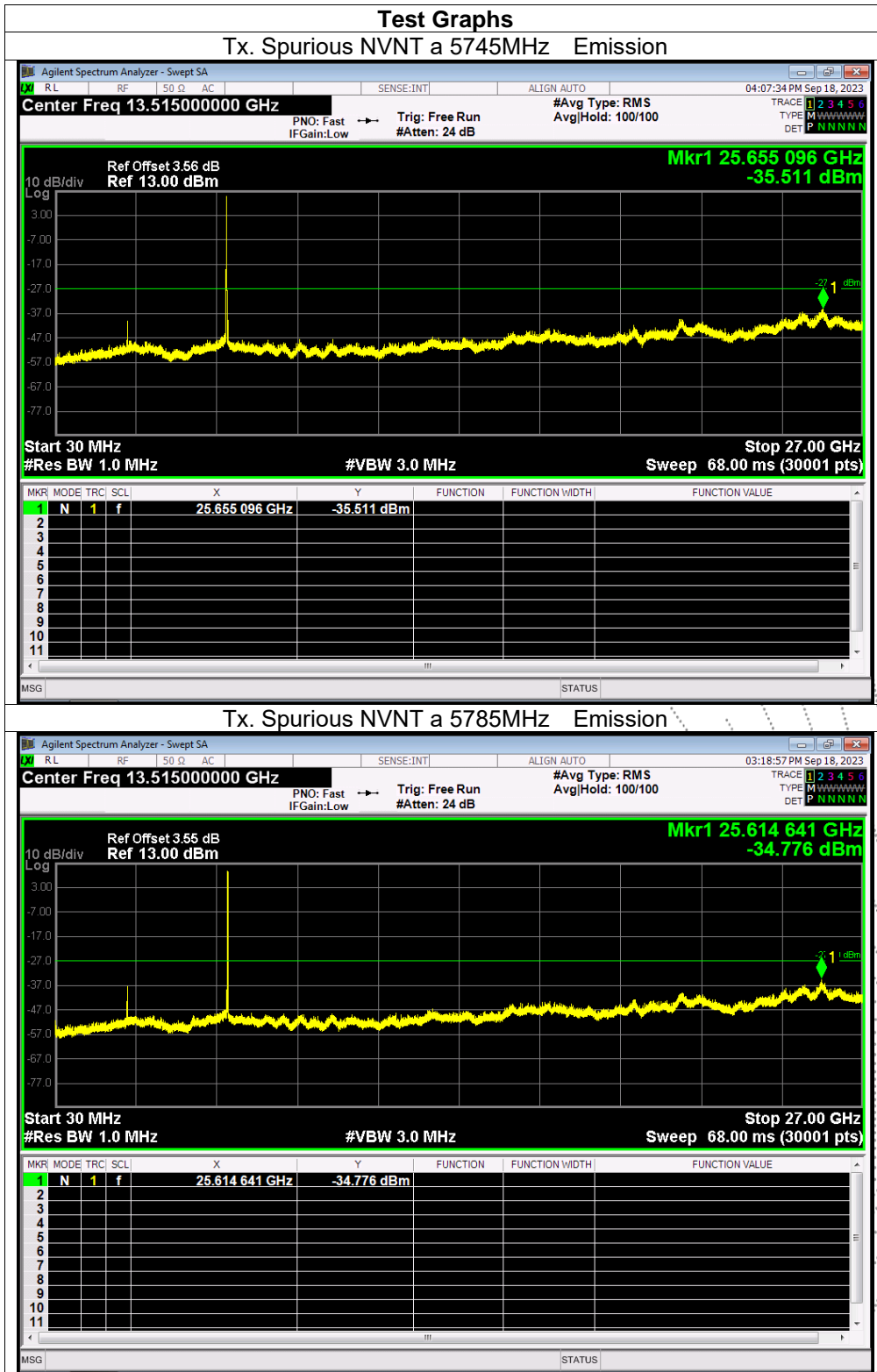
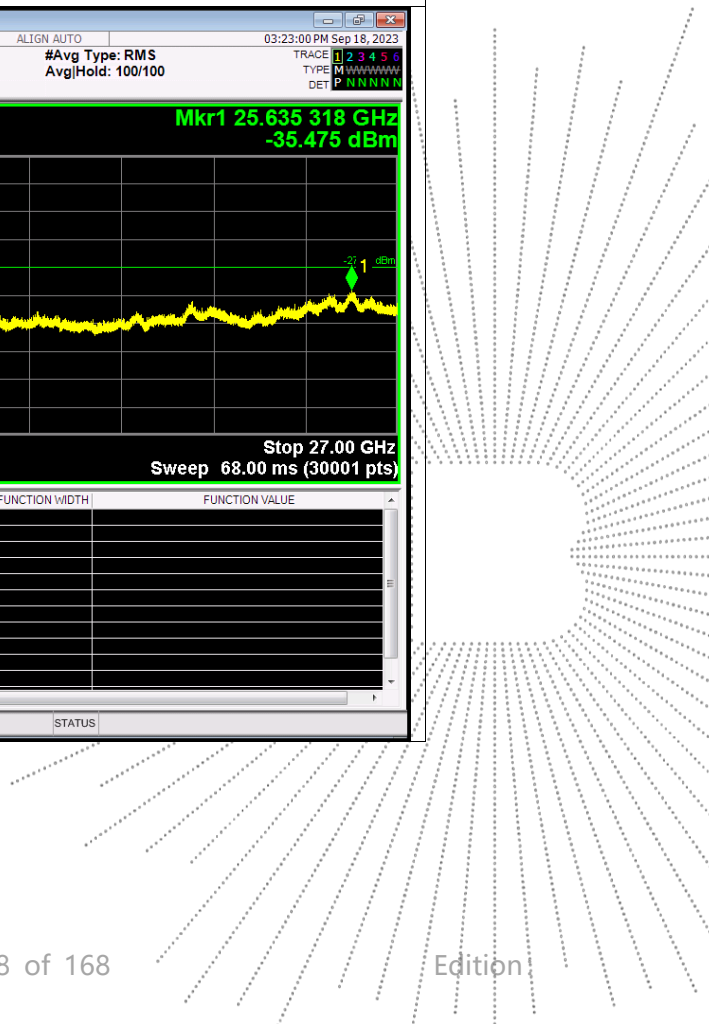
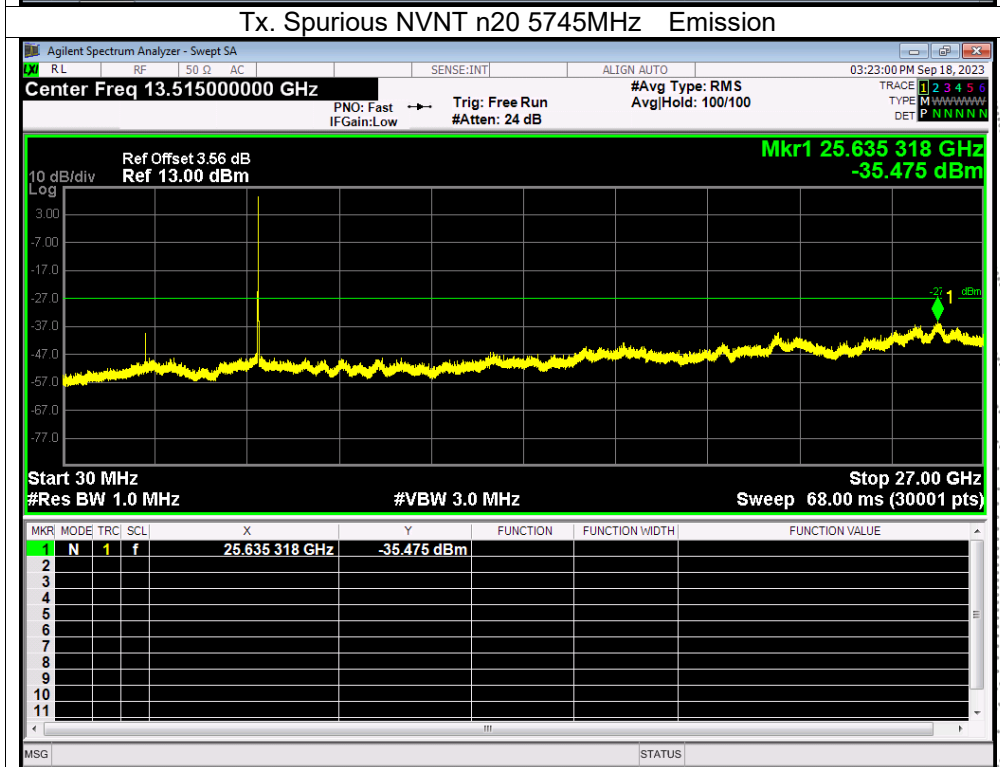
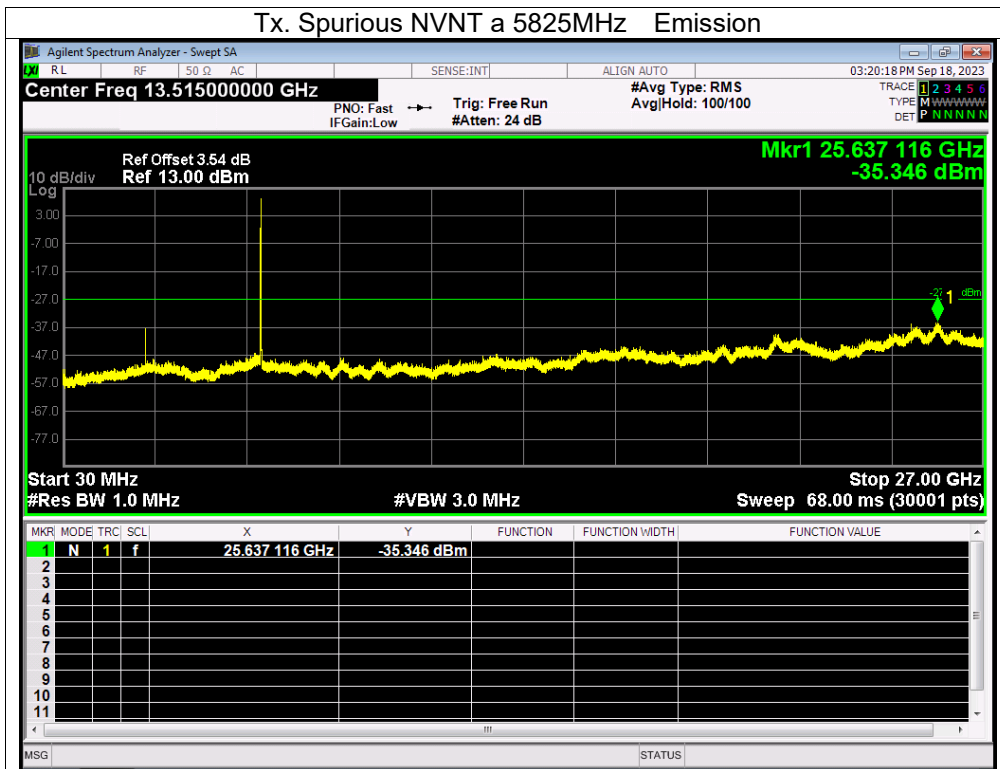
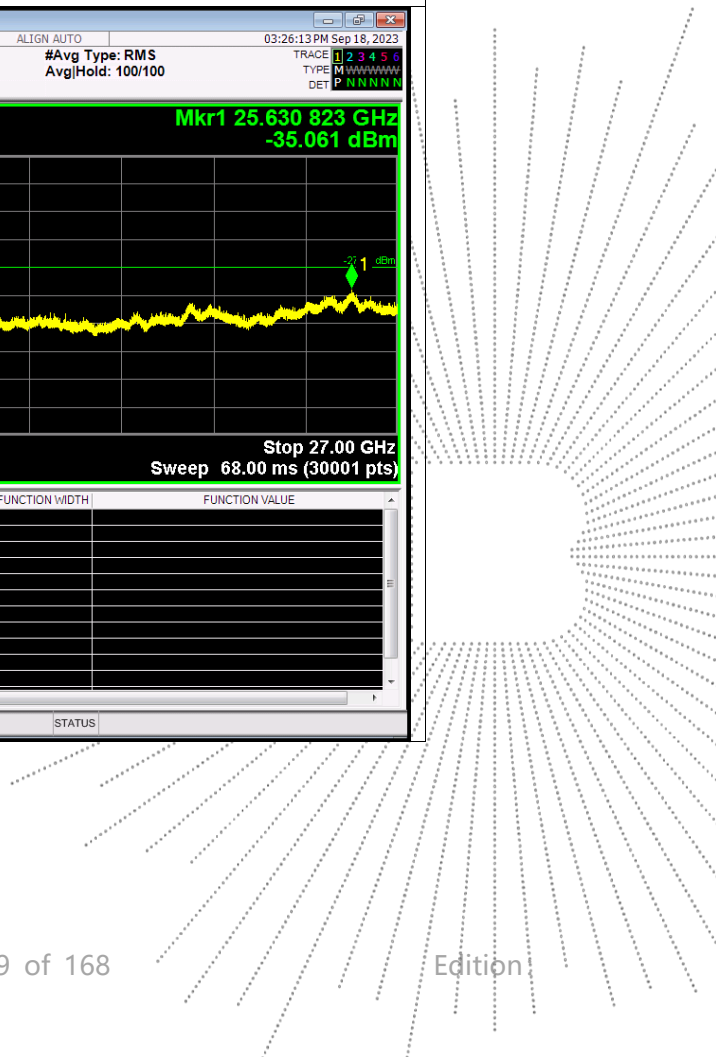
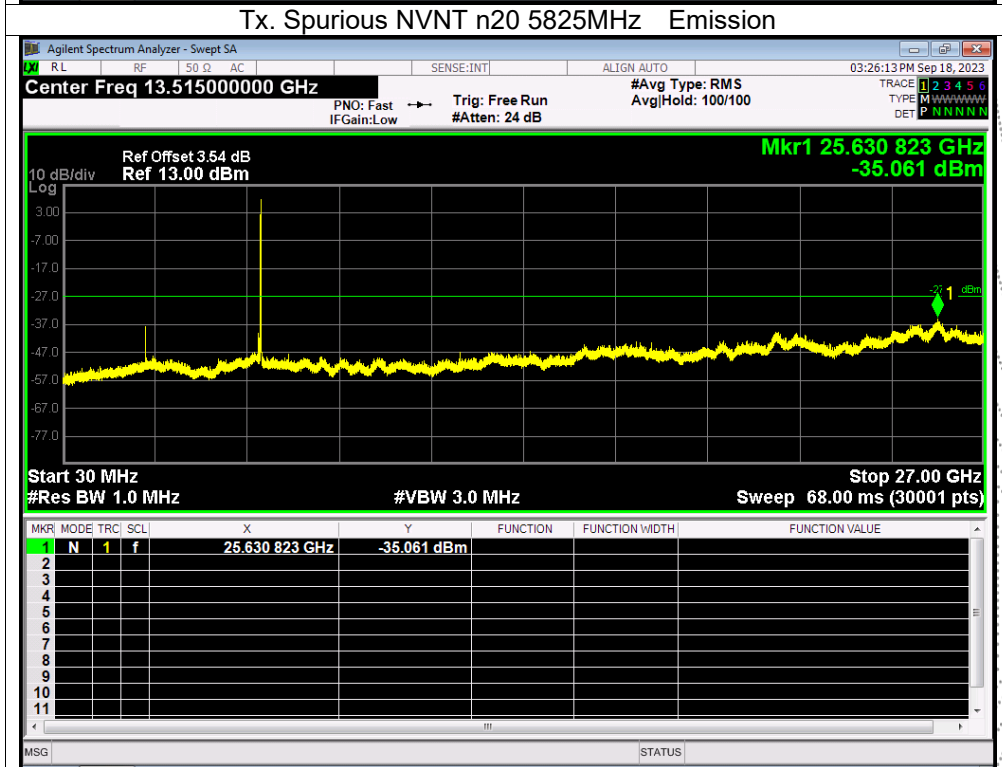
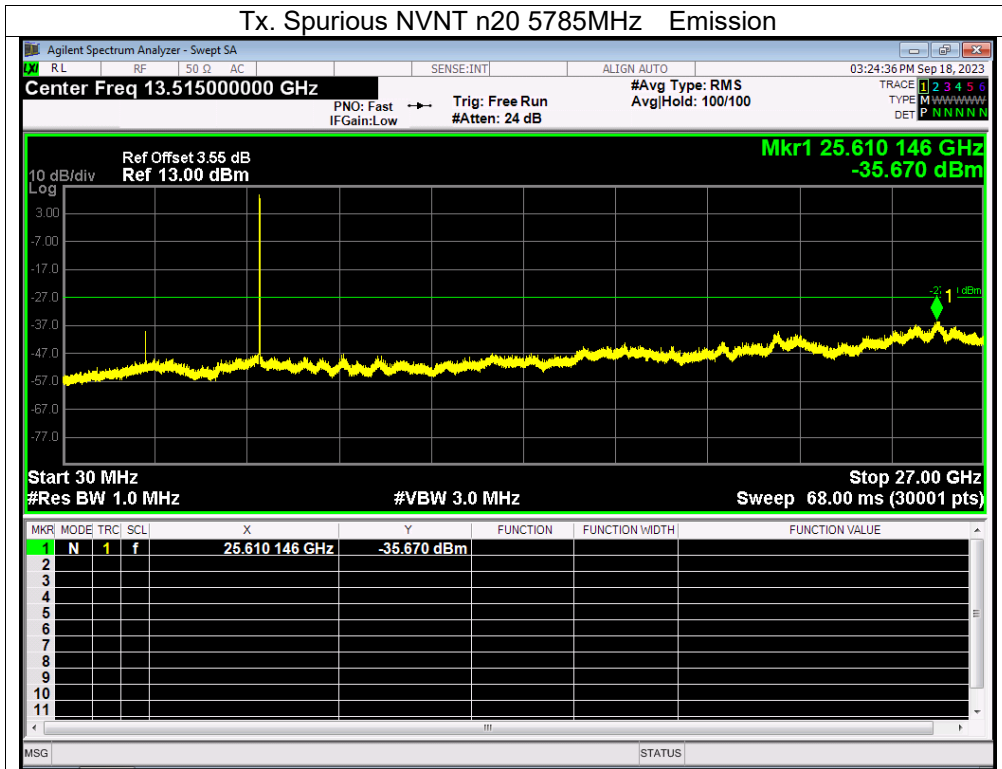
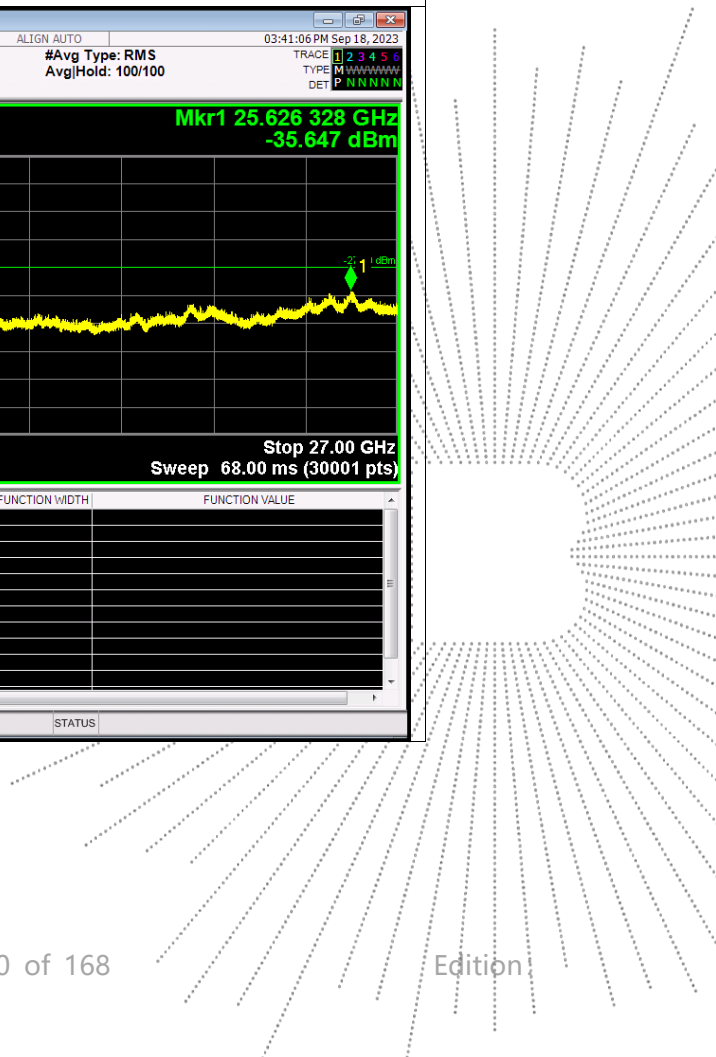
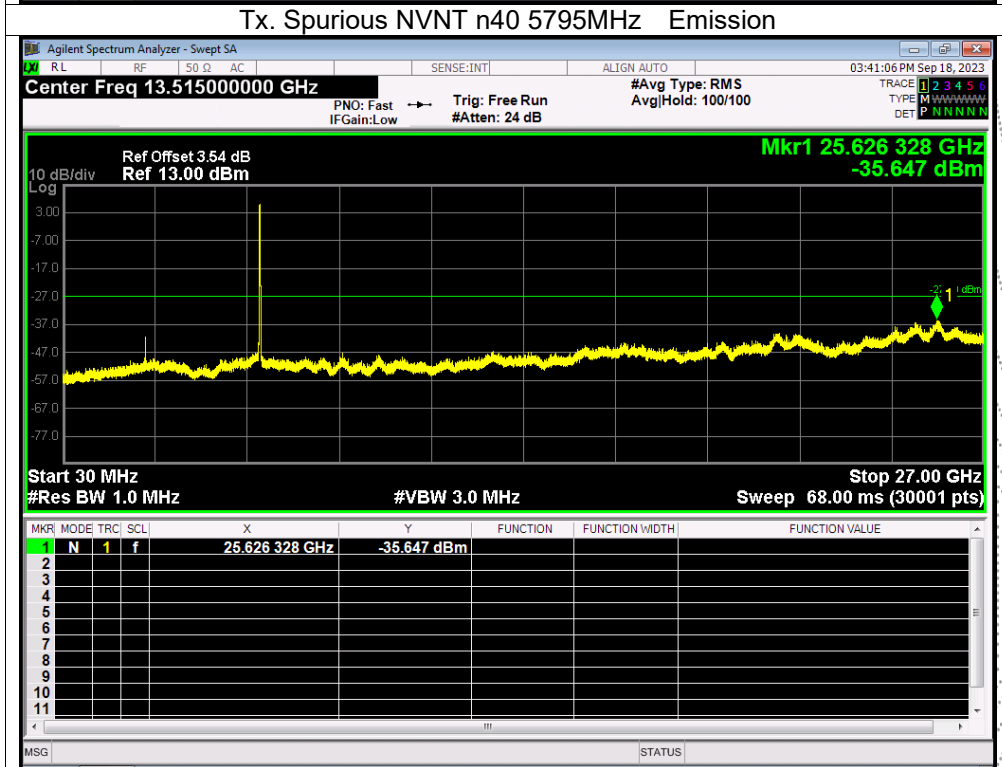
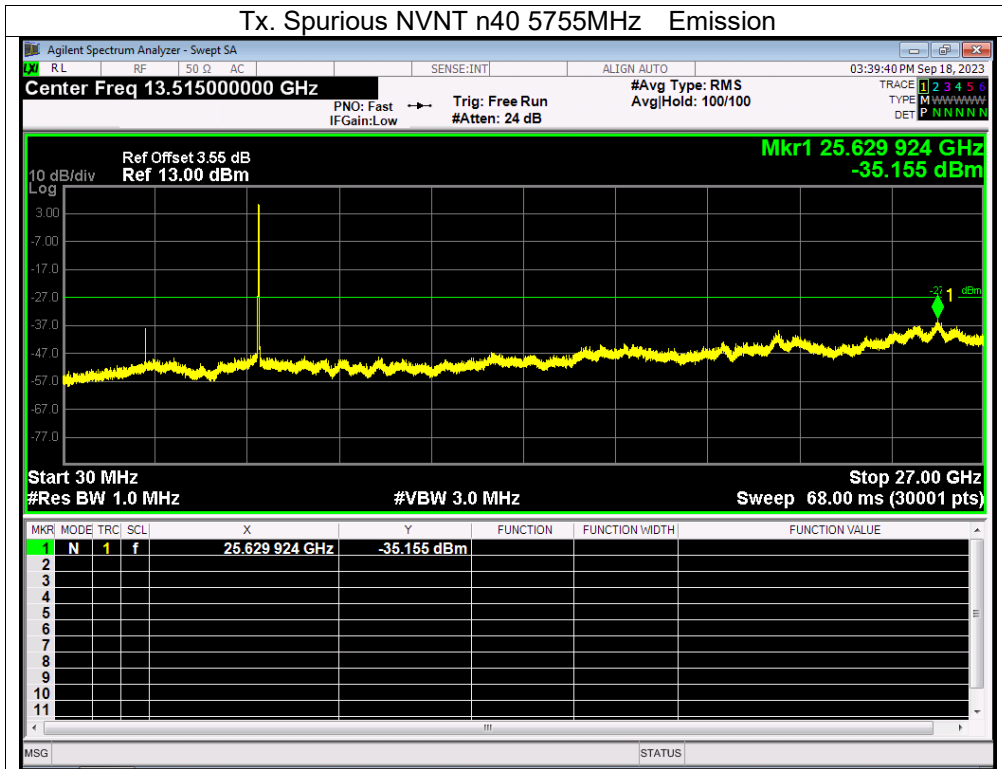


Note: A(B) Represent the value of antenna A and B, The worst data is Antenna A, only shown Antenna A.  
 Antenna A: 5745-58250MHz

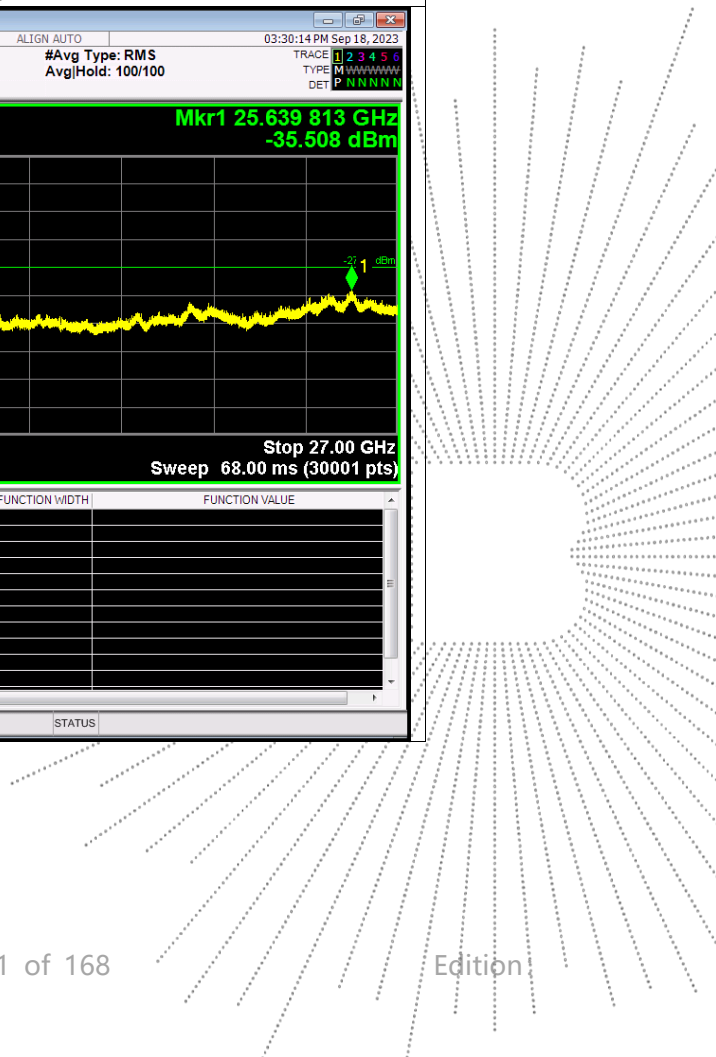
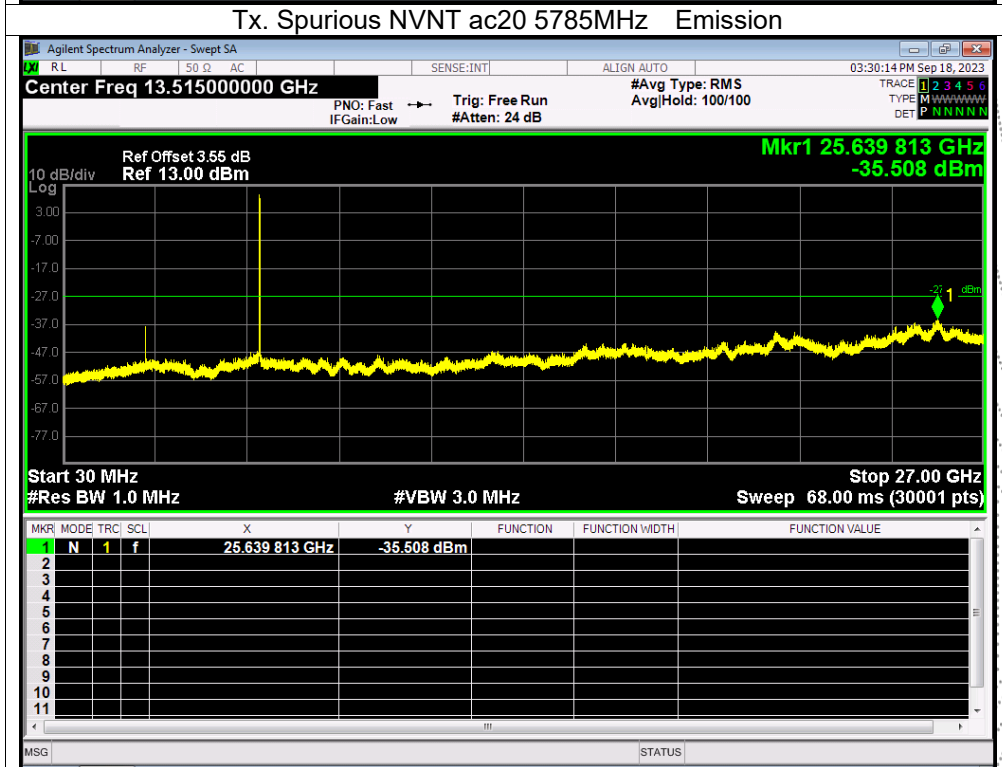
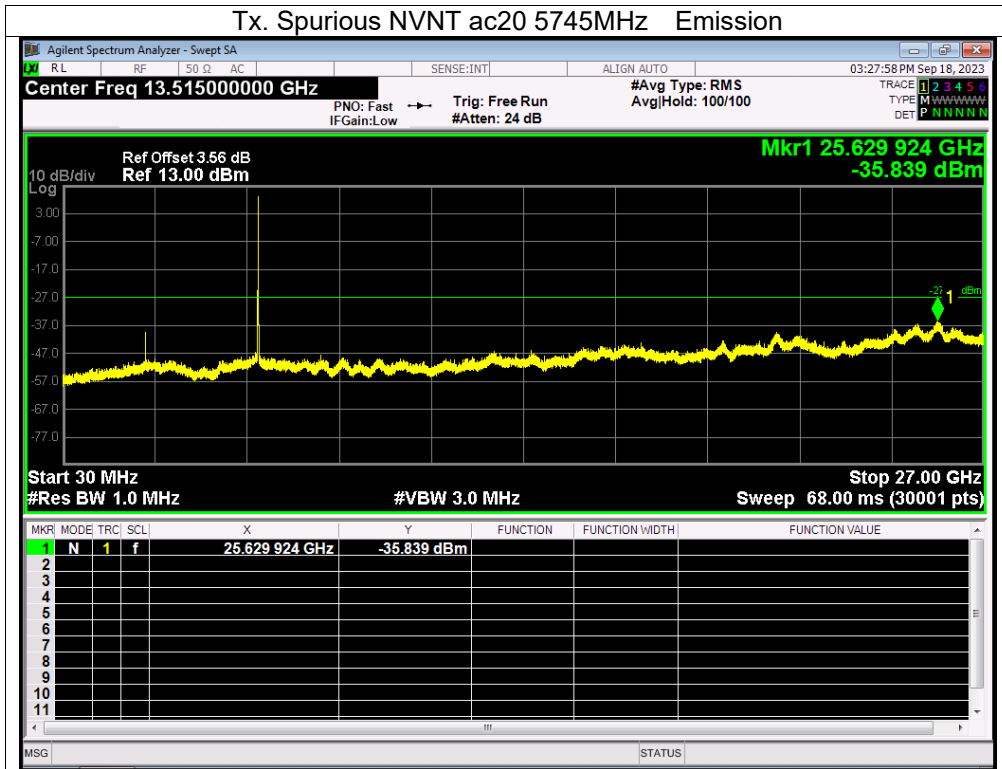




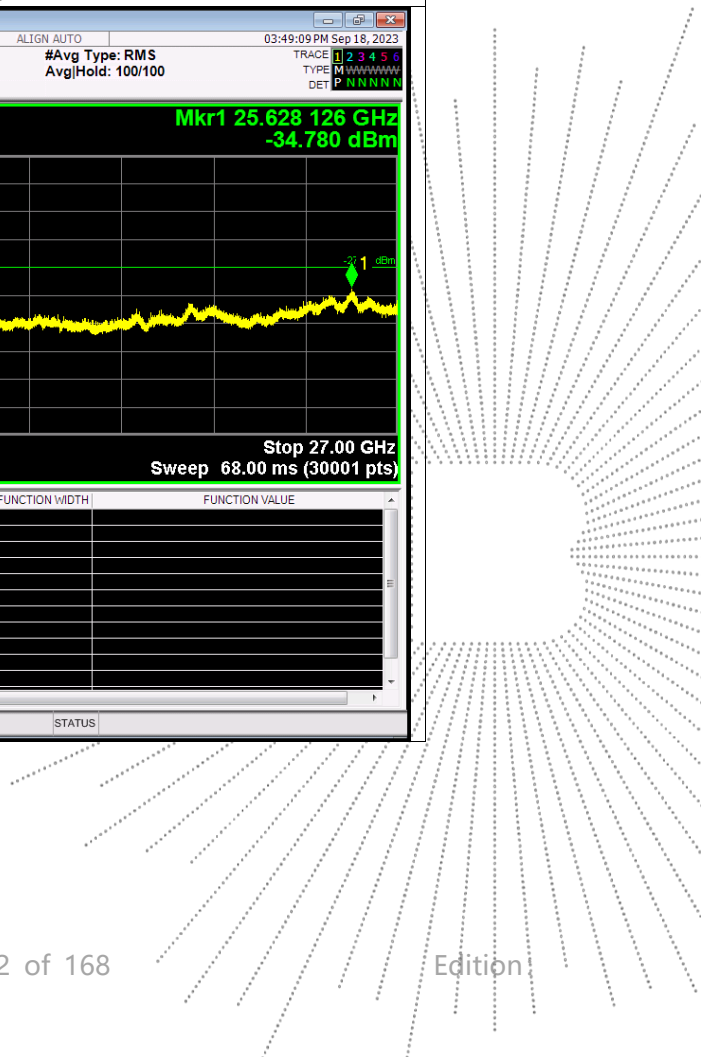
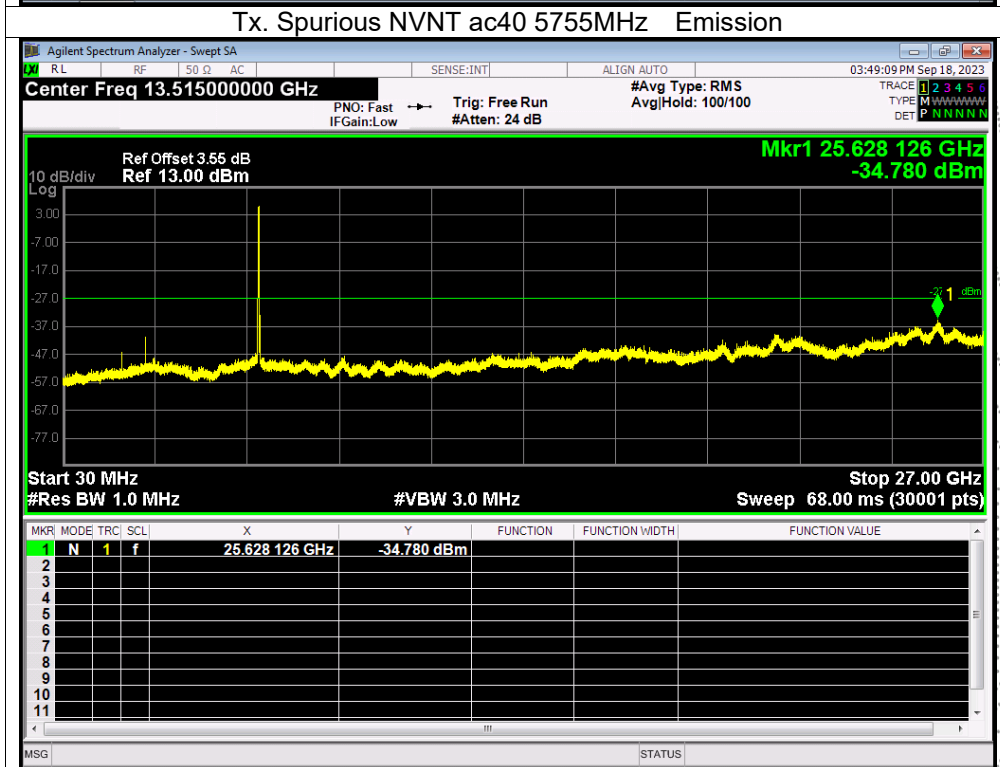
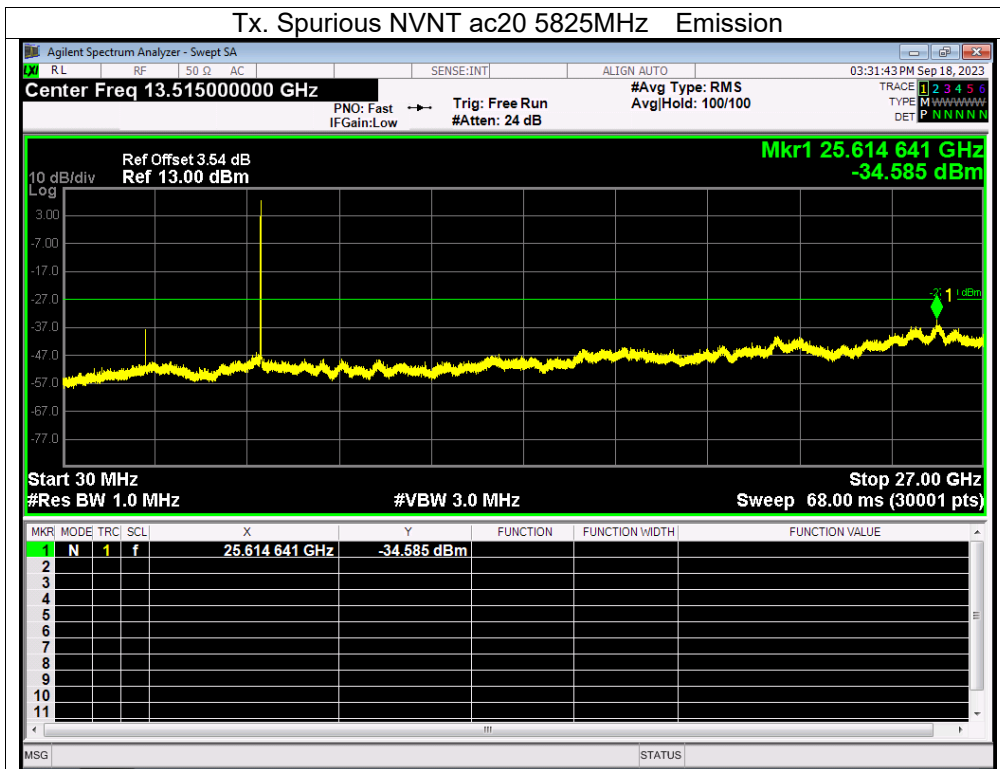


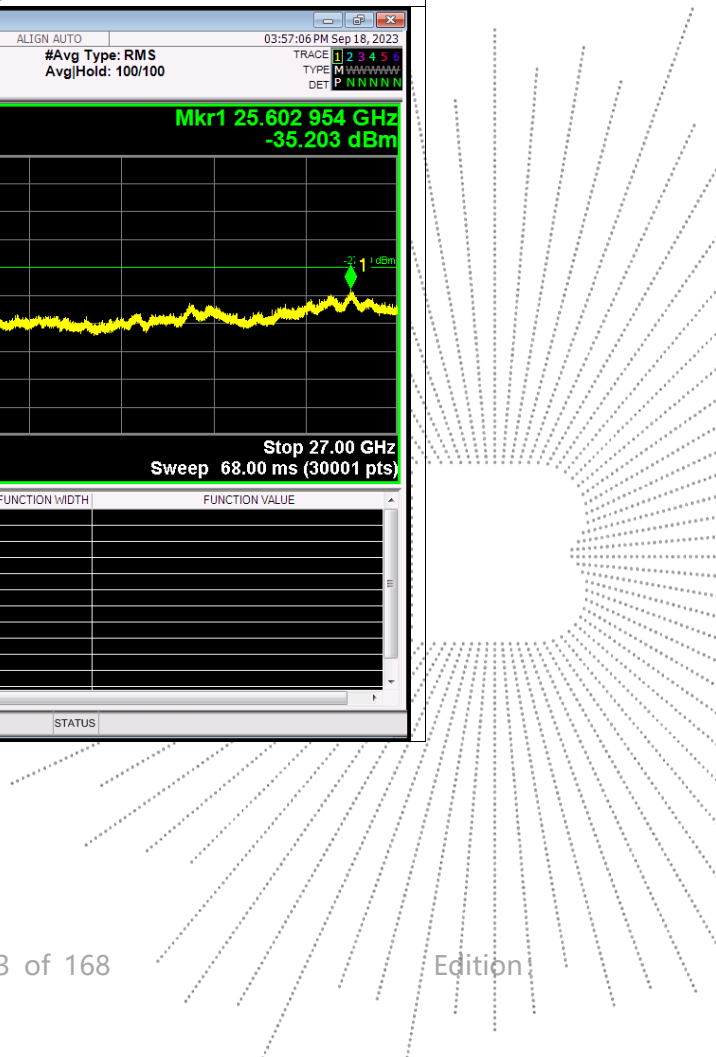
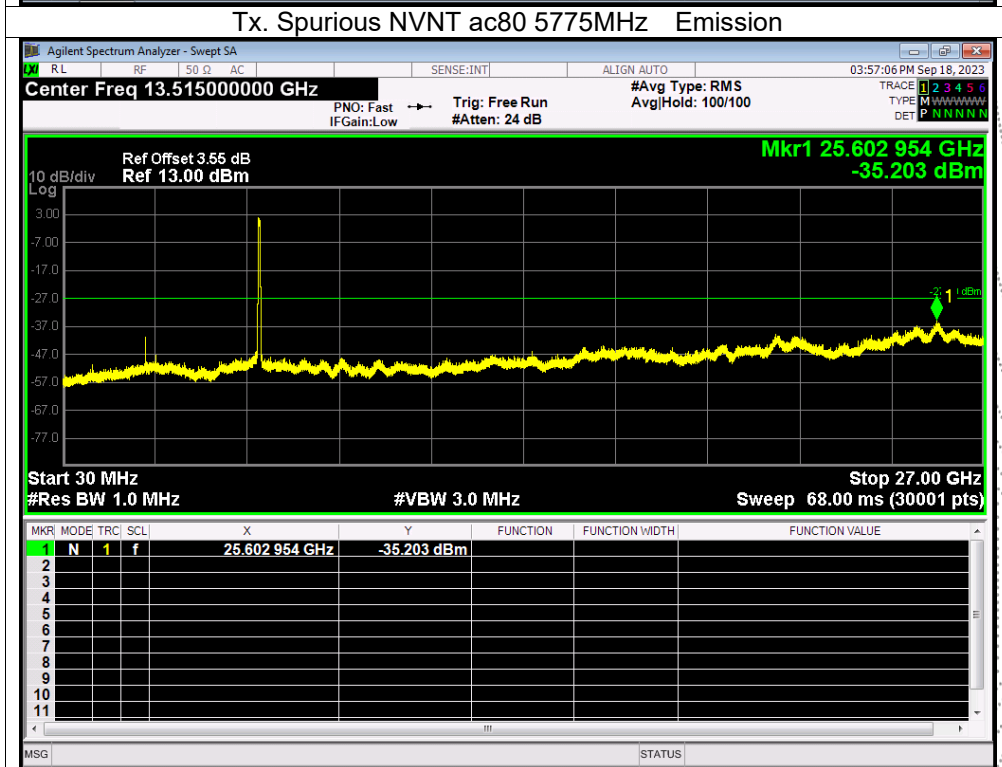
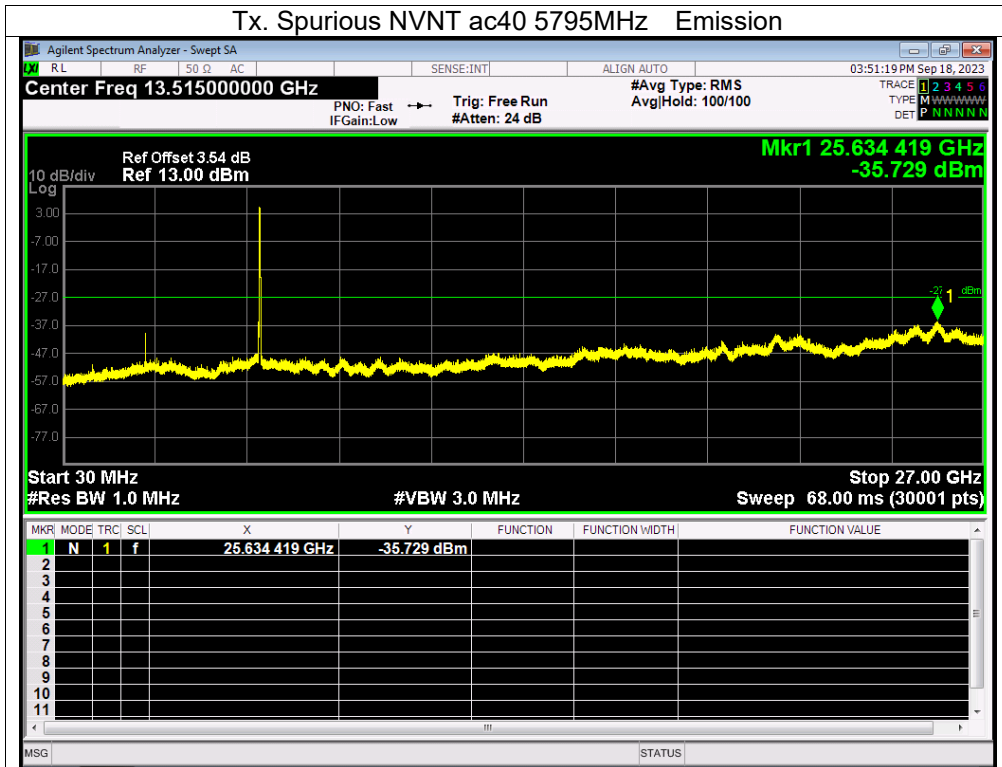


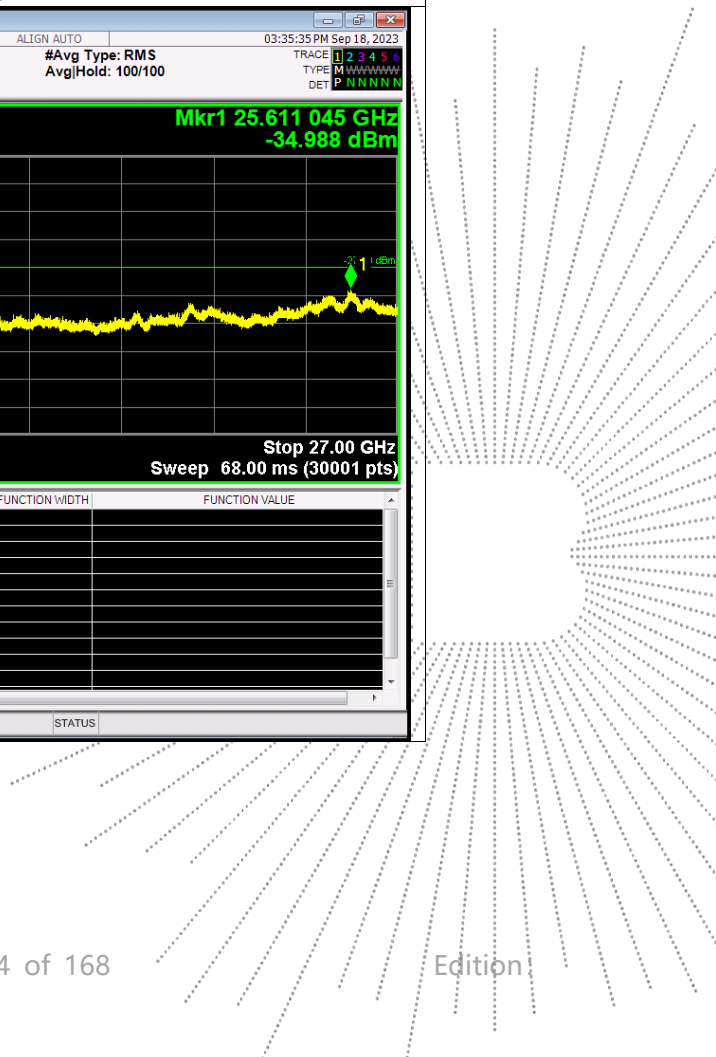
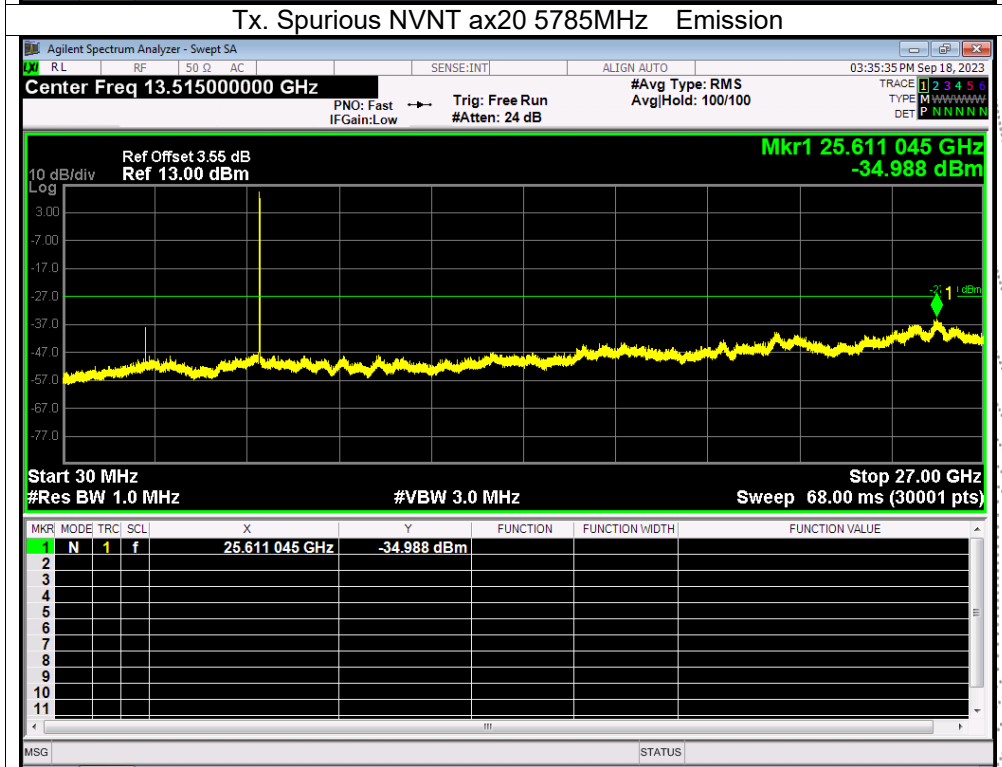
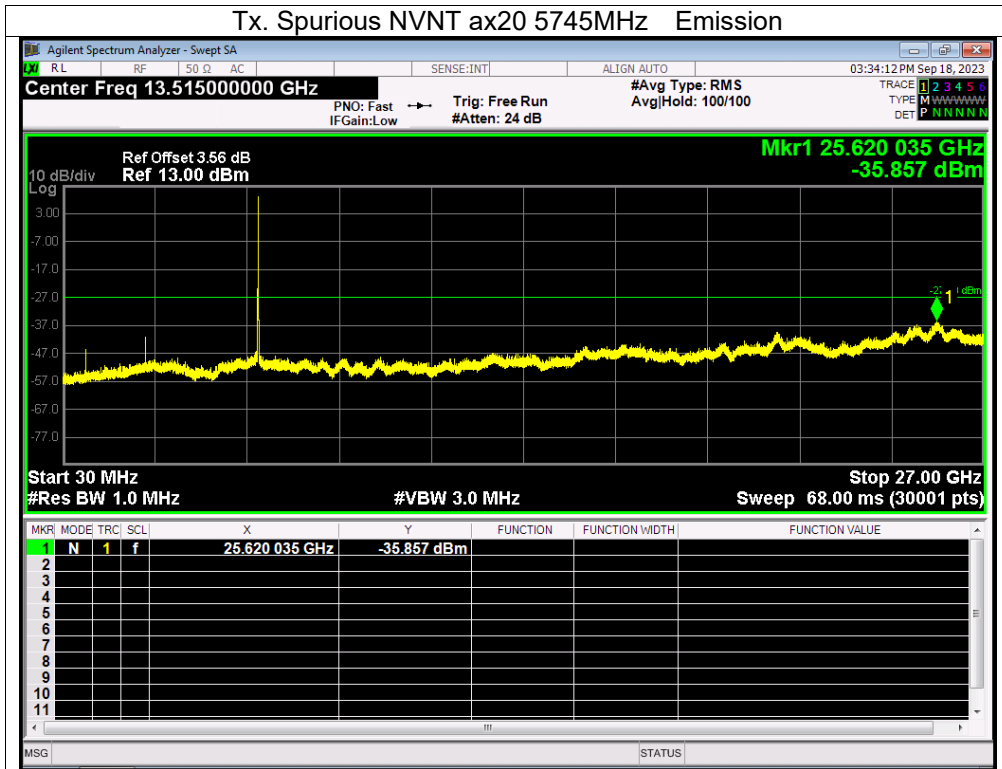


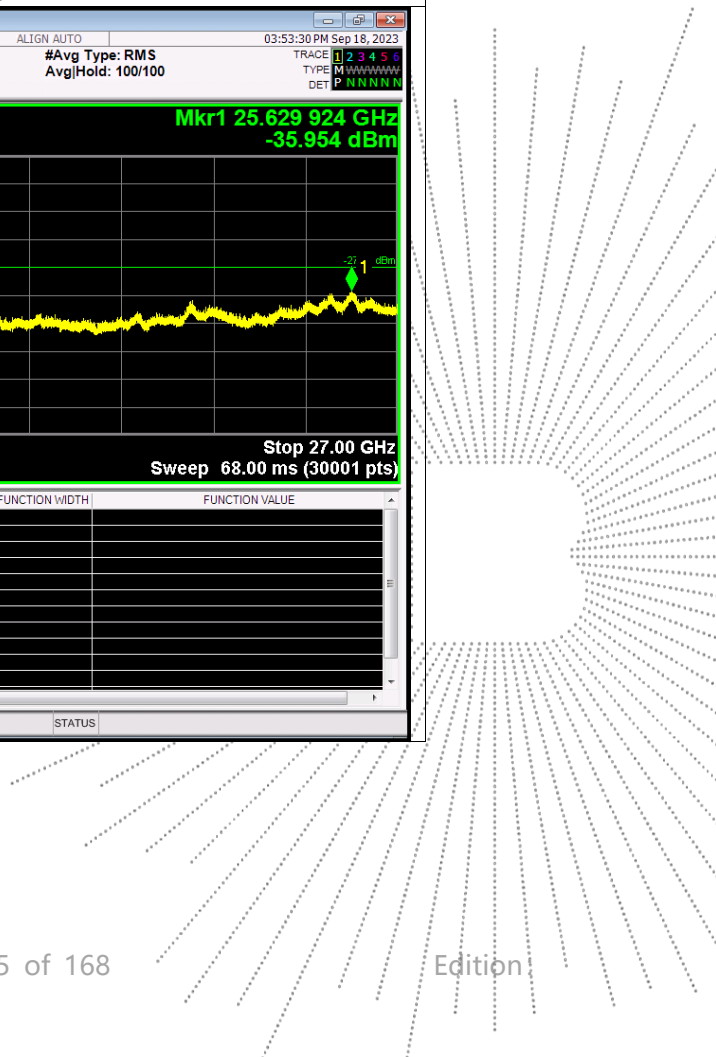
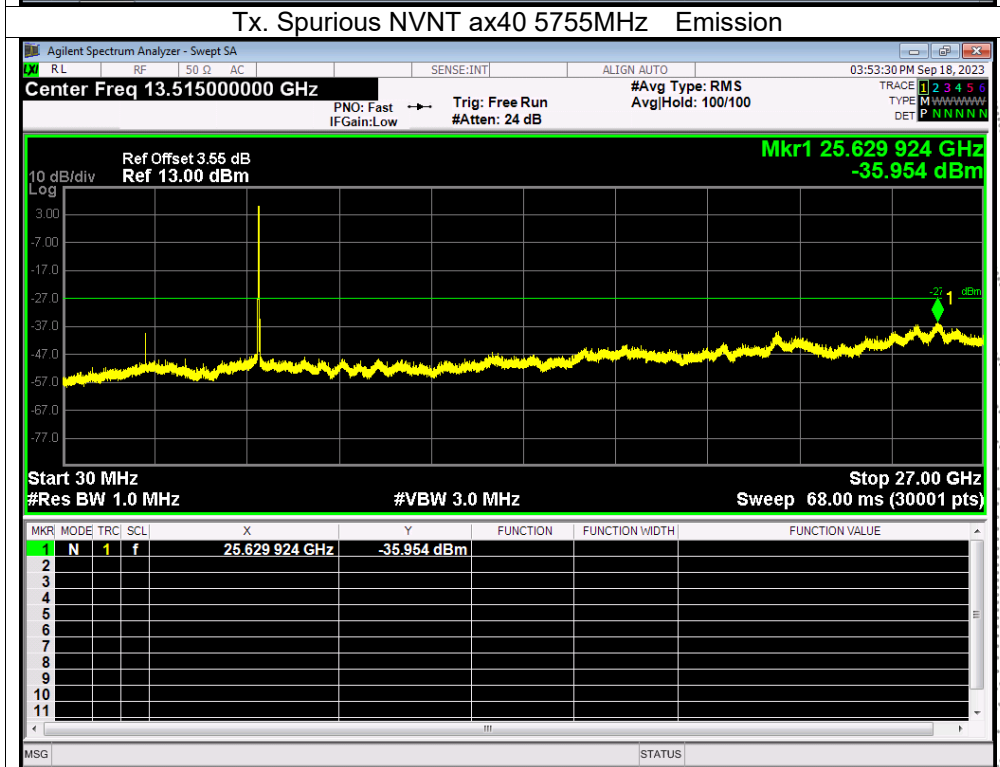
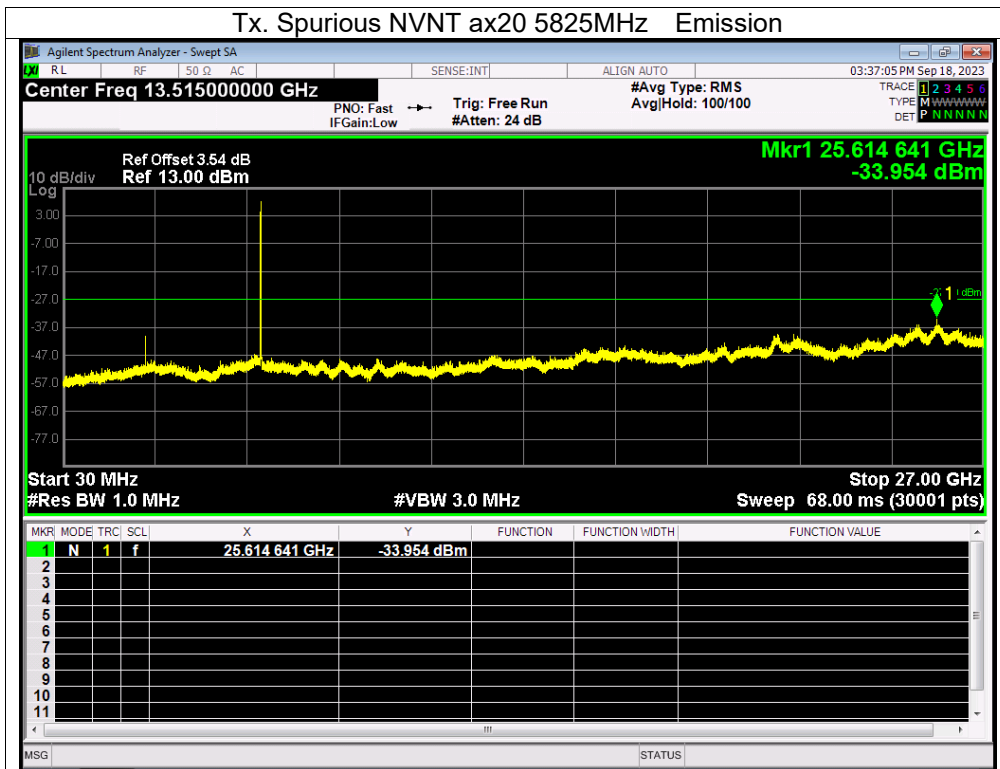


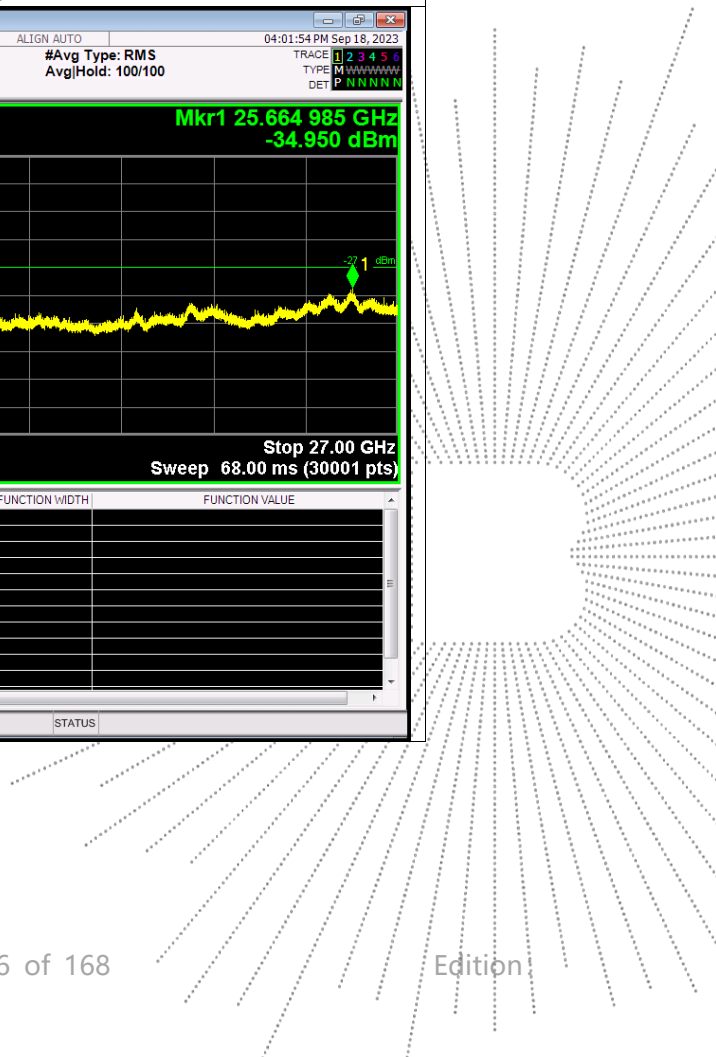
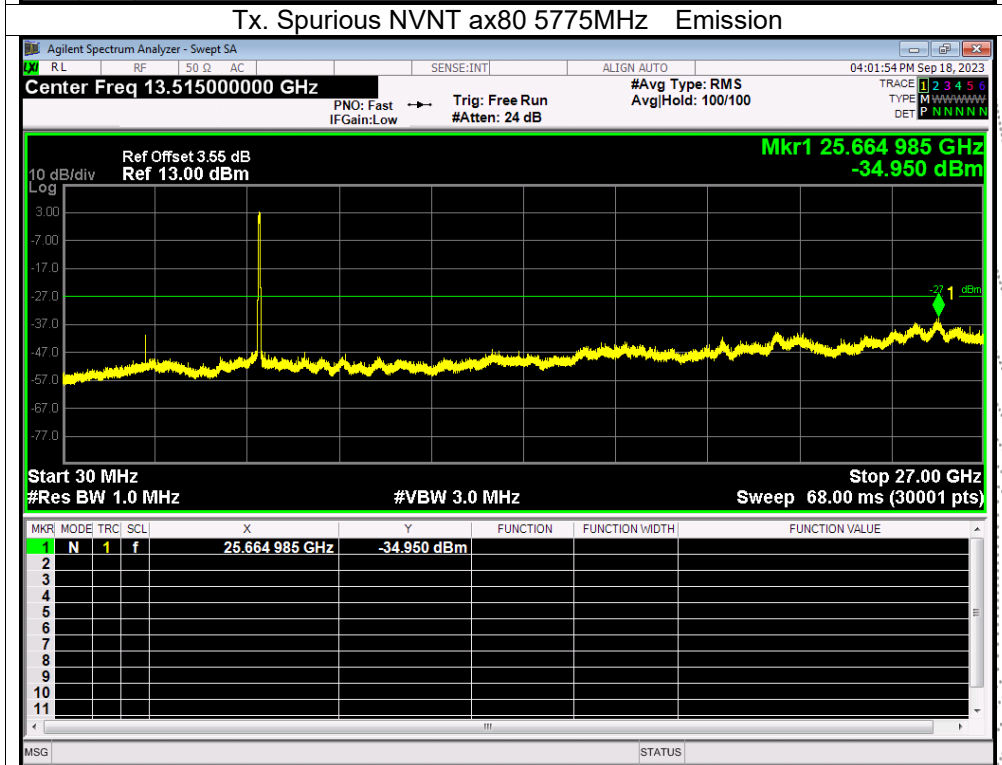
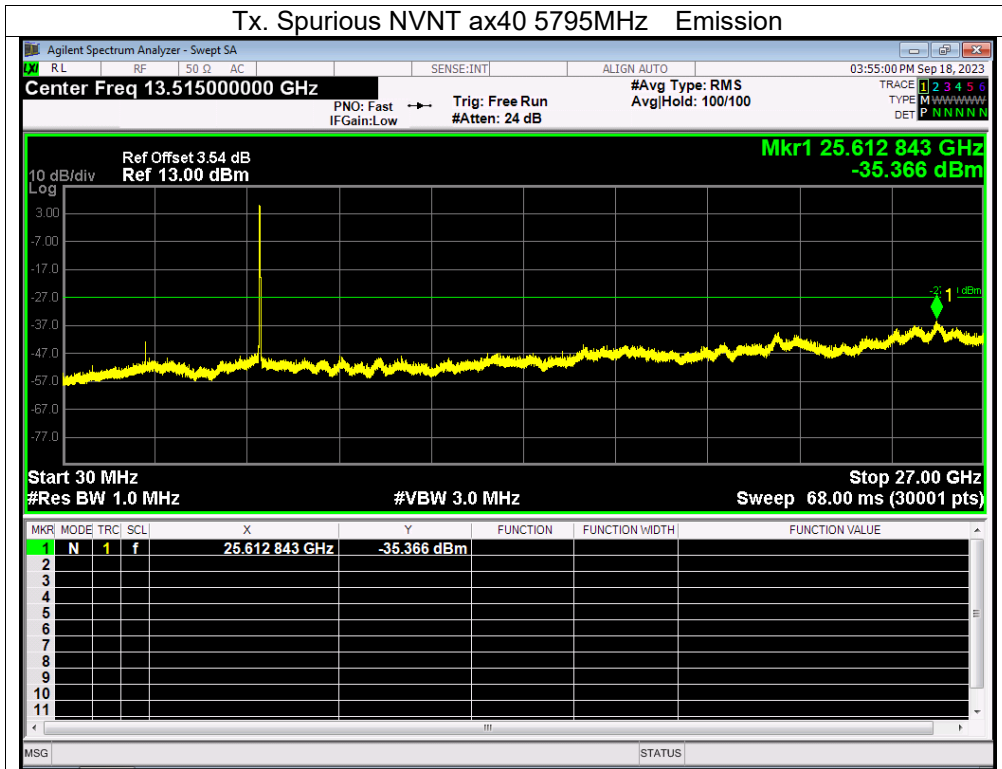












## 13. Frequency Stability Measurement

### 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  $\pm 20$  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  $\pm 20$  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)	AC 120	5180.0204	5180	0.0204	3.9466
		V max (V)	AC 138	5180.0063	5180	0.0063	1.2143
		V min (V)	AC 102	5180.0018	5180	0.0018	0.3449
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)	AC 120	T (°C)	-20	5180.0070	5180	0.0070	1.3496
		T (°C)	-10	5180.0098	5180	0.0098	1.9004
		T (°C)	0	5180.0089	5180	0.0089	1.7203
		T (°C)	10	5180.0086	5180	0.0086	1.6653
		T (°C)	20	5180.0059	5180	0.0059	1.1405
		T (°C)	30	5180.0034	5180	0.0034	0.6532
		T (°C)	40	5180.0092	5180	0.0092	1.7852
		T (°C)	50	5180.0100	5180	0.0100	1.9343
		T (°C)	60	5180.0009	5180	0.0009	0.1725
		T (°C)	70	5180.0083	5180	0.0083	1.6099
Limits				5150-5250 MHz			
Result				Complies			

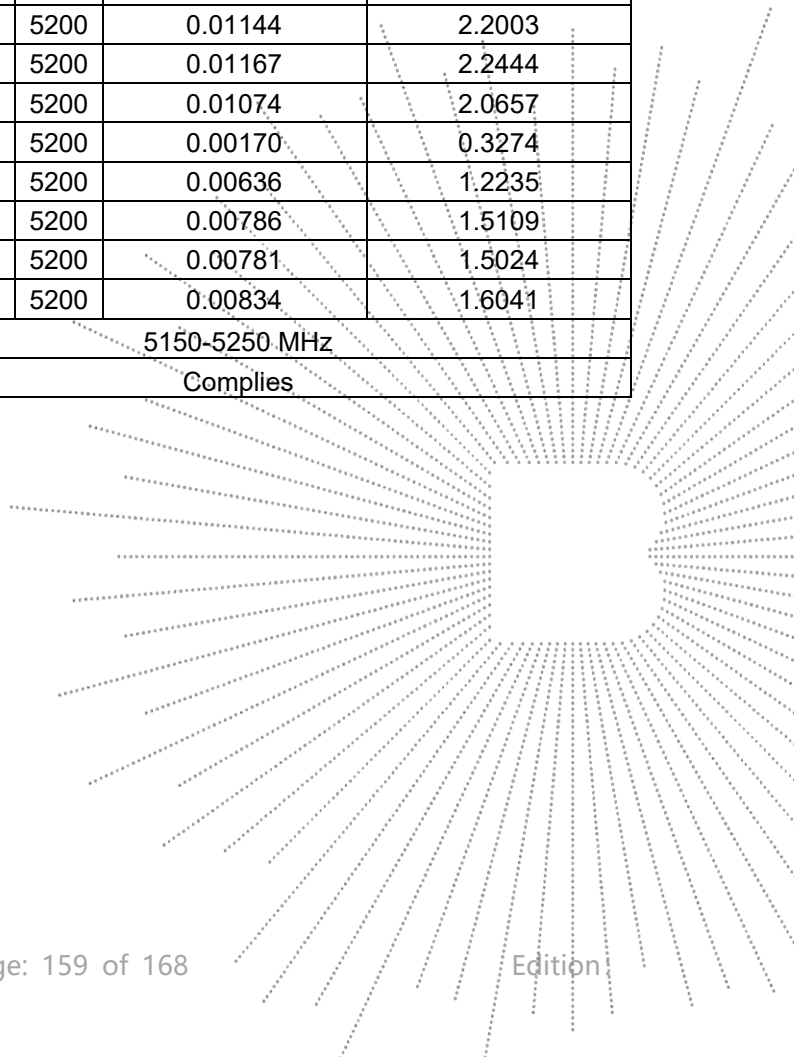


## Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5200MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	AC 120	5200.0062	5200	0.0062	1.1830
		V max (V)	AC 138	5200.0106	5200	0.0106	2.0359
		V min (V)	AC 102	5200.0109	5200	0.0109	2.1031
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)	AC 120	T (°C)	-20	5200.00728	5200	0.00728	1.3994
		T (°C)	-10	5200.00994	5200	0.00994	1.9110
		T (°C)	0	5200.01144	5200	0.01144	2.2003
		T (°C)	10	5200.01167	5200	0.01167	2.2444
		T (°C)	20	5200.01074	5200	0.01074	2.0657
		T (°C)	30	5200.00170	5200	0.00170	0.3274
		T (°C)	40	5200.00636	5200	0.00636	1.2235
		T (°C)	50	5200.00786	5200	0.00786	1.5109
		T (°C)	60	5200.00781	5200	0.00781	1.5024
		T (°C)	70	5200.00834	5200	0.00834	1.6041
Limits				5150-5250 MHz			
Result				Complies			

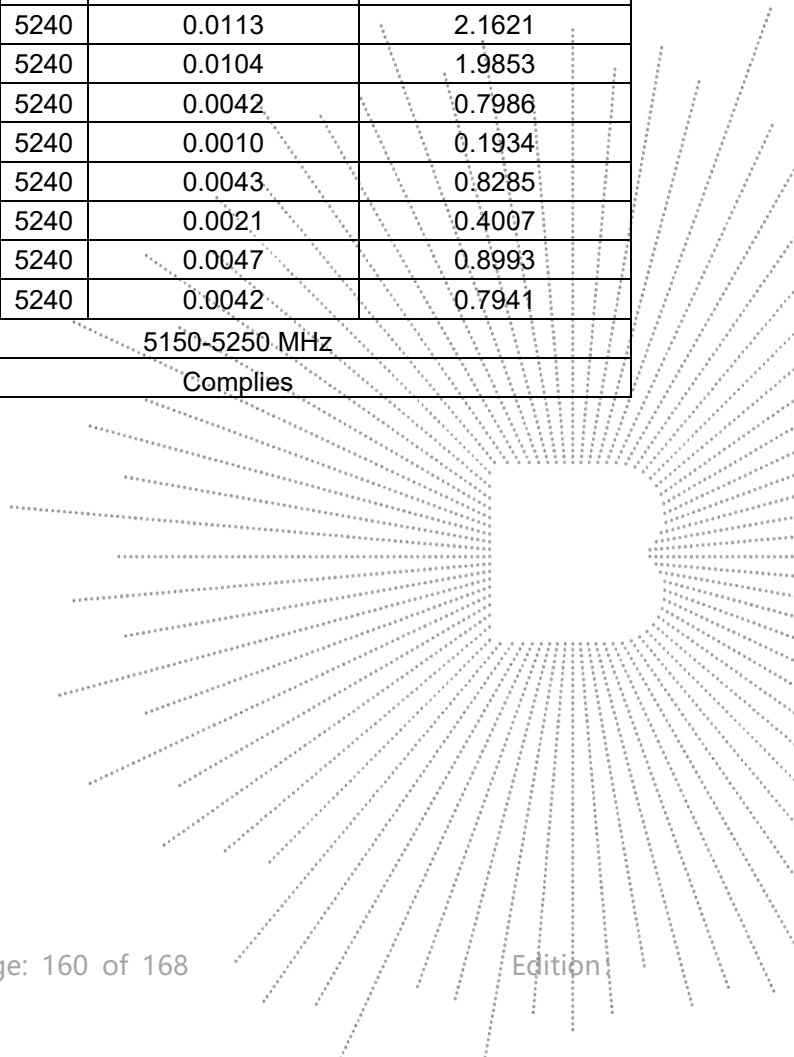


## Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5240MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	AC 120	5240.0077	5240	0.0077	1.4616
		V max (V)	AC 138	5240.0012	5240	0.0012	0.2267
		V min (V)	AC 102	5240.0035	5240	0.0035	0.6675
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)	AC 120	T (°C)	-20	5240.0088	5240	0.0088	1.6819
		T (°C)	-10	5240.0103	5240	0.0103	1.9634
		T (°C)	0	5240.0113	5240	0.0113	2.1621
		T (°C)	10	5240.0104	5240	0.0104	1.9853
		T (°C)	20	5240.0042	5240	0.0042	0.7986
		T (°C)	30	5240.0010	5240	0.0010	0.1934
		T (°C)	40	5240.0043	5240	0.0043	0.8285
		T (°C)	50	5240.0021	5240	0.0021	0.4007
		T (°C)	60	5240.0047	5240	0.0047	0.8993
		T (°C)	70	5240.0042	5240	0.0042	0.7941
Limits				5150-5250 MHz			
Result				Complies			



Temperature :	26 °C	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	AC 120V 60Hz
Test 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)	AC 120	5745.00536	5745	0.00536	0.9327
		V max (V)	AC 138	5745.00380	5745	0.00380	0.6612
		V min (V)	AC 102	5745.00005	5745	0.00005	0.0083
Limits				5725-5850 MHz			
Result				Complies			

## Temperature vs. Frequency Stability

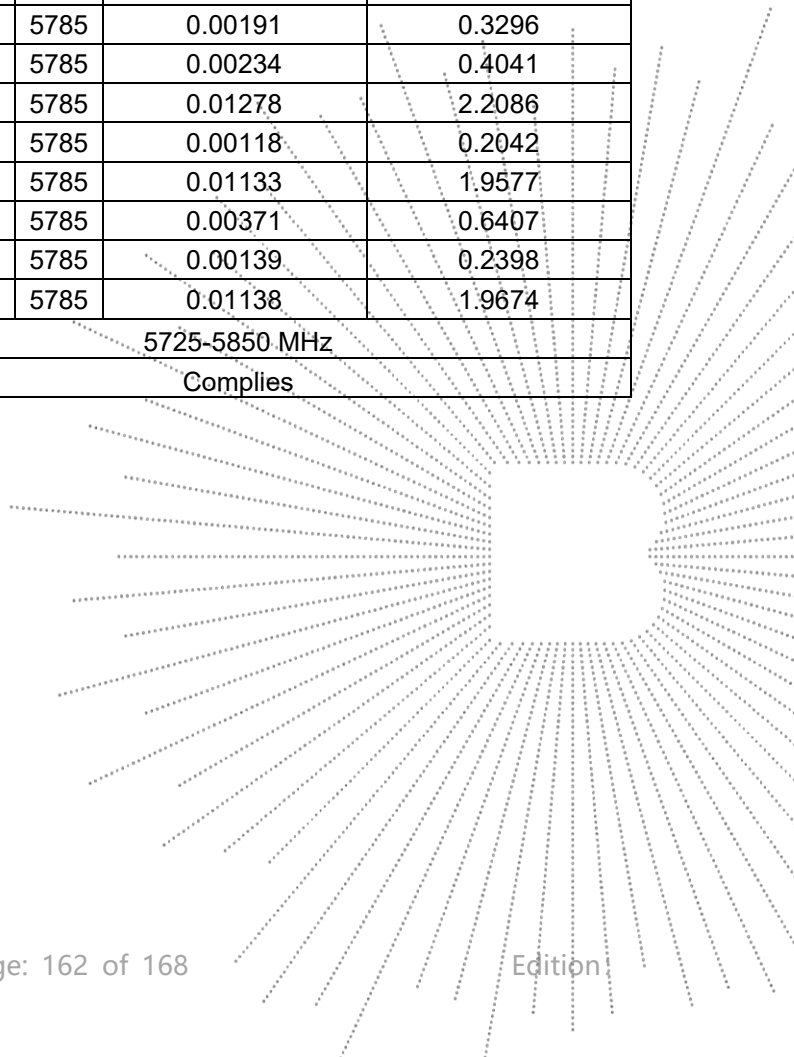
TEST CONDITIONS				Reference Frequency: 5745MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	AC 120	T (°C)	-20	5745.01094	5745	0.01094	1.9050
		T (°C)	-10	5745.00258	5745	0.00258	0.4496
		T (°C)	0	5745.00654	5745	0.00654	1.1379
		T (°C)	10	5745.01292	5745	0.01292	2.2482
		T (°C)	20	5745.01176	5745	0.01176	2.0467
		T (°C)	30	5745.01322	5745	0.01322	2.3005
		T (°C)	40	5745.00600	5745	0.00600	1.0449
		T (°C)	50	5745.00085	5745	0.00085	0.1472
		T (°C)	60	5745.01001	5745	0.01001	1.7429
		T (°C)	70	5745.00372	5745	0.00372	0.6474
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)	AC 120	12.00	5785.00848	5785	0.00848
		V max (V)	AC 138	13.80	5785.01313	5785	0.01313
		V min (V)	AC 102	10.20	5785.00718	5785	0.00718
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)	AC 120	T (°C)	-20	5785.00248	5785	0.00248	0.4292
		T (°C)	-10	5785.00228	5785	0.00228	0.3935
		T (°C)	0	5785.00191	5785	0.00191	0.3296
		T (°C)	10	5785.00234	5785	0.00234	0.4041
		T (°C)	20	5785.01278	5785	0.01278	2.2086
		T (°C)	30	5785.00118	5785	0.00118	0.2042
		T (°C)	40	5785.01133	5785	0.01133	1.9577
		T (°C)	50	5785.00371	5785	0.00371	0.6407
		T (°C)	60	5785.00139	5785	0.00139	0.2398
		T (°C)	70	5785.01138	5785	0.01138	1.9674
Limits				5725-5850 MHz			
Result				Complies			

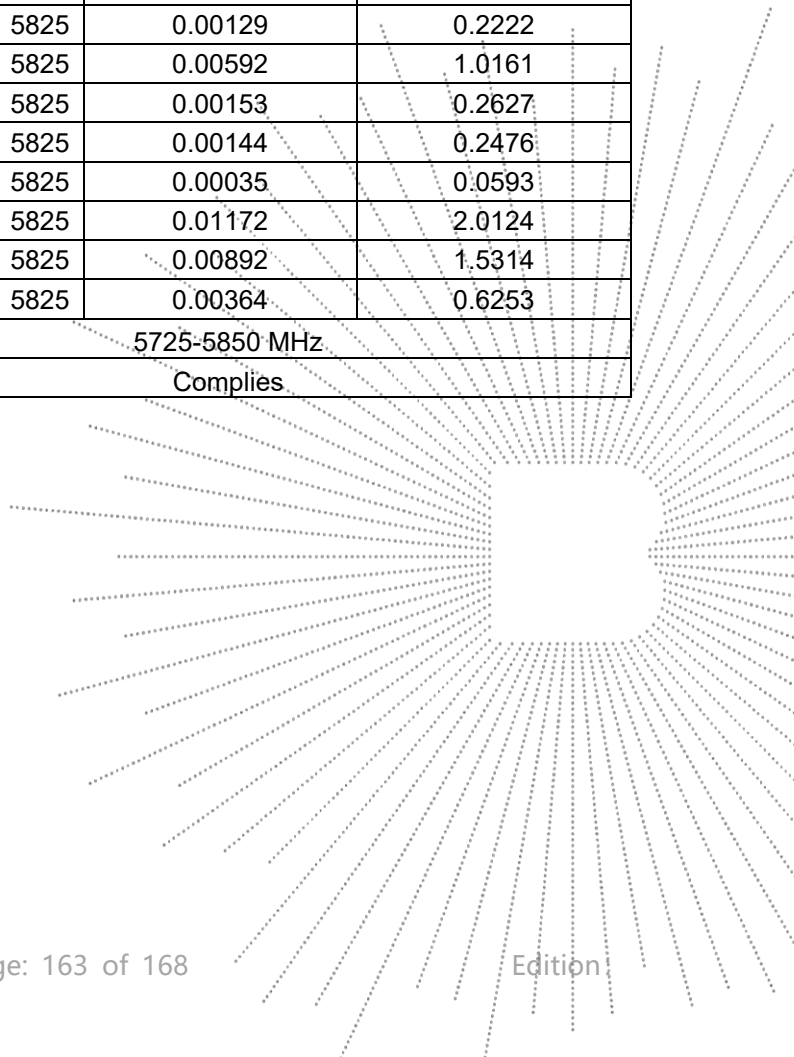


## Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5825MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	AC 120	5825.01044	5825	0.01044	1.7925
		V max (V)	AC 138	5825.00418	5825	0.00418	0.7179
		V min (V)	AC 102	5825.00254	5825	0.00254	0.4368
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)	AC 120	T (°C)	-20	5825.00120	5825	0.00120	0.2052
		T (°C)	-10	5825.00663	5825	0.00663	1.1380
		T (°C)	0	5825.00129	5825	0.00129	0.2222
		T (°C)	10	5825.00592	5825	0.00592	1.0161
		T (°C)	20	5825.00153	5825	0.00153	0.2627
		T (°C)	30	5825.00144	5825	0.00144	0.2476
		T (°C)	40	5825.00035	5825	0.00035	0.0593
		T (°C)	50	5825.01172	5825	0.01172	2.0124
		T (°C)	60	5825.00892	5825	0.00892	1.5314
		T (°C)	70	5825.00364	5825	0.00364	0.6253
Limits				5725-5850 MHz			
Result				Complies			



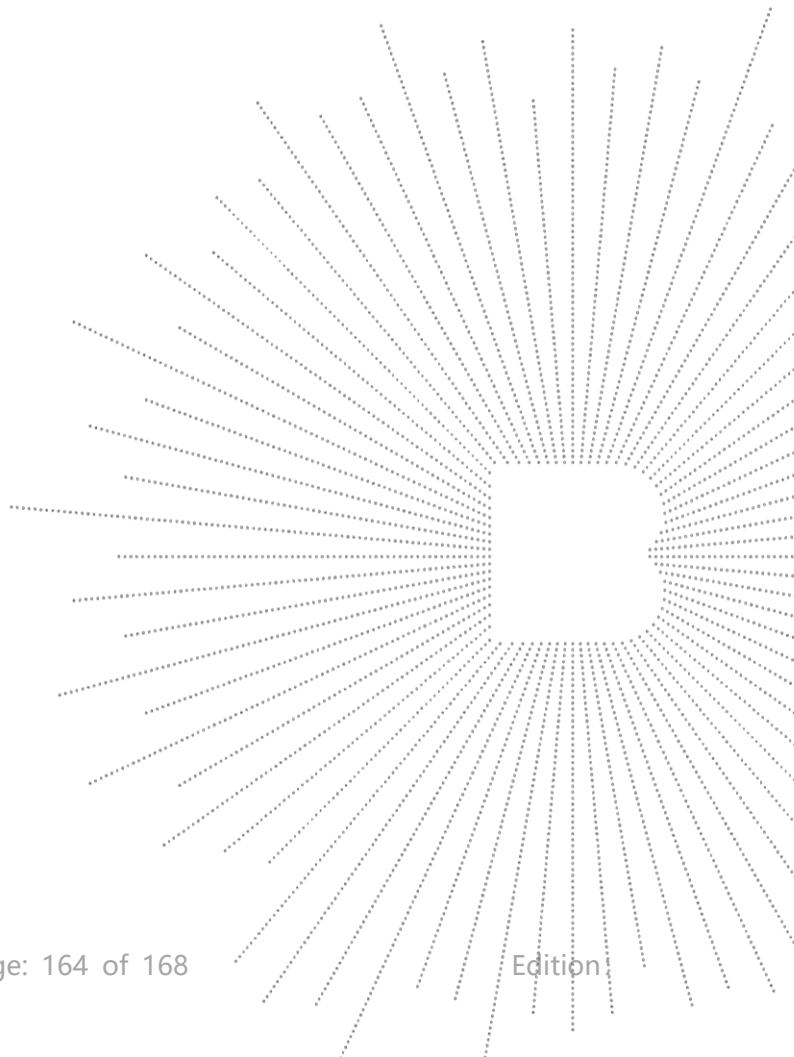
## 14. Antenna Requirement

### 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 A gain is (5.1G:5.42dBi, 5.8G:5.31dBi), antenna A connector type is IPEX, antenna B gain is (5.1G:5.11dBi, 5.8G:5.23dBi), antenna B connector type is IPEX, fulfill the requirement of this section.





**15. EUT Photographs**

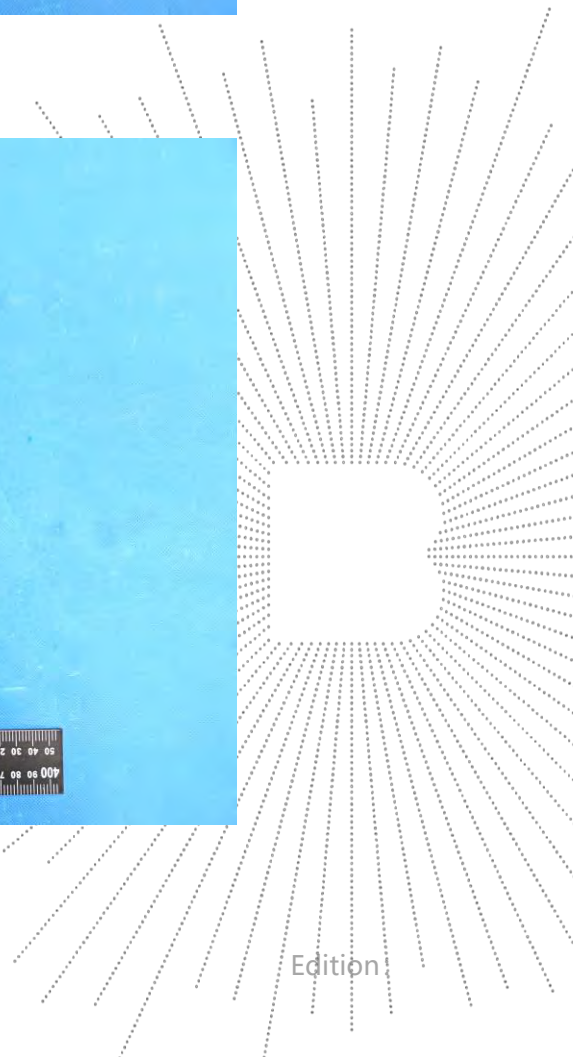
**EUT Photo 1**



**EUT Photo 2**



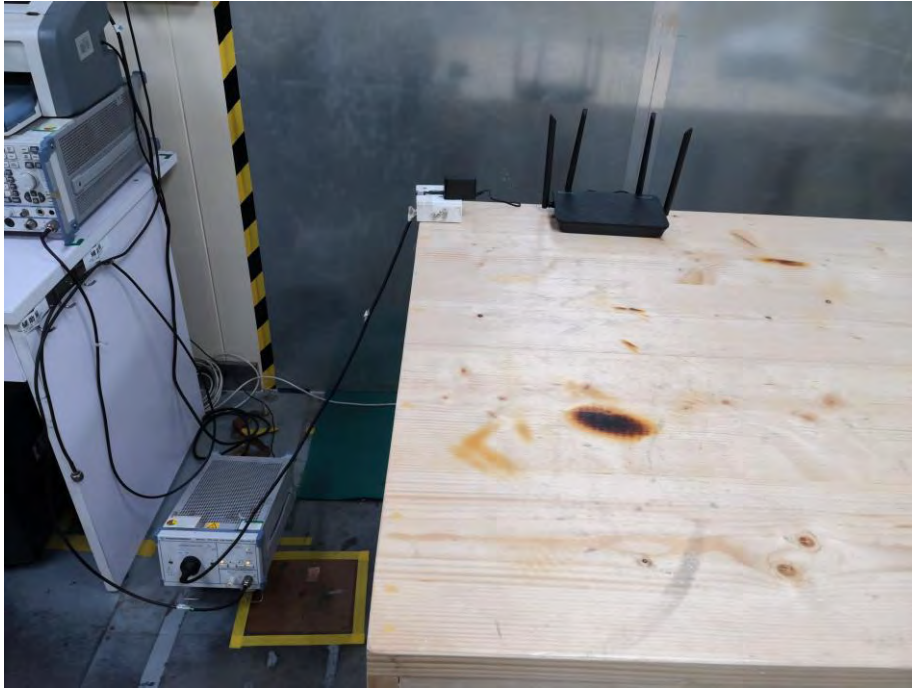
NOTE: Appendix-Photographs Of EUT Constructional Details



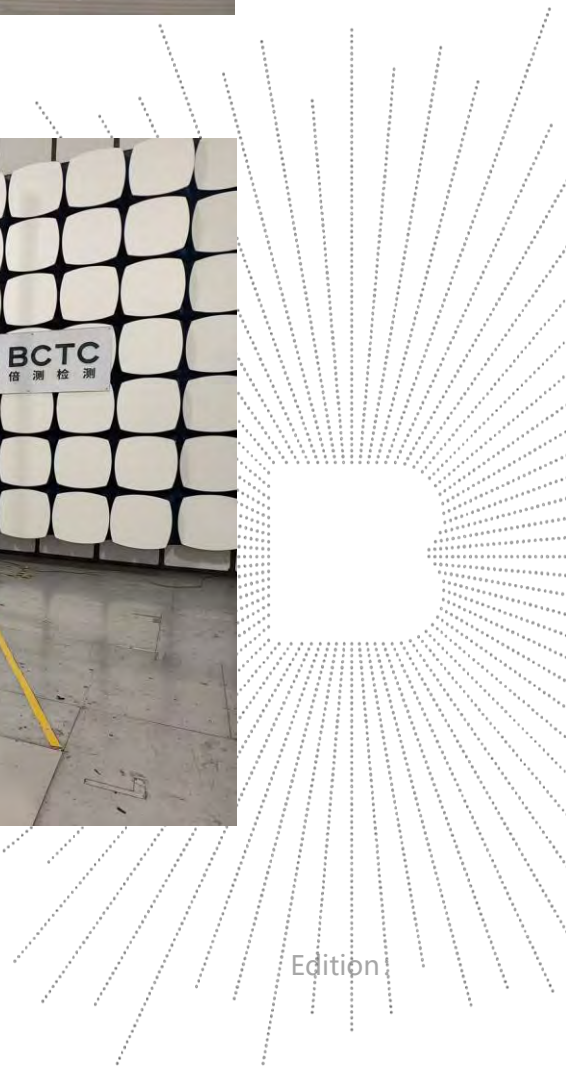
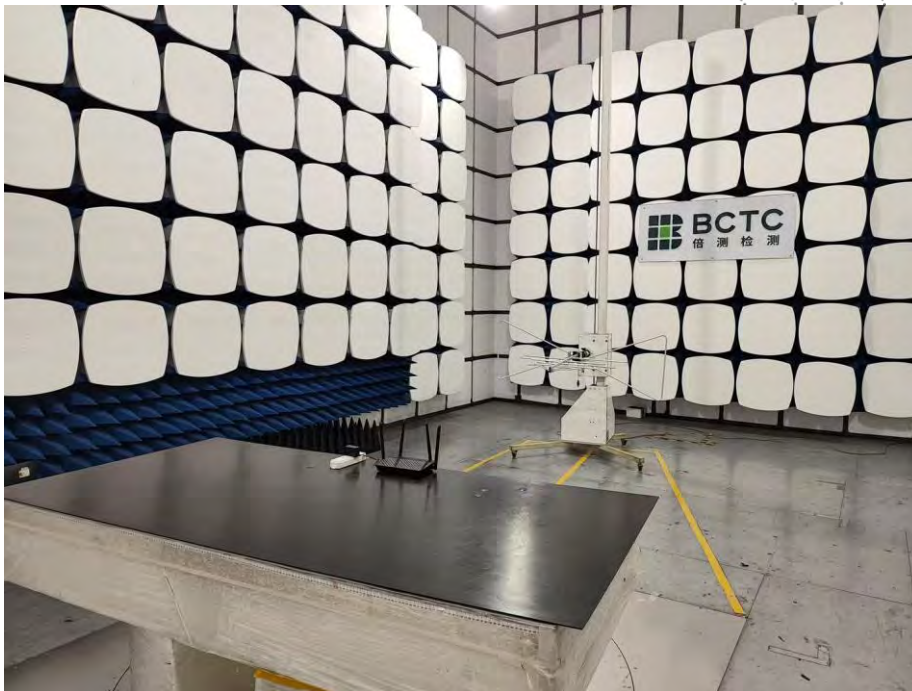


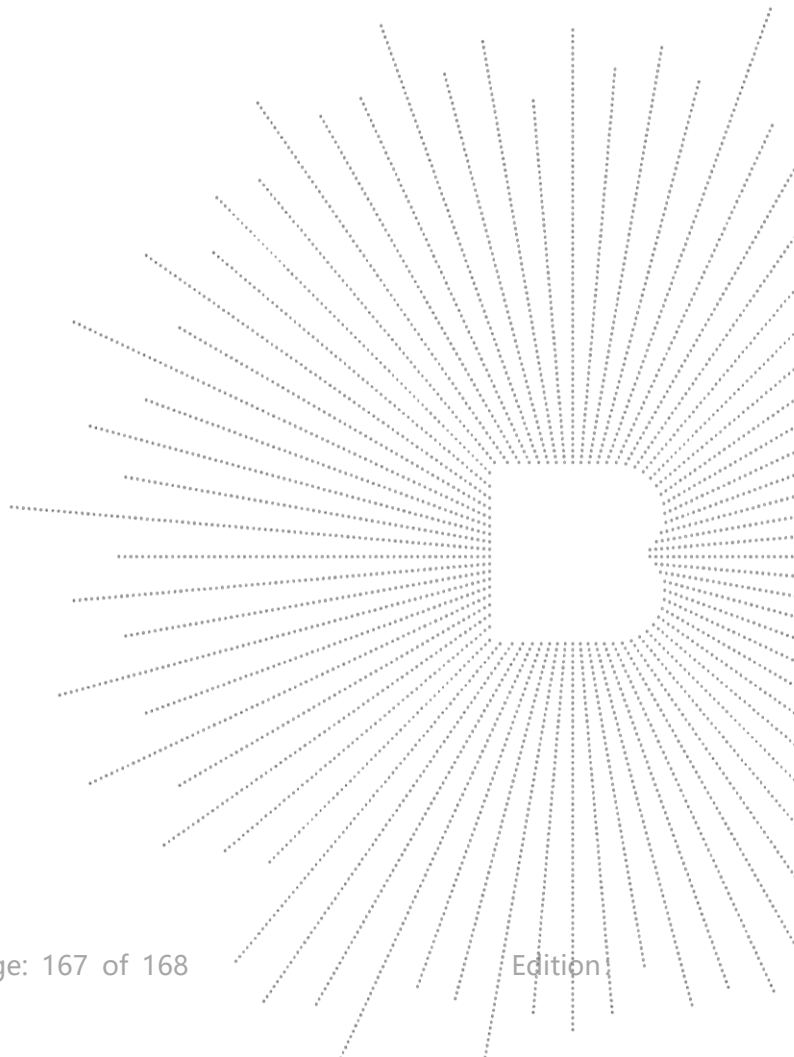
### 16. EUT Test Setup Photographs

#### Conducted Measurement Photo



#### 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 the "special seal for inspection and testing".
4. The test report is invalid without the signature of the approver.
5. The test process and test result is only related to the Unit Under Test.
6. Sample information is provided by the client and the laboratory is not responsible for its authenticity.
7. The quality system of our laboratory is in accordance with ISO/IEC17025.
8. If there is any objection to this test 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, Zhancheng, 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](mailto:bctc@bctc-lab.com.cn)

\*\*\*\*\* END \*\*\*\*\*

