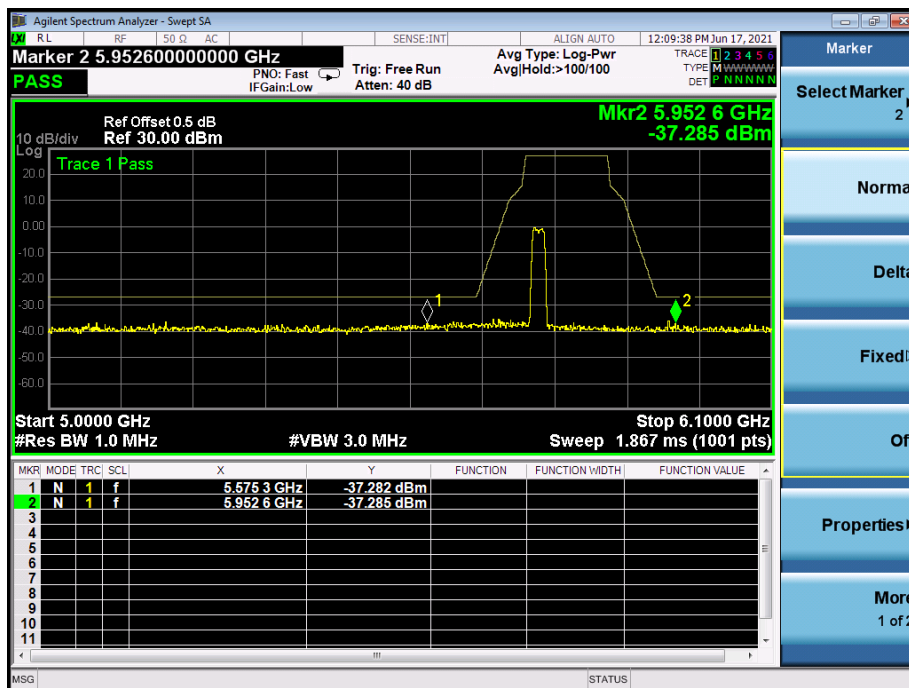
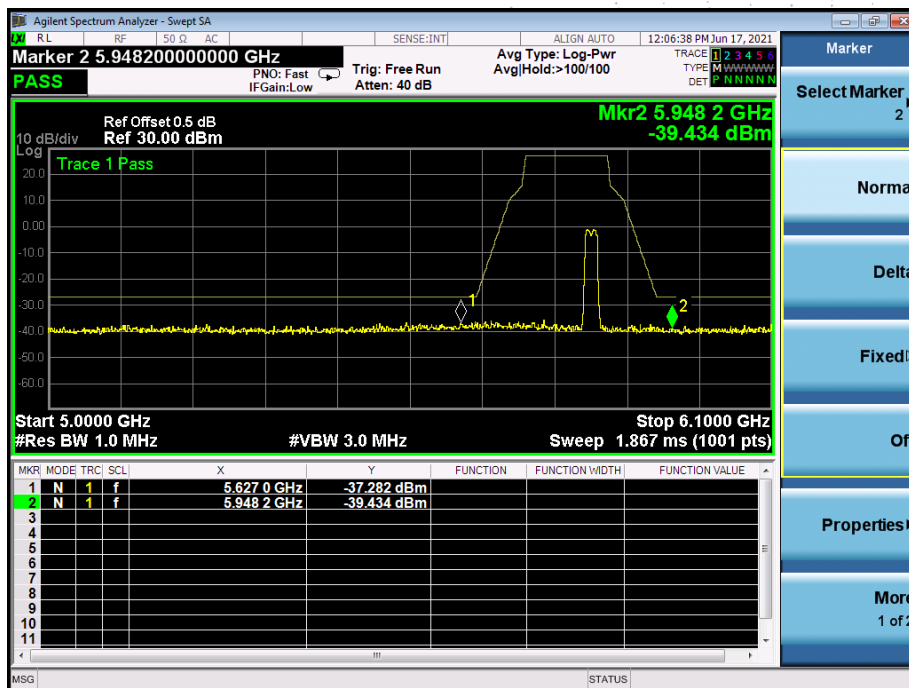


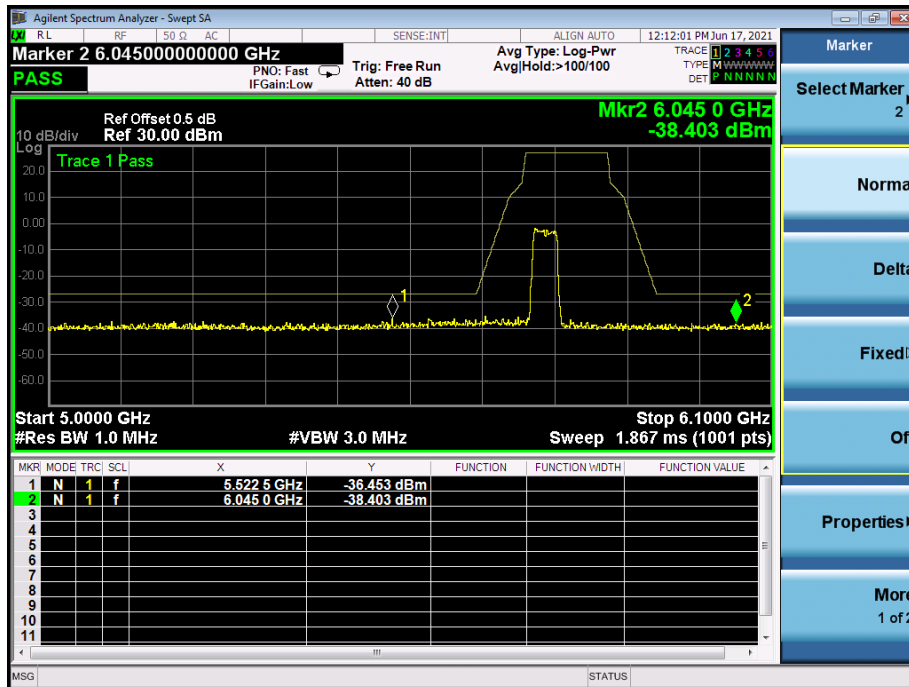
5.745~5.825 GHz (802.11n20) Band Edge, Left Side



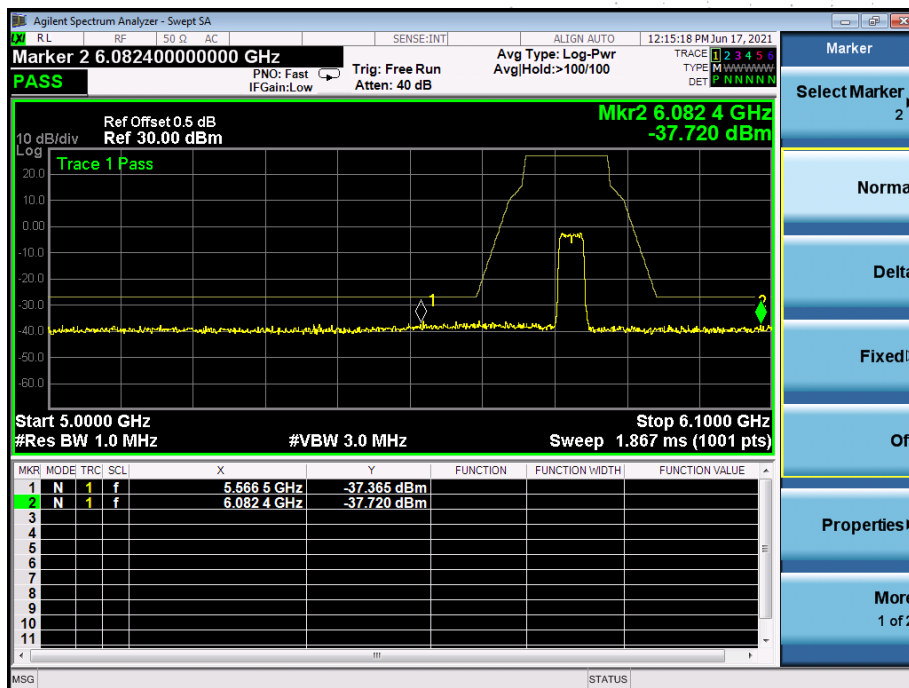
(802.11n20) Band Edge, Right Side



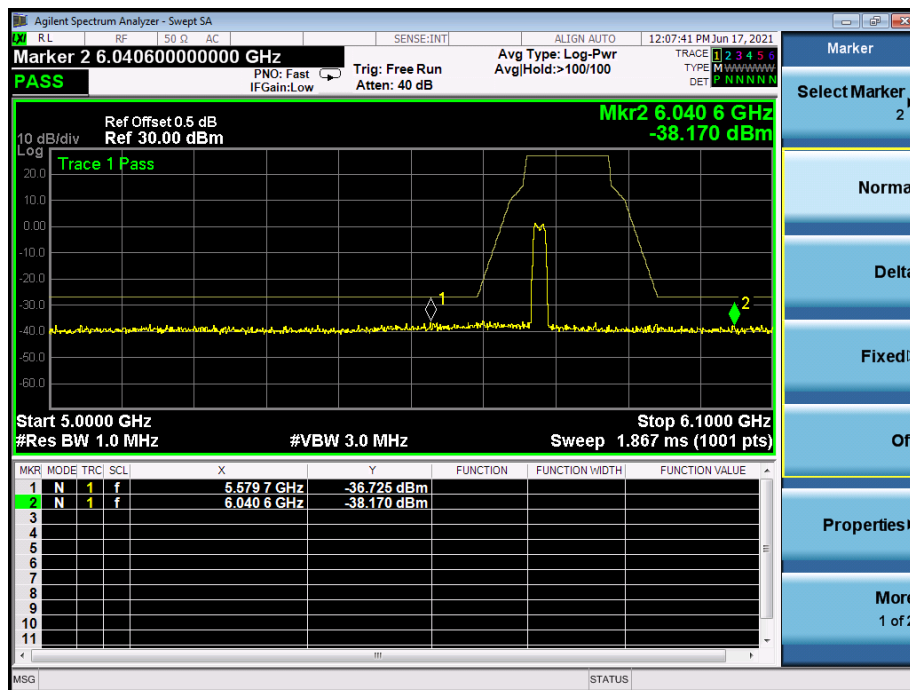
5.745~5.825 GHz
(802.11n40) Band Edge, Left Side



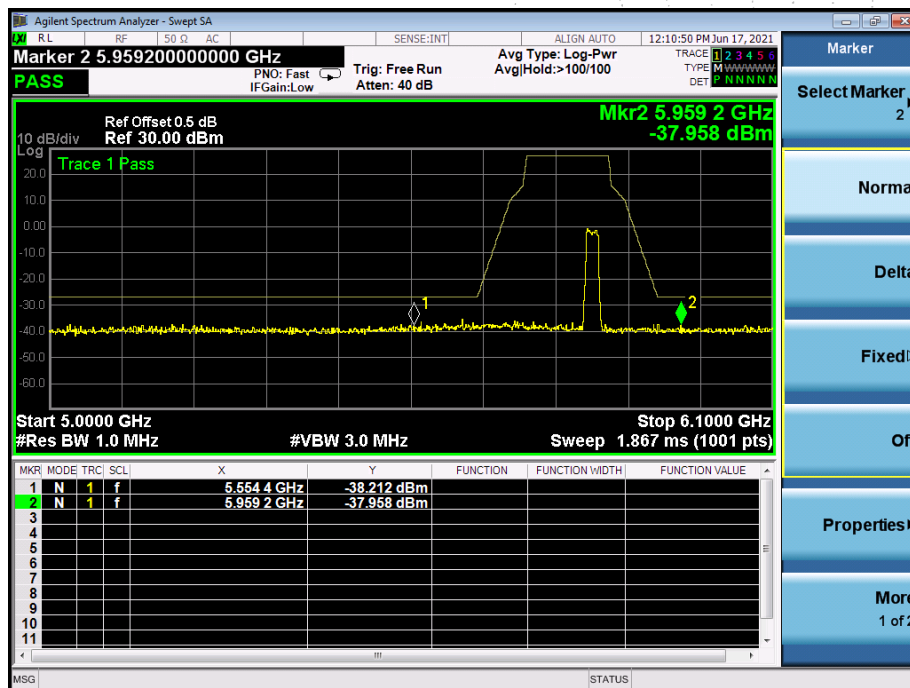
(802.11n40) Band Edge, Right Side



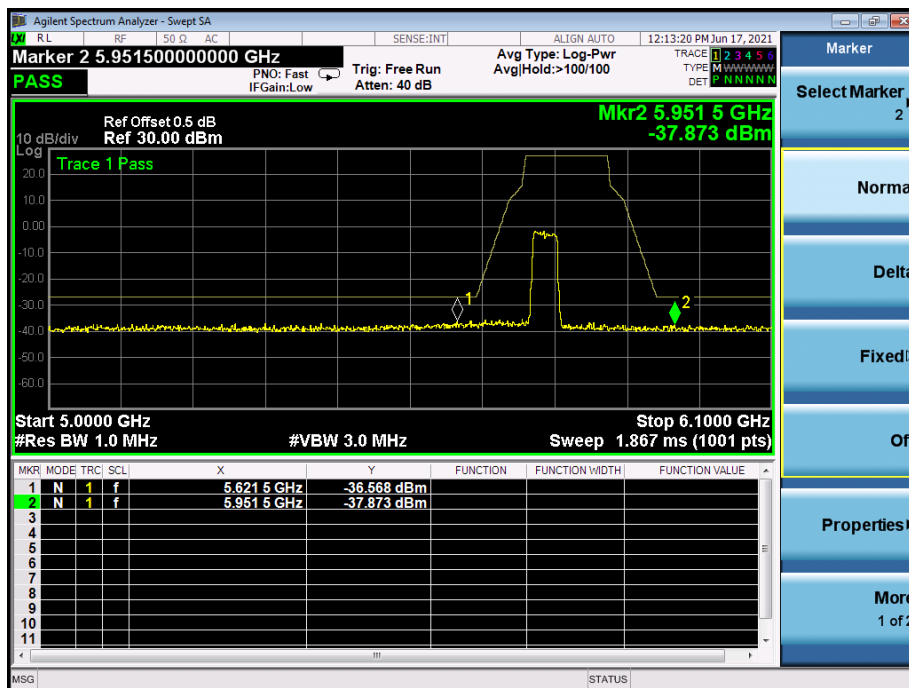
5.745~5.825 GHz (802.11ac20) Band Edge, Left Side



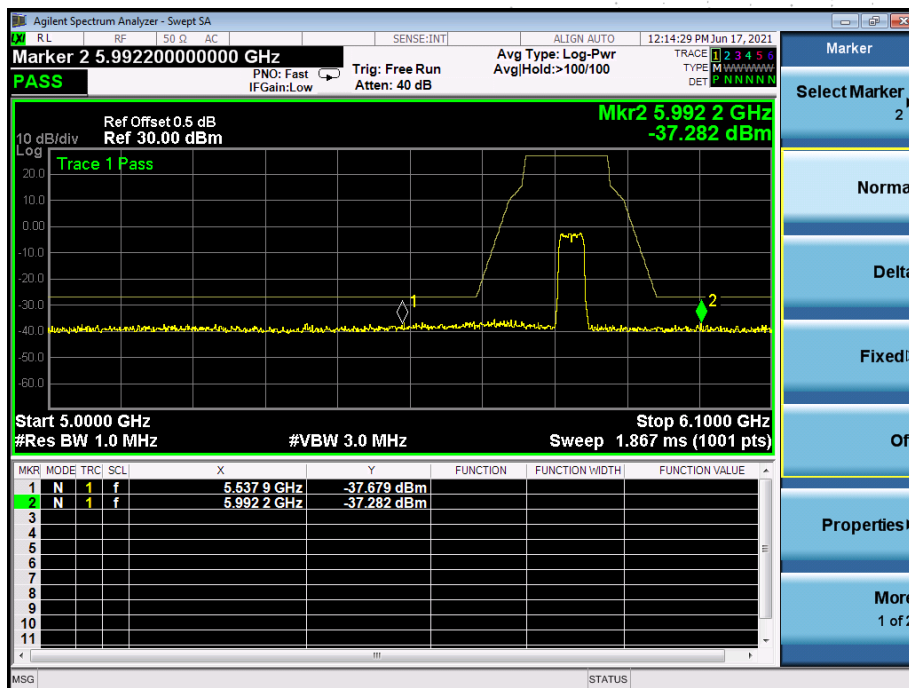
(802.11ac20) Band Edge, Right Side



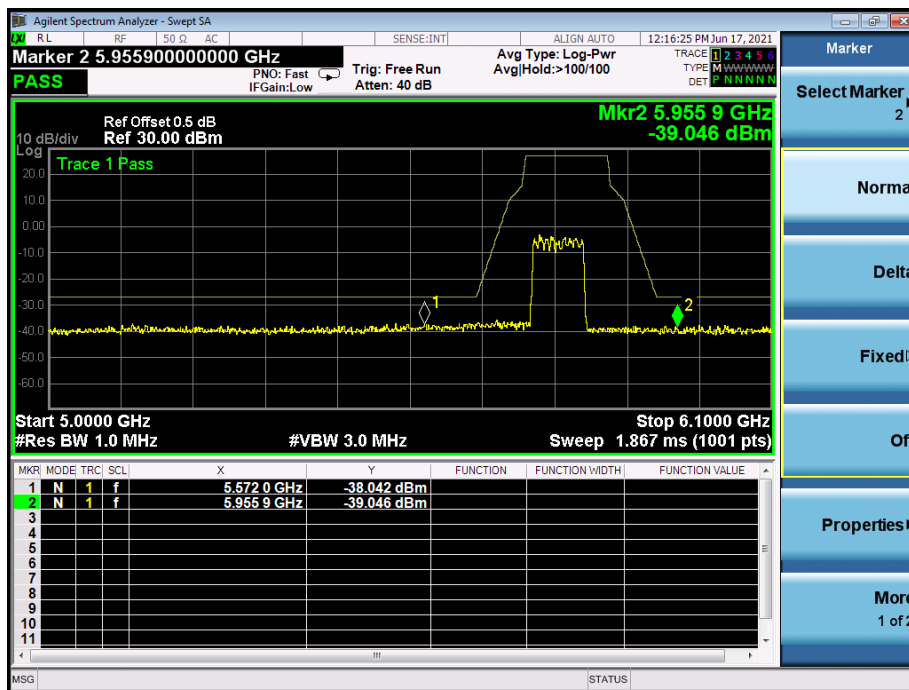
5.745~5.825 GHz (802.11ac40) Band Edge, Left Side



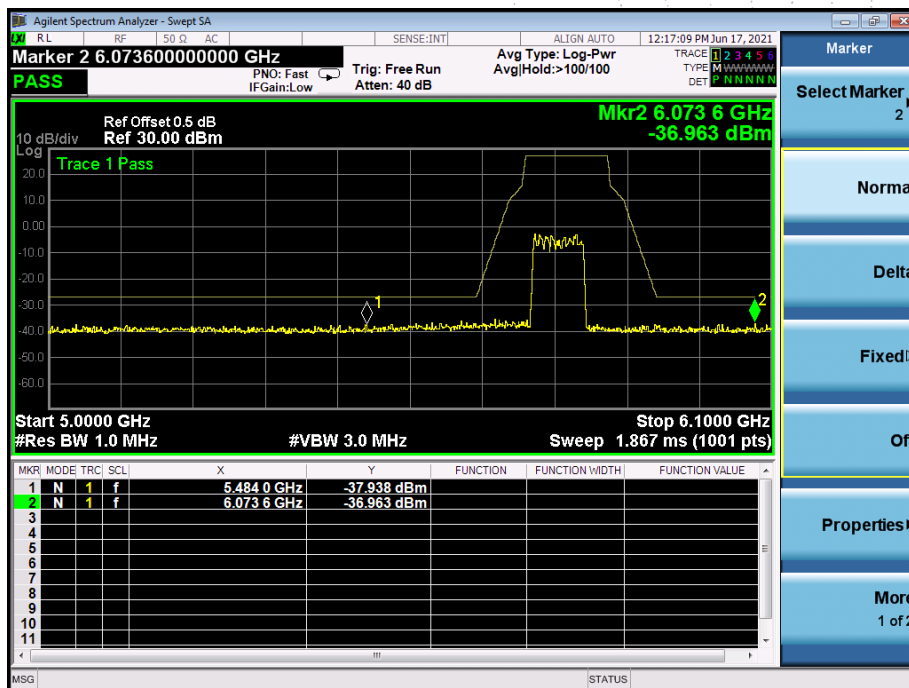
(802.11ac40) Band Edge, Right Side



5.745~5.825 GHz (802.11ac80) Band Edge, Left Side



(802.11ac80) Band Edge, Right Side



12. SPURIOUS RF CONDUCTED EMISSIONS

12.1 Block Diagram Of Test Setup



12.2 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..

12.3 Test procedure

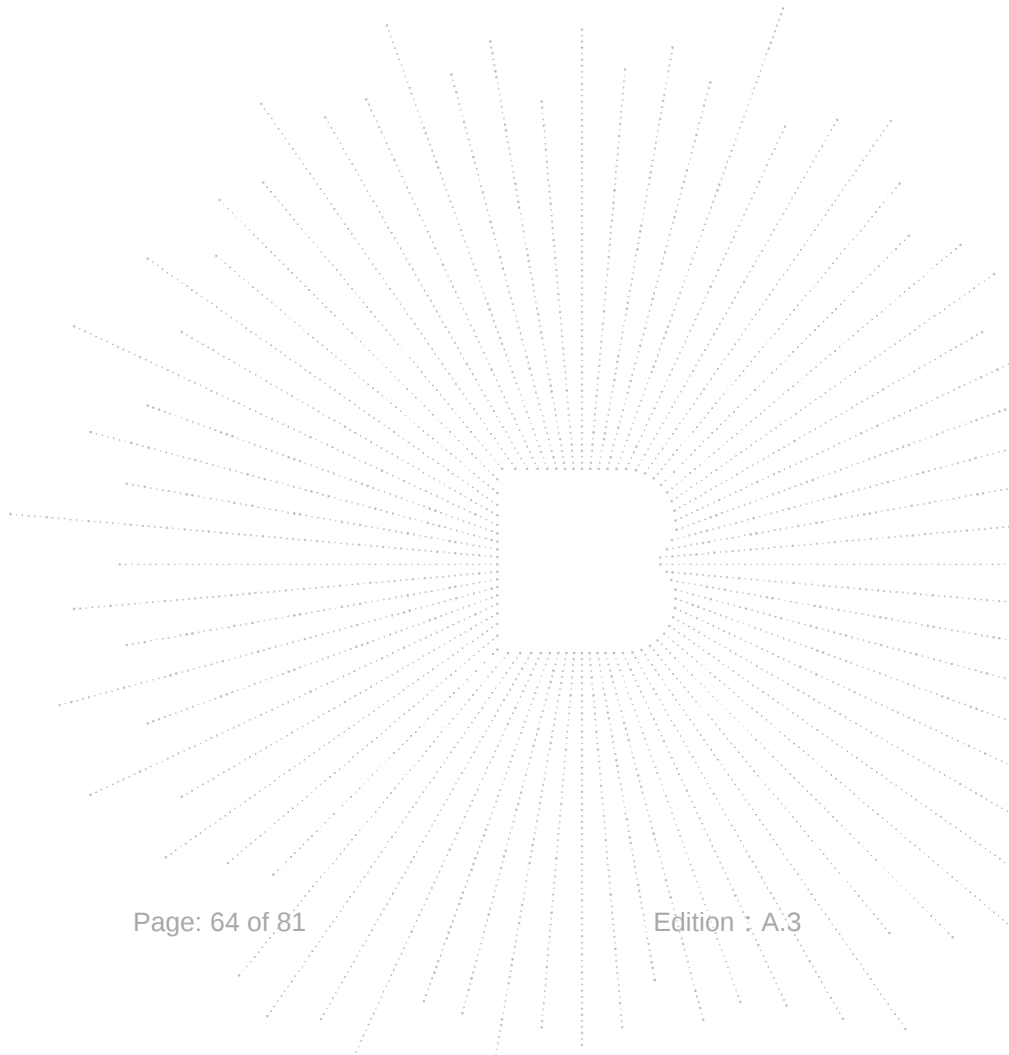
1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then 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.

12.4 Test Result

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 bandedge 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.

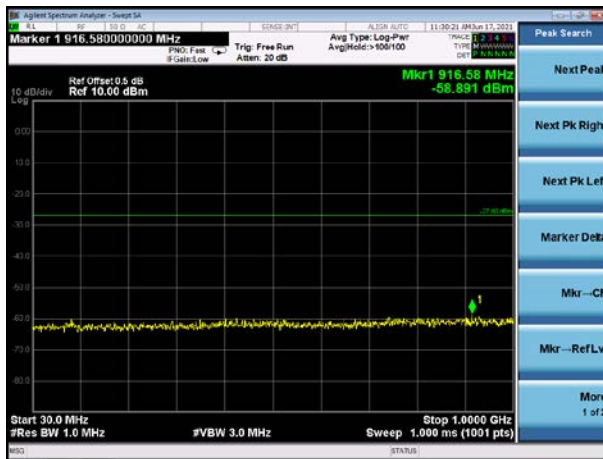
Note: A(B) Represent the value of antenna A and B, The worst data is Antenna B, only shown Antenna B Plot.



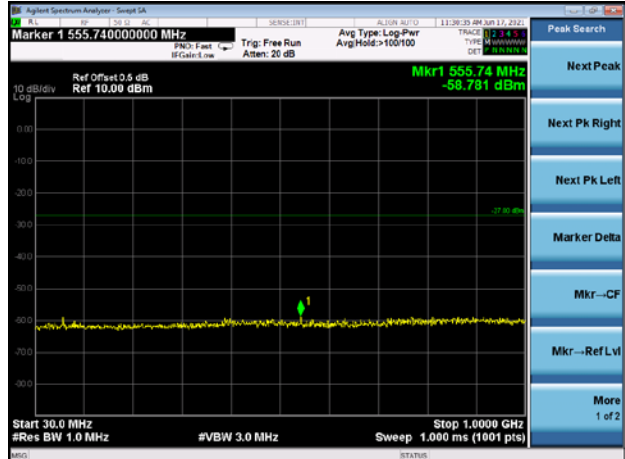
5.8G

Test Plot

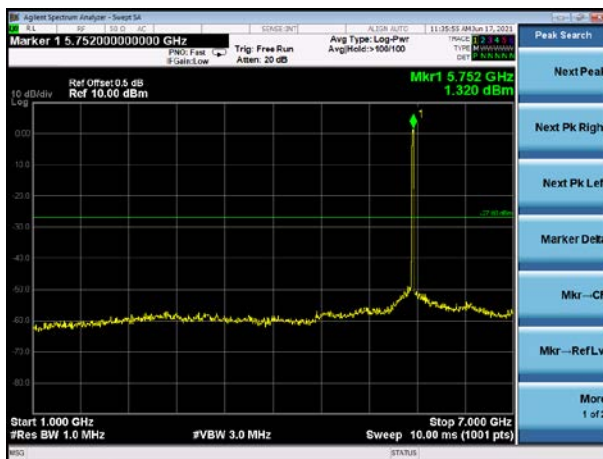
802.11a on channel 149



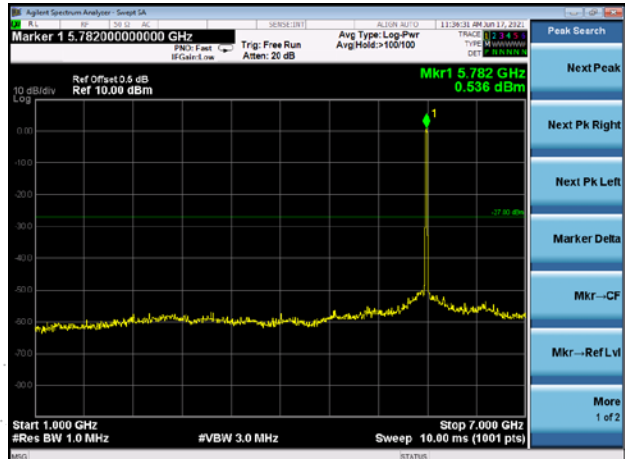
802.11a on channel 157



802.11a on channel 149



802.11a on channel 157



802.11a on channel 149

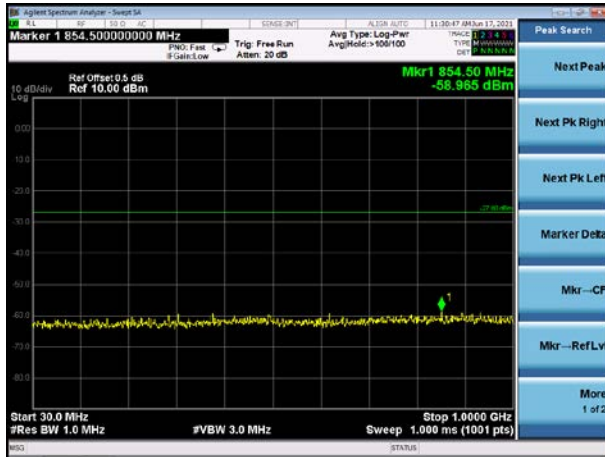


802.11a on channel 157

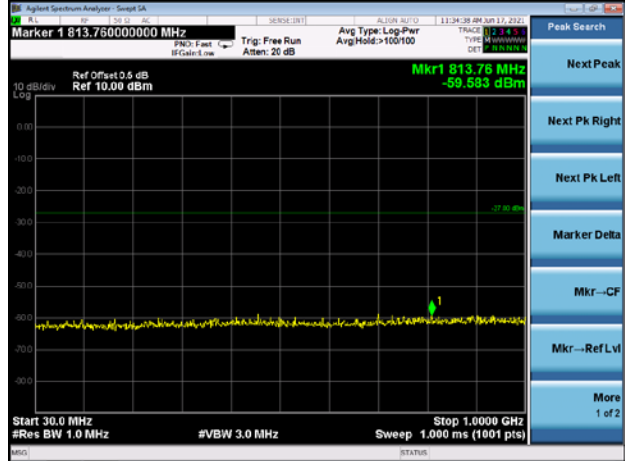


Test Plot

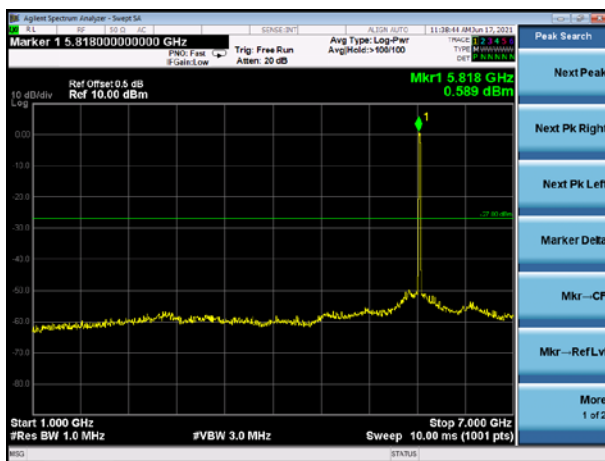
802.11a on channel 165



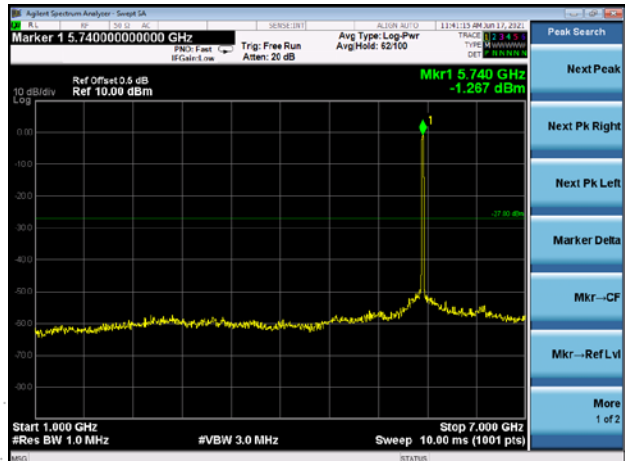
802.11n20 on channel 149



802.11a on channel 165



802.11n20 on channel 149



802.11a on channel 165

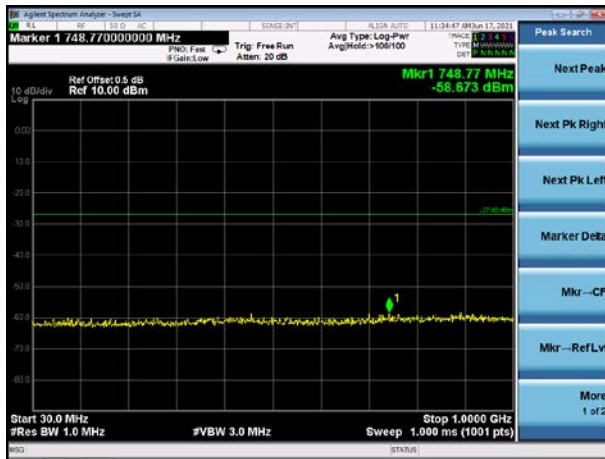


802.11n20 on channel 149

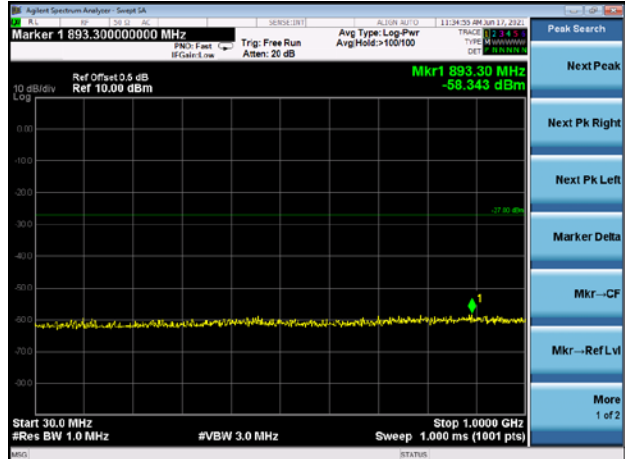


Test Plot

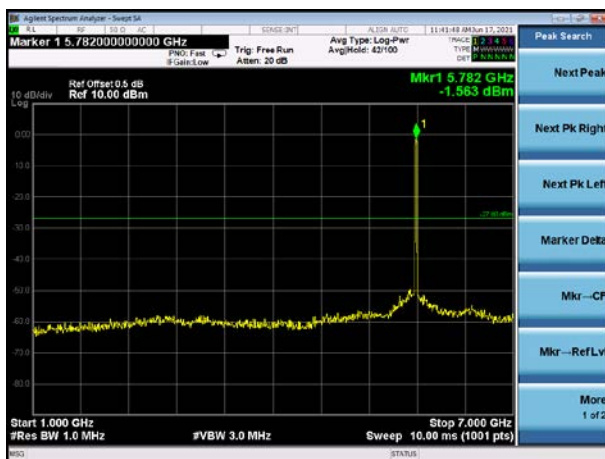
802.11n20 on channel 157



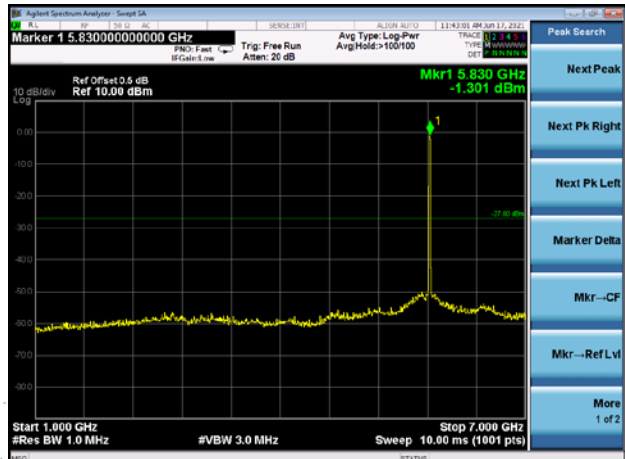
802.11n20 on channel 165



802.11n20 on channel 157



802.11n20 on channel 165



802.11n20 on channel 157

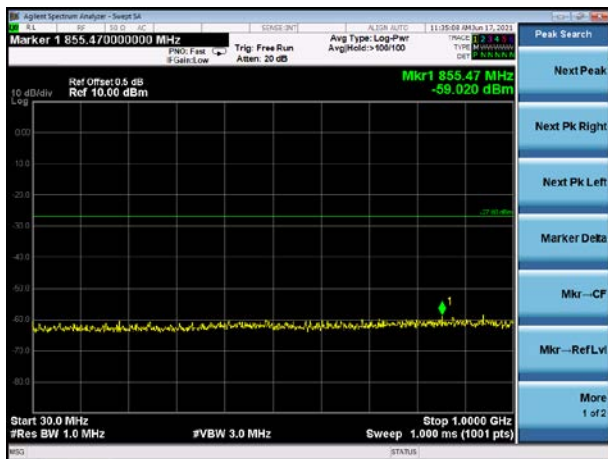


802.11n20 on channel 165

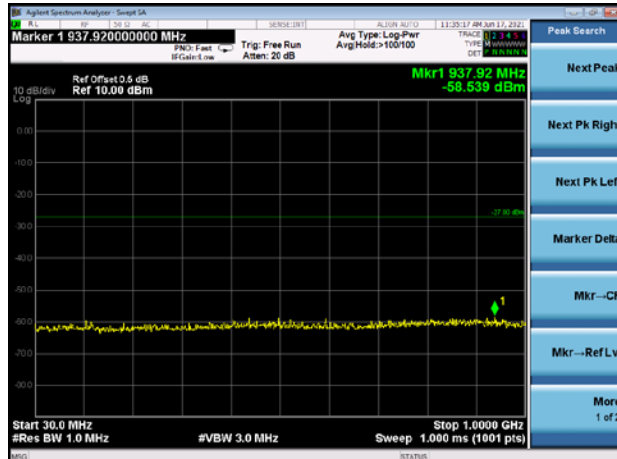


Test Plot

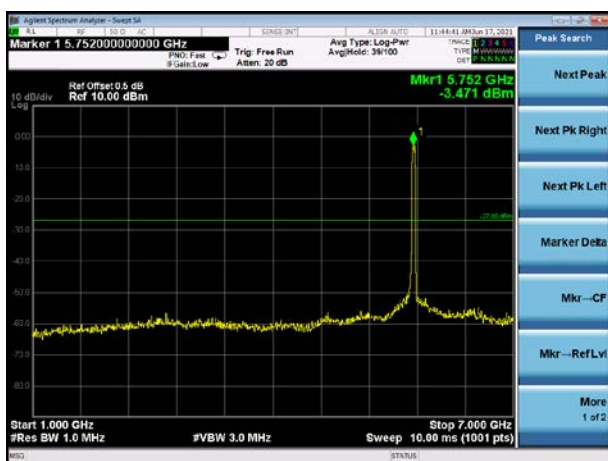
802.11n40 on channel 151



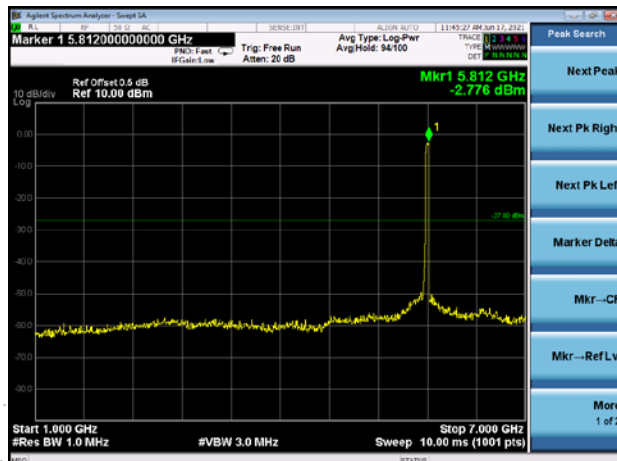
802.11n40 on channel 159



802.11n40 on channel 151



802.11n40 on channel 159



802.11n40 on channel 151

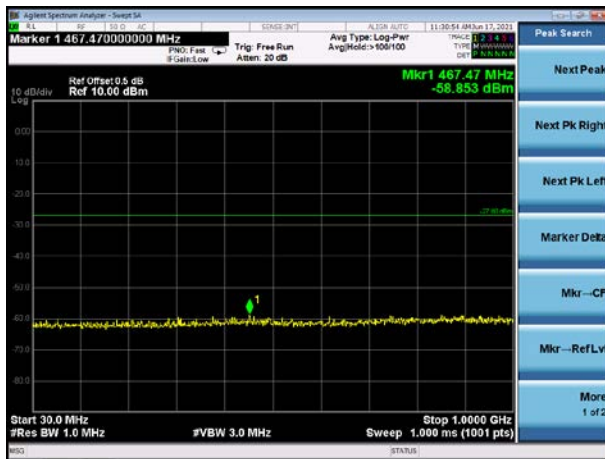


802.11n40 on channel 159

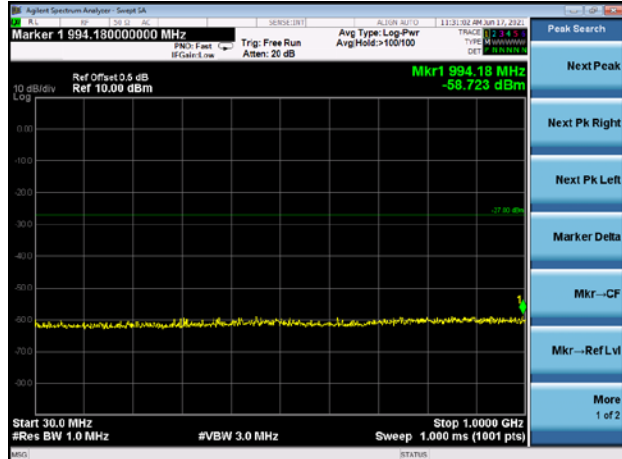


Test Plot

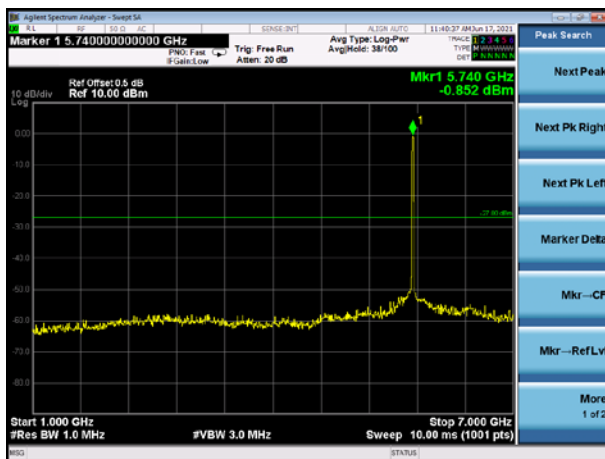
802.11ac20 on channel 149



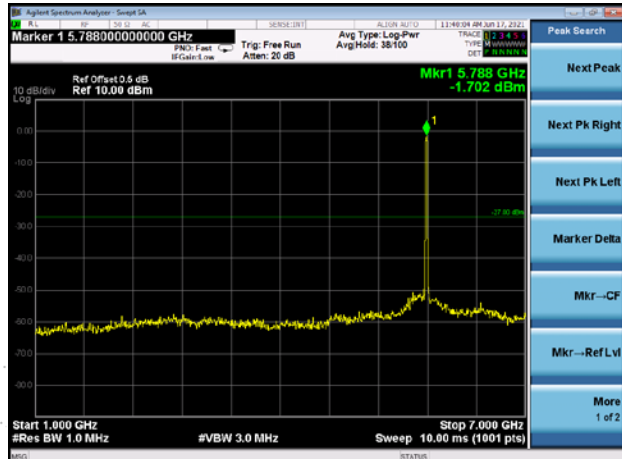
802.11ac20 on channel 157



802.11ac20 on channel 149



802.11ac20 on channel 157



802.11ac20 on channel 149

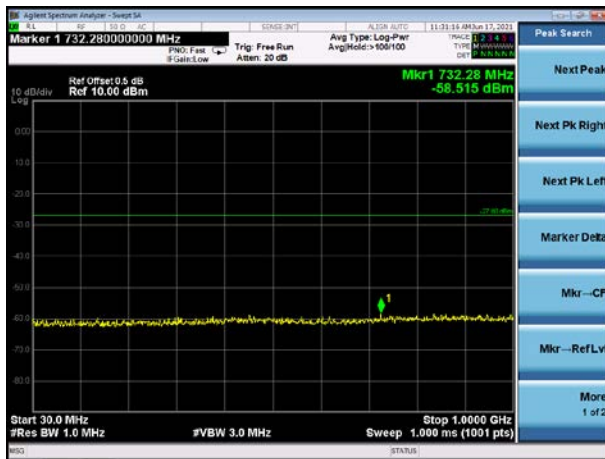


802.11ac20 on channel 157

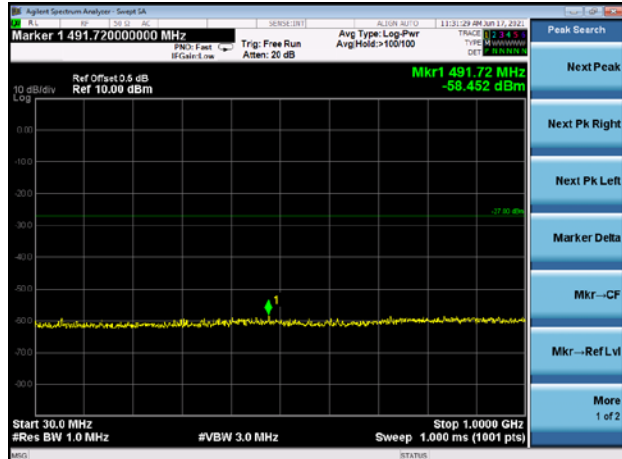


Test Plot

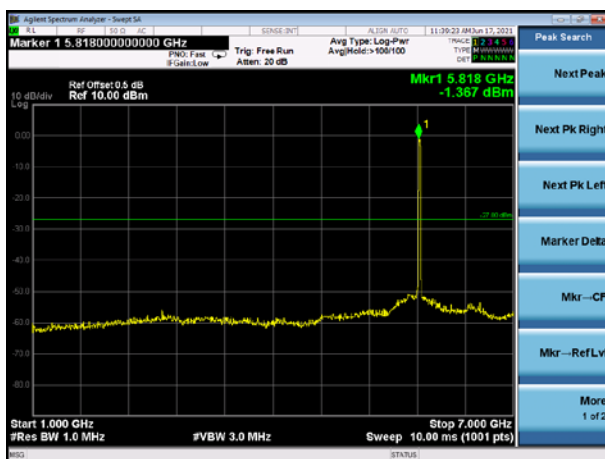
802.11ac20 on channel 165



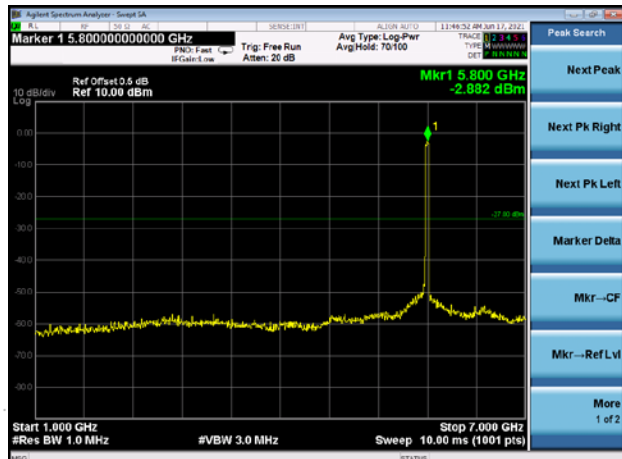
802.11ac40 on channel 151



802.11ac20 on channel 165



802.11ac40 on channel 151



802.11ac20 on channel 165

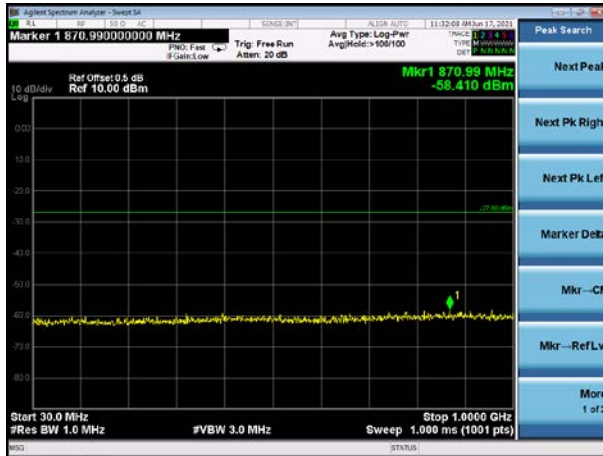


802.11ac40 on channel 151

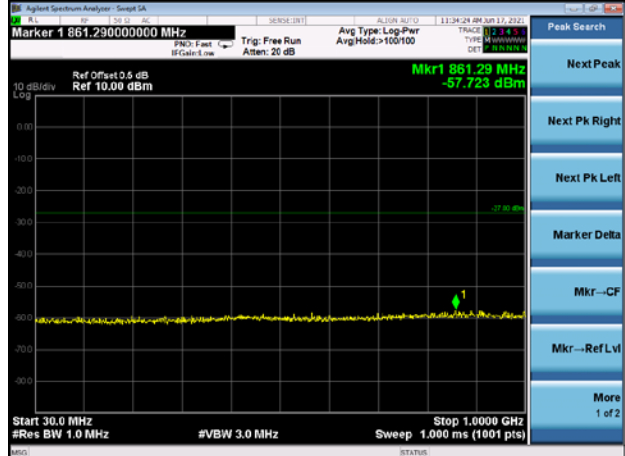


Test Plot

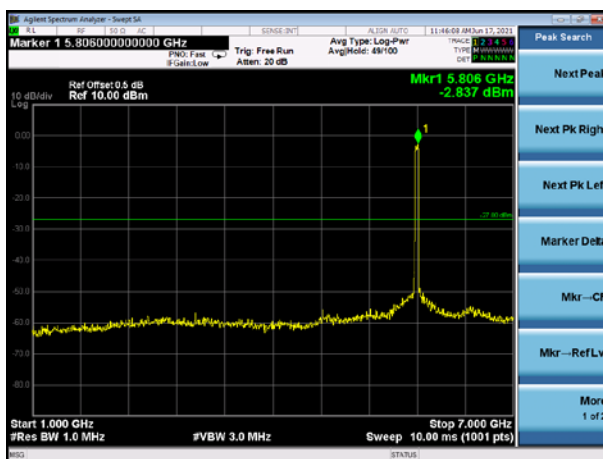
802.11ac40 on channel 159



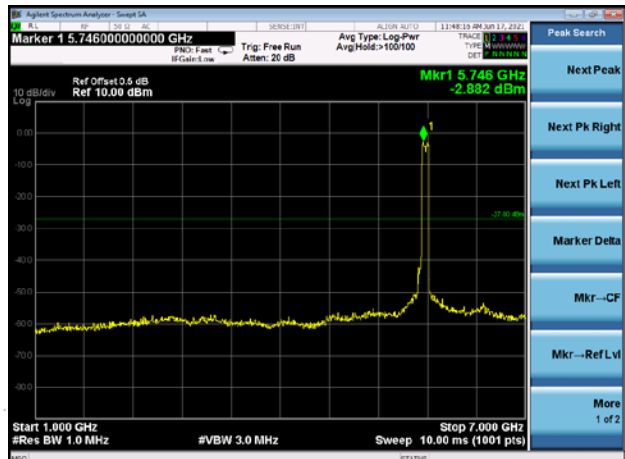
802.11ac80 on channel 155



802.11 ac40 on channel 159



802.11ac80 on channel 155



802.11 ac40 on channel 159

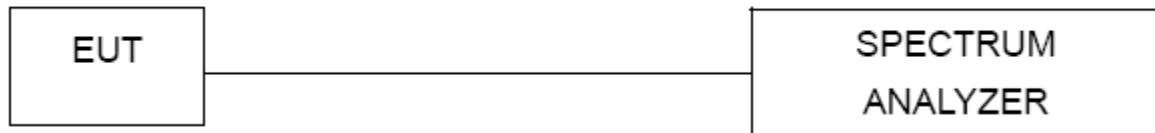


802.11ac80 on channel 155



13. FREQUENCY STABILITY MEASUREMENT

13.1 Block Diagram Of Test Setup



13.2 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)..

13.3 Test procedure

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. f_c is declaring of channel frequency. Then the frequency error formula is $(f_c - f)/f_c \times 10^6$ ppm and he limit is less than ± 20 ppm (IEEE 802.11n specification).
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 $-20^\circ\text{C} \sim 70^\circ\text{C}$.

13.4 Test Result

Temperature :	26 °C	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	AC120V/60Hz
Hzst Mode :	TX Frequency(5745-5825MHz)		

Voltage vs. Frequency Stabilit

TEST CONDITIONS				Reference Frequency: 5745MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120.00	5745.00893	5745	0.00893	1.5547
		V max (V)	132.00	5745.01053	5745	0.01053	1.8334
		V min (V)	108.00	5745.00641	5745	0.00641	1.1154
Limits				5725-5850 MHz			
Result				Complies			

Temperature vs. Frequency Stability

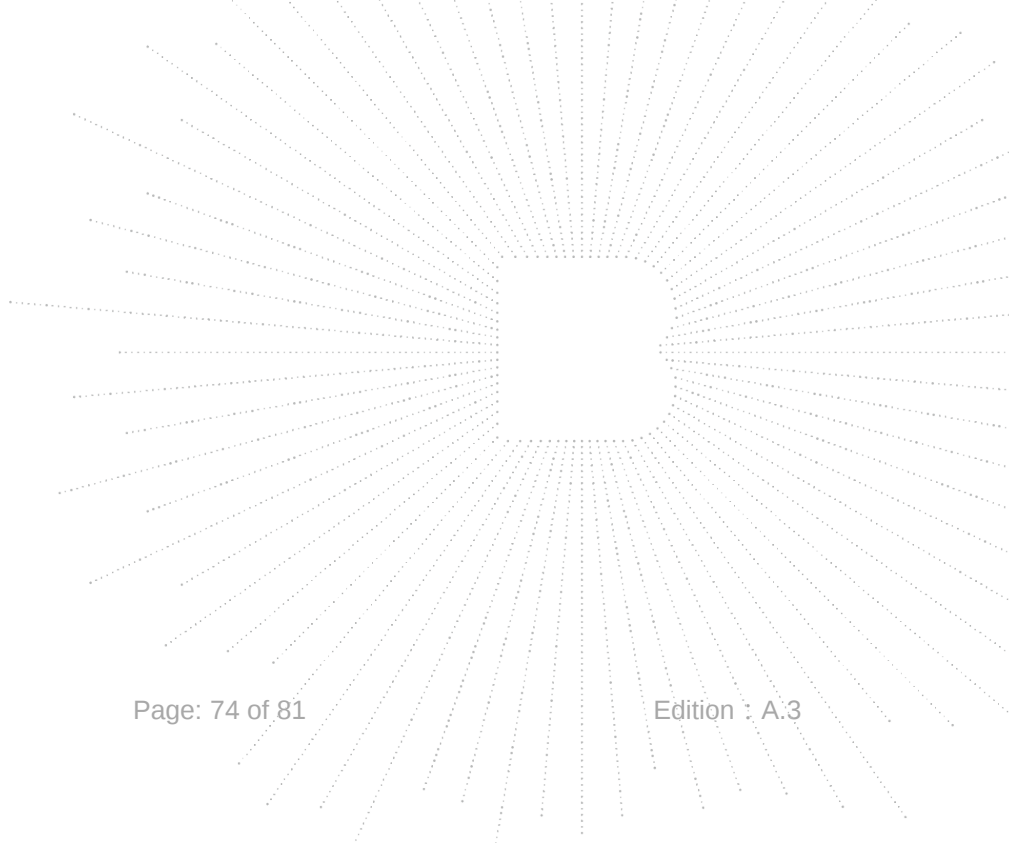
TEST CONDITIONS				Reference Frequency: 5745MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	-20	5745.00235	5745	0.00235	0.4096
		T (°C)	-10	5745.00551	5745	0.00551	0.9597
		T (°C)	0	5745.00968	5745	0.00968	1.6846
		T (°C)	10	5745.01102	5745	0.01102	1.9180
		T (°C)	20	5745.00191	5745	0.00191	0.3326
		T (°C)	30	5745.01050	5745	0.01050	1.8274
		T (°C)	40	5745.00157	5745	0.00157	0.2734
		T (°C)	50	5745.00396	5745	0.00396	0.6890
		T (°C)	60	5745.00722	5745	0.00722	1.2569
		T (°C)	70	5745.01207	5745	0.01207	2.1016
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)	120.00	5785.00143	5785	0.00143	0.2475
		V max (V)	132.00	5785.00734	5785	0.00734	1.2691
		V min (V)	108.00	5785.00401	5785	0.00401	0.6930
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)	120	T (°C)	-20	5785.00501	5785	0.00501	0.8660
		T (°C)	-10	5785.00028	5785	0.00028	0.0482
		T (°C)	0	5785.00843	5785	0.00843	1.4575
		T (°C)	10	5785.01267	5785	0.01267	2.1906
		T (°C)	20	5785.01189	5785	0.01189	2.0557
		T (°C)	30	5785.01060	5785	0.01060	1.8321
		T (°C)	40	5785.00269	5785	0.00269	0.4645
		T (°C)	50	5785.00159	5785	0.00159	0.2753
		T (°C)	60	5785.00876	5785	0.00876	1.5138
		T (°C)	70	5785.00805	5785	0.00805	1.3924
Limits				5725-5850 MHz			
Result				Complies			

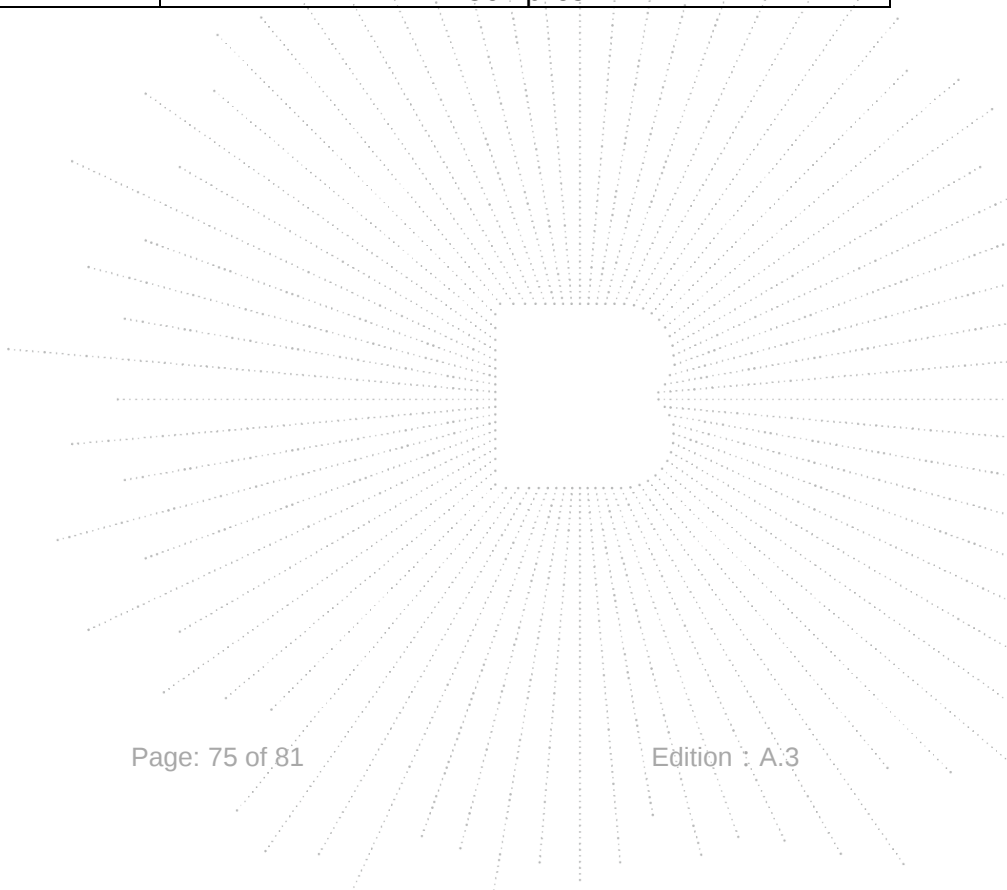


Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5825MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120.00	5825.01226	5825	0.01226	2.1047
		V max (V)	132.00	5825.00558	5825	0.00558	0.9575
		V min (V)	108.00	5825.01178	5825	0.01178	2.0228
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)	120	T (°C)	-20	5825.00580	5825	0.00580	0.9950
		T (°C)	-10	5825.00824	5825	0.00824	1.4150
		T (°C)	0	5825.01049	5825	0.01049	1.8007
		T (°C)	10	5825.00593	5825	0.00593	1.0173
		T (°C)	20	5825.01241	5825	0.01241	2.1301
		T (°C)	30	5825.01212	5825	0.01212	2.0801
		T (°C)	40	5825.00757	5825	0.00757	1.2996
		T (°C)	50	5825.00739	5825	0.00739	1.2692
		T (°C)	60	5825.00712	5825	0.00712	1.2223
		T (°C)	70	5825.00512	5825	0.00512	0.8786
Limits				5725-5850 MHz			
Result				Complies			



14. AUTOMATICALLY DISCONTINUE TRANSMISSION

14.1 Standard requirement

According to FCC Part 15.407(c), the device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signaling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization to describe how this requirement is met.

14.2 Test Results

While the EUT is not transmitting any information, the EUT can automatically discontinue transmission and become standby mode for power saving. The EUT can detect the controlling signal of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission.

15. ANTENNA REQUIREMENT

15.1 Limit

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.

15.2 Test Result

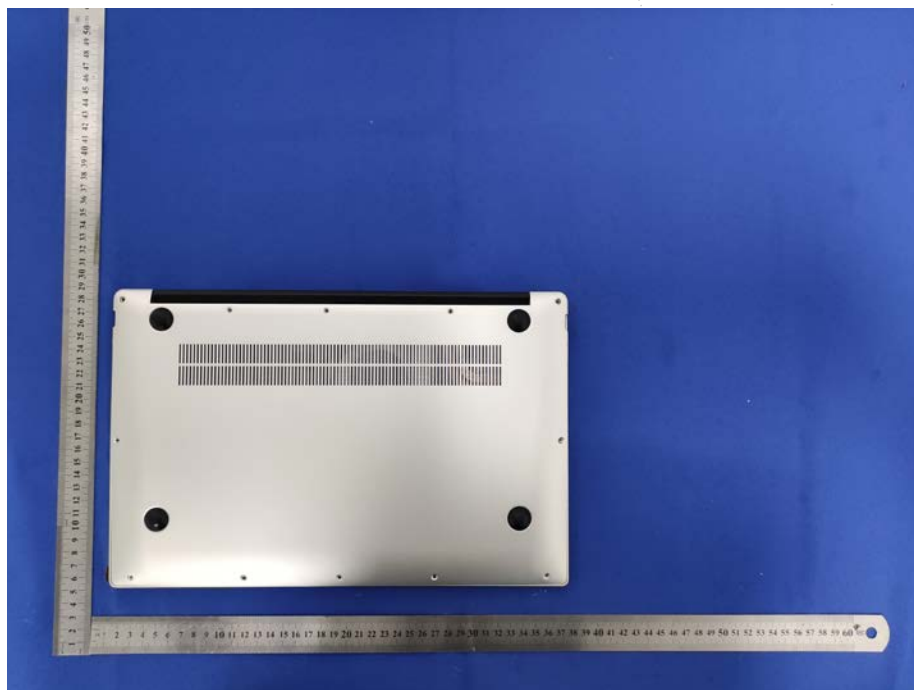
The EUT antenna is FPCB antenna, fulfill the requirement of this section.

16. EUT PHOTOGRAPHS

EUT Photo 1



EUT Photo 2



17. EUT TEST SETUP PHOTOGRAPHS

Conducted Measurement Photos



Radiated Measurement Photos



STATEMENT

- 1.The equipment lists are traceable to the national reference standards.
- 2.The test report can not be partially copied unless prior written approval is issued from our lab.
- 3.The test report is invalid without stamp of laboratory.
- 4.The test report is invalid without signature of person(s) testing and authorizing.
- 5.The test process and test result is only related to the Unit Under Test.
- 6.The quality system of our laboratory is in accordance with ISO/IEC17025.
- 7.If there is any objection to report, the client should inform issuing laboratory within 15 days from the date of receiving test report.

Address:

1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Tangwei, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China

TEL : 400-788-9558

P.C.: 518103

FAX : 0755-33229357

Website : <http://www.chnbctc.com>

E-Mail : bctc@bctc-lab.com.cn

***** **END** *****