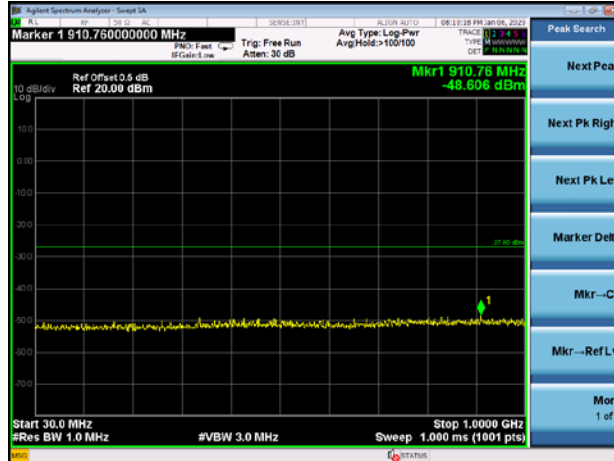


Test Plot

802.11n20 on channel 157



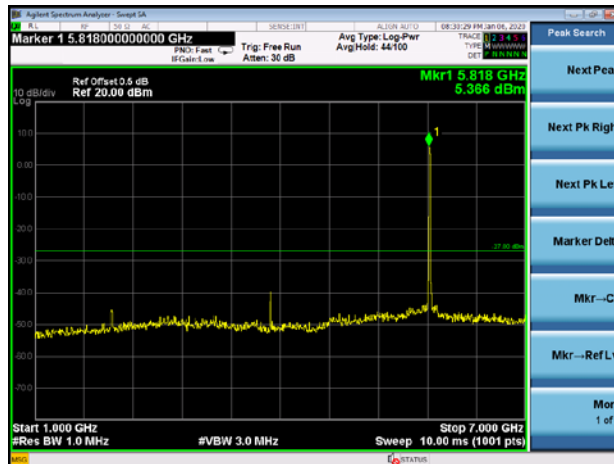
802.11n20 on channel 165



802.11n20 on channel 157



802.11n20 on channel 165



802.11n20 on channel 157

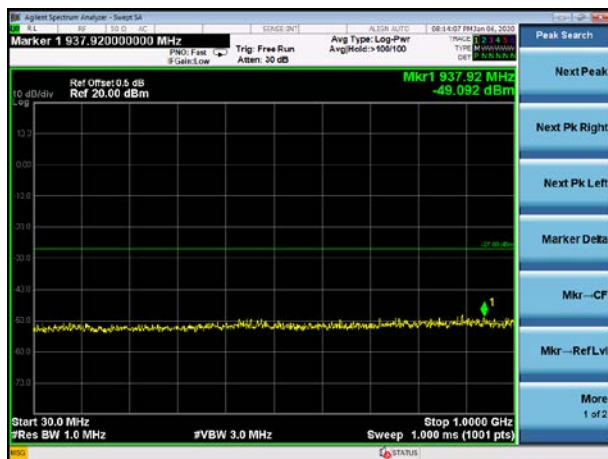


802.11n20 on channel 165



Test Plot

802.11n40 on channel 151



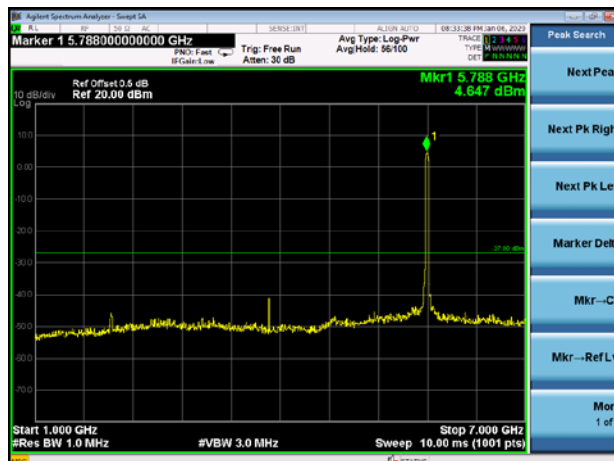
802.11n40 on channel 159



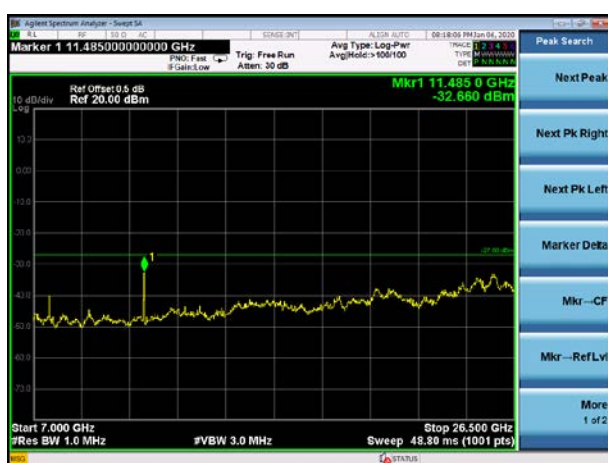
802.11n40 on channel 151



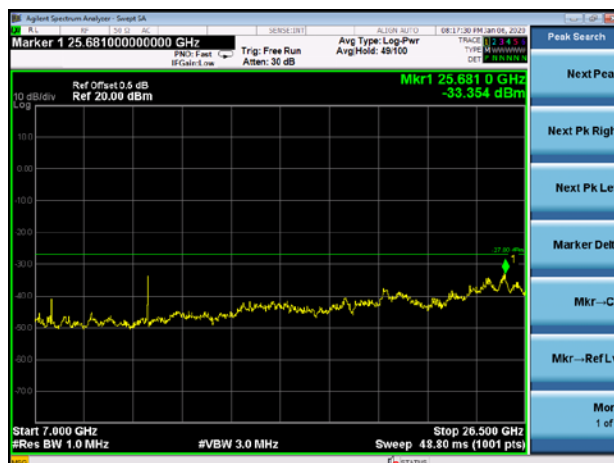
802.11n40 on channel 159



802.11n40 on channel 151

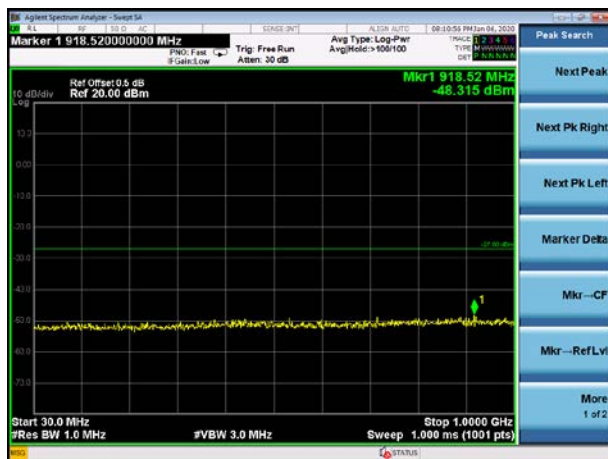


802.11n40 on channel 159

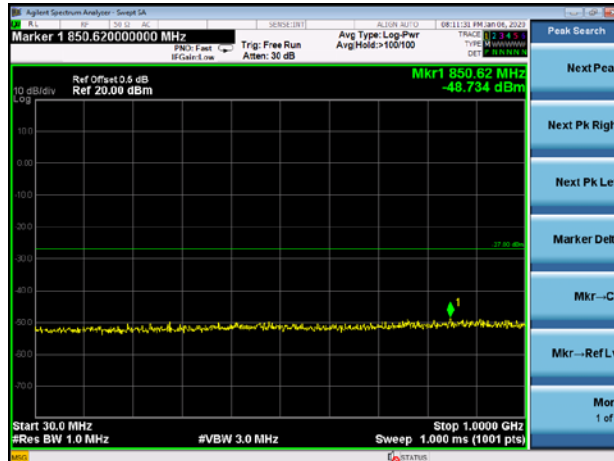


Test Plot

802.11ac20 on channel 149



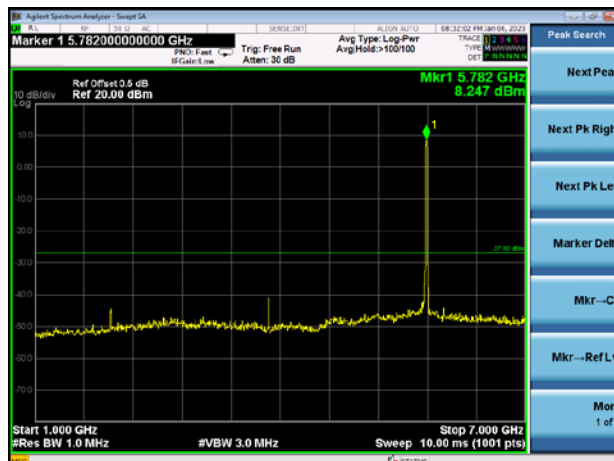
802.11ac20 on channel 157



802.11ac20 on channel 149



802.11ac20 on channel 157



802.11ac20 on channel 149

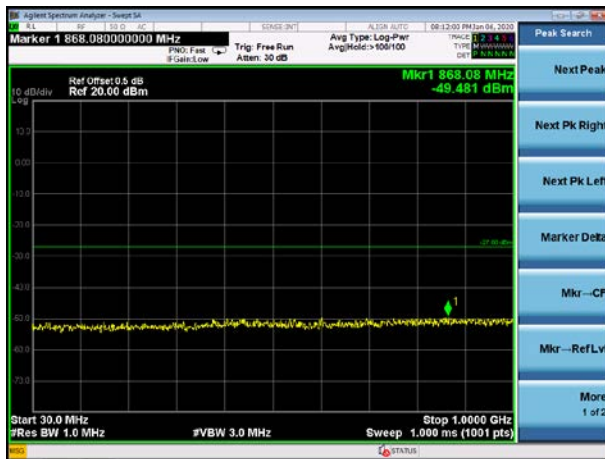


802.11ac20 on channel 157

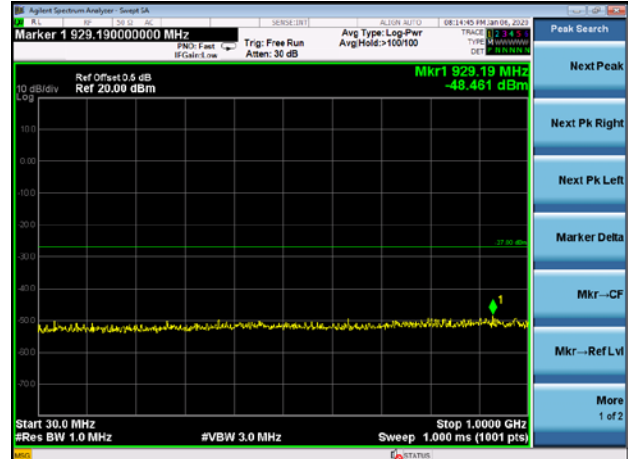


Test Plot

802.11ac20 on channel 165



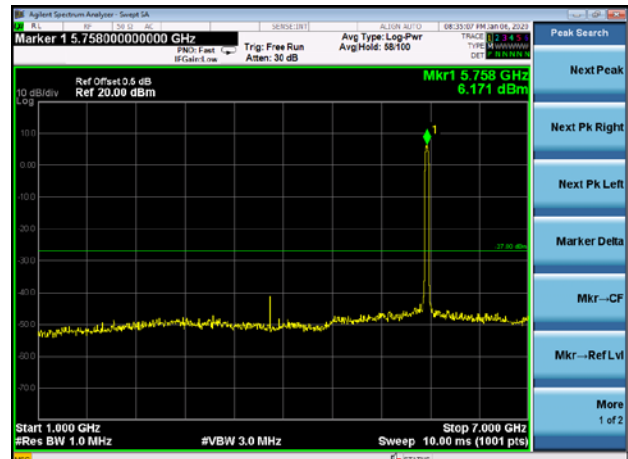
802.11ac40 on channel 151



802.11ac20 on channel 165



802.11ac40 on channel 151



802.11ac20 on channel 165

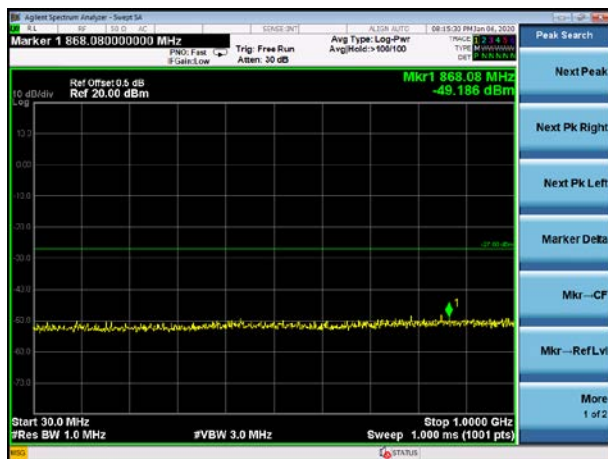


802.11ac40 on channel 151

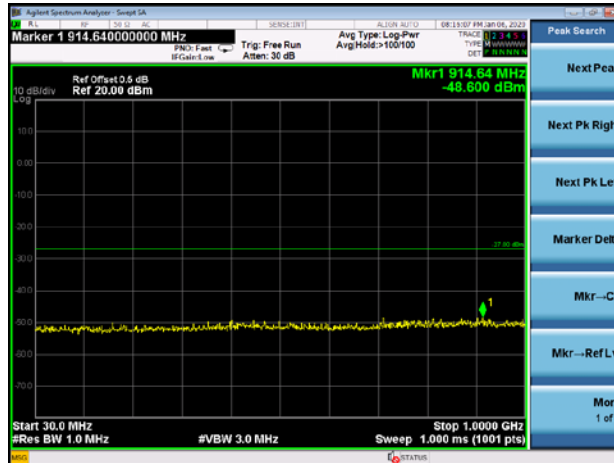


Test Plot

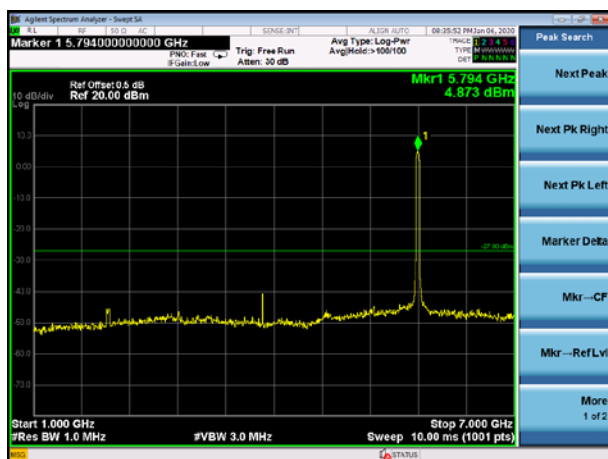
802.11ac40 on channel 159



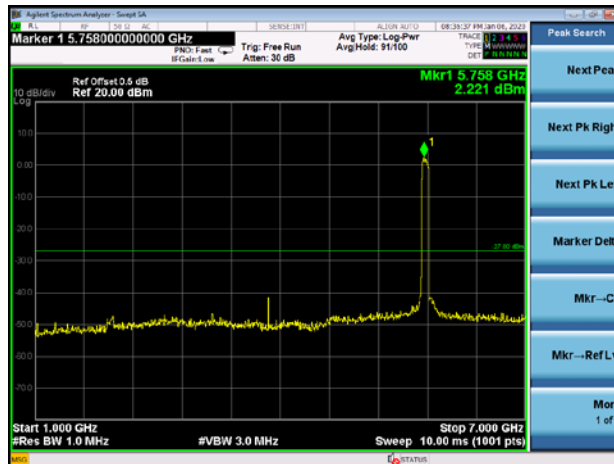
802.11ac80 on channel 155



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.

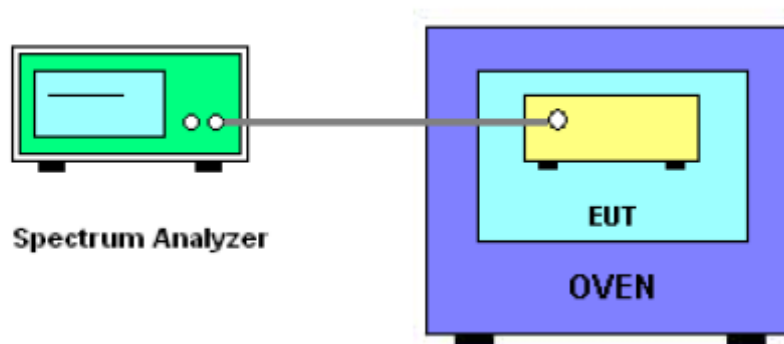
The transmitter center frequency tolerance shall be ± 20 ppm maximum for the 5 GHz band (IEEE 802.11n specification).

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



9.4 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 :	AC 120V/60Hz
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)	3.70	5180.0527	5180	0.0527	10.1737
		V max (V)	4.26	5180.0325	5180	0.0325	6.2741
		V min (V)	3.15	5180.0244	5180	0.0244	4.7104
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)	3.7	T (°C)	-20	5180.0054	5180	0.0054	1.0425
		T (°C)	-10	5180.0105	5180	0.0105	2.0270
		T (°C)	0	5180.0328	5180	0.0328	6.3320
		T (°C)	10	5180.0385	5180	0.0385	7.4324
		T (°C)	20	5180.0294	5180	0.0294	5.6757
		T (°C)	30	5180.0216	5180	0.0216	4.1699
		T (°C)	40	5180.0128	5180	0.0128	2.4710
		T (°C)	50	5180.0093	5180	0.0093	1.7954
		T (°C)	60	5180.0414	5180	0.0414	7.9923
		T (°C)	70	5180.0696	5180	0.0696	13.4363
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)	3.70	5200.0257	5200	0.0257	4.9423
		V max (V)	4.26	5200.0425	5200	0.0425	8.1731
		V min (V)	3.15	5200.0697	5200	0.0697	13.4038
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)	3.7	T (°C)	-20	5200.0635	5200	0.0635	12.2115
		T (°C)	-10	5200.0524	5200	0.0524	10.0769
		T (°C)	0	5200.0435	5200	0.0435	8.3654
		T (°C)	10	5200.0928	5200	0.0928	17.8462
		T (°C)	20	5200.0636	5200	0.0636	12.2308
		T (°C)	30	5200.0124	5200	0.0124	2.3846
		T (°C)	40	5200.0732	5200	0.0732	14.0769
		T (°C)	50	5200.0416	5200	0.0416	8.0000
		T (°C)	60	5200.0327	5200	0.0327	6.2885
		T (°C)	70	5200.0425	5200	0.0425	8.1731
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)	3.70	5240.0135	5240	0.0135	2.5763
		V max (V)	4.26	5240.0414	5240	0.0414	7.9008
		V min (V)	3.15	5240.0092	5240	0.0092	1.7557
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)	3.7	T (°C)	-20	5240.0092	5240	0.0092	1.7557
		T (°C)	-10	5240.0037	5240	0.0037	0.7061
		T (°C)	0	5240.0144	5240	0.0144	2.7481
		T (°C)	10	5240.0855	5240	0.0855	16.3168
		T (°C)	20	5240.0116	5240	0.0116	2.2137
		T (°C)	30	5240.0122	5240	0.0122	2.3282
		T (°C)	40	5240.0067	5240	0.0067	1.2786
		T (°C)	50	5240.0073	5240	0.0073	1.3931
		T (°C)	60	5240.0055	5240	0.0055	1.0496
		T (°C)	70	5240.0104	5240	0.0104	1.9847
Limits				5150-5250 MHz			
Result				Complies			

Temperature :	26 °C	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	AC 120V/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)	3.70	5745.01013	5745	0.01013	1.7628
		V max (V)	4.26	5745.01038	5745	0.01038	1.8074
		V min (V)	3.15	5745.00903	5745	0.00903	1.5727
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)	3.7	T (°C)	-20	5745.00580	5745	0.00580	1.0090
		T (°C)	-10	5745.00524	5745	0.00524	0.9118
		T (°C)	0	5745.01028	5745	0.01028	1.7899
		T (°C)	10	5745.01193	5745	0.01193	2.0771
		T (°C)	20	5745.00334	5745	0.00334	0.5819
		T (°C)	30	5745.00176	5745	0.00176	0.3065
		T (°C)	40	5745.00294	5745	0.00294	0.5112
		T (°C)	50	5745.01063	5745	0.01063	1.8509
		T (°C)	60	5745.00479	5745	0.00479	0.8341
		T (°C)	70	5745.00540	5745	0.00540	0.9399
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)	3.70	5785.00126	5785	0.00126	0.2177
		V max (V)	4.26	5785.01120	5785	0.01120	1.9359
		V min (V)	3.15	5785.01090	5785	0.01090	1.8841
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)	3.7	T (°C)	-20	5785.00970	5785	0.00970	1.6775
		T (°C)	-10	5785.00931	5785	0.00931	1.6089
		T (°C)	0	5785.00541	5785	0.00541	0.9354
		T (°C)	10	5785.00068	5785	0.00068	0.1176
		T (°C)	20	5785.00902	5785	0.00902	1.5598
		T (°C)	30	5785.01230	5785	0.01230	2.1254
		T (°C)	40	5785.00004	5785	0.00004	0.0068
		T (°C)	50	5785.00559	5785	0.00559	0.9670
		T (°C)	60	5785.00178	5785	0.00178	0.3075
		T (°C)	70	5785.00737	5785	0.00737	1.2734
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)	3.70	5825.00386	5825	0.00386	0.6624
		V max (V)	4.26	5825.00910	5825	0.00910	1.5617
		V min (V)	3.15	5825.00919	5825	0.00919	1.5776
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)	3.7	T (°C)	-20	5825.00278	5825	0.00278	0.4768
		T (°C)	-10	5825.00124	5825	0.00124	0.2121
		T (°C)	0	5825.00224	5825	0.00224	0.3842
		T (°C)	10	5825.00341	5825	0.00341	0.5851
		T (°C)	20	5825.00311	5825	0.00311	0.5335
		T (°C)	30	5825.00889	5825	0.00889	1.5270
		T (°C)	40	5825.00681	5825	0.00681	1.1683
		T (°C)	50	5825.00170	5825	0.00170	0.2916
		T (°C)	60	5825.01183	5825	0.01183	2.0307
		T (°C)	70	5825.01277	5825	0.01277	2.1930
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

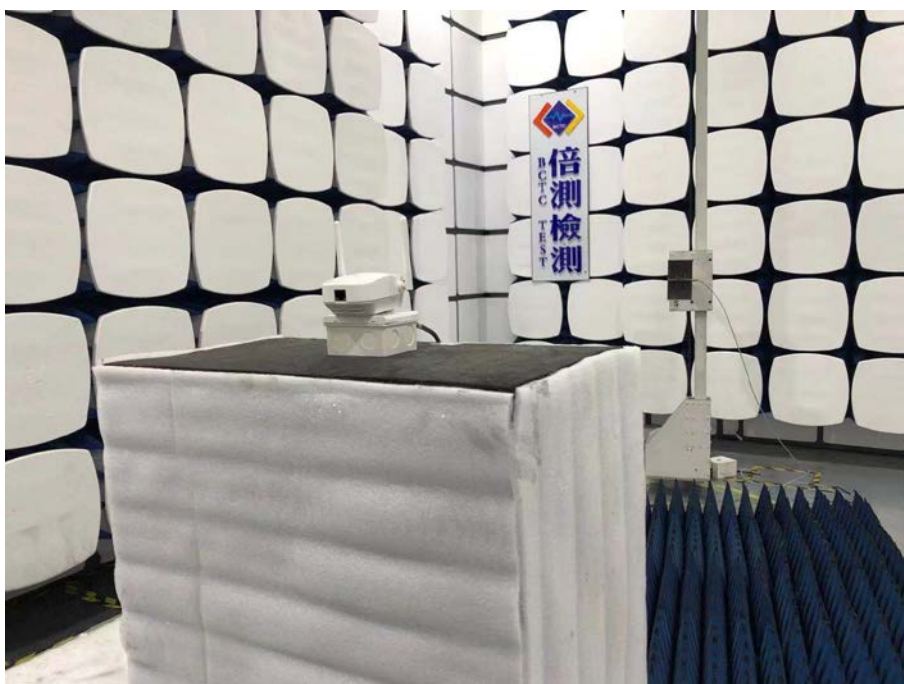
The EUT antenna is External antenna (antenna gain (A): 3.27dBi; antenna gain (B) : 3.27dBi). It comply with the standard requirement.

11. EUT TEST PHOTO

Conducted Measurement Photos



Radiated Measurement Photos





12. EUT PHOTO



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