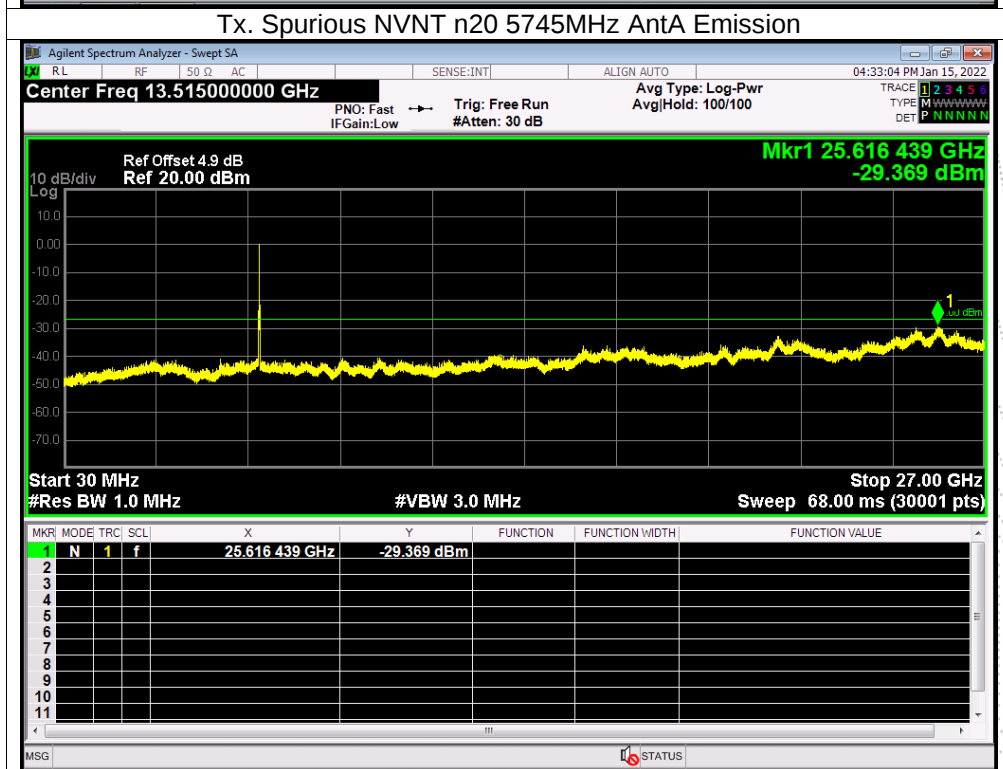
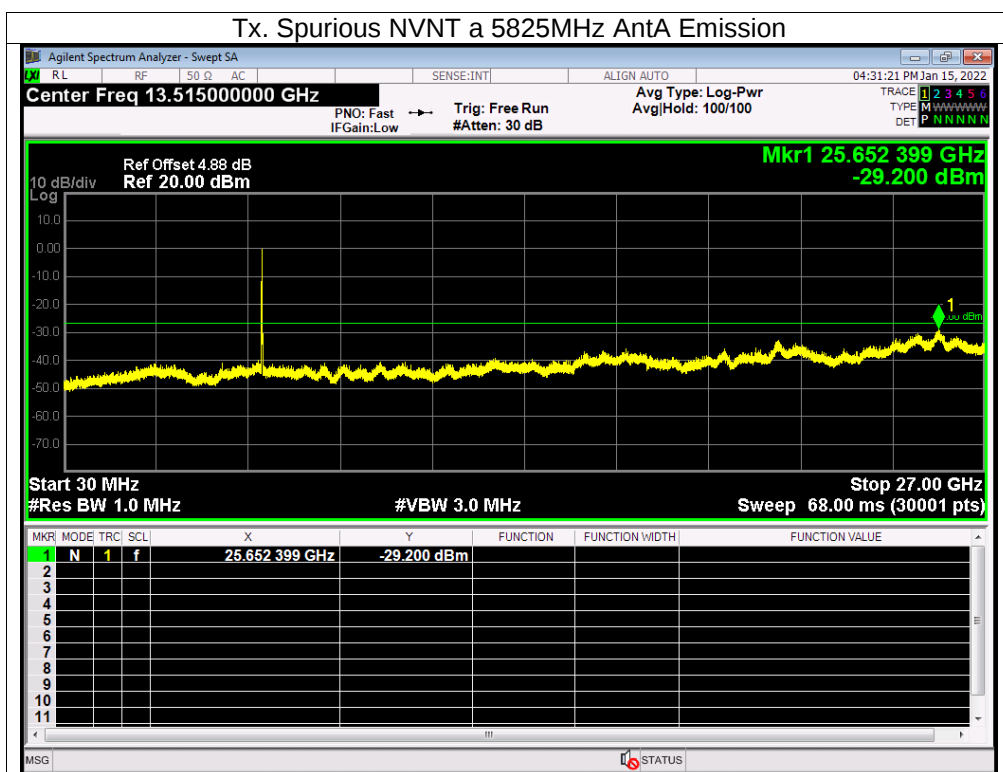
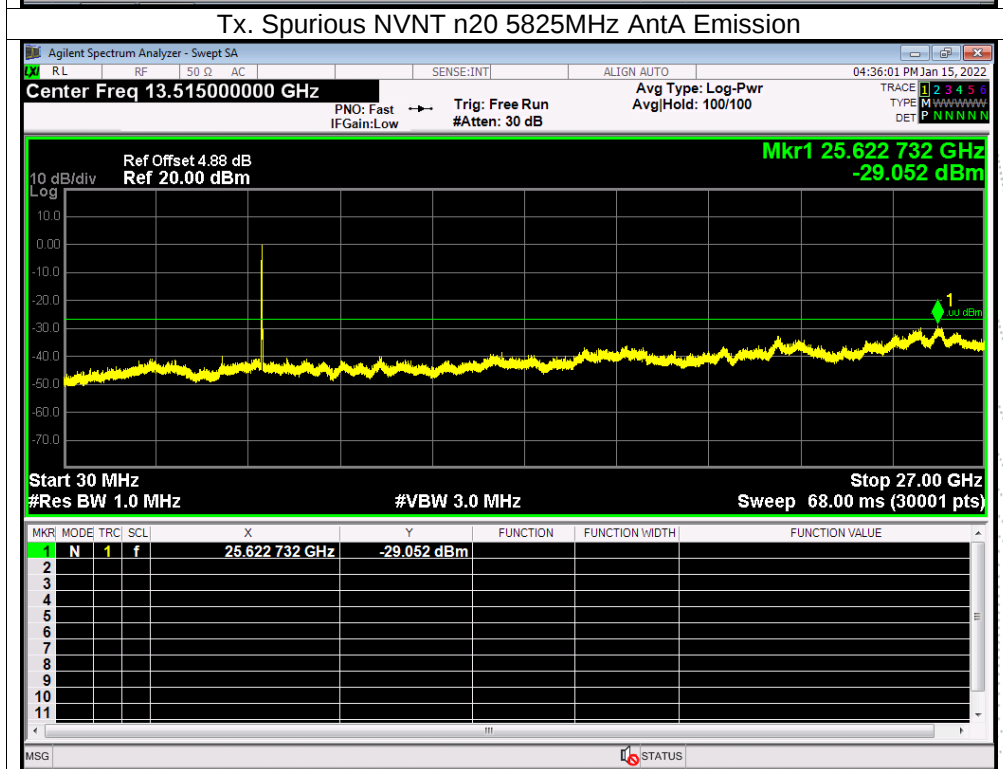
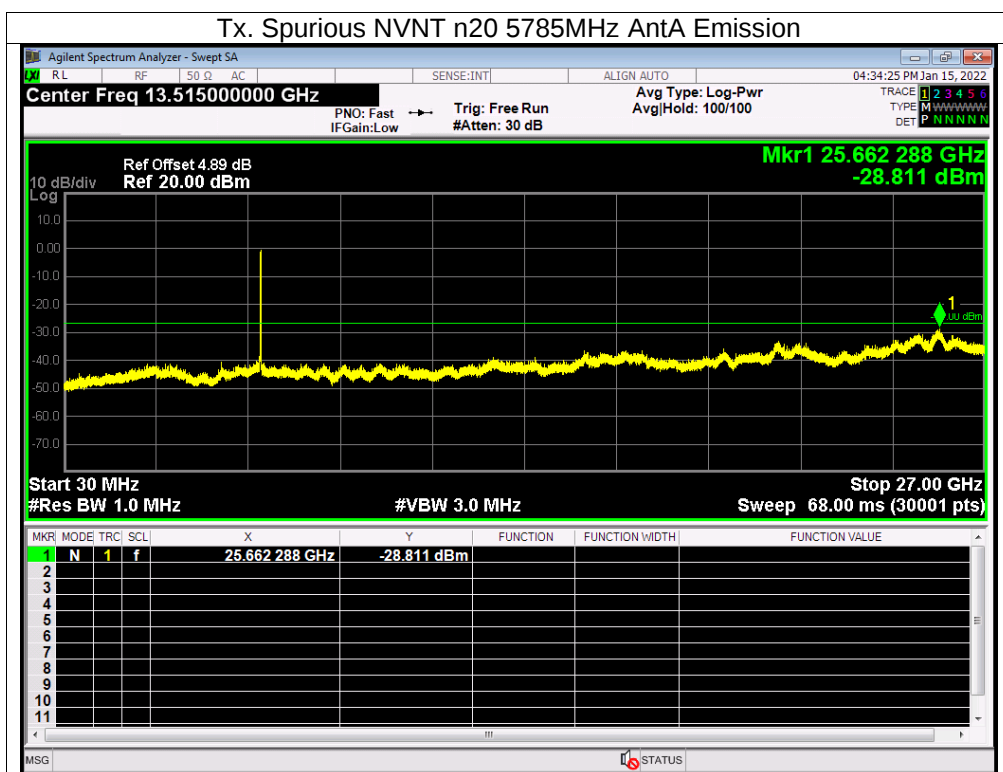
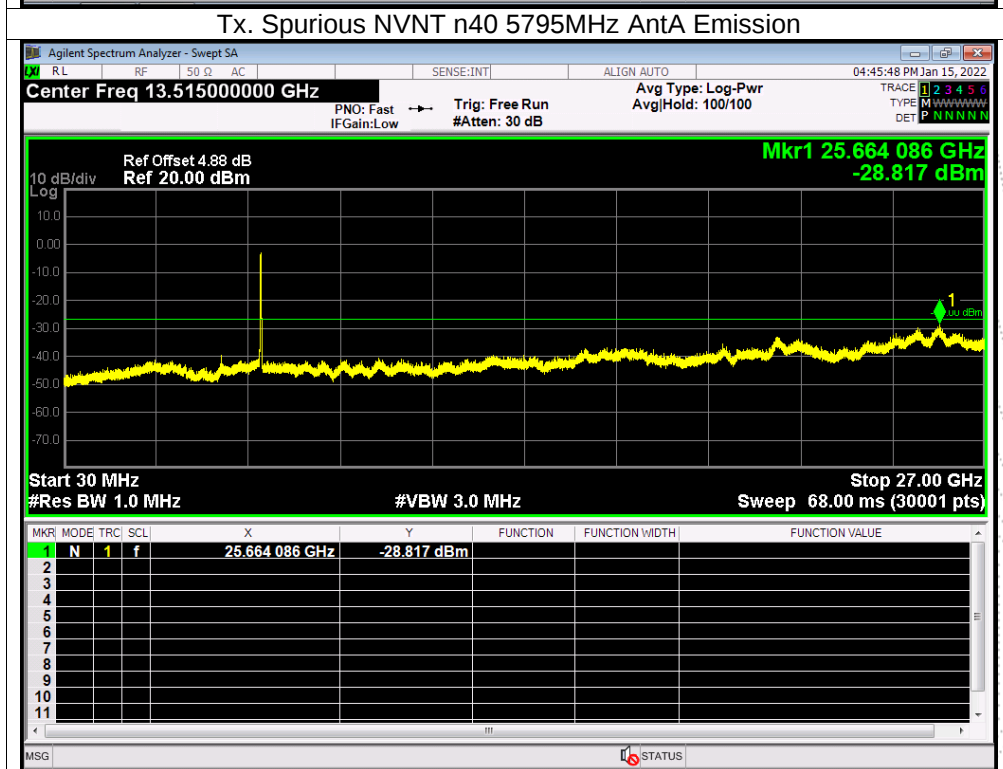
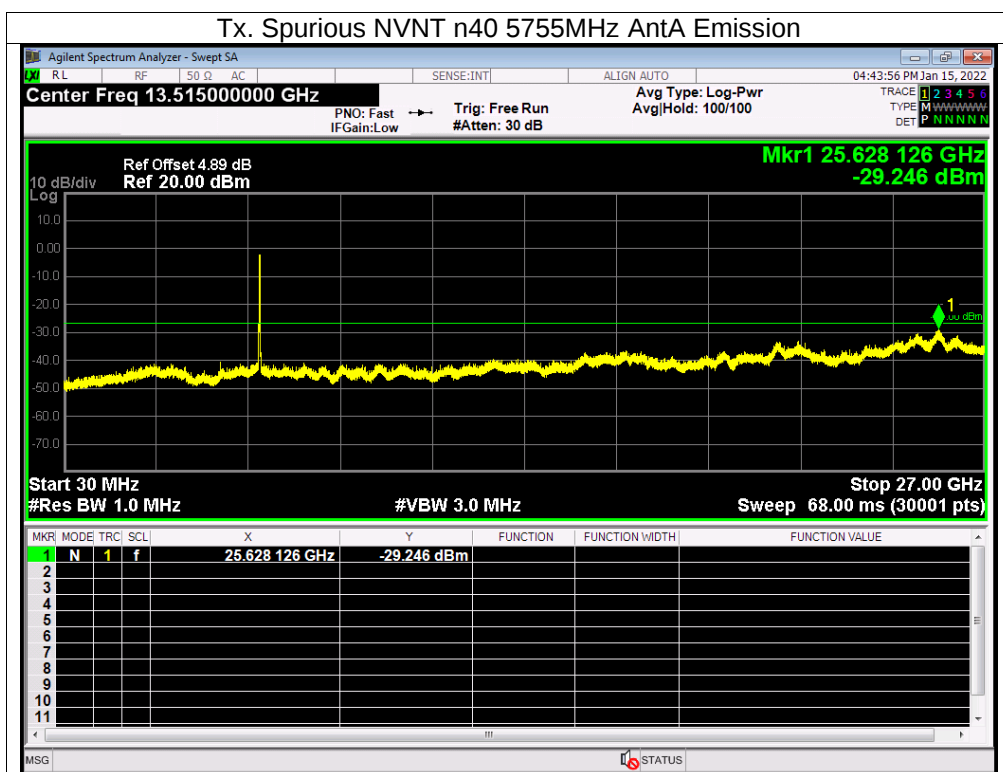
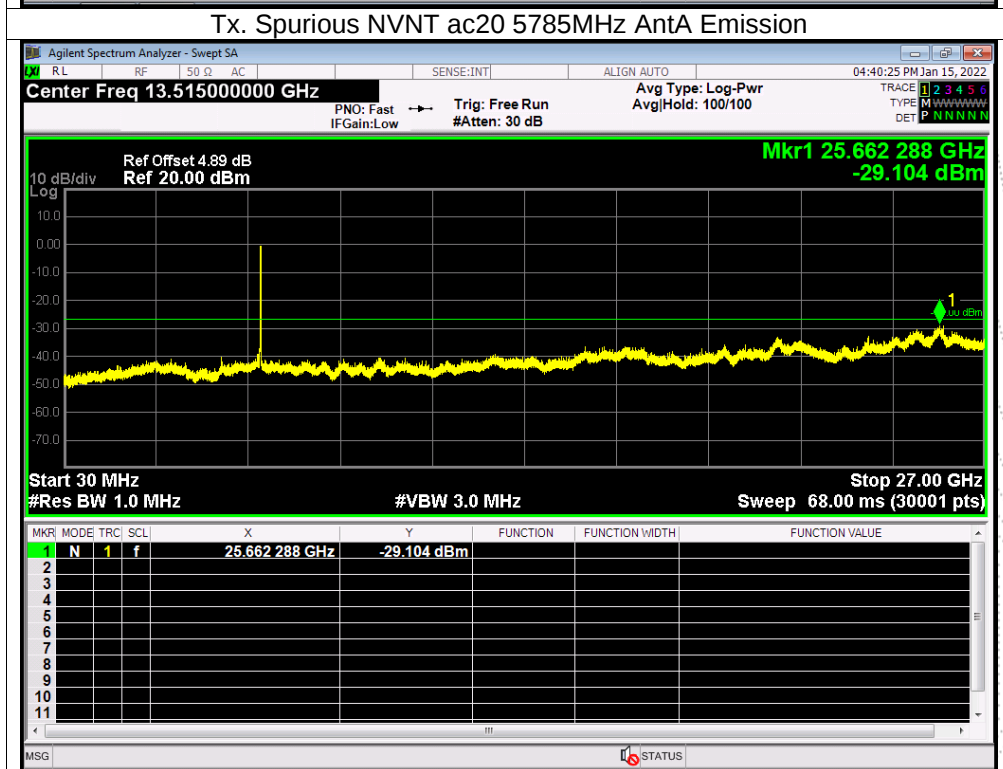
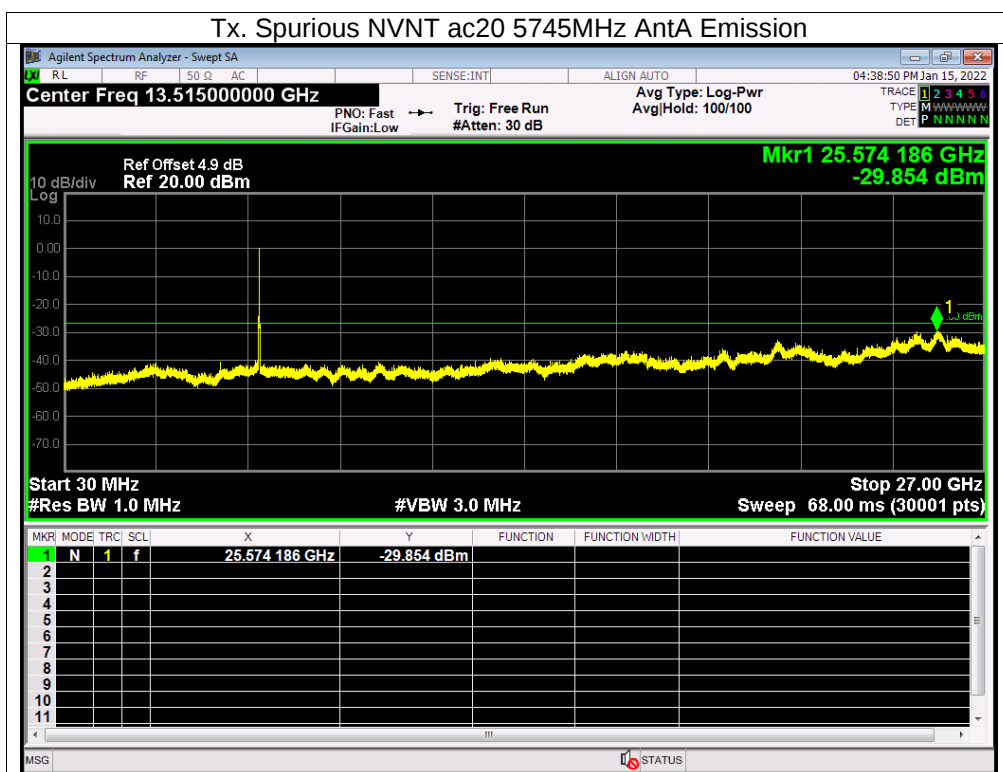
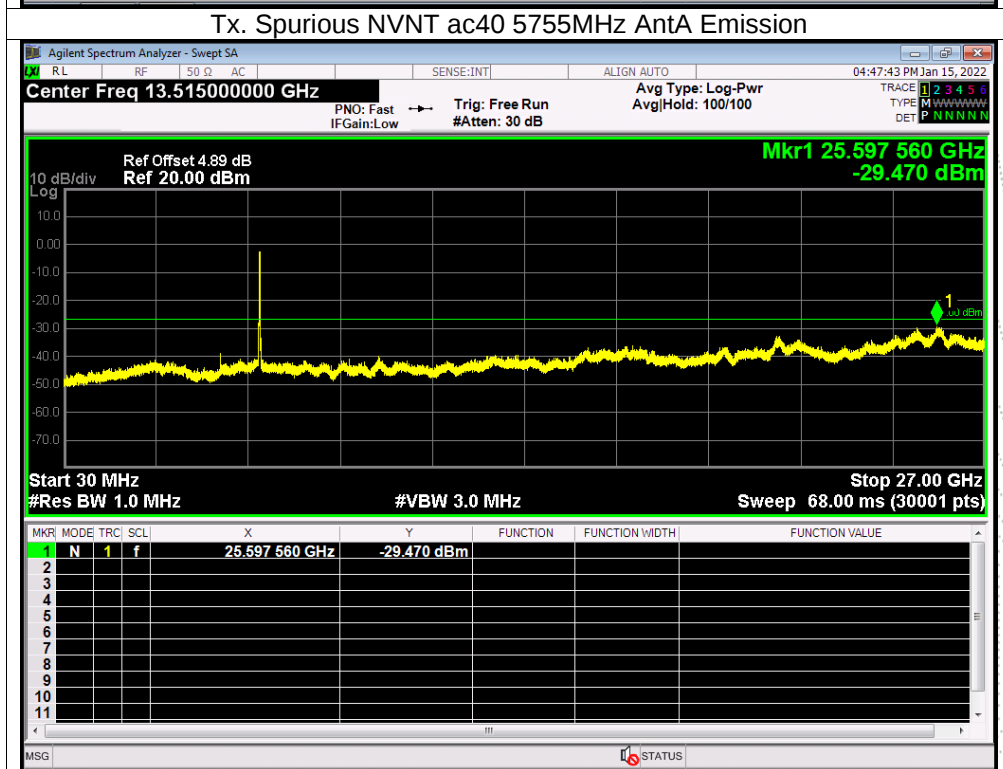
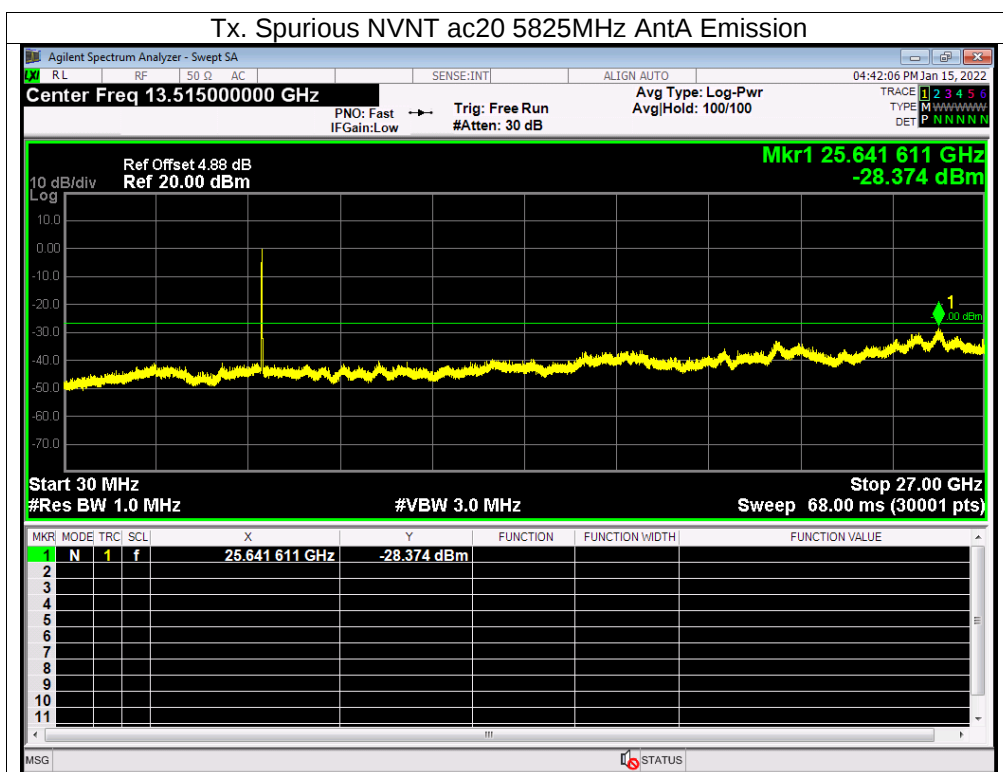


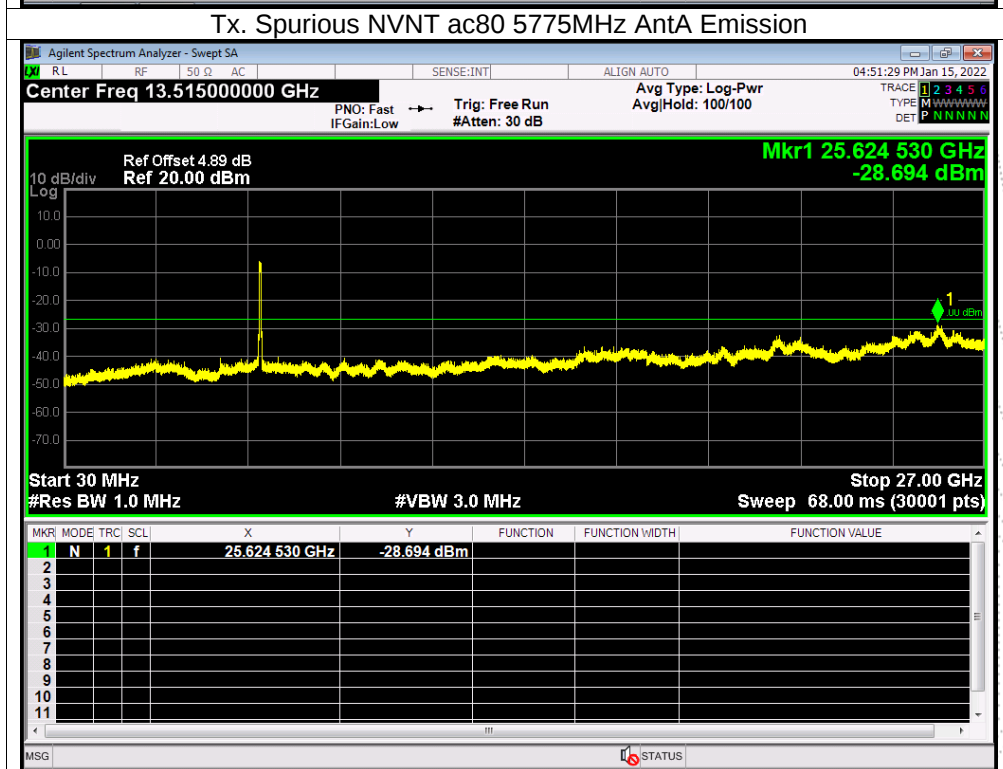
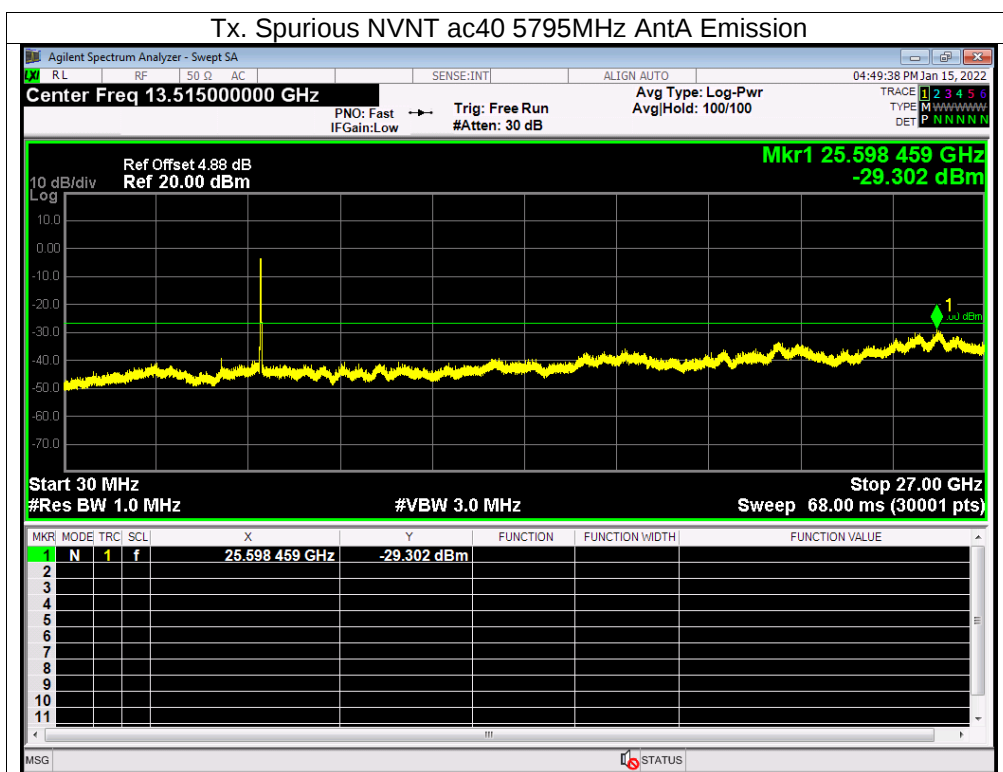












13. Frequency Stability Measurement

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	5180.0162	5180	0.0162	3.1289
		V max (V)	138.00	5180.0039	5180	0.0039	0.7560
		V min (V)	102.00	5180.0172	5180	0.0172	3.3164
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	5180.0082	5180	0.0082	1.5740
		T (°C)	-10	5180.0021	5180	0.0021	0.4003
		T (°C)	0	5180.0088	5180	0.0088	1.6923
		T (°C)	10	5180.0020	5180	0.0020	0.3783
		T (°C)	20	5180.0124	5180	0.0124	2.4032
		T (°C)	30	5180.0076	5180	0.0076	1.4730
		T (°C)	40	5180.0021	5180	0.0021	0.3993
		T (°C)	50	5180.0040	5180	0.0040	0.7783
		T (°C)	60	5180.0106	5180	0.0106	2.0490
		T (°C)	70	5180.0010	5180	0.0010	0.1993
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	5200.0039	5200	0.0039	0.7505
		V max (V)	138.00	5200.0074	5200	0.0074	1.4165
		V min (V)	102.00	5200.0117	5200	0.0117	2.2485
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	5200.00325	5200	0.00325	0.6258
		T (°C)	-10	5200.00286	5200	0.00286	0.5509
		T (°C)	0	5200.00013	5200	0.00013	0.0252
		T (°C)	10	5200.00115	5200	0.00115	0.2209
		T (°C)	20	5200.00541	5200	0.00541	1.0408
		T (°C)	30	5200.00550	5200	0.00550	1.0569
		T (°C)	40	5200.01271	5200	0.01271	2.4442
		T (°C)	50	5200.00557	5200	0.00557	1.0718
		T (°C)	60	5200.00637	5200	0.00637	1.2247
		T (°C)	70	5200.00911	5200	0.00911	1.7520
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	5240.0076	5240	0.0076	1.4445
		V max (V)	138.00	5240.0067	5240	0.0067	1.2793
		V min (V)	102.00	5240.0061	5240	0.0061	1.1546
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	5240.0007	5240	0.0007	0.1326
		T (°C)	-10	5240.0111	5240	0.0111	2.1241
		T (°C)	0	5240.0100	5240	0.0100	1.9162
		T (°C)	10	5240.0101	5240	0.0101	1.9341
		T (°C)	20	5240.0061	5240	0.0061	1.1637
		T (°C)	30	5240.0080	5240	0.0080	1.5188
		T (°C)	40	5240.0051	5240	0.0051	0.9734
		T (°C)	50	5240.0072	5240	0.0072	1.3714
		T (°C)	60	5240.0057	5240	0.0057	1.0783
		T (°C)	70	5240.0075	5240	0.0075	1.4259
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)	120.00	5745.00763	5745	0.00763	1.3288
		V max (V)	138.00	5745.00878	5745	0.00878	1.5284
		V min (V)	102.00	5745.01035	5745	0.01035	1.8008
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	5745.00375	5745	0.00375	0.6529
		T (°C)	-10	5745.01342	5745	0.01342	2.3364
		T (°C)	0	5745.00871	5745	0.00871	1.5162
		T (°C)	10	5745.00130	5745	0.00130	0.2262
		T (°C)	20	5745.00594	5745	0.00594	1.0334
		T (°C)	30	5745.00263	5745	0.00263	0.4573
		T (°C)	40	5745.00527	5745	0.00527	0.9168
		T (°C)	50	5745.00314	5745	0.00314	0.5471
		T (°C)	60	5745.01048	5745	0.01048	1.8235
		T (°C)	70	5745.01158	5745	0.01158	2.0162
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	5785.00785	5785	0.00785	1.3569
		V max (V)	138.00	5785.01037	5785	0.01037	1.7919
		V min (V)	102.00	5785.00074	5785	0.00074	0.1278
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	5785.00117	5785	0.00117	0.2020
		T (°C)	-10	5785.00545	5785	0.00545	0.9419
		T (°C)	0	5785.00434	5785	0.00434	0.7511
		T (°C)	10	5785.00483	5785	0.00483	0.8352
		T (°C)	20	5785.01004	5785	0.01004	1.7347
		T (°C)	30	5785.01140	5785	0.01140	1.9703
		T (°C)	40	5785.00032	5785	0.00032	0.0545
		T (°C)	50	5785.00988	5785	0.00988	1.7083
		T (°C)	60	5785.01071	5785	0.01071	1.8521
		T (°C)	70	5785.00833	5785	0.00833	1.4404
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	5825.00004	5825	0.00004	0.0066
		V max (V)	138.00	5825.01265	5825	0.01265	2.1719
		V min (V)	102.00	5825.00951	5825	0.00951	1.6334
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	5825.00706	5825	0.00706	1.2116
		T (°C)	-10	5825.00096	5825	0.00096	0.1655
		T (°C)	0	5825.00131	5825	0.00131	0.2254
		T (°C)	10	5825.01336	5825	0.01336	2.2933
		T (°C)	20	5825.00373	5825	0.00373	0.6400
		T (°C)	30	5825.01257	5825	0.01257	2.1574
		T (°C)	40	5825.01257	5825	0.01257	2.1588
		T (°C)	50	5825.00004	5825	0.00004	0.0069
		T (°C)	60	5825.01262	5825	0.01262	2.1669
		T (°C)	70	5825.00625	5825	0.00625	1.0736
Limits				5725-5850 MHz			
Result				Complies			

14. Antenna Requirement

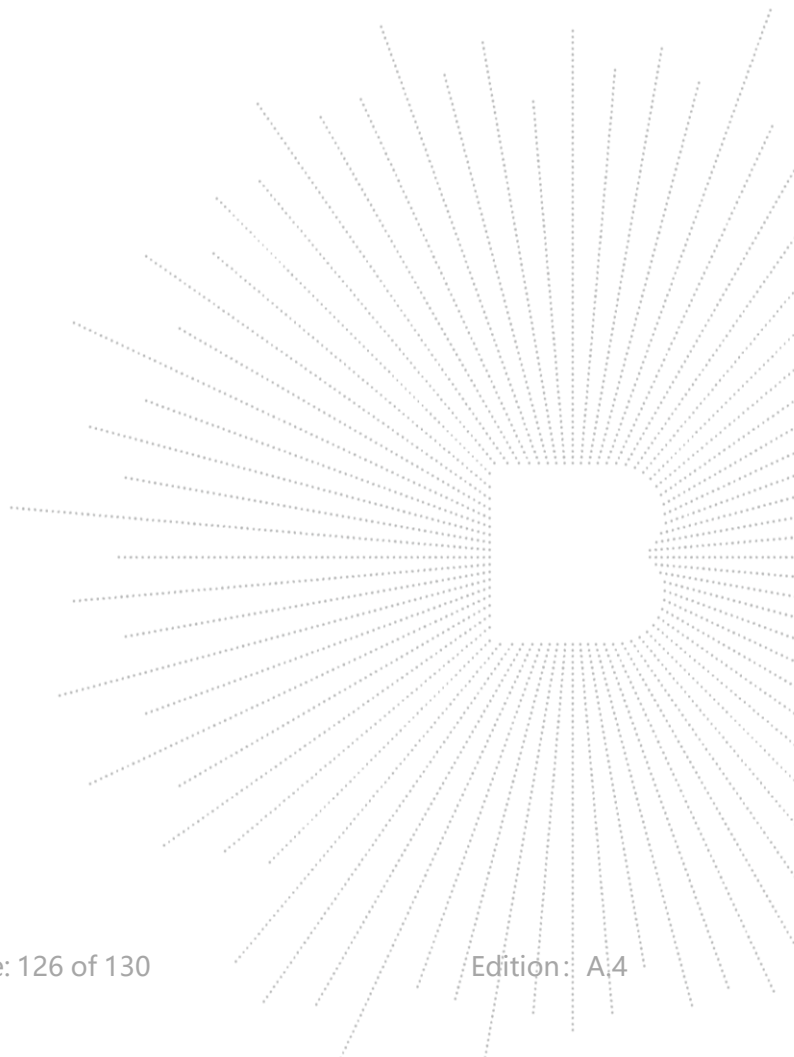
14.1 Limit

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): 1.34dBi; antenna gain (B) : 1.34dBi). It comply with the standard requirement.

The EUT antenna is External antenna (antenna gain (A): 1.34dBi; antenna gain (B) : 1.34dBi). It comply with the standard requirement.

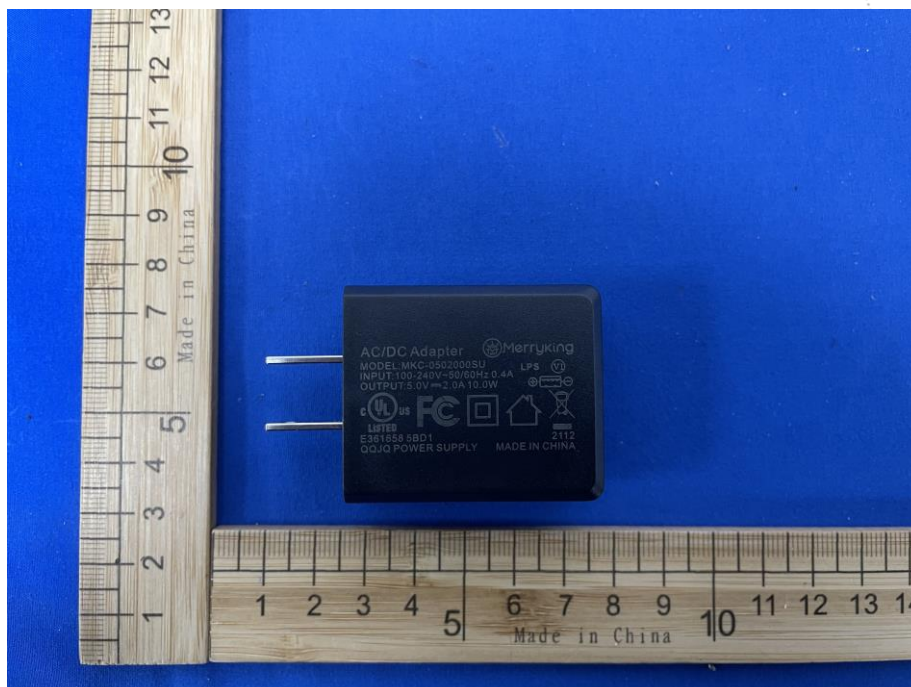


15. EUT Photographs

EUT Photo 1



EUT Photo 2

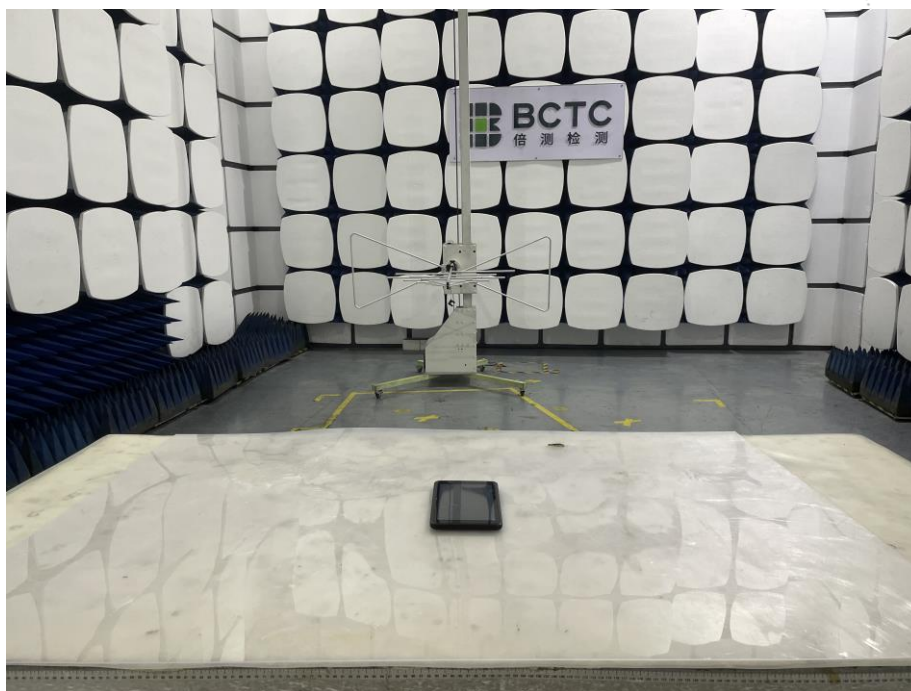


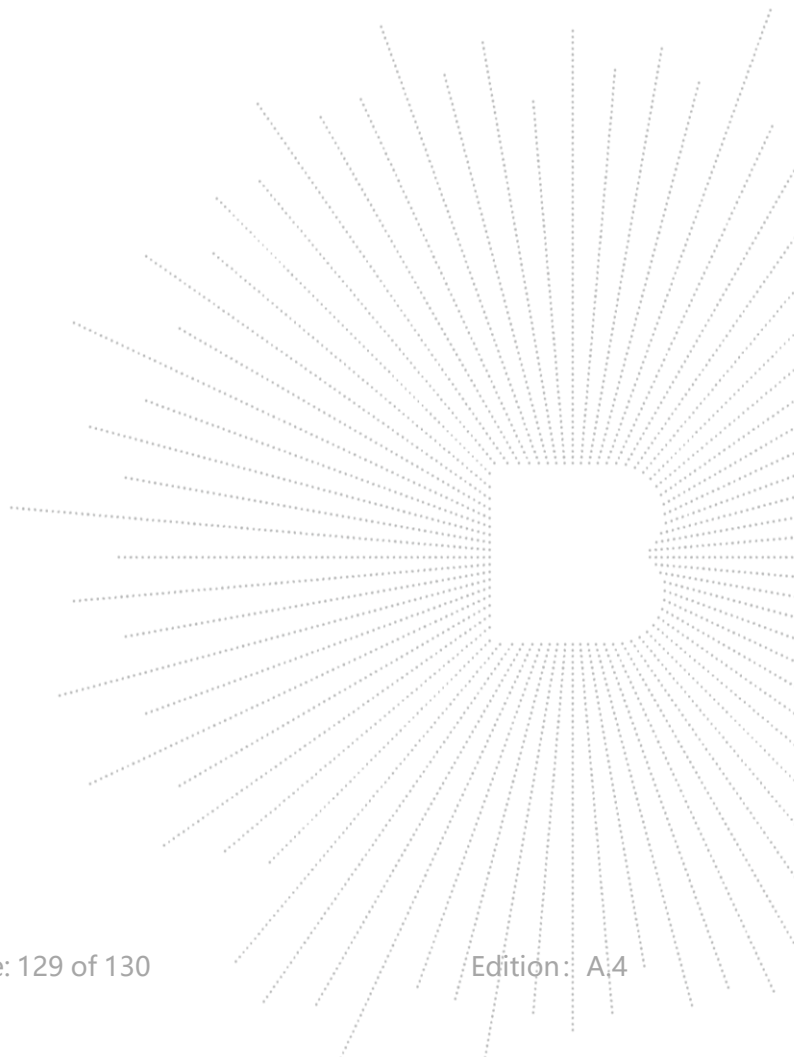
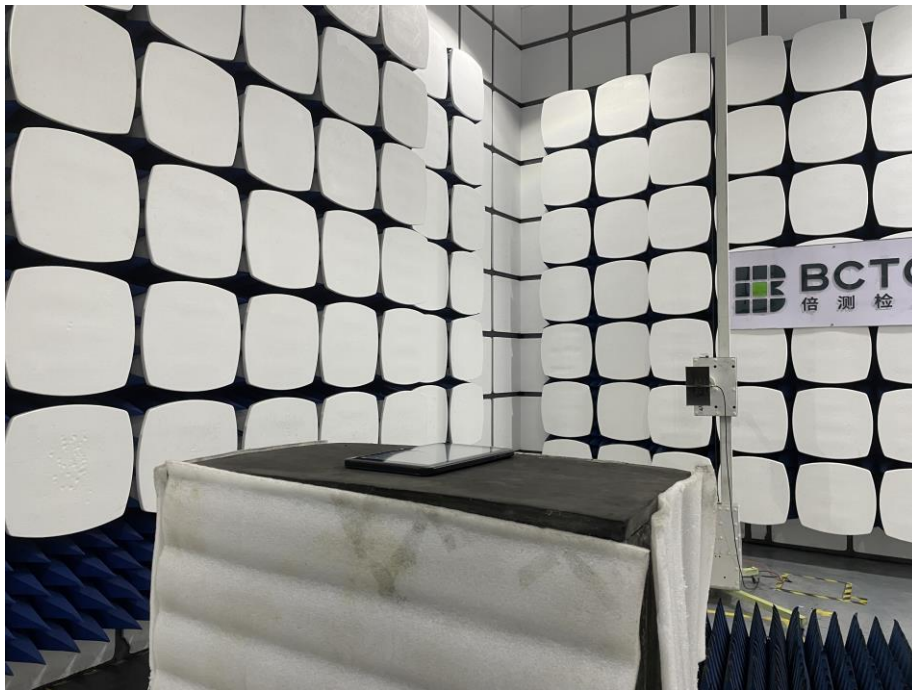
16. EUT Test Setup Photographs

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 *****