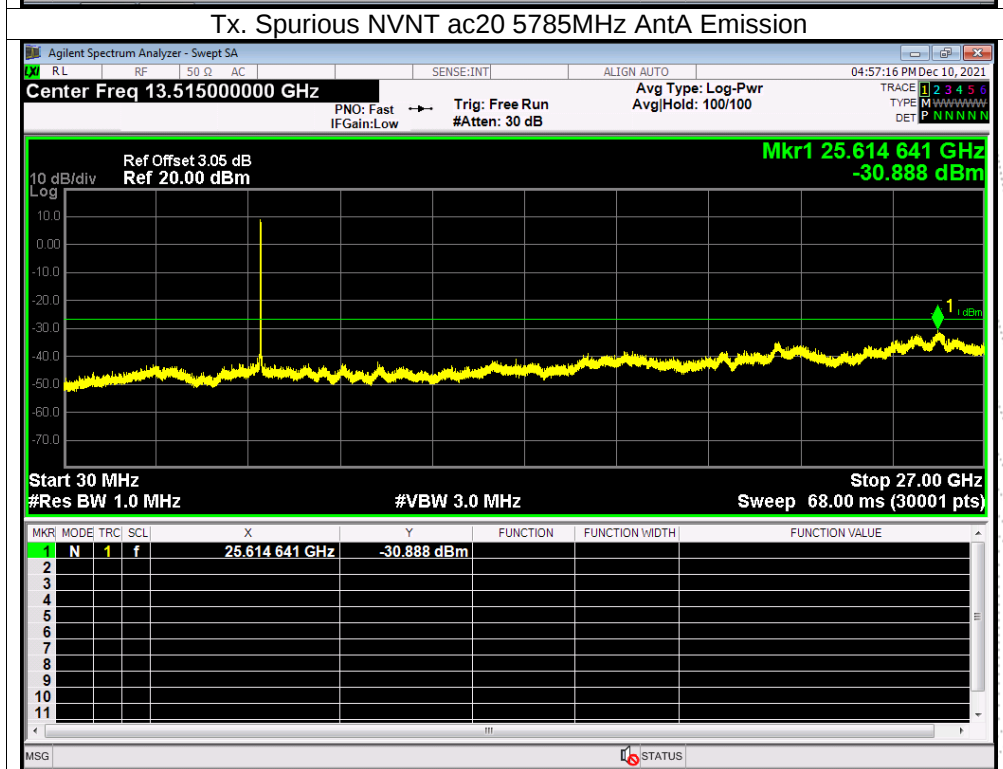
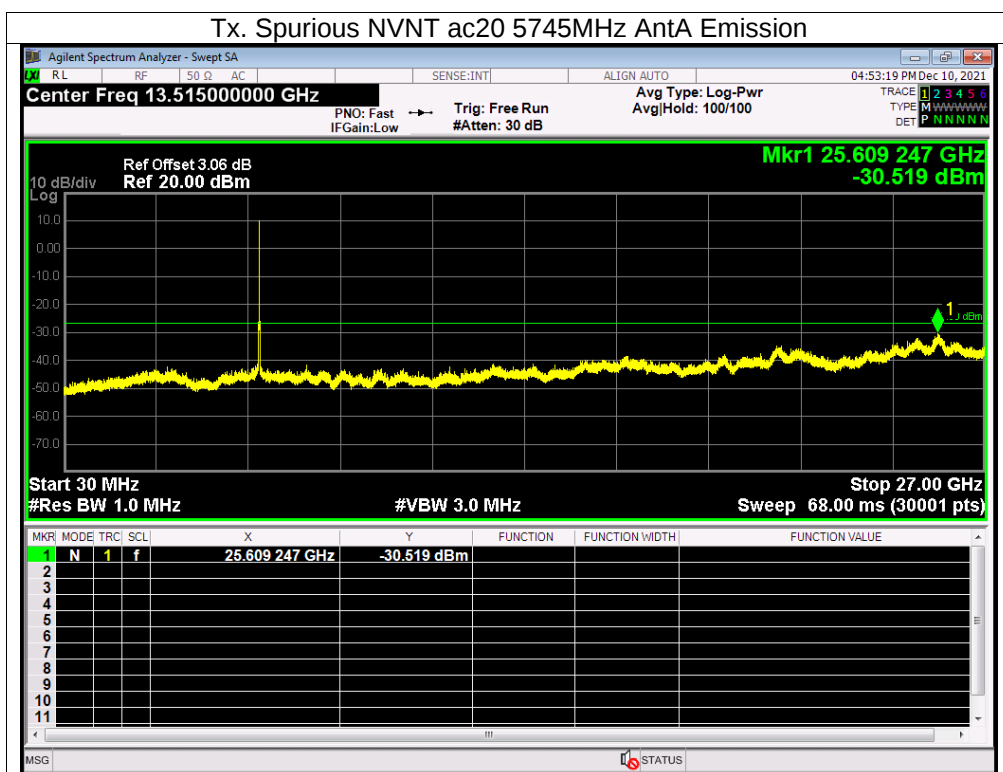
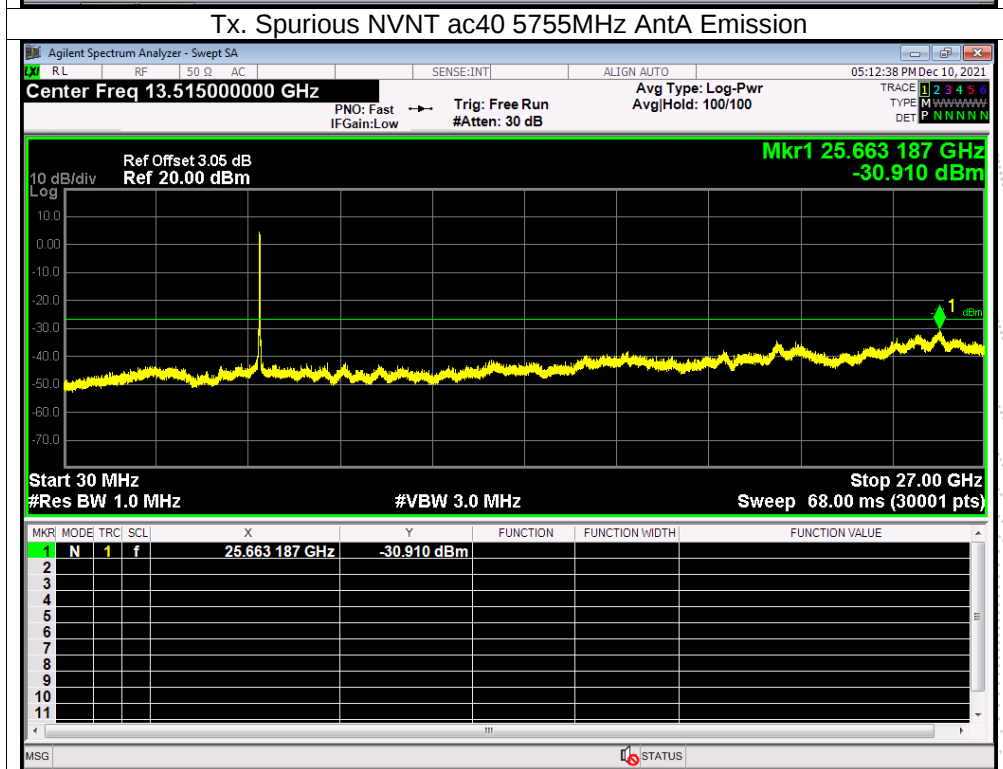
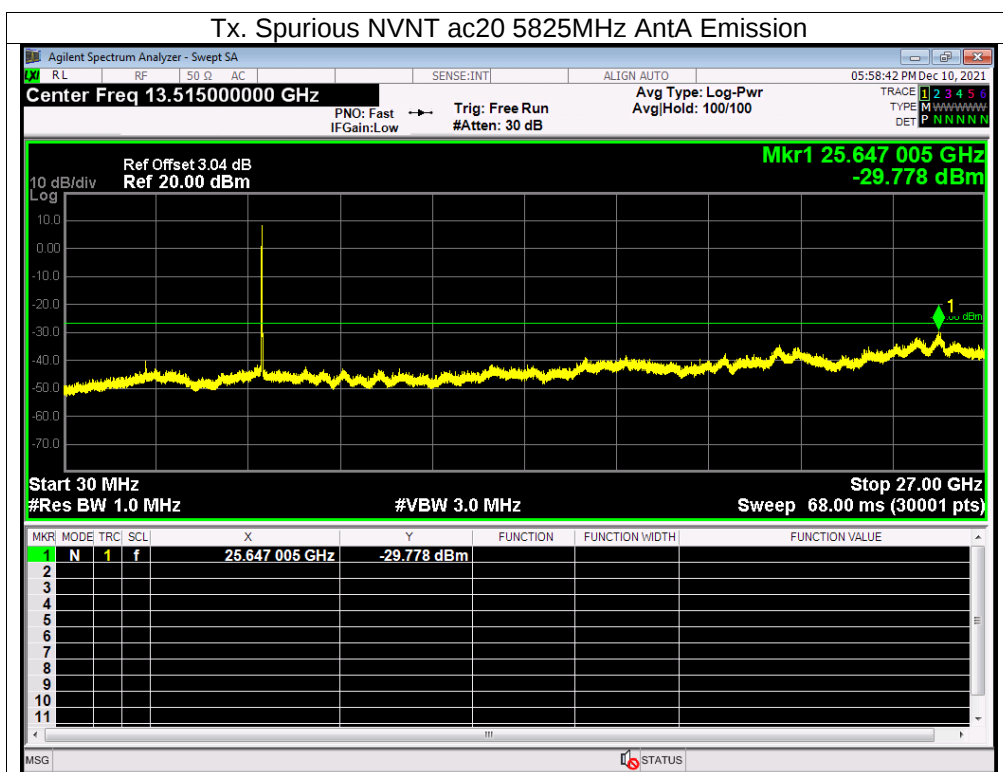
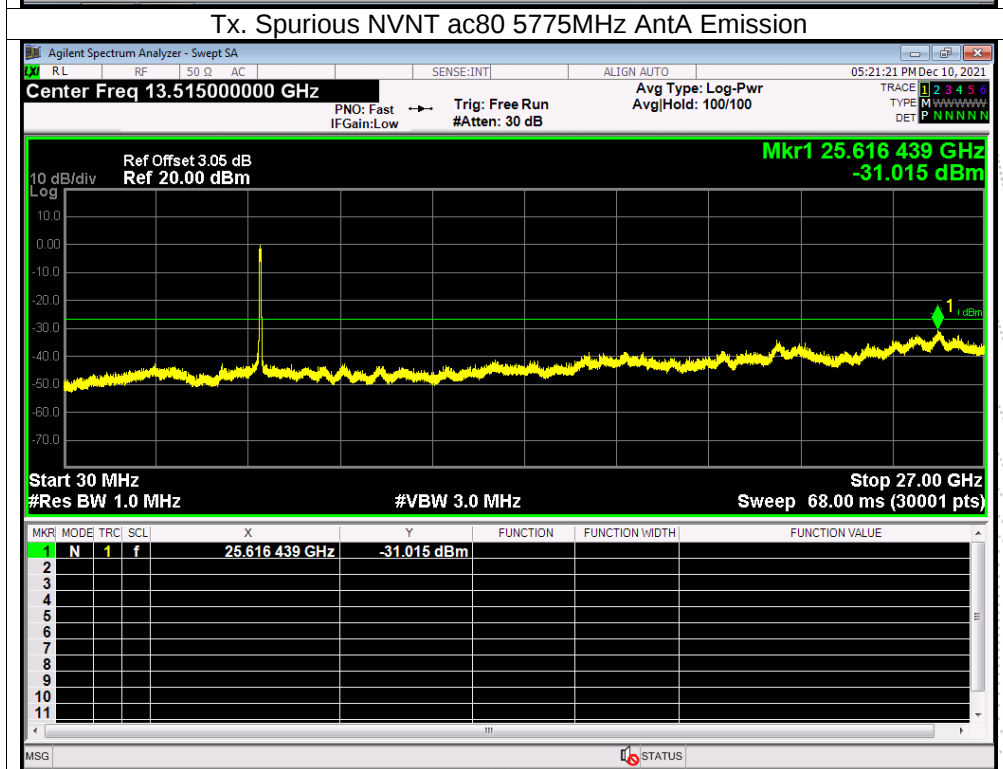
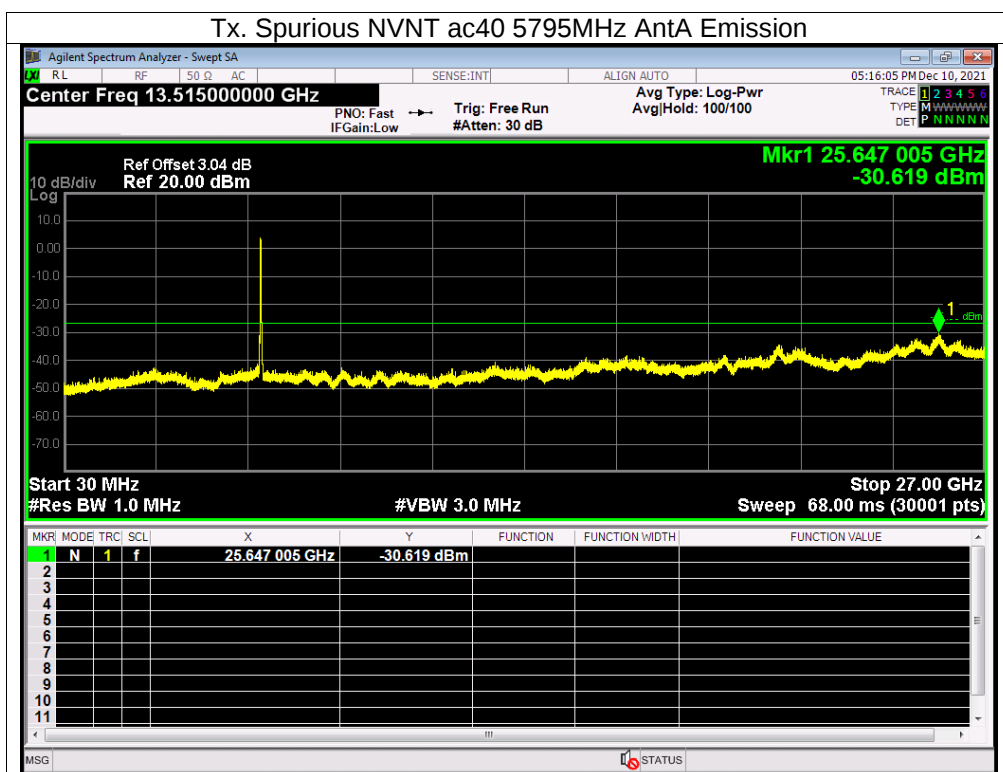








13. Frequency Stability Measurement

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 :	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	5180.0105	5180	0.0105	2.0252
		V max (V)	138.00	5180.0120	5180	0.0120	2.3190
		V min (V)	102.00	5180.0097	5180	0.0097	1.8651
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)	12	T (°C)	-20	5180.0074	5180	0.0074	1.4237
		T (°C)	-10	5180.0074	5180	0.0074	1.4277
		T (°C)	0	5180.0022	5180	0.0022	0.4256
		T (°C)	10	5180.0074	5180	0.0074	1.4204
		T (°C)	20	5180.0114	5180	0.0114	2.2096
		T (°C)	30	5180.0046	5180	0.0046	0.8910
		T (°C)	40	5180.0068	5180	0.0068	1.3177
		T (°C)	50	5180.0120	5180	0.0120	2.3176
		T (°C)	60	5180.0014	5180	0.0014	0.2651
		T (°C)	70	5180.0120	5180	0.0120	2.3260
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	5200.0093	5200	0.0093	1.7859
		V max (V)	138.00	5200.0046	5200	0.0046	0.8784
		V min (V)	102.00	5200.0043	5200	0.0043	0.8278
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)	12	T (°C)	-20	5200.01000	5200	0.01000	1.9235
		T (°C)	-10	5200.01177	5200	0.01177	2.2630
		T (°C)	0	5200.00860	5200	0.00860	1.6533
		T (°C)	10	5200.00047	5200	0.00047	0.0899
		T (°C)	20	5200.01169	5200	0.01169	2.2481
		T (°C)	30	5200.00264	5200	0.00264	0.5071
		T (°C)	40	5200.00060	5200	0.00060	0.1157
		T (°C)	50	5200.01287	5200	0.01287	2.4754
		T (°C)	60	5200.00802	5200	0.00802	1.5414
		T (°C)	70	5200.01214	5200	0.01214	2.3353
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	5240.0093	5240	0.0093	1.7716
		V max (V)	138.00	5240.0039	5240	0.0039	0.7515
		V min (V)	102.00	5240.0082	5240	0.0082	1.5741
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)	12	T (°C)	-20	5240.0019	5240	0.0019	0.3673
		T (°C)	-10	5240.0098	5240	0.0098	1.8772
		T (°C)	0	5240.0093	5240	0.0093	1.7676
		T (°C)	10	5240.0027	5240	0.0027	0.5112
		T (°C)	20	5240.0035	5240	0.0035	0.6760
		T (°C)	30	5240.0090	5240	0.0090	1.7161
		T (°C)	40	5240.0016	5240	0.0016	0.2991
		T (°C)	50	5240.0088	5240	0.0088	1.6771
		T (°C)	60	5240.0048	5240	0.0048	0.9122
		T (°C)	70	5240.0080	5240	0.0080	1.5325
Limits				5150-5250 MHz			
Result				Complies			

Temperature :	26 °C	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	AC 120V/60Hz
Hrst 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	5745.00721	5745	0.00721	1.2554
		V max (V)	138	5745.00057	5745	0.00057	0.0998
		V min (V)	102	5745.00717	5745	0.00717	1.2481
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)	12	T (°C)	-20	5745.00441	5745	0.00441	0.7676
		T (°C)	-10	5745.01085	5745	0.01085	1.8895
		T (°C)	0	5745.01241	5745	0.01241	2.1599
		T (°C)	10	5745.00171	5745	0.00171	0.2982
		T (°C)	20	5745.00960	5745	0.00960	1.6714
		T (°C)	30	5745.00634	5745	0.00634	1.1028
		T (°C)	40	5745.00977	5745	0.00977	1.7000
		T (°C)	50	5745.00884	5745	0.00884	1.5396
		T (°C)	60	5745.00866	5745	0.00866	1.5067
		T (°C)	70	5745.00715	5745	0.00715	1.2451
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	5785.01022	5785	0.01022	1.7663
		V max (V)	138	5785.00503	5785	0.00503	0.8693
		V min (V)	102	5785.00255	5785	0.00255	0.4416
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)	12	T (°C)	-20	5785.00091	5785	0.00091	0.1576
		T (°C)	-10	5785.00241	5785	0.00241	0.4167
		T (°C)	0	5785.00751	5785	0.00751	1.2979
		T (°C)	10	5785.01122	5785	0.01122	1.9391
		T (°C)	20	5785.00495	5785	0.00495	0.8551
		T (°C)	30	5785.01222	5785	0.01222	2.1130
		T (°C)	40	5785.01104	5785	0.01104	1.9078
		T (°C)	50	5785.00592	5785	0.00592	1.0231
		T (°C)	60	5785.00503	5785	0.00503	0.8687
		T (°C)	70	5785.00800	5785	0.00800	1.3830
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	5825.01305	5825	0.01305	2.2409
		V max (V)	138	5825.00218	5825	0.00218	0.3750
		V min (V)	102	5825.00052	5825	0.00052	0.0896
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)	12	T (°C)	-20	5825.00756	5825	0.00756	1.2972
		T (°C)	-10	5825.00836	5825	0.00836	1.4351
		T (°C)	0	5825.00202	5825	0.00202	0.3466
		T (°C)	10	5825.00033	5825	0.00033	0.0568
		T (°C)	20	5825.00937	5825	0.00937	1.6083
		T (°C)	30	5825.01207	5825	0.01207	2.0717
		T (°C)	40	5825.01015	5825	0.01015	1.7429
		T (°C)	50	5825.00541	5825	0.00541	0.9285
		T (°C)	60	5825.01321	5825	0.01321	2.2681
		T (°C)	70	5825.00560	5825	0.00560	0.9605
Limits				5725-5850 MHz			
Result				Complies			

14. Antenna Requirement

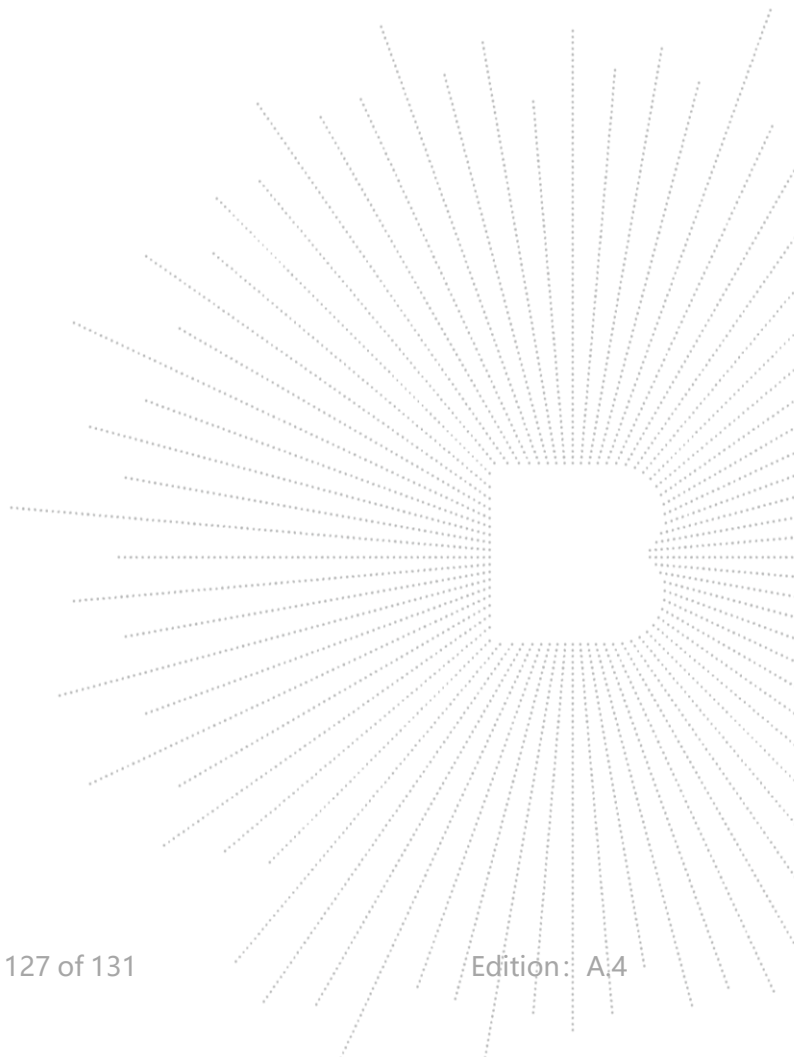
14.1 Limit

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 Test Result

The EUT antenna is External antenna (antenna gain (A): 5dBi; antenna gain (B) : 5dBi). It comply with the standard requirement.

The EUT antenna is External antenna (antenna gain (A): 5dBi; antenna gain (B) : 5dBi). It comply with the standard requirement.



15. EUT Photographs

EUT Photo 1



EUT Photo 2

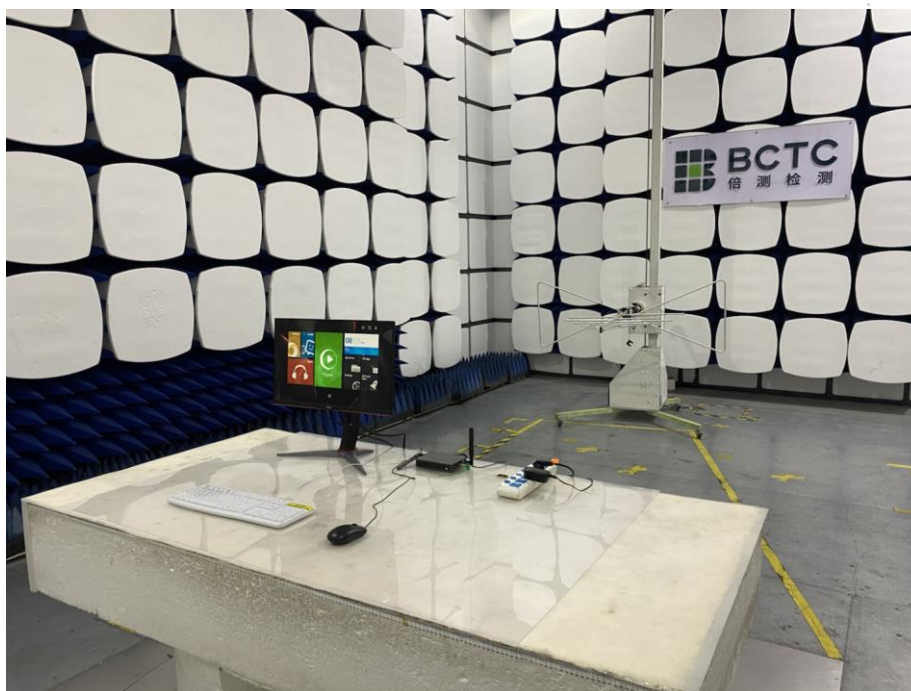


16. EUT Test Setup Photographs

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:

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 *****