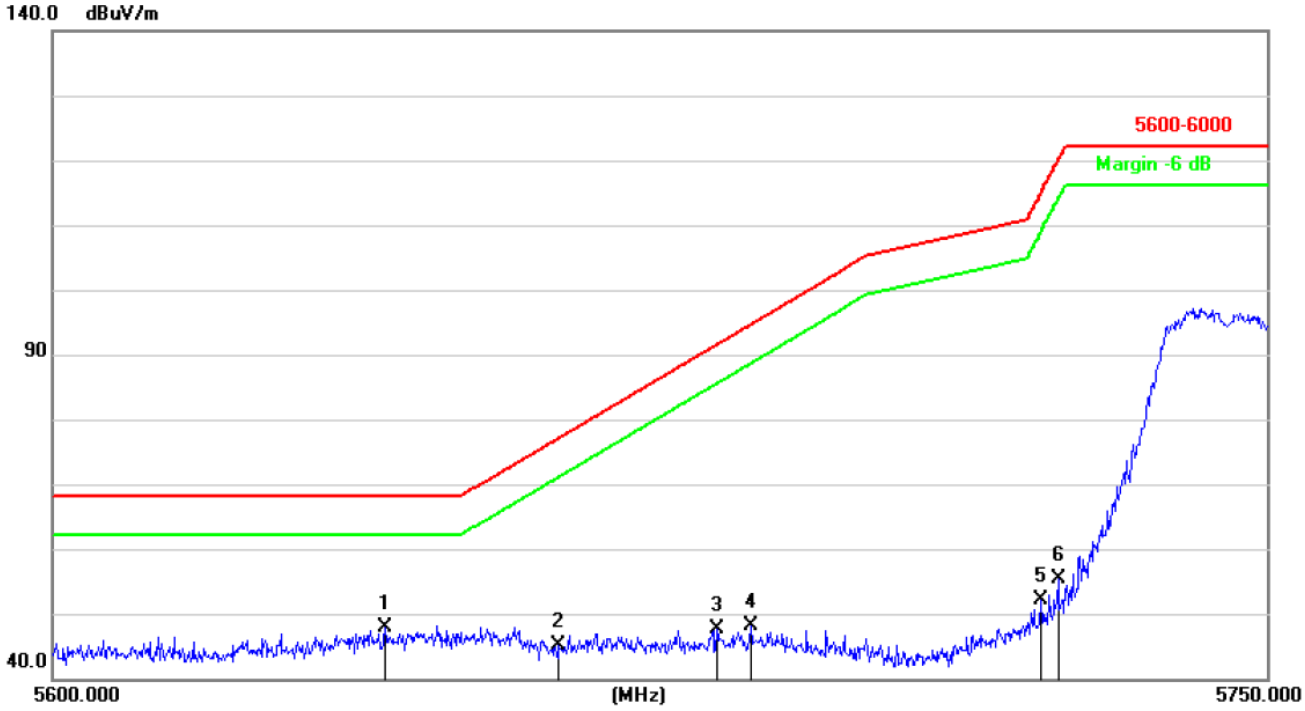
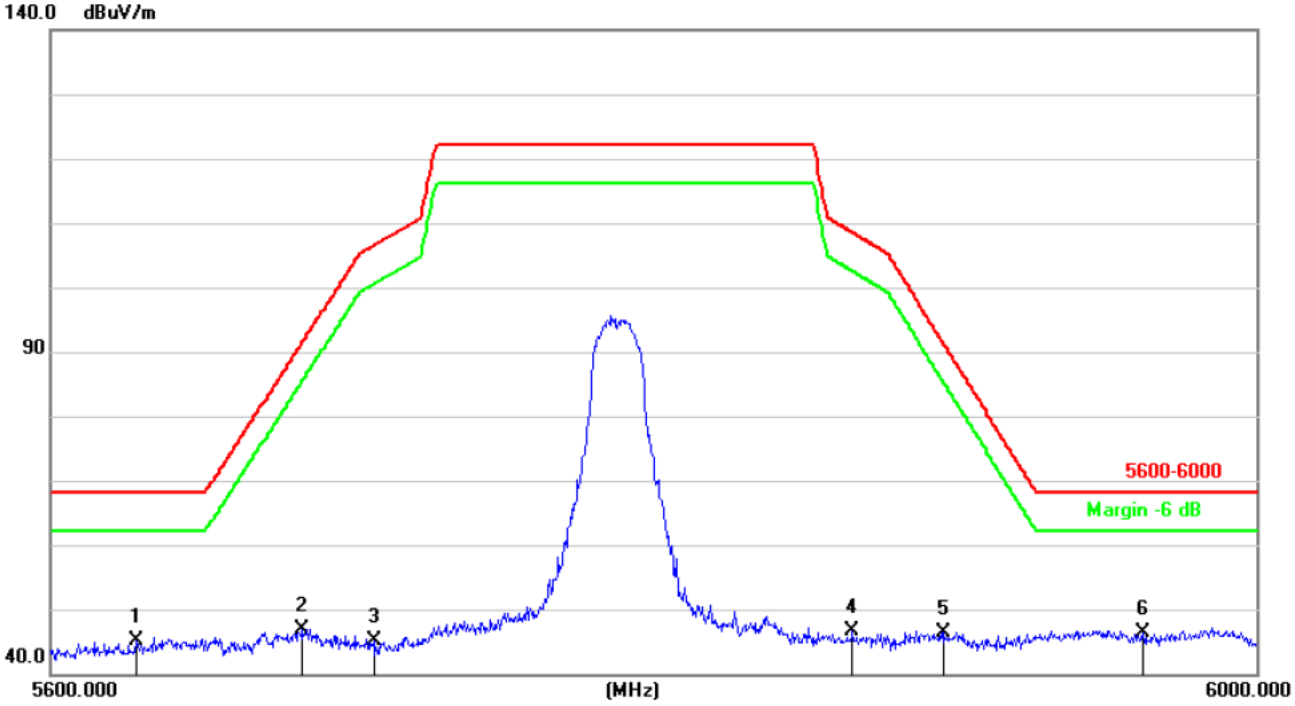
802.11n(HT20)
For the frequency band 5745-5825MHz

Low Channel



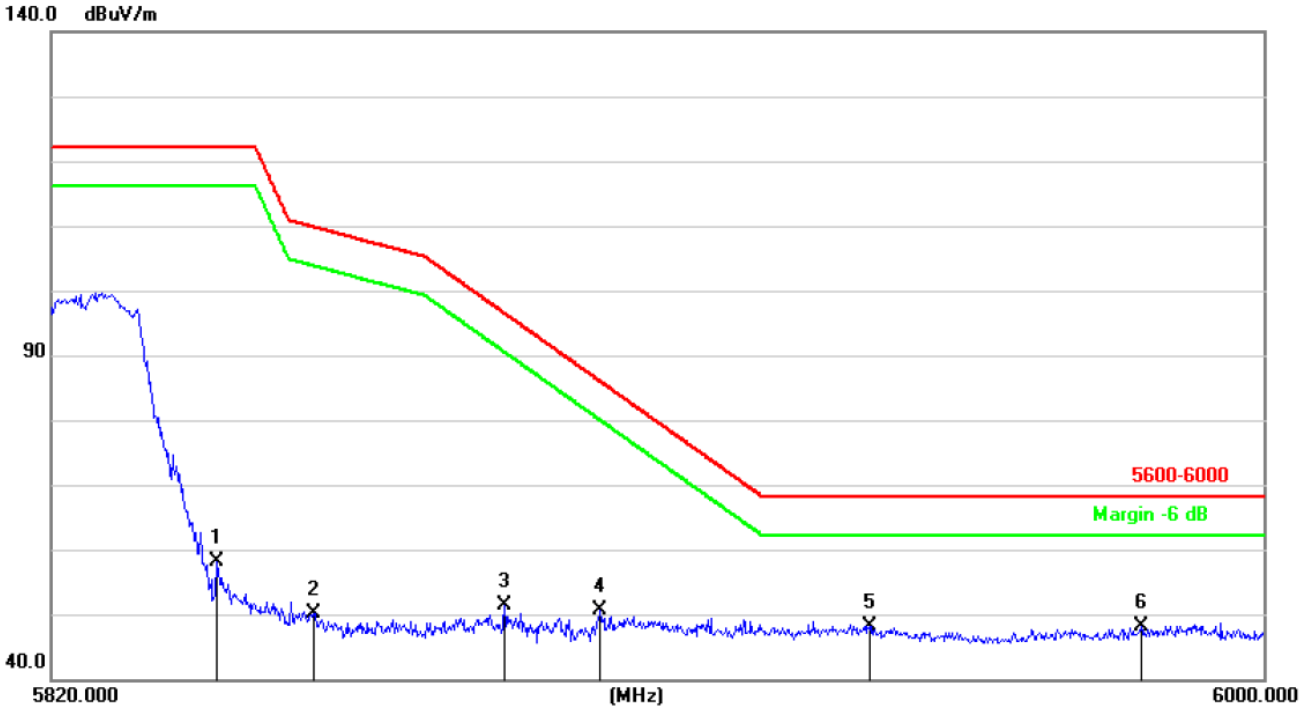
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5640.800	45.36	2.43	47.79	68.20	-20.41	peak
2	5662.100	42.69	2.52	45.21	77.18	-31.97	peak
3	5681.600	44.92	2.61	47.53	91.62	-44.09	peak
4	5685.800	45.43	2.62	48.05	94.73	-46.68	peak
5	5721.800	49.37	2.78	52.15	114.91	-62.76	peak
6	5724.050	52.61	2.79	55.40	120.03	-64.63	peak

Middle Channel



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5627.600	42.64	2.38	45.02	68.20	-23.18	peak
2	5681.600	44.34	2.61	46.95	91.62	-44.67	peak
3	5704.800	42.31	2.71	45.02	106.55	-61.53	peak
4	5863.200	43.13	3.38	46.51	108.50	-61.99	peak
5	5894.000	42.85	3.51	46.36	91.10	-44.74	peak
6	5961.600	42.46	3.80	46.26	68.20	-21.94	peak

High Channel



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5844.300	54.88	3.30	58.18	122.20	-64.02	peak
2	5858.520	46.71	3.36	50.07	109.81	-59.74	peak
3	5886.780	47.93	3.48	51.41	96.45	-45.04	peak
4	5901.000	47.02	3.54	50.56	85.92	-35.36	peak
5	5940.960	44.30	3.71	48.01	68.20	-20.19	peak
6	5981.640	44.25	3.88	48.13	68.20	-20.07	peak

Note:
1. This EUT was tested in 802.11a/n/ac(HT20), n/ac(HT40), ac(HT80) mode and 802.11n(HT20) the worst case position data was reported.

8.SPURIOUS RF CONDUCTED EMISSIONS

8.1CONFORMANCE LIMIT

Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum 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 e.i.r.p. of −27 dBm/MHz.

(2) 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.

.

8.2MEASURING INSTRUMENTS

The Measuring equipment is listed in the section 6.3 of this test report.

8.3TEST SETUP

Please refer to Section 6.1 of this test report.

8.4TEST PROCEDURE

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. 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.
3. Set RBW of spectrum analyzer to 1 MHz with a convenient frequency span.
4. 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.
5. Repeat above procedures until all measured frequencies were complete.

8.5TEST RESULTS

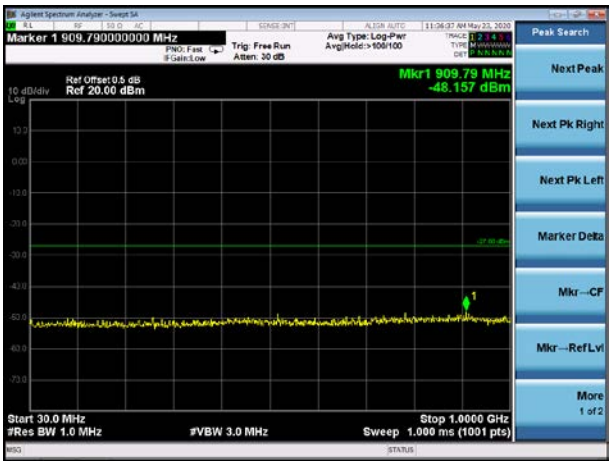
Remark: The measurement frequency range is from 9KHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the spurious emissions and bandege measurement data.

About:26.5GHz-40GHz, The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

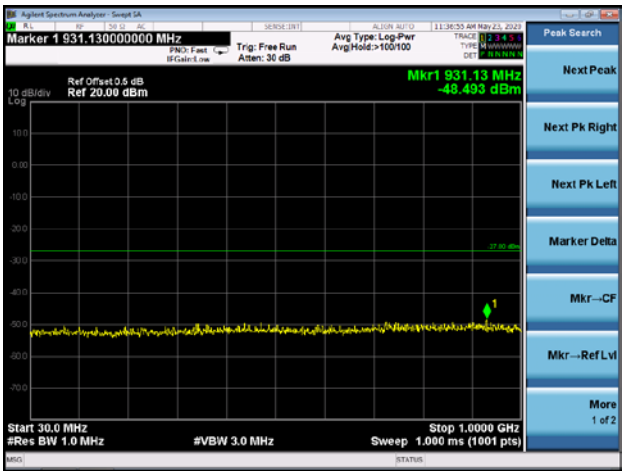
Note: C(D) Represent the value of antenna C and D, The worst data is Antenna D ,only shown Antenna D Plot.

5.2G

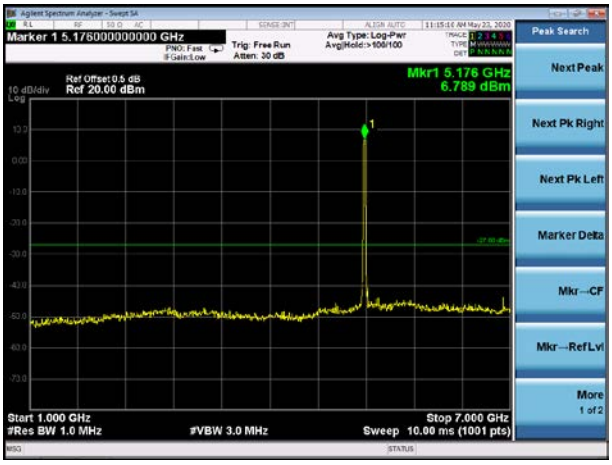
802.11a on channel 36



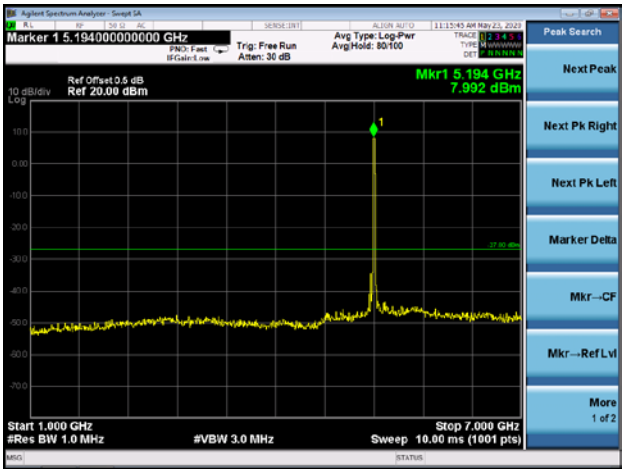
802.11a on channel 40



802.11a on channel 36



802.11a on channel 40

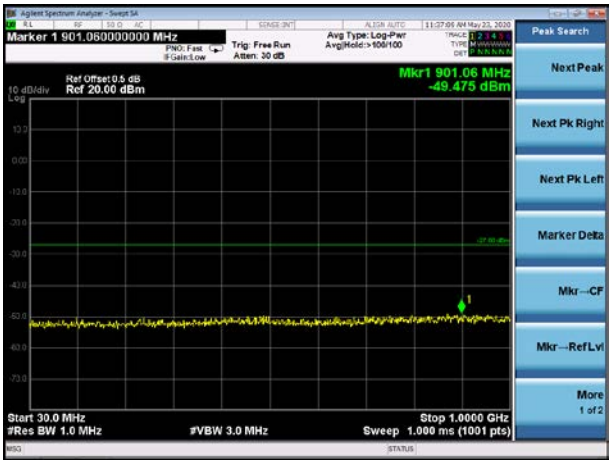


802.11a on channel 36

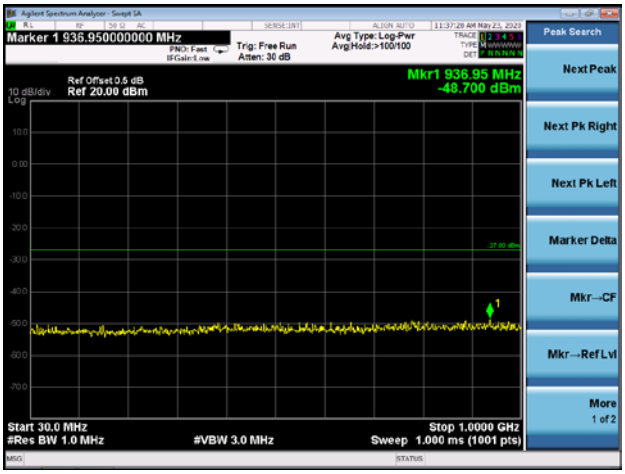
802.11a on channel 40

Test Plot

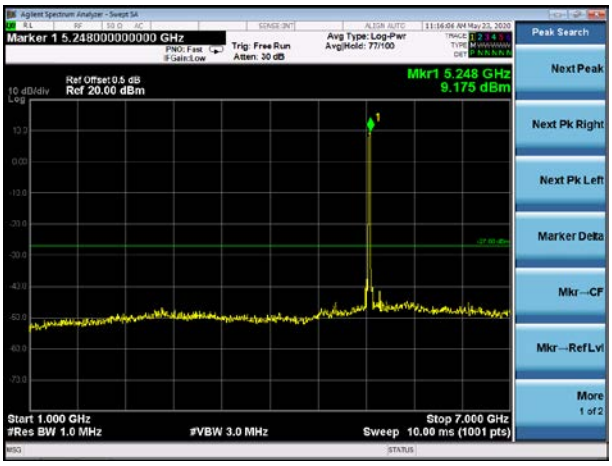
802.11a on channel 48



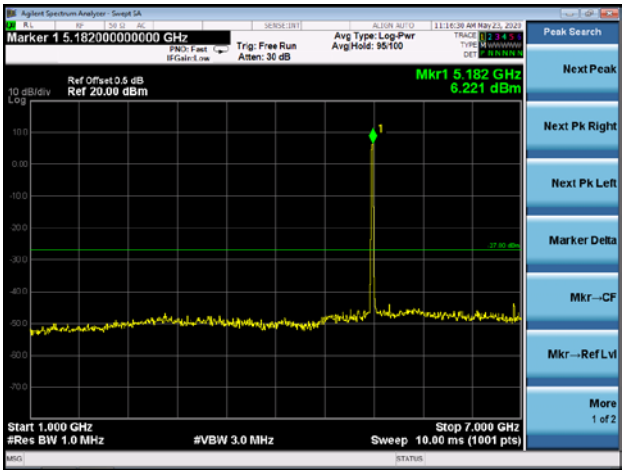
802.11n20 on channel 36



802.11a on channel 48



802.11n20 on channel 36

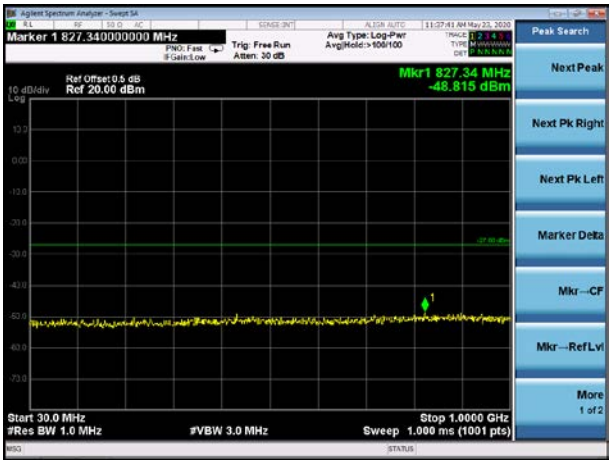


802.11a on channel 48

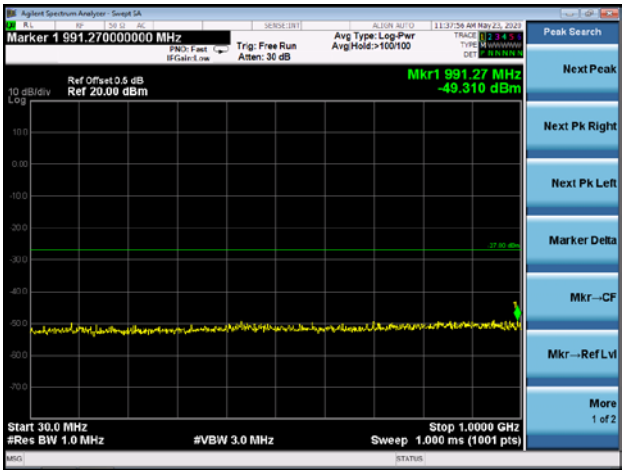
802.11n20 on channel 36

Test Plot

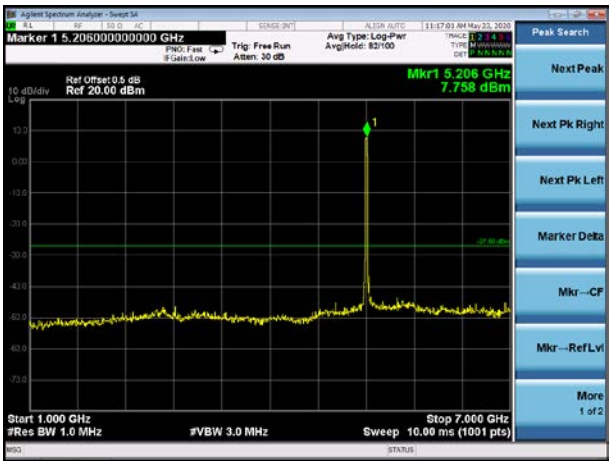
802.11n20 on channel 40



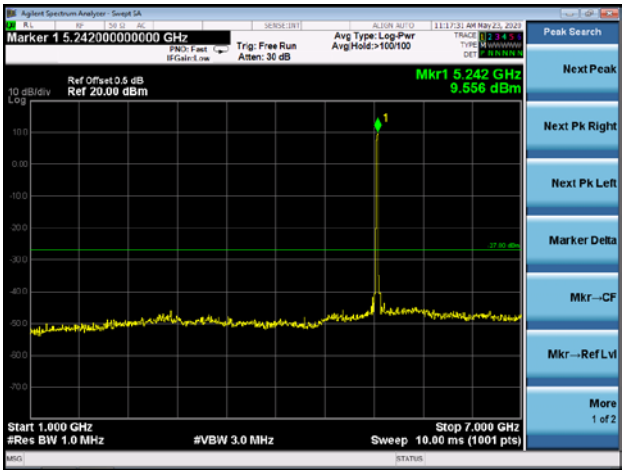
802.11n20 on channel 48



802.11n20 on channel 40



802.11n20 on channel 48

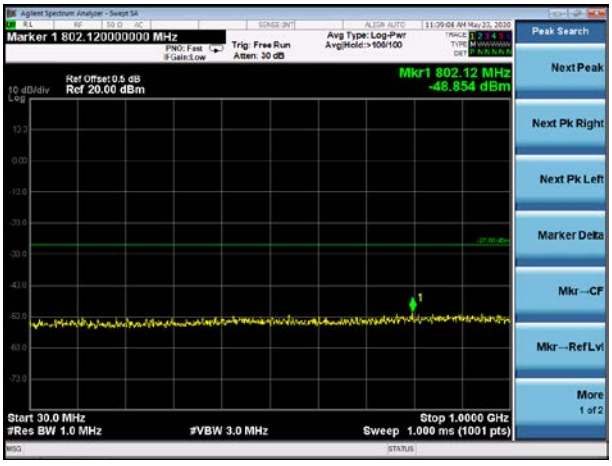


802.11n20 on channel 40

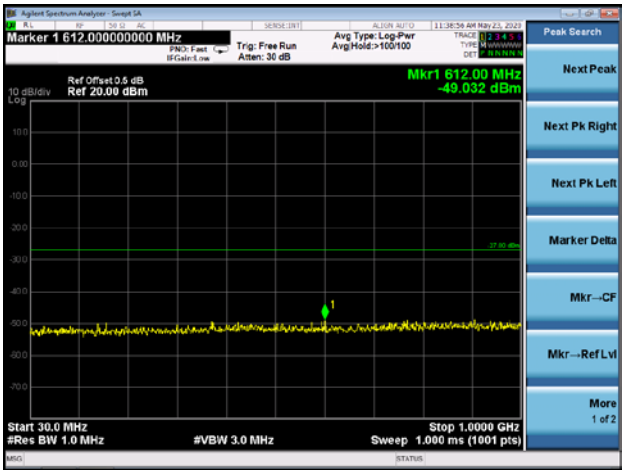
802.11n20 on channel 48

Test Plot

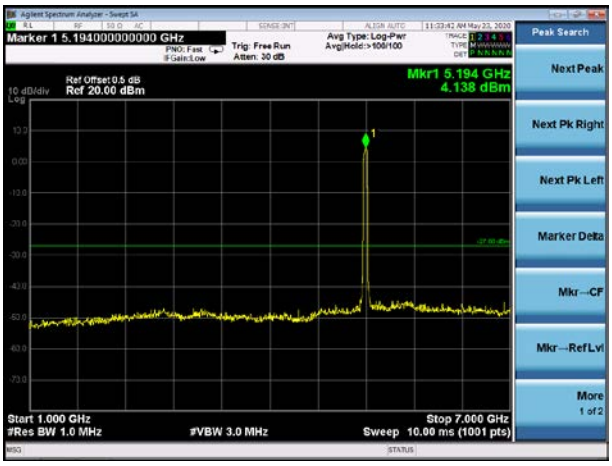
802.11n40 on channel 38



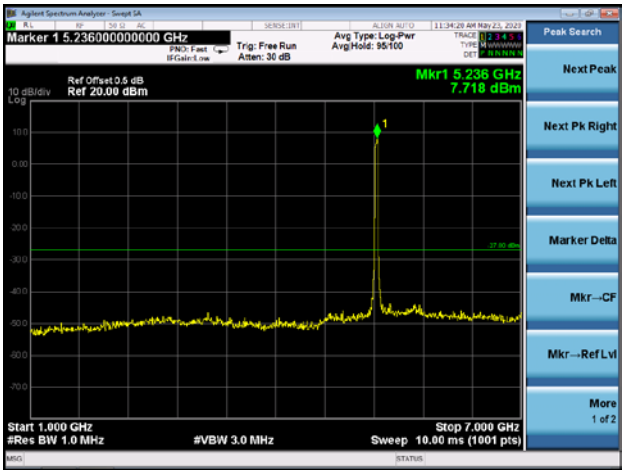
802.11n40 on channel 46



802.11n40 on channel 38



802.11n40 on channel 46

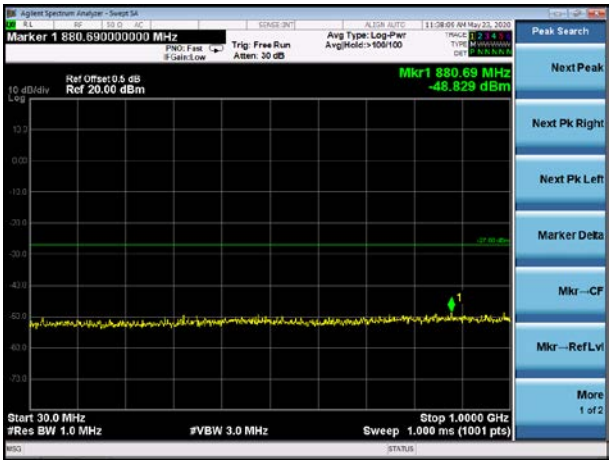


802.11n40 on channel 38

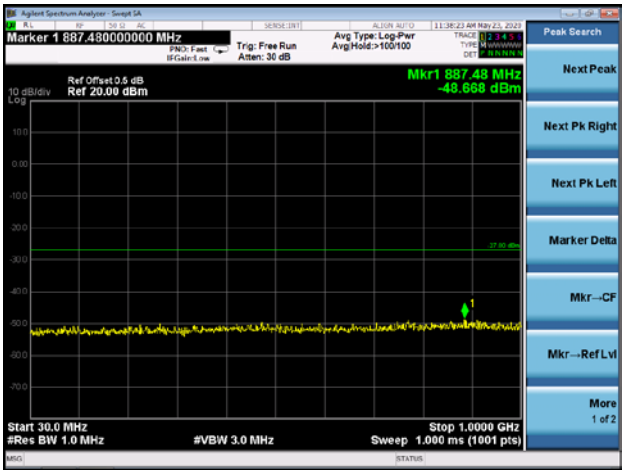
802.11n40 on channel 46

Test Plot

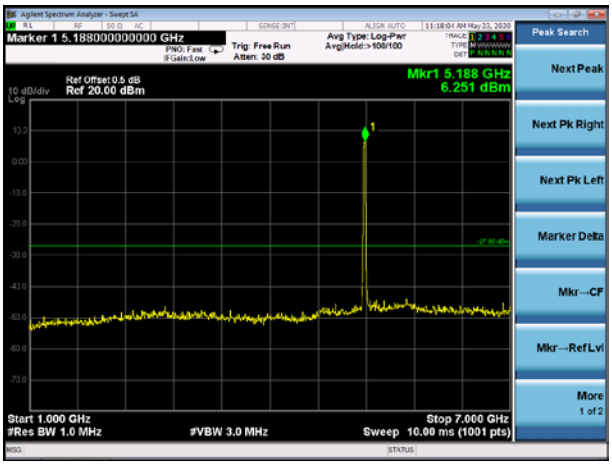
802.11ac20 on channel 36



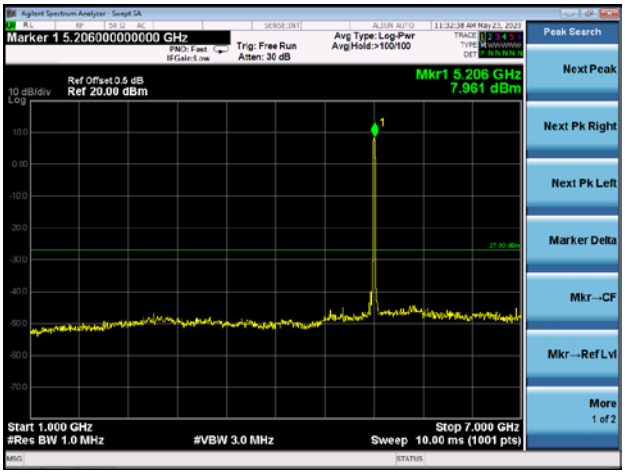
802.11ac20 on channel 40



802.11ac20 on channel 36



802.11ac20 on channel 40

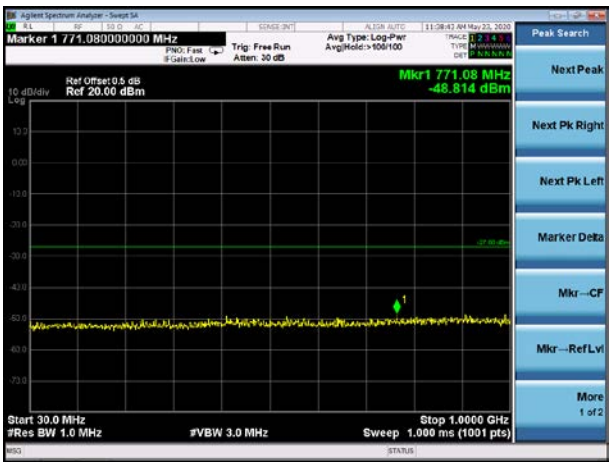


802.11ac20 on channel 36

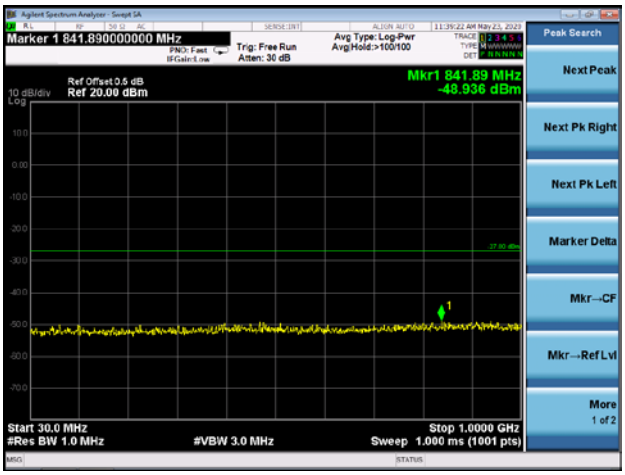
802.11ac20 on channel 40

Test Plot

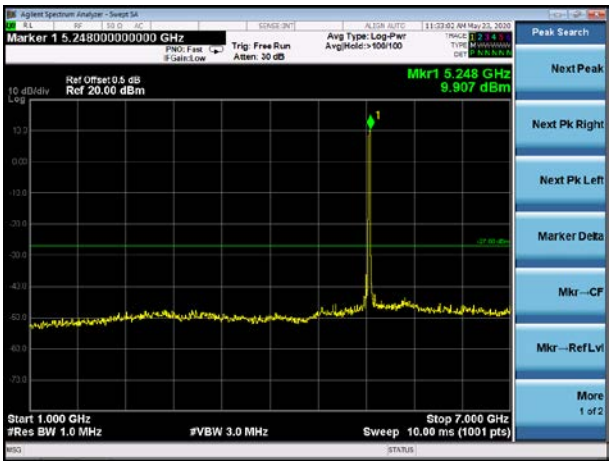
802.11ac20 on channel 48



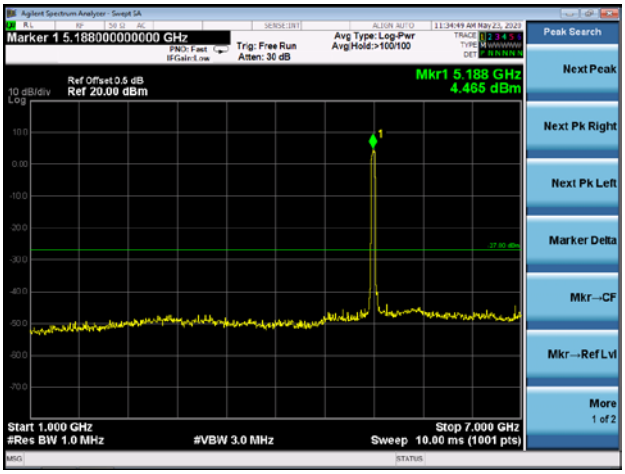
802.11ac40 on channel 38



802.11ac20 on channel 48



802.11ac40 on channel 38

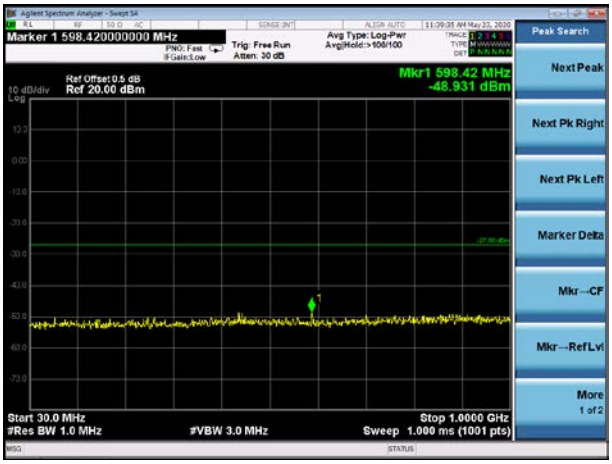


802.11ac20 on channel 48

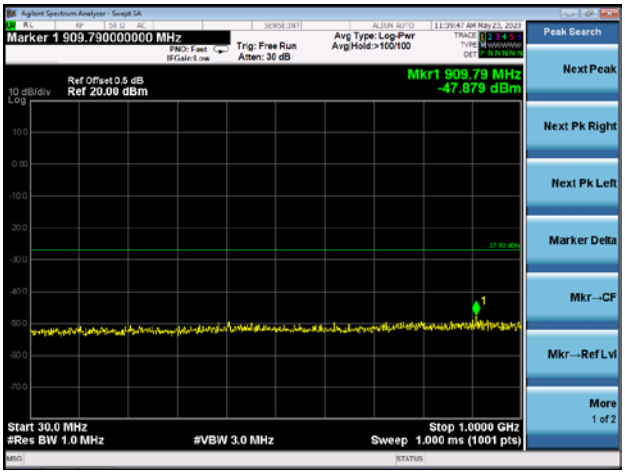
802.11ac40 on channel 38

Test Plot

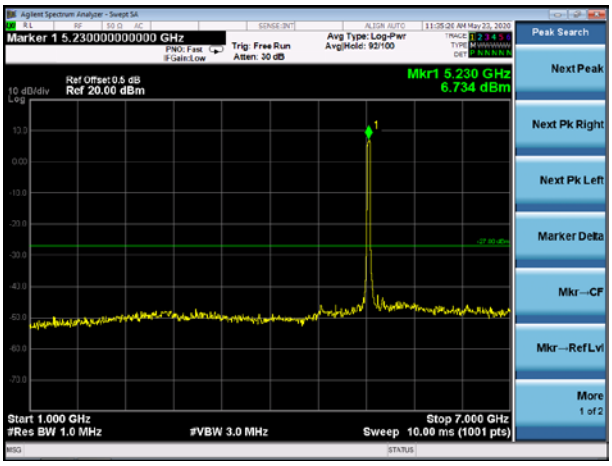
802.11ac40 on channel 46



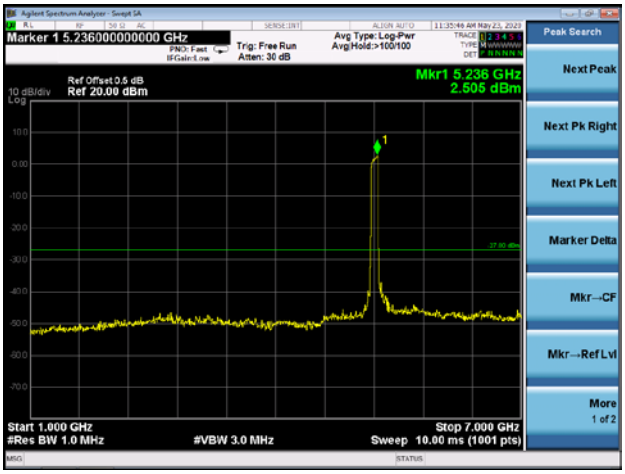
802.11ac80 on channel 42



802.11 ac40 on channel 46



802.11 ac80 on channel 42



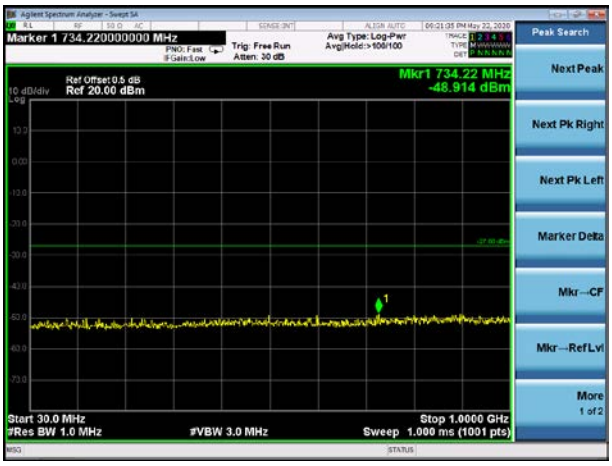
802.11 ac40 on channel 46

802.11 ac80 on channel 42

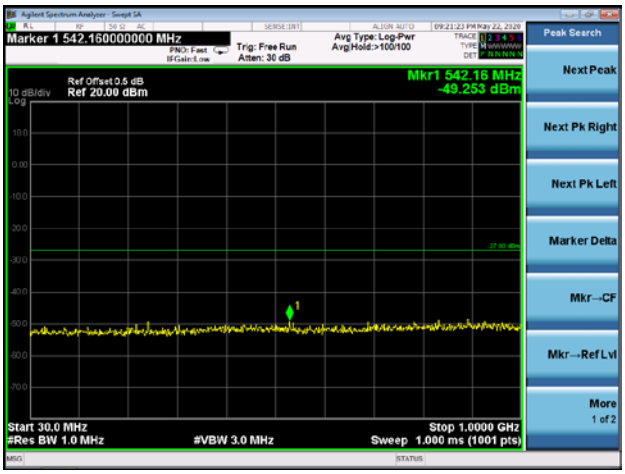
5.8G

Test Plot

802.11a on channel 149



802.11a on channel 157



802.11a on channel 149

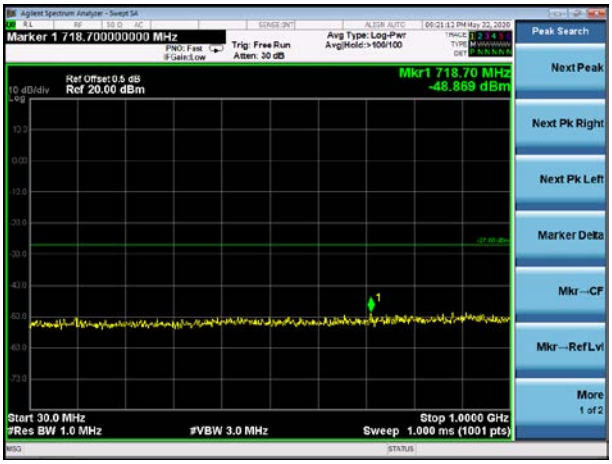
802.11a on channel 157

802.11a on channel 149

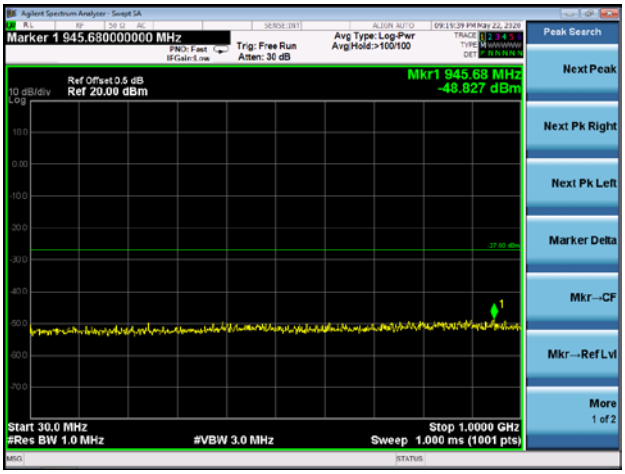
802.11a on channel 157

Test Plot

802.11a on channel 165



802.11n20 on channel 149



802.11a on channel 165

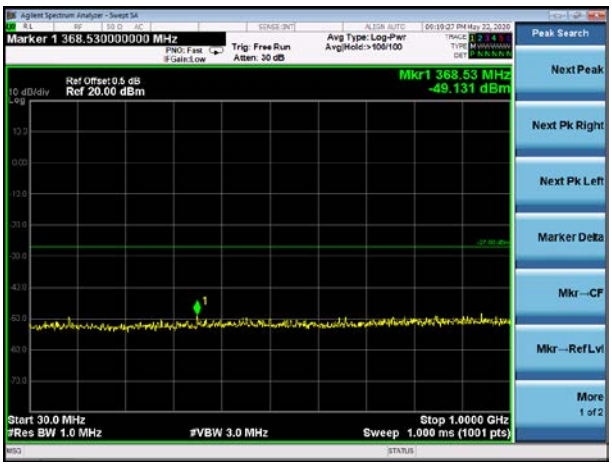
802.11n20 on channel 149

802.11a on channel 165

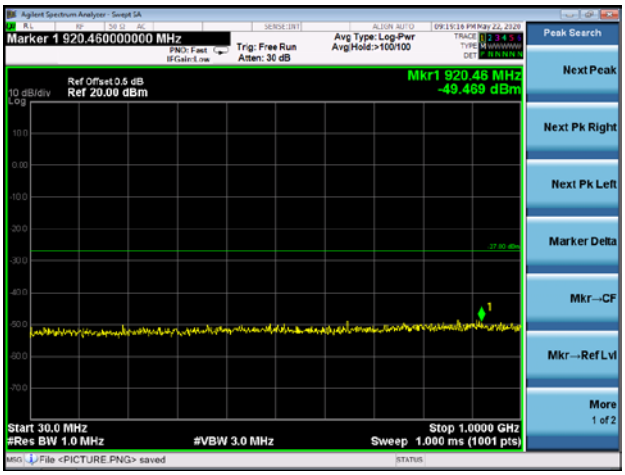
802.11n20 on channel 149

Test Plot

802.11n20 on channel 157

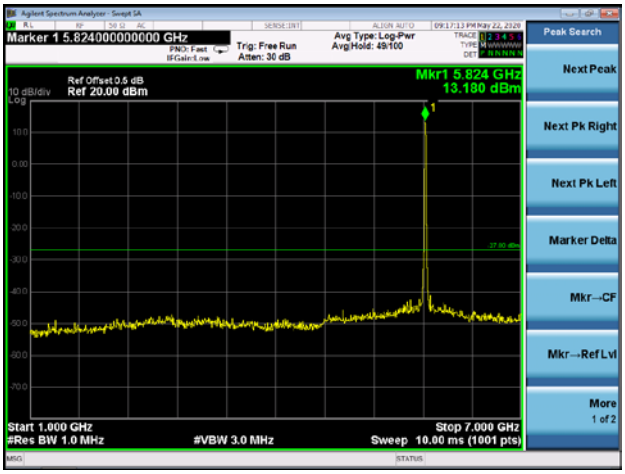


802.11n20 on channel 165



802.11n20 on channel 157

802.11n20 on channel 165

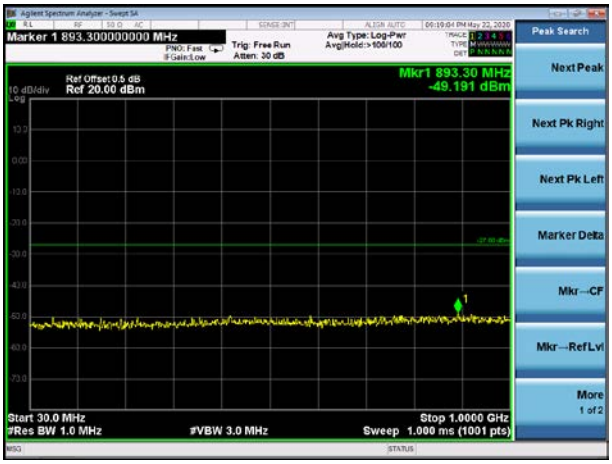


802.11n20 on channel 157

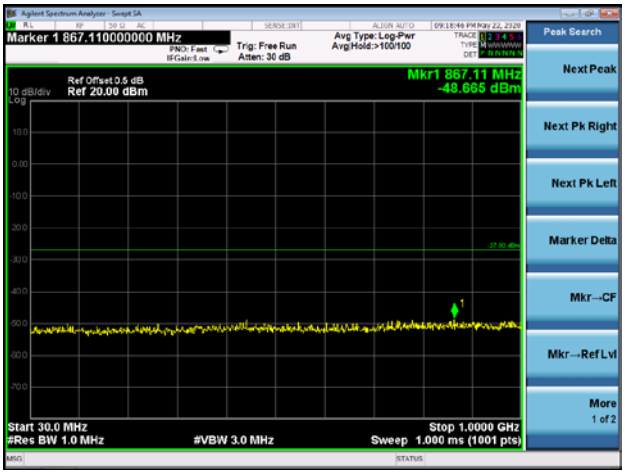
802.11n20 on channel 165

Test Plot

802.11n40 on channel 151



802.11n40 on channel 159



802.11n40 on channel 151

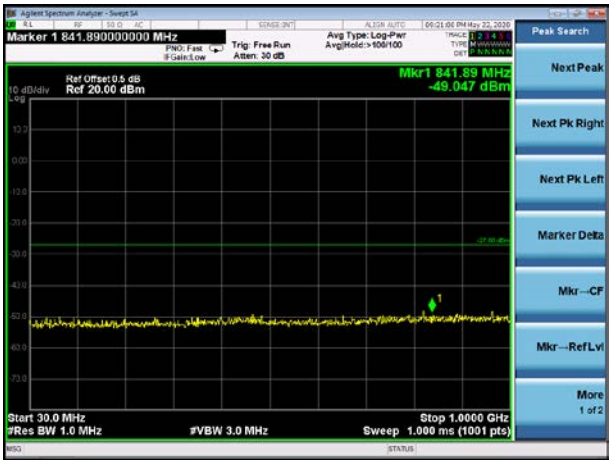
802.11n40 on channel 159

802.11n40 on channel 151

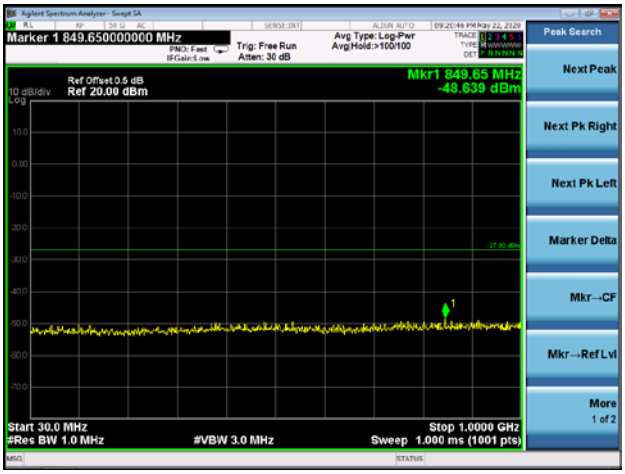
802.11n40 on channel 159

Test Plot

802.11ac20 on channel 149

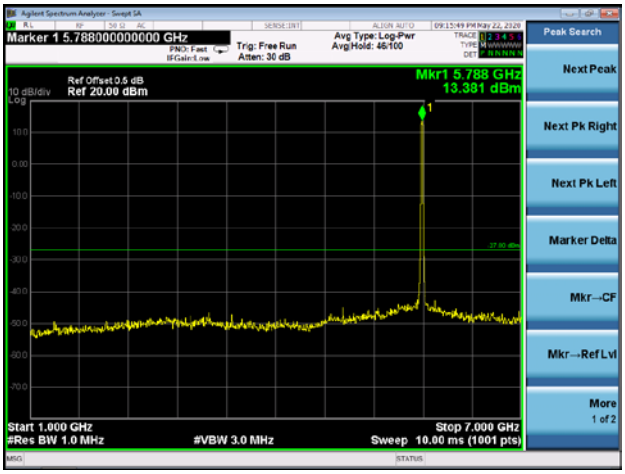


802.11ac20 on channel 157



802.11ac20 on channel 149

802.11ac20 on channel 157

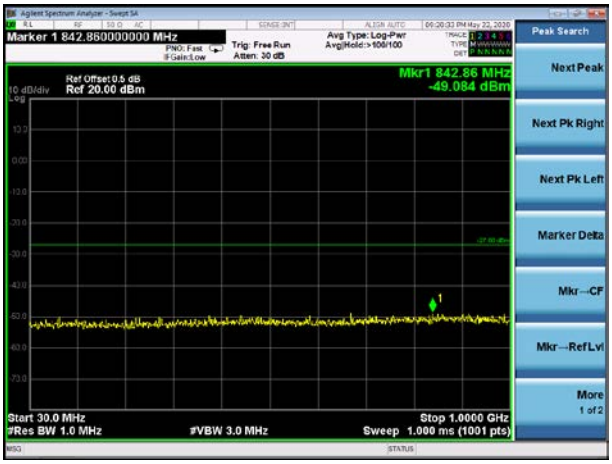


802.11ac20 on channel 149

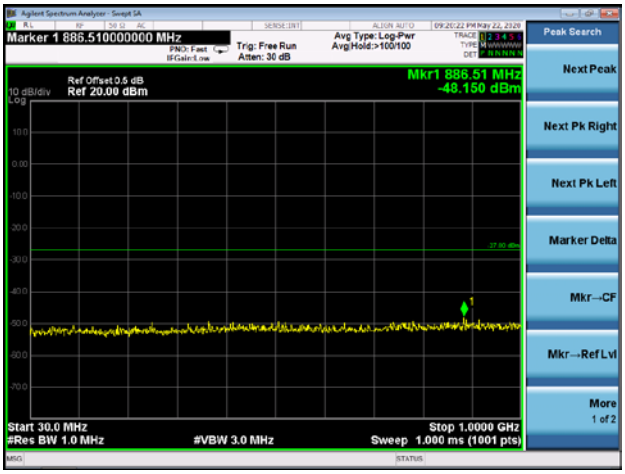
802.11ac20 on channel 157

Test Plot

802.11ac20 on channel 165



802.11ac40 on channel 151



802.11ac20 on channel 165

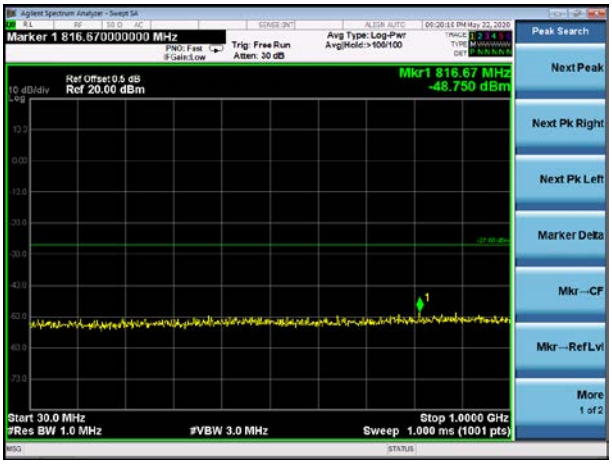
802.11ac40 on channel 151

802.11ac20 on channel 165

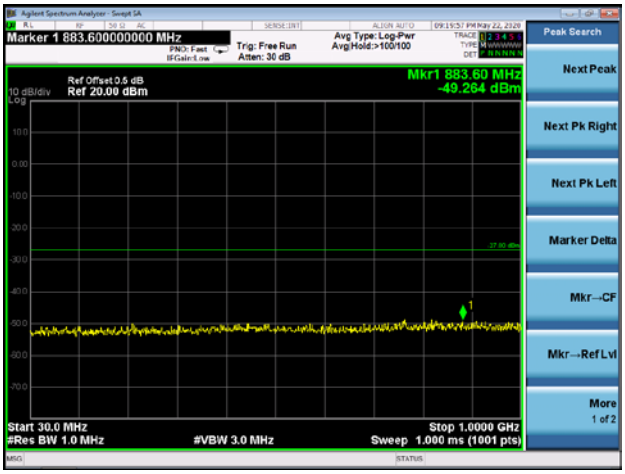
802.11ac40 on channel 151

Test Plot

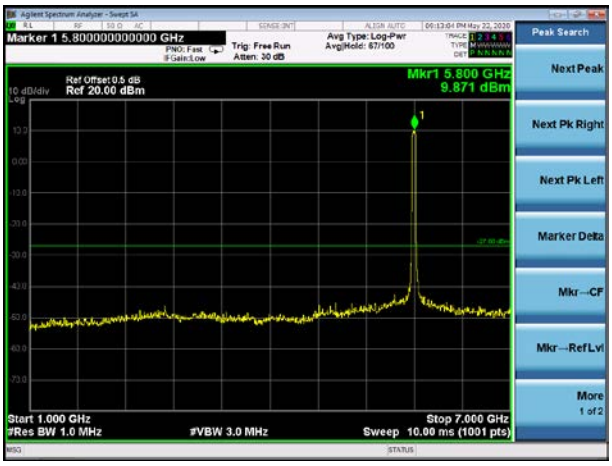
802.11ac40 on channel 159



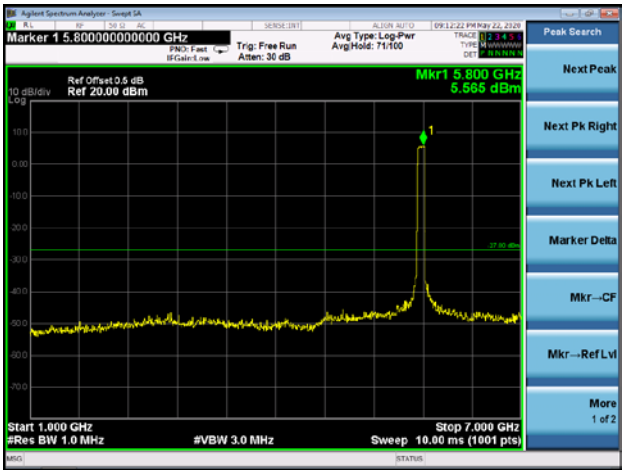
802.11ac80 on channel 155



802.11 ac40 on channel 159



802.11 ac80 on channel 155



802.11 ac40 on channel 159

802.11 ac80 on channel 155

9. Frequency Stability Measurement

9.1 LIMIT

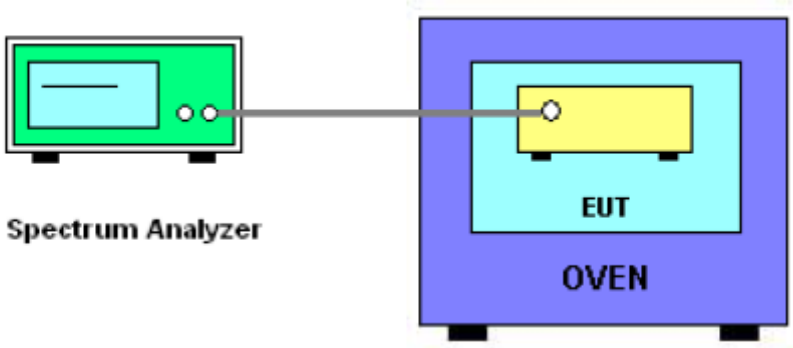
Manufactures of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

The transmitter center frequency tolerance shall be ± 20 ppm maximum for the 5 GHz band (IEEE 802.11n specification).

9.2 TEST PROCEDURES

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. EUT have transmitted absence of modulation signal and fixed channelize.
3. Set the spectrum analyzer span to view the entire absence of modulation emissions bandwidth.
4. Set RBW = 10 kHz, VBW = 10 kHz with peak detector and maxhold settings.
5. fc is declaring of channel frequency. Then the frequency error formula is (fc-f)/fc × 10_6 ppm and the limit is less than ±20ppm (IEEE 802.11nspecification).
6. The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value
7. Extreme temperature is -20°C~70°C.

9.3 TEST SETUP LAYOUT



9.4 EUT OPERATION DURING TEST

The EUT was programmed to be in continuously un-modulation transmitting mode.

9.5 TEST RESULTS

Temperature：	26 ℃	Relative Humidity：	54%
Pressure：	101kPa	Test Voltage ：	DC12V
Test Mode ：	TX Frequency U-NII-1 (5180-5240MHz)		

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5180MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	12.00	5180.0528	5180	0.0528	10.1931
		V max (V)	13.80	5180.0322	5180	0.0322	6.2162
		V min (V)	10.20	5180.0247	5180	0.0247	4.7683
Limits				5150-5250 MHz			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5180MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	12	T (°C)	-20	5180.0052	5180	0.0052	1.0039
		T (°C)	-10	5180.0104	5180	0.0104	2.0077
		T (°C)	0	5180.0328	5180	0.0328	6.3320
		T (°C)	10	5180.0384	5180	0.0384	7.4131
		T (°C)	20	5180.0299	5180	0.0299	5.7722
		T (°C)	30	5180.0215	5180	0.0215	4.1506
		T (°C)	40	5180.0125	5180	0.0125	2.4151
		T (°C)	50	5180.0092	5180	0.0092	1.7761
		T (°C)	60	5180.0418	5180	0.0418	8.0695
		T (°C)	70	5180.0693	5180	0.0693	13.3784
Limits				5150-5250 MHz			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5200MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	12.00	5200.0252	5200	0.0252	4.8462
		V max (V)	13.80	5200.0427	5200	0.0427	8.2115
		V min (V)	10.20	5200.0691	5200	0.0691	13.2885
Limits				5150-5250 MHz			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5200MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	12	T (°C)	-20	5200.0634	5200	0.0634	12.1923
		T (°C)	-10	5200.0522	5200	0.0522	10.0385
		T (°C)	0	5200.0438	5200	0.0438	8.4231
		T (°C)	10	5200.0924	5200	0.0924	17.7692
		T (°C)	20	5200.0633	5200	0.0633	12.1731
		T (°C)	30	5200.0128	5200	0.0128	2.4615
		T (°C)	40	5200.0734	5200	0.0734	14.1154
		T (°C)	50	5200.0416	5200	0.0416	8.0000
		T (°C)	60	5200.0327	5200	0.0327	6.2885
		T (°C)	70	5200.0422	5200	0.0422	8.1154
Limits				5150-5250 MHz			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5240MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	12.00	5240.0134	5240	0.0134	2.5573
		V max (V)	13.80	5240.0418	5240	0.0418	7.9771
		V min (V)	10.20	5240.0096	5240	0.0096	1.8321
Limits				5150-5250 MHz			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5240MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	12	T (°C)	-20	5240.0098	5240	0.0098	1.8702
		T (°C)	-10	5240.0035	5240	0.0035	0.6679
		T (°C)	0	5240.0147	5240	0.0147	2.8053
		T (°C)	10	5240.0851	5240	0.0851	16.2405
		T (°C)	20	5240.0113	5240	0.0113	2.1565
		T (°C)	30	5240.0126	5240	0.0126	2.4046
		T (°C)	40	5240.0068	5240	0.0068	1.2977
		T (°C)	50	5240.0072	5240	0.0072	1.3740
		T (°C)	60	5240.0087	5240	0.0087	1.6603
		T (°C)	70	5240.0104	5240	0.0104	1.9847
Limits				5150-5250 MHz			
Result				Complies			

Temperature：	26 ℃	Relative Humidity：	54%
Pressure：	101kPa	Test Voltage ：	DC12V
Hzst Mode ：	TX Frequency(5745-5825MHz)		

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5745MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	12.00	5745.01098	5745	0.01098	1.9115
		V max (V)	13.80	5745.00647	5745	0.00647	1.1268
		V min (V)	10.20	5745.00634	5745	0.00634	1.1044
Limits				5725-5850 MHz			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5745MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	12	T (°C)	-20	5745.00511	5745	0.00511	0.8888
		T (°C)	-10	5745.00734	5745	0.00734	1.2780
		T (°C)	0	5745.00414	5745	0.00414	0.7200
		T (°C)	10	5745.00571	5745	0.00571	0.9946
		T (°C)	20	5745.00520	5745	0.00520	0.9044
		T (°C)	30	5745.00665	5745	0.00665	1.1580
		T (°C)	40	5745.00568	5745	0.00568	0.9882
		T (°C)	50	5745.00526	5745	0.00526	0.9151
		T (°C)	60	5745.01176	5745	0.01176	2.0477
		T (°C)	70	5745.01162	5745	0.01162	2.0228
Limits				5725-5850 MHz			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5785MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	12.00	5785.00938	5785	0.00938	1.6208
		V max (V)	13.80	5785.00647	5785	0.00647	1.1185
		V min (V)	10.20	5785.01077	5785	0.01077	1.8610
Limits				5725-5850 MHz			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5785MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	12	T (°C)	-20	5785.00980	5785	0.00980	1.6941
		T (°C)	-10	5785.01322	5785	0.01322	2.2845
		T (°C)	0	5785.00768	5785	0.00768	1.3275
		T (°C)	10	5785.01264	5785	0.01264	2.1852
		T (°C)	20	5785.00435	5785	0.00435	0.7524
		T (°C)	30	5785.00513	5785	0.00513	0.8874
		T (°C)	40	5785.01035	5785	0.01035	1.7889
		T (°C)	50	5785.00725	5785	0.00725	1.2534
		T (°C)	60	5785.01045	5785	0.01045	1.8064
		T (°C)	70	5785.01035	5785	0.01035	1.7891
Limits				5725-5850 MHz			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5825MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	12.00	5825.00292	5825	0.00292	0.5020
		V max (V)	13.80	5825.01275	5825	0.01275	2.1896
		V min (V)	10.20	5825.01169	5825	0.01169	2.0070
Limits				5725-5850 MHz			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5825MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	12	T (°C)	-20	5825.00157	5825	0.00157	0.2696
		T (°C)	-10	5825.00674	5825	0.00674	1.1576
		T (°C)	0	5825.00845	5825	0.00845	1.4513
		T (°C)	10	5825.01166	5825	0.01166	2.0013
		T (°C)	20	5825.00806	5825	0.00806	1.3844
		T (°C)	30	5825.01181	5825	0.01181	2.0282
		T (°C)	40	5825.00540	5825	0.00540	0.9267
		T (°C)	50	5825.00329	5825	0.00329	0.5641
		T (°C)	60	5825.00129	5825	0.00129	0.2222
		T (°C)	70	5825.00731	5825	0.00731	1.2548
Limits				5725-5850 MHz			
Result				Complies			

10. ANTENNA REQUIREMENT

10.1 STANDARD REQUIREMENT

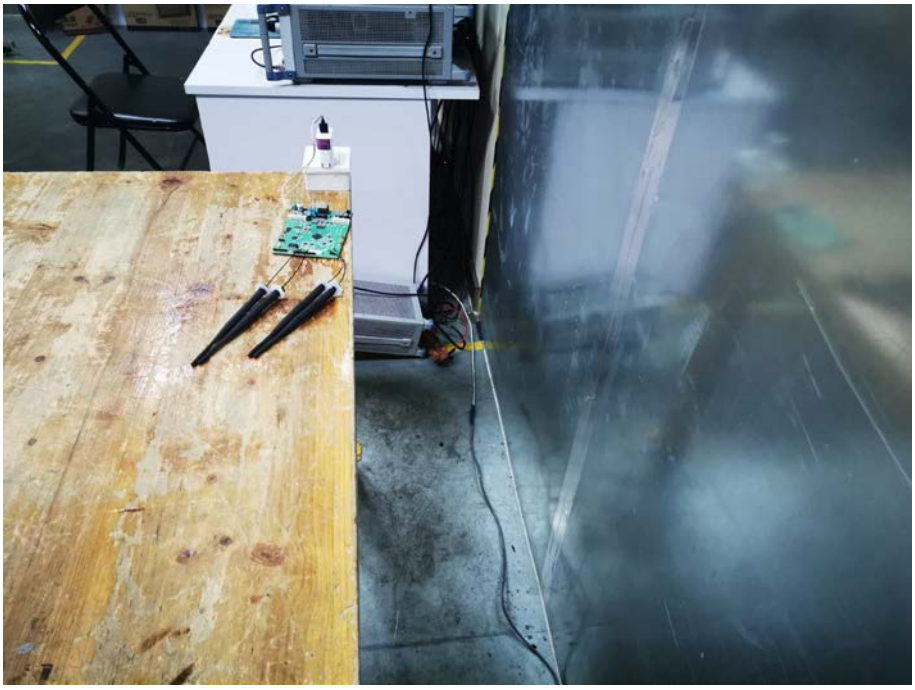
15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

10.2 EUT ANTENNA

The EUT antenna is External antenna (antenna gain (C): 5dBi; antenna gain (D) : 5dBi). It comply with the standard requirement.

11. EUT TEST PHOTO

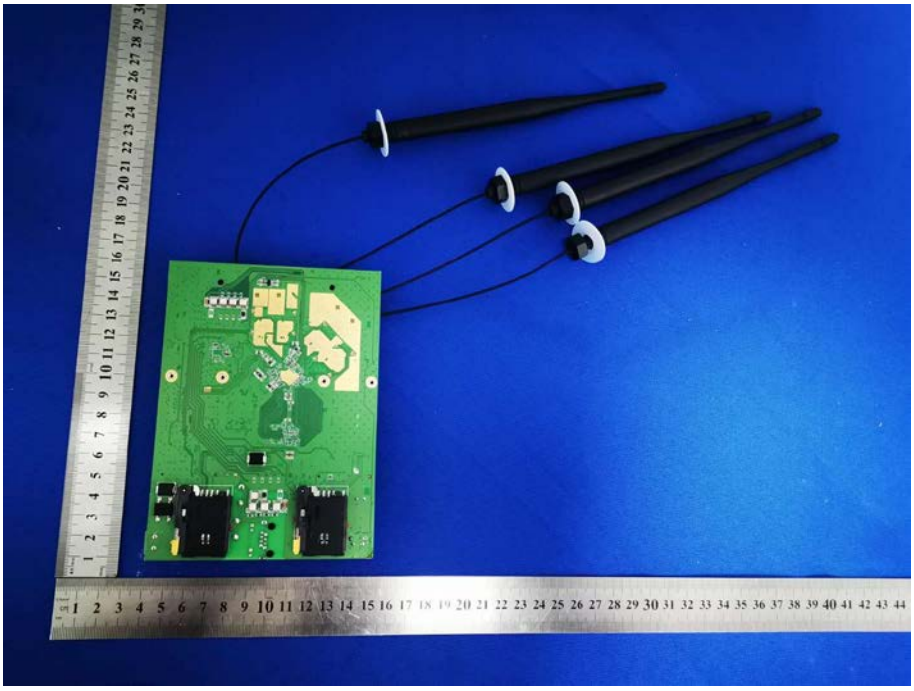
Conducted Measurement Photos

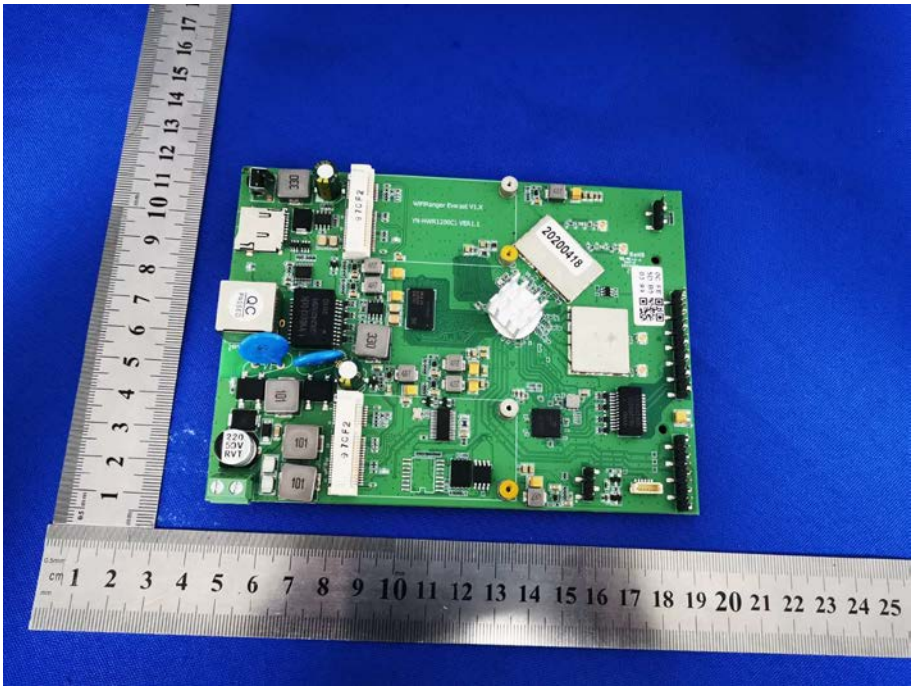


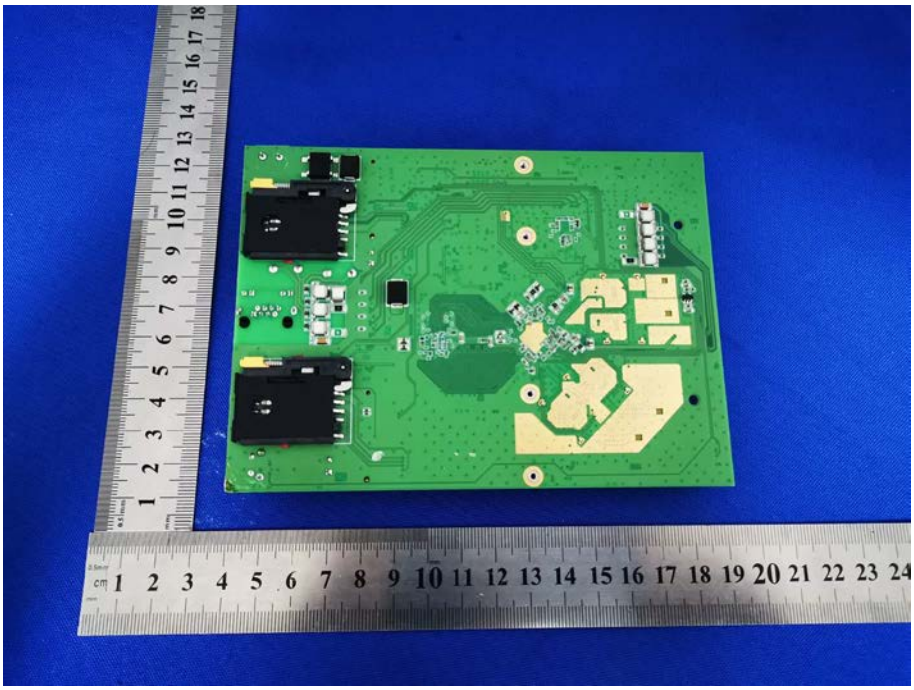
Radiated Measurement Photos


倍测检测
BCTC TEST

12. EUT PHOTO







S※※※※ END OF REPORT ※※※※※