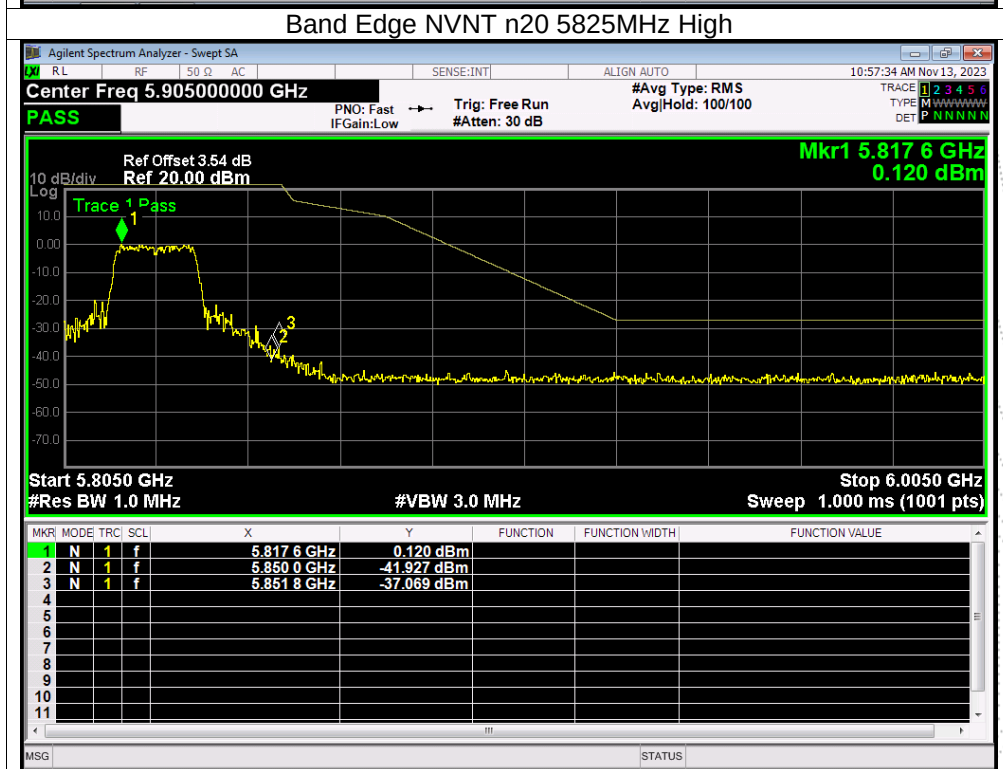
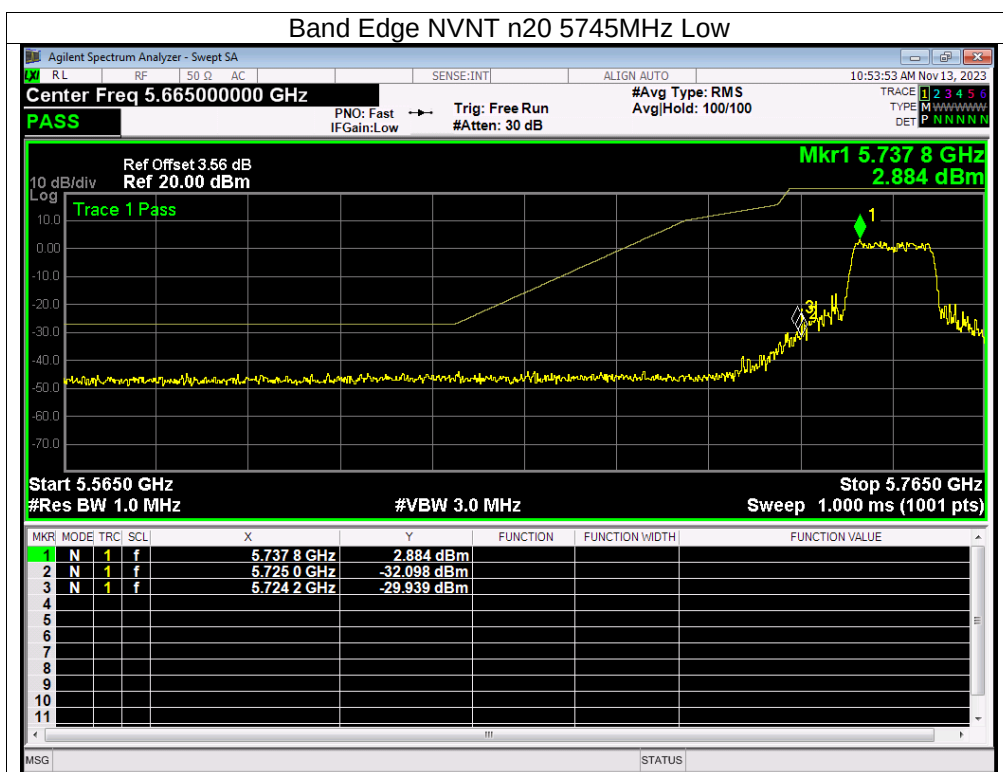
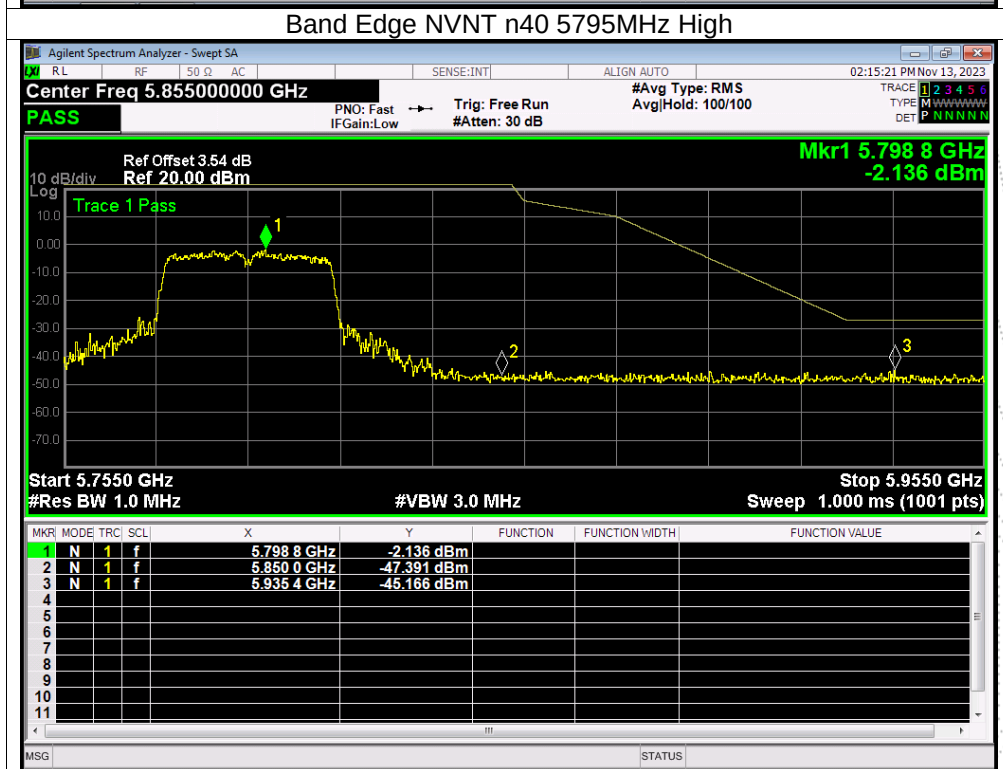
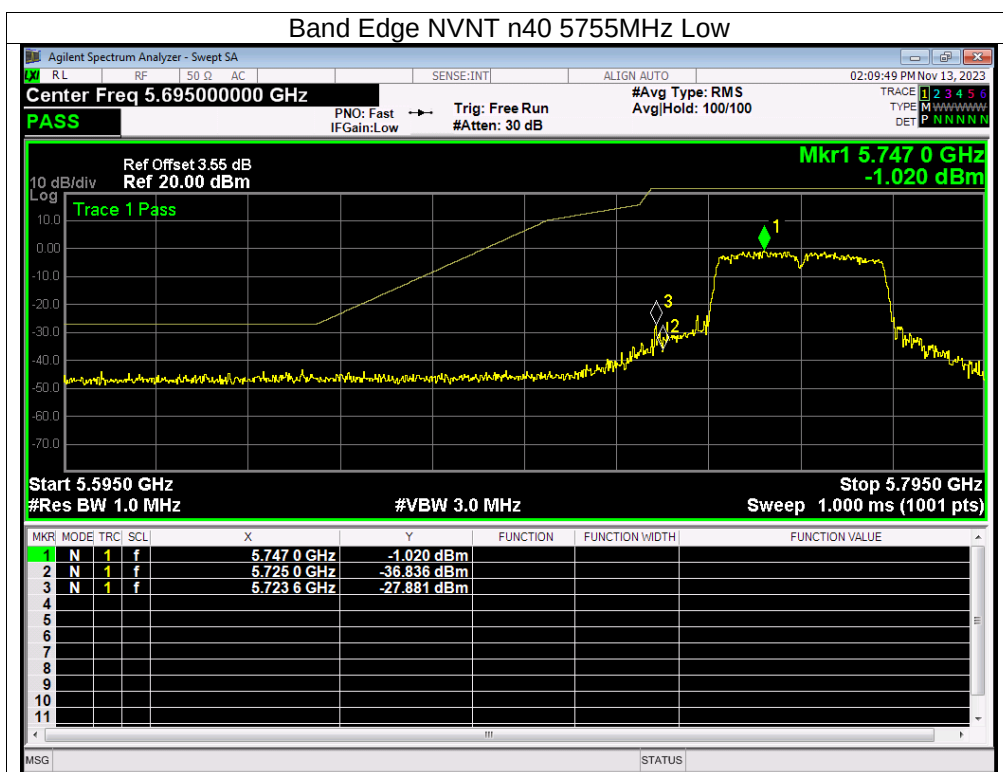
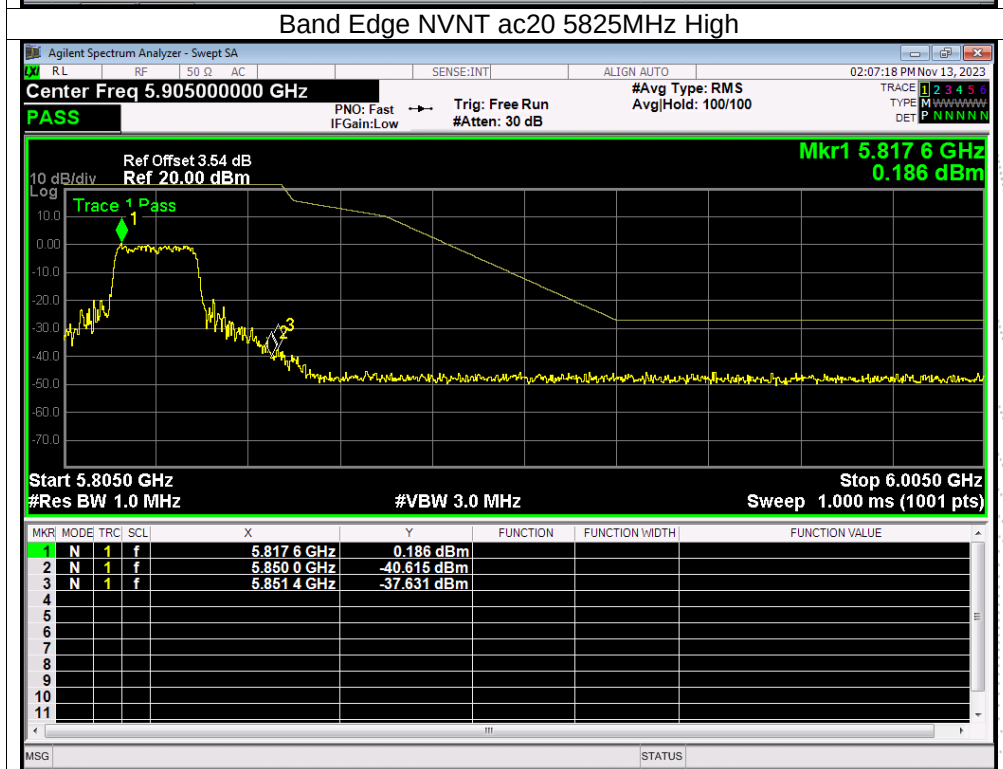
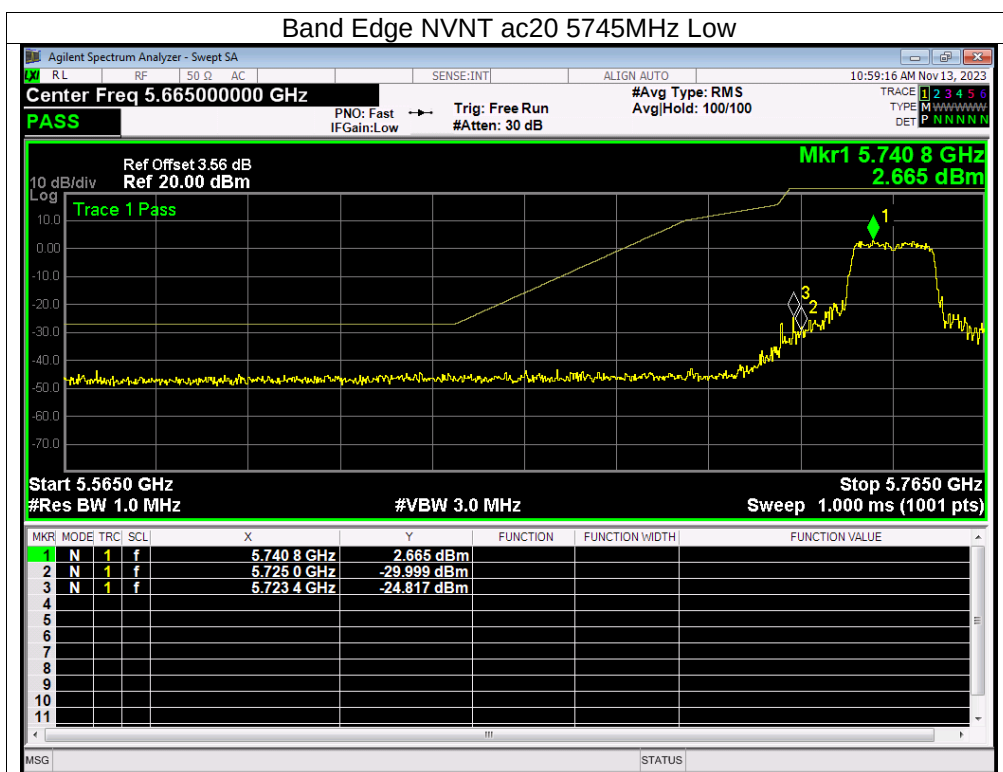
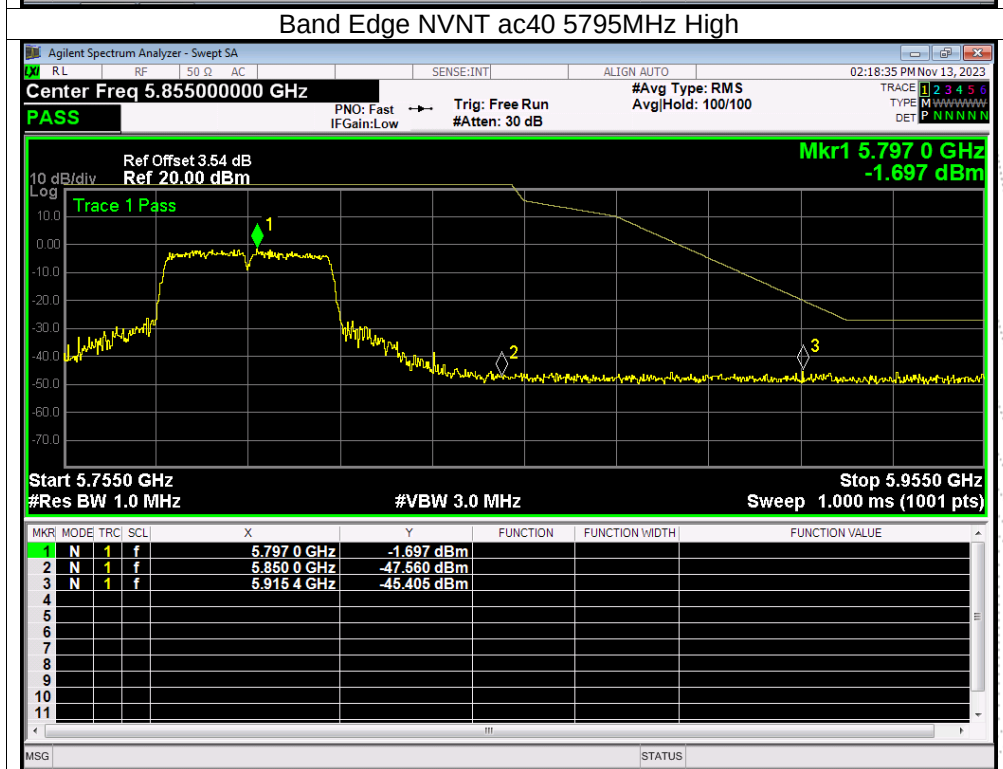
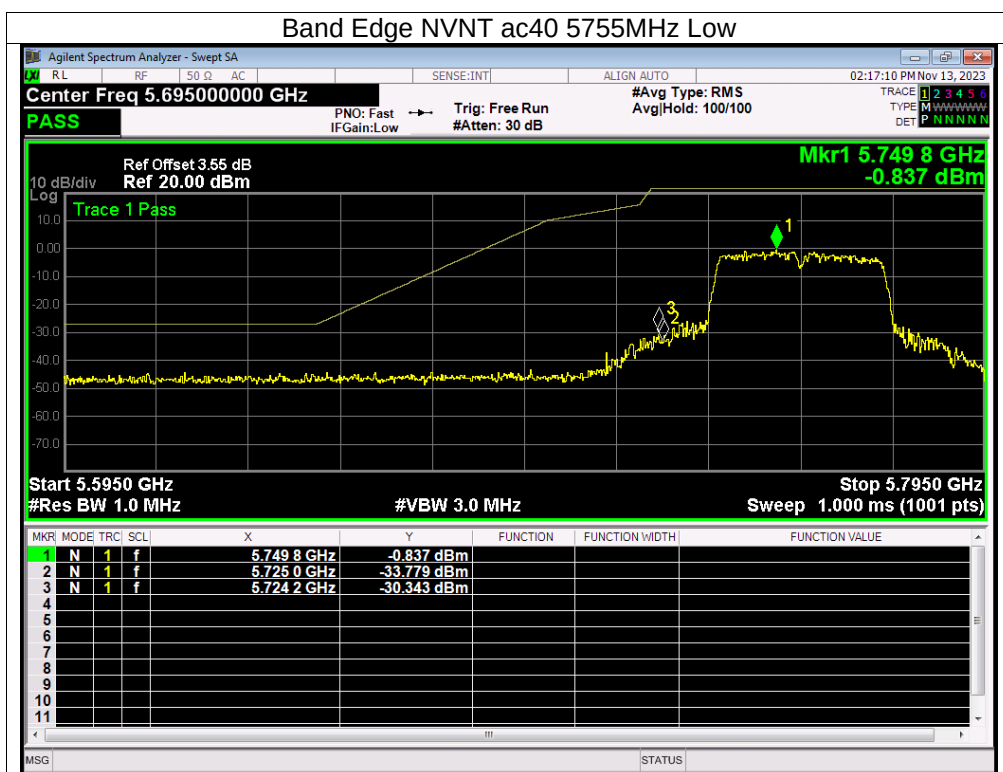
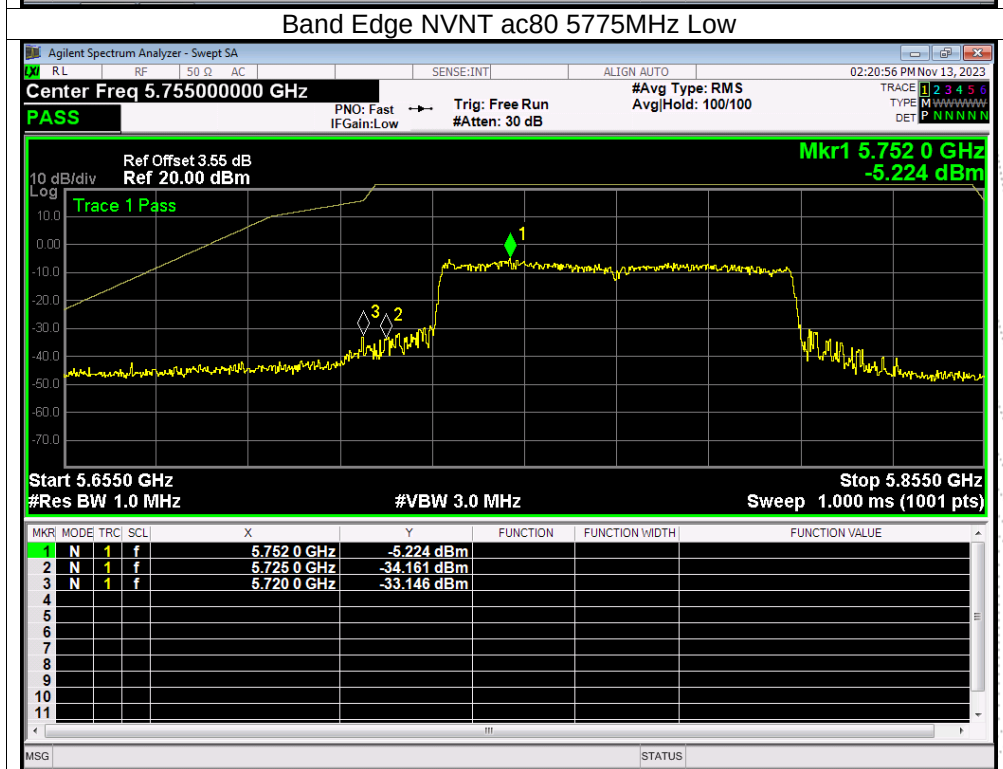
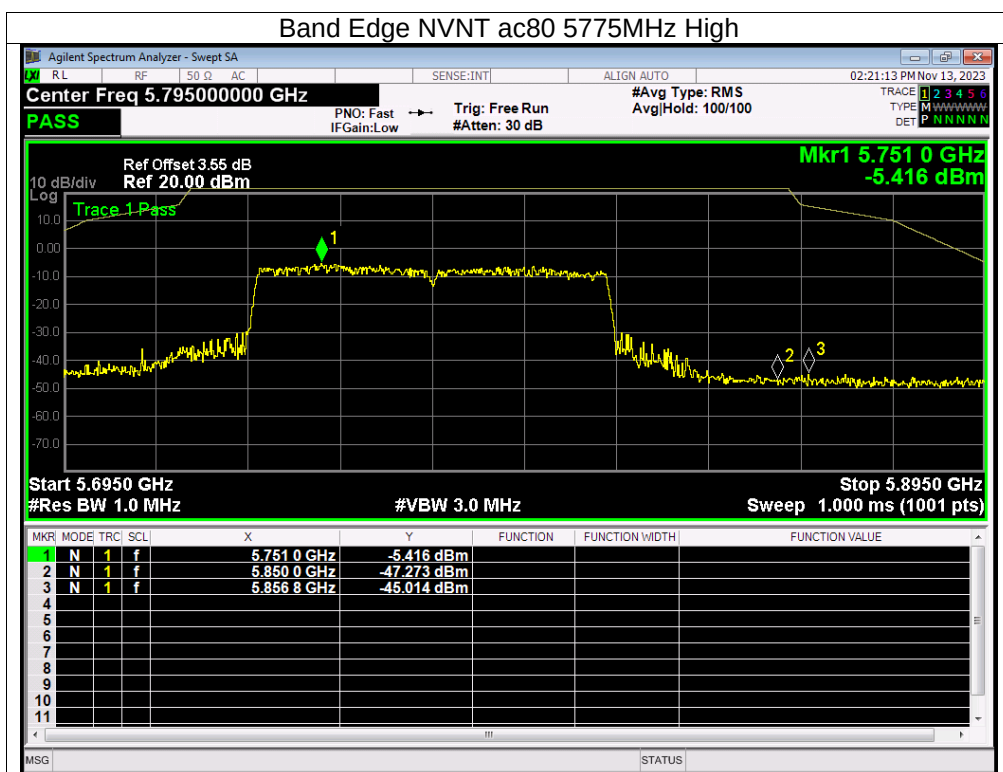












12. Spurious RF Conducted Emissions

12.1 Block Diagram Of Test Setup



12.2 Limit

Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(2) For transmitters operating in the 5.725-5.85 GHz band(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge..

12.3 Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Set RBW of spectrum analyzer to 1 MHz with a convenient frequency span.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.

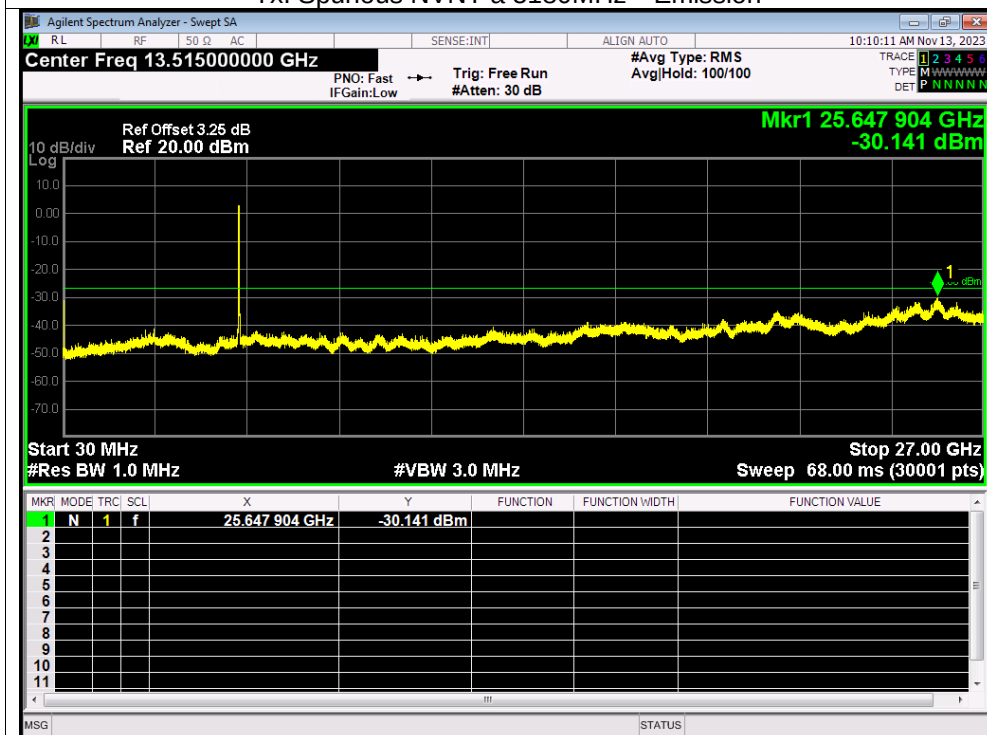
12.4 Test Result

Remark: The measurement frequency range is from 9KHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the spurious emissions and bandedge measurement data.

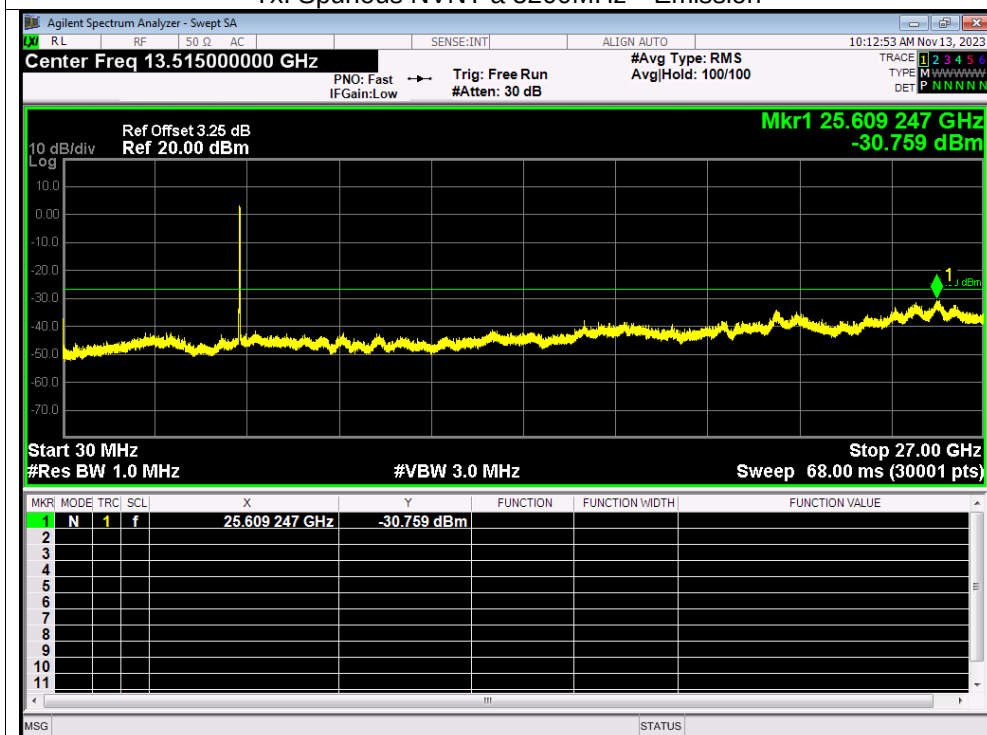
About: 26.5GHz-40GHz, The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

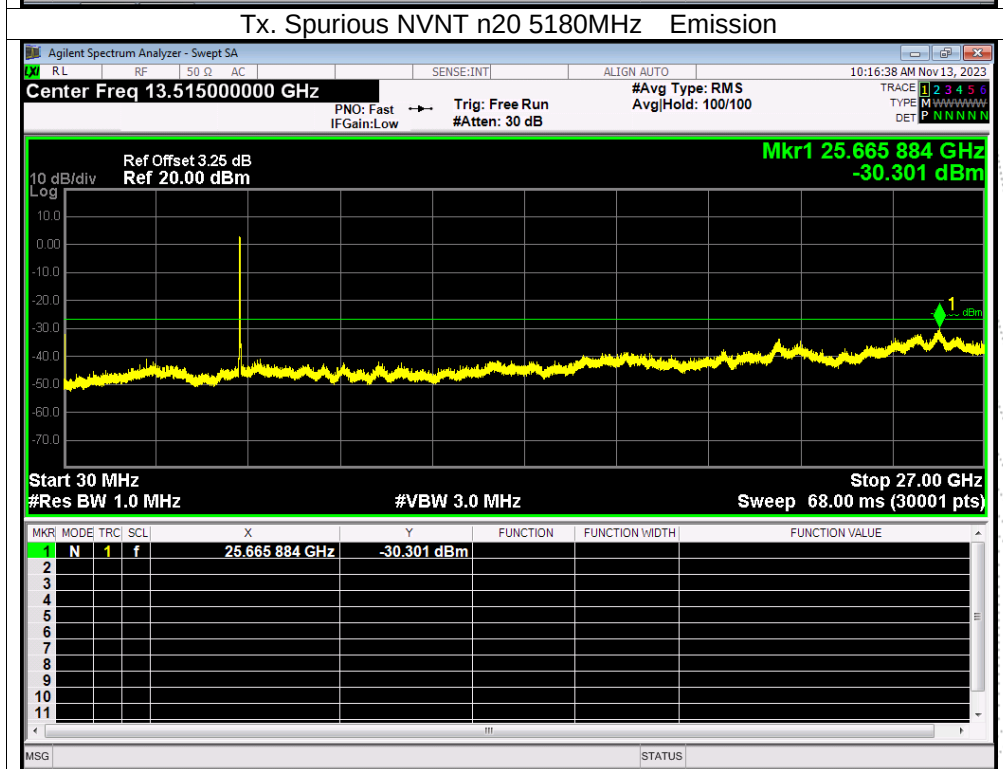
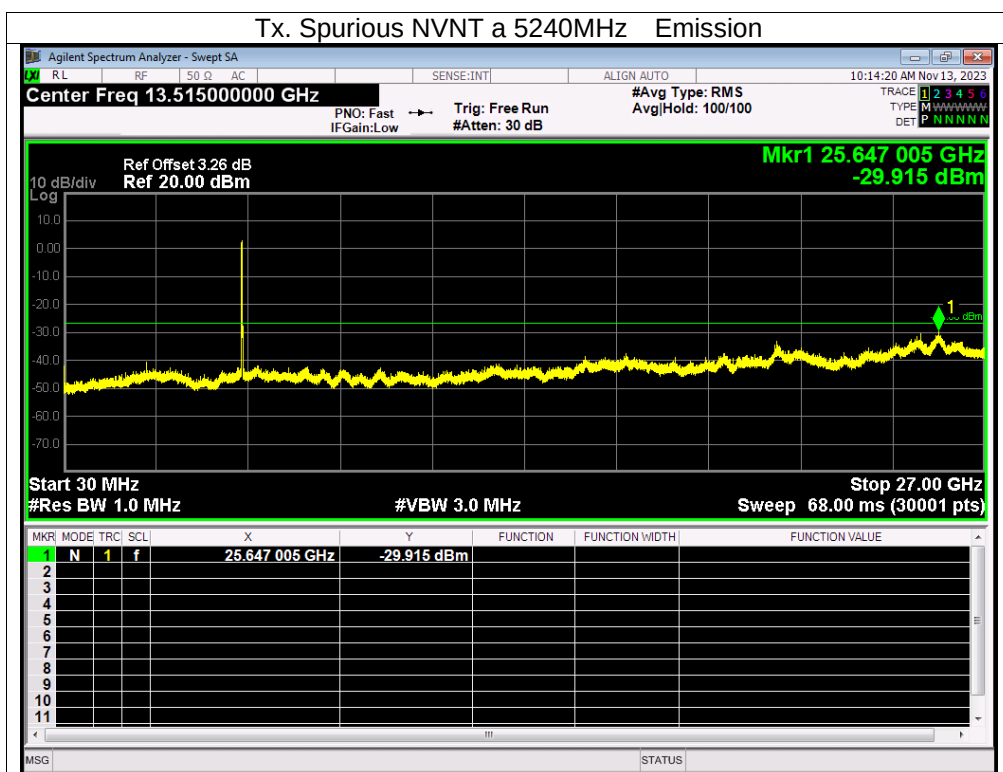
Test Graphs

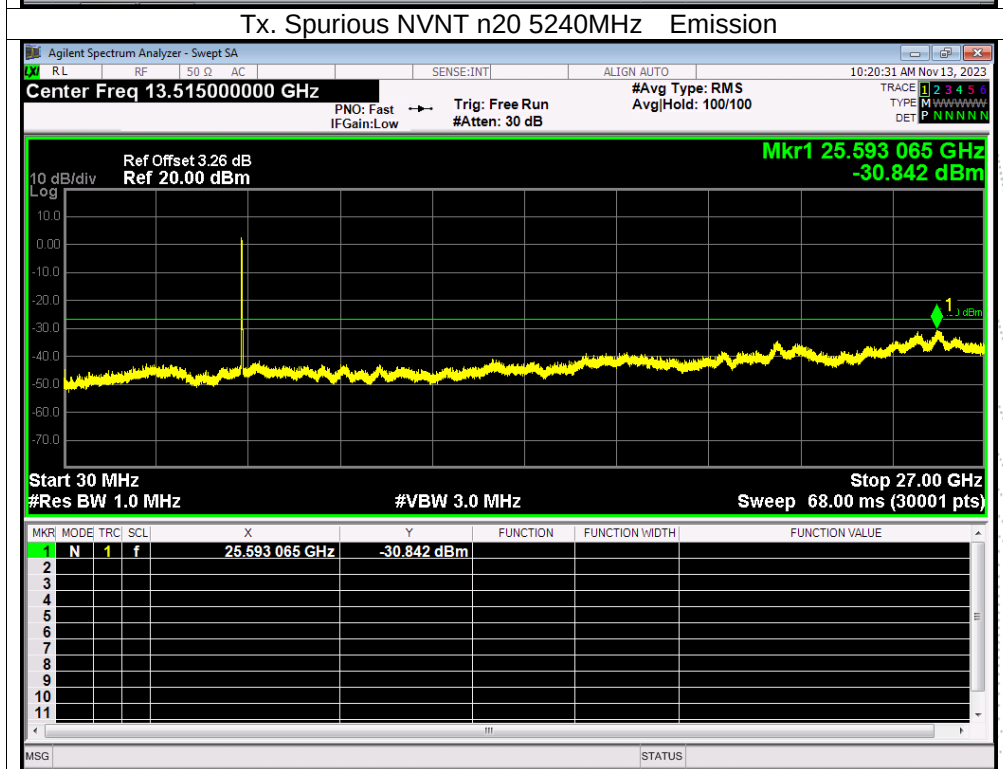
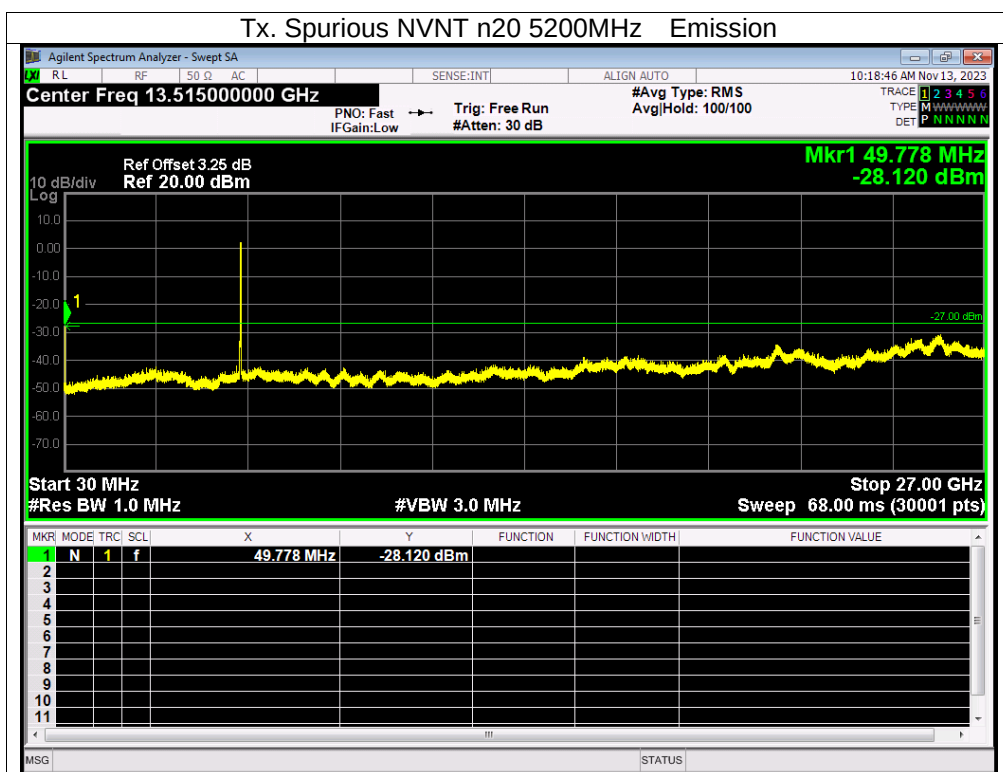
Tx. Spurious NVNT a 5180MHz Emission

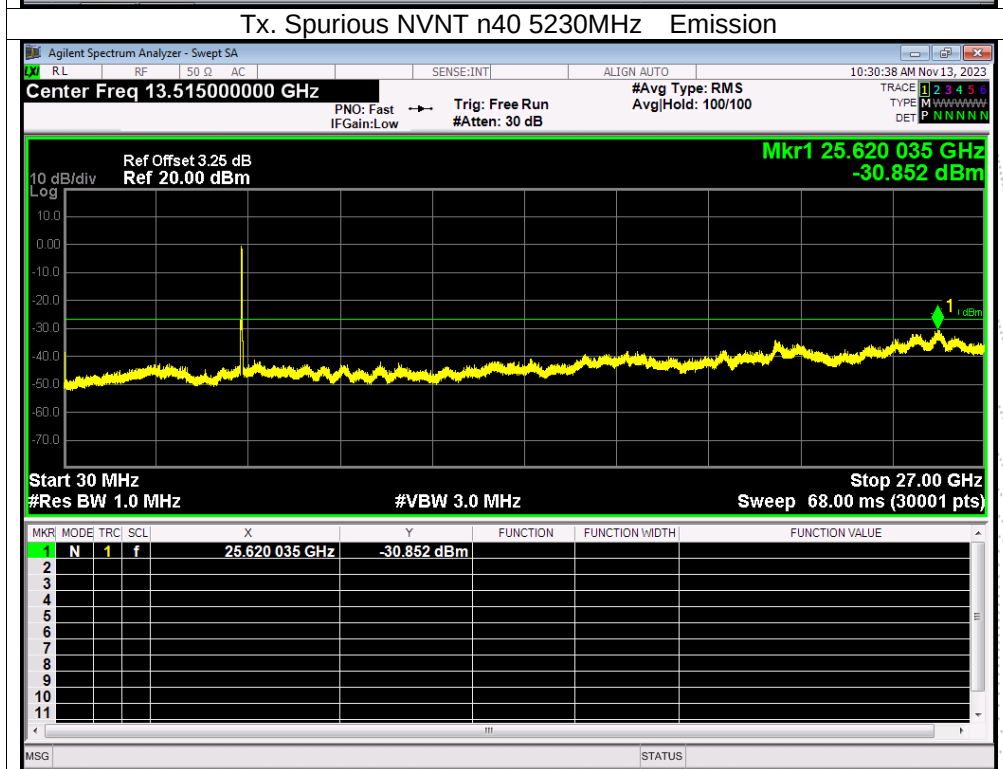
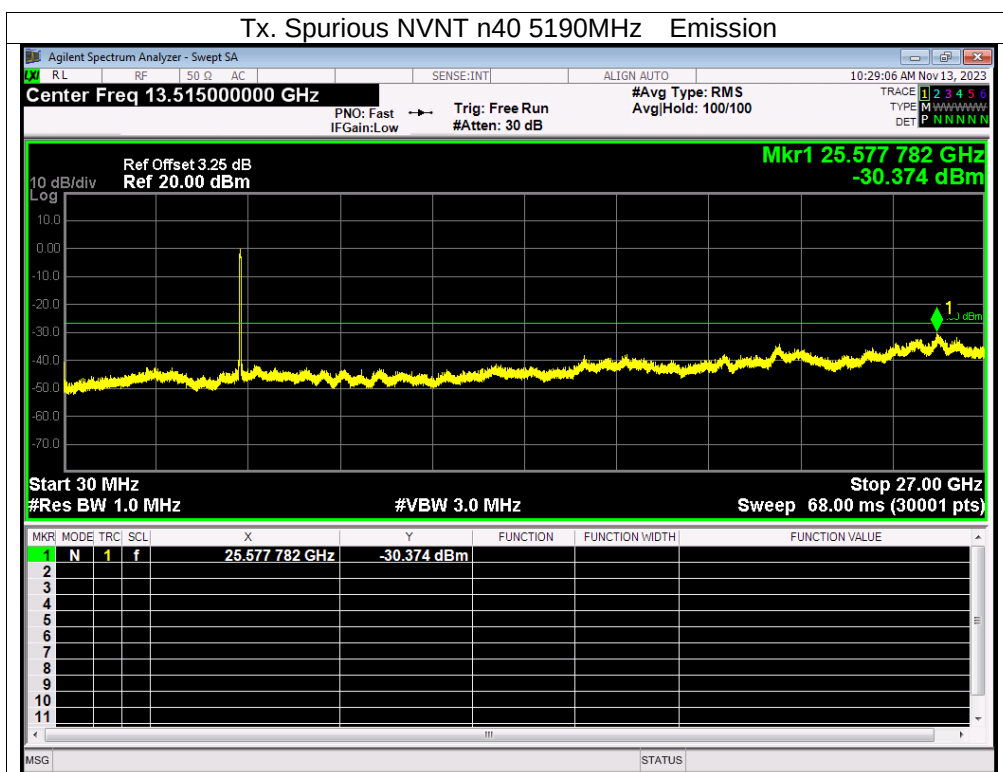


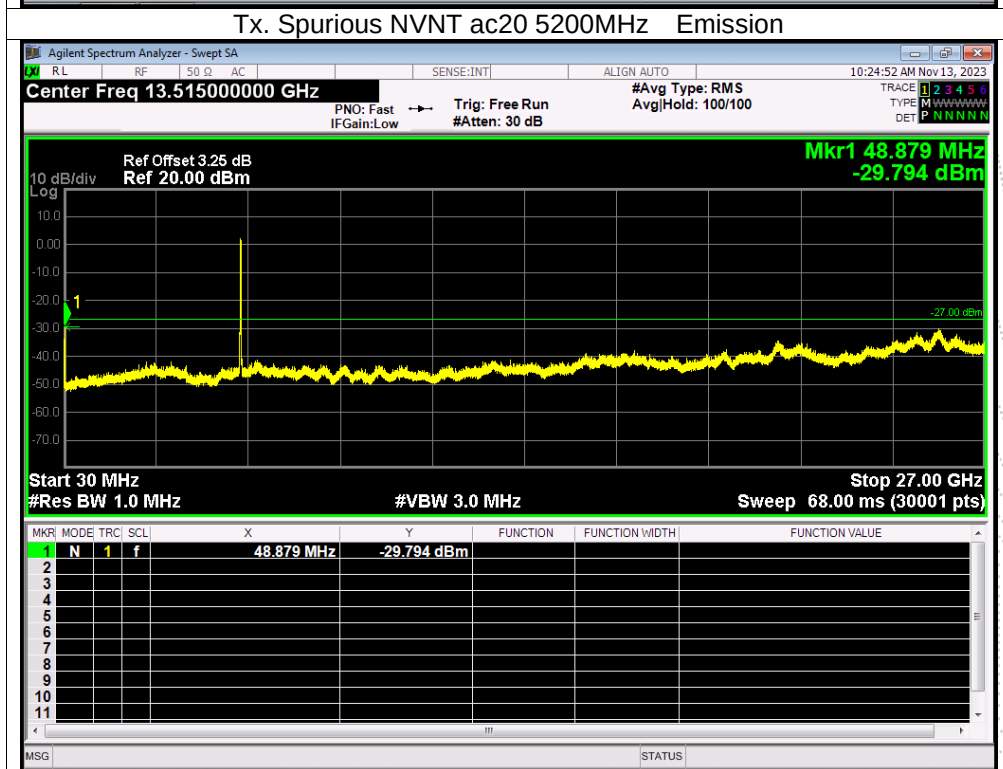
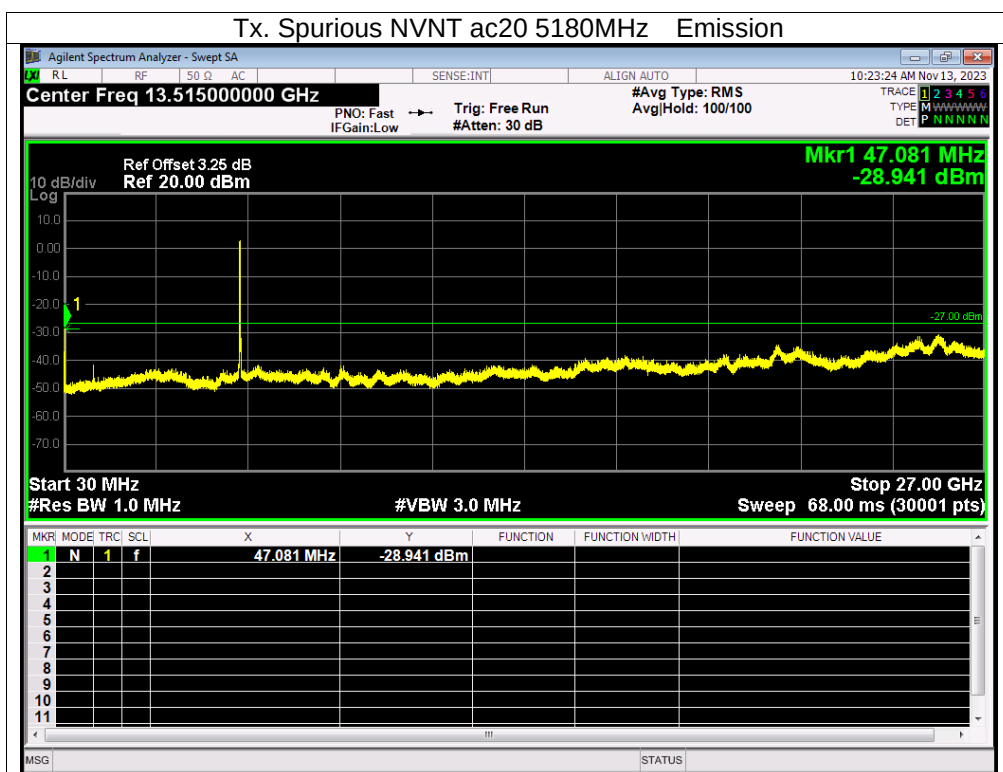
Tx. Spurious NVNT a 5200MHz Emission

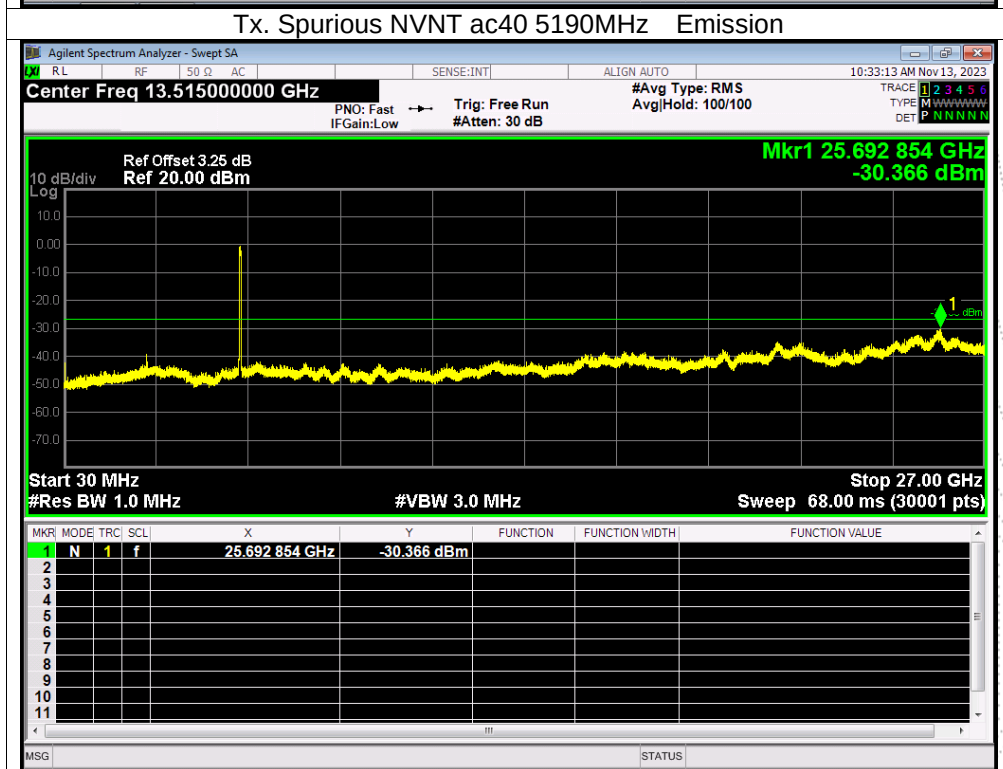
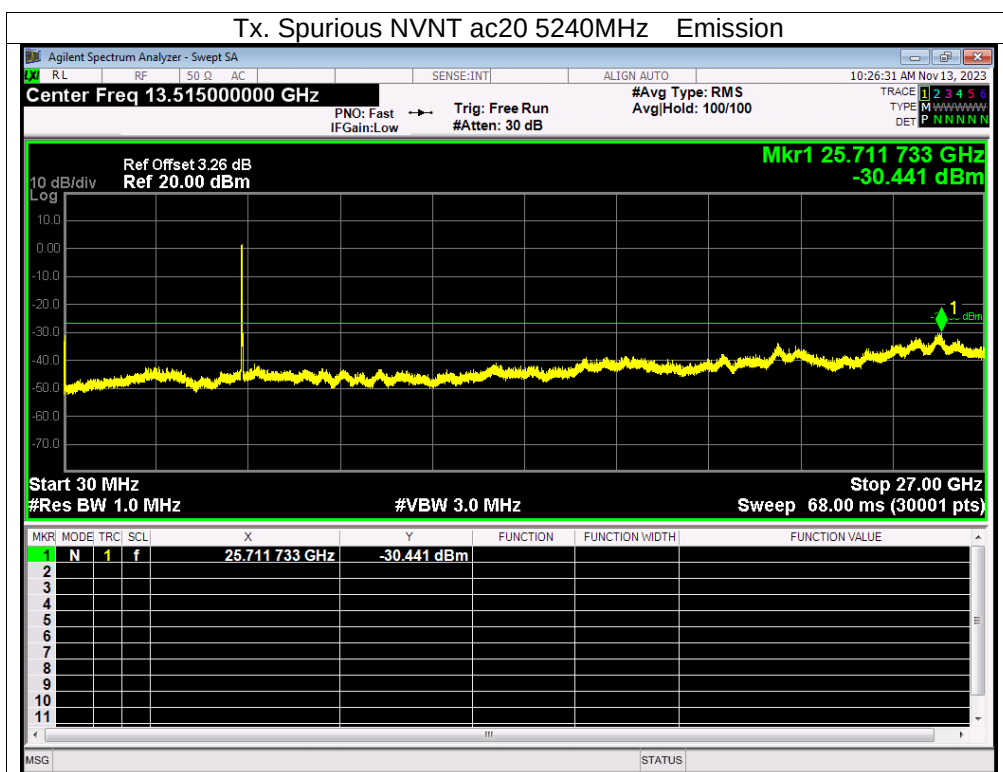


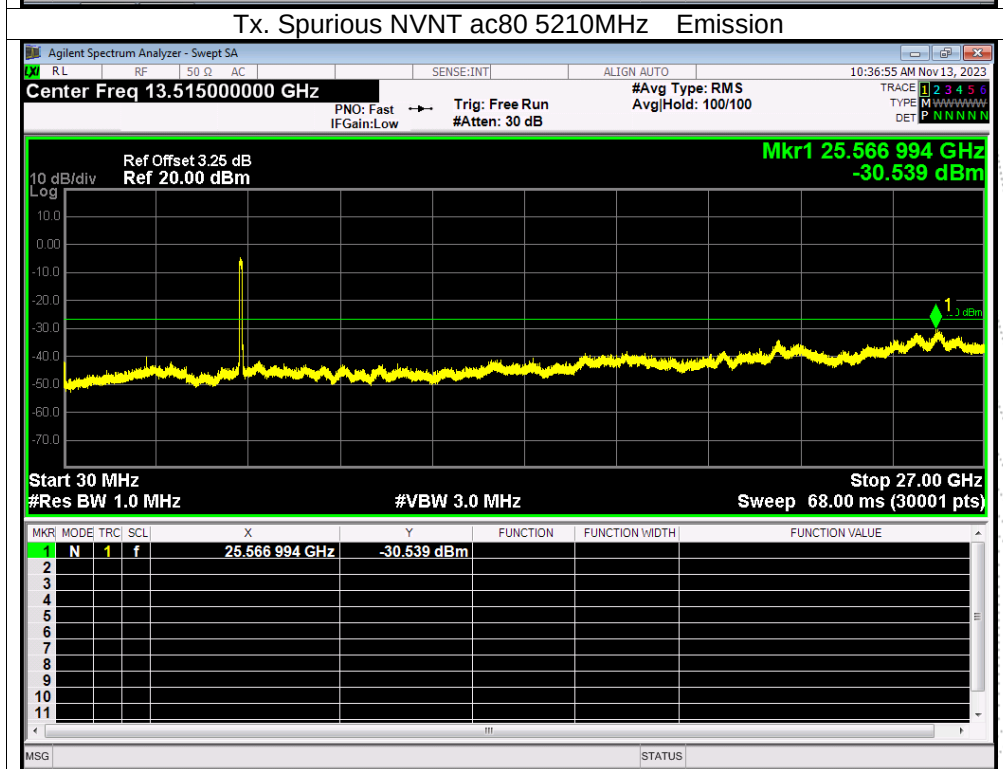
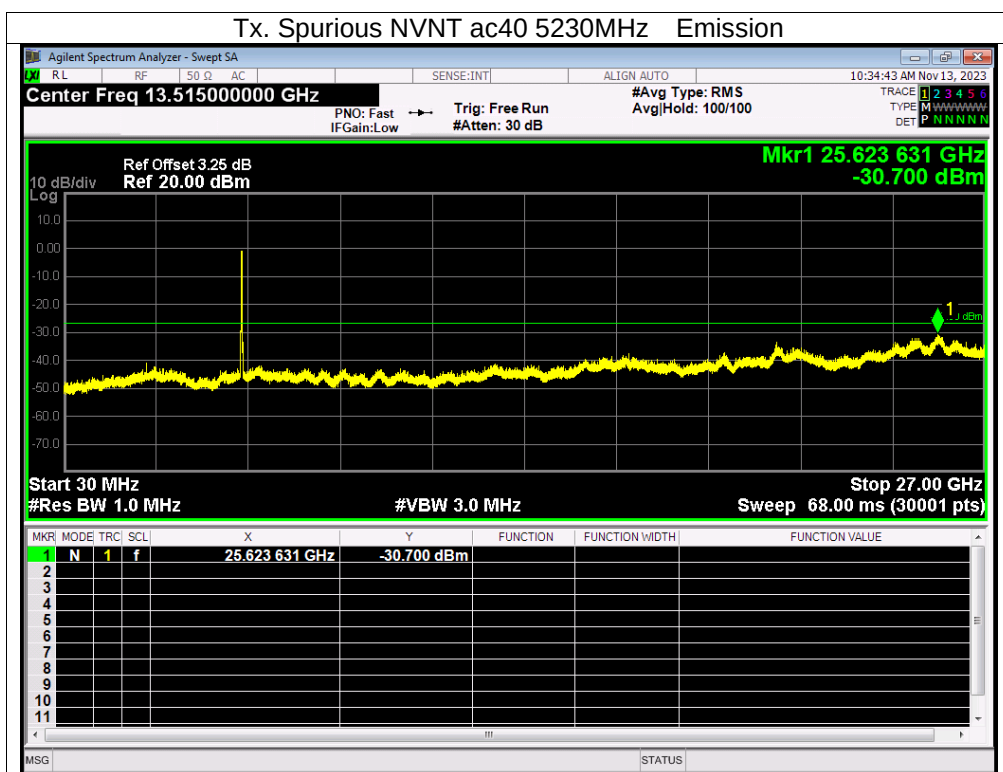






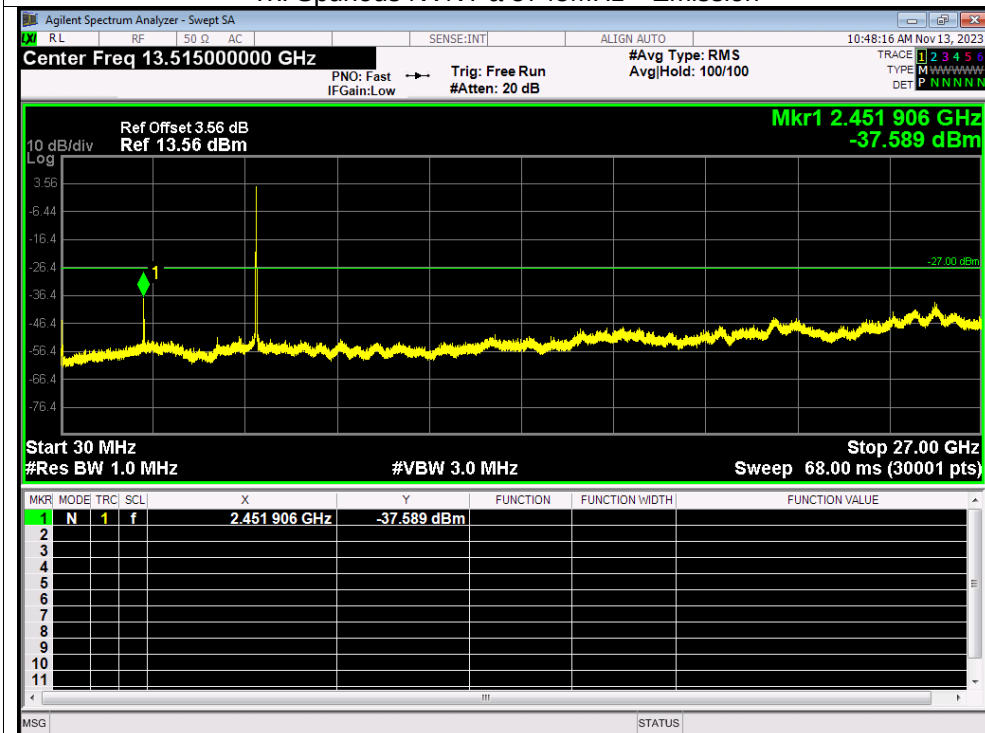




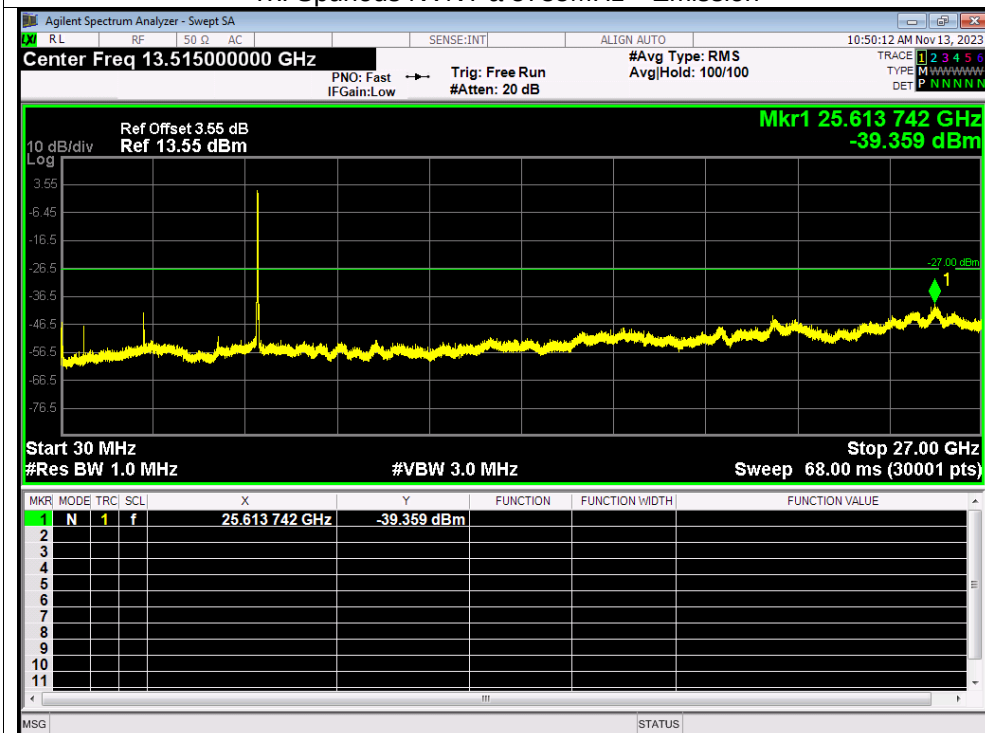


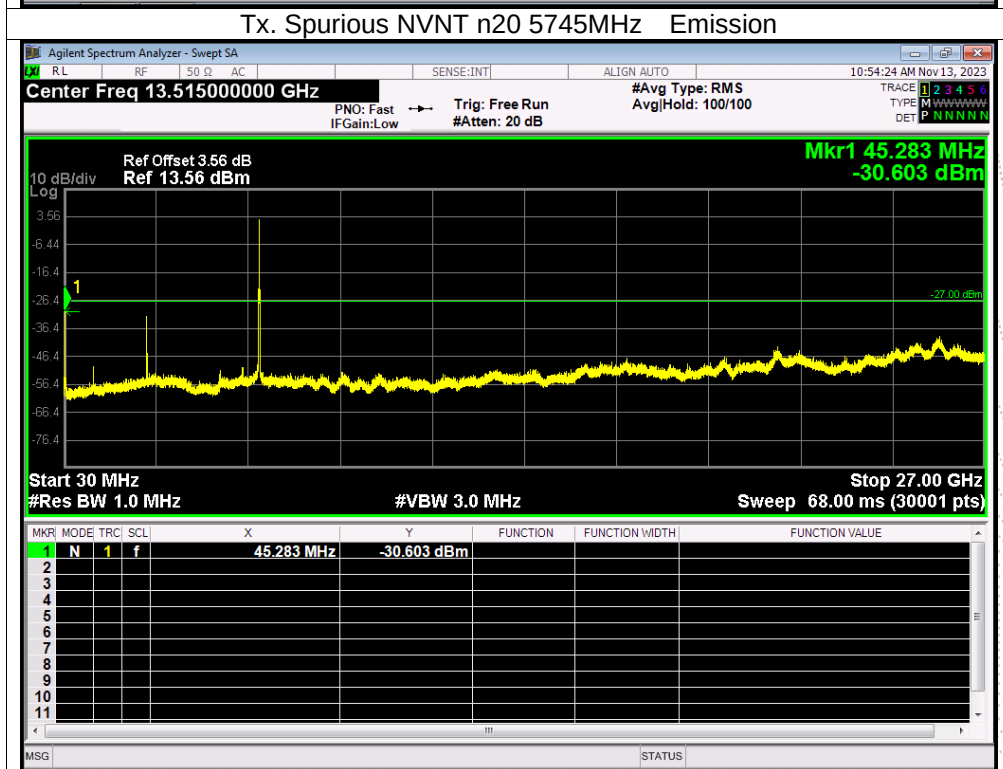
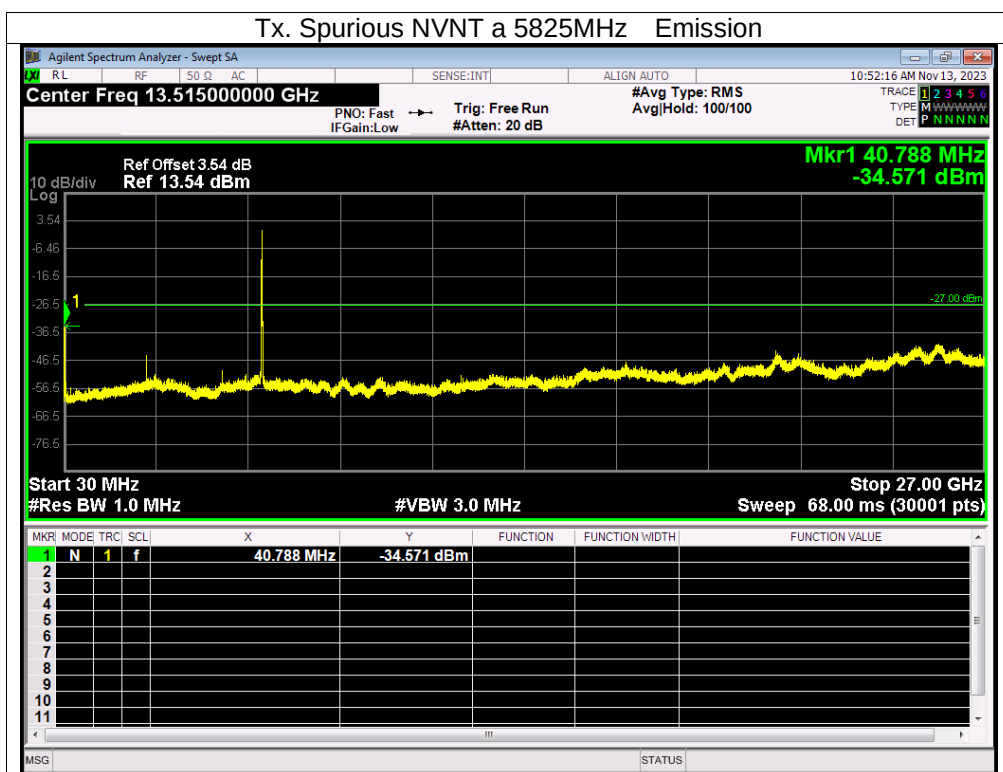
Test Graphs

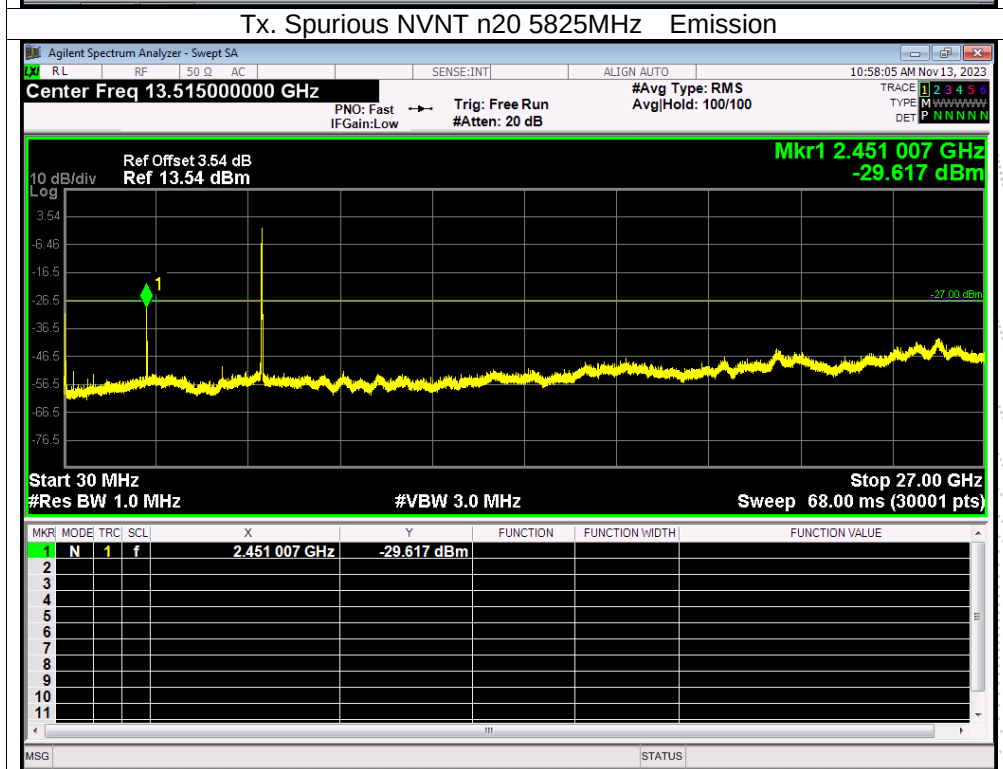
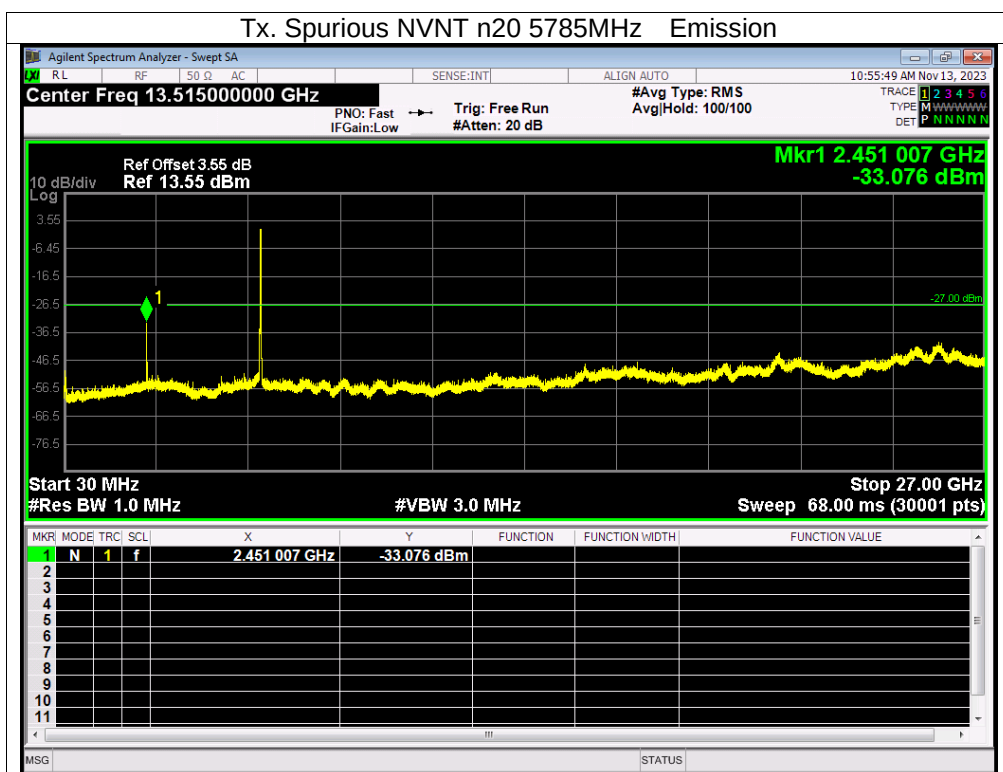
Tx. Spurious NVNT a 5745MHz Emission

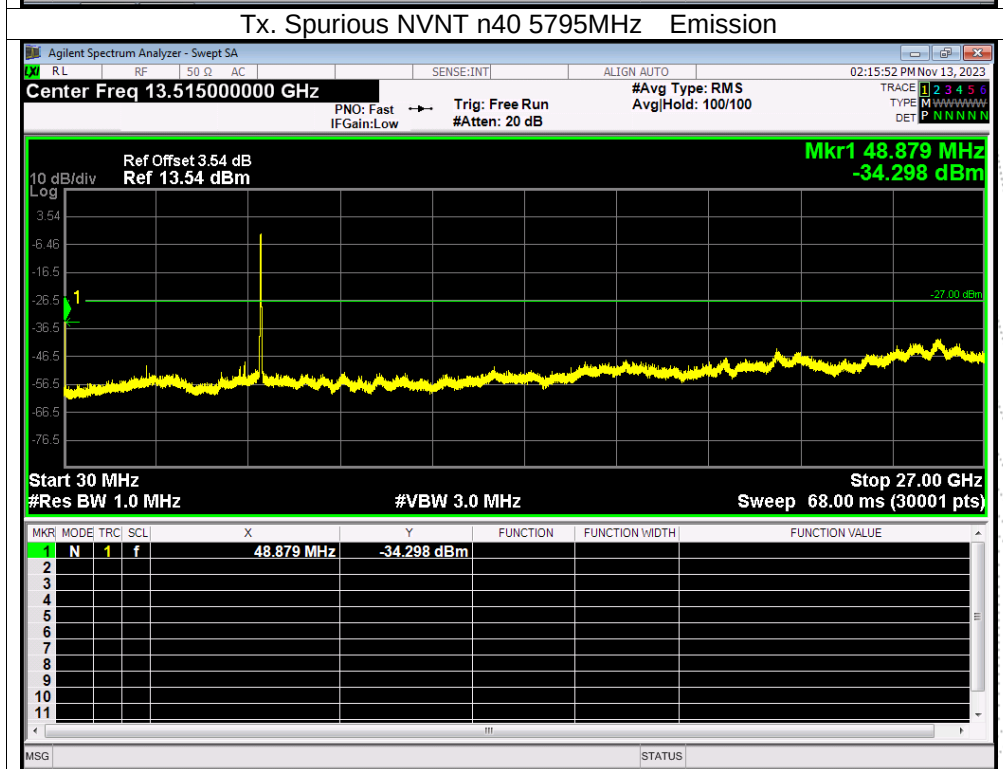
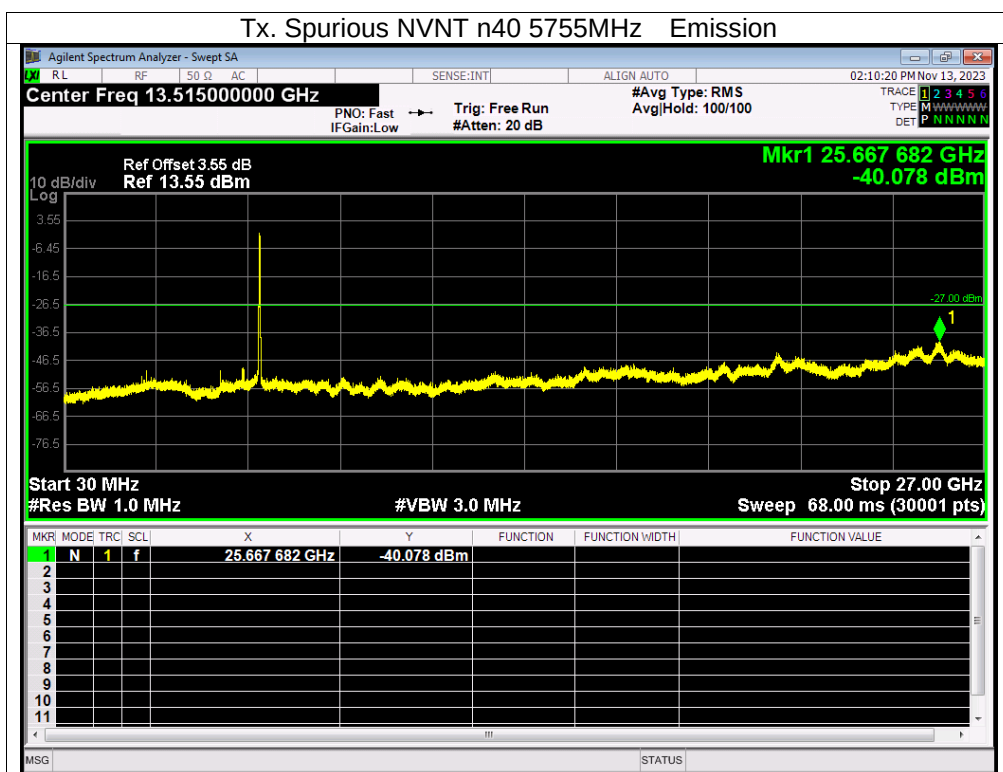


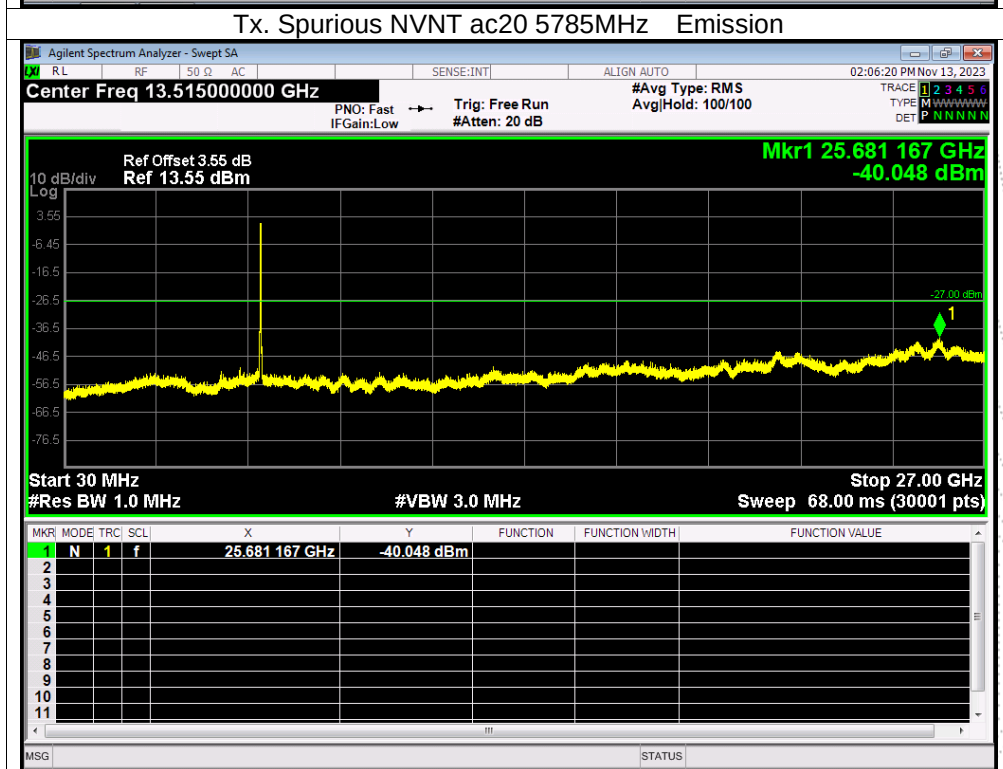
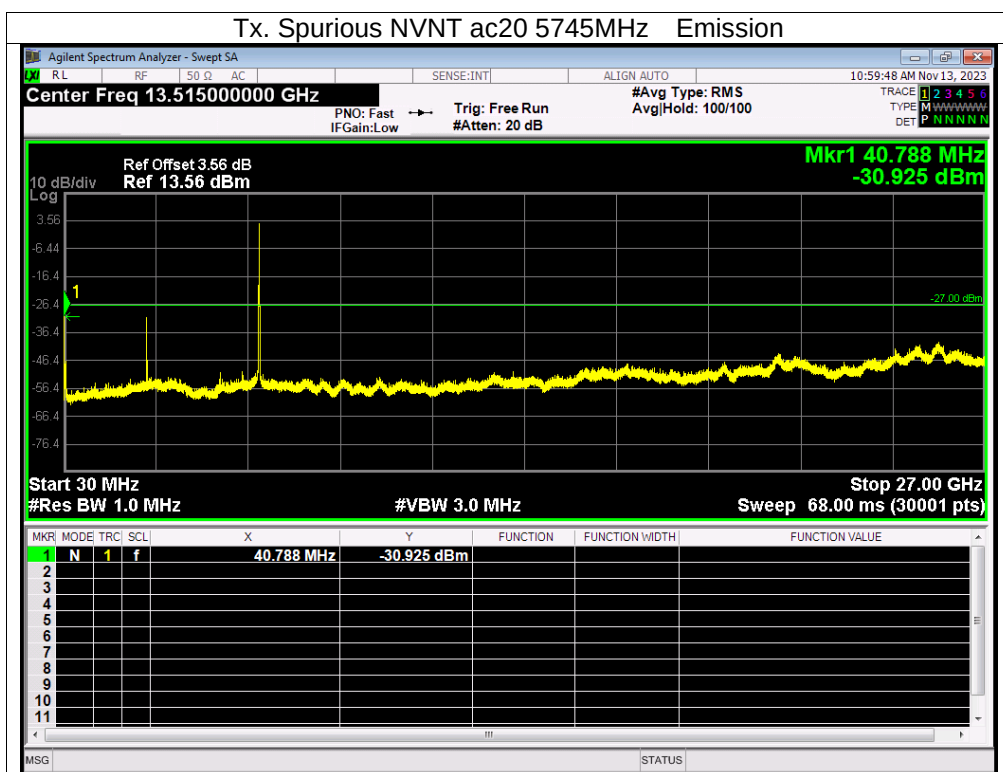
Tx. Spurious NVNT a 5785MHz Emission

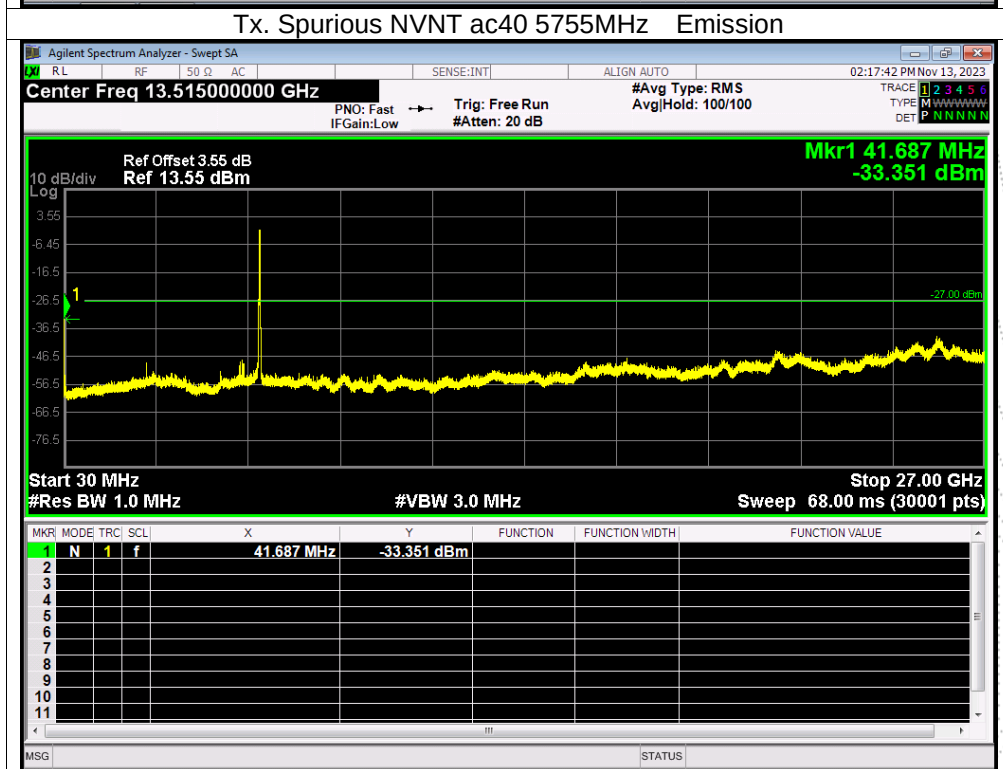
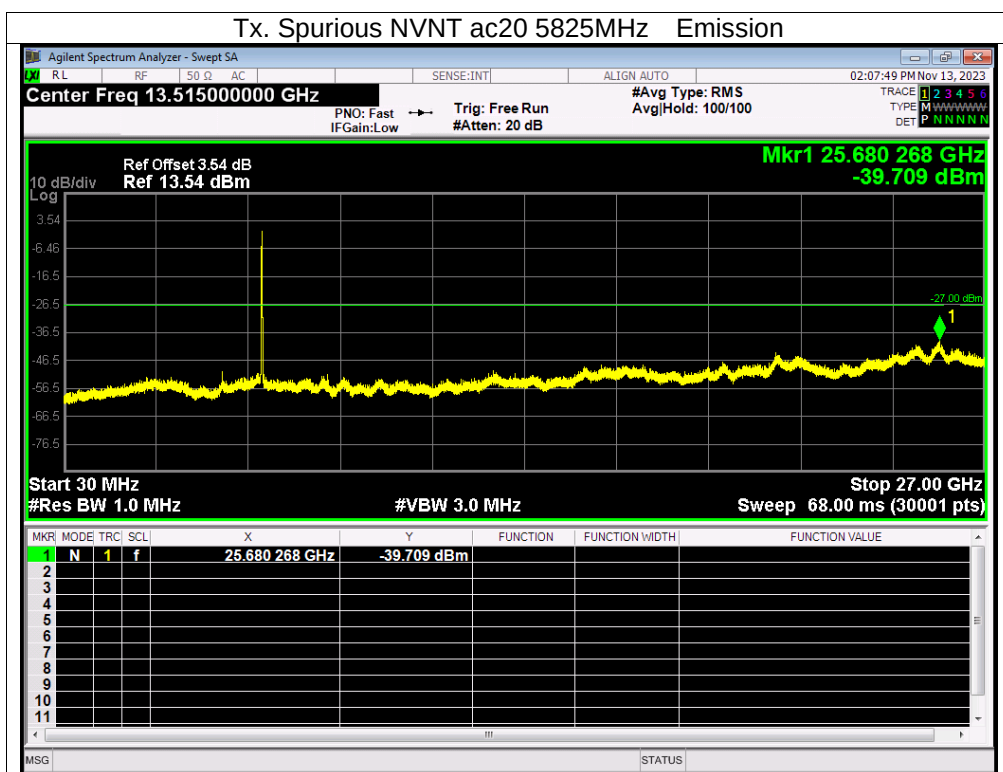


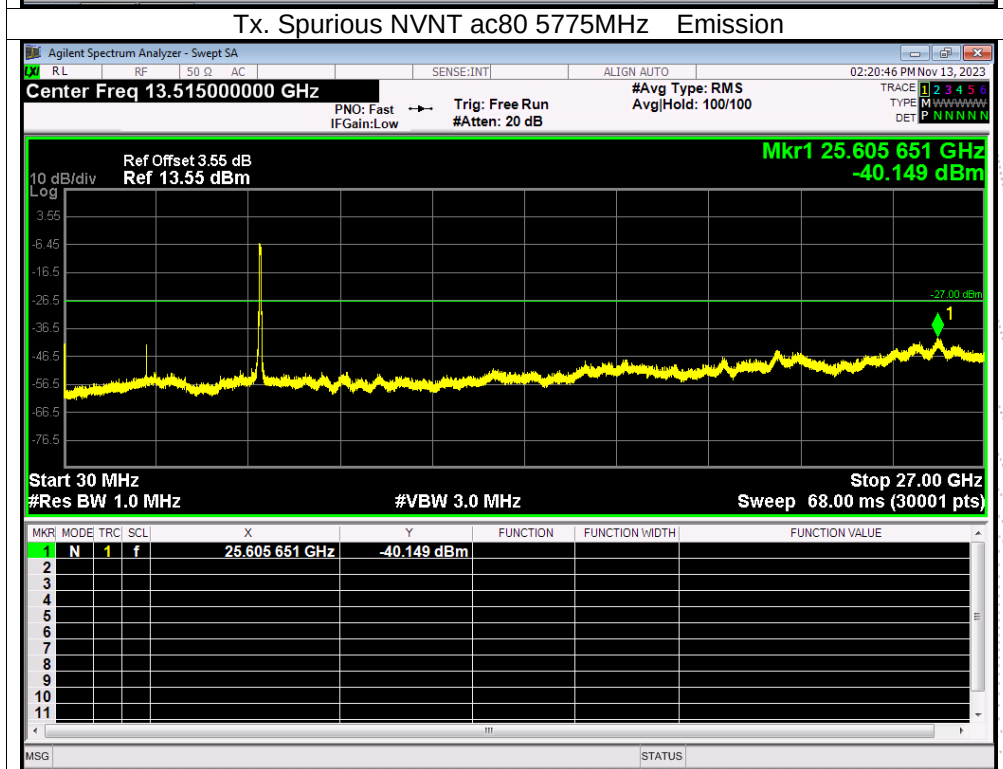
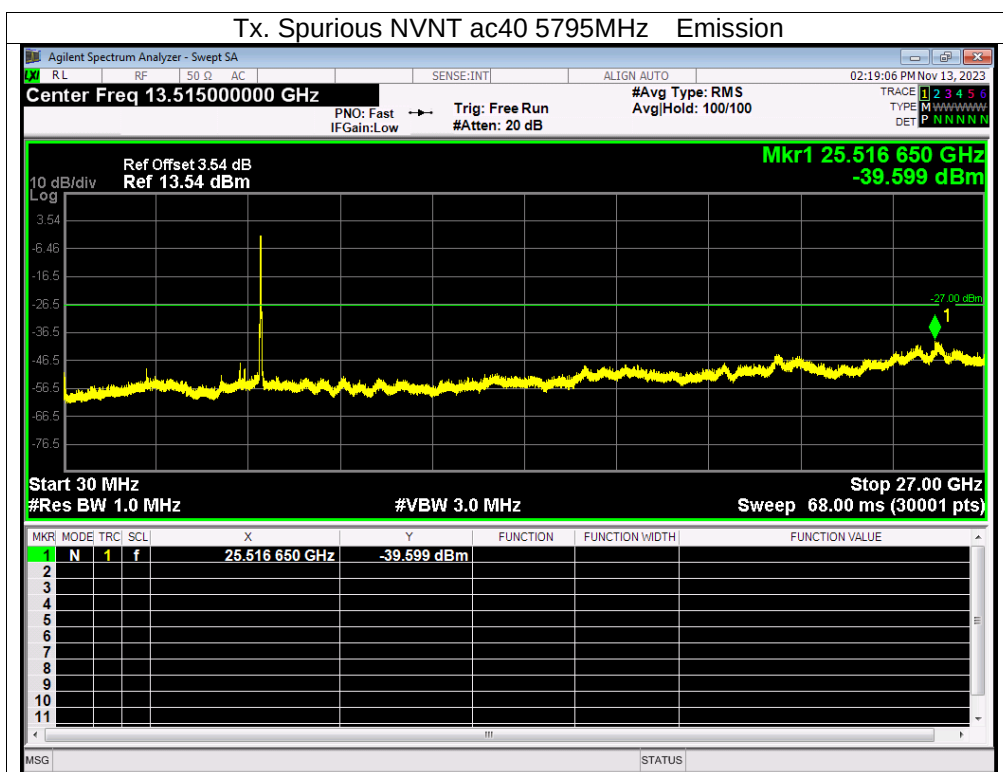












13. Frequency Stability Measurement

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. 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 3.8V
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)	3.8	5180.0012	5180	0.0012	0.2245
		V max (V)	4.37	5180.0075	5180	0.0075	1.4550
		V min (V)	3.23	5180.0006	5180	0.0006	0.1242
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)	3.8	T (°C)	-20	5180.0071	5180	0.0071	1.3735
		T (°C)	-10	5180.0119	5180	0.0119	2.2922
		T (°C)	0	5180.0008	5180	0.0008	0.1449
		T (°C)	10	5180.0133	5180	0.0133	2.5745
		T (°C)	20	5180.0112	5180	0.0112	2.1532
		T (°C)	30	5180.0080	5180	0.0080	1.5460
		T (°C)	40	5180.0124	5180	0.0124	2.3886
		T (°C)	50	5180.0128	5180	0.0128	2.4800
		T (°C)	60	5180.0031	5180	0.0031	0.6037
		T (°C)	70	5180.0009	5180	0.0009	0.1715
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)	3.8	5200.0079	5200	0.0079	1.5237
		V max (V)	4.37	5200.0065	5200	0.0065	1.2416
		V min (V)	3.23	5200.0005	5200	0.0005	0.0976
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)	3.8	T (°C)	-20	5200.00400	5200	0.00400	0.7701
		T (°C)	-10	5200.00541	5200	0.00541	1.0412
		T (°C)	0	5200.01107	5200	0.01107	2.1291
		T (°C)	10	5200.00454	5200	0.00454	0.8722
		T (°C)	20	5200.00359	5200	0.00359	0.6896
		T (°C)	30	5200.01072	5200	0.01072	2.0621
		T (°C)	40	5200.01112	5200	0.01112	2.1375
		T (°C)	50	5200.00563	5200	0.00563	1.0831
		T (°C)	60	5200.00675	5200	0.00675	1.2972
		T (°C)	70	5200.00804	5200	0.00804	1.5464
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)	3.8	5240.0114	5240	0.0114	2.1683
		V max (V)	4.37	5240.0106	5240	0.0106	2.0172
		V min (V)	3.23	5240.0030	5240	0.0030	0.5766
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)	3.8	T (°C)	-20	5240.0043	5240	0.0043	0.8221
		T (°C)	-10	5240.0127	5240	0.0127	2.4216
		T (°C)	0	5240.0091	5240	0.0091	1.7450
		T (°C)	10	5240.0038	5240	0.0038	0.7174
		T (°C)	20	5240.0083	5240	0.0083	1.5918
		T (°C)	30	5240.0090	5240	0.0090	1.7148
		T (°C)	40	5240.0112	5240	0.0112	2.1410
		T (°C)	50	5240.0064	5240	0.0064	1.2130
		T (°C)	60	5240.0059	5240	0.0059	1.1219
		T (°C)	70	5240.0056	5240	0.0056	1.0681
Limits				5150-5250 MHz			
Result				Complies			

Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101kPa	Test Voltage:	DC 3.8V
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)	3.8	5745.00186	5745	0.00186	0.3236
		V max (V)	4.37	5745.00286	5745	0.00286	0.4973
		V min (V)	3.23	5745.00253	5745	0.00253	0.4404
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)	3.8	T (°C)	-20	5745.00806	5745	0.00806	1.4027
		T (°C)	-10	5745.00140	5745	0.00140	0.2430
		T (°C)	0	5745.00510	5745	0.00510	0.8881
		T (°C)	10	5745.01338	5745	0.01338	2.3282
		T (°C)	20	5745.00964	5745	0.00964	1.6787
		T (°C)	30	5745.00428	5745	0.00428	0.7452
		T (°C)	40	5745.00388	5745	0.00388	0.6750
		T (°C)	50	5745.00855	5745	0.00855	1.4883
		T (°C)	60	5745.00548	5745	0.00548	0.9540
		T (°C)	70	5745.01004	5745	0.01004	1.7471
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)	3.8	5785.01295	5785	0.01295	2.2393
		V max (V)	4.37	5785.00535	5785	0.00535	0.9246
		V min (V)	3.23	5785.00721	5785	0.00721	1.2463
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)	3.8	T (°C)	-20	5785.00394	5785	0.00394	0.6804
		T (°C)	-10	5785.00841	5785	0.00841	1.4531
		T (°C)	0	5785.00222	5785	0.00222	0.3837
		T (°C)	10	5785.01305	5785	0.01305	2.2552
		T (°C)	20	5785.00405	5785	0.00405	0.6998
		T (°C)	30	5785.00522	5785	0.00522	0.9022
		T (°C)	40	5785.01073	5785	0.01073	1.8552
		T (°C)	50	5785.00190	5785	0.00190	0.3279
		T (°C)	60	5785.00577	5785	0.00577	0.9966
		T (°C)	70	5785.01280	5785	0.01280	2.2119
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)	3.8	5825.00426	5825	0.00426	0.7311
		V max (V)	4.37	5825.00811	5825	0.00811	1.3930
		V min (V)	3.23	5825.00089	5825	0.00089	0.1530
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)	3.8	T (°C)	-20	5825.00971	5825	0.00971	1.6673
		T (°C)	-10	5825.01084	5825	0.01084	1.8613
		T (°C)	0	5825.00833	5825	0.00833	1.4301
		T (°C)	10	5825.01130	5825	0.01130	1.9402
		T (°C)	20	5825.00995	5825	0.00995	1.7081
		T (°C)	30	5825.00798	5825	0.00798	1.3694
		T (°C)	40	5825.00880	5825	0.00880	1.5114
		T (°C)	50	5825.01258	5825	0.01258	2.1590
		T (°C)	60	5825.01208	5825	0.01208	2.0737
		T (°C)	70	5825.00221	5825	0.00221	0.3789
Limits				5725-5850 MHz			
Result				Complies			

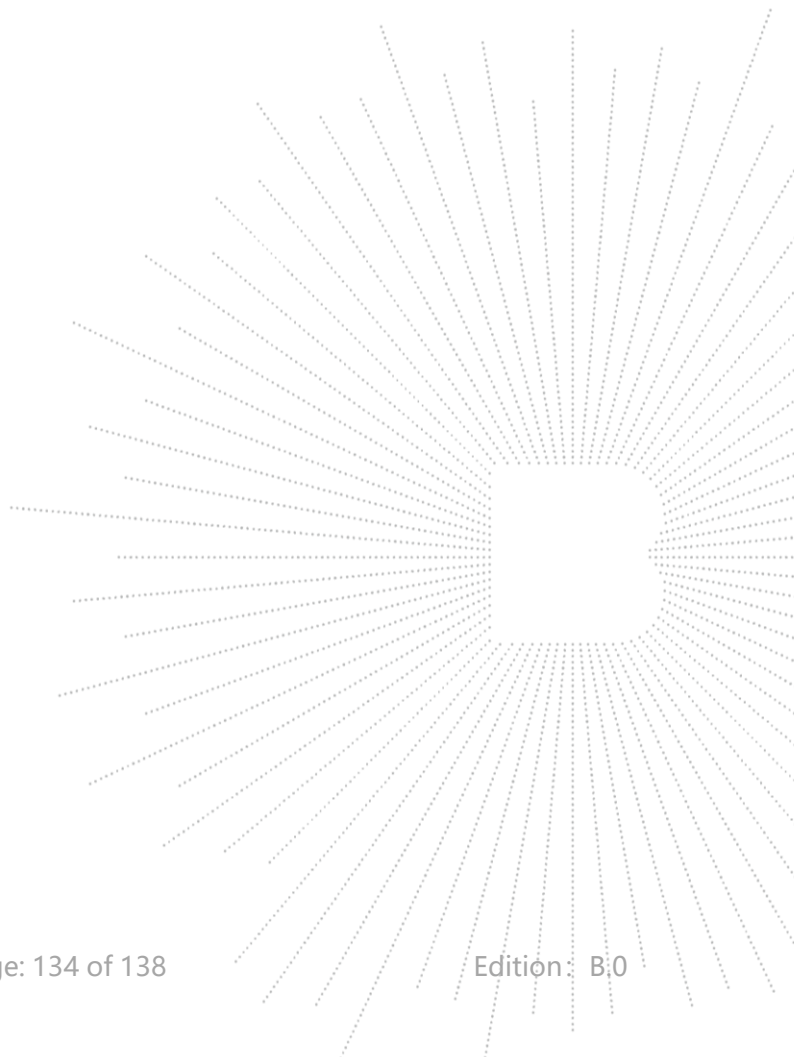
14. Antenna Requirement

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 FPC antenna. It comply with the standard requirement.



15. EUT Photographs

EUT Photo 1



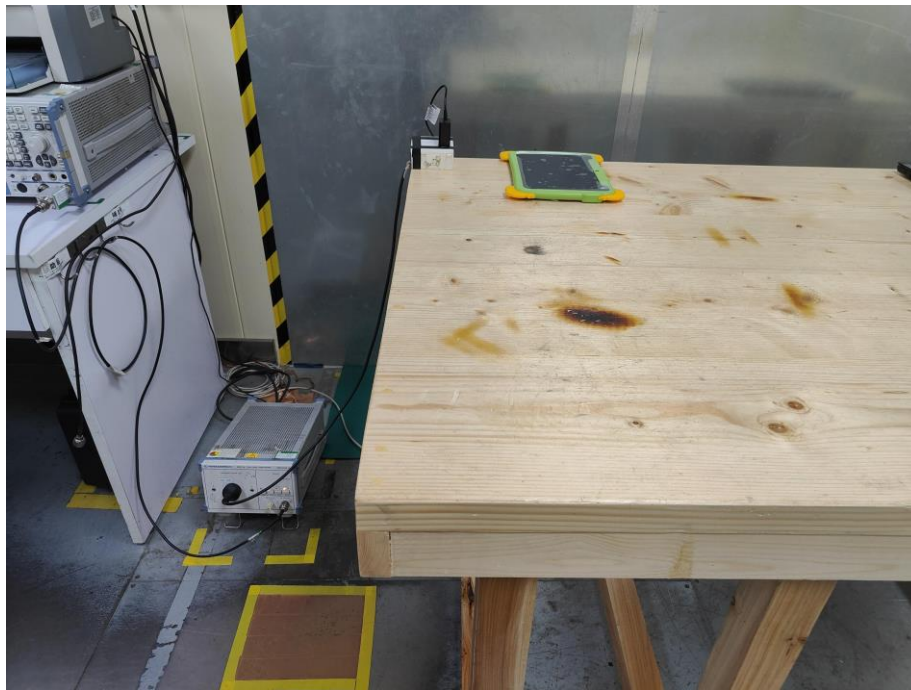
EUT Photo 2



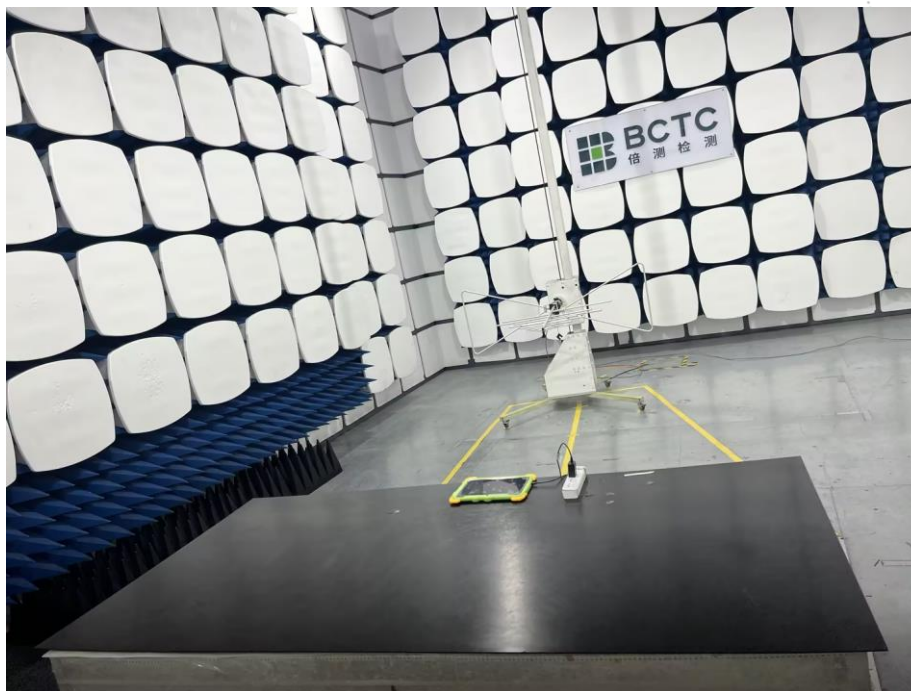
NOTE: Appendix-Photographs Of EUT Constructional Details

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

***** END *****