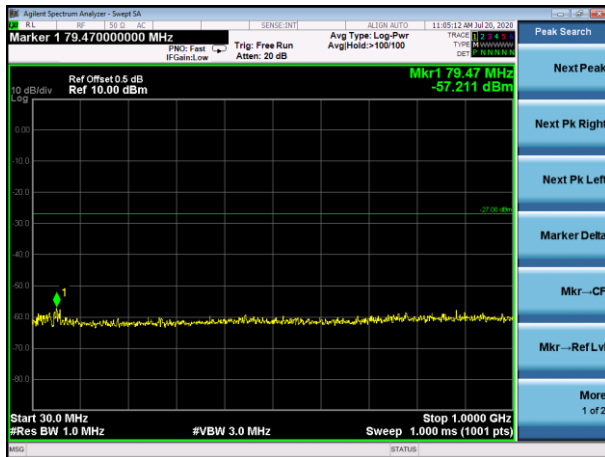
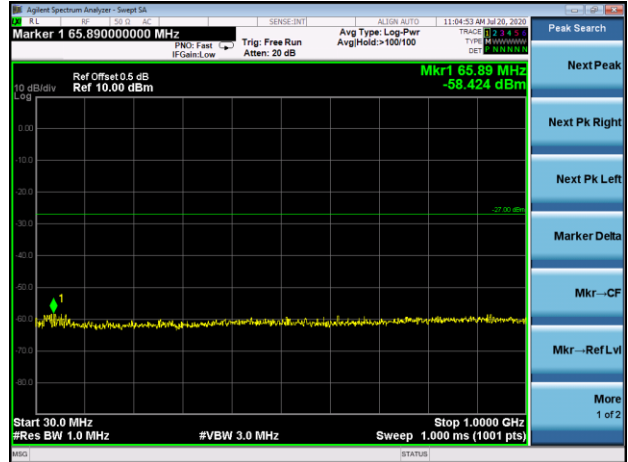


5.8G
Test Plot

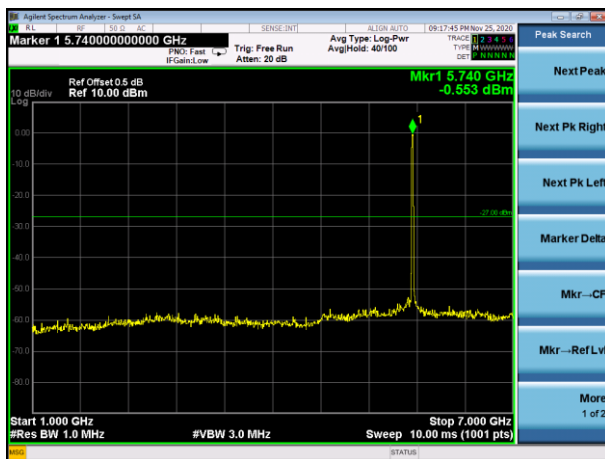
802.11a on channel 149



802.11a on channel 157



802.11a on channel 149



802.11a on channel 157



802.11a on channel 149

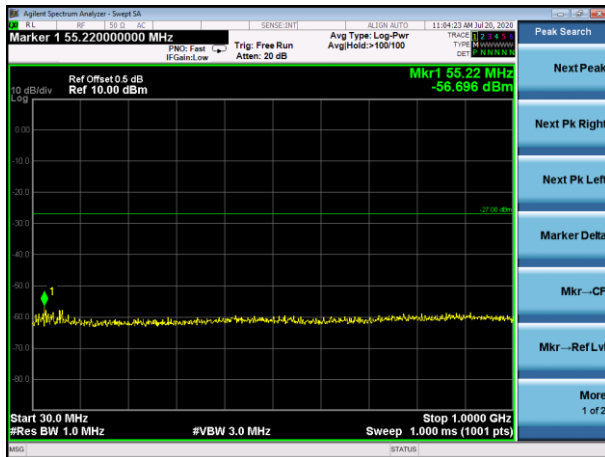


802.11a on channel 157

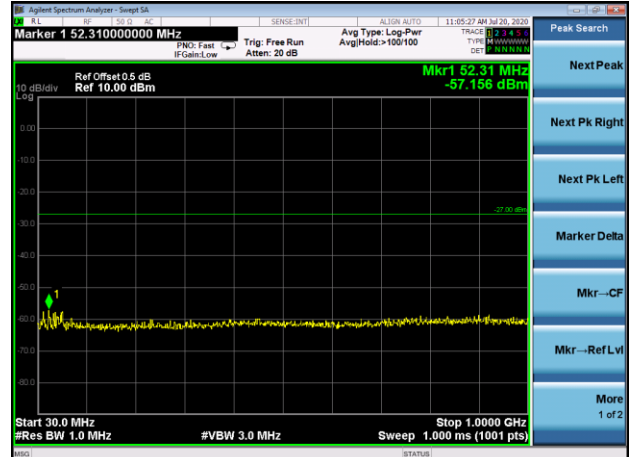


Test Plot

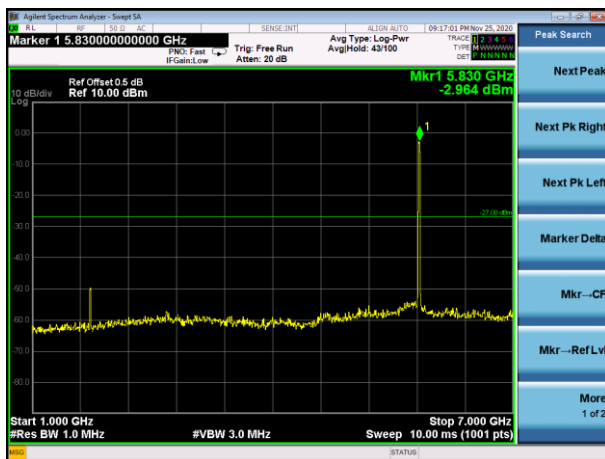
802.11a on channel 165



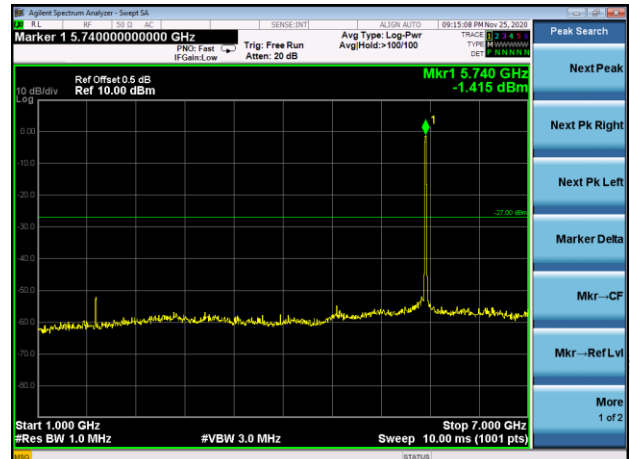
802.11n20 on channel 149



802.11a on channel 165



802.11n20 on channel 149



802.11a on channel 165

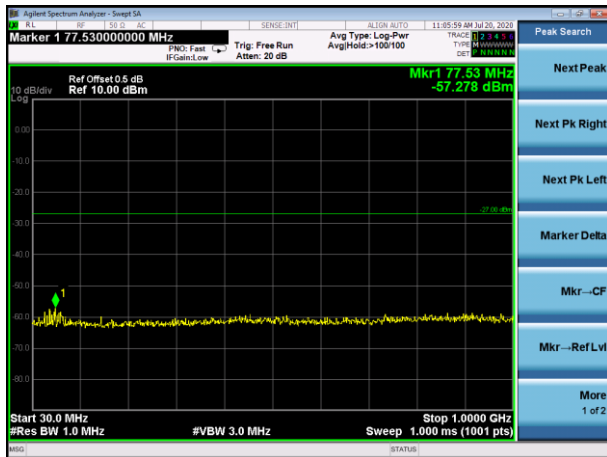


802.11n20 on channel 149

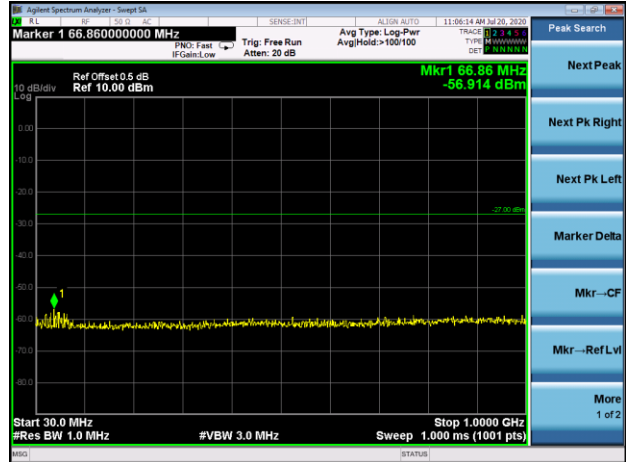


Test Plot

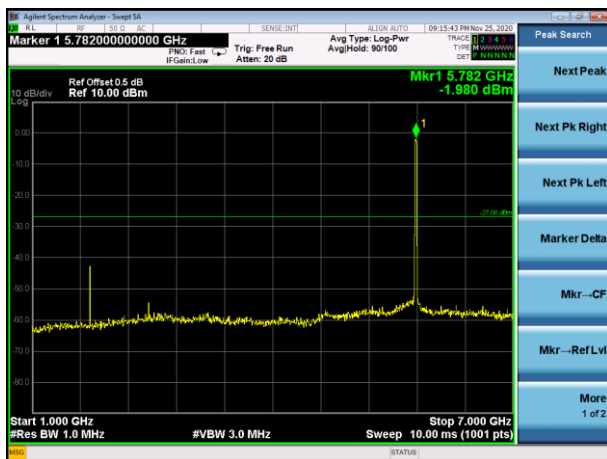
802.11n20 on channel 157



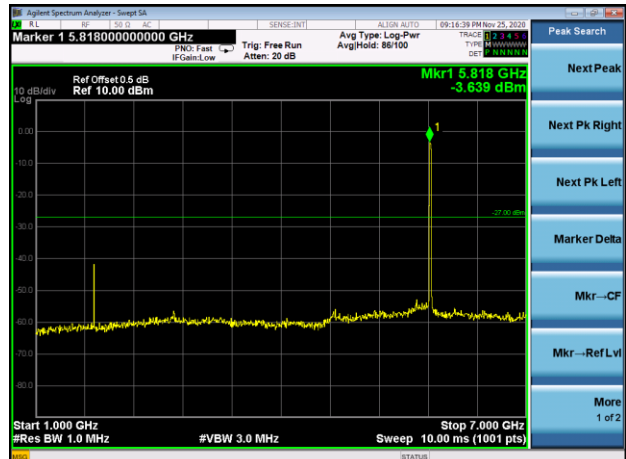
802.11n20 on channel 165



802.11n20 on channel 157



802.11n20 on channel 165



802.11n20 on channel 157

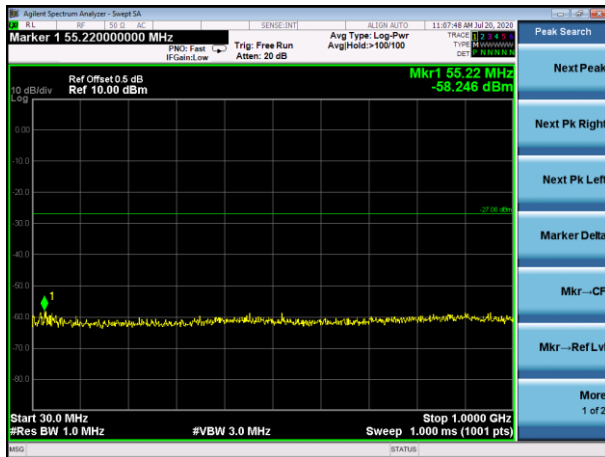


802.11n20 on channel 165

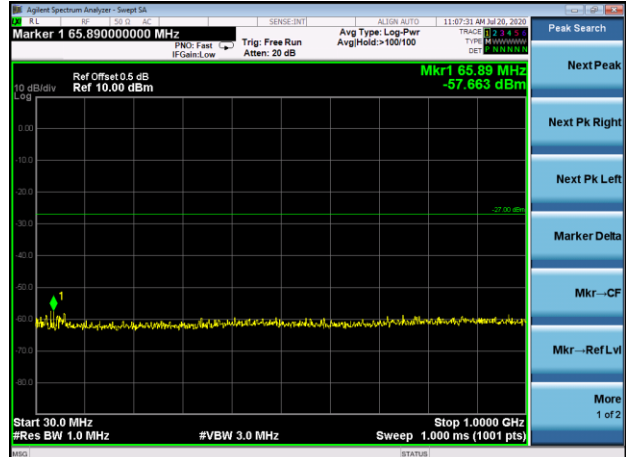


Test Plot

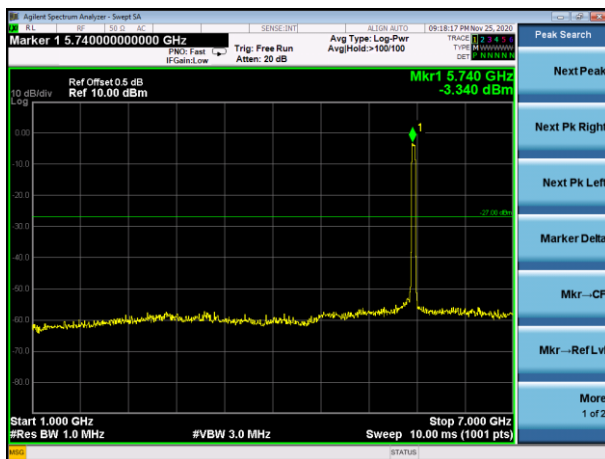
802.11n40 on channel 151



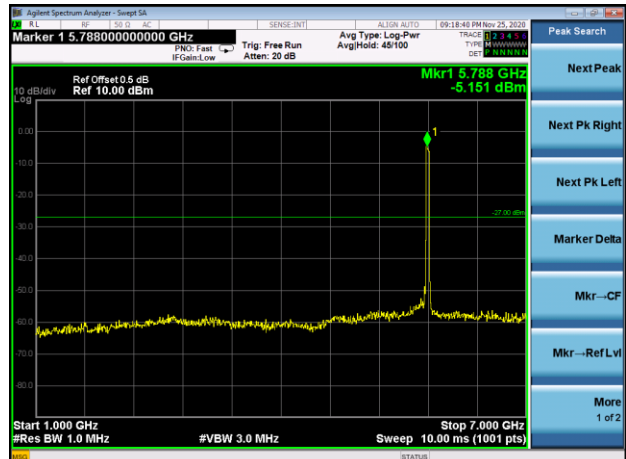
802.11n40 on channel 159



802.11n40 on channel 151



802.11n40 on channel 159



802.11n40 on channel 151

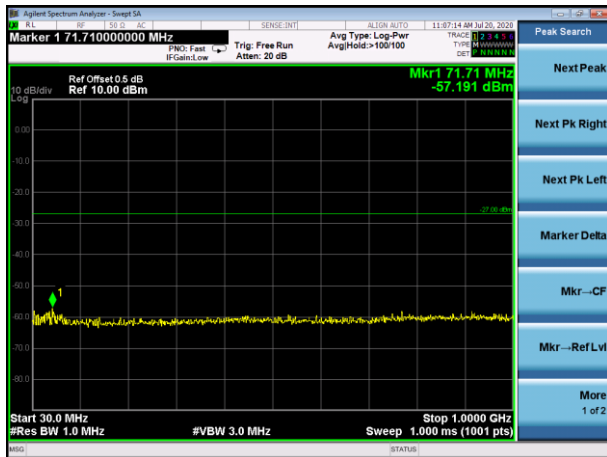


802.11n40 on channel 159

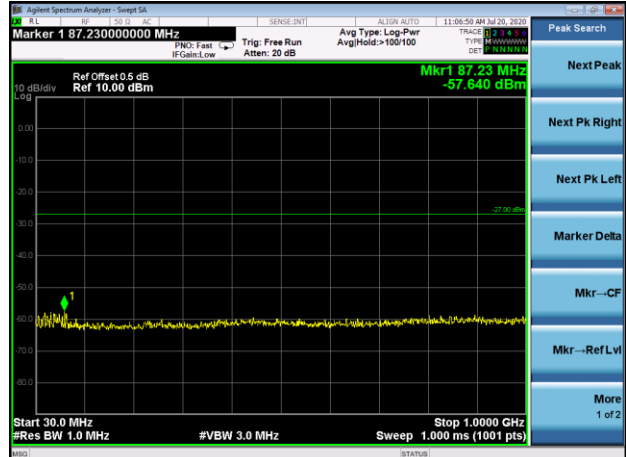


Test Plot

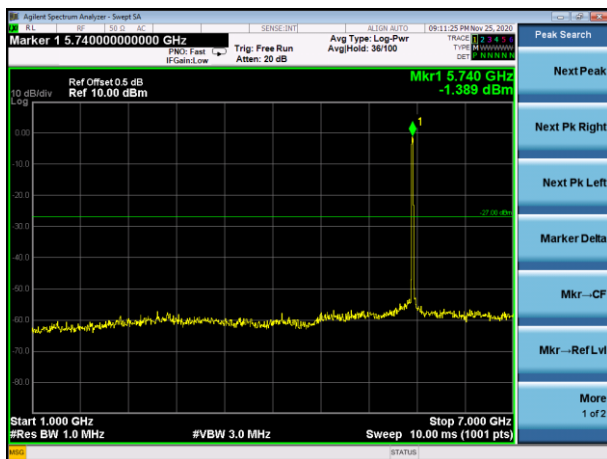
802.11ac20 on channel 149



802.11ac20 on channel 157



802.11ac20 on channel 149



802.11ac20 on channel 157



802.11ac20 on channel 149

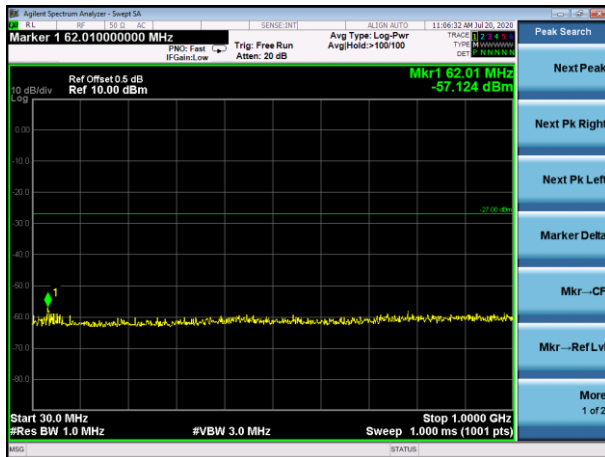


802.11ac20 on channel 157

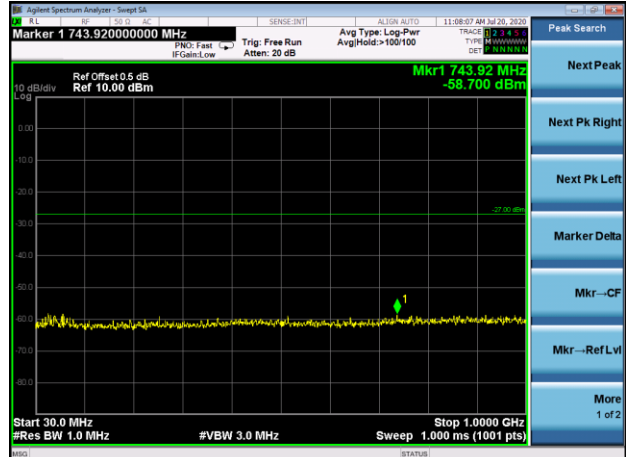


Test Plot

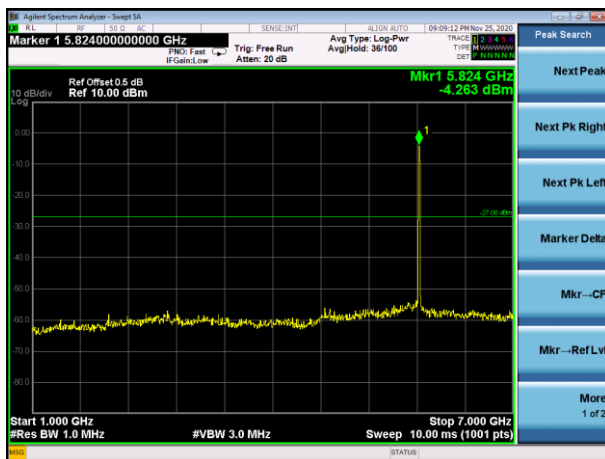
802.11ac20 on channel 165



802.11ac40 on channel 151



802.11ac20 on channel 165



802.11ac40 on channel 151



802.11ac20 on channel 165

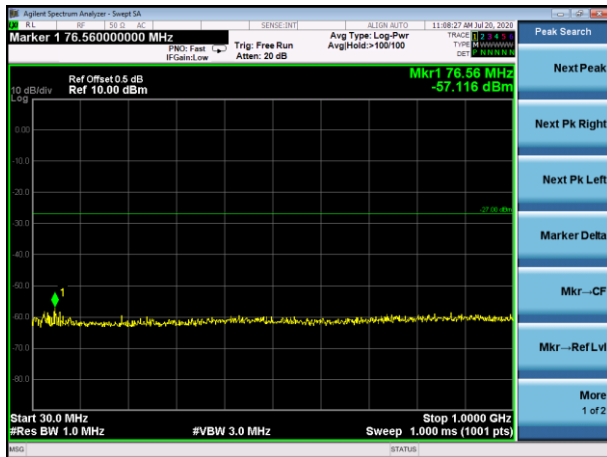


802.11ac40 on channel 151

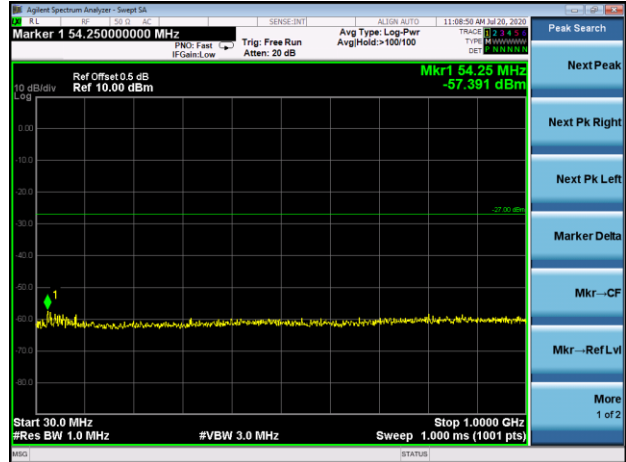


Test Plot

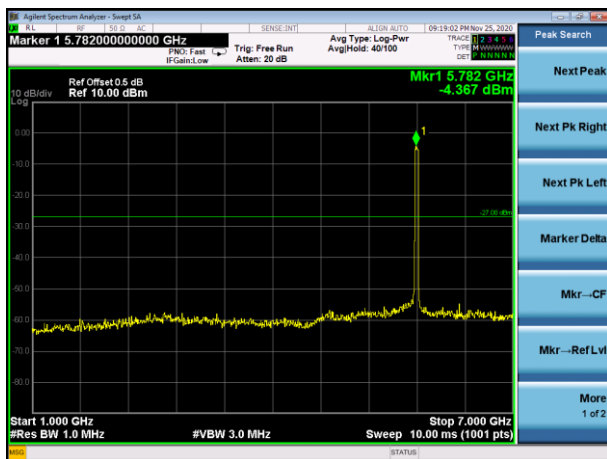
802.11ac40 on channel 159



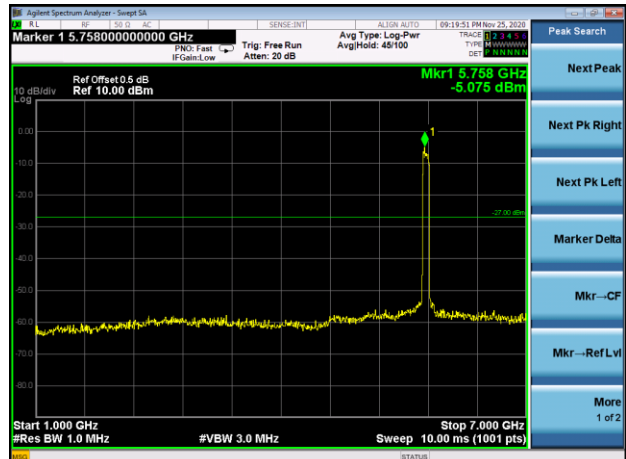
802.11ac80 on channel 155



802.11 ac40 on channel 159



802.11 ac80 on channel 155



802.11 ac40 on channel 159



802.11 ac80 on channel 155



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 :	DC 5V
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	5180.0108	5180	0.0108	2.0817
		V max (V)	138.00	5180.0209	5180	0.0209	4.0431
		V min (V)	102.00	5180.0010	5180	0.0010	0.1928
Limits				5150-5250 MHz			
Result				Complies			

Temperature vs. Frequency Stability

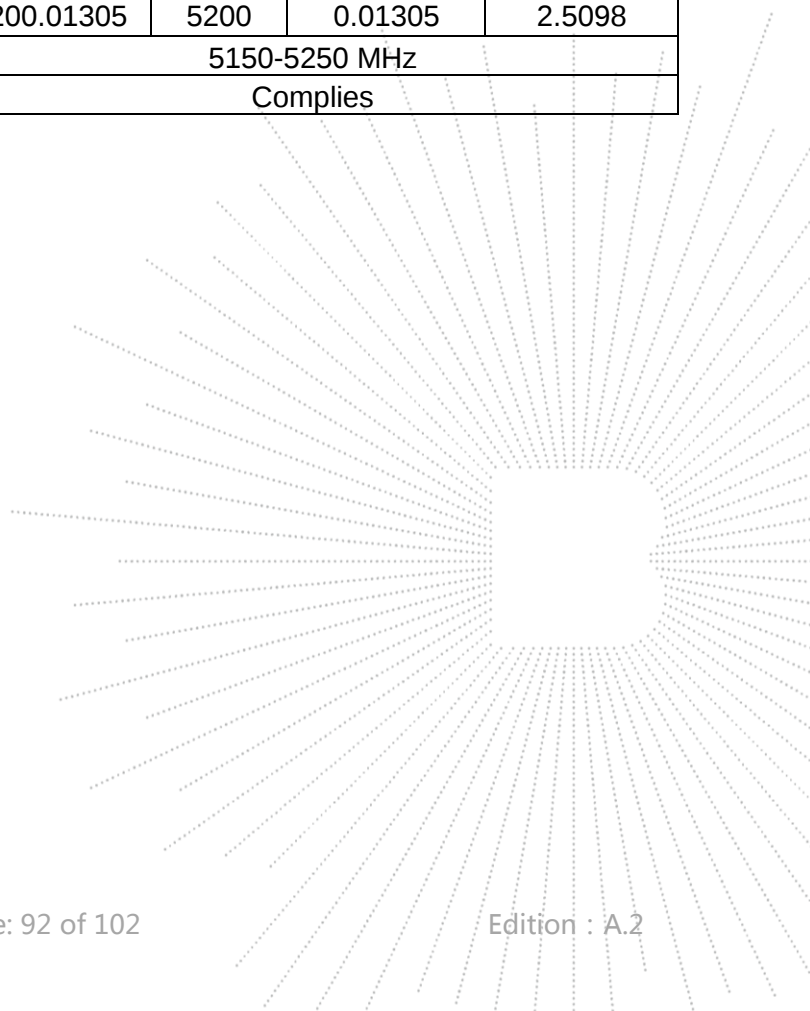
TEST CONDITIONS				Reference Frequency: 5180MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120V/60Hz	T (°C)	-20	5180.0089	5180	0.0089	1.7172
		T (°C)	-10	5180.0025	5180	0.0025	0.4838
		T (°C)	0	5180.0062	5180	0.0062	1.1877
		T (°C)	10	5180.0132	5180	0.0132	2.5486
		T (°C)	20	5180.0068	5180	0.0068	1.3101
		T (°C)	30	5180.0096	5180	0.0096	1.8502
		T (°C)	40	5180.0100	5180	0.0100	1.9223
		T (°C)	50	5180.0007	5180	0.0007	0.1365
		T (°C)	60	5180.0037	5180	0.0037	0.7167
		T (°C)	70	5180.0112	5180	0.0112	2.1698
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)	120.00	5200.0040	5200	0.0040	0.7635
		V max (V)	138.00	5200.0008	5200	0.0008	0.1613
		V min (V)	102.00	5200.0063	5200	0.0063	1.2202
Limits				5725-5850 MHz			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5200MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120V/60Hz	T (°C)	-20	5200.00651	5200	0.00651	1.2521
		T (°C)	-10	5200.00532	5200	0.00532	1.0232
		T (°C)	0	5200.01057	5200	0.01057	2.0324
		T (°C)	10	5200.00975	5200	0.00975	1.8755
		T (°C)	20	5200.01244	5200	0.01244	2.3921
		T (°C)	30	5200.01274	5200	0.01274	2.4493
		T (°C)	40	5200.00096	5200	0.00096	0.1852
		T (°C)	50	5200.00925	5200	0.00925	1.7782
		T (°C)	60	5200.00649	5200	0.00649	1.2485
		T (°C)	70	5200.01305	5200	0.01305	2.5098
Limits				5150-5250 MHz			
Result				Complies			

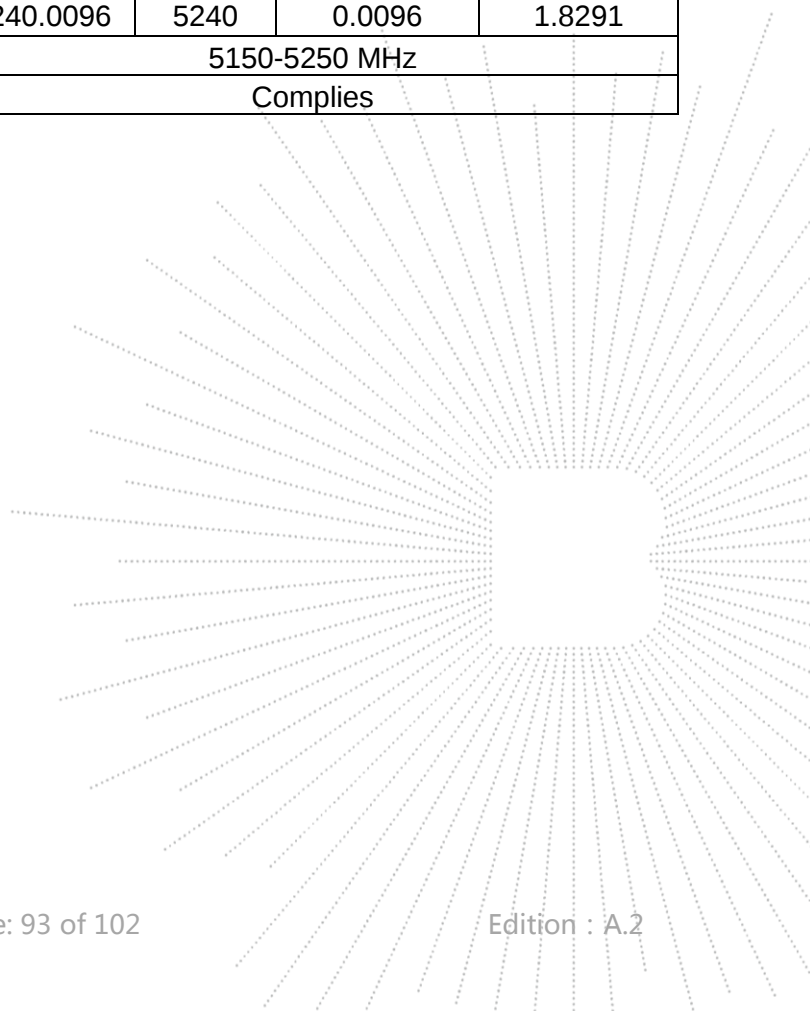


Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5240MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120.00	5240.0121	5240	0.0121	2.3136
		V max (V)	138.00	5240.0134	5240	0.0134	2.5628
		V min (V)	102.00	5240.0010	5240	0.0010	0.1875
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)	120V/60Hz	T (°C)	-20	5240.0070	5240	0.0070	1.3314
		T (°C)	-10	5240.0035	5240	0.0035	0.6585
		T (°C)	0	5240.0064	5240	0.0064	1.2301
		T (°C)	10	5240.0022	5240	0.0022	0.4174
		T (°C)	20	5240.0064	5240	0.0064	1.2279
		T (°C)	30	5240.0003	5240	0.0003	0.0661
		T (°C)	40	5240.0076	5240	0.0076	1.4552
		T (°C)	50	5240.0004	5240	0.0004	0.0757
		T (°C)	60	5240.0092	5240	0.0092	1.7608
		T (°C)	70	5240.0096	5240	0.0096	1.8291
Limits				5150-5250 MHz			
Result				Complies			



Temperature :	26 °C	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	DC 5V
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	5745.00101	5745	0.00101	0.1762
		V max (V)	138.00	5745.00671	5745	0.00671	1.1686
		V min (V)	102.00	5745.00379	5745	0.00379	0.6602
Limits				5725-5850 MHz			
Result				Complies			

Temperature vs. Frequency Stability

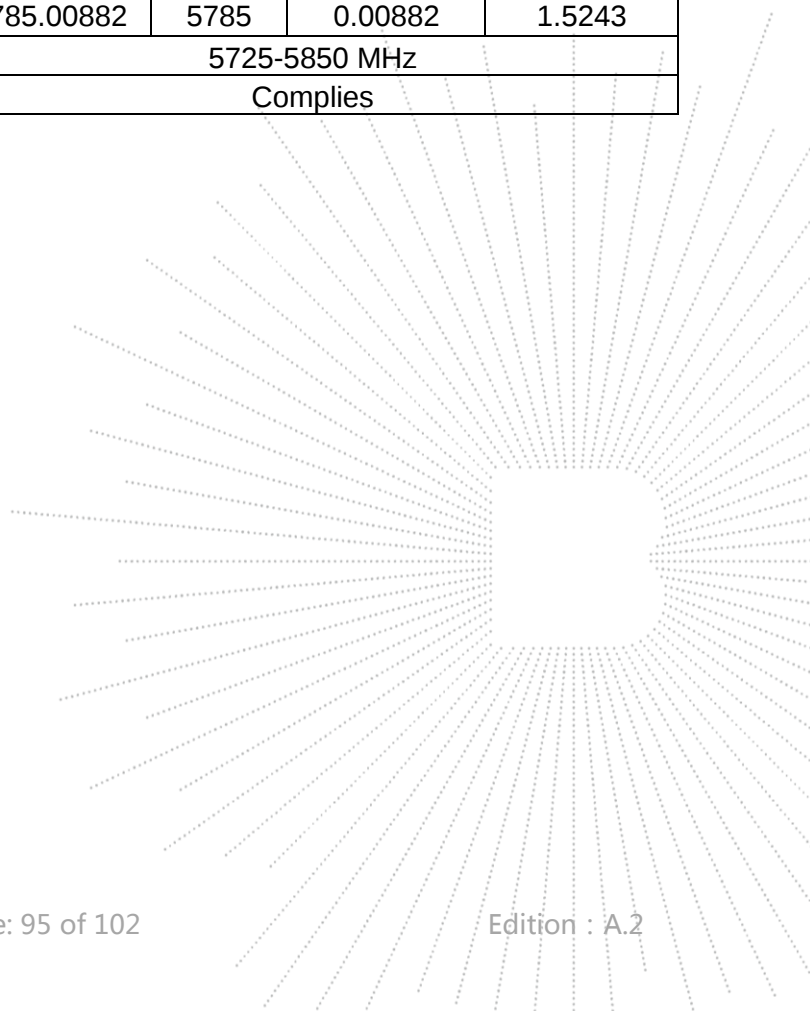
TEST CONDITIONS				Reference Frequency: 5745MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120V/60Hz	T (°C)	-20	5745.00262	5745	0.00262	0.4553
		T (°C)	-10	5745.00302	5745	0.00302	0.5254
		T (°C)	0	5745.00400	5745	0.00400	0.6959
		T (°C)	10	5745.00365	5745	0.00365	0.6359
		T (°C)	20	5745.01299	5745	0.01299	2.2603
		T (°C)	30	5745.00212	5745	0.00212	0.3687
		T (°C)	40	5745.00646	5745	0.00646	1.1251
		T (°C)	50	5745.01187	5745	0.01187	2.0668
		T (°C)	60	5745.01242	5745	0.01242	2.1624
		T (°C)	70	5745.01059	5745	0.01059	1.8431
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	5785.00473	5785	0.00473	0.8177
		V max (V)	138.00	5785.01023	5785	0.01023	1.7683
		V min (V)	102.00	5785.00068	5785	0.00068	0.1167
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)	120V/60Hz	T (°C)	-20	5785.00939	5785	0.00939	1.6234
		T (°C)	-10	5785.00463	5785	0.00463	0.8004
		T (°C)	0	5785.00722	5785	0.00722	1.2475
		T (°C)	10	5785.00162	5785	0.00162	0.2807
		T (°C)	20	5785.00942	5785	0.00942	1.6284
		T (°C)	30	5785.01077	5785	0.01077	1.8616
		T (°C)	40	5785.01148	5785	0.01148	1.9846
		T (°C)	50	5785.00609	5785	0.00609	1.0528
		T (°C)	60	5785.00130	5785	0.00130	0.2242
		T (°C)	70	5785.00882	5785	0.00882	1.5243
Limits				5725-5850 MHz			
Result				Complies			

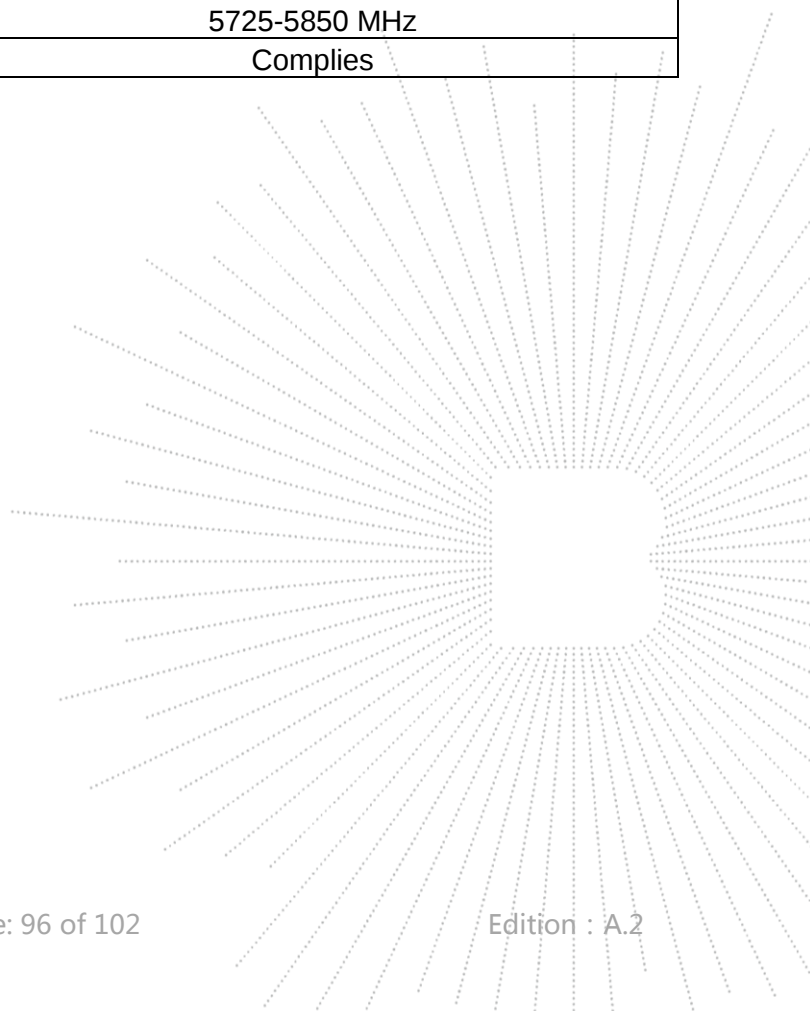


Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5825MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120.00	5825.00291	5825	0.00291	0.5004
		V max (V)	138.00	5825.00699	5825	0.00699	1.1997
		V min (V)	102.00	5825.00972	5825	0.00972	1.6682
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)	120V/60Hz	T (°C)	-20	5825.00181	5825	0.00181	0.3113
		T (°C)	-10	5825.01334	5825	0.01334	2.2905
		T (°C)	0	5825.01027	5825	0.01027	1.7624
		T (°C)	10	5825.00119	5825	0.00119	0.2035
		T (°C)	20	5825.00239	5825	0.00239	0.4111
		T (°C)	30	5825.00642	5825	0.00642	1.1024
		T (°C)	40	5825.00473	5825	0.00473	0.8120
		T (°C)	50	5825.00788	5825	0.00788	1.3522
		T (°C)	60	5825.00885	5825	0.00885	1.5198
		T (°C)	70	5825.00256	5825	0.00256	0.4403
Limits				5725-5850 MHz			
Result				Complies			



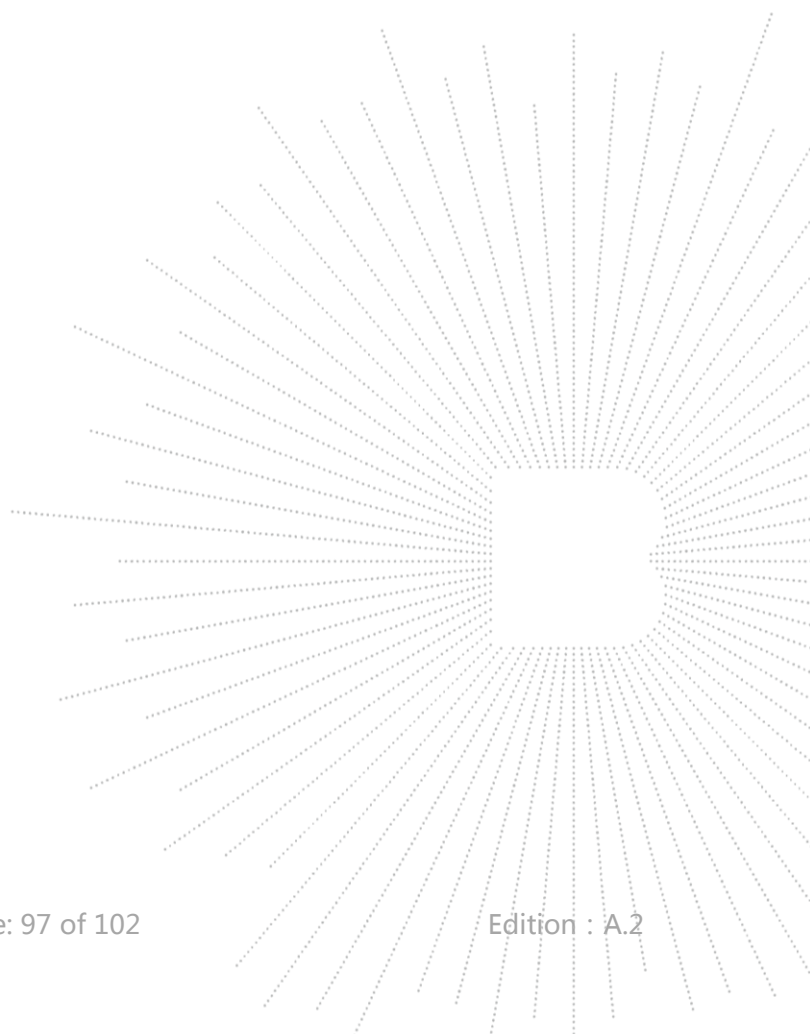
14. ANTENNA REQUIREMENT

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 EUT ANTENNA

The EUT antenna is Chip Antenna (antenna gain:1dBi). It comply with the standard requirement.

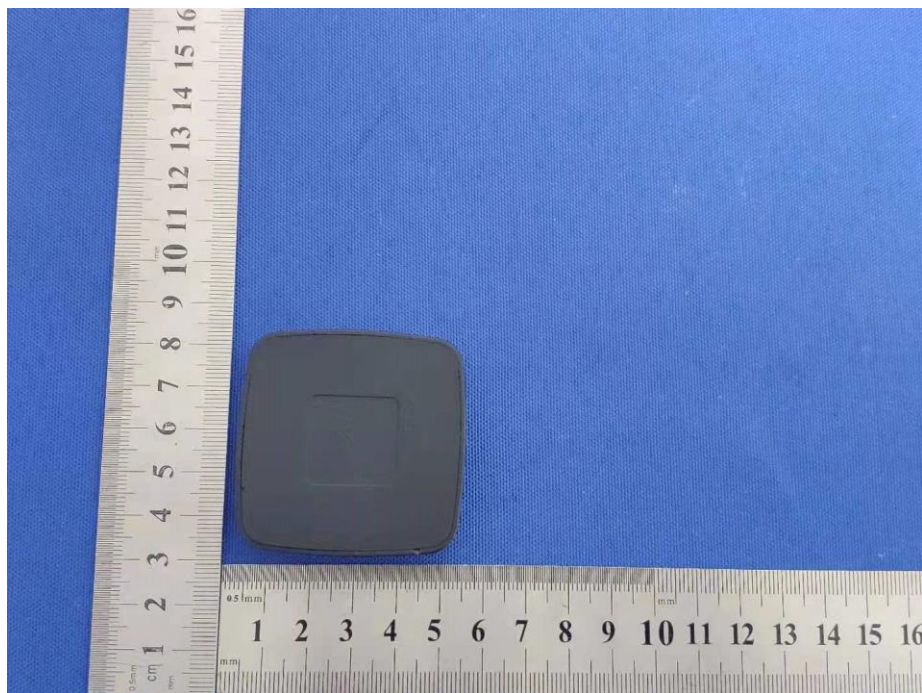


15. EUT PHOTOGRAPHS

EUT Photo 1

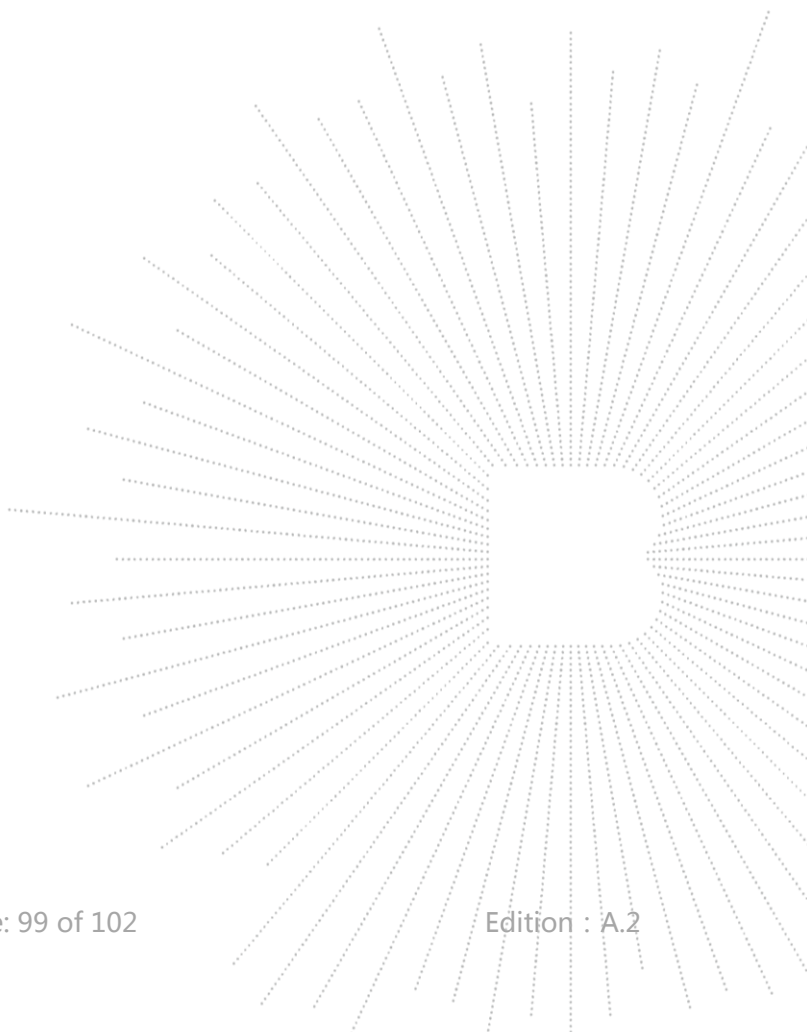


EUT Photo 2

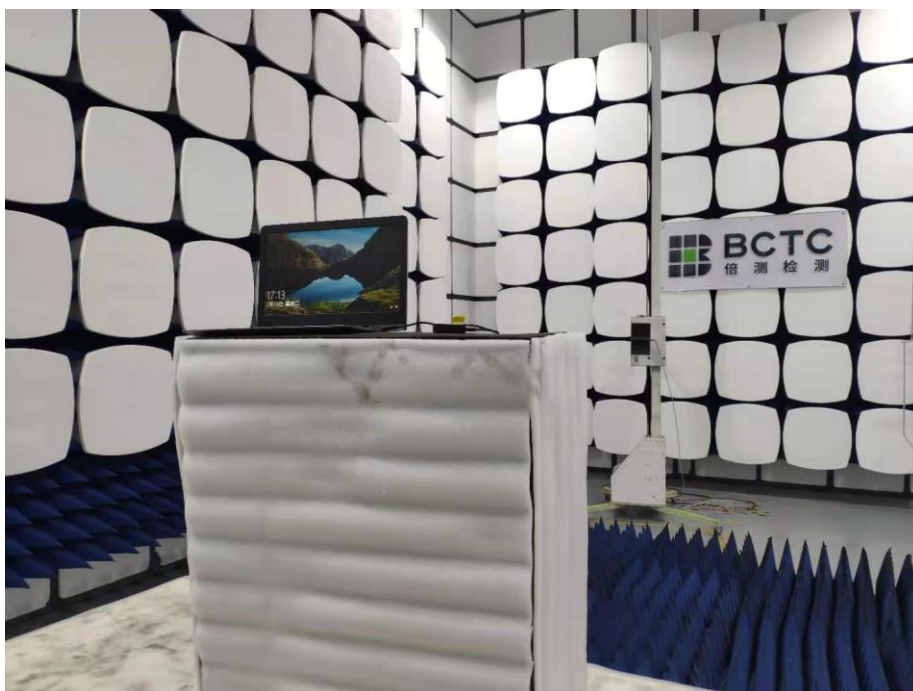


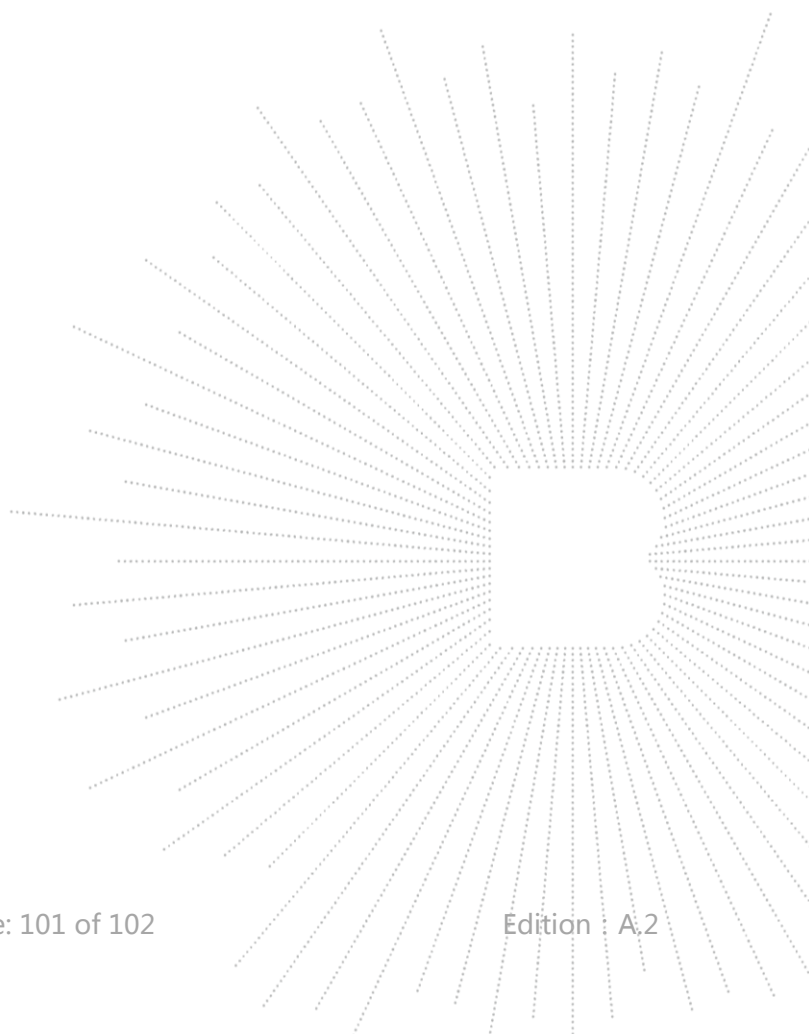
16. EUT TEST SETUP PHOTOGRAPHS

Conducted emissions



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:

1-2F, East of B Building, Pengzhou Industrial Park, Fuyuan 1st Road, Qiaotou, Fuyong Street, Bao'an District, Shenzhen, Guangdong, China

TEL : 400-788-9558

P.C.: 518103

FAX : 0755-33229357

Website : <http://www.bctc-lab.com>

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

***** END *****