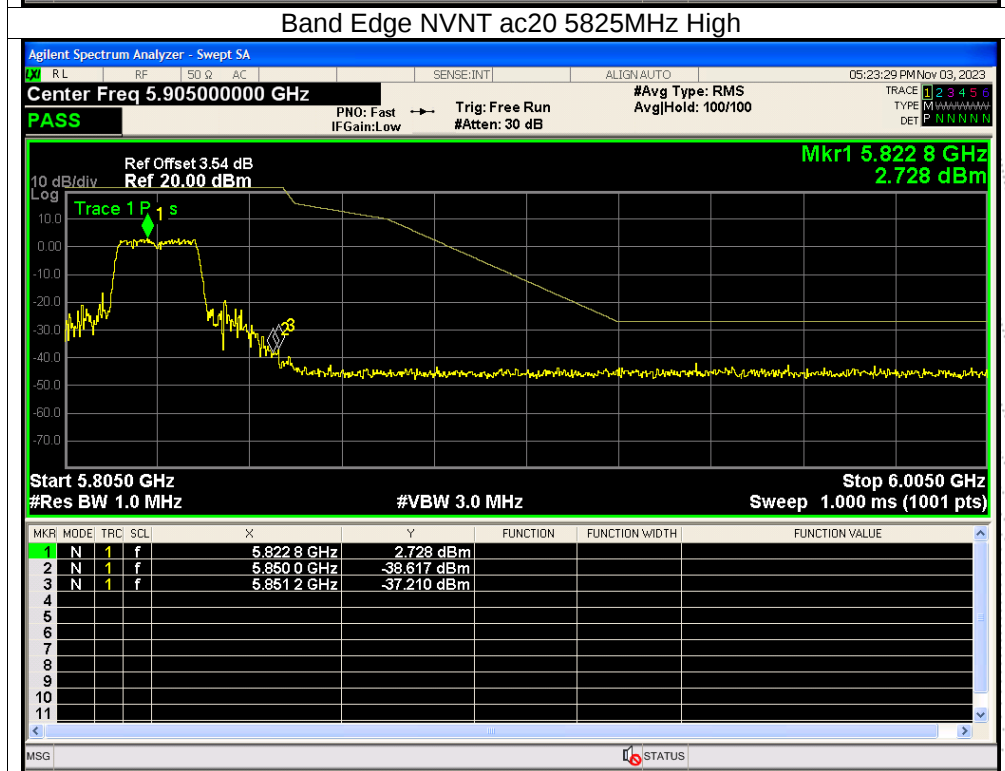
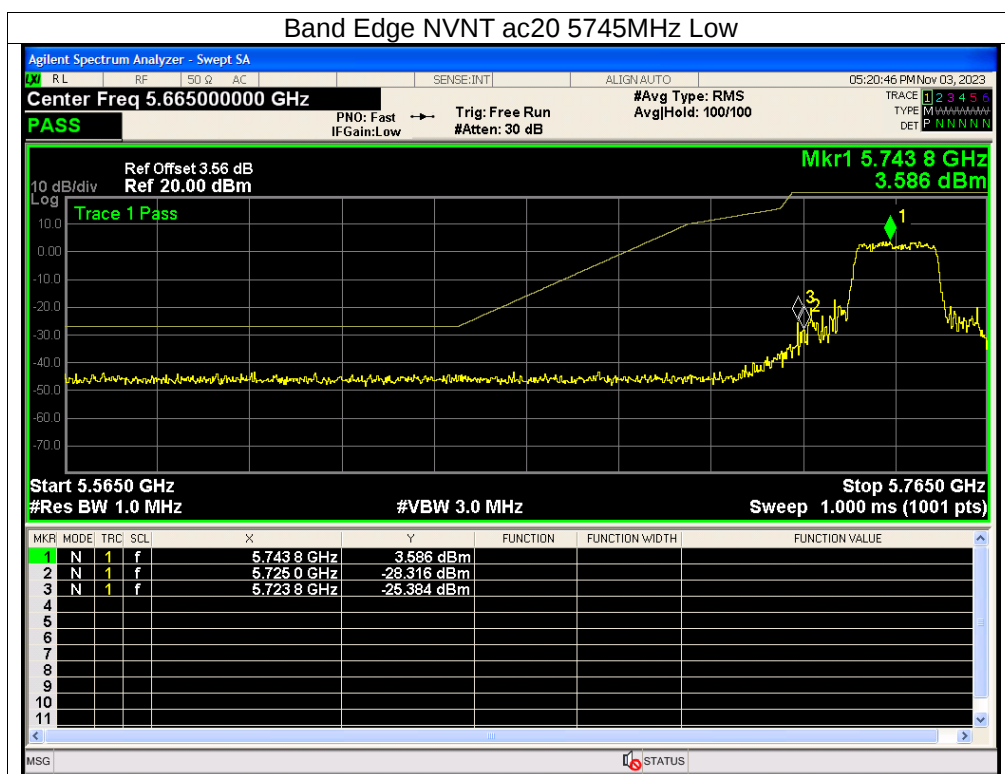
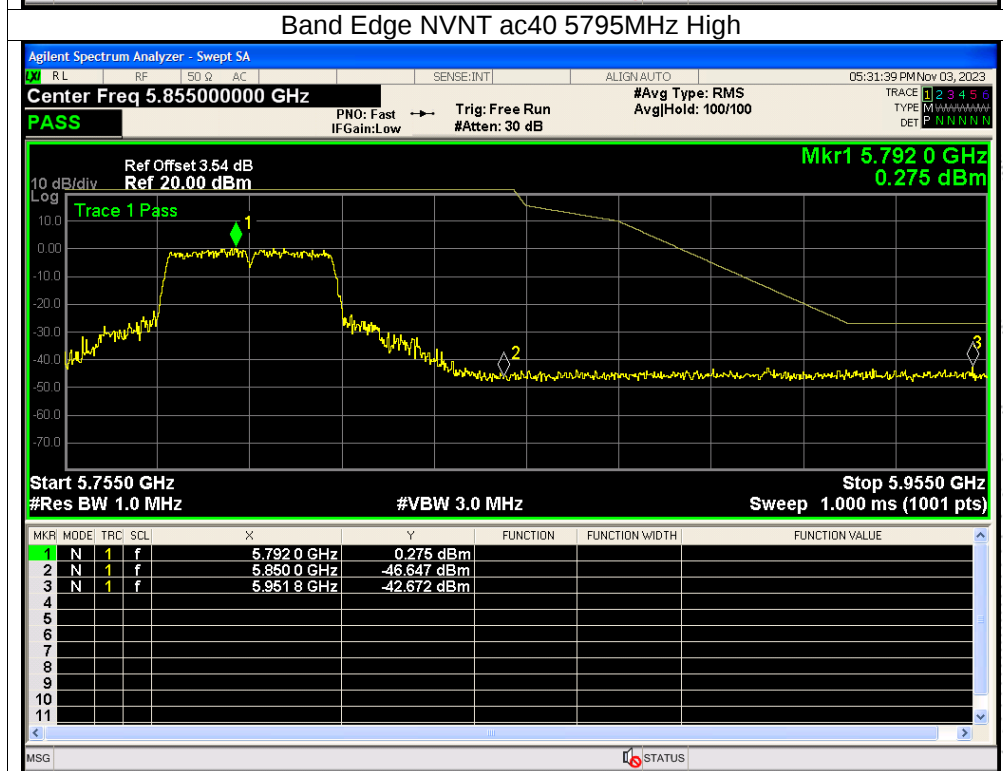
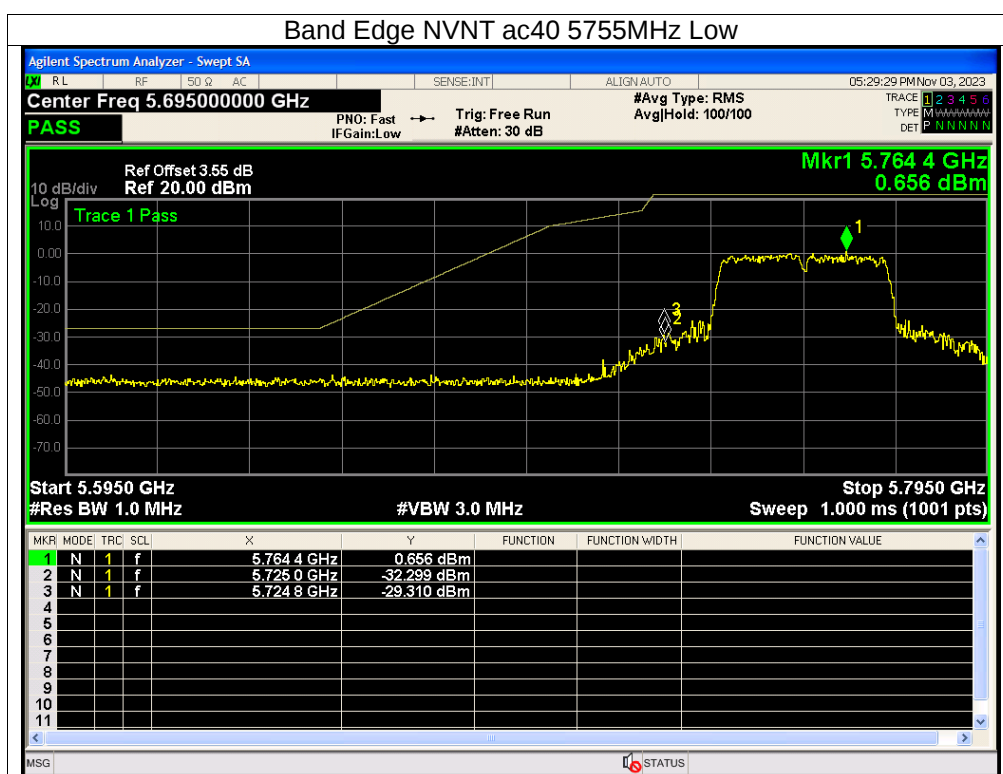
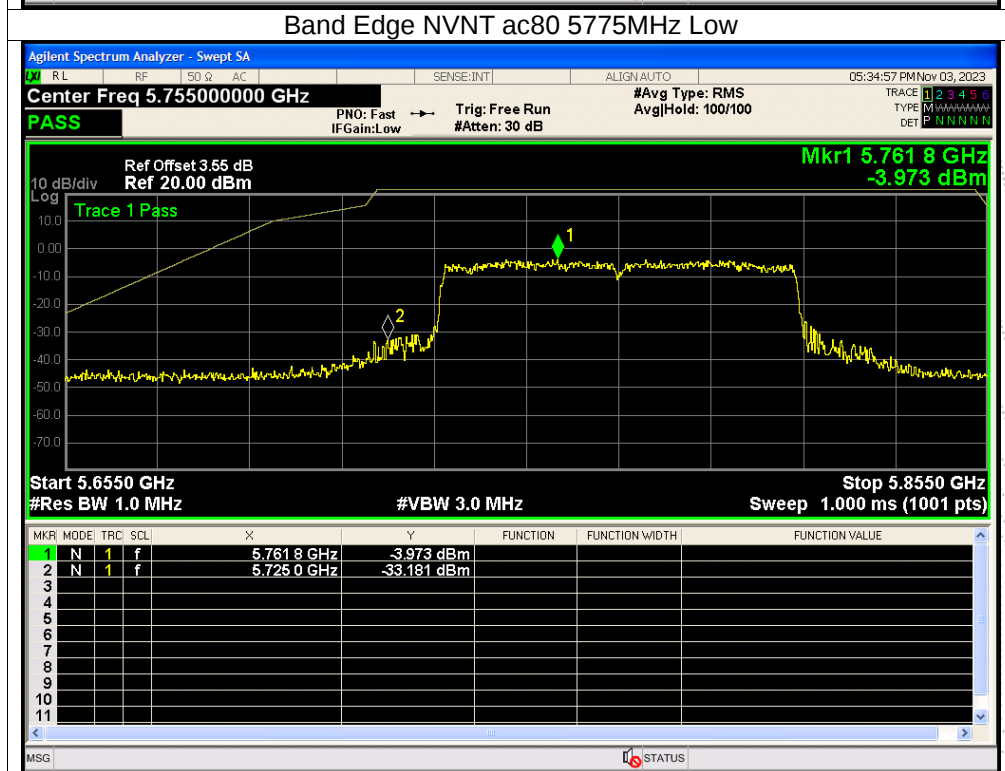
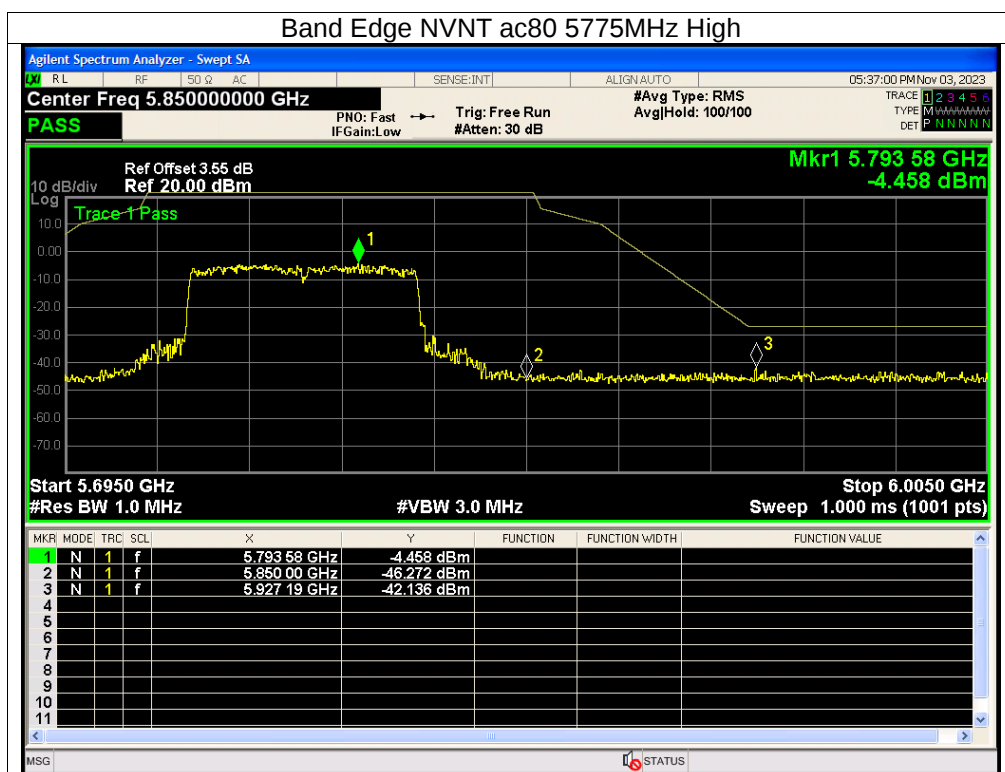








12. Spurious RF Conducted Emissions

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..

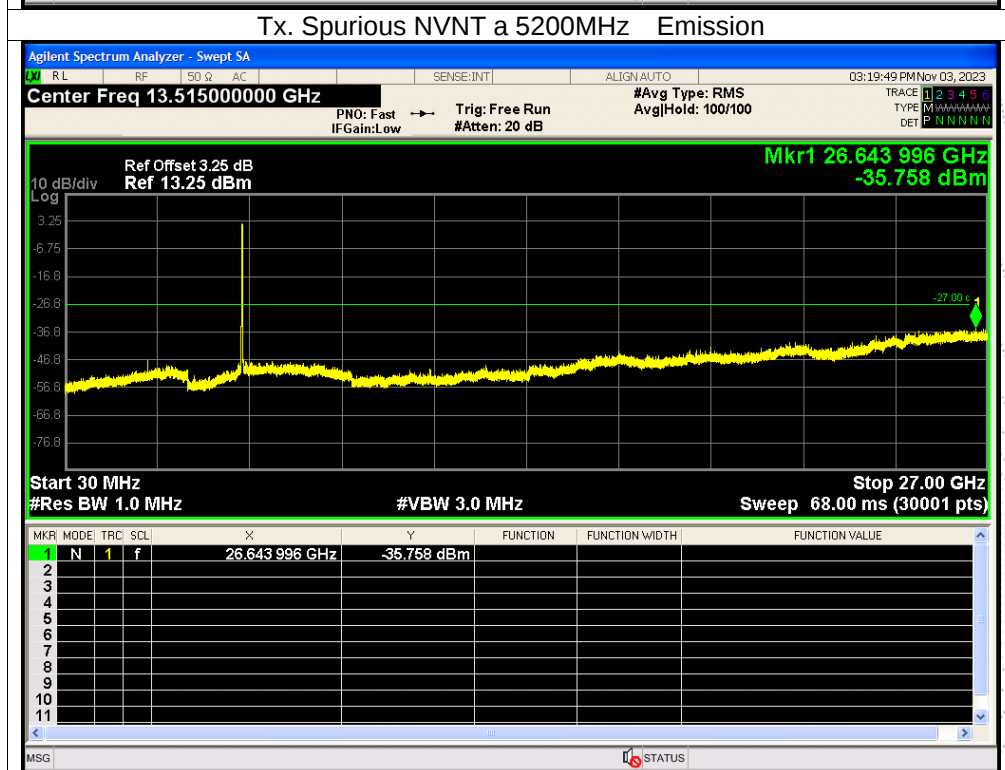
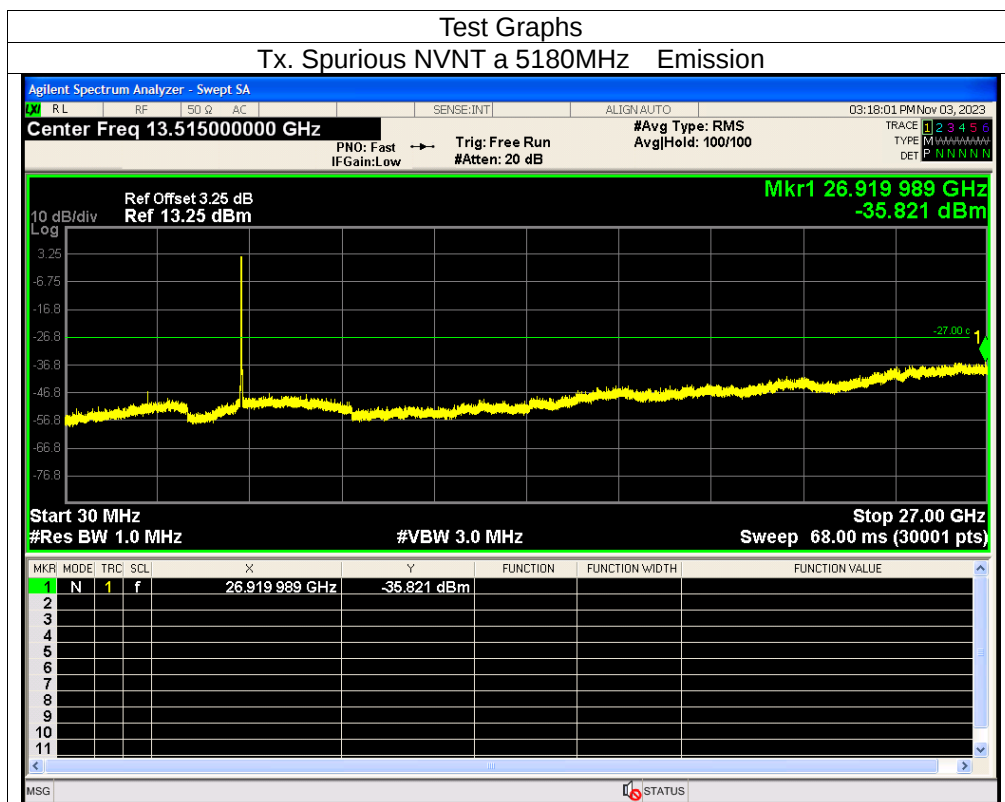
12.3 Test Procedure

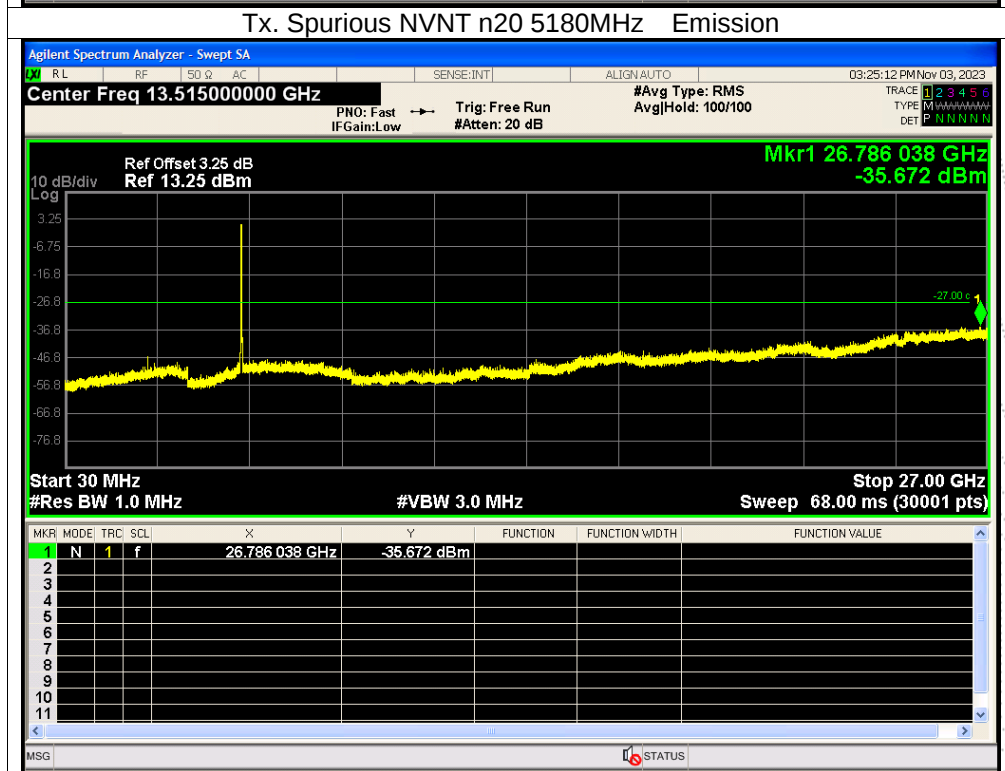
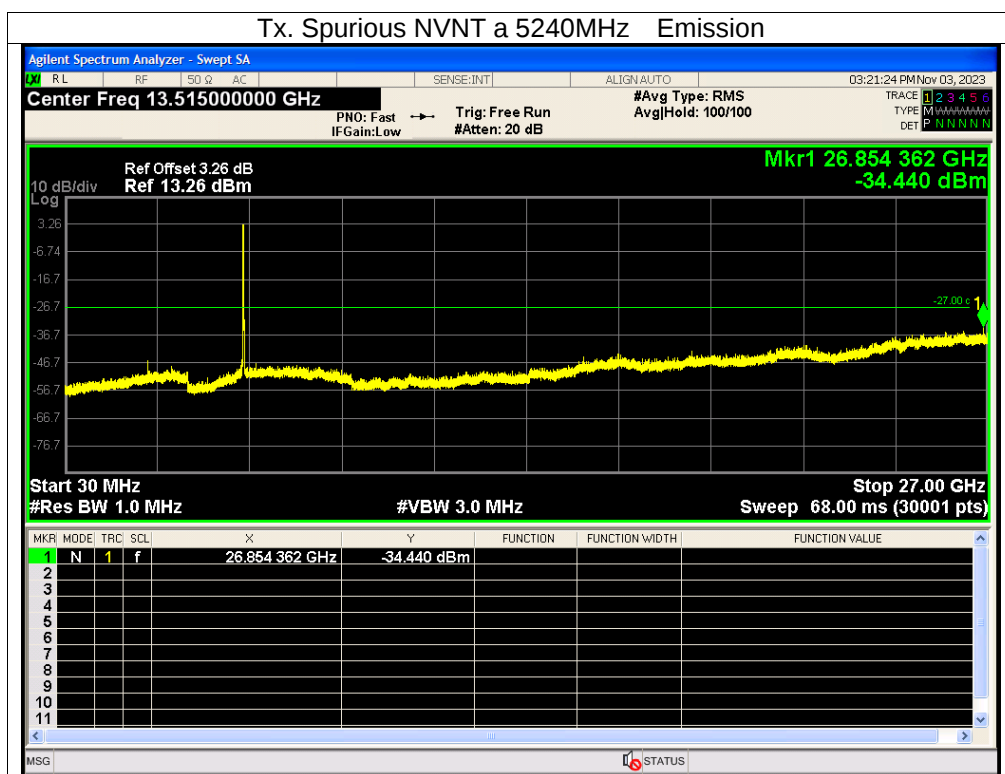
1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then 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.

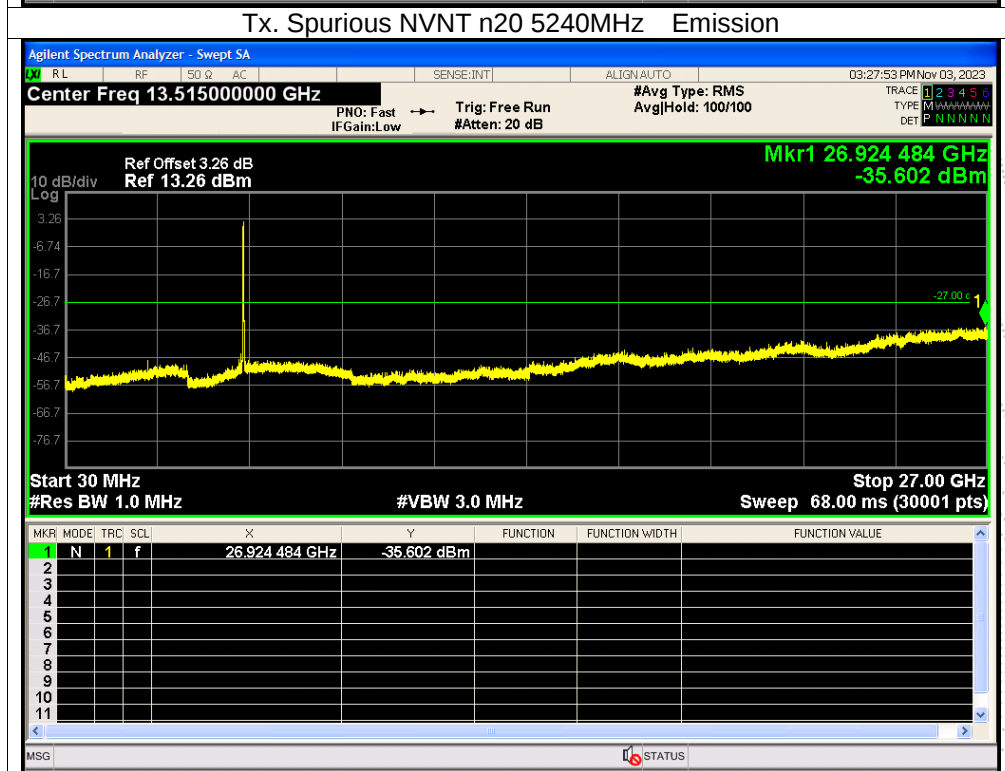
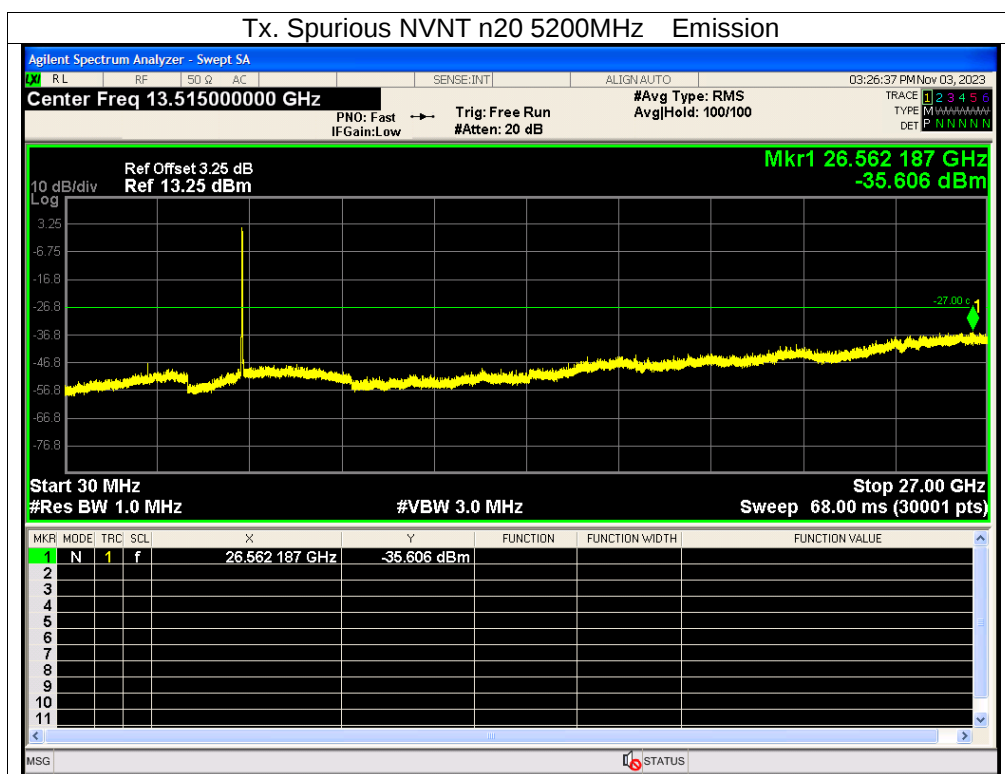
12.4 Test Result

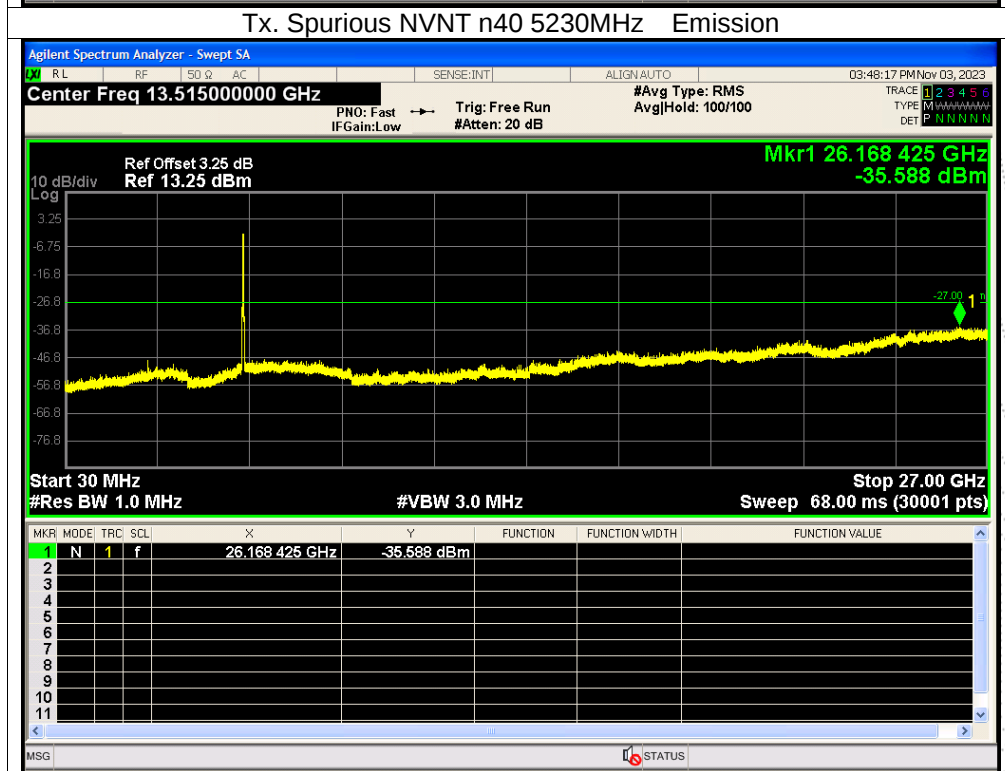
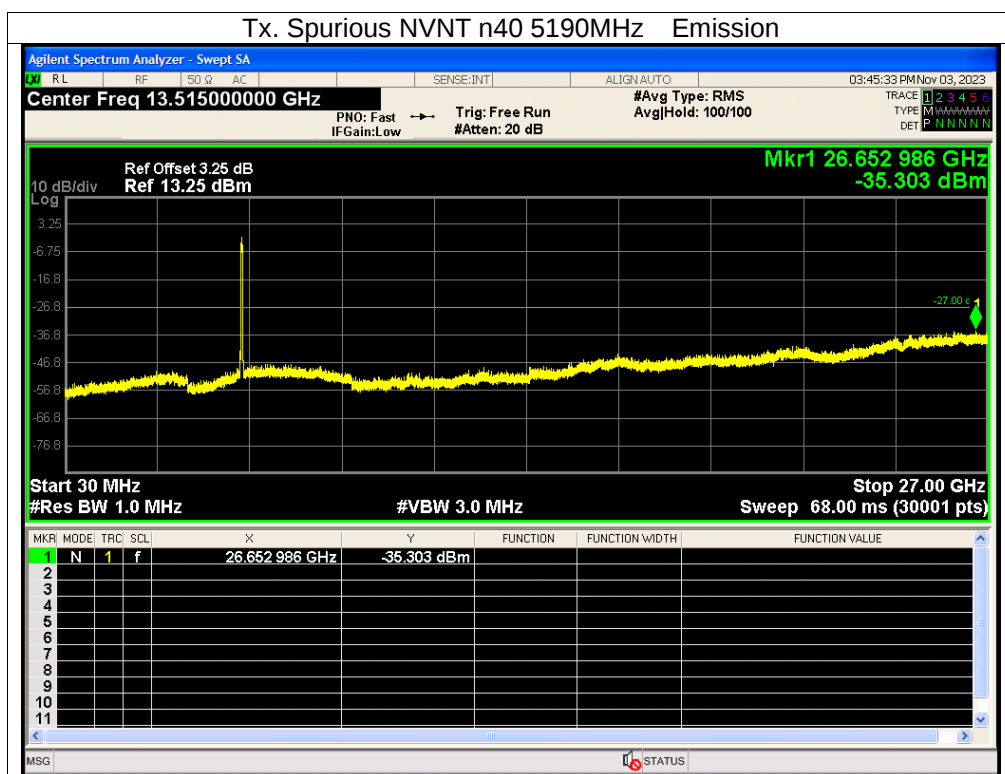
Remark: The measurement frequency range is from 9KHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the spurious emissions and bandedge measurement data.

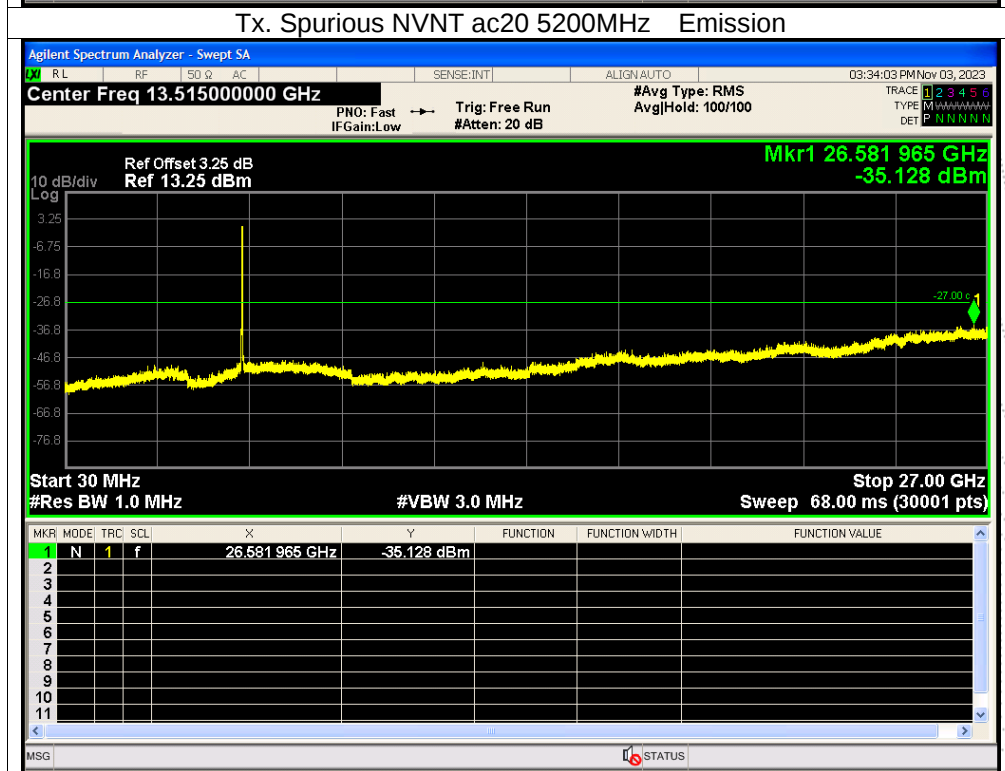
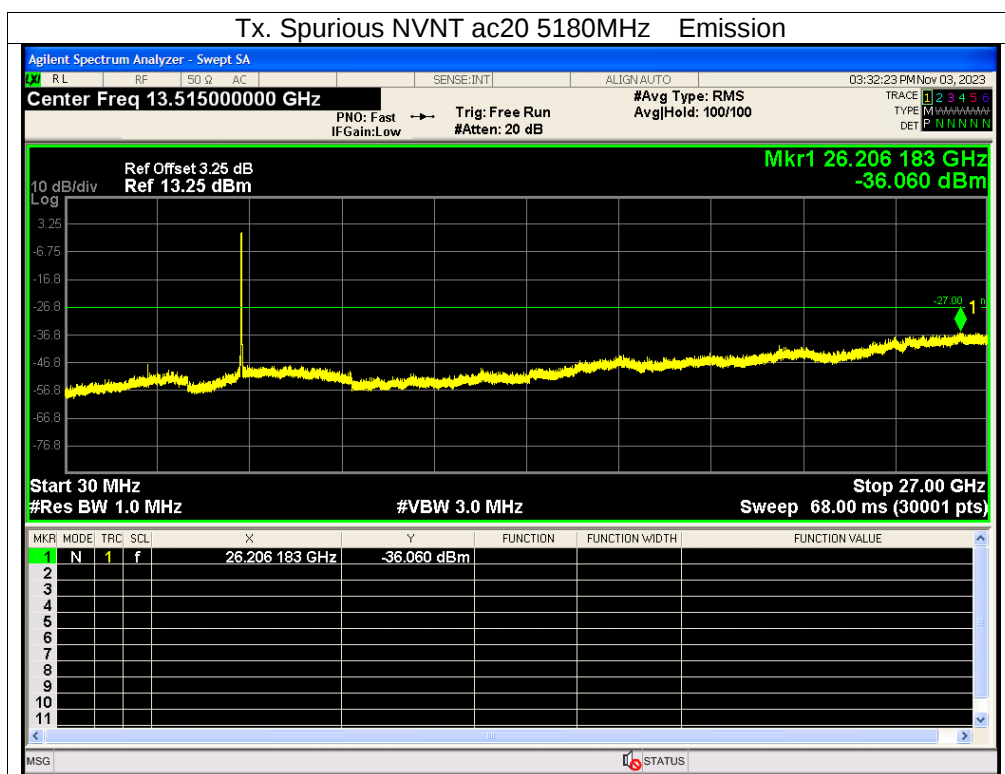
About: 26.5GHz-40GHz, The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

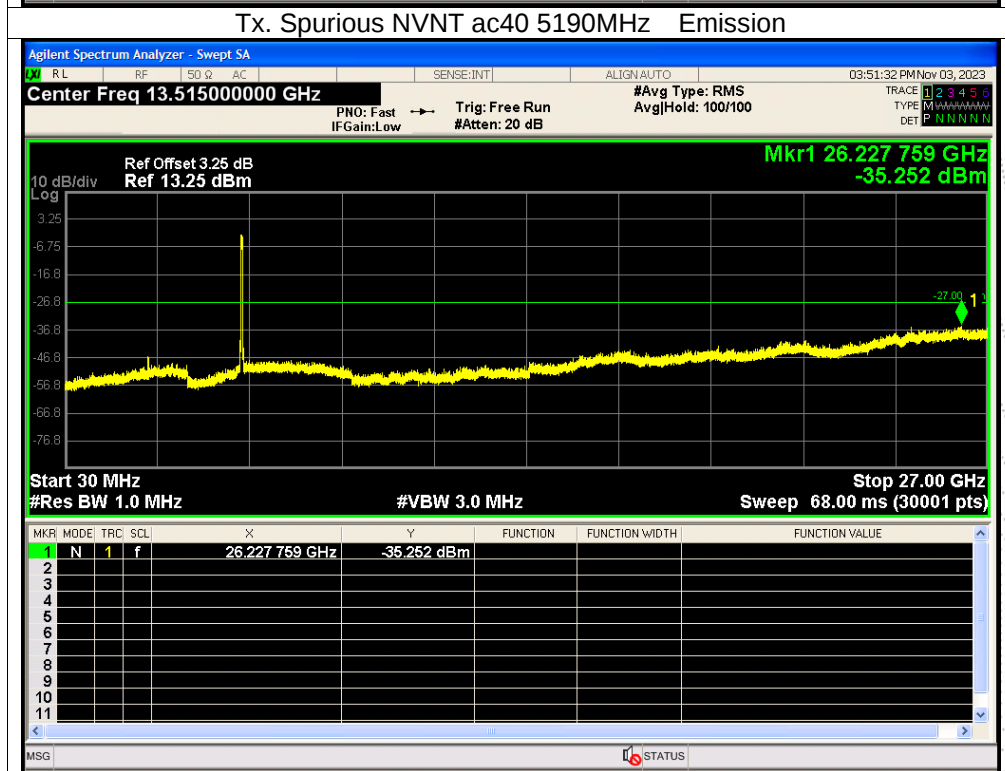
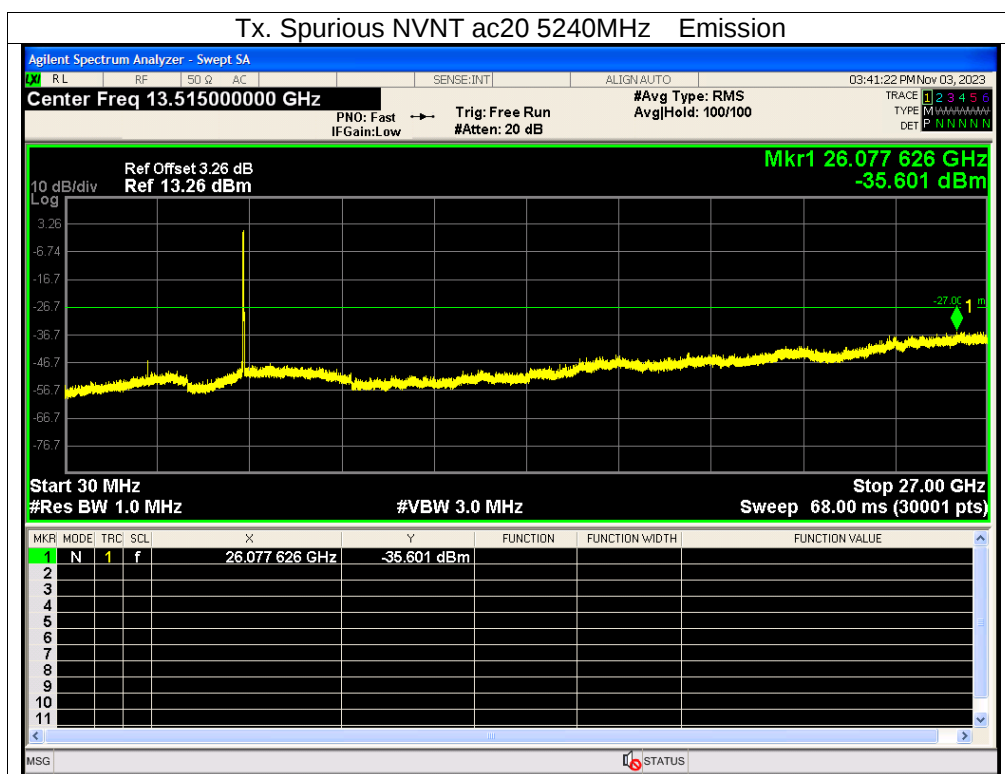


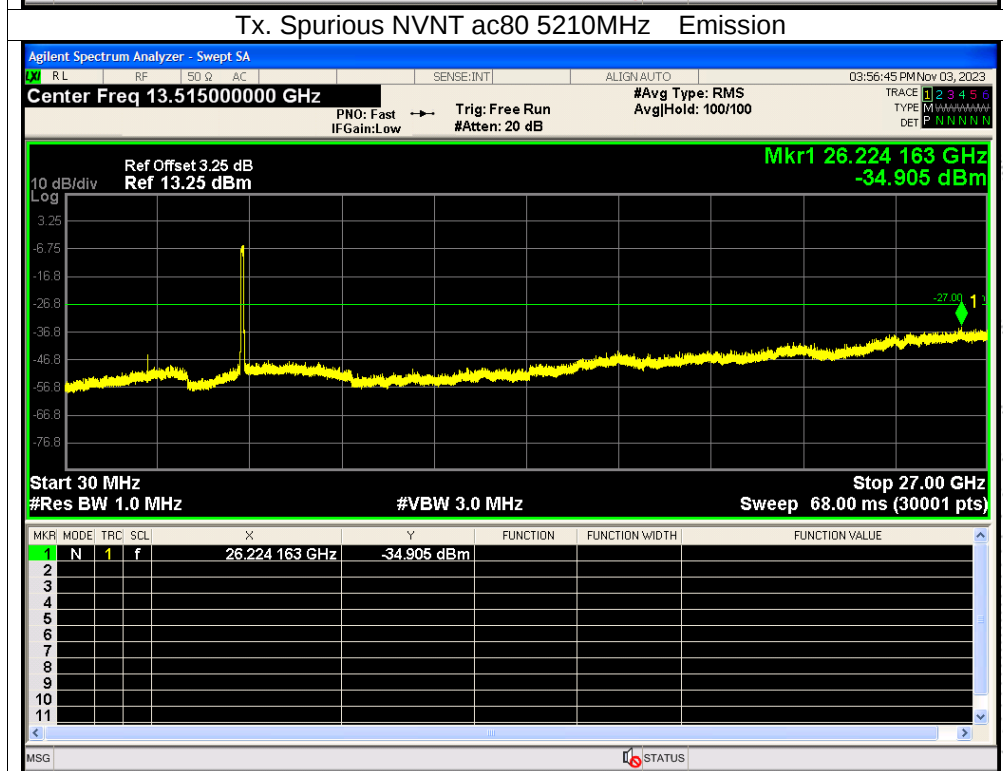
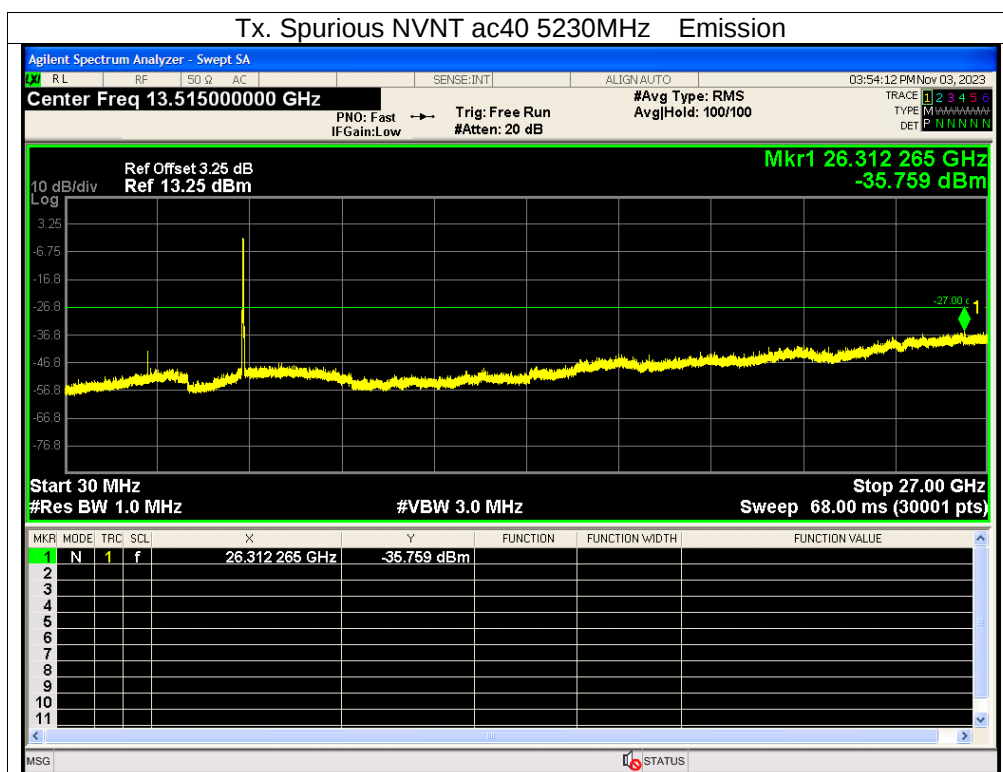


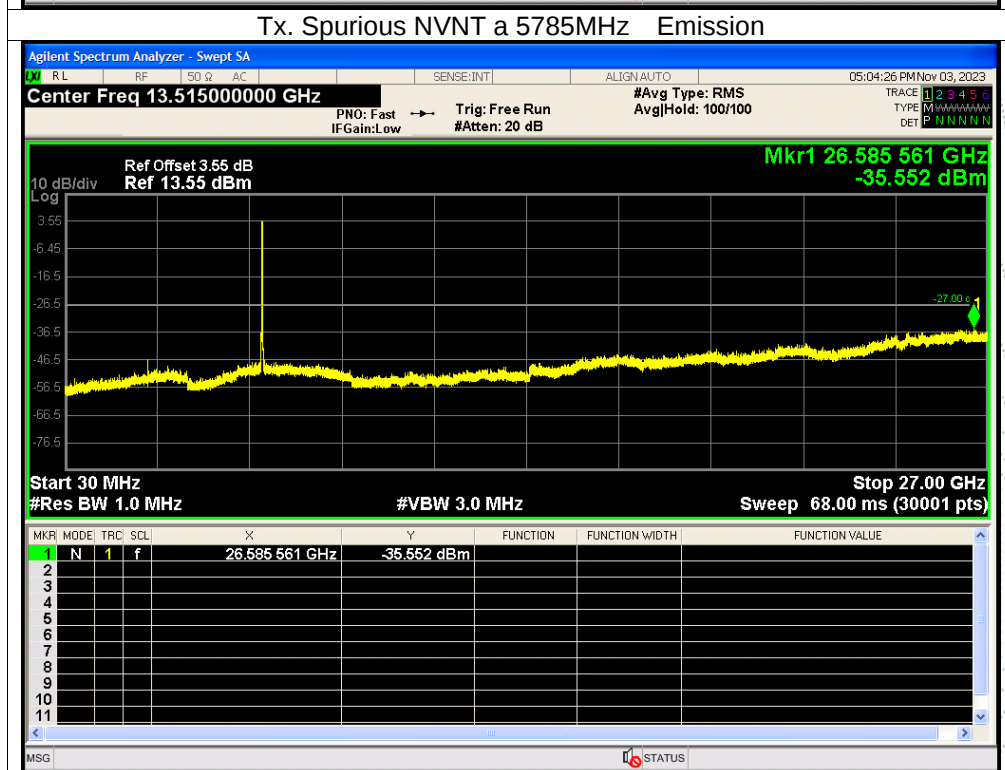
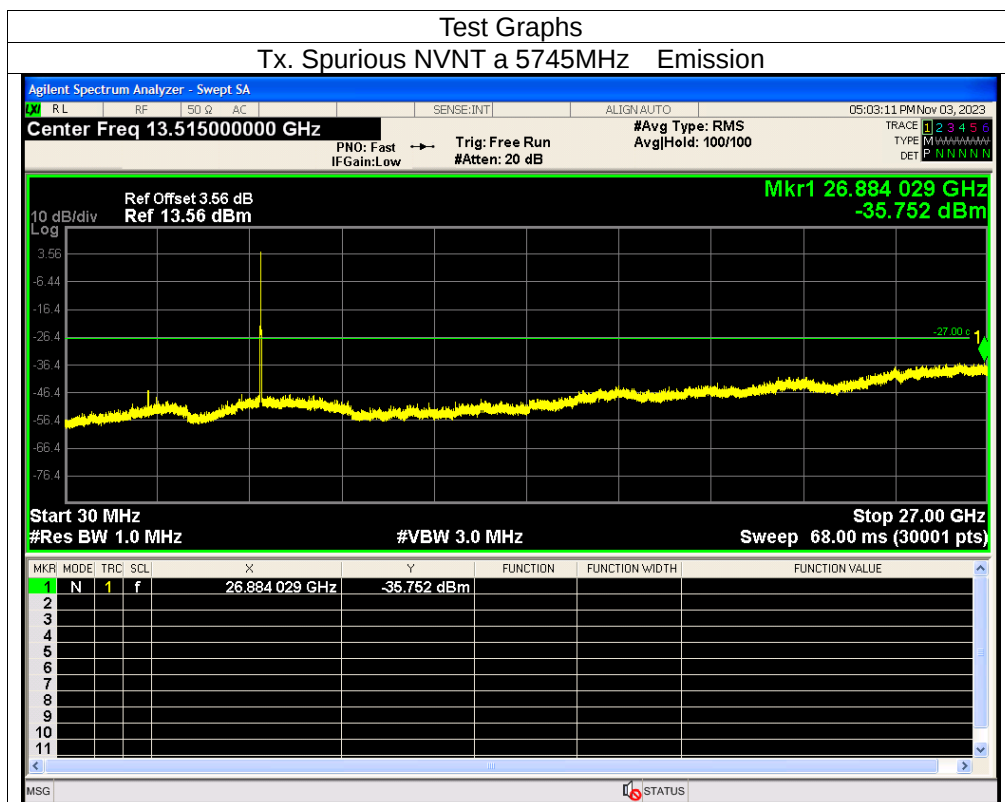


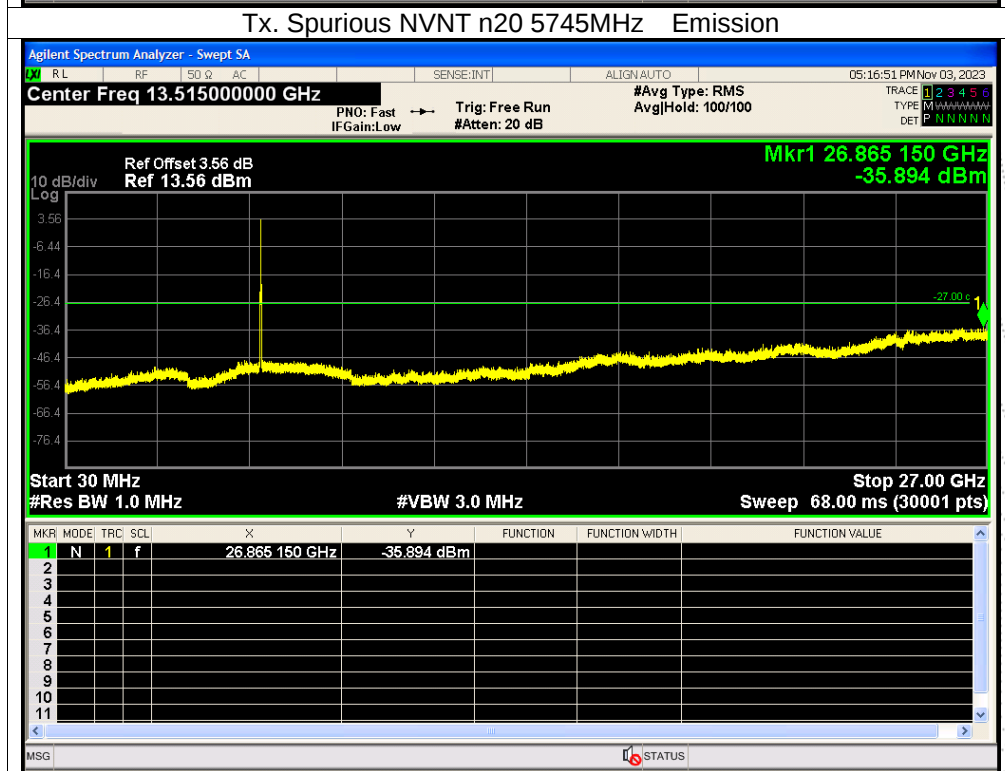
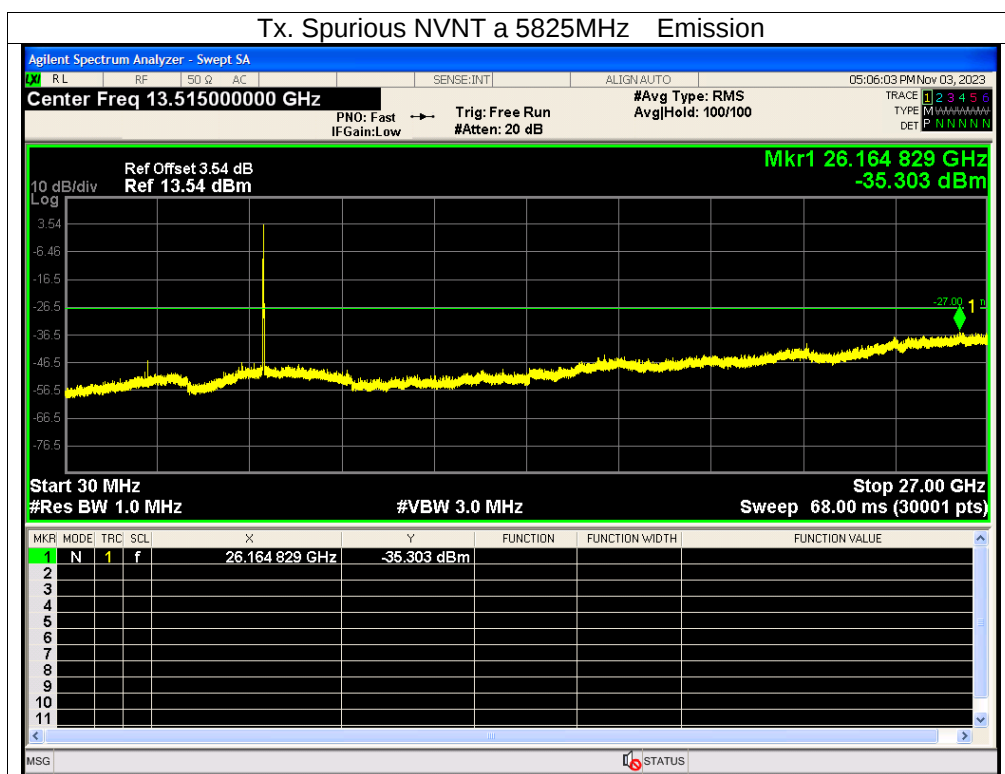


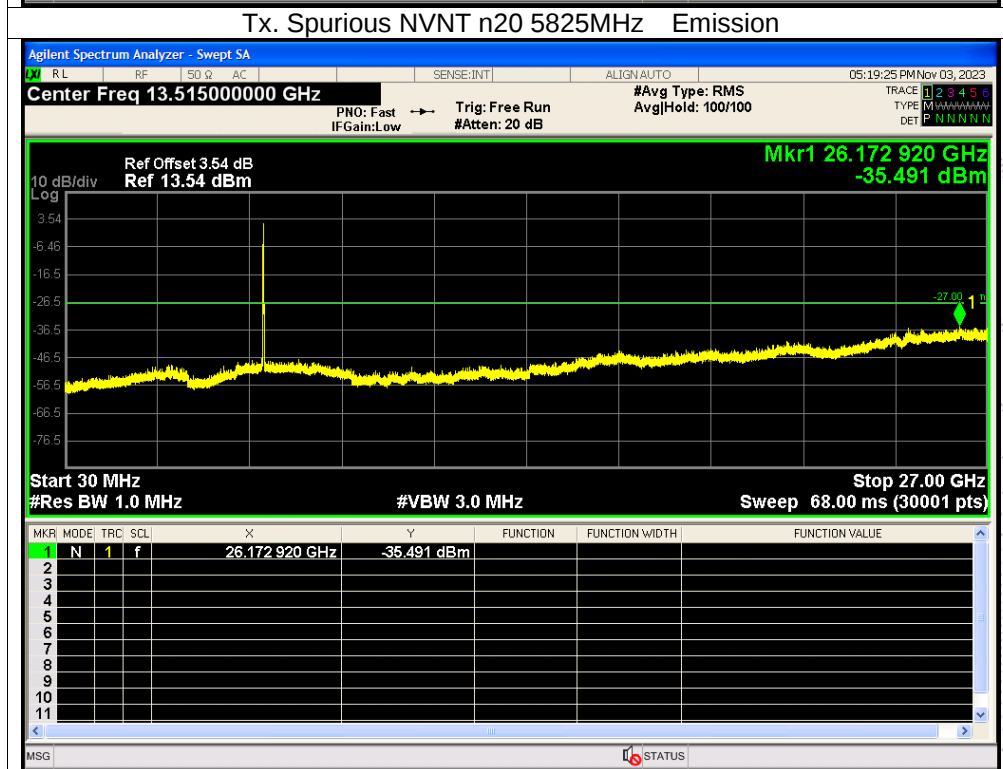
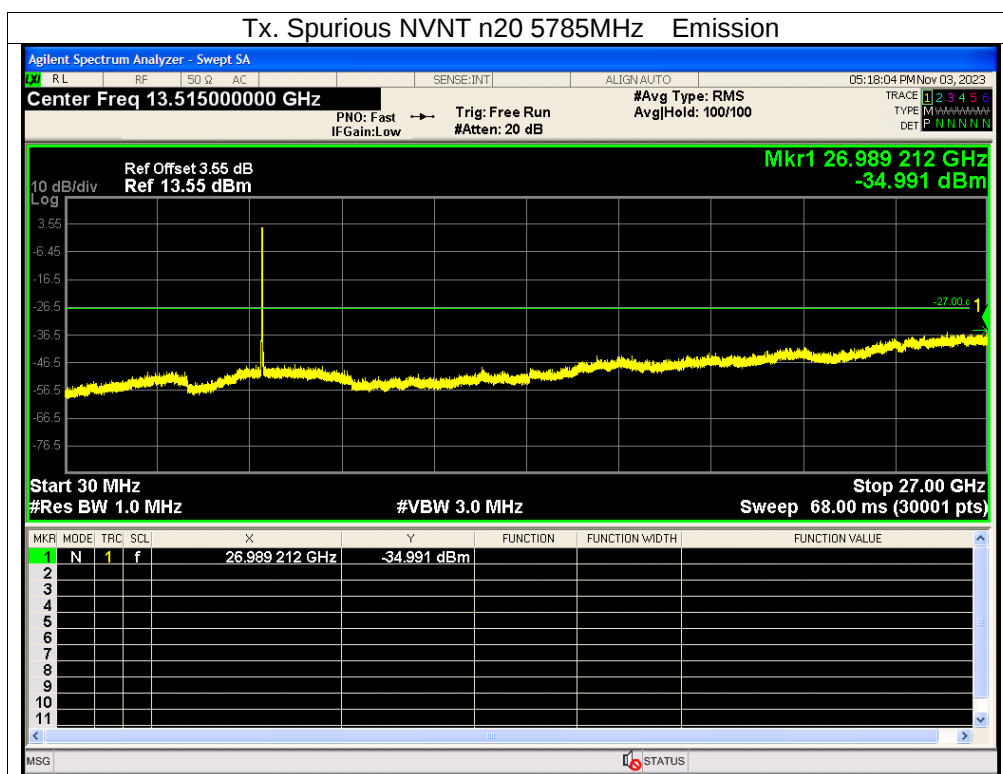


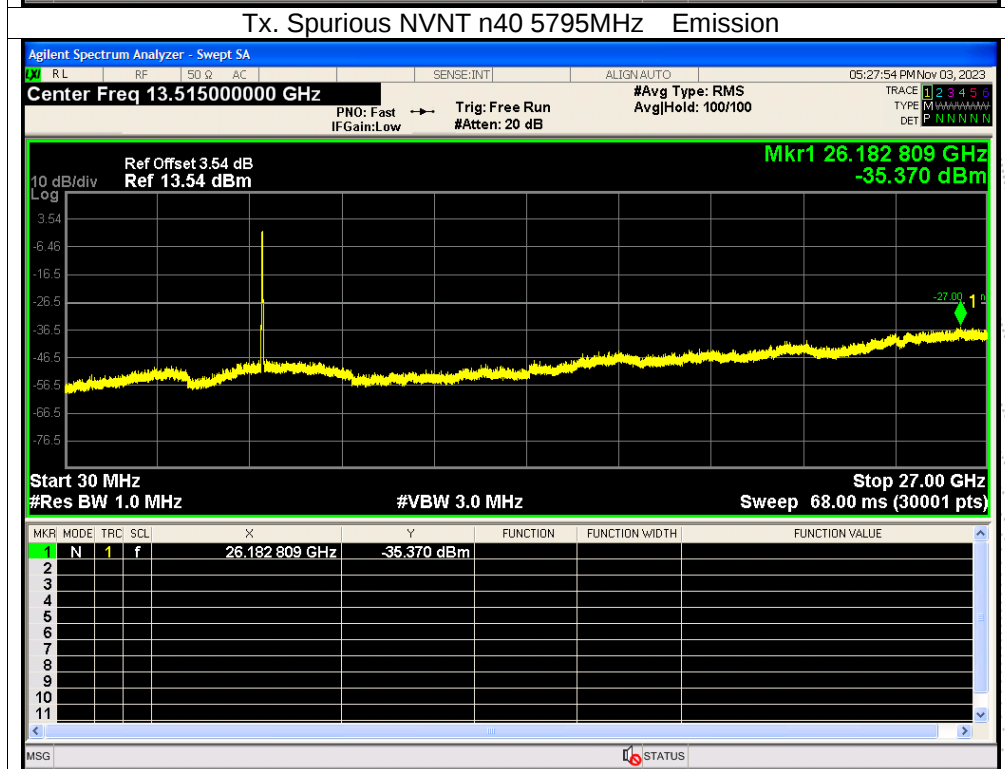
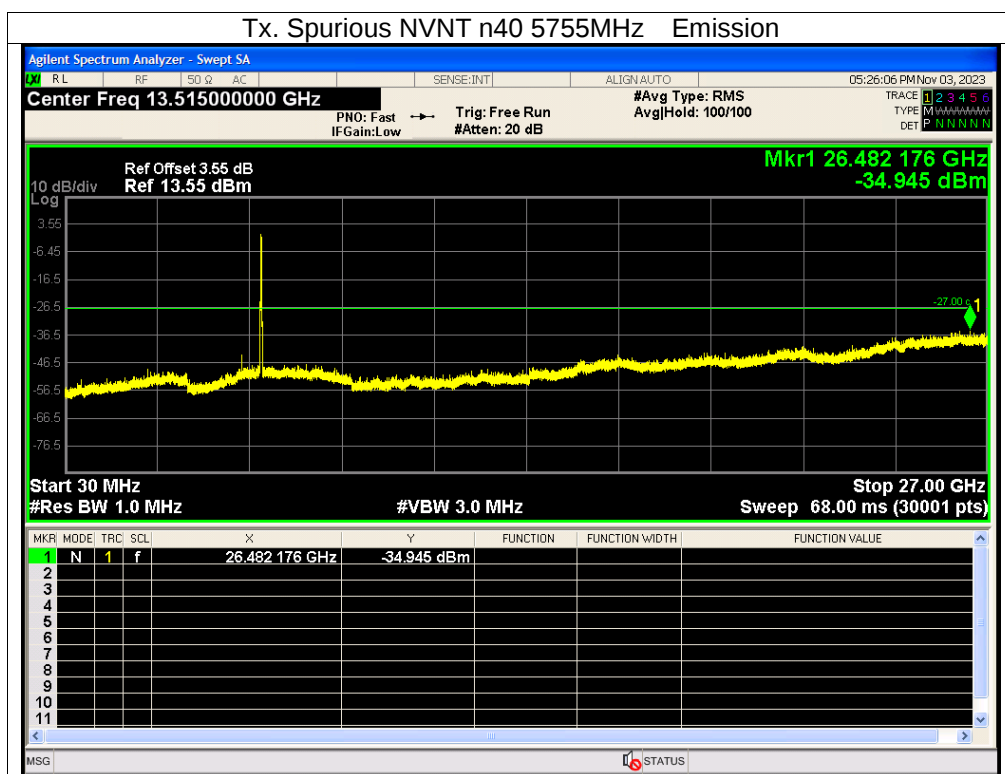


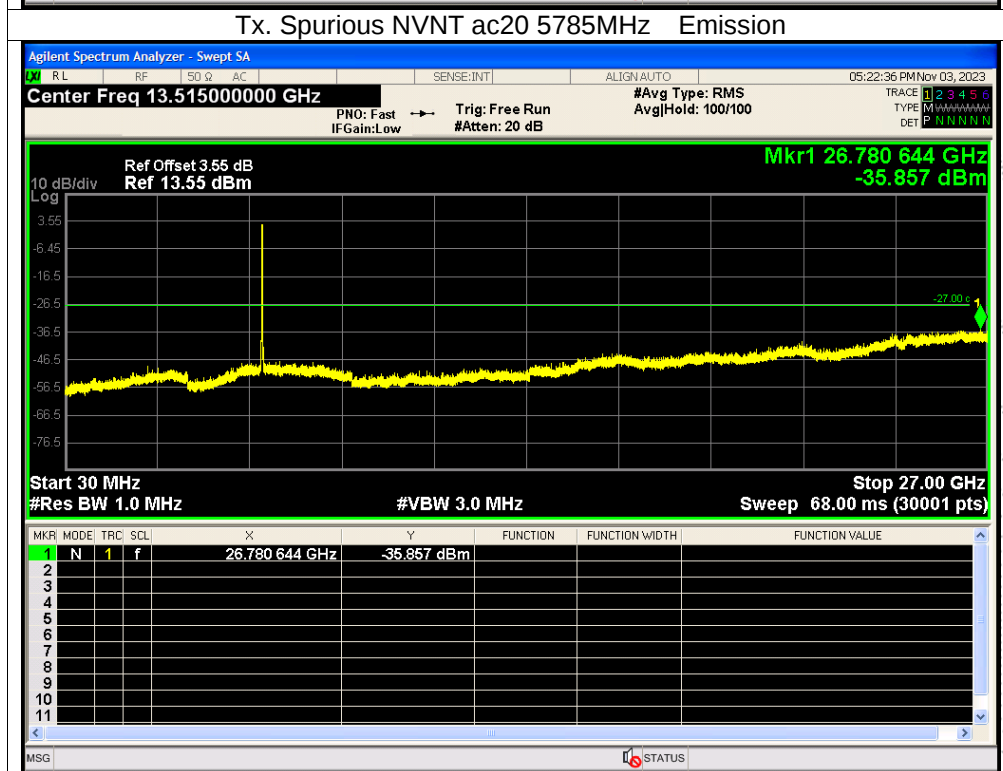
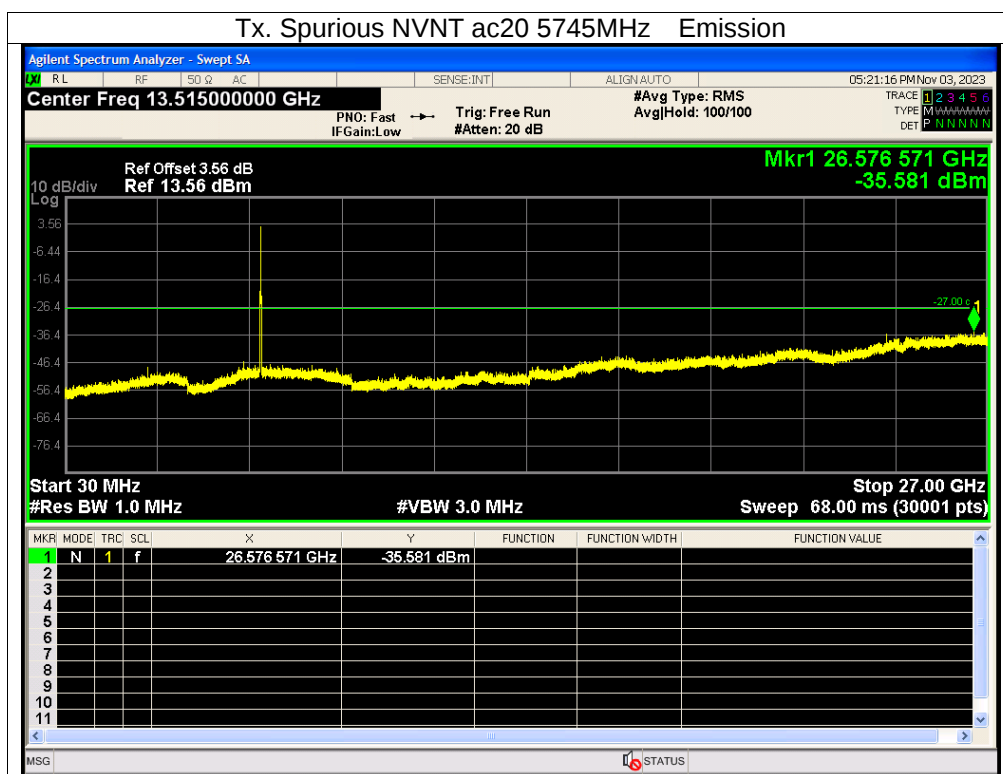


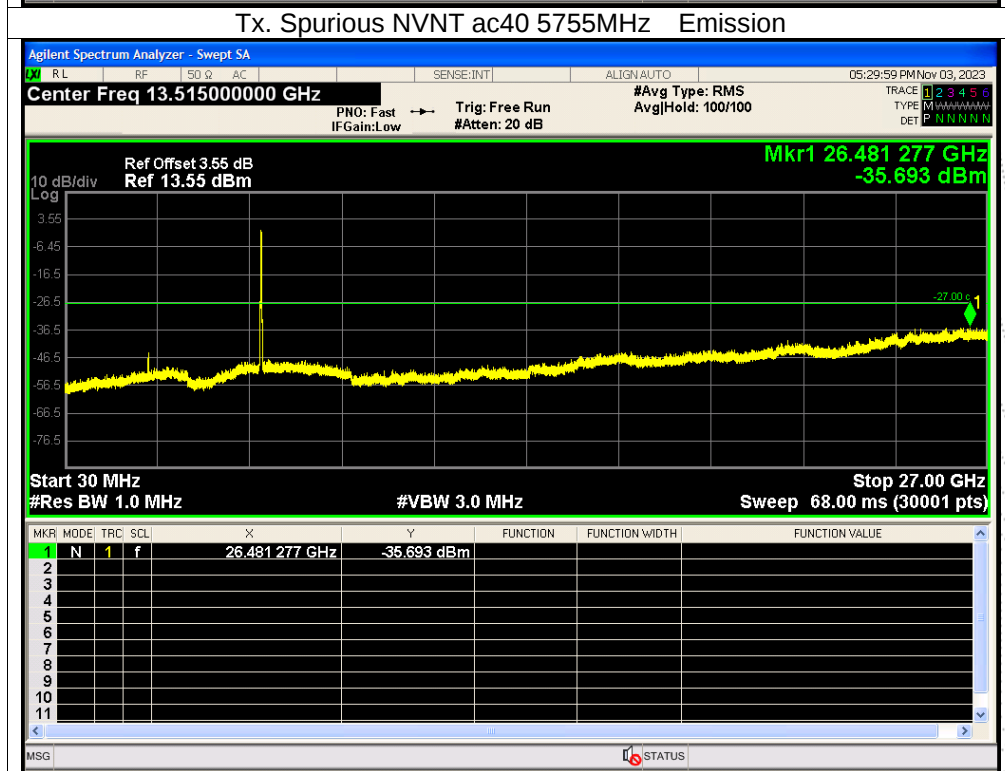
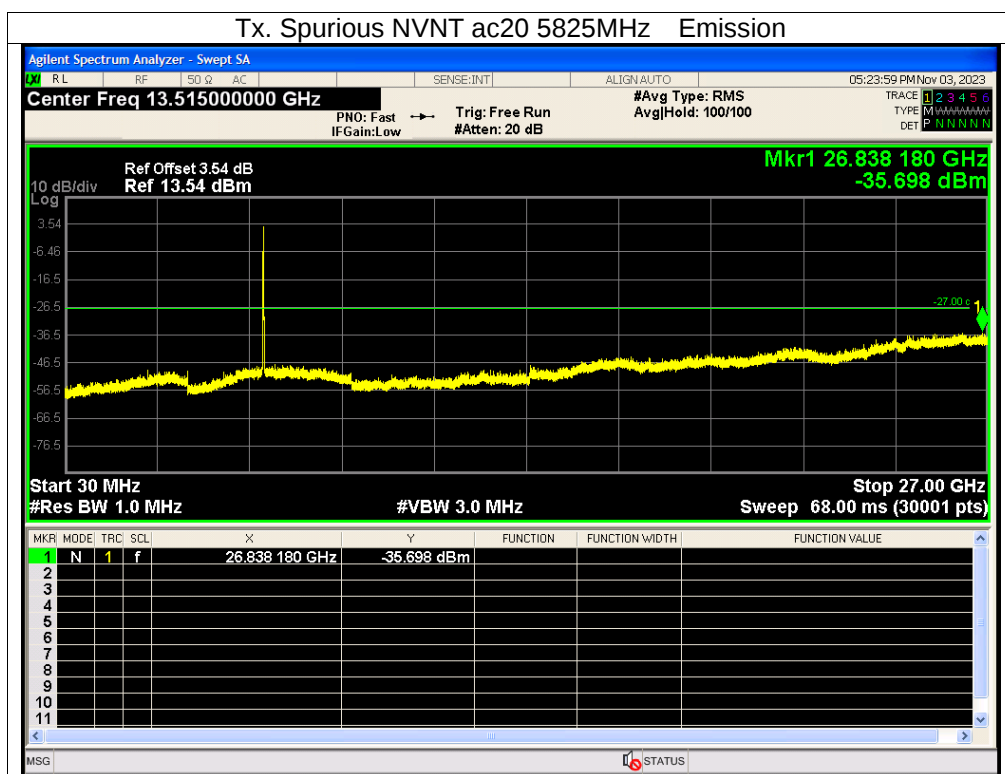


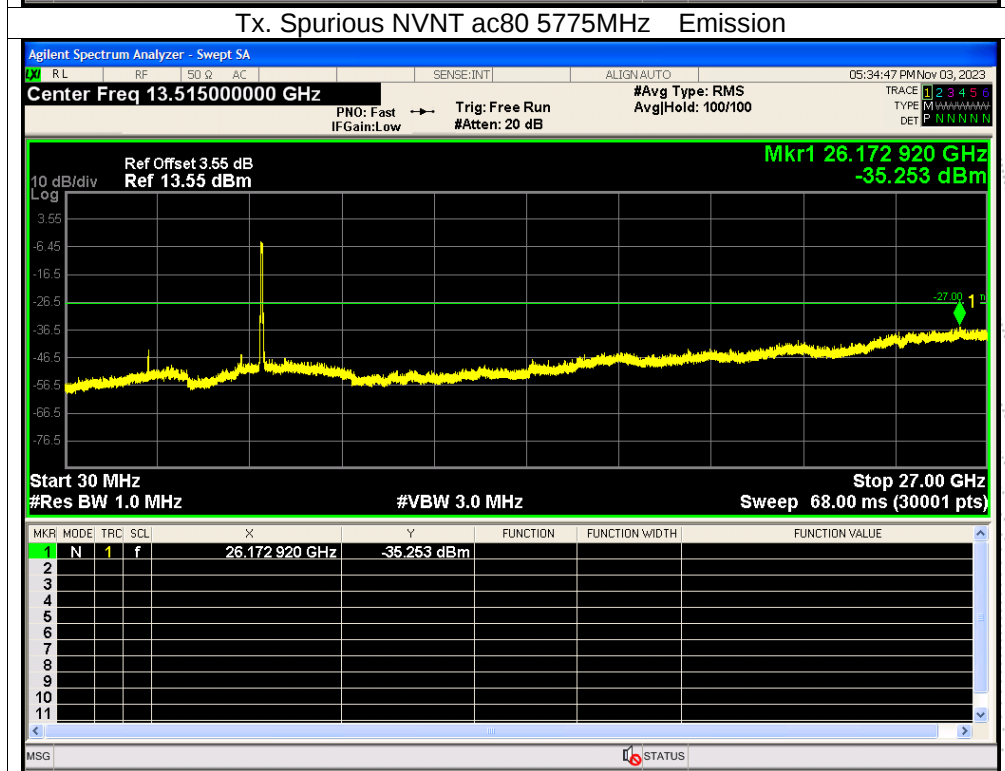
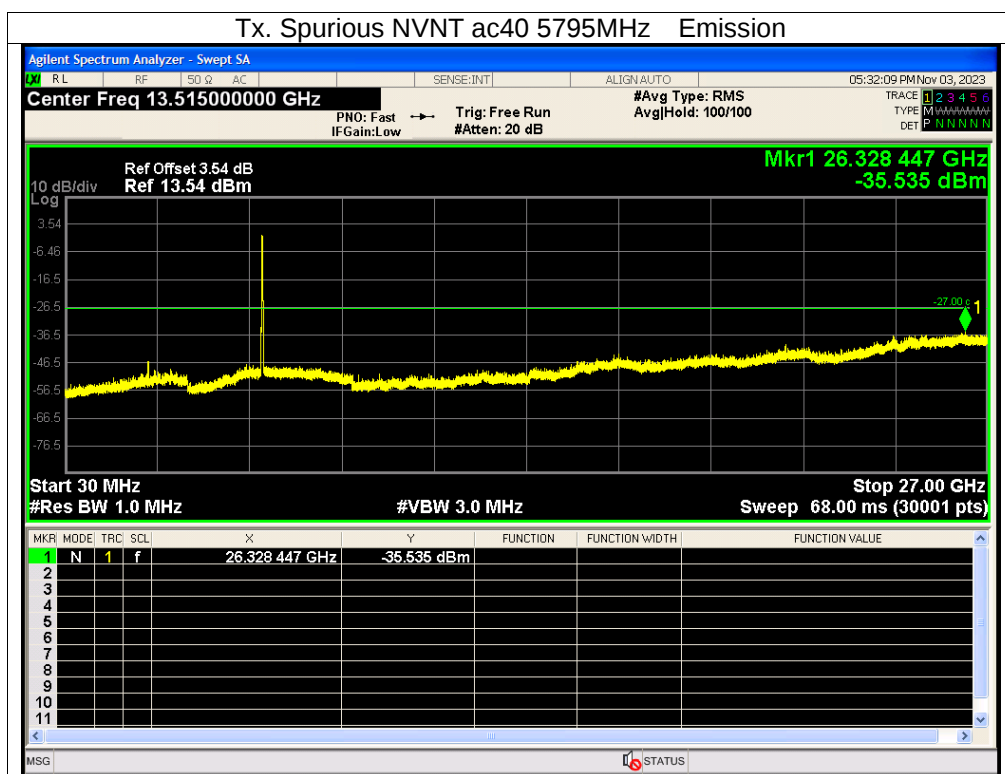












13. Frequency Stability Measurement

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	5180.0211	5180	0.0211	4.0737
		V max (V)	4.37	5180.0015	5180	0.0015	0.2823
		V min (V)	3.23	5180.0135	5180	0.0135	2.6027
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	5180.0110	5180	0.0110	2.1170
		T (°C)	-10	5180.0051	5180	0.0051	0.9826
		T (°C)	0	5180.0029	5180	0.0029	0.5625
		T (°C)	10	5180.0055	5180	0.0055	1.0700
		T (°C)	20	5180.0016	5180	0.0016	0.3116
		T (°C)	30	5180.0016	5180	0.0016	0.3104
		T (°C)	40	5180.0012	5180	0.0012	0.2230
		T (°C)	50	5180.0043	5180	0.0043	0.8328
		T (°C)	60	5180.0090	5180	0.0090	1.7351
		T (°C)	70	5180.0061	5180	0.0061	1.1702
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	5200.0114	5200	0.0114	2.1834
		V max (V)	4.37	5200.0013	5200	0.0013	0.2428
		V min (V)	3.23	5200.0115	5200	0.0115	2.2042
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	5200.00751	5200	0.00751	1.4440
		T (°C)	-10	5200.00684	5200	0.00684	1.3161
		T (°C)	0	5200.00143	5200	0.00143	0.2754
		T (°C)	10	5200.01232	5200	0.01232	2.3695
		T (°C)	20	5200.00137	5200	0.00137	0.2638
		T (°C)	30	5200.00969	5200	0.00969	1.8626
		T (°C)	40	5200.01267	5200	0.01267	2.4359
		T (°C)	50	5200.00382	5200	0.00382	0.7348
		T (°C)	60	5200.00569	5200	0.00569	1.0940
		T (°C)	70	5200.00002	5200	0.00002	0.0044
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	5240.0037	5240	0.0037	0.7100
		V max (V)	4.37	5240.0018	5240	0.0018	0.3494
		V min (V)	3.23	5240.0068	5240	0.0068	1.2982
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	5240.0112	5240	0.0112	2.1467
		T (°C)	-10	5240.0133	5240	0.0133	2.5318
		T (°C)	0	5240.0125	5240	0.0125	2.3776
		T (°C)	10	5240.0119	5240	0.0119	2.2620
		T (°C)	20	5240.0072	5240	0.0072	1.3762
		T (°C)	30	5240.0016	5240	0.0016	0.3067
		T (°C)	40	5240.0084	5240	0.0084	1.6063
		T (°C)	50	5240.0095	5240	0.0095	1.8174
		T (°C)	60	5240.0030	5240	0.0030	0.5814
		T (°C)	70	5240.0115	5240	0.0115	2.1989
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	5745.00958	5745	0.00958	1.6672
		V max (V)	4.37	5745.00713	5745	0.00713	1.2411
		V min (V)	3.23	5745.00511	5745	0.00511	0.8887
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	5745.01277	5745	0.01277	2.2222
		T (°C)	-10	5745.00372	5745	0.00372	0.6480
		T (°C)	0	5745.00074	5745	0.00074	0.1294
		T (°C)	10	5745.00704	5745	0.00704	1.2257
		T (°C)	20	5745.00254	5745	0.00254	0.4425
		T (°C)	30	5745.00250	5745	0.00250	0.4347
		T (°C)	40	5745.00935	5745	0.00935	1.6272
		T (°C)	50	5745.00811	5745	0.00811	1.4115
		T (°C)	60	5745.00760	5745	0.00760	1.3227
		T (°C)	70	5745.01092	5745	0.01092	1.9006
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	5785.00062	5785	0.00062	0.1079
		V max (V)	4.37	5785.00167	5785	0.00167	0.2884
		V min (V)	3.23	5785.01015	5785	0.01015	1.7550
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	5785.01229	5785	0.01229	2.1252
		T (°C)	-10	5785.00869	5785	0.00869	1.5016
		T (°C)	0	5785.00045	5785	0.00045	0.0774
		T (°C)	10	5785.01022	5785	0.01022	1.7670
		T (°C)	20	5785.00934	5785	0.00934	1.6140
		T (°C)	30	5785.01049	5785	0.01049	1.8134
		T (°C)	40	5785.00149	5785	0.00149	0.2572
		T (°C)	50	5785.00394	5785	0.00394	0.6817
		T (°C)	60	5785.00298	5785	0.00298	0.5145
		T (°C)	70	5785.00422	5785	0.00422	0.7302
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	5825.00929	5825	0.00929	1.5949
		V max (V)	4.37	5825.00900	5825	0.00900	1.5455
		V min (V)	3.23	5825.00446	5825	0.00446	0.7664
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	5825.01164	5825	0.01164	1.9978
		T (°C)	-10	5825.00176	5825	0.00176	0.3030
		T (°C)	0	5825.00110	5825	0.00110	0.1882
		T (°C)	10	5825.00438	5825	0.00438	0.7524
		T (°C)	20	5825.01140	5825	0.01140	1.9563
		T (°C)	30	5825.00539	5825	0.00539	0.9249
		T (°C)	40	5825.01268	5825	0.01268	2.1776
		T (°C)	50	5825.00275	5825	0.00275	0.4716
		T (°C)	60	5825.00689	5825	0.00689	1.1834
		T (°C)	70	5825.00193	5825	0.00193	0.3305
Limits				5725-5850 MHz			
Result				Complies			

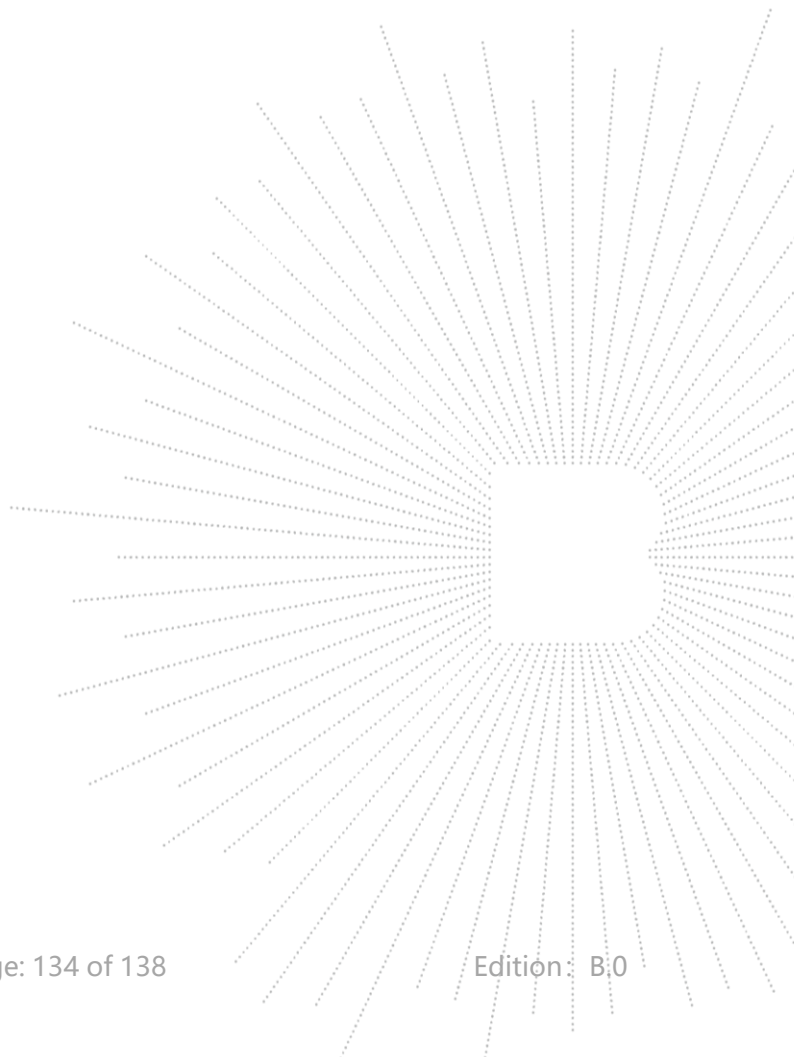
14. Antenna Requirement

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.

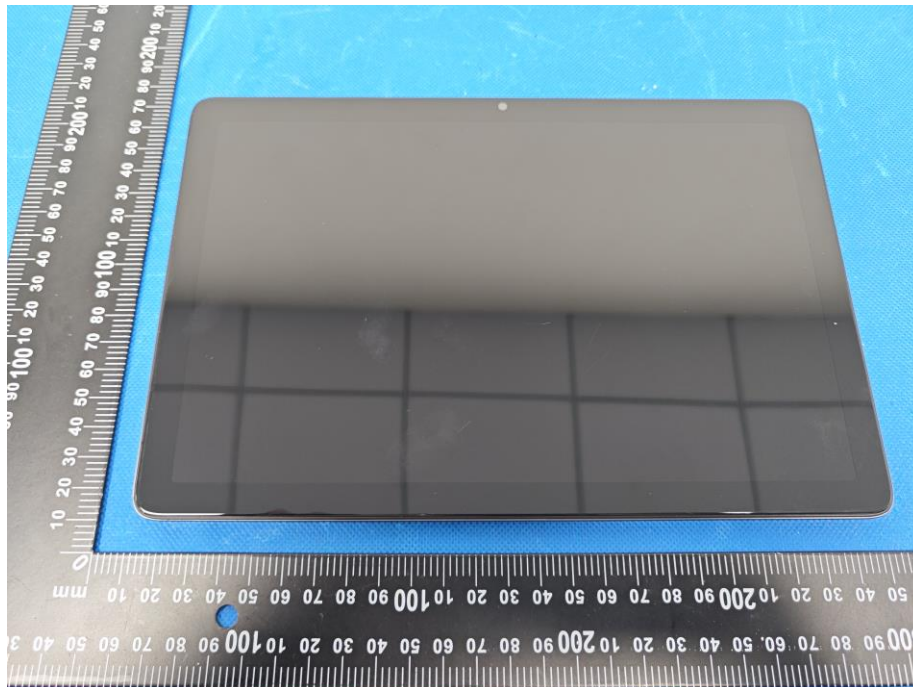
14.2 Test Result

The EUT antenna is FPC antenna. It comply with the standard requirement.

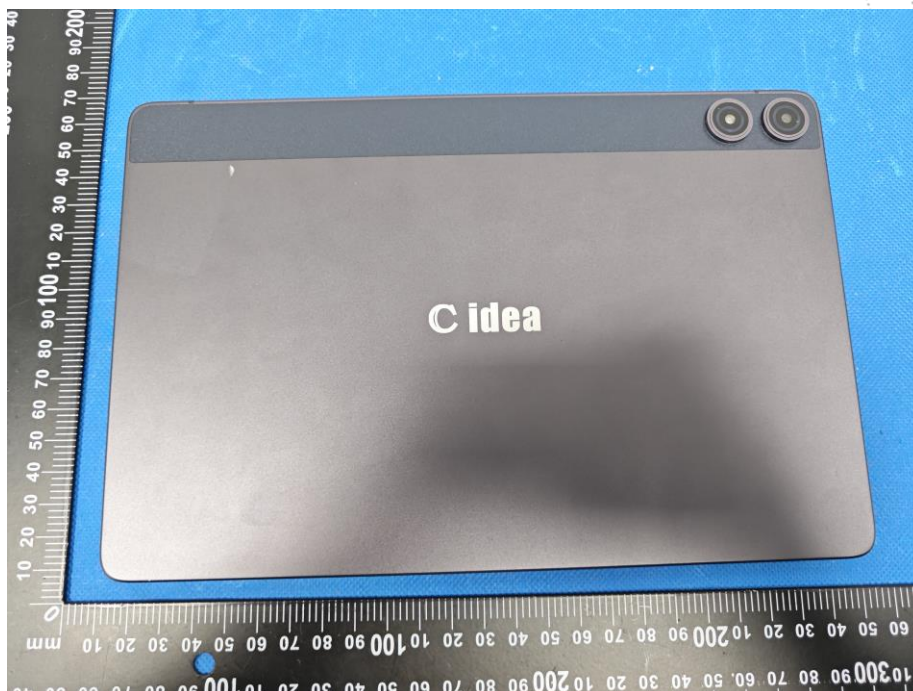


15. EUT Photographs

EUT Photo 1



EUT Photo 2



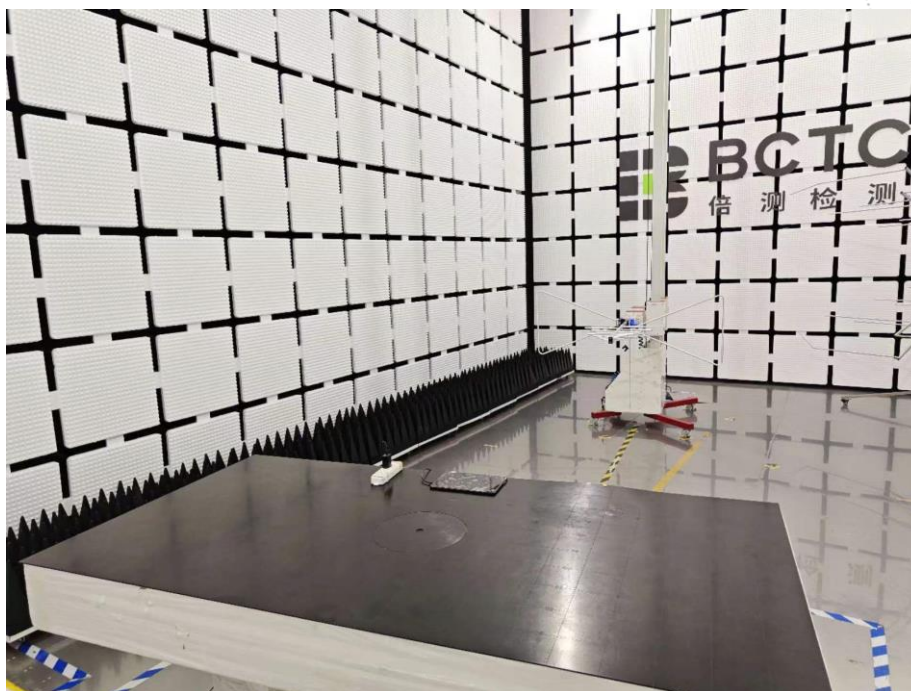
NOTE: Appendix-Photographs Of EUT Constructional Details

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 *****