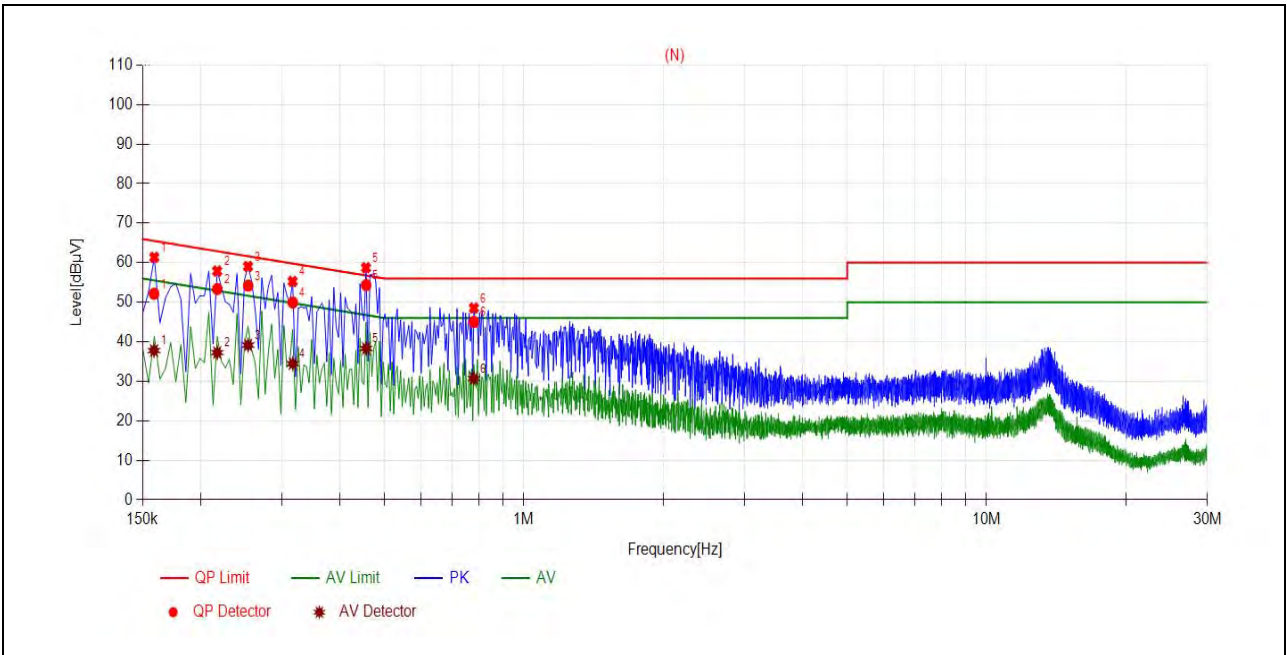
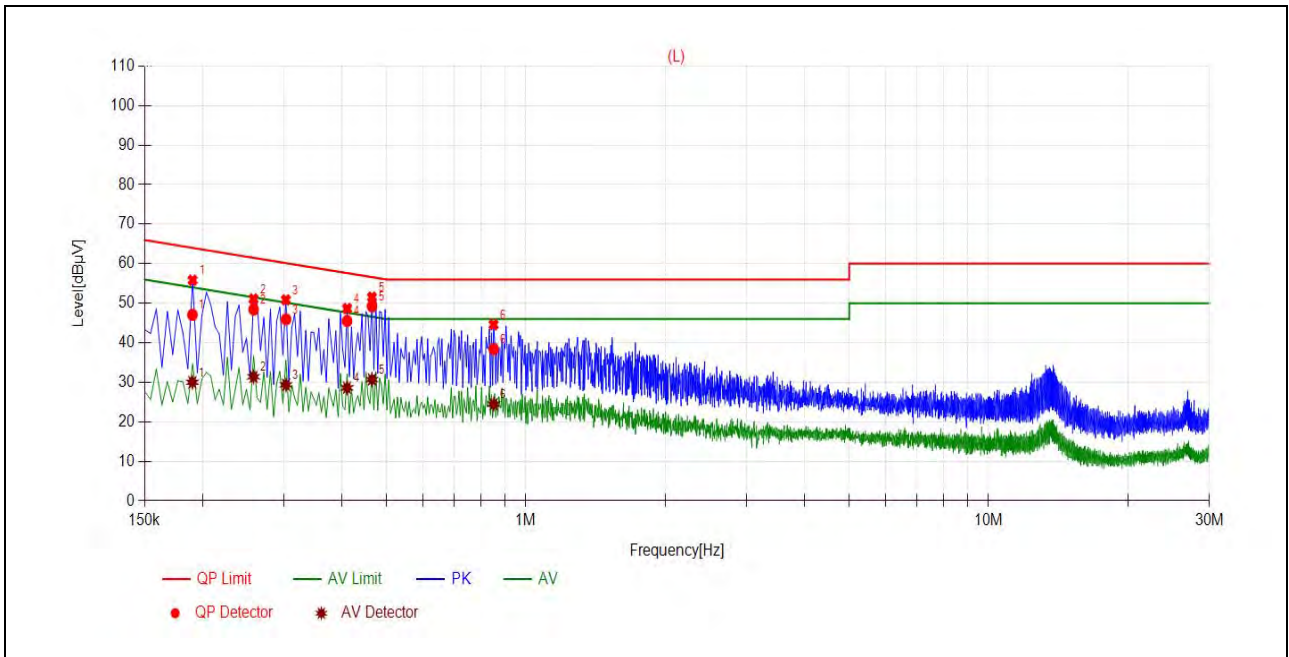


B.Test Plot:



(L Phase)

No.	Fre. (MHz)	Emission Level (dBµV)		Limit (dBµV)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.1588	52.16	37.77	65.52	55.52	Line	PASS
2	0.2175	53.34	37.26	62.91	52.91		PASS
3	0.2536	54.19	39.15	61.64	51.64		PASS
4	0.3167	49.94	34.45	59.79	49.79		PASS
5	0.4562	54.32	38.28	56.76	46.76		PASS
6	0.7797	45.05	30.70	56.00	46.00		PASS



(N Phase)

No.	Fre. (MHz)	Emission Level (dBµV)		Limit (dBµV)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.1903	47.08	30.00	64.02	54.02	Neutral	PASS
2	0.2580	48.41	31.40	61.50	51.50		PASS
3	0.3032	45.93	29.35	60.15	50.15		PASS
4	0.4107	45.51	28.60	57.63	47.63		PASS
5	0.4650	49.22	30.70	56.60	46.60		PASS
6	0.8523	38.39	24.47	56.00	46.00		PASS

2.8. Restricted Frequency Bands

2.8.1. Requirement

The peak emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

- (1) For transmitters operating in the 5.15–5.25 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of -27dBm/MHz.
- (2) For transmitters operating in the 5.25–5.35 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of -27dBm/MHz.
- (3) 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 EIRP of -27dBm/MHz.
- (4) For transmitters operating in the 5.725-5.85 GHz band:
 - (i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

The following formula is used to convert the equipment isotropic radiated power(e.i.r.p.) to field strength (dBμV/m);

$$E = 1000000 \times \sqrt{30P} / 3 \mu\text{V/m}$$

where P is the EIRP in Watts

Therefore: -27 dBm/MHz = 68.23 dBuV/m

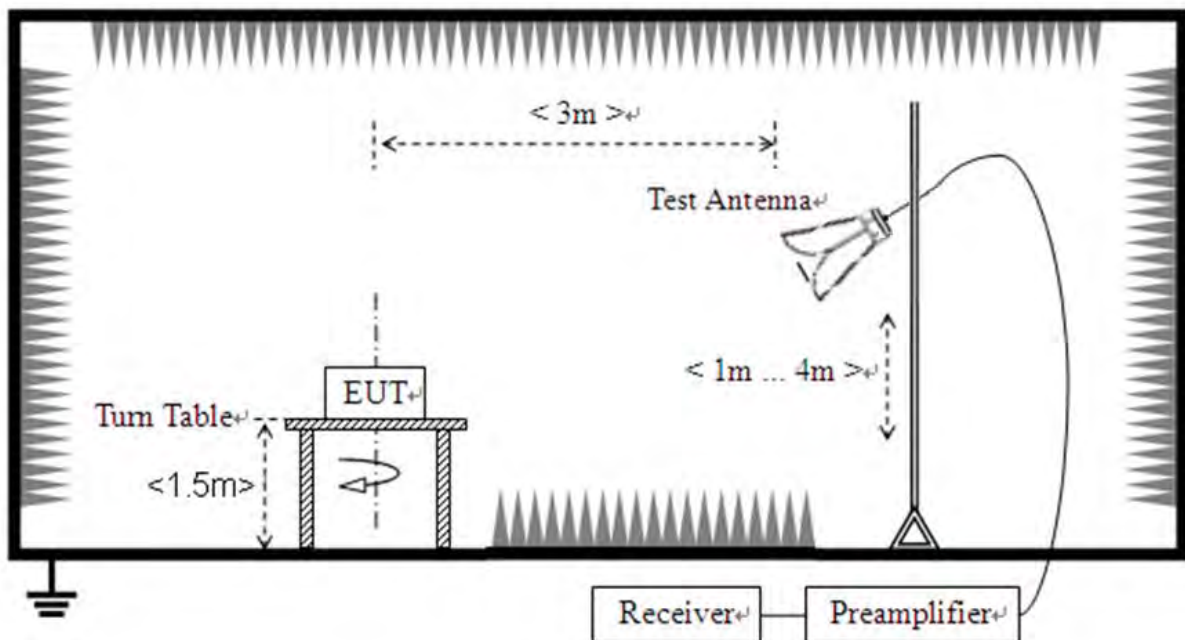
Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in § 15.209. According to FCC section 15.209 (a), except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength ($\mu\text{V}/\text{m}$)	Measurement Distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

For Above 1000MHz, the emission limit in this paragraph is based on measurement instrumentation employing an average detector, measurement using instrumentation with a peak detector function, corresponding to 20dB above the maximum permitted average limit. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), also should comply with the radiated emission limits specified in Section 15.209(a)(above table).

2.8.2. Test Description

Test Setup





The EUT is located in a 3m Semi-Anechoic Chamber; the antenna factors, cable loss and so on of the site as factors are calculated to correct the reading.

KDB 789033 Section H) 3)5)6(d)) was used in order to prove compliance

For the Test Antenna:

Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground to determine the maximum value of the field strength.

2.8.3. Test Result

The lowest and highest channels are tested to verify Restricted Frequency Bands.

The measurement results are obtained as below:

$$E \text{ [dB}\mu\text{V/m]} = U_R + A_T + A_{\text{Factor}} \text{ [dB]}; A_T = L_{\text{Cable loss}} \text{ [dB]} - G_{\text{preamp}} \text{ [dB]}$$

A_T : Total correction Factor except Antenna; U_R : Receiver Reading

G_{preamp} : Preamplifier Gain; A_{Factor} : Antenna Factor at 3m

Note 1: Restricted Frequency Bands were performed when antenna was at vertical and horizontal polarity, and only the worse test condition (vertical) was recorded in this test report.

Note 2 All test modes and bandwidth were considered and evaluated respectively by performing full test, only the worst data were recorded for each bandwidth.

Antenna Type A

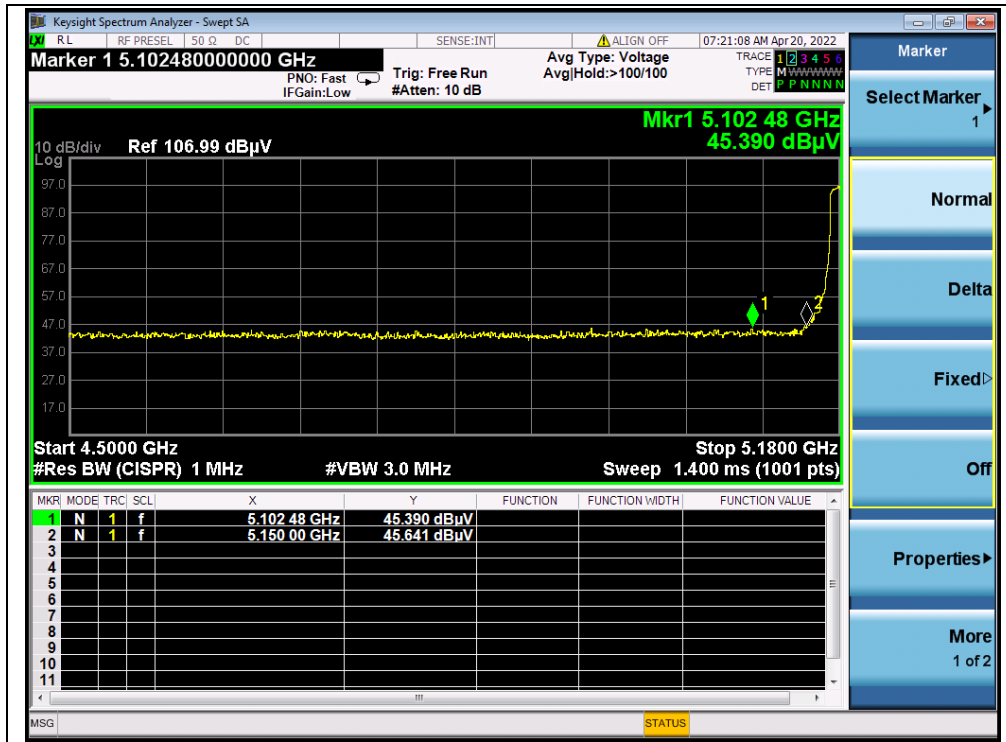
802.11a Mode

A. Test Verdict:

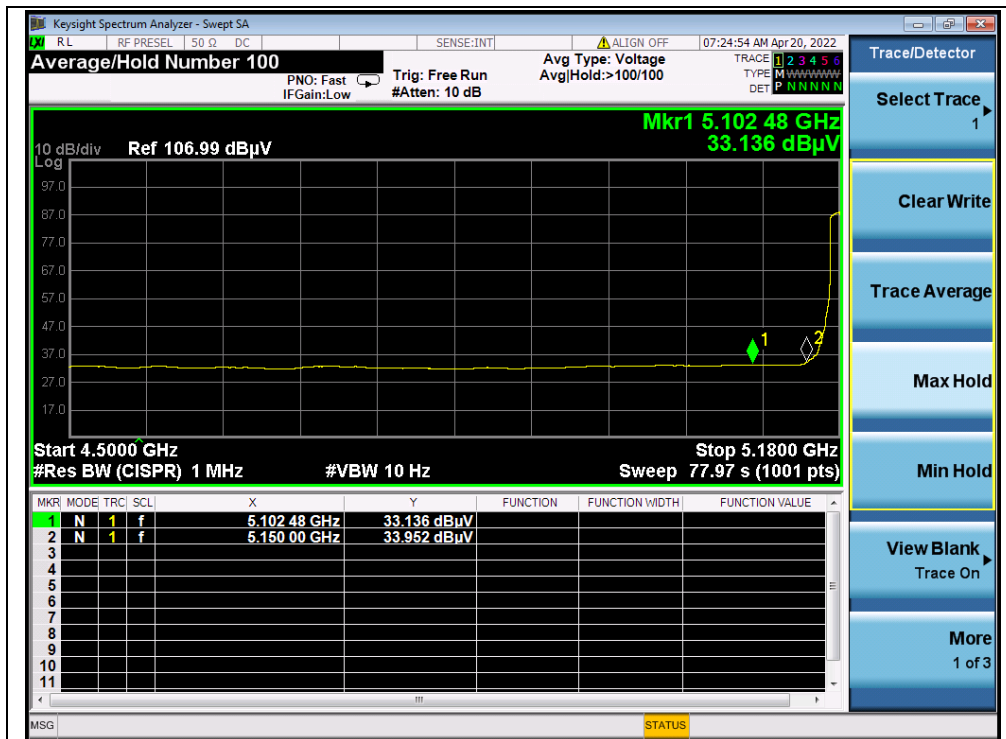
Channel	Frequency (MHz)	Detector	Receiver Reading	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dB μ V/m)	Limit (dB μ V/m)	Verdict
		PK/ AV	U_R (dB μ V)					
36	5150.00	PK	45.64	-19.54	32.20	58.30	74	PASS
36	5150.00	AV	33.95	-19.54	32.20	46.61	54	PASS
64	5350.00	PK	43.34	-18.80	32.20	56.74	74	PASS
64	5350.00	AV	31.74	-18.80	32.20	45.14	54	PASS
100	5445.61	PK	42.45	-19.20	32.20	55.45	74	PASS
100	5470.00	AV	32.27	-19.20	32.20	45.27	54	PASS
144	5725.00	PK	51.05	-19.20	32.20	64.05	68.23	PASS
149	5725.00	PK	57.04	-19.01	32.20	70.23	122.23	PASS
165	5850.00	PK	49.46	-19.01	32.20	62.65	122.23	PASS



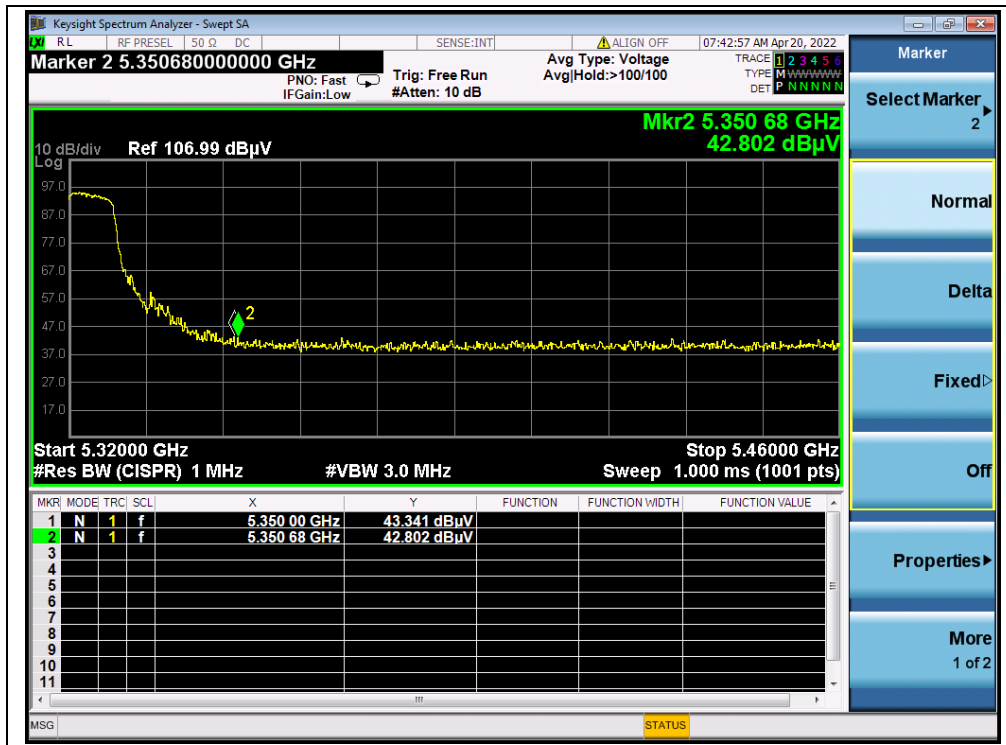
B.Test Plot:



(PEAK, Channel 36, 802.11a)



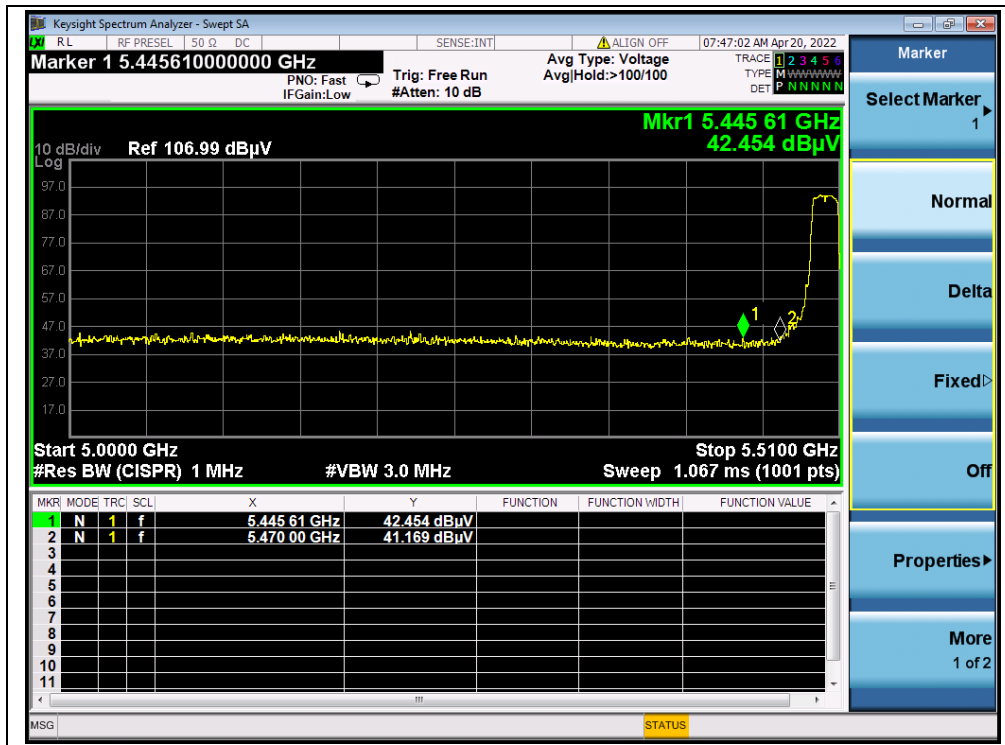
(AVERAGE, Channel 36, 802.11a)



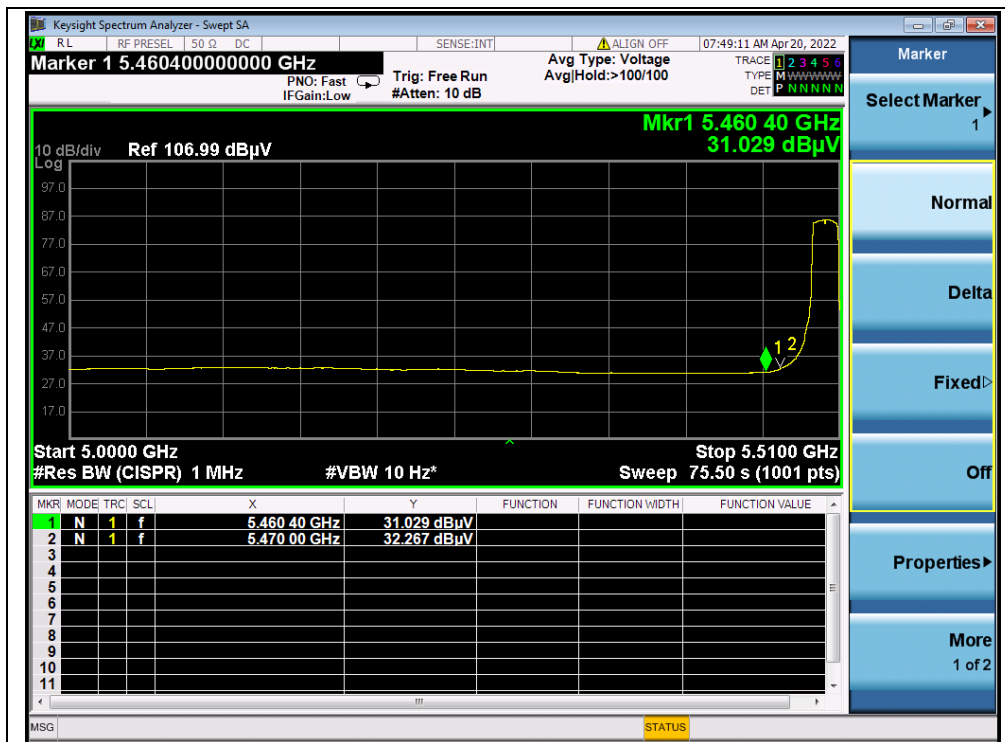
(PEAK, Channel 64, 802.11a)



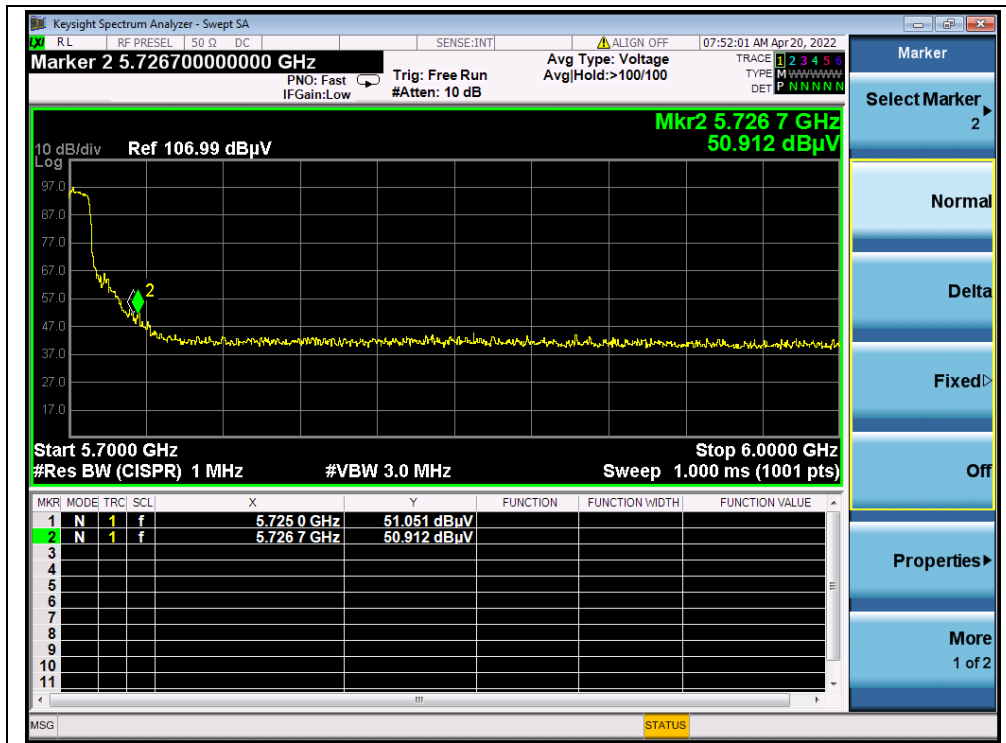
(AVERAGE, Channel 64, 802.11a)



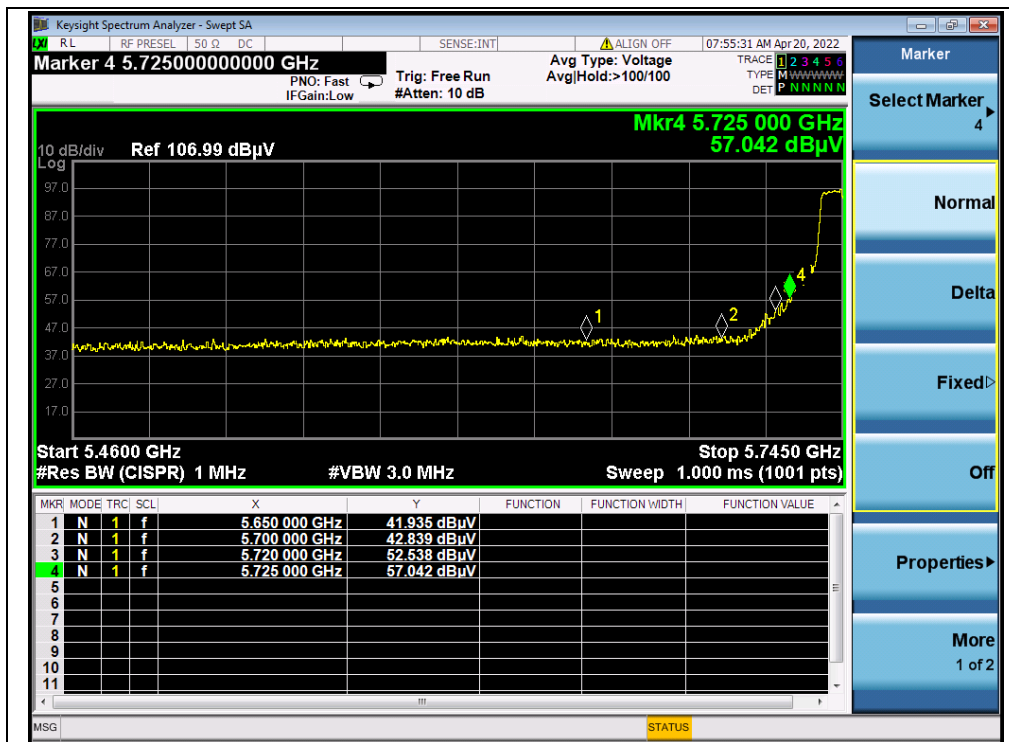
(PEAK, Channel100, 802.11a)



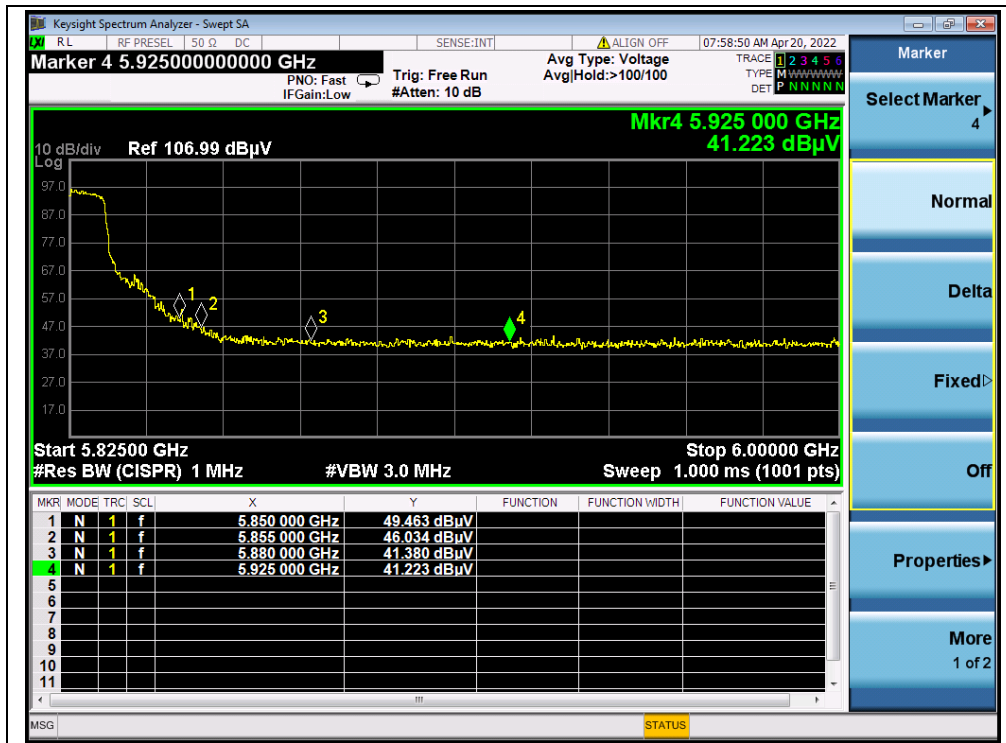
(AVERAGE, Channel 100, 802.11a)



(PEAK, Channel 144, 802.11a)



(PEAK, Channel 149, 802.11a)

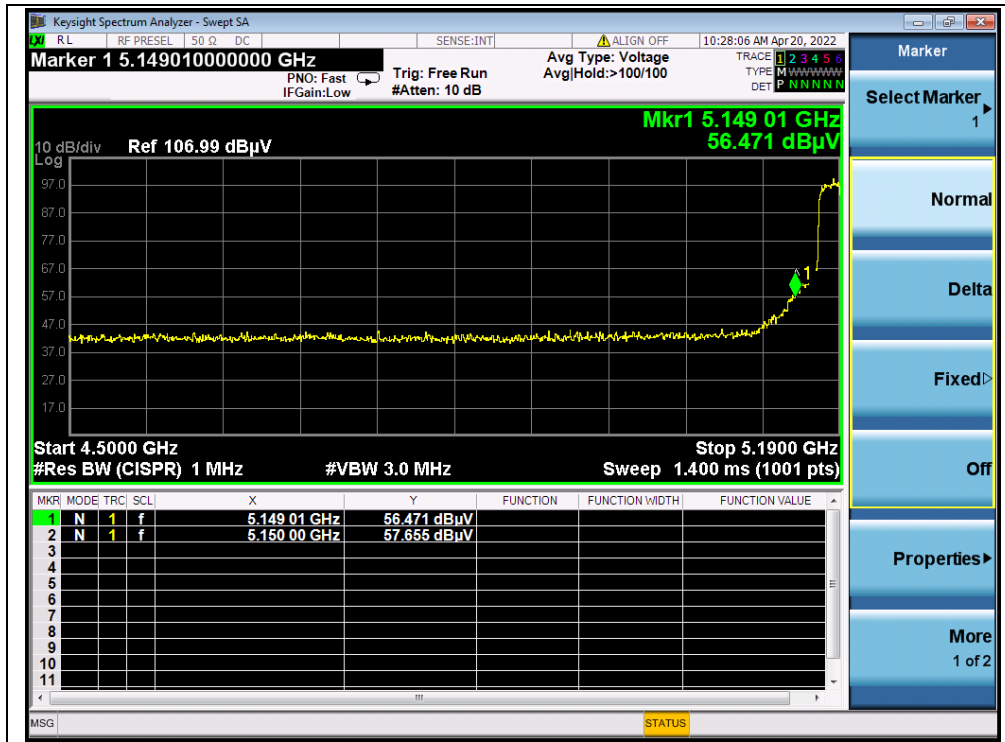


(PEAK, Channel 165, 802.11a)

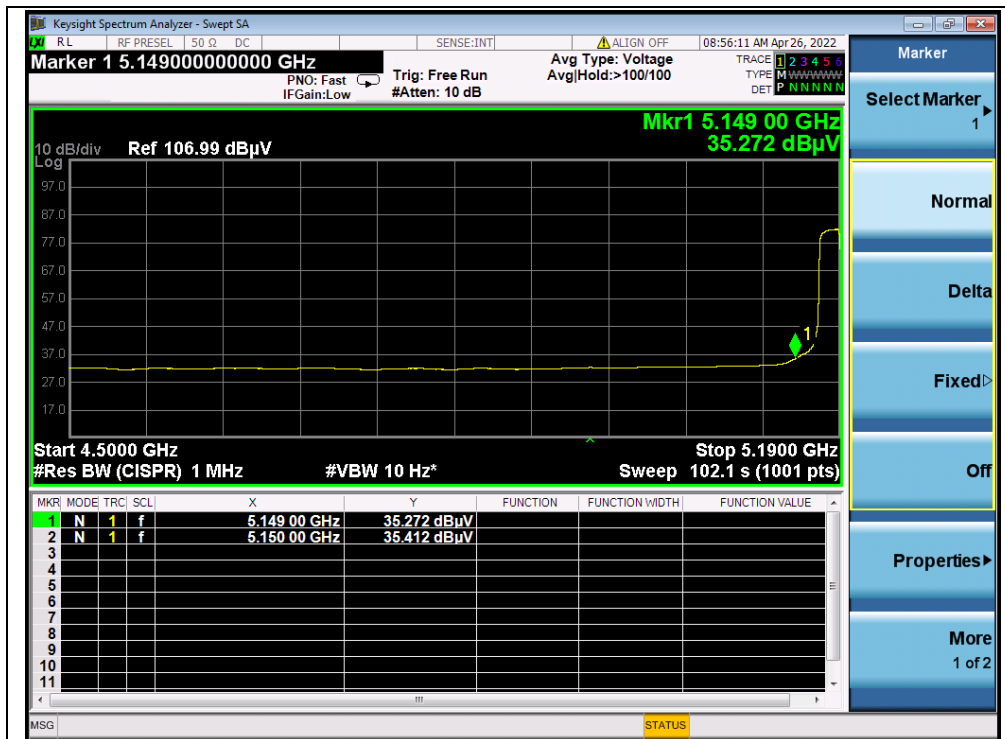
**802.11n (HT40) Mode****A. Test Verdict:**

Channel	Frequency (MHz)	Detector	Receiver Reading U_R (dB μ V)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dB μ V/m)	Limit (dB μ V/m)	Verdict
		PK/ AV						
38	5150.00	PK	57.66	-19.54	32.20	70.32	74	PASS
38	5150.00	AV	35.41	-19.54	32.20	48.07	54	PASS
62	5350.80	PK	56.02	-18.80	32.20	69.42	74	PASS
62	5350.00	AV	37.39	-18.80	32.20	50.79	54	PASS
102	5468.32	PK	53.79	-19.20	32.20	66.79	68.23	PASS
102	5470.00	AV	35.06	-19.20	32.20	48.06	54	PASS
142	5727.76	PK	48.28	-19.20	32.20	61.28	68.23	PASS
151	5725.00	PK	63.17	-19.01	32.20	76.36	122.23	PASS
159	5850.00	PK	47.03	-19.01	32.20	60.22	122.23	PASS

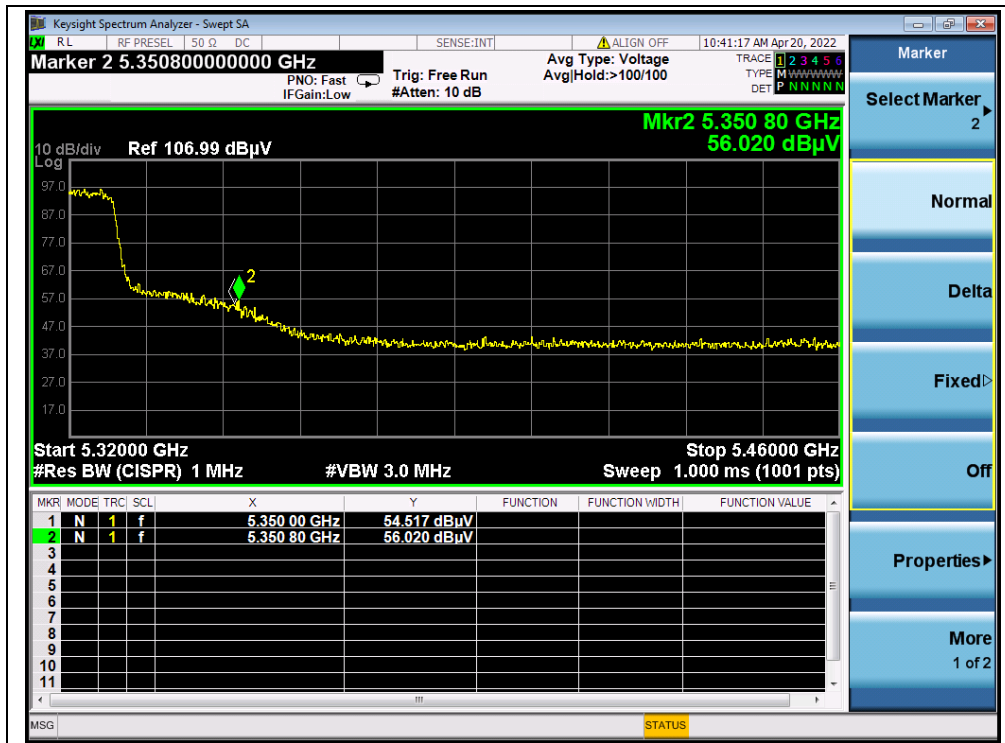
B.Test Plot:



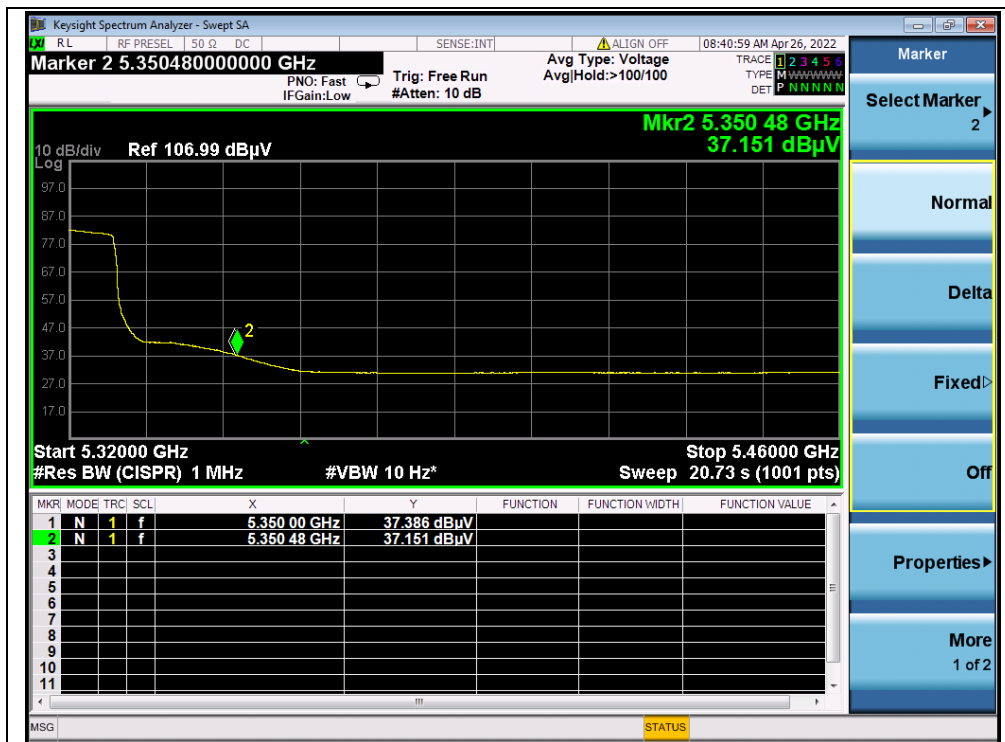
(PEAK, Channel 38, 802.11n (HT40))



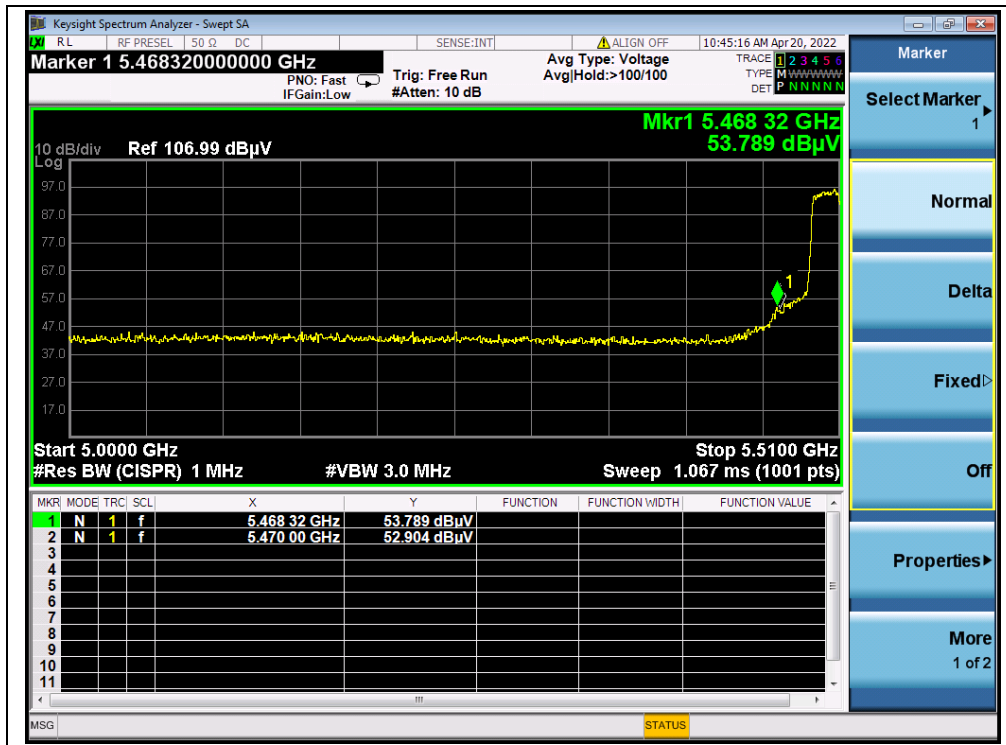
(AVERAGE, Channel 38, 802.11n (HT40))



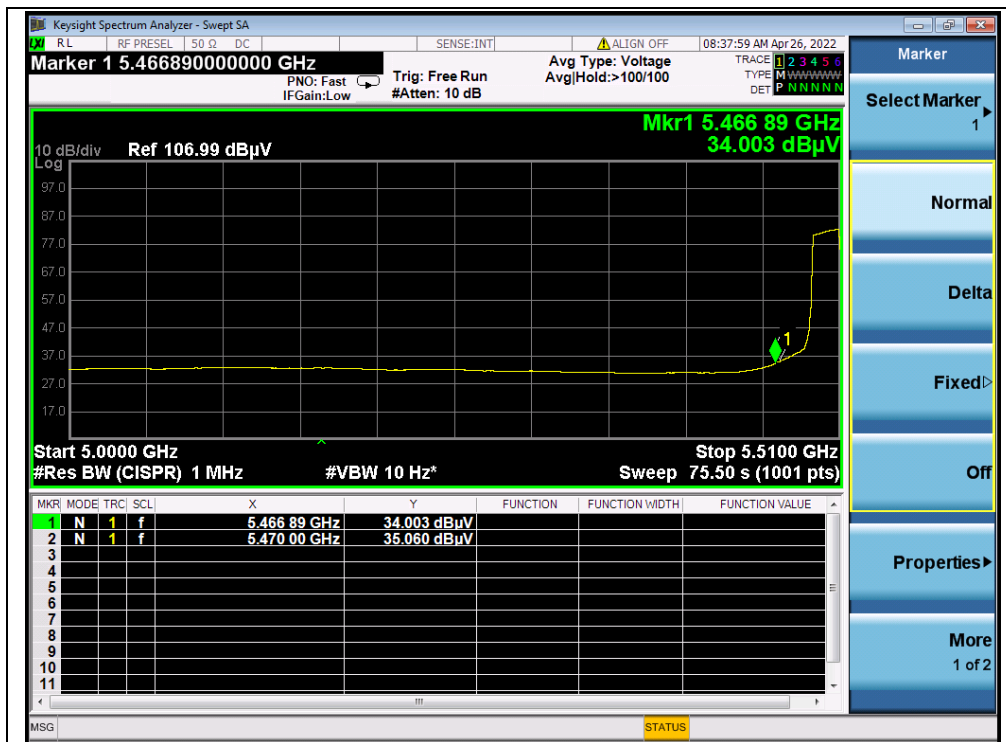
(PEAK, Channel 62, 802.11n (HT40))



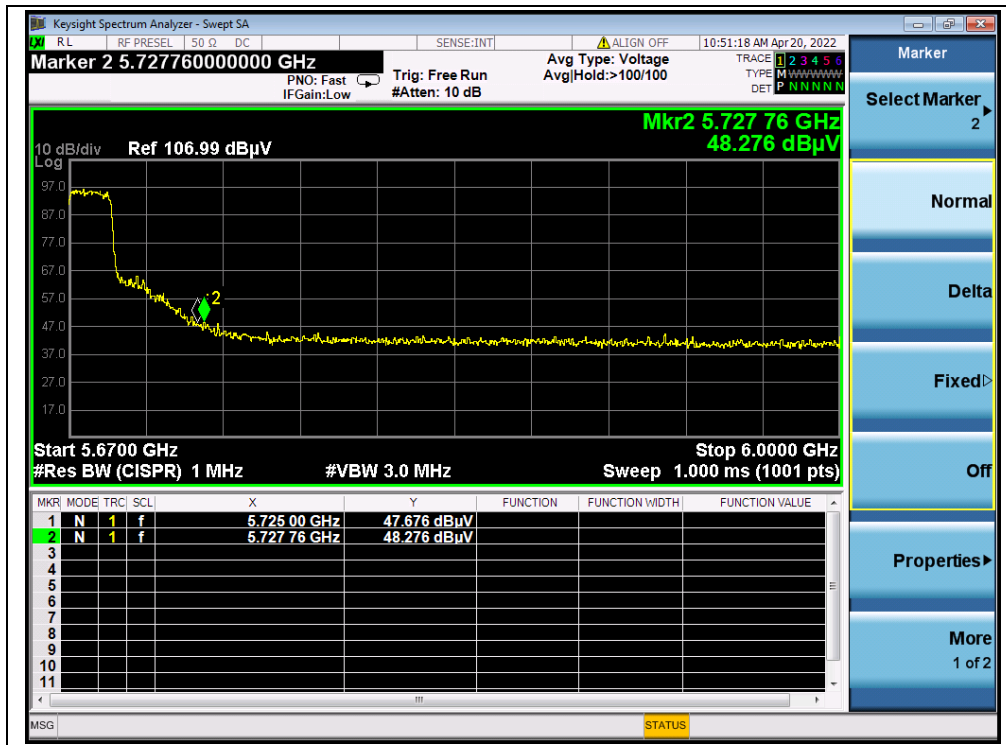
(AVERAGE, Channel 62, 802.11n (HT40))



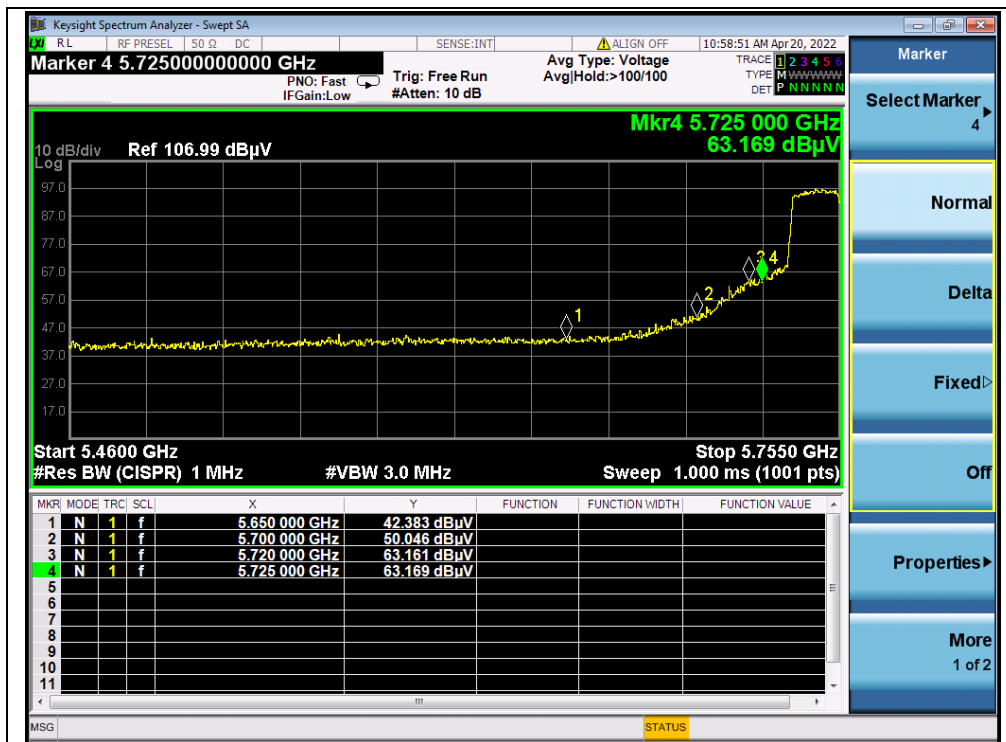
(PEAK, Channel 102, 802.11n (HT40))



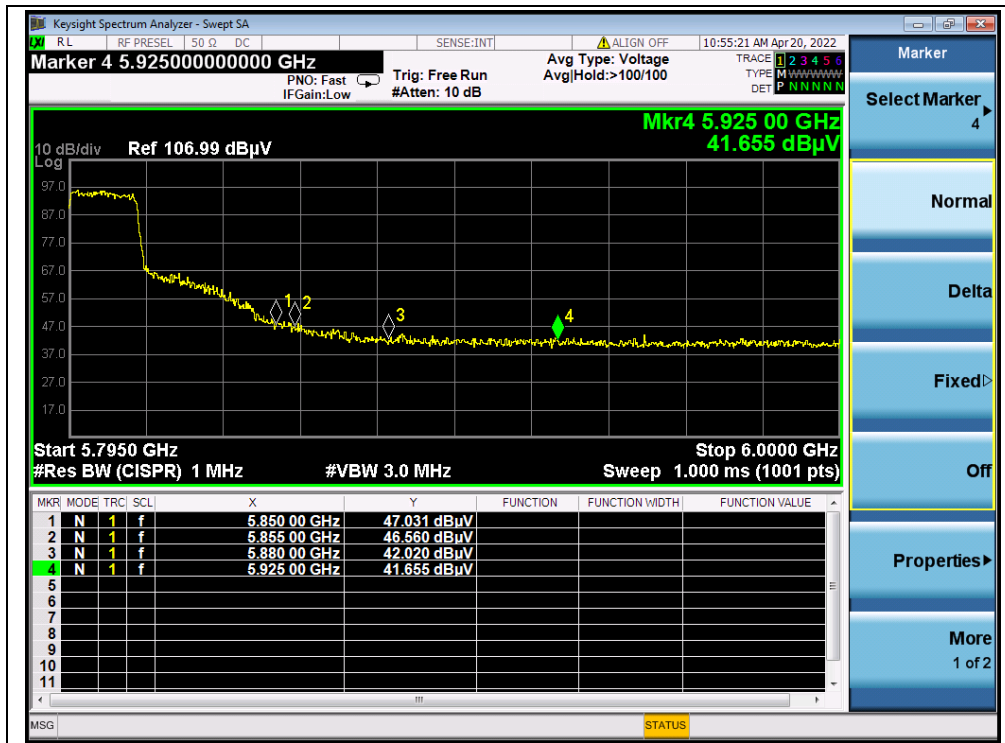
(AVERAGE, Channel 102, 802.11n (HT40))



(PEAK, Channel 142, 802.11n (HT40))



(PEAK, Channel 151, 802.11n (HT40))



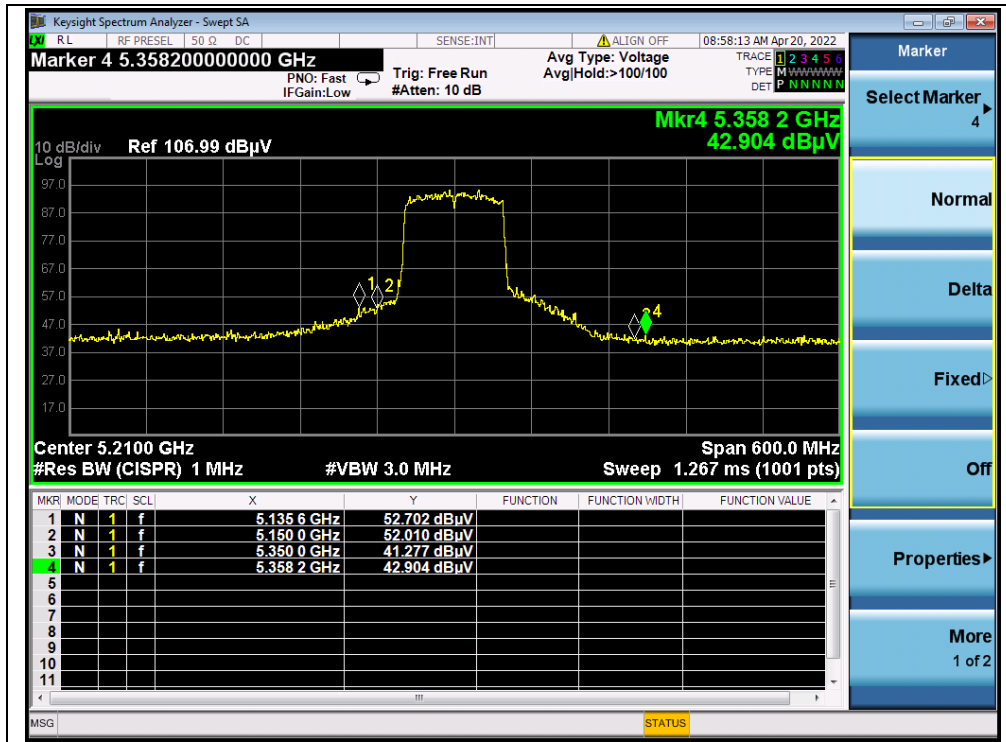
(PEAK, Channel 159, 802.11n (HT40))

**802.11ac (VHT80) Mode****A. Test Verdict:**

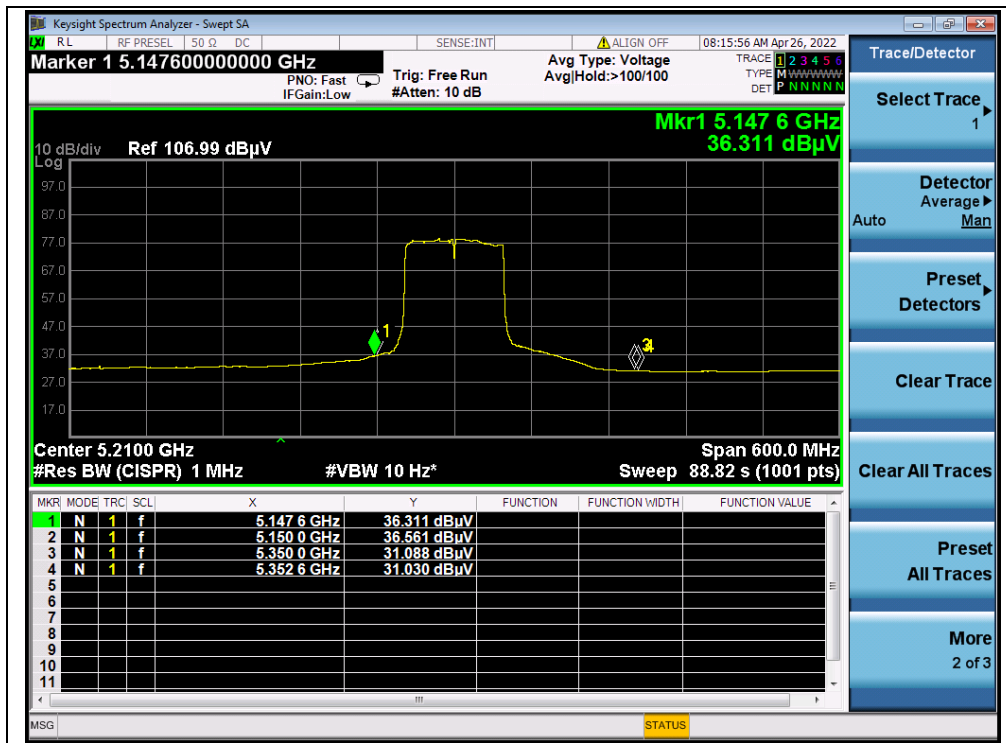
Channel	Frequency (MHz)	Detector	Receiver Reading U_R (dB μ V)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dB μ V/m)	Limit (dB μ V/m)	Verdict
		PK/ AV						
42	5135.60	PK	52.70	-19.54	32.20	65.36	74	PASS
42	5150.00	AV	36.56	-19.54	32.20	49.22	54	PASS
58	5355.80	PK	51.09	-18.80	32.20	64.49	74	PASS
58	5350.00	AV	35.39	-18.80	32.20	48.79	54	PASS
106	5464.16	PK	50.90	-19.20	32.20	63.90	68.23	PASS
106	5466.89	AV	33.89	-19.20	32.20	46.89	54	PASS
138	5743.21	PK	44.31	-19.20	32.20	57.31	68.23	PASS
155	5725.00	PK	57.99	-19.01	32.20	71.18	122.23	PASS
155	5850.00	PK	56.01	-19.01	32.20	69.20	122.23	PASS



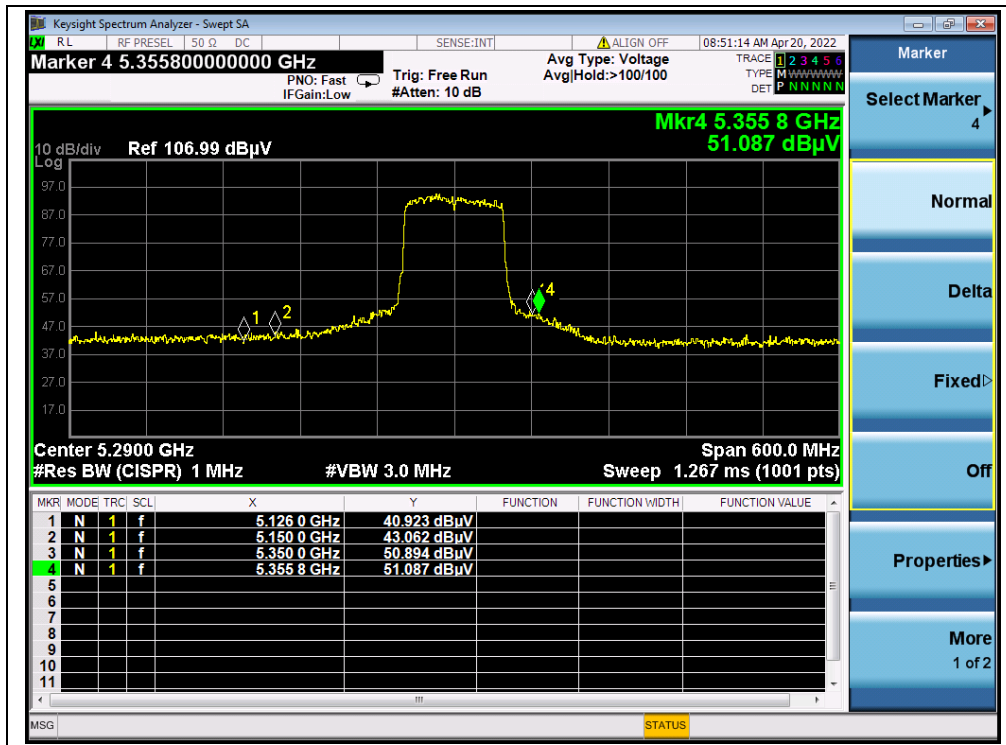
B.Test Plot:



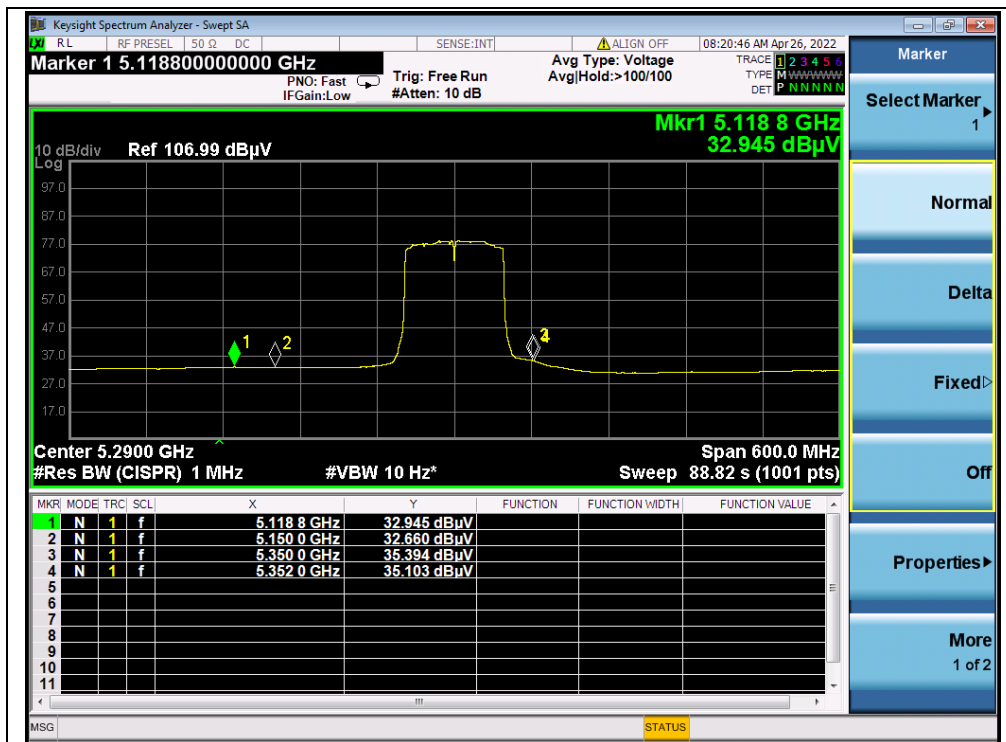
(PEAK, Channel 42, 802.11ac (VHT80))



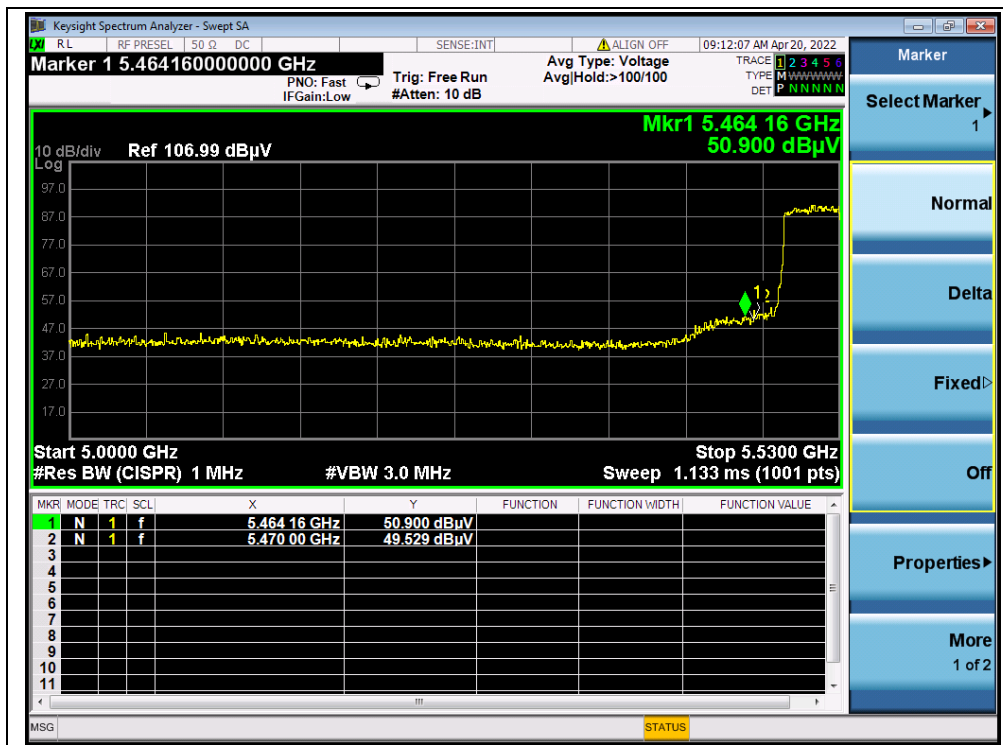
(AVERAGE, Channel 42, 802.11ac (VHT80))



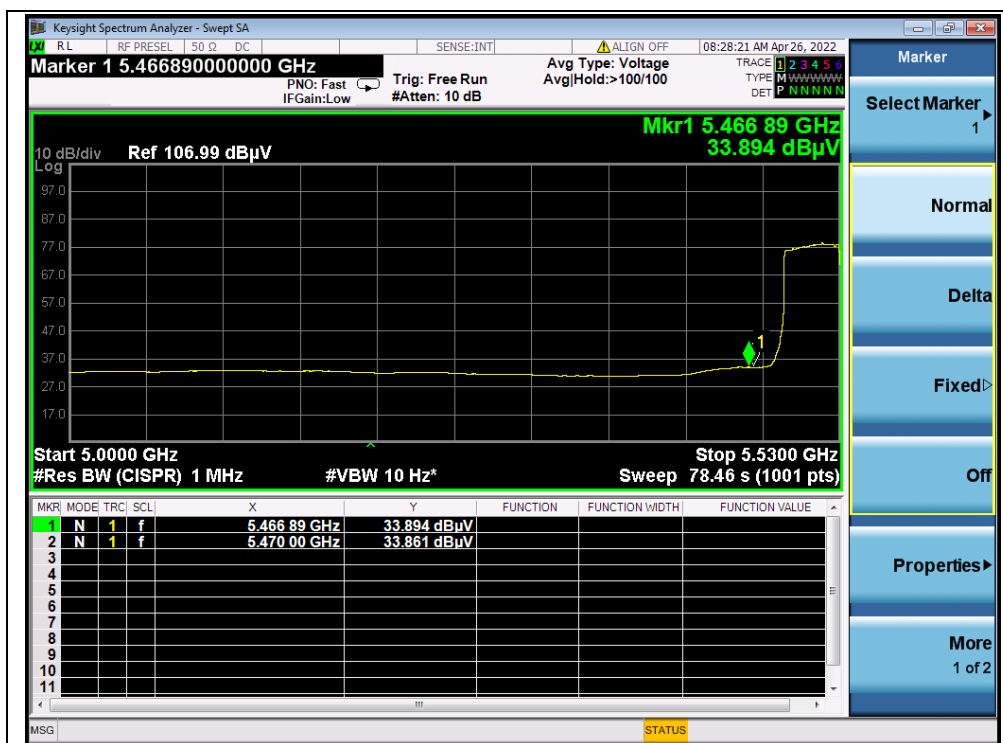
(PEAK, Channel 58, 802.11ac (VHT80))



(AVERAGE, Channel 58, 802.11ac (VHT80))



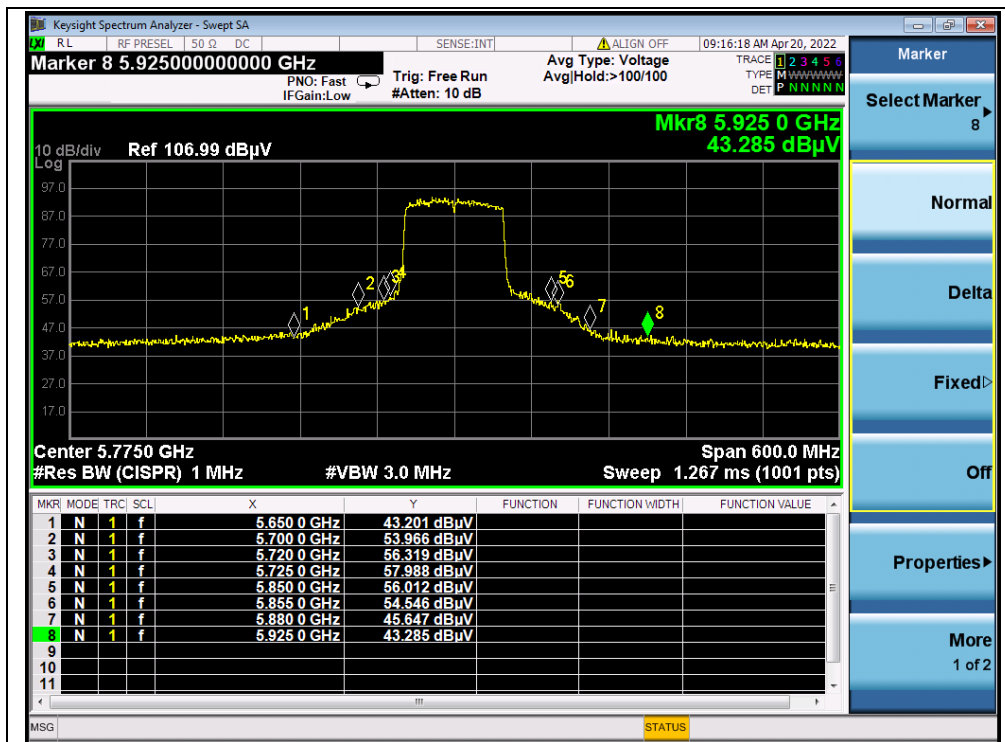
(PEAK, Channel 106, 802.11ac (VHT80))



(AVERAGE, Channel 106, 802.11ac (VHT80))



(PEAK, Channel 138, 802.11ac (VHT80))



(PEAK, Channel 155, 802.11ac (VHT80))

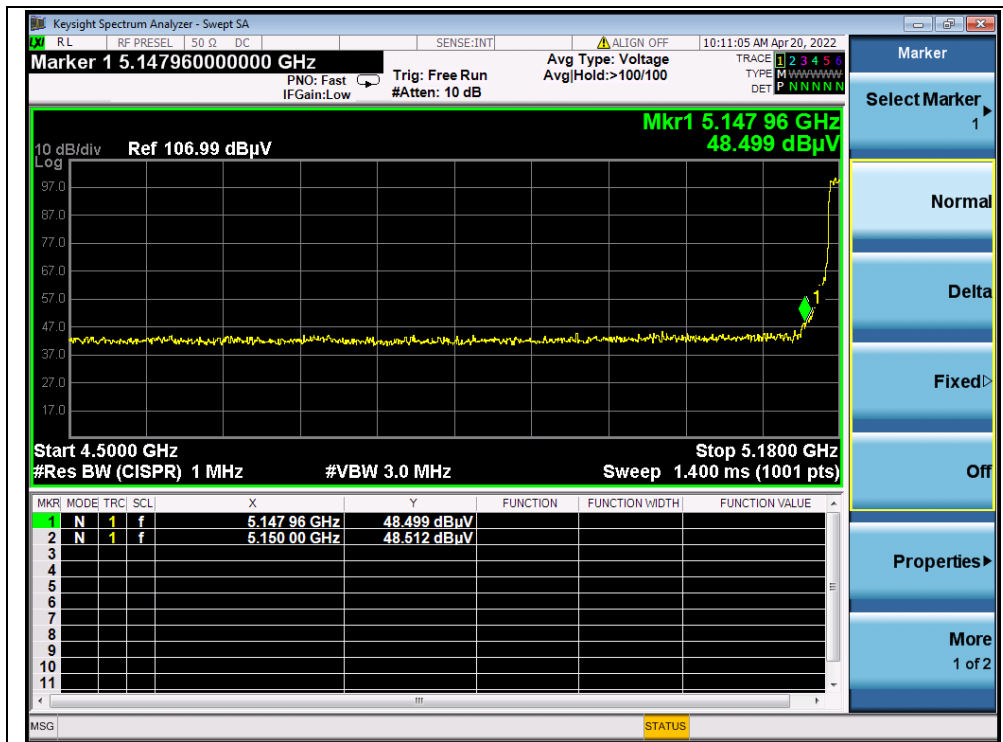


802.11ax (HEW20) Mode

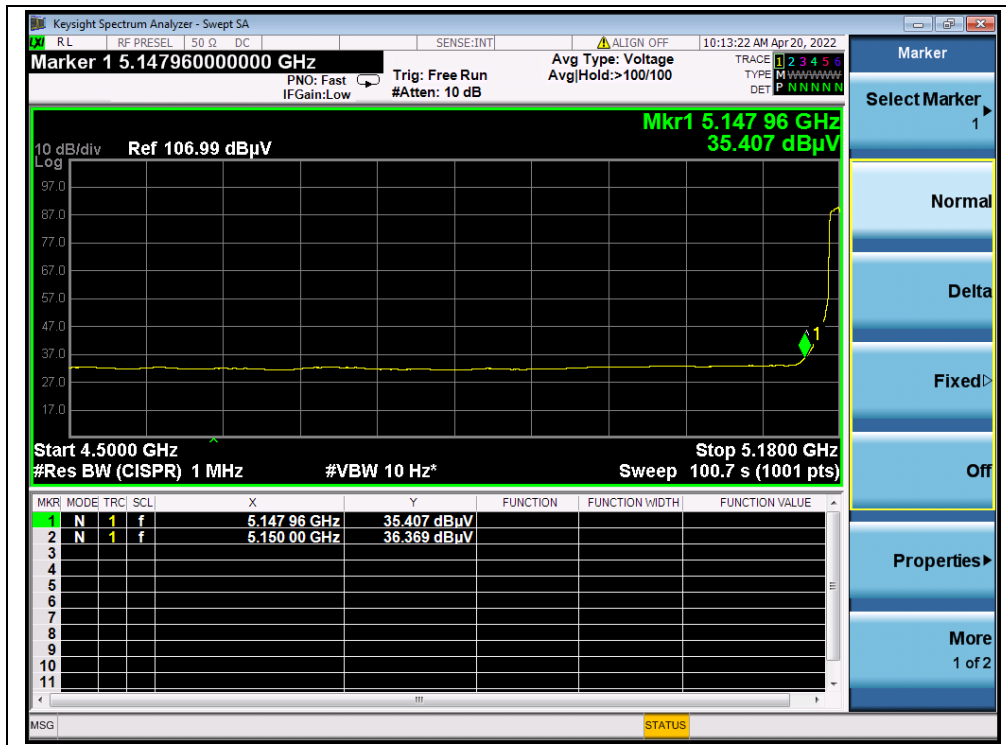
A. Test Verdict:

Channel	Frequency (MHz)	Detector	Receiver Reading	A_T	A_{Factor}	Max. Emission	Limit	Verdict
		PK/ AV	U_R (dB μ V)	(dB)	(dB@3m)	E (dB μ V/m)	(dB μ V/m)	
36	5150.00	PK	48.51	-19.54	32.20	61.17	74	PASS
36	5150.00	AV	36.37	-19.54	32.20	49.03	54	PASS
64	5361.30	PK	43.34	-18.80	32.20	56.74	74	PASS
64	5350.00	AV	31.71	-18.80	32.20	45.11	54	PASS
100	5470.00	PK	43.42	-19.20	32.20	56.42	68.23	PASS
100	5470.00	AV	32.26	-19.20	32.20	45.26	54	PASS
144	5725.00	PK	47.86	-19.20	32.20	60.86	68.23	PASS
149	5725.00	PK	55.13	-19.01	32.20	68.32	122.23	PASS
165	5850.00	PK	48.59	-19.01	32.20	61.78	122.23	PASS

B. Test Plot:



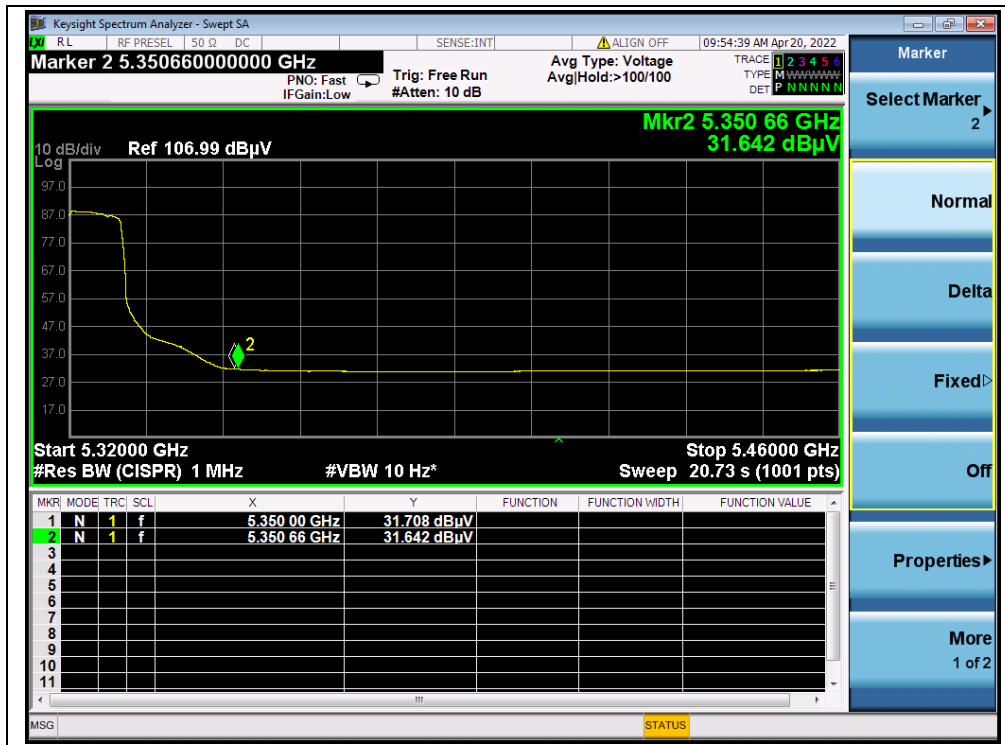
(PEAK, Channel 36, 802.11ax (HEW20))



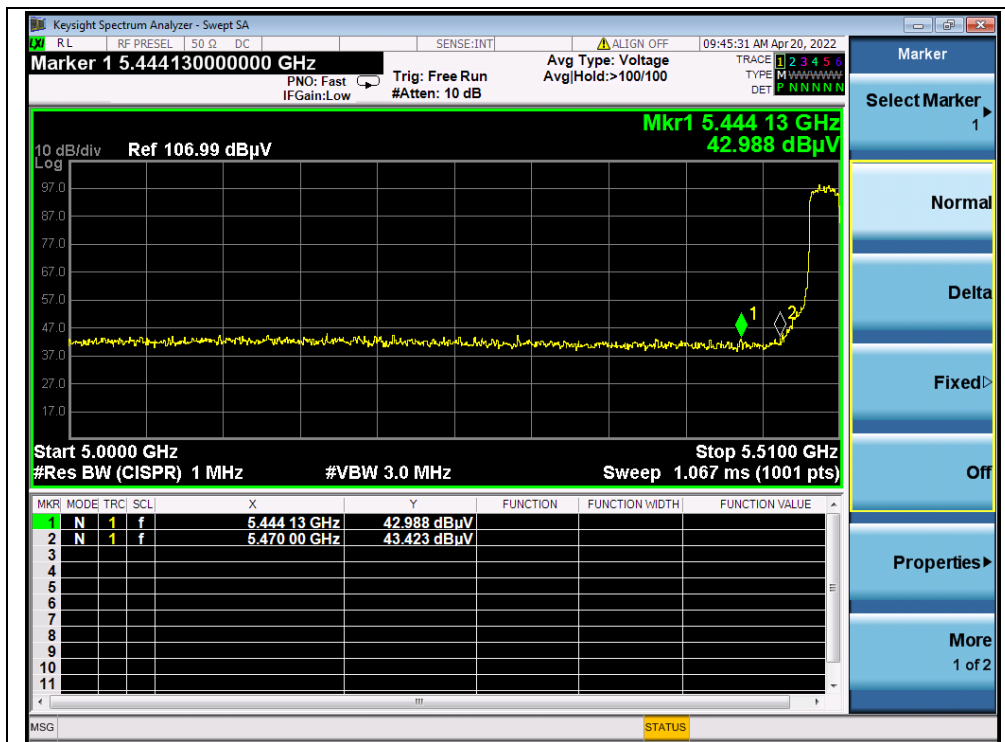
(AVERAGE, Channel 36, 802.11ax (HEW20))



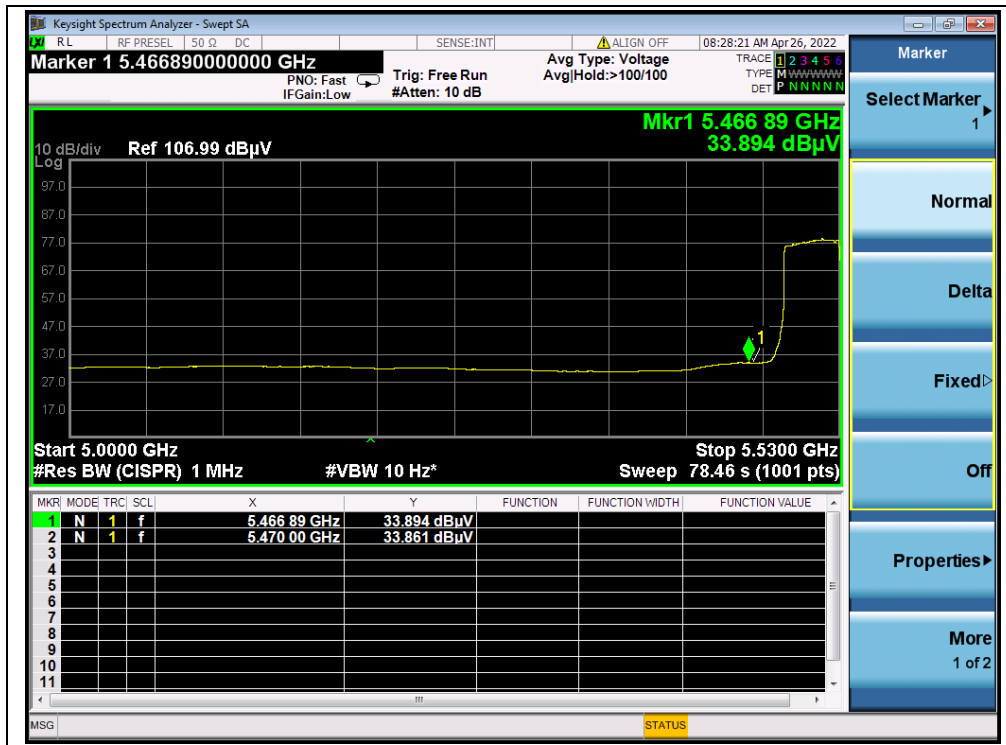
(PEAK, Channel 64, 802.11ax (HEW20))



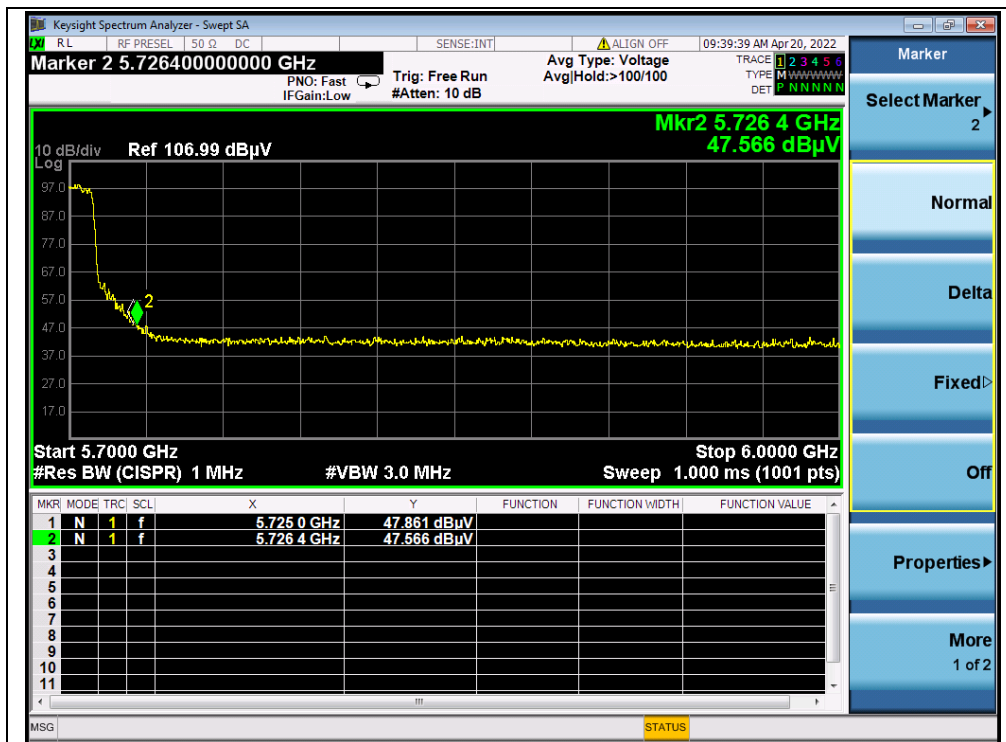
(AVERAGE, Channel 64, 802.11ax (HEW20))



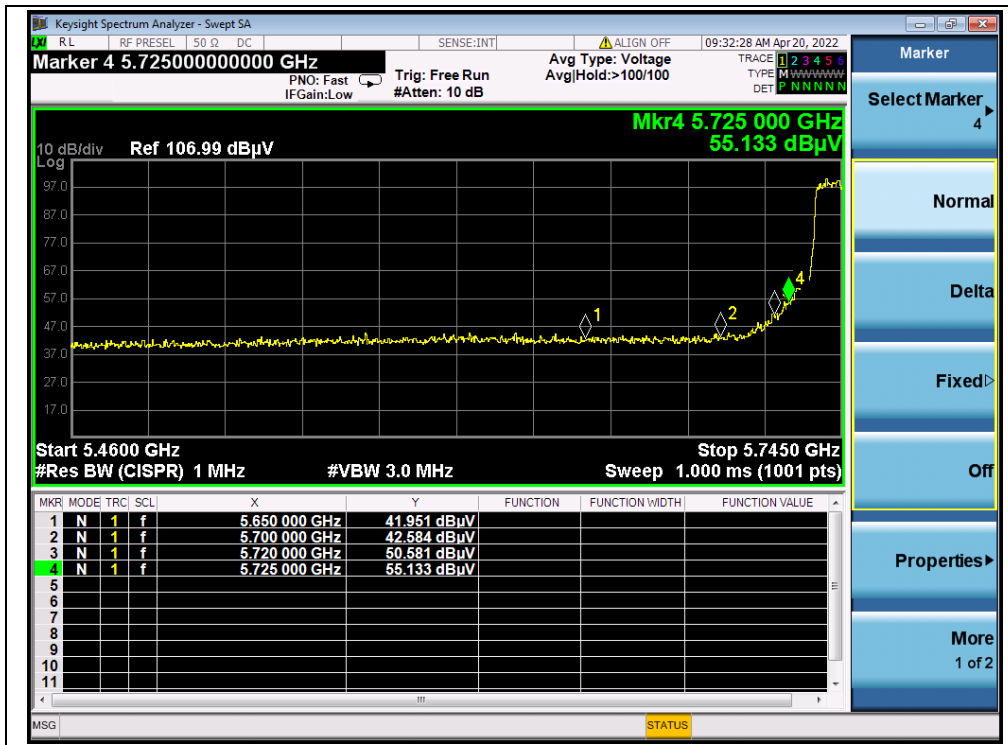
(PEAK, Channel100, 802.11ax (HEW20))



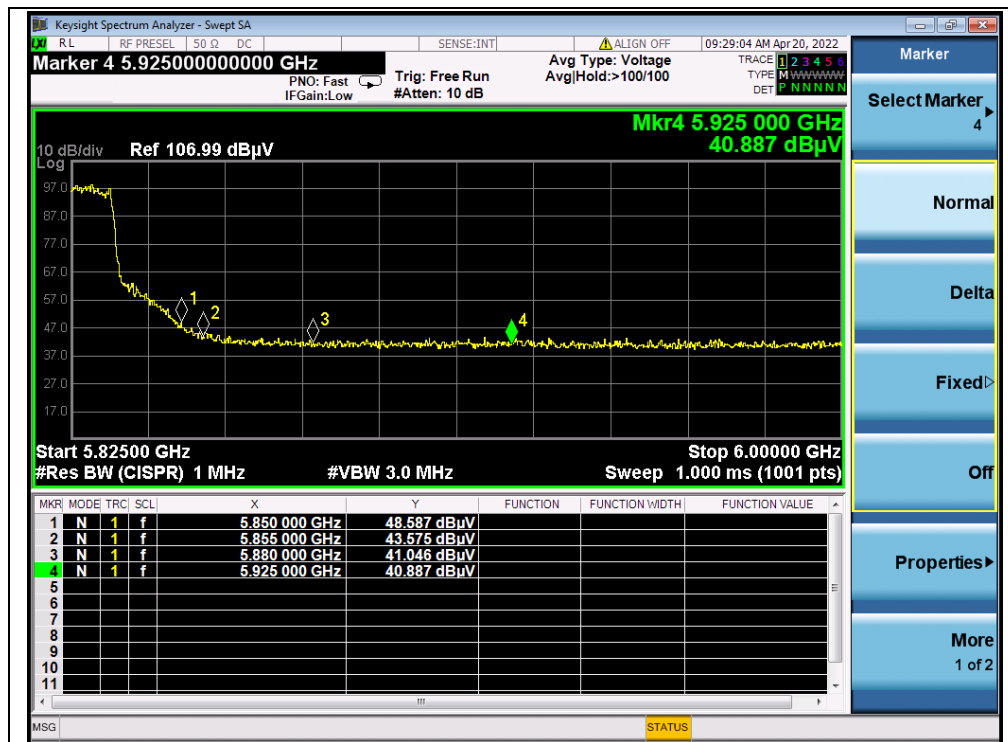
(AVERAGE, Channel 100, 802.11ax (HEW20))



(PEAK, Channel 144, 802.11ax (HEW20))



(PEAK, Channel 149, 802.11ax (HEW20))



(PEAK, Channel 165, 802.11ax (HEW20))

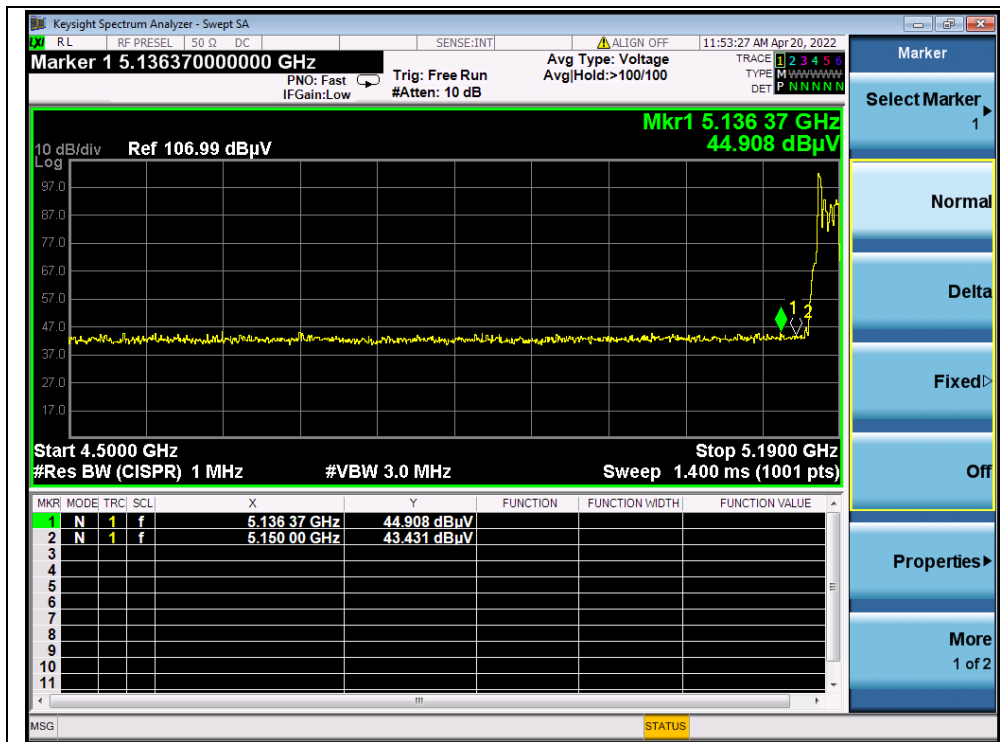


802.11ax (HEW20) RU26 Mode

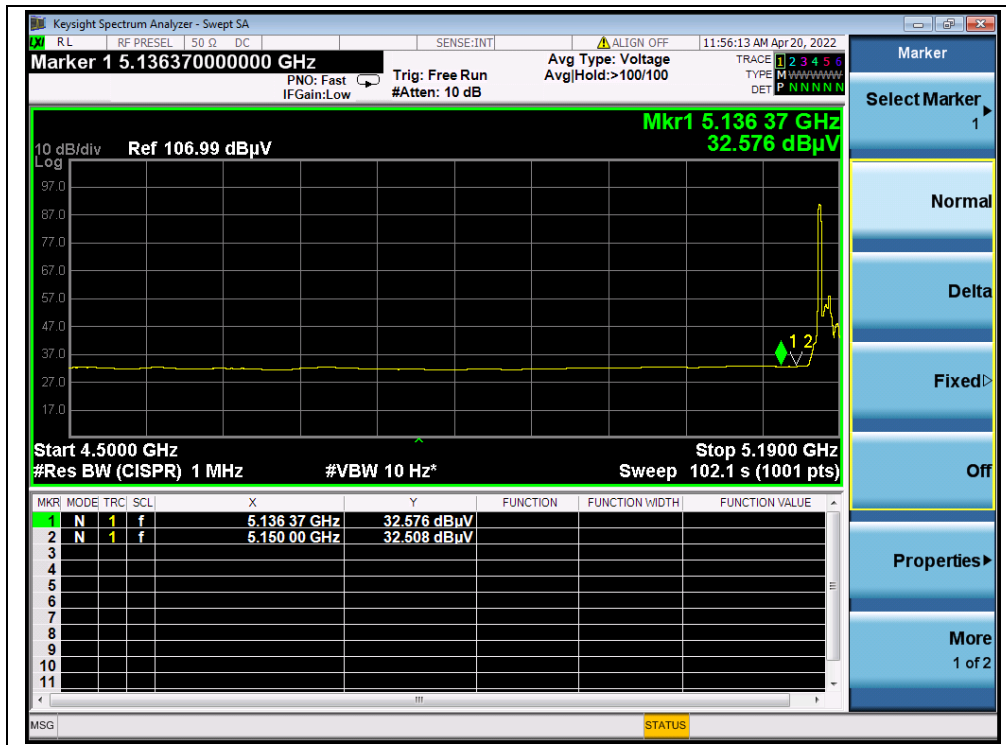
A. Test Verdict:

Channel	Frequency (MHz)	Detector	Receiver Reading	A_T	A_{Factor}	Max. Emission	Limit	Verdict
		PK/ AV	U_R (dB μ V)	(dB)	(dB@3m)	E (dB μ V/m)	(dB μ V/m)	
36	5136.37	PK	44.91	-19.54	32.20	57.57	74	PASS
36	5136.37	AV	32.58	-19.54	32.20	45.24	54	PASS
64	5370.95	PK	41.95	-18.80	32.20	55.35	74	PASS
64	5352.80	AV	30.70	-18.80	32.20	44.10	54	PASS
100	5247.04	PK	45.98	-19.20	32.20	58.98	68.23	PASS
100	5465.44	AV	31.00	-19.20	32.20	44.00	54	PASS
144	5775.93	PK	44.76	-19.20	32.20	57.76	68.23	PASS
149	5700.00	PK	43.15	-19.01	32.20	56.34	105.23	PASS
165	5850.00	PK	42.63	-19.01	32.20	55.82	122.23	PASS

B. Test Plot:



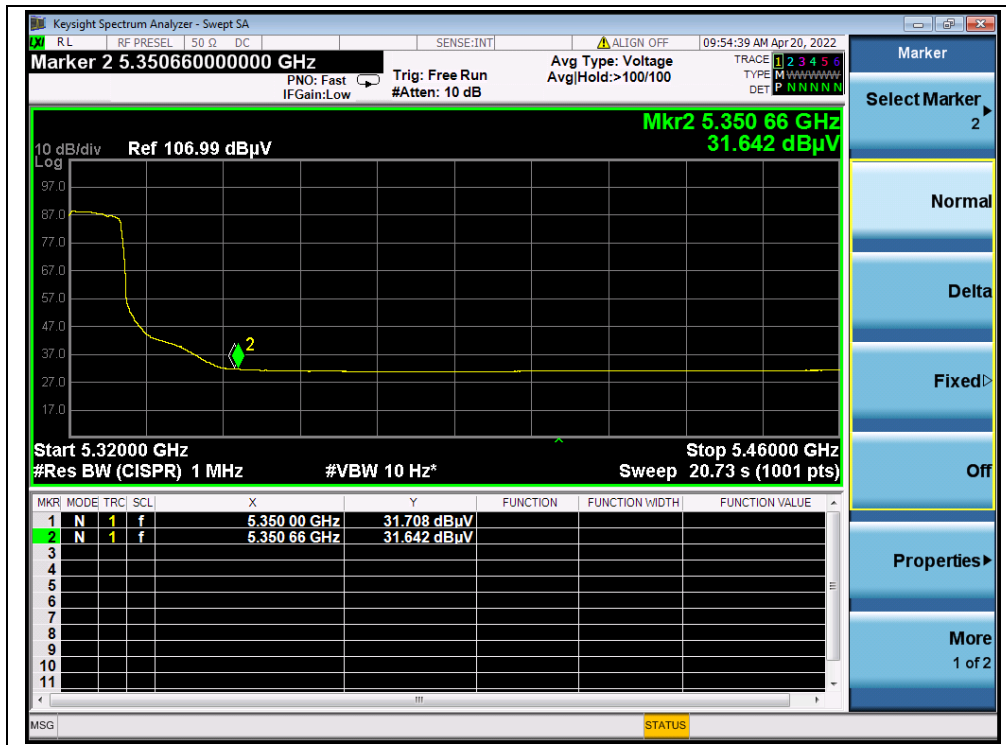
(PEAK, Channel 36, 802.11ax (HEW20) RU26)



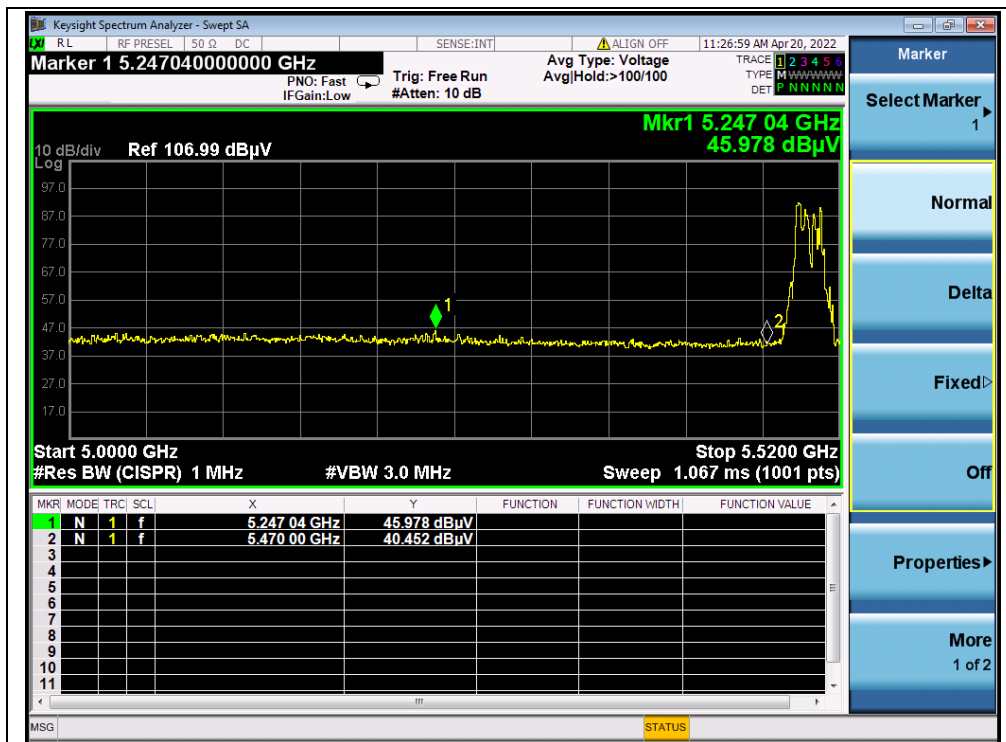
(AVERAGE, Channel 36, 802.11ax (HEW20) RU26)



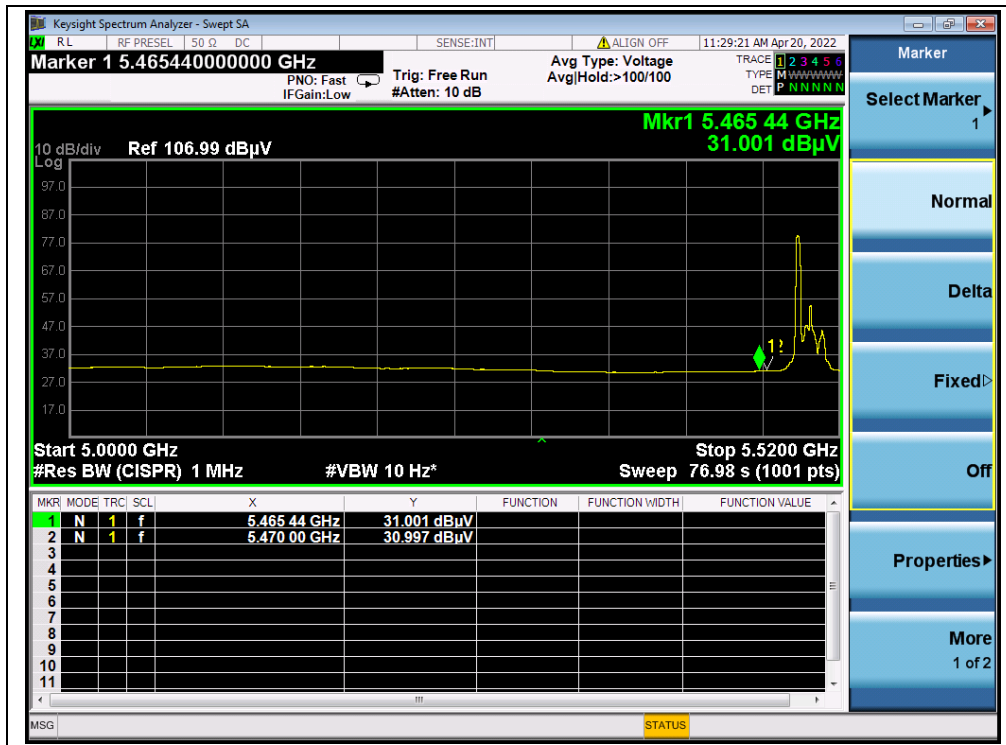
(PEAK, Channel 64, 802.11ax (HEW20) RU26)



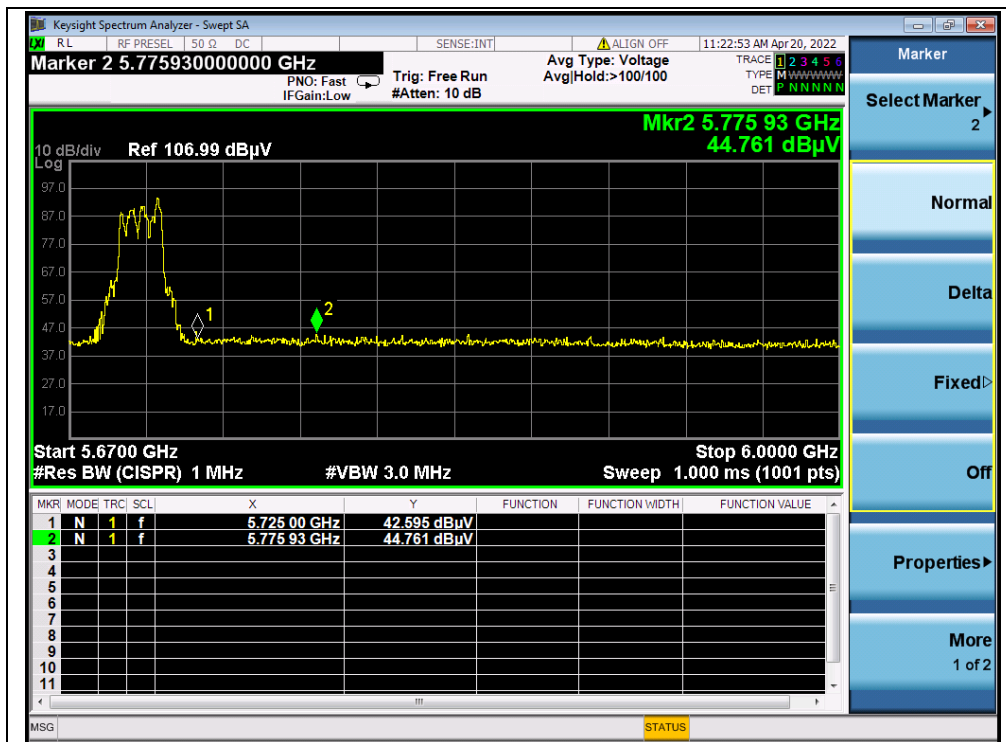
(AVERAGE, Channel 64, 802.11ax (HEW20) RU26)



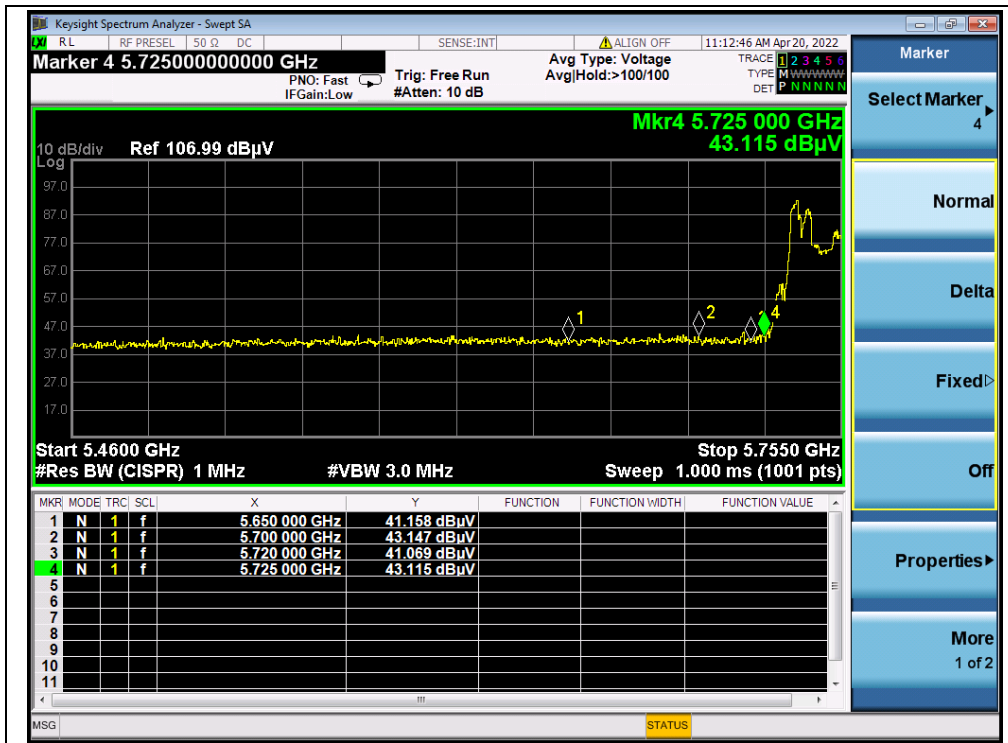
(PEAK, Channel100, 802.11ax (HEW20) RU26)



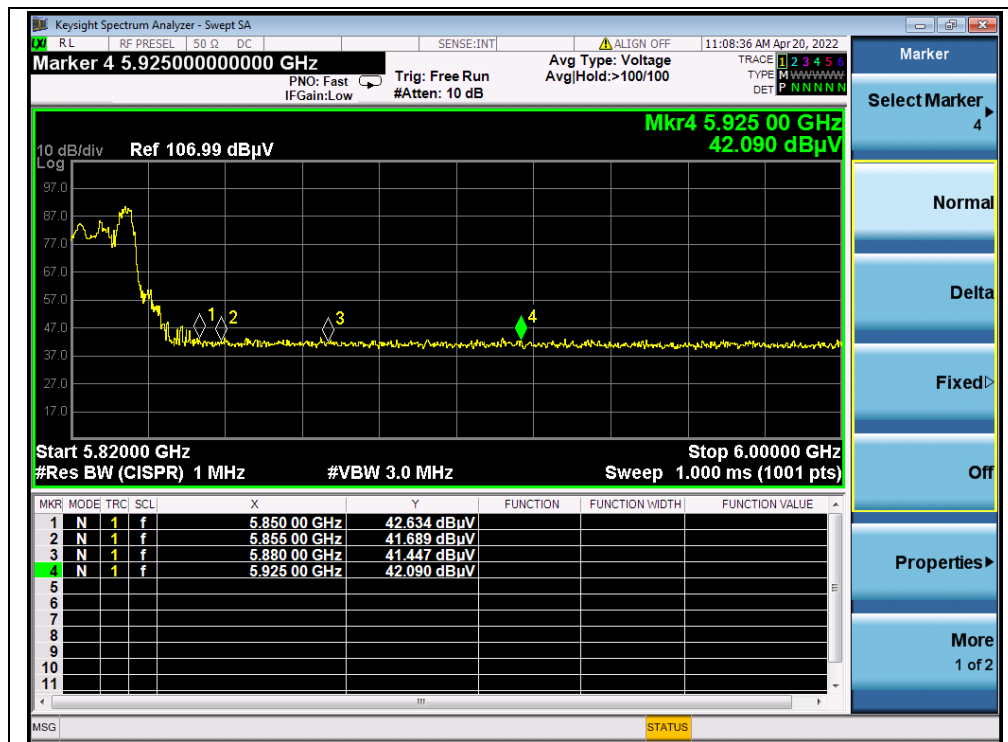
(AVERAGE, Channel 100, 802.11ax (HEW20) RU26)



(PEAK, Channel 144, 802.11ax (HEW20) RU26)



(PEAK, Channel 149, 802.11ax (HEW20) RU26)



(PEAK, Channel 165, 802.11ax (HEW20) RU26)

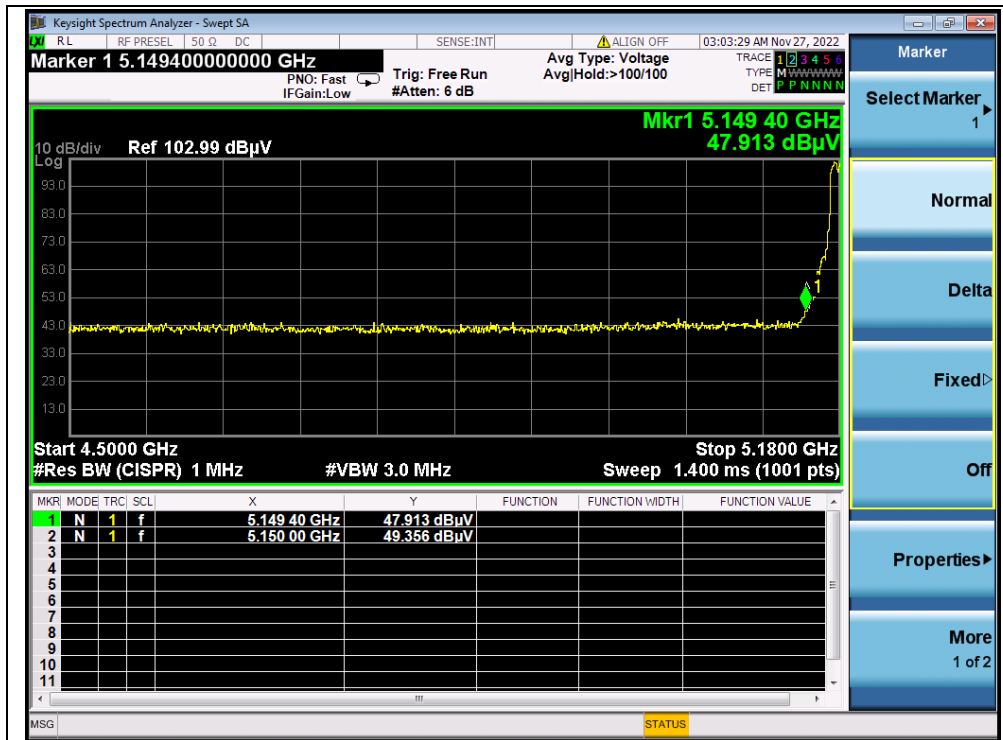


Antenna Type B
802.11a Mode

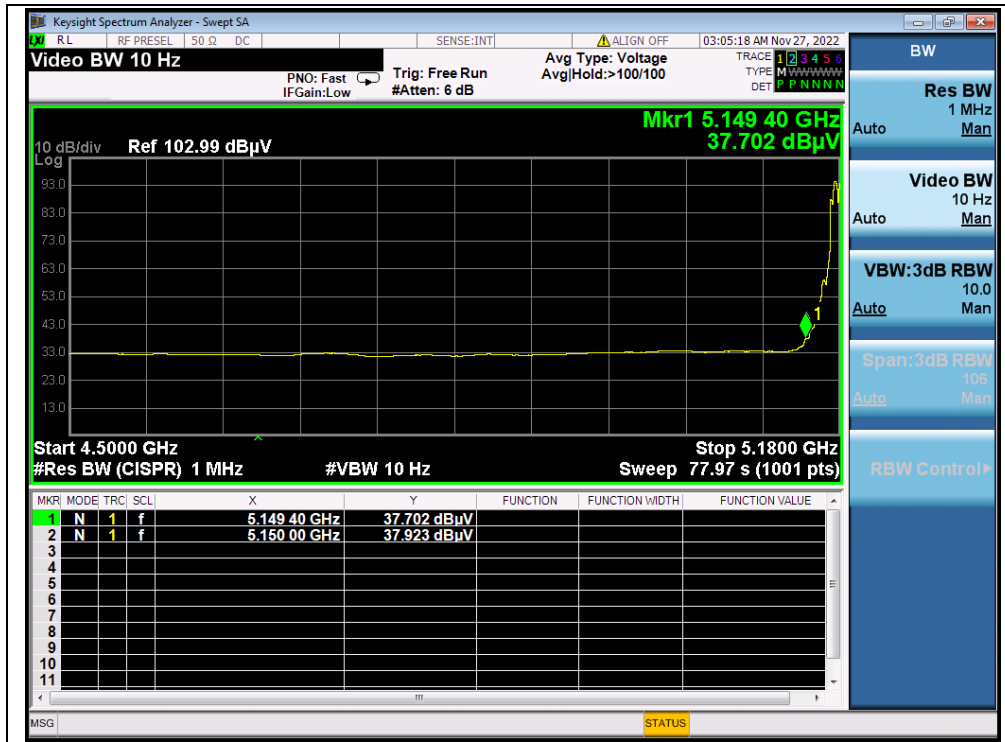
A. Test Verdict:

Channel	Frequency (MHz)	Detector	Receiver Reading	A _T (dB)	A _{Factor} (dB@3m)	Max. Emission E (dBμV/m)	Limit (dBμV/m)	Verdict
		PK/ AV	U _R (dBμV)					
36	5150.00	PK	49.36	-19.54	32.20	62.02	74	PASS
36	5150.00	AV	37.92	-19.54	32.20	50.58	54	PASS
64	5351.56	PK	42.94	-18.80	32.20	56.34	74	PASS
64	5351.56	AV	33.57	-18.80	32.20	46.97	54	PASS
100	5058.15	PK	44.54	-19.20	32.20	57.54	74	PASS
100	5467.54	AV	33.25	-19.20	32.20	46.25	54	PASS
144	5725.40	PK	45.87	-19.20	32.20	58.87	68.23	PASS
149	5725.00	PK	58.06	-19.01	32.20	71.25	122.23	PASS
165	5850.00	PK	49.62	-19.01	32.20	62.81	122.23	PASS

B. Test Plot:



(PEAK, Channel 36, 802.11a)



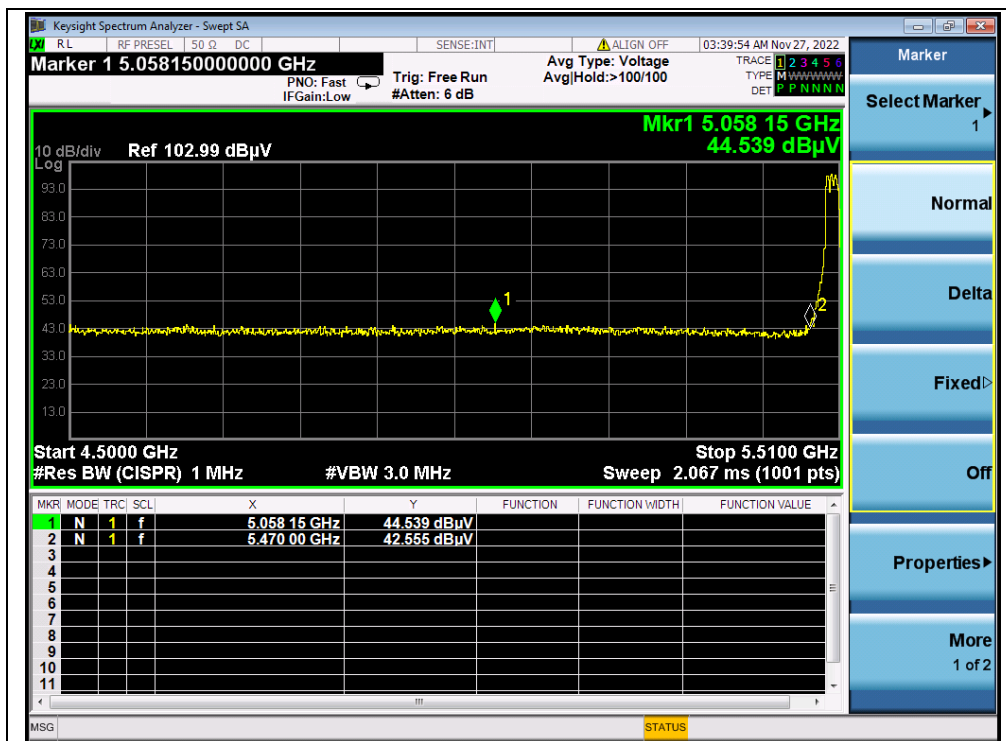
(AVERAGE, Channel 36, 802.11a)



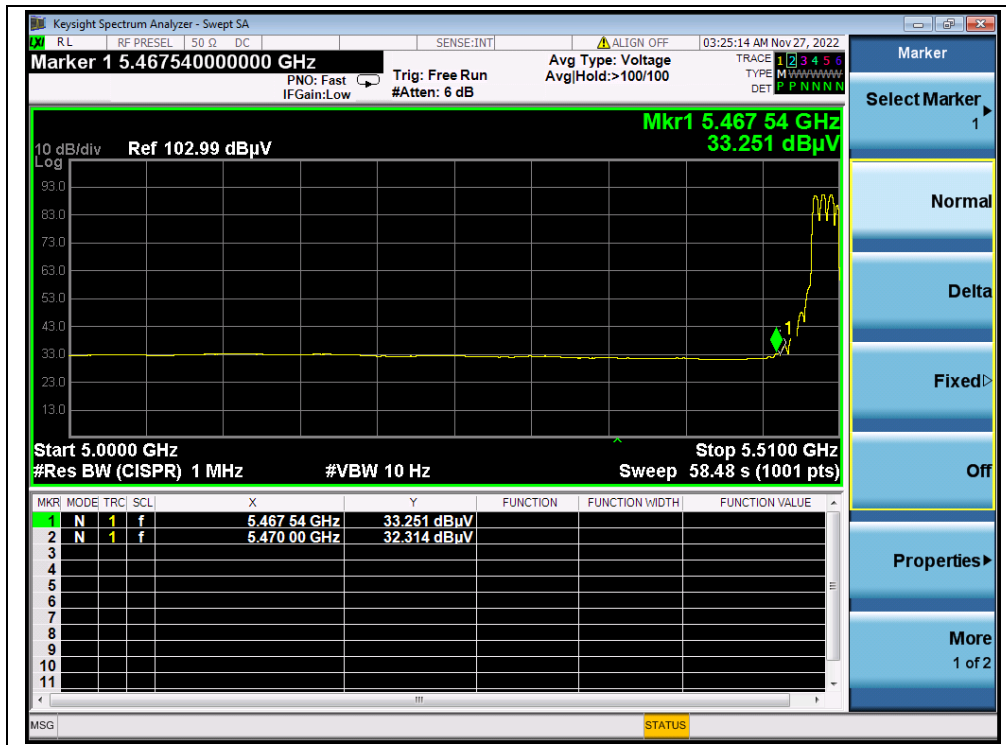
(PEAK, Channel 64, 802.11a)



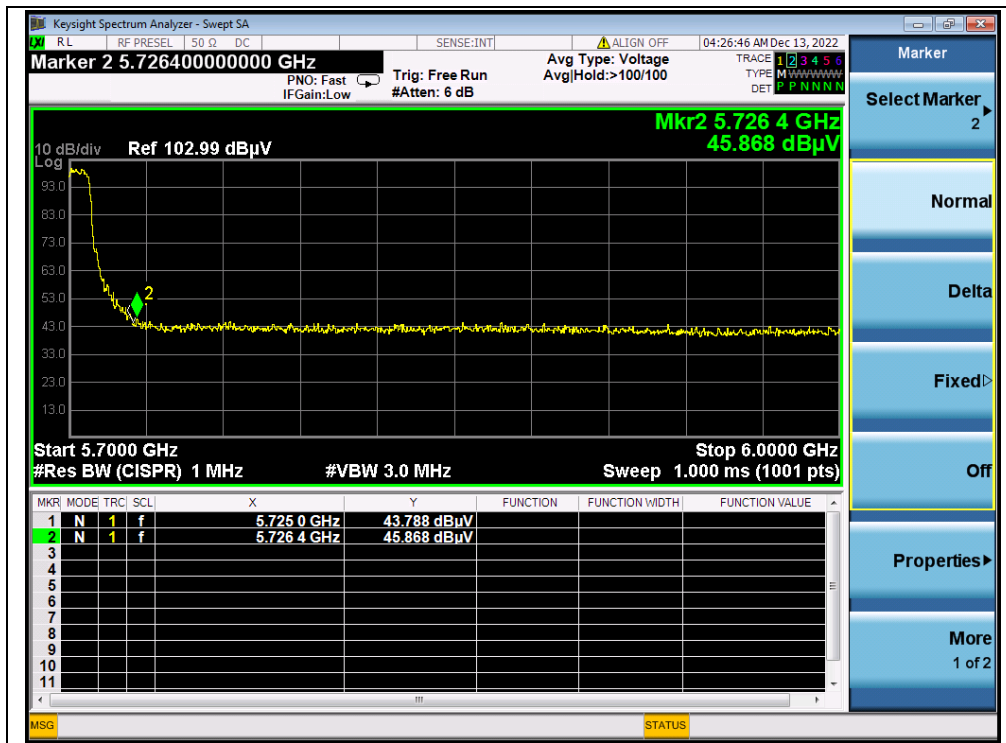
(AVERAGE, Channel 64, 802.11a)



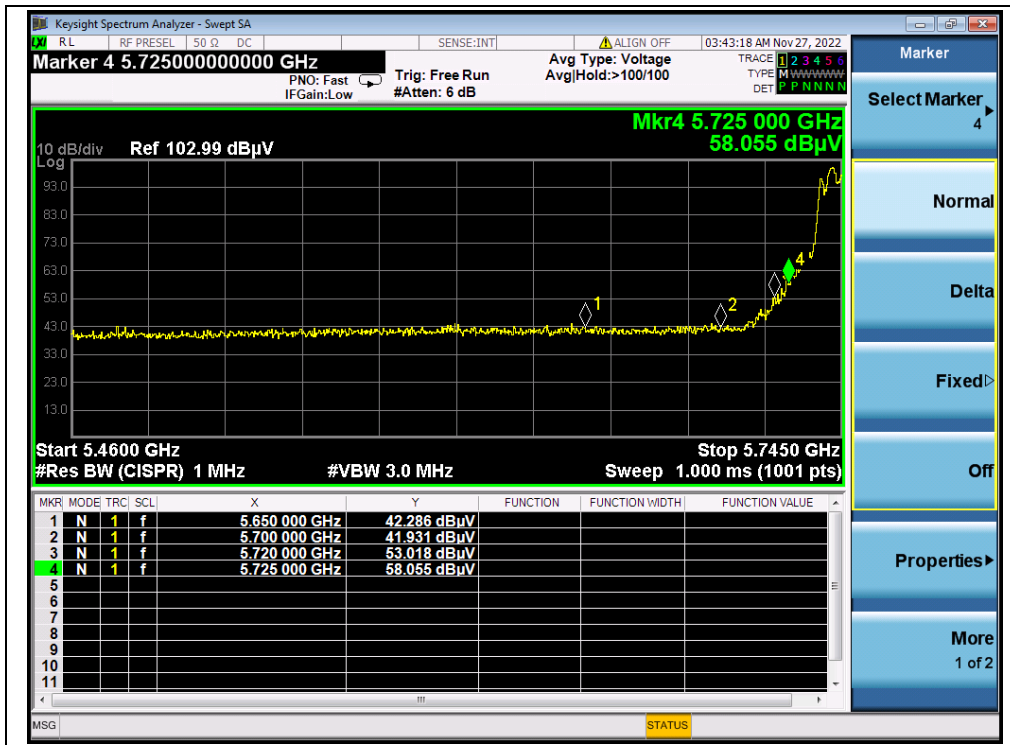
(PEAK, Channel100, 802.11a)



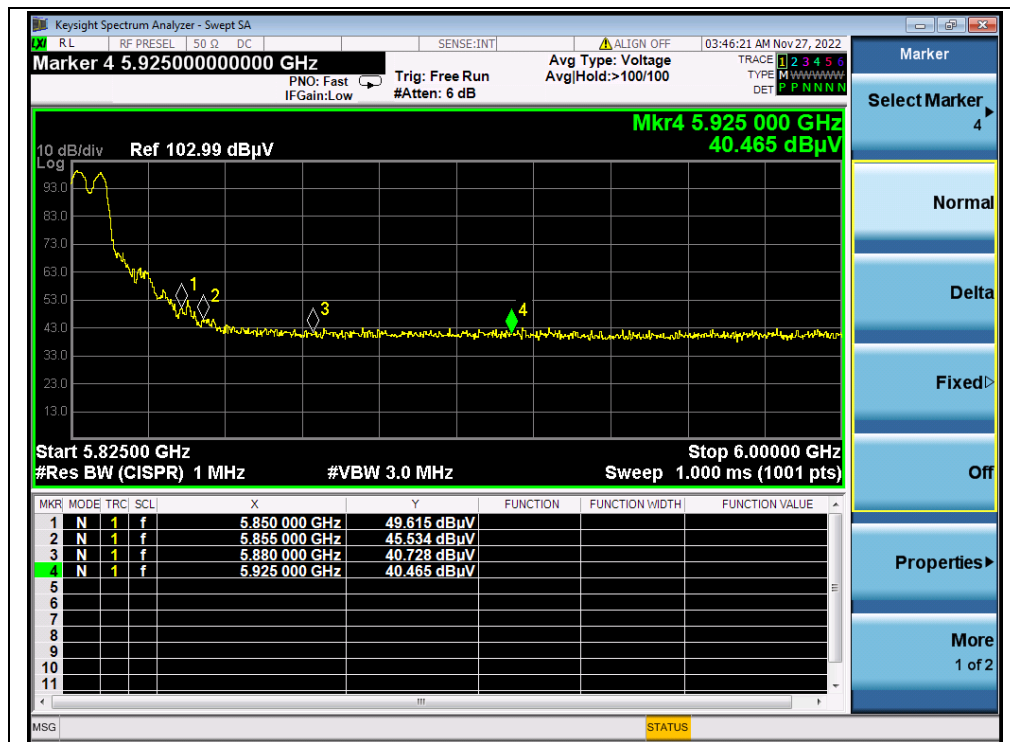
(AVERAGE, Channel 100, 802.11a)



(PEAK, Channel 144, 802.11a)



(PEAK, Channel 149, 802.11a)



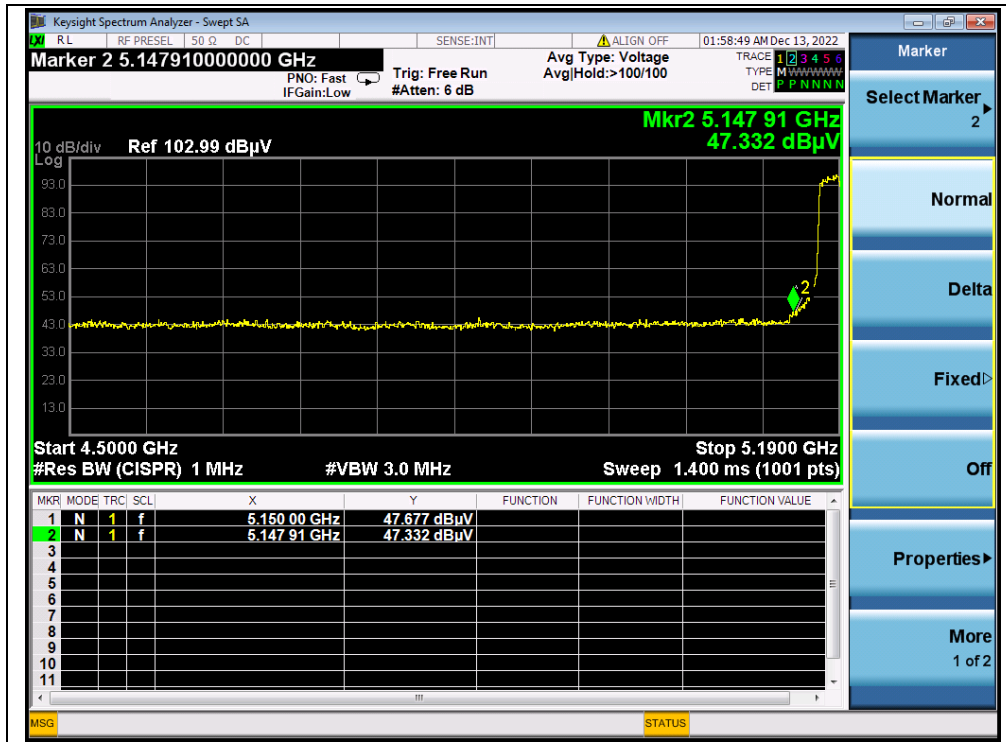
(PEAK, Channel 165, 802.11a)

**802.11n (HT40) Mode****A.Test Verdict:**

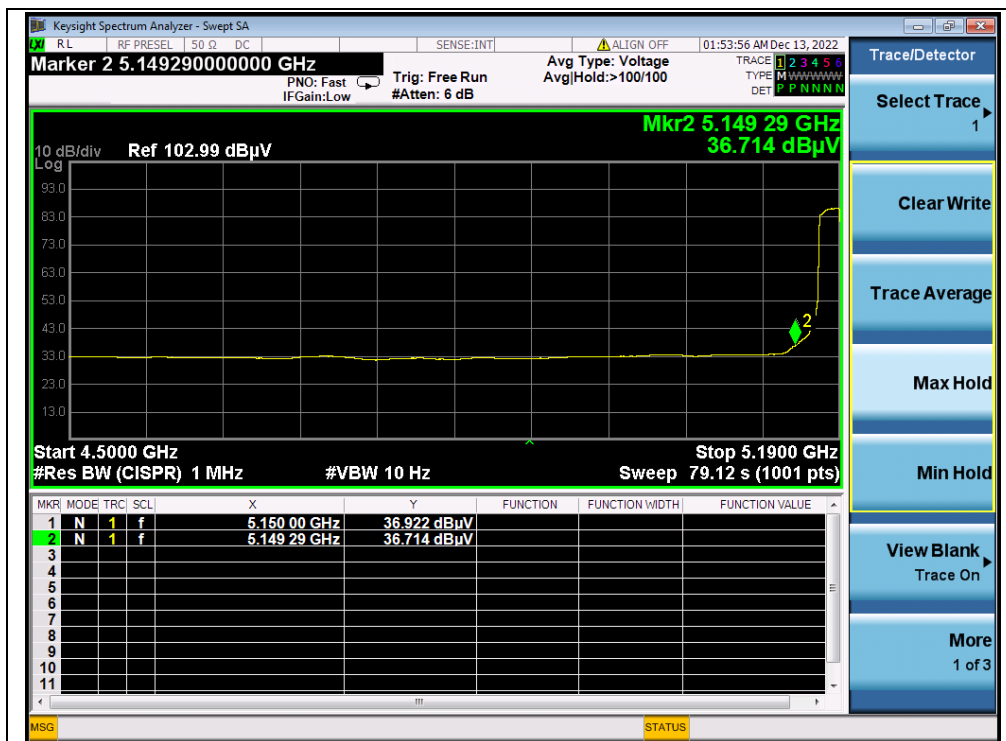
Channel	Frequency (MHz)	Detector	Receiver Reading U_R (dB μ V)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dB μ V/m)	Limit (dB μ V/m)	Verdict
		PK/ AV						
38	5388.06	PK	42.74	-19.54	32.20	55.40	74	PASS
38	5352.64	AV	31.70	-19.54	32.20	44.36	54	PASS
62	5352.15	PK	43.49	-18.80	32.20	56.89	74	PASS
62	5350.00	AV	36.35	-18.80	32.20	49.75	54	PASS
102	5470.00	PK	47.99	-19.20	32.20	60.99	68.23	PASS
102	5470.00	AV	39.00	-19.20	32.20	52.00	54	PASS
142	5726.49	PK	45.80	-19.20	32.20	58.80	68.23	PASS
151	5725.00	PK	60.21	-19.01	32.20	73.40	122.23	PASS
159	5850.00	PK	46.06	-19.01	32.20	59.25	122.23	PASS



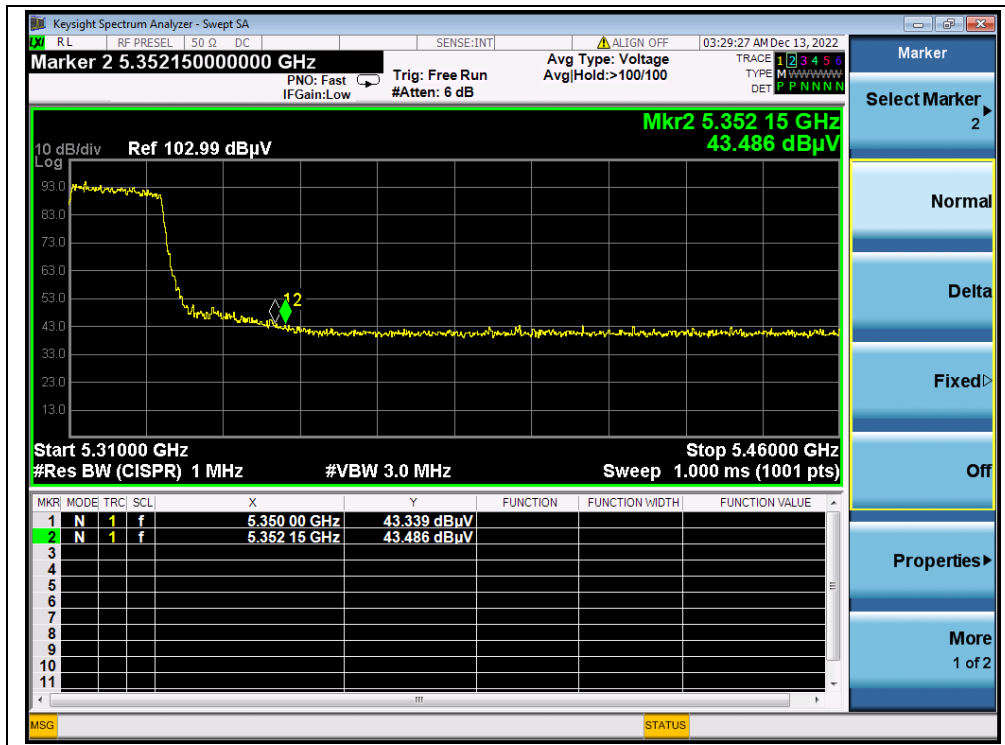
B.Test Plot:



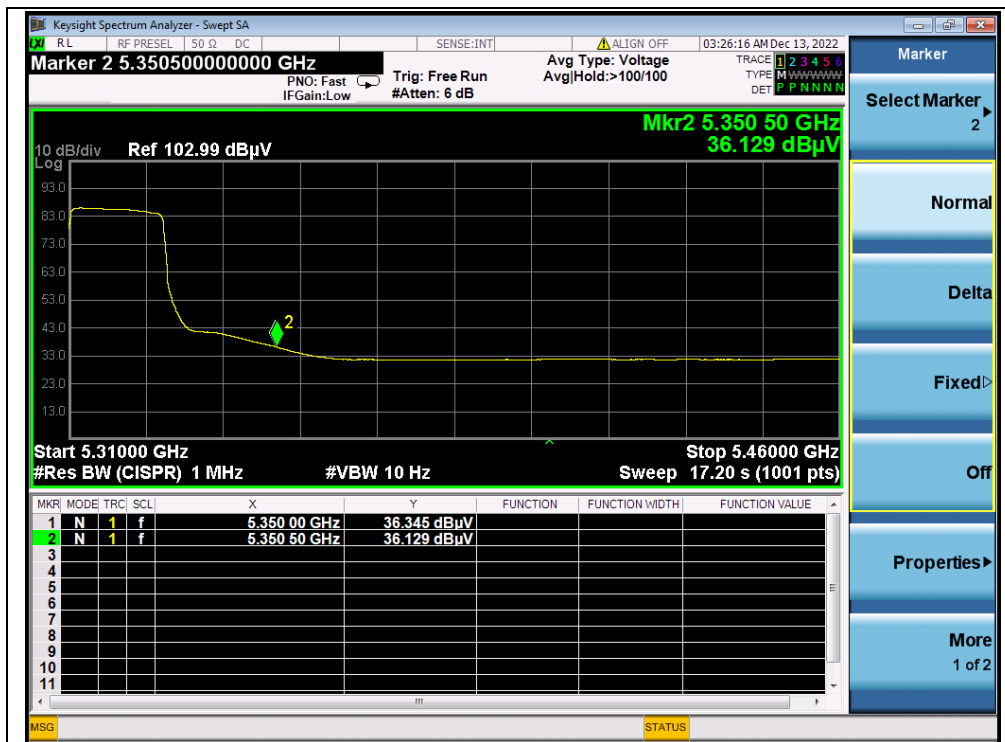
(PEAK, Channel 38, 802.11n (HT40))



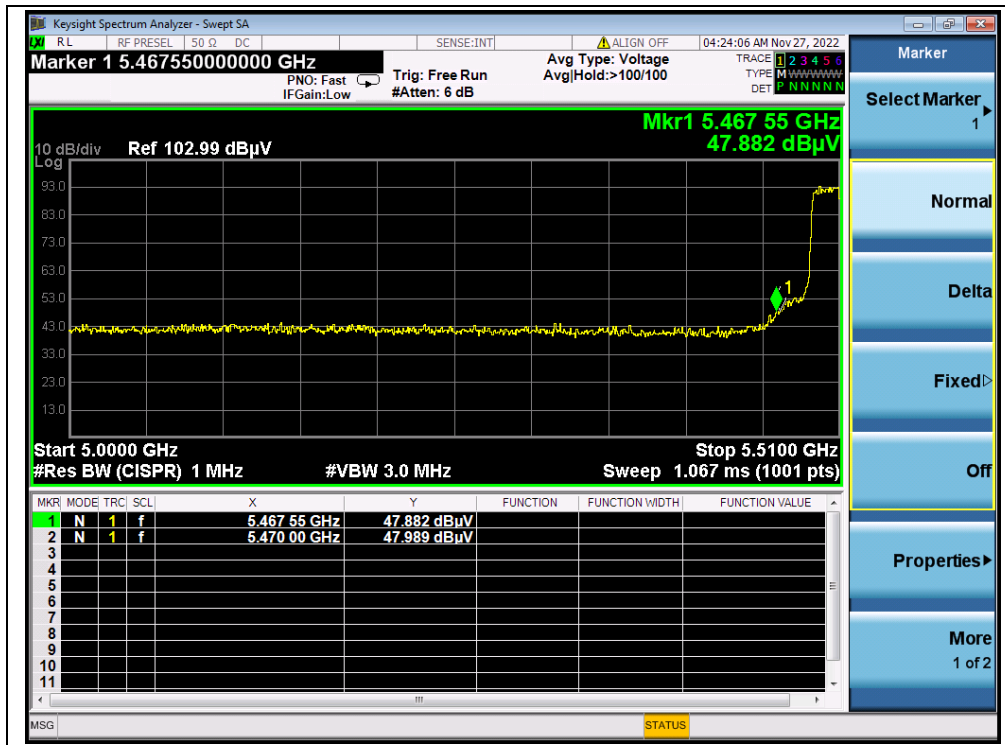
(AVERAGE, Channel 38, 802.11n (HT40))



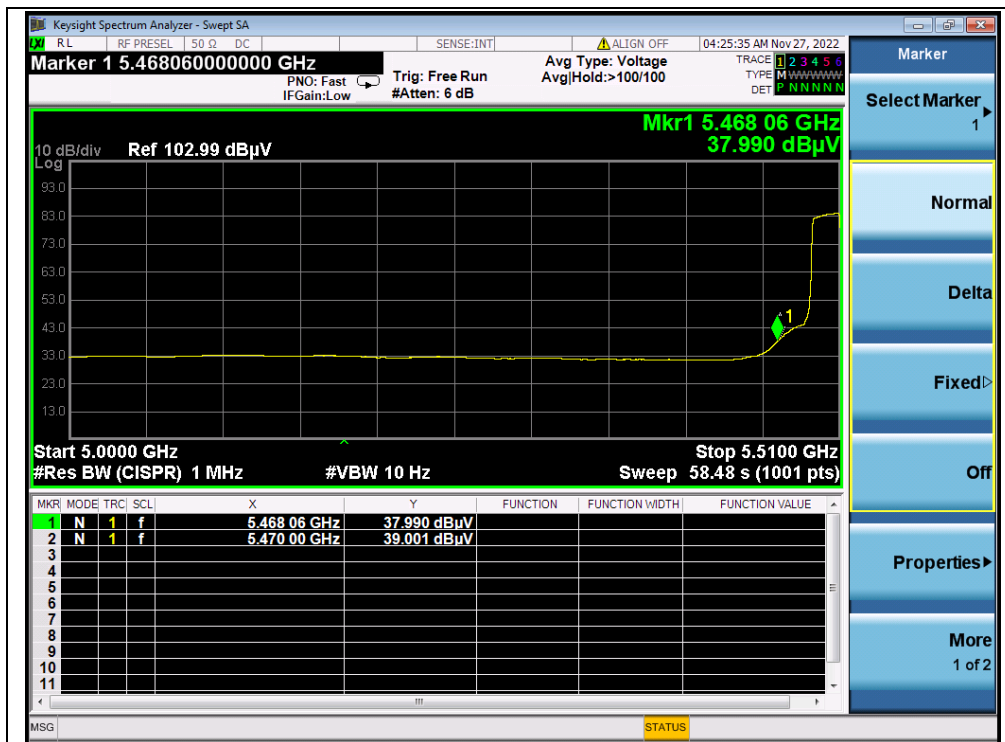
(PEAK, Channel 62, 802.11n (HT40))



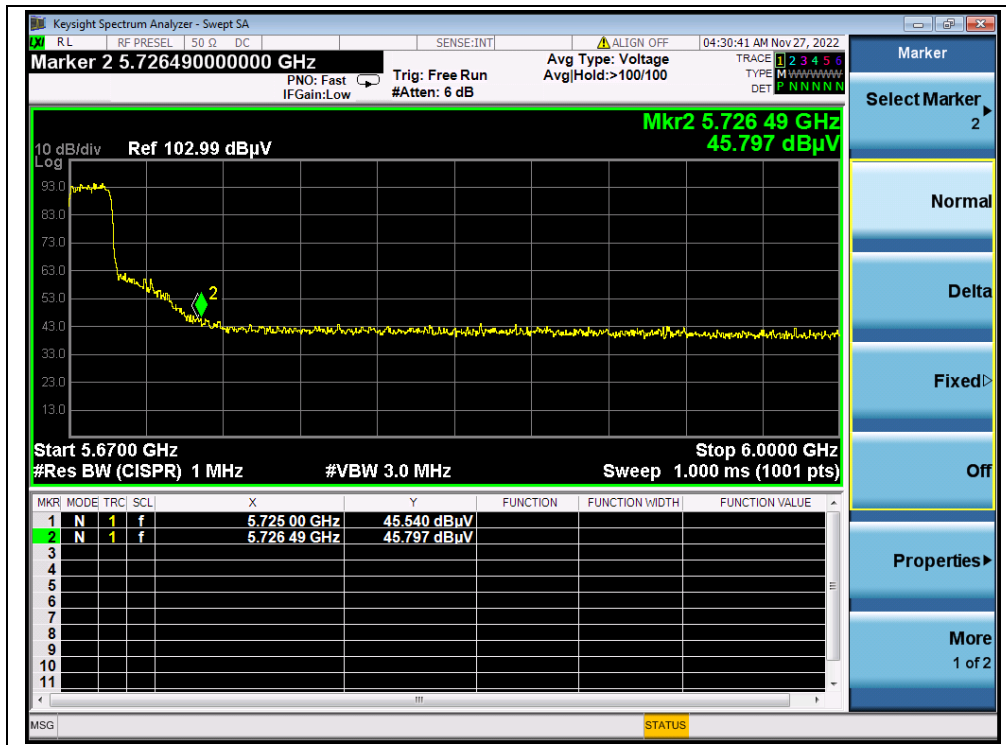
(AVERAGE, Channel 62, 802.11n (HT40))



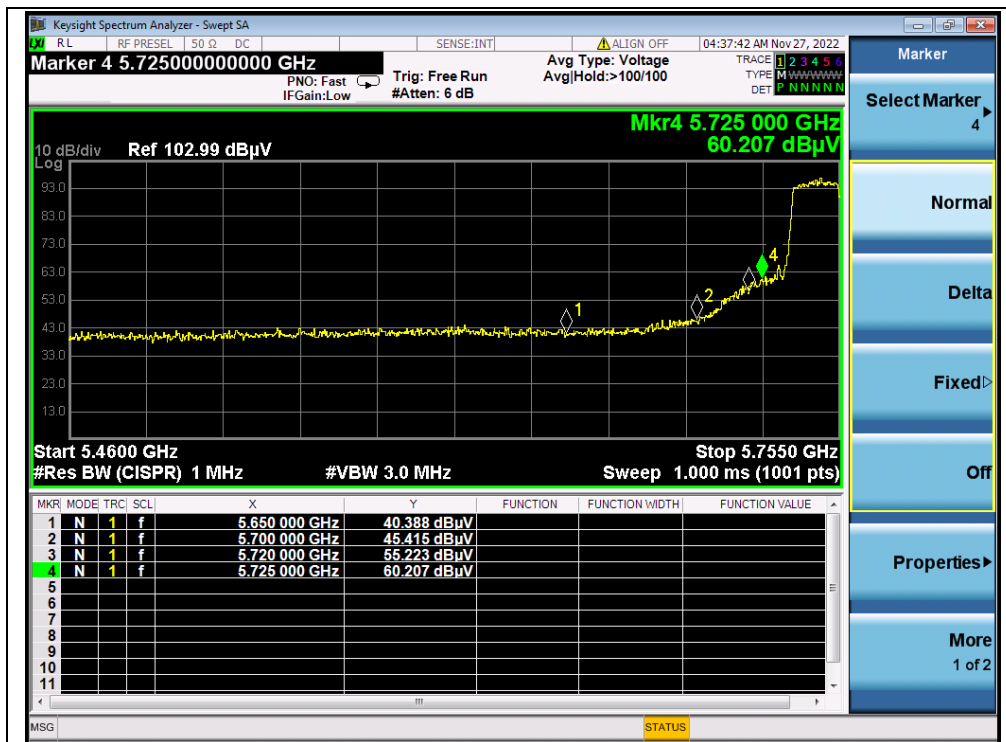
(PEAK, Channel 102, 802.11n (HT40))



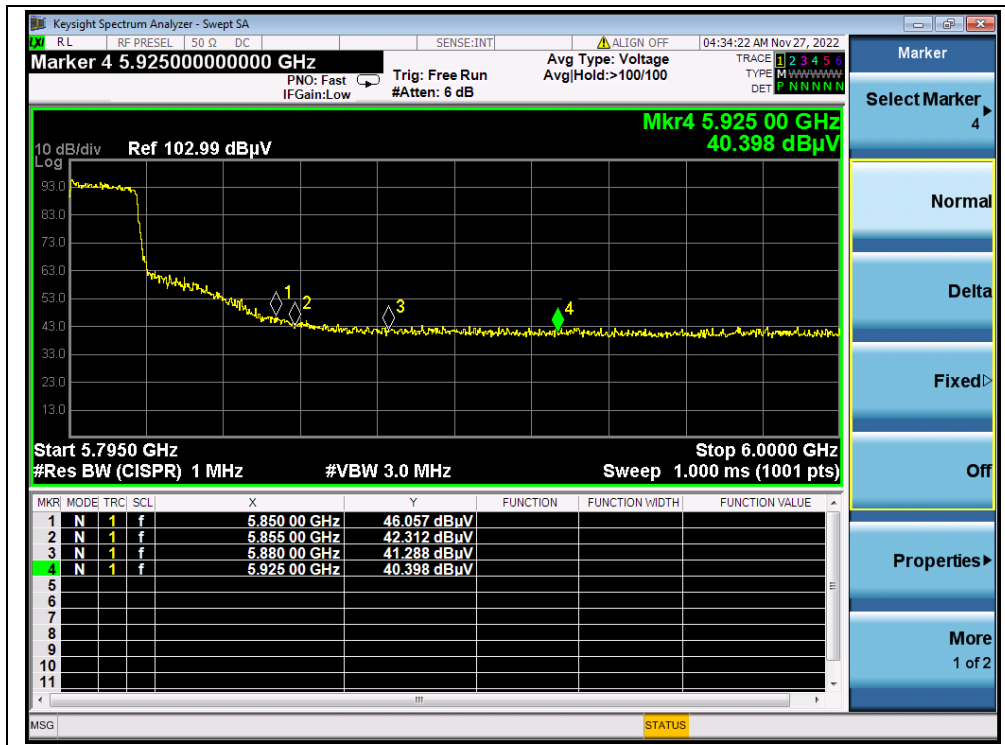
(AVERAGE, Channel 102, 802.11n (HT40))



(PEAK, Channel 142, 802.11n (HT40))



(PEAK, Channel 151, 802.11n (HT40))



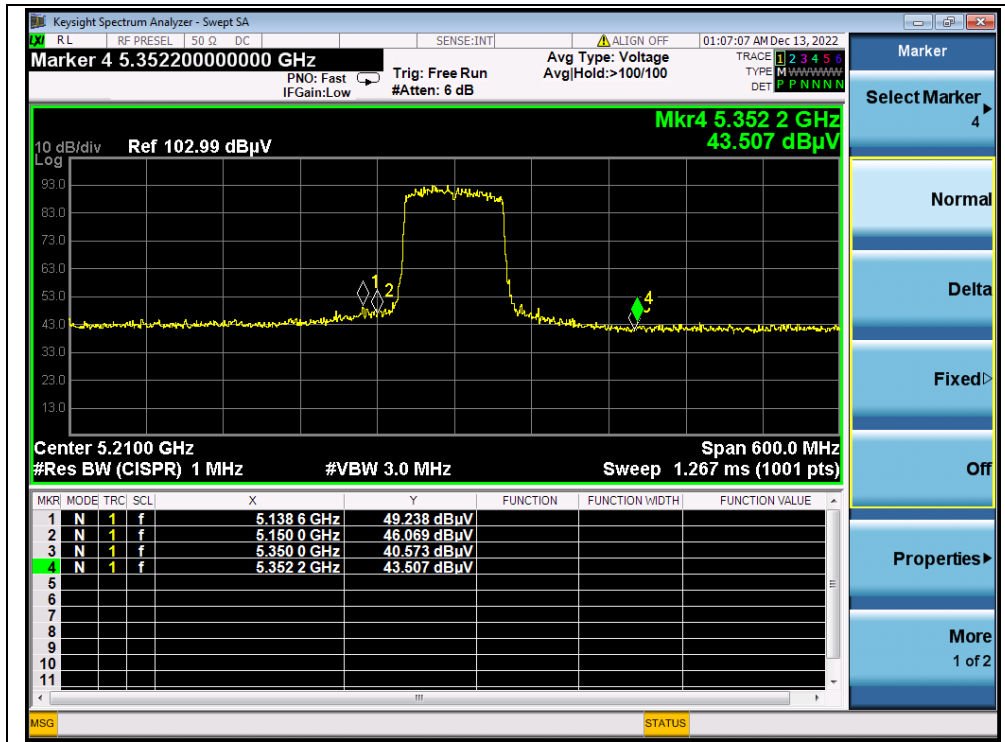
(PEAK, Channel 159, 802.11n (HT40))

**802.11ac (VHT80) Mode****A.Test Verdict:**

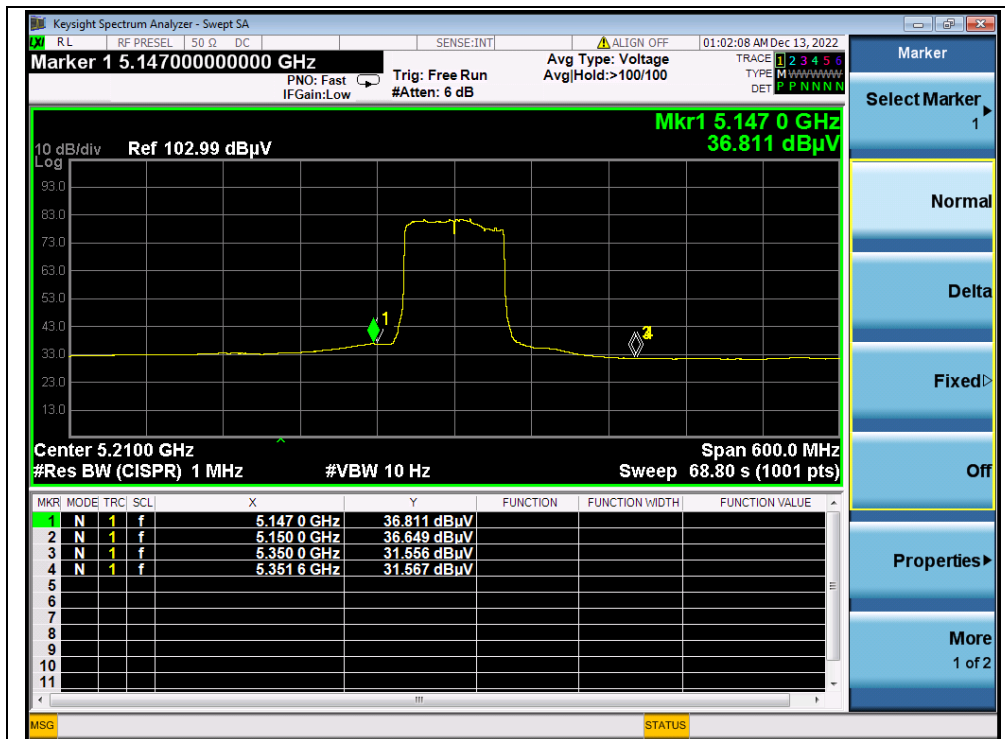
Channel	Frequency (MHz)	Detector	Receiver Reading U_R (dB μ V)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dB μ V/m)	Limit (dB μ V/m)	Verdict
		PK/ AV						
42	5138.60	PK	49.24	-19.54	32.20	61.90	74	PASS
42	5147.00	AV	36.81	-19.54	32.20	49.47	54	PASS
58	5367.40	PK	46.93	-18.80	32.20	60.33	74	PASS
58	5350.00	AV	37.31	-18.80	32.20	50.71	54	PASS
106	5197.16	PK	50.00	-19.20	32.20	63.00	68.23	PASS
106	5470.00	AV	37.81	-19.20	32.20	50.81	54	PASS
138	5810.85	PK	44.26	-19.20	32.20	57.26	68.23	PASS
155	5725.00	PK	56.30	-19.01	32.20	69.49	122.23	PASS
155	5850.00	PK	51.24	-19.01	32.20	64.43	122.23	PASS



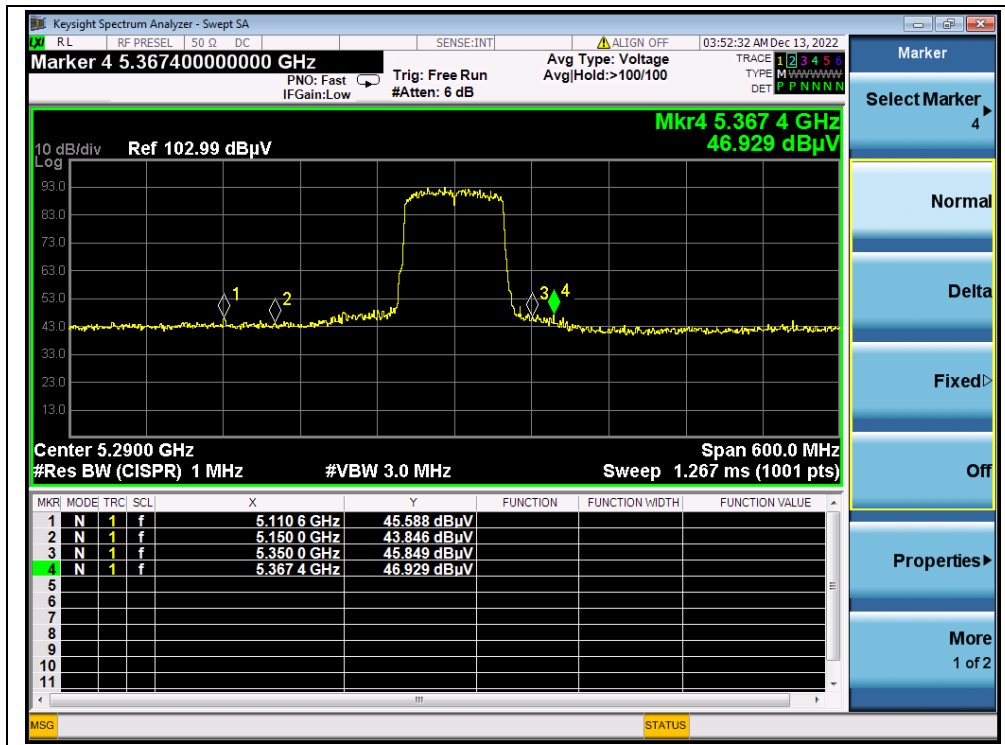
B.Test Plot:



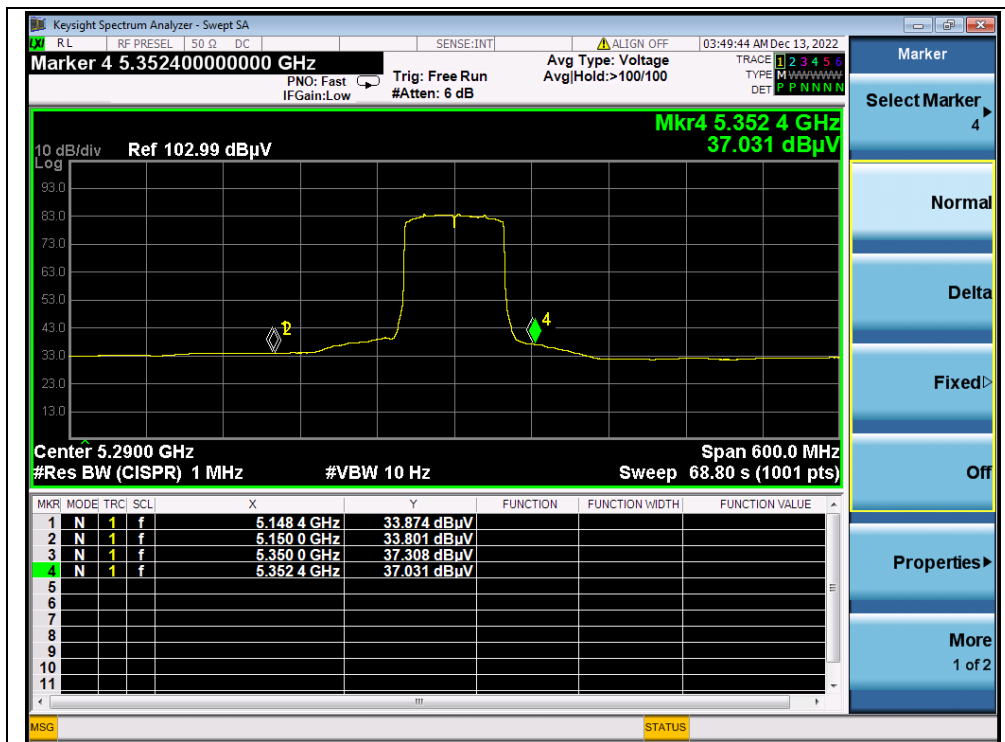
(PEAK, Channel 42, 802.11ac (VHT80))



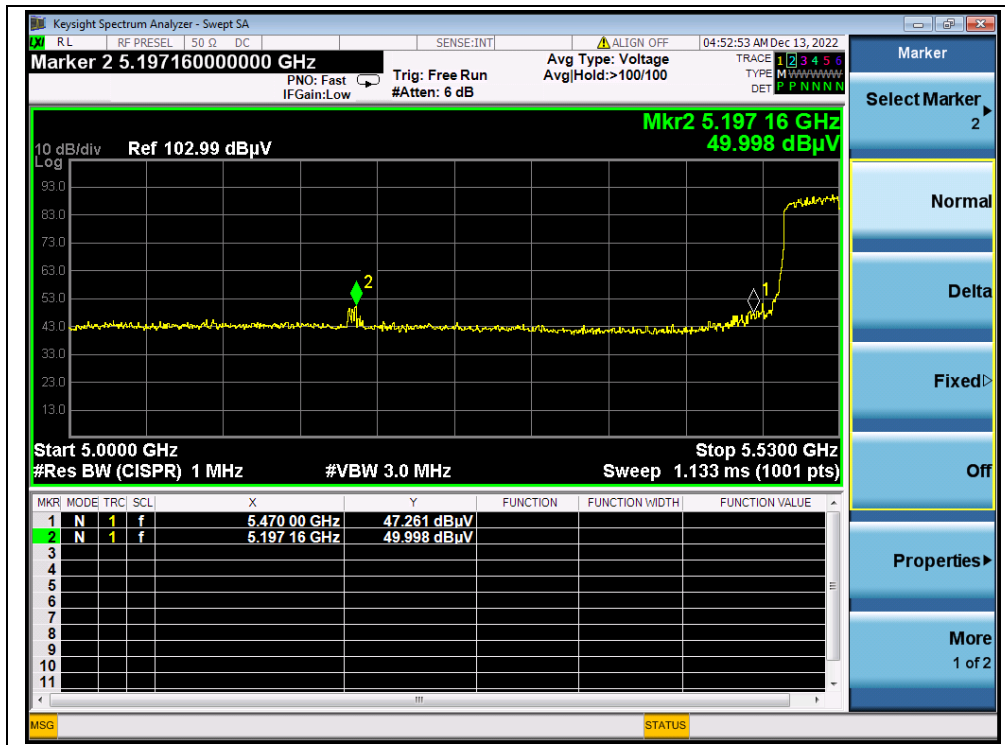
(AVERAGE, Channel 42, 802.11ac (VHT80))



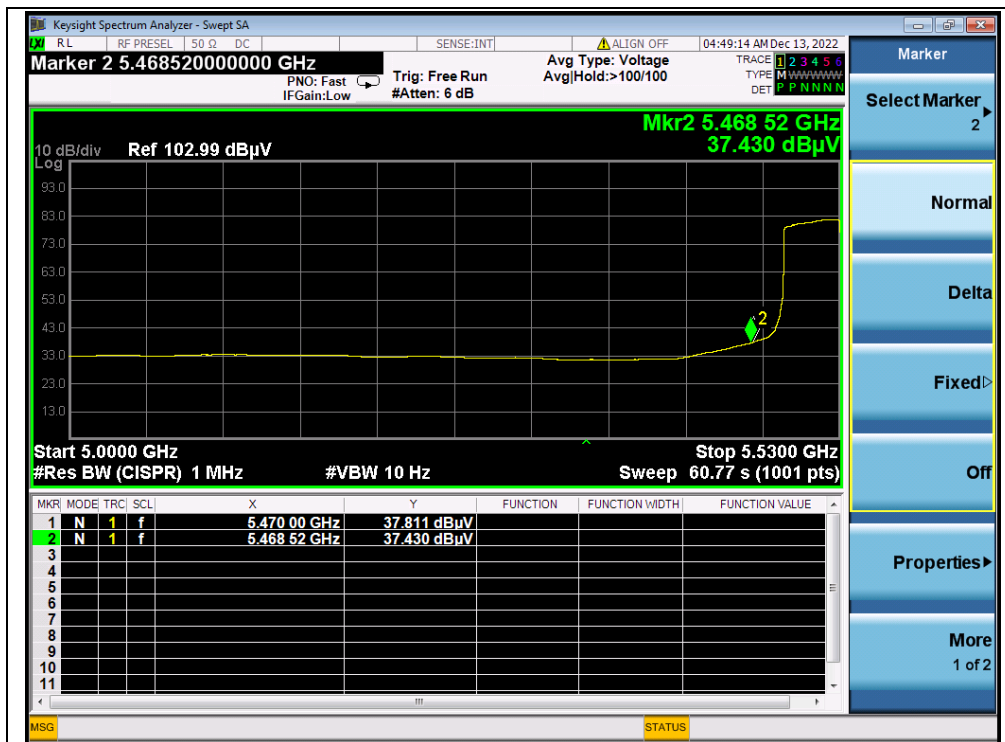
(PEAK, Channel 58, 802.11ac (VHT80))



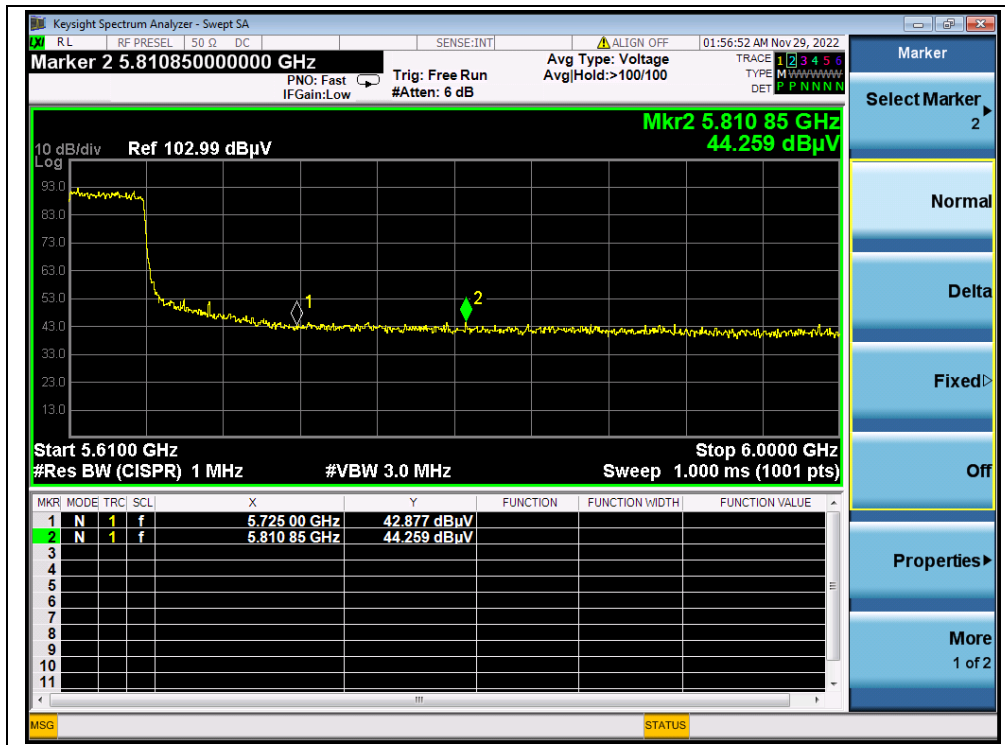
(AVERAGE, Channel 58, 802.11ac (VHT80))



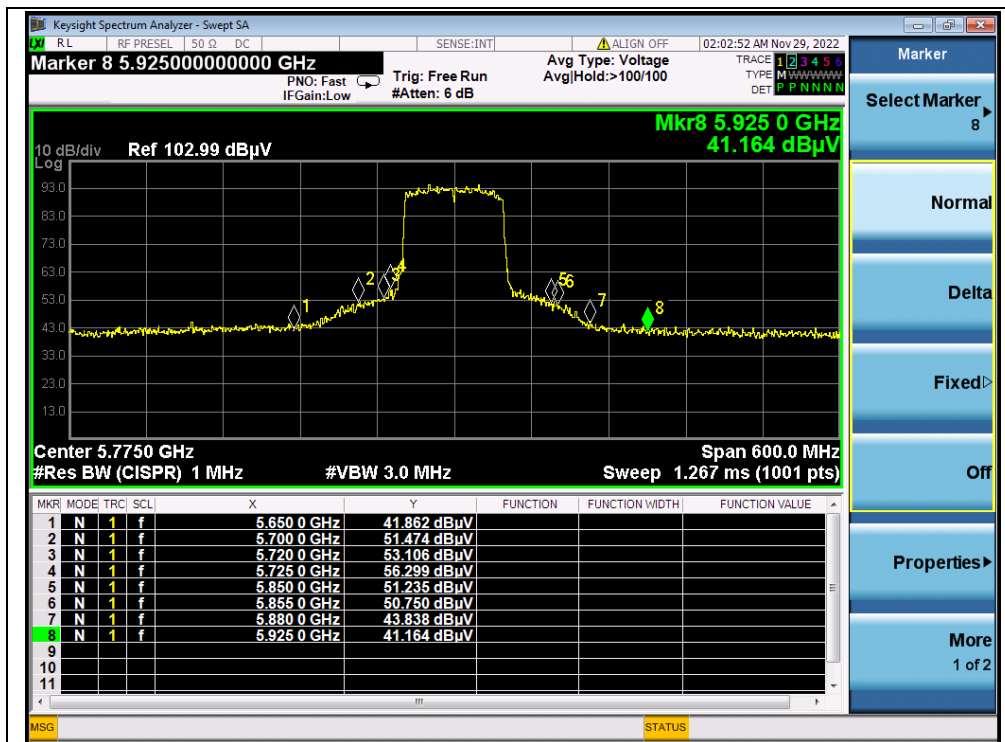
(PEAK, Channel 106, 802.11ac (VHT80))



(AVERAGE, Channel 106, 802.11ac (VHT80))



(PEAK, Channel 138, 802.11ac (VHT80))



(PEAK, Channel 155, 802.11ac (VHT80))

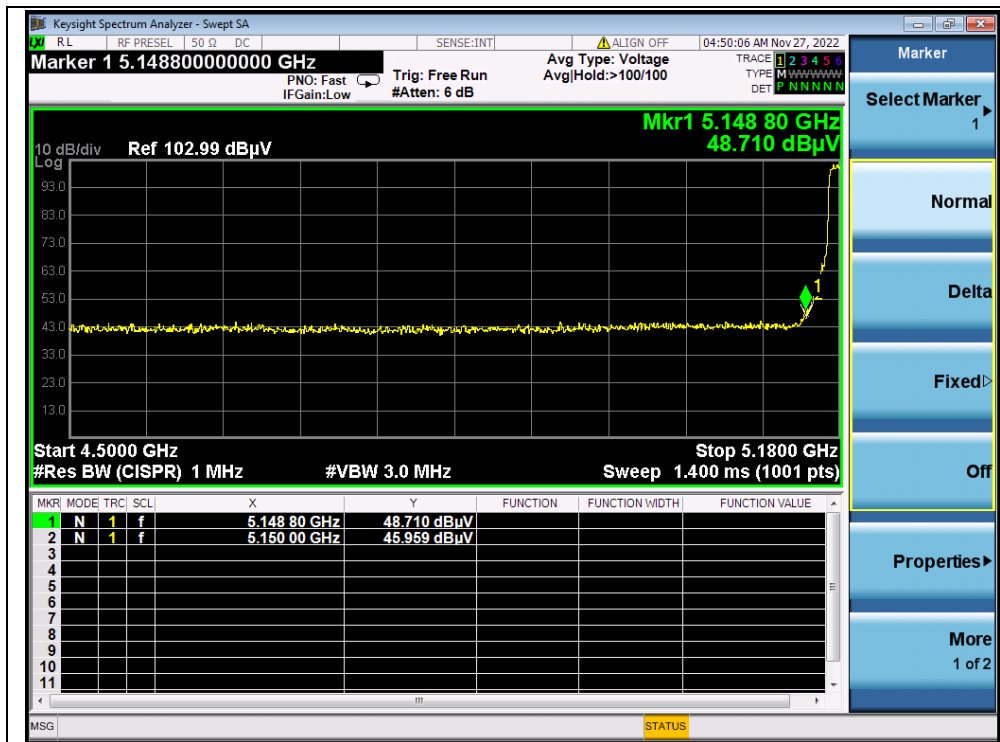


802.11ax (HEW20) Mode

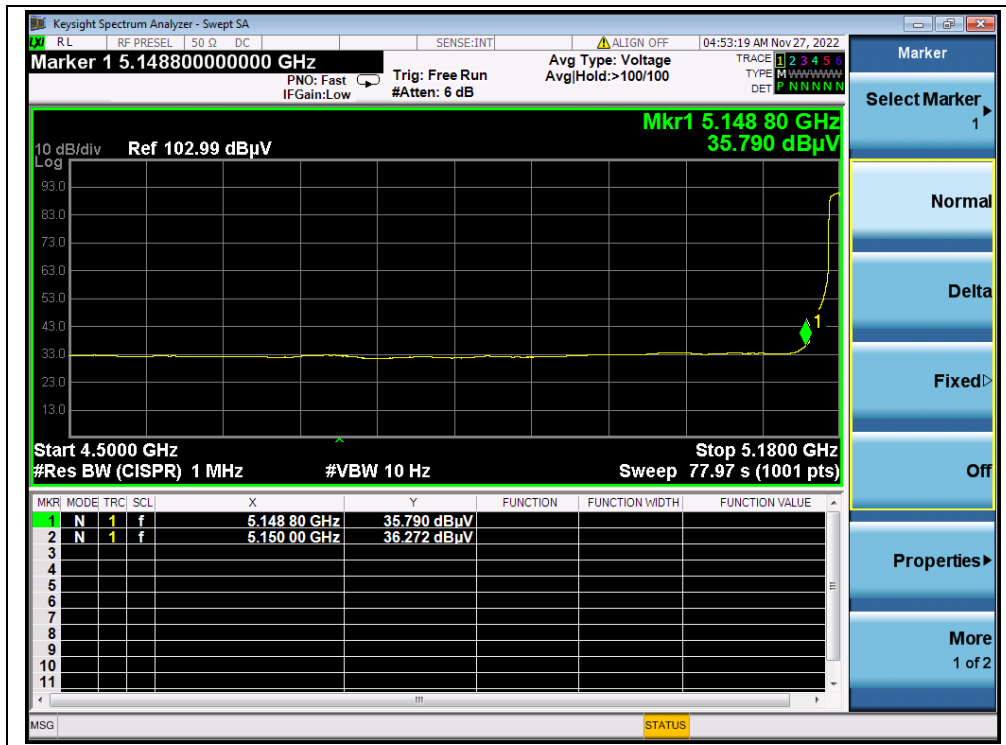
A. Test Verdict:

Channel	Frequency (MHz)	Detector	Receiver Reading	A_T	A_{Factor}	Max. Emission	Limit (dB μ V/m)	Verdict
		PK/ AV	U_R (dB μ V)	(dB)	(dB@3m)	E (dB μ V/m)		
36	5148.80	PK	48.71	-19.54	32.20	61.37	74	PASS
36	5150.00	AV	36.27	-19.54	32.20	48.93	54	PASS
64	5351.85	PK	44.29	-18.80	32.20	57.69	74	PASS
64	5350.00	AV	32.75	-18.80	32.20	46.15	54	PASS
100	5275.50	PK	44.72	-19.20	32.20	57.72	68.23	PASS
100	5470.00	AV	33.00	-19.20	32.20	46.00	54	PASS
144	5849.40	PK	44.64	-19.20	32.20	57.64	68.23	PASS
149	5725.00	PK	55.40	-19.01	32.20	68.59	122.23	PASS
165	5850.00	PK	45.68	-19.01	32.20	58.87	122.23	PASS

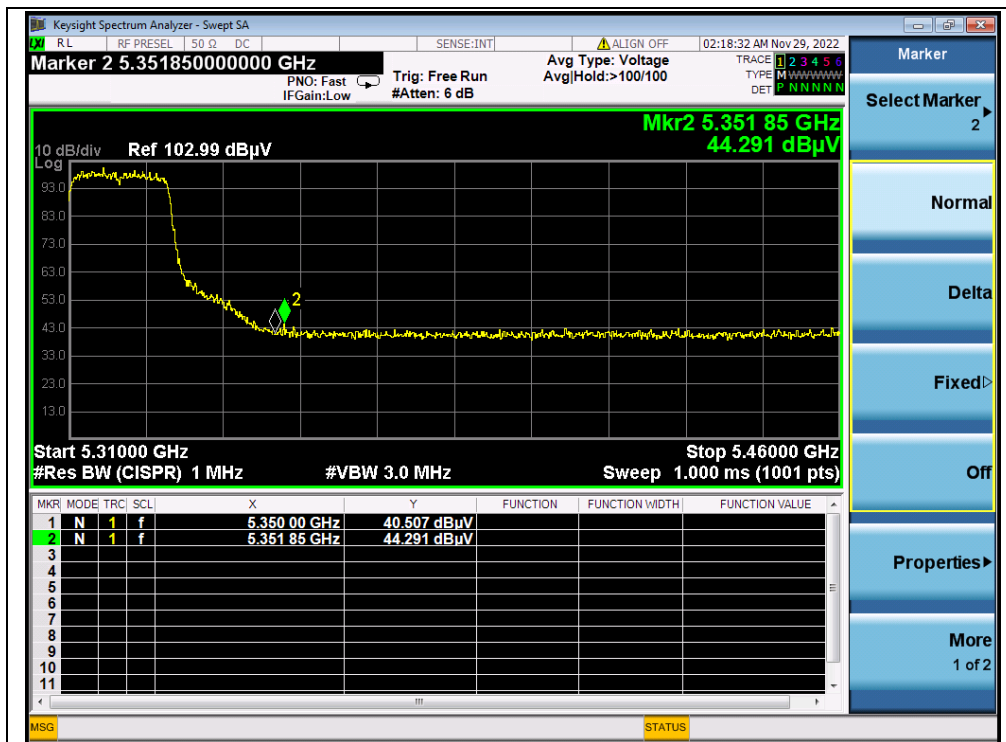
B. Test Plot:



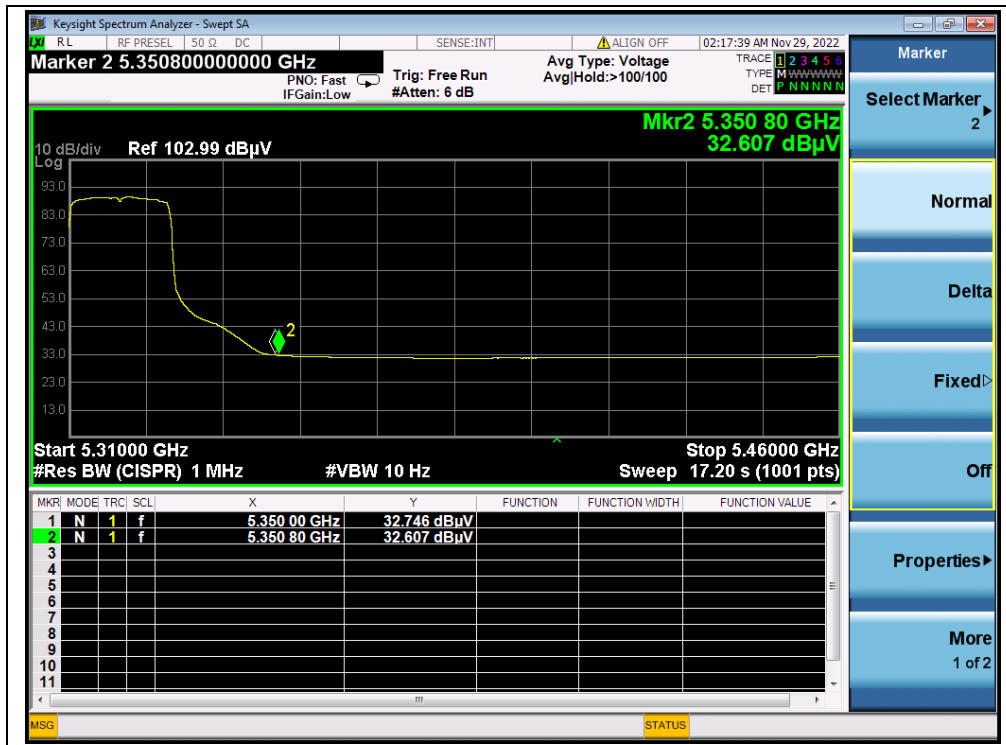
(PEAK, Channel 36, 802.11ax (HEW20))



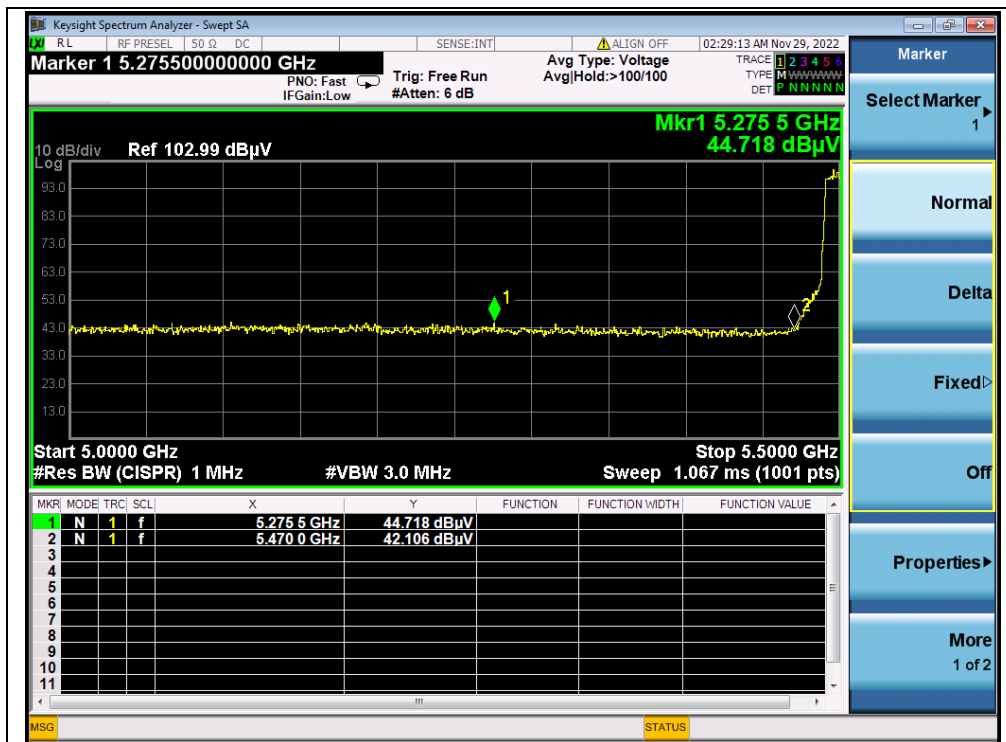
(AVERAGE, Channel 36, 802.11ax (HEW20))



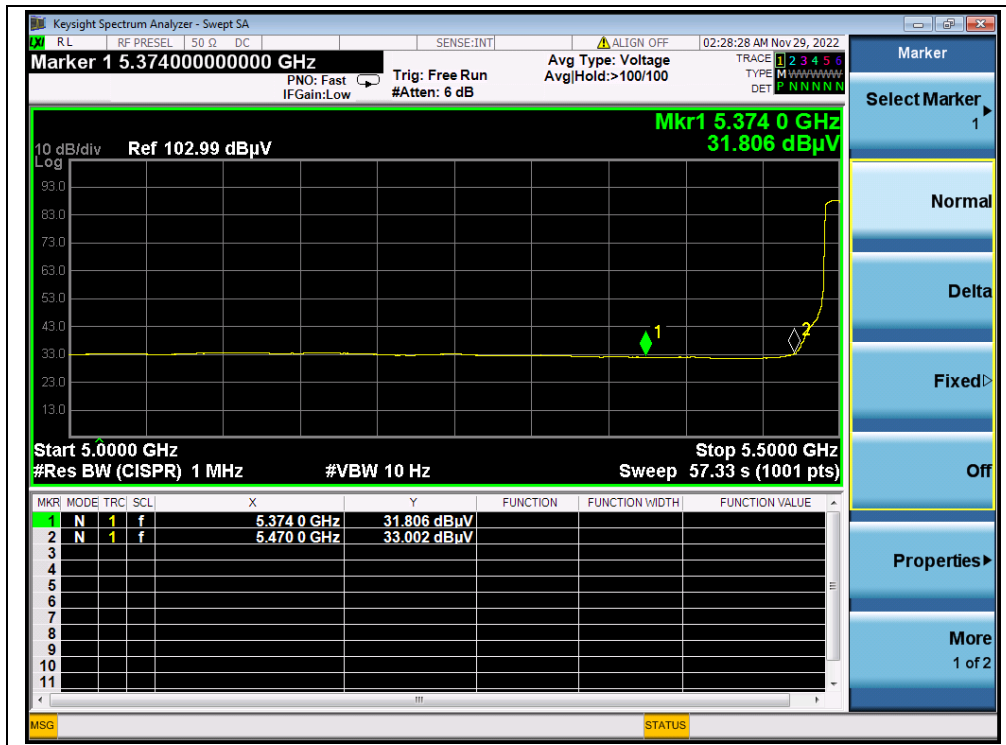
(PEAK, Channel 64, 802.11ax (HEW20))



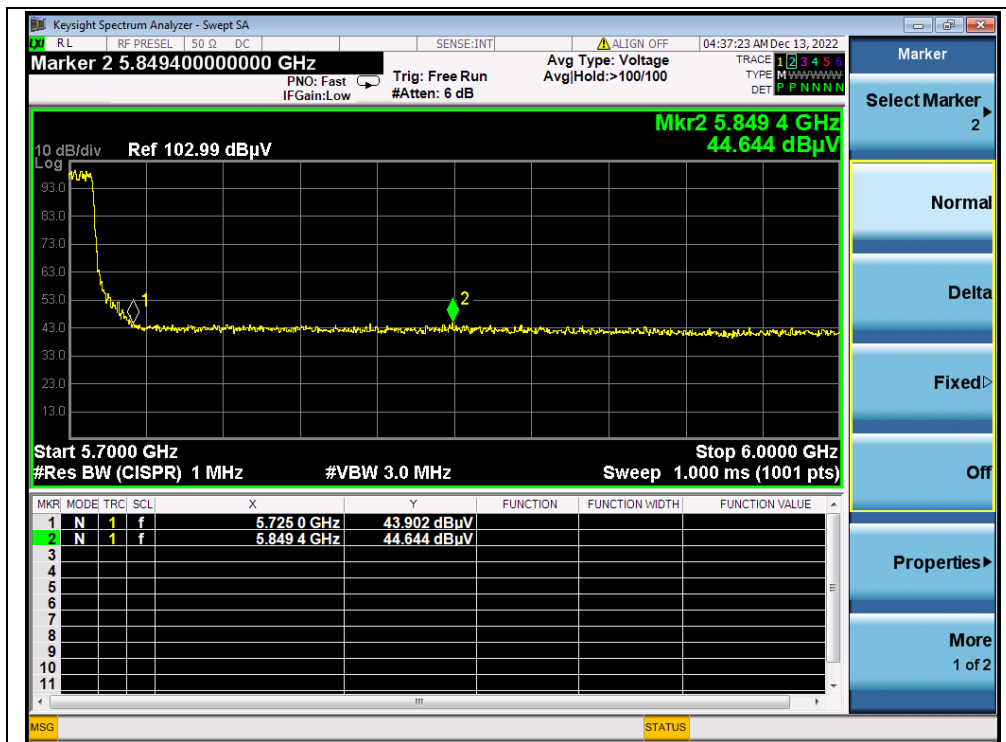
(AVERAGE, Channel 64, 802.11ax (HEW20))



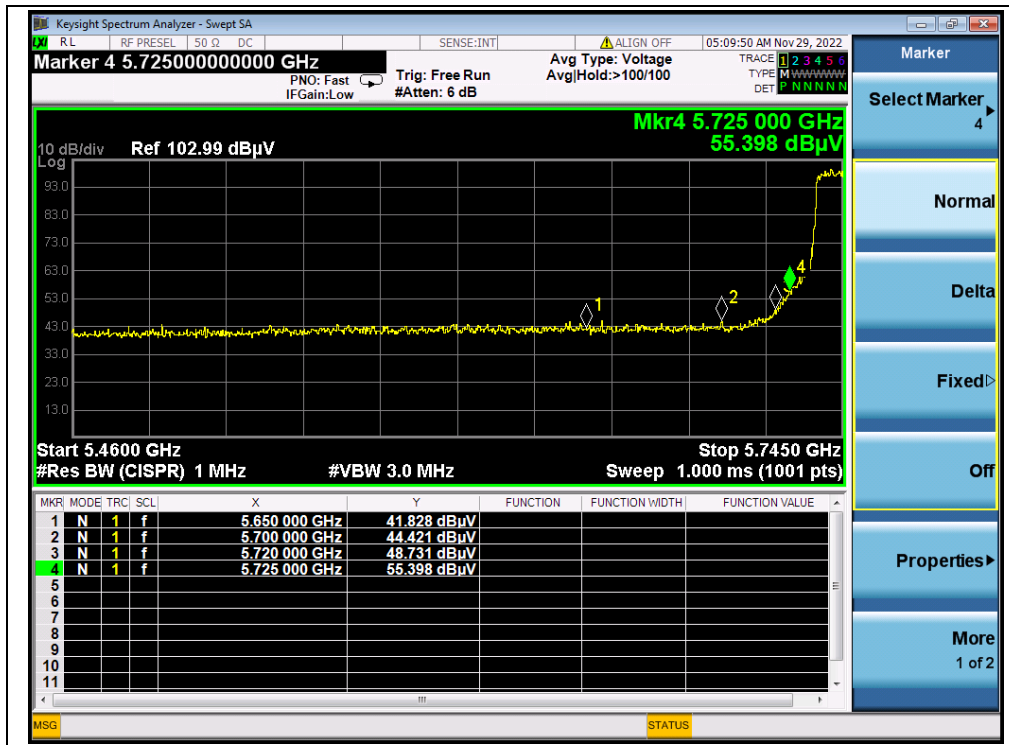
(PEAK, Channel100, 802.11ax (HEW20))



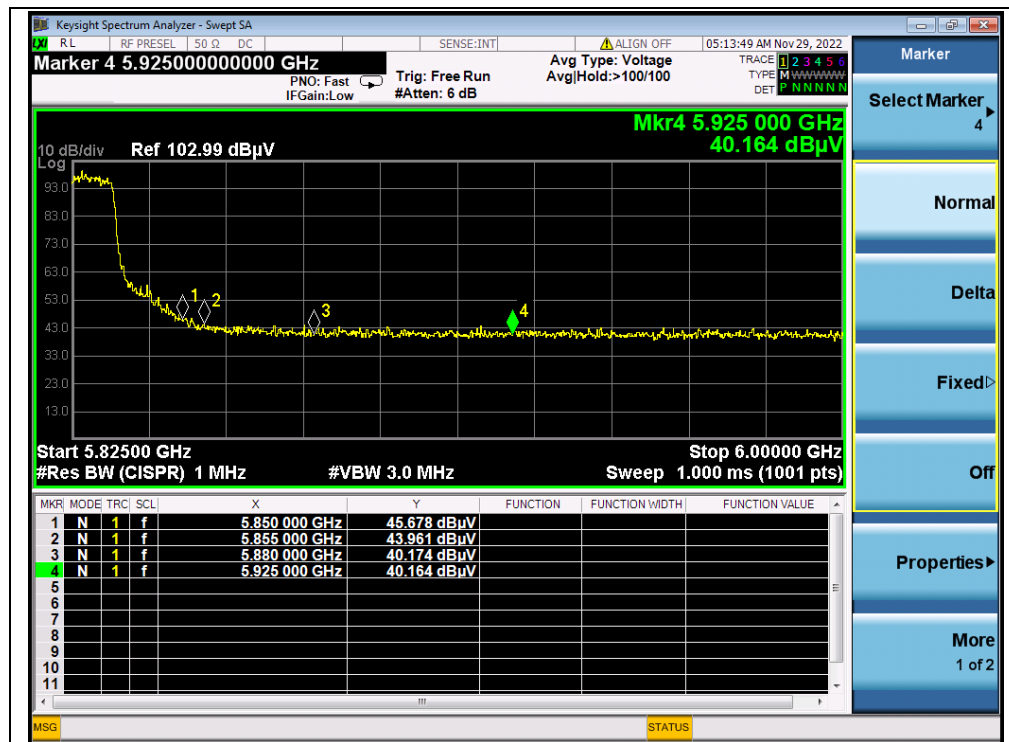
(AVERAGE, Channel 100, 802.11ax (HEW20))



(PEAK, Channel 144, 802.11ax (HEW20))



(PEAK, Channel 149, 802.11ax (HEW20))



(PEAK, Channel 165, 802.11ax (HEW20))

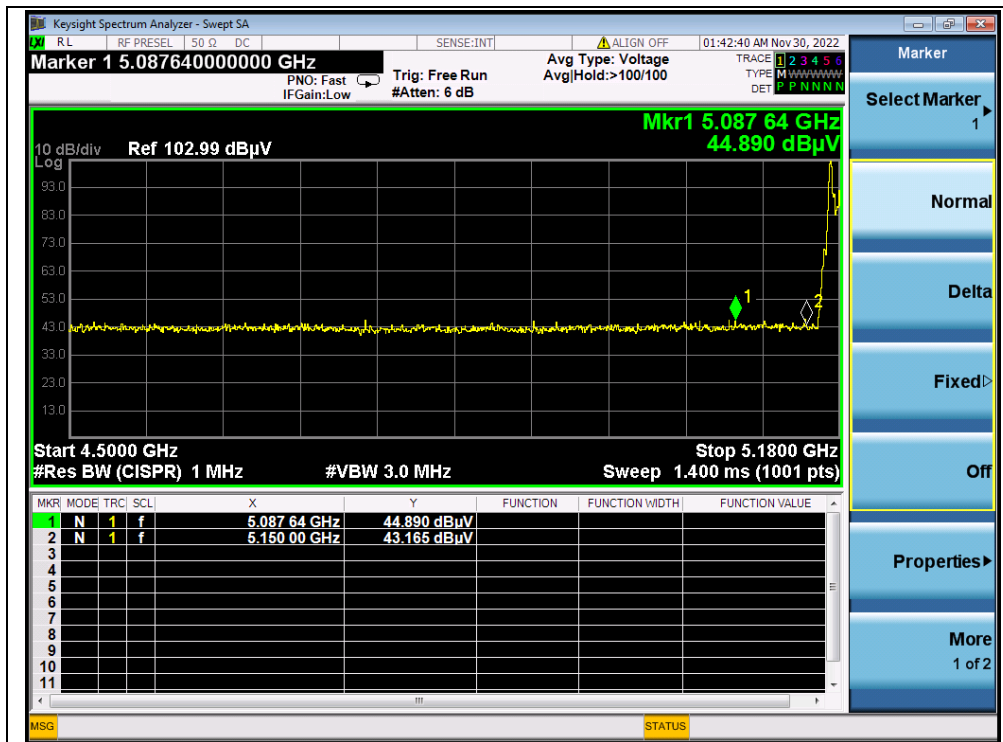


802.11ax (HEW20) RU26 Mode

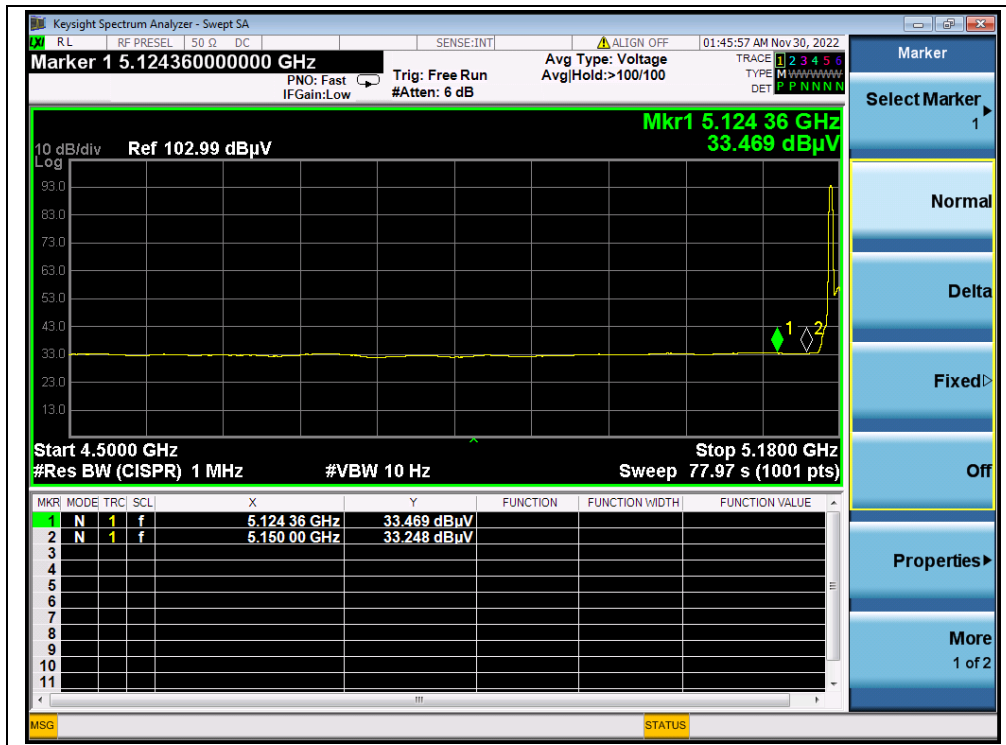
A. Test Verdict:

Channel	Frequency (MHz)	Detector	Receiver Reading	A_T	A_{Factor}	Max. Emission	Limit (dB μ V/m)	Verdict
		PK/ AV	U_R (dB μ V)	(dB)	(dB@3m)	E (dB μ V/m)		
36	5087.64	PK	44.89	-19.54	32.20	57.55	74	PASS
36	5124.36	AV	33.47	-19.54	32.20	46.13	54	PASS
64	5373.15	PK	42.54	-18.80	32.20	55.94	74	PASS
64	5350.00	AV	31.64	-18.80	32.20	45.04	54	PASS
100	5222.87	PK	44.49	-19.20	32.20	57.49	68.23	PASS
100	5470.00	AV	31.76	-19.20	32.20	44.76	54	PASS
144	5749.10	PK	44.71	-19.20	32.20	57.71	68.23	PASS
149	5725.00	PK	42.48	-19.01	32.20	55.67	122.23	PASS
165	5880.00	PK	42.50	-19.01	32.20	55.69	101.53	PASS

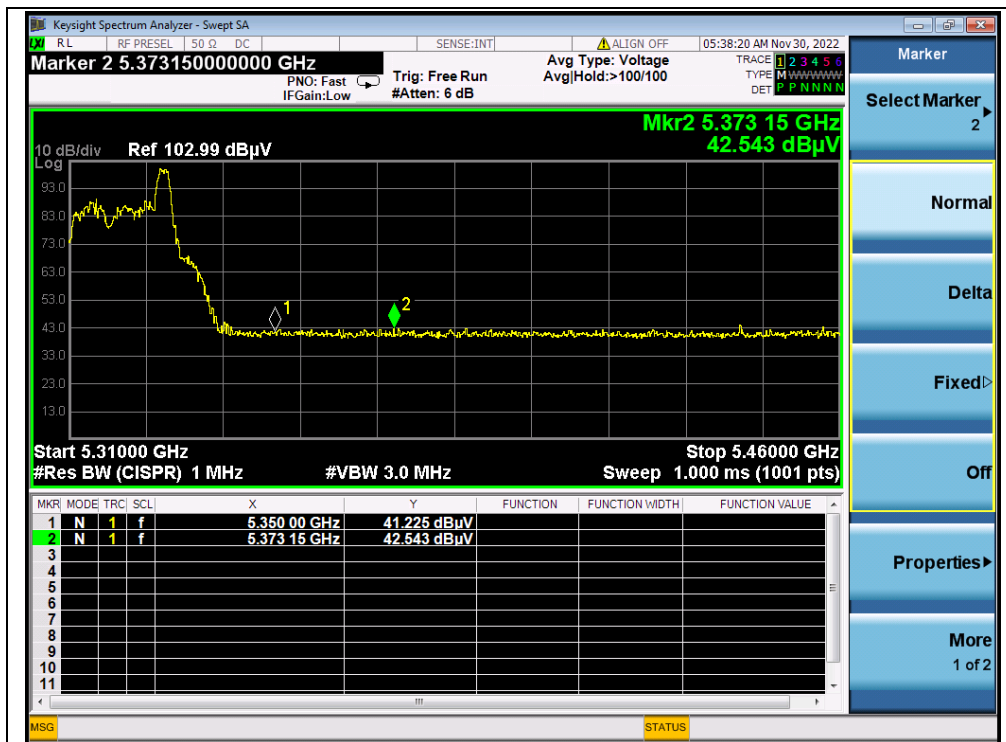
B. Test Plot:



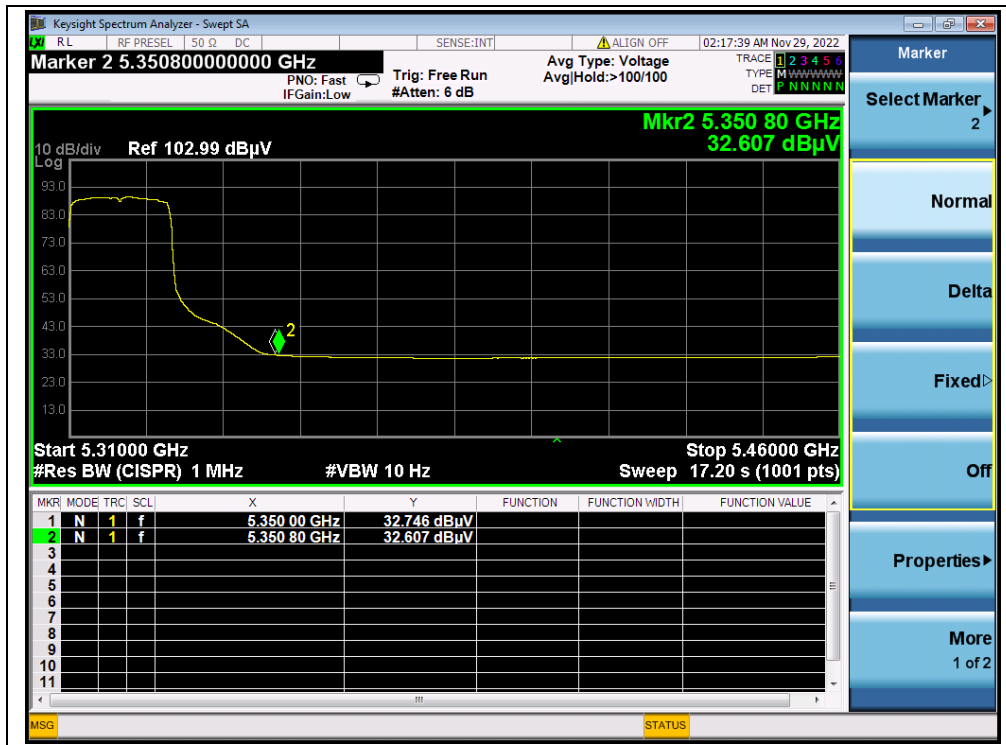
(PEAK, Channel 36, 802.11ax (HEW20) RU26)



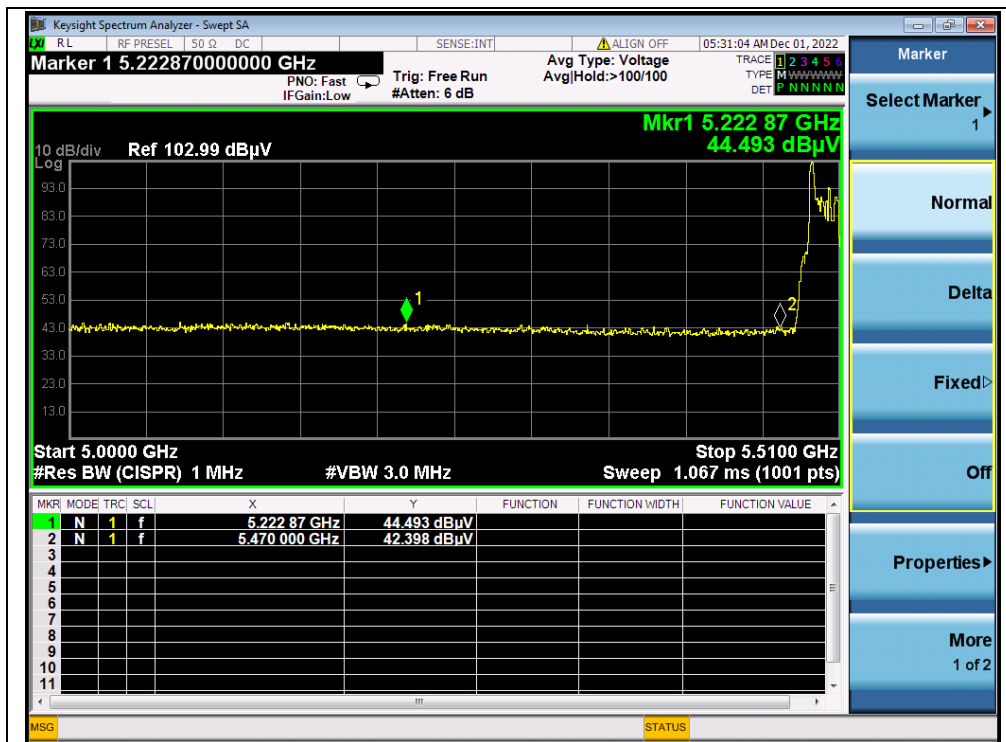
(AVERAGE, Channel 36, 802.11ax (HEW20) RU26)



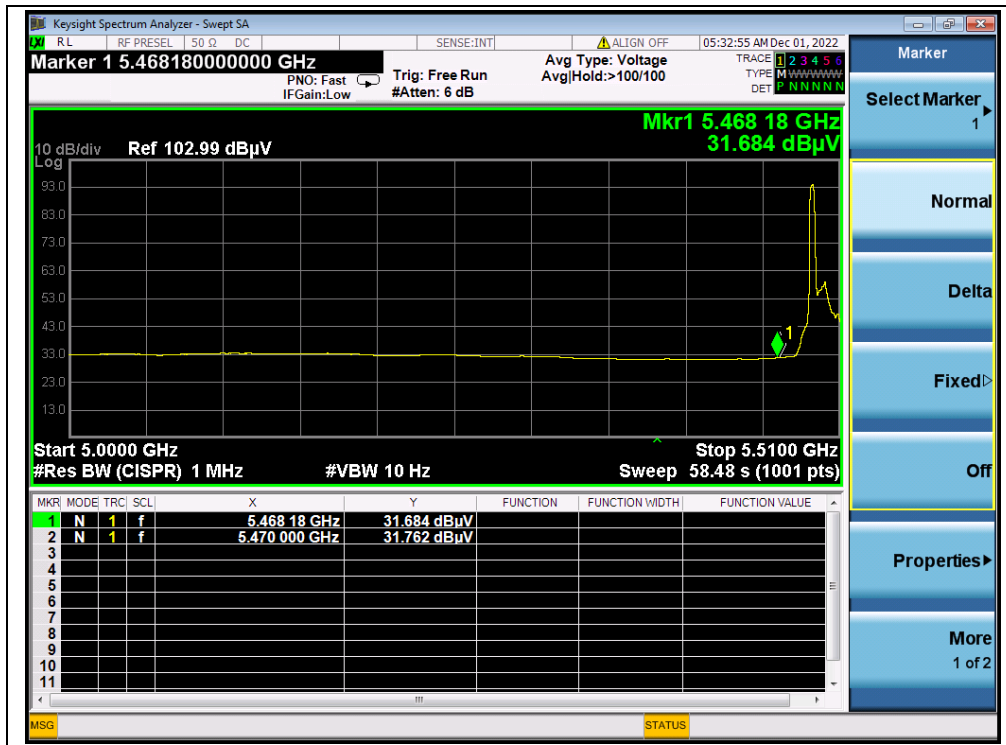
(PEAK, Channel 64, 802.11ax (HEW20) RU26)



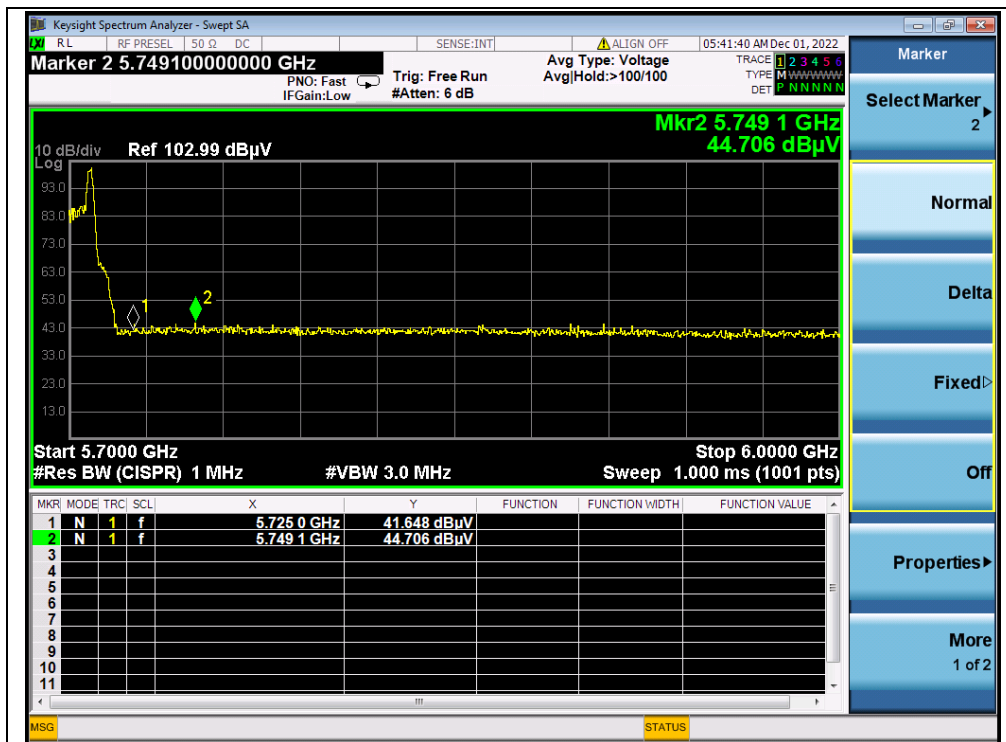
(AVERAGE, Channel 64, 802.11ax (HEW20) RU26)



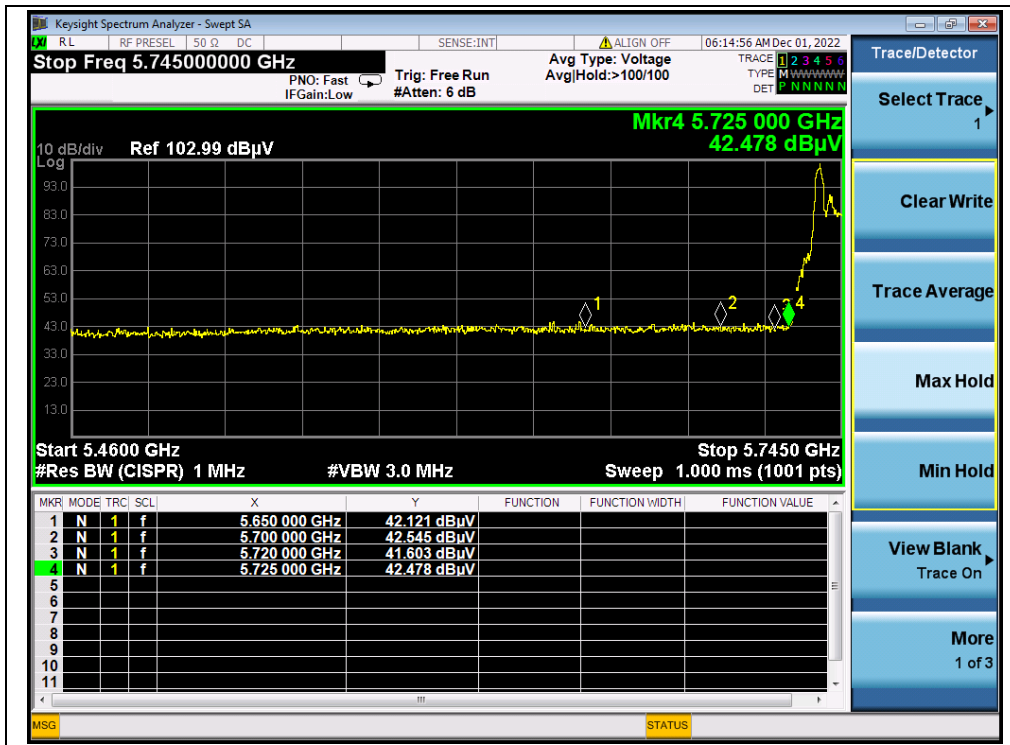
(PEAK, Channel100, 802.11ax (HEW20) RU26)



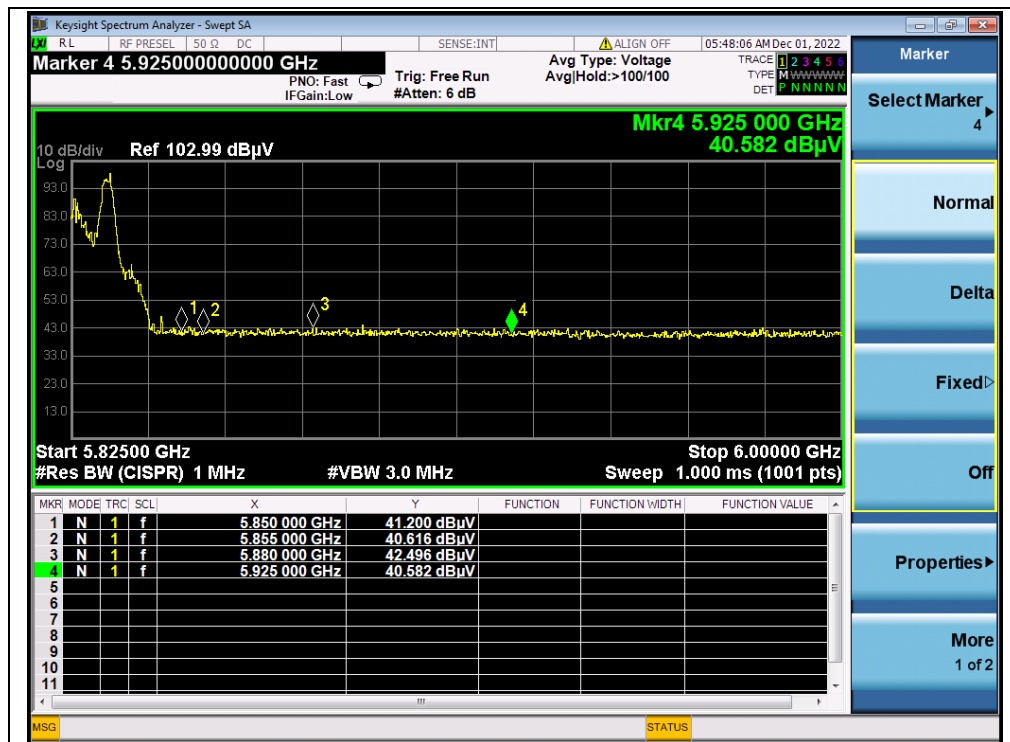
(AVERAGE, Channel 100, 802.11ax (HEW20) RU26)



(PEAK, Channel 144, 802.11ax (HEW20) RU26)



(PEAK, Channel 149, 802.11ax (HEW20) RU26)



(PEAK, Channel 165, 802.11ax (HEW20) RU26)



2.9. Radiated Emission

2.9.1. Requirement

The peak emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

- (1) For transmitters operating in the 5.15–5.25 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of -27dBm/MHz.
- (2) For transmitters operating in the 5.25–5.35 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of -27dBm/MHz.
- (3) 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 EIRP of -27dBm/MHz.
- (4) For transmitters operating in the 5.725-5.85 GHz band: All emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of -17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of -27 dBm/MHz.

The following formula is used to convert the equipment isotropic radiated power(e.i.r.p.) to field strength (dBμV/m);

$$E = 1000000 \times \sqrt{30P} / 3 \mu\text{V/m}$$

where P is the EIRP in Watts

Therefore: -27 dBm/MHz = 68.23 dBuV/m

Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in § 15.209. According to FCC section 15.209 (a), except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

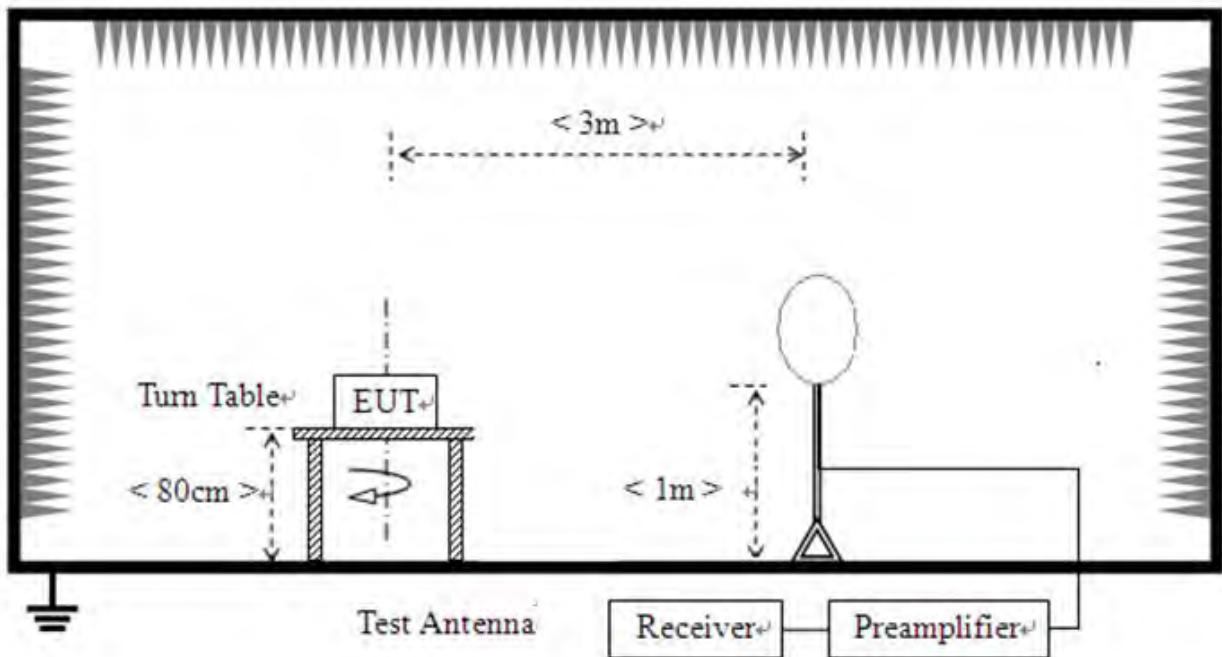
Frequency (MHz)	Field Strength (μV/m)	Measurement Distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

For Above 1000MHz, the emission limit in this paragraph is based on measurement instrumentation employing an average detector, measurement using instrumentation with a peak detector function, corresponding to 20dB above the maximum permitted average limit. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), also should comply with the radiated emission limits specified in Section 15.209(a)(above table).

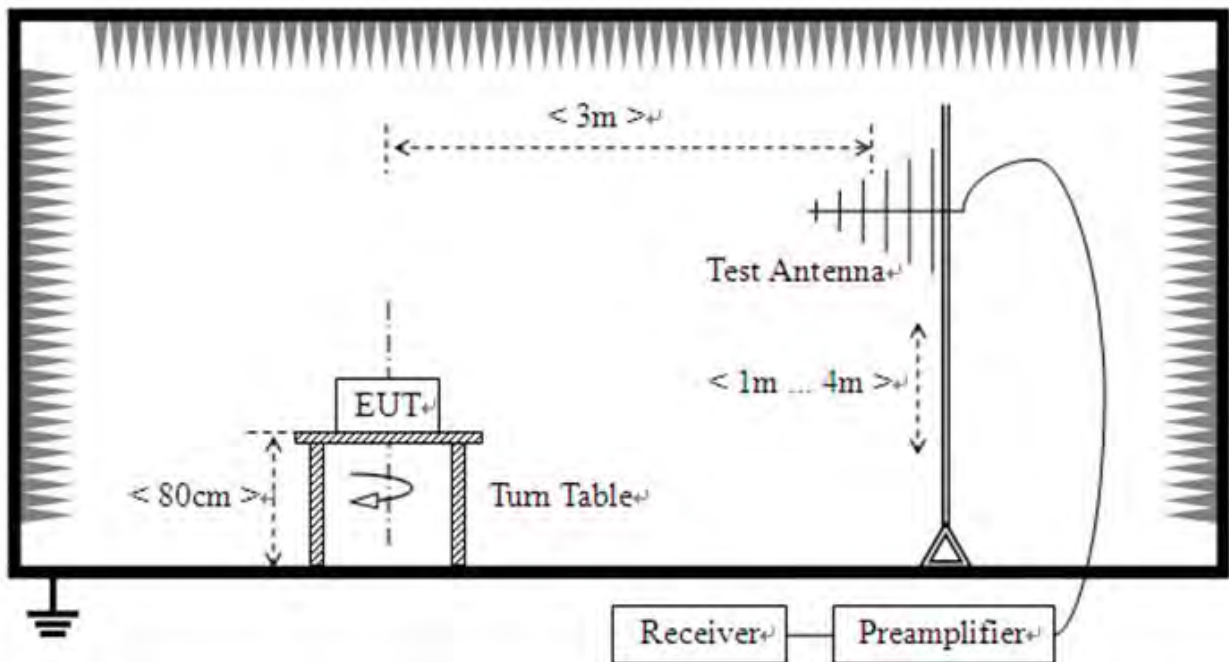
2.9.2. Test Description

Test Setup:

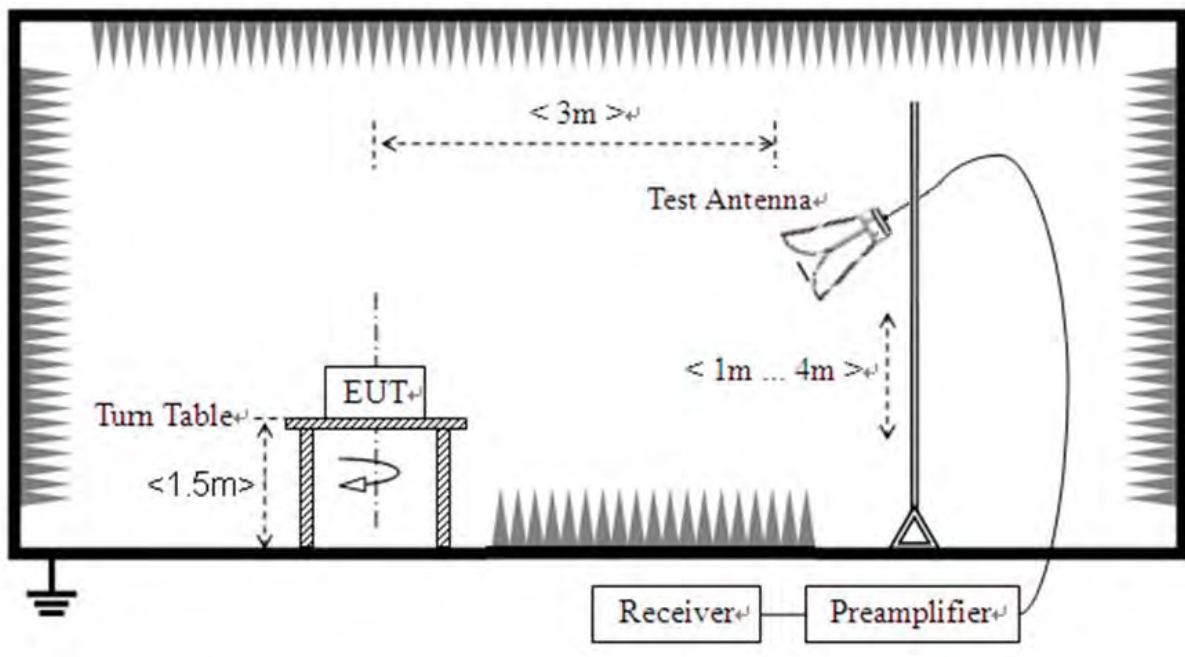
- 1) For radiated emissions from 9kHz to 30MHz



2) For radiated emissions from 30MHz to1GHz



3) For radiated emissions above 1GHz



The EUT is placed on a non-conducting table 80 cm above the ground plane for measurement below 1GHz; 1.5 m above the ground plane for measurement above 1GHz. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.10. The EUT is set to transmit in a continuous mode.



For measurements below 30MHz, the emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9kHz-90 kHz, 110kHz-490 kHz. Radiated emission limits in these two bands are based on measurements employing an average detector.

For measurements below 1GHz the resolution bandwidth is set to 100kHz for peak detection measurements or 120kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For measurements above 1GHz the resolution bandwidth is set to 1MHz, the video band width is set to 3MHz for peak measurements and as applicable for average measurements.

The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

2.9.3. Test Result

According to ANSI C63.10, because of peak detection will yield amplitudes equal to or greater than amplitudes measured with the quasi-peak (or average) detector, the measurement data from a spectrum analyzer peak detector will represent the worst-case results, if the peak measured value complies with the quasi-peak (or average) limit, it is unnecessary to perform a quasi-peak measurement (or average).

The measurement results are obtained as below:

$$E \text{ [dB}\mu\text{V/m]} = U_R + A_T + A_{\text{Factor}} \text{ [dB]}; A_T = L_{\text{Cable loss}} \text{ [dB]} - G_{\text{preamp}} \text{ [dB]}$$

A_T : Total correction Factor except Antenna

U_R : Receiver Reading

G_{preamp} : Preamplifier Gain

A_{Factor} : Antenna Factor at 3m

During the test, the total correction Factor A_T and A_{Factor} were built in test software.

Note 1: All radiated emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

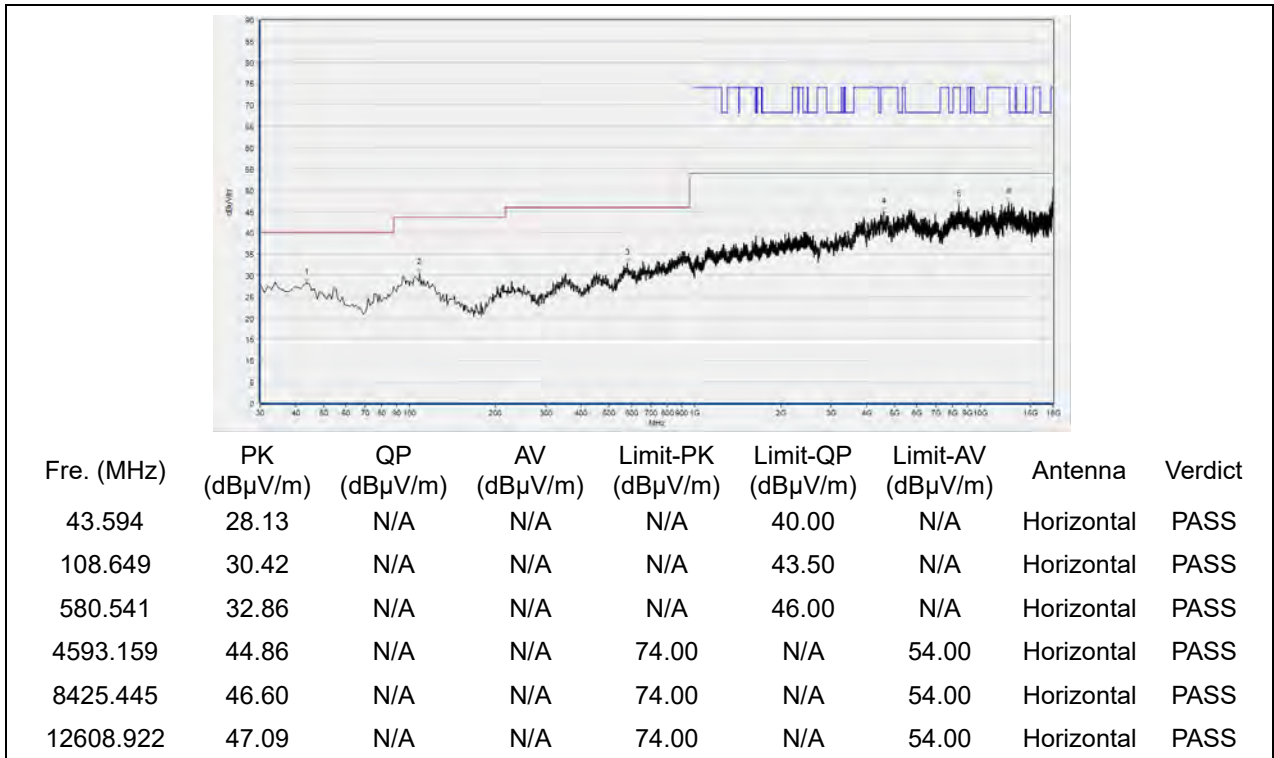
Note 2: For the frequency, which started from 9kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit was not recorded.

Note 3: For the frequency, which started from 18GHz to 40GHz, was pre-scanned and the result which was 20dB lower than the limit was not recorded.

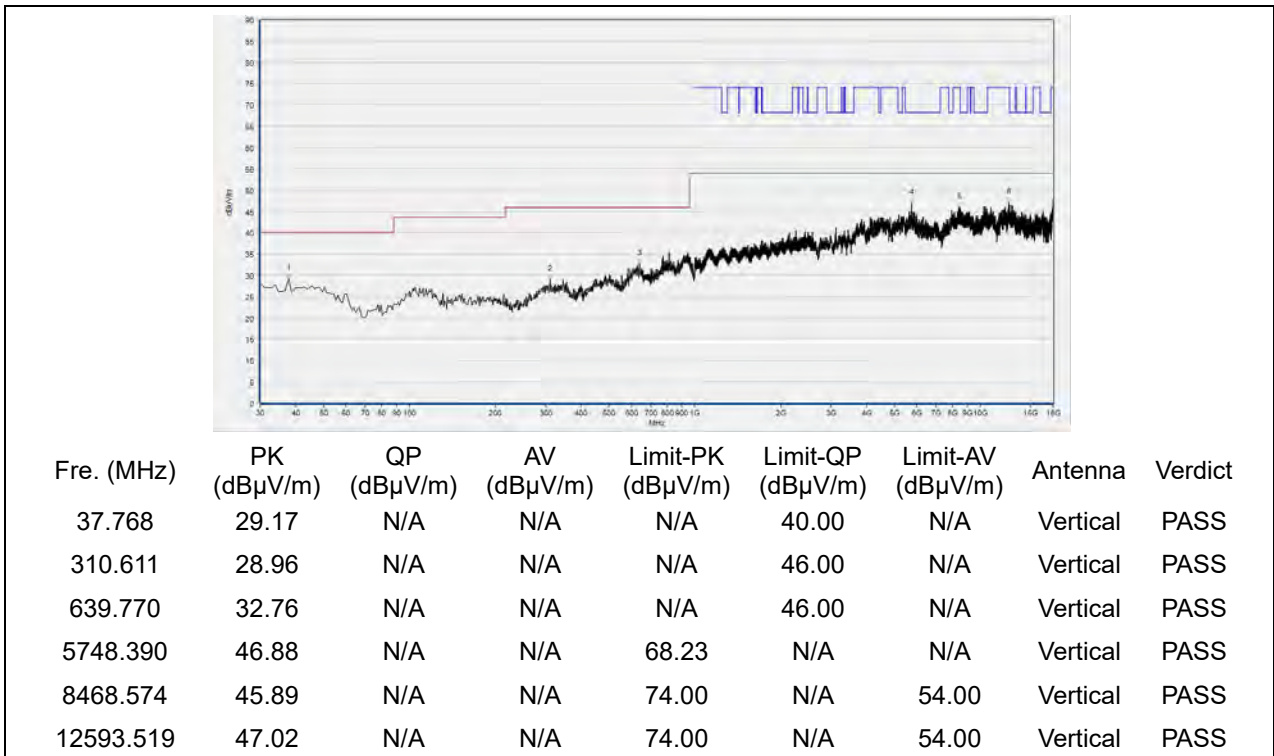
Note 4: All test modes and bandwidth were considered and evaluated respectively by performing full test, only the worst data were recorded for each bandwidth.

Antenna Type A, 802.11a Mode

Plot for Channel 36

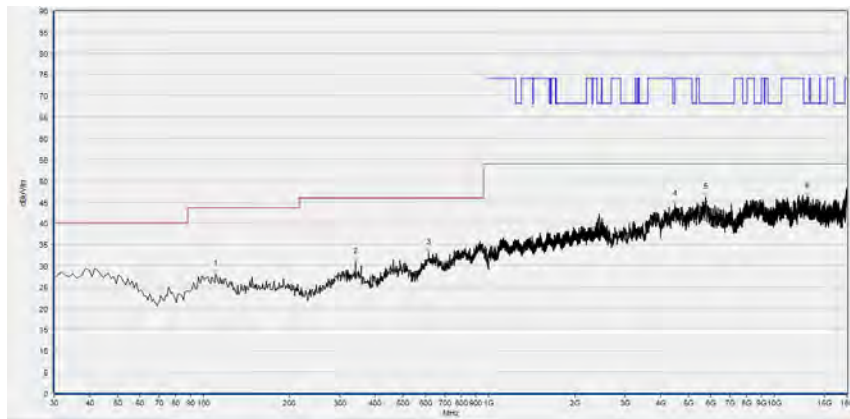


(Antenna Horizontal, 30MHz to 18GHz)



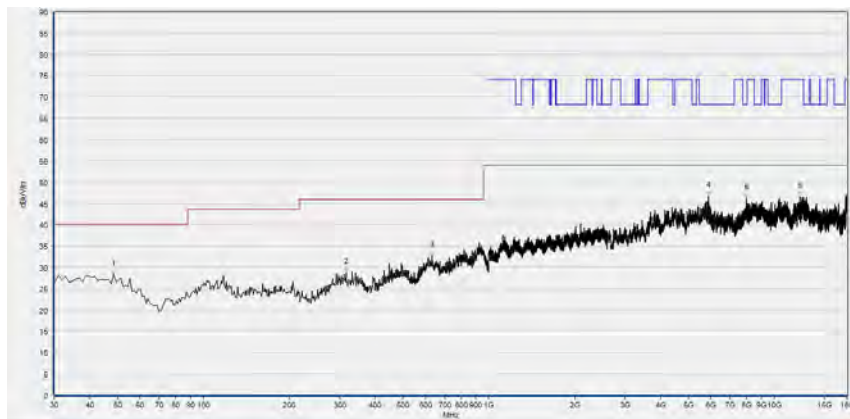
(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 44



Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
110.591	27.94	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
340.711	30.78	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
615.495	33.06	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
4497.660	44.45	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
5748.390	46.17	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
13058.692	46.22	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

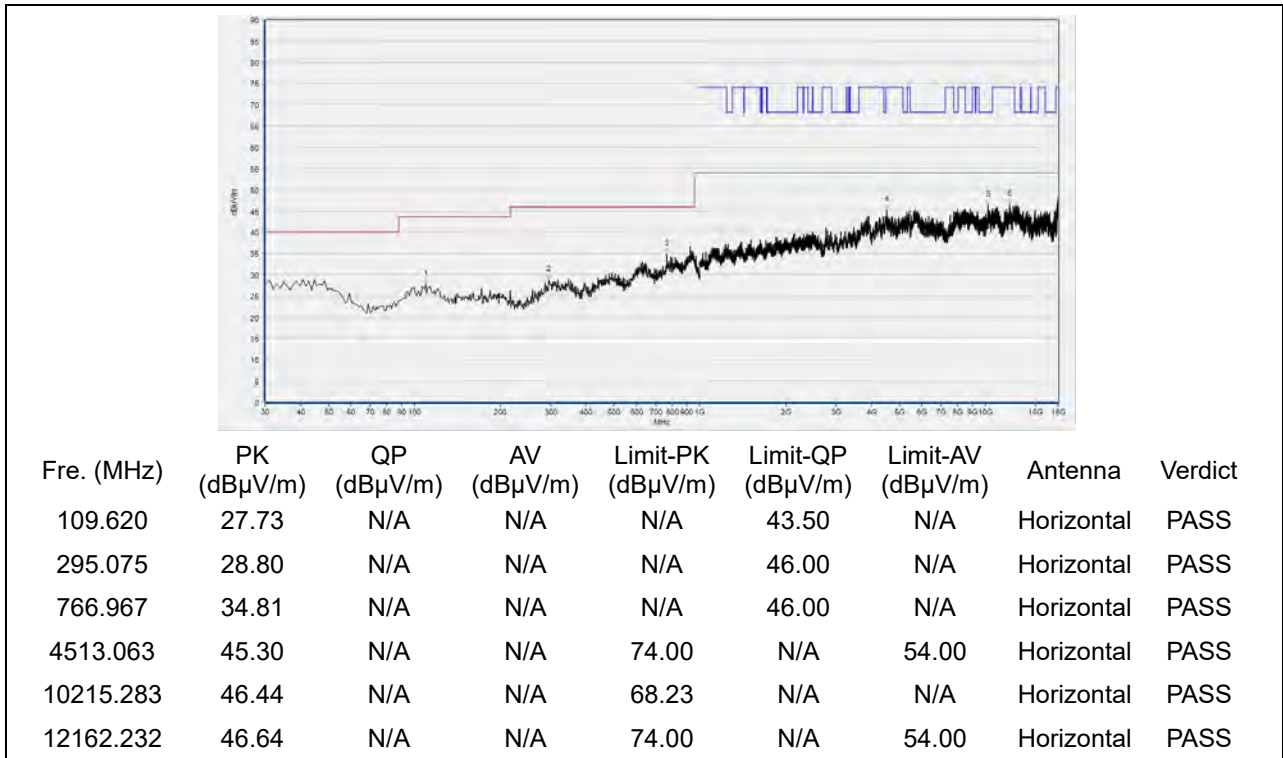
(Antenna Horizontal, 30MHz to 18GHz)



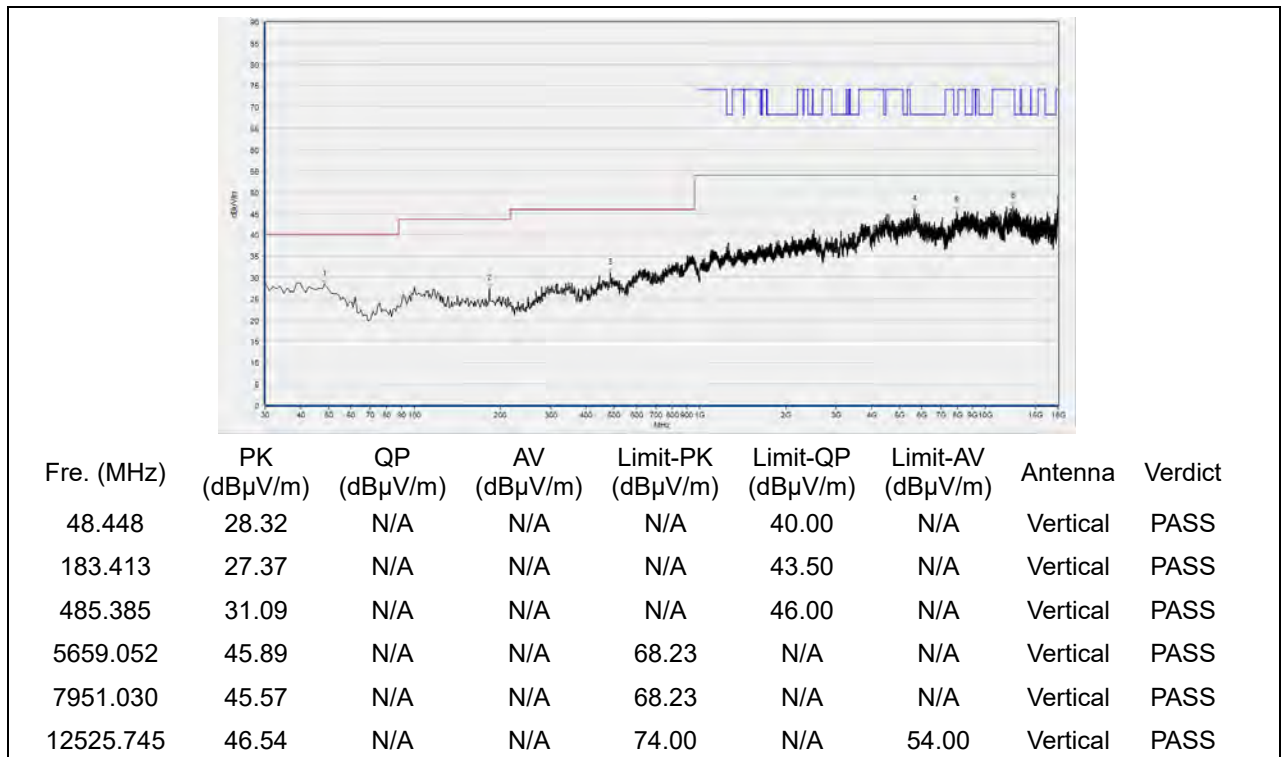
Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
48.448	28.34	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
316.436	28.77	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
632.973	32.70	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
5880.856	46.74	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
7975.675	46.32	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
12294.699	46.59	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 48

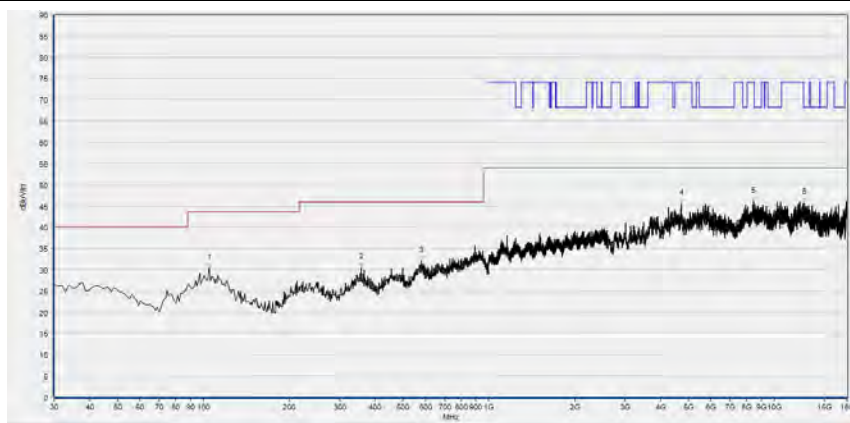


(Antenna Horizontal, 30MHz to 18GHz)



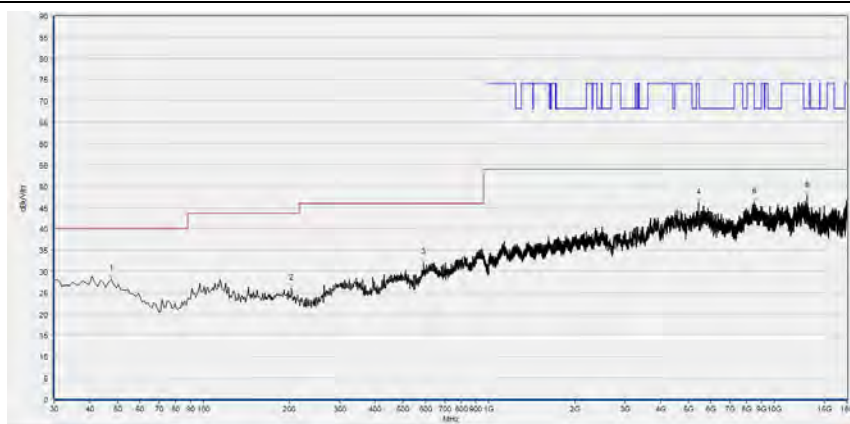
(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 52



Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
104.765	30.33	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
357.217	30.49	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
578.599	31.99	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
4722.545	45.64	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
8462.412	46.09	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12756.791	45.75	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

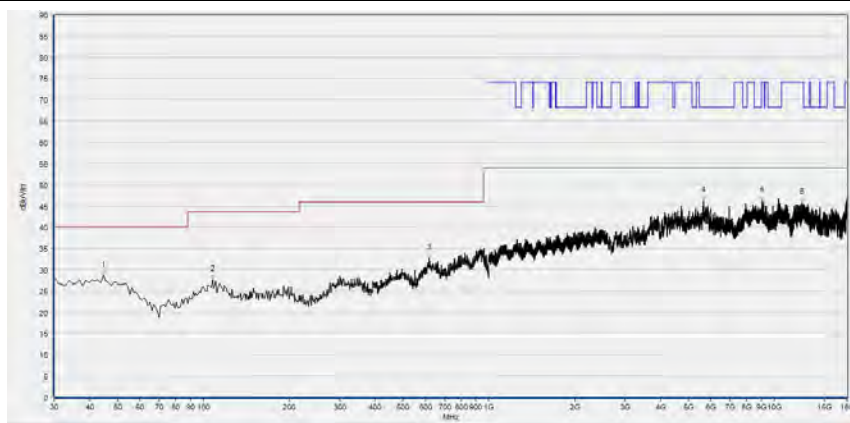
(Antenna Horizontal, 30MHz to 18GHz)



Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
47.477	28.21	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
203.804	25.95	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
591.221	31.97	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
5431.086	46.12	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
8502.460	46.29	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
13049.450	47.84	N/A	N/A	68.23	N/A	N/A	Vertical	PASS

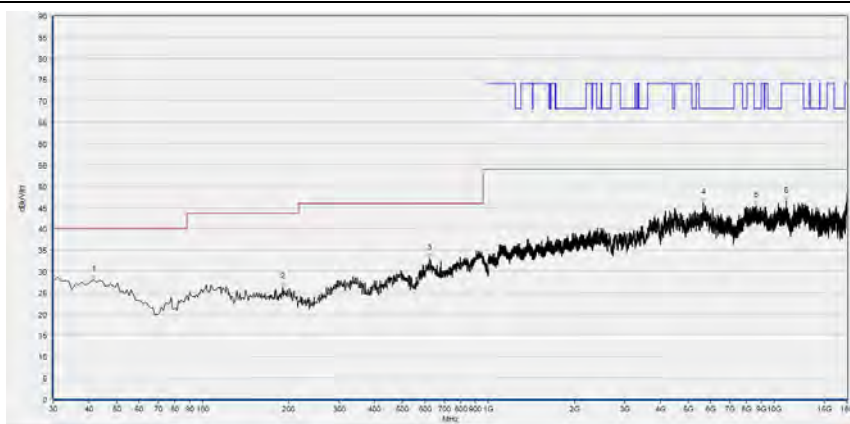
(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 60



Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
44.565	28.60	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
107.678	27.63	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
617.437	32.74	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
5655.971	46.31	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
9069.294	46.20	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12538.068	45.72	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

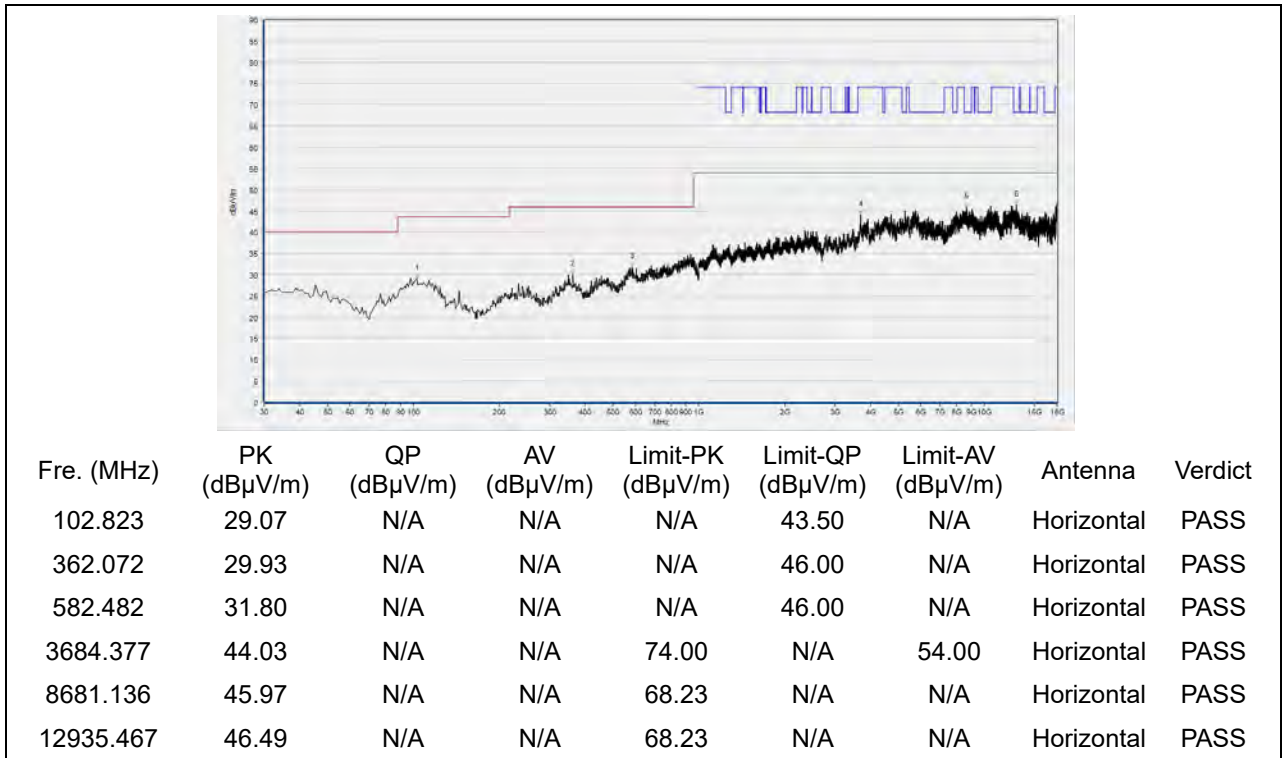
(Antenna Horizontal, 30MHz to 18GHz)



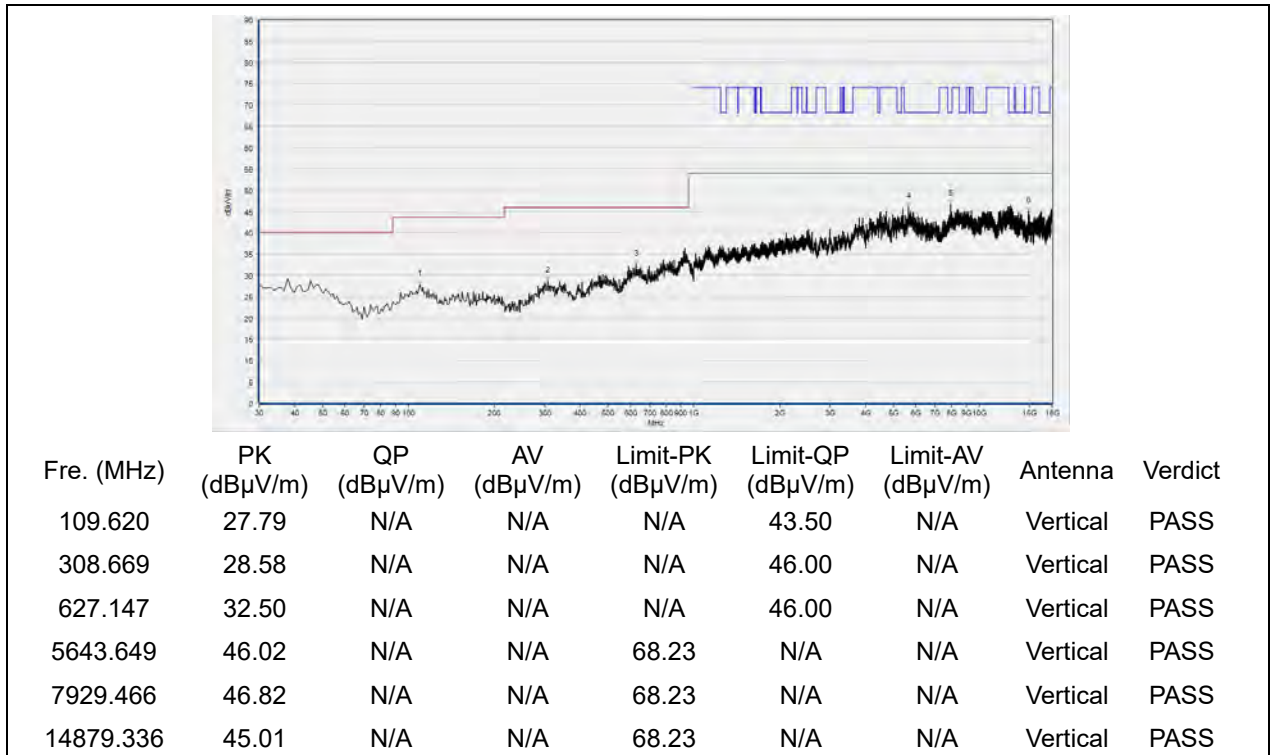
Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
41.652	27.94	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
191.181	26.34	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
623.263	32.98	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
5649.810	46.10	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
8634.927	45.35	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
11050.130	46.35	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 64

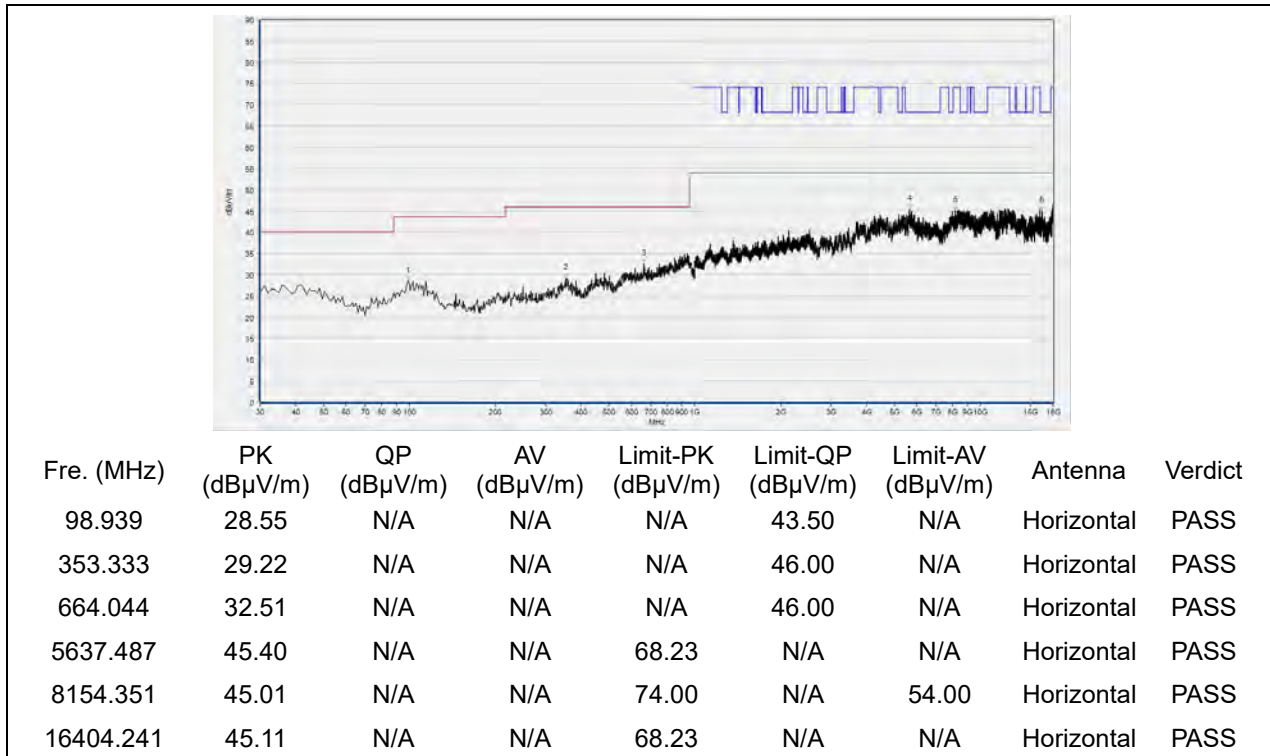


(Antenna Horizontal, 30MHz to 18GHz)

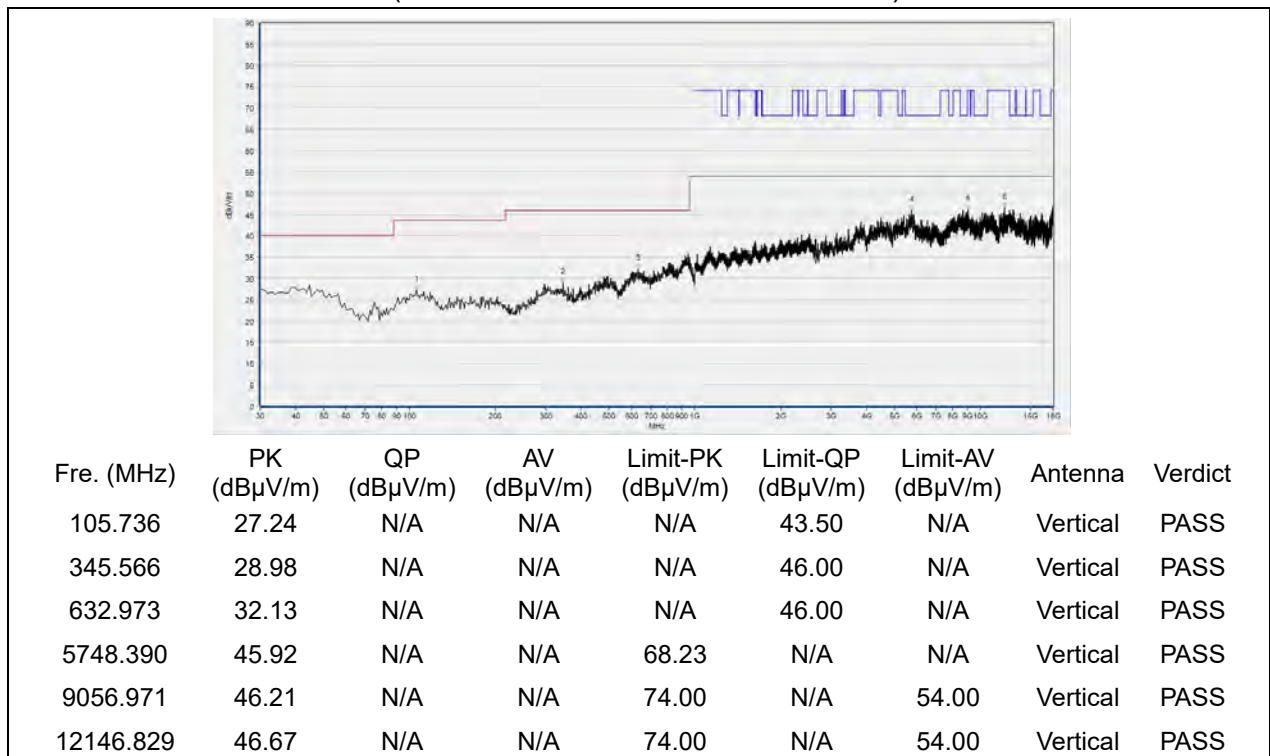


(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 100

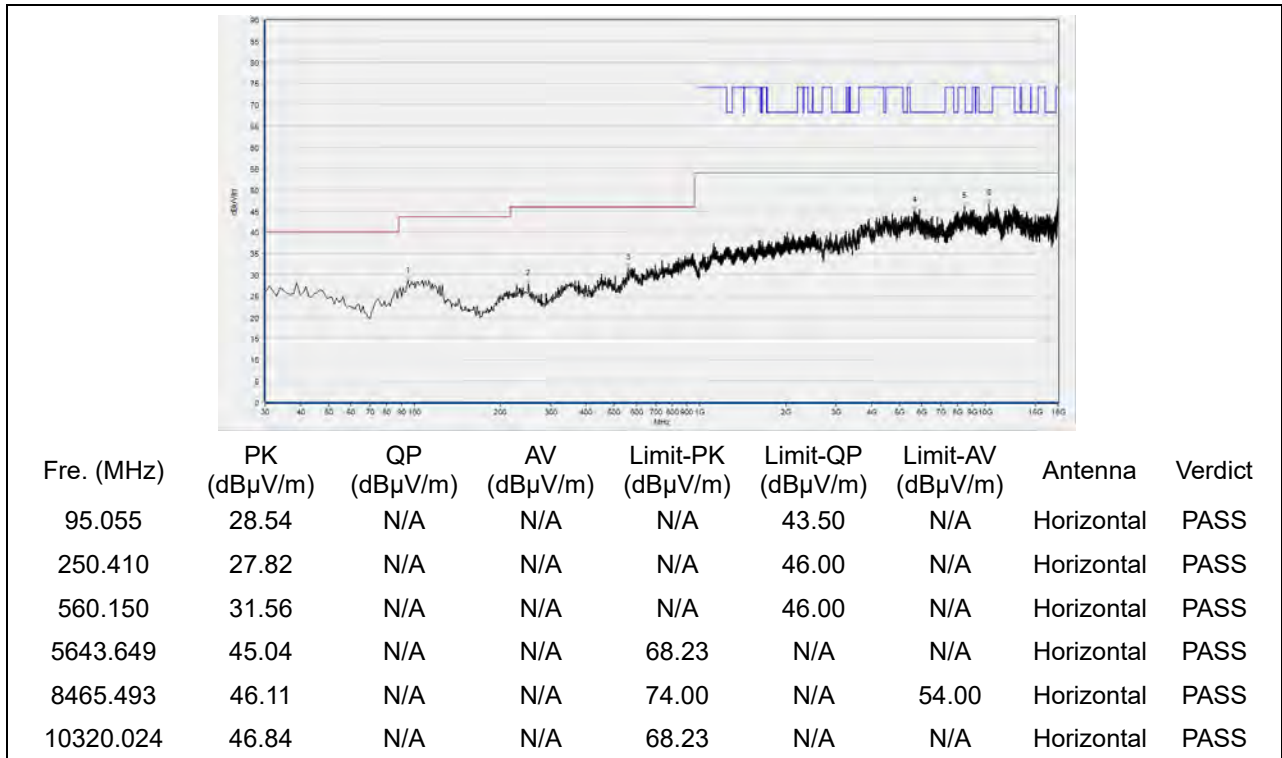


(Antenna Horizontal, 30MHz to 18GHz)

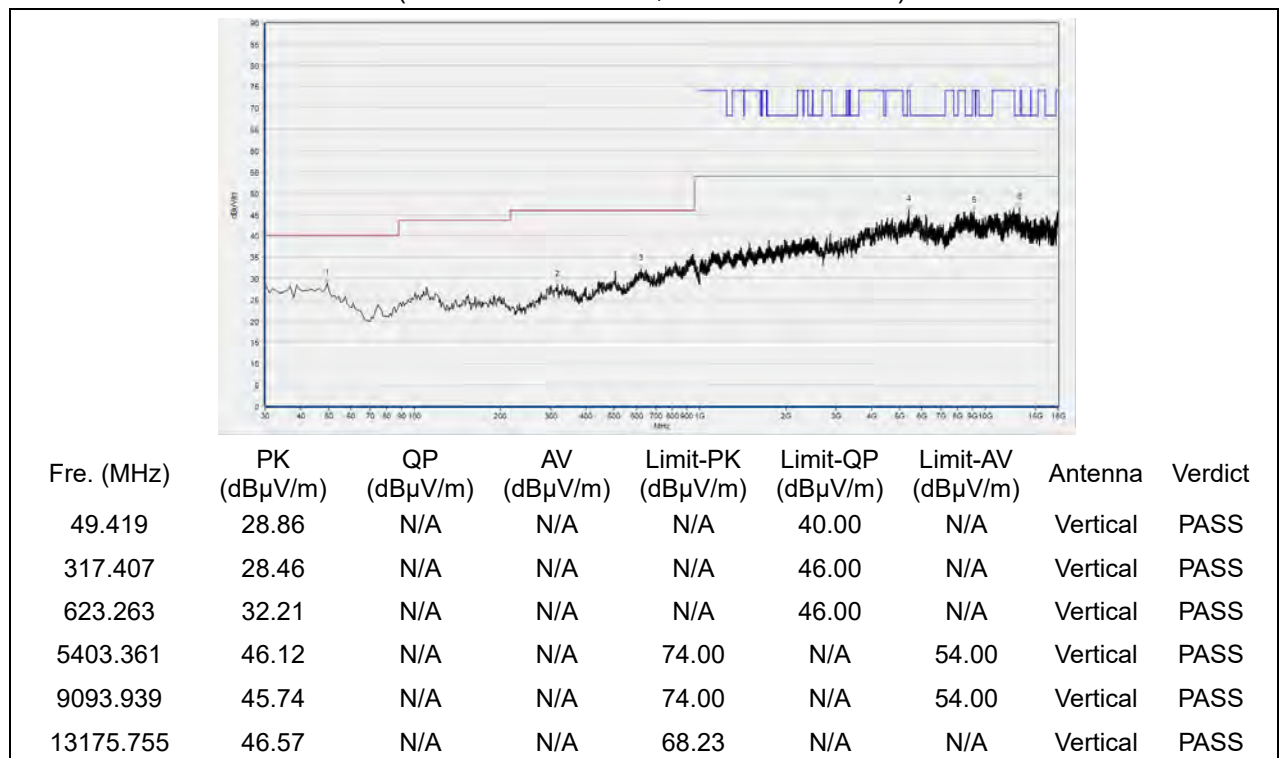


(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 120

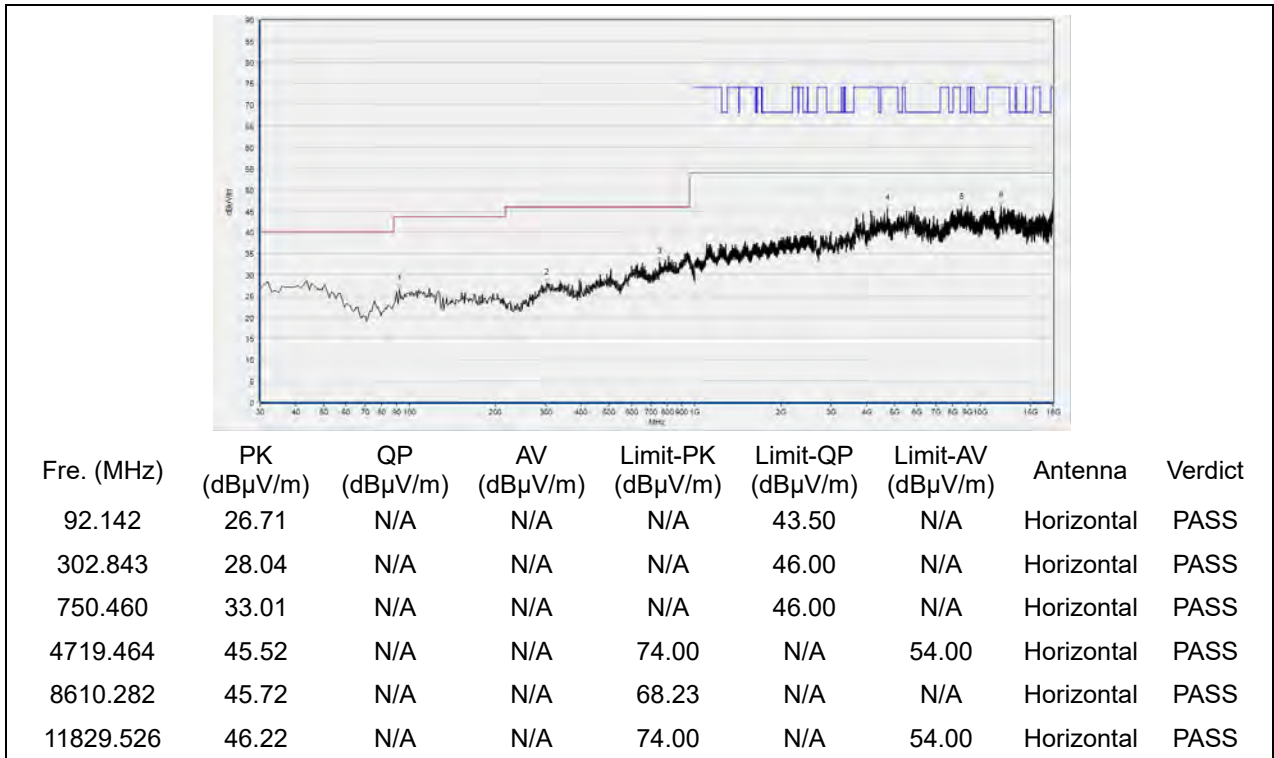


(Antenna Horizontal, 30MHz to 18GHz)

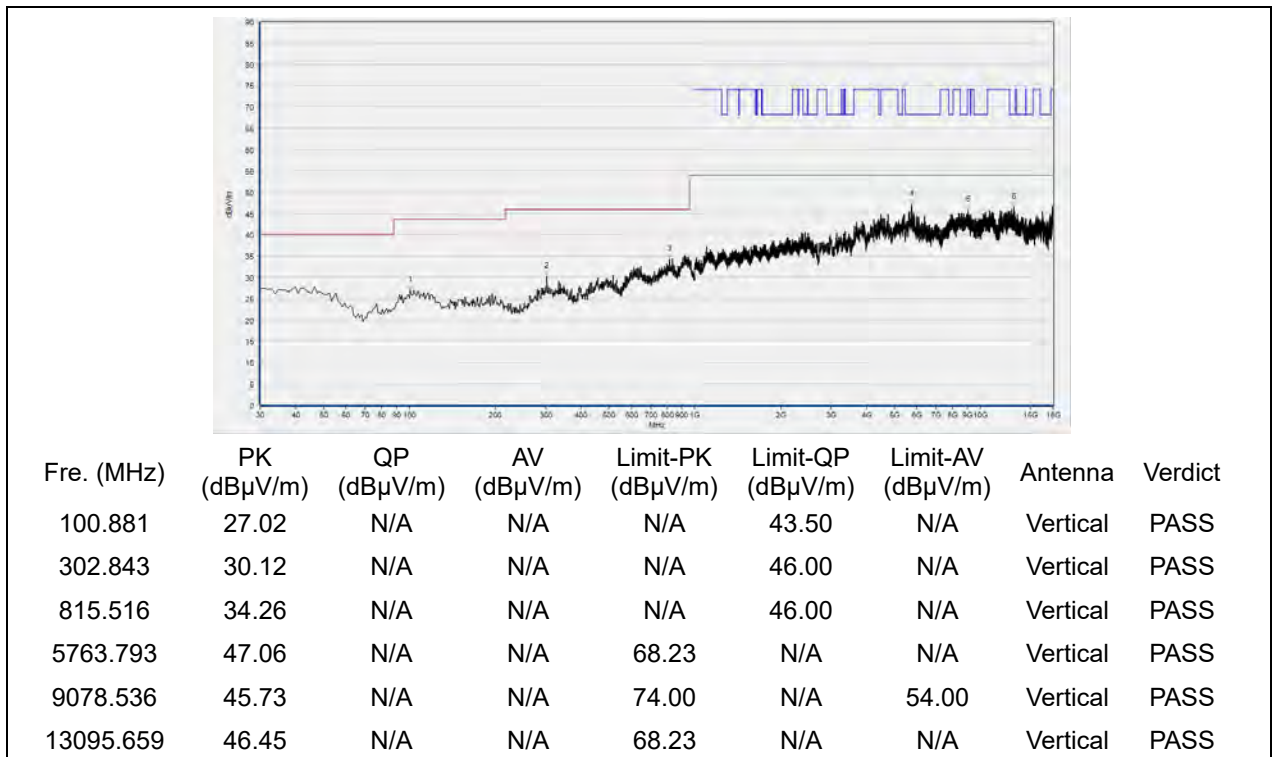


(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 144

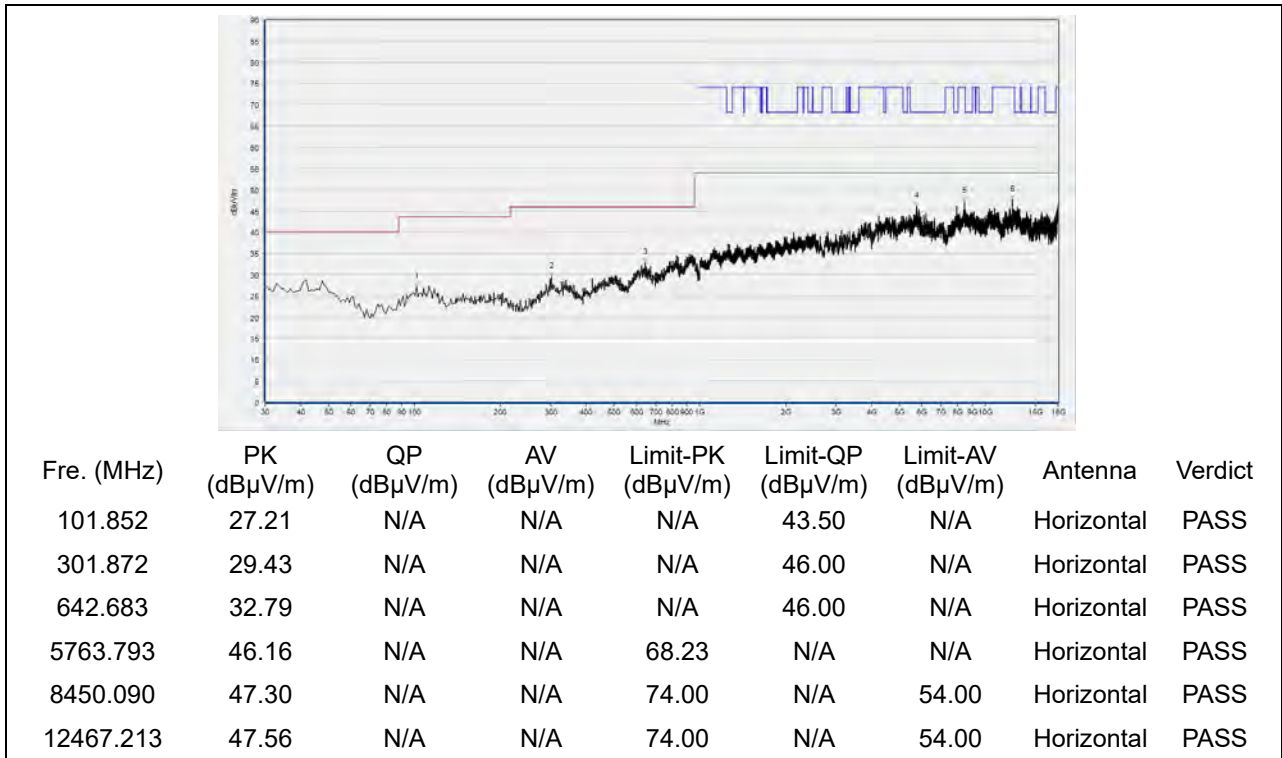


(Antenna Horizontal, 30MHz to 18GHz)

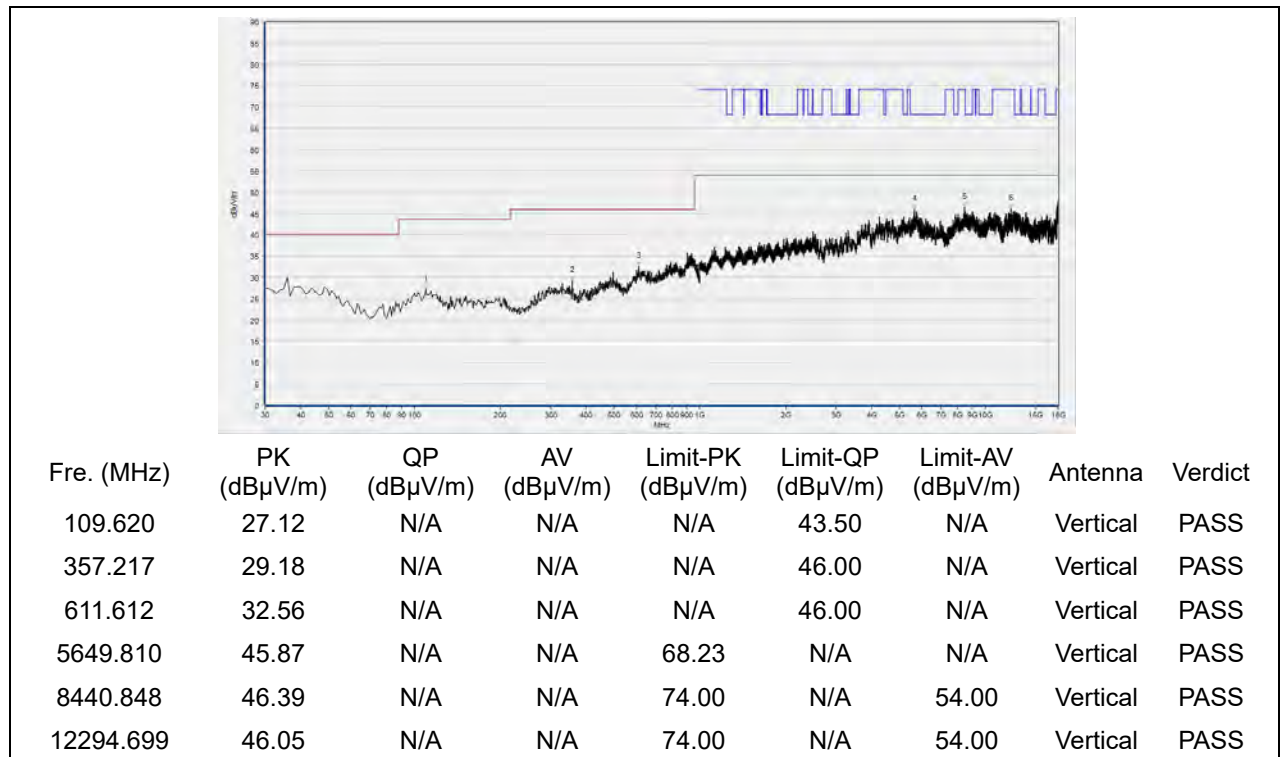


(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 149

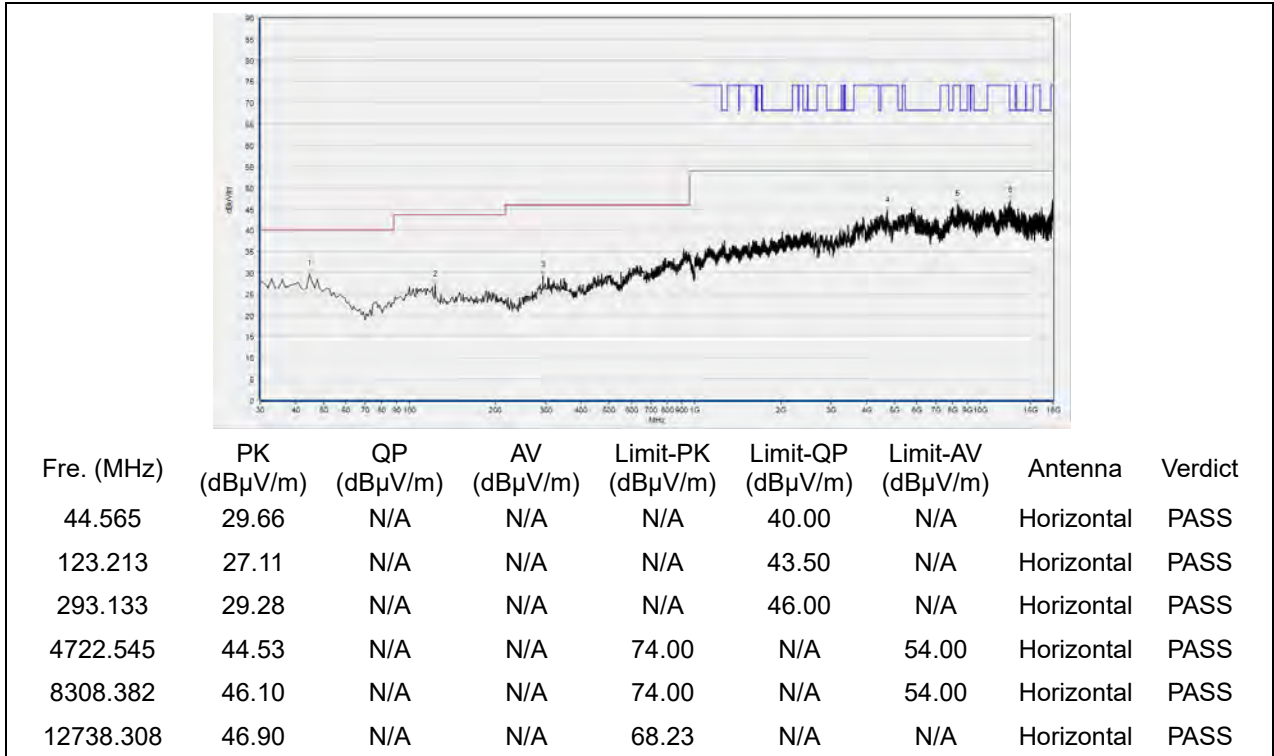


(Antenna Horizontal, 30MHz to 18GHz)

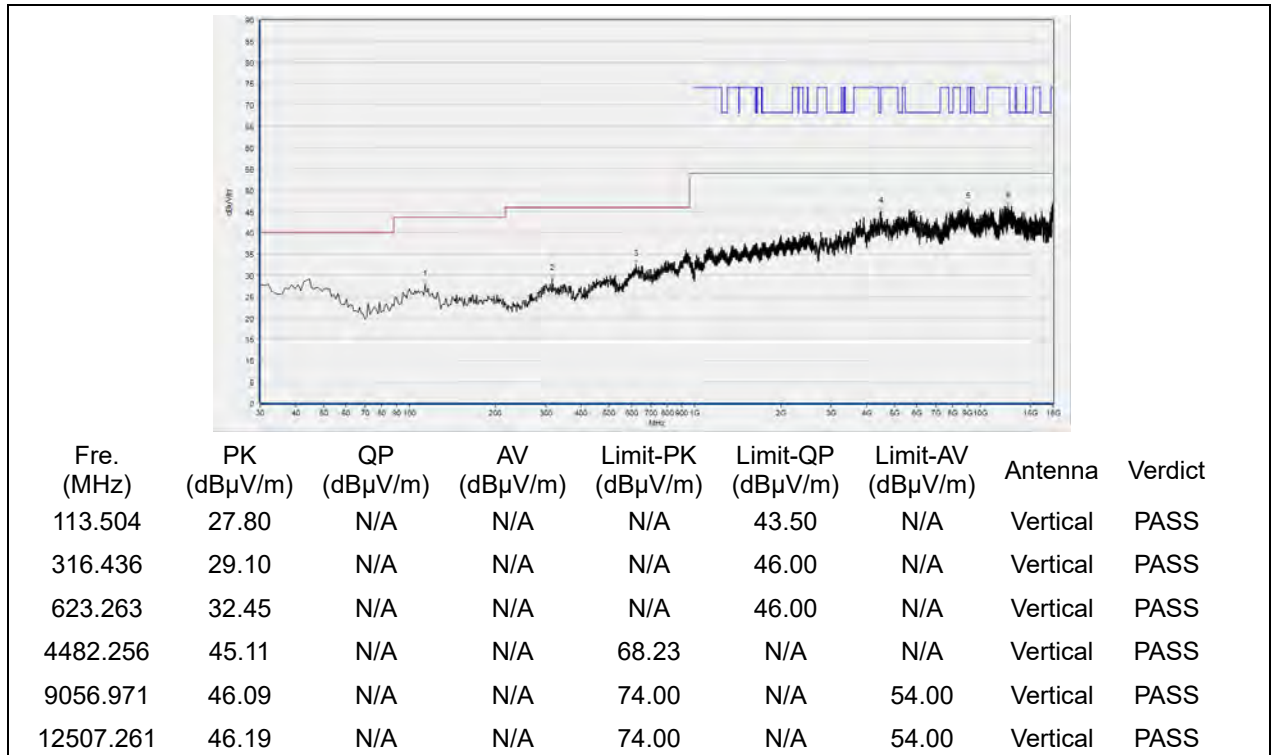


(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 157

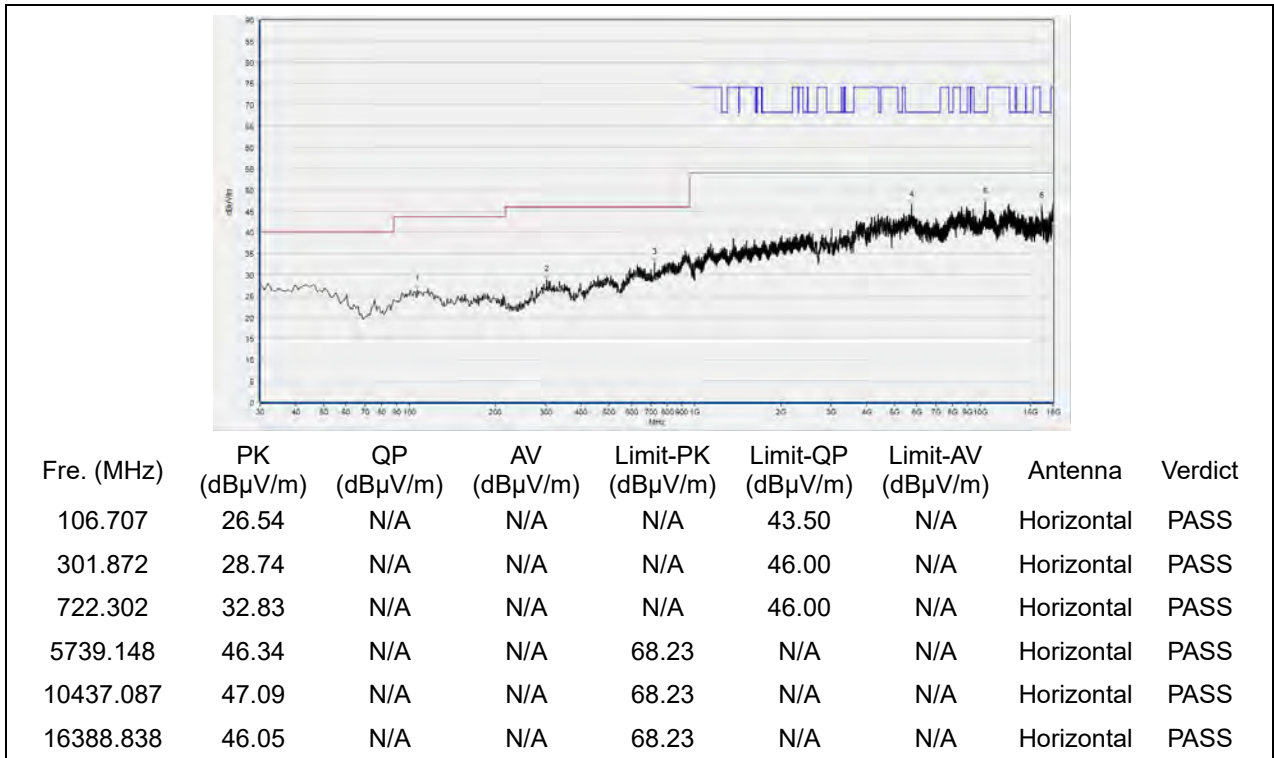


(Antenna Horizontal, 30MHz to 18GHz)

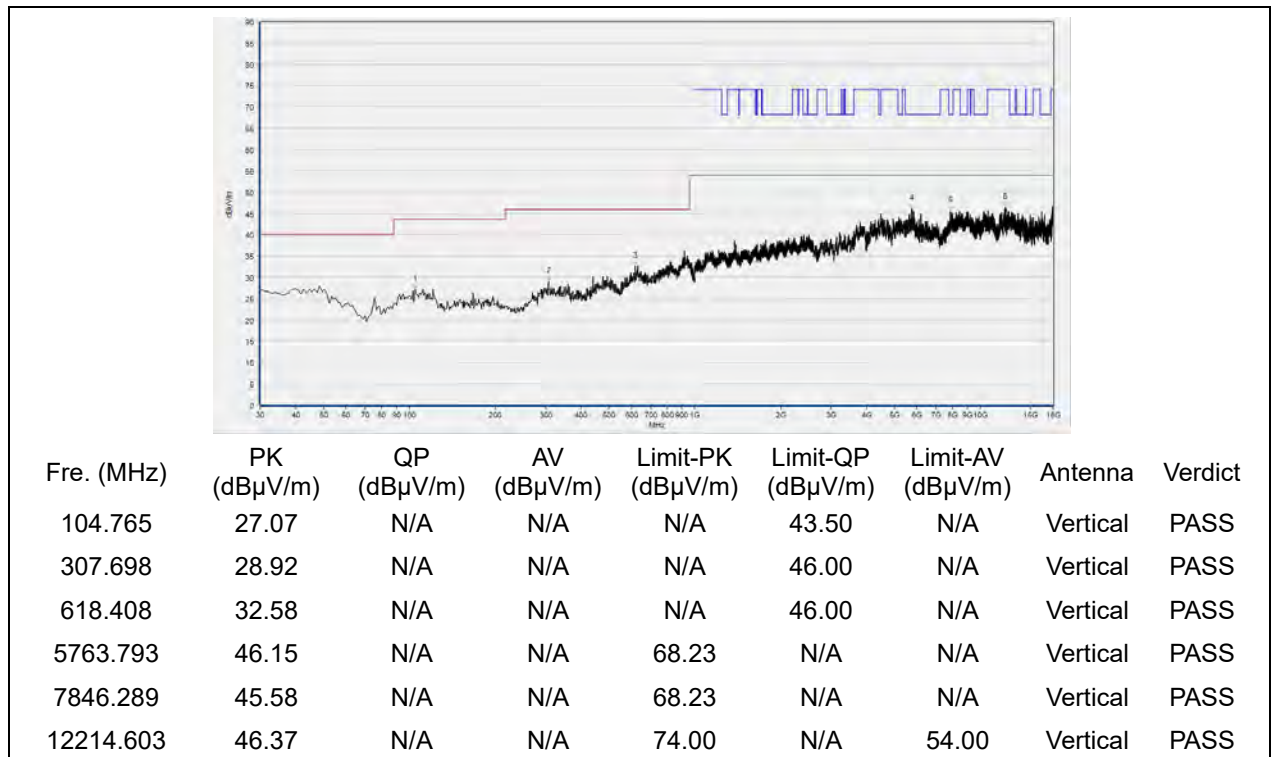


(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 165



(Antenna Horizontal, 30MHz to 18GHz)

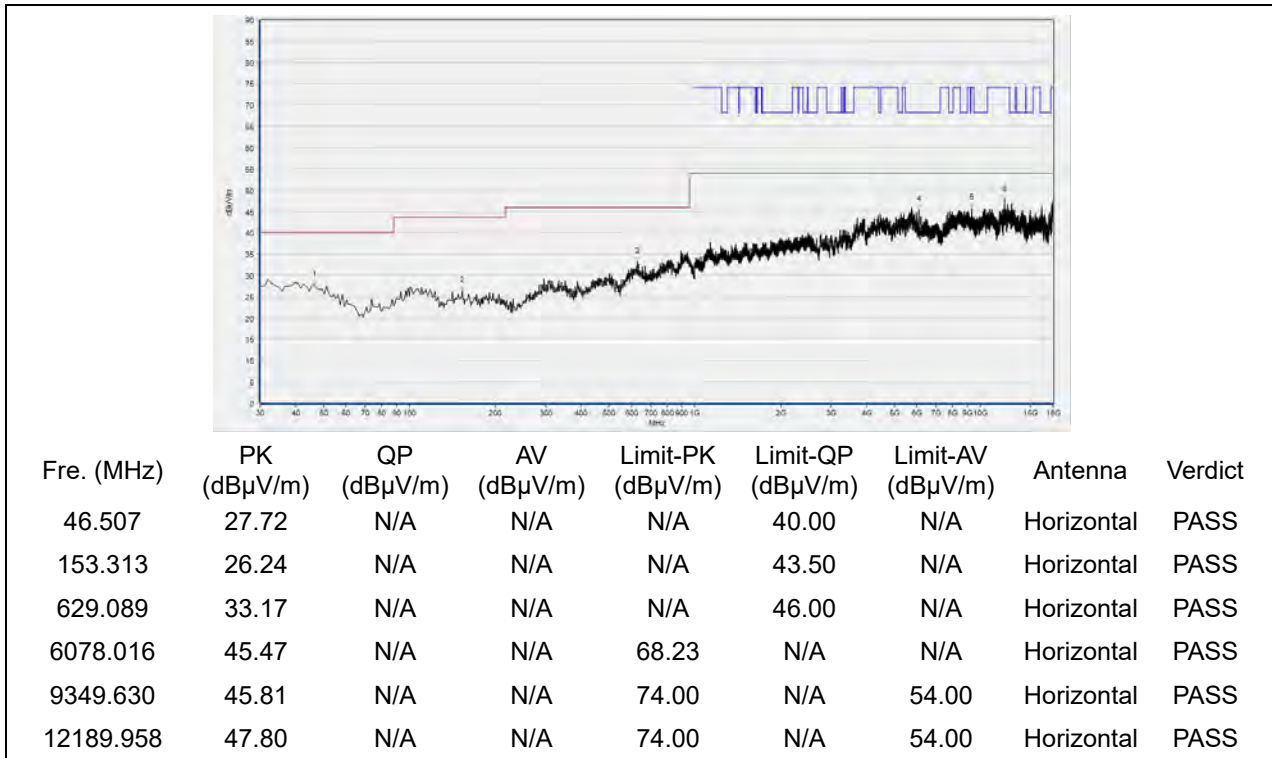


(Antenna Vertical, 30MHz to 18GHz)

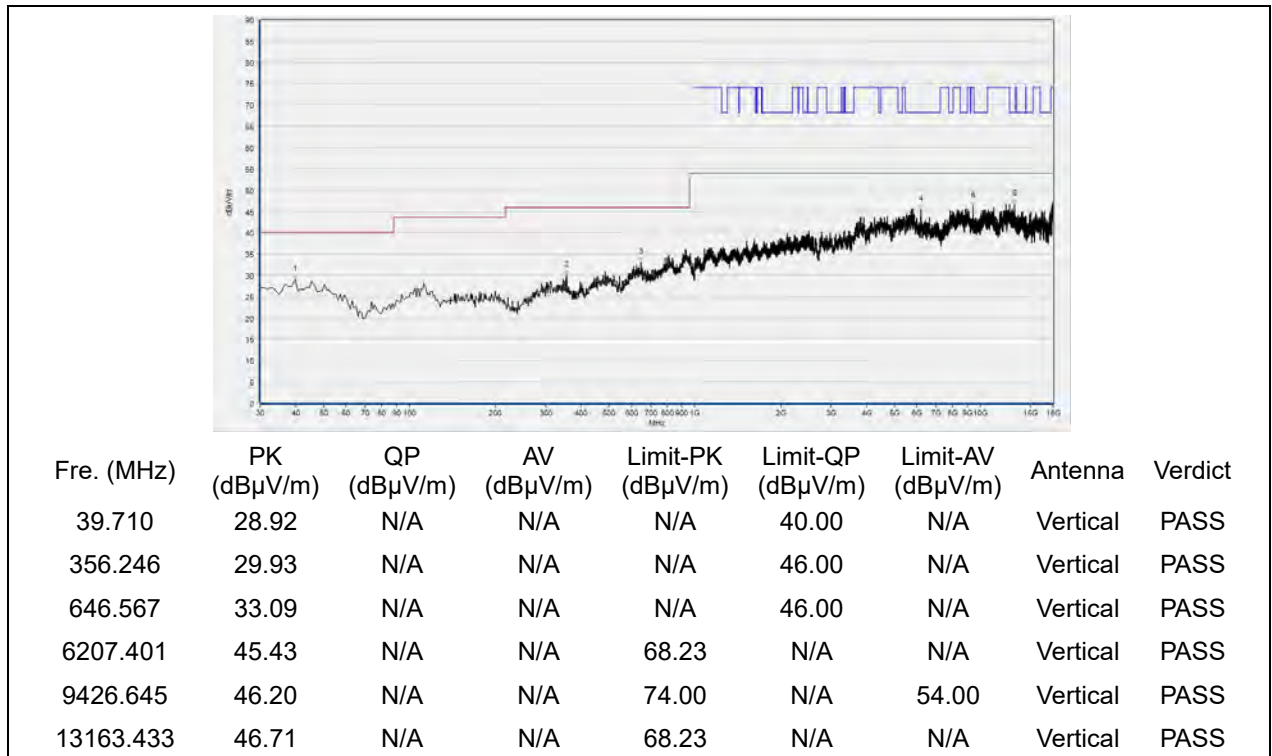


802.11n (HT40) mode

Plot for Channel 38

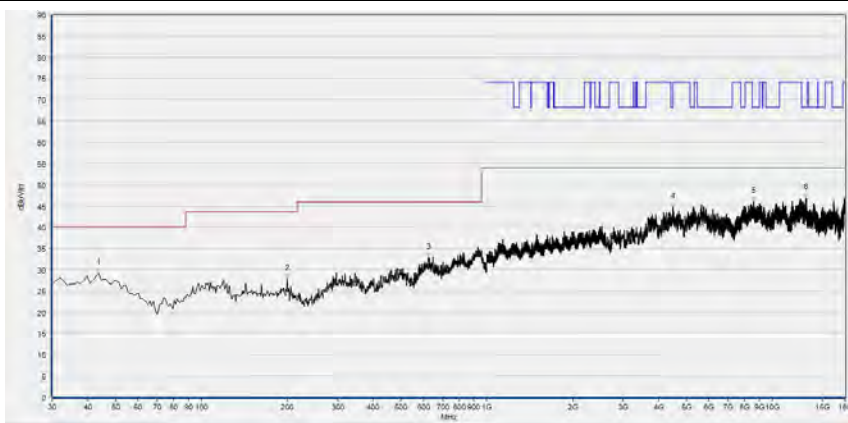


(Antenna Horizontal, 30MHz to 18GHz)



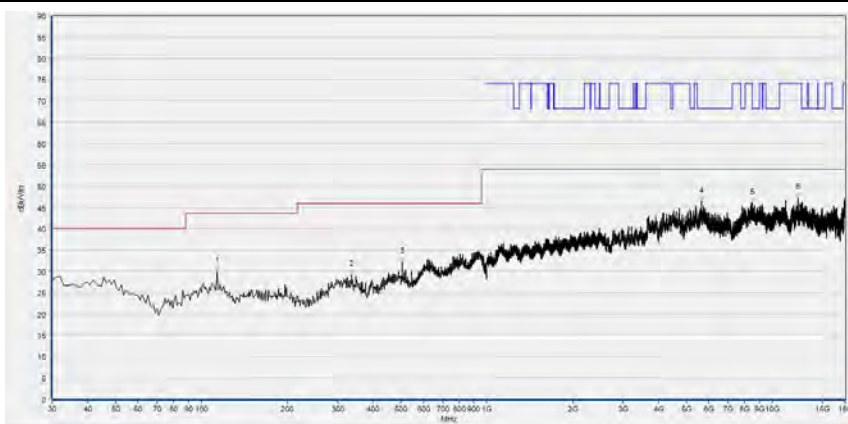
(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 46



Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
43.594	29.15	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
199.920	27.89	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
624.234	32.92	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
4494.579	44.70	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
8588.718	46.06	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
13111.062	46.85	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

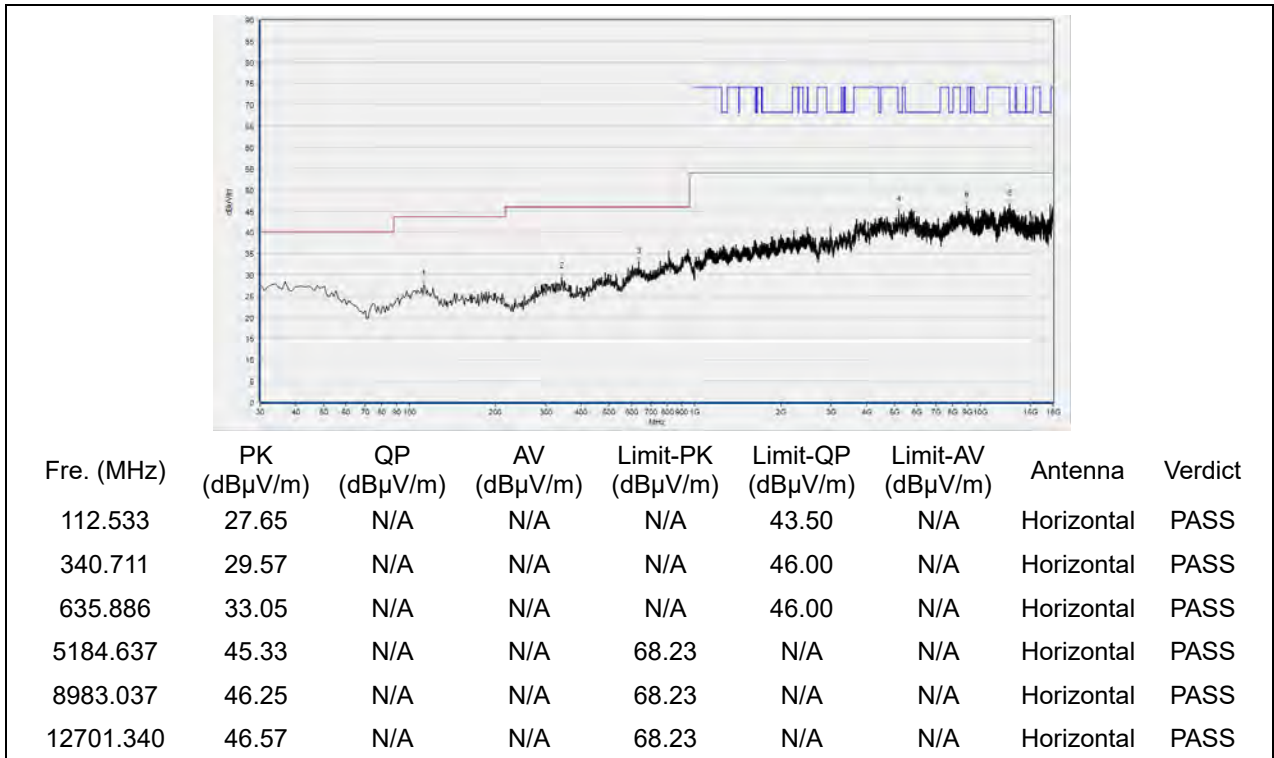
(Antenna Horizontal, 30MHz to 18GHz)



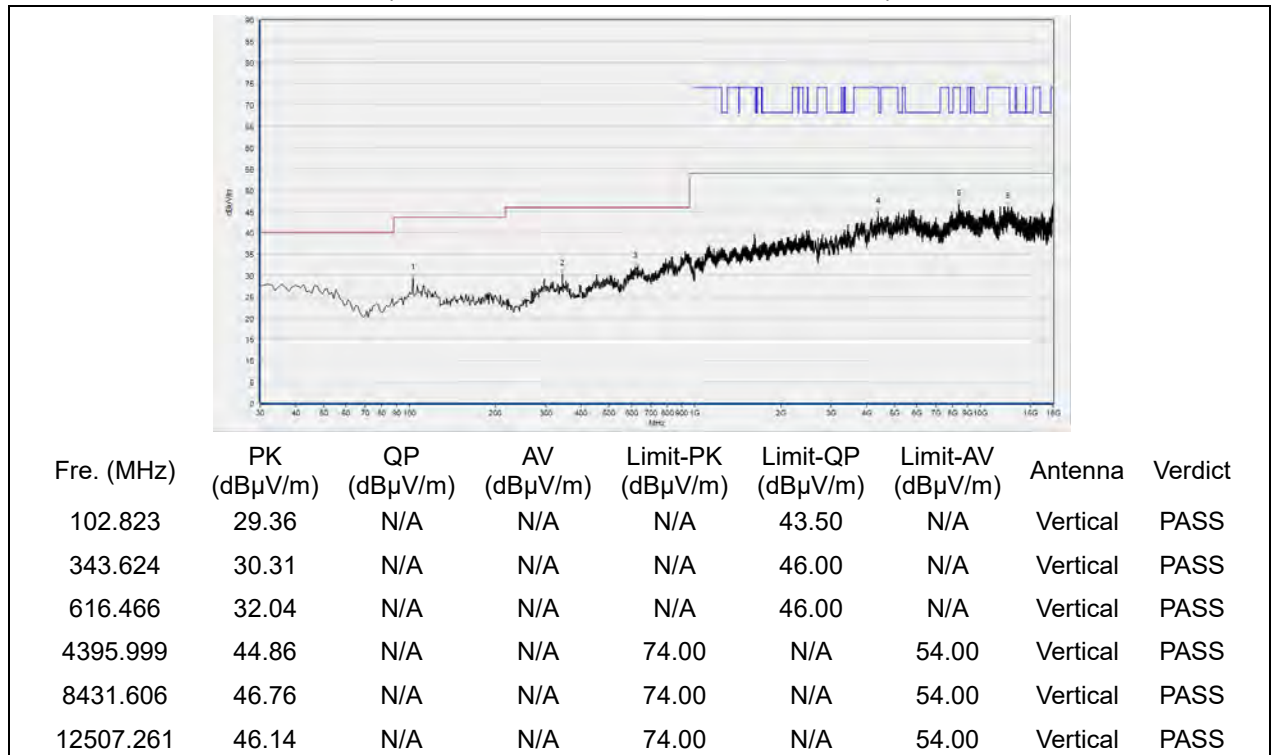
Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
113.504	30.03	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
335.856	29.24	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
504.805	32.13	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
5655.971	46.39	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
8508.622	46.03	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
12276.215	47.19	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 54

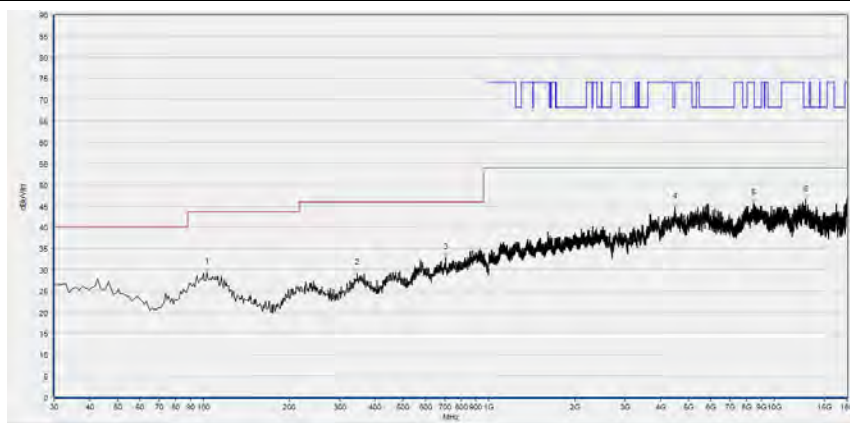


(Antenna Horizontal, 30MHz to 18GHz)



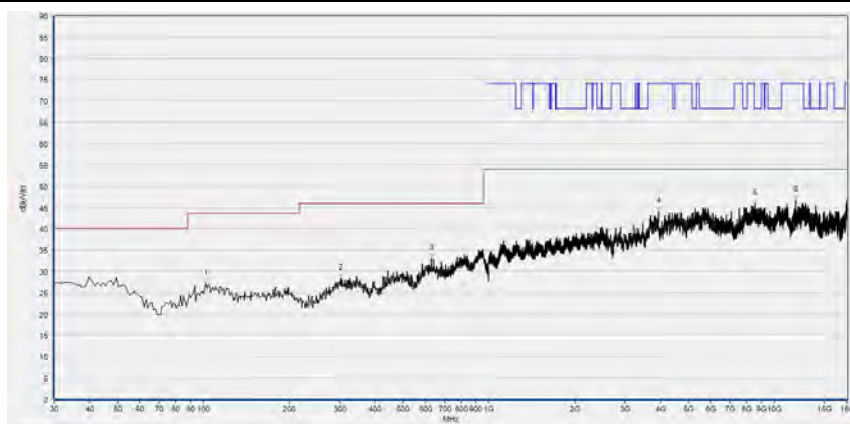
(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 62



Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
102.823	29.34	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
345.566	29.19	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
706.767	32.89	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
4494.579	44.73	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS
8450.090	45.65	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12895.419	46.38	N/A	N/A	68.23	N/A	N/A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 18GHz)



Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
101.852	27.17	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
302.843	28.24	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
629.089	32.99	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
3927.746	44.08	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
8542.509	45.98	N/A	N/A	68.23	N/A	N/A	Vertical	PASS
11854.171	46.73	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)