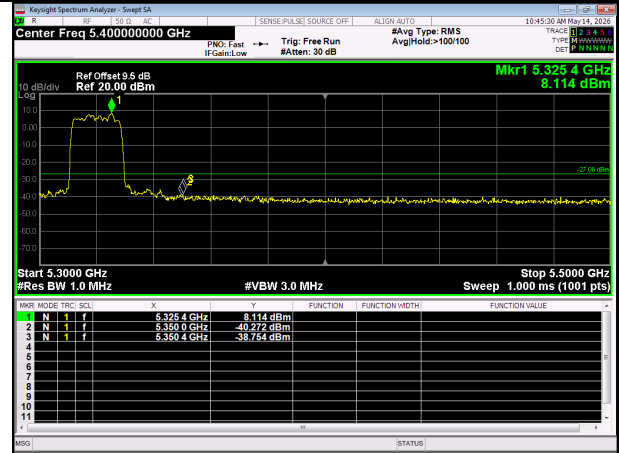
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U-NII-2A Band

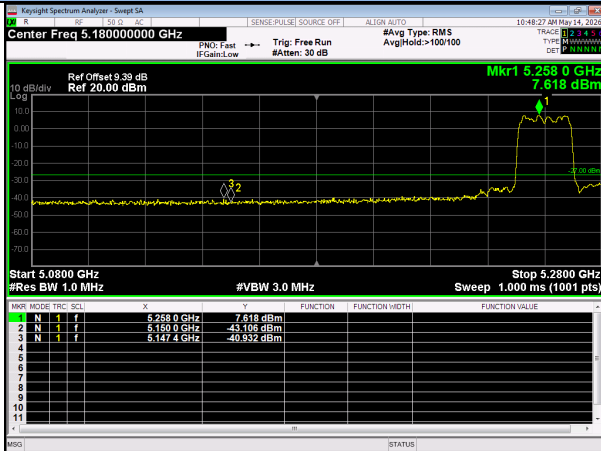
IEEE 802.11a Low Channel



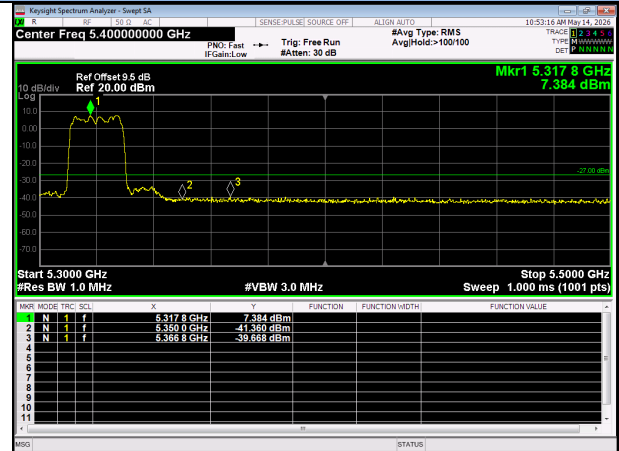
IEEE 802.11a High Channel



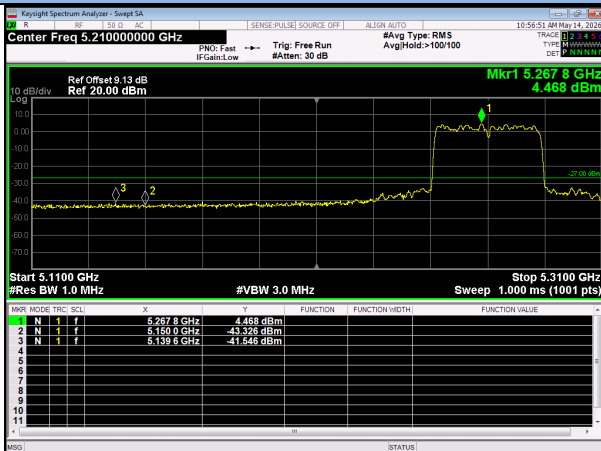
IEEE 802.11n(HT20) Low Channel



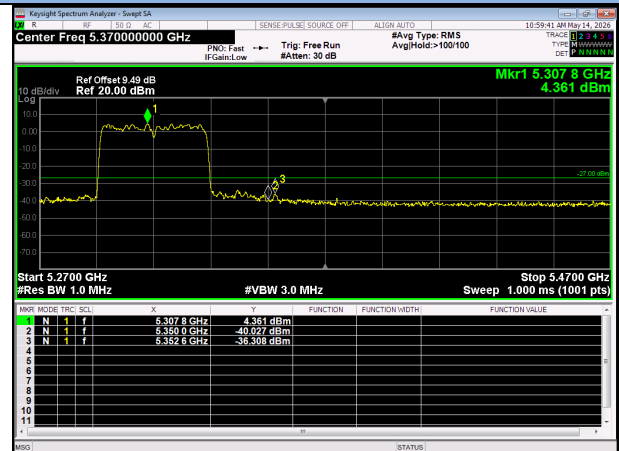
IEEE 802.11n(HT20) High Channel



IEEE 802.11n(HT40) Low Channel

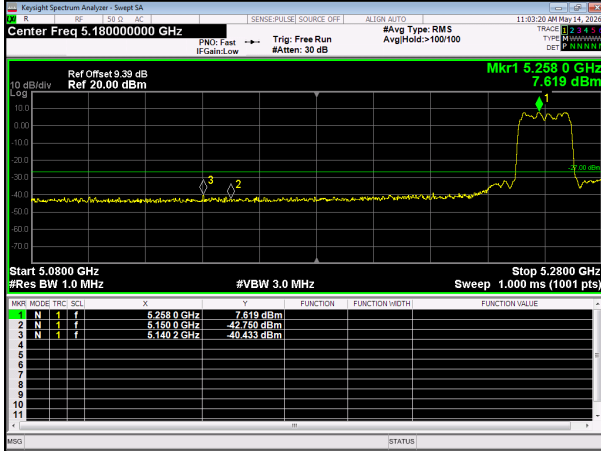


IEEE 802.11n(HT40) High Channel

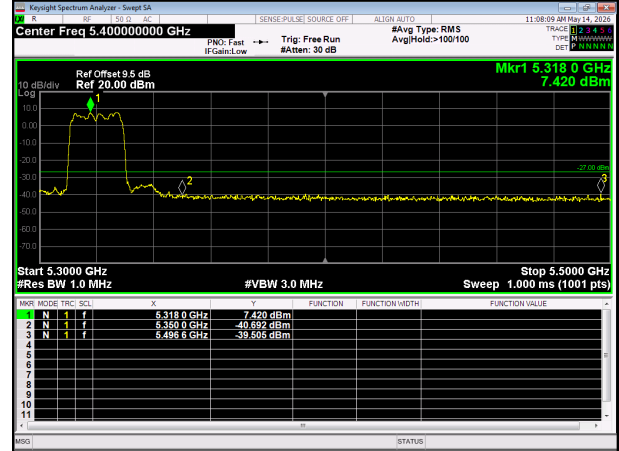


U-NII-2A Band

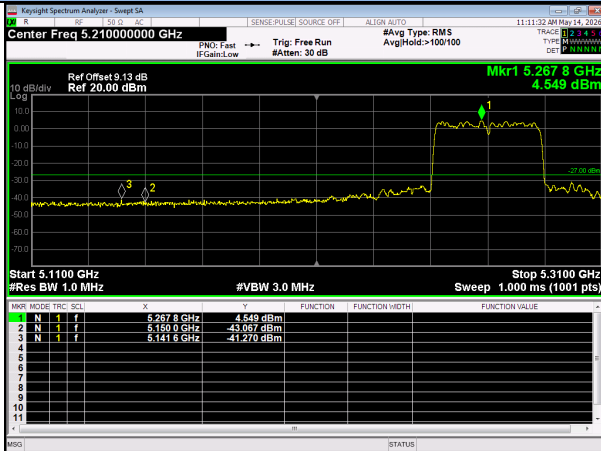
IEEE 802.11ac(VHT20) Low Channel



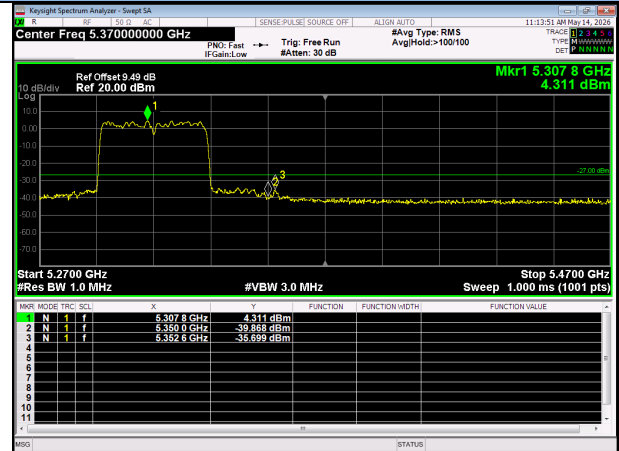
IEEE 802.11ac(VHT20) Middle Channel



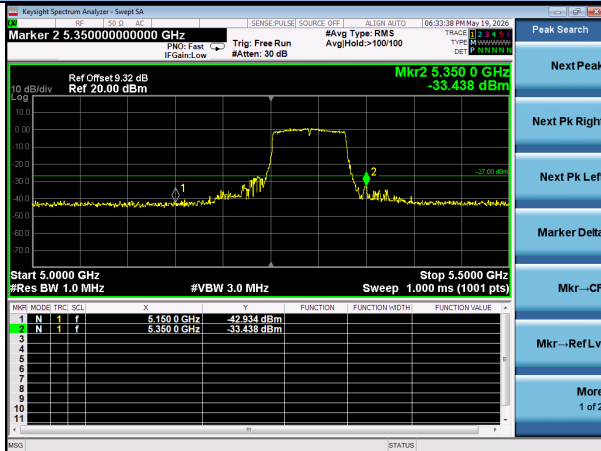
IEEE 802.11ac(VHT40) Low Channel



IEEE 802.11ac(VHT40) High Channel



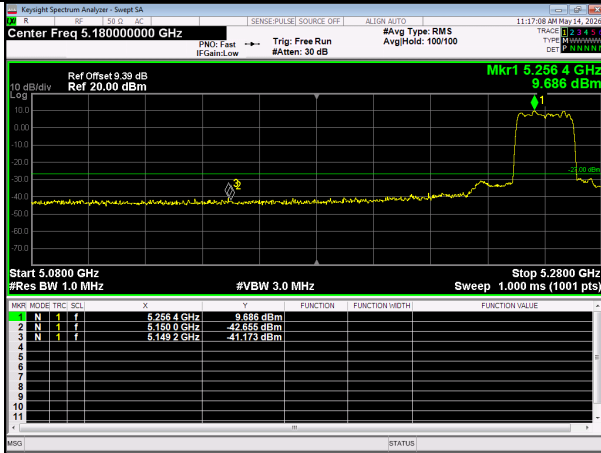
IEEE 802.11ac(VHT80)



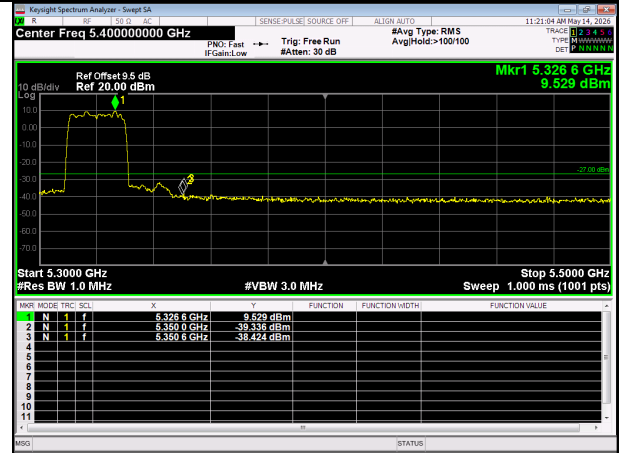
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U-NII-2A Band

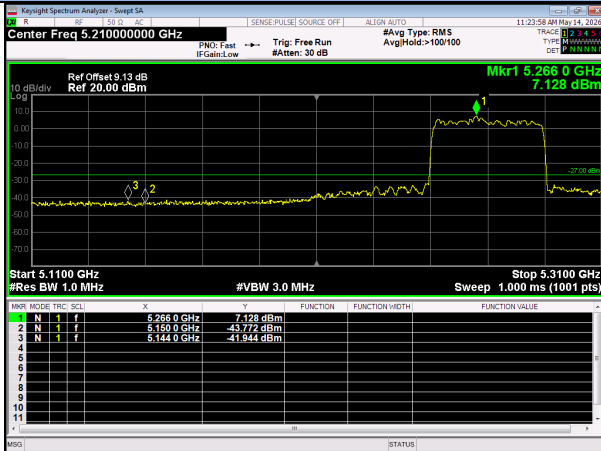
IEEE 802.11ax(HE20) Low Channel



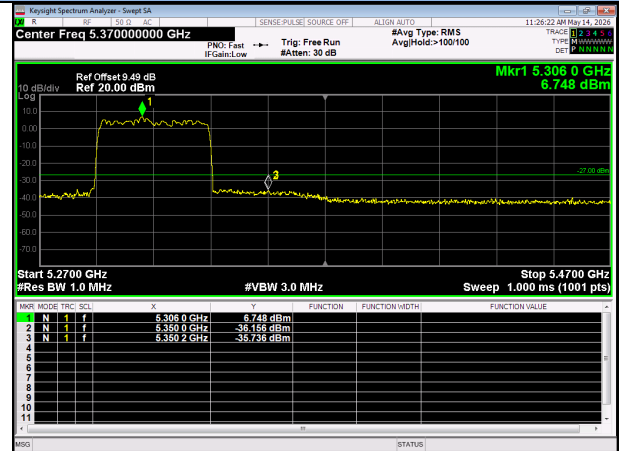
IEEE 802.11ax(HE20) High Channel



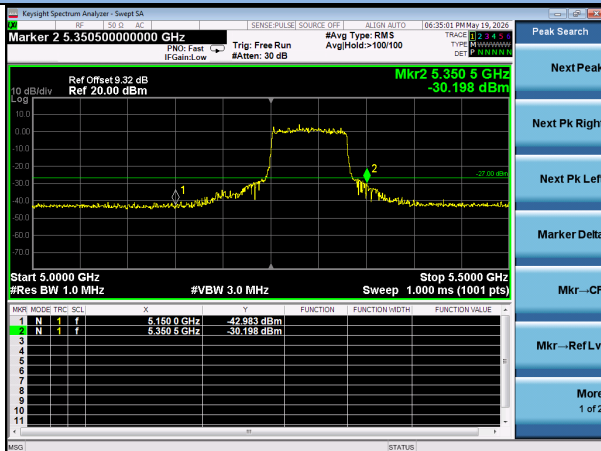
IEEE 802.11ax(HE40) Low Channel



IEEE 802.11ax(HE40) High Channel



IEEE 802.11ax(HE80)

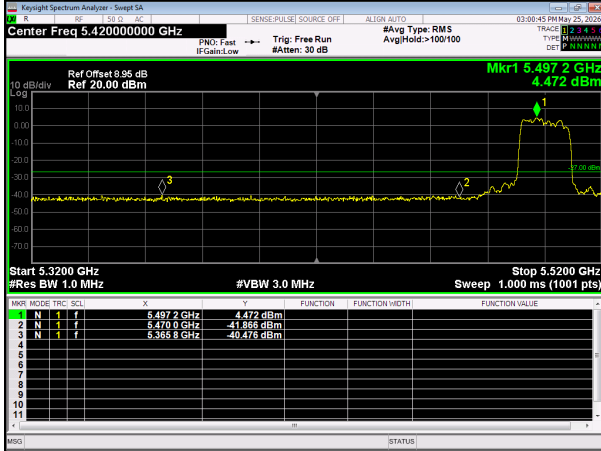


- Peak Search
- Next Peak
- Next Pk Right
- Next Pk Left
- Marker Delta
- Mkr--CF
- Mkr--Ref Lvl
- More
- 1 of 2

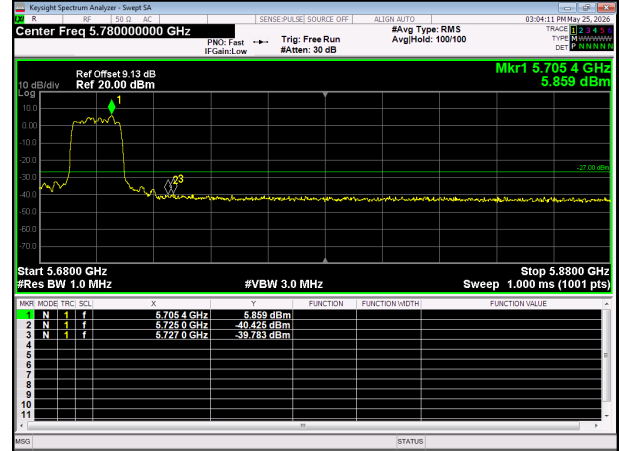
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U-NII-2C Band

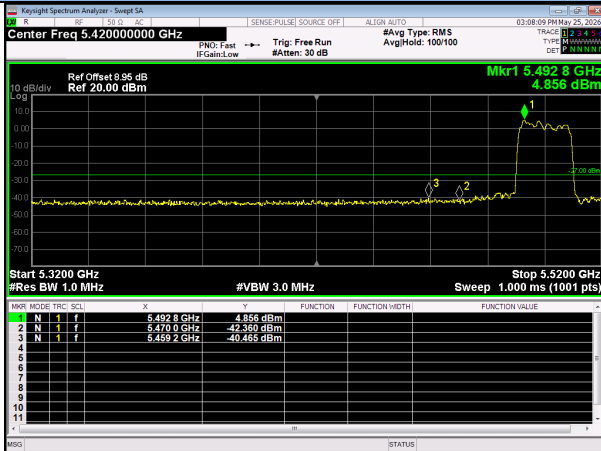
IEEE 802.11a Low Channel



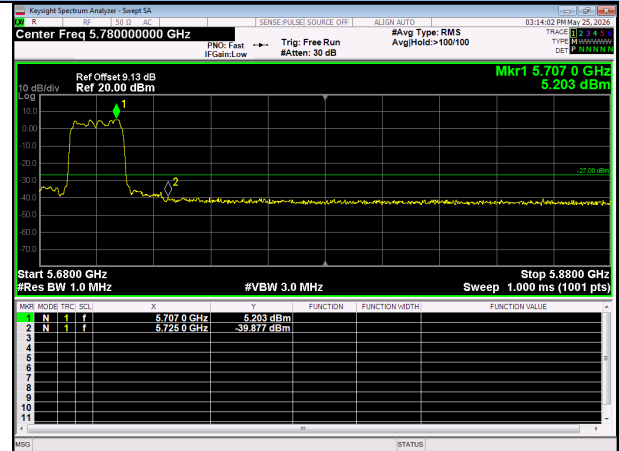
IEEE 802.11a High Channel



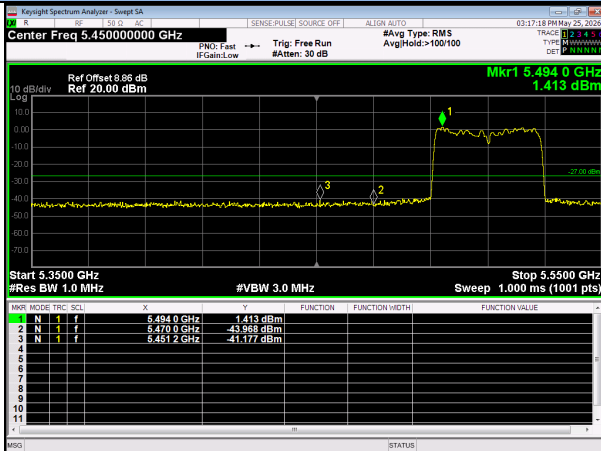
IEEE 802.11n(HT20) Low Channel



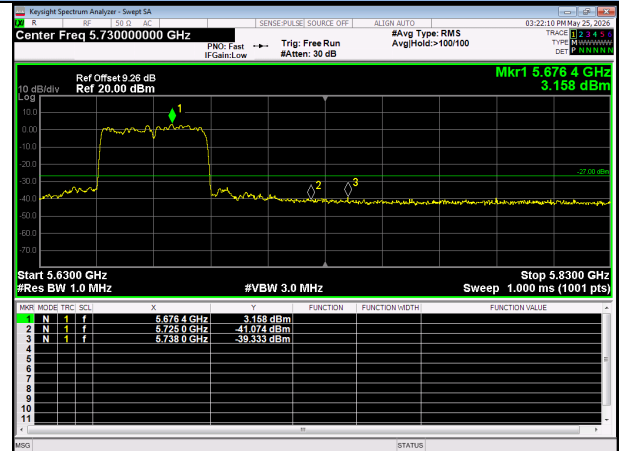
IEEE 802.11n(HT20) High Channel



IEEE 802.11n(HT40) Low Channel

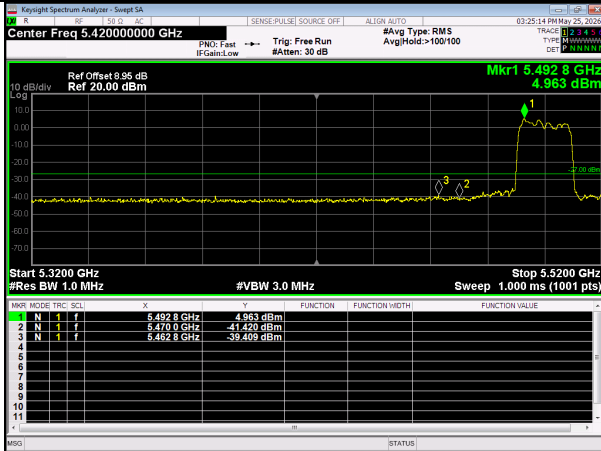


IEEE 802.11n(HT40) High Channel

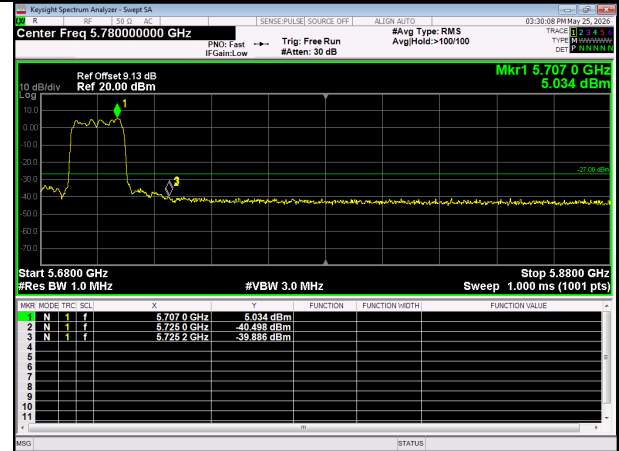


U-NII-2C Band

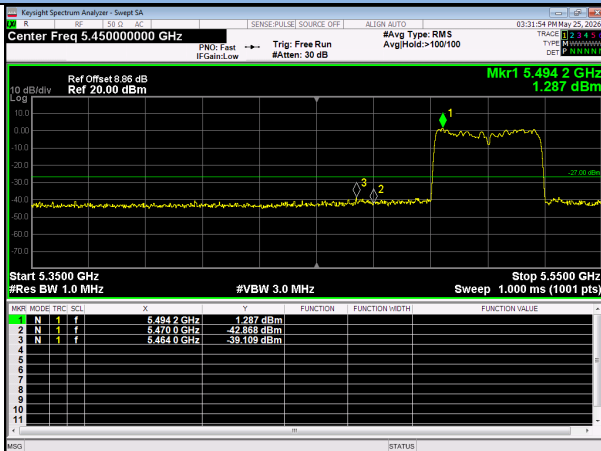
IEEE 802.11ac(VHT20) Low Channel



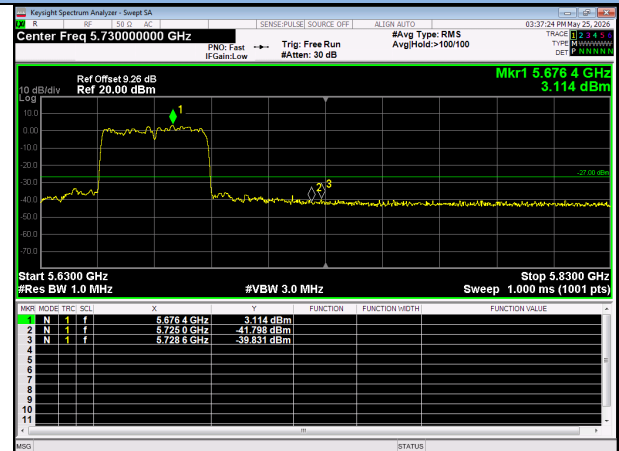
IEEE 802.11ac(VHT20) High Channel



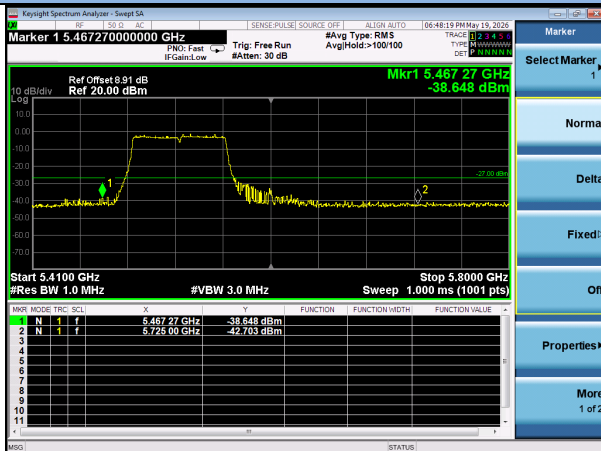
IEEE 802.11ac(VHT40) Low Channel



IEEE 802.11ac(VHT40) High Channel



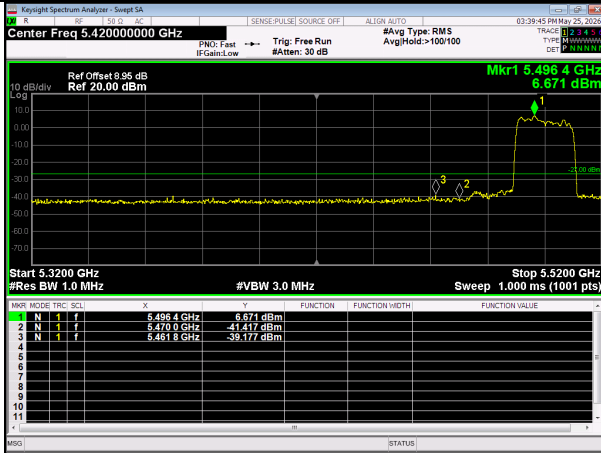
IEEE 802.11ac(VHT80)



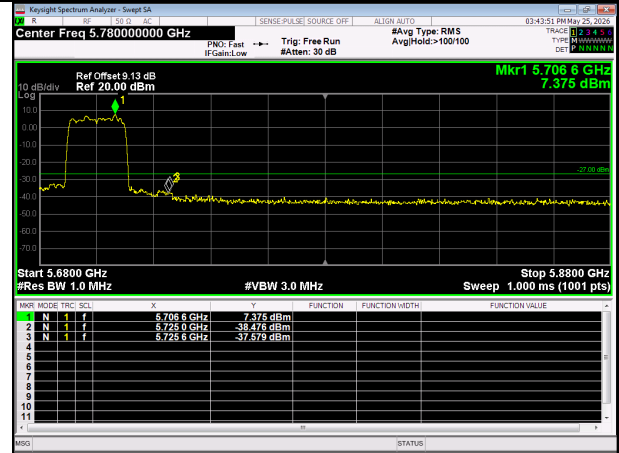
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U-NII-2C Band

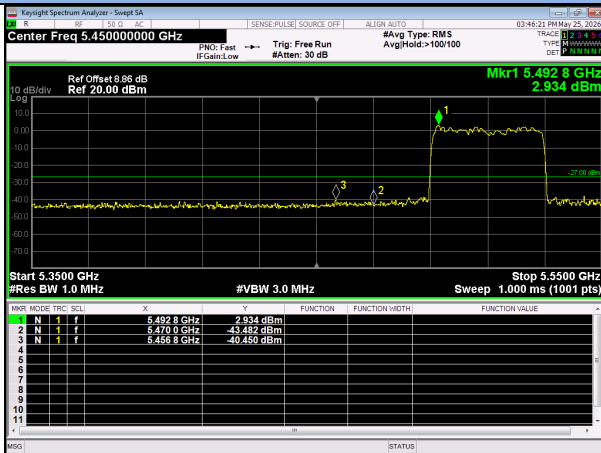
IEEE 802.11ax(HE20) Low Channel



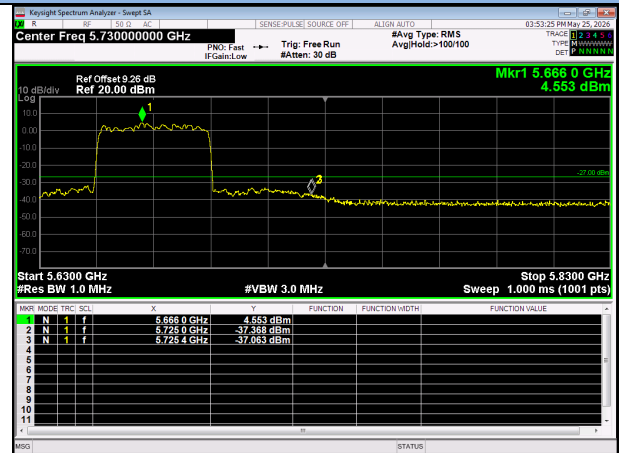
IEEE 802.11ax(HE20) High Channel



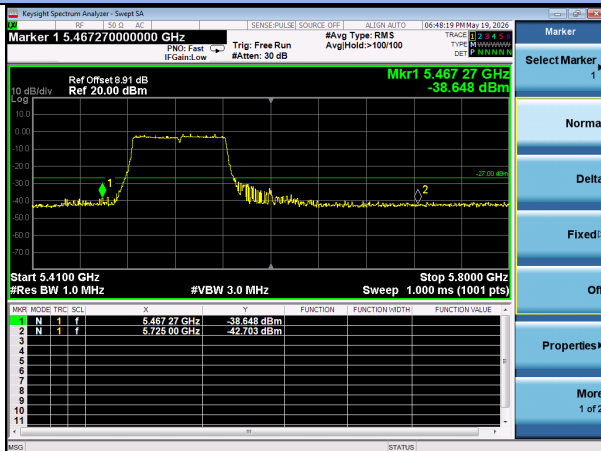
IEEE 802.11ax(HE40) Low Channel



IEEE 802.11ax(HE40) High Channel



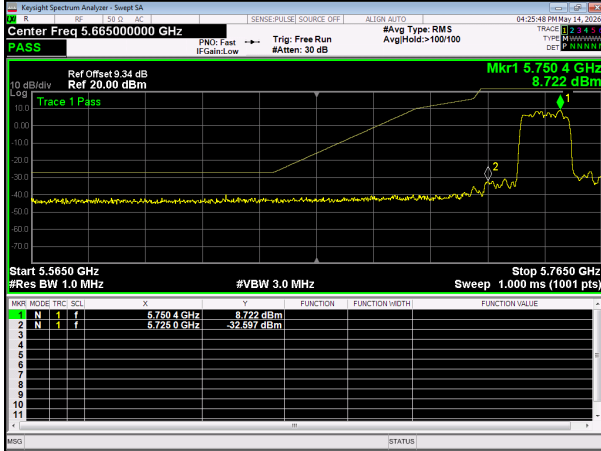
IEEE 802.11ax(HE80)



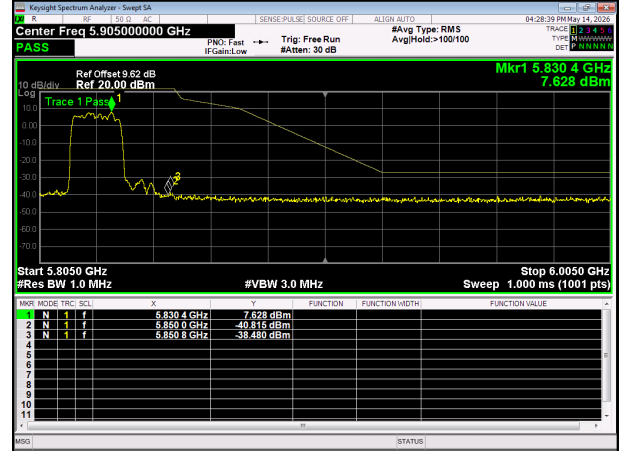
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U-NII-3 Band

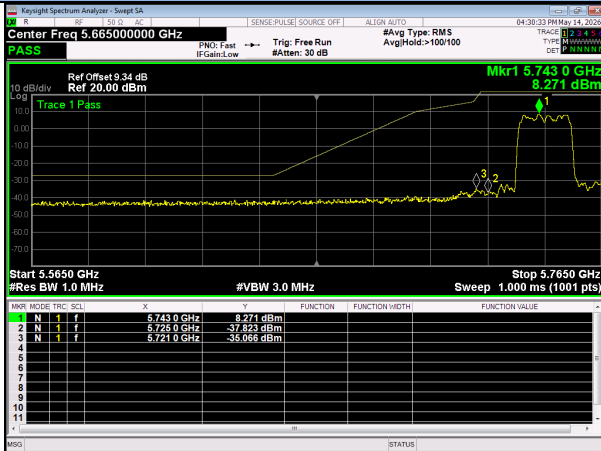
IEEE 802.11a Low Channel



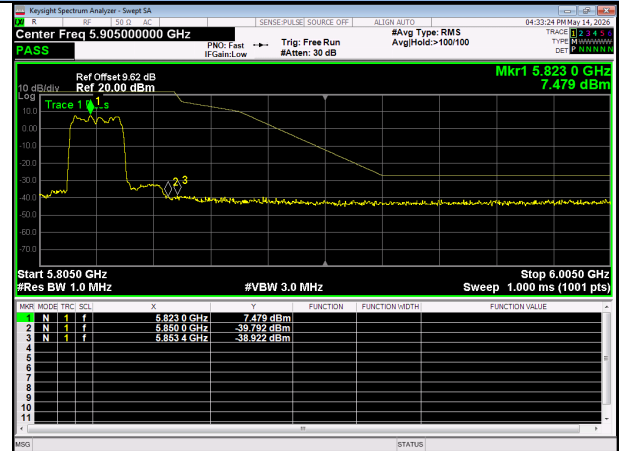
IEEE 802.11a High Channel



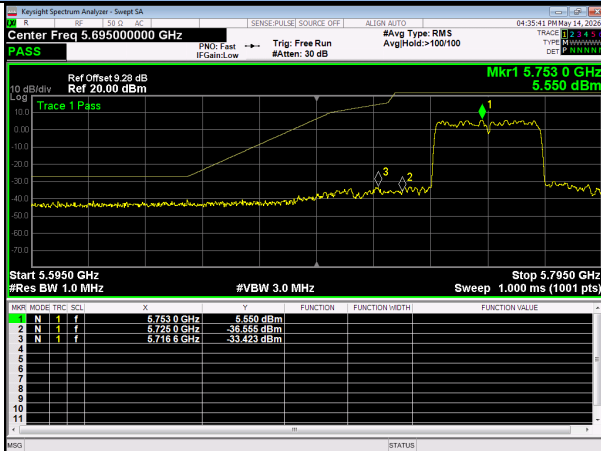
IEEE 802.11n(HT20) Low Channel



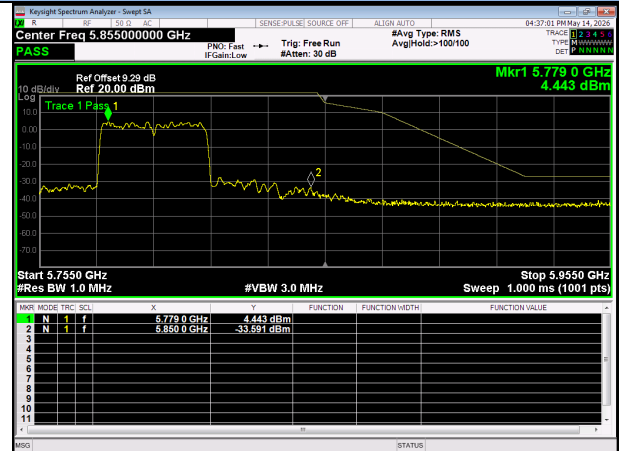
IEEE 802.11n(HT20) High Channel



IEEE 802.11n(HT40) Low Channel

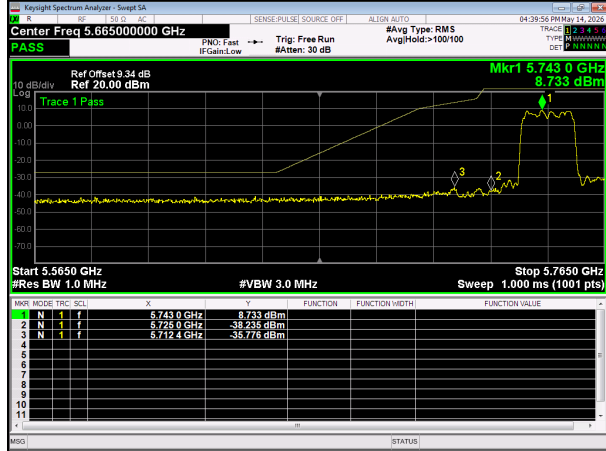


IEEE 802.11n(HT40) High Channel

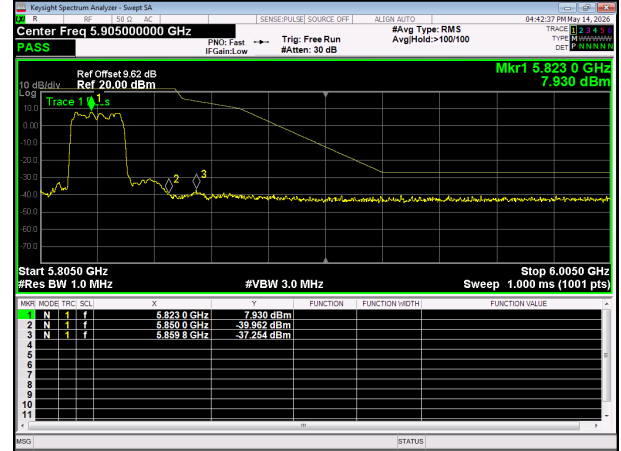


U-NII-3 Band

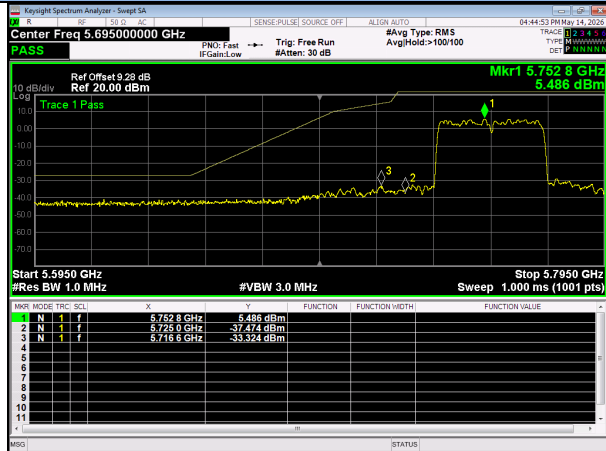
IEEE 802.11ac(VHT20) Low Channel



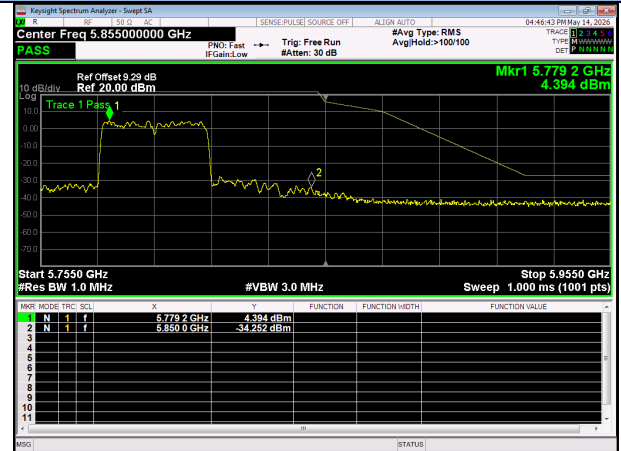
IEEE 802.11ac(VHT20) High Channel



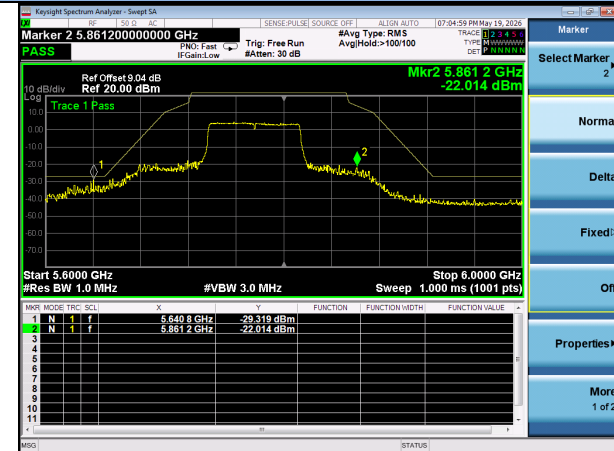
IEEE 802.11ac(VHT40) Low Channel



IEEE 802.11ac(VHT40) High Channel



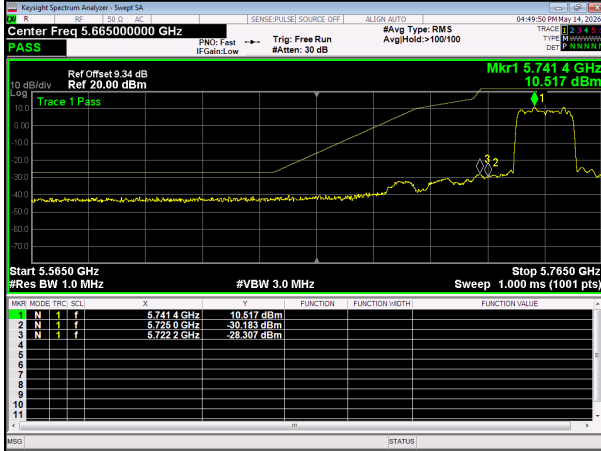
IEEE 802.11ac(VHT80)



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U-NII-3 Band

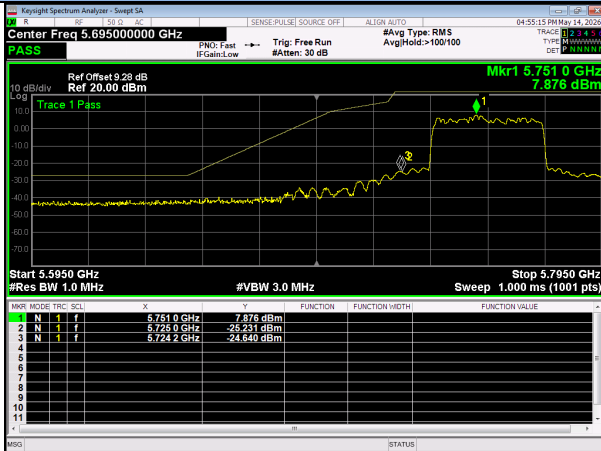
IEEE 802.11ax(HE20) Low Channel



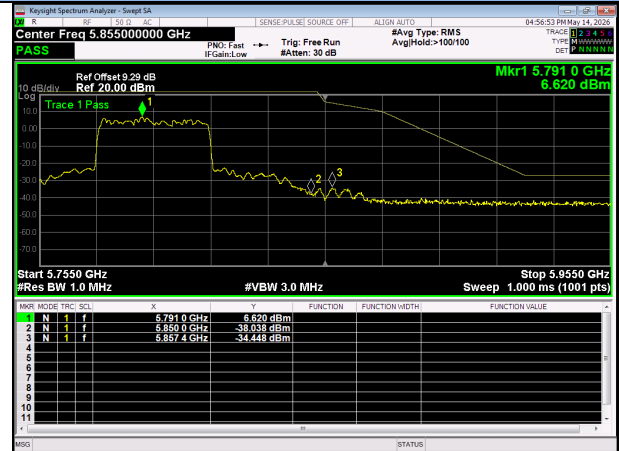
IEEE 802.11ax(HE20) High Channel



IEEE 802.11ax(HE40) Low Channel



IEEE 802.11ax(HE40) High Channel



IEEE 802.11ax(HE80)



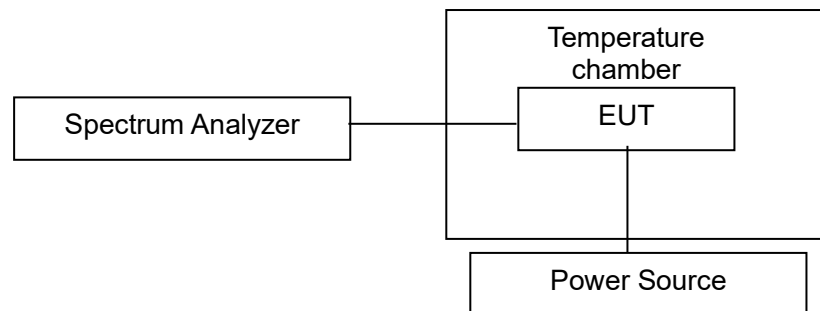
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14.7 Frequency Stability

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

- The EUT was placed inside the environmental test chamber and powered by Power source.
- Turn the EUT on and couple its output to a spectrum analyzer.
- Turn the EUT off and set the chamber to the highest temperature specified.
- 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.
- Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
- 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

Please refer to the following pages.

U-NII-1 Band						
Lowest channel 5180MHz						
Temperature (°C)	Power Supplied (V)	Measured Frequency (MHz)				Test Result
		0 Minute	2 Minute	5 Minute	10 Minute	
0	120	5179.957	5179.956	5179.954	5179.957	Pass
10		5179.959	5179.953	5179.953	5179.958	Pass
20		5179.958	5179.958	5179.958	5179.956	Pass
30		5179.959	5179.957	5179.956	5179.956	Pass
40		5179.956	5179.958	5179.957	5179.957	Pass
25	108	5179.958	5179.958	5179.953	5179.953	Pass
25	132	5179.958	5179.956	5179.954	5179.954	Pass
Highest channel 5240MHz						
Temperature (°C)	Power Supplied (V)	Measured Frequency (MHz)				Test Result
		0 Minute	2 Minute	5 Minute	10 Minute	
0	120	5239.948	5239.948	5239.945	5239.947	Pass
10		5239.946	5239.946	5239.947	5239.946	Pass
20		5239.948	5239.943	5239.946	5239.948	Pass
30		5239.949	5239.948	5239.948	5239.947	Pass
40		5239.946	5239.946	5239.945	5239.946	Pass
25	108	5239.948	5239.948	5239.947	5239.948	Pass
25	132	5239.945	5239.946	5239.947	5239.946	Pass

Note: EUT temperature working range is 0 to 40°C.

U-NII-2A Band						
Lowest channel 5260MHz						
Temperature (°C)	Power Supplied (V)	Measured Frequency (MHz)				Test Result
		0 Minute	2 Minute	5 Minute	10 Minute	
0	120	5259.957	5259.957	5259.957	5259.956	Pass
10		5259.956	5259.955	5259.956	5259.957	Pass
20		5259.957	5259.956	5259.956	5259.956	Pass
30		5259.957	5259.956	5259.955	5259.956	Pass
40		5259.956	5259.957	5259.956	5259.957	Pass
25	108	5259.956	5259.956	5259.957	5259.958	Pass
25	132	5259.956	5259.956	5259.956	5259.956	Pass
Highest channel 5320MHz						
Temperature (°C)	Power Supplied (V)	Measured Frequency (MHz)				Test Result
		0 Minute	2 Minute	5 Minute	10 Minute	
0	120	5299.966	5299.967	5299.965	5299.967	Pass
10		5299.966	5299.966	5299.965	5299.965	Pass
20		5299.967	5299.966	5299.967	5299.965	Pass
30		5299.966	5299.965	5299.966	5299.966	Pass
40		5299.966	5299.966	5299.966	5299.966	Pass
25	108	5299.966	5299.967	5299.966	5299.967	Pass
25	132	5299.967	5299.966	5299.965	5299.966	Pass

Note: EUT temperature working range is 0 to 40°C.

U-NII-2C Band						
Lowest channel 5500MHz						
Temperature (°C)	Power Supplied (V)	Measured Frequency (MHz)				Test Result
		0 Minute	2 Minute	5 Minute	10 Minute	
0	120	5499.956	5499.956	5499.954	5499.956	Pass
10		5499.957	5499.956	5499.954	5499.957	Pass
20		5499.956	5499.957	5499.956	5499.956	Pass
30		5499.956	5499.956	5499.957	5499.956	Pass
40		5499.957	5499.956	5499.956	5499.956	Pass
25	108	5499.957	5499.957	5499.956	5499.957	Pass
25	132	5499.956	5499.956	5499.957	5499.957	Pass
Highest channel 5700MHz						
Temperature (°C)	Power Supplied (V)	Measured Frequency (MHz)				Test Result
		0 Minute	2 Minute	5 Minute	10 Minute	
0	120	5699.964	5699.965	5699.965	5699.965	Pass
10		5699.964	5699.965	5699.965	5699.965	Pass
20		5699.964	5699.964	5699.965	5699.964	Pass
30		5699.965	5699.966	5699.965	5699.965	Pass
40		5699.964	5699.965	5699.966	5699.964	Pass
25	108	5699.964	5699.965	5699.964	5699.965	Pass
25	132	5699.966	5699.964	5699.964	5699.965	Pass

Note: EUT temperature working range is 0 to 40°C.

U-NII-3 Band						
Lowest channel 5745MHz						
Temperature (°C)	Power Supplied (V)	Measured Frequency (MHz)				Test Result
		0 Minute	2 Minute	5 Minute	10 Minute	
0	120	5744.955	5744.954	5744.954	5744.954	Pass
10		5744.954	5744.955	5744.955	5744.954	Pass
20		5744.955	5744.954	5744.954	5744.955	Pass
30		5744.953	5744.956	5744.956	5744.956	Pass
40		5744.954	5744.954	5744.954	5744.954	Pass
25	108	5744.955	5744.954	5744.955	5744.956	Pass
25	132	5744.956	5744.956	5744.956	5744.955	Pass
Highest channel 5825MHz						
Temperature (°C)	Power Supplied (V)	Measured Frequency (MHz)				Test Result
		0 Minute	2 Minute	5 Minute	10 Minute	
0	120	5824.956	5824.954	5824.956	5824.954	Pass
10		5824.954	5824.956	5824.954	5824.956	Pass
20		5824.956	5824.953	5824.953	5824.954	Pass
30		5824.955	5824.954	5824.954	5824.956	Pass
40		5824.956	5824.956	5824.955	5824.953	Pass
25	108	5824.956	5824.954	5824.954	5824.954	Pass
25	132	5824.954	5824.955	5824.956	5824.956	Pass

Note: EUT temperature working range is 0 to 40°C.

14.8 Radiated Spurious Emissions and Restricted Bands Measurement and Band Edge

LIMITS

Frequency range MHz	Distance Meters	Field Strengths Limit (15.209)
		$\mu\text{V/m}$
0.009 ~ 0.490	300	$2400/F(\text{kHz})$
0.490 ~ 1.705	30	$24000/F(\text{kHz})$
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 $\mu\text{V/m}$.
 - (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 5.25-5.35 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.

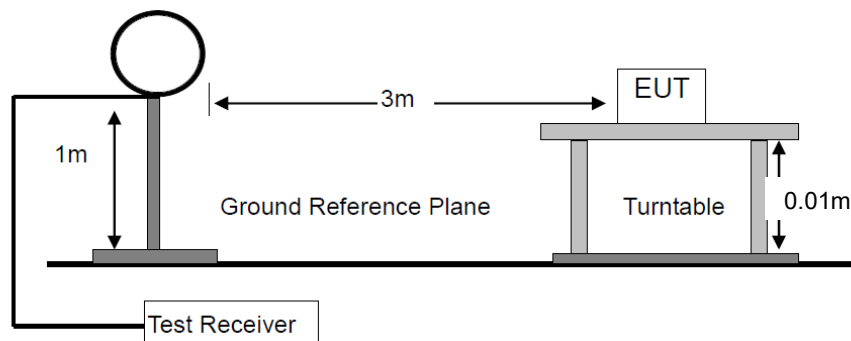
For transmitters operating in the 5.725-5.85 GHz band:

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

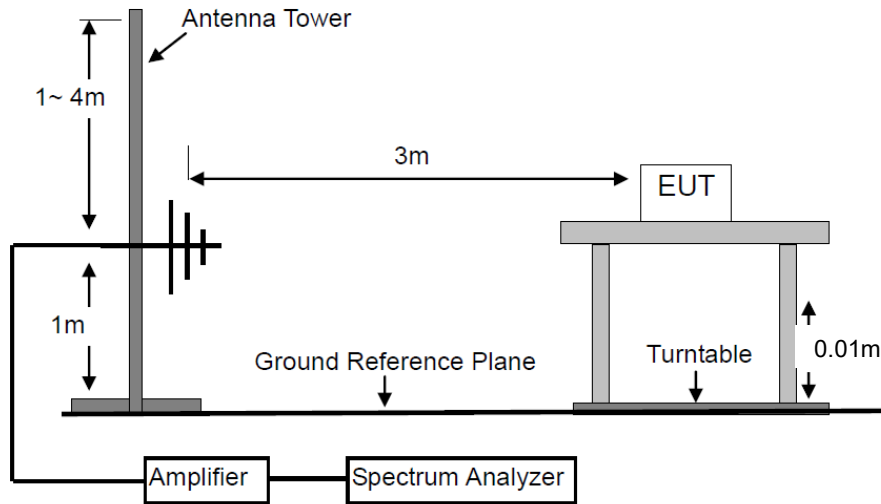
increasing linearly to a level of 27dBm/MHz at the band edge.

BLOCK DIAGRAM OF TEST SETUP

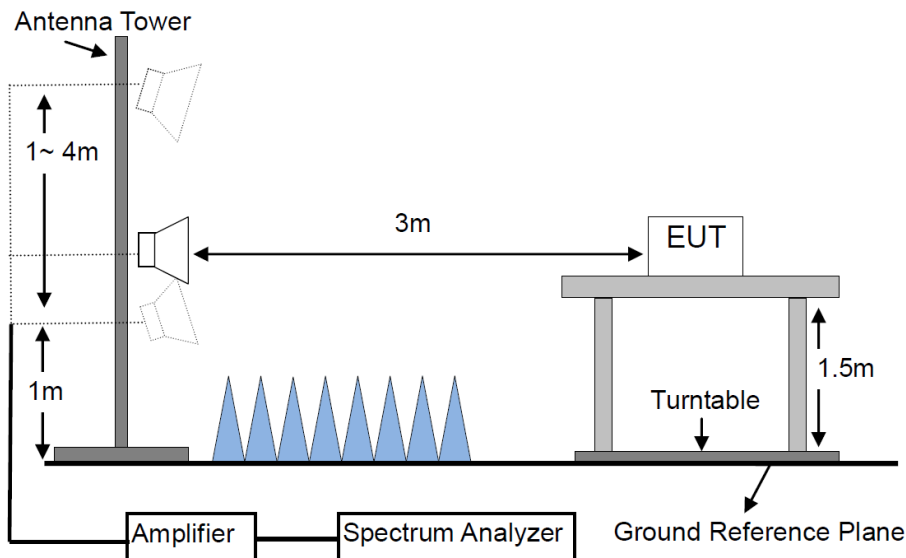
For Radiated Emission below 30MHz



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 0.01 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
0.009~0.15	QP & AVG	200 Hz	1 kHz
0.15~30	QP & AVG	10 kHz	30 kHz
30 to 1000	QP	120 kHz	300 kHz
Above 1000	Peak	1 MHz	3 MHz
	Average	1 MHz	10 Hz

TEST RESULTS

PASS

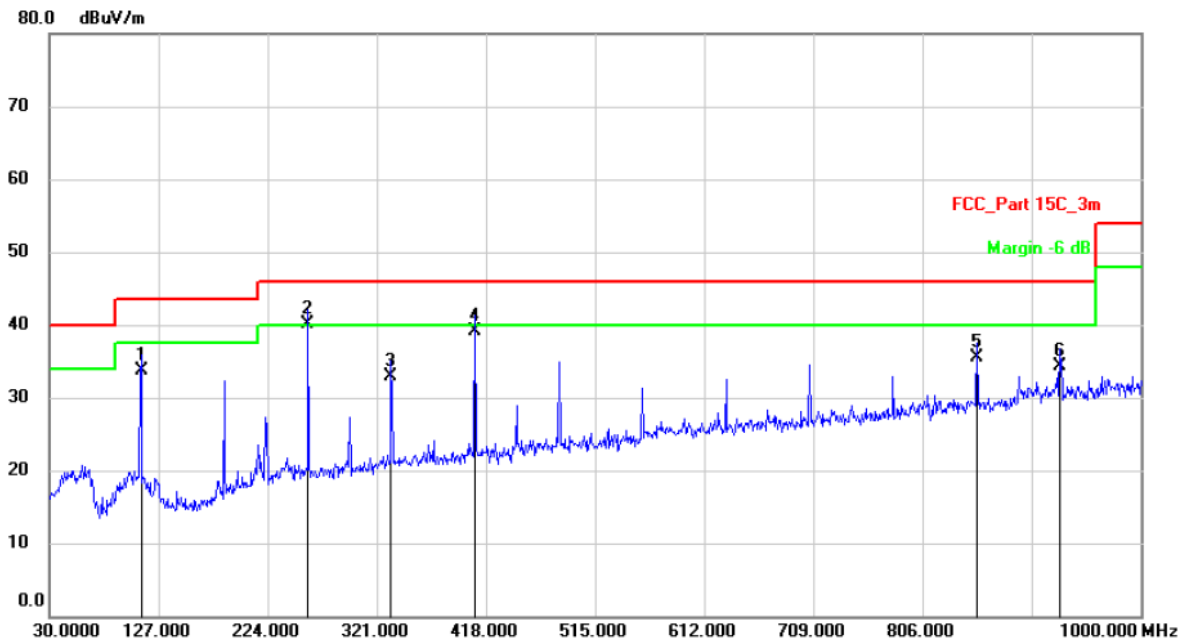
Please refer to the following pages of the worst case.

M/N: ROCCO2023	Testing Voltage: AC 120V / 60Hz
Polarization: Horizontal	Detector: QP
Test Mode: Test Mode: 1 (the worst case, 802.11ac(VHT40), CH46)	Distance: 3m

Radiated Emission Measurement

Date: 2026/5/27

Time: 15:05:54



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
1		111.4800	41.59	-7.79	33.80	43.50	-9.70	QP	
2	*	259.8900	46.26	-6.16	40.10	46.00	-5.90	QP	
3		333.6099	37.53	-4.53	33.00	46.00	-13.00	QP	
4		408.3000	42.39	-3.19	39.20	46.00	-6.80	QP	
5		854.5000	30.67	4.83	35.50	46.00	-10.50	QP	
6		928.2200	28.16	6.24	34.40	46.00	-11.60	QP	

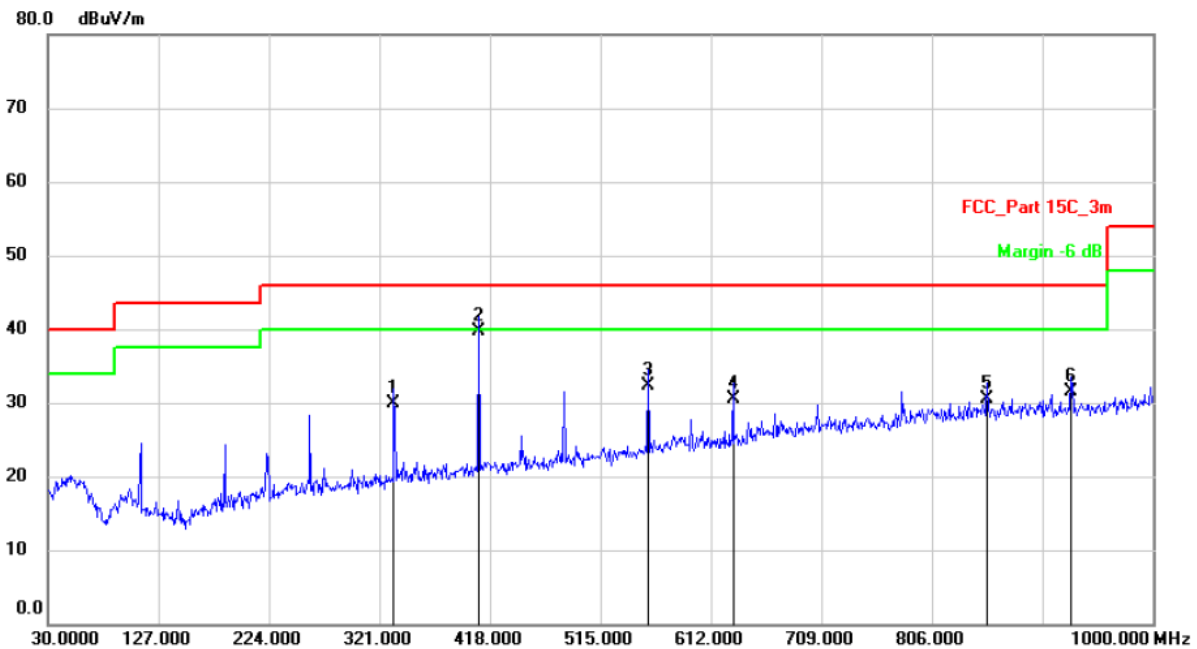
Note: Below 30MHz, the emissions are lower than 20dB below the allowable limit.

M/N: ROCCO2023	Testing Voltage: AC 120V / 60Hz
Polarization: Vertical	Detector: QP
Test Mode: Test Mode: 1 (the worst case, 802.11ac(VHT40), CH46)	Distance: 3m

Radiated Emission Measurement

Date: 2026/5/27

Time: 15:12:53



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		333.6099	35.53	-5.53	30.00	46.00	-16.00	QP	
2	*	408.3000	43.99	-4.19	39.80	46.00	-6.20	QP	
3		556.7100	34.00	-1.60	32.40	46.00	-13.60	QP	
4		631.4000	30.23	0.37	30.60	46.00	-15.40	QP	
5		854.5000	25.77	4.83	30.60	46.00	-15.40	QP	
6		928.2200	26.50	5.00	31.50	46.00	-14.50	QP	

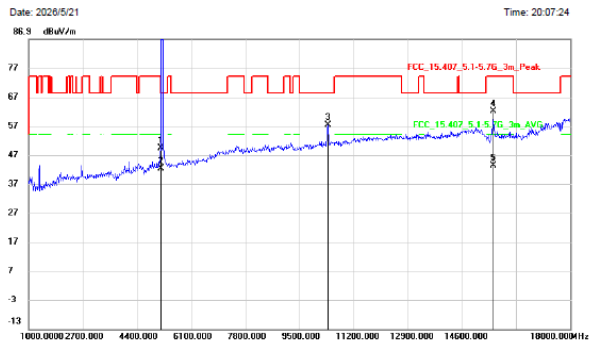
Note: Below 30MHz, the emissions are lower than 20dB below the allowable limit.

Test plots of the worst case

U-NII-1 Band (IEEE 802.11ac(VHT40))

Low channel / Vertical / 1-18GHz

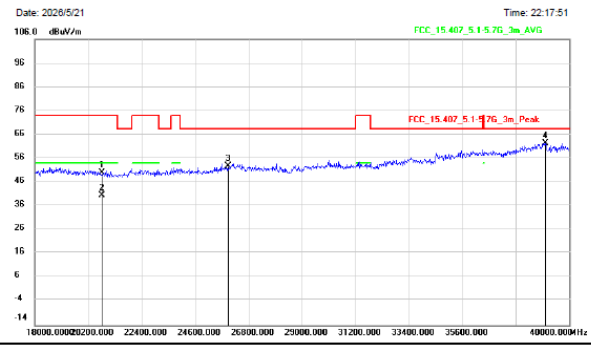
Radiated Emission Measurement



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dBm	dBuV/m	dBuV/m	dB	Detector	Comment
1		5150.000	44.72	4.53	49.25	68.20	-18.95	peak	
2		5150.000	37.86	4.53	42.39	54.00	-11.61	AVG	
3		10380.000	45.43	11.76	57.19	68.20	-11.01	peak	
4		15570.000	48.68	13.39	62.07	74.00	-11.93	peak	
5	*	15570.000	29.90	13.39	43.29	54.00	-10.71	AVG	

Low channel / Vertical / 18-40GHz

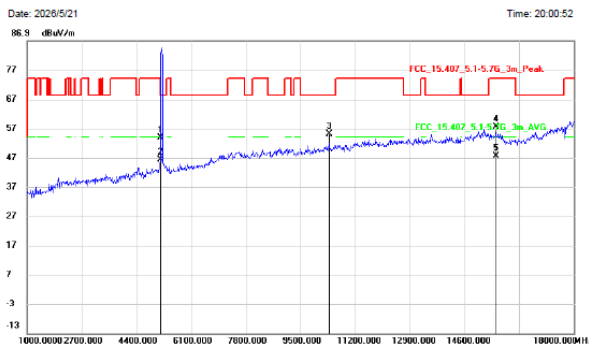
Radiated Emission Measurement



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dBm	dBuV/m	dBuV/m	dB	Detector	Comment
1		20760.000	44.26	5.75	50.01	74.00	-23.99	peak	
2		20760.000	34.60	5.75	40.35	54.00	-13.65	AVG	
3		25950.000	45.69	6.95	52.64	68.20	-15.56	peak	
4	*	39010.000	49.92	12.48	62.40	68.20	-5.80	peak	

Low channel / Horizontal / 1-18GHz

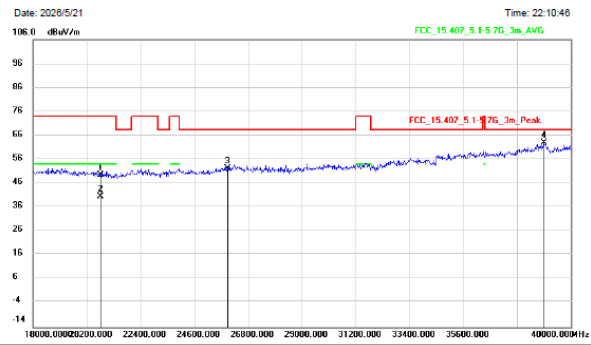
Radiated Emission Measurement



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dBm	dBuV/m	dBuV/m	dB	Detector	Comment
1		5150.000	49.18	4.53	53.71	68.20	-14.49	peak	
2		5150.000	41.74	4.53	46.27	54.00	-7.73	AVG	
3		10380.000	43.17	11.76	54.93	68.20	-13.27	peak	
4		15570.000	42.22	15.33	57.55	74.00	-16.45	peak	
5	*	15570.000	32.21	15.33	47.54	54.00	-6.46	AVG	

Low channel / Horizontal / 18-40GHz

Radiated Emission Measurement



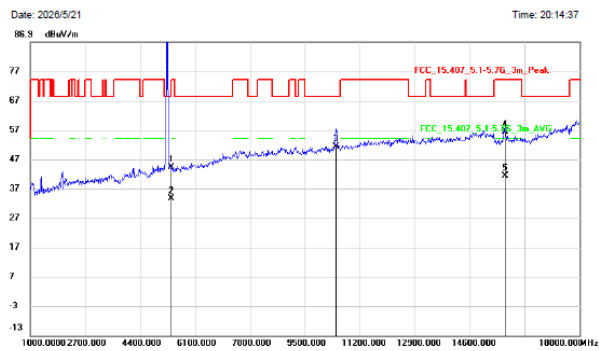
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dBm	dBuV/m	dBuV/m	dB	Detector	Comment
1		20760.000	43.77	5.75	49.52	74.00	-24.48	peak	
2		20760.000	34.58	5.75	40.33	54.00	-13.67	AVG	
3		25950.000	45.29	6.95	52.24	68.20	-15.96	peak	
4	*	38900.000	50.32	12.68	63.00	68.20	-5.20	peak	

Test plots of the worst case

U-NII-1 Band (IEEE 802.11ac(VHT40))

High channel / Vertical / 1-18GHz

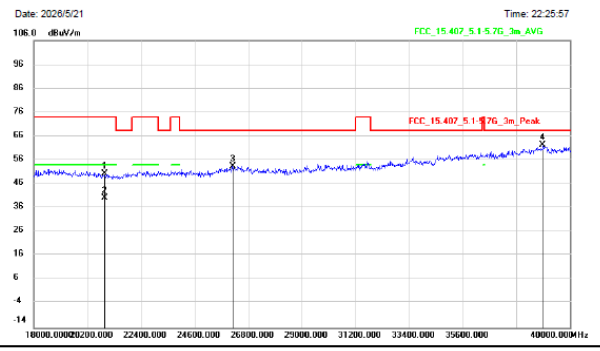
Radiated Emission Measurement



No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
	MHz	dBuV	dBm	dBuV/m	dBuV/m	dB	Detector	Comment
1	5350.000	39.81	4.55	44.36	68.20	-23.84	peak	
2	5350.000	29.01	4.55	33.56	54.00	-20.44	AVG	
3	10460.000	39.39	11.95	51.34	68.20	-16.86	peak	
4	15690.000	42.62	13.55	56.17	74.00	-17.83	peak	
5 *	15690.000	27.73	13.55	41.28	54.00	-12.72	AVG	

High channel / Vertical / 18-40GHz

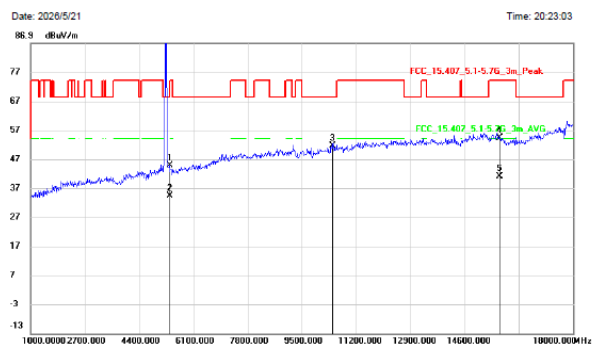
Radiated Emission Measurement



No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
	MHz	dBuV	dBm	dBuV/m	dBuV/m	dB	Detector	Comment
1	20920.000	45.09	5.41	50.50	74.00	-23.50	peak	
2	20920.000	34.85	5.41	40.26	54.00	-13.74	AVG	
3	26150.000	46.16	7.09	53.25	68.20	-14.95	peak	
4 *	38878.000	49.77	12.73	62.50	68.20	-5.70	peak	

High channel / Horizontal / 1-18GHz

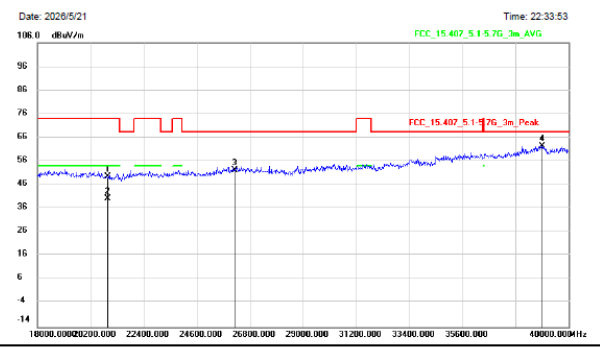
Radiated Emission Measurement



No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
	MHz	dBuV	dBm	dBuV/m	dBuV/m	dB	Detector	Comment
1	5350.000	40.15	4.55	44.70	68.20	-23.50	peak	
2	5350.000	29.61	4.55	34.16	54.00	-19.84	AVG	
3	10460.000	39.59	11.95	51.54	68.20	-16.66	peak	
4	15690.000	39.51	14.77	54.28	74.00	-19.72	peak	
5 *	15690.000	26.32	14.77	41.09	54.00	-12.91	AVG	

High channel / Horizontal / 18-40GHz

Radiated Emission Measurement



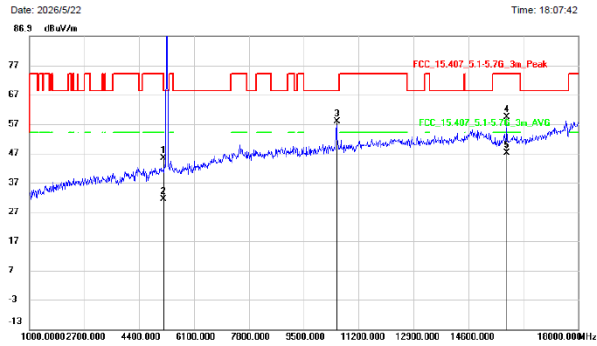
No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
	MHz	dBuV	dBm	dBuV/m	dBuV/m	dB	Detector	Comment
1	20920.000	44.11	5.41	49.52	74.00	-24.48	peak	
2	20920.000	34.62	5.41	40.03	54.00	-13.97	AVG	
3	26150.000	45.11	7.09	52.20	68.20	-16.00	peak	
4 *	38900.000	49.52	12.68	62.20	68.20	-6.00	peak	

Test plots of the worst case

U-NII-2A Band (IEEE 802.11a)

Low channel / Vertical / 1-18GHz

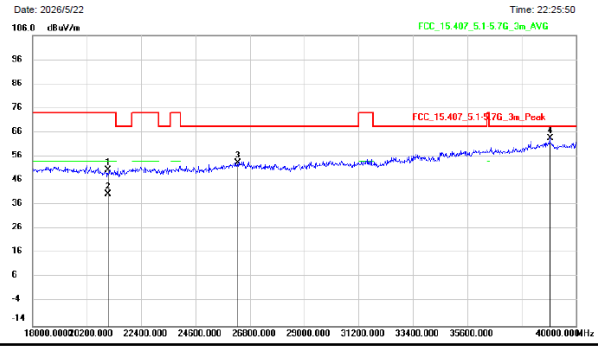
Radiated Emission Measurement



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dBm	dBuV/m	dBuV/m	dB	Detector	Comment
1		5150.000	40.76	4.53	45.29	68.20	-22.91	peak	
2		5150.000	26.72	4.53	31.25	54.00	-22.75	AVG	
3		10520.000	45.65	12.06	57.71	68.20	-10.49	peak	
4		15780.000	45.59	13.66	59.25	74.00	-14.75	peak	
5	*	15780.000	33.26	13.66	46.92	54.00	-7.08	AVG	

Low channel / Vertical / 18-40GHz

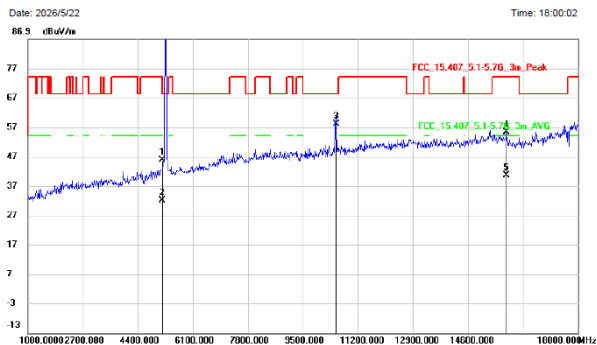
Radiated Emission Measurement



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dBm	dBuV/m	dBuV/m	dB	Detector	Comment
1		21040.000	45.03	5.22	50.25	74.00	-23.75	peak	
2		21040.000	35.13	5.22	40.35	54.00	-13.65	AVG	
3		26300.000	46.20	7.14	53.34	68.20	-14.86	peak	
4	*	38944.000	51.11	12.59	63.70	68.20	-4.50	peak	

Low channel / Horizontal / 1-18GHz

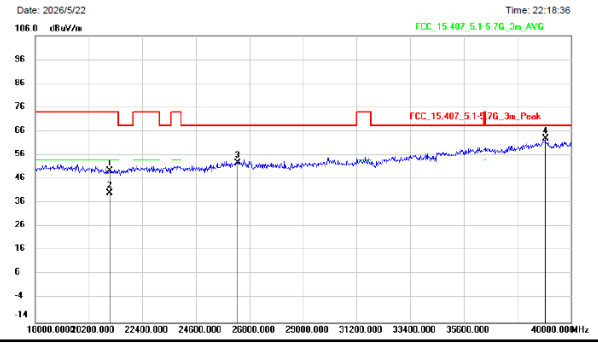
Radiated Emission Measurement



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dBm	dBuV/m	dBuV/m	dB	Detector	Comment
1		5150.000	41.26	4.53	45.79	68.20	-22.41	peak	
2		5150.000	27.60	4.53	32.13	54.00	-21.87	AVG	
3	*	10520.000	45.86	12.06	57.92	68.20	-10.28	peak	
4		15780.000	40.90	14.34	55.24	74.00	-18.76	peak	
5		15780.000	26.08	14.34	40.42	54.00	-13.58	AVG	

Low channel / Horizontal / 18-40GHz

Radiated Emission Measurement



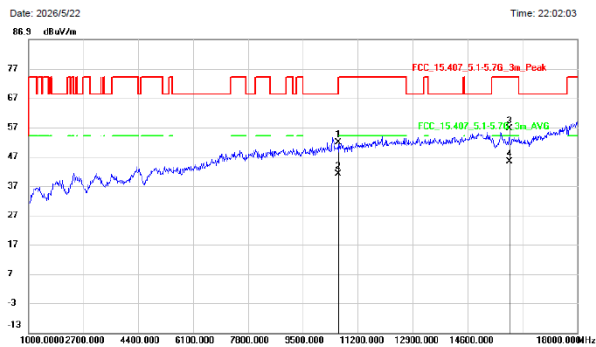
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dBm	dBuV/m	dBuV/m	dB	Detector	Comment
1		21040.000	44.32	5.22	49.54	74.00	-24.46	peak	
2		21040.000	34.96	5.22	40.18	54.00	-13.82	AVG	
3		26300.000	45.64	7.14	52.78	68.20	-15.42	peak	
4	*	38944.000	50.46	12.59	63.05	68.20	-5.15	AVG	

Test plots of the worst case

U-NII-2A Band (IEEE 802.11a)

Mid channel / Vertical / 1-18GHz

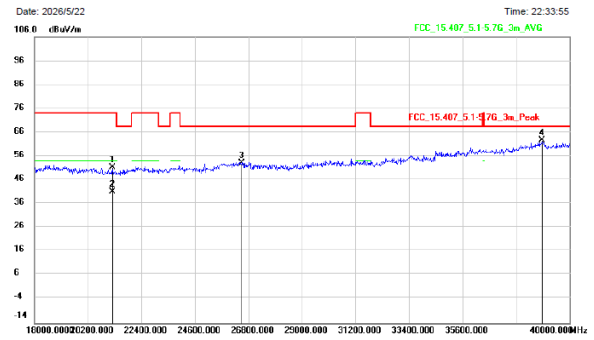
Radiated Emission Measurement



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over		
		MHz	dBuV	Factor	ment			Detector	Comment
1		10600.000	39.68	12.12	51.80	68.20	-16.40	peak	
2		10600.000	28.83	12.12	40.95	54.00	-13.05	AVG	
3		15900.000	42.67	13.82	56.49	74.00	-17.51	peak	
4	*	15900.000	31.56	13.82	45.38	54.00	-8.62	AVG	

Mid channel / Vertical / 18-40GHz

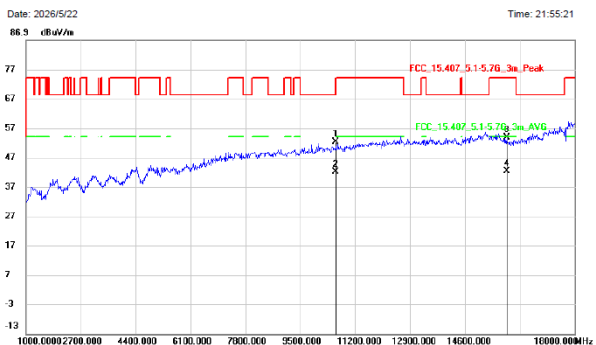
Radiated Emission Measurement



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over		
		MHz	dBuV	Factor	ment			Detector	Comment
1		21200.000	46.26	5.08	51.34	74.00	-22.66	peak	
2		21200.000	35.99	5.08	41.07	54.00	-12.93	AVG	
3		26500.000	45.83	7.22	53.05	68.20	-15.15	peak	
4	*	38856.000	49.80	12.78	62.58	68.20	-5.62	peak	

Mid channel / Horizontal / 1-18GHz

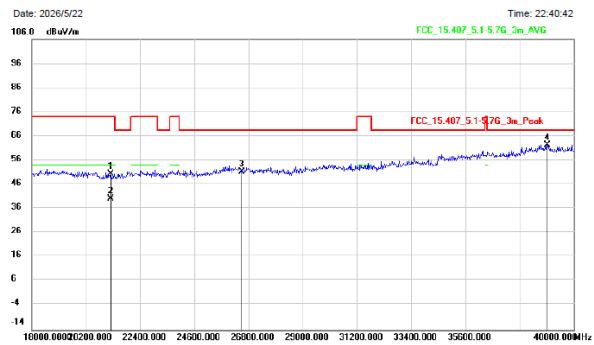
Radiated Emission Measurement



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over		
		MHz	dBuV	Factor	ment			Detector	Comment
1		10600.000	40.05	12.12	52.17	68.20	-16.03	peak	
2		10600.000	30.03	12.12	42.15	54.00	-11.85	AVG	
3		15900.000	39.98	13.78	53.76	74.00	-20.24	peak	
4	*	15900.000	28.60	13.78	42.38	54.00	-11.62	AVG	

Mid channel / Horizontal / 18-40GHz

Radiated Emission Measurement



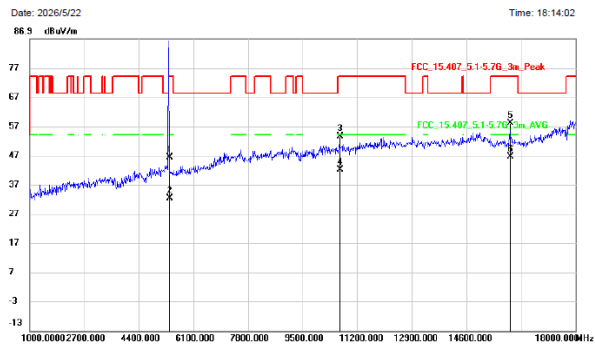
No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over		
		MHz	dBuV	Factor	ment			Detector	Comment
1		21200.000	45.20	5.08	50.28	74.00	-23.72	peak	
2		21200.000	35.18	5.08	40.26	54.00	-13.74	AVG	
3		26500.000	44.03	7.22	51.25	68.20	-16.95	peak	
4	*	38922.000	49.86	12.64	62.50	68.20	-5.70	peak	

Test plots of the worst case

U-NII-2A Band (IEEE 802.11a)

High channel / Vertical / 1-18GHz

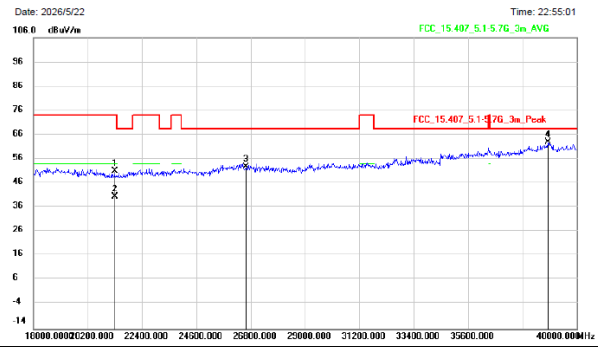
Radiated Emission Measurement



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dBm	dBuV/m	dBuV/m	dB	Detector	Comment
1		5350.000	41.75	4.55	46.30	68.20	-21.90	peak	
2		5350.000	27.76	4.55	32.31	54.00	-21.69	AVG	
3		10640.000	41.48	12.14	53.62	74.00	-20.38	peak	
4		10640.000	29.87	12.14	42.01	54.00	-11.99	AVG	
5		15960.000	44.18	13.90	58.08	74.00	-15.92	peak	
6	*	15960.000	32.67	13.90	46.57	54.00	-7.43	AVG	

High channel / Vertical / 18-40GHz

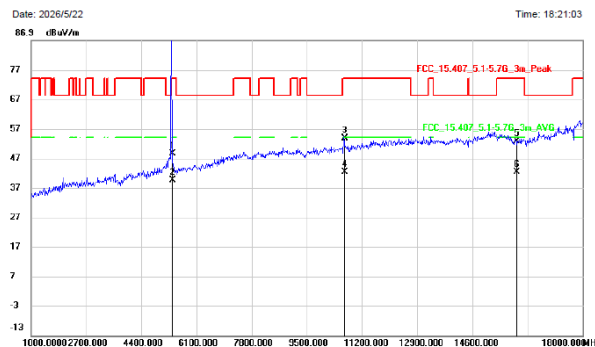
Radiated Emission Measurement



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dBm	dBuV/m	dBuV/m	dB	Detector	Comment
1		21280.000	45.82	5.01	50.83	74.00	-23.17	peak	
2		21280.000	35.44	5.01	40.45	54.00	-13.55	AVG	
3		26600.000	45.60	7.20	52.80	68.20	-15.40	peak	
4	*	38834.000	50.28	12.82	63.10	68.20	-5.10	peak	

High channel / Horizontal / 1-18GHz

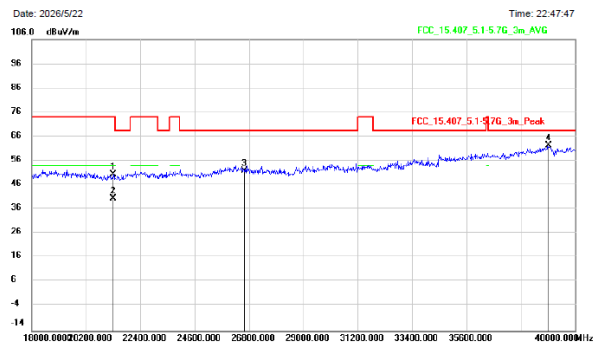
Radiated Emission Measurement



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dBm	dBuV/m	dBuV/m	dB	Detector	Comment
1		5350.000	44.03	4.55	48.58	68.20	-19.62	peak	
2		5350.000	34.87	4.55	39.42	54.00	-14.58	AVG	
3		10640.000	41.67	12.14	53.81	74.00	-20.19	peak	
4	*	10640.000	30.17	12.14	42.31	54.00	-11.69	AVG	
5		15960.000	39.20	13.50	52.70	74.00	-21.30	peak	
6		15960.000	28.76	13.50	42.26	54.00	-11.74	AVG	

High channel / Horizontal / 18-40GHz

Radiated Emission Measurement



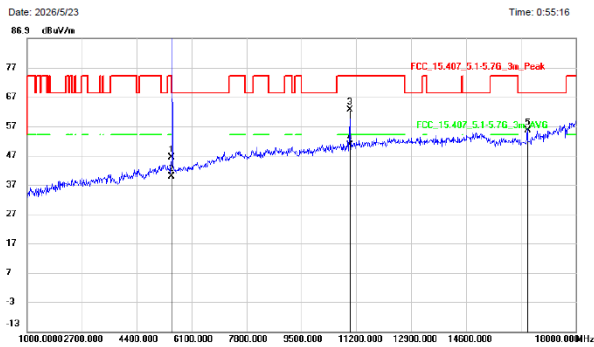
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dBm	dBuV/m	dBuV/m	dB	Detector	Comment
1		21280.000	45.40	5.01	50.41	74.00	-23.59	peak	
2		21280.000	35.39	5.01	40.40	54.00	-13.60	AVG	
3		26600.000	44.80	7.20	52.00	68.20	-16.20	peak	
4	*	38922.000	49.69	12.64	62.33	68.20	-5.87	peak	

Test plots of the worst case

U-NII-2C Band (IEEE 802.11n(HT20))

Low channel / Vertical / 1-18GHz

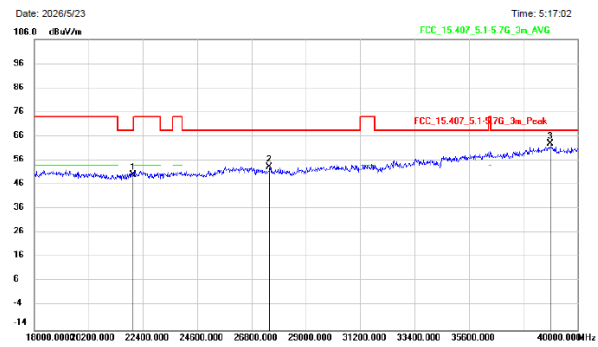
Radiated Emission Measurement



No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
	MHz	dBuV	dBm	dBuV/m	dBuV/m	dB	Detector	Comment
1	5470.000	41.77	4.53	46.30	68.20	-21.90	peak	
2	5470.000	35.35	4.53	39.88	68.20	-28.32	AVG	
3	11000.000	50.08	12.39	62.47	74.00	-11.53	peak	
4 *	11000.000	38.11	12.39	50.50	54.00	-3.50	AVG	
5	16500.000	41.52	13.99	55.51	68.20	-12.69	peak	

Low channel / Vertical / 18-40GHz

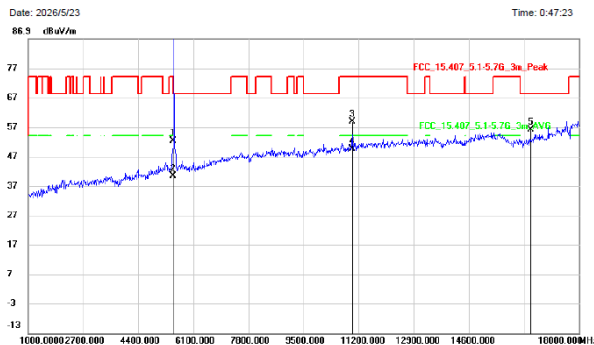
Radiated Emission Measurement



No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
	MHz	dBuV	dBm	dBuV/m	dBuV/m	dB	Detector	Comment
1	22000.000	44.64	5.49	50.13	68.20	-18.07	peak	
2	27500.000	46.34	6.96	53.30	68.20	-14.90	peak	
3 *	38900.000	50.32	12.68	63.00	68.20	-5.20	peak	

Low channel / Horizontal / 1-18GHz

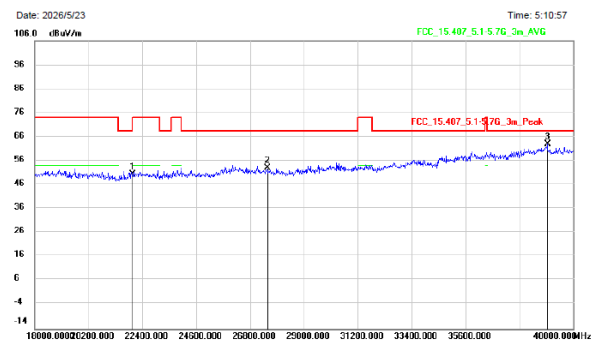
Radiated Emission Measurement



No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
	MHz	dBuV	dBm	dBuV/m	dBuV/m	dB	Detector	Comment
1	5470.000	47.81	4.53	52.34	68.20	-15.86	peak	
2	5470.000	35.86	4.53	40.39	68.20	-27.81	AVG	
3	11000.000	46.46	12.39	58.85	74.00	-15.15	peak	
4 *	11000.000	37.18	12.39	49.57	54.00	-4.43	AVG	
5	16500.000	41.44	14.54	55.98	68.20	-12.22	peak	

Low channel / Horizontal / 18-40GHz

Radiated Emission Measurement



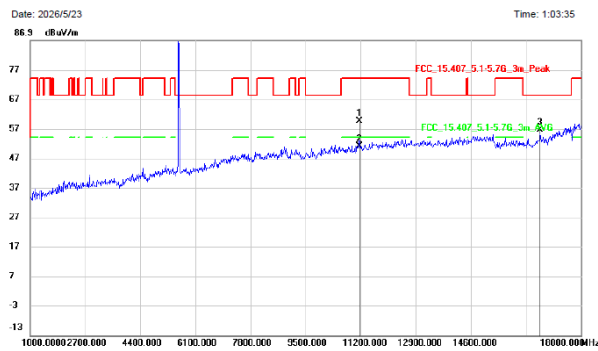
No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
	MHz	dBuV	dBm	dBuV/m	dBuV/m	dB	Detector	Comment
1	22000.000	44.72	5.49	50.21	68.20	-17.99	peak	
2	27500.000	46.04	6.96	53.00	68.20	-15.20	peak	
3 *	38944.000	50.31	12.59	62.90	68.20	-5.30	peak	

Test plots of the worst case

U-NII-2C Band (IEEE 802.11n(HT20))

Mid channel / Vertical / 1-18GHz

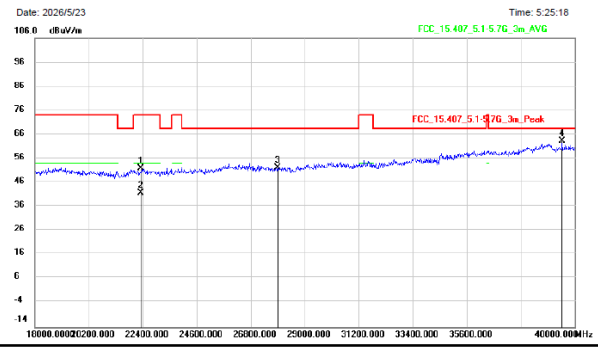
Radiated Emission Measurement



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over		
		MHz	dBuV	Factor	ment	dBuV/m	dB	Detector	Comment
1		11160.000	46.77	12.75	59.52	74.00	-14.48	peak	
2	*	11160.000	38.25	12.75	51.00	54.00	-3.00	AVG	
3		16740.000	41.35	15.21	56.56	68.20	-11.64	peak	

Mid channel / Vertical / 18-40GHz

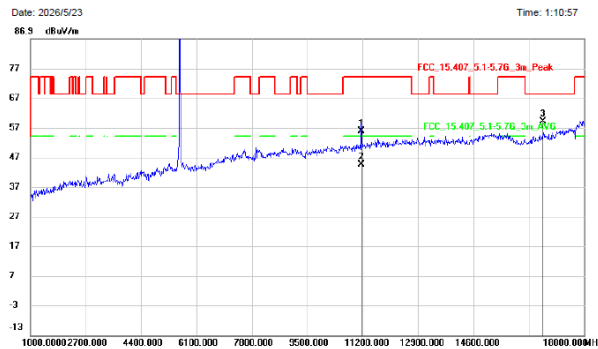
Radiated Emission Measurement



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over		
		MHz	dBuV	Factor	ment	dBuV/m	dB	Detector	Comment
1		22320.000	46.47	5.53	52.00	74.00	-22.00	peak	
2		22320.000	36.06	5.53	41.59	54.00	-12.41	AVG	
3		27900.000	45.19	7.01	52.20	68.20	-16.00	peak	
4	*	39494.000	50.20	12.92	63.12	68.20	-5.08	peak	

Mid channel / Horizontal / 1-18GHz

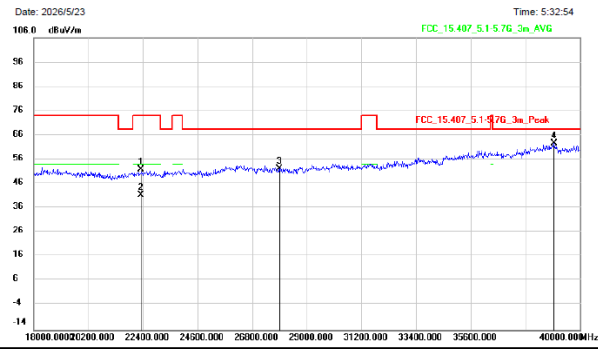
Radiated Emission Measurement



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over		
		MHz	dBuV	Factor	ment	dBuV/m	dB	Detector	Comment
1		11160.000	42.92	12.75	55.67	74.00	-18.33	peak	
2		11160.000	31.80	12.75	44.55	54.00	-9.45	AVG	
3	*	16740.000	43.46	15.49	58.95	68.20	-9.25	peak	

Mid channel / Horizontal / 18-40GHz

Radiated Emission Measurement



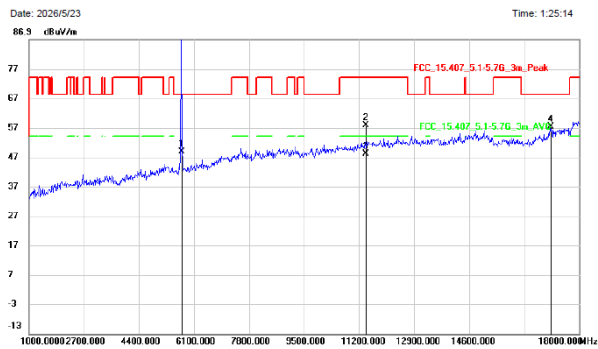
No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over		
		MHz	dBuV	Factor	ment	dBuV/m	dB	Detector	Comment
1		22320.000	46.27	5.53	51.80	74.00	-22.20	peak	
2		22320.000	35.72	5.53	41.25	54.00	-12.75	AVG	
3		27900.000	45.09	7.01	52.10	68.20	-16.10	peak	
4	*	38966.000	50.26	12.54	62.80	68.20	-5.40	peak	

Test plots of the worst case

U-NII-2C Band (IEEE 802.11n(HT20))

High channel / Vertical / 1-18GHz

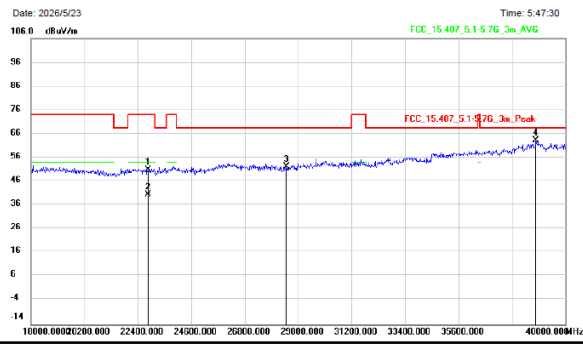
Radiated Emission Measurement



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over		
		MHz	dBuV	dBm	dBuV/m	dBuV/m	dB	Detector	Comment
1		5725.000	43.75	4.92	48.67	68.20	-19.53	peak	
2		11400.000	44.36	13.30	57.66	74.00	-16.34	peak	
3	*	11400.000	34.71	13.30	48.01	54.00	-5.99	AVG	
4		17100.000	40.48	16.91	57.39	68.20	-10.81	peak	

High channel / Vertical / 18-40GHz

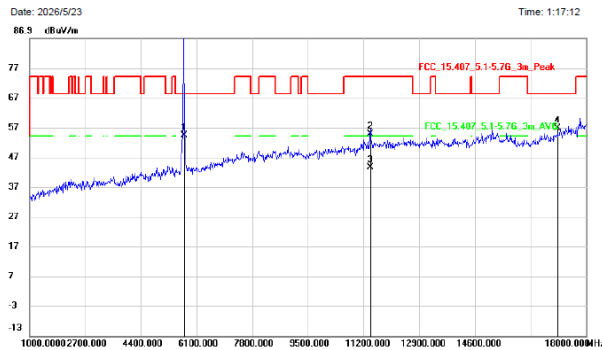
Radiated Emission Measurement



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over		
		MHz	dBuV	dBm	dBuV/m	dBuV/m	dB	Detector	Comment
1		22800.000	45.62	5.29	50.91	74.00	-23.09	peak	
2		22800.000	35.23	5.29	40.52	54.00	-13.48	AVG	
3		28500.000	45.40	6.90	52.30	68.20	-15.90	peak	
4	*	38790.000	50.30	12.91	63.21	68.20	-4.99	peak	

High channel / Horizontal / 1-18GHz

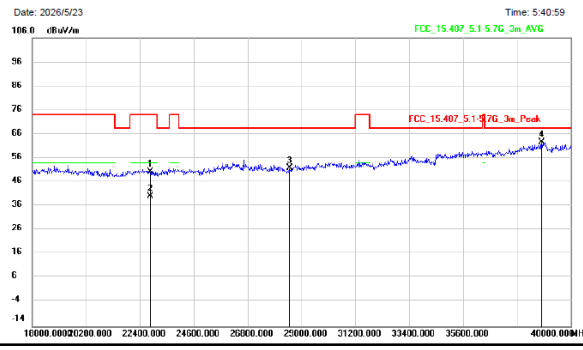
Radiated Emission Measurement



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over		
		MHz	dBuV	dBm	dBuV/m	dBuV/m	dB	Detector	Comment
1		5725.000	49.35	4.92	54.27	68.20	-13.93	peak	
2		11400.000	41.45	13.30	54.75	74.00	-19.25	peak	
3	*	11400.000	30.20	13.30	43.50	54.00	-10.50	AVG	
4		17100.000	39.89	16.91	56.80	68.20	-11.40	peak	

High channel / Horizontal / 18-40GHz

Radiated Emission Measurement



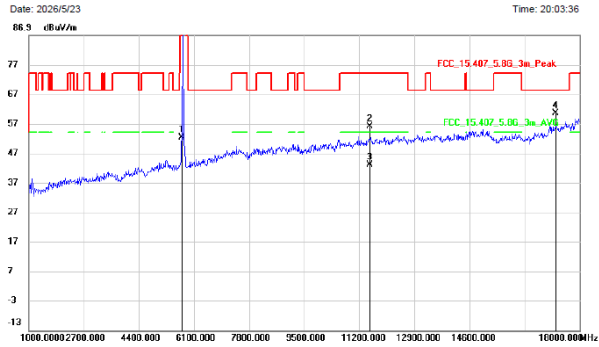
No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over		
		MHz	dBuV	dBm	dBuV/m	dBuV/m	dB	Detector	Comment
1		22800.000	45.21	5.29	50.50	74.00	-23.50	peak	
2		22800.000	34.96	5.29	40.25	54.00	-13.75	AVG	
3		28500.000	45.10	6.90	52.00	68.20	-16.20	peak	
4	*	38812.000	49.93	12.87	62.80	68.20	-5.40	peak	

Test plots of the worst case

U-NII-3 Band (IEEE 802.11n(HT40))

Low channel / Vertical / 1-18GHz

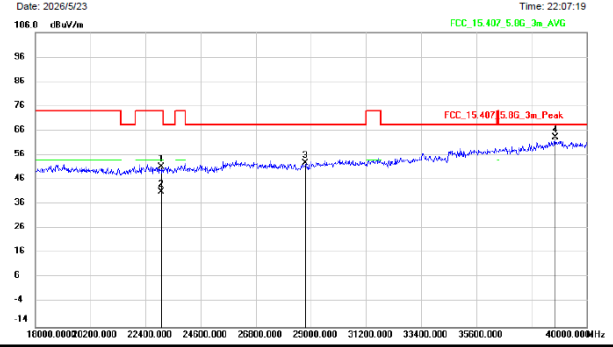
Radiated Emission Measurement



No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
	MHz	dBuV	dBm	dBuV/m	dBuV/m	dB	Detector	Comment
1	5725.000	47.45	4.92	52.37	122.20	-69.83	peak	
2	11510.000	42.48	13.53	56.01	74.00	-17.99	peak	
3	11510.000	29.44	13.53	42.97	54.00	-11.03	AVG	
4 *	17265.000	42.97	17.51	60.48	68.20	-7.72	peak	

Low channel / Vertical / 18-40GHz

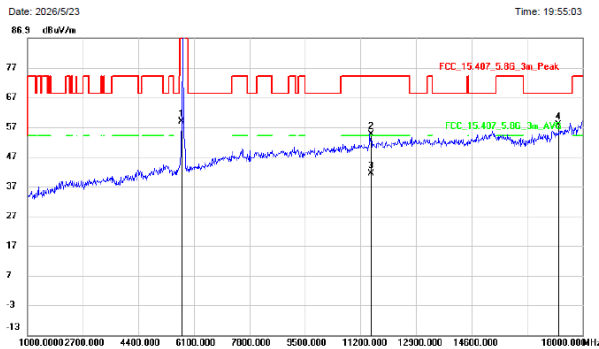
Radiated Emission Measurement



No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
	MHz	dBuV	dBm	dBuV/m	dBuV/m	dB	Detector	Comment
1	23020.000	46.13	5.12	51.25	74.00	-22.75	peak	
2	23020.000	35.90	5.12	41.02	54.00	-12.98	AVG	
3	28775.000	45.69	7.11	52.80	68.20	-15.40	peak	
4 *	38746.000	50.22	12.99	63.21	68.20	-4.99	peak	

Low channel / Horizontal / 1-18GHz

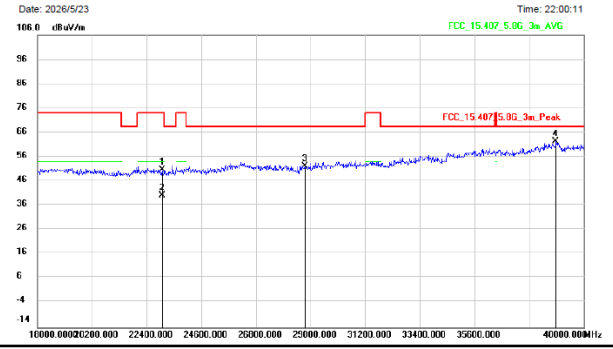
Radiated Emission Measurement



No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
	MHz	dBuV	dBm	dBuV/m	dBuV/m	dB	Detector	Comment
1	5725.000	53.76	4.92	58.68	122.20	-63.52	peak	
2	11510.000	41.05	13.53	54.58	74.00	-19.42	peak	
3	11510.000	27.66	13.53	41.19	54.00	-12.81	AVG	
4 *	17265.000	40.33	17.51	57.84	68.20	-10.36	peak	

Low channel / Horizontal / 18-40GHz

Radiated Emission Measurement



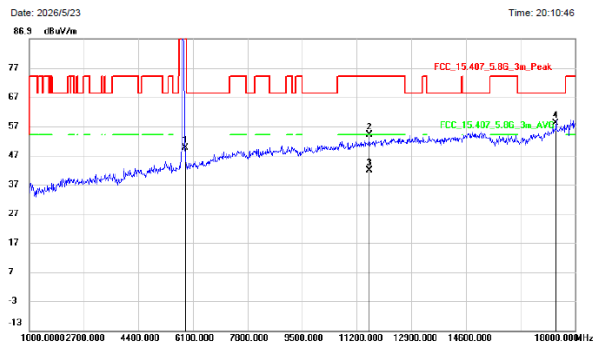
No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
	MHz	dBuV	dBm	dBuV/m	dBuV/m	dB	Detector	Comment
1	23020.000	45.68	5.12	50.80	74.00	-23.20	peak	
2	23020.000	35.13	5.12	40.25	54.00	-13.75	AVG	
3	28775.000	45.11	7.11	52.22	68.20	-15.98	peak	
4 *	38878.000	49.57	12.73	62.30	68.20	-5.90	peak	

Test plots of the worst case

U-NII-3 Band (IEEE 802.11n(HT40))

High channel / Vertical / 1-18GHz

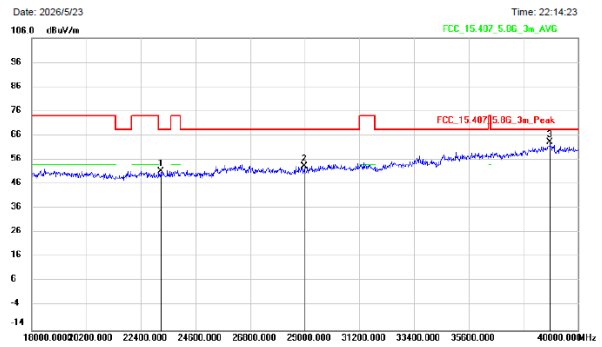
Radiated Emission Measurement



No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
	MHz	dBuV	dBm	dBuV/m	dBuV/m	dB	Detector	Comment
1	5850.000	44.61	5.04	49.65	122.20	-72.55	peak	
2	11590.000	40.42	13.54	53.96	74.00	-20.04	peak	
3	11590.000	28.24	13.54	41.78	54.00	-12.22	AVG	
4 *	17385.000	40.01	17.95	57.96	68.20	-10.24	peak	

High channel / Vertical / 18-40GHz

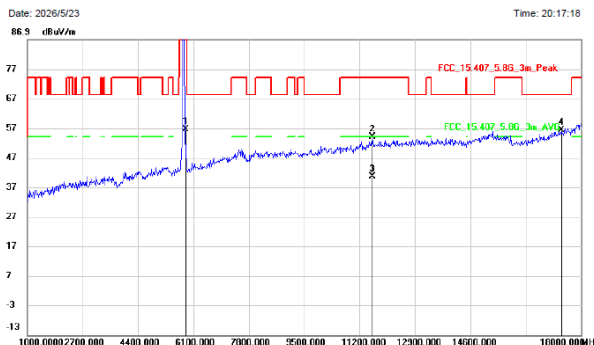
Radiated Emission Measurement



No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
	MHz	dBuV	dBm	dBuV/m	dBuV/m	dB	Detector	Comment
1	23180.000	46.11	5.12	51.23	68.20	-16.97	peak	
2	28975.000	46.23	7.27	53.50	68.20	-14.70	peak	
3 *	38878.000	50.47	12.73	63.20	68.20	-5.00	peak	

High channel / Horizontal / 1-18GHz

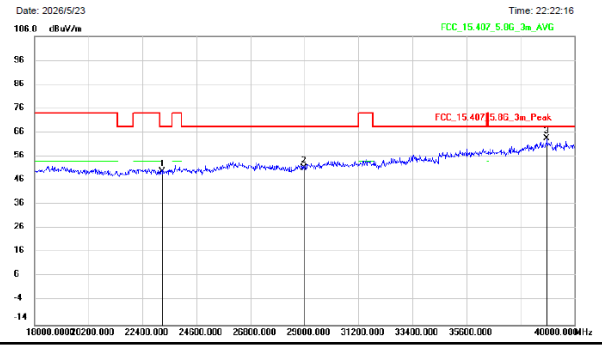
Radiated Emission Measurement



No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
	MHz	dBuV	dBm	dBuV/m	dBuV/m	dB	Detector	Comment
1	5850.000	51.39	5.04	56.43	122.20	-65.77	peak	
2	11590.000	40.37	13.54	53.91	74.00	-20.09	peak	
3	11590.000	26.95	13.54	40.49	54.00	-13.51	AVG	
4 *	17385.000	38.42	17.95	56.37	68.20	-11.83	peak	

High channel / Horizontal / 18-40GHz

Radiated Emission Measurement



No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
	MHz	dBuV	dBm	dBuV/m	dBuV/m	dB	Detector	Comment
1	23180.000	44.68	5.12	49.80	68.20	-18.40	peak	
2	28975.000	43.98	7.27	51.25	68.20	-16.95	peak	
3 *	38878.000	50.77	12.73	63.50	68.20	-4.70	peak	

14.9 Dynamic Frequency Selection

List of Measurement and Examinations

EUT Operational mode:

DFS Operational mode	Operating Frequency Range	
	U-NII-2A	U-NII-2C
Slave without radar Interference detection function	√	√

Devices with radar detection

Maximum Transmit Power	Value (See Note 1 and 2)
≥200 mw	-64 dBm
EIRP < 200 mw and power spectral density < 10 dBm/MHz	-62 dBm
E IRP < 200 mw that do not meet the power spectral density requirement	-64 dBm
Note: 1. This is the level at the input of the receiver assuming a 0 dBi receive antenna. 2. Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response. 3: EIRP is based on the highest antenna gain. For MIMO devices refer to KDB Publication 662911 D01.	

Applicability of DFS requirements prior to use of a channel

Requirement Radar	Operational Mode		
	Master	Client without Radar Detection	Client with Radar Detection
Non-Occupancy Period	√	Not required	Yes
DFS Detection Threshold	√	Not required	Yes
Channel Availability Check Time	√	Not required	Not Required
U-NII Detection Bandwidth	√	Not required	Yes
Note: Regarding KDB 905462 D03 Client Without DFS New Rules section (b)(5/6), If the client moves with the master, the device is considered compliant if nothing appears in the client non- occupancy period test. For devices that shut down (rather than moving channels), no beacons should appear. An analyzer plot that contains a single 30-minute sweep on the original channel.			

Applicability of DFS requirements during normal operation

Requirement Radar	Operational Mode		
	Master	Client without Radar Detection	Client with Radar Detection
DFS Detection Threshold	√	Not required	Yes
Channel Closing Transmission Time	√	Yes	Yes
Channel Move Time	√	Yes	Yes
U-NII Detection Bandwidth	√	Not required	Yes
Note: Regarding KDB 905462 D03 Client Without DFS New Rules section (b)(5/6), If the client moves with the master, the device is considered compliant if nothing appears in the client non- occupancy period test. For devices that shut down (rather than moving channels), no beacons should appear. An analyzer plot that contains a single 30-minute sweep on the original channel.			
Additional requirements for devices with multiple bandwidth modes	Master or Client with radar detection	Client without radar detection	
U-NII Detection Bandwidth and Statistical Performance Check	All BW modes must be tested	Not required	
Channel Move Time and Channel Closing Transmission Time	Test using widest BW mode available	Test using the widest Test using the widest BW mode available for the link	
All other	Any single BW mode	Not required	
Note: Frequencies selected for statistical performance check (Section 7.8.4) should include several frequencies within the radar detection bandwidth and frequencies near the edge of the radar detection bandwidth. For 802.11 devices it is suggested to select frequencies in each of the bonded 20 MHz channels and the channel center frequency.			

DFS Radar Signal Parameter Values:

Parameter	Value
Non-occupancy period	Minimum 30 minutes
Channel Availability Check Time	60 seconds
Channel Move Time	10 seconds (See Note 1)
Channel Closing Transmission Time	200 milliseconds + an aggregate of 60ms over remaining 10 second period (See Notes 1 and 2)
U-NII Detection Bandwidth	Minimum 100% of the U-NII 99% transmission power bandwidth (See Note 3.)

- Note:
1. Channel Move Time and the Channel Closing Transmission Time should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0 burst.
 2. The Channel Closing Transmission Time is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signals required to facilitate a Channel move (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions.
 3. During the U-NII Detection Bandwidth detection test, radar type 0 should be used. For each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.

DFS Radar Signal Parameter:

Radar Type 0 was used in the evaluation of the Client device for the purpose of measuring the Channel Move Time and the Channel Closing Transmission Time

Table 1: Short Pulse Radar Test Waveforms

Radar Type	Pulse Width (μsec)	PRI (μsec)	Number of Pulses	Minimum Percentage of Successful Detection	Minimum Trials
0	1	1428	18	See Note 1	See Note 1
1	1	Test A, Test B	$\text{Roundup} \left\{ \left(\frac{1}{360} \right) \left(\frac{19 \cdot 10^6}{\text{PRI}_{\mu\text{sec}}} \right) \right\}$	60%	30
2	1-5	150-230	23-29	60%	30
3	6-10	200-500	16-18	60%	30
4	11-20	200-500	12-16	60%	30
Aggregate (Radar Types 1-4)				80%	120
Note: Short Pulse Radar Type 0 should be used for the detection bandwidth test, channel move time, and channel closing time tests.					
Test A: 15 unique PRI values randomly selected from the list of 23 PRI values in Table 5a					
Test B: 15 unique PRI values randomly selected within the range of 518-3066 μsec, with a minimum increment of 1 μsec, excluding PRI values selected in Test A.					
Remark1: A minimum of 30 unique waveforms are required for each of the Short Pulse Radar Types 2 through 4. If more than 30 waveforms are used for Short Pulse Radar Types 2 through 4, then each additional waveform must also be unique and not repeated from the previous waveforms.					
Remark2: If more than 30 waveforms are used for Short Pulse Radar Type 1, then each additional waveform is generated with Test B and must also be unique and not repeated from the previous waveforms in Tests A or B.					
Remark3: The aggregate is the average of the percentage of successful detections of short pulse radar types 1-4.					

Table 2: Long Pulse Radar Test Waveform

Radar Type	Pulse Width (μsec)	Chirp Width (MHz)	PRI (μsec)	Number of Pulses per Burst	Number of Bursts	Minimum Percentage of Successful Detection	Minimum Trials
5	50-100	5-20	1000-2000	1-3	8-20	80%	30

Table 3: Frequency Hopping Radar Test Waveform

Radar Type	Pulse Width (μsec)	PRI (μsec)	Pulses per Hop	Hopping Rate (kHz)	Hopping Sequence Length (msec)	Minimum Percentage of Successful Detection	Minimum Trials
6	1	333	9	0.333	300	70%	30

In-Service Monitoring: Channel Move Time, Channel Closing Transmission Time and Non-Occupancy Period

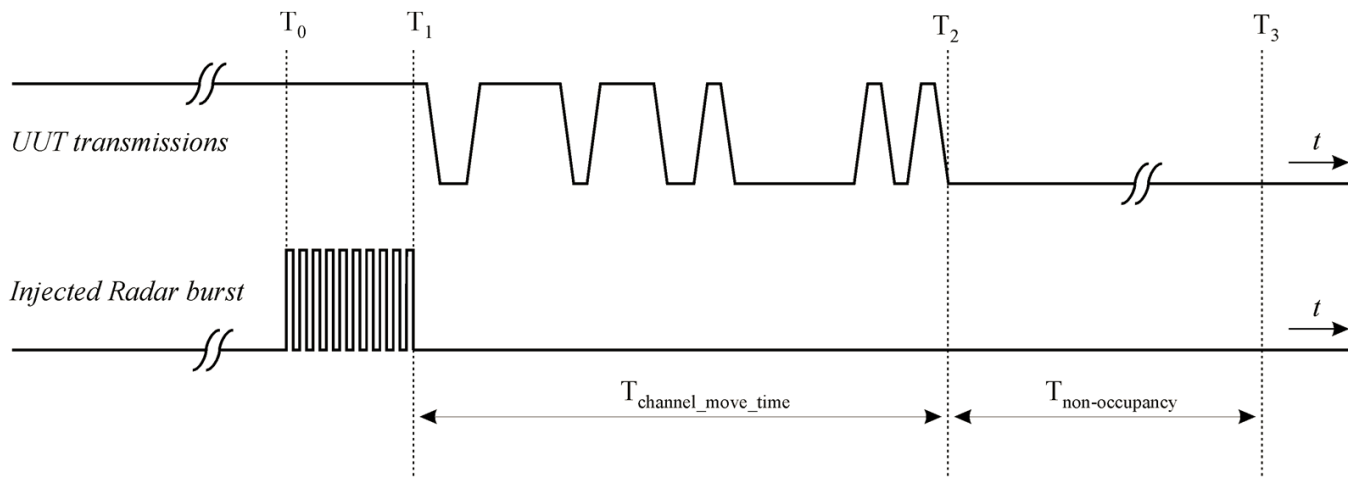
Limit of In-Service Monitoring

Reference to DFS Radar Signal Parameter Values.

Test Procedures

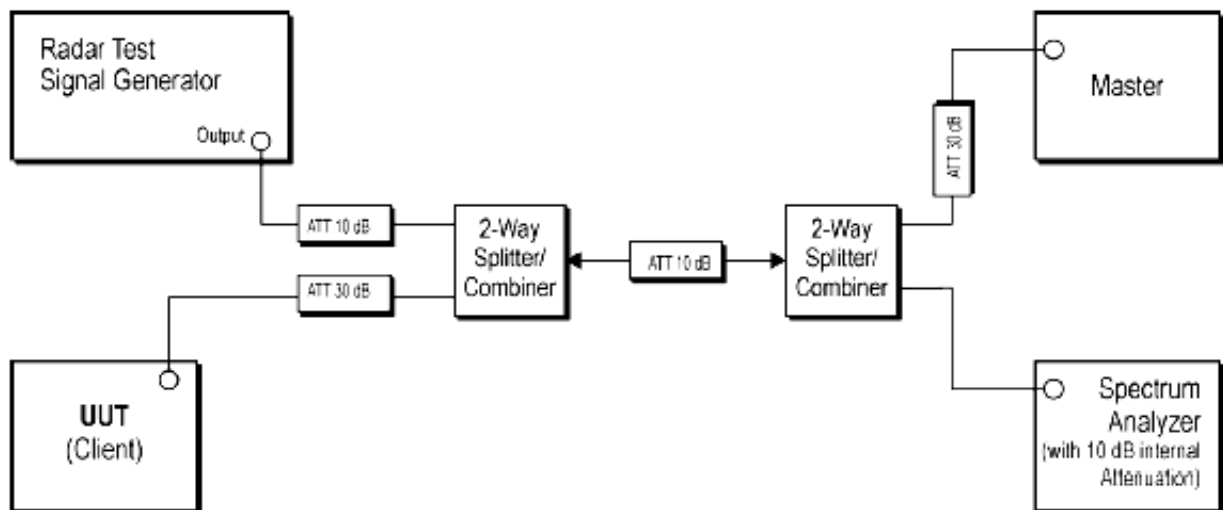
1. One frequency will be chosen from the Operating Channels of the EUT within the 5250-5350 MHz or 5470-5725 MHz bands. For 802.11 devices, the test frequency must contain control signals. This can be verified by disabling channel loading and monitoring the spectrum analyzer. If no control signals are detected, another frequency must be selected within the emission bandwidth where control signals are detected.
2. In case the EUT is a Master Device, a U-NII device operating as a Client Device will be used and it is assumed that the Client will associate with the EUT (Master). For radiated tests, the emissions of the Radar Waveform generator will be directed towards the Master Device. If the Master Device has antenna gain, the main beam of the antenna will be directed toward the radar emitter. Vertical polarization is used for testing.
3. The TCP protocol unicast data stream was generated by the iperf software command line with at least 17% activity ratio over any 100ms period.
4. Timing plots are reported with calculations demonstrating a minimum channel loading of approximately 17% or greater. For example, channel loading can be estimated by setting the spectrum analyzer for zero span and approximate the Time On/ (Time On + Off Time).
5. At time T0 the Radar Waveform generator sends a Burst of pulses for one of the Short Pulse Radar Types 1-4 at DFS Detection Threshold levels on the Operating Channel. An additional 1dB is added to the radar test signal to ensure it is at or above the DFS Detection Threshold, accounting for equipment variations/errors.
6. Observe the transmissions of the EUT at the end of the radar Burst on the Operating Channel for duration greater than 10 seconds. Measure and record the transmissions from the EUT during the observation time (Channel Move Time). Measure and record the Channel Move Time and Channel Closing Transmission Time if radar detection occurs.

7. When operating as a Master Device, monitor the EUT for more than 30 minutes following instant T2 to verify that the EUT does not resume any transmissions on this Channel. Perform this test once and record the measurement result.



Channel Closing Transmission Time, Channel Move Time and Non-Occupancy Period

Test Set-Up



Setup for Client with injection at the Master

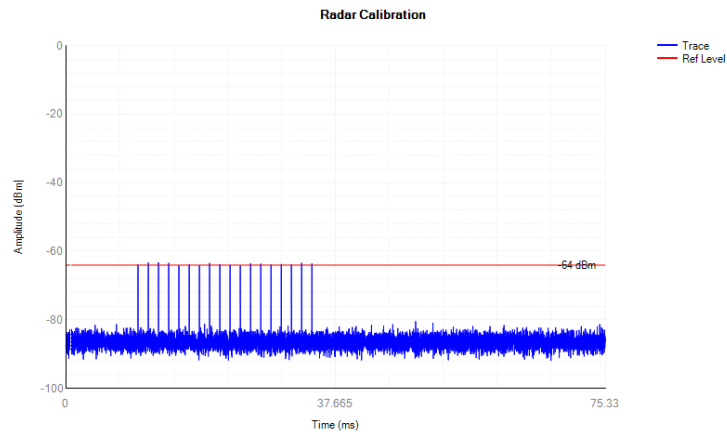
Measurement Results

Pass

Please refer to following plots of the worst case.

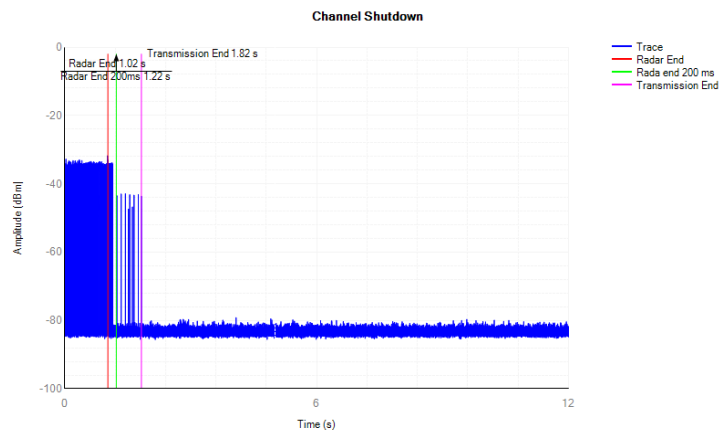
Channel	Test Item	Test Result	Limit	Pass/Fail
5280MHz	Channel Move Time	0.8 s	< 10s	Pass
	Channel Closing Transmission Time	36.3 ms	< 200+60ms	Pass
	Non-Occupancy Period	No transmission	30 minutes	Pass

Radar Waveform Calibration Plot - 5280MHz

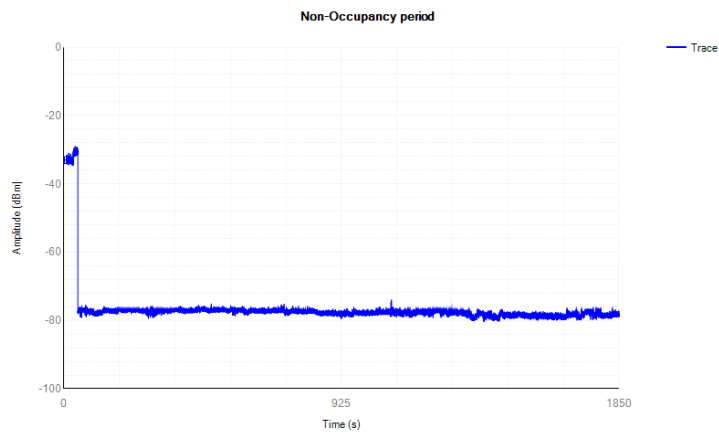


The Worst Case - 5280MHz

Channel Move Time & Channel Closing Transmission Time Plot

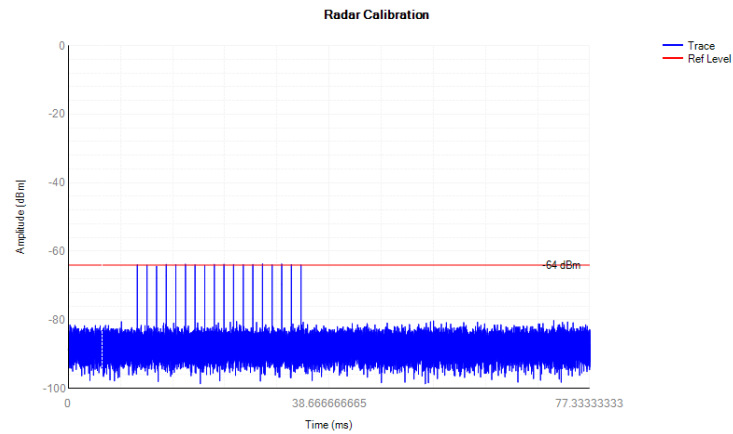


Non-Occupancy Period Plot



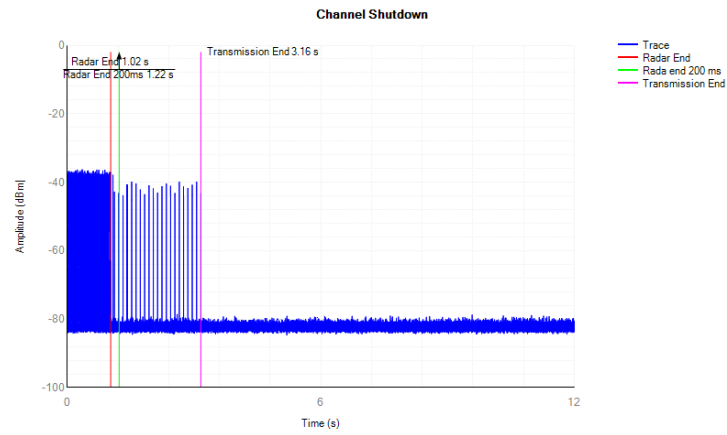
Channel	Test Item	Test Result	Limit	Pass/Fail
5610MHz	Channel Move Time	2.14 s	< 10s	Pass
	Channel Closing Transmission Time	16 ms	< 200+60ms	Pass
	Non-Occupancy Period	No transmission	30 minutes	Pass

Radar Waveform Calibration Plot - 5610MHz

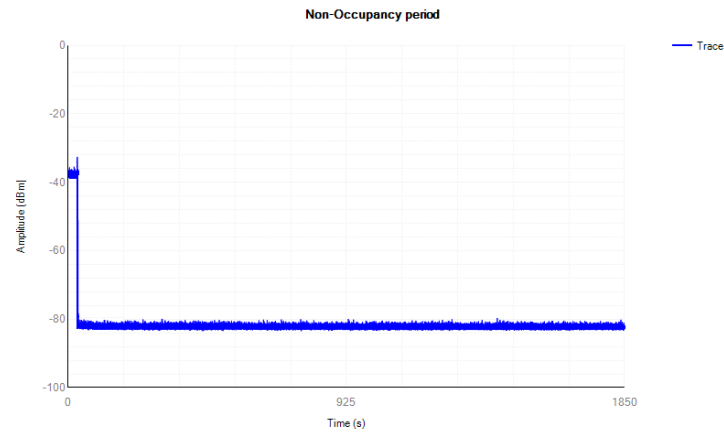


The Worst Case - 5610MHz

Channel Move Time & Channel Closing Transmission Time Plot



Non-Occupancy Period Plot



14.10 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 antenna is FPC 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 -1.35dBi, 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	ESCI	101152	Aug. 21, 2025	1 Year
2.	L.I.S.N	Rohde & Schwarz	ENV 216	101317	Aug. 21, 2025	1 Year
3.	L.I.S.N	Schwarzbeck	NNLK8129	00558	Aug. 23, 2025	1 Year
4.	RF Switching Unit	Compliance Direction Systems Inc.	RSU-M2	38311	Aug. 21, 2025	1 Year
5.	Test Receiver	Rohde & Schwarz	ESCI7	100837	Aug. 21, 2025	1 Year
6.	Spectrum Analyzer	Keysight	N9020A	MY50510314	Aug. 21, 2025	1 Year
7.	Spectrum Analyzer	Keysight	N9020A	MY54200831	Aug. 22, 2025	1 Year
8.	Spectrum Analyzer	Keysight	N9010B	MY62170254	Aug. 21, 2025	1 Year
9.	Antenna	Schwarzbeck	VULB9163	01552	Aug. 16, 2025	2 Year
10.	Loop Antenna	Schwarzbeck	FMZB 1513	1513-272	Aug. 16, 2025	2 Year
11.	Horn Antenna	COM-Power	AH-118	071078	Aug. 16, 2025	2 Year
12.	Pre-Amplifier	HP	HP 8447D	1145A00203	Aug. 21, 2025	1 Year
13.	Pre-Amplifier	HP	HP 8449B	3008A00964	Aug. 23, 2025	1 Year
14.	Communication Tester	Rohde & Schwarz	CMW500	109851	Aug. 28, 2025	1 Year
15.	Power Sensor	DARE	RPR3006W	15I00041SNO 64	Aug. 28, 2025	1 Year
16.	Horn Antenna	COM-Power	AH-840	10100020	Aug. 28, 2025	2 Year
17.	Temperature & Humidity Chamber	Wanshun	SS-HWHS-80	N/A	Aug. 09, 2025	1 Year
18.	DC Source	ZHAOXIN	KXN305D	N/A	Aug. 23, 2025	1 Year
19.	Temporary antenna connector	TESCOM	SS402	N/A	N/A	N/A
20.	Chamber	YIHENG	9*6*6m	N/A	Sep. 22, 2025	2 Year
21.	Test Software	MWRF	MTS 8310, V2.0.0.0	N/A	N/A	N/A
22.	Test Software	EZ	EZ_EMC, NTC-3A1.1	N/A	N/A	N/A

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

---End---