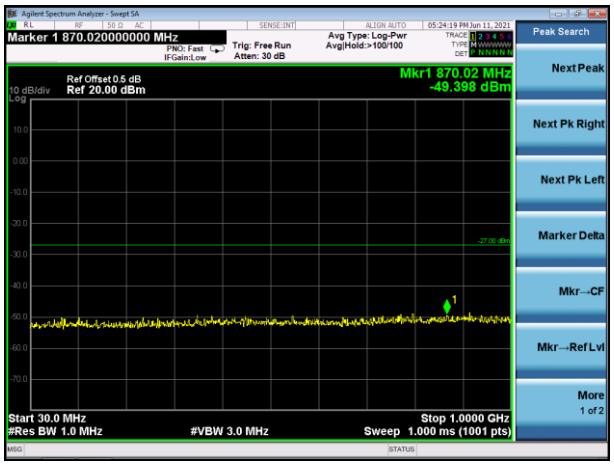
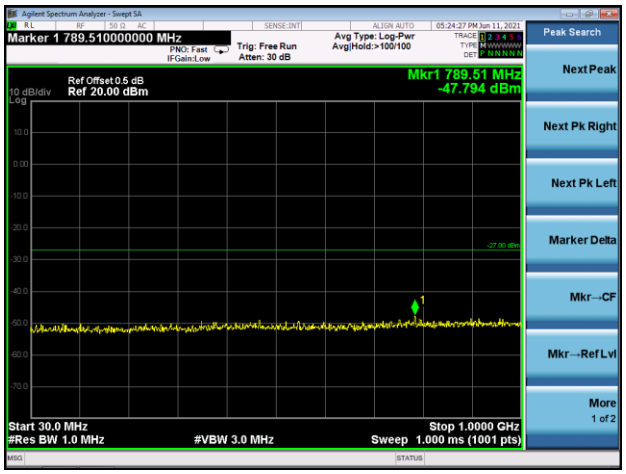
Test Plot

802.11n20 on channel 157



802.11n20 on channel 165



802.11n20 on channel 157

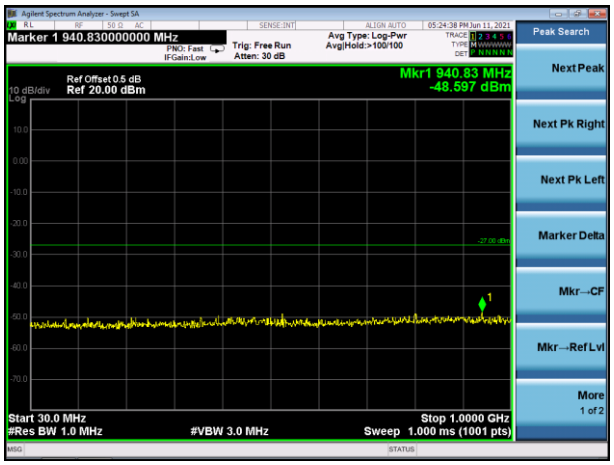
802.11n20 on channel 165

802.11n20 on channel 157

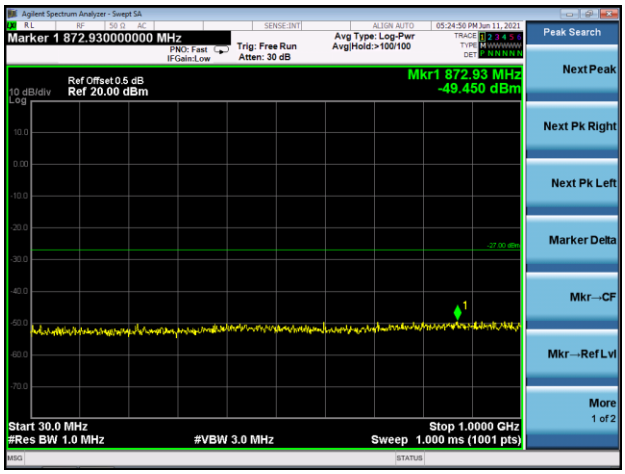
802.11n20 on channel 165

Test Plot

802.11n40 on channel 151

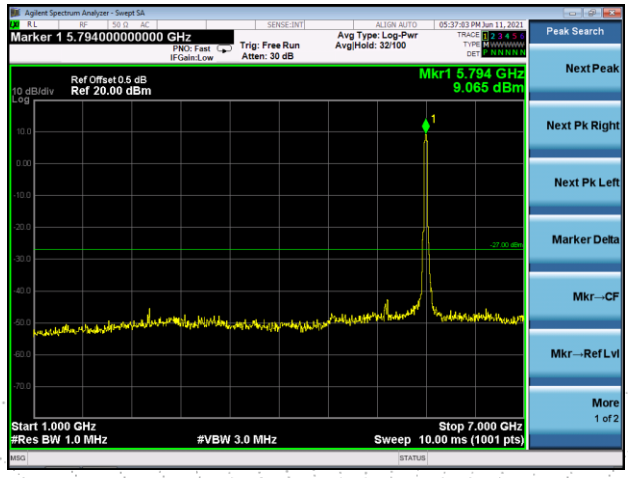


802.11n40 on channel 159



802.11n40 on channel 151

802.11n40 on channel 159

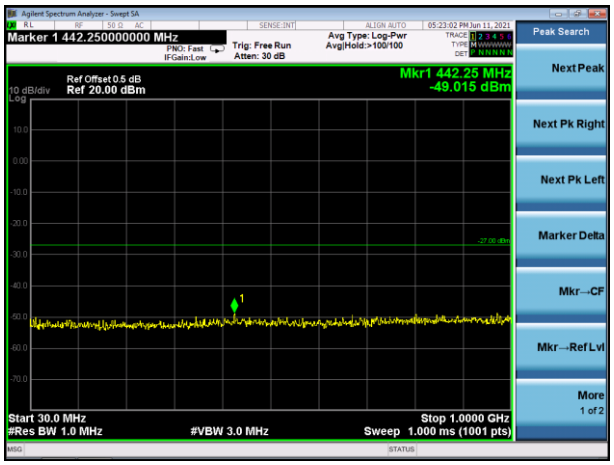


802.11n40 on channel 151

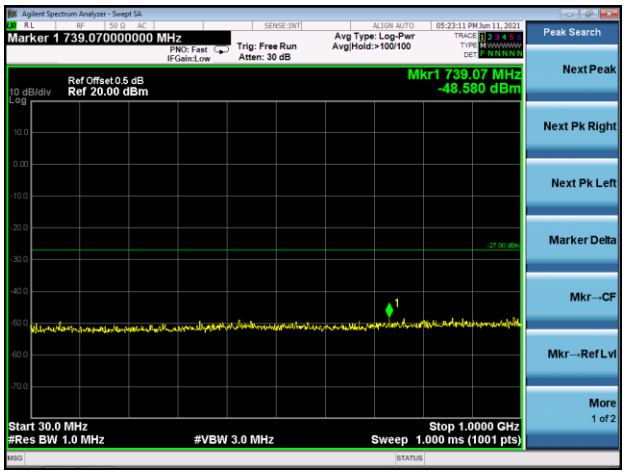
802.11n40 on channel 159

Test Plot

802.11ac20 on channel 149

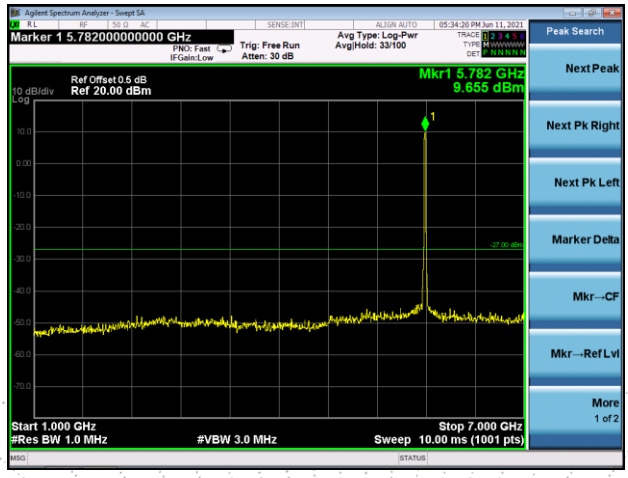


802.11ac20 on channel 157



802.11ac20 on channel 149

802.11ac20 on channel 157

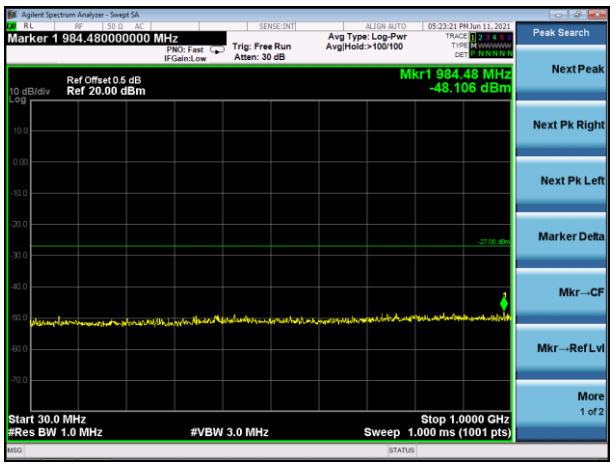


802.11ac20 on channel 149

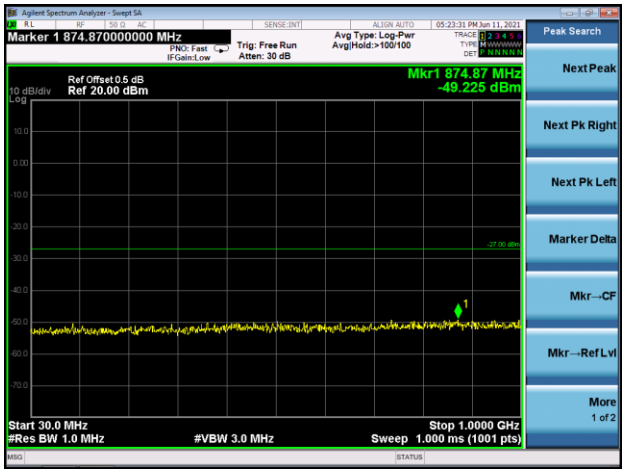
802.11ac20 on channel 157

Test Plot

802.11ac20 on channel 165



802.11ac40 on channel 151



802.11ac20 on channel 165

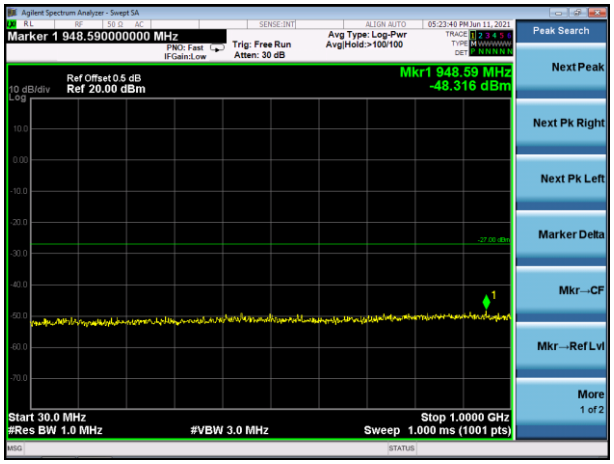
802.11ac40 on channel 151

802.11ac20 on channel 165

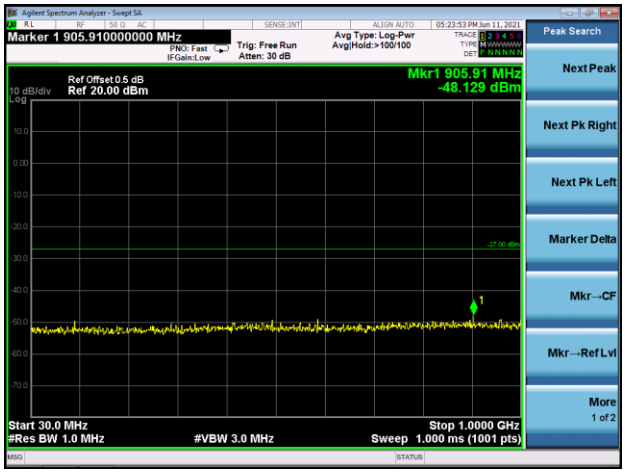
802.11ac40 on channel 151

Test Plot

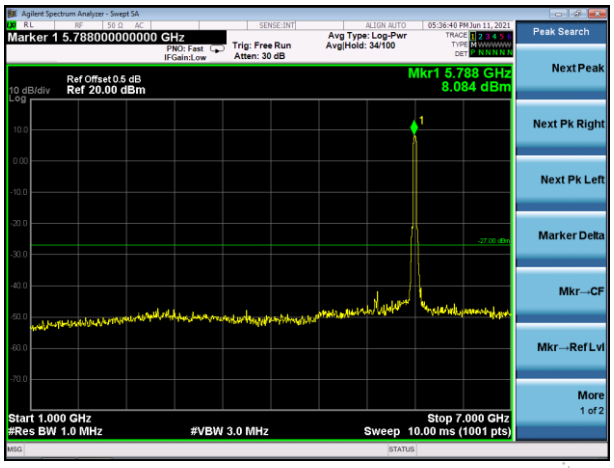
802.11ac40 on channel 159



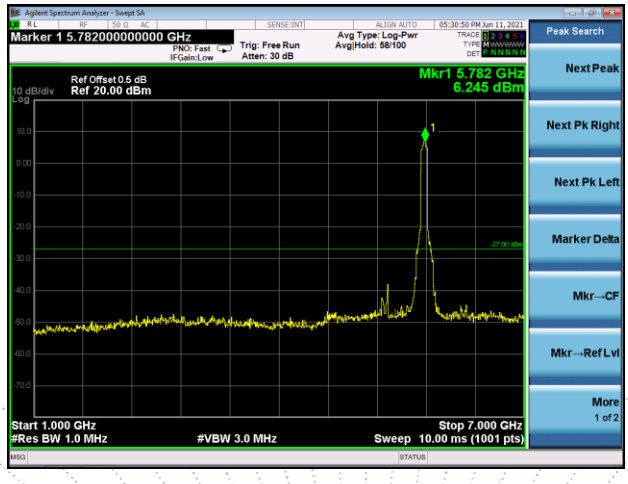
802.11ac80 on channel 155



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 LIMIT

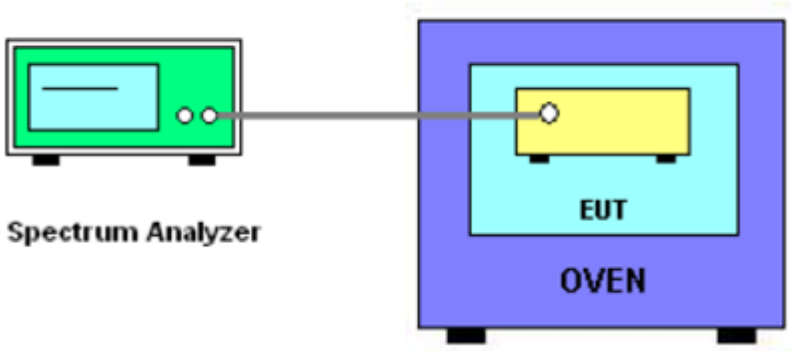
Manufactures of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

The transmitter center frequency tolerance shall be ± 20 ppm maximum for the 5 GHz band (IEEE802.11n specification).

13.2 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 × 106 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.

13.3 TEST SETUP LAYOUT



13.4 EUT OPERATION DURING TEST

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

13.5 TEST RESULTS

Temperature：	26 ℃	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)	120.00	5180.01057	5180	0.0106	2.0398
		V max (V)	138.00	5180.00969	5180	0.0097	1.8713
		V min (V)	102.00	5180.00187	5180	0.0019	0.3607
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5180MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	-20	5180.00352	5180	0.0035	0.6789
		T (°C)	-10	5180.01221	5180	0.0122	2.3578
		T (°C)	0	5180.00855	5180	0.0085	1.6505
		T (°C)	10	5180.00725	5180	0.0072	1.3991
		T (°C)	20	5180.00960	5180	0.0096	1.8538
		T (°C)	30	5180.00152	5180	0.0015	0.2938
		T (°C)	40	5180.00999	5180	0.0100	1.9288
		T (°C)	50	5180.01126	5180	0.0113	2.1736
		T (°C)	60	5180.00795	5180	0.0079	1.5341
		T (°C)	70	5180.00870	5180	0.0087	1.6798
Limits				±20ppm			
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)	120.00	5200.01237	5200	0.0124	2.3785
		V max (V)	138.00	5200.01254	5200	0.0125	2.4106
		V min (V)	102.00	5200.01184	5200	0.0118	2.2765
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5200MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	-20	5200.00692	5200	0.0069	1.3304
		T (°C)	-10	5200.01089	5200	0.0109	2.0946
		T (°C)	0	5200.00358	5200	0.0036	0.6888
		T (°C)	10	5200.00777	5200	0.0078	1.4944
		T (°C)	20	5200.01188	5200	0.0119	2.2854
		T (°C)	30	5200.00497	5200	0.0050	0.9557
		T (°C)	40	5200.00980	5200	0.0098	1.8846
		T (°C)	50	5200.00974	5200	0.0097	1.8734
		T (°C)	60	5200.00248	5200	0.0025	0.4766
		T (°C)	70	5200.00825	5200	0.0082	1.5863
Limits				±20ppm			
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)	120.00	5240.01009	5240	0.0101	1.9263
		V max (V)	138.00	5240.00546	5240	0.0055	1.0423
		V min (V)	102.00	5240.01209	5240	0.0121	2.3072
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5240MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	-20	5240.00605	5240	0.0061	1.1551
		T (°C)	-10	5240.00732	5240	0.0073	1.3964
		T (°C)	0	5240.00052	5240	0.0005	0.0990
		T (°C)	10	5240.00667	5240	0.0067	1.2721
		T (°C)	20	5240.00259	5240	0.0026	0.4950
		T (°C)	30	5240.00961	5240	0.0096	1.8335
		T (°C)	40	5240.00933	5240	0.0093	1.7809
		T (°C)	50	5240.01087	5240	0.0109	2.0736
		T (°C)	60	5240.00202	5240	0.0020	0.3855
		T (°C)	70	5240.00156	5240	0.0016	0.2971
Limits				±20ppm			
Result				Complies			

Temperature：	26 ℃	Relative Humidity：	54%
Pressure：	101kPa	Test Voltage ：	AC 120V/60Hz
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)	120.00	5745.00067	5745	0.00067	0.1174
		V max (V)	138.00	5745.01067	5745	0.01067	1.8571
		V min (V)	102.00	5745.01051	5745	0.01051	1.8294
Limits				±20ppm			
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	5745.00442	5745	0.00442	0.7688
		T (°C)	-10	5745.00011	5745	0.00011	0.0185
		T (°C)	0	5745.01100	5745	0.01100	1.9148
		T (°C)	10	5745.01098	5745	0.01098	1.9119
		T (°C)	20	5745.00392	5745	0.00392	0.6824
		T (°C)	30	5745.00237	5745	0.00237	0.4126
		T (°C)	40	5745.00079	5745	0.00079	0.1381
		T (°C)	50	5745.01177	5745	0.01177	2.0485
		T (°C)	60	5745.00550	5745	0.00550	0.9578
		T (°C)	70	5745.00073	5745	0.00073	0.1275
Limits				±20ppm			
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	5785.00301	5785	0.00301	0.5201
		V max (V)	138.00	5785.00895	5785	0.00895	1.5478
		V min (V)	102.00	5785.01329	5785	0.01329	2.2979
Limits				±20ppm			
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	5785.00253	5785	0.00253	0.4372
		T (°C)	-10	5785.00296	5785	0.00296	0.5112
		T (°C)	0	5785.00568	5785	0.00568	0.9818
		T (°C)	10	5785.00758	5785	0.00758	1.3110
		T (°C)	20	5785.00055	5785	0.00055	0.0957
		T (°C)	30	5785.00033	5785	0.00033	0.0572
		T (°C)	40	5785.00810	5785	0.00810	1.4008
		T (°C)	50	5785.01285	5785	0.01285	2.2211
		T (°C)	60	5785.00339	5785	0.00339	0.5866
		T (°C)	70	5785.00983	5785	0.00983	1.6987
Limits				±20ppm			
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	5825.00277	5825	0.00277	0.4759
		V max (V)	138.00	5825.00337	5825	0.00337	0.5777
		V min (V)	102.00	5825.00619	5825	0.00619	1.0626
Limits				±20ppm			
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	5825.01137	5825	0.01137	1.9522
		T (°C)	-10	5825.00457	5825	0.00457	0.7846
		T (°C)	0	5825.01251	5825	0.01251	2.1483
		T (°C)	10	5825.00872	5825	0.00872	1.4968
		T (°C)	20	5825.00892	5825	0.00892	1.5306
		T (°C)	30	5825.00039	5825	0.00039	0.0662
		T (°C)	40	5825.00168	5825	0.00168	0.2876
		T (°C)	50	5825.00203	5825	0.00203	0.3481
		T (°C)	60	5825.00453	5825	0.00453	0.7782
		T (°C)	70	5825.00704	5825	0.00704	1.2089
Limits				±20ppm			
Result				Complies			

14. ANTENNA REQUIREMENT

14.1 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.

14.2 Test Result

The EUT antenna is External antenna (antenna gain (A): 2dBi; antenna gain (B): 2dBi). It comply with the standard requirement.

15. EUT PHOTOGRAPHS

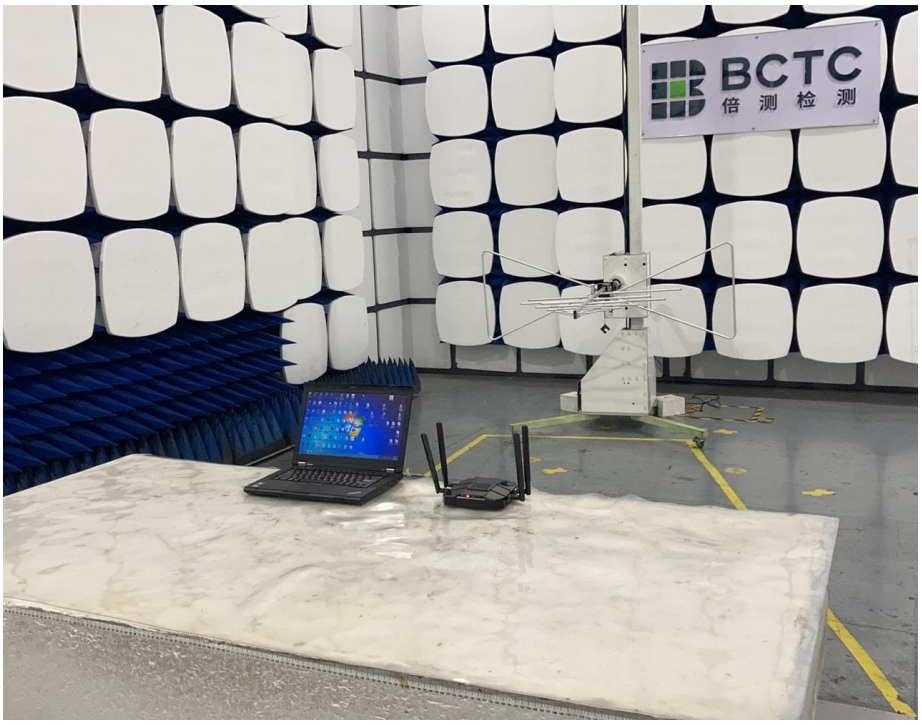
EUT Photo 1

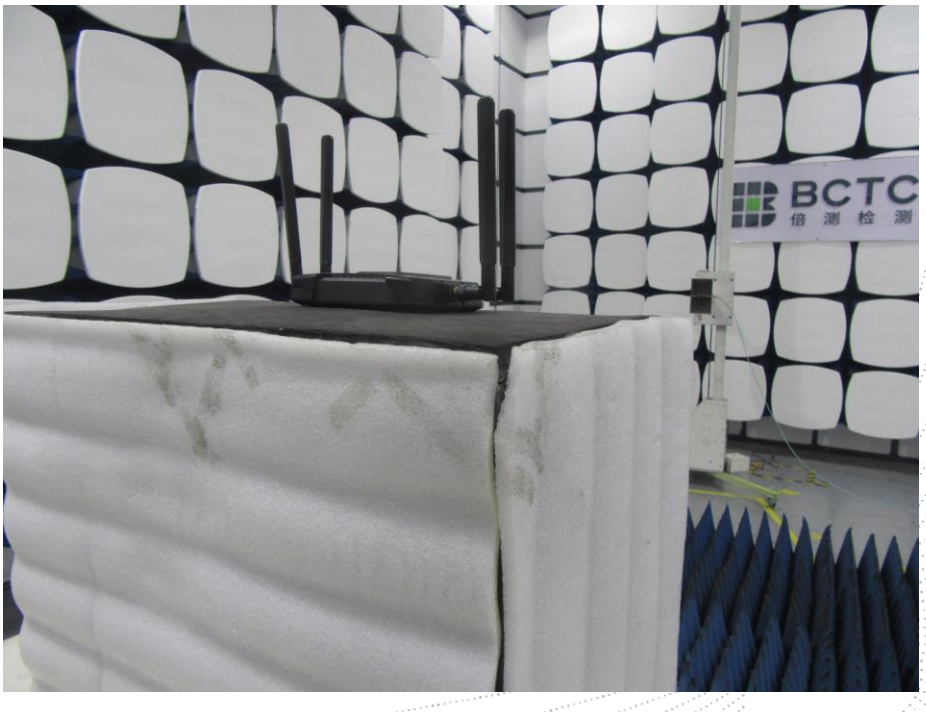
EUT Photo 2

16. 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:
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P.C.: 518103

FAX：0755-33229357

Website：http://www.chnbctc.com

E-Mail：bctc@bctc-lab.com.cn

※※※※※ **END** ※※※※※