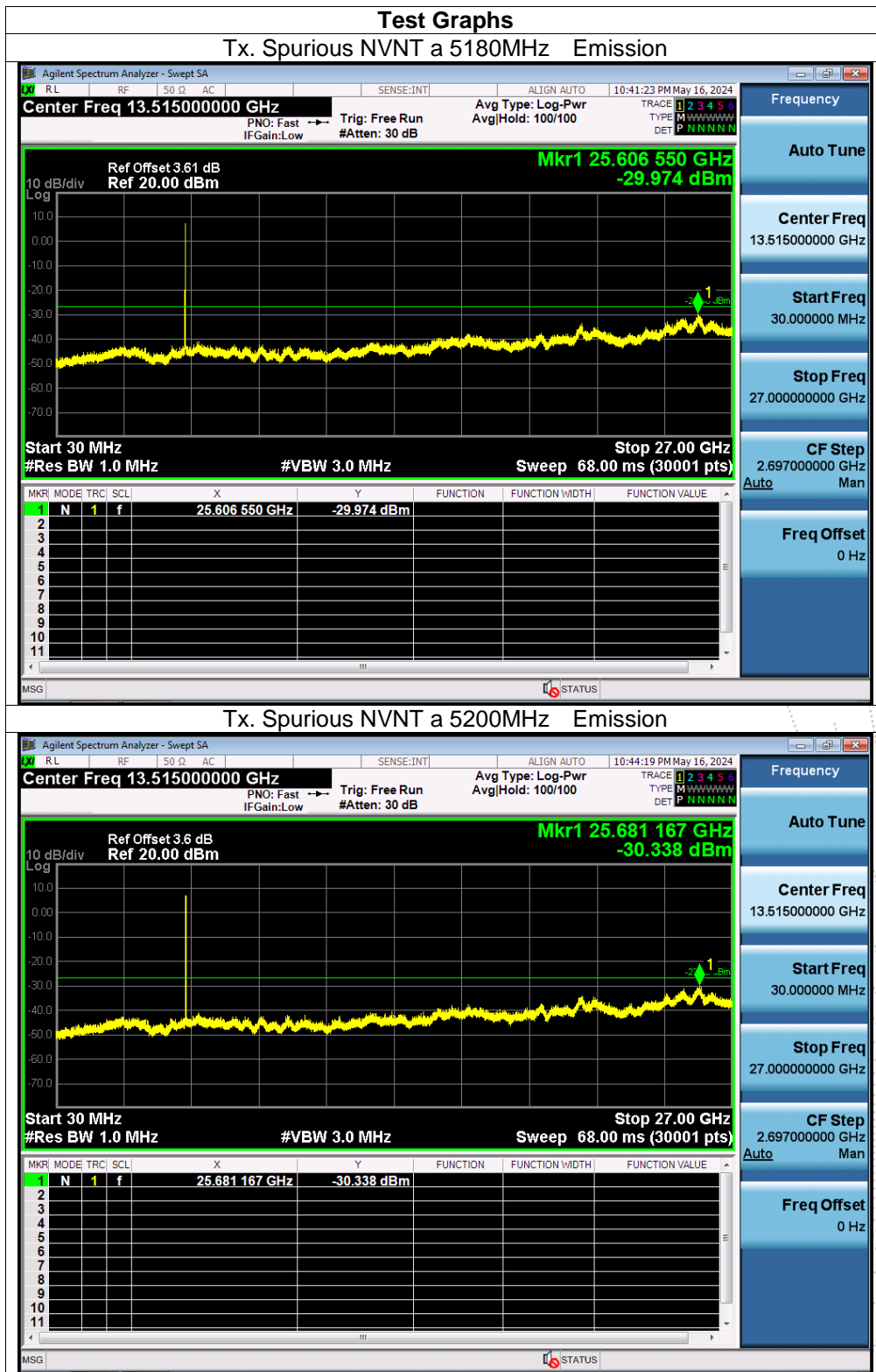
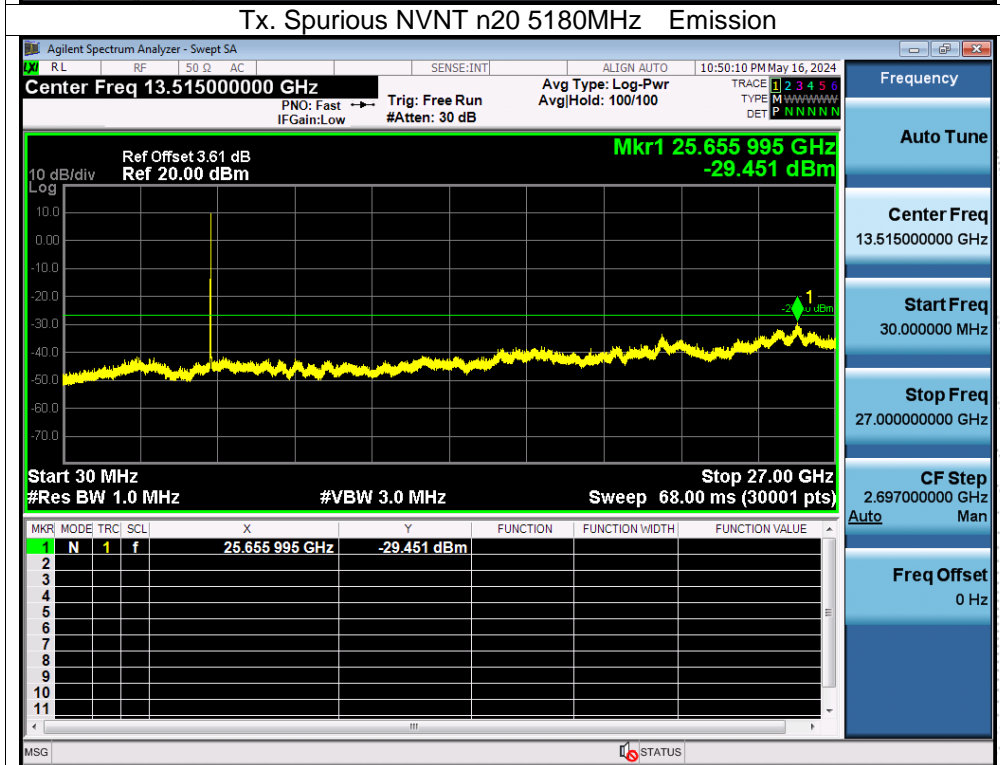
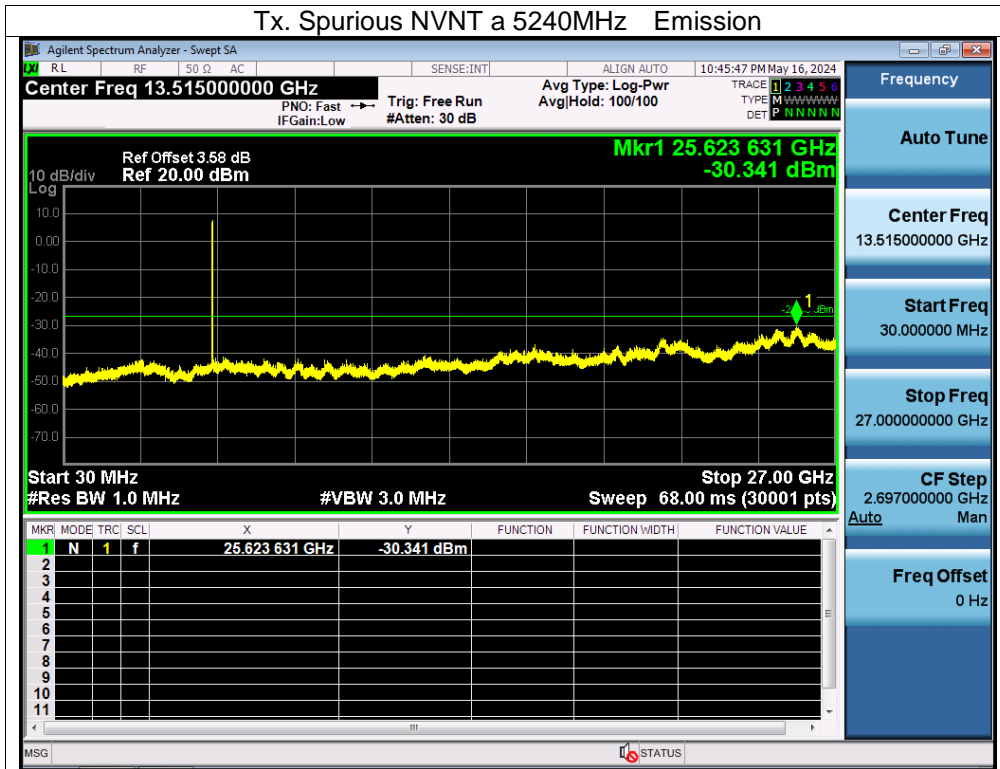
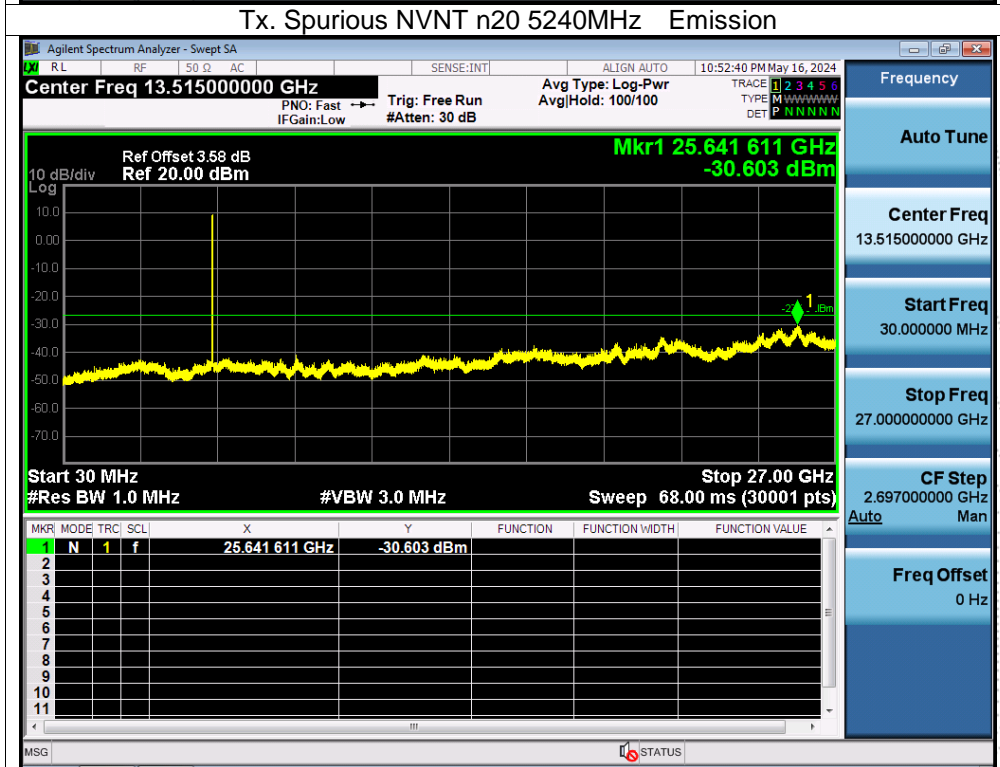
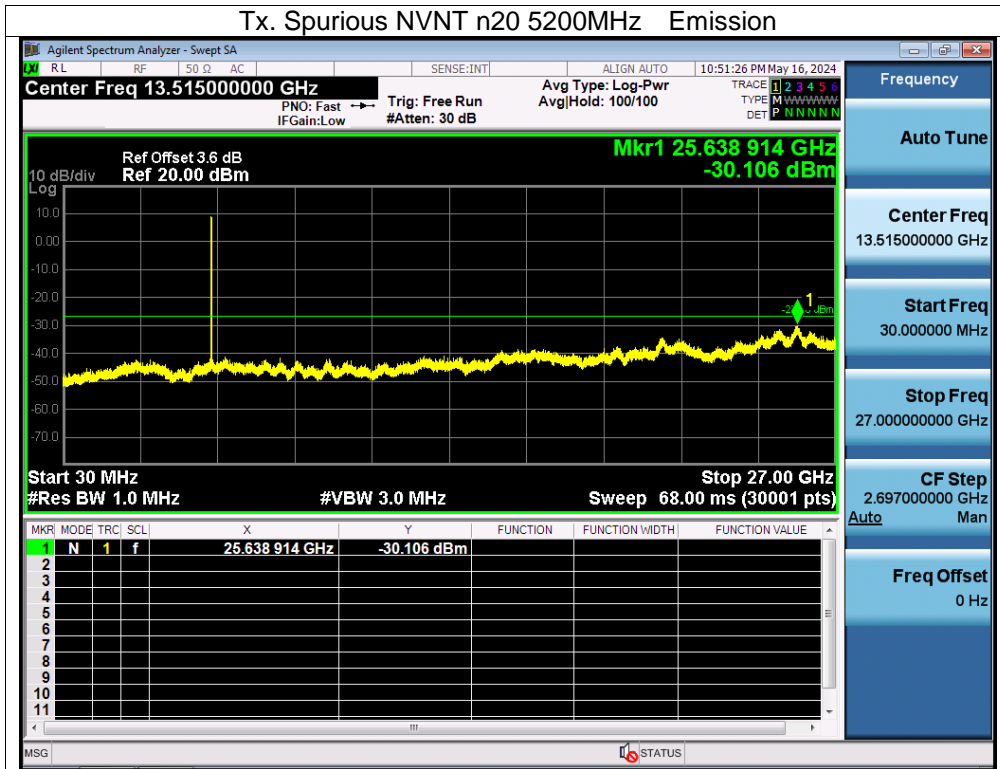
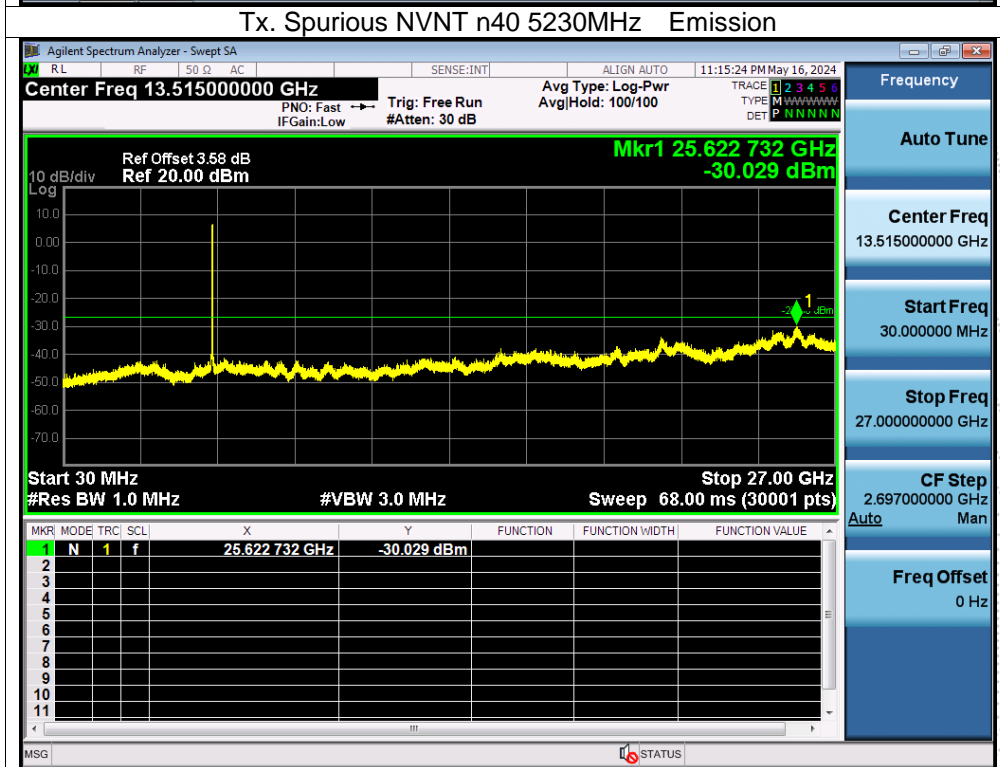
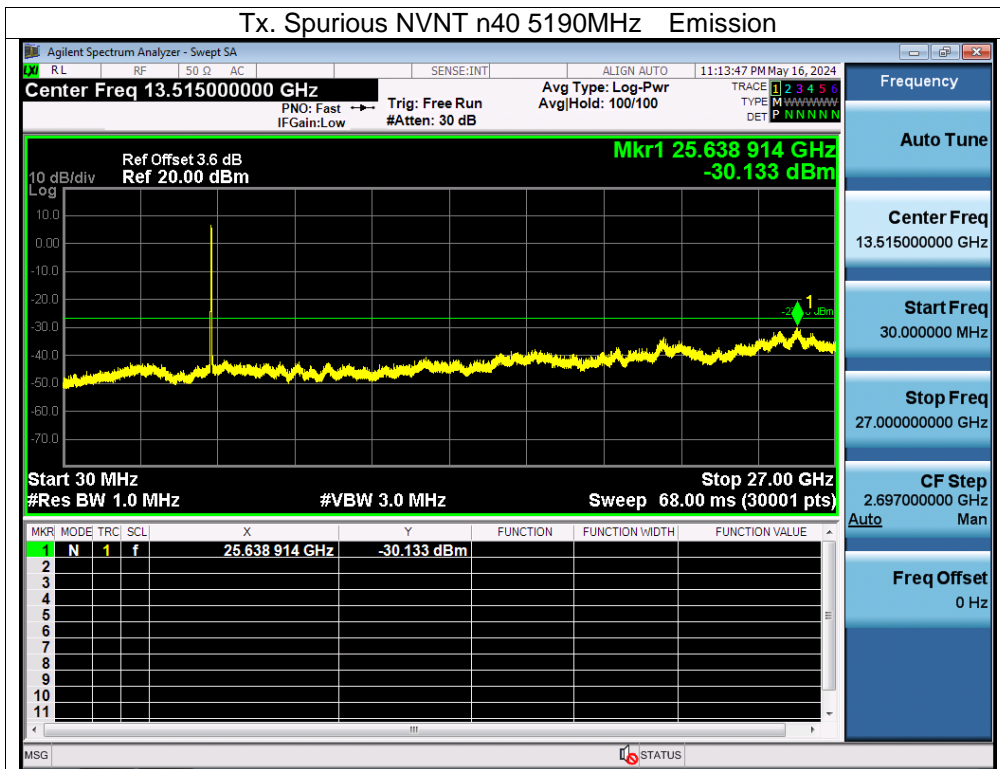


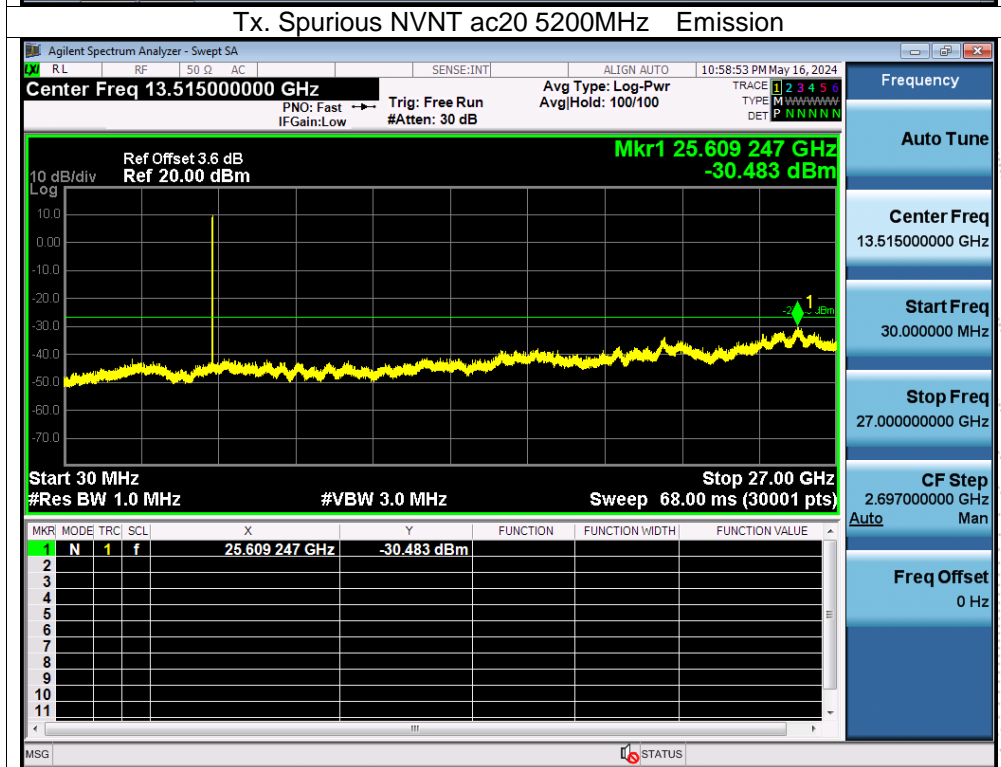
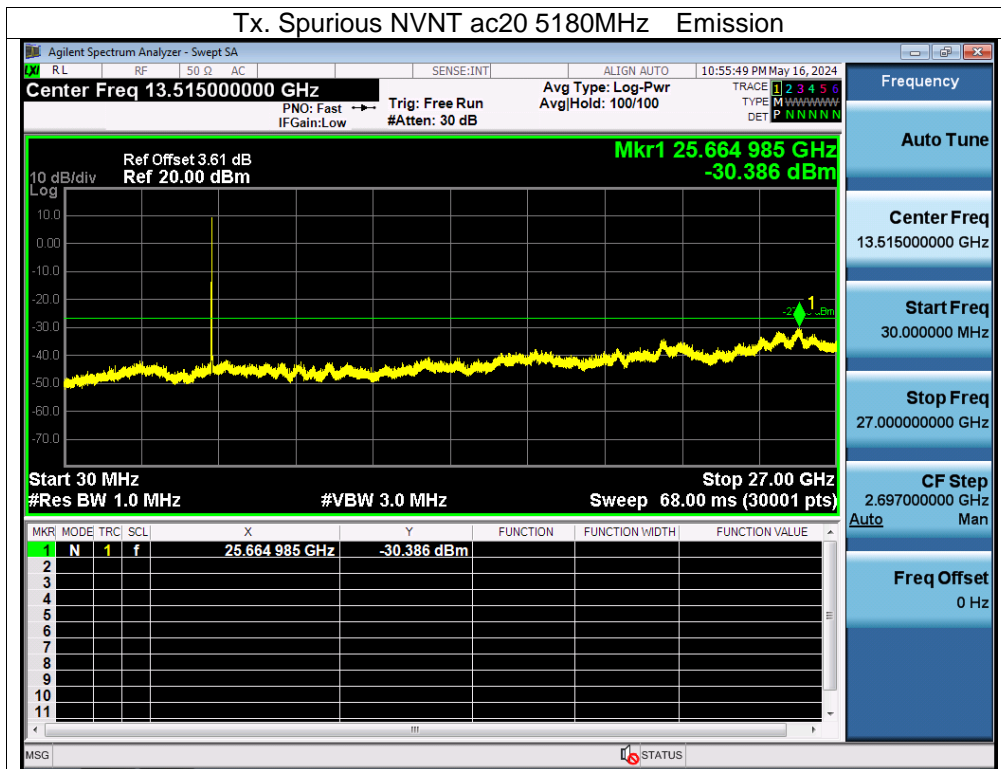
Note: A(B) Represent the value of antenna A and B, The worst data is Antenna A, only shown Antenna A Plot. Antenna A: 5180-5240MHz

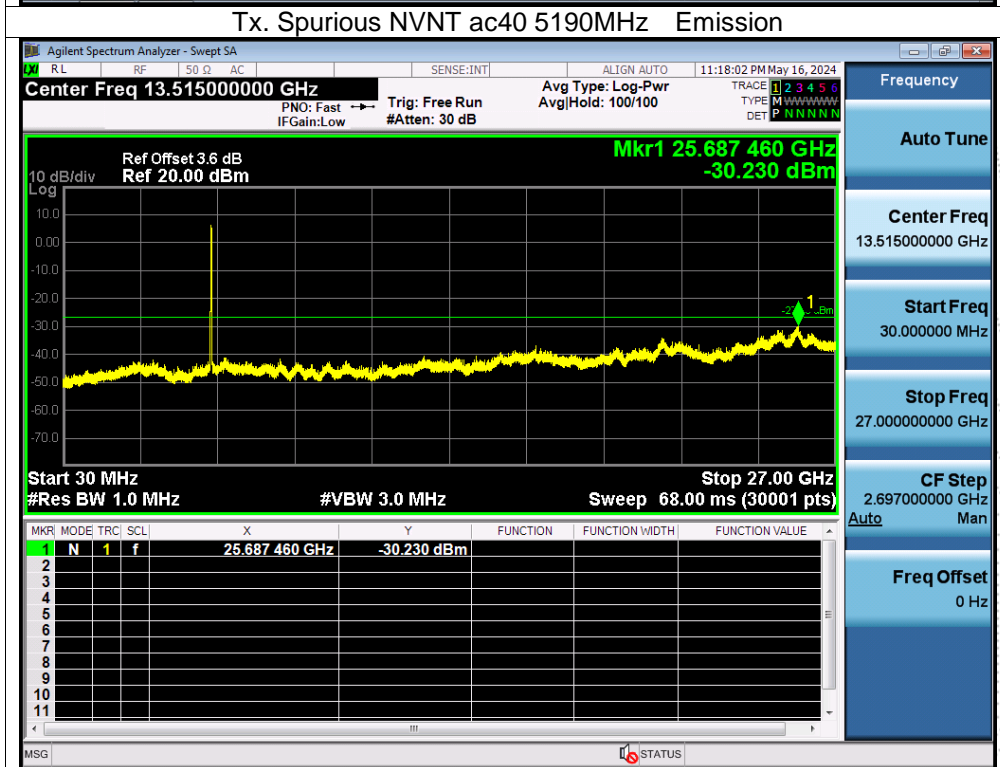
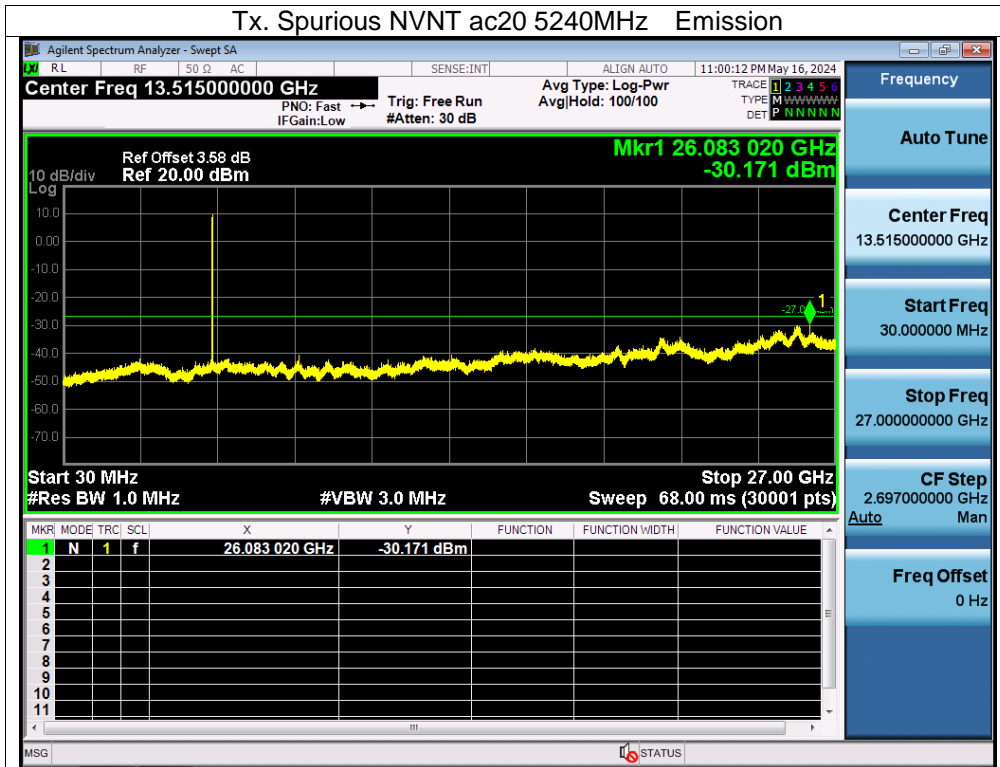


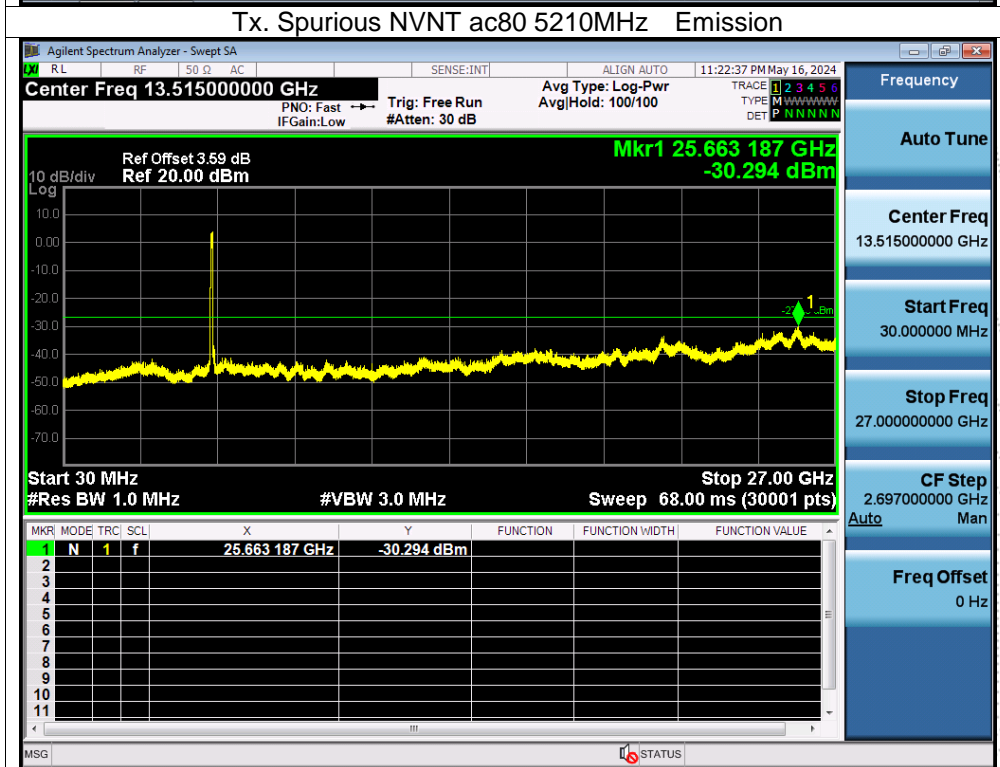
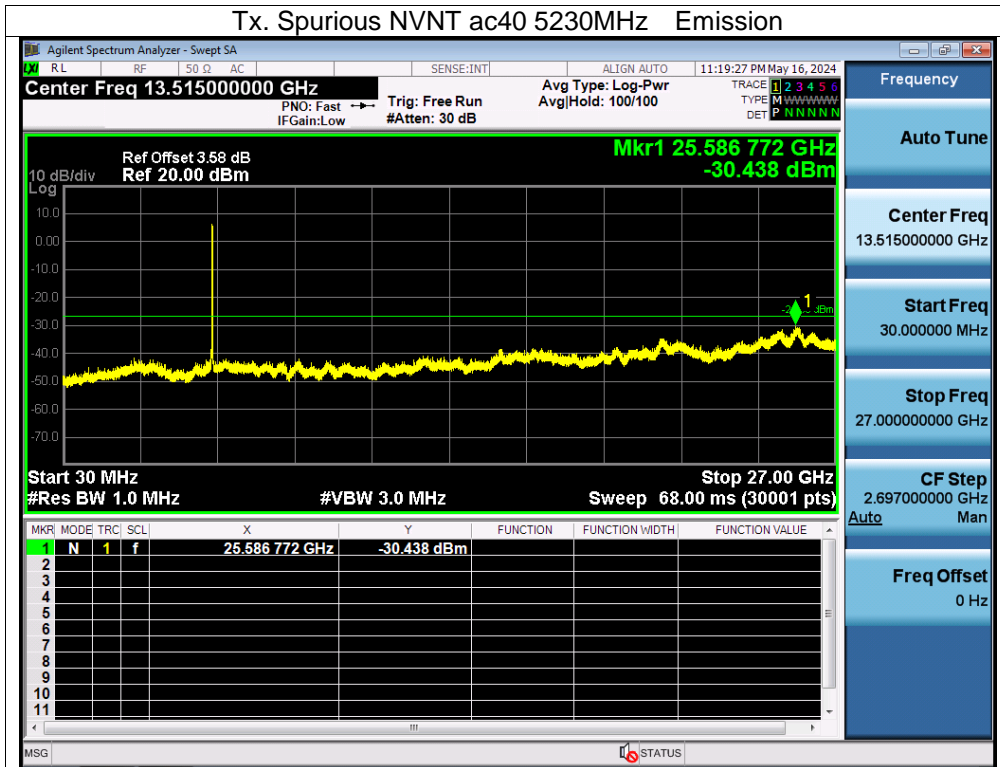


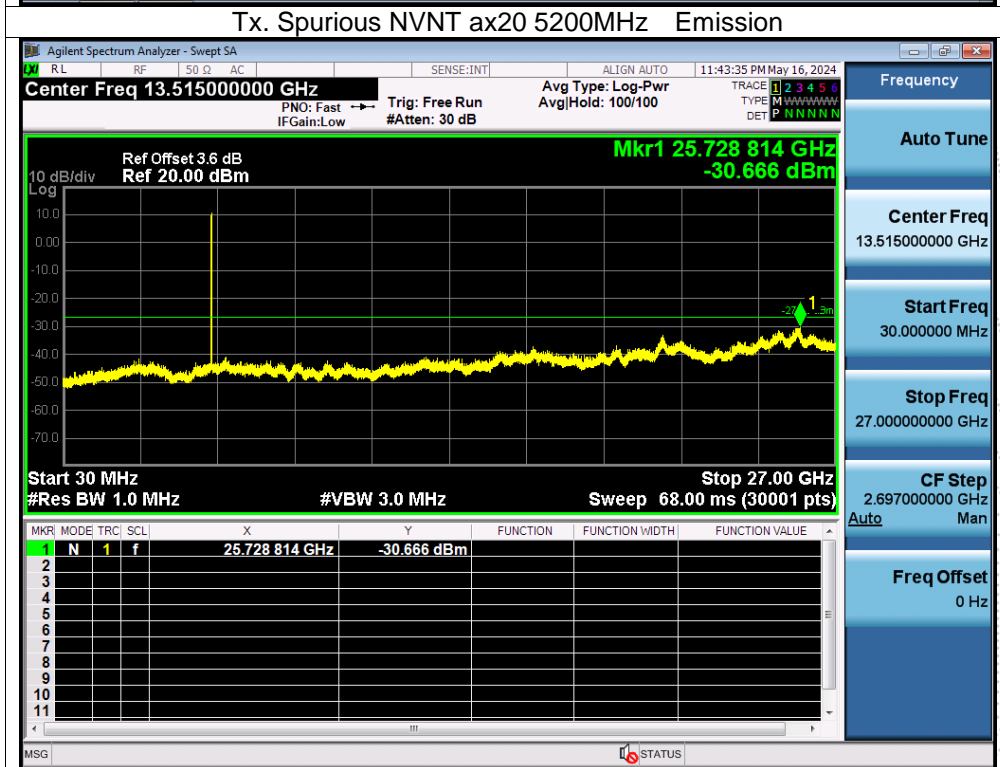
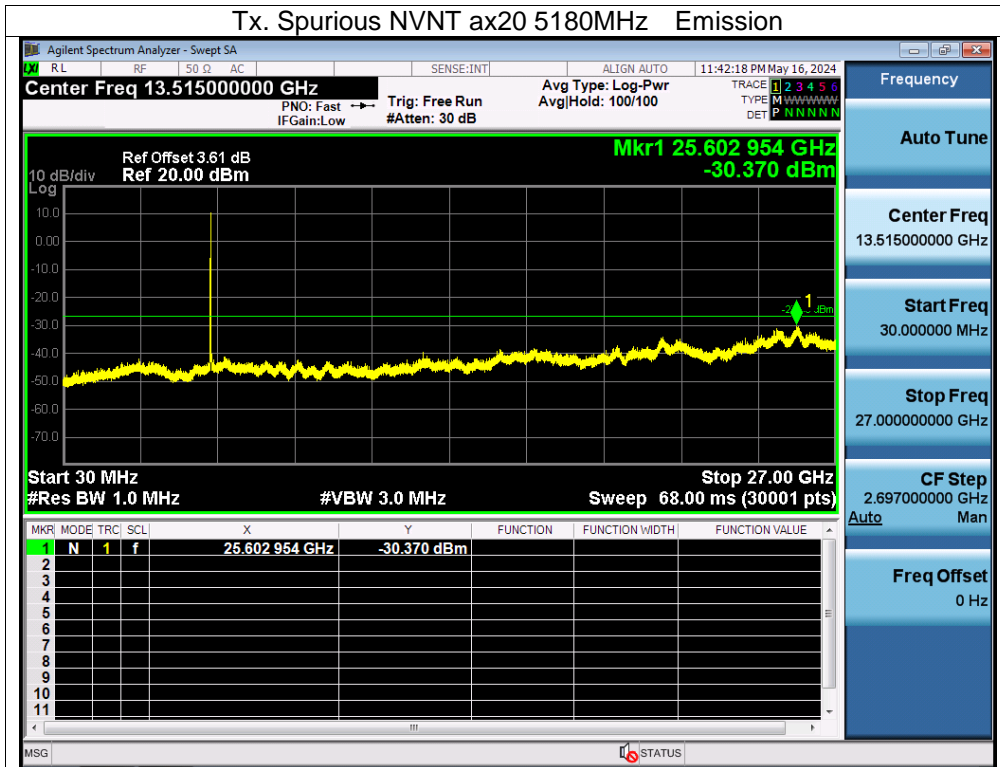


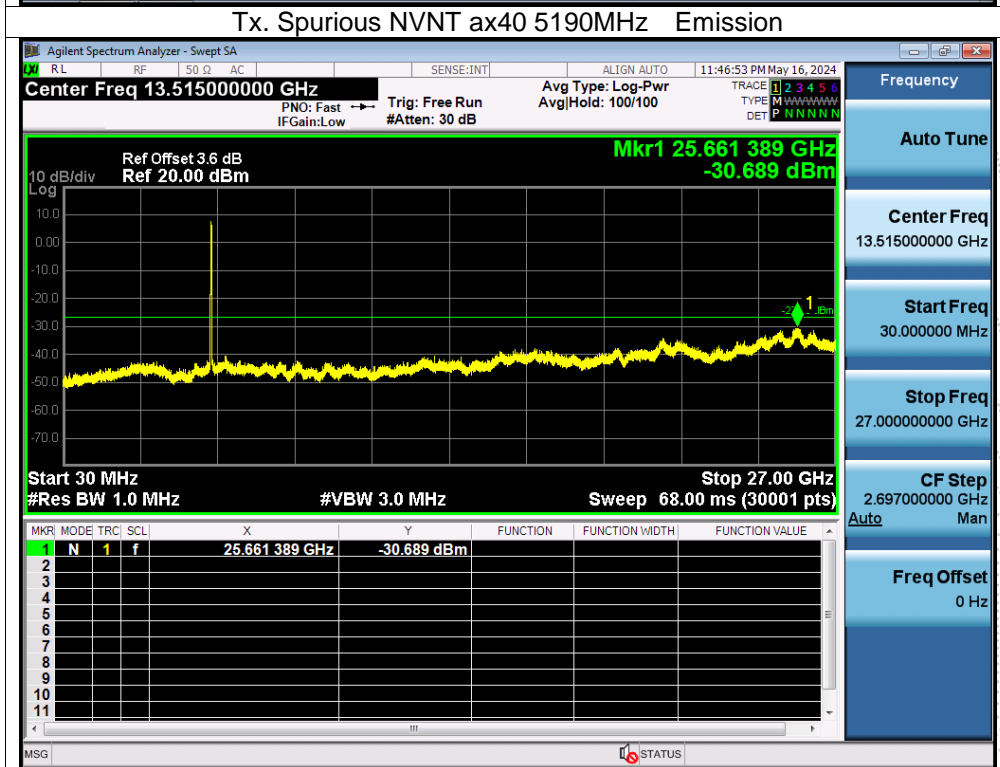
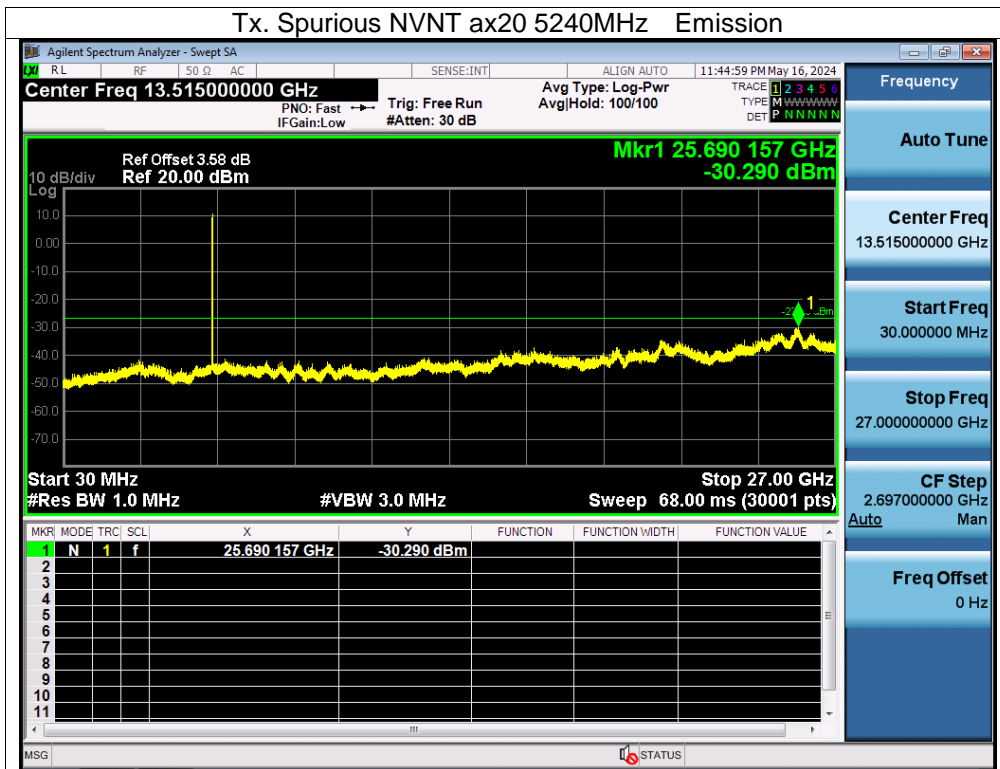


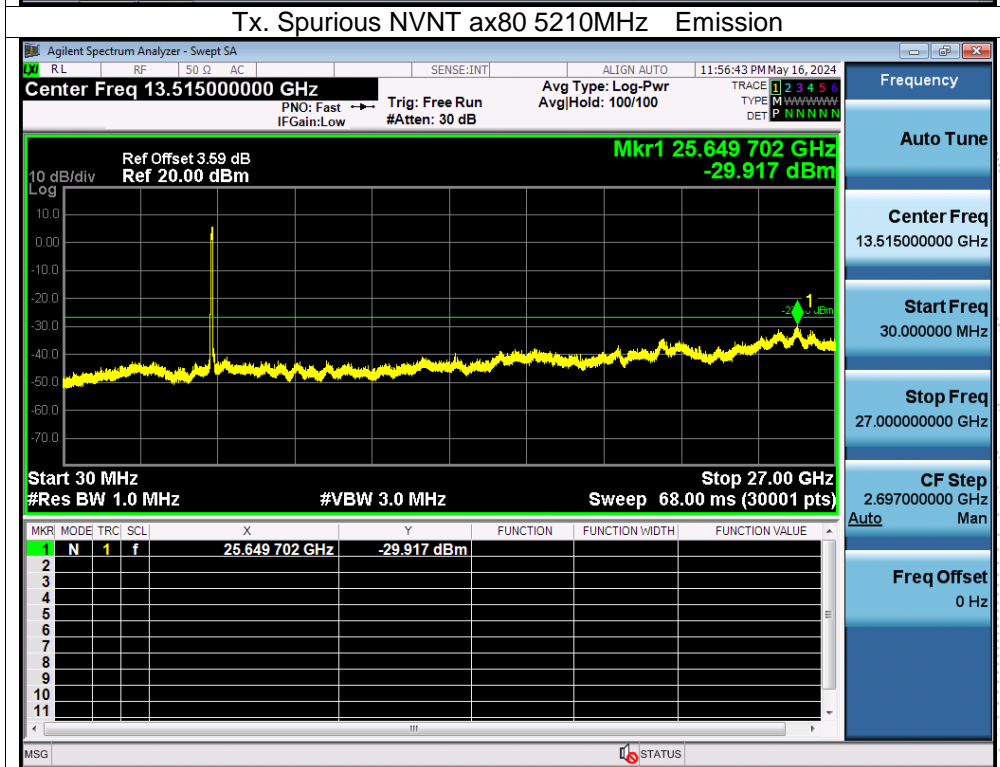
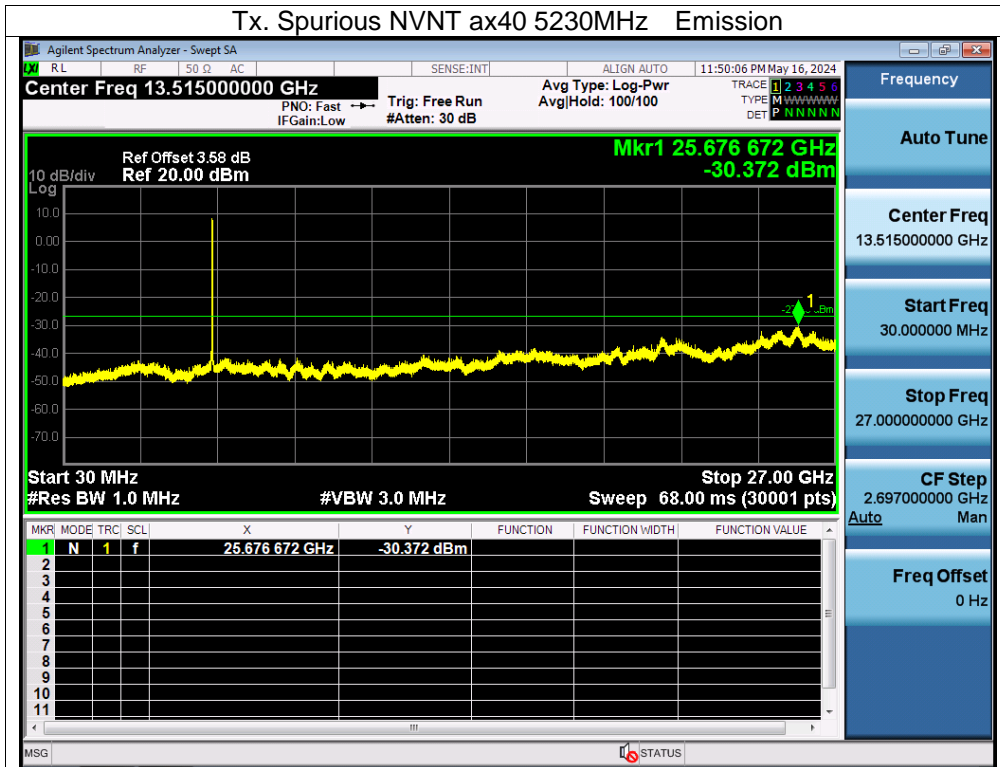




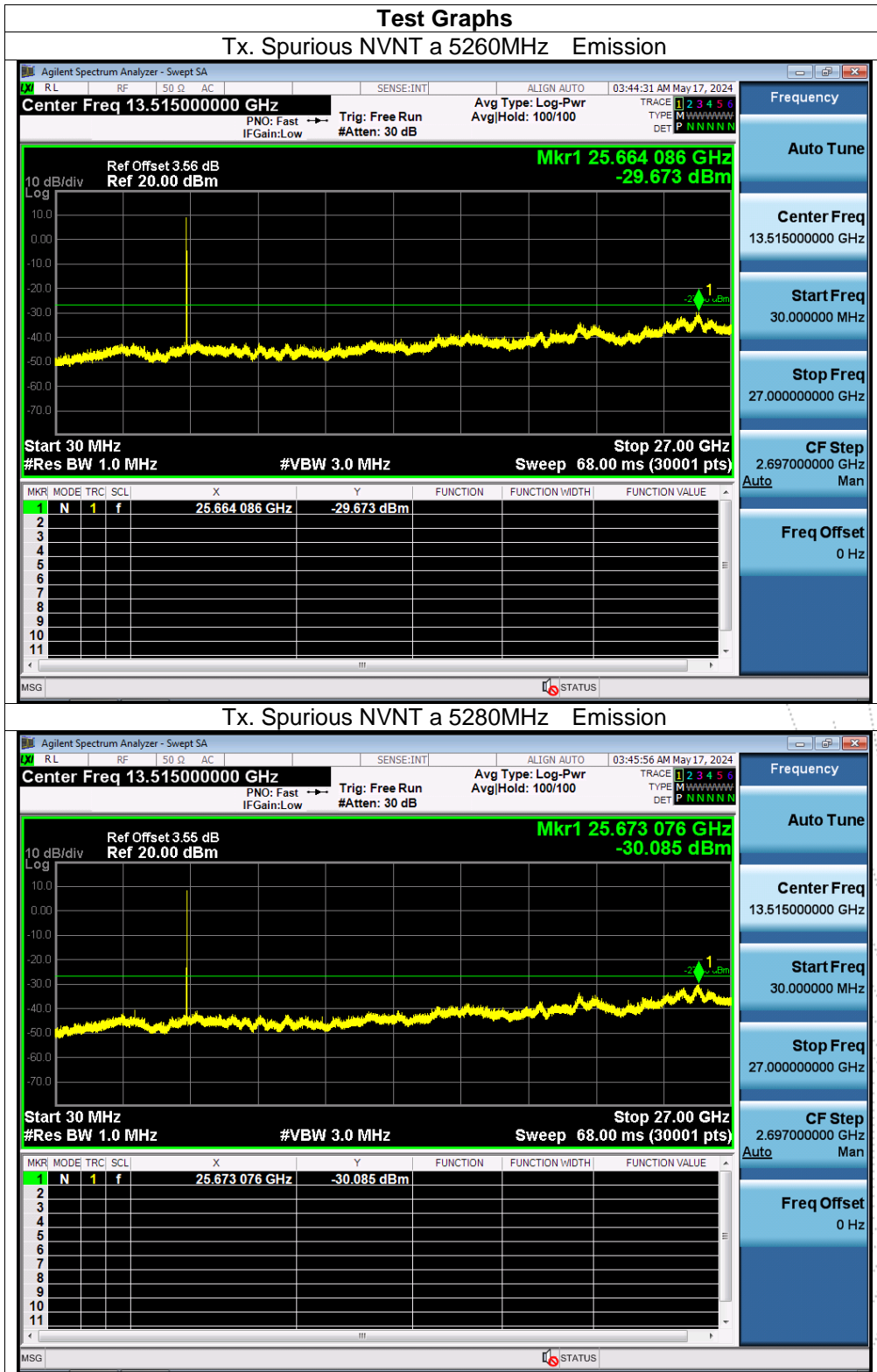


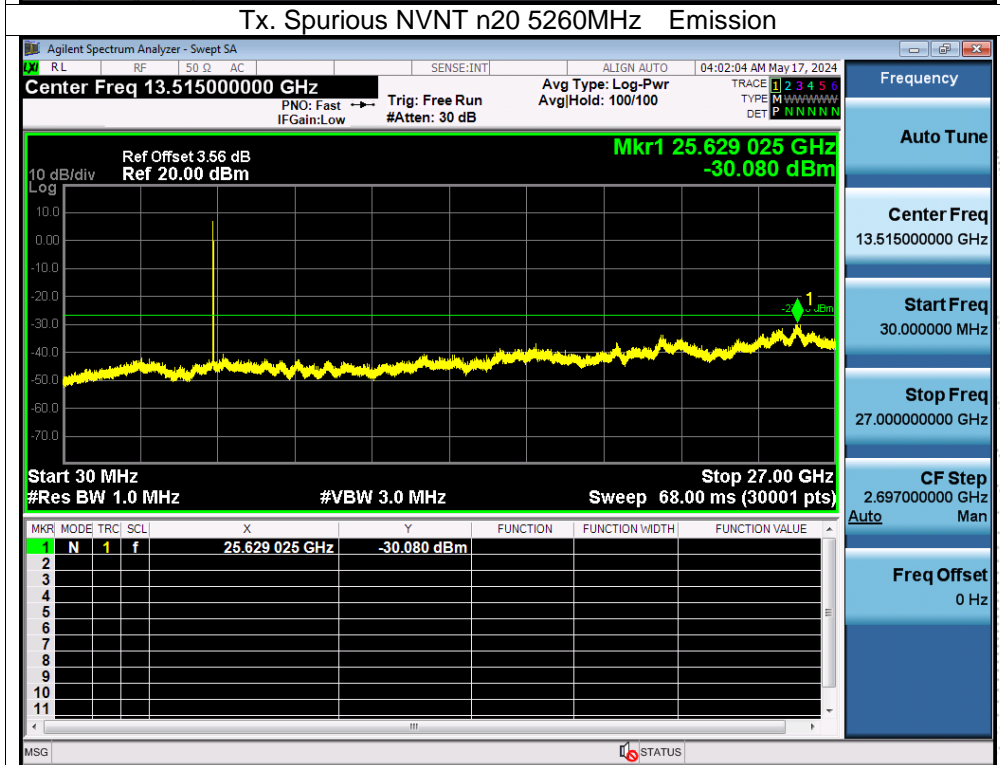
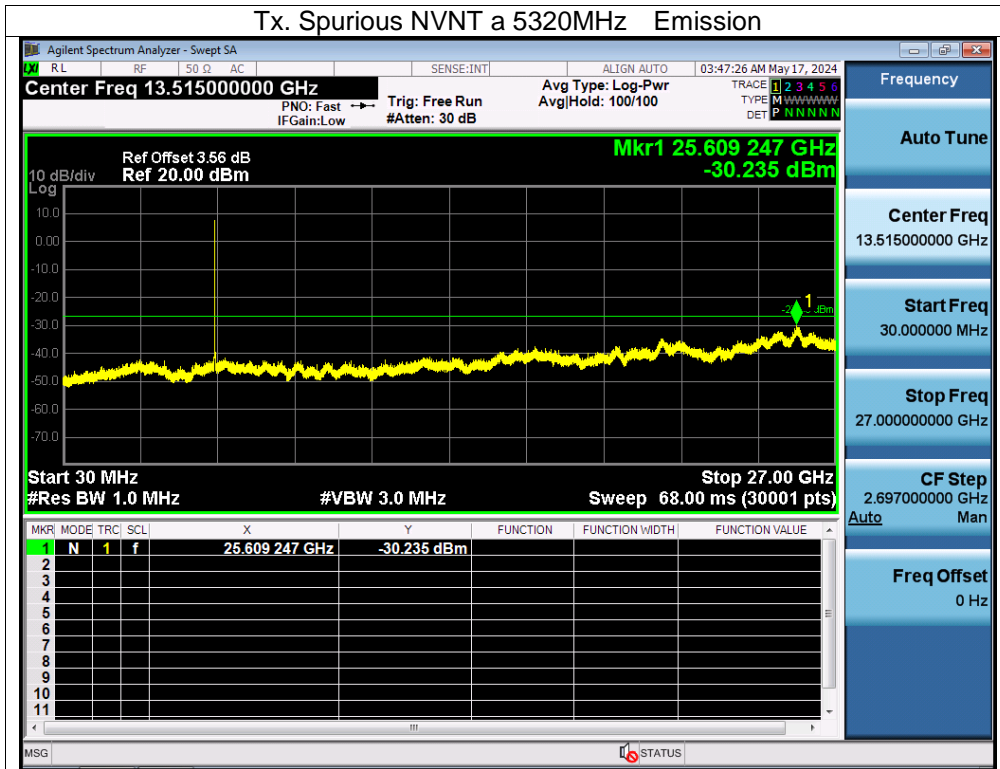


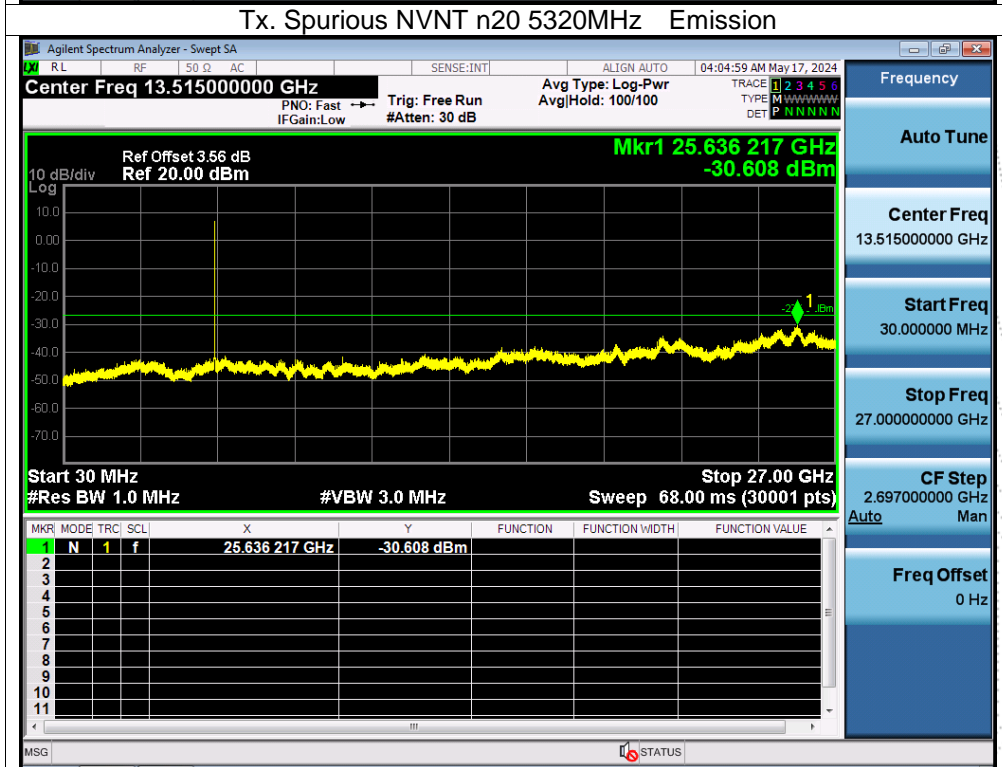
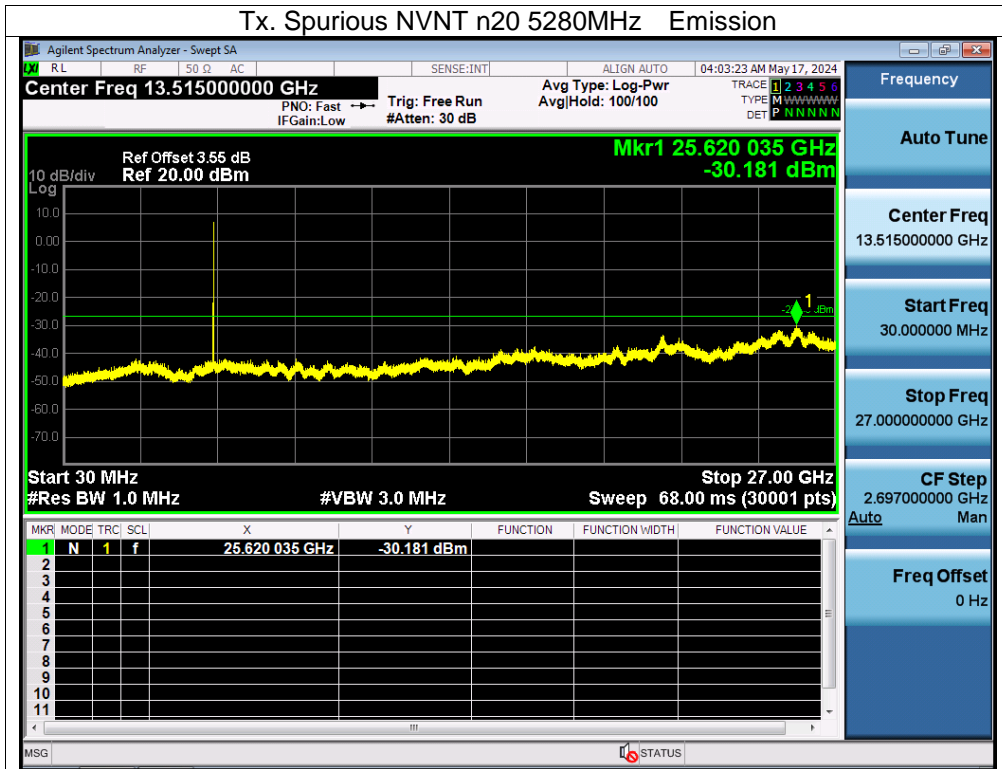


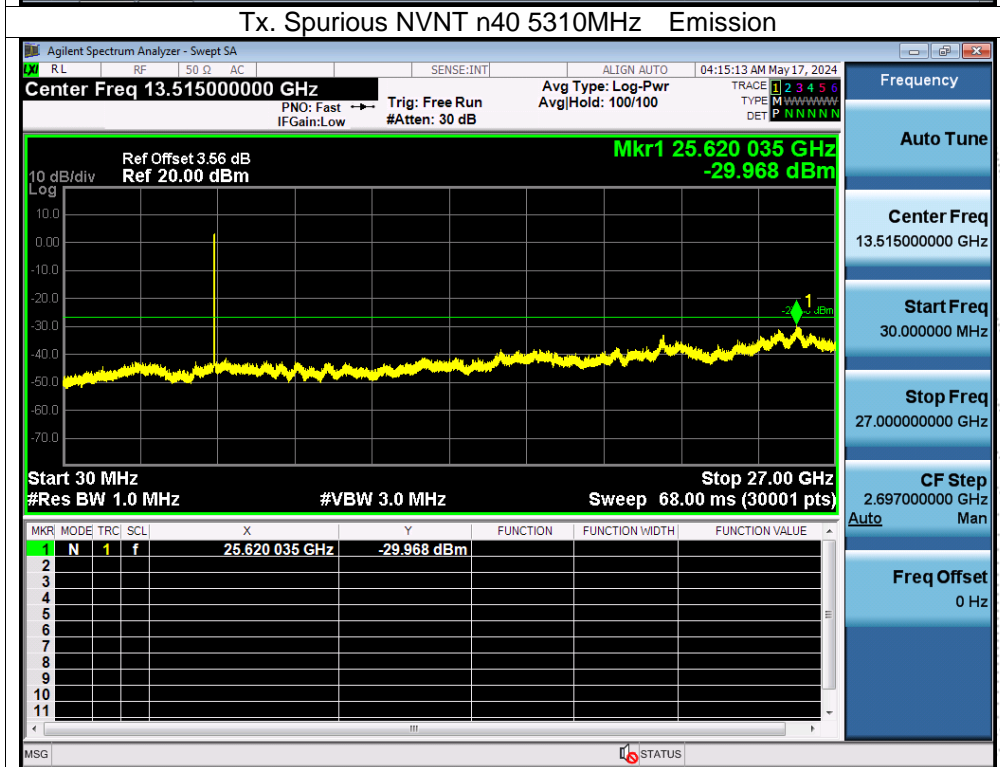
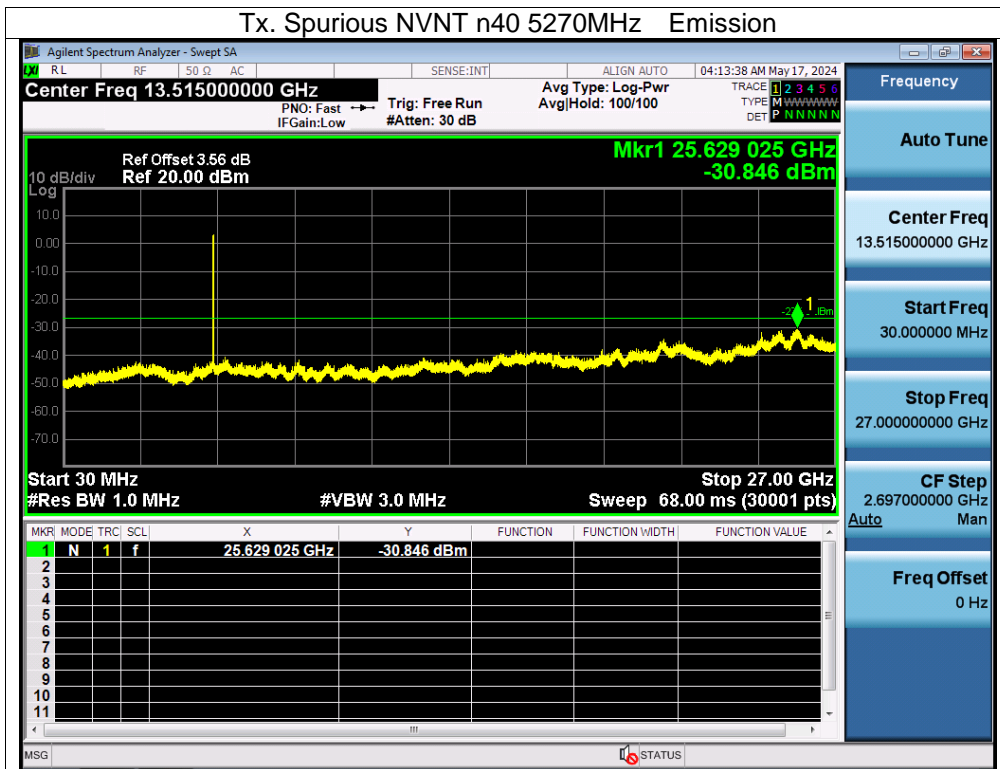


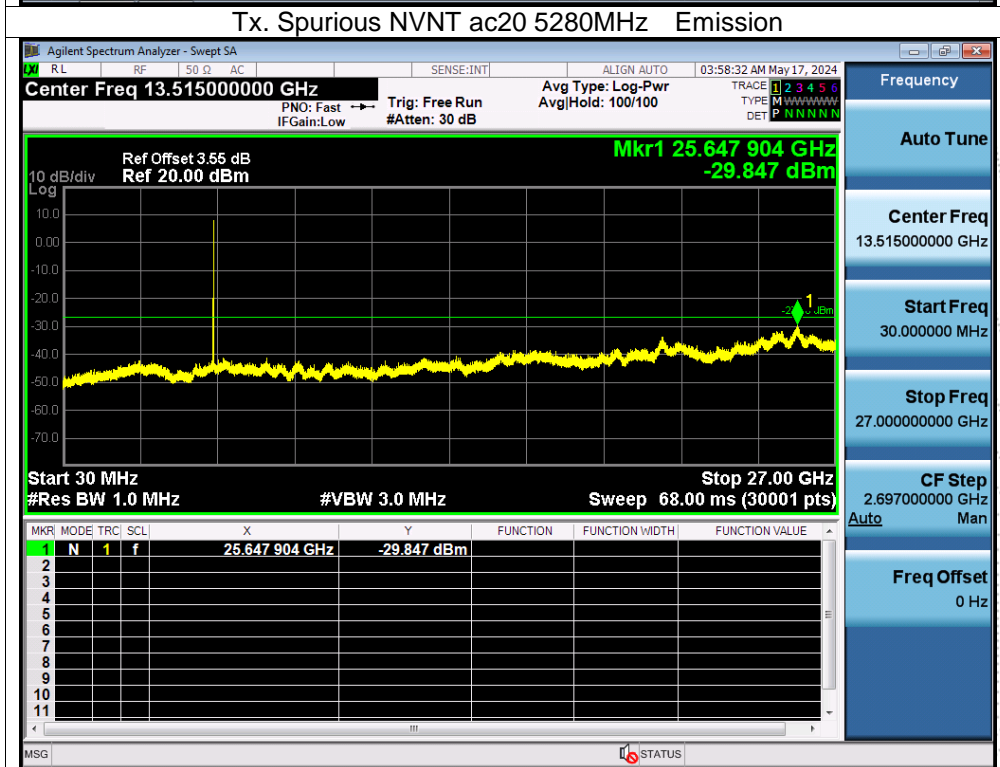
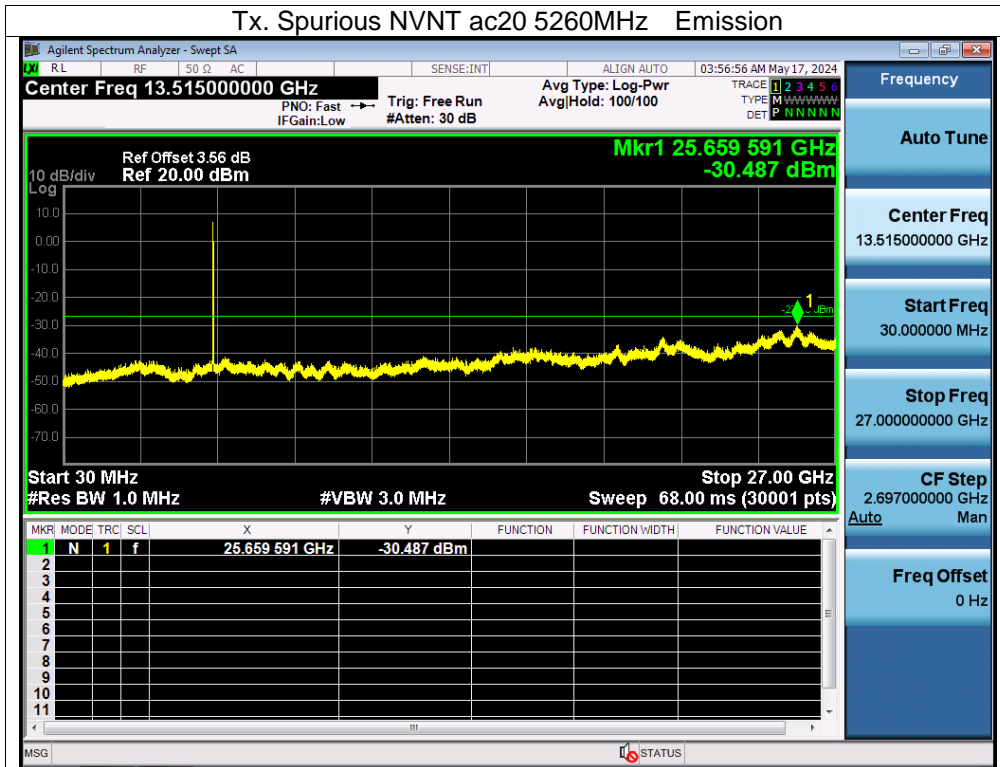
Note: A(B) Represent the value of antenna A and B, The worst data is Antenna A, only shown Antenna A.
 Antenna A: 5260-5320MHz

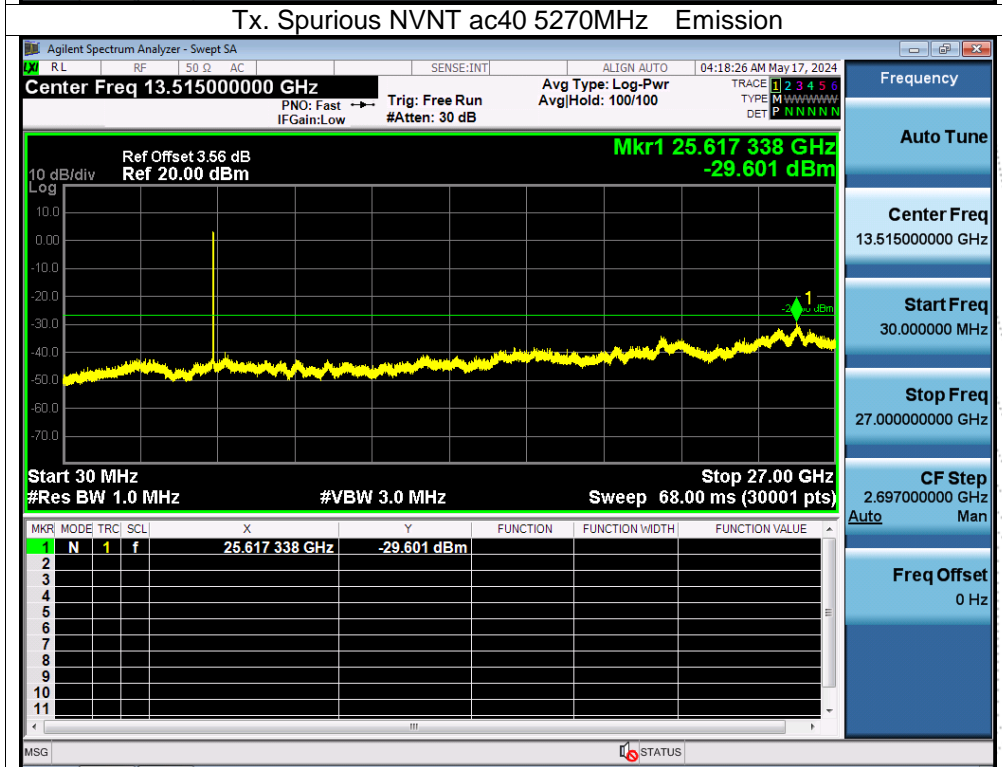
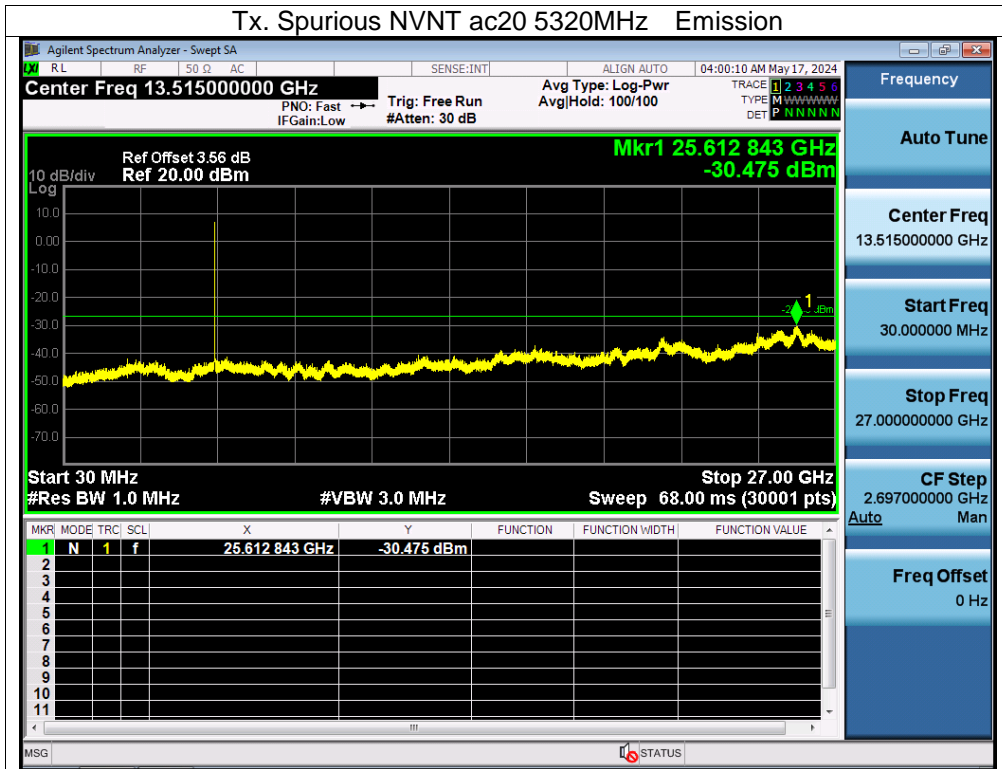


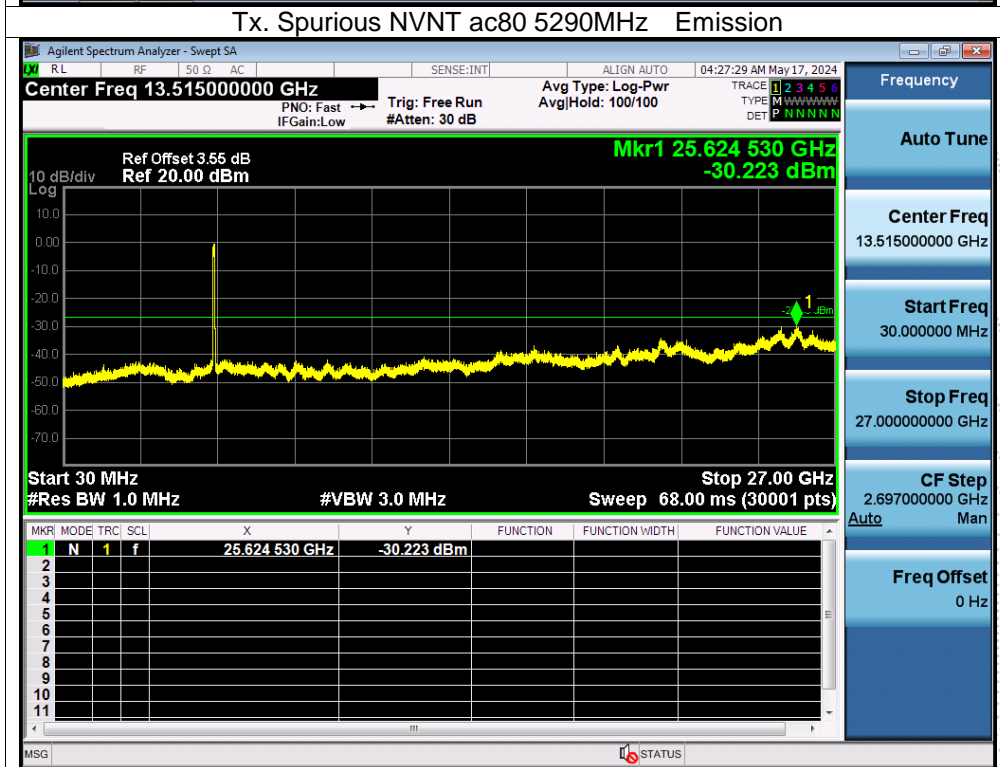
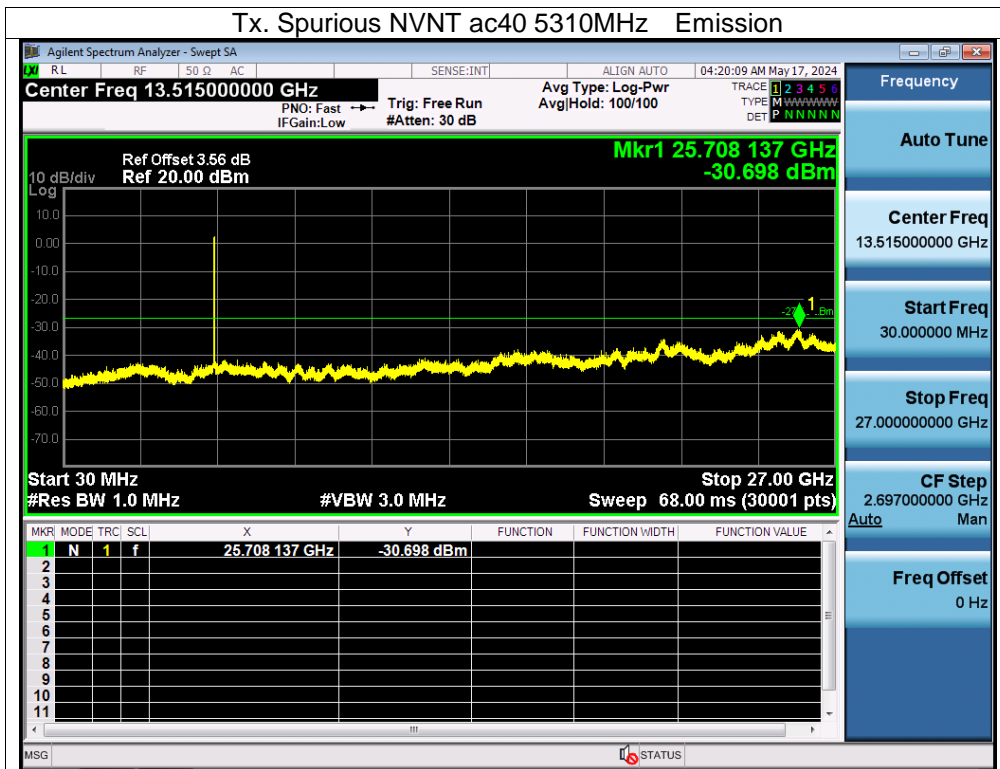


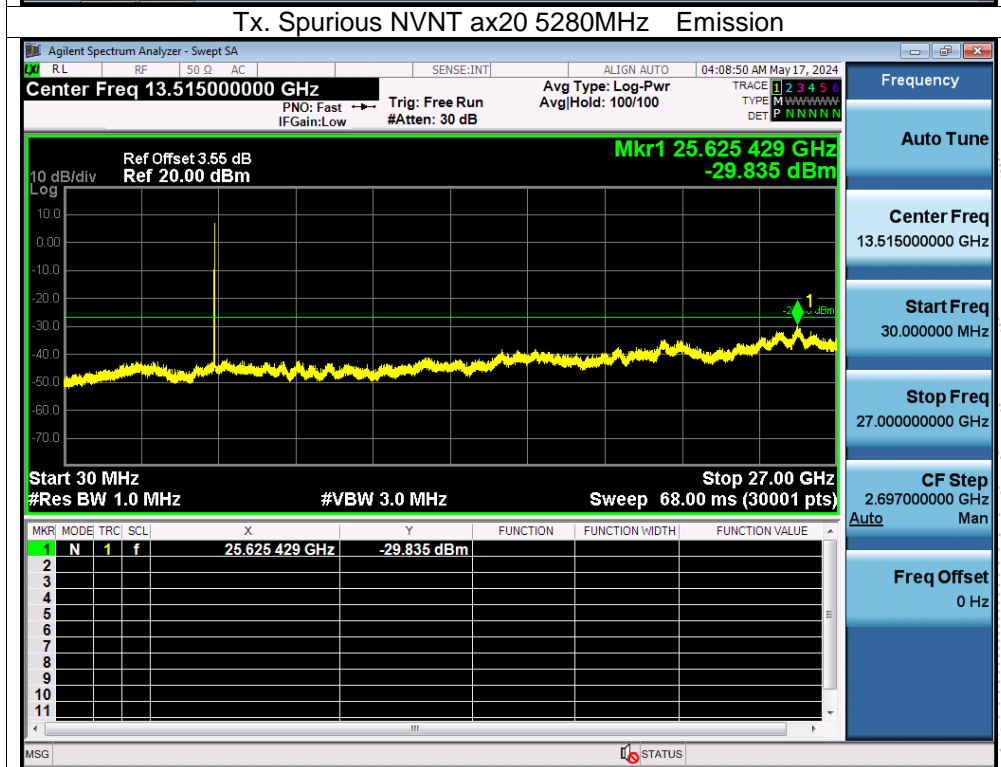
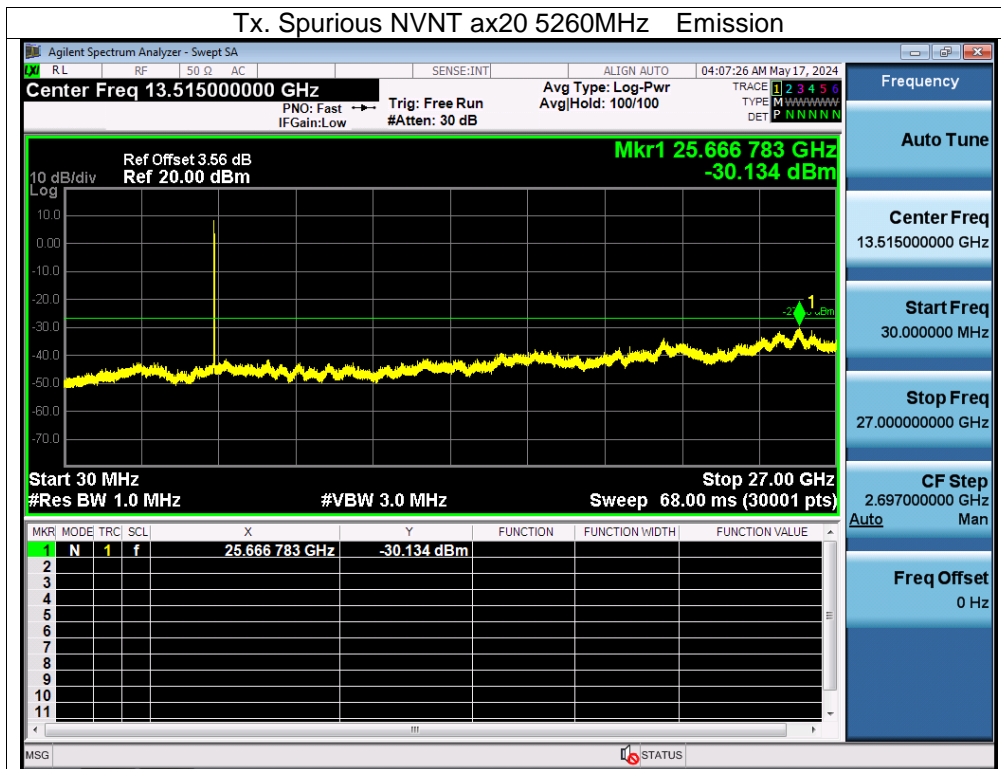


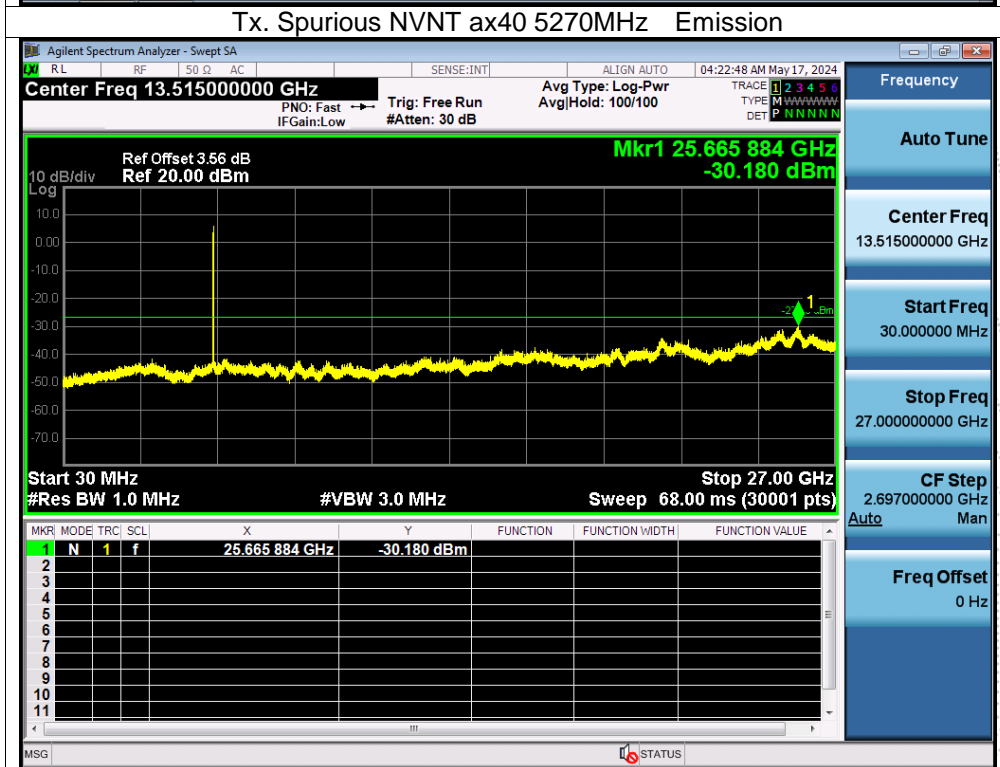
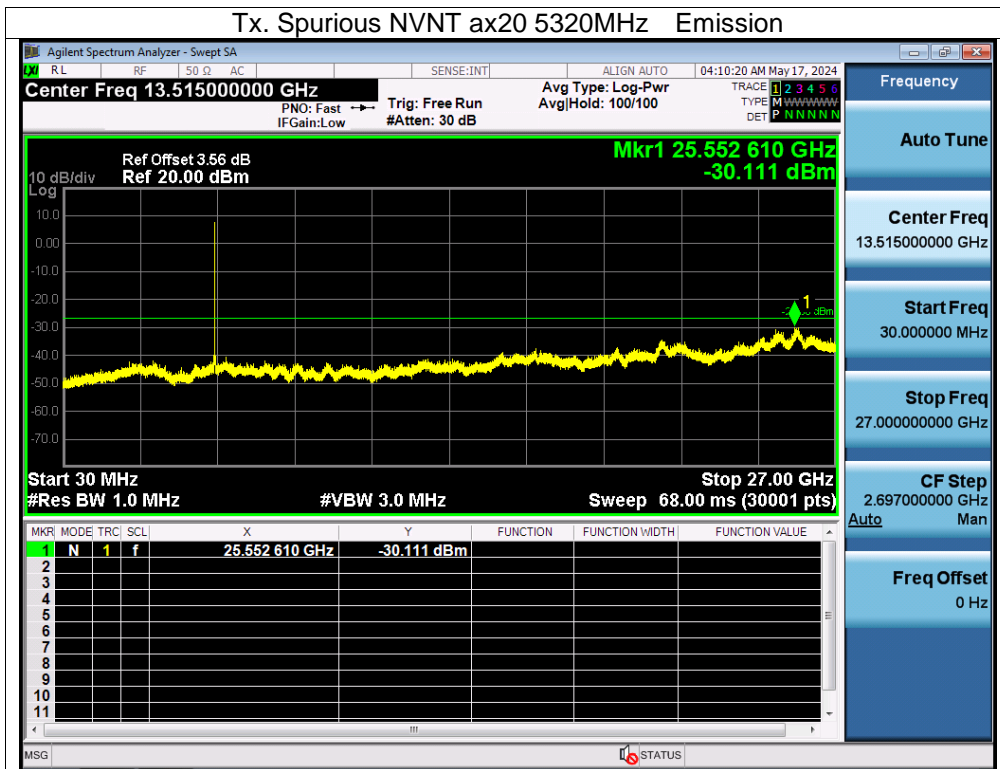


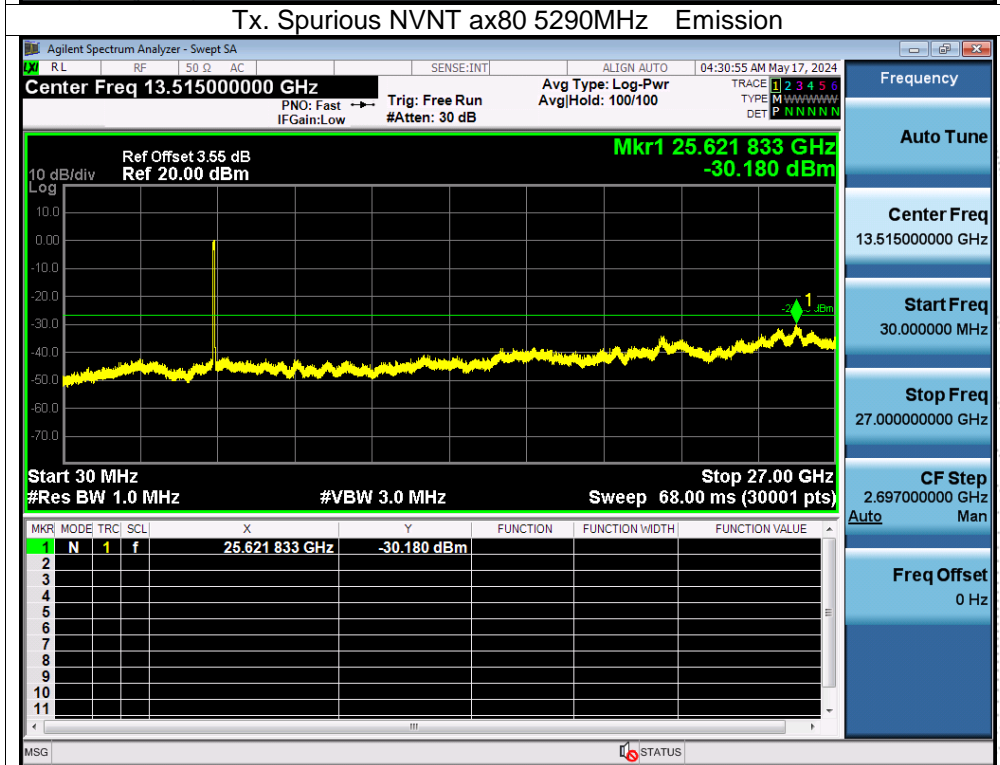
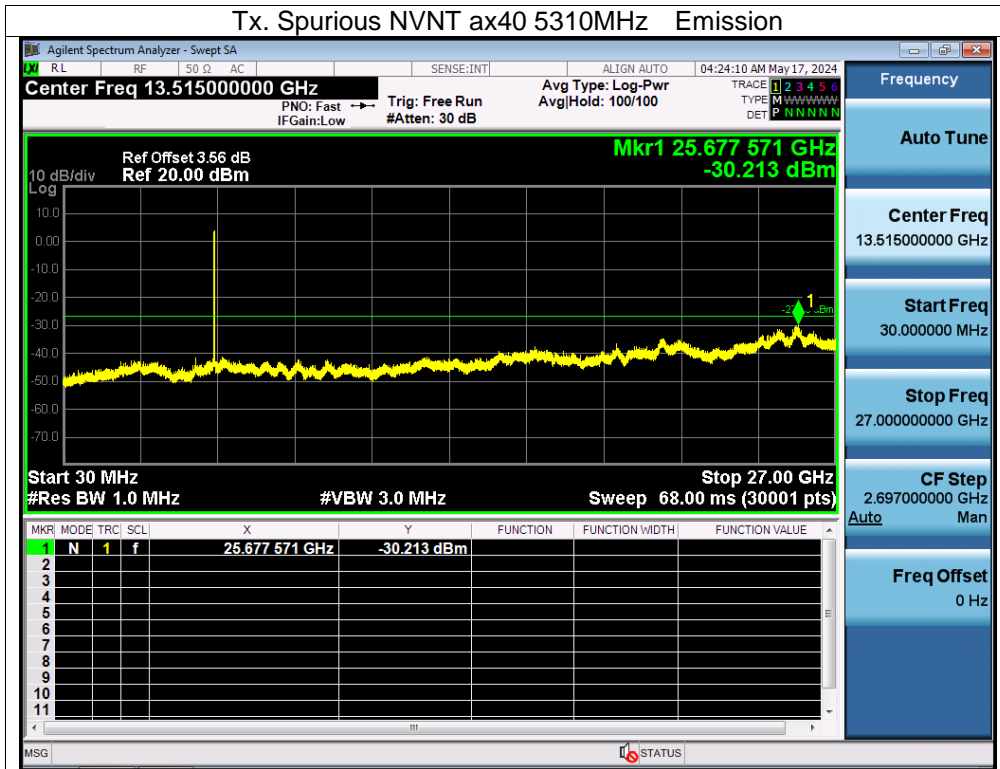




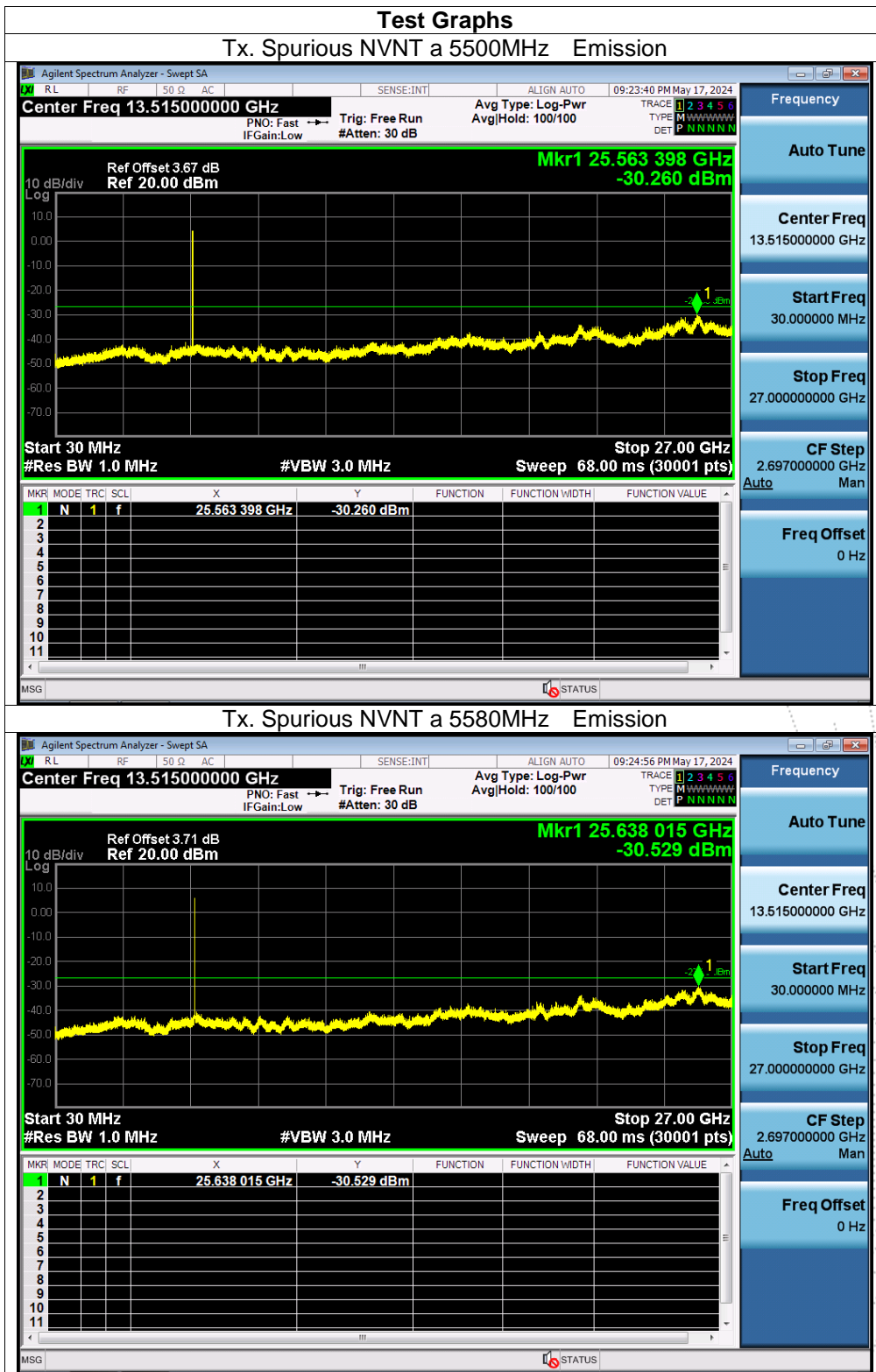


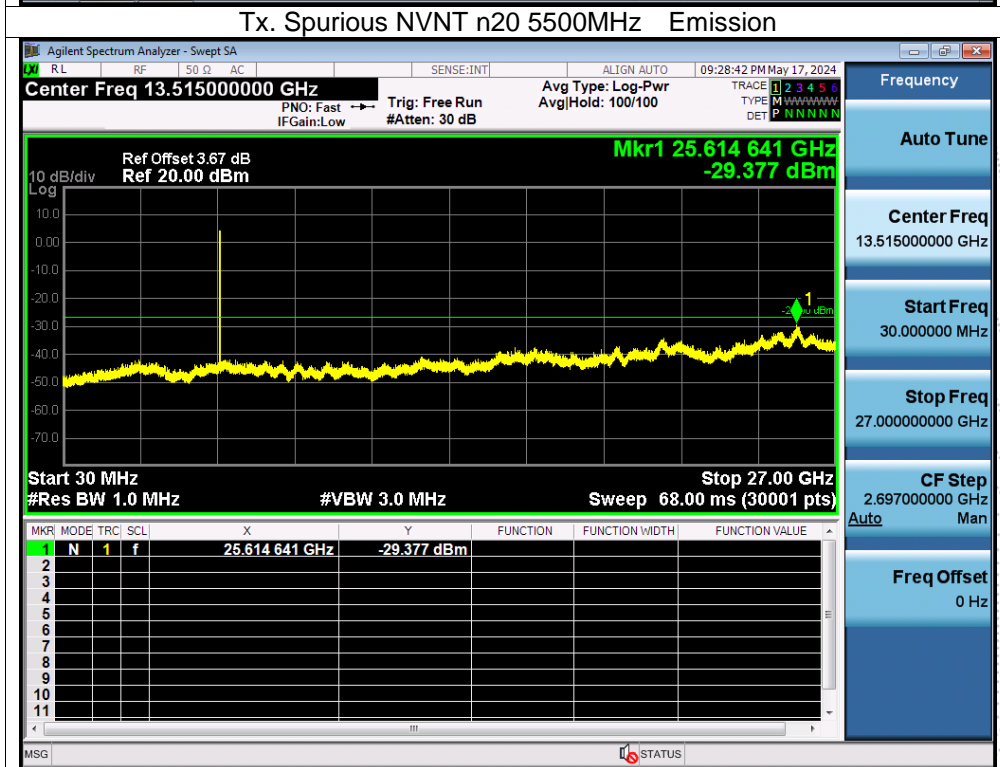
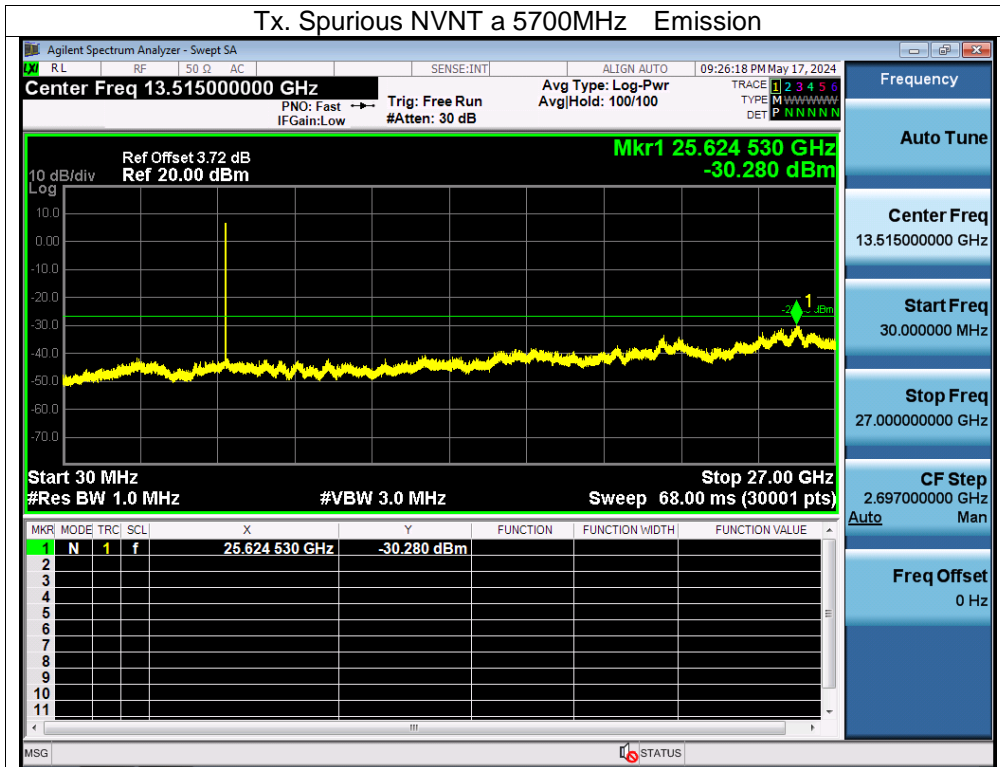


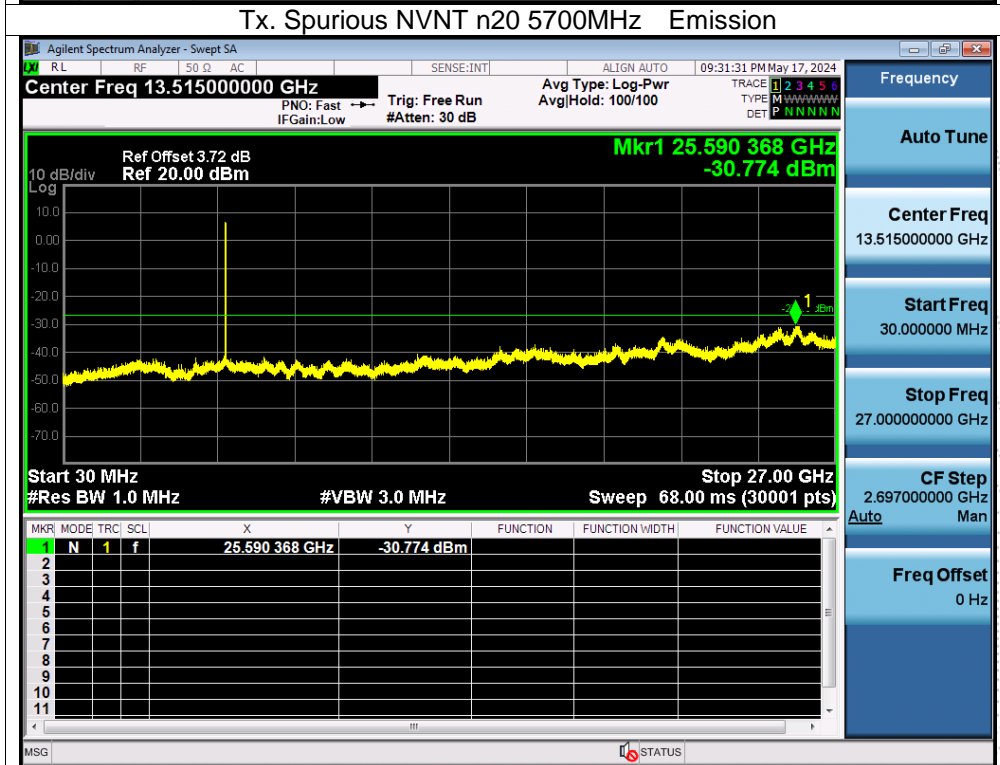
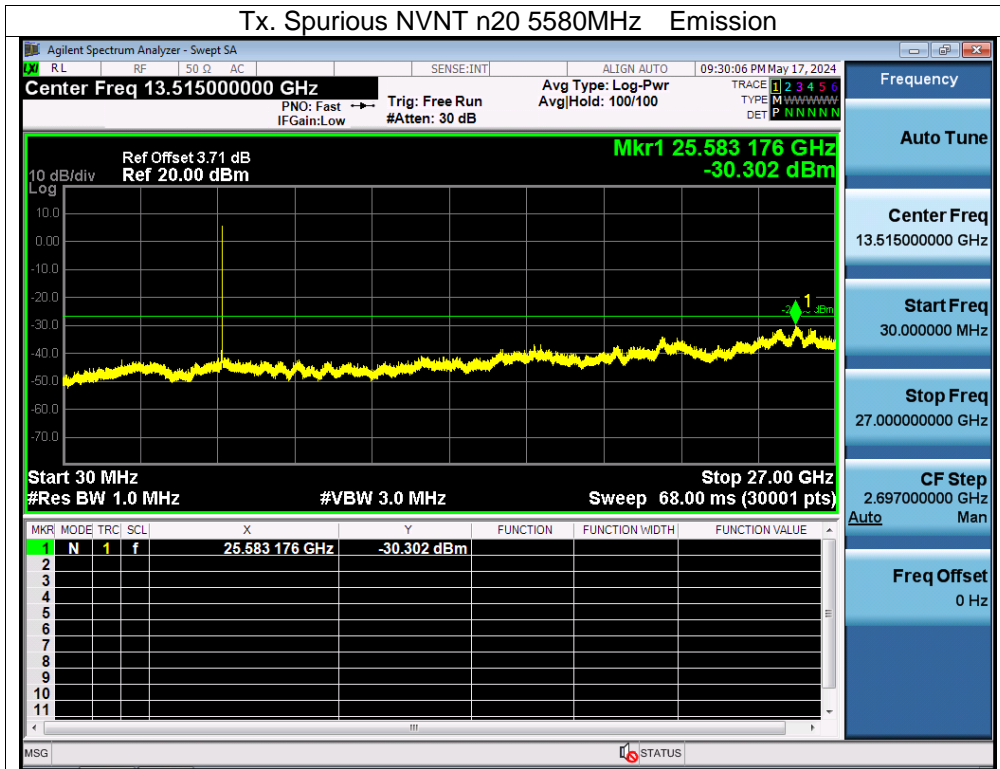


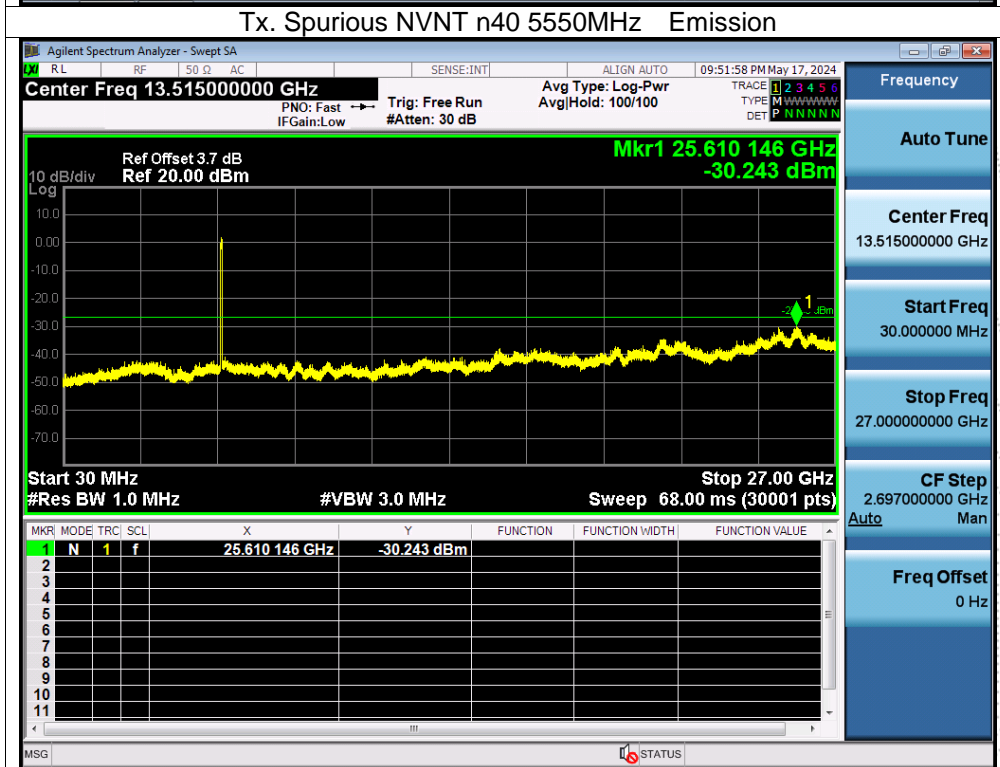
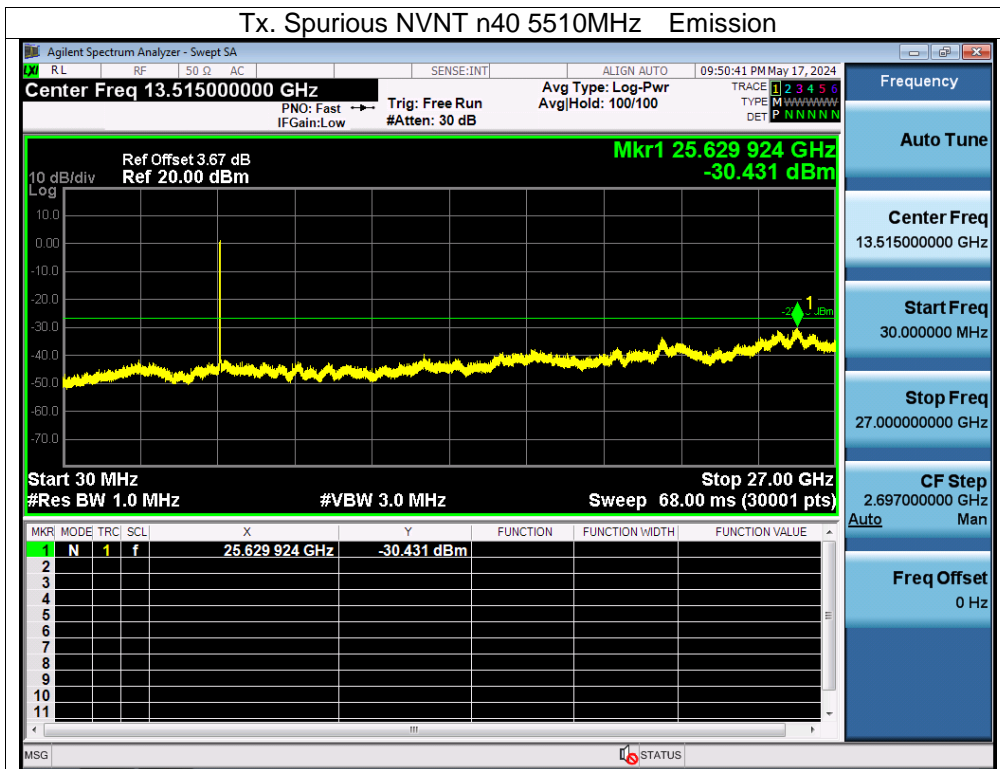


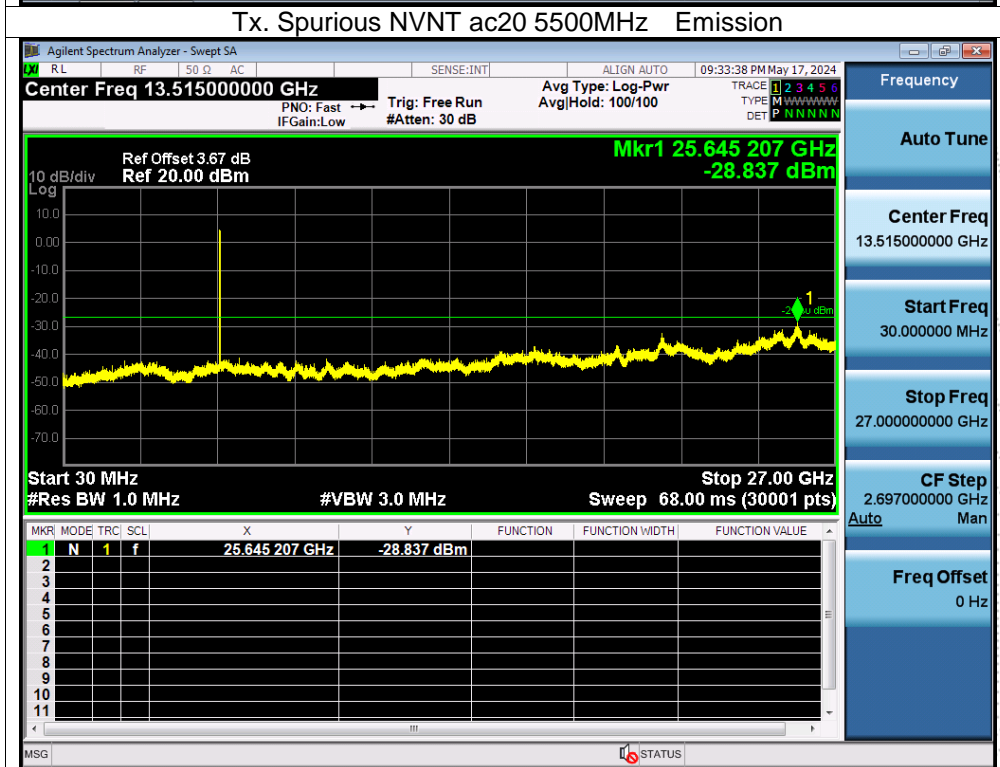
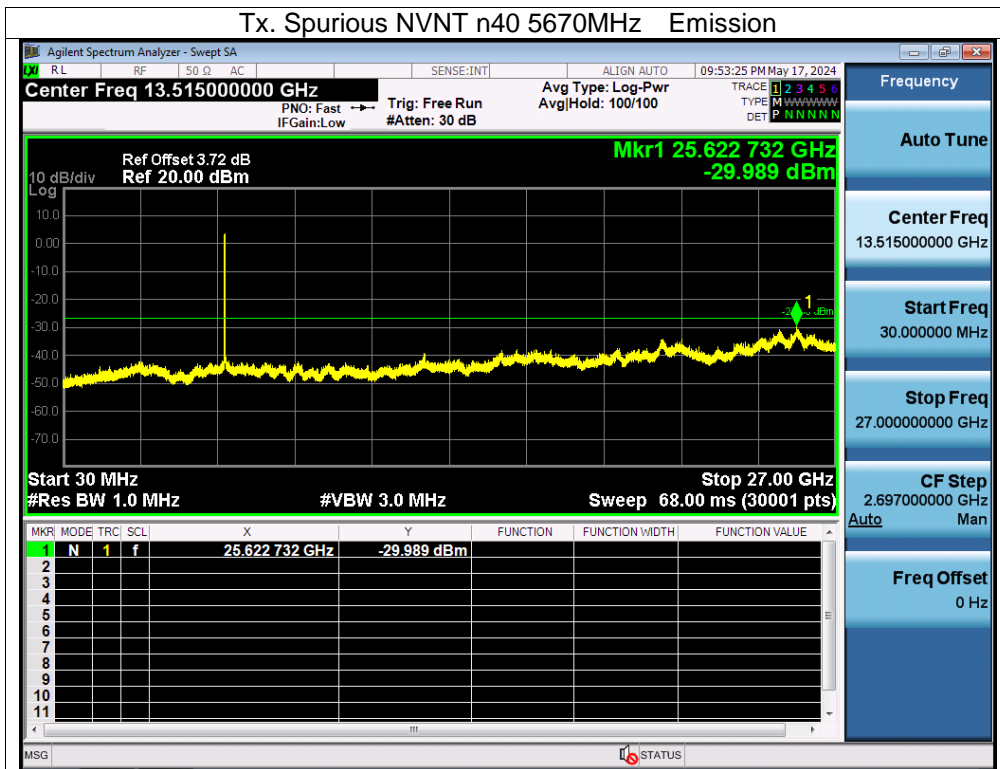
Note: A(B) Represent the value of antenna A and B, The worst data is Antenna A, only shown Antenna A.
 Antenna A: 5500-5700MHz

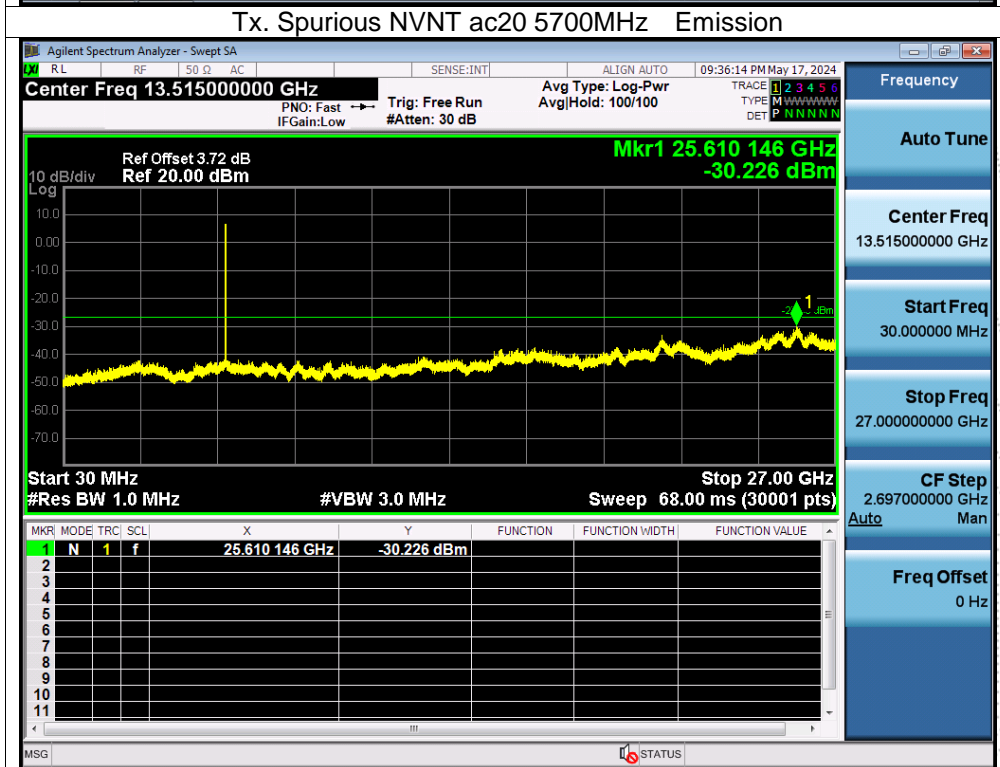
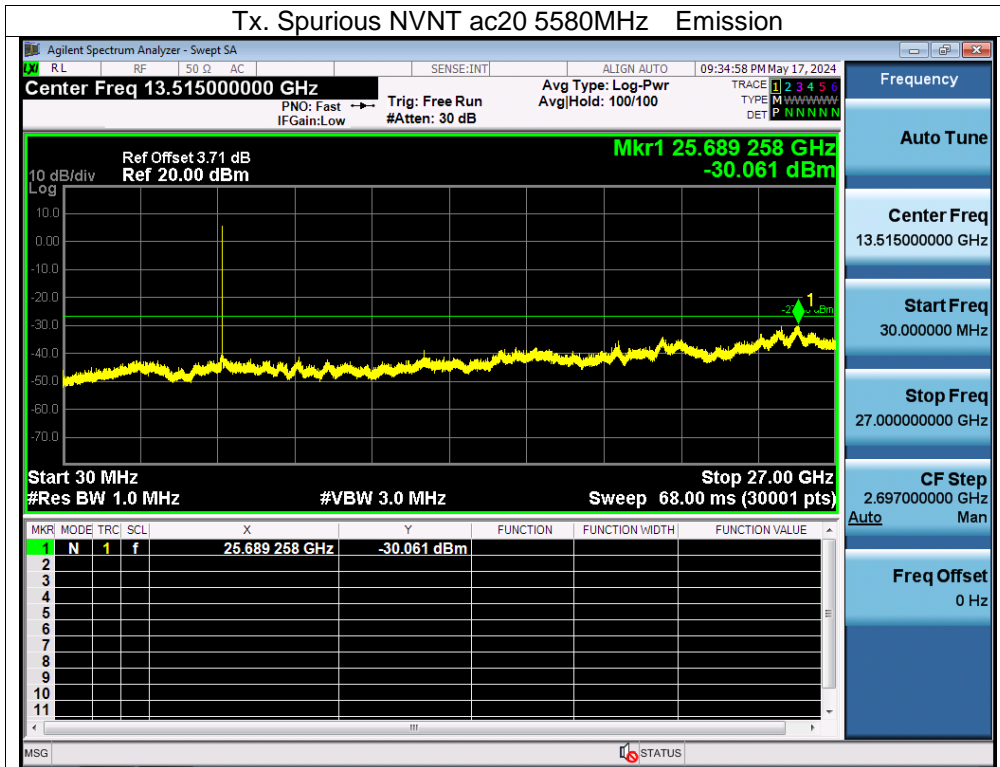


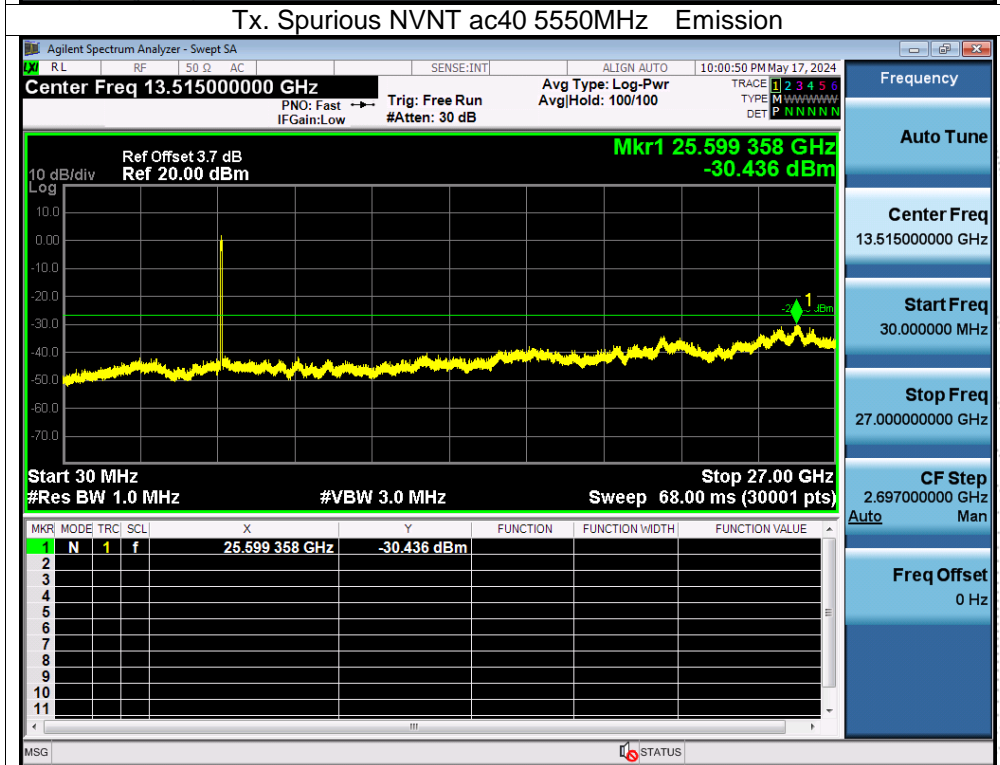
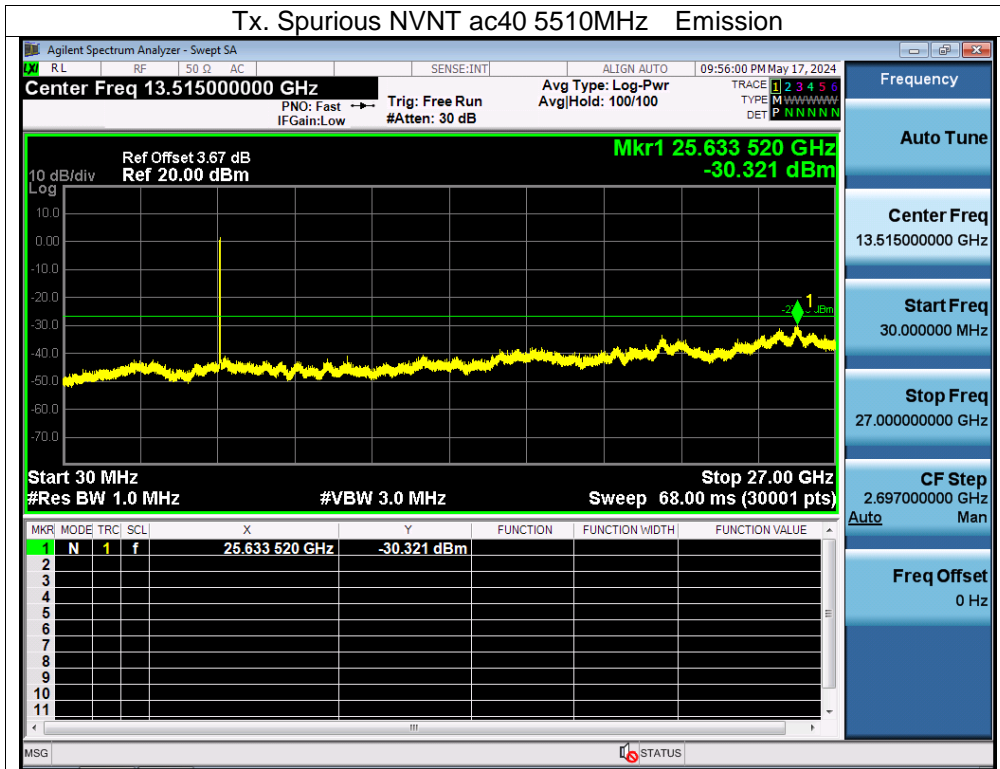


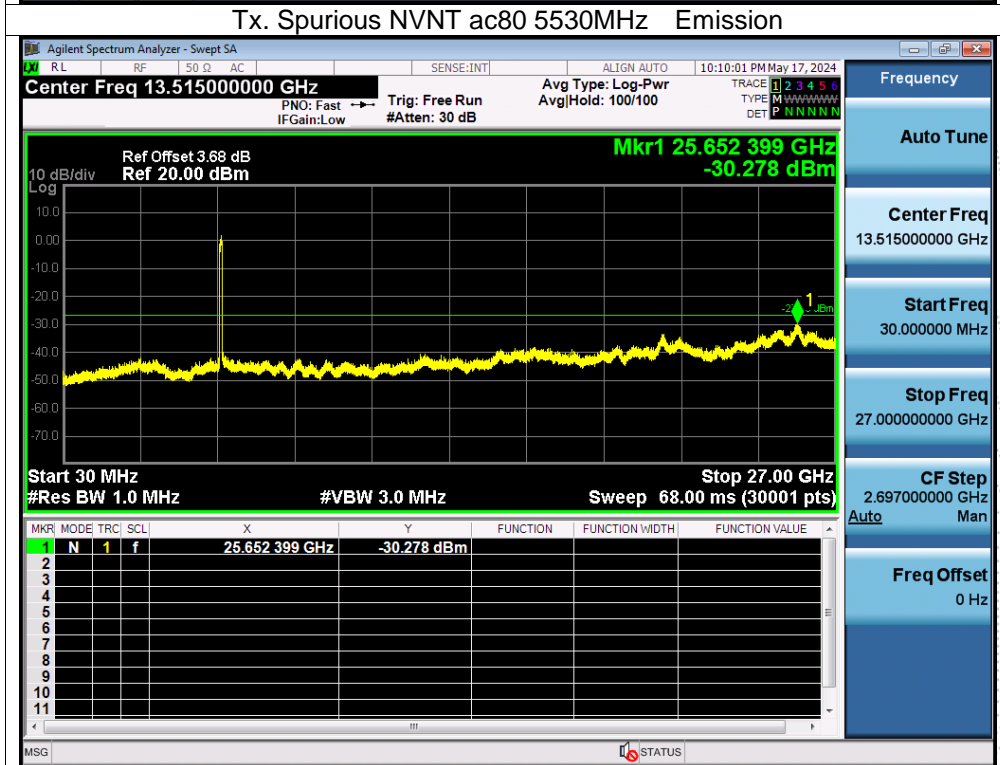
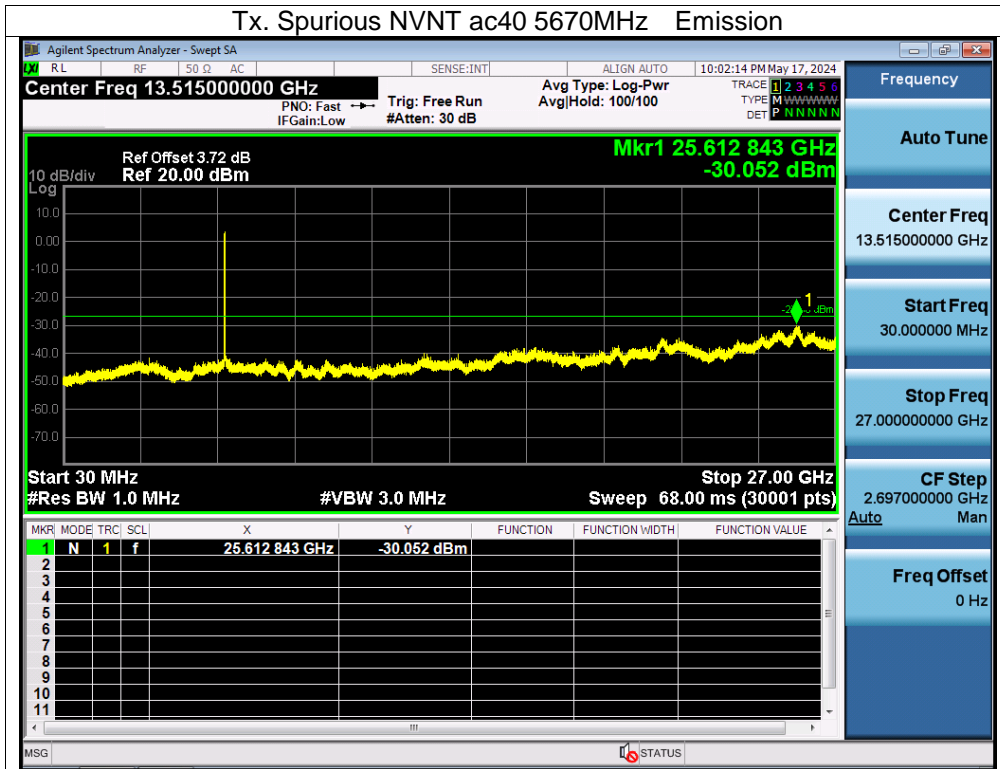


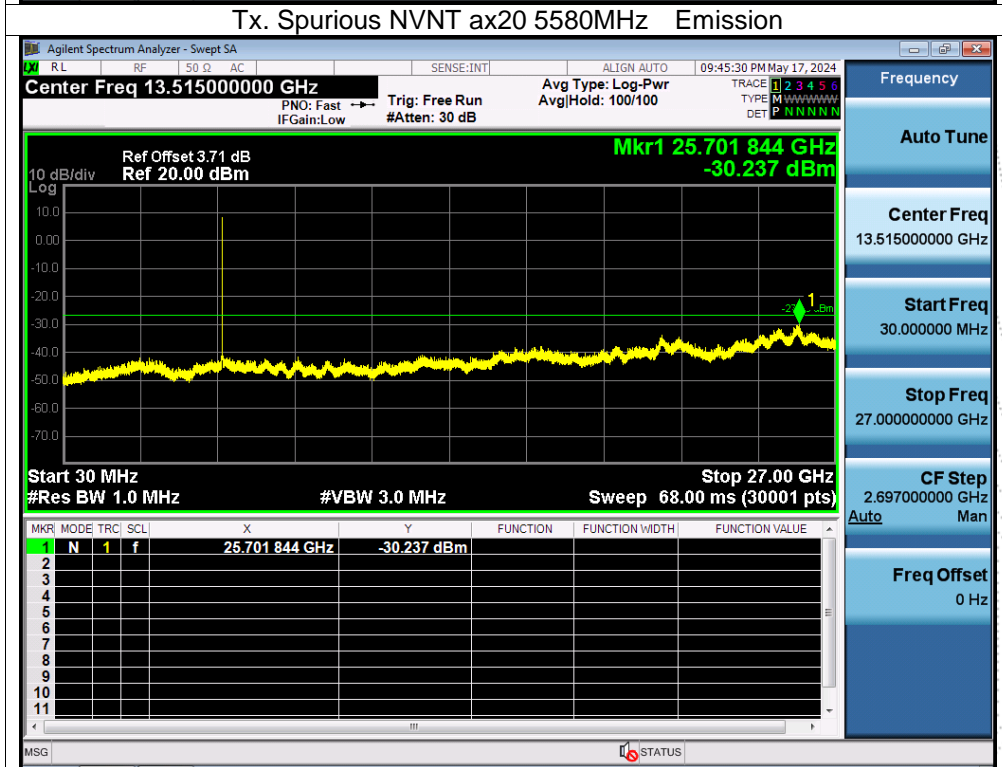
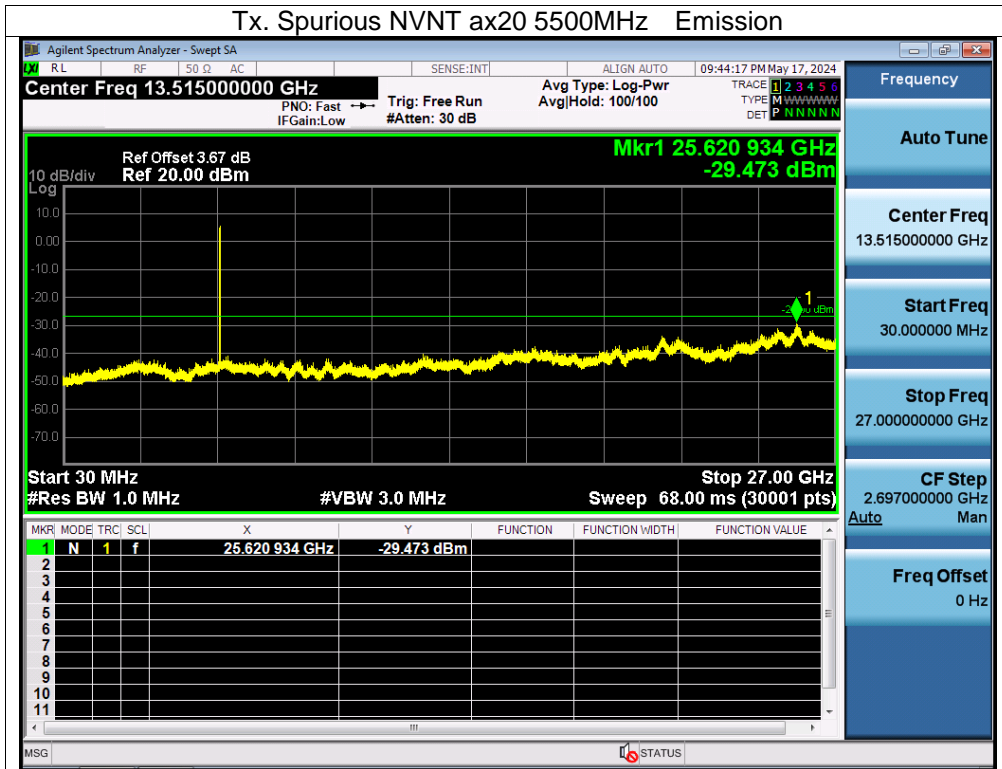


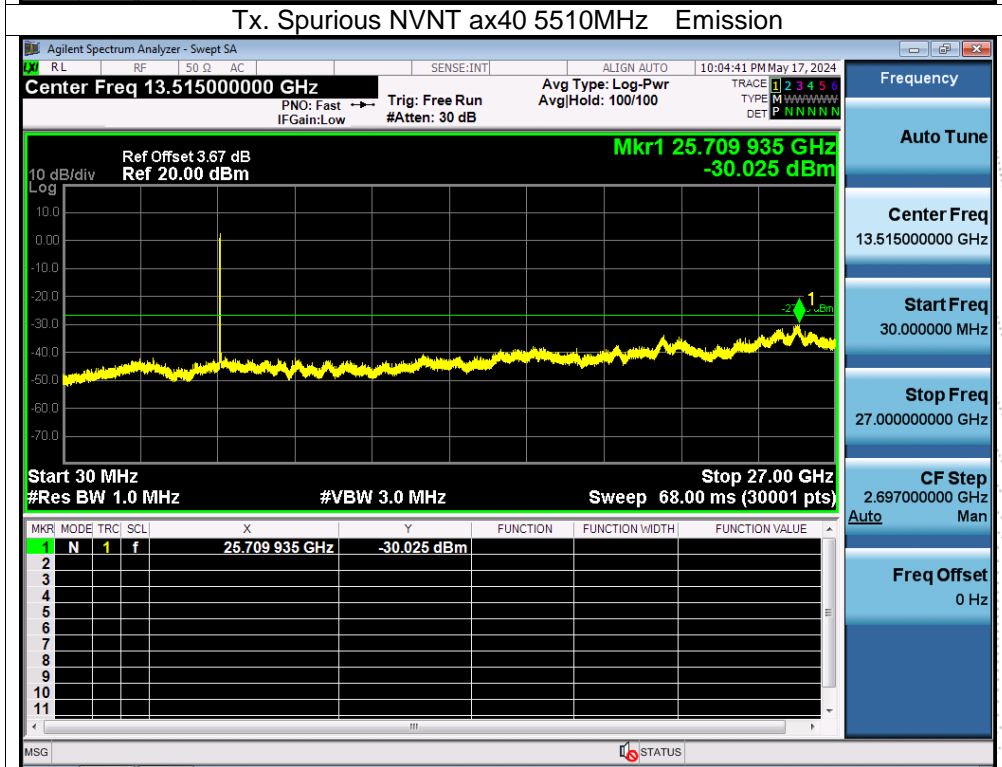
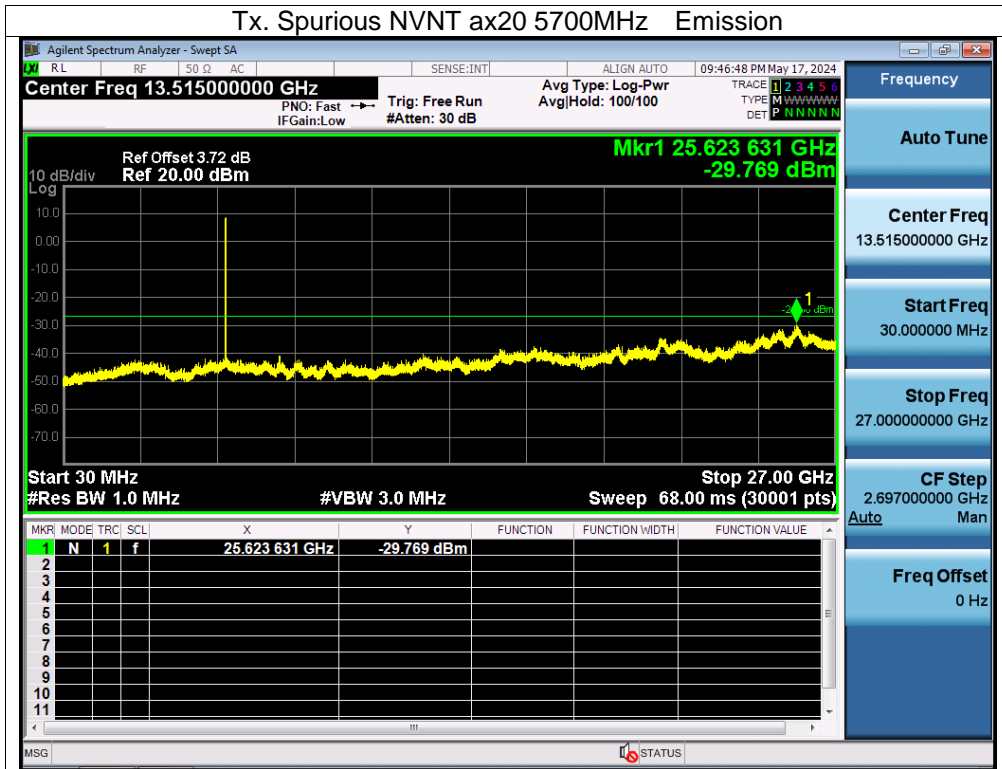


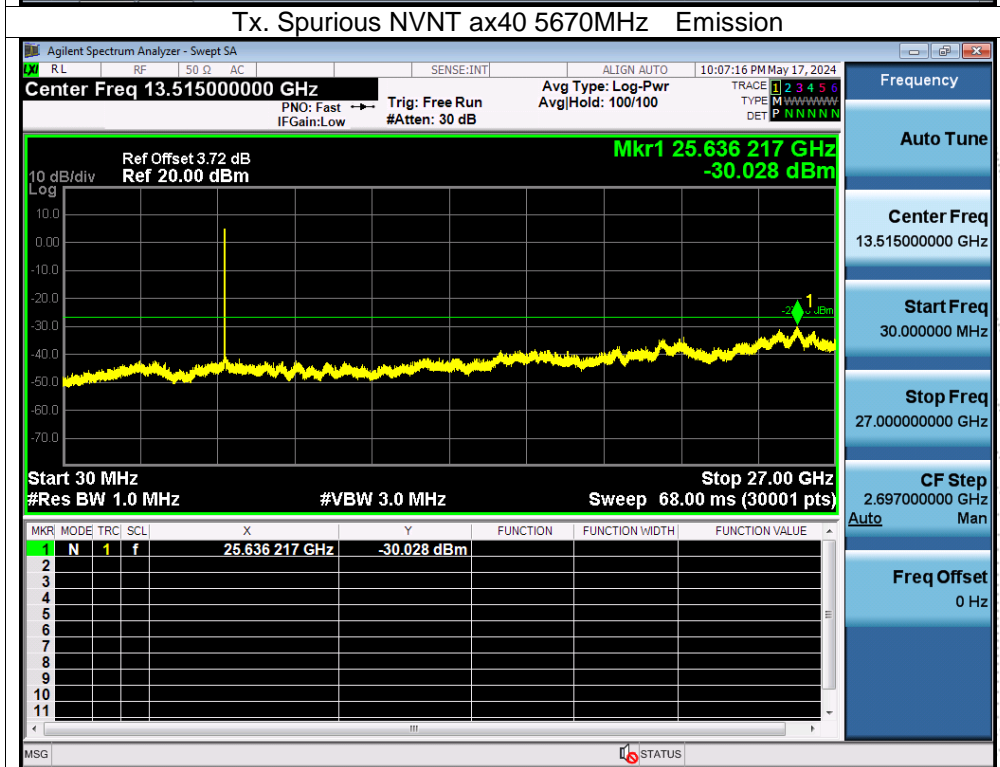
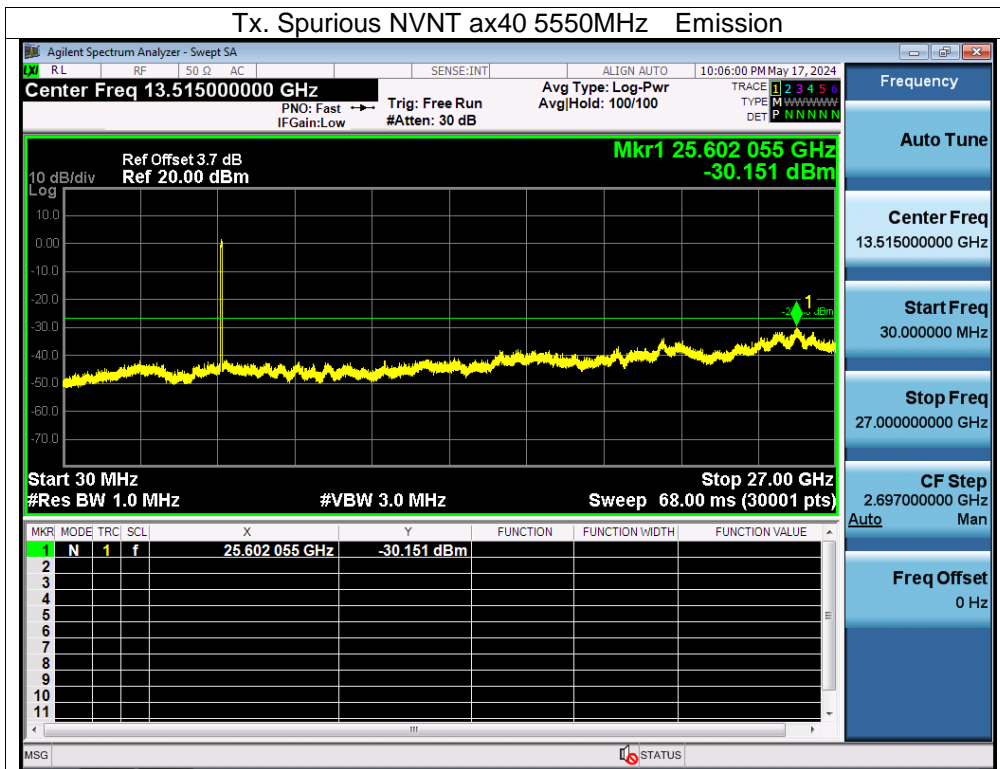


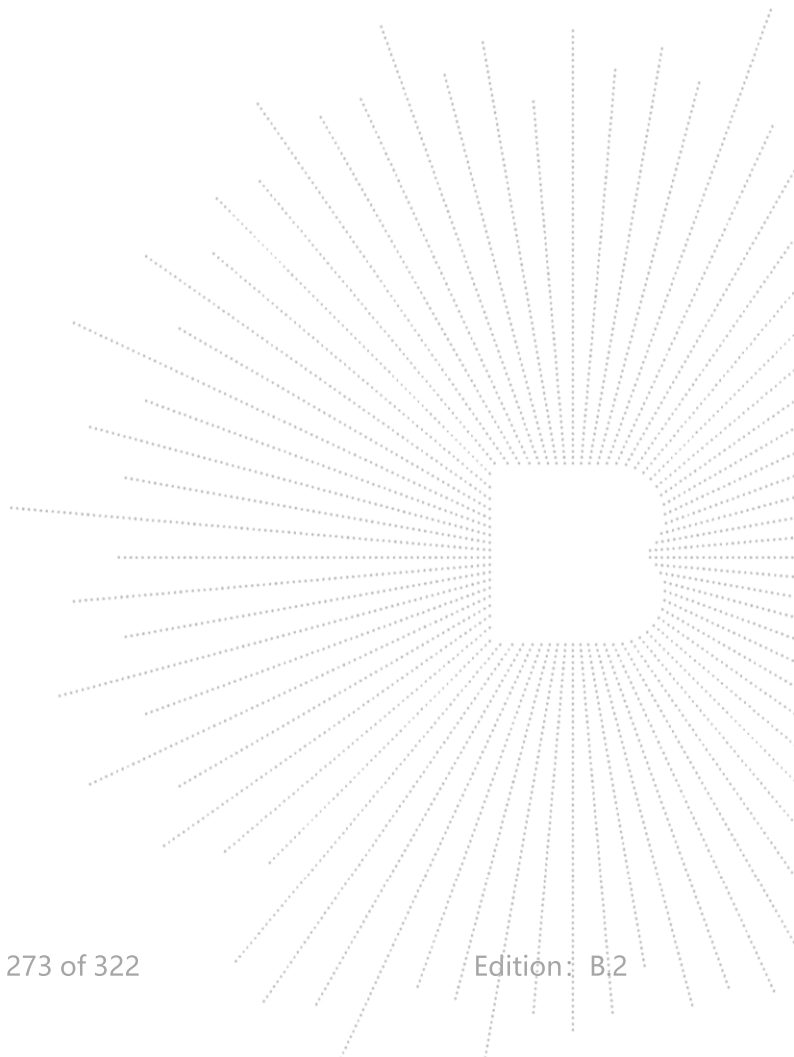
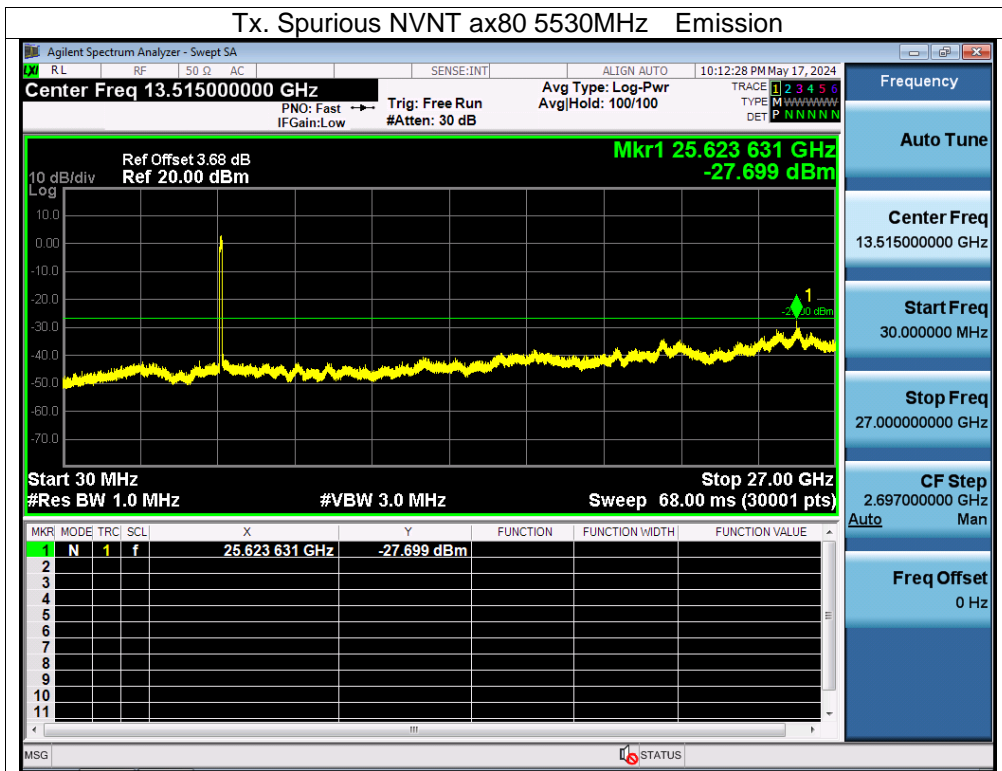




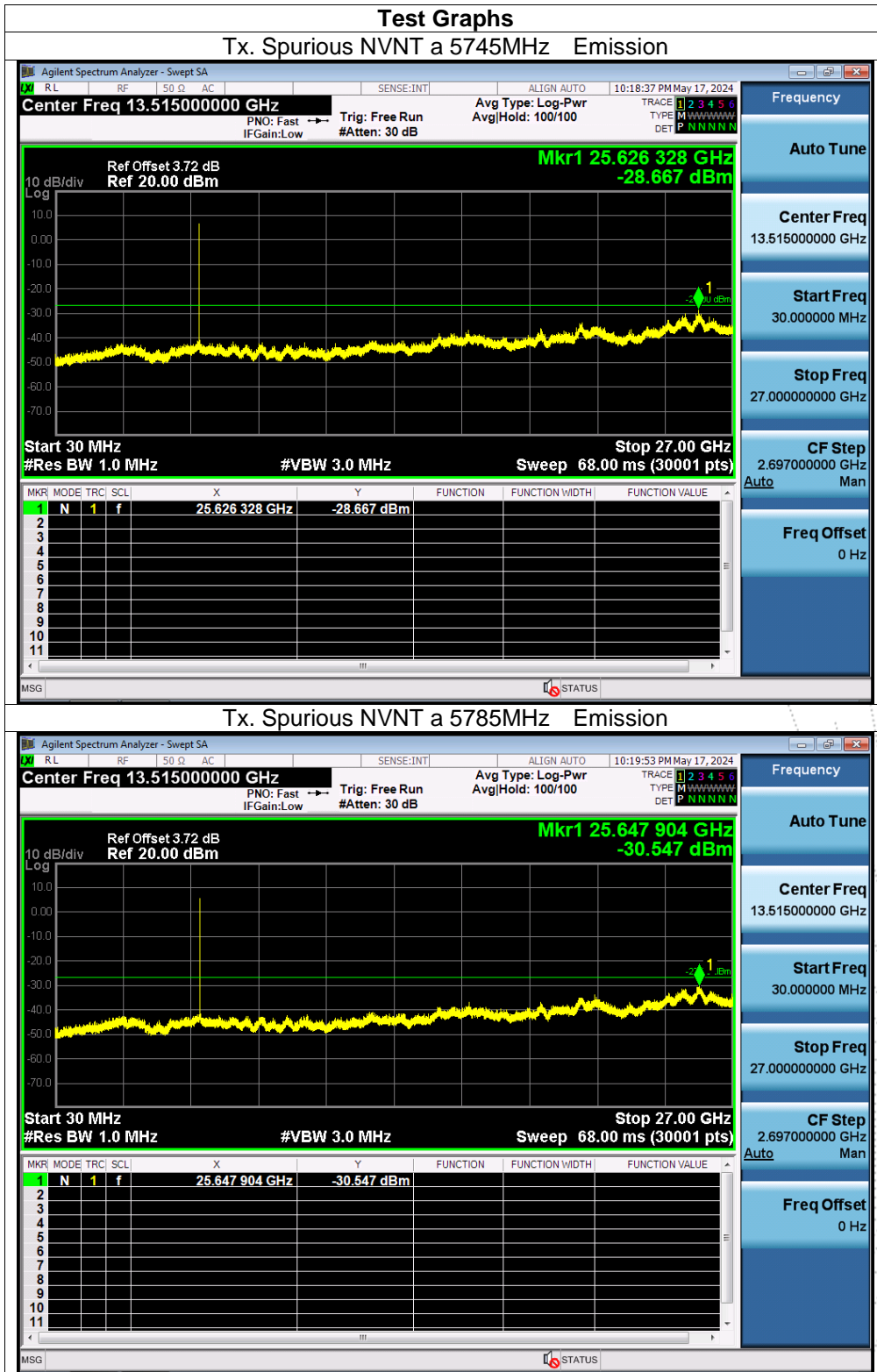


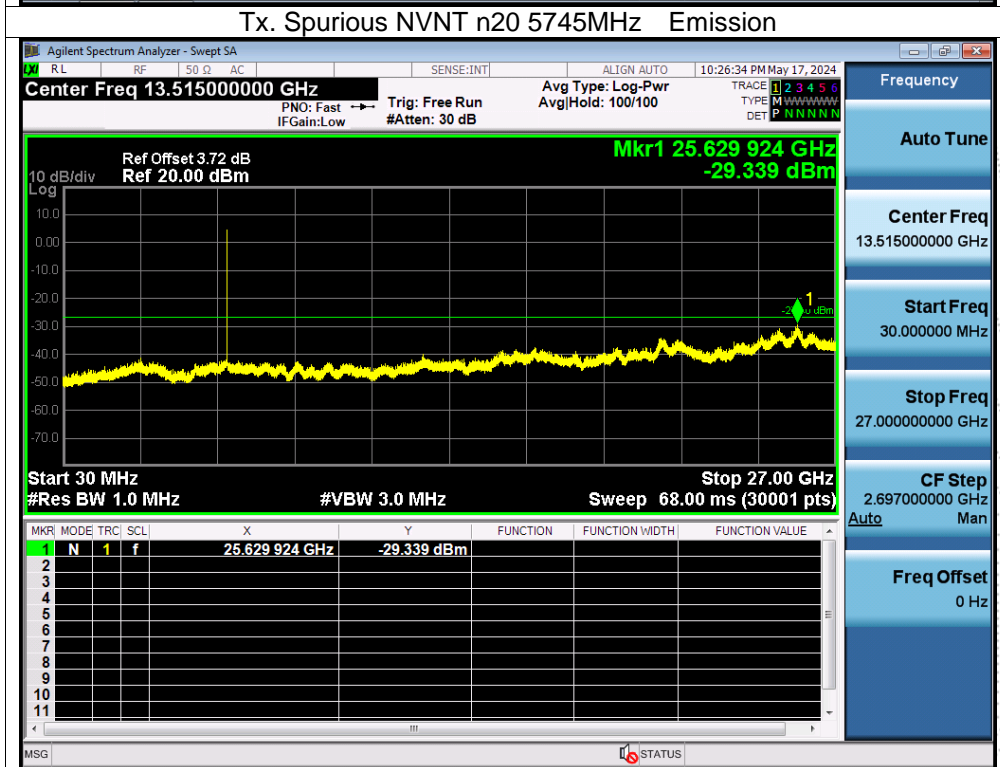
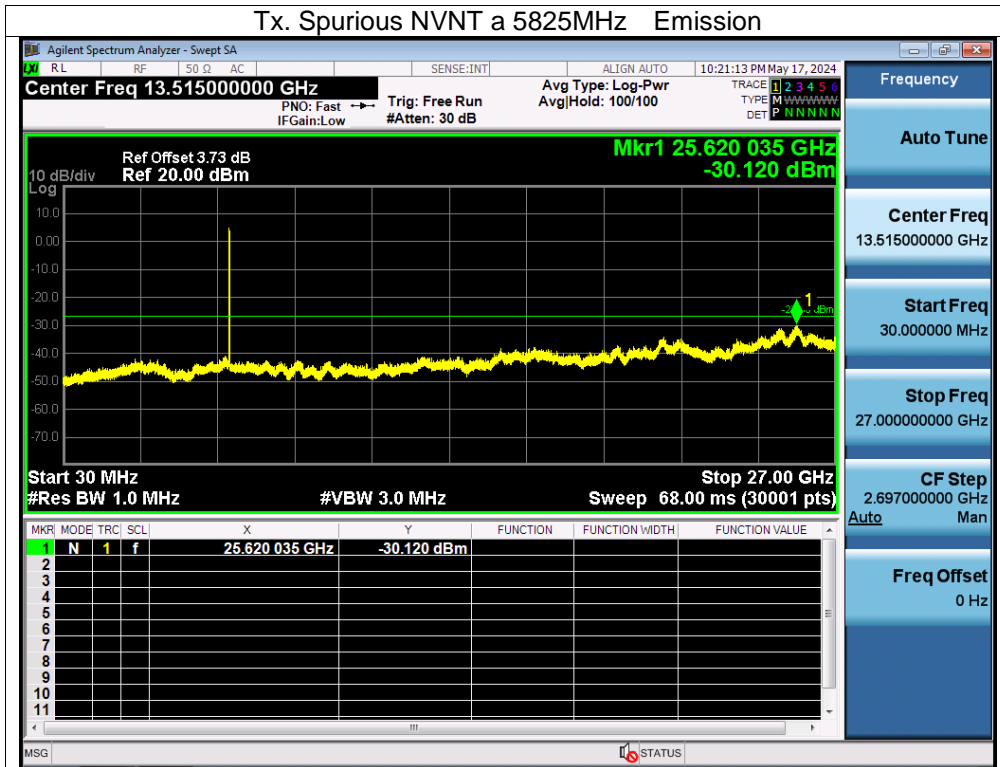


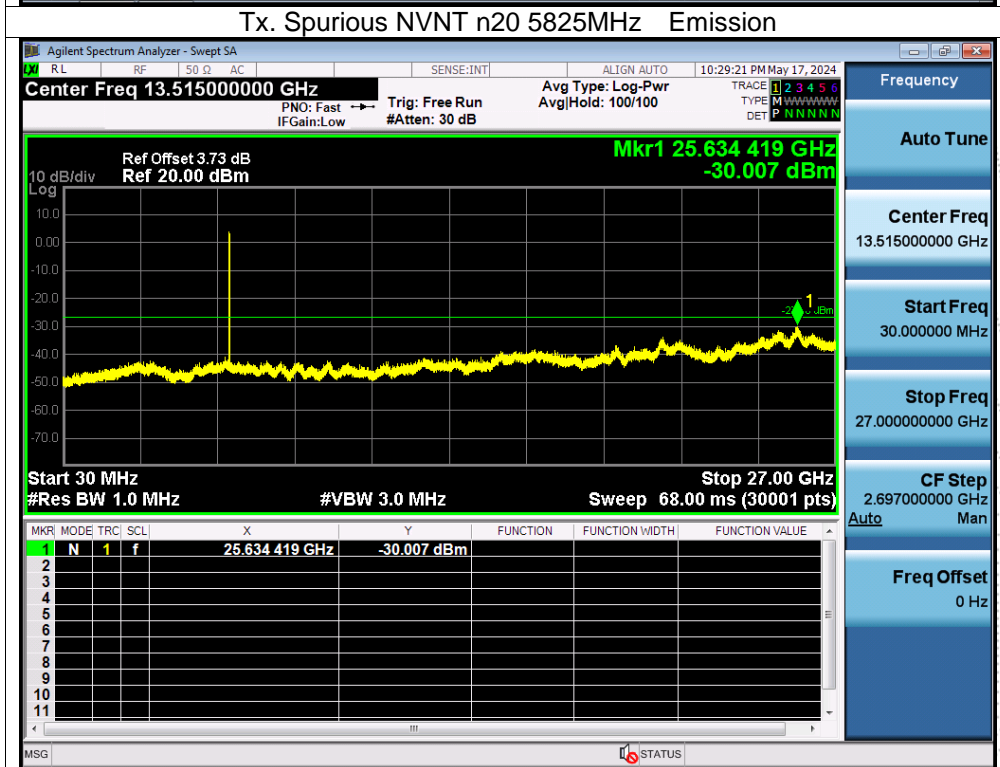
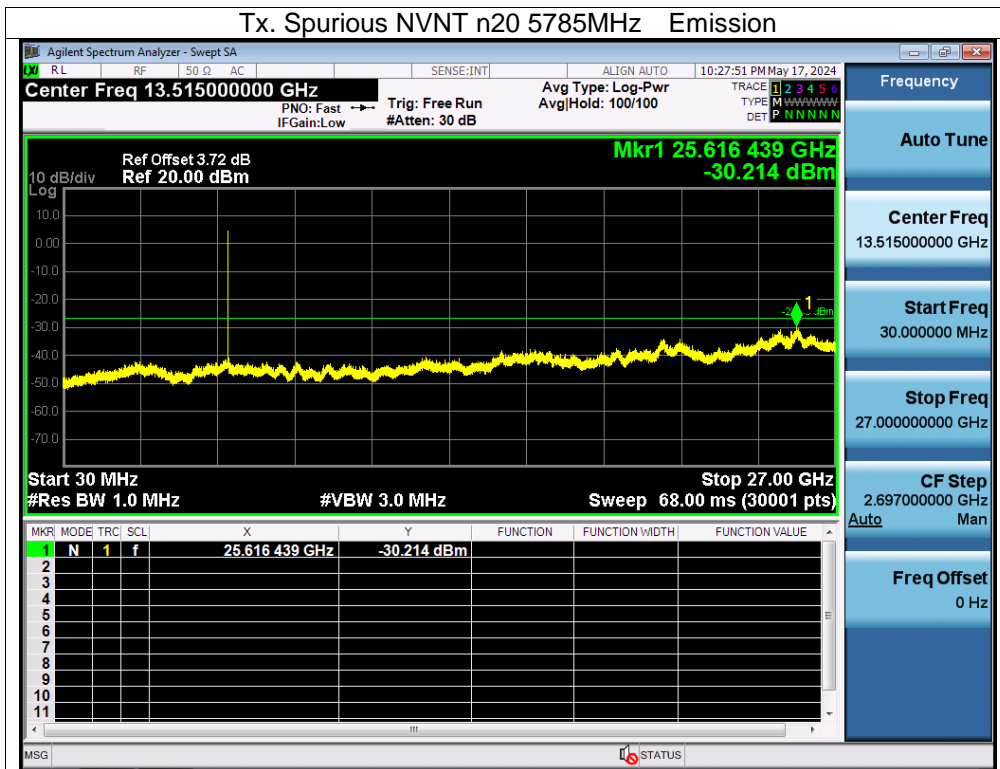


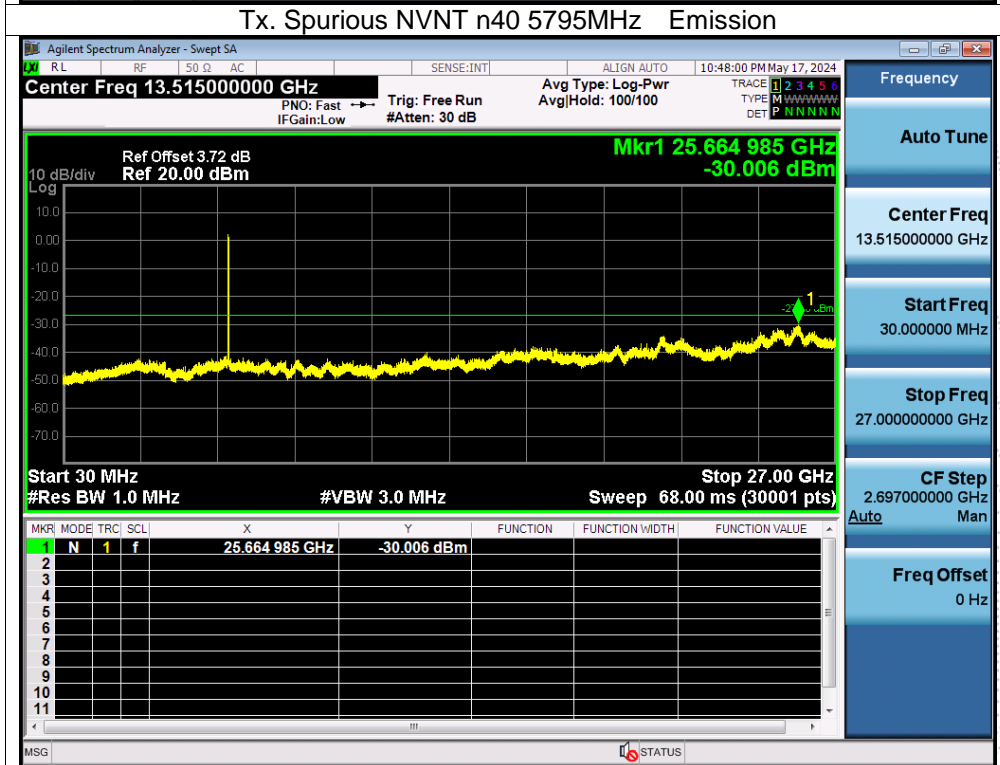
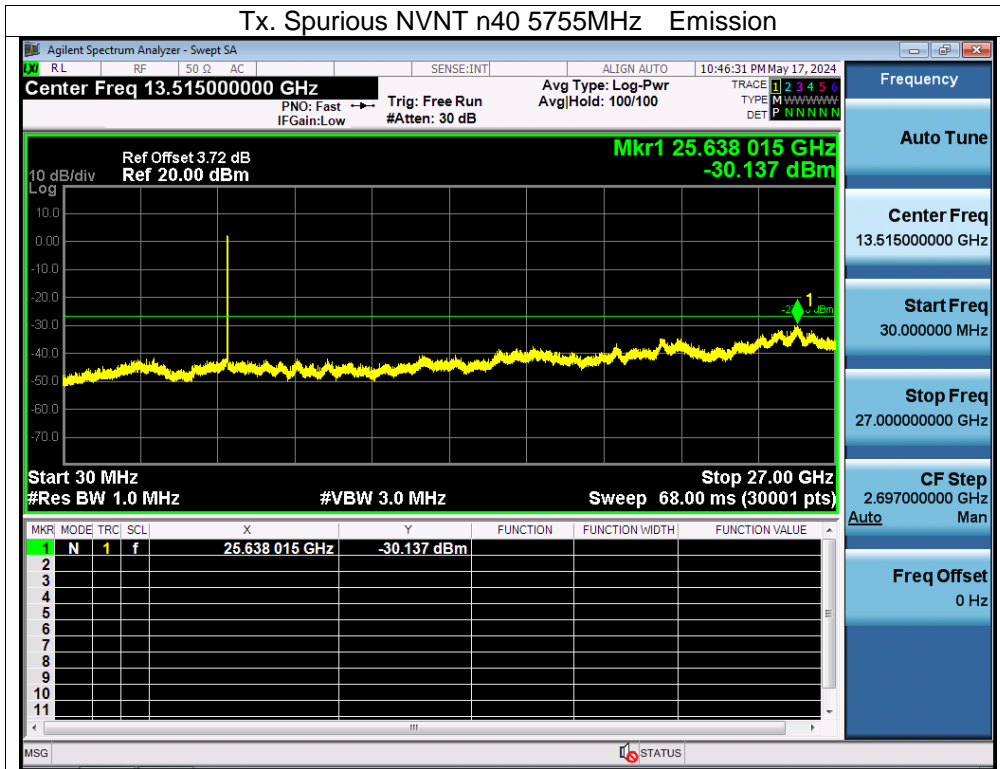


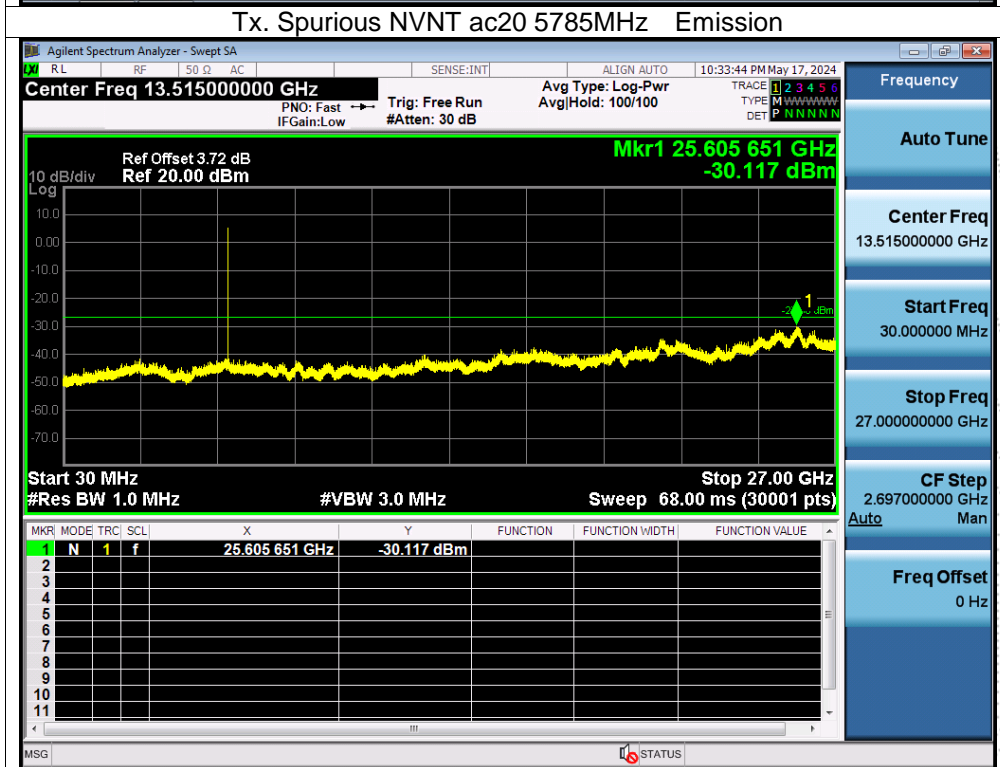
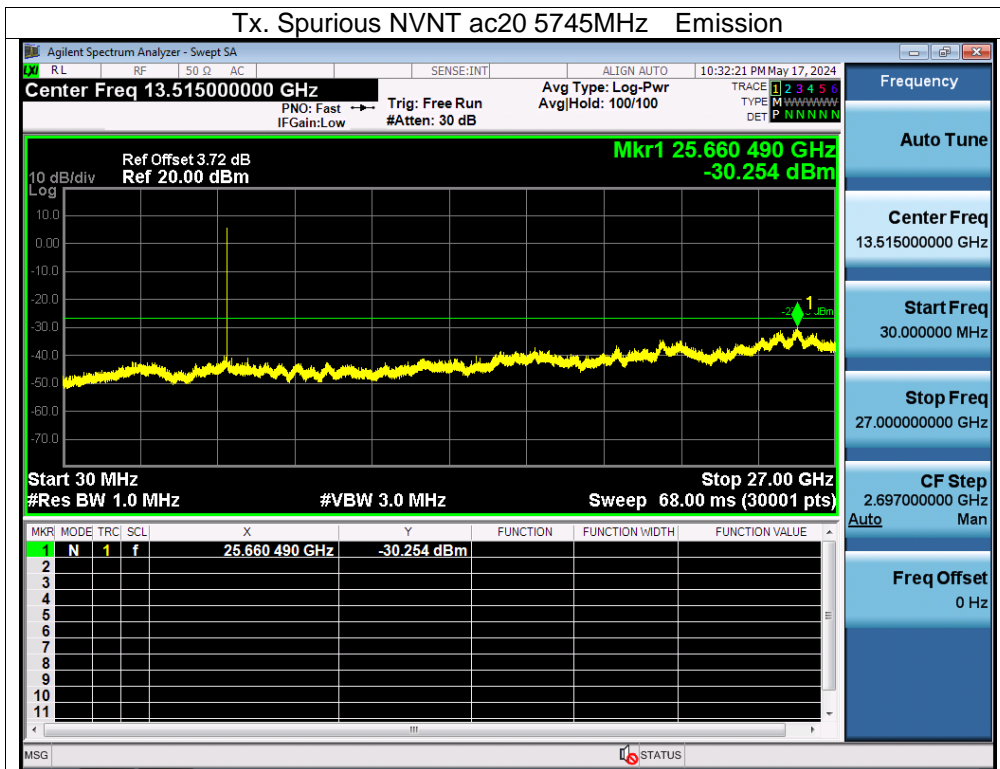
Note: A(B) Represent the value of antenna A and B, The worst data is Antenna A, only shown Antenna A Plot. Antenna A: 5745-5825 MHz

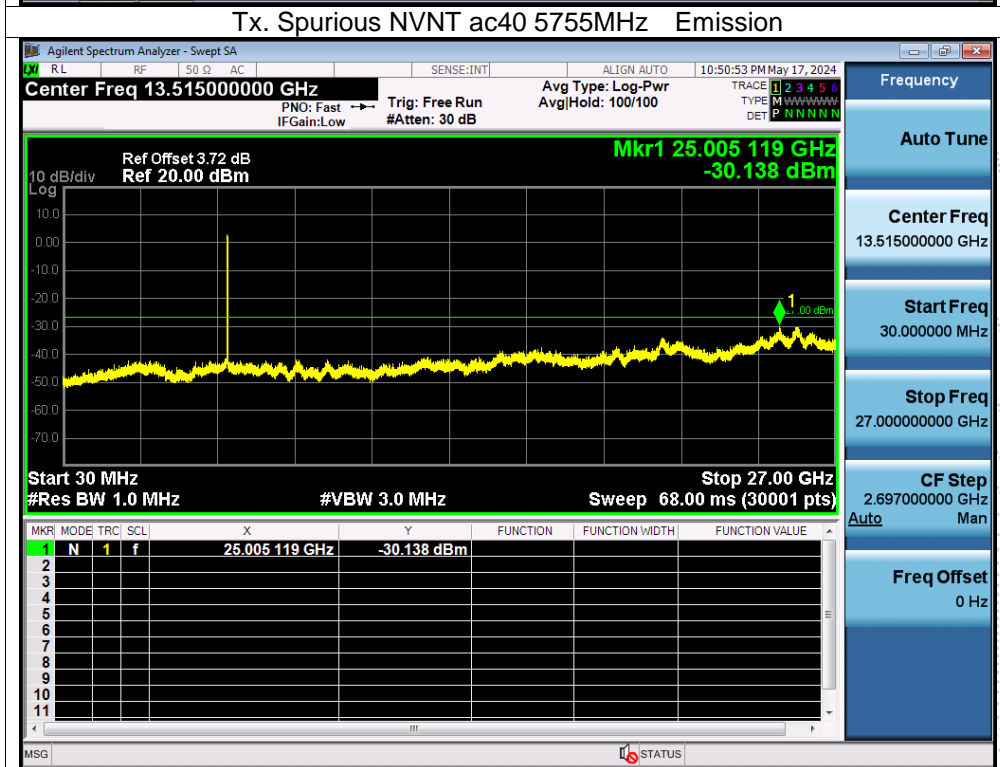
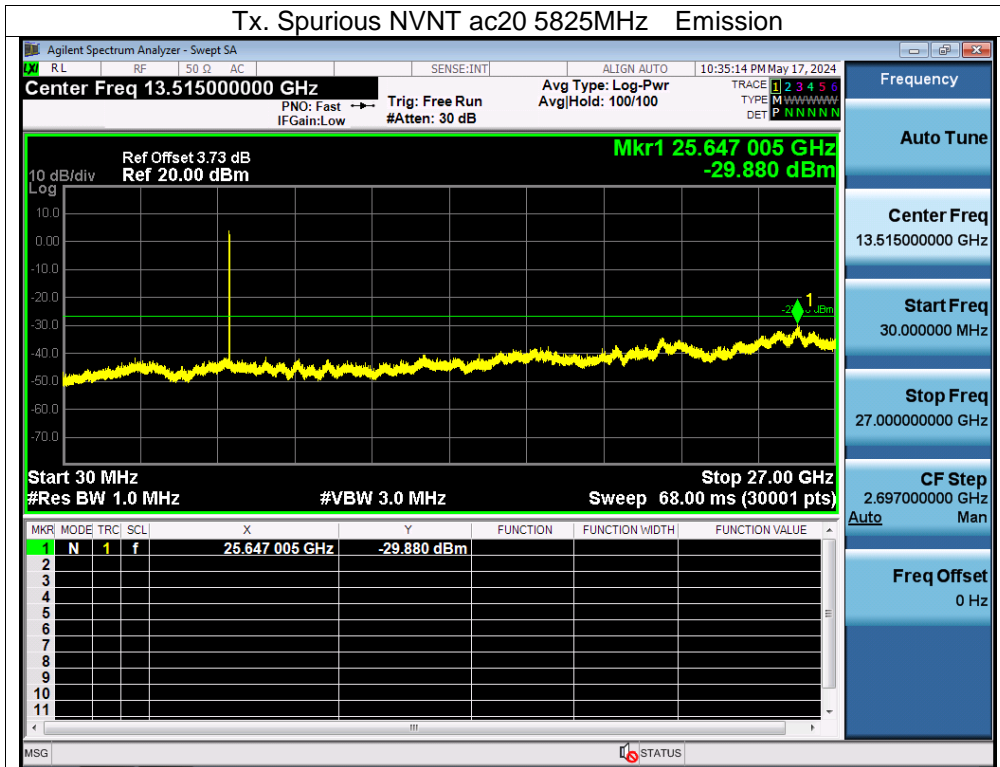


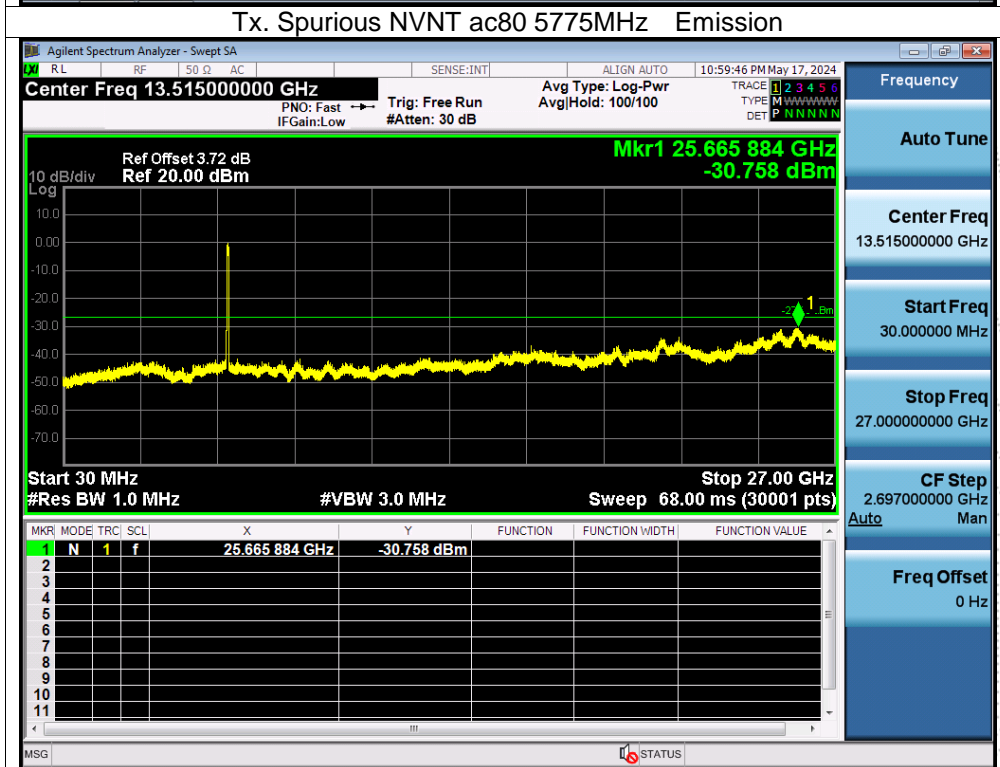
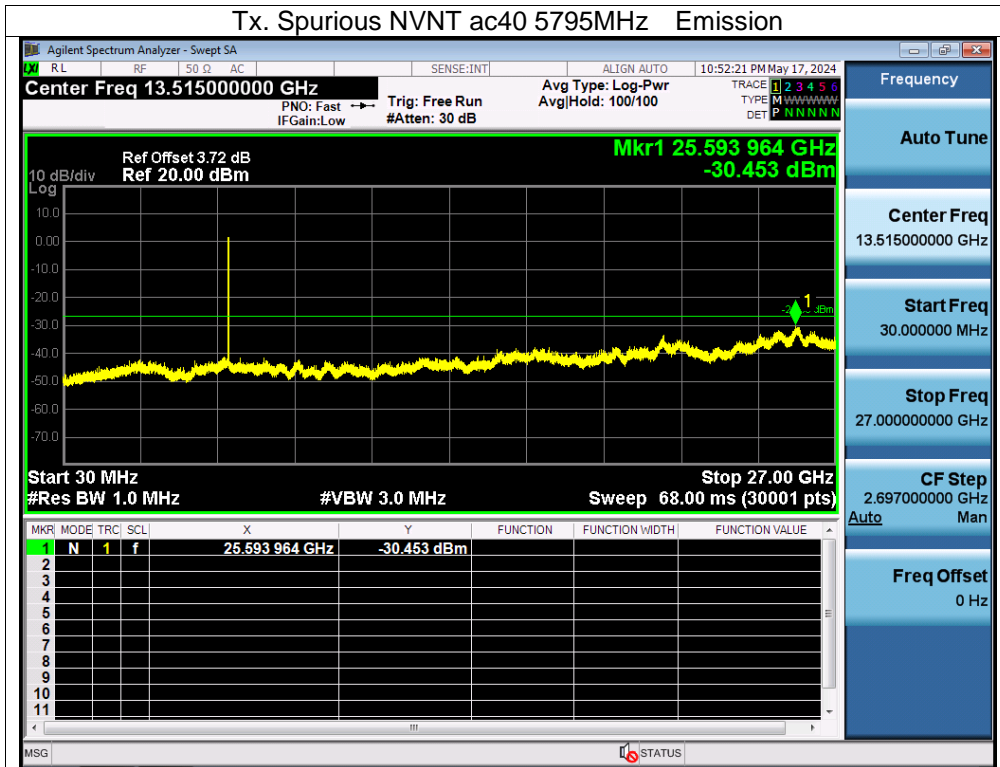


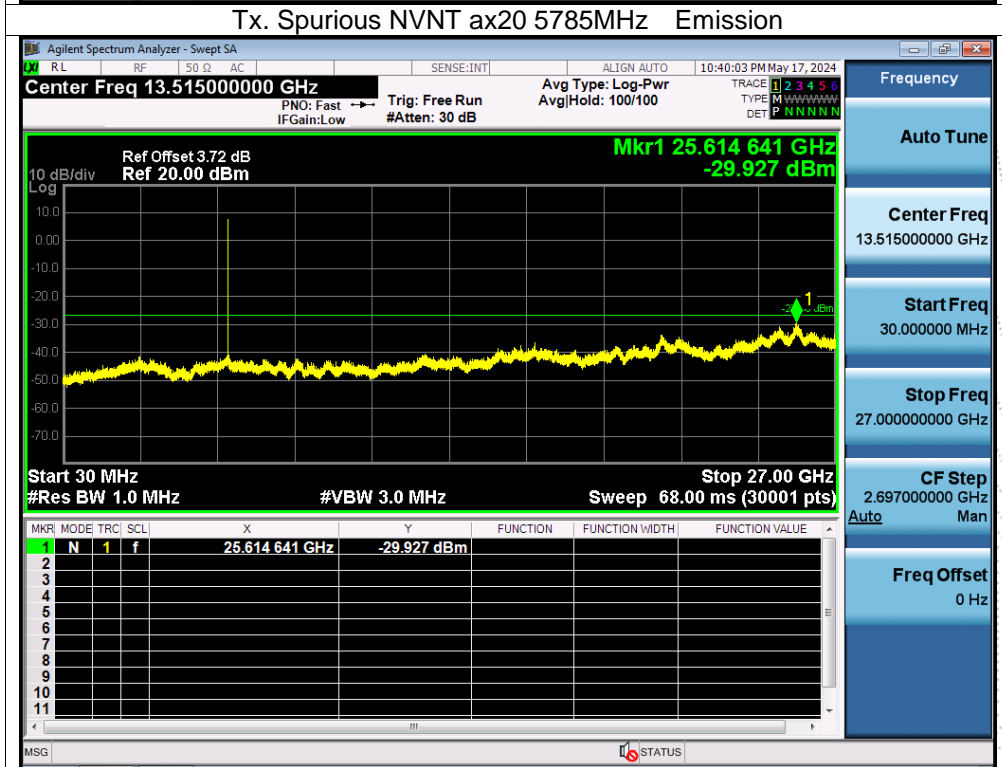
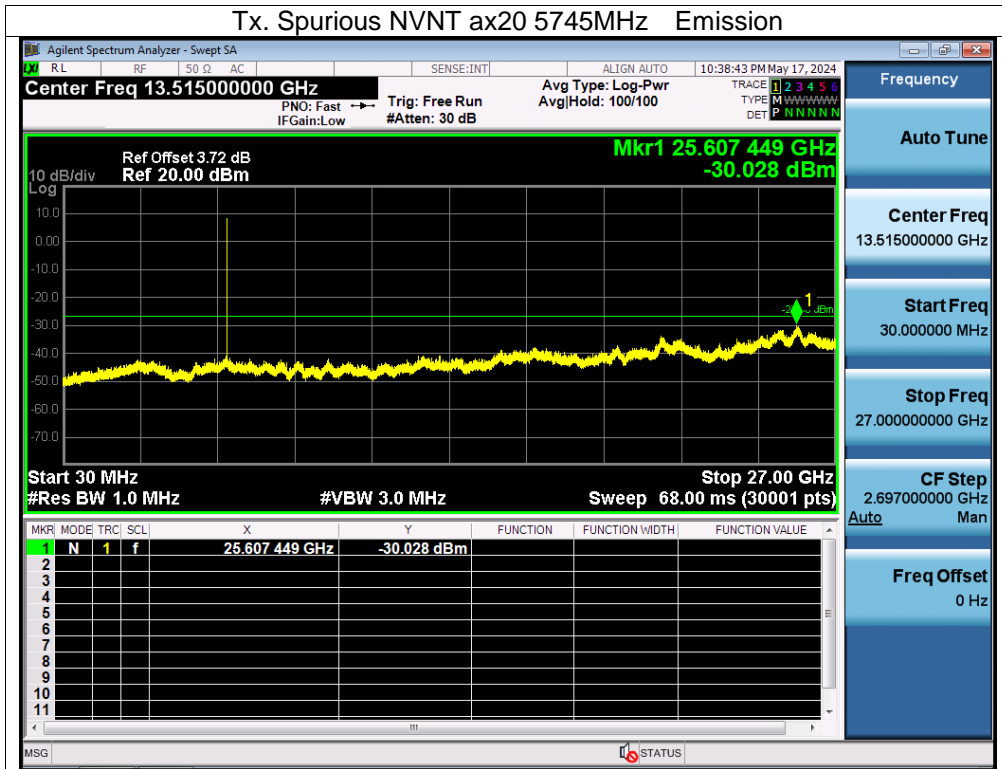


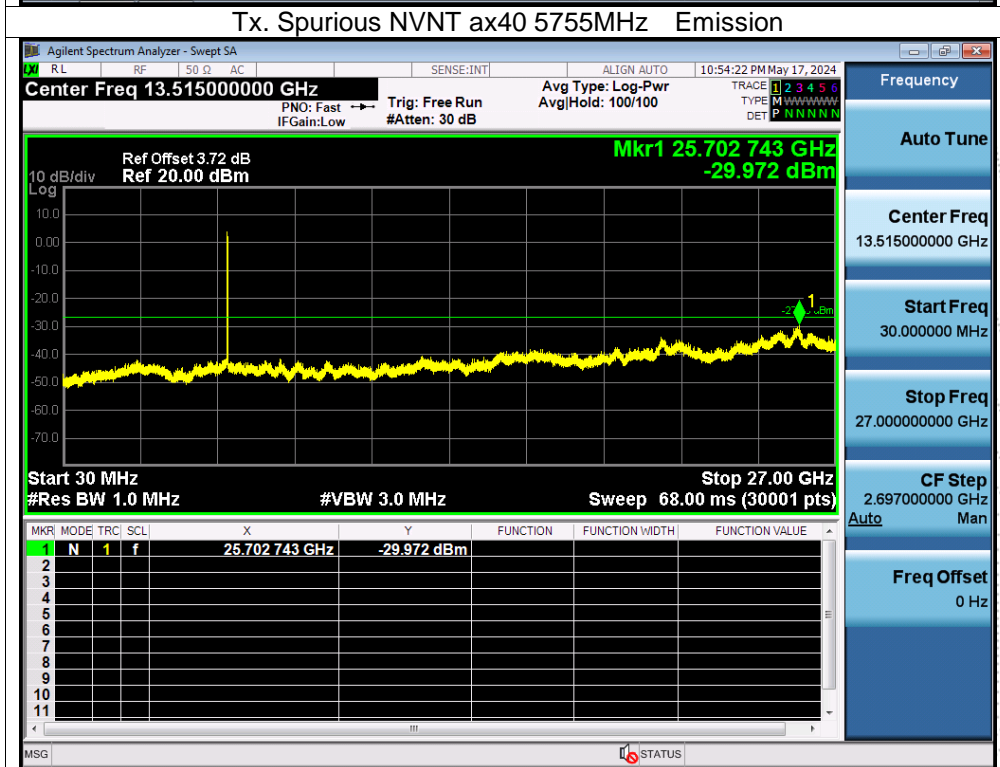
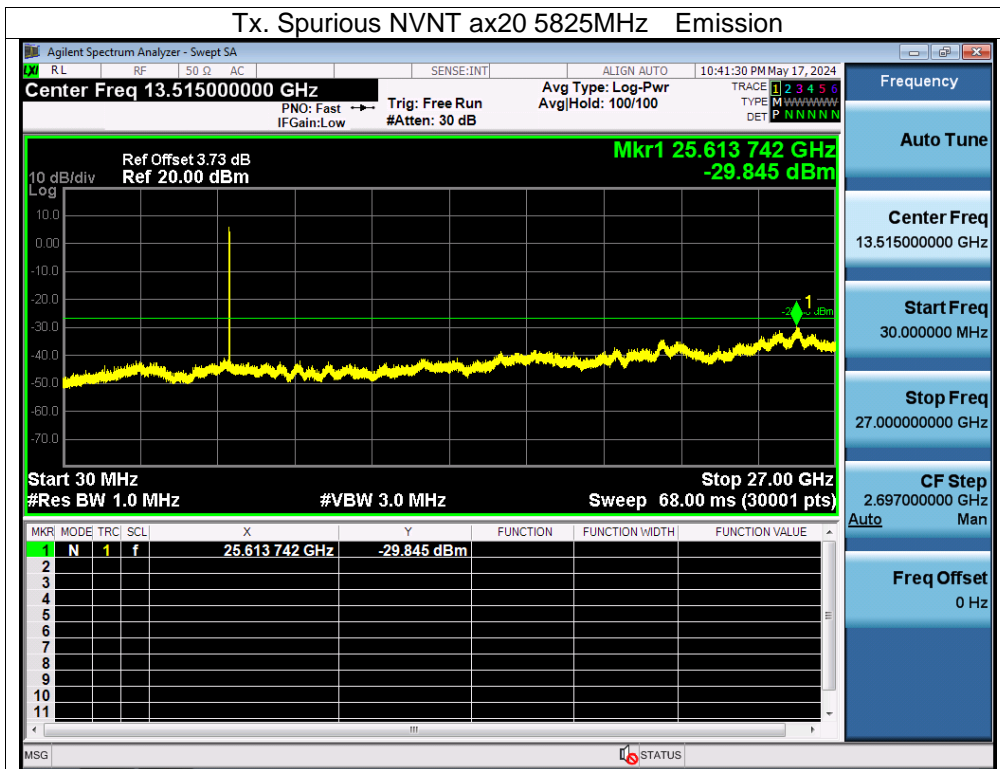


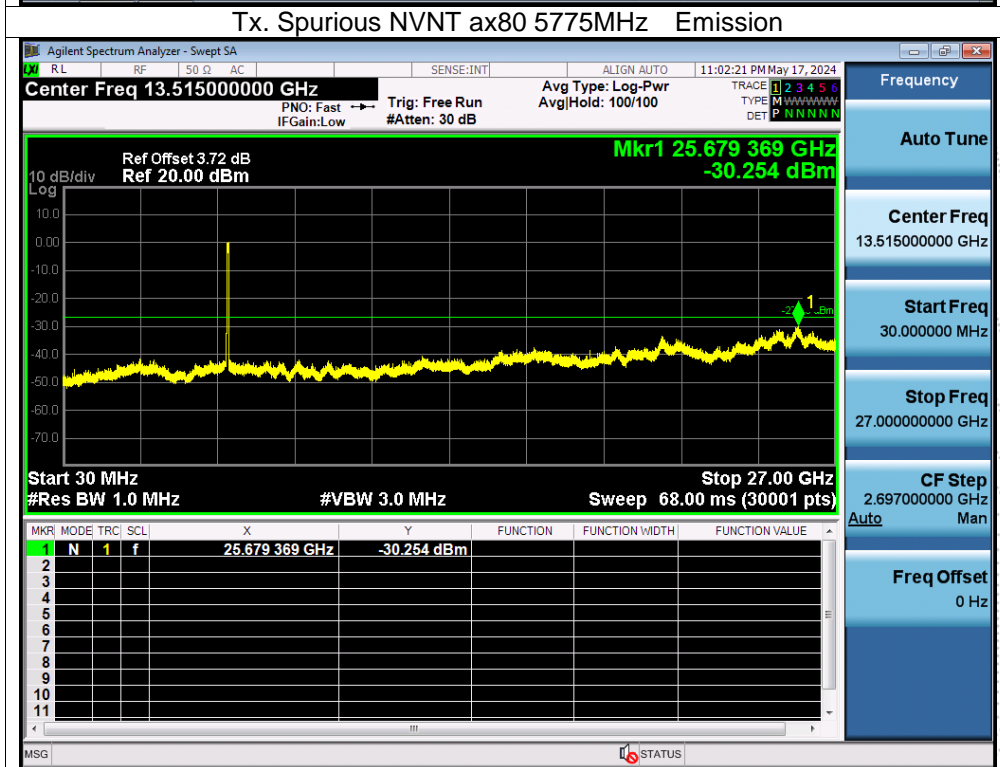
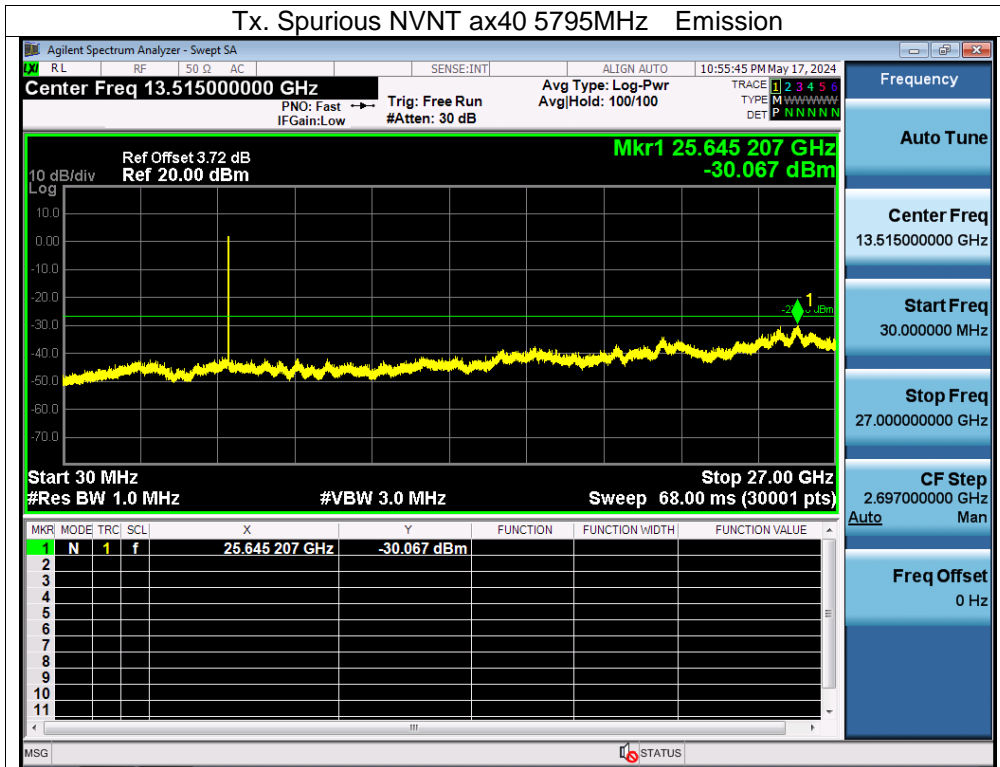












13. Frequency Stability Measurement

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 12V
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)	12.00	5180.0017	5180	0.0017	0.3282
		V max (V)	13.80	5180.0017	5180	0.0017	0.3282
		V min (V)	10.20	5180.0127	5180	0.0127	2.4517
Limits				5150-5250 MHz			
Result				Complies			

Temperature vs. Frequency Stability

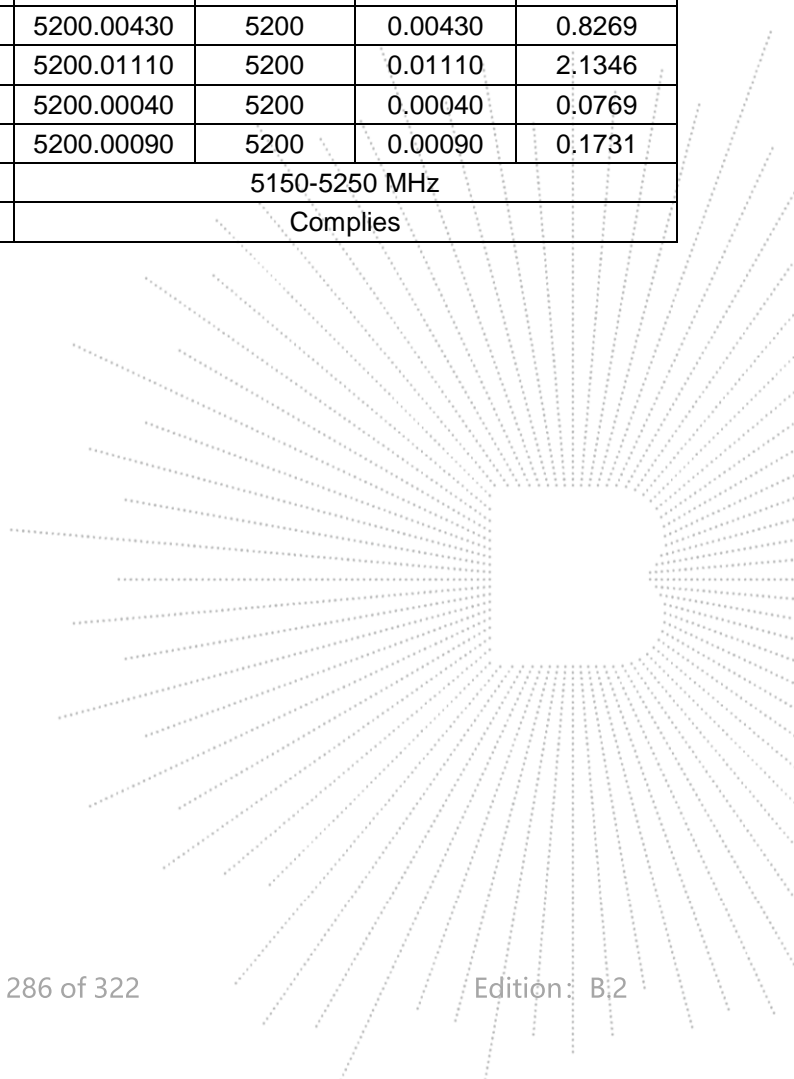
TEST CONDITIONS				Reference Frequency: 5180MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	12	T (°C)	-20	5180.0045	5180	0.0045	0.8687
		T (°C)	-10	5180.0131	5180	0.0131	2.5290
		T (°C)	0	5180.0020	5180	0.0020	0.3861
		T (°C)	10	5180.0095	5180	0.0095	1.8340
		T (°C)	20	5180.0130	5180	0.0130	2.5097
		T (°C)	30	5180.0118	5180	0.0118	2.2780
		T (°C)	40	5180.0110	5180	0.0110	2.1236
		T (°C)	50	5180.0051	5180	0.0051	0.9846
		T (°C)	60	5180.0084	5180	0.0084	1.6216
		T (°C)	70	5180.0089	5180	0.0089	1.7181
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)	12.00	5200.0072	5200	0.0072	1.3846
		V max (V)	13.80	5200.0129	5200	0.0129	2.4808
		V min (V)	10.20	5200.0094	5200	0.0094	1.8077
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)	12	T (°C)	-20	5200.01130	5200	0.01130	2.1731
		T (°C)	-10	5200.00100	5200	0.00100	0.1923
		T (°C)	0	5200.00680	5200	0.00680	1.3077
		T (°C)	10	5200.00520	5200	0.00520	1.0000
		T (°C)	20	5200.00710	5200	0.00710	1.3654
		T (°C)	30	5200.00640	5200	0.00640	1.2308
		T (°C)	40	5200.00430	5200	0.00430	0.8269
		T (°C)	50	5200.01110	5200	0.01110	2.1346
		T (°C)	60	5200.00040	5200	0.00040	0.0769
		T (°C)	70	5200.00090	5200	0.00090	0.1731
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)	12.00	5240.0055	5240	0.0055	1.0496
		V max (V)	13.80	5240.0047	5240	0.0047	0.8969
		V min (V)	10.20	5240.0098	5240	0.0098	1.8702
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)	12	T (°C)	-20	5240.0066	5240	0.0066	1.2595
		T (°C)	-10	5240.0088	5240	0.0088	1.6794
		T (°C)	0	5240.0113	5240	0.0113	2.1565
		T (°C)	10	5240.0043	5240	0.0043	0.8206
		T (°C)	20	5240.0109	5240	0.0109	2.0802
		T (°C)	30	5240.0007	5240	0.0007	0.1336
		T (°C)	40	5240.0077	5240	0.0077	1.4695
		T (°C)	50	5240.0088	5240	0.0088	1.6794
		T (°C)	60	5240.0041	5240	0.0041	0.7824
		T (°C)	70	5240.0035	5240	0.0035	0.6679
Limits				5150-5250 MHz			
Result				Complies			

