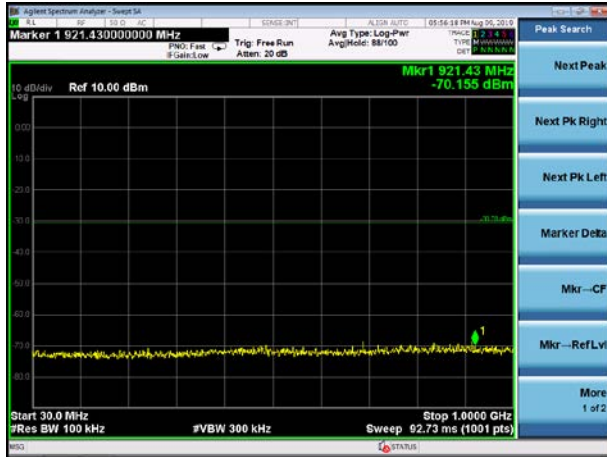


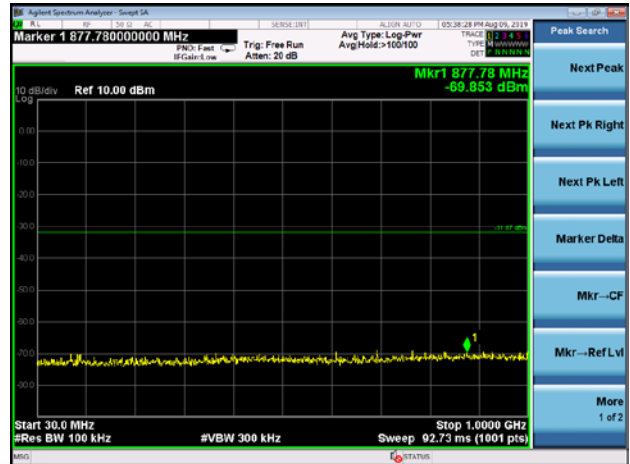


Test Plot

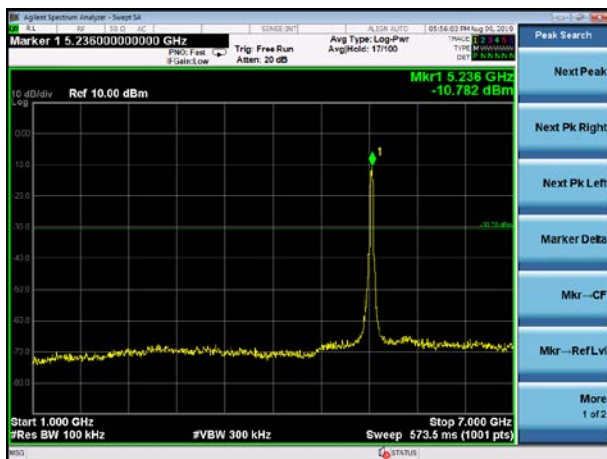
802.11ac40 on channel 46



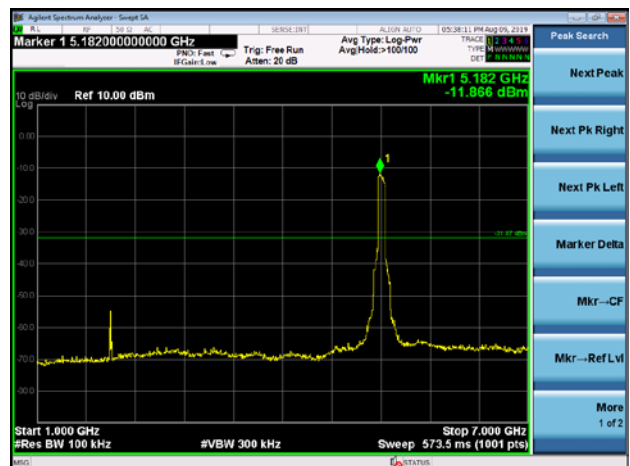
802.11ac80 on channel 42



802.11 ac40 on channel 46



802.11 ac80 on channel 42



802.11 ac40 on channel 46



802.11 ac80 on channel 42

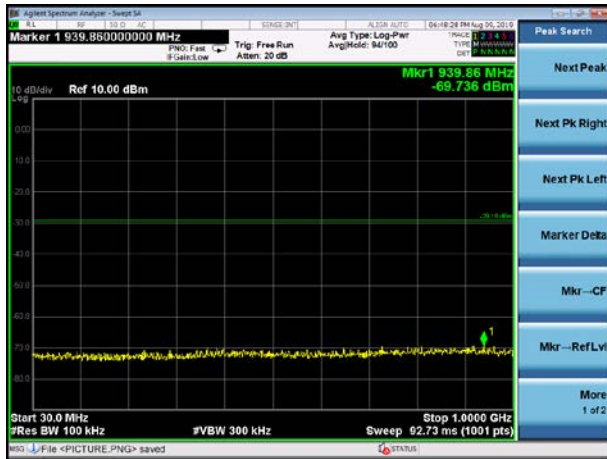




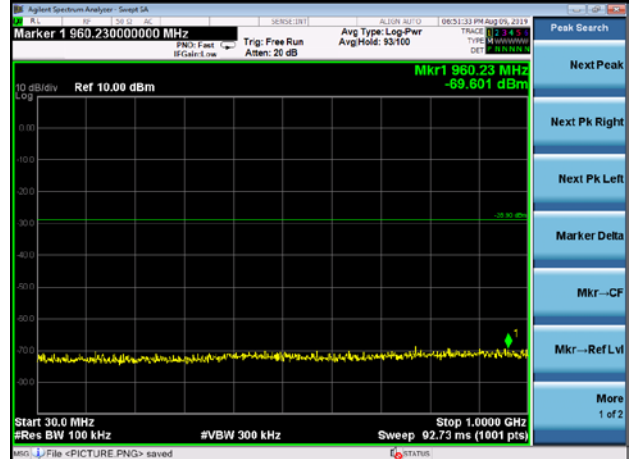
5.8G

Test Plot

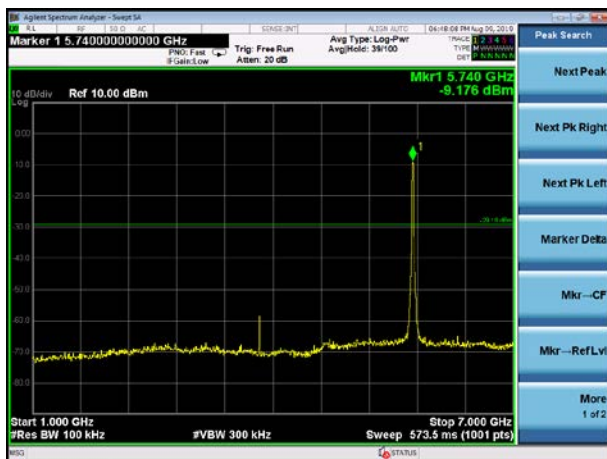
802.11a on channel 149



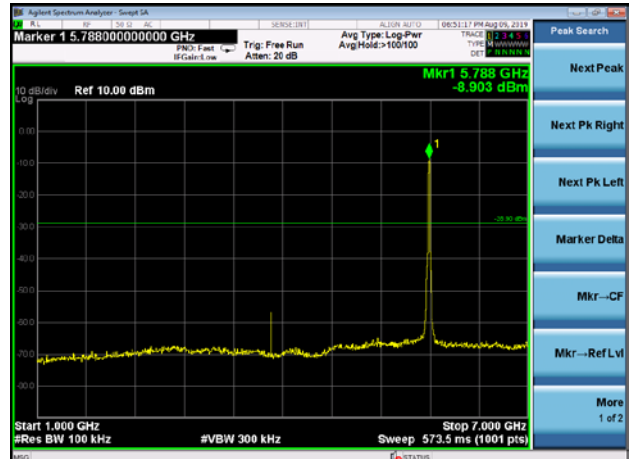
802.11a on channel 157



802.11a on channel 149



802.11a on channel 157



802.11a on channel 149



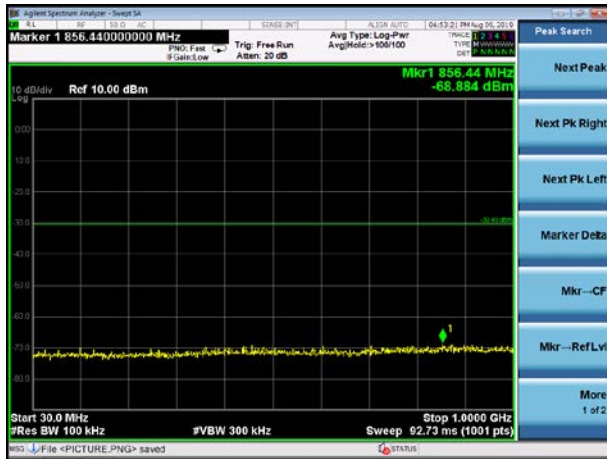
802.11a on channel 157



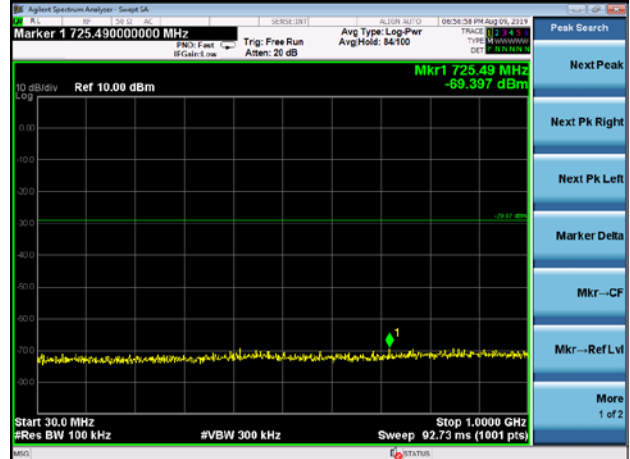


Test Plot

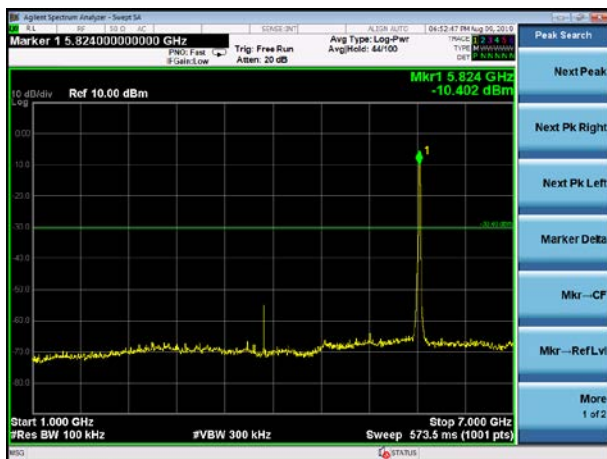
802.11a on channel 165



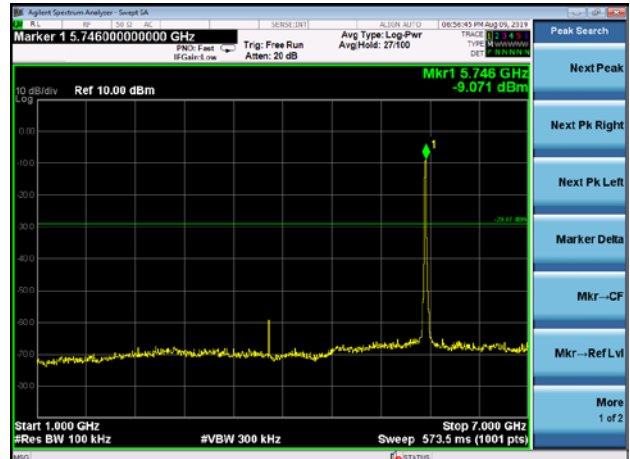
802.11n20 on channel 149



802.11a on channel 165



802.11n20 on channel 149



802.11a on channel 165



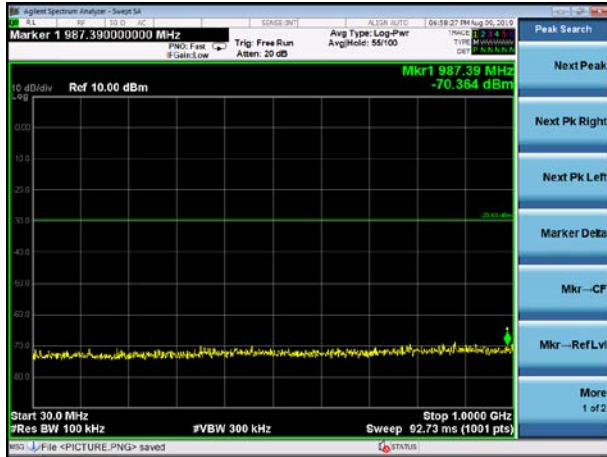
802.11n20 on channel 149



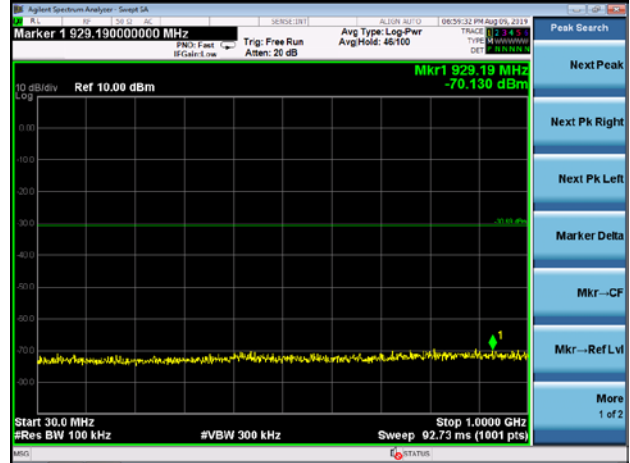


Test Plot

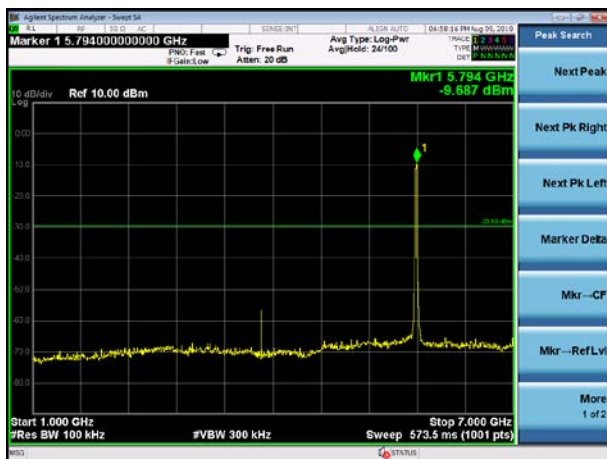
802.11n20 on channel 157



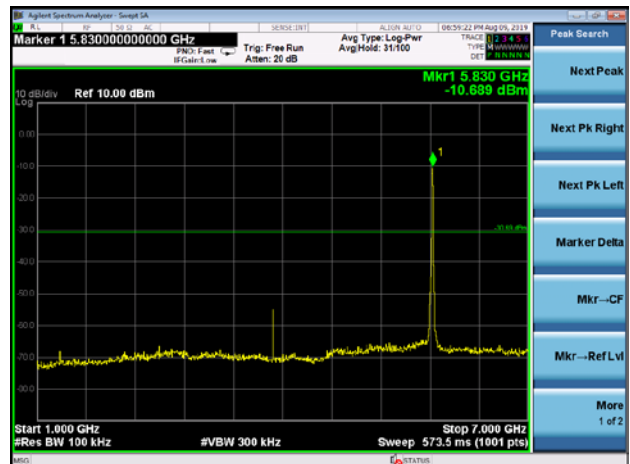
802.11n20 on channel 165



802.11n20 on channel 157



802.11n20 on channel 165



802.11n20 on channel 157



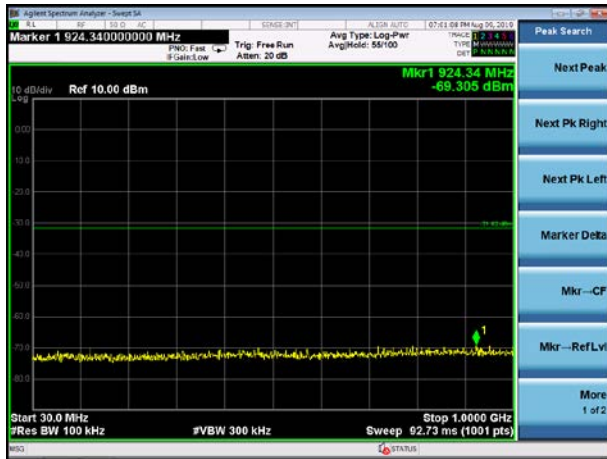
802.11n20 on channel 165



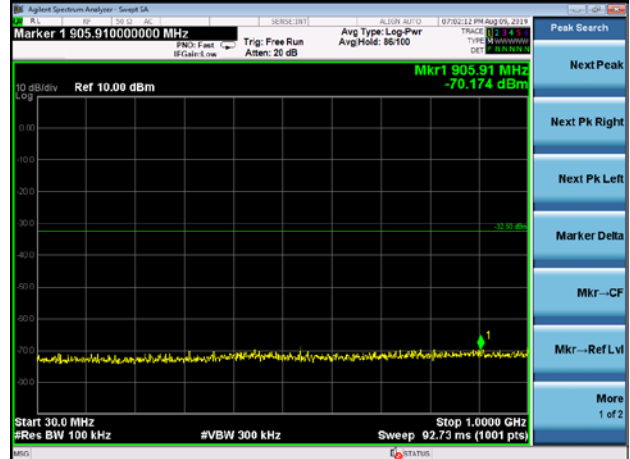


Test Plot

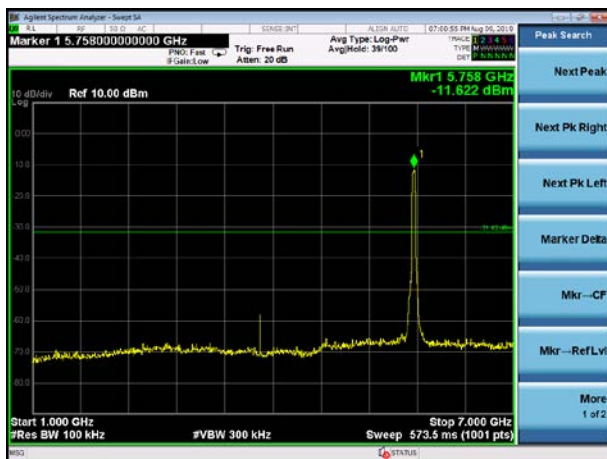
802.11n40 on channel 151



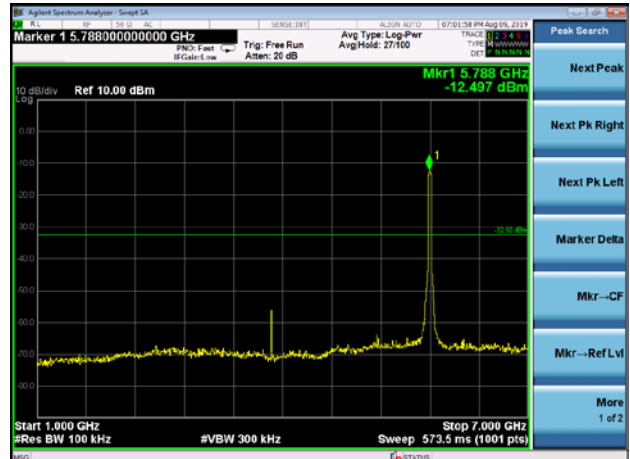
802.11n40 on channel 159



802.11n40 on channel 151



802.11n40 on channel 159



802.11n40 on channel 151



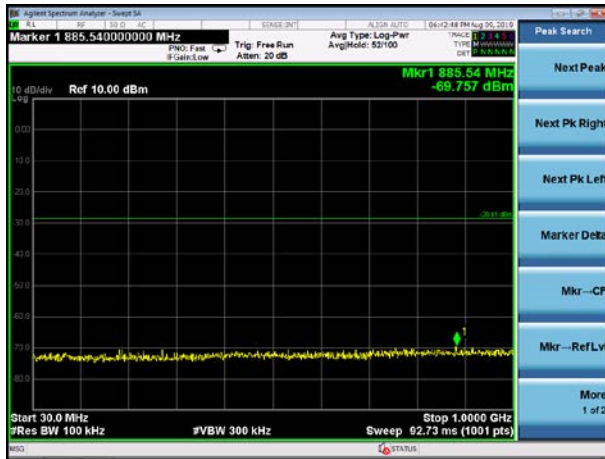
802.11n40 on channel 159



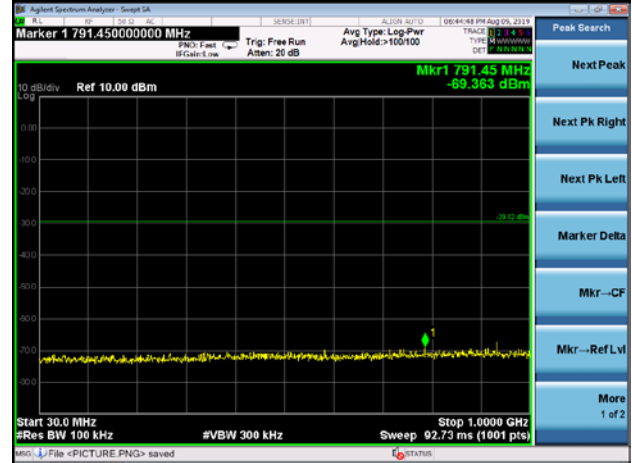


Test Plot

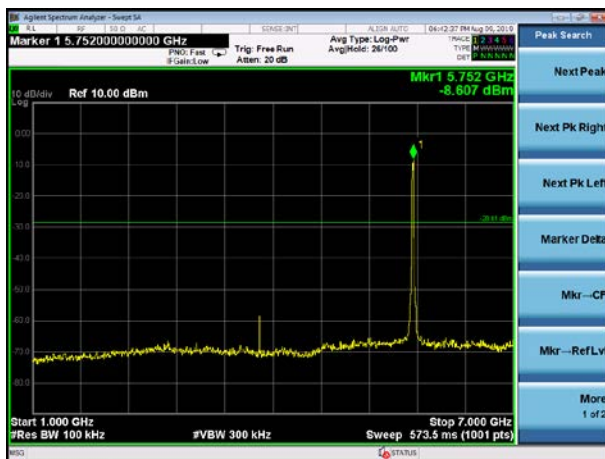
802.11ac20 on channel 149



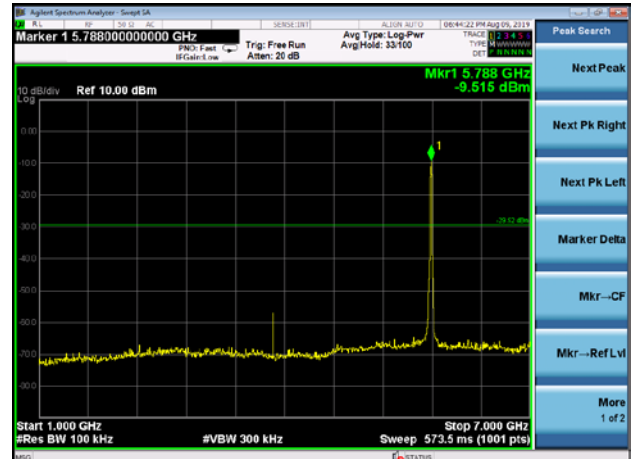
802.11ac20 on channel 157



802.11ac20 on channel 149



802.11ac20 on channel 157



802.11ac20 on channel 149



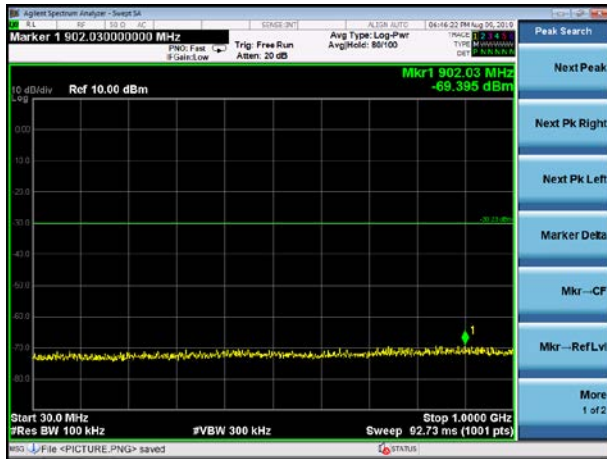
802.11ac20 on channel 157



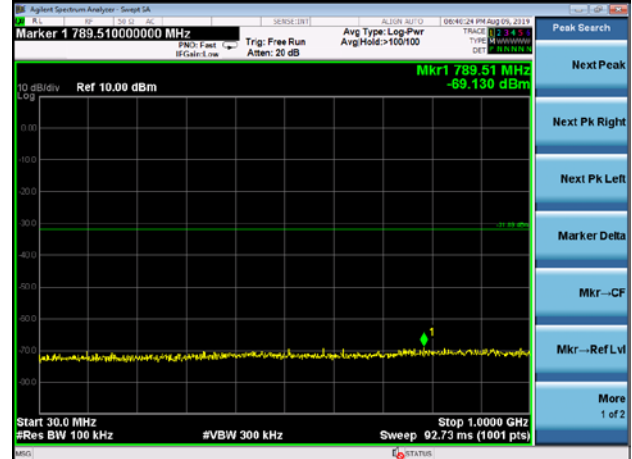


Test Plot

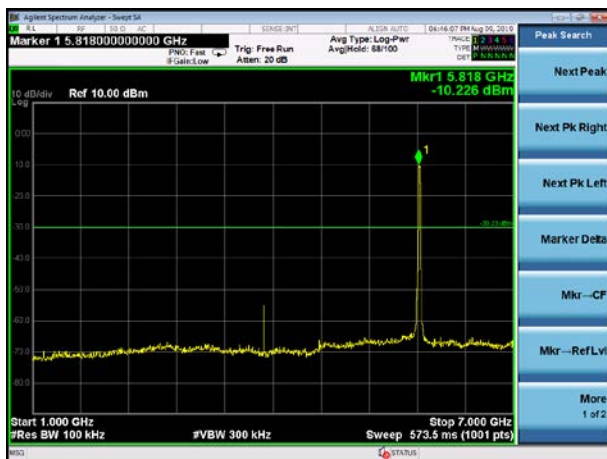
802.11ac20 on channel 165



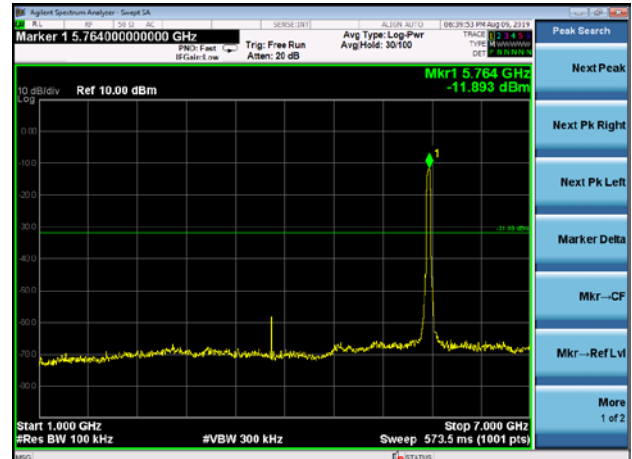
802.11ac40 on channel 151



802.11ac20 on channel 165



802.11ac40 on channel 151



802.11ac20 on channel 165



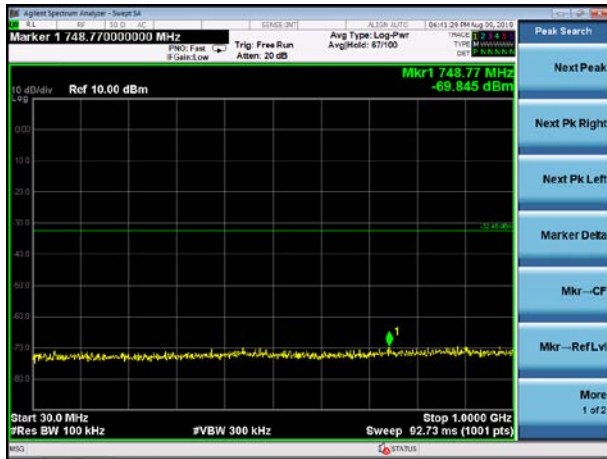
802.11ac40 on channel 151



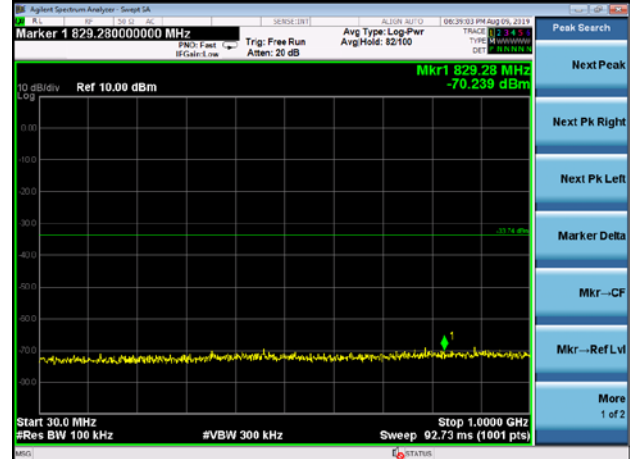


Test Plot

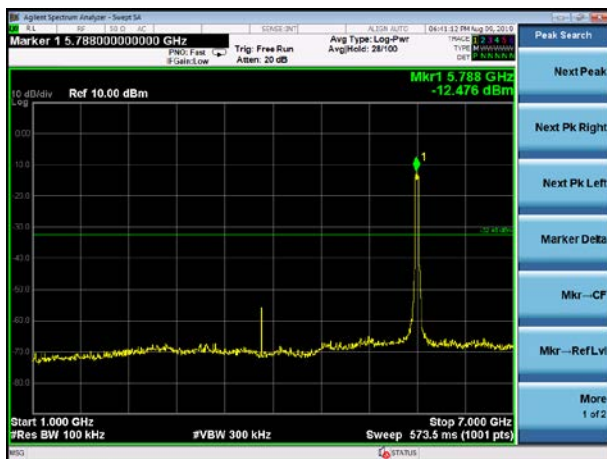
802.11ac40 on channel 159



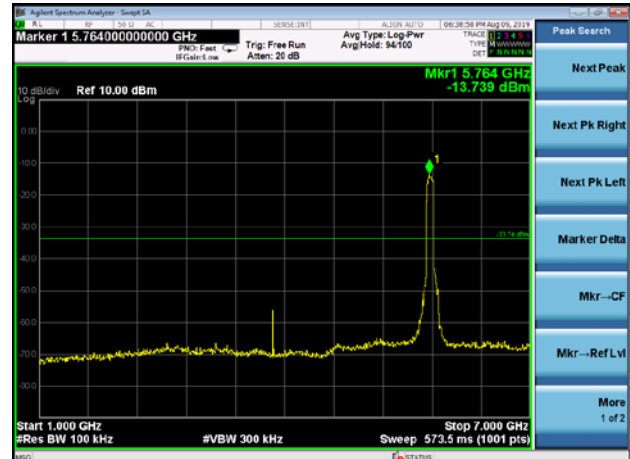
802.11ac80 on channel 155



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

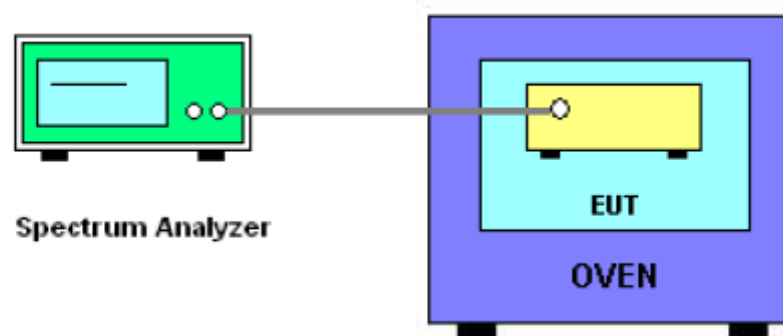
Manufactures of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

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. f_c is declaring of channel frequency. Then the frequency error formula is $(f_c - f)/f_c \times 10^6$ ppm and the 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 $-20^{\circ}\text{C} \sim 70^{\circ}\text{C}$.

9.3 TEST SETUP LAYOUT



10.4 EUT OPERATION DURING TEST

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



9.5 TEST RESULTS

Temperature :	26 °C	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	DC 12V
Test Mode :	TX Frequency U-NII-1 (5150-5250MHz)		

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	5180.0524	5180	0.0524	-10.1158
		V max (V)	13.80	5180.0322	5180	0.0322	-6.2162
		V min (V)	10.20	5180.0243	5180	0.0243	-4.6911
Limits Range (MHz)				5150-5250			
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	5180.0322	5180	0.0322	-6.2162
		T (°C)	10	5180.0382	5180	0.0382	-7.3745
		T (°C)	20	5180.0292	5180	0.0292	-5.6371
		T (°C)	30	5180.0213	5180	0.0213	-4.1120
		T (°C)	40	5180.0122	5180	0.0122	-2.3552
		T (°C)	50	5180.0094	5180	0.0094	-1.8147
		T (°C)	60	5180.0415	5180	0.0415	-8.0116
		T (°C)	70	5180.0690	5180	0.0690	-13.3205
Limits Range (MHz)				5150-5250			
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	5200.0254	5200	0.0254	-4.8846
		V max (V)	13.80	5200.0427	5200	0.0427	-8.2115
		V min (V)	10.20	5200.0699	5200	0.0699	-13.4423
Limits Range (MHz)				5150-5250			
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	5200.0633	5200	0.0633	-12.1731
		T (°C)	-10	5200.0525	5200	0.0525	-10.0962
		T (°C)	0	5200.0435	5200	0.0435	-8.3654
		T (°C)	10	5200.0927	5200	0.0927	-17.8269
		T (°C)	20	5200.0632	5200	0.0632	-12.1538
		T (°C)	30	5200.0126	5200	0.0126	-2.4231
		T (°C)	40	5200.0735	5200	0.0735	-14.1346
		T (°C)	50	5200.0414	5200	0.0414	-7.9615
		T (°C)	60	5200.0321	5200	0.0321	-6.1731
		T (°C)	70	5200.0421	5200	0.0421	-8.0962
Limits Range (MHz)				5150-5250			
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	5240.0132	5240	0.0132	-2.5191
		V max (V)	13.80	5240.0413	5240	0.0413	-7.8817
		V min (V)	10.20	5240.0092	5240	0.0092	-1.7557
Limits Range (MHz)				5150-5250			
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	5240.0095	5240	0.0095	-1.8130
		T (°C)	-10	5240.0032	5240	0.0032	-0.6107
		T (°C)	0	5240.0143	5240	0.0143	-2.7290
		T (°C)	10	5240.0852	5240	0.0852	-16.2595
		T (°C)	20	5240.0111	5240	0.0111	-2.1183
		T (°C)	30	5240.0123	5240	0.0123	-2.3473
		T (°C)	40	5240.0061	5240	0.0061	-1.1641
		T (°C)	50	5240.0071	5240	0.0071	-1.3550
		T (°C)	60	5240.0051	5240	0.0051	-0.9733
		T (°C)	70	5240.0102	5240	0.0102	-1.9466
Limits Range (MHz)				5150-5250			
Result				Complies			



Temperature :	26 °C	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	DC 12V
Test Mode :	TX Frequency(5725-5850MHz)		

TEST CONDITIONS				Reference Frequency: 5745MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	12.00	5745.00966	5745	0.00966	-1.6812
		V max (V)	13.80	5745.01148	5745	0.01148	-1.9985
		V min (V)	10.20	5745.00675	5745	0.00675	-1.1754
Limits Range (MHz)				5725-5850			
Result				Complies			

Voltage vs. Frequency Stability

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5745MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	12	T (°C)	-20	5745.00649	5745	0.00649	-1.1291
		T (°C)	-10	5745.00026	5745	0.00026	-0.0451
		T (°C)	0	5745.00429	5745	0.00429	-0.7471
		T (°C)	10	5745.00342	5745	0.00342	-0.5961
		T (°C)	20	5745.00241	5745	0.00241	-0.4202
		T (°C)	30	5745.00122	5745	0.00122	-0.2115
		T (°C)	40	5745.00728	5745	0.00728	-1.2679
		T (°C)	50	5745.00920	5745	0.00920	-1.6016
		T (°C)	60	5745.01180	5745	0.01180	-2.0539
		T (°C)	70	5745.00569	5745	0.00569	-0.9896
Limits Range (MHz)				5725-5850			
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	5785.00290	5785	0.00290	-0.5013
		V max (V)	13.80	5785.00032	5785	0.00032	-0.0549
		V min (V)	10.20	5785.00261	5785	0.00261	-0.4517
Limits Range (MHz)				5725-5850			
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	5785.00969	5785	0.00969	-1.6753
		T (°C)	-10	5785.00860	5785	0.00860	-1.4860
		T (°C)	0	5785.01222	5785	0.01222	-2.1126
		T (°C)	10	5785.00696	5785	0.00696	-1.2037
		T (°C)	20	5785.01033	5785	0.01033	-1.7855
		T (°C)	30	5785.00971	5785	0.00971	-1.6790
		T (°C)	40	5785.01339	5785	0.01339	-2.3138
		T (°C)	50	5785.00405	5785	0.00405	-0.7008
		T (°C)	60	5785.01039	5785	0.01039	-1.7956
		T (°C)	70	5785.01308	5785	0.01308	-2.2603
Limits Range (MHz)				5725-5850			
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	5825.00489	5825	0.00489	-0.8403
		V max (V)	13.80	5825.00725	5825	0.00725	-1.2451
		V min (V)	10.20	5825.00538	5825	0.00538	-0.9229
Limits Range (MHz)				5725-5850			
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	5825.00423	5825	0.00423	-0.7263
		T (°C)	-10	5825.01021	5825	0.01021	-1.7530
		T (°C)	0	5825.00615	5825	0.00615	-1.0560
		T (°C)	10	5825.00797	5825	0.00797	-1.3684
		T (°C)	20	5825.01154	5825	0.01154	-1.9815
		T (°C)	30	5825.00781	5825	0.00781	-1.3416
		T (°C)	40	5825.00121	5825	0.00121	-0.2073
		T (°C)	50	5825.00243	5825	0.00243	-0.4169
		T (°C)	60	5825.01070	5825	0.01070	-1.8365
		T (°C)	70	5825.00855	5825	0.00855	-1.4682
Limits Range (MHz)				5725-5850			
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.

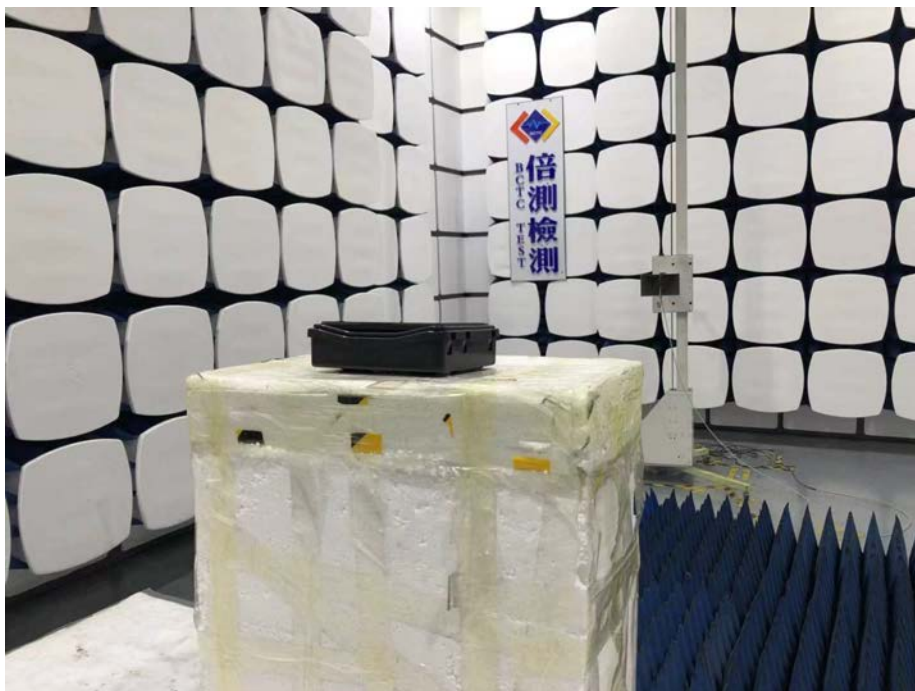
10.2 EUT ANTENNA

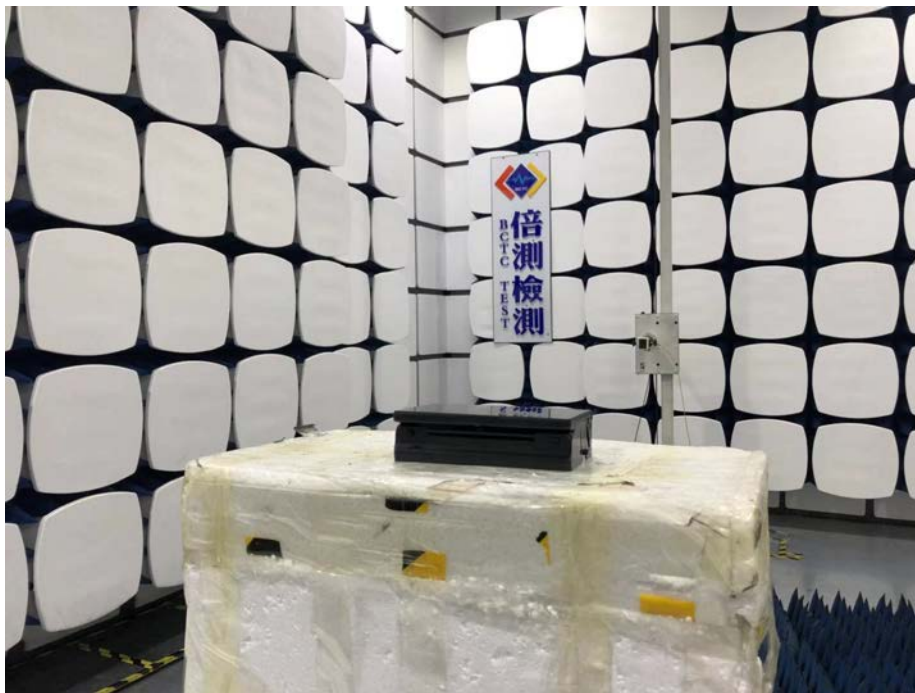
The EUT antenna is FPCB antenna (antenna gain: WIFI 5150MHz-5250MHz 0.57dBi, WIFI 5725-5850MHz -0.78dBi). It comply with the standard requirement.



11. EUT TEST PHOTO

Radiated Measurement Photos







12. EUT PHOTO

EUT Photo 1



EUT Photo 2





EUT Photo 3



***** END OF REPORT *****