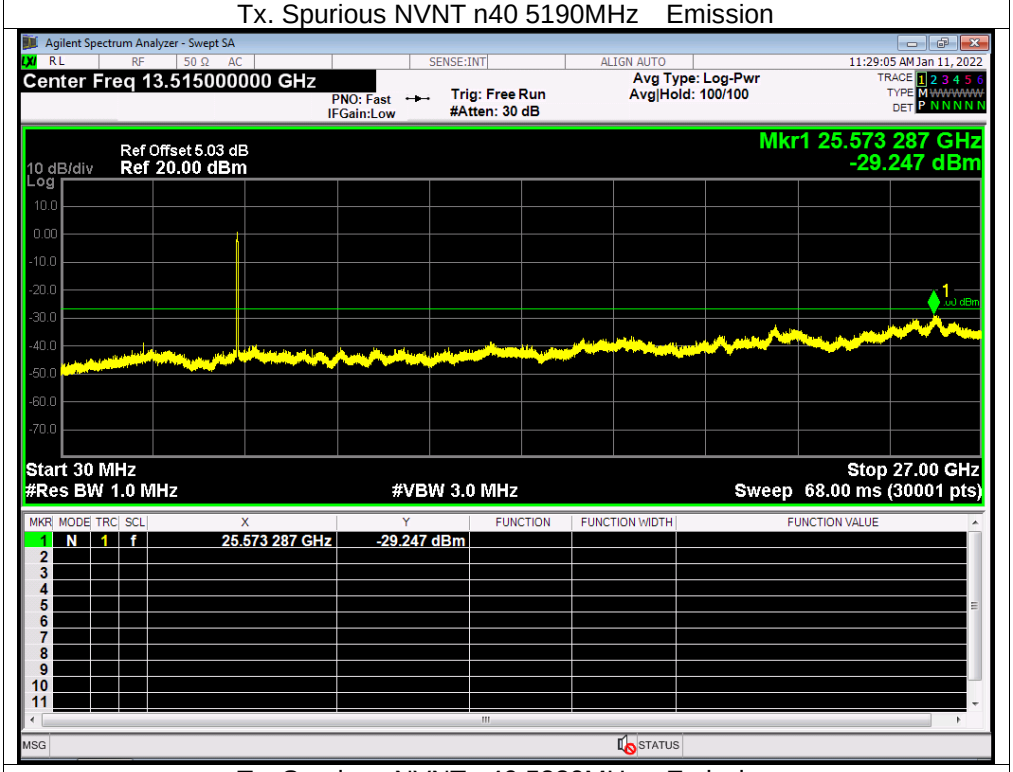
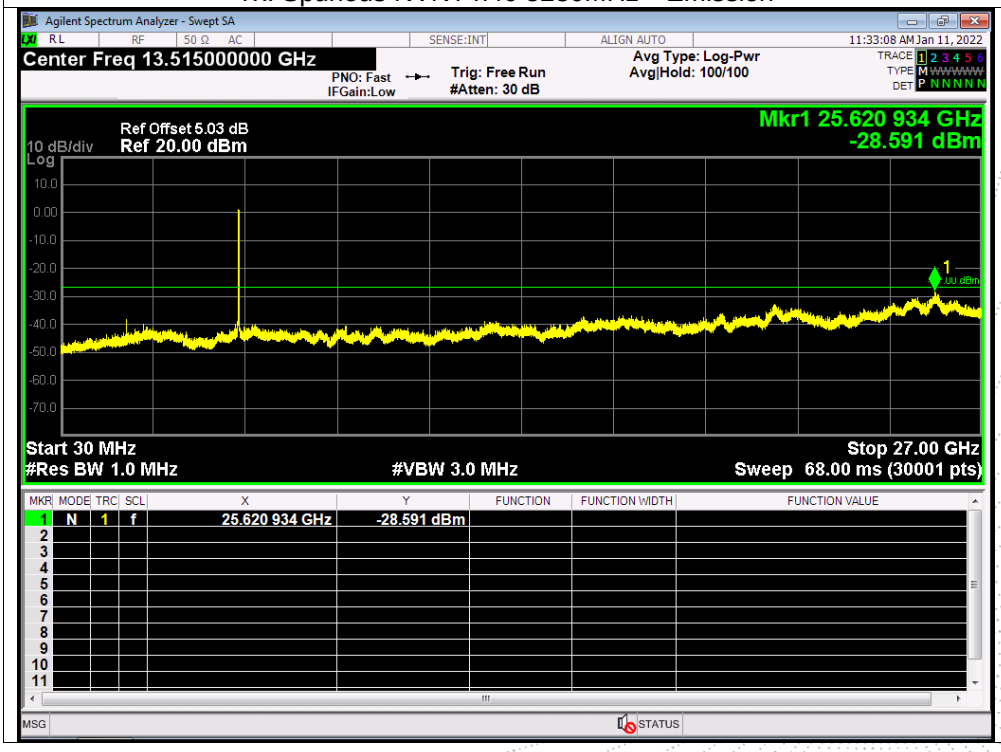
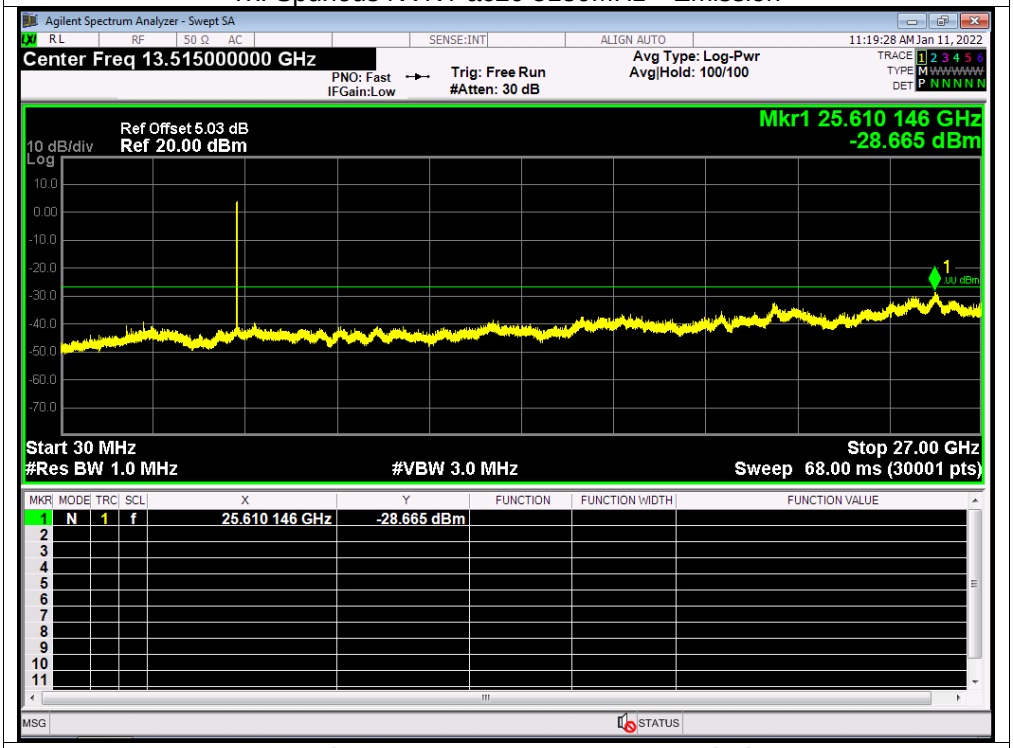
Tx. Spurious NVNT n40 5190MHz Emission



Tx. Spurious NVNT n40 5230MHz Emission



Tx. Spurious NVNT ac20 5180MHz Emission



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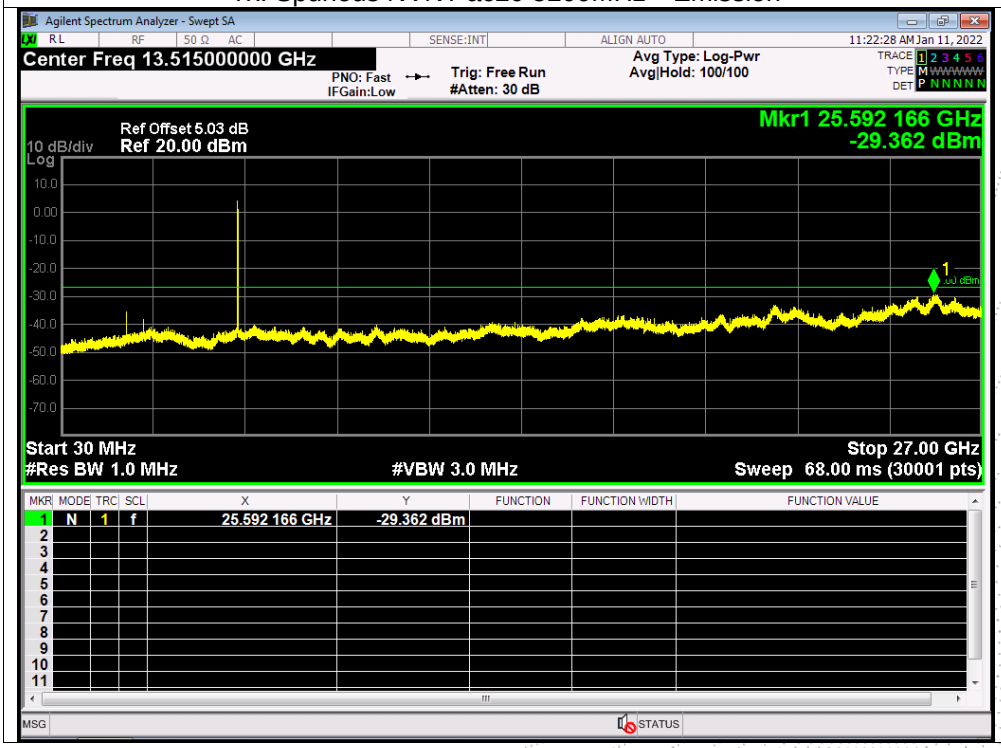
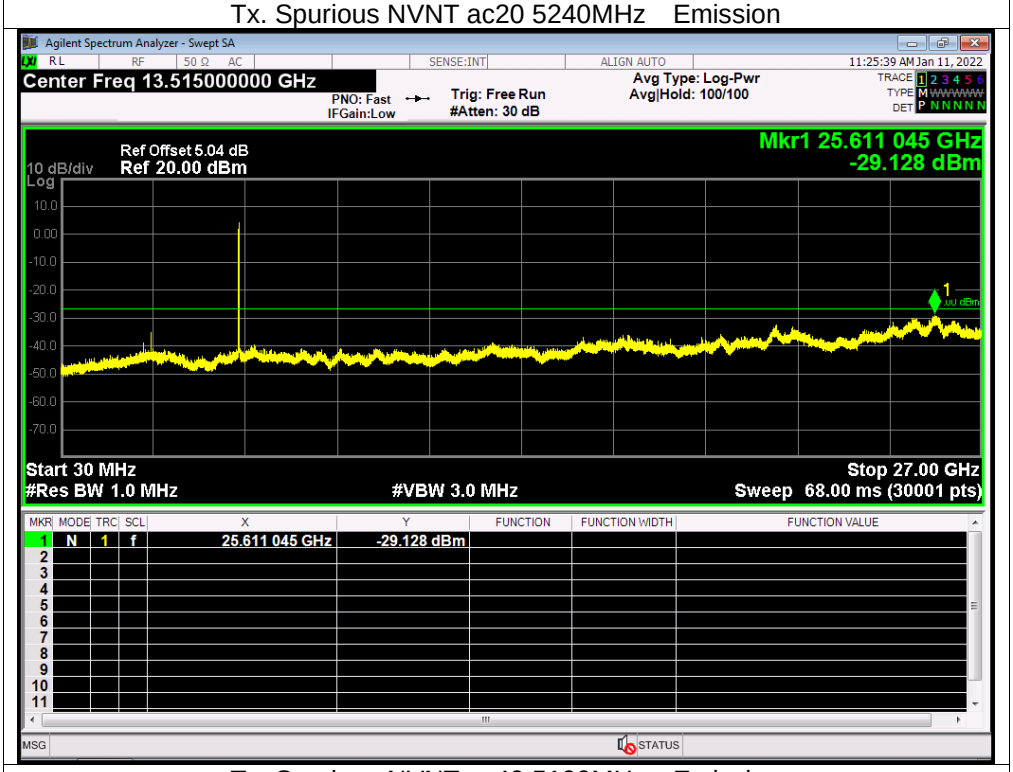
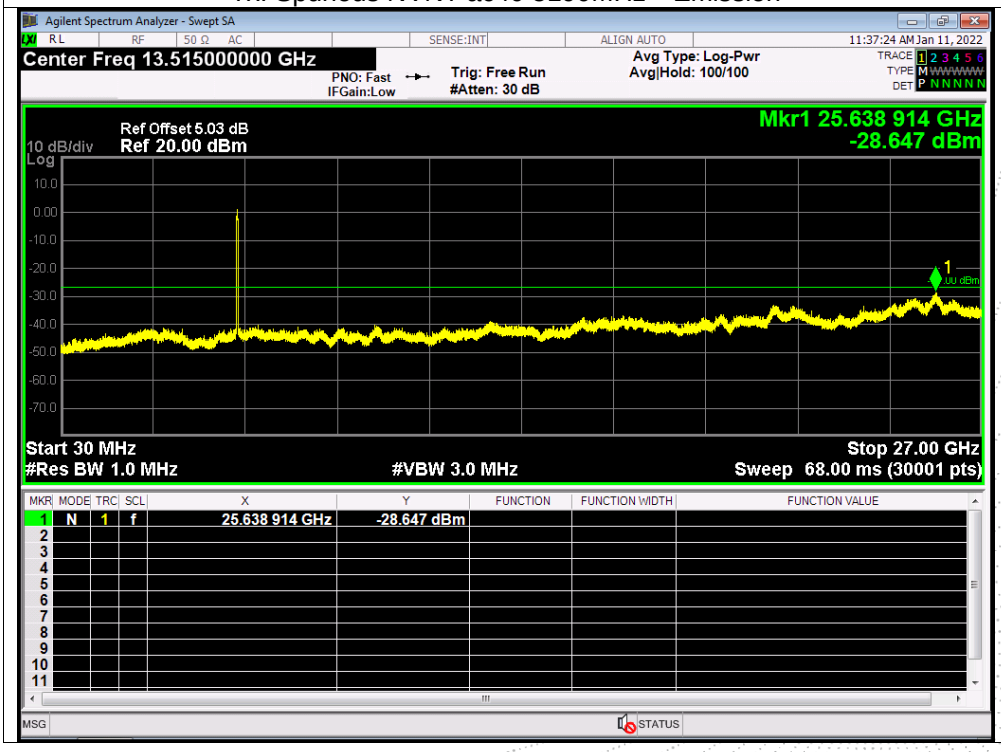


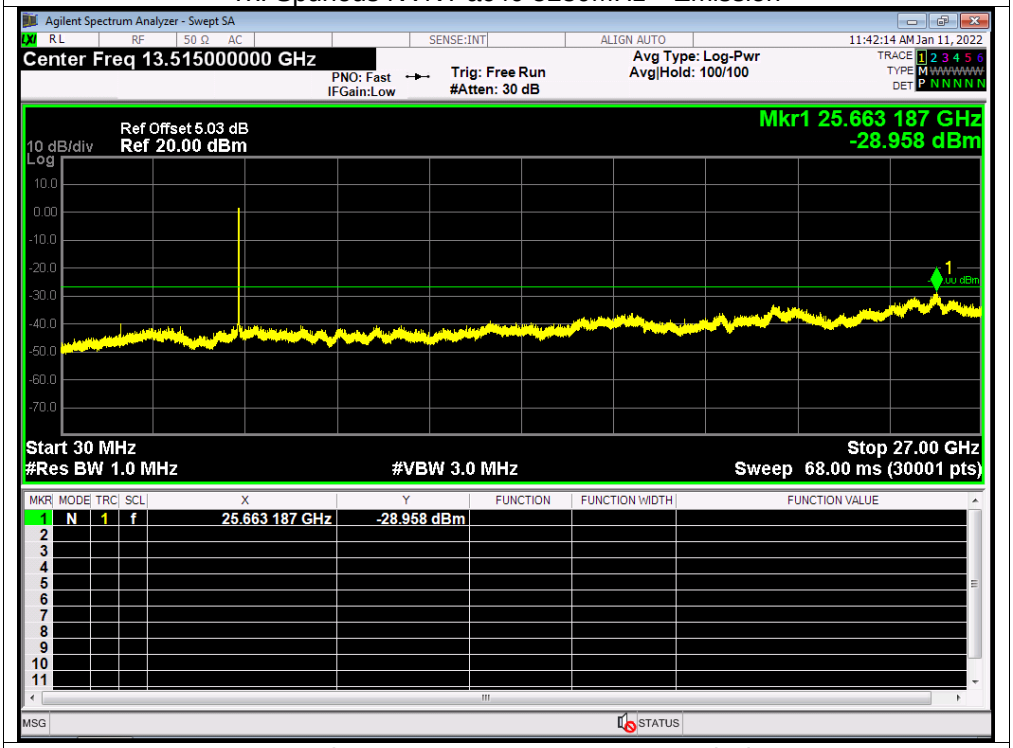
Tx. Spurious NVNT ac20 5240MHz Emission



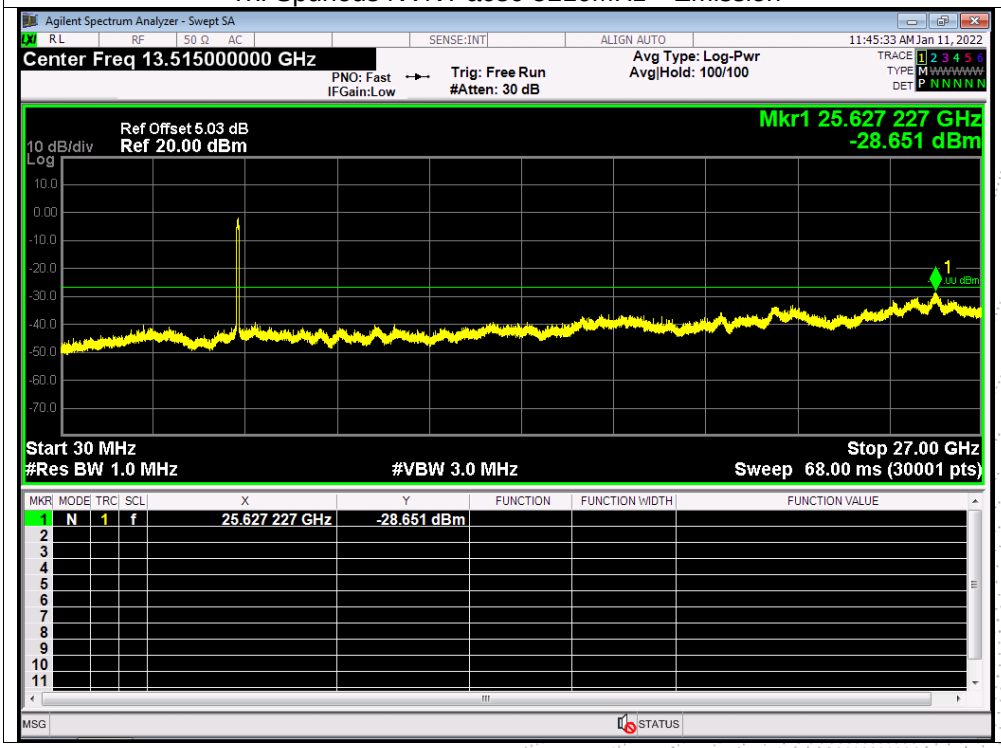
Tx. Spurious NVNT ac40 5190MHz Emission



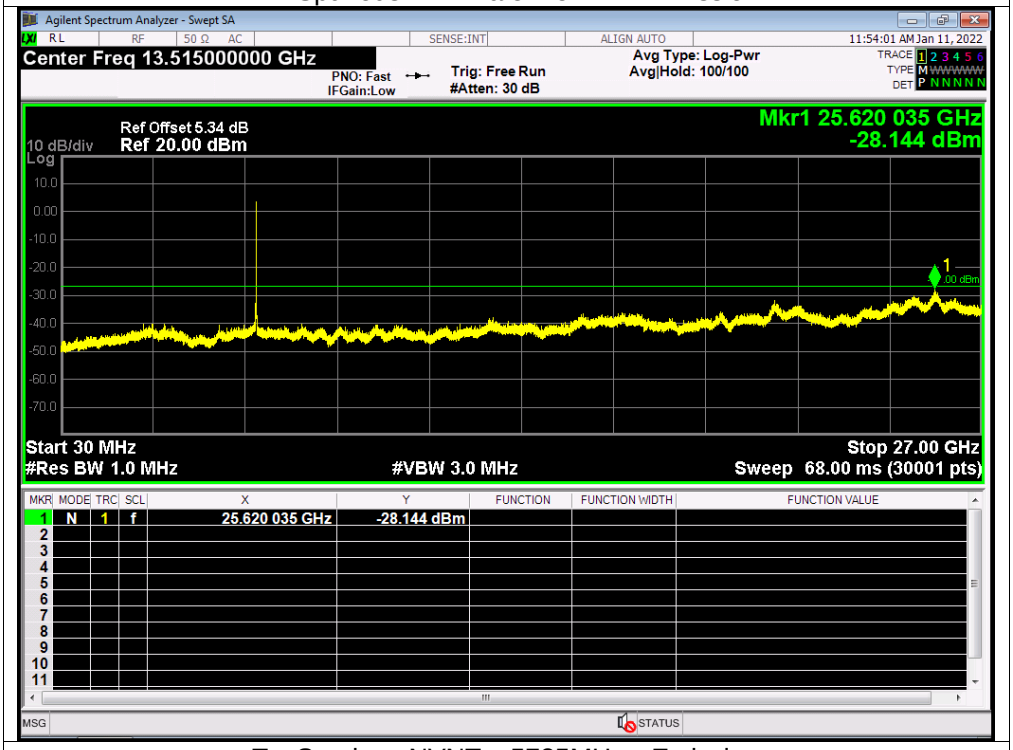
Tx. Spurious NVNT ac40 5230MHz Emission



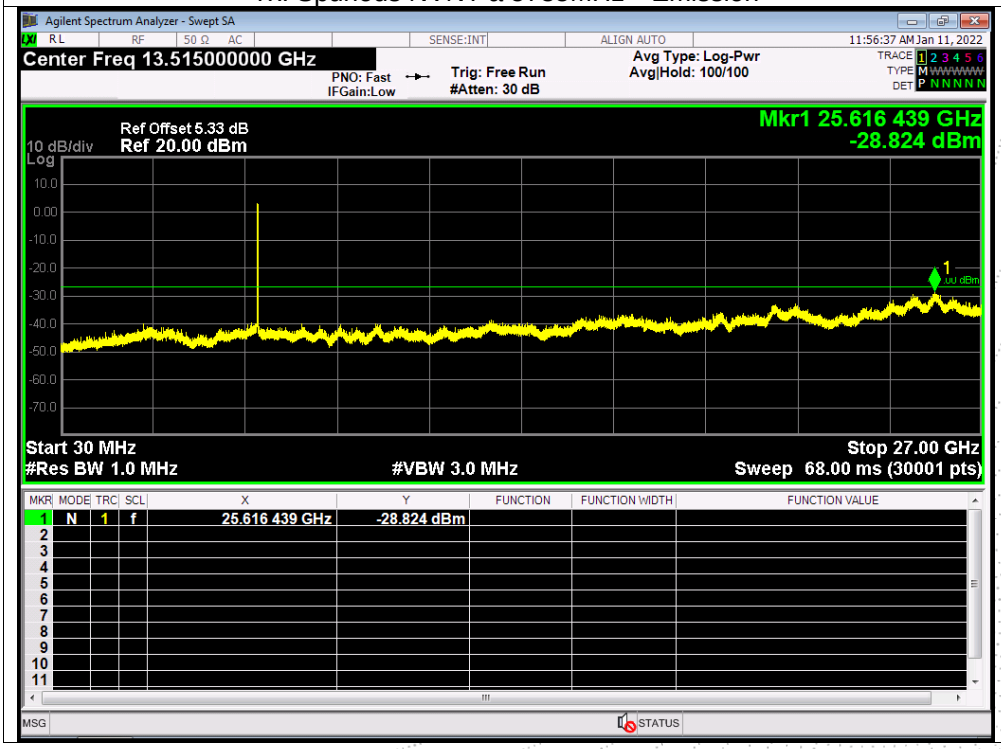
Tx. Spurious NVNT ac80 5210MHz Emission



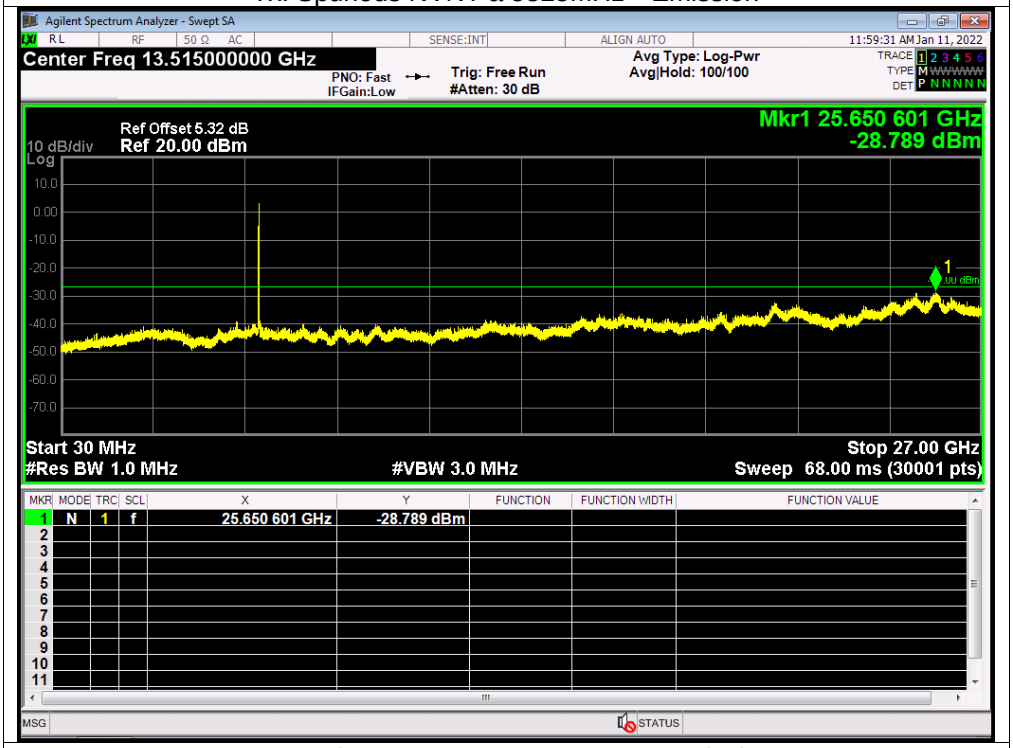
Test Graphs
Tx. Spurious NVNT a 5745MHz Emission



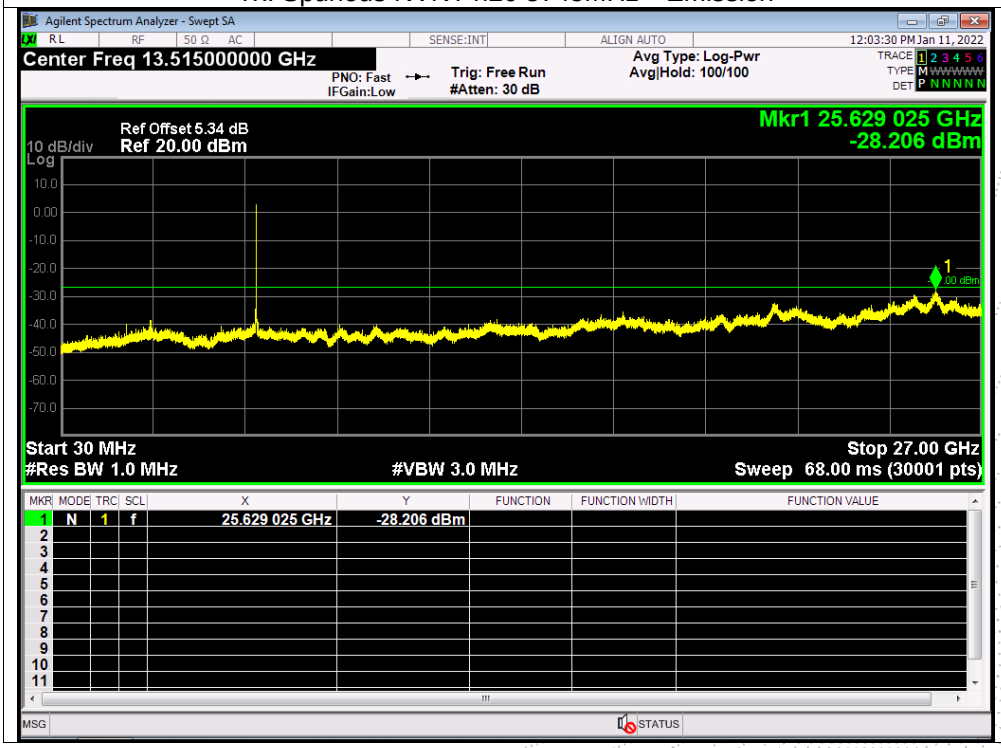
Tx. Spurious NVNT a 5785MHz Emission



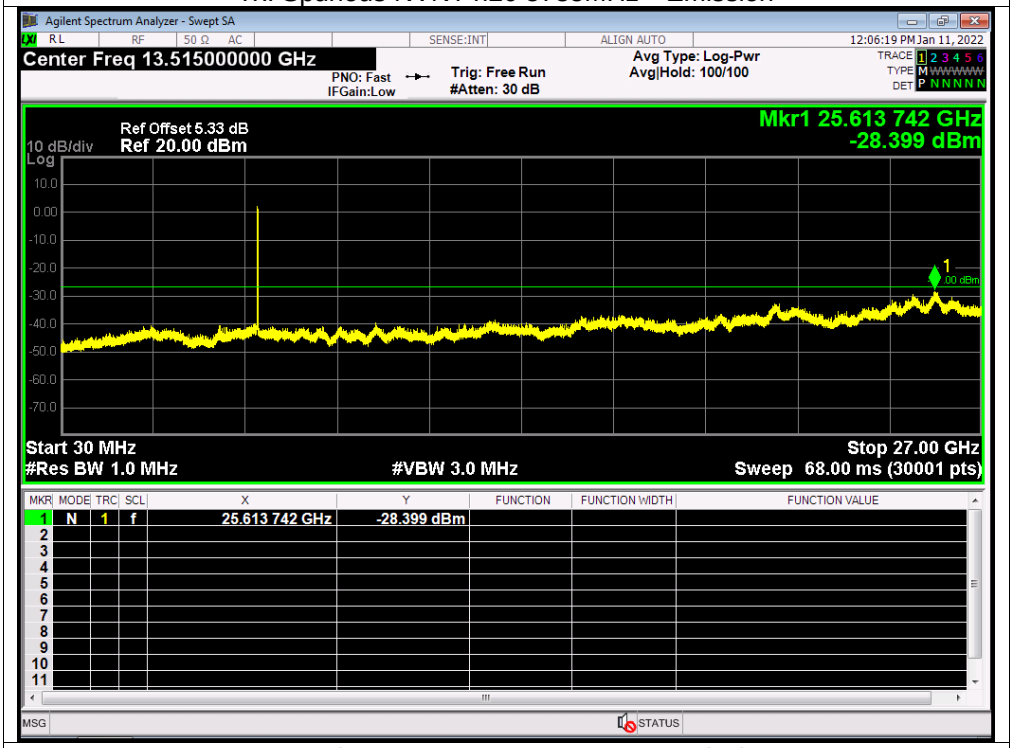
Tx. Spurious NVNT a 5825MHz Emission



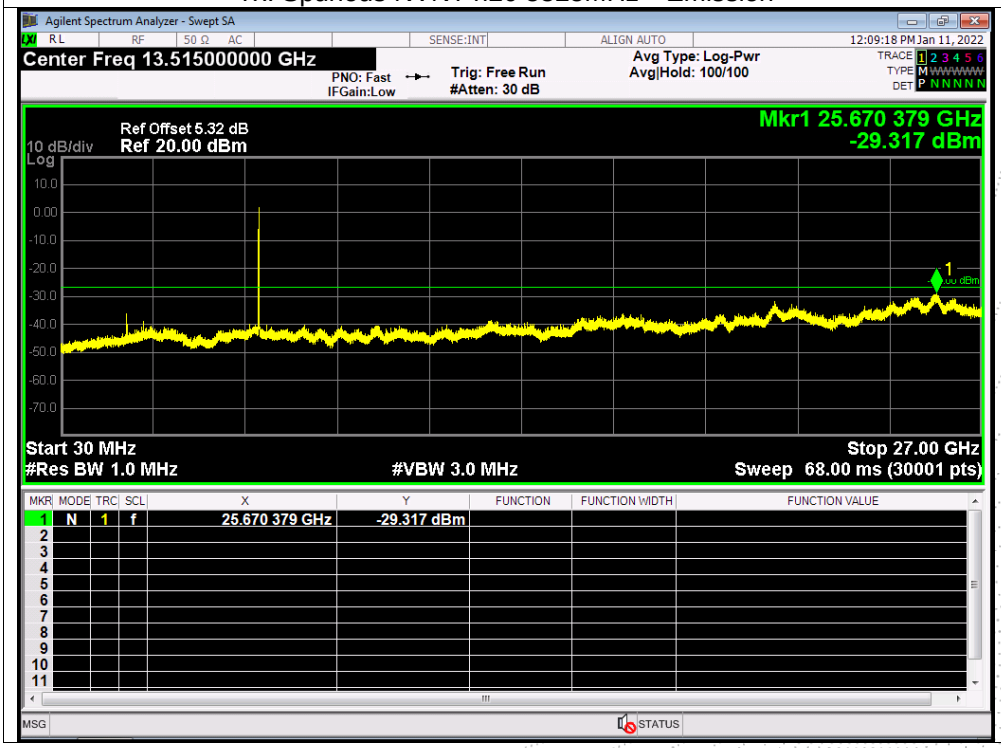
Tx. Spurious NVNT n20 5745MHz Emission



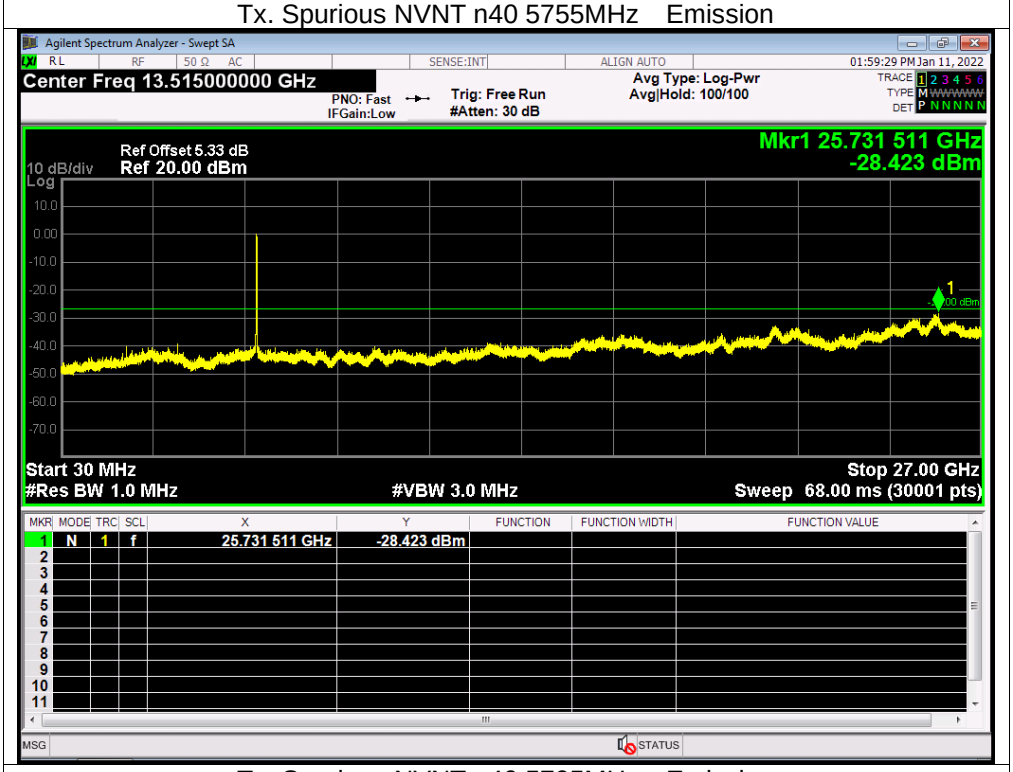
Tx. Spurious NVNT n20 5785MHz Emission



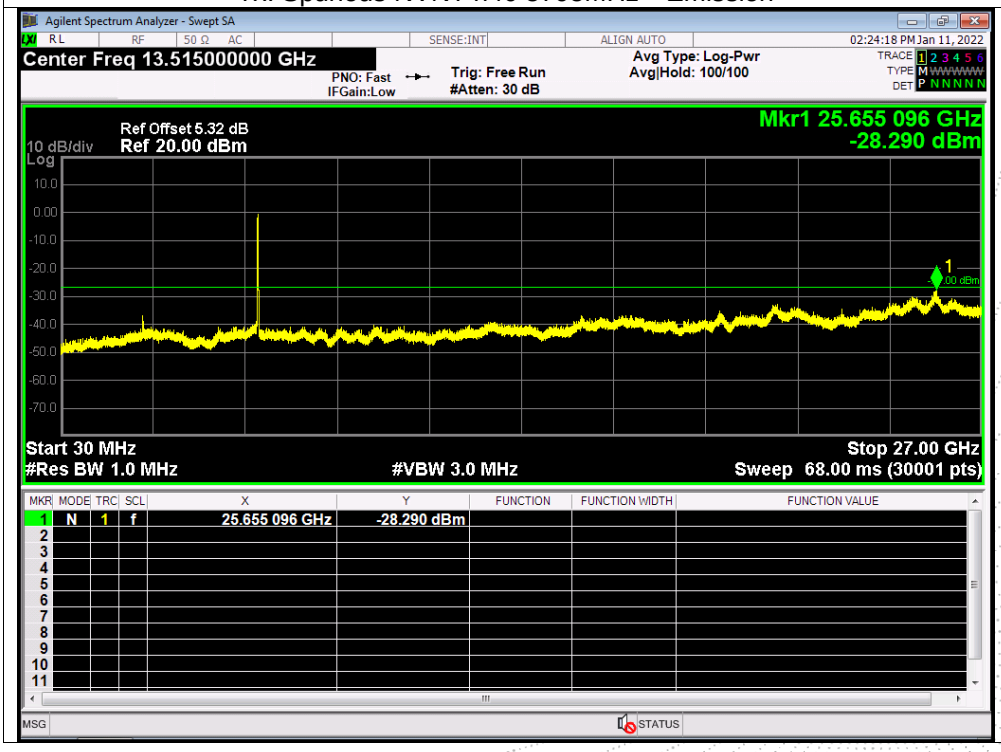
Tx. Spurious NVNT n20 5825MHz Emission



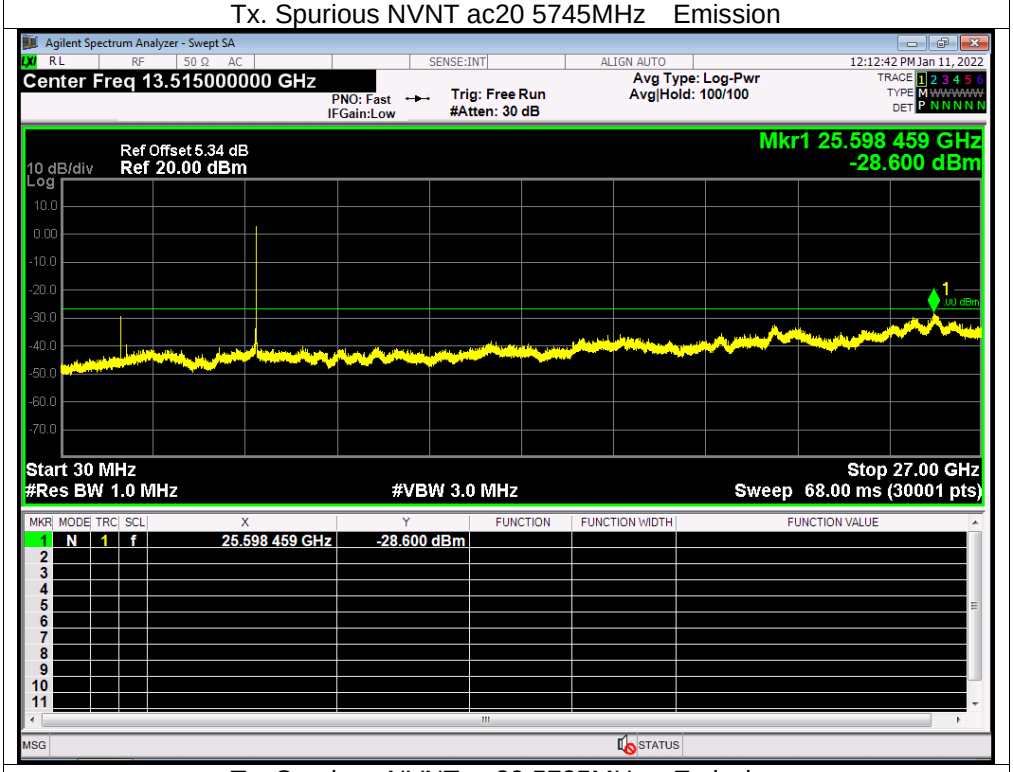
Tx. Spurious NVNT n40 5755MHz Emission



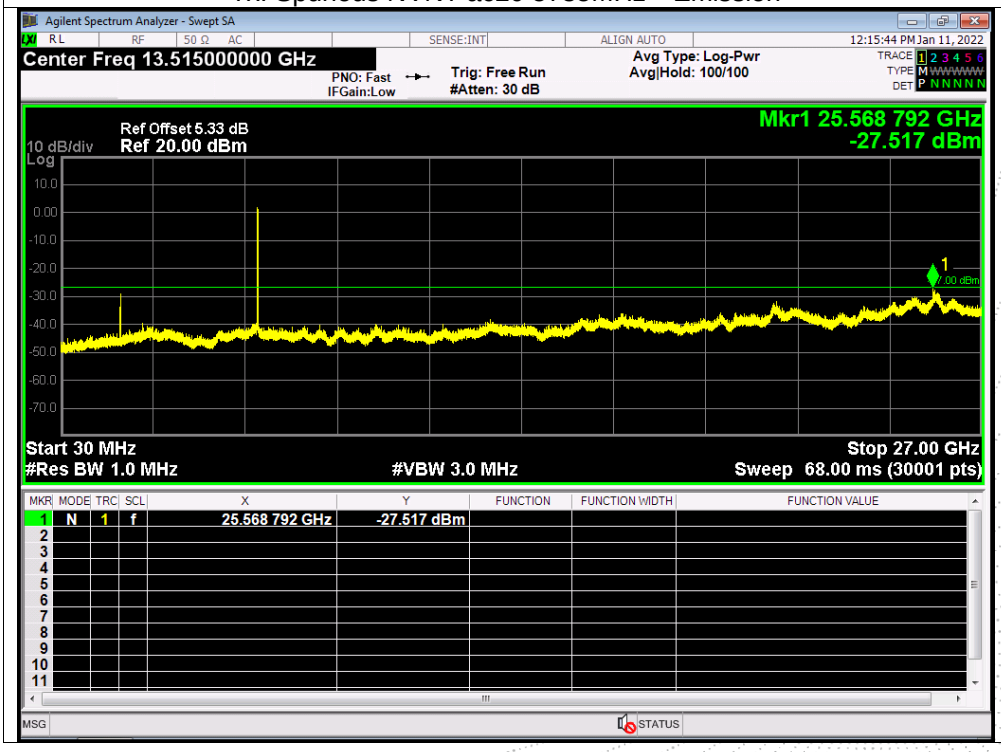
Tx. Spurious NVNT n40 5795MHz Emission



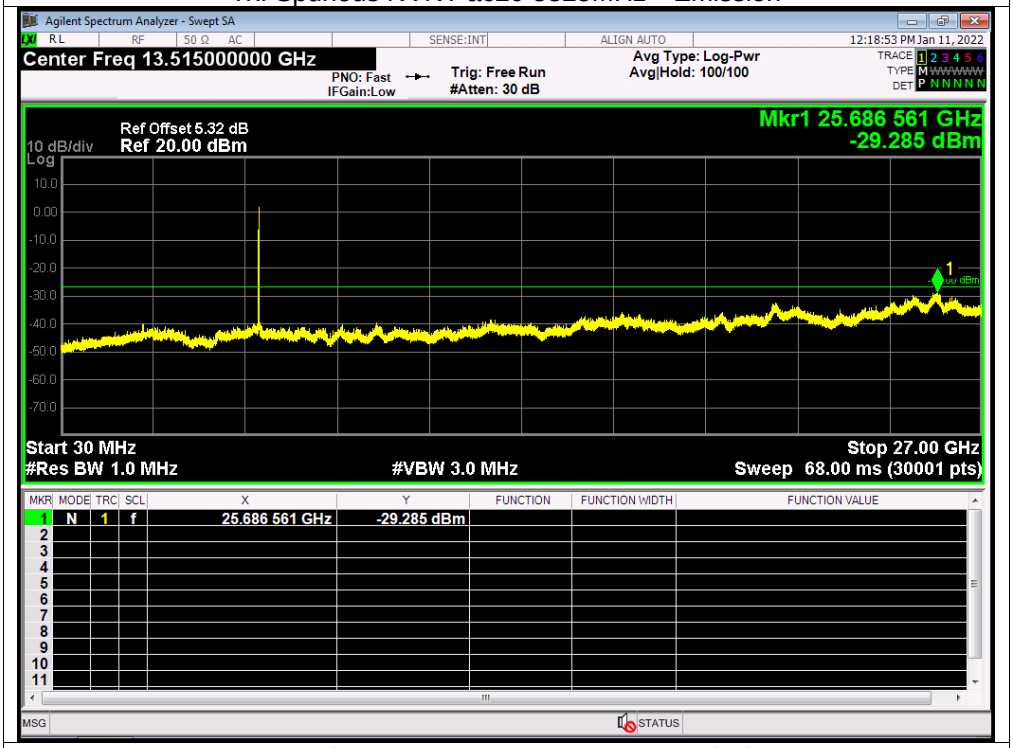
Tx. Spurious NVNT ac20 5745MHz Emission



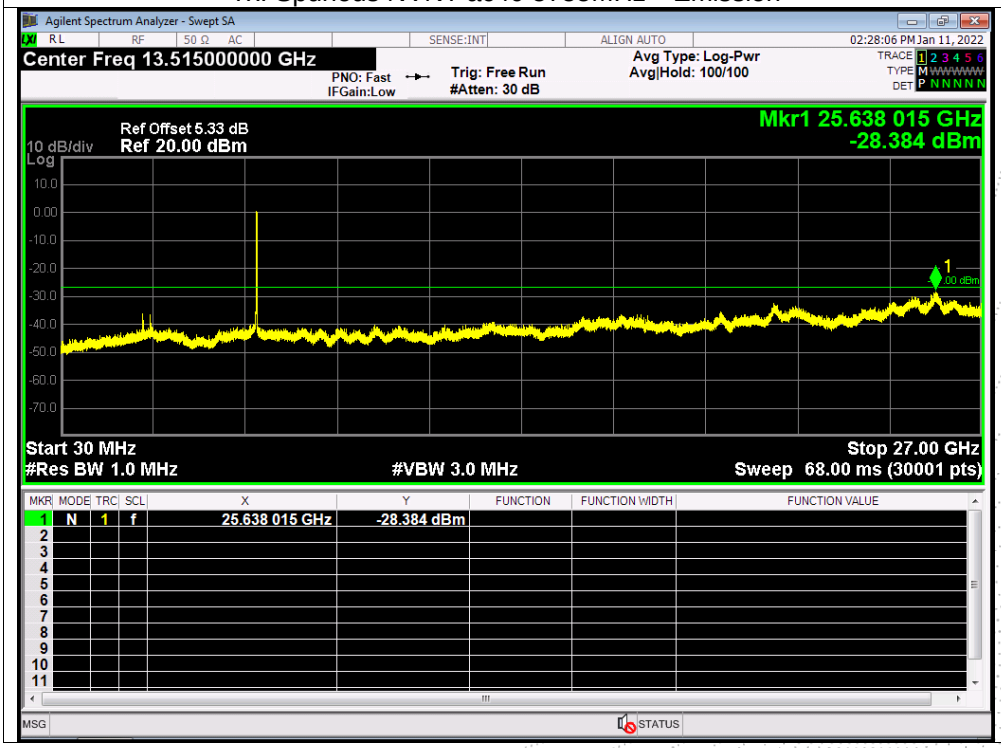
Tx. Spurious NVNT ac20 5785MHz Emission



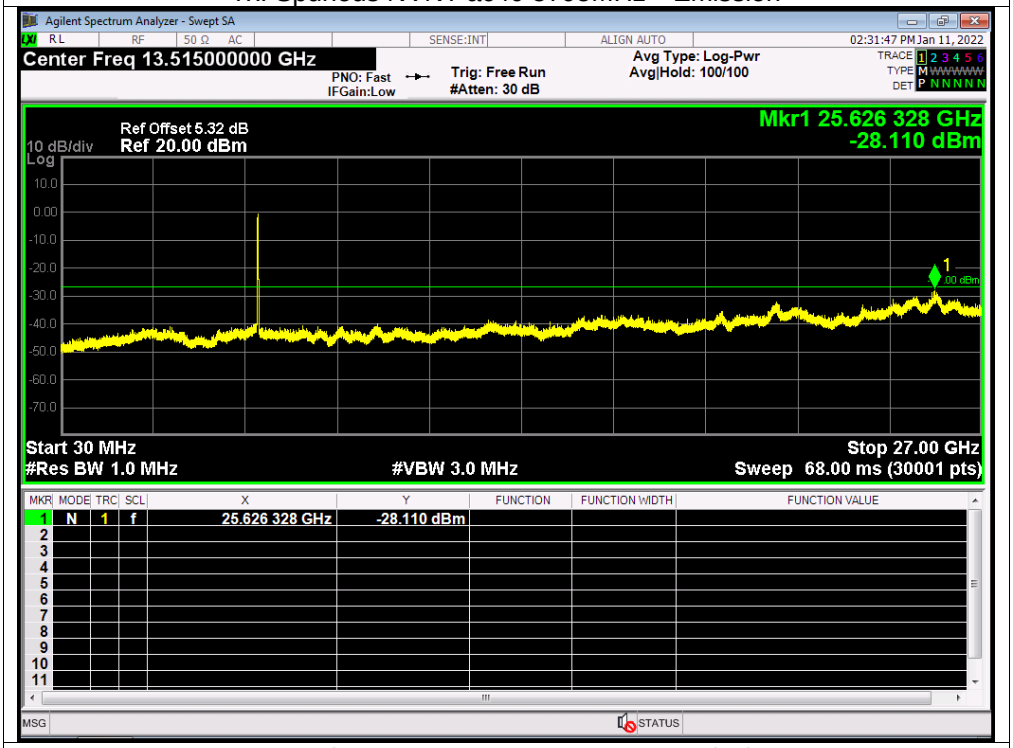
Tx. Spurious NVNT ac20 5825MHz Emission



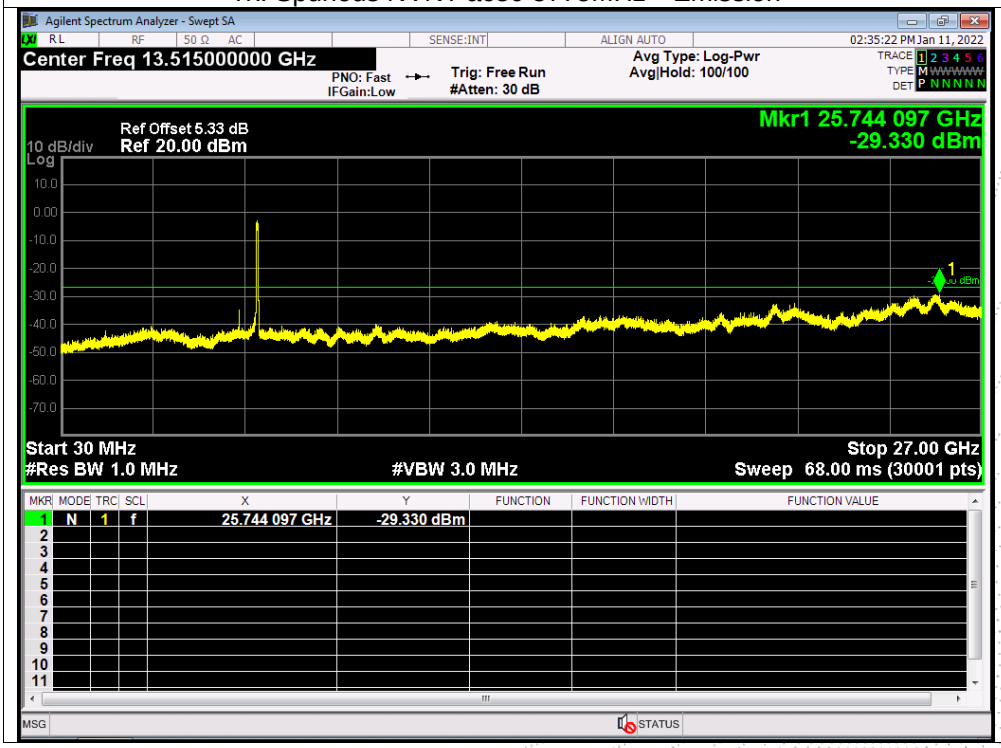
Tx. Spurious NVNT ac40 5755MHz Emission



Tx. Spurious NVNT ac40 5795MHz Emission



Tx. Spurious NVNT ac80 5775MHz Emission



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. fc is declaring of channel frequency. Then the frequency error formula is (fc-f)/fc × 106 ppm and he 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.

13.4 Test Result

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	AC120V/60Hz
Test Mode:	TX (5.1G) Mode 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	5180.0196	5180	0.0196	3.7789
		V max (V)	138.00	5180.0186	5180	0.0186	3.5828
		V min (V)	102.00	5180.0181	5180	0.0181	3.4942
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)	120	T (°C)	-20	5180.0008	5180	0.0008	0.1557
		T (°C)	-10	5180.0075	5180	0.0075	1.4451
		T (°C)	0	5180.0082	5180	0.0082	1.5887
		T (°C)	10	5180.0077	5180	0.0077	1.4827
		T (°C)	20	5180.0082	5180	0.0082	1.5789
		T (°C)	30	5180.0088	5180	0.0088	1.6898
		T (°C)	40	5180.0120	5180	0.0120	2.3145
		T (°C)	50	5180.0080	5180	0.0080	1.5380
		T (°C)	60	5180.0129	5180	0.0129	2.4952
		T (°C)	70	5180.0008	5180	0.0008	0.1578
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	5200.0130	5200	0.0130	2.4954
		V max (V)	138.00	5200.0103	5200	0.0103	1.9800
		V min (V)	102.00	5200.0044	5200	0.0044	0.8544
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)	120	T (°C)	-20	5200.00209	5200	0.00209	0.4022
		T (°C)	-10	5200.00501	5200	0.00501	0.9627
		T (°C)	0	5200.00261	5200	0.00261	0.5018
		T (°C)	10	5200.00193	5200	0.00193	0.3712
		T (°C)	20	5200.01175	5200	0.01175	2.2604
		T (°C)	30	5200.01205	5200	0.01205	2.3166
		T (°C)	40	5200.00607	5200	0.00607	1.1671
		T (°C)	50	5200.00198	5200	0.00198	0.3808
		T (°C)	60	5200.00803	5200	0.00803	1.5446
		T (°C)	70	5200.01212	5200	0.01212	2.3310
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	5240.0048	5240	0.0048	0.9255
		V max (V)	138.00	5240.0074	5240	0.0074	1.4201
		V min (V)	102.00	5240.0070	5240	0.0070	1.3427
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)	120	T (°C)	-20	5240.0043	5240	0.0043	0.8126
		T (°C)	-10	5240.0025	5240	0.0025	0.4857
		T (°C)	0	5240.0116	5240	0.0116	2.2071
		T (°C)	10	5240.0127	5240	0.0127	2.4267
		T (°C)	20	5240.0015	5240	0.0015	0.2850
		T (°C)	30	5240.0096	5240	0.0096	1.8242
		T (°C)	40	5240.0103	5240	0.0103	1.9730
		T (°C)	50	5240.0134	5240	0.0134	2.5484
		T (°C)	60	5240.0117	5240	0.0117	2.2235
		T (°C)	70	5240.0044	5240	0.0044	0.8412
Limits				5150-5250 MHz			
Result				Complies			

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	AC120V/60Hz
Test Mode:	TX (5.8G) Mode Frequency U-NII-3 (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	5745.00227	5745	0.00227	0.3946
		V max (V)	138.00	5745.00495	5745	0.00495	0.8620
		V min (V)	102.00	5745.00011	5745	0.00011	0.0198
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)	120	T (°C)	-20	5745.00580	5745	0.00580	1.0094
		T (°C)	-10	5745.00292	5745	0.00292	0.5081
		T (°C)	0	5745.00952	5745	0.00952	1.6563
		T (°C)	10	5745.00394	5745	0.00394	0.6852
		T (°C)	20	5745.00842	5745	0.00842	1.4654
		T (°C)	30	5745.00470	5745	0.00470	0.8179
		T (°C)	40	5745.00212	5745	0.00212	0.3698
		T (°C)	50	5745.00586	5745	0.00586	1.0192
		T (°C)	60	5745.00044	5745	0.00044	0.0760
		T (°C)	70	5745.00248	5745	0.00248	0.4312
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	5785.00456	5785	0.00456	0.7891
		V max (V)	138.00	5785.00218	5785	0.00218	0.3771
		V min (V)	102.00	5785.00810	5785	0.00810	1.4007
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)	120	T (°C)	-20	5785.00766	5785	0.00766	1.3245
		T (°C)	-10	5785.00118	5785	0.00118	0.2032
		T (°C)	0	5785.00789	5785	0.00789	1.3641
		T (°C)	10	5785.00749	5785	0.00749	1.2945
		T (°C)	20	5785.00183	5785	0.00183	0.3169
		T (°C)	30	5785.00639	5785	0.00639	1.1050
		T (°C)	40	5785.00725	5785	0.00725	1.2534
		T (°C)	50	5785.01277	5785	0.01277	2.2080
		T (°C)	60	5785.00592	5785	0.00592	1.0238
		T (°C)	70	5785.01001	5785	0.01001	1.7311
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	5825.00126	5825	0.00126	0.2163
		V max (V)	138.00	5825.00958	5825	0.00958	1.6450
		V min (V)	102.00	5825.01314	5825	0.01314	2.2551
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)	120	T (°C)	-20	5825.00540	5825	0.00540	0.9267
		T (°C)	-10	5825.00578	5825	0.00578	0.9927
		T (°C)	0	5825.00194	5825	0.00194	0.3330
		T (°C)	10	5825.01056	5825	0.01056	1.8129
		T (°C)	20	5825.01102	5825	0.01102	1.8914
		T (°C)	30	5825.00386	5825	0.00386	0.6627
		T (°C)	40	5825.00930	5825	0.00930	1.5957
		T (°C)	50	5825.00236	5825	0.00236	0.4044
		T (°C)	60	5825.00367	5825	0.00367	0.6302
		T (°C)	70	5825.00238	5825	0.00238	0.4085
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 Antenna

The EUT antenna is Internal antenna (antenna gain: 1.78dBi). It comply with the standard requirement.

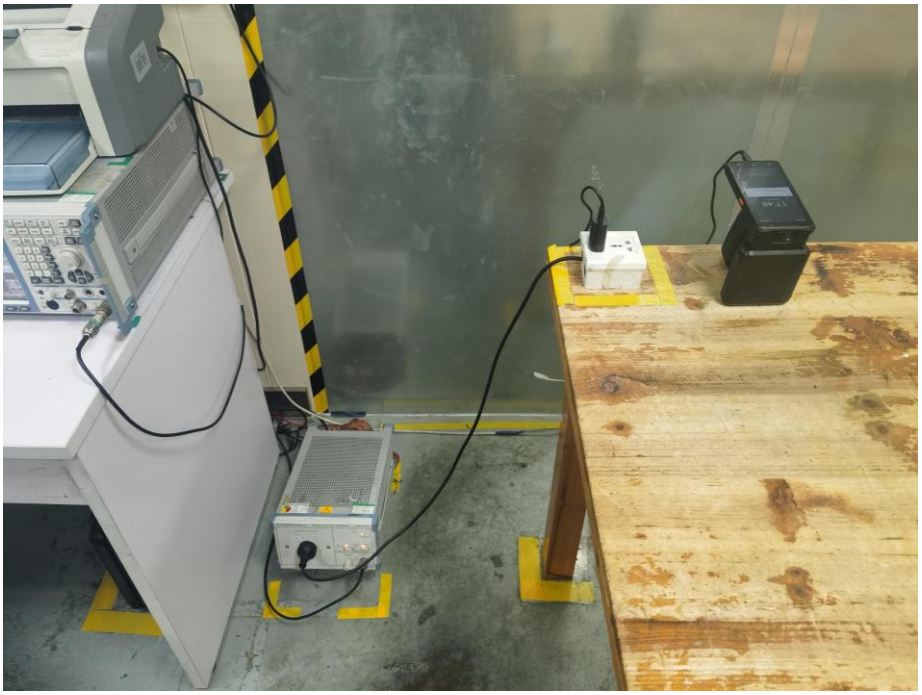
15. EUT Photographs

EUT Photo 1

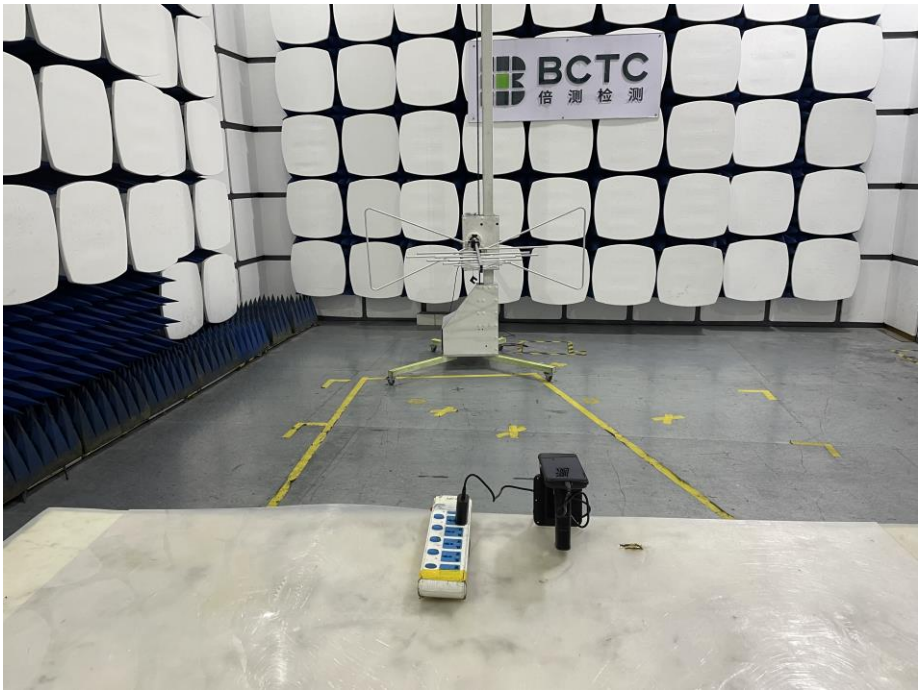
Appendix-Photographs Of EUT Constructional Details

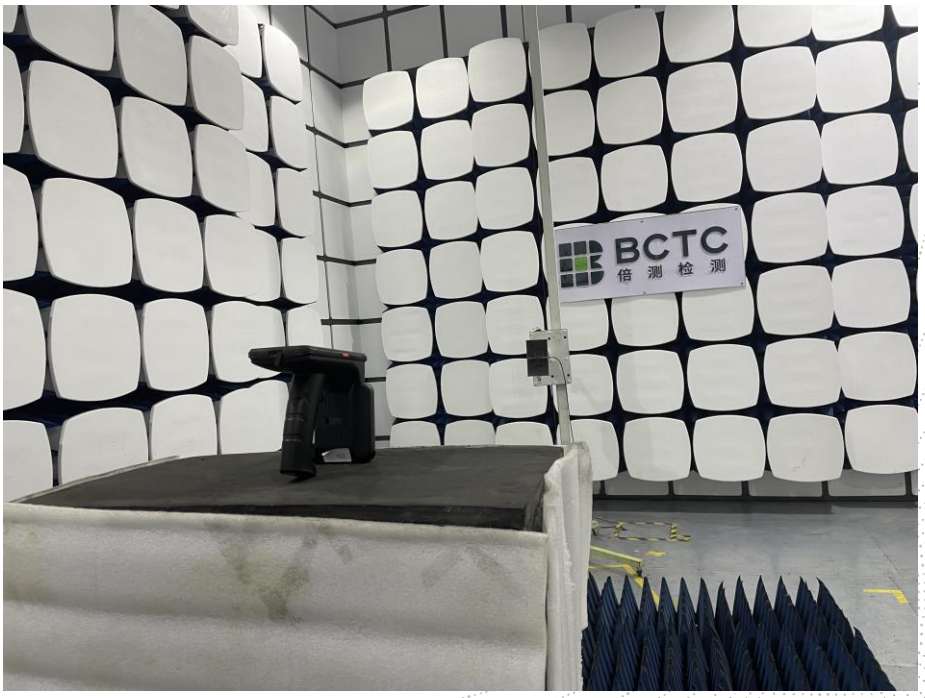
16. EUT Test Setup Photographs

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:
1-2/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** ※※※※※