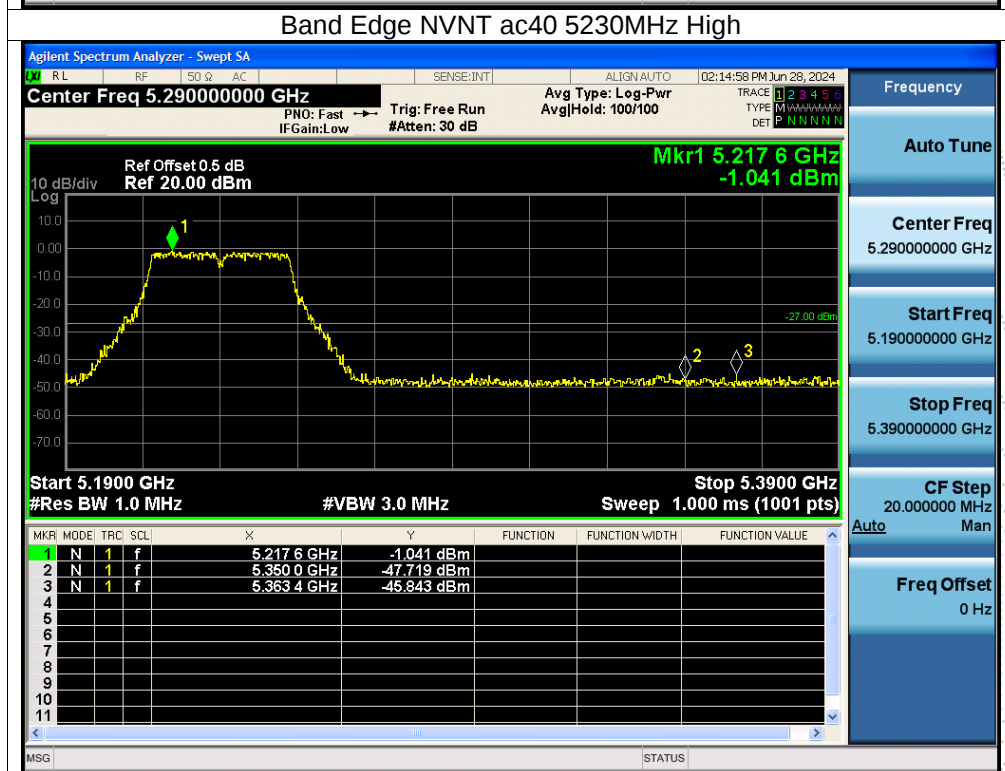
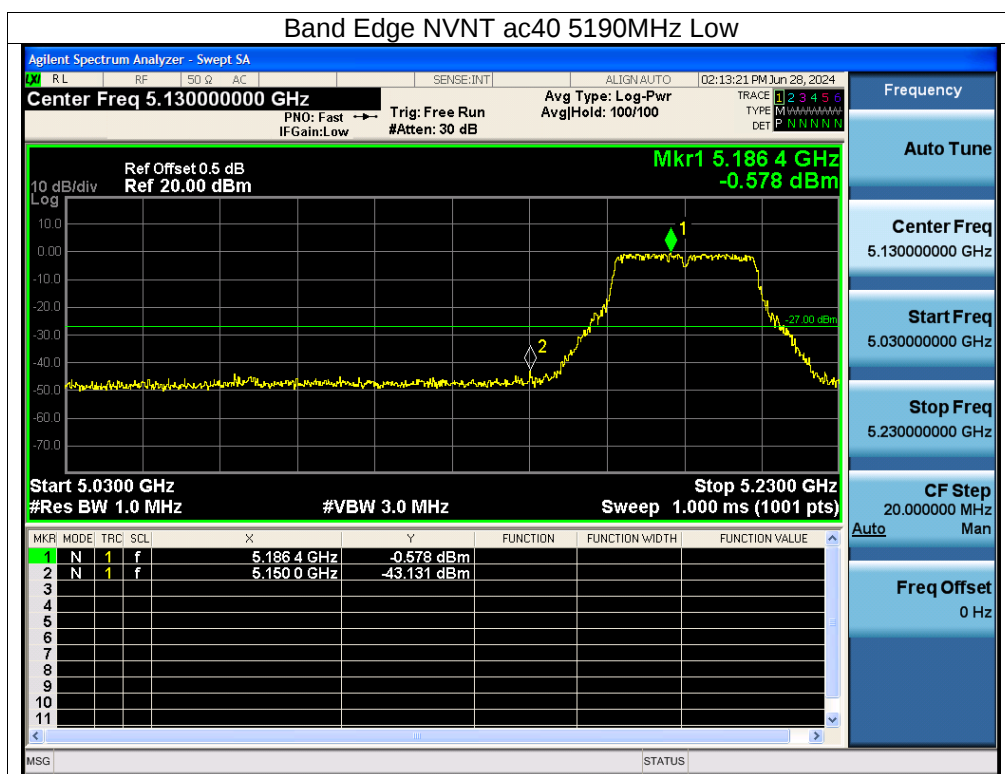
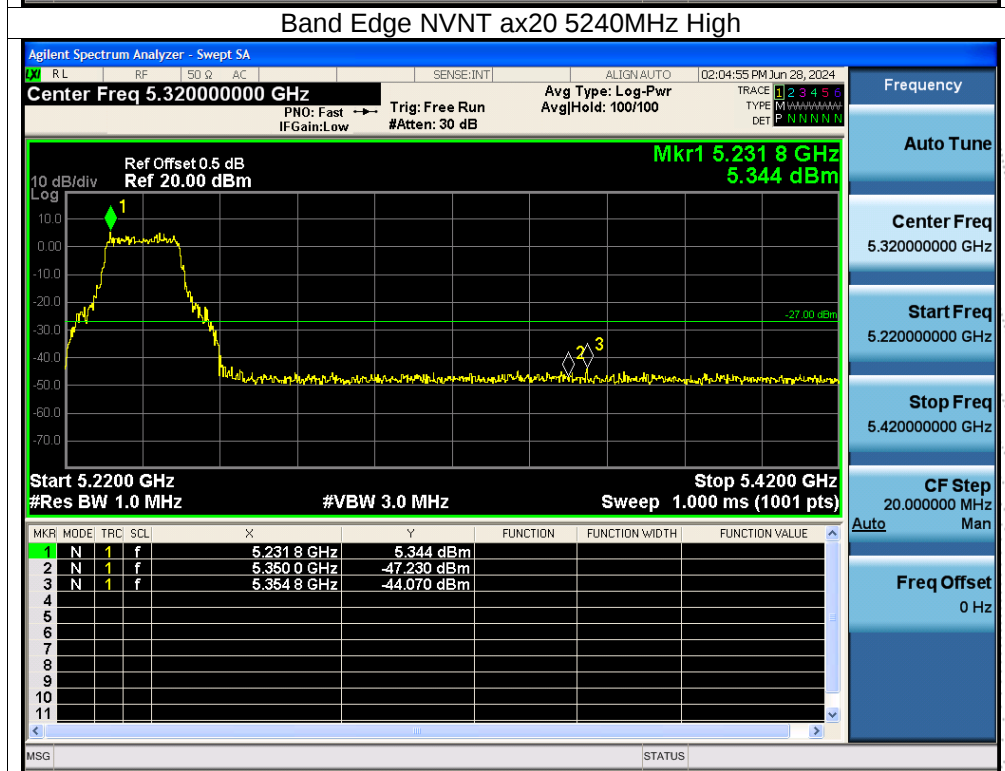
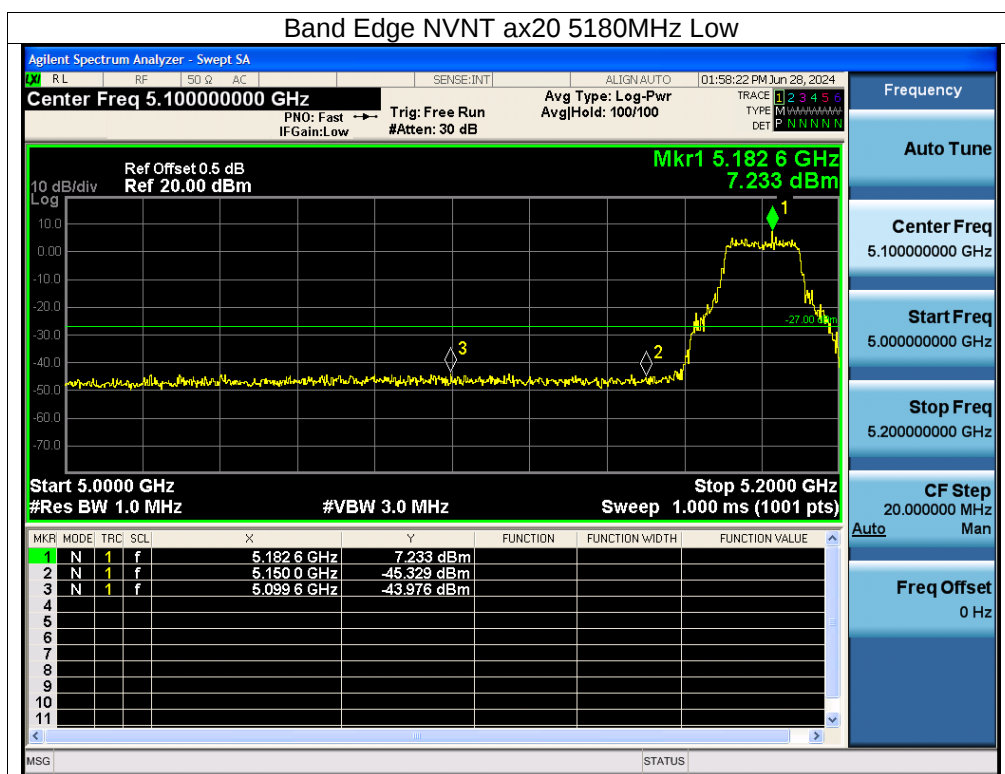
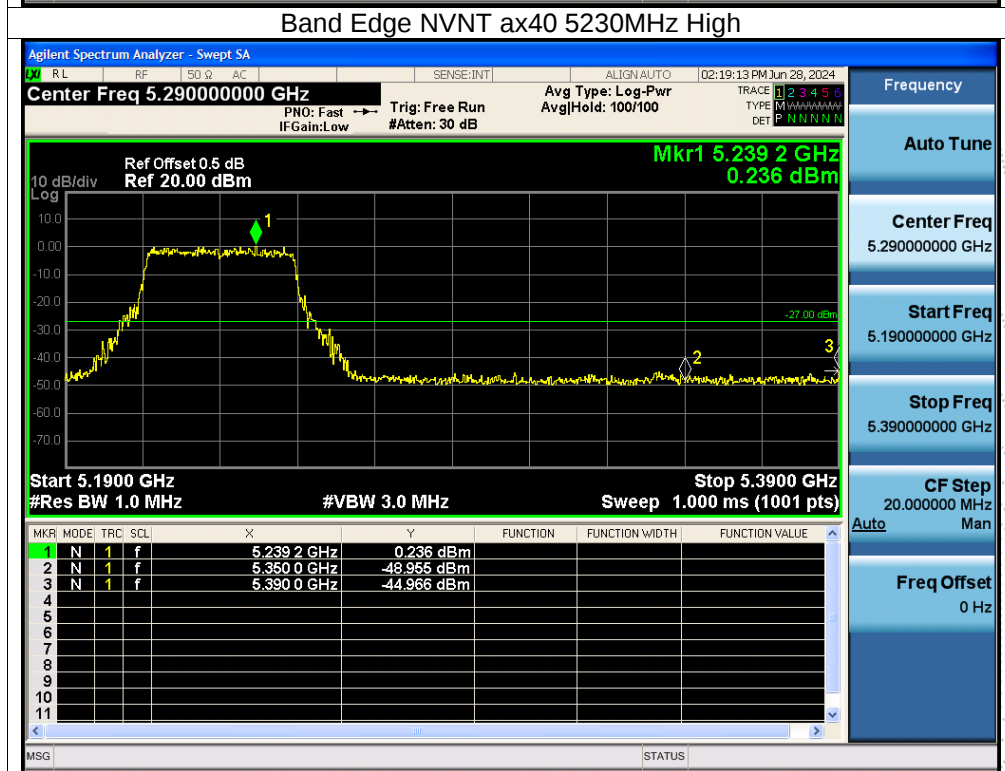
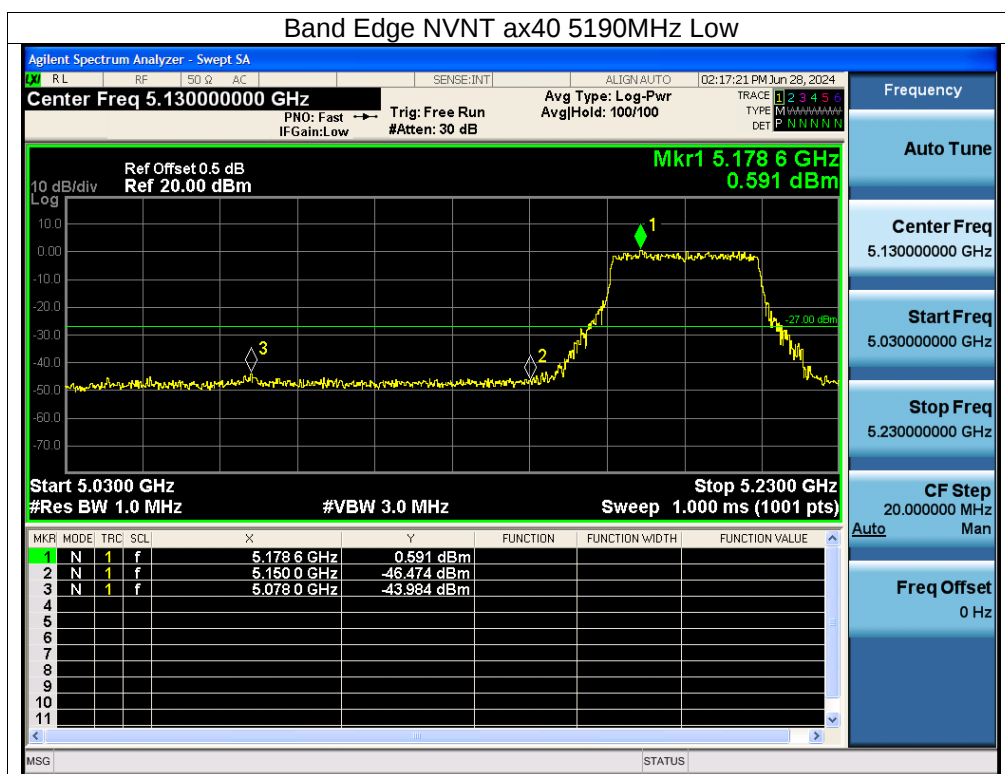
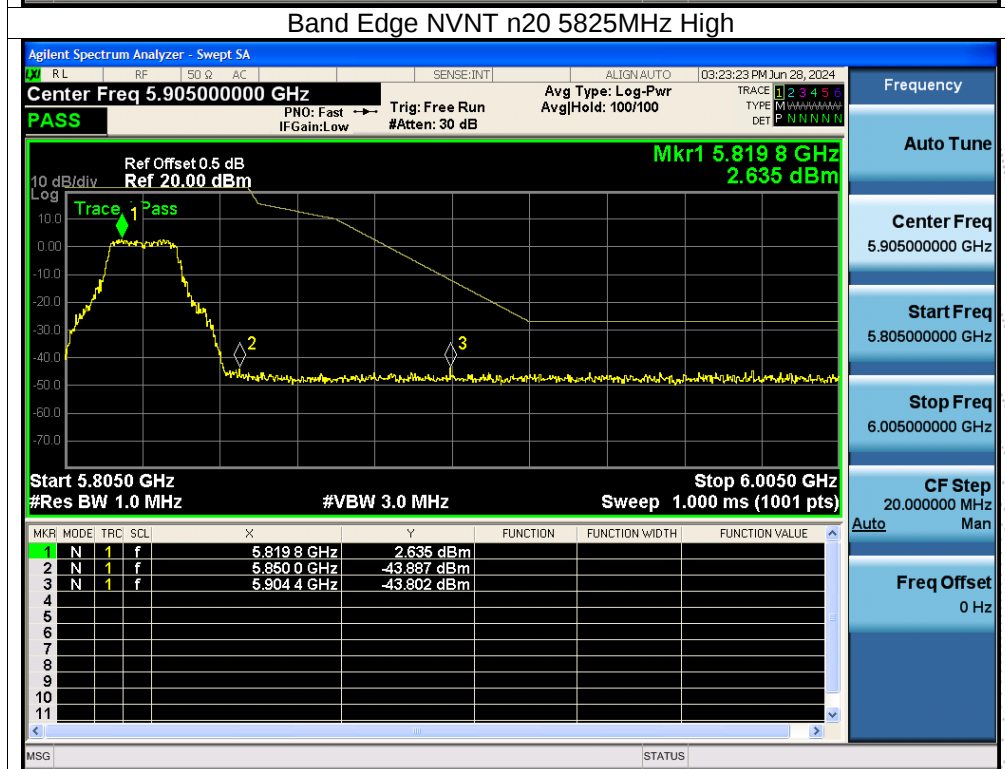
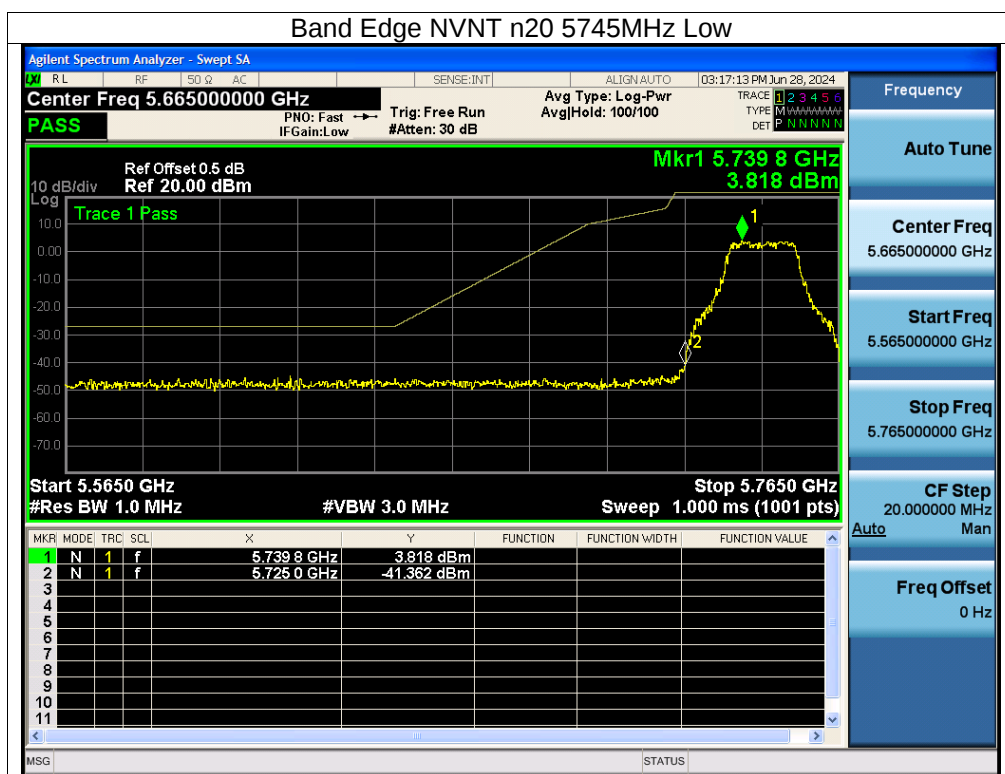


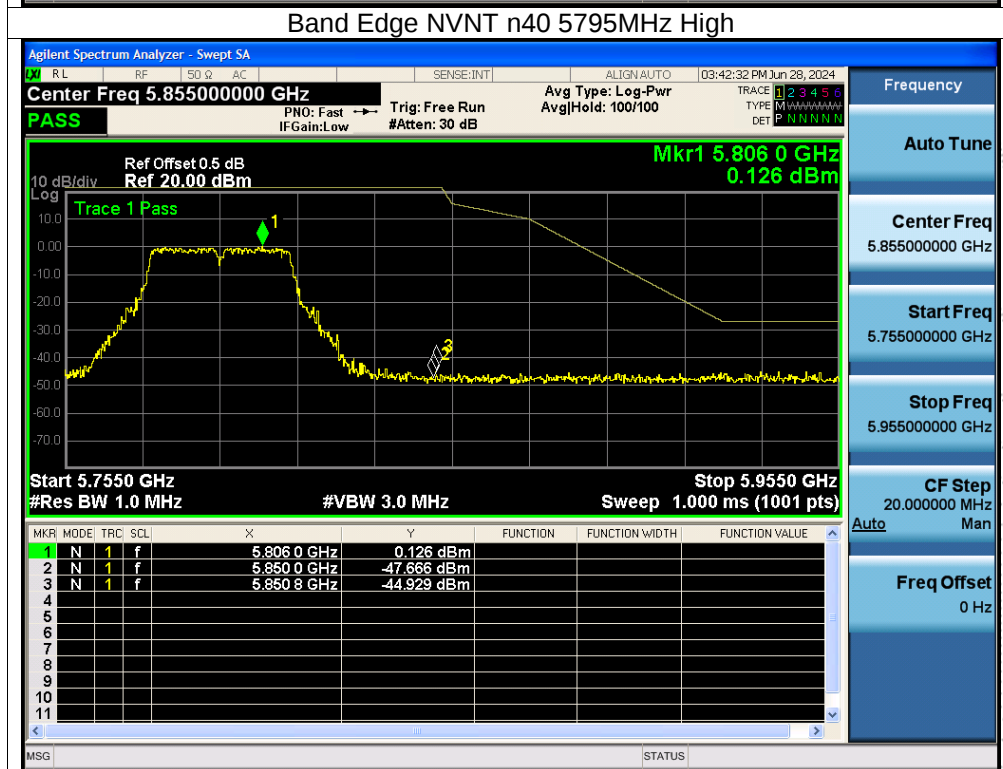
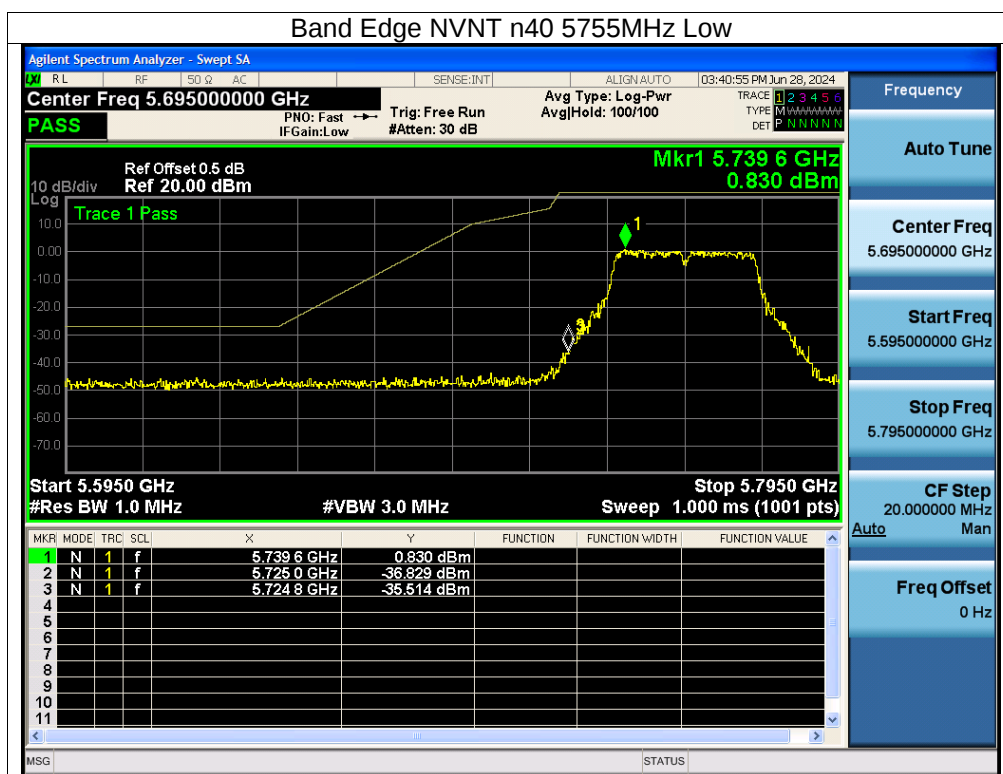


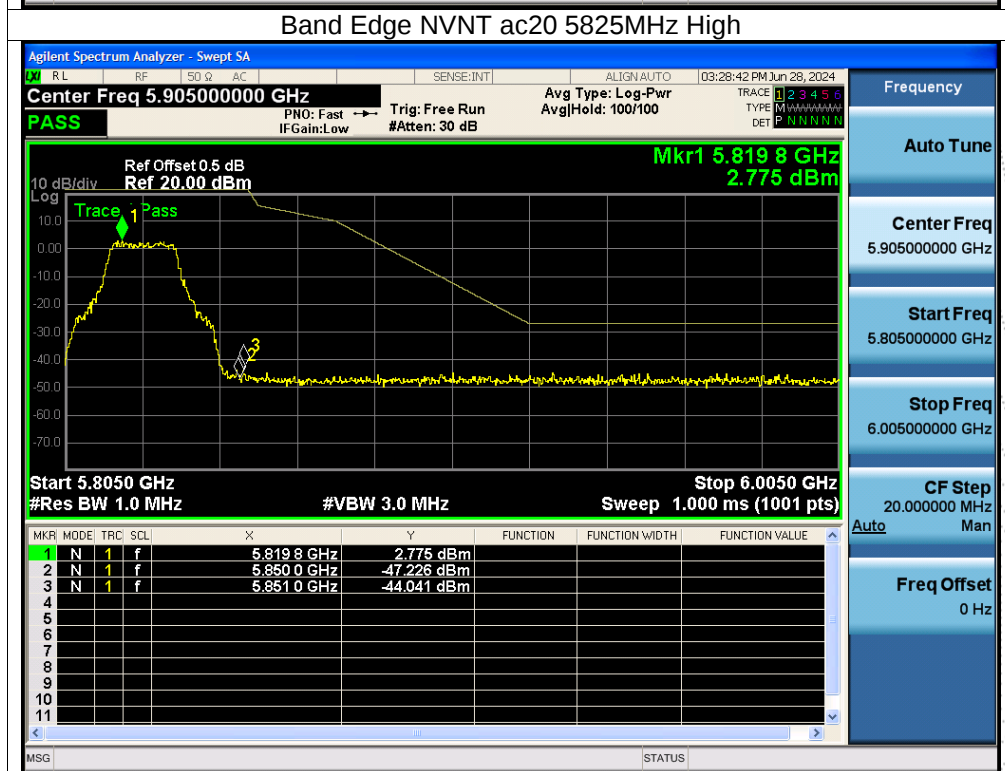
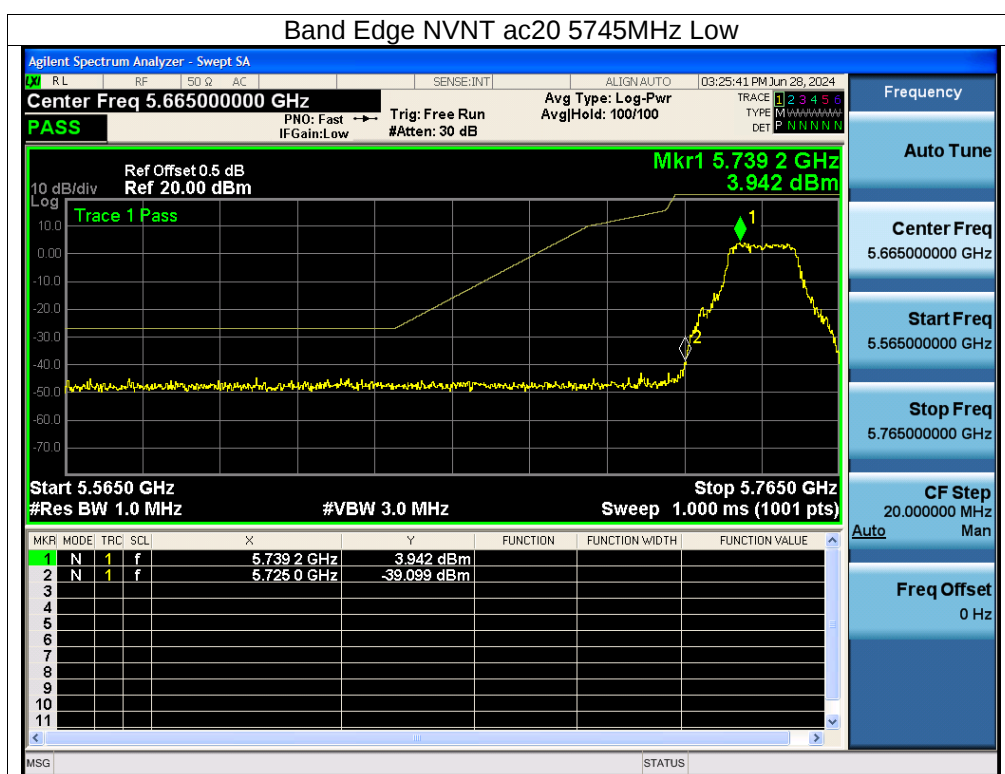


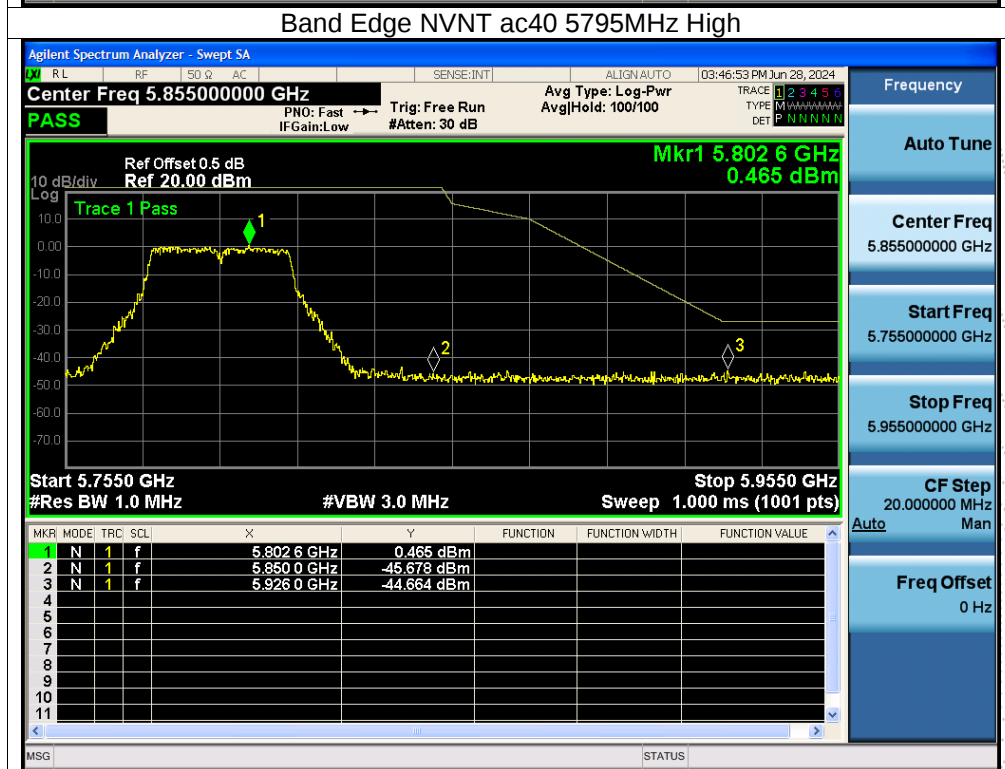
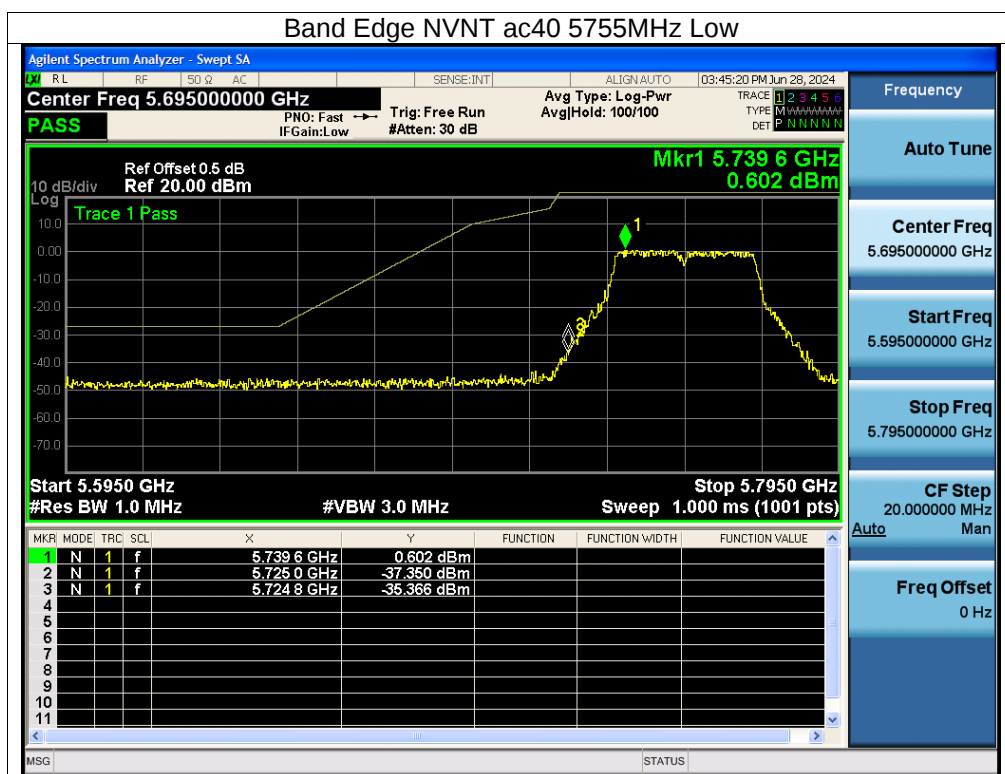


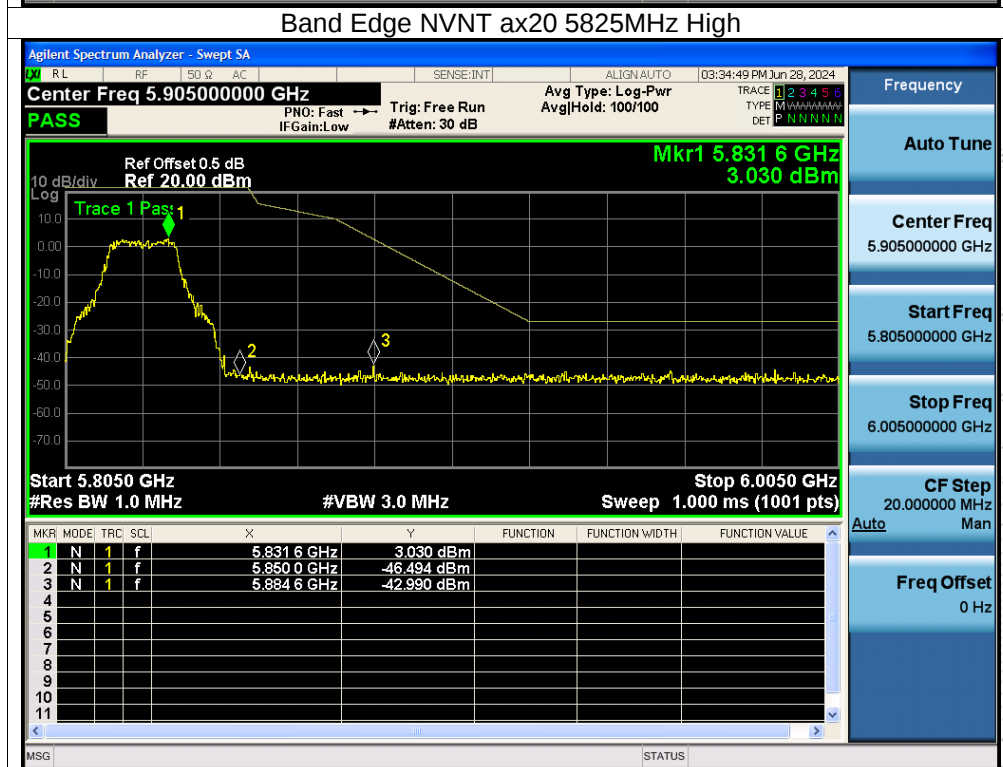
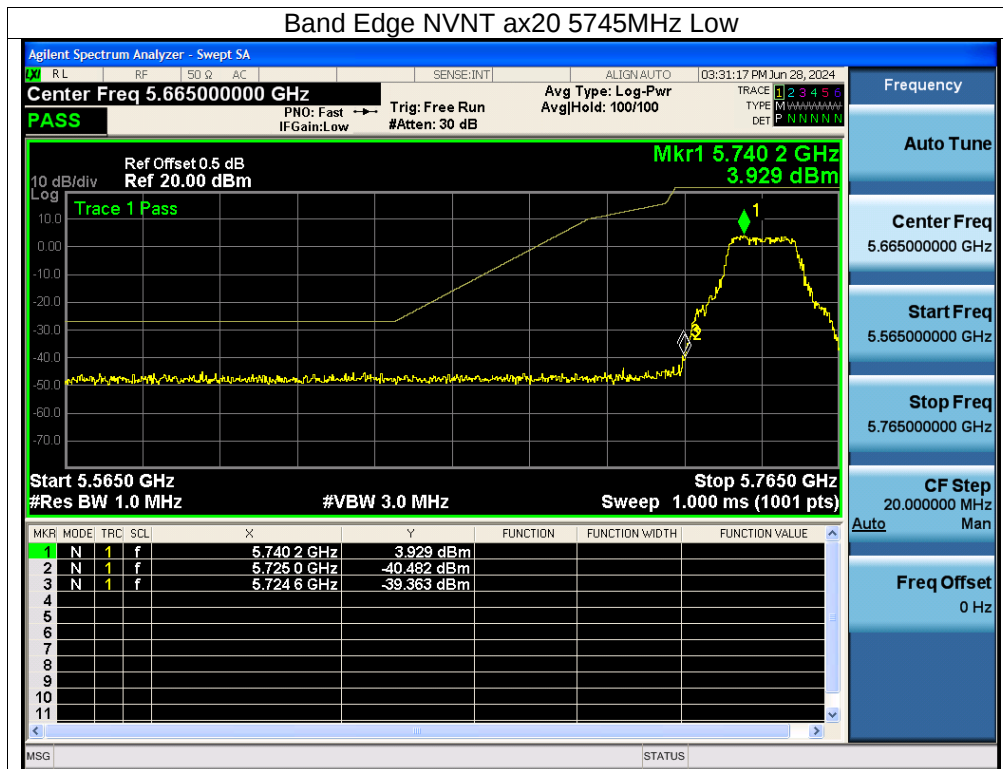


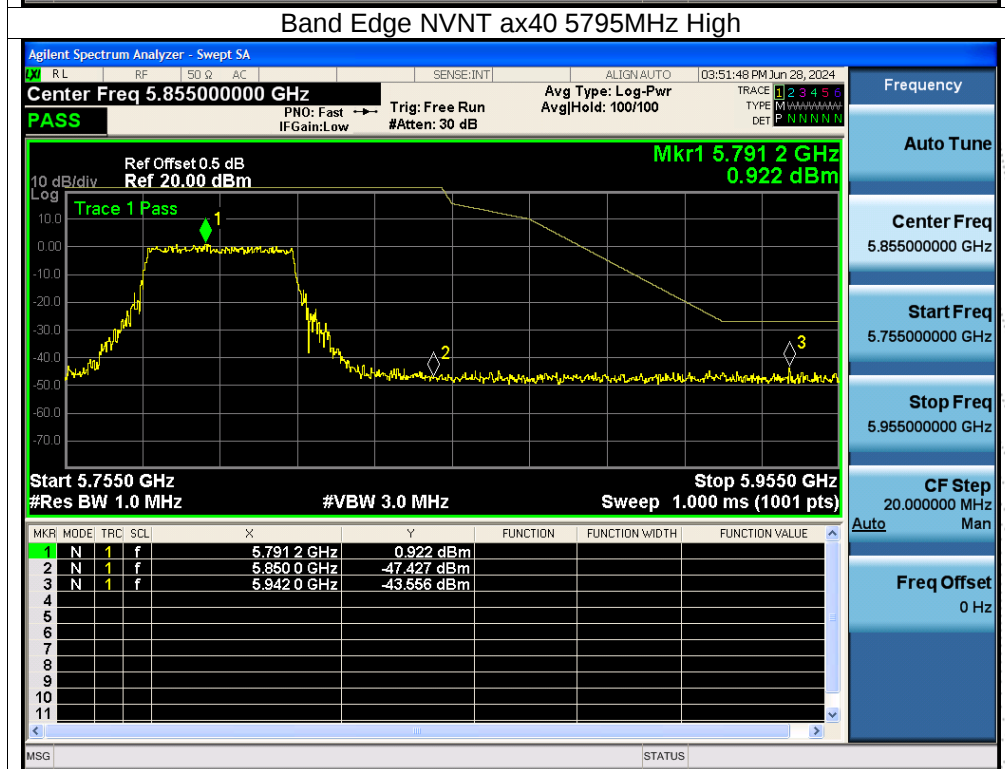
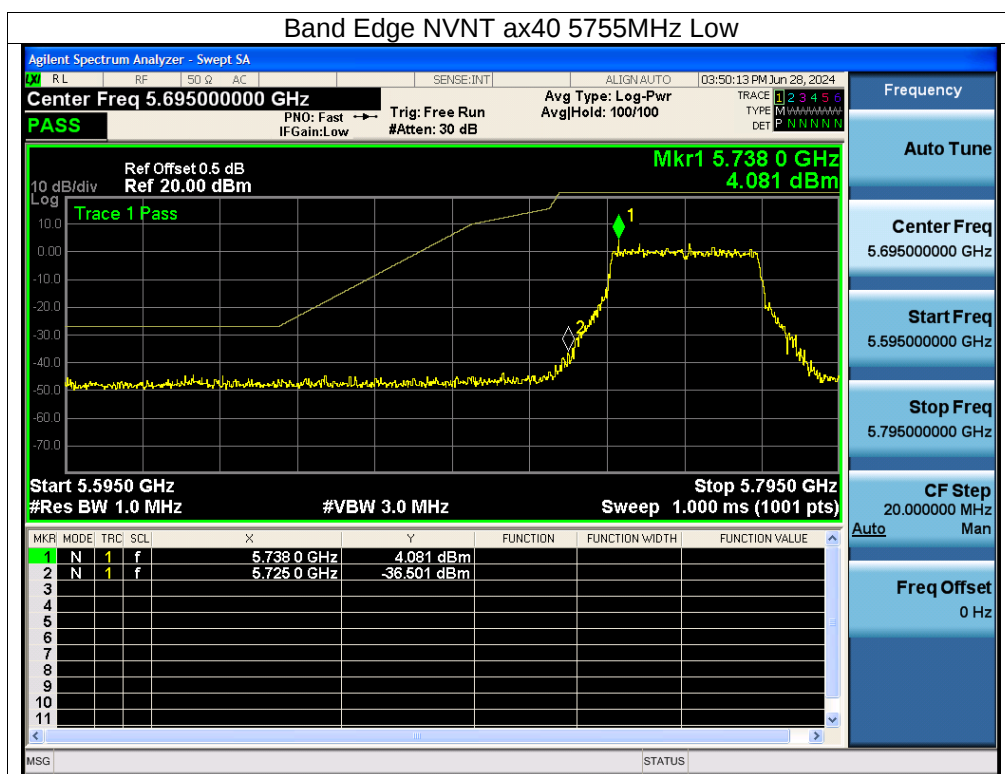












12. Spurious RF Conducted Emissions

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..

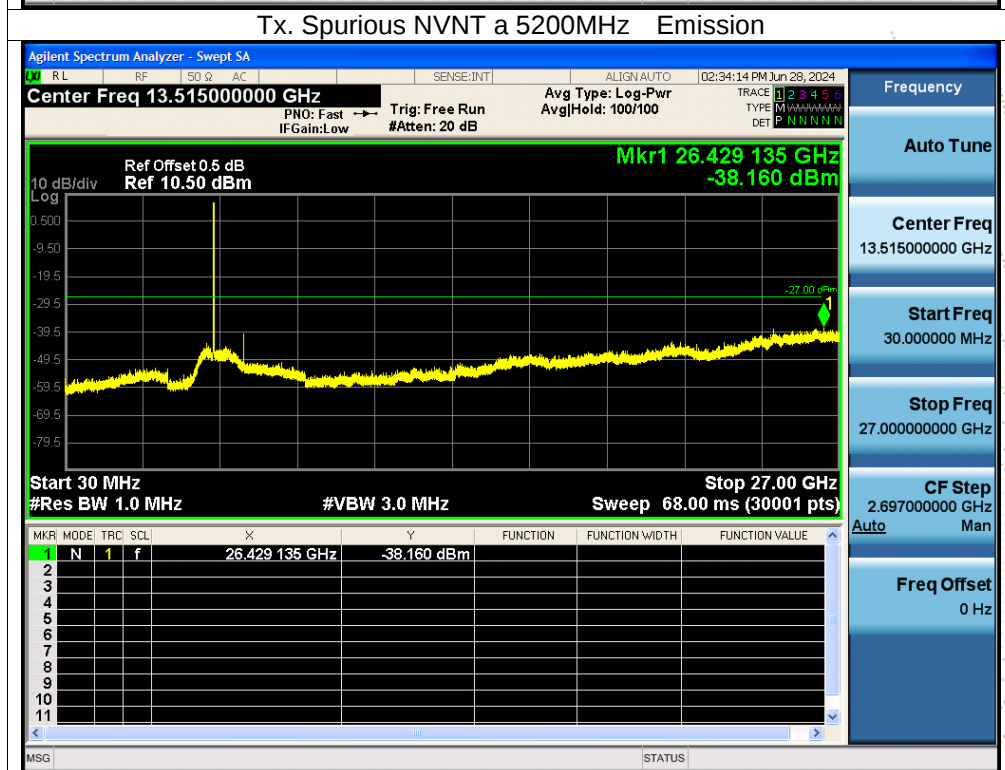
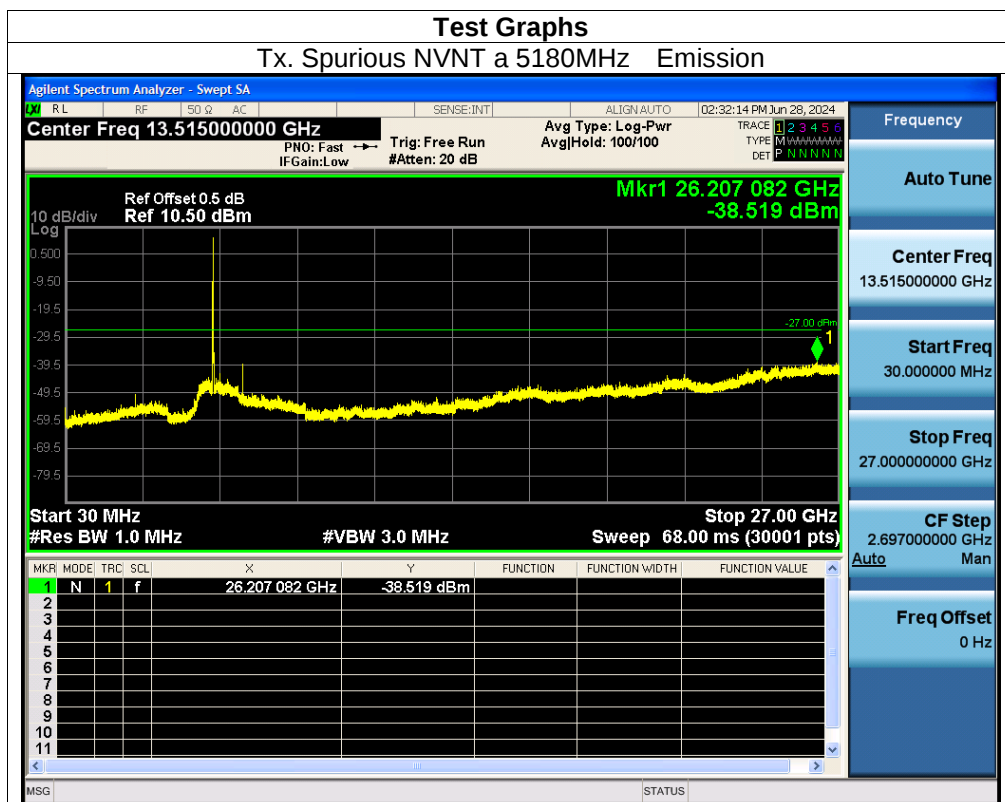
12.3 Test Procedure

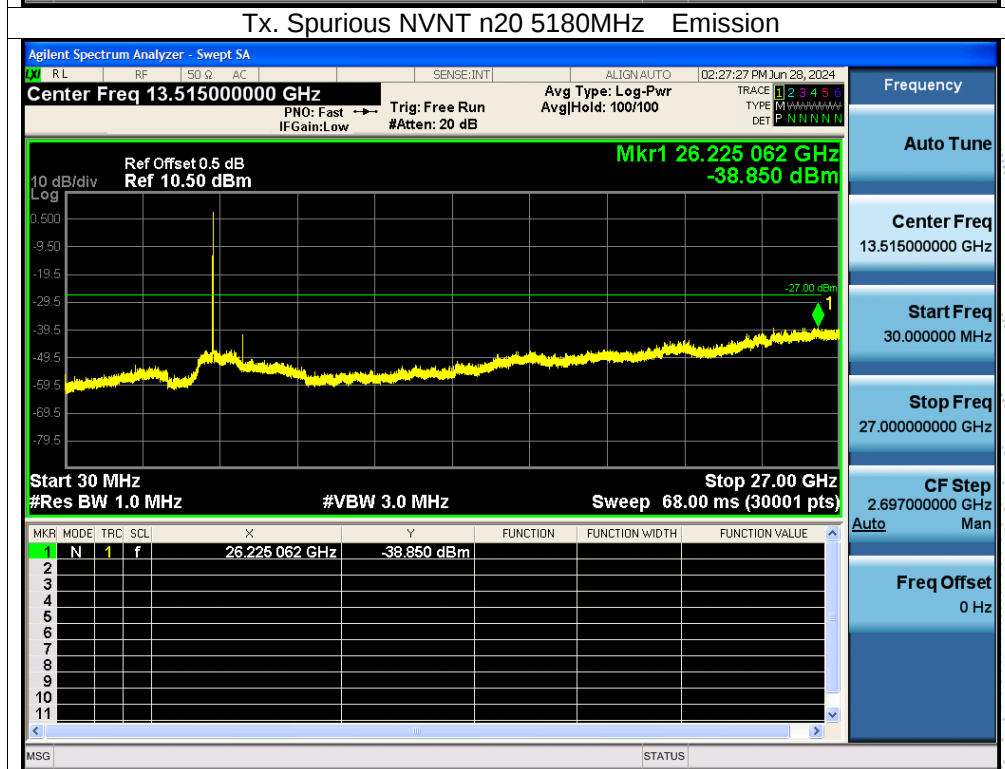
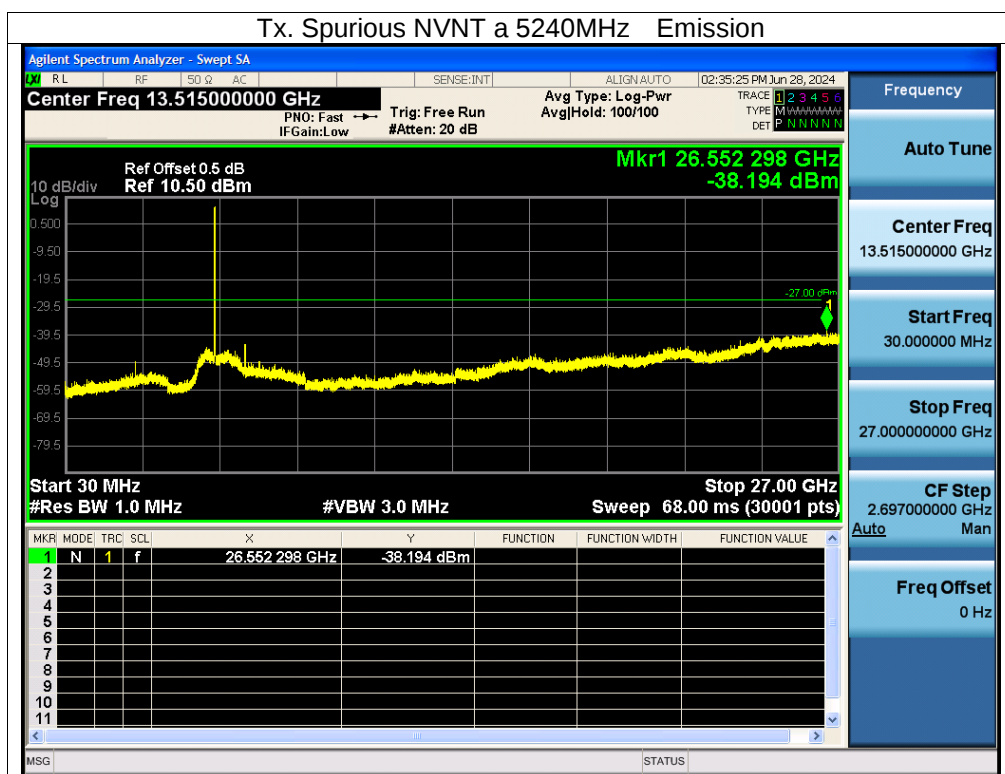
1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then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

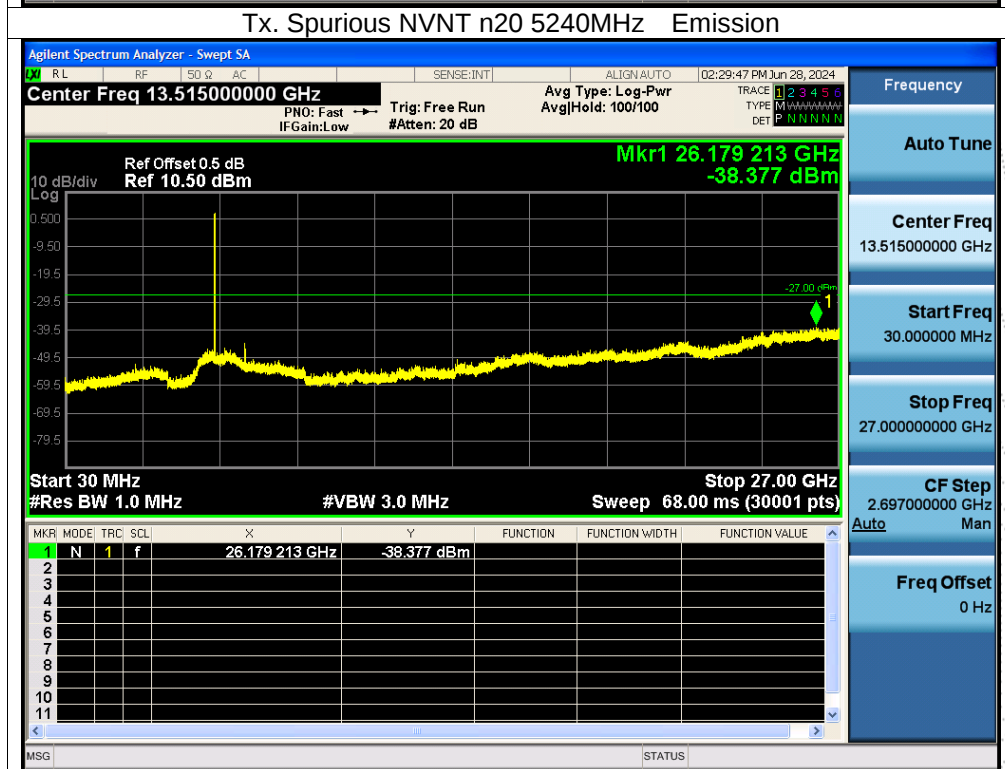
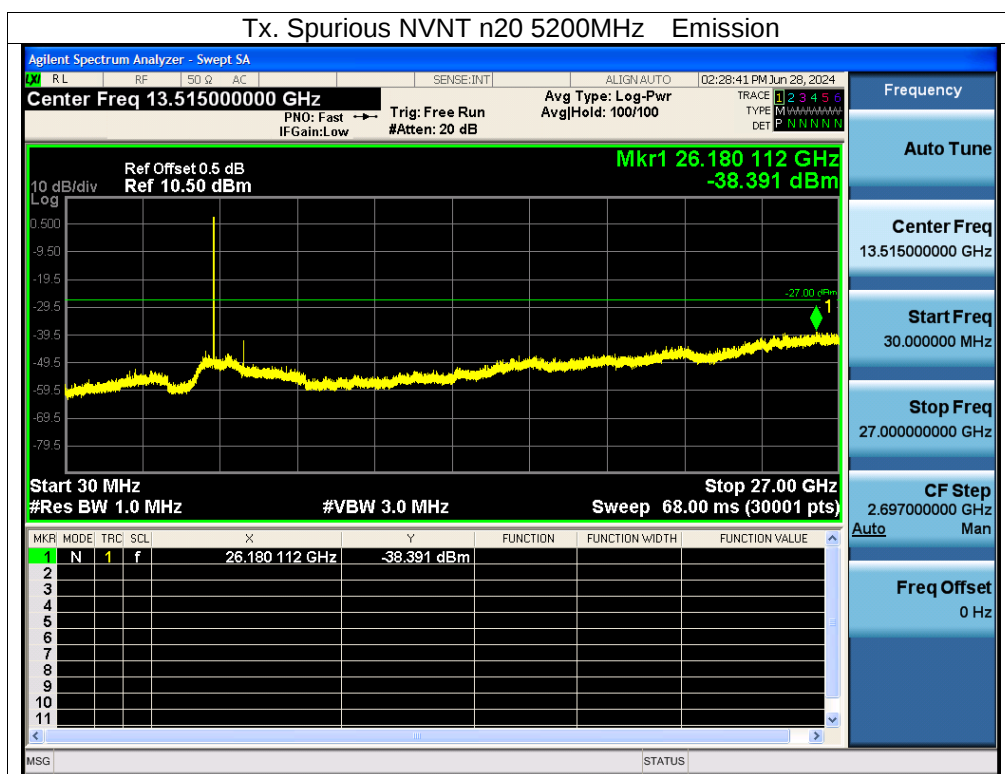
12.4 Test Result

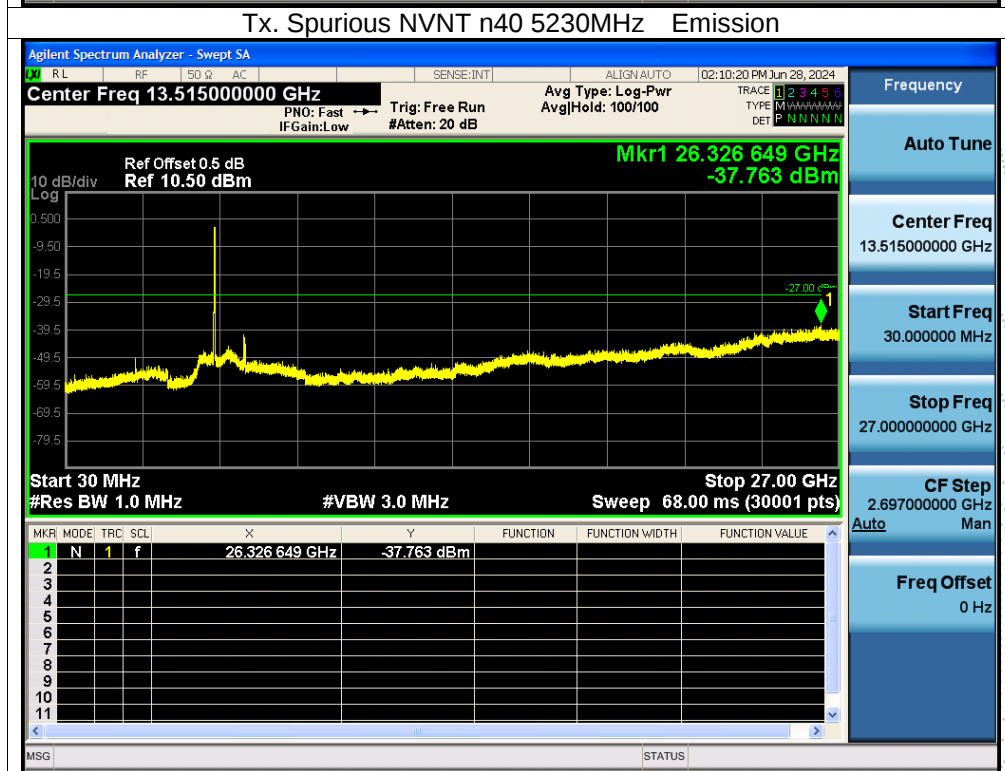
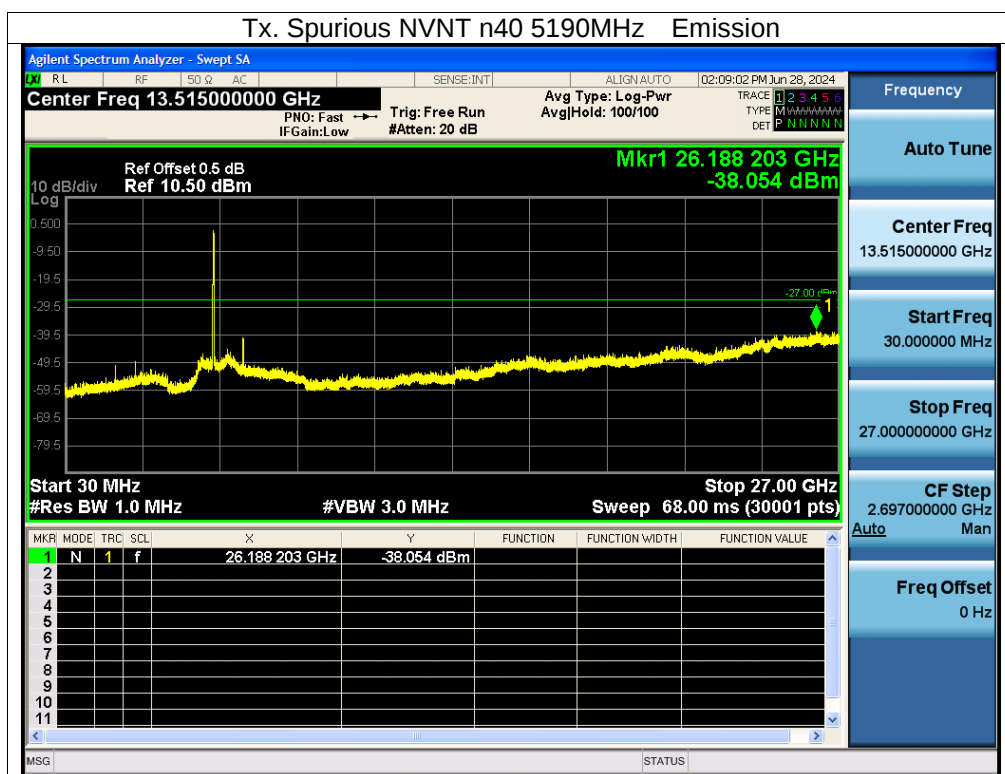
Remark: The measurement frequency range is from 9KHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the spurious emissions and bandedge measurement data.

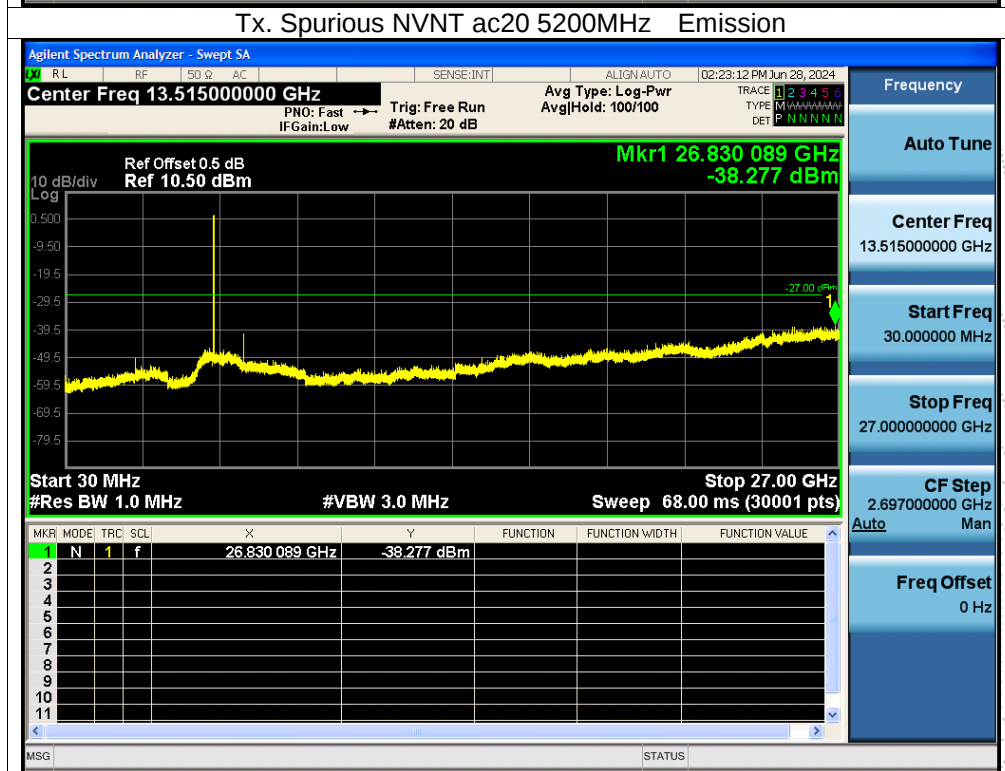
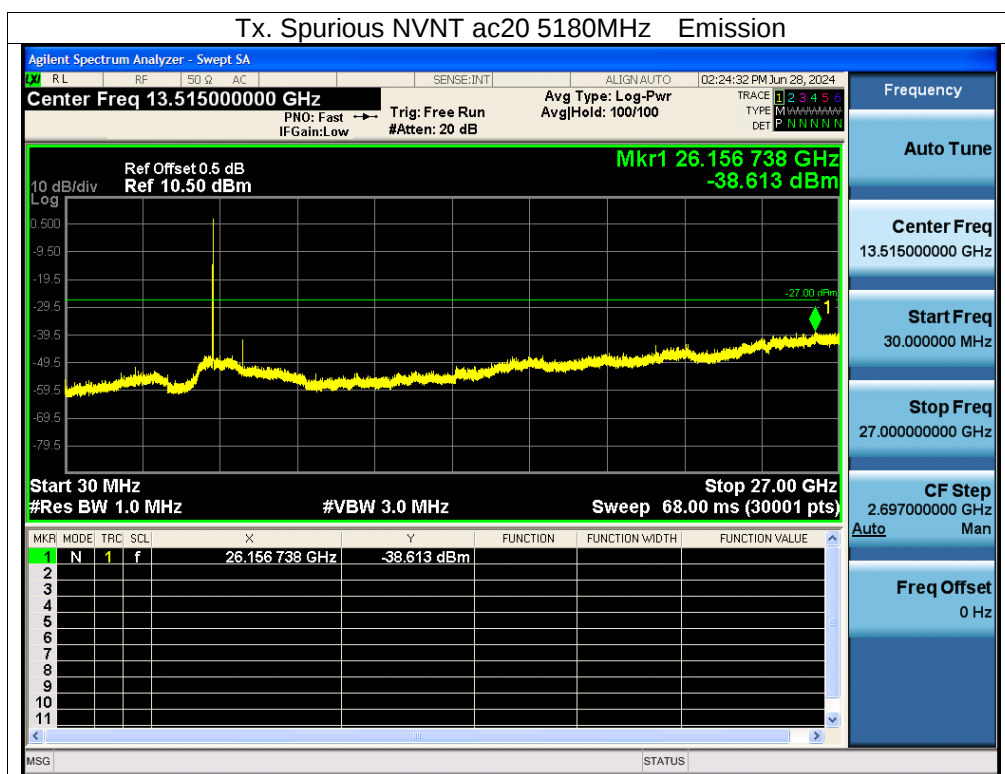
About: 26.5GHz-40GHz, The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

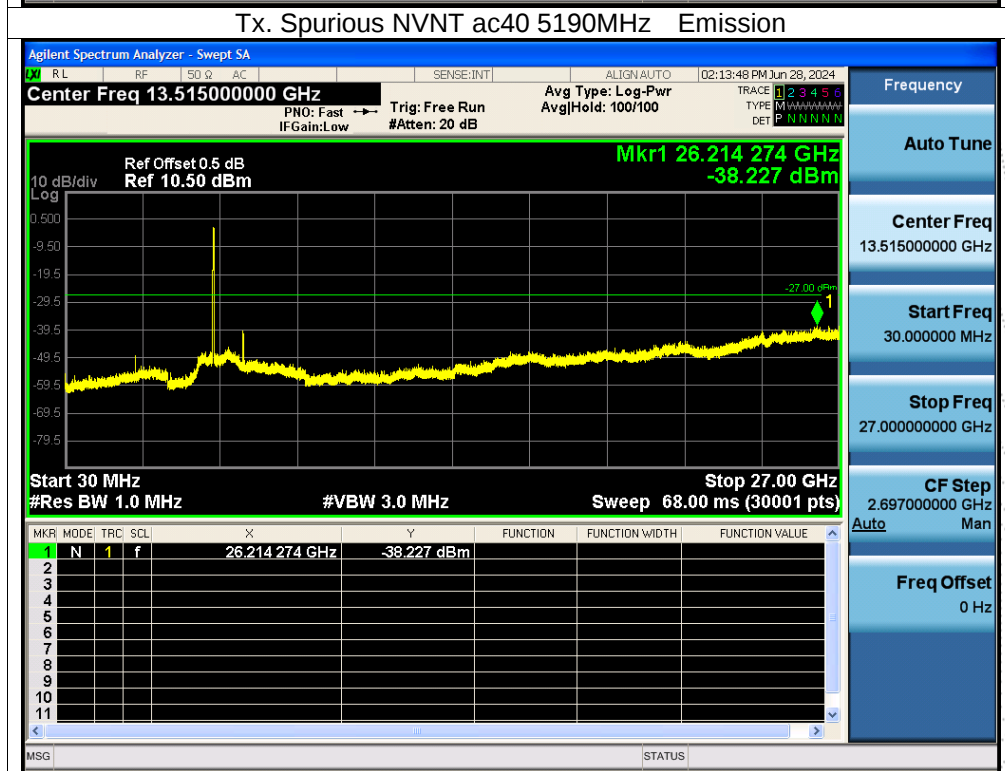
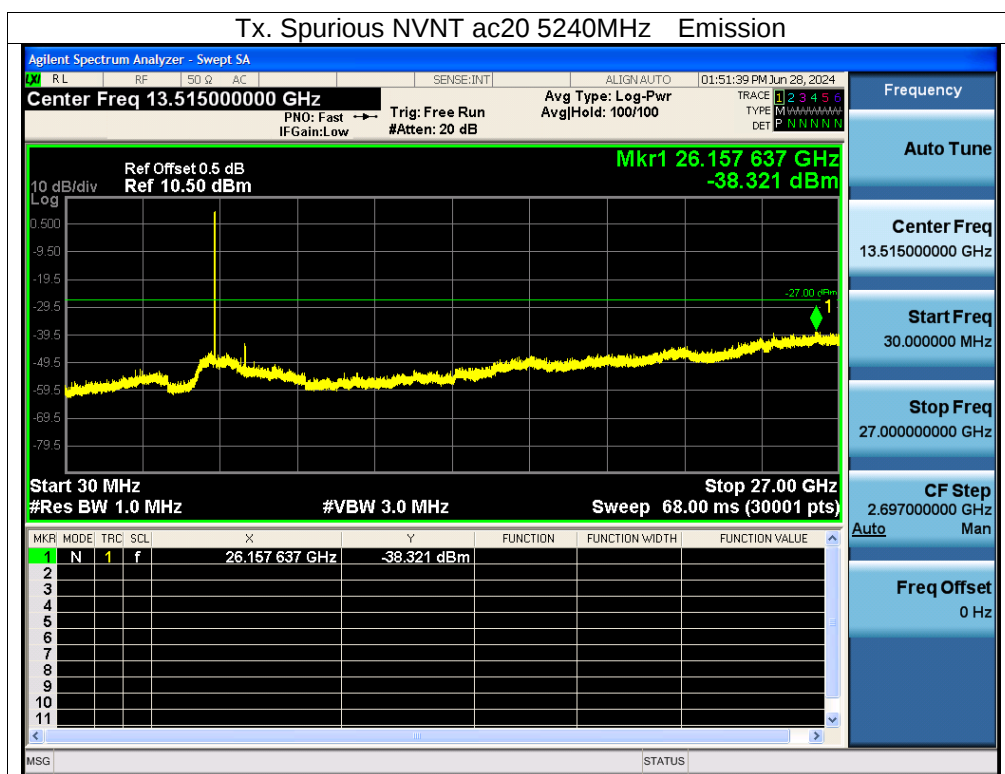


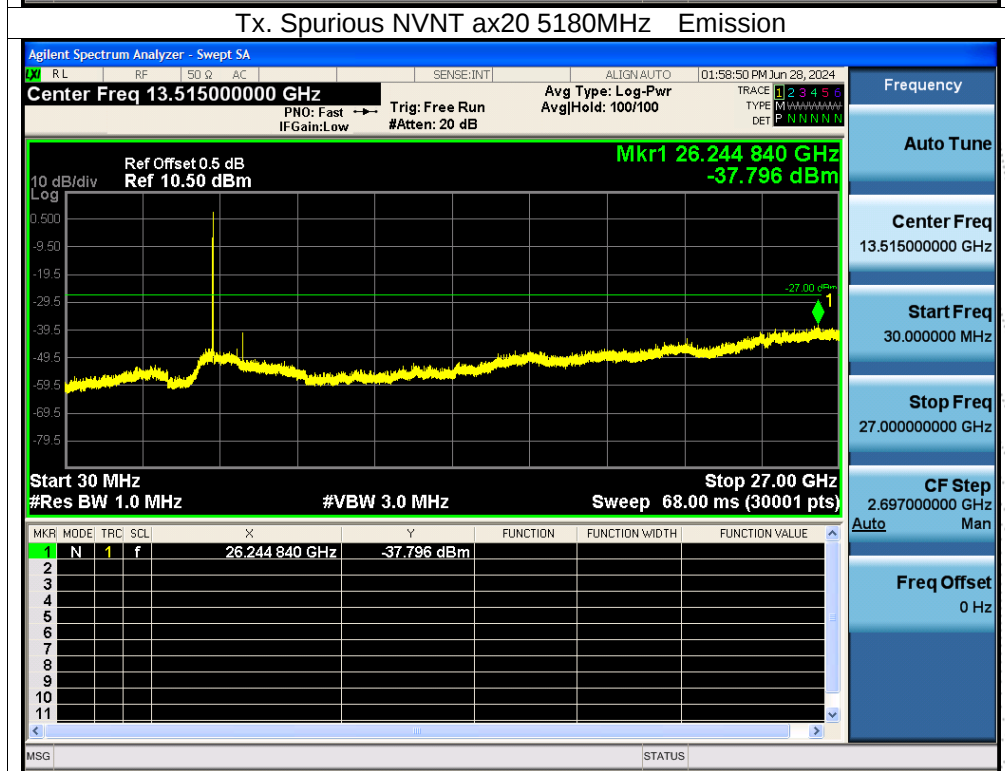
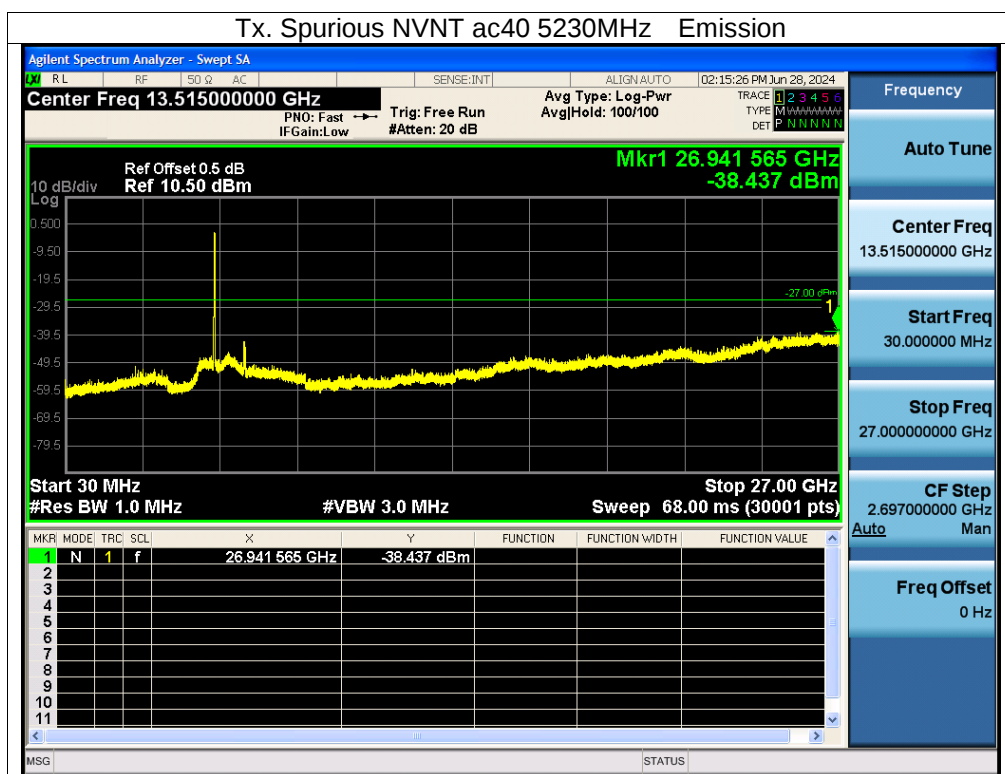


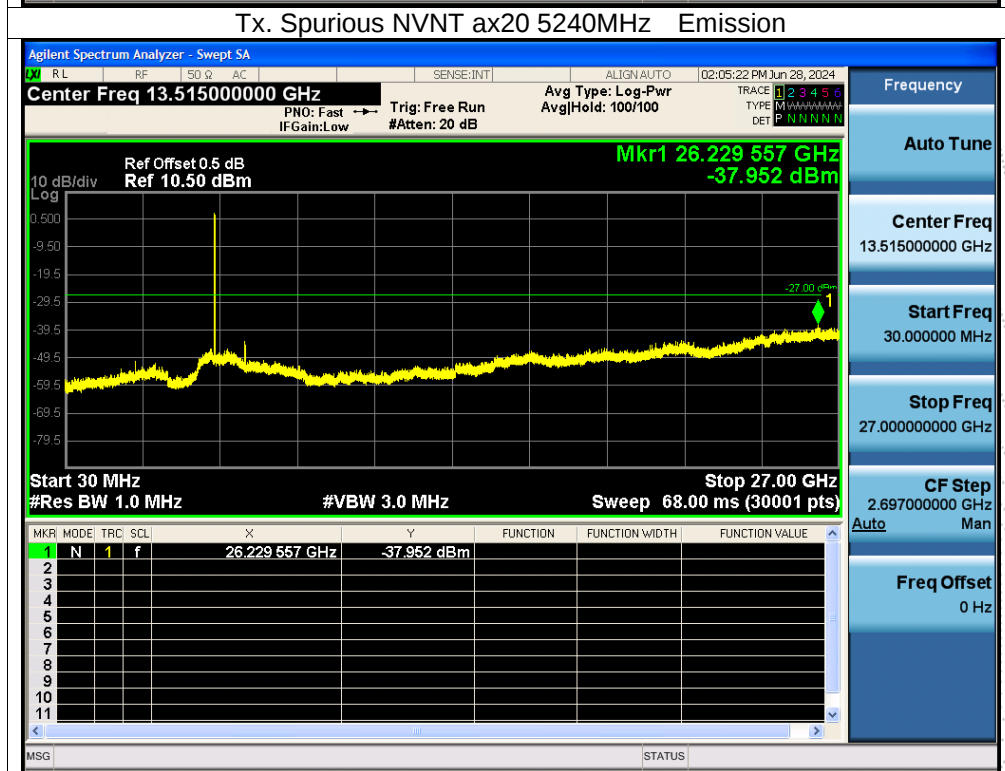
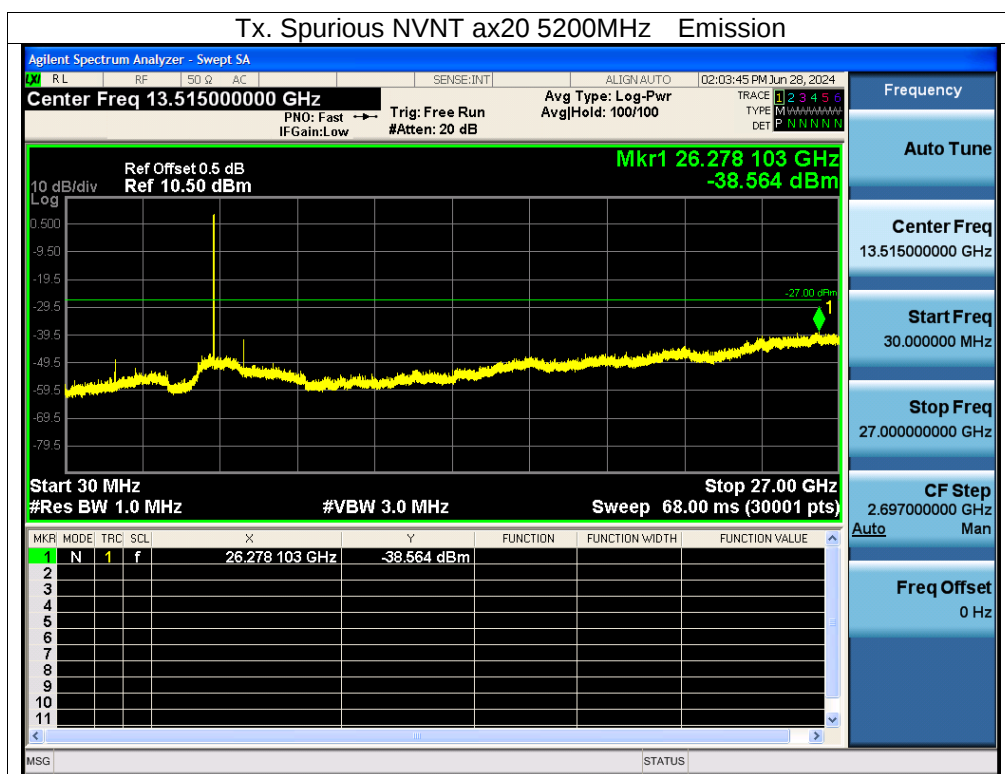


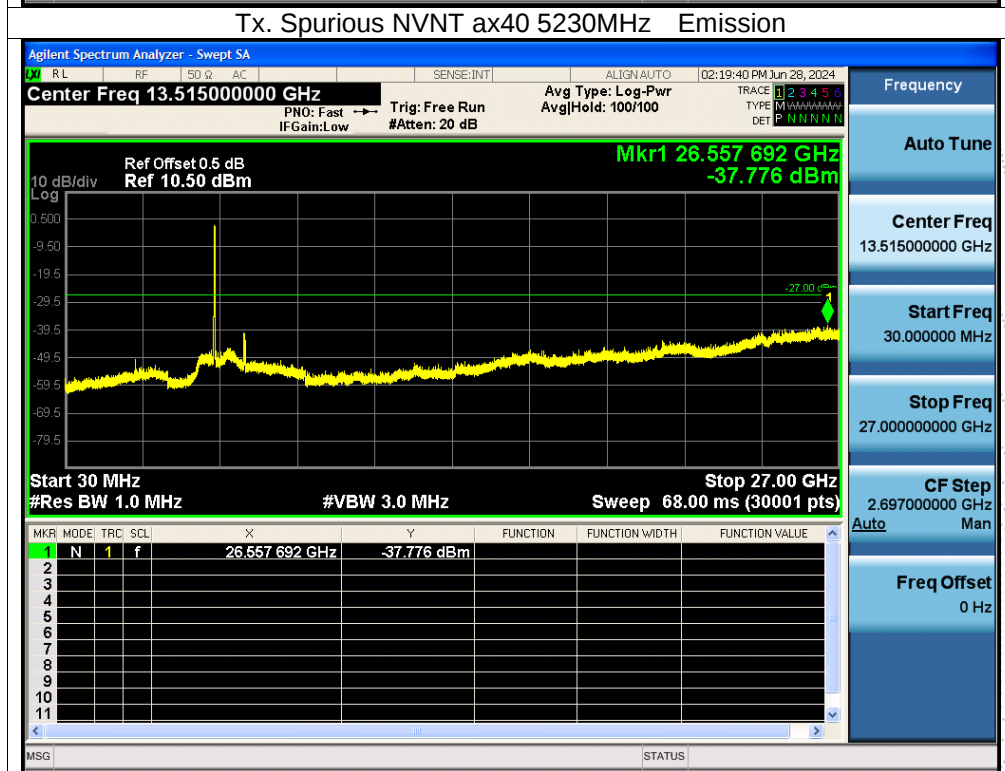
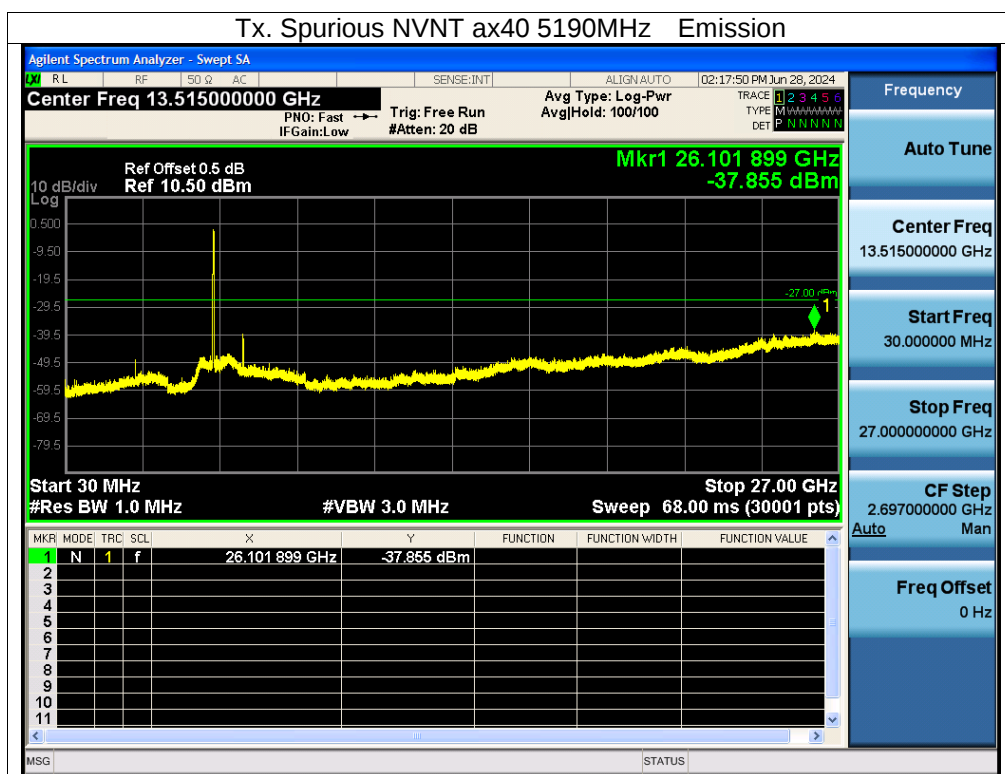


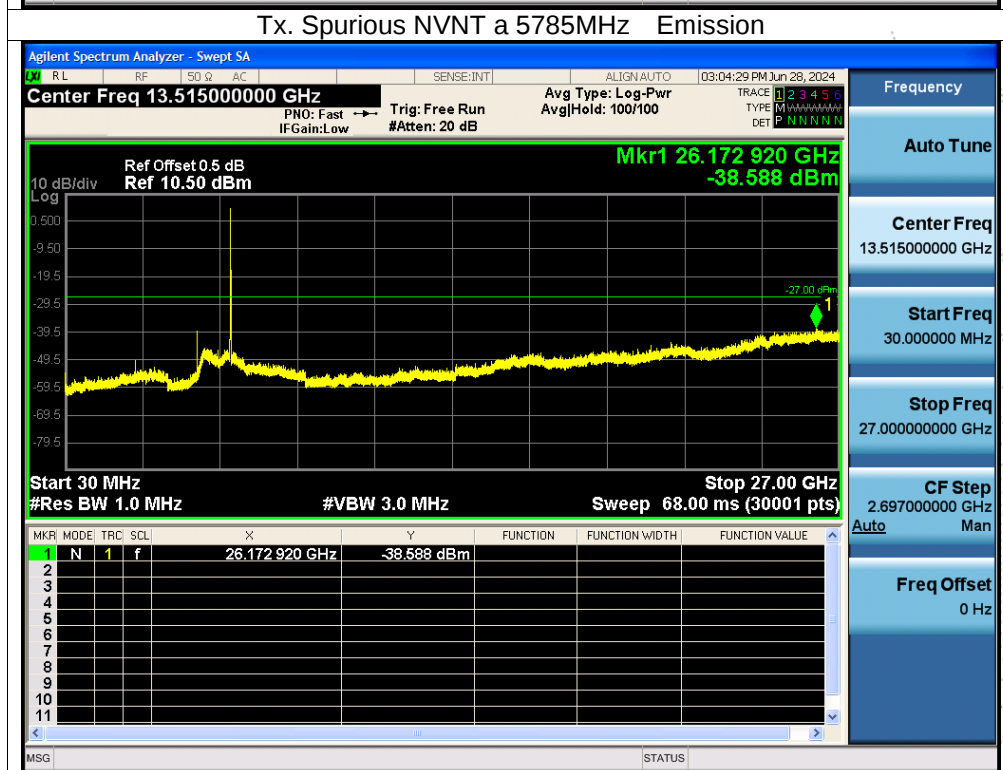
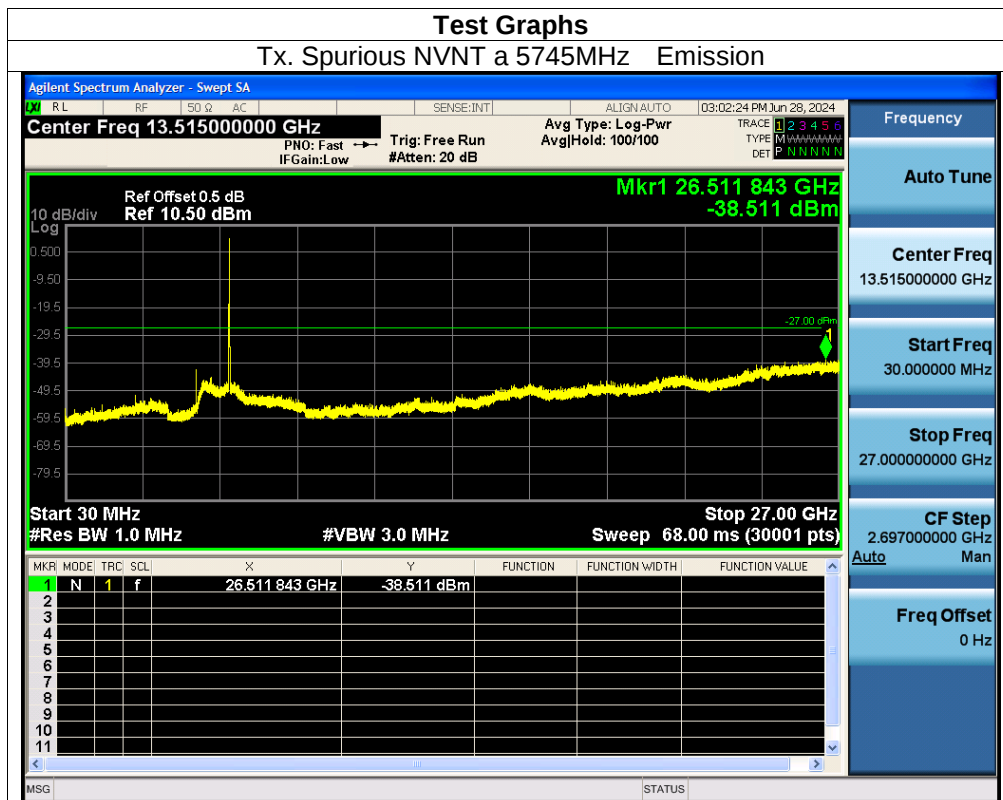


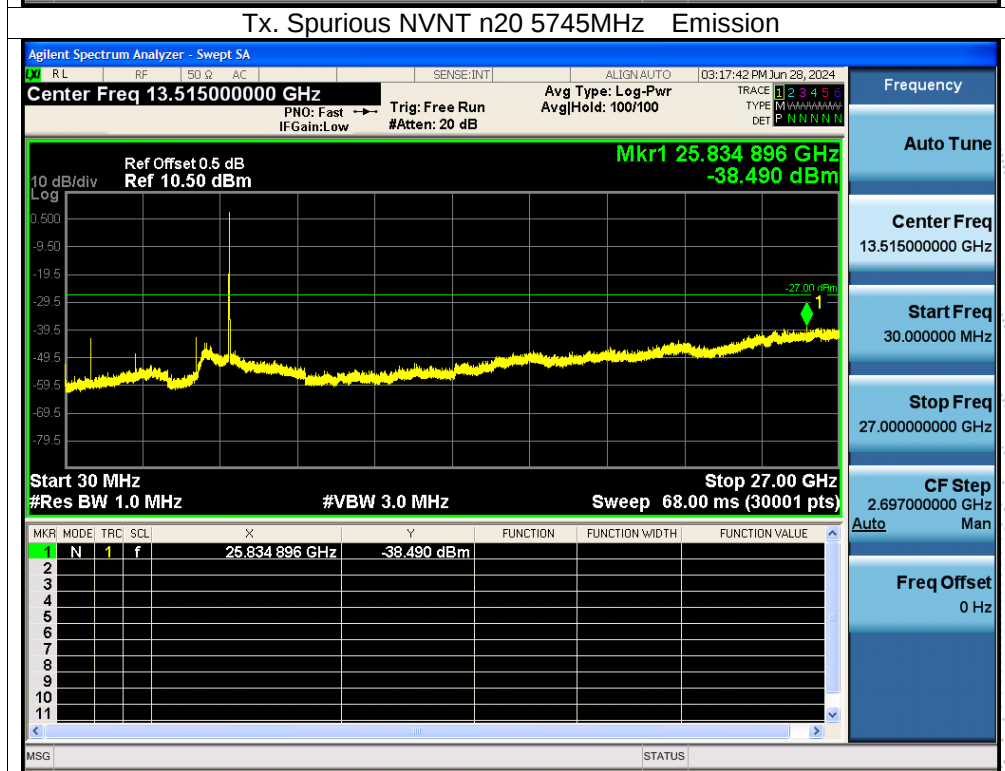
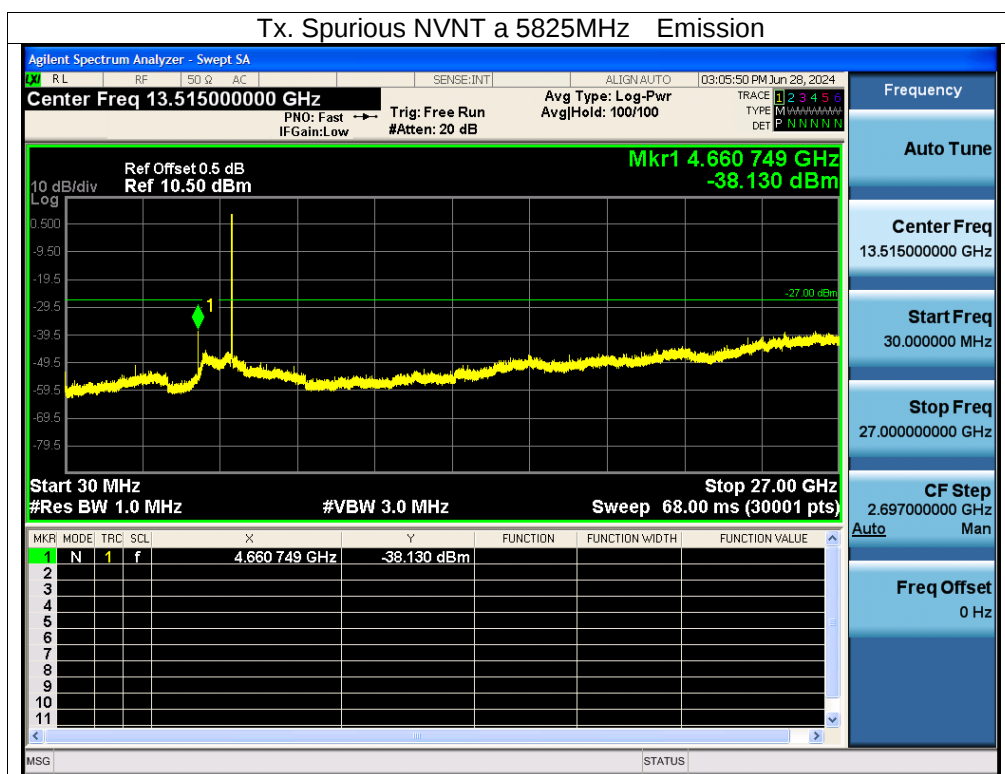


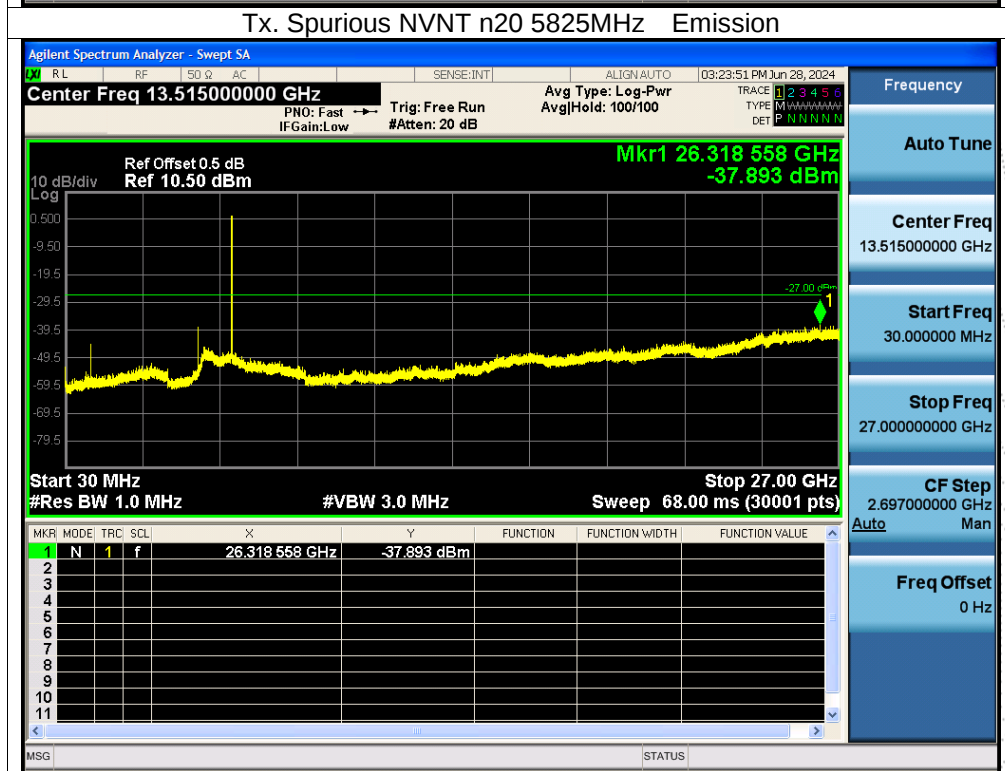
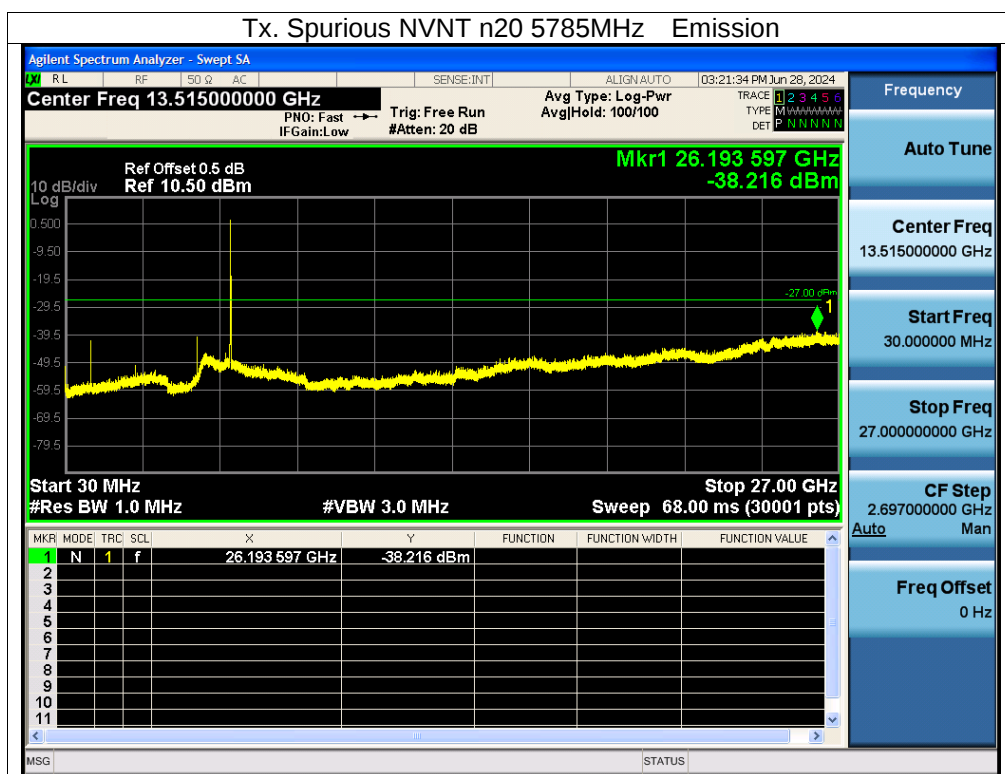


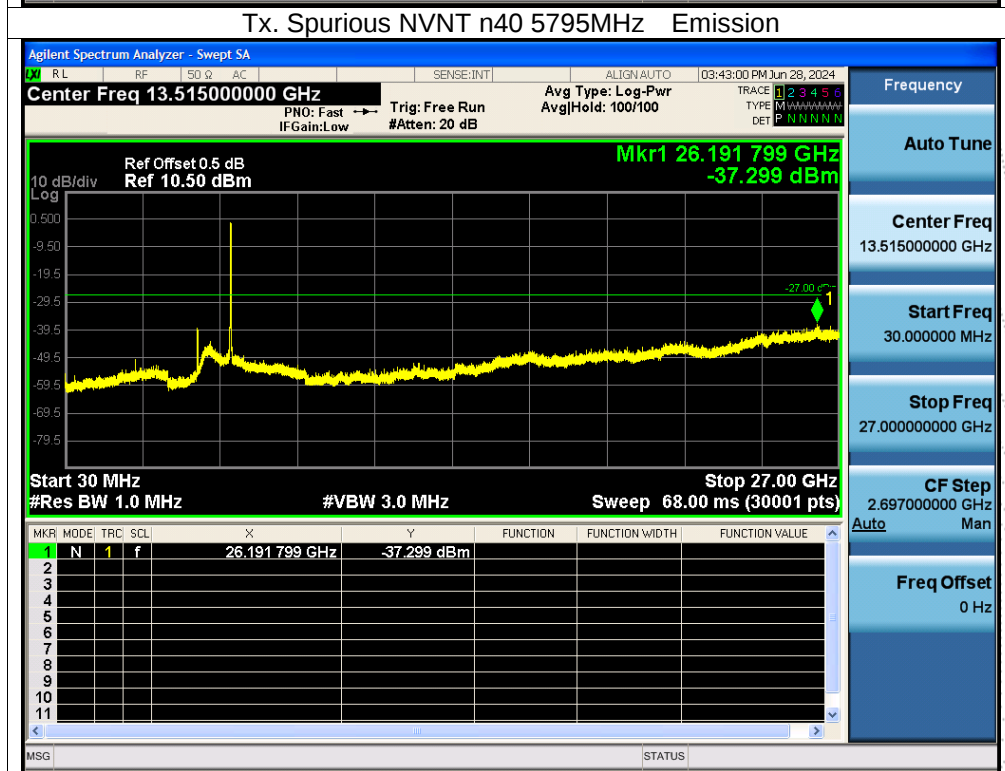
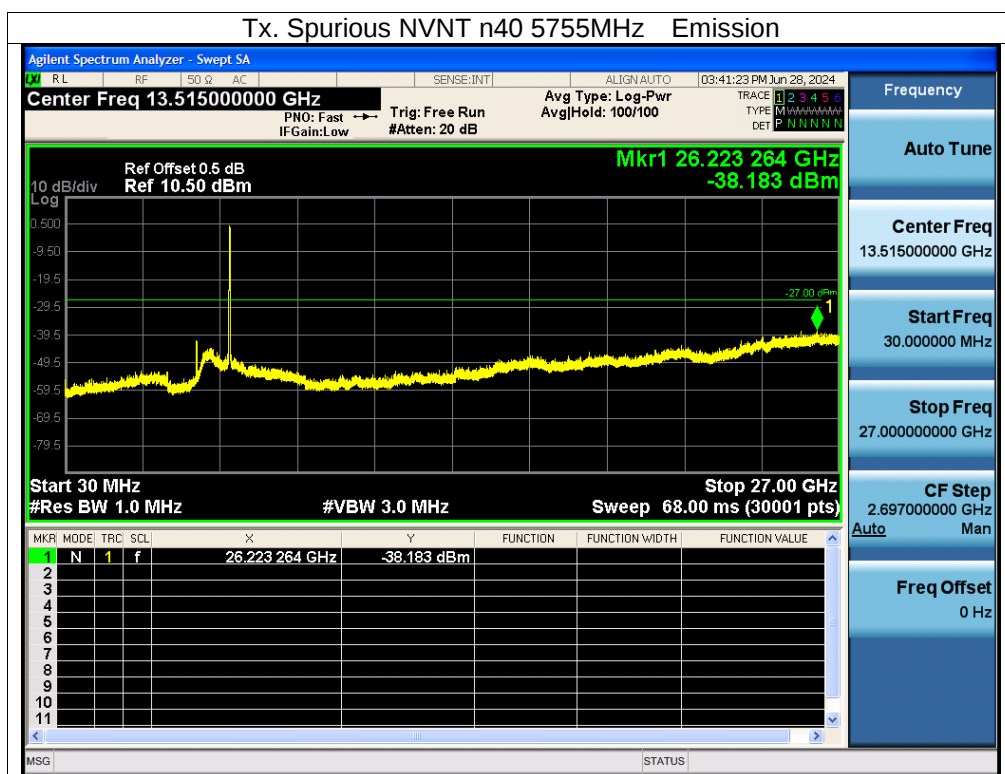


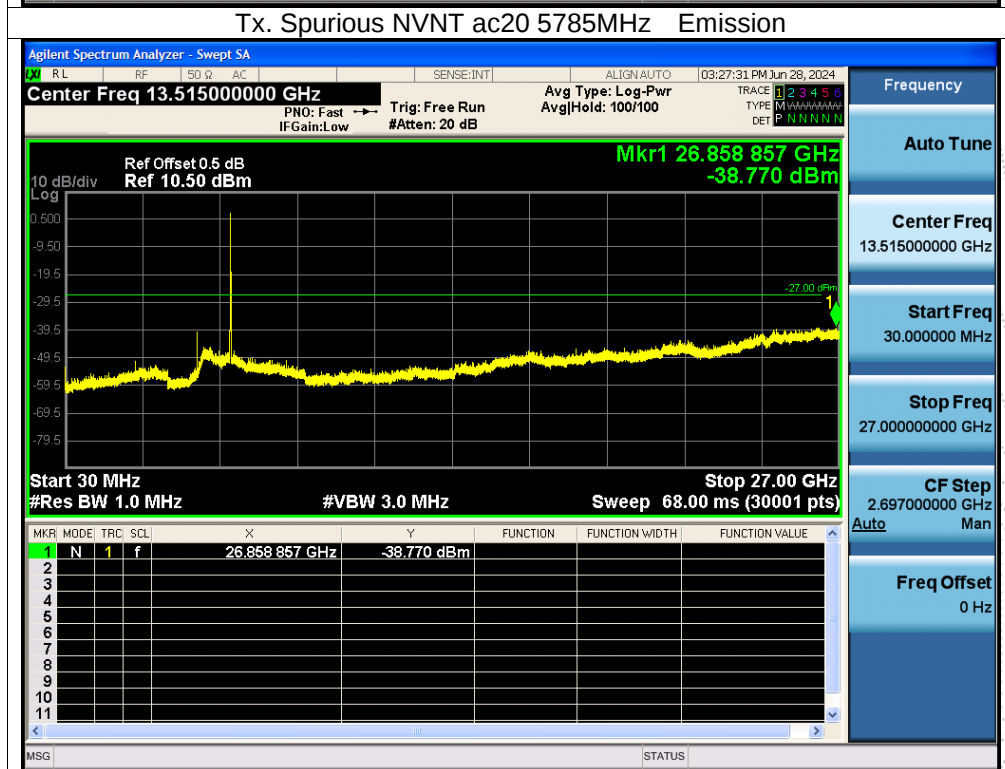
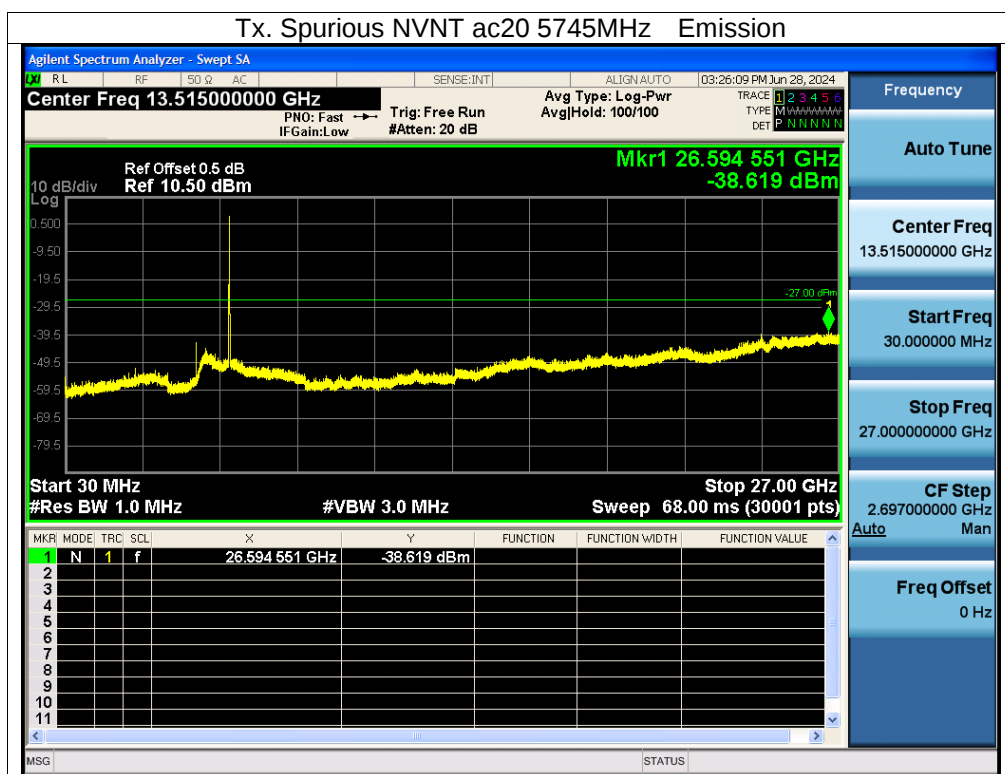


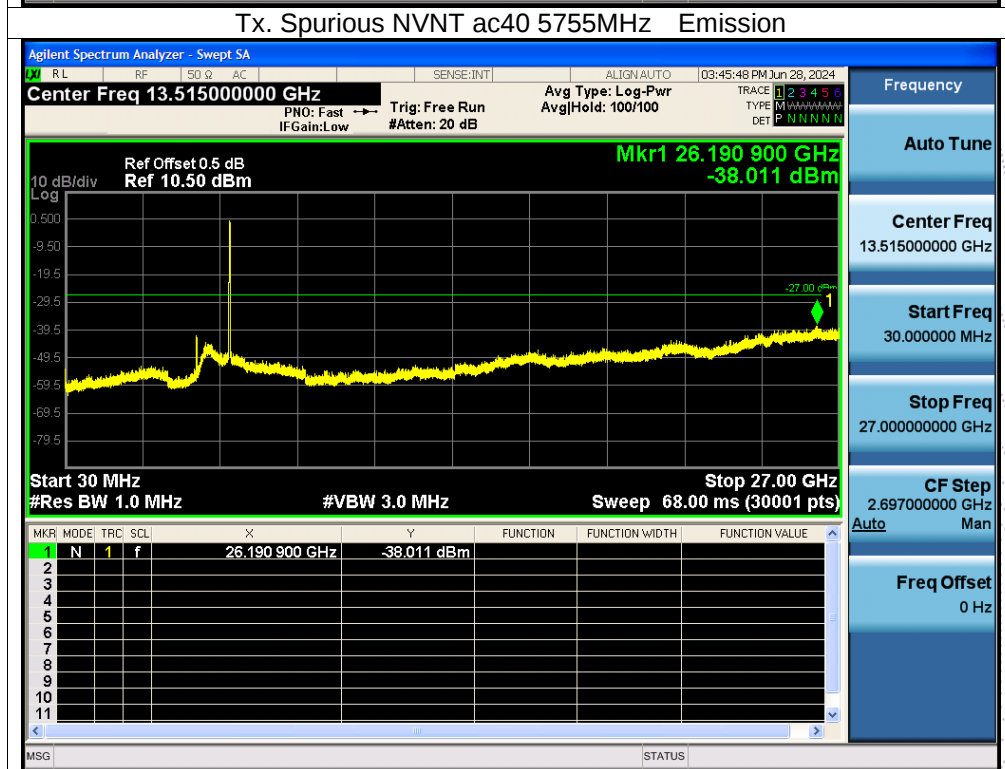
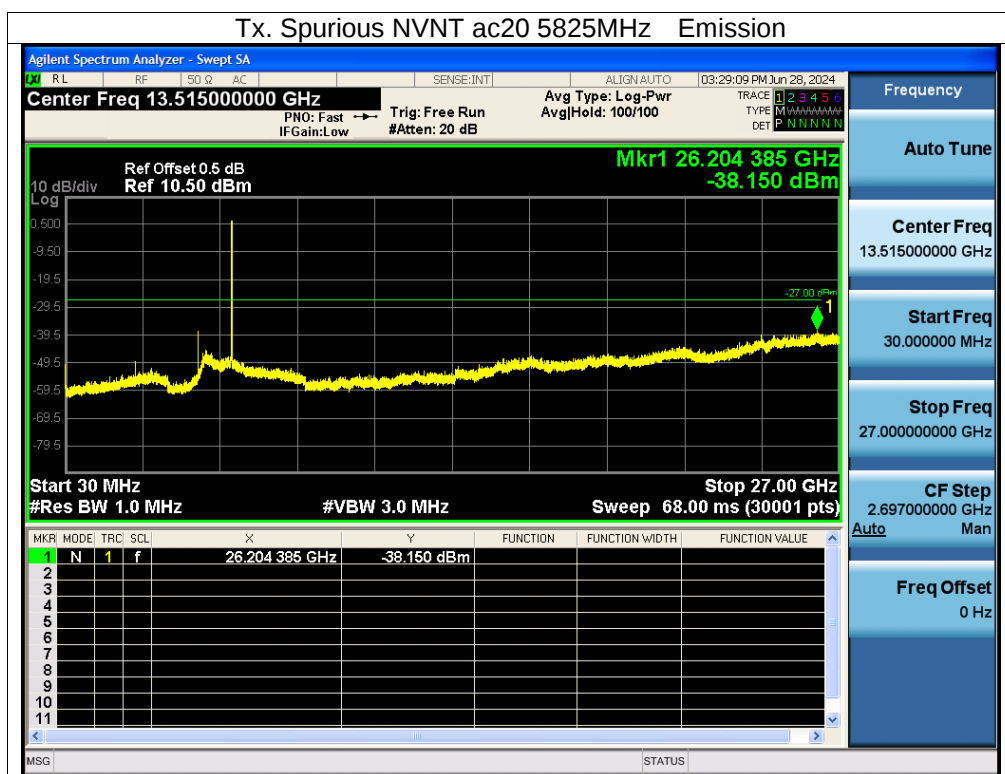


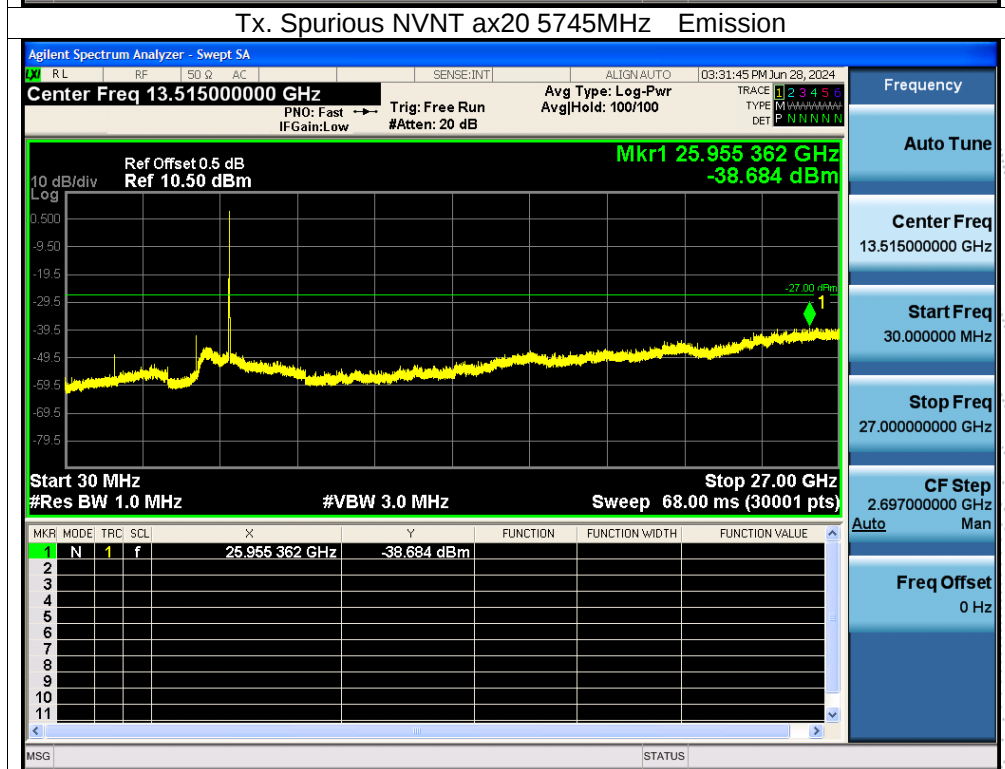
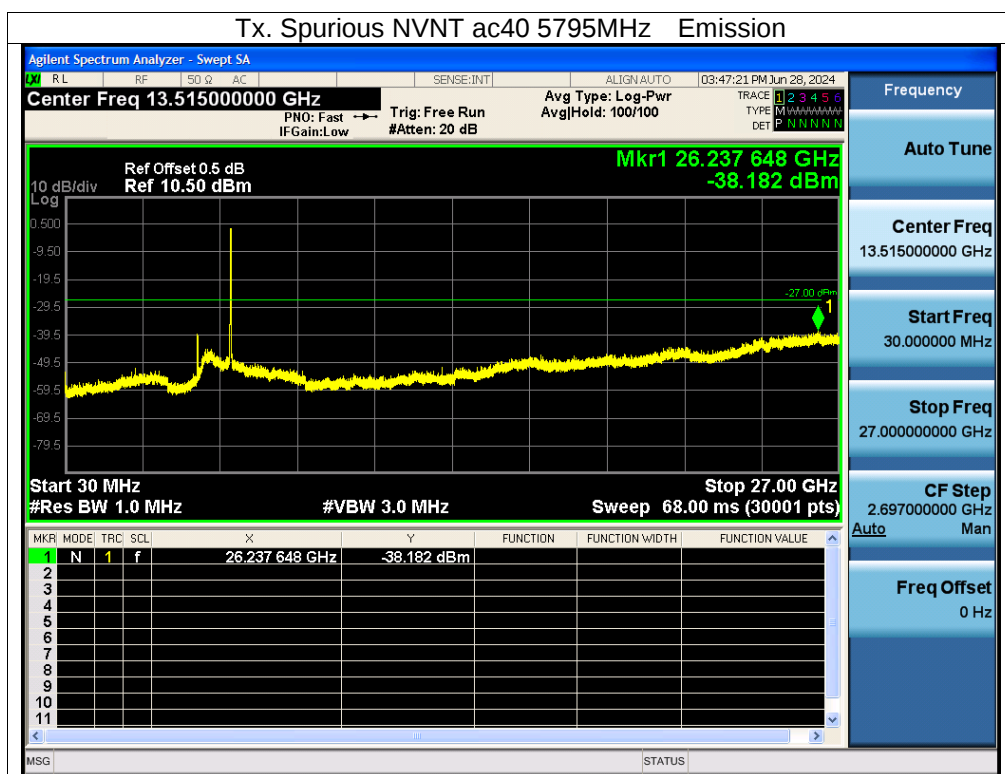


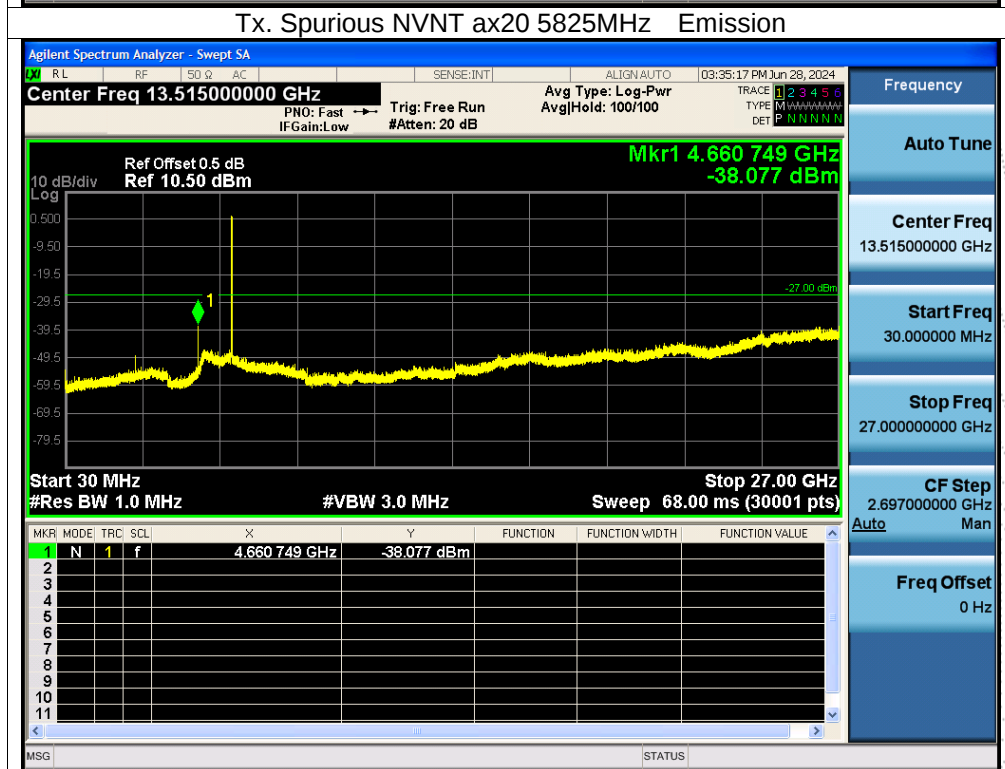
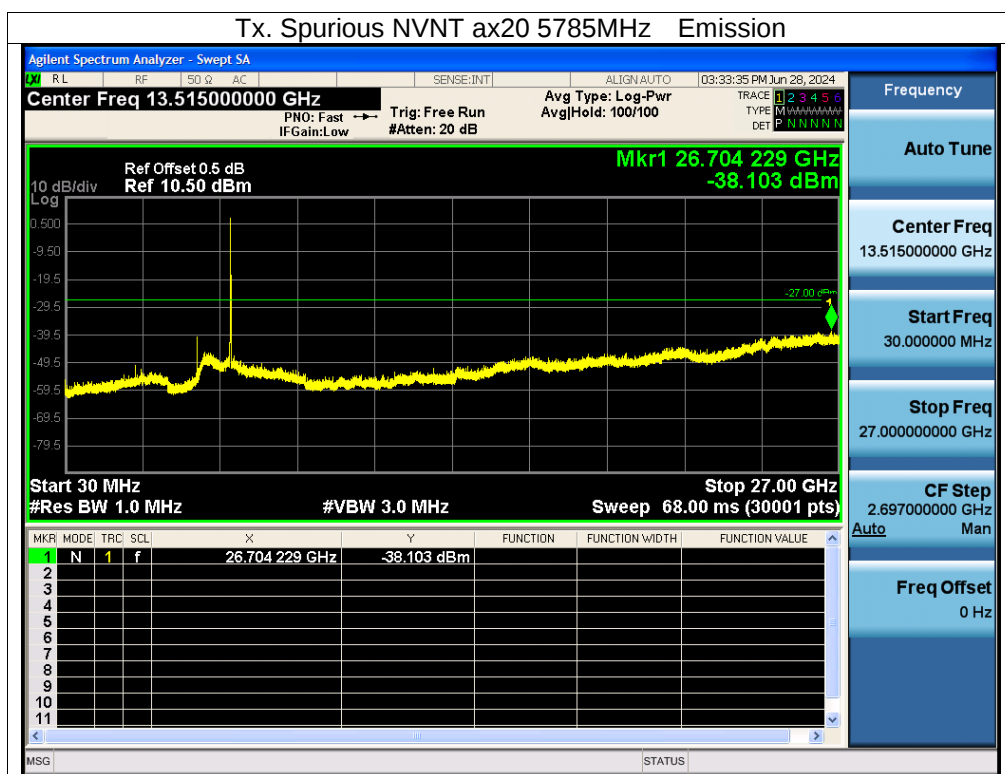


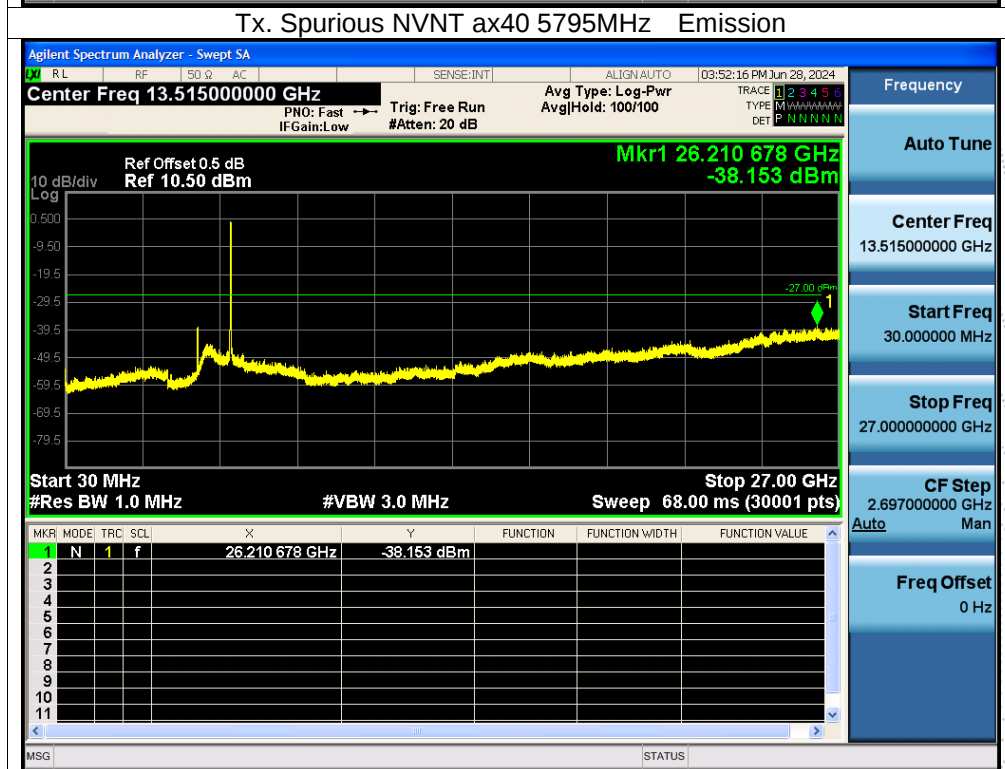
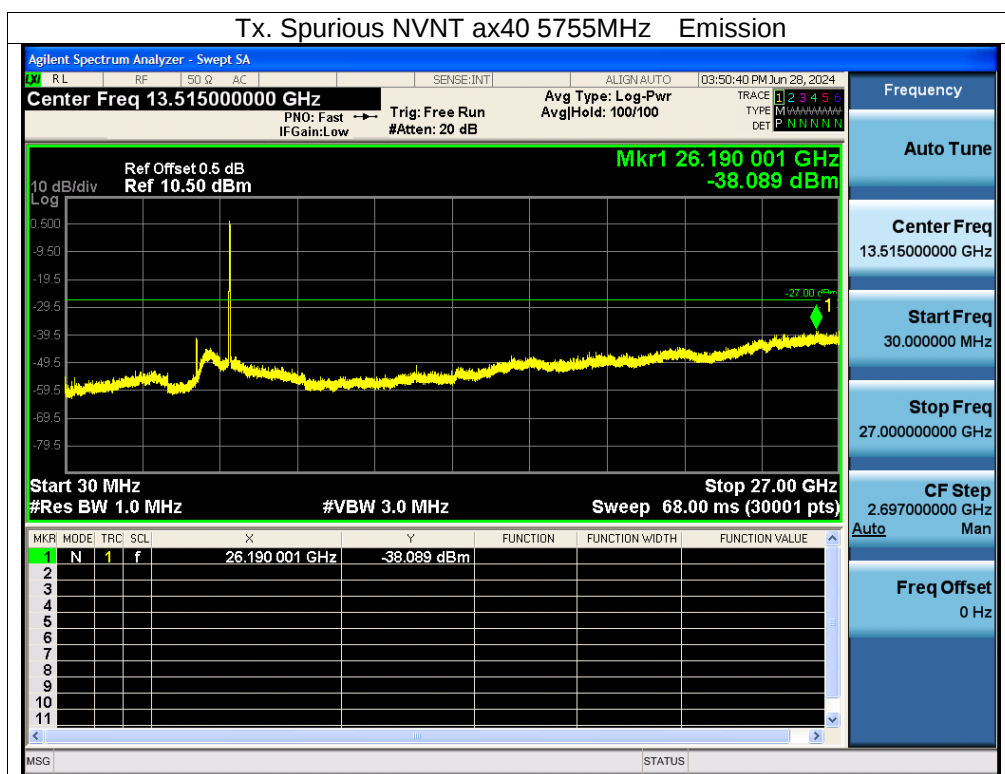












13. Frequency Stability Measurement

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:	AC 120V/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	5180.0036	5180	0.0036	0.6950
		V max (V)	138.00	5180.0015	5180	0.0015	0.2896
		V min (V)	102.00	5180.0053	5180	0.0053	1.0232
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	5180.0078	5180	0.0078	1.5058
		T (°C)	-10	5180.0028	5180	0.0028	0.5405
		T (°C)	0	5180.0116	5180	0.0116	2.2394
		T (°C)	10	5180.0082	5180	0.0082	1.5830
		T (°C)	20	5180.0000	5180	0.0000	0.0000
		T (°C)	30	5180.0103	5180	0.0103	1.9884
		T (°C)	40	5180.0065	5180	0.0065	1.2548
		T (°C)	50	5180.0072	5180	0.0072	1.3900
		T (°C)	60	5180.0112	5180	0.0112	2.1622
		T (°C)	70	5180.0096	5180	0.0096	1.8533
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	5200.0135	5200	0.0135	2.5962
		V max (V)	138.00	5200.0077	5200	0.0077	1.4808
		V min (V)	102.00	5200.0116	5200	0.0116	2.2308
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	5200.01310	5200	0.01310	2.5192
		T (°C)	-10	5200.00020	5200	0.00020	0.0385
		T (°C)	0	5200.00250	5200	0.00250	0.4808
		T (°C)	10	5200.01280	5200	0.01280	2.4615
		T (°C)	20	5200.01250	5200	0.01250	2.4038
		T (°C)	30	5200.00600	5200	0.00600	1.1538
		T (°C)	40	5200.00270	5200	0.00270	0.5192
		T (°C)	50	5200.00800	5200	0.00800	1.5385
		T (°C)	60	5200.00460	5200	0.00460	0.8846
		T (°C)	70	5200.00050	5200	0.00050	0.0962
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	5240.0004	5240	0.0004	0.0763
		V max (V)	138.00	5240.0006	5240	0.0006	0.1145
		V min (V)	102.00	5240.0016	5240	0.0016	0.3053
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	5240.0037	5240	0.0037	0.7061
		T (°C)	-10	5240.0051	5240	0.0051	0.9733
		T (°C)	0	5240.0101	5240	0.0101	1.9275
		T (°C)	10	5240.0011	5240	0.0011	0.2099
		T (°C)	20	5240.0047	5240	0.0047	0.8969
		T (°C)	30	5240.0002	5240	0.0002	0.0382
		T (°C)	40	5240.0007	5240	0.0007	0.1336
		T (°C)	50	5240.0016	5240	0.0016	0.3053
		T (°C)	60	5240.0072	5240	0.0072	1.3740
		T (°C)	70	5240.0015	5240	0.0015	0.2863
Limits				5150-5250 MHz			
Result				Complies			

Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	AC 120V/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	5745.00820	5745	0.00820	1.4273
		V max (V)	138.00	5745.00840	5745	0.00840	1.4621
		V min (V)	102.00	5745.00320	5745	0.00320	0.5570
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	5745.00090	5745	0.00090	0.1567
		T (°C)	-10	5745.00830	5745	0.00830	1.4447
		T (°C)	0	5745.00730	5745	0.00730	1.2707
		T (°C)	10	5745.00300	5745	0.00300	0.5222
		T (°C)	20	5745.00170	5745	0.00170	0.2959
		T (°C)	30	5745.00330	5745	0.00330	0.5744
		T (°C)	40	5745.00500	5745	0.00500	0.8703
		T (°C)	50	5745.00460	5745	0.00460	0.8007
		T (°C)	60	5745.00090	5745	0.00090	0.1567
		T (°C)	70	5745.00340	5745	0.00340	0.5918
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	5785.01030	5785	0.01030	1.7805
		V max (V)	138.00	5785.01060	5785	0.01060	1.8323
		V min (V)	102.00	5785.00450	5785	0.00450	0.7779
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	5785.01060	5785	0.01060	1.8323
		T (°C)	-10	5785.00010	5785	0.00010	0.0173
		T (°C)	0	5785.00690	5785	0.00690	1.1927
		T (°C)	10	5785.00580	5785	0.00580	1.0026
		T (°C)	20	5785.01010	5785	0.01010	1.7459
		T (°C)	30	5785.00370	5785	0.00370	0.6396
		T (°C)	40	5785.01350	5785	0.01350	2.3336
		T (°C)	50	5785.00840	5785	0.00840	1.4520
		T (°C)	60	5785.00880	5785	0.00880	1.5212
		T (°C)	70	5785.00490	5785	0.00490	0.8470
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	5825.00590	5825	0.00590	1.0129
		V max (V)	138.00	5825.00100	5825	0.00100	0.1717
		V min (V)	102.00	5825.00410	5825	0.00410	0.7039
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	5825.01200	5825	0.01200	2.0601
		T (°C)	-10	5825.01060	5825	0.01060	1.8197
		T (°C)	0	5825.00940	5825	0.00940	1.6137
		T (°C)	10	5825.00040	5825	0.00040	0.0687
		T (°C)	20	5825.00850	5825	0.00850	1.4592
		T (°C)	30	5825.00500	5825	0.00500	0.8584
		T (°C)	40	5825.00160	5825	0.00160	0.2747
		T (°C)	50	5825.01090	5825	0.01090	1.8712
		T (°C)	60	5825.01270	5825	0.01270	2.1803
		T (°C)	70	5825.00530	5825	0.00530	0.9099
Limits				5725-5850 MHz			
Result				Complies			

14. Duty Cycle Of Test Signal

14.1 Standard Requirement

Pre-analysis Check: While conducting average power measurement, duty cycle of each mode shall be checked to ensure its duty cycle in order to compensate for the loss due to insufficient ratio of duty cycle. All duty cycle is pre-scanned, and result as obtained below shows only the most representative ones where duty cycle is conducted as the given transmission with given virtual operation that expresses the percentage.

14.2 Formula

Duty Cycle = $T_{on} / (T_{on} + T_{off})$

14.3 Test Procedure

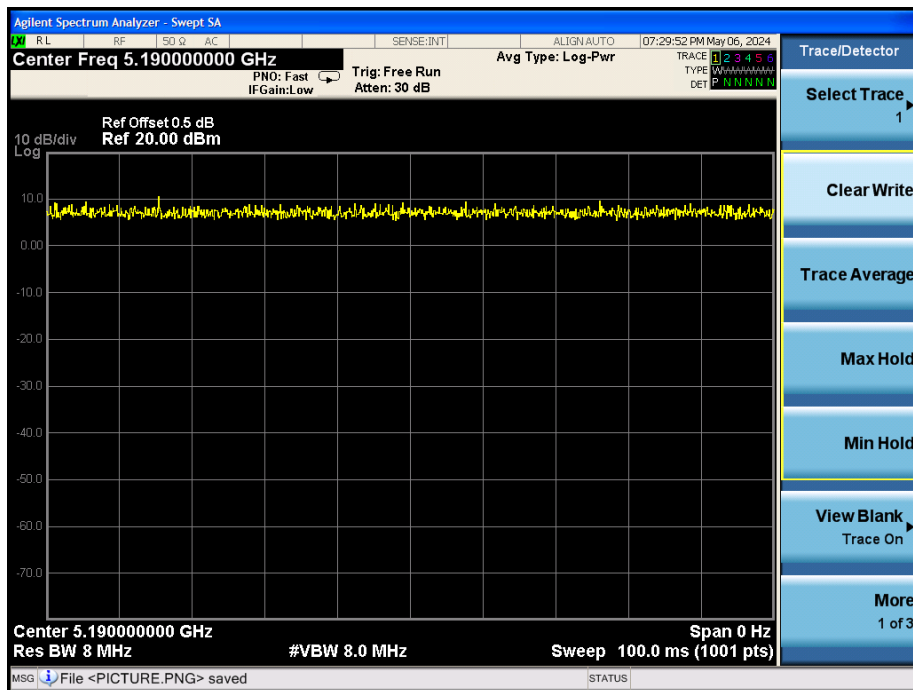
1. Set span = Zero
2. RBW = 8MHz
3. VBW = 8MHz,
4. Detector = Peak

14.4 Test Result

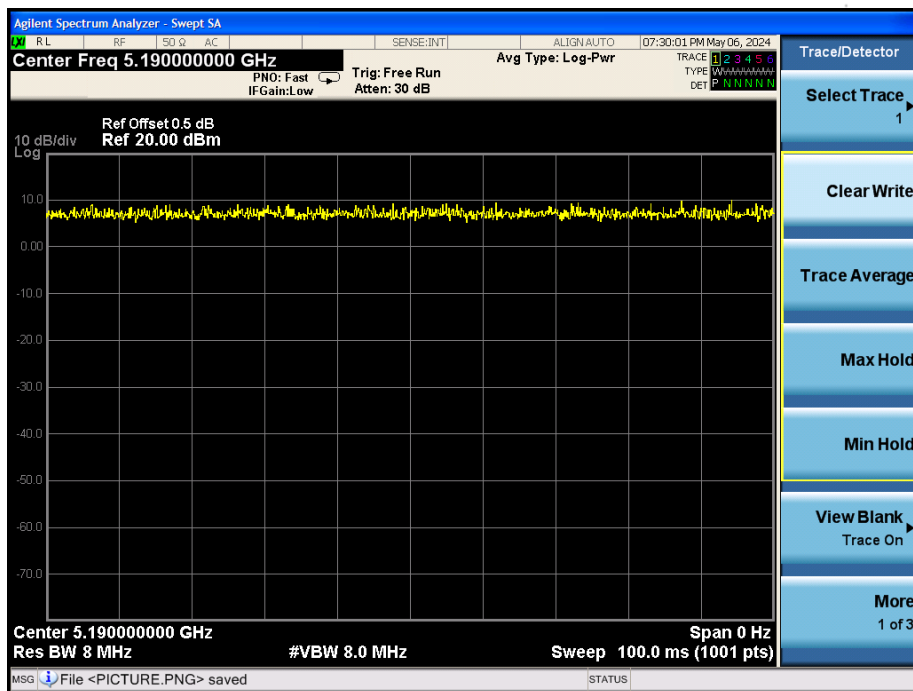
5.1G

Condition	Mode	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	a	100	0	0
NVNT	n20	100	0	0
NVNT	n40	100	0	0
NVNT	ac20	100	0	0
NVNT	ac40	100	0	0
NVNT	ax20	100	0	0
NVNT	ax40	100	0	0

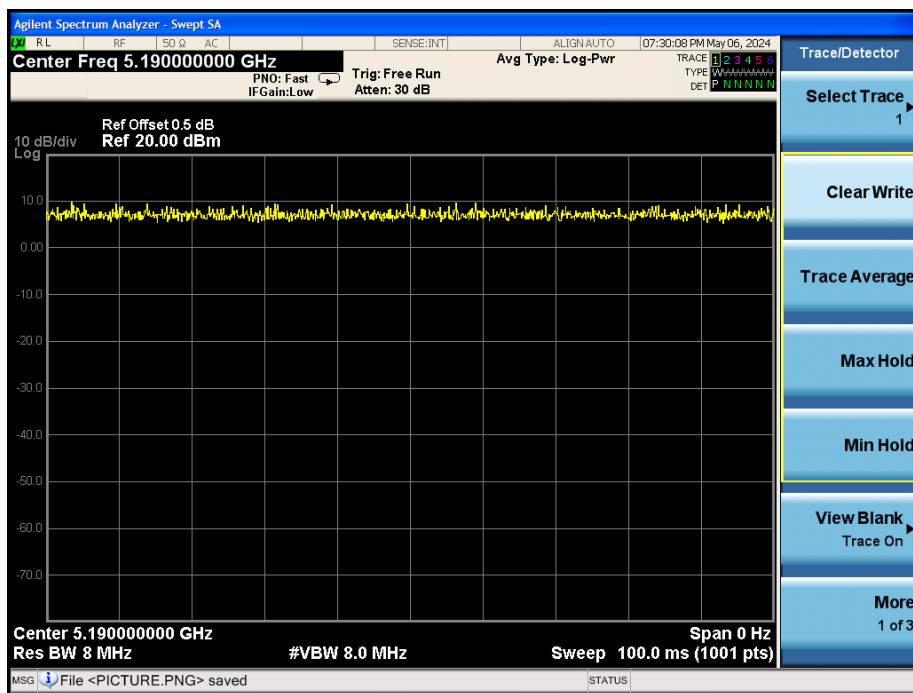
a



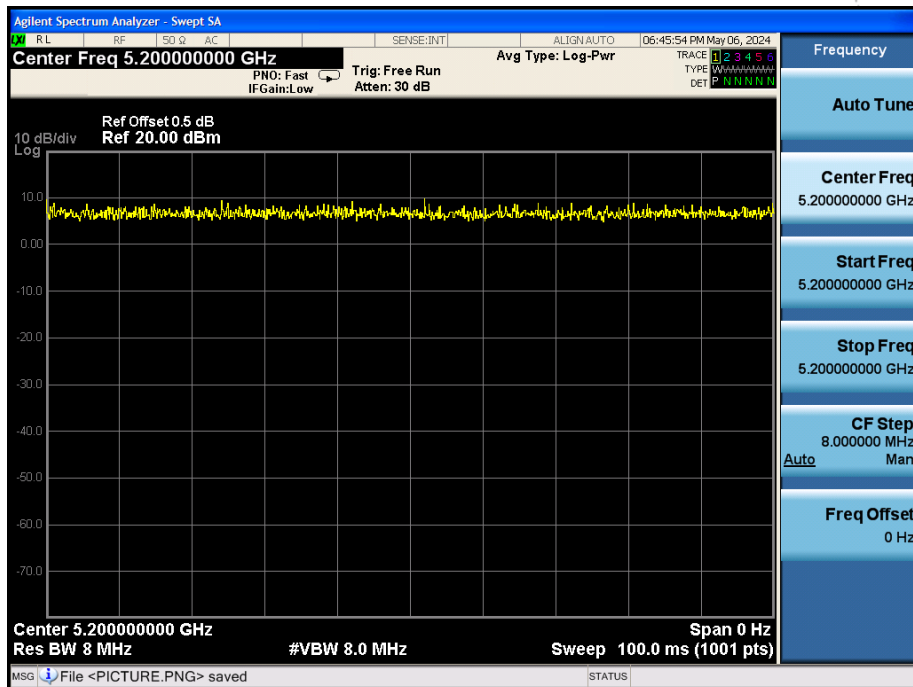
n20



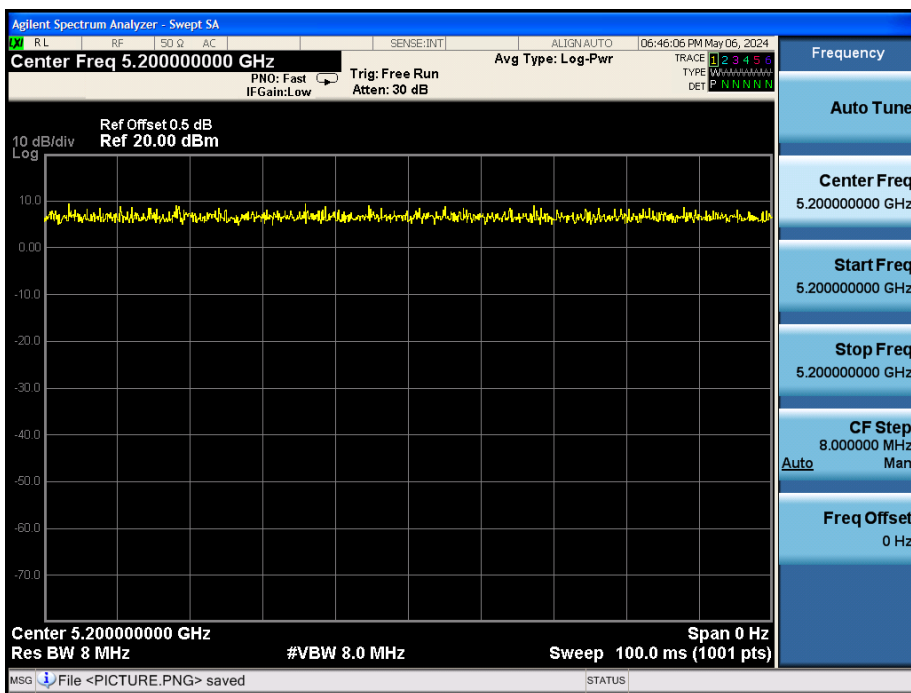
n40



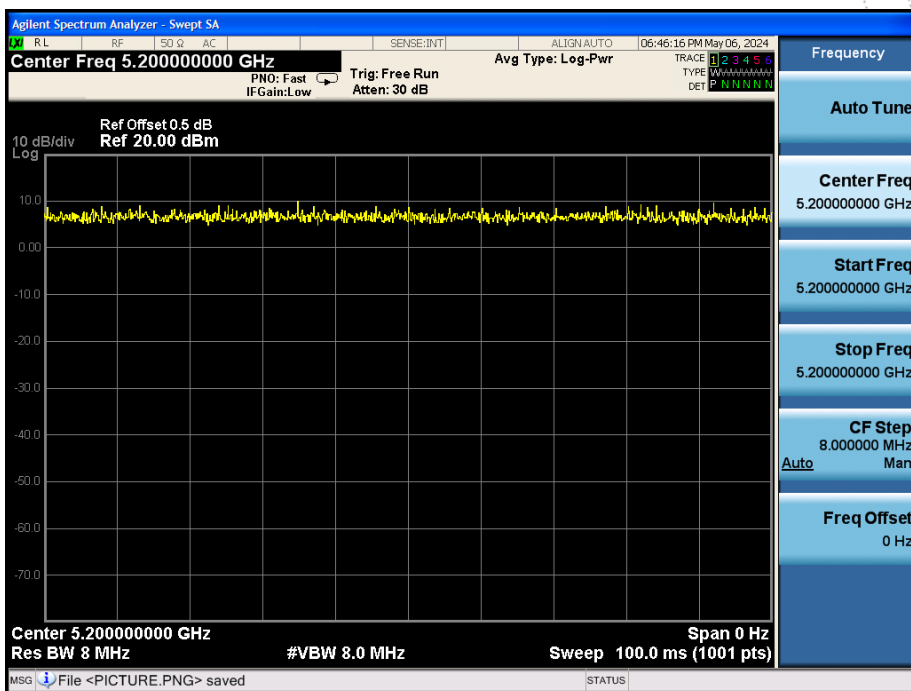
ac20



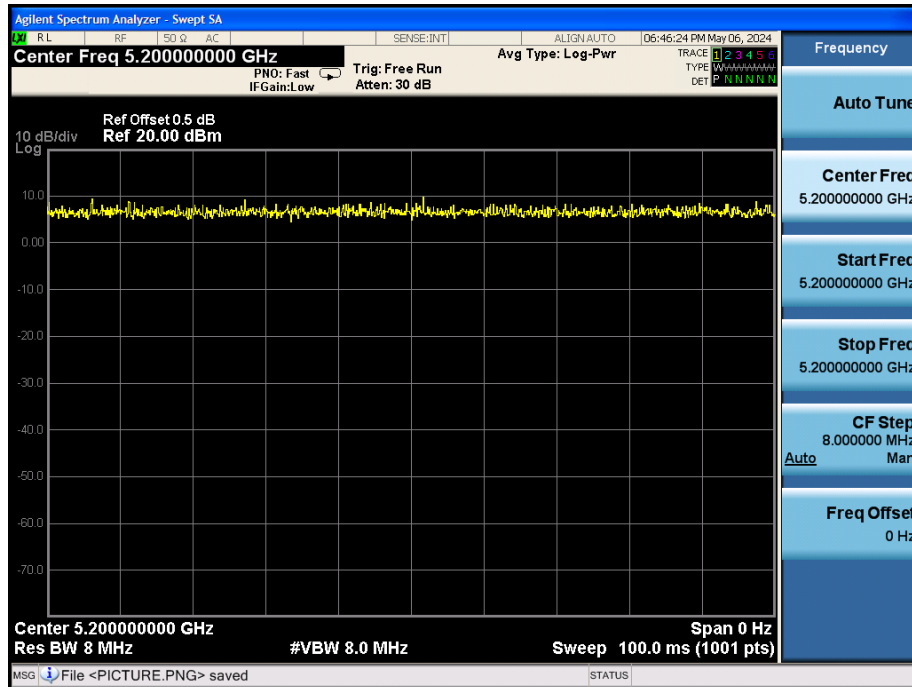
ac40



ax20



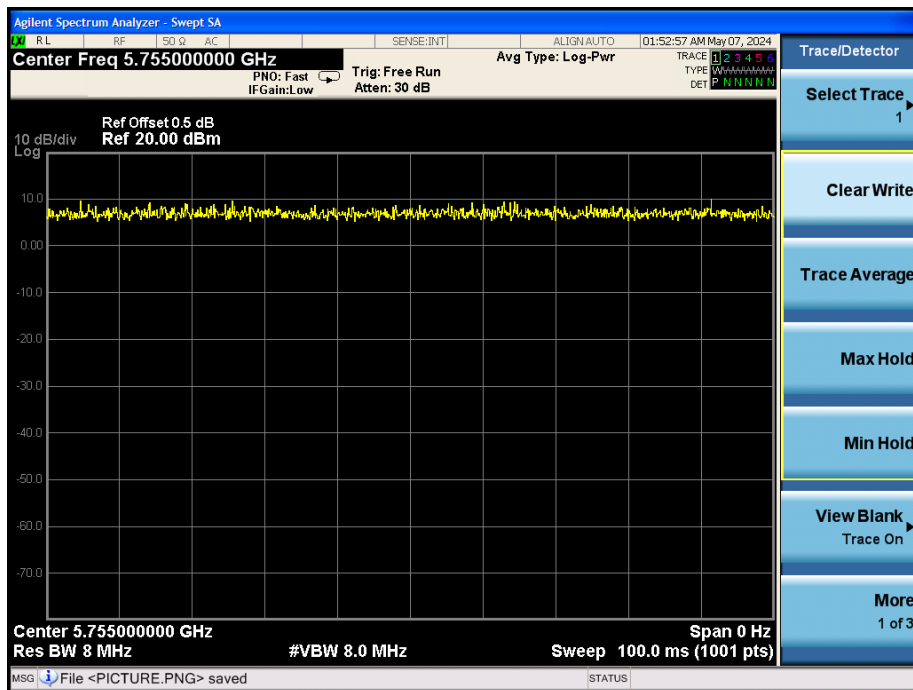
ax40



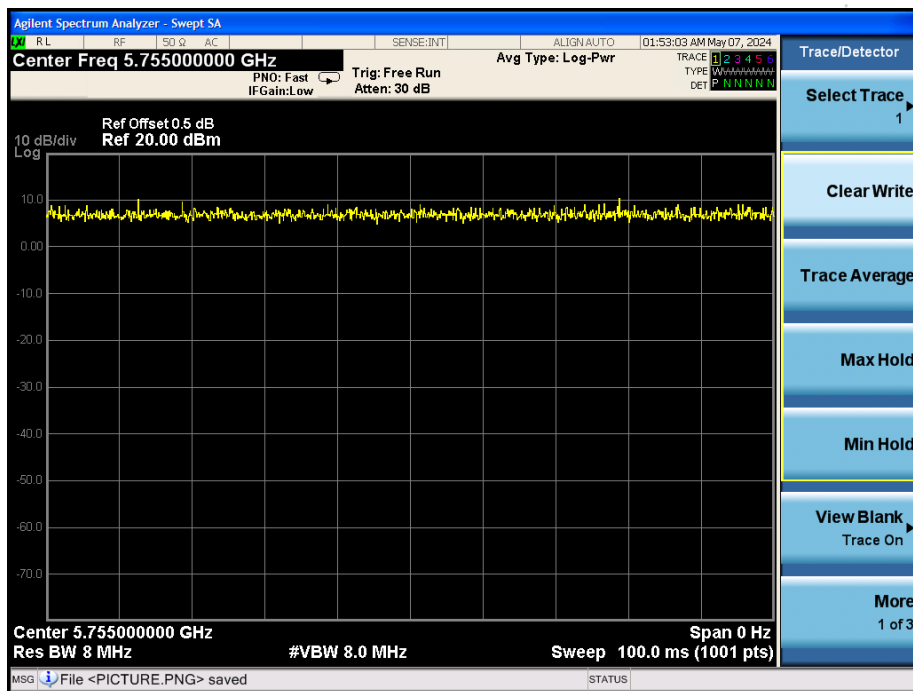
5.8G

Condition	Mode	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	a	100	0	0
NVNT	n20	100	0	0
NVNT	n40	100	0	0
NVNT	ac20	100	0	0
NVNT	ac40	100	0	0
NVNT	ax20	100	0	0
NVNT	ax40	100	0	0

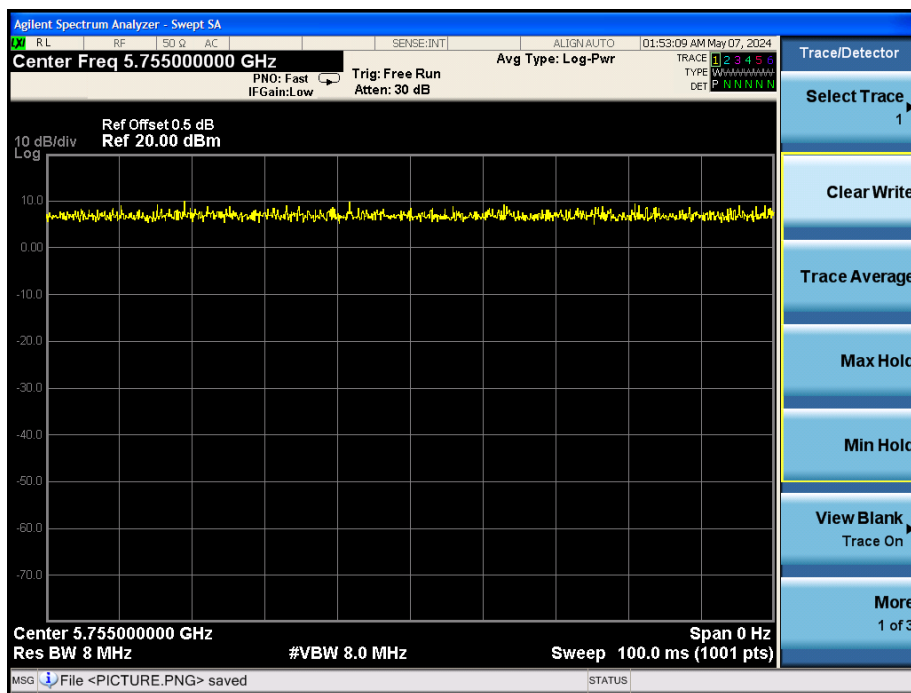
a



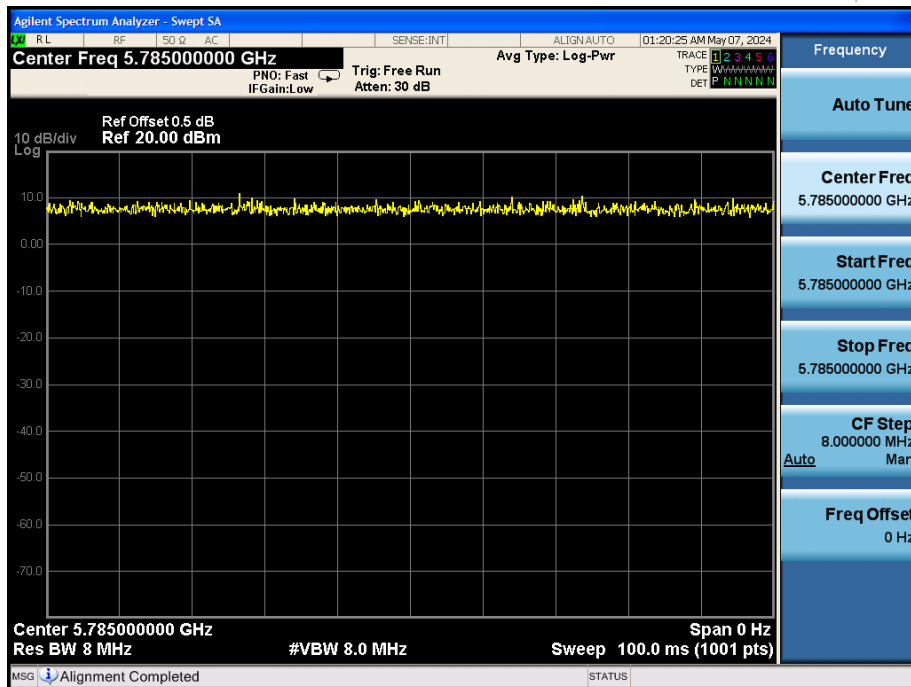
n20



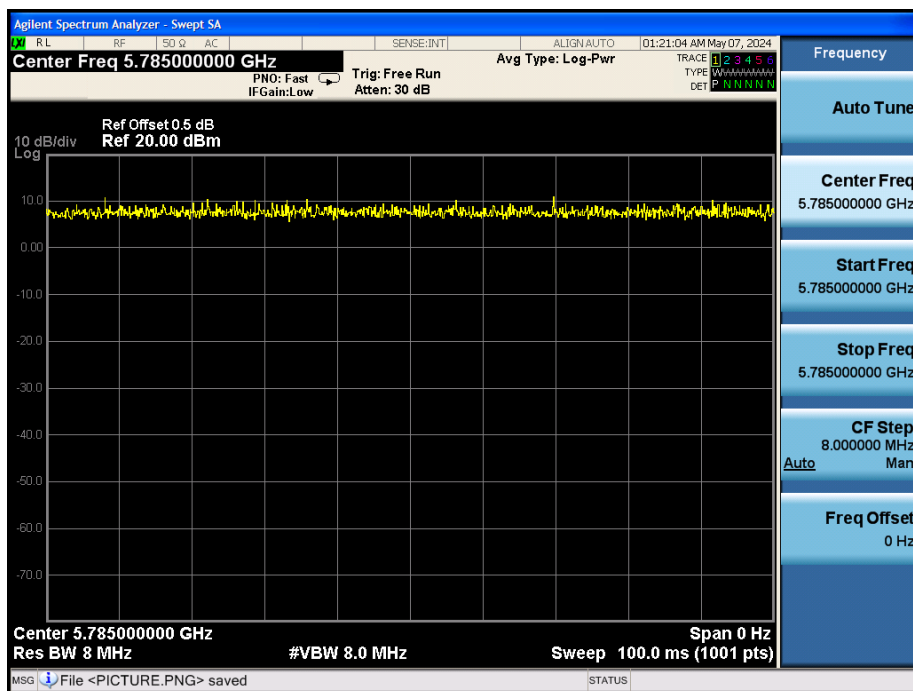
n40



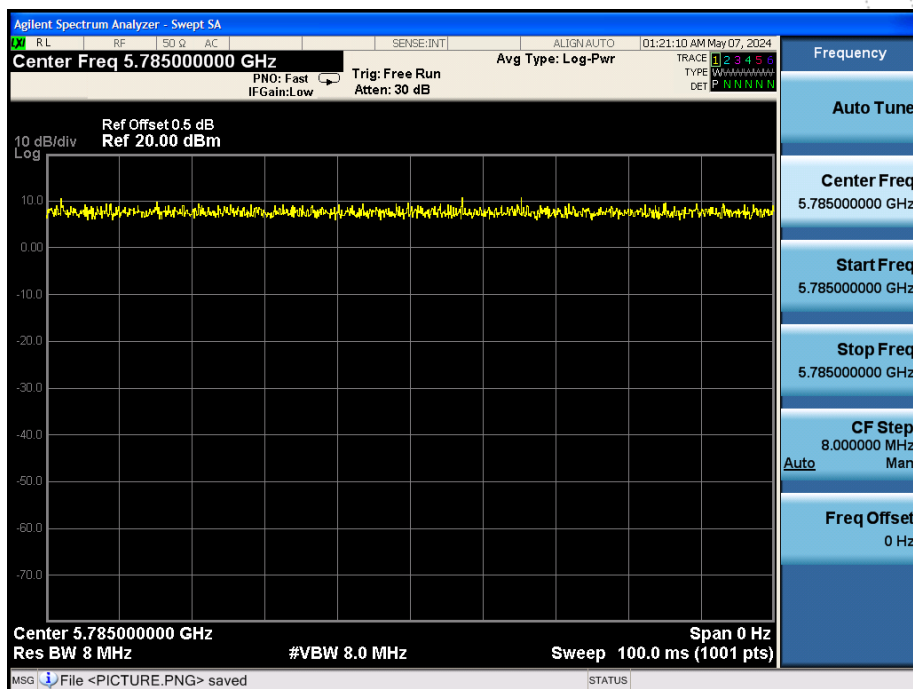
ac20



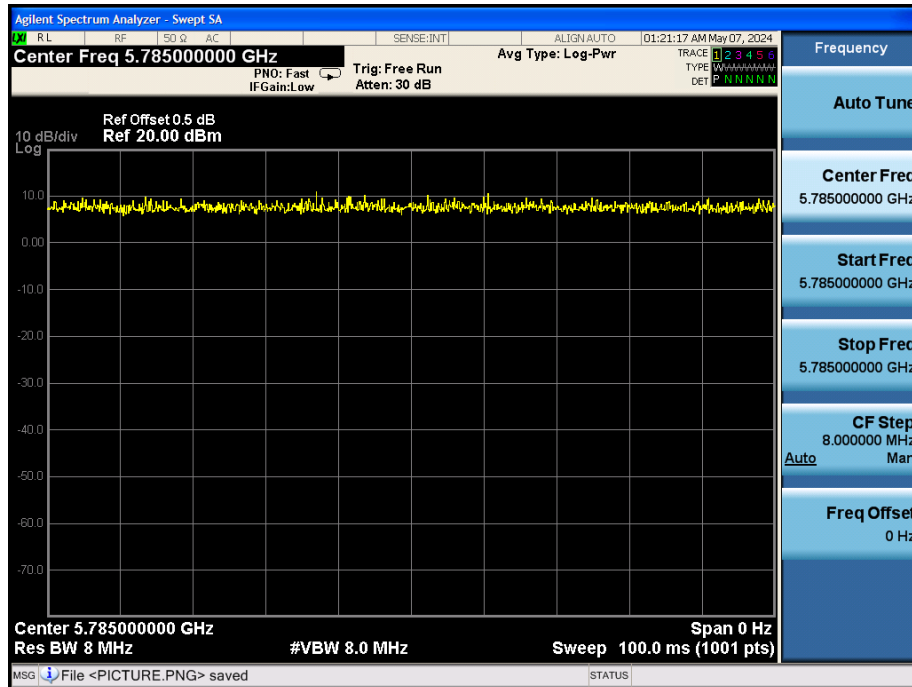
ac40



ax20



ax40



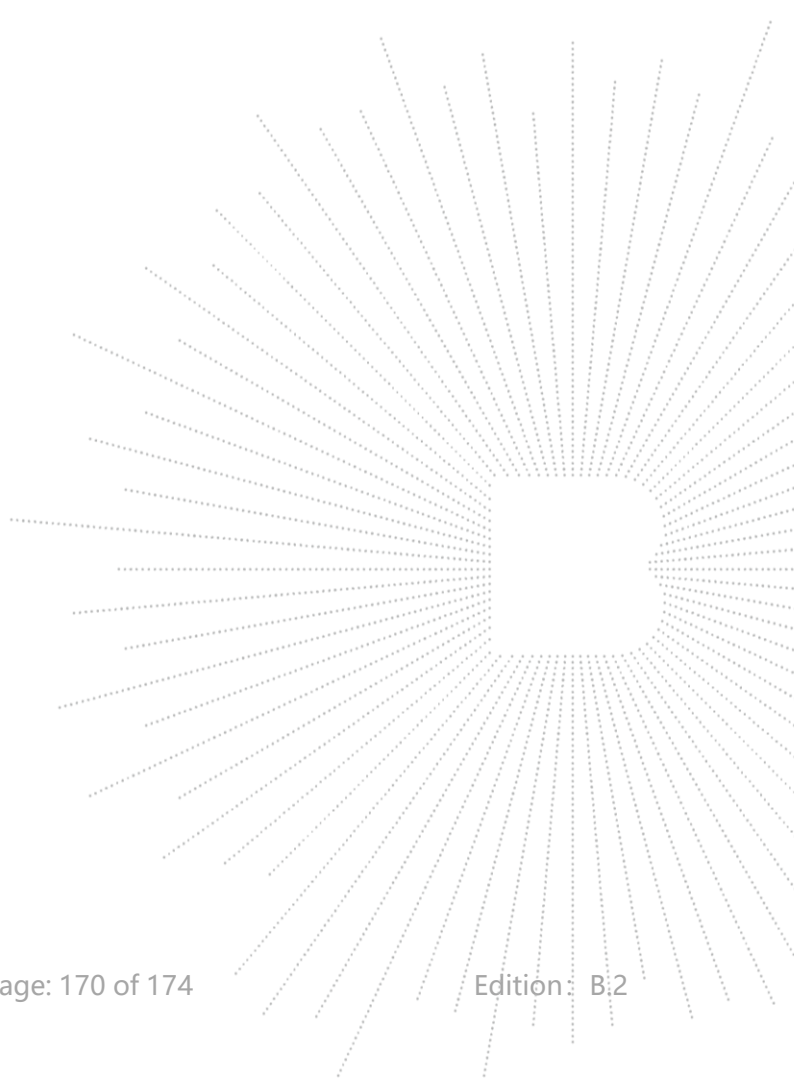
15. Antenna Requirement

15.1 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.

15.2 Test Result

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



16. EUT Photographs**EUT Photo 1****EUT Photo 2**

NOTE: Appendix-Photographs Of EUT Constructional Details.

17. EUT Test Setup Photographs

Conducted Emissions 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.

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***** END *****