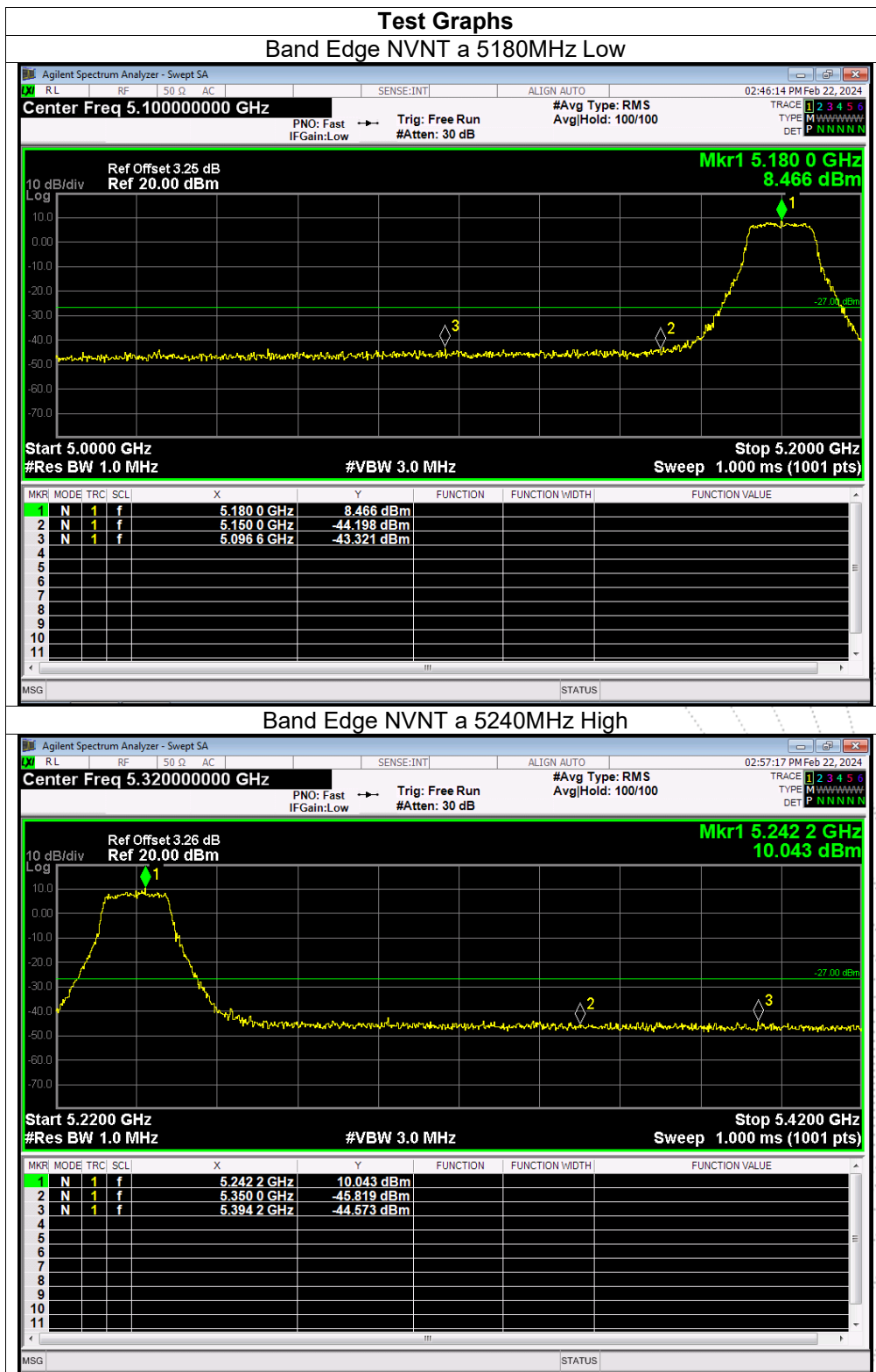
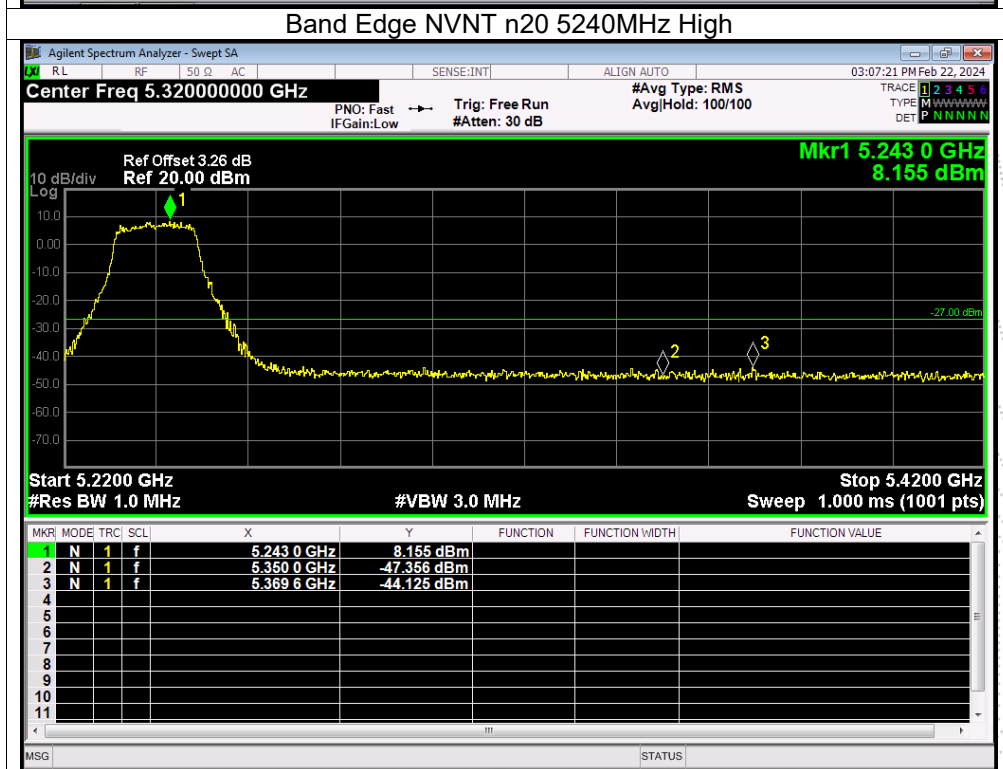
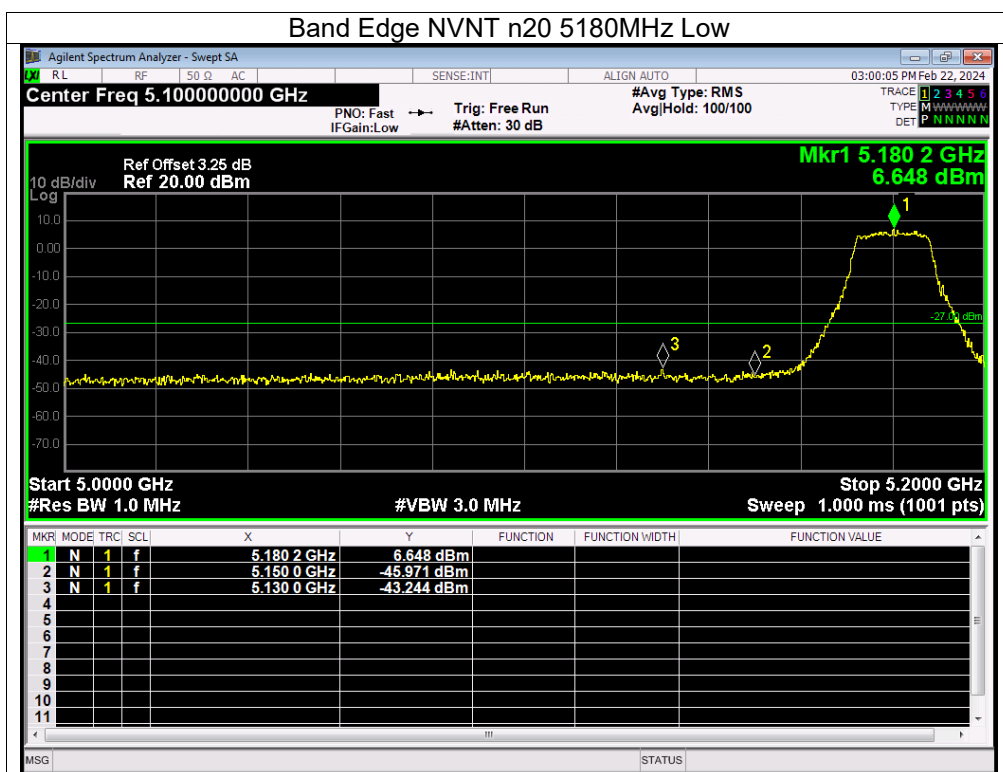
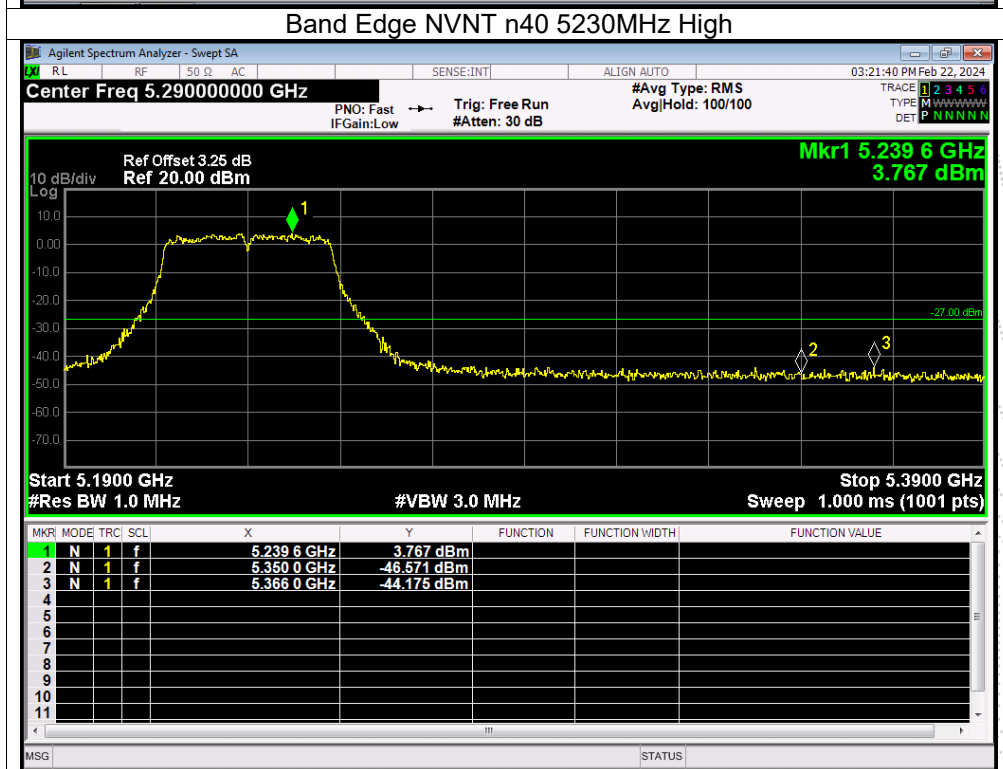
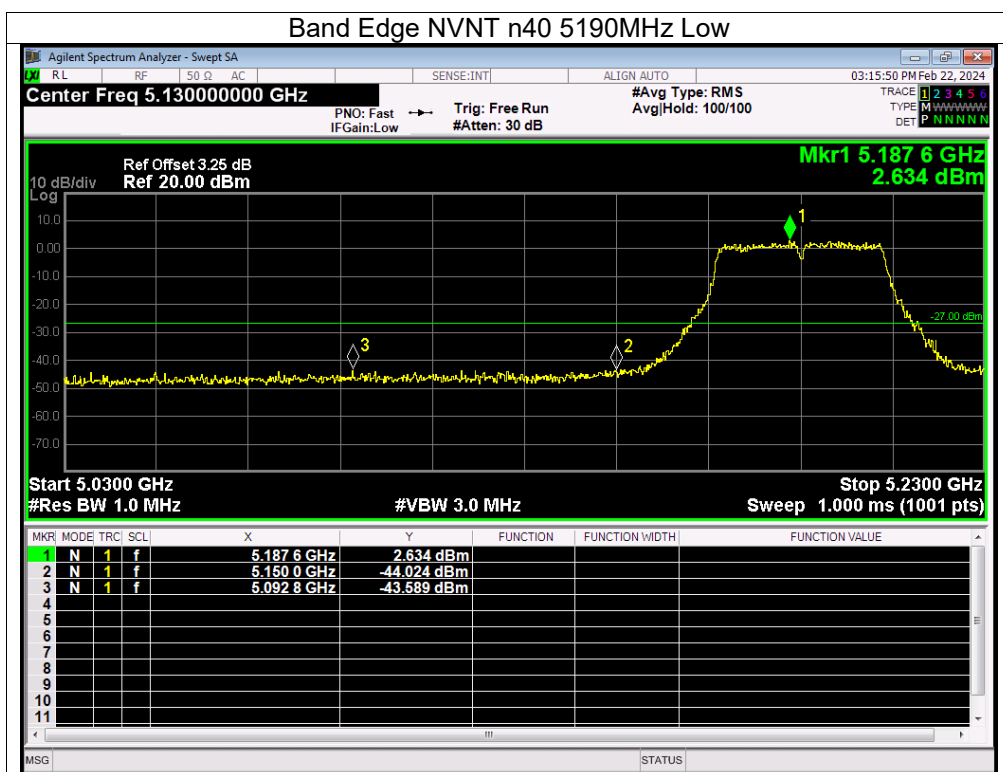


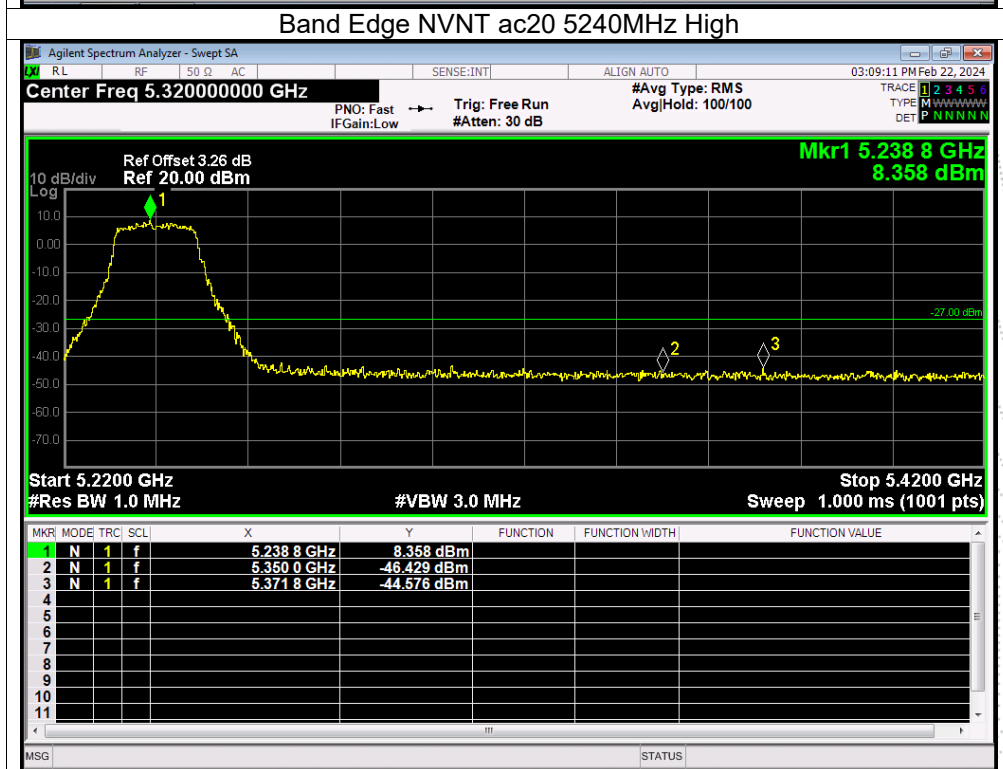
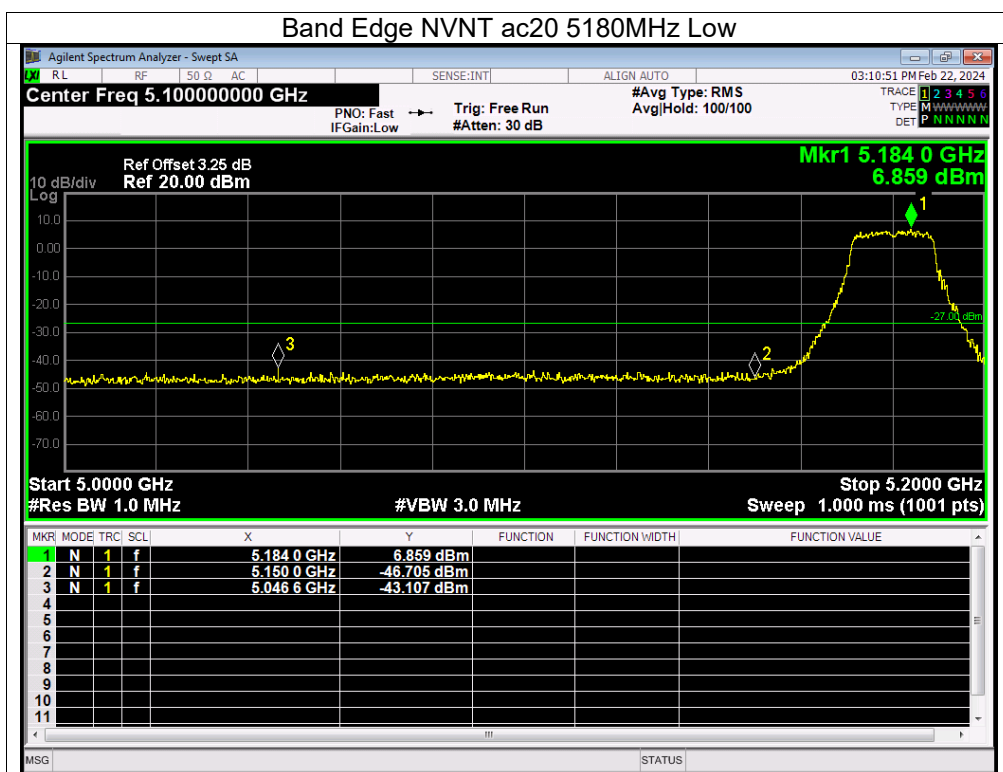
11.5 Test Result

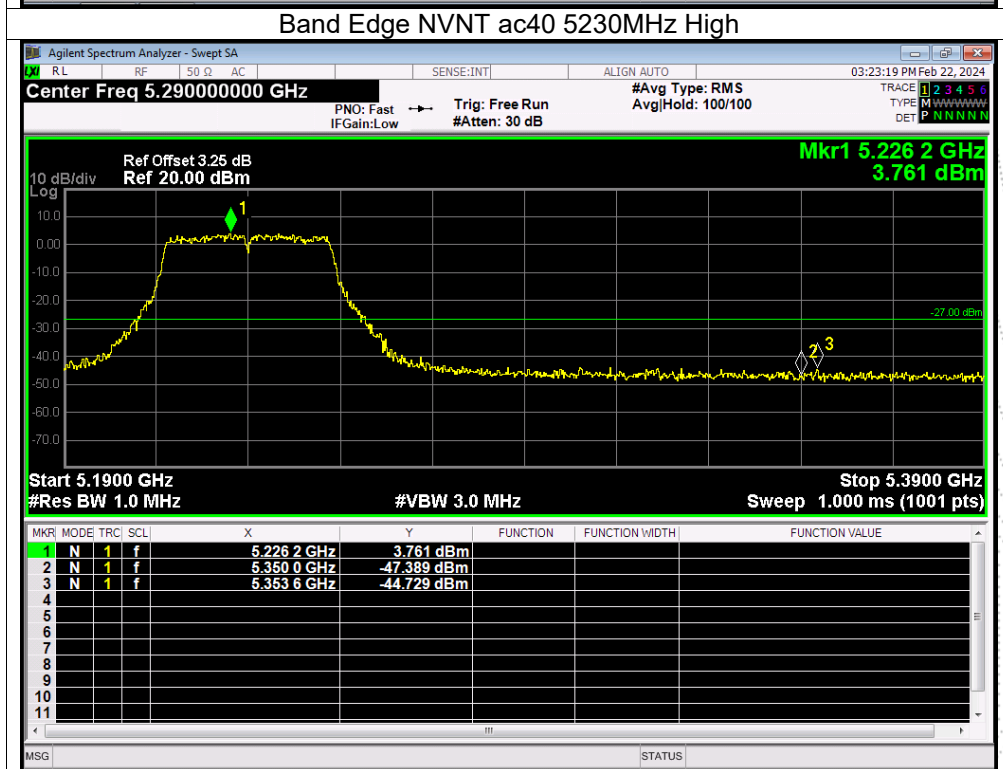
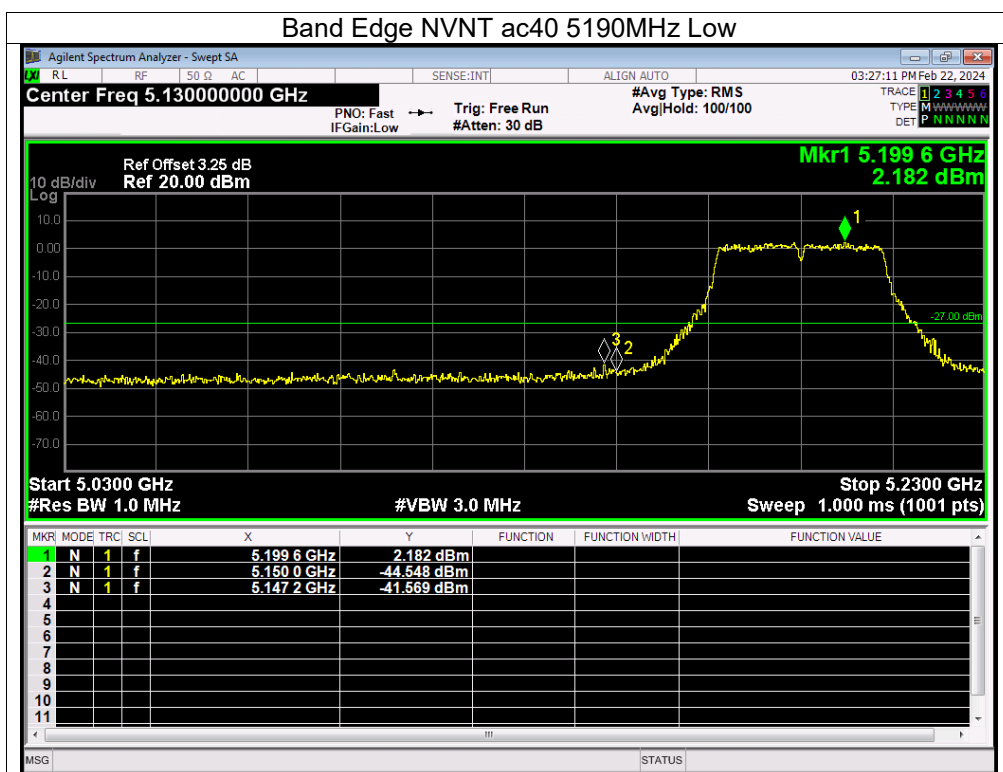
Note: A(B) Represent the value of antenna A/B/C and D, The worst data is Antenna A, only shown Antenna A Plot. Antenna A: 5180-5240MHz

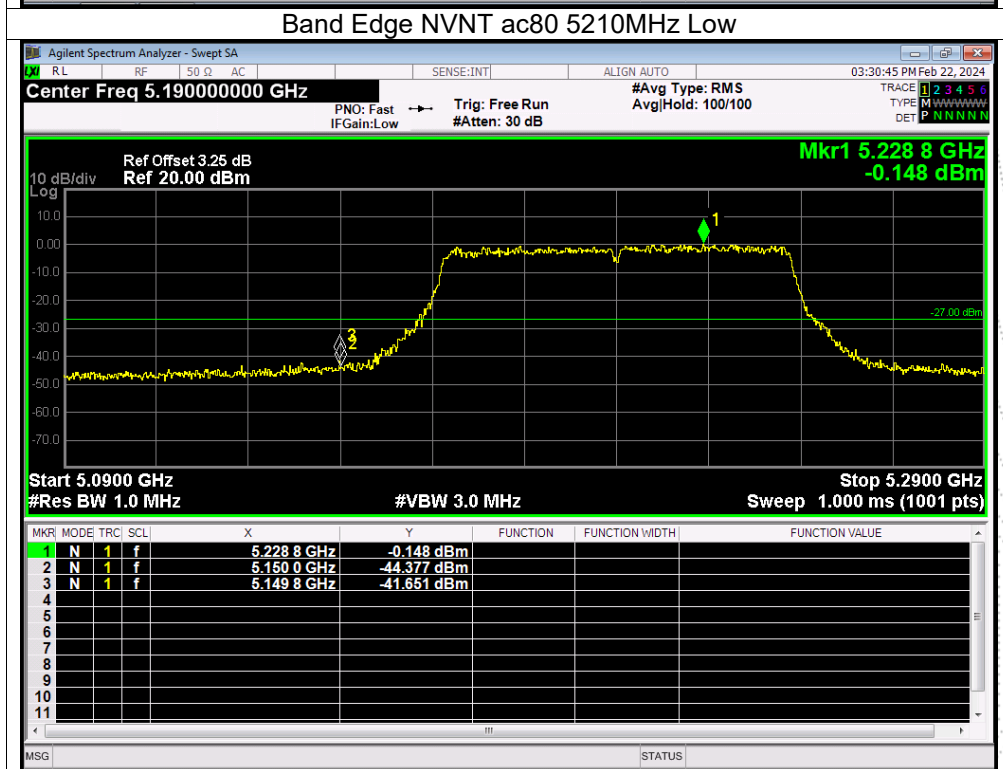
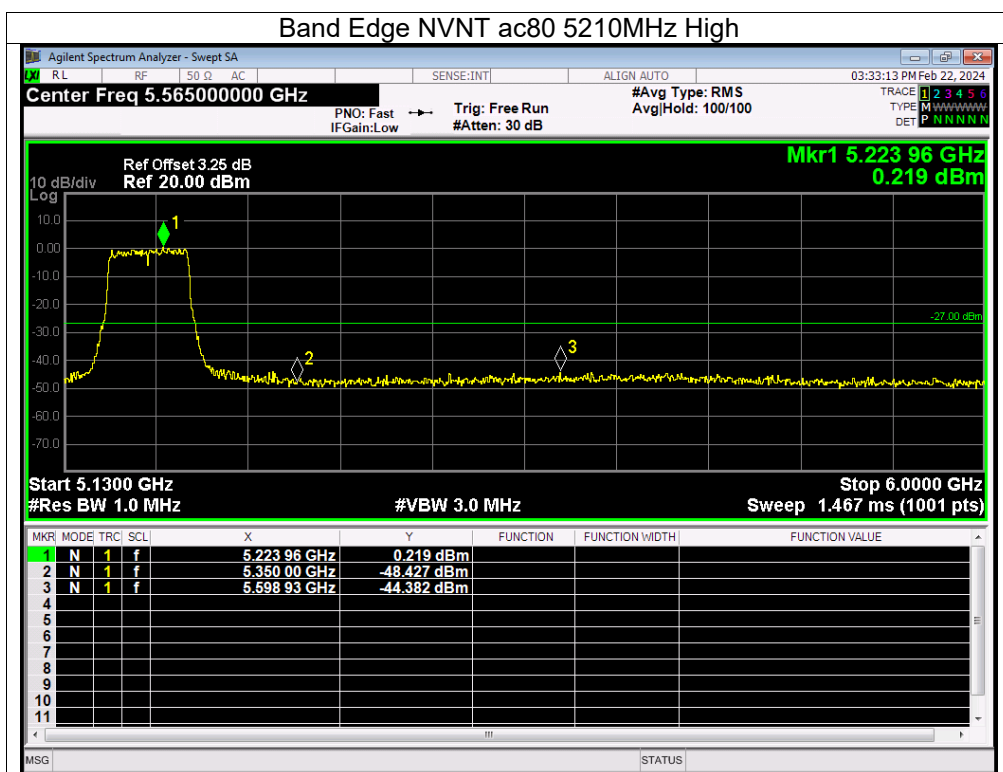




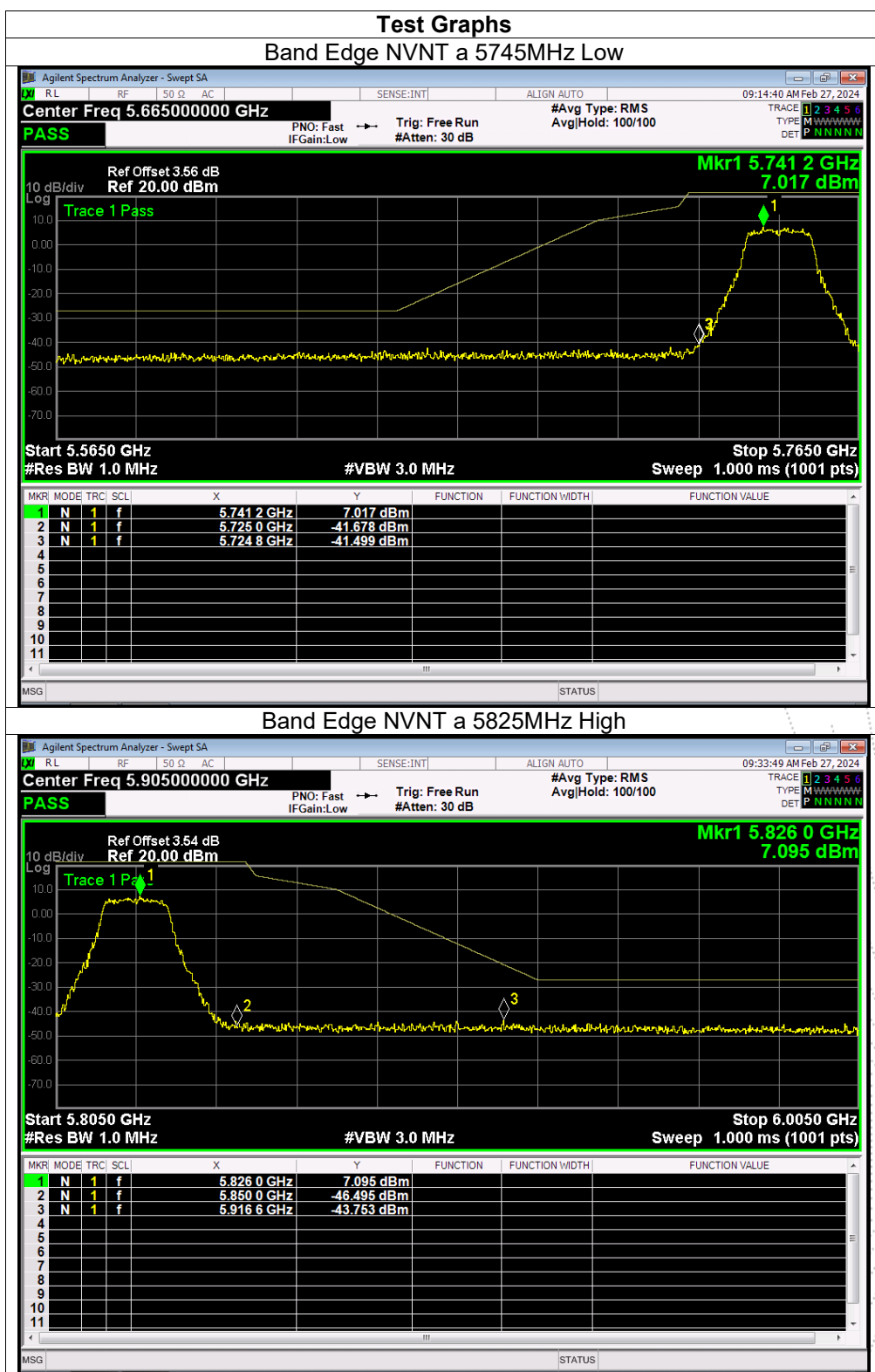


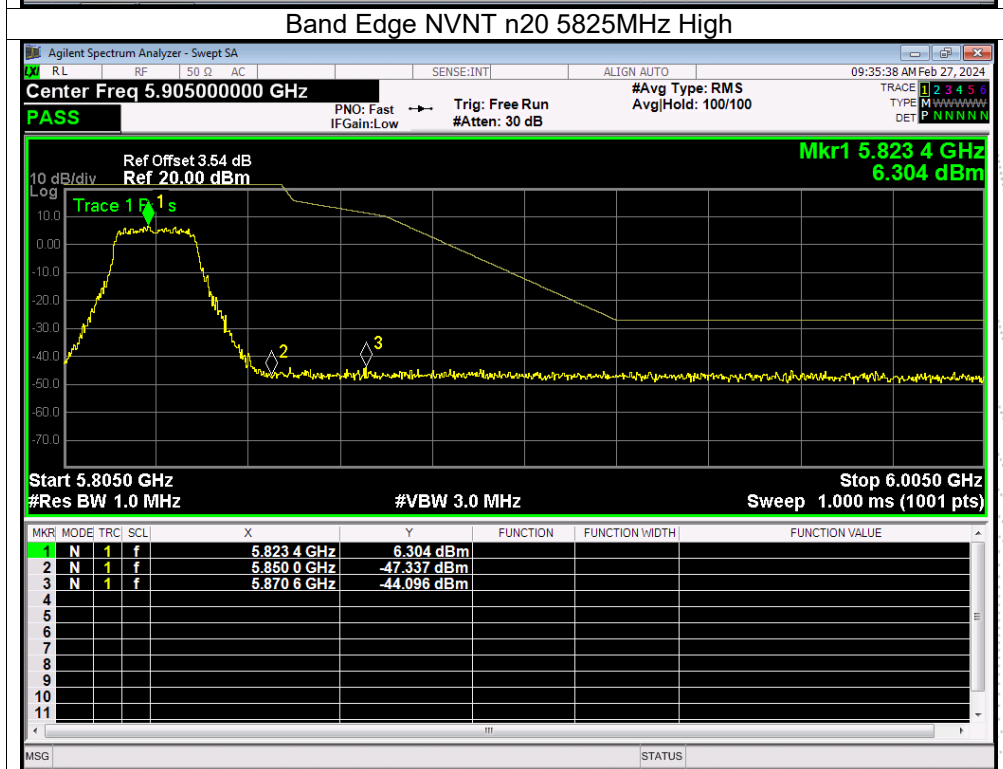
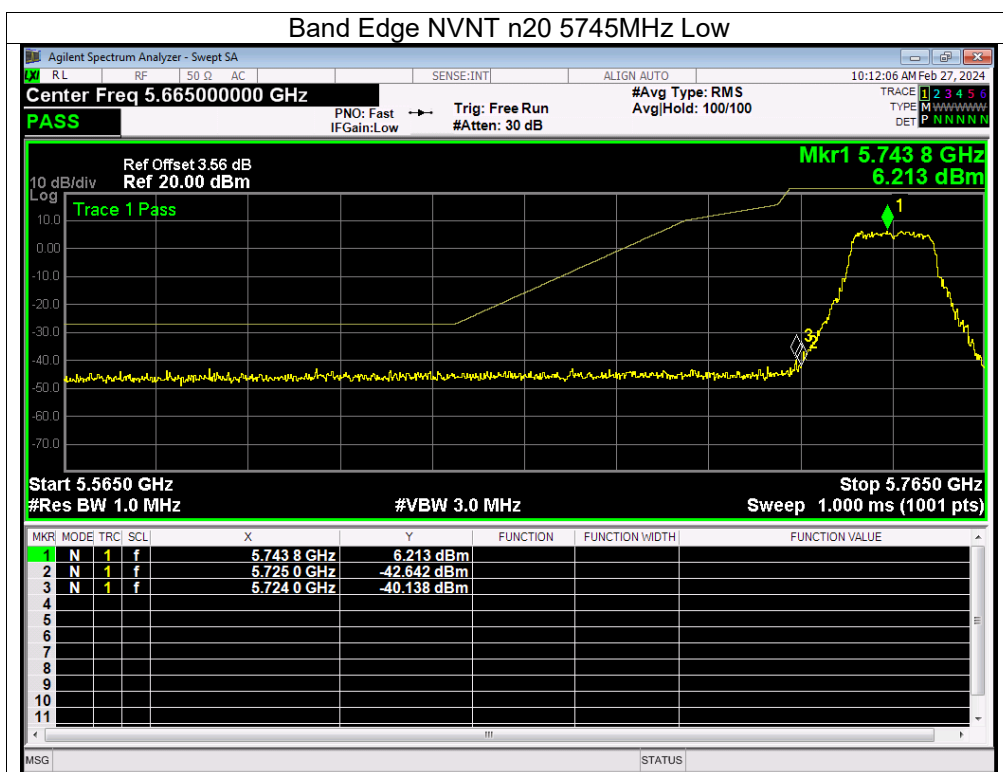


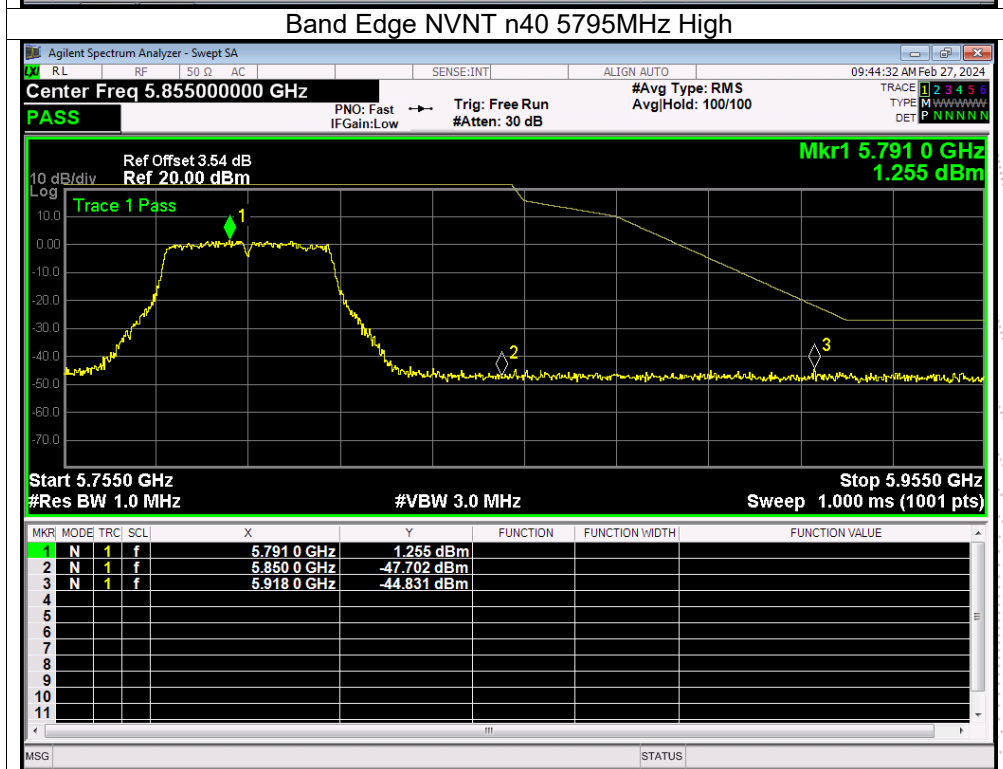
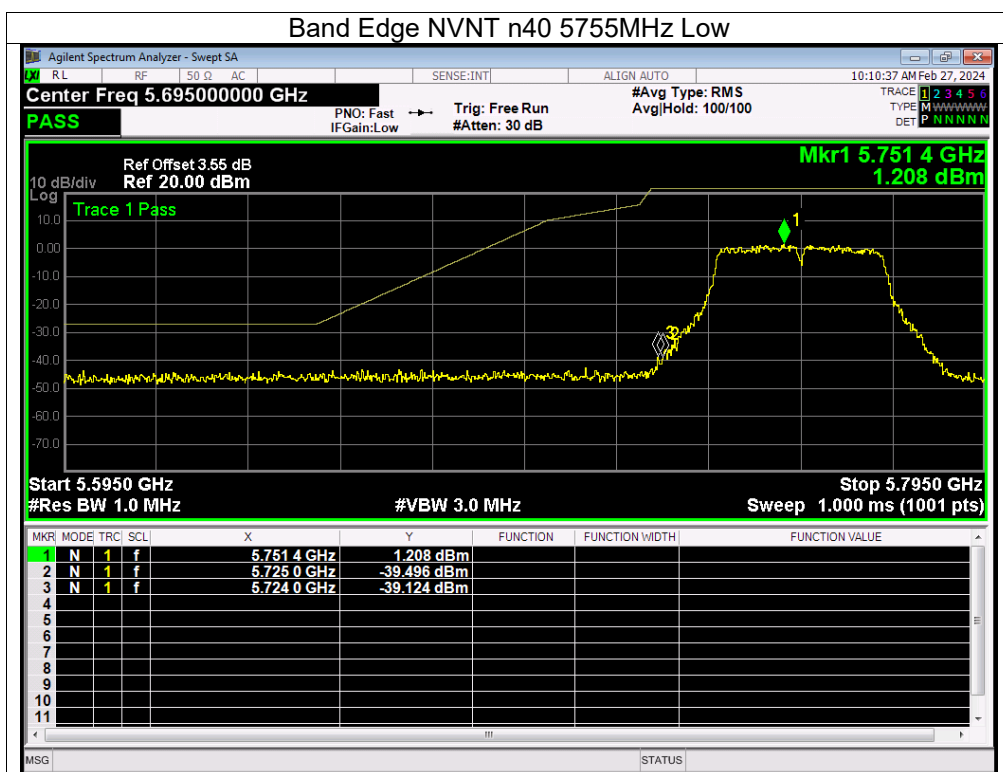


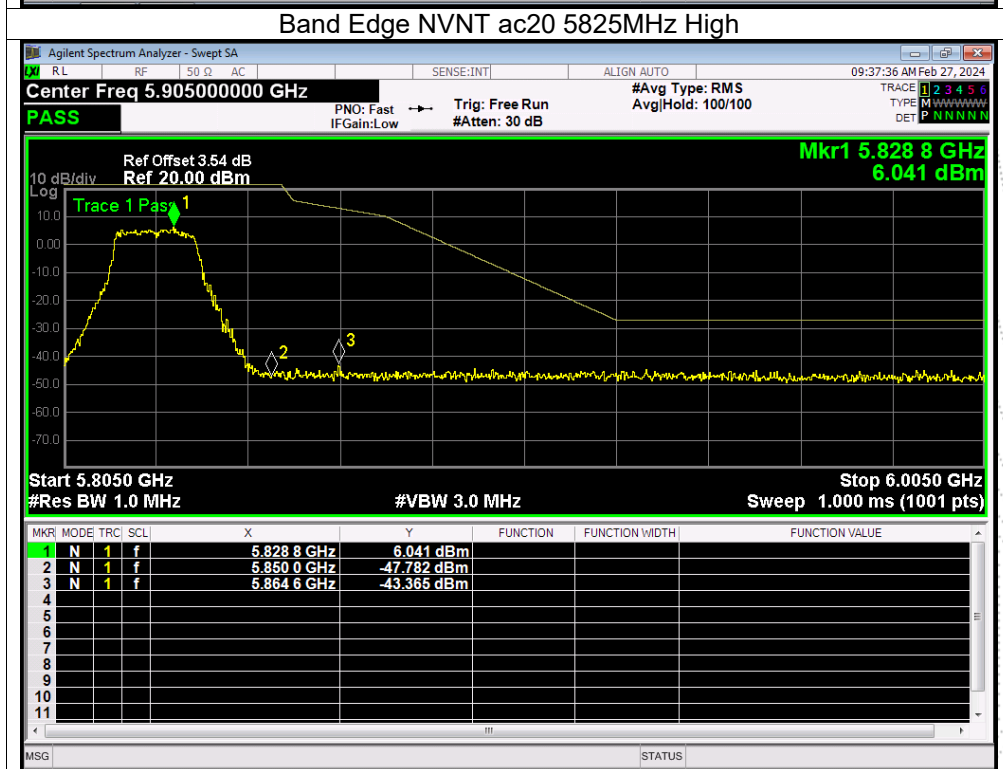
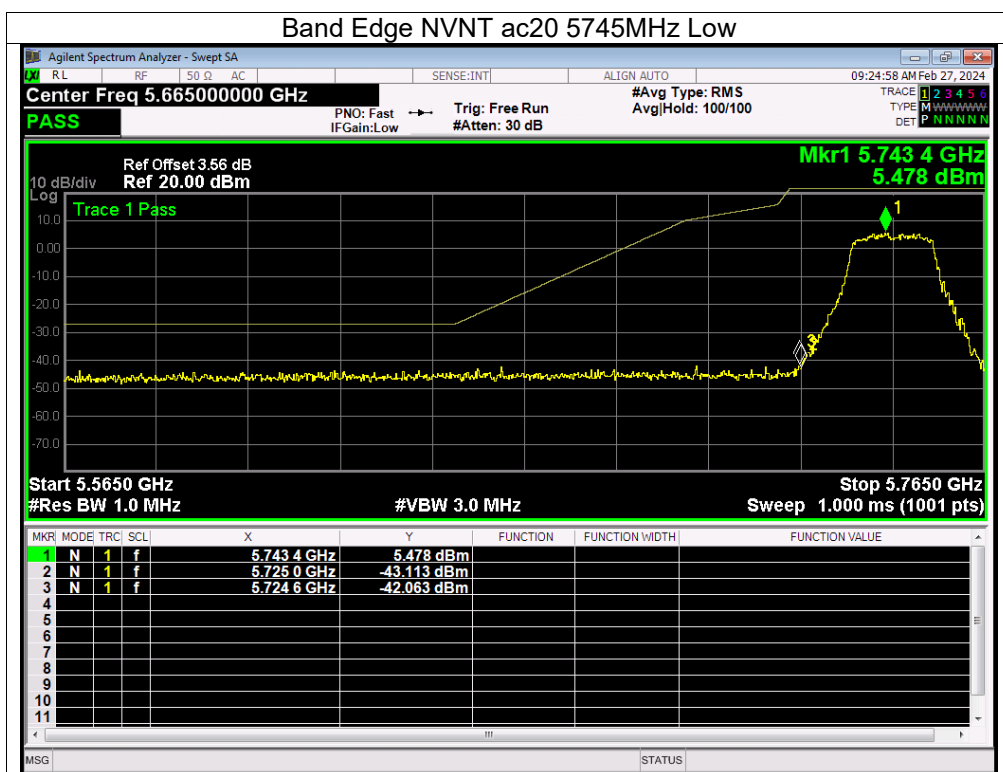


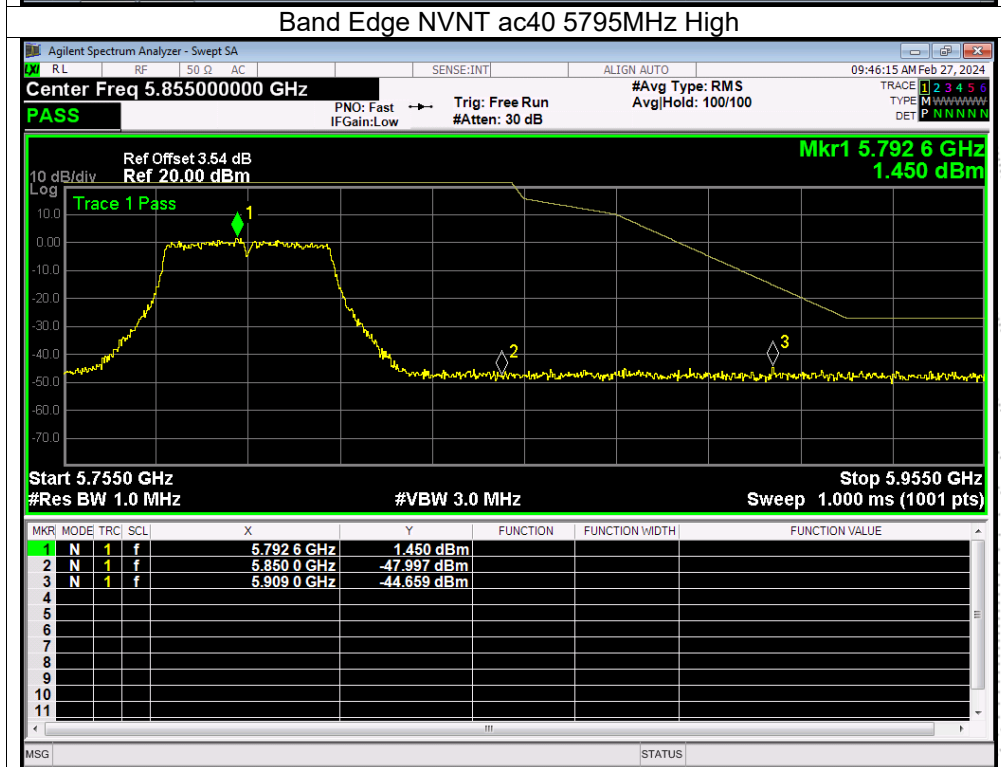
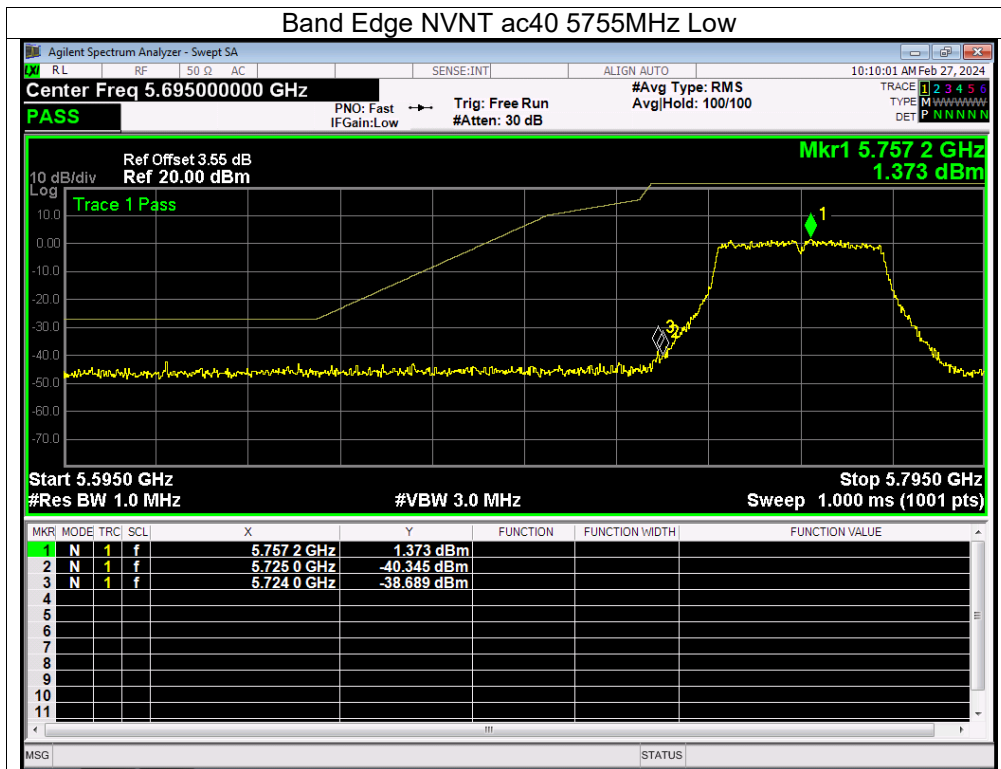
Note: A(B) Represent the value of antenna A/B/C and D, The worst data is Antenna A, only shown Antenna A Plot. Antenna A: 5745-5825 MHz

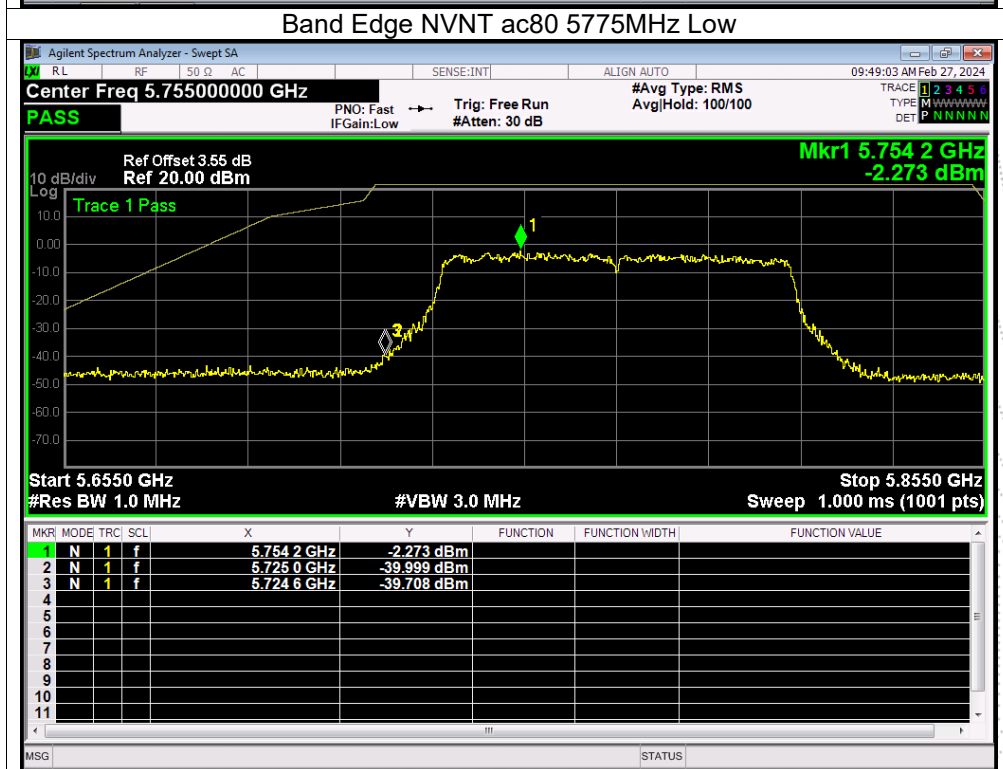
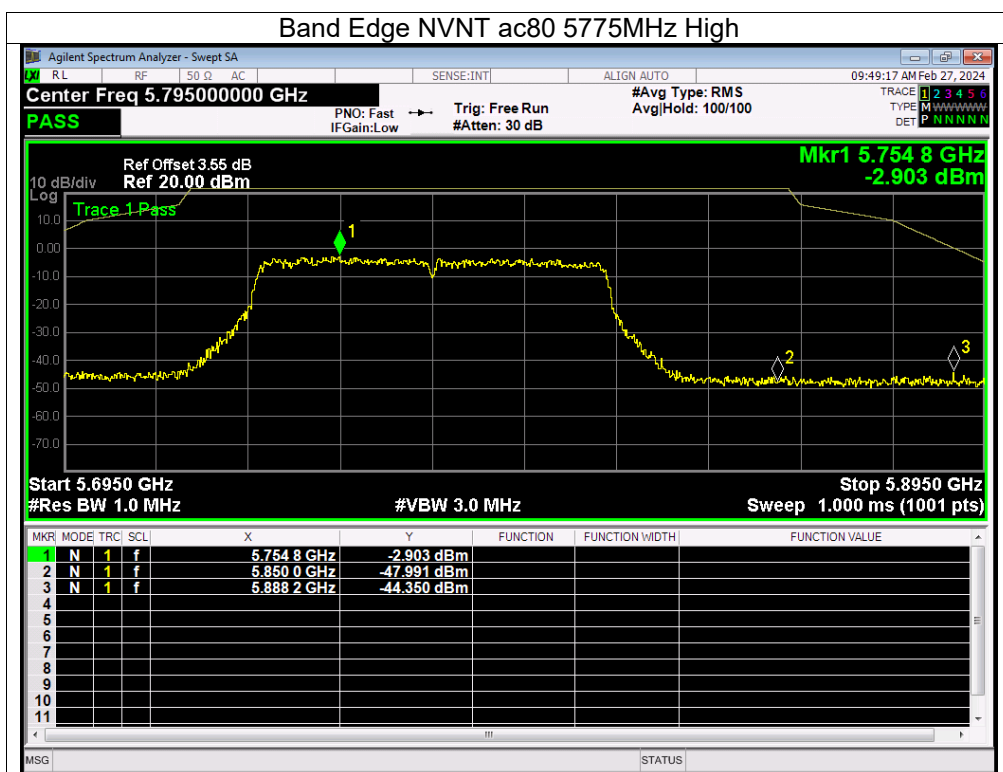












12. Spurious RF Conducted Emissions

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..
- (3) For transmitters operating in the 5.25-5.35 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.
- (4) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

12.3 Test Procedure

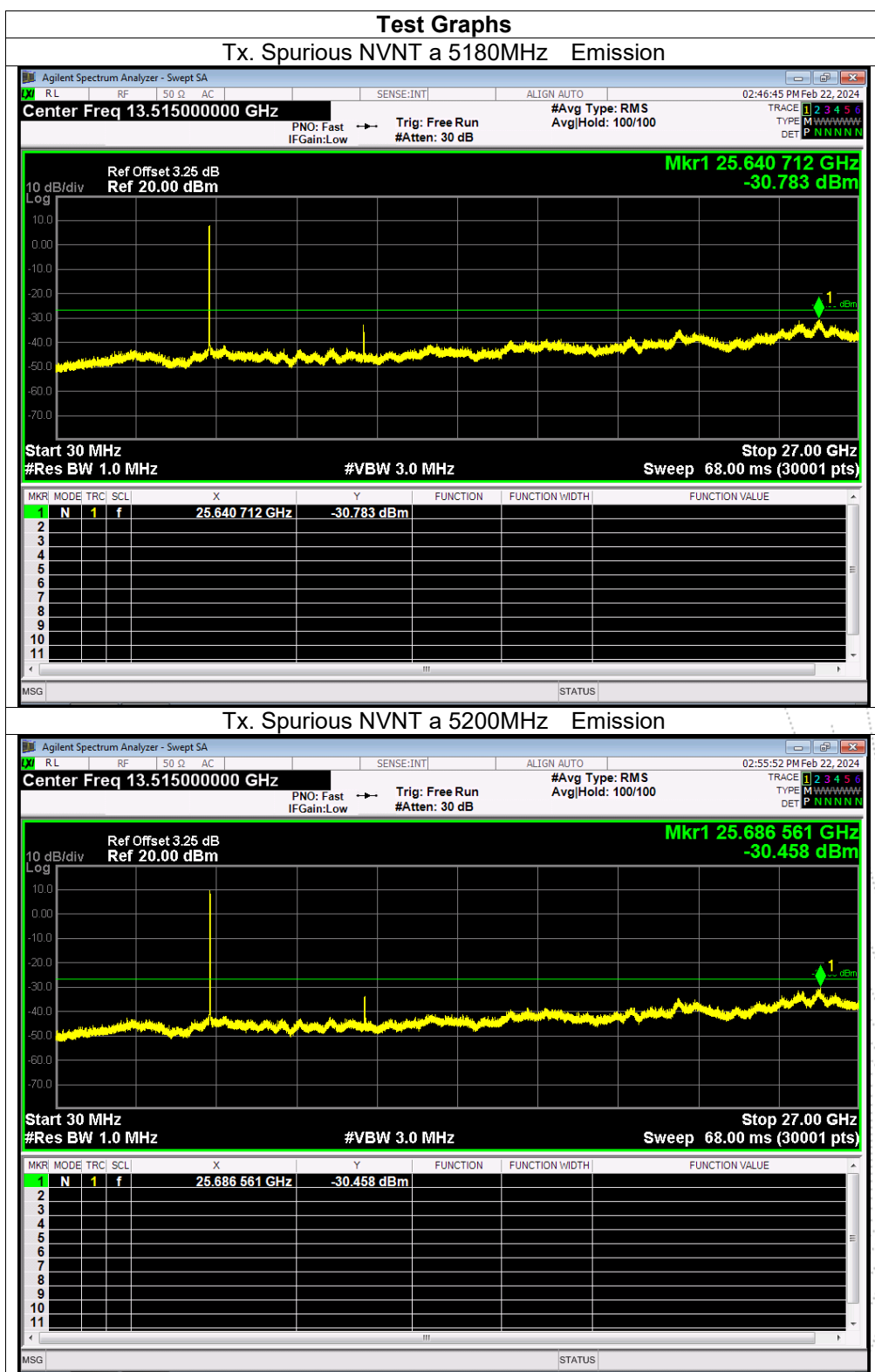
1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then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

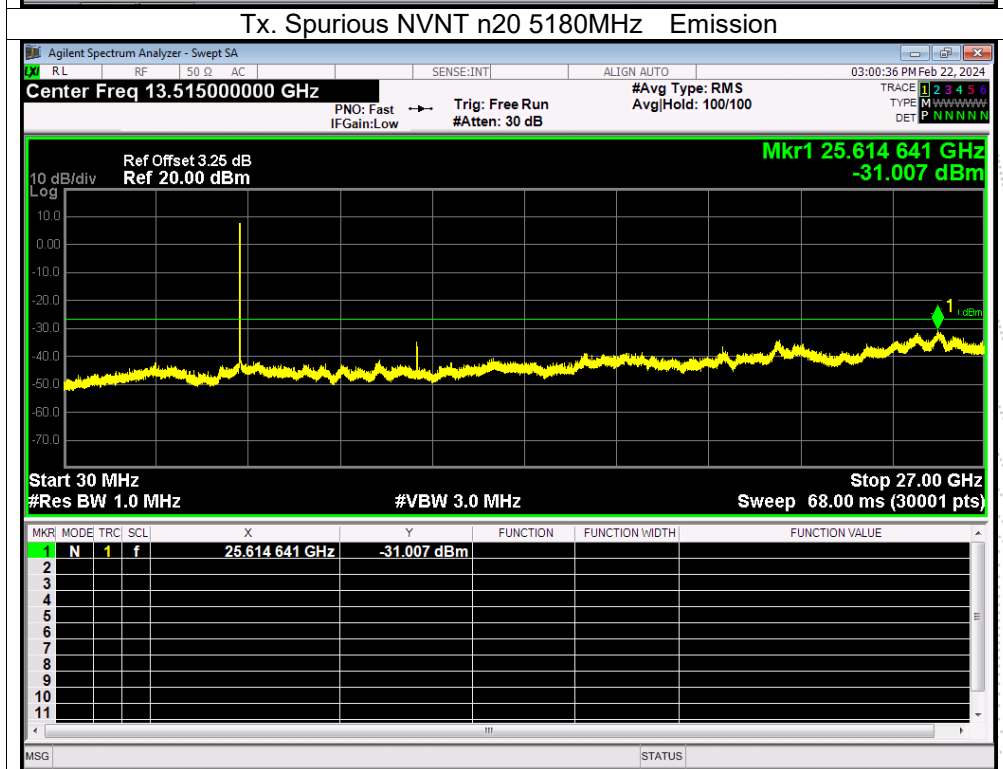
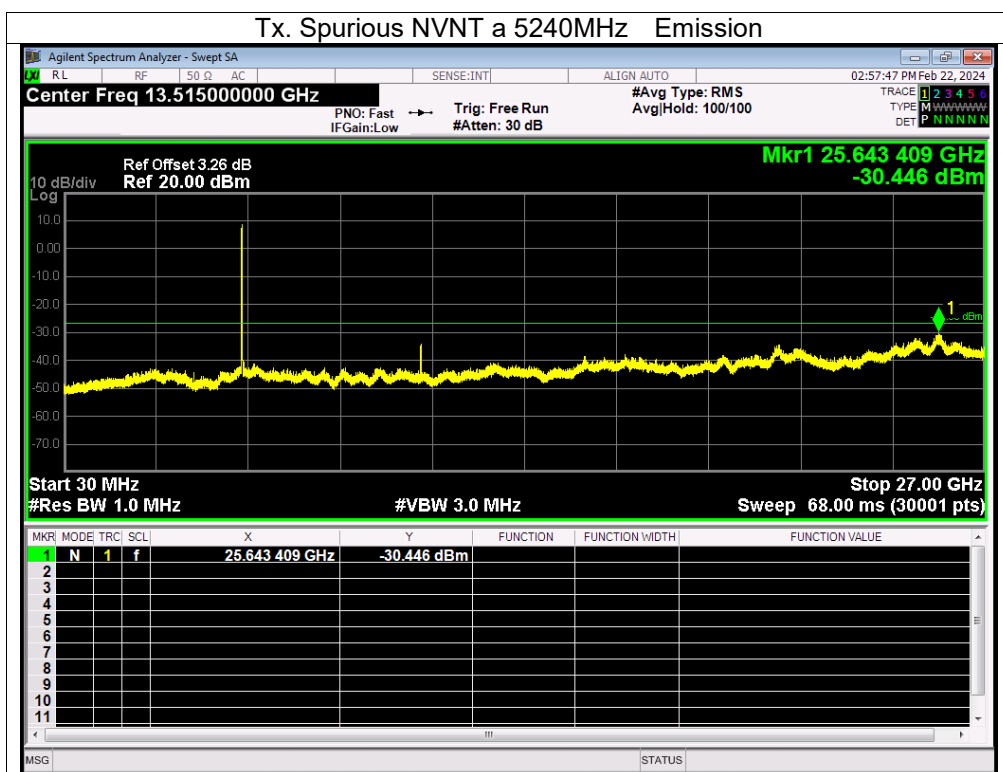
12.4 Test Result

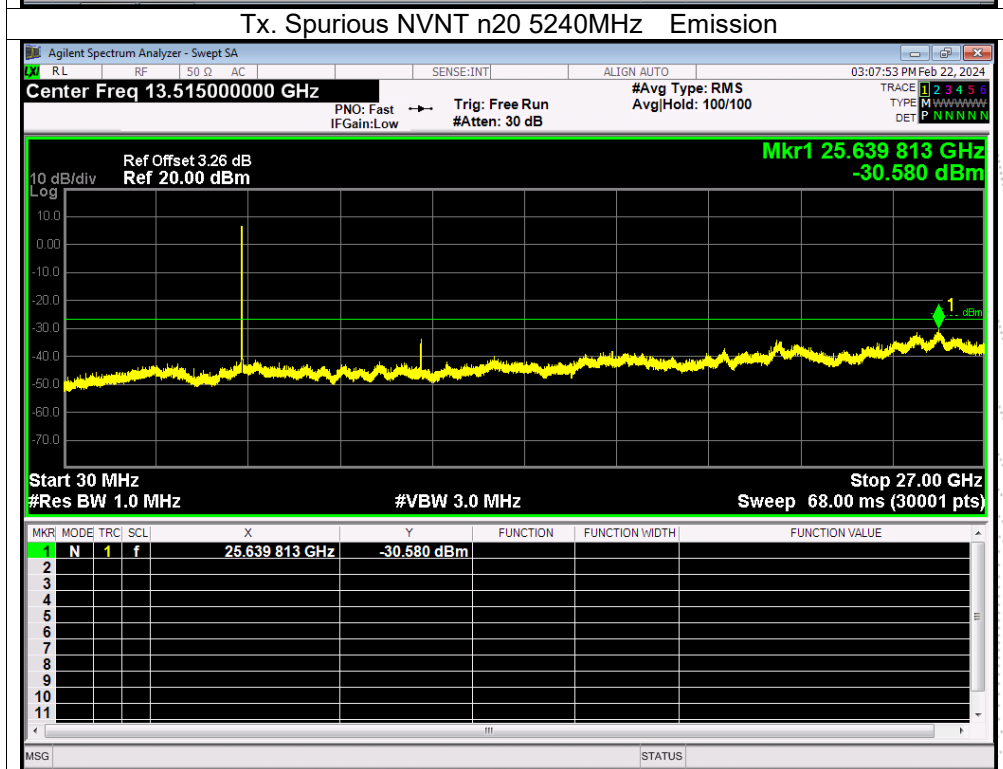
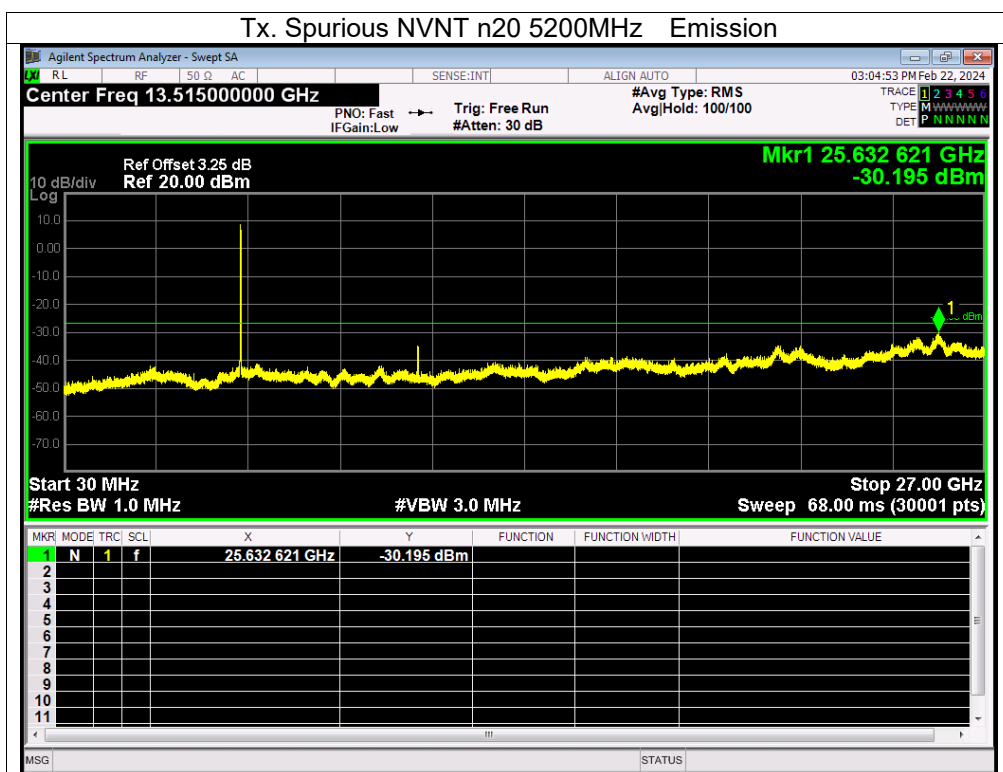
Remark: The measurement frequency range is from 9KHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the spurious emissions and bandedge measurement data.

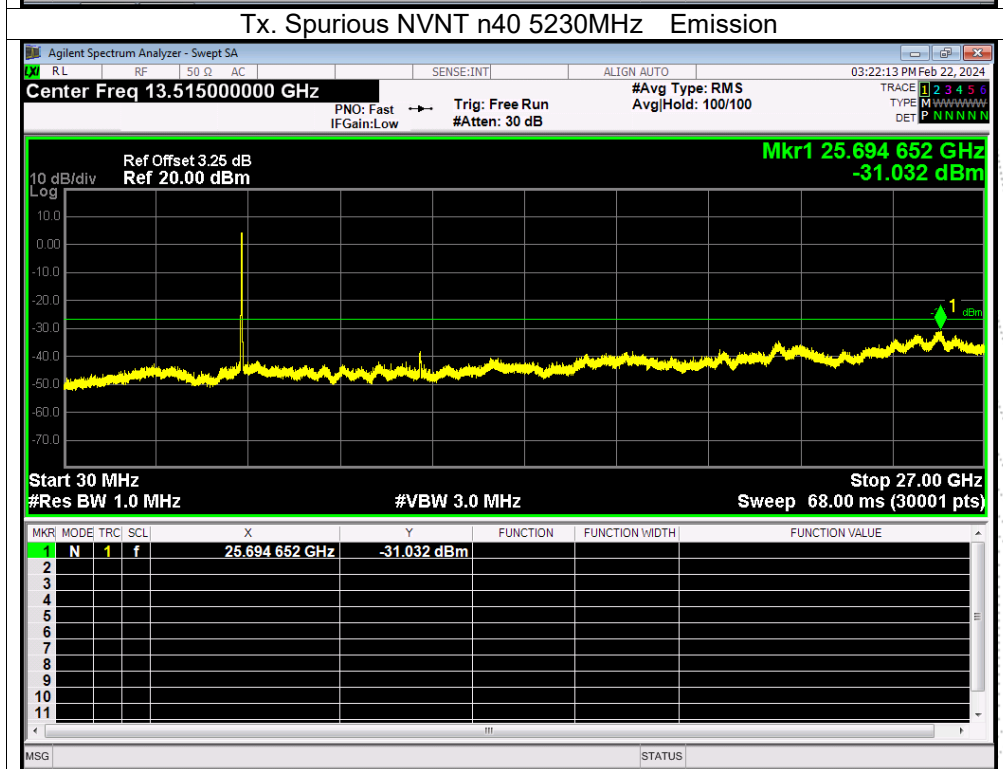
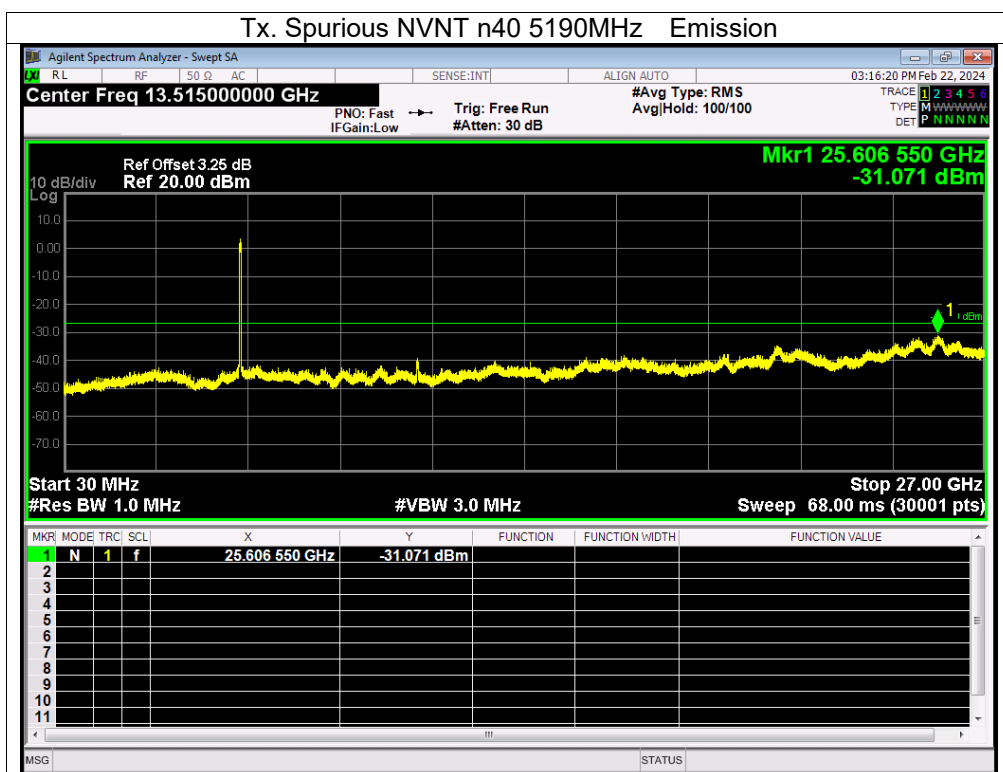
About: 26.5GHz-40GHz, The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

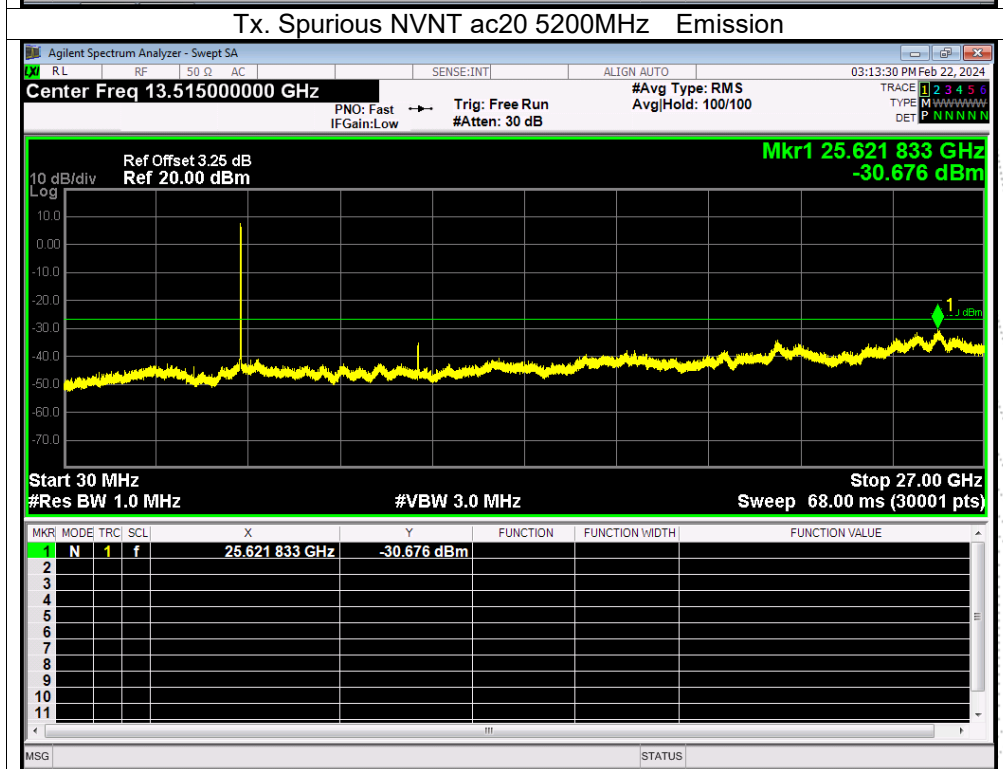
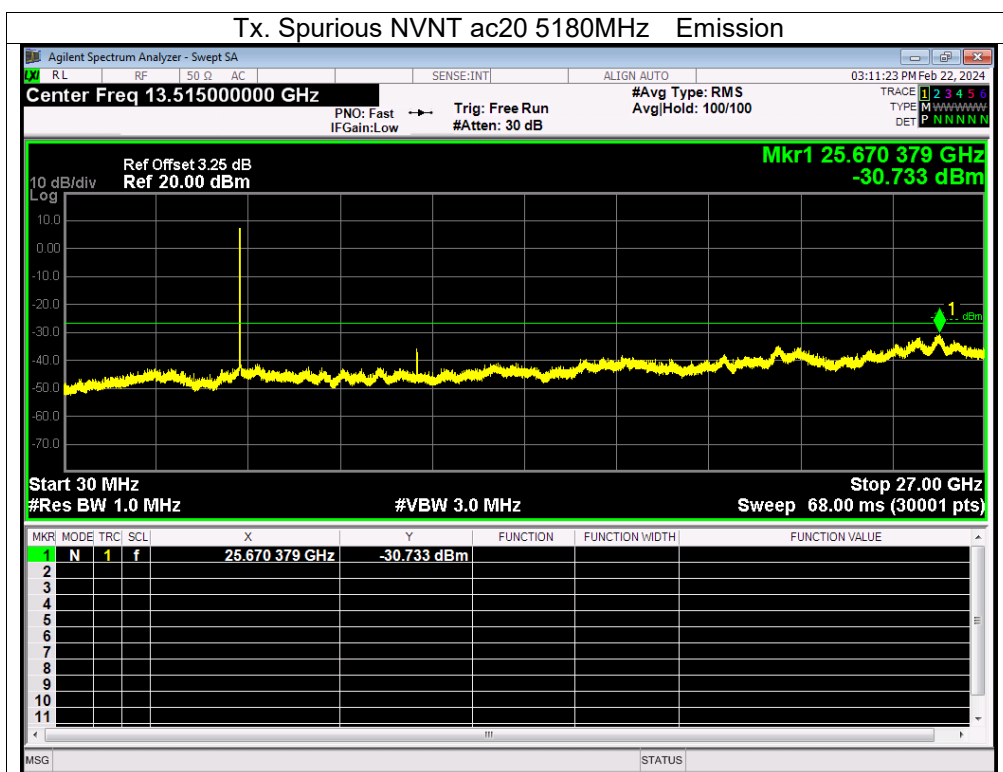
Note: A(B) Represent the value of antenna A/B/C and D, The worst data is Antenna A, only shown Antenna A Plot. Antenna A: 5180-5240MHz

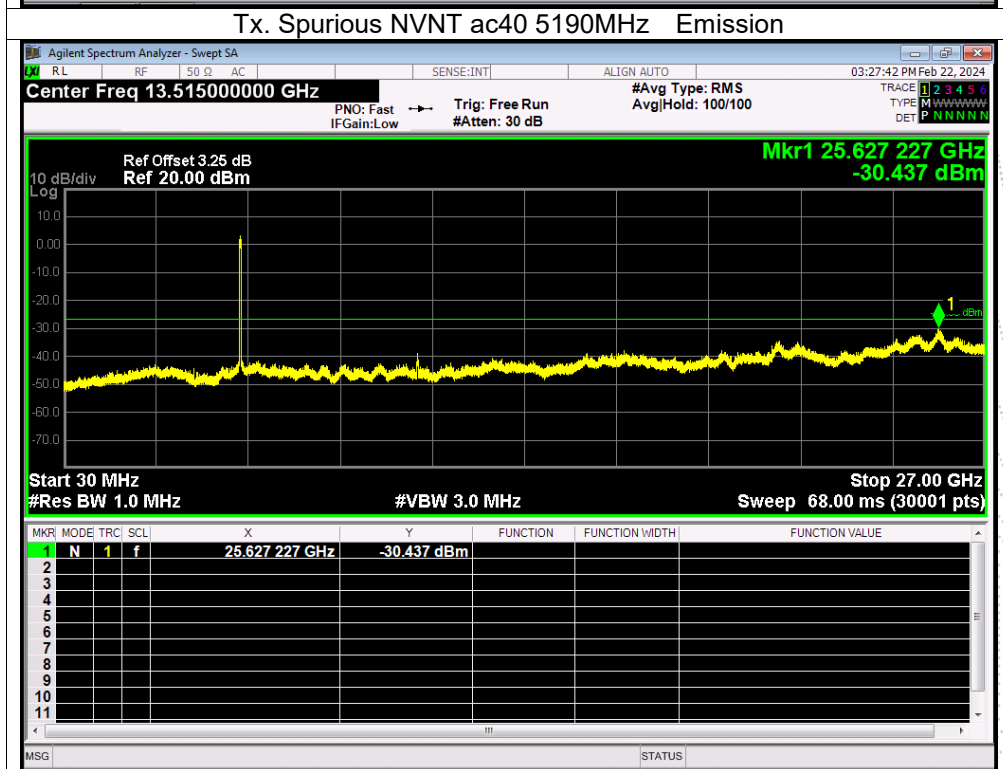
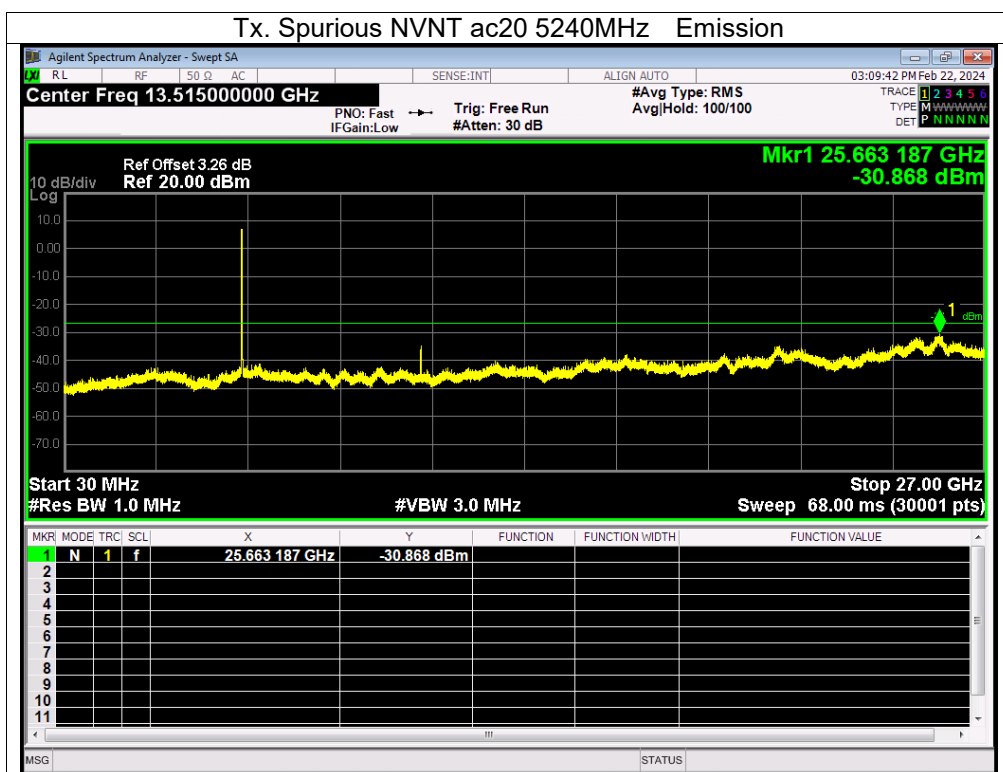


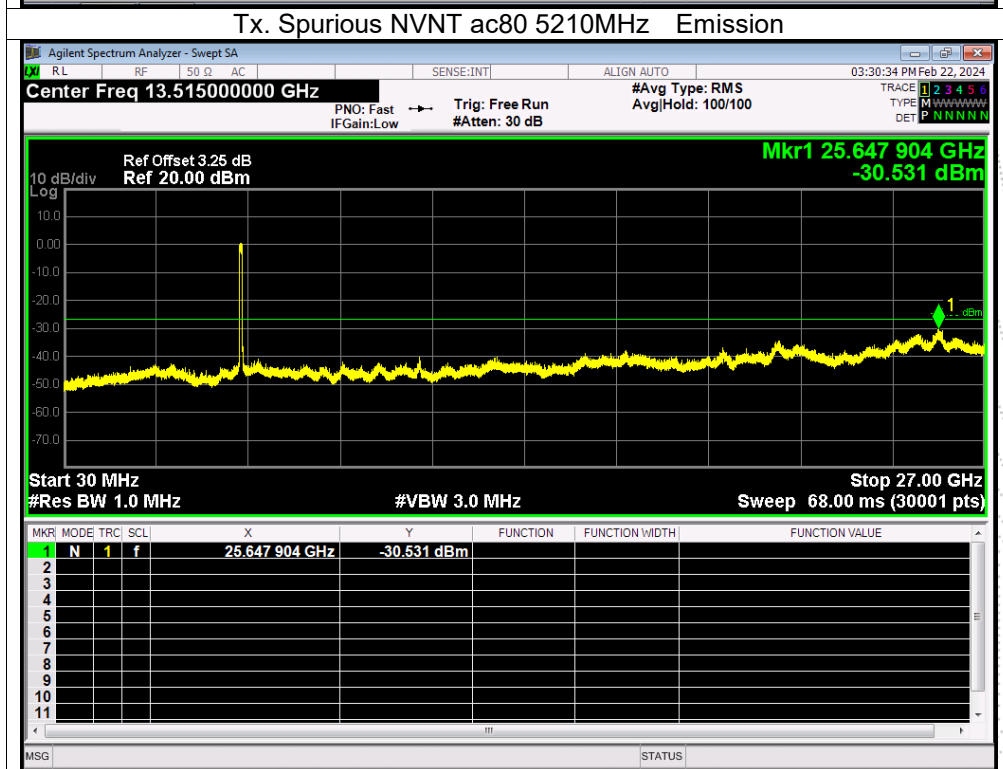
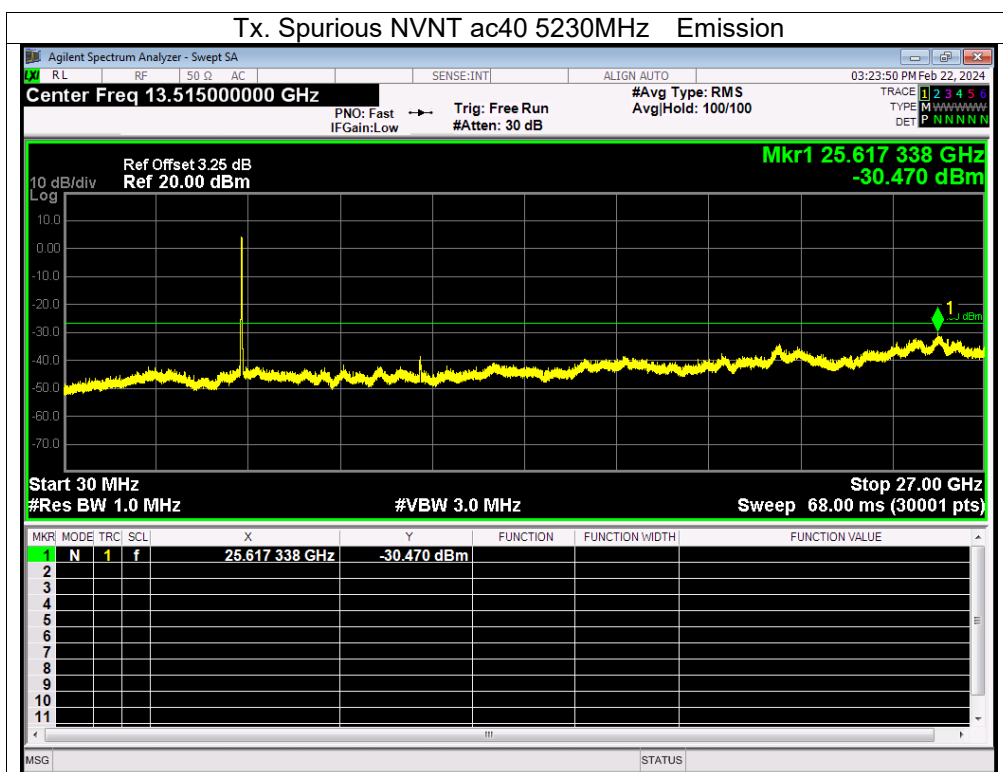




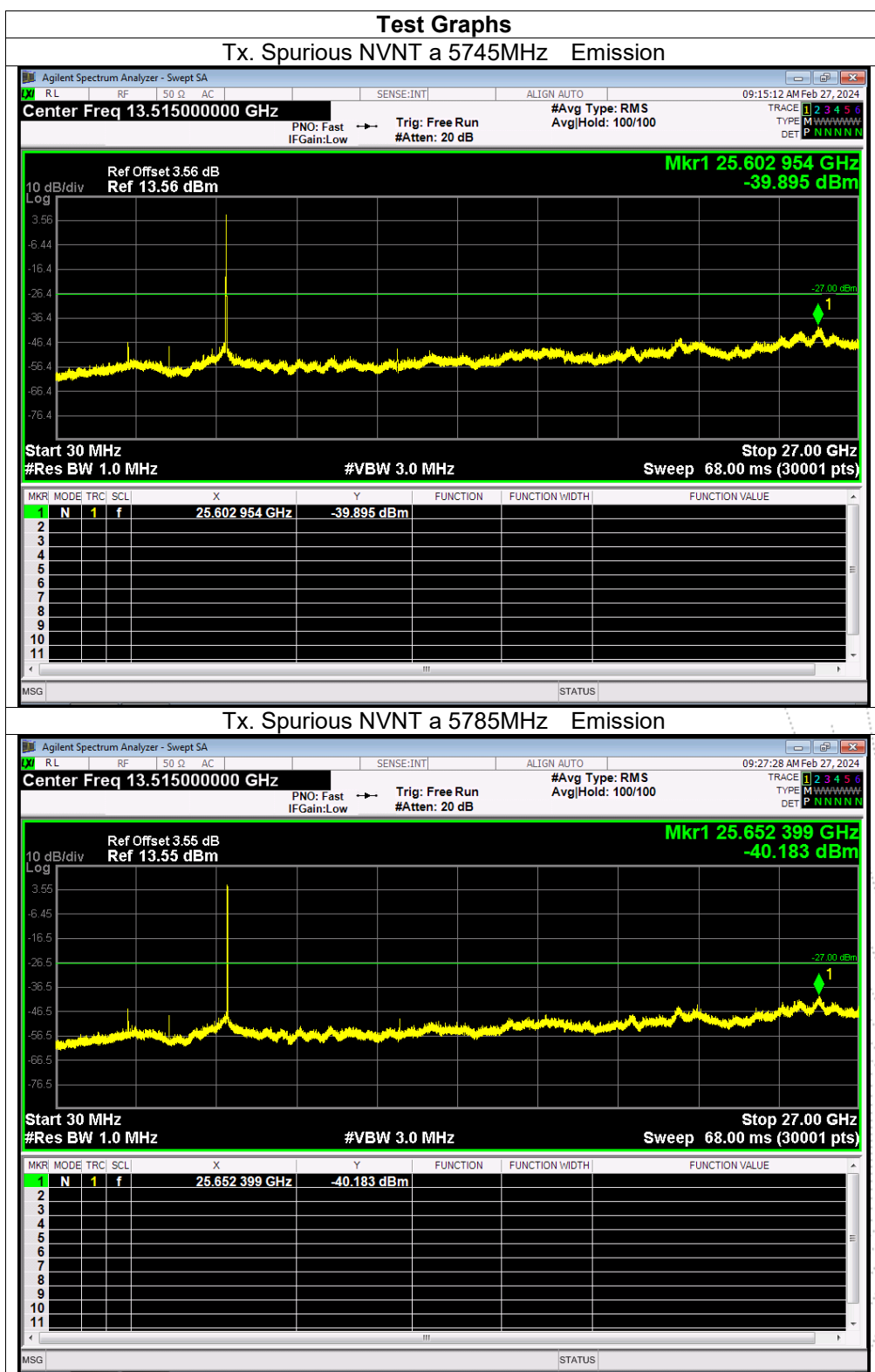


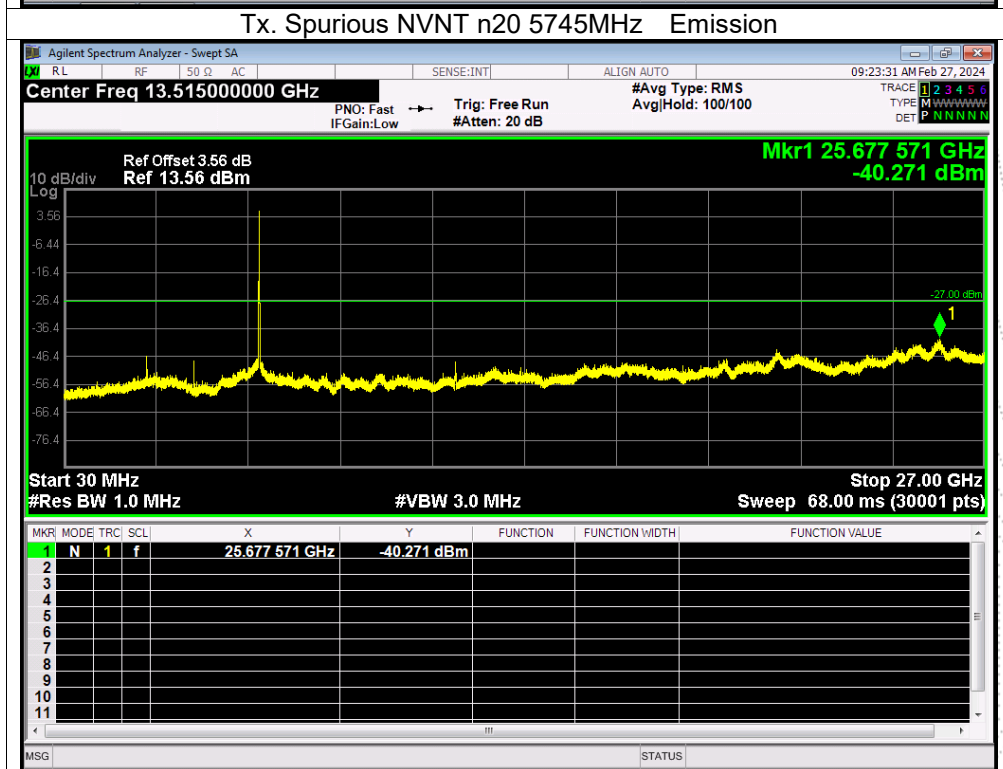
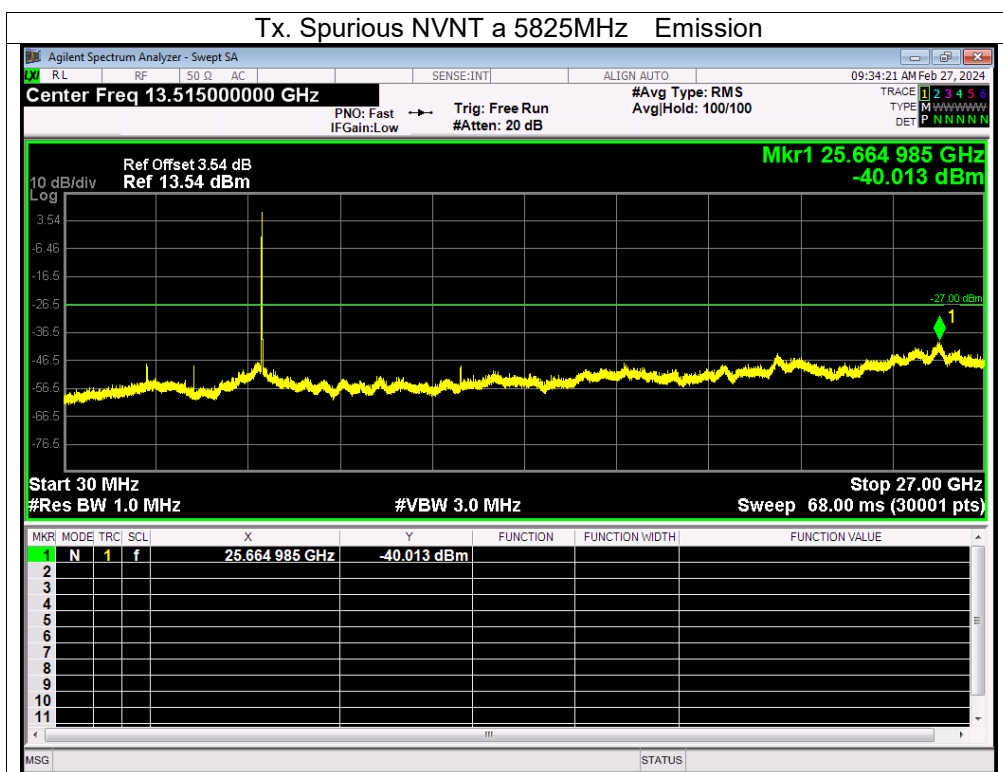


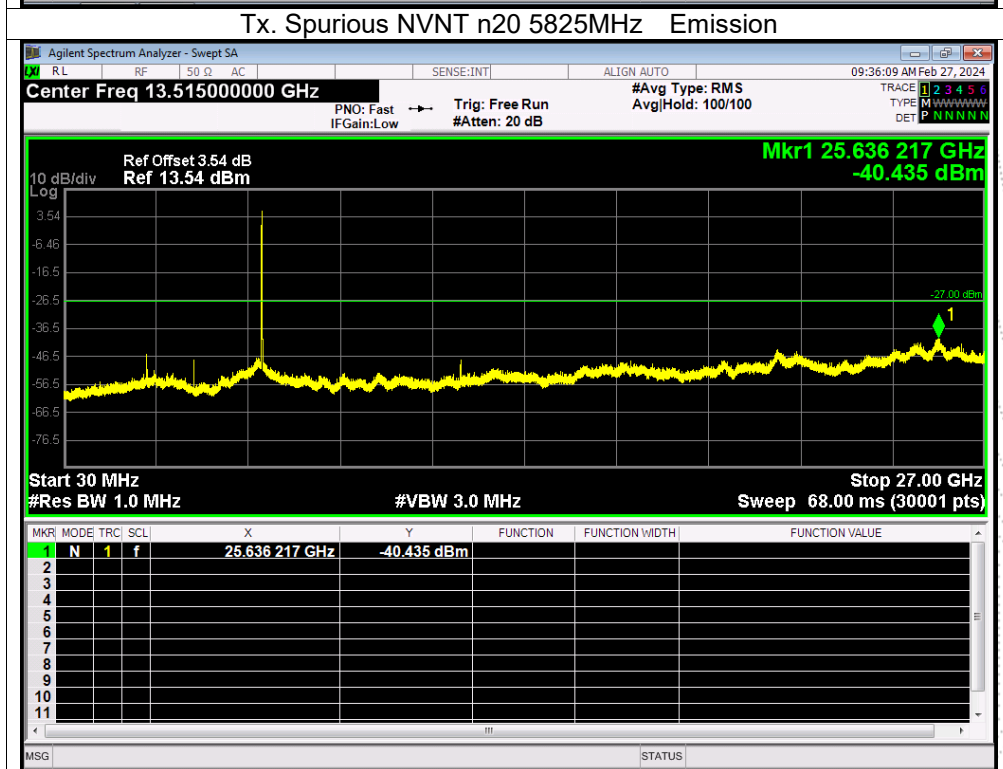
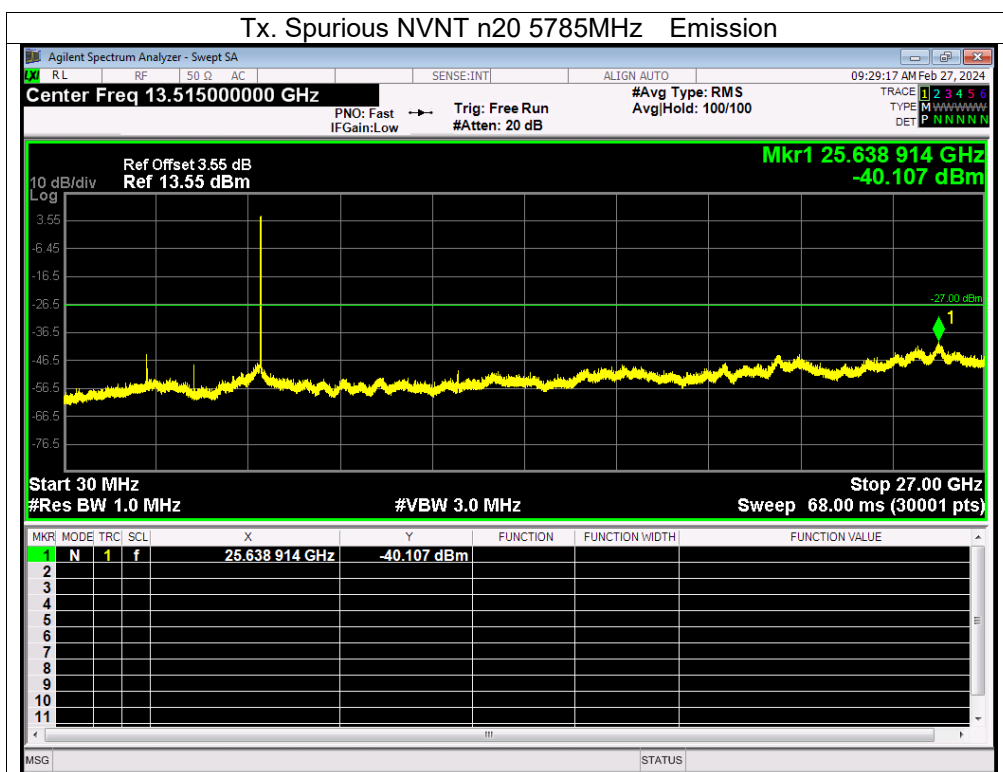


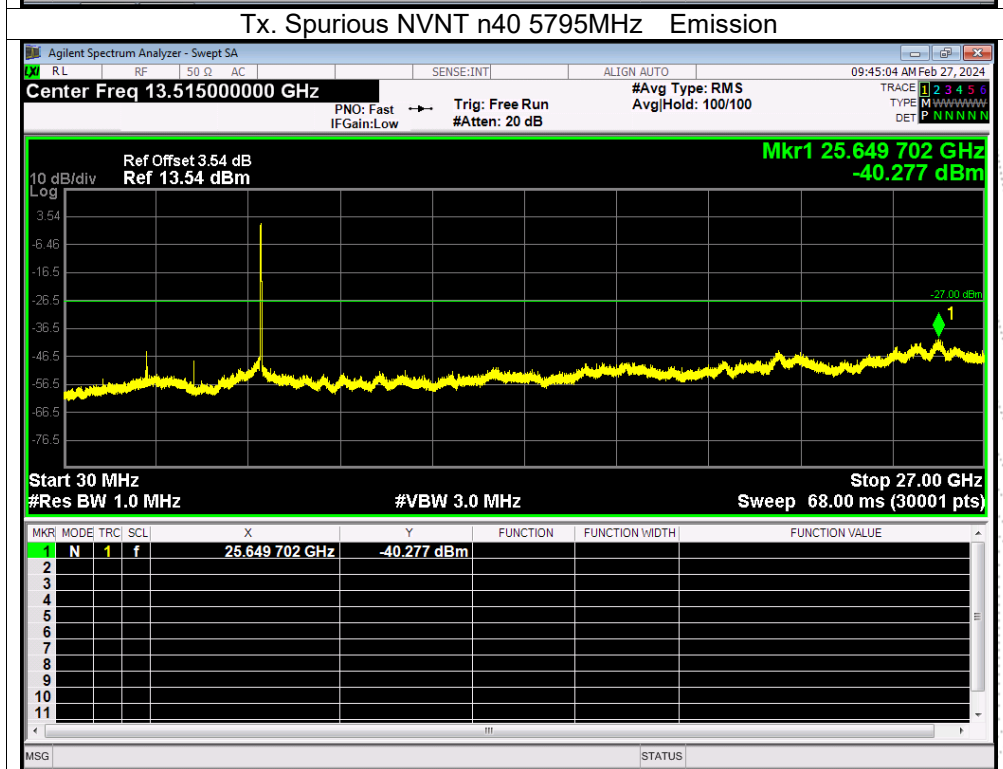
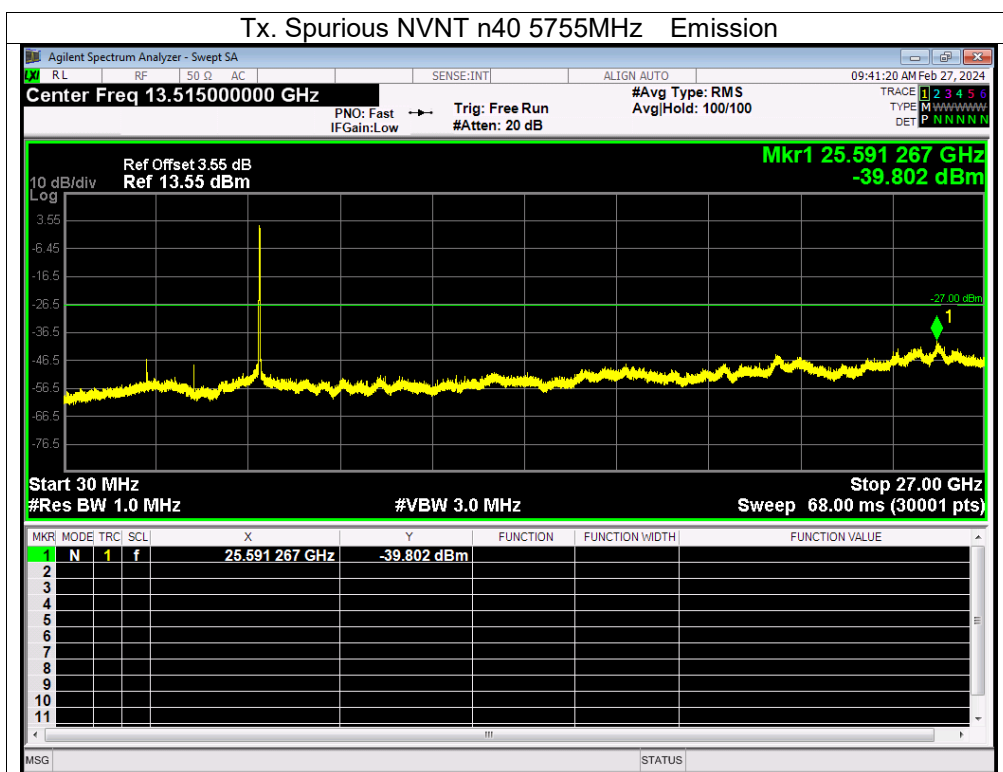


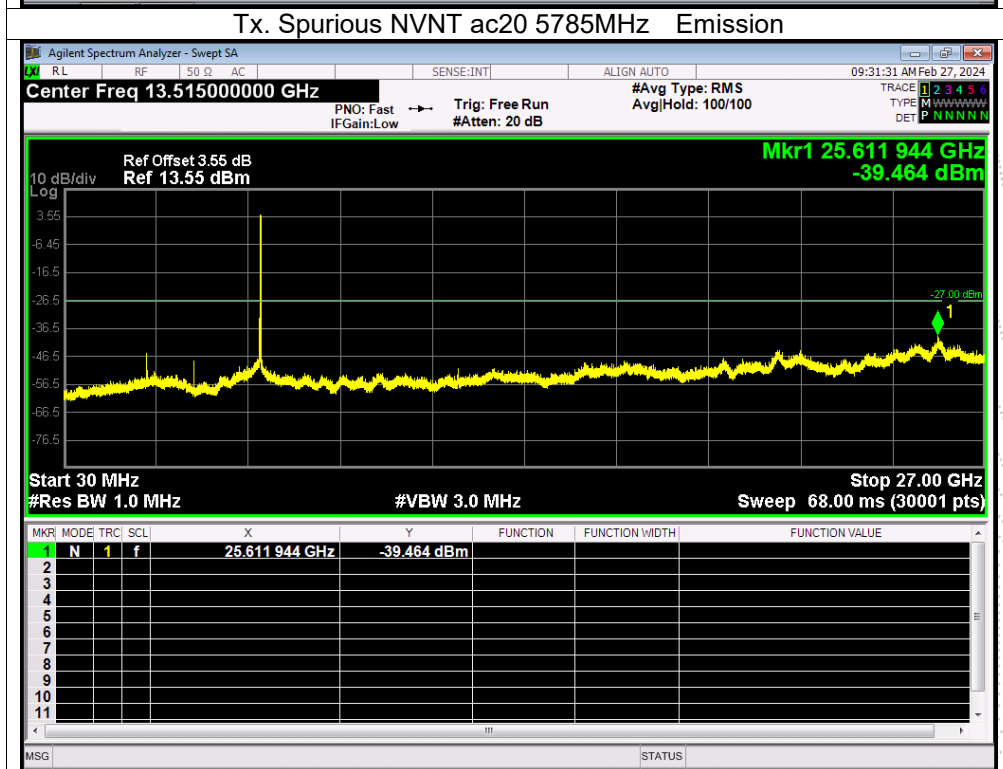
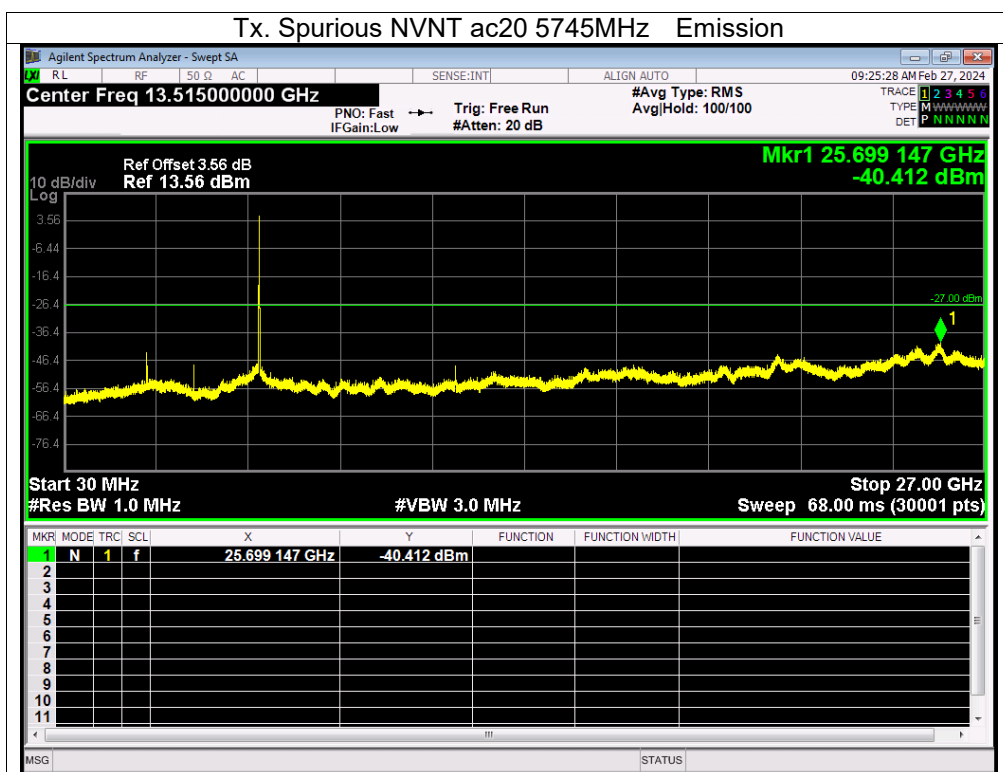
Note: A(B) Represent the value of antenna A/B/C and D, The worst data is Antenna A, only shown Antenna A Plot. Antenna A: 5745-5825 MHz

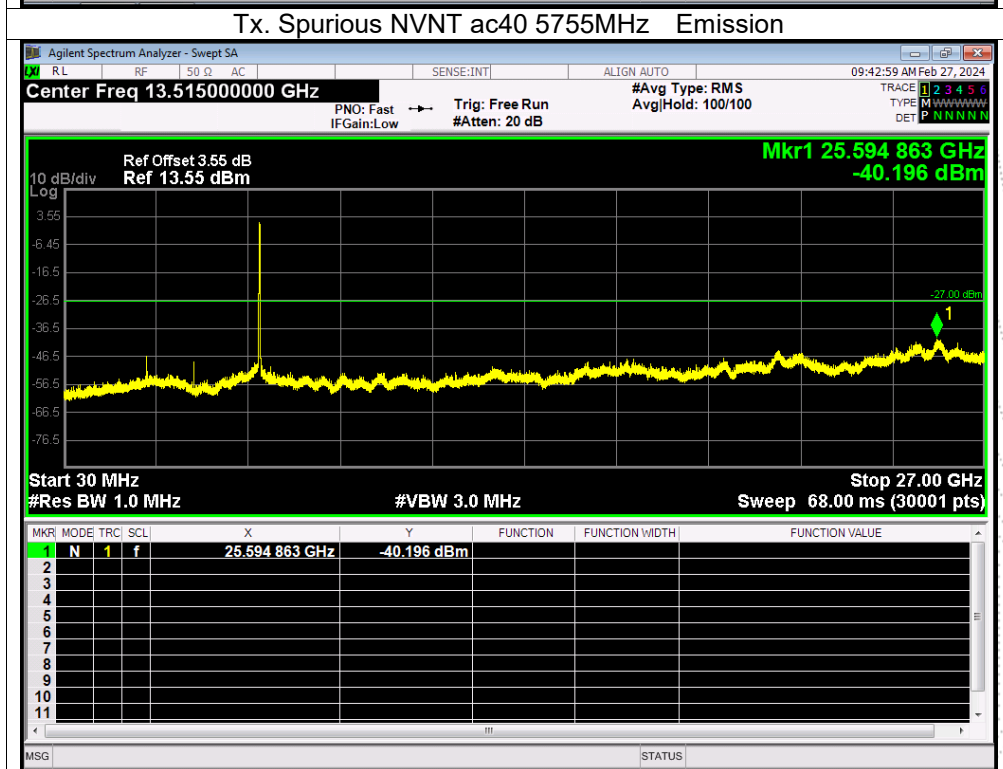
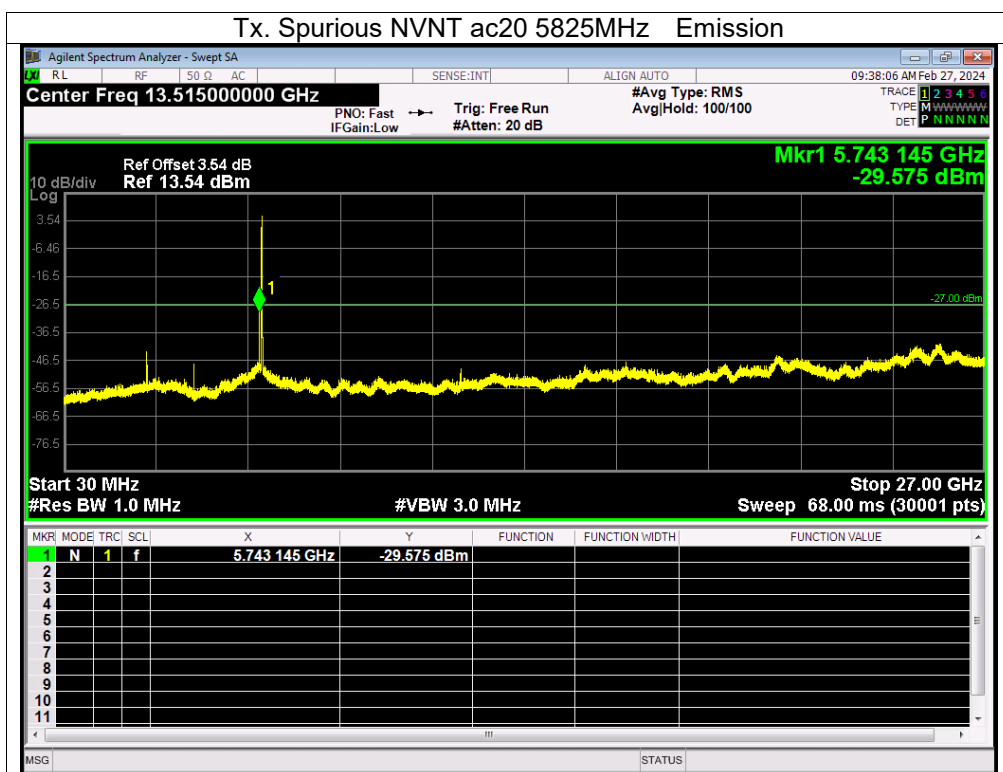


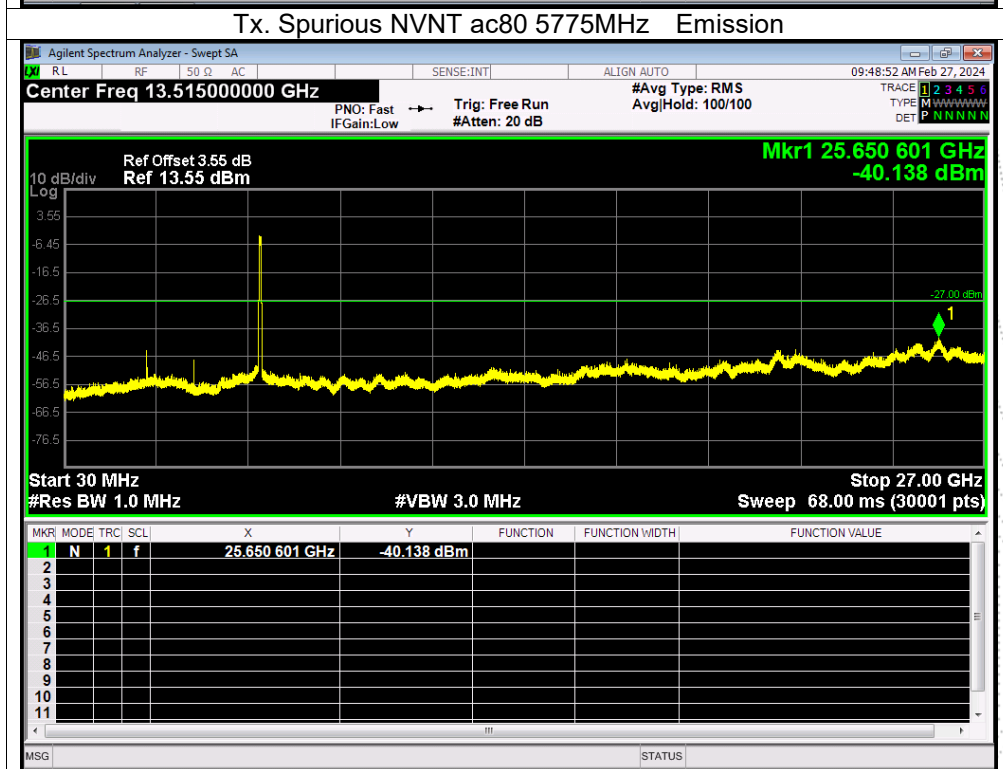
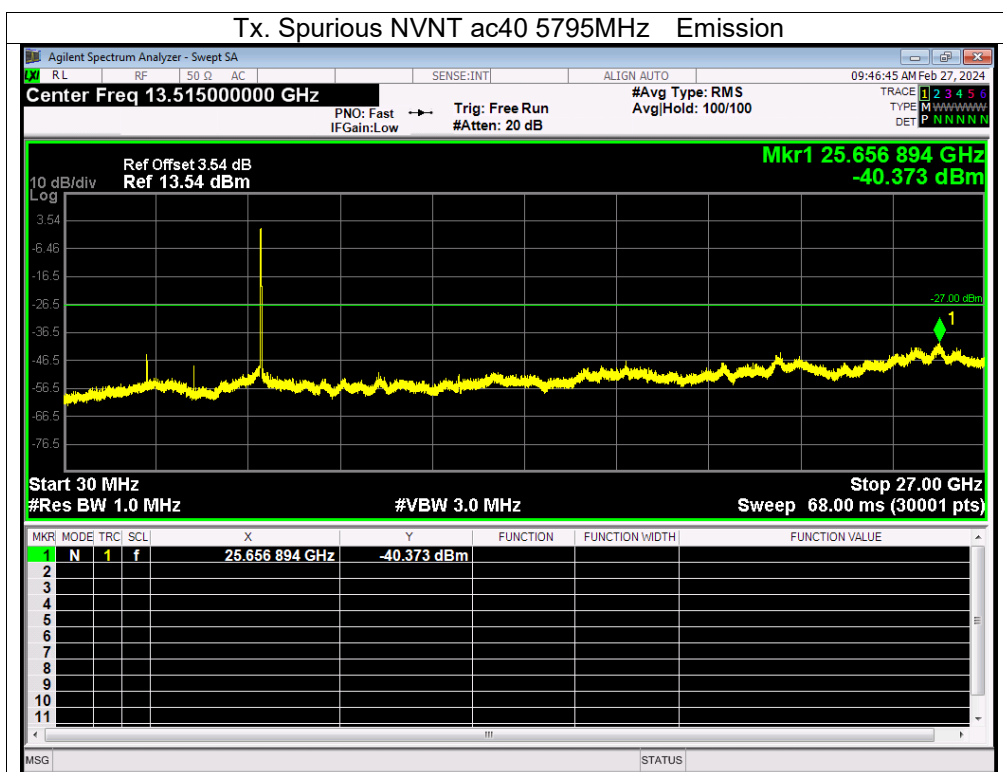












13. Frequency Stability Measurement

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:	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	5180.0045	5180	0.0045	0.8687
		V min (V)	102.00	5180.0061	5180	0.0061	1.1776
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	5180.0085	5180	0.0085	1.6409
		T (°C)	-10	5180.0036	5180	0.0036	0.6950
		T (°C)	0	5180.0010	5180	0.0010	0.1931
		T (°C)	10	5180.0010	5180	0.0010	0.1931
		T (°C)	20	5180.0122	5180	0.0122	2.3552
		T (°C)	30	5180.0068	5180	0.0068	1.3127
		T (°C)	40	5180.0046	5180	0.0046	0.8880
		T (°C)	50	5180.0028	5180	0.0028	0.5405
		T (°C)	60	5180.0069	5180	0.0069	1.3320
		T (°C)	70	5180.0063	5180	0.0063	1.2162
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	5200.0029	5200	0.0029	0.5577
		V max (V)	138.00	5200.0104	5200	0.0104	2.0000
		V min (V)	102.00	5200.0046	5200	0.0046	0.8846
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	5200.00580	5200	0.00580	1.1154
		T (°C)	-10	5200.01020	5200	0.01020	1.9615
		T (°C)	0	5200.00260	5200	0.00260	0.5000
		T (°C)	10	5200.00320	5200	0.00320	0.6154
		T (°C)	20	5200.00130	5200	0.00130	0.2500
		T (°C)	30	5200.01230	5200	0.01230	2.3654
		T (°C)	40	5200.00210	5200	0.00210	0.4038
		T (°C)	50	5200.00310	5200	0.00310	0.5962
		T (°C)	60	5200.01100	5200	0.01100	2.1154
		T (°C)	70	5200.00880	5200	0.00880	1.6923
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	5240.0041	5240	0.0041	0.7824
		V max (V)	138.00	5240.0018	5240	0.0018	0.3435
		V min (V)	102.00	5240.0082	5240	0.0082	1.5649
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	5240.0099	5240	0.0099	1.8893
		T (°C)	-10	5240.0058	5240	0.0058	1.1069
		T (°C)	0	5240.0027	5240	0.0027	0.5153
		T (°C)	10	5240.0117	5240	0.0117	2.2328
		T (°C)	20	5240.0110	5240	0.0110	2.0992
		T (°C)	30	5240.0124	5240	0.0124	2.3664
		T (°C)	40	5240.0020	5240	0.0020	0.3817
		T (°C)	50	5240.0028	5240	0.0028	0.5344
		T (°C)	60	5240.0134	5240	0.0134	2.5573
		T (°C)	70	5240.0083	5240	0.0083	1.5840
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 Stability

TEST CONDITIONS				Reference Frequency: 5745MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120.00	5745.00750	5745	0.00750	1.3055
		V max (V)	138.00	5745.01150	5745	0.01150	2.0017
		V min (V)	102.00	5745.00900	5745	0.00900	1.5666
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	5745.00140	5745	0.00140	0.2437
		T (°C)	-10	5745.01110	5745	0.01110	1.9321
		T (°C)	0	5745.00390	5745	0.00390	0.6789
		T (°C)	10	5745.00730	5745	0.00730	1.2707
		T (°C)	20	5745.00410	5745	0.00410	0.7137
		T (°C)	30	5745.00690	5745	0.00690	1.2010
		T (°C)	40	5745.00400	5745	0.00400	0.6963
		T (°C)	50	5745.01270	5745	0.01270	2.2106
		T (°C)	60	5745.00690	5745	0.00690	1.2010
		T (°C)	70	5745.00810	5745	0.00810	1.4099
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	5785.00770	5785	0.00770	1.3310
		V max (V)	138.00	5785.00310	5785	0.00310	0.5359
		V min (V)	102.00	5785.01080	5785	0.01080	1.8669
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	5785.00100	5785	0.00100	0.1729
		T (°C)	-10	5785.00310	5785	0.00310	0.5359
		T (°C)	0	5785.00420	5785	0.00420	0.7260
		T (°C)	10	5785.00010	5785	0.00010	0.0173
		T (°C)	20	5785.00120	5785	0.00120	0.2074
		T (°C)	30	5785.01070	5785	0.01070	1.8496
		T (°C)	40	5785.00370	5785	0.00370	0.6396
		T (°C)	50	5785.01150	5785	0.01150	1.9879
		T (°C)	60	5785.01150	5785	0.01150	1.9879
		T (°C)	70	5785.01050	5785	0.01050	1.8150
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	5825.00910	5825	0.00910	1.5622
		V max (V)	138.00	5825.00740	5825	0.00740	1.2704
		V min (V)	102.00	5825.00640	5825	0.00640	1.0987
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	5825.00490	5825	0.00490	0.8412
		T (°C)	-10	5825.00250	5825	0.00250	0.4292
		T (°C)	0	5825.00760	5825	0.00760	1.3047
		T (°C)	10	5825.00430	5825	0.00430	0.7382
		T (°C)	20	5825.01170	5825	0.01170	2.0086
		T (°C)	30	5825.00930	5825	0.00930	1.5966
		T (°C)	40	5825.00130	5825	0.00130	0.2232
		T (°C)	50	5825.00460	5825	0.00460	0.7897
		T (°C)	60	5825.01350	5825	0.01350	2.3176
		T (°C)	70	5825.01090	5825	0.01090	1.8712
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 = $T_{on} / (T_{on} + T_{off})$

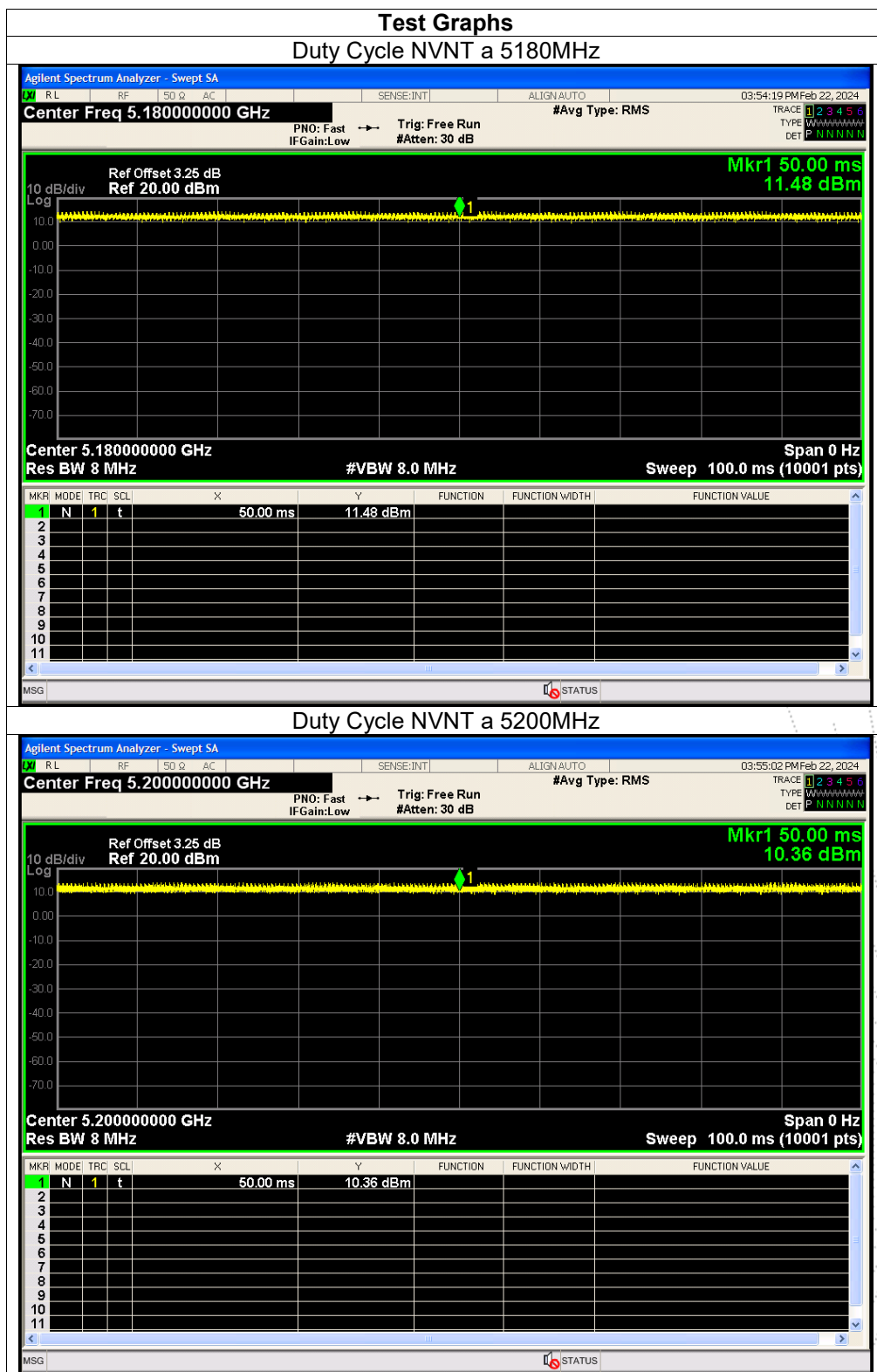
14.3 Test Procedure

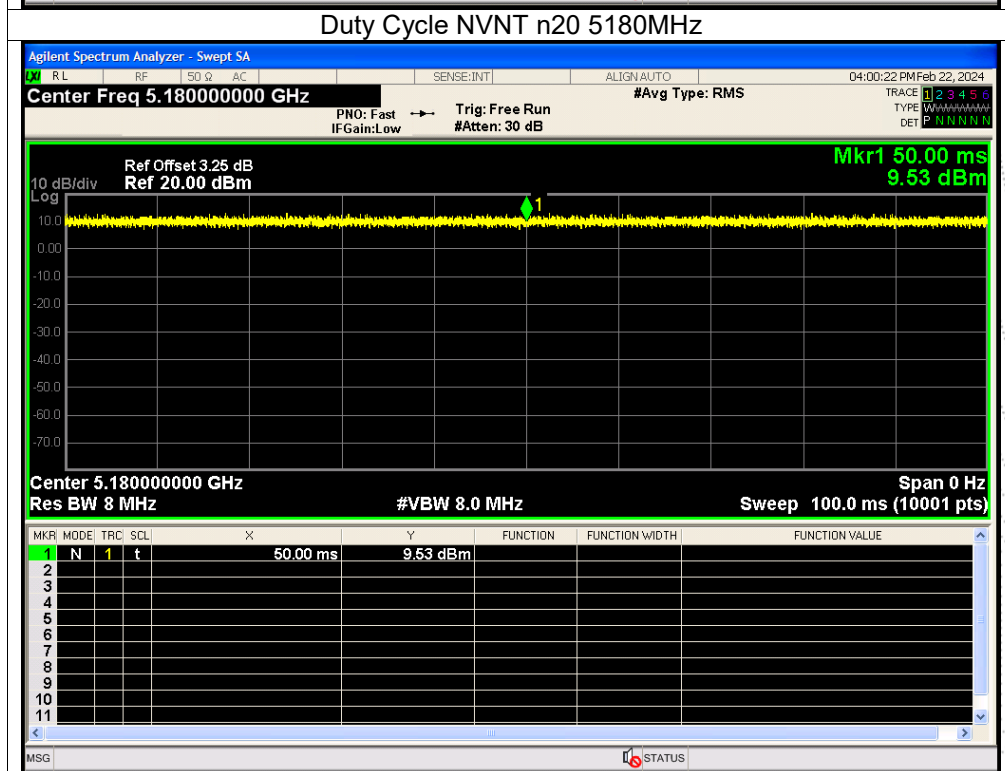
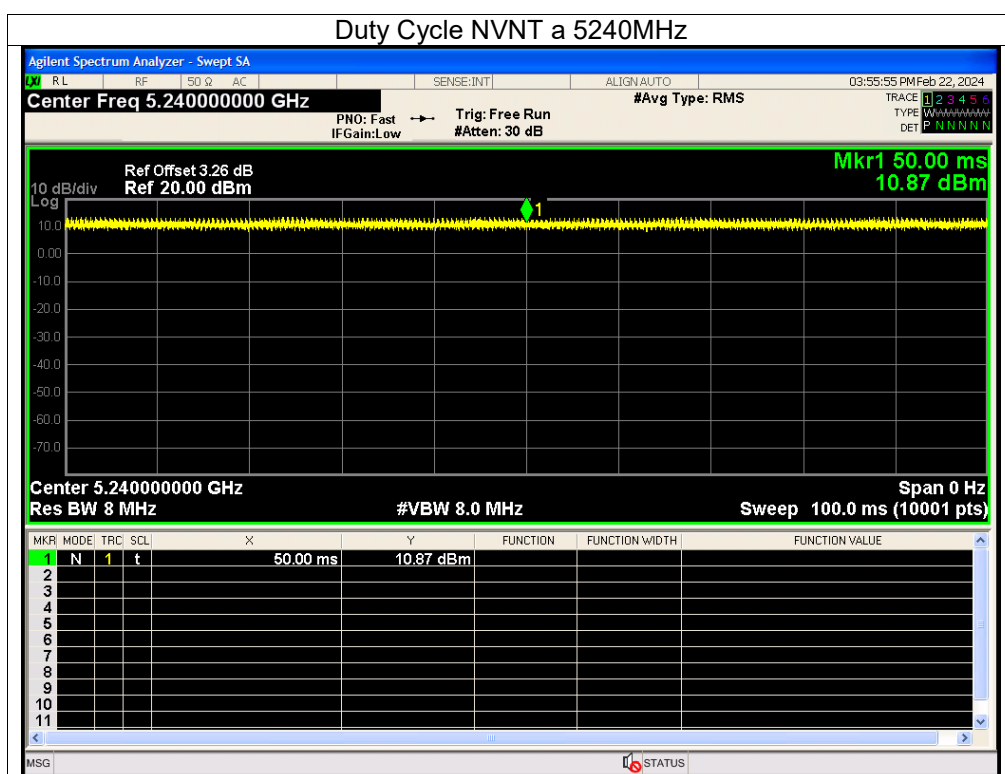
1. Set span = Zero
2. RBW = 8MHz
3. VBW = 8MHz,
4. Detector = Peak

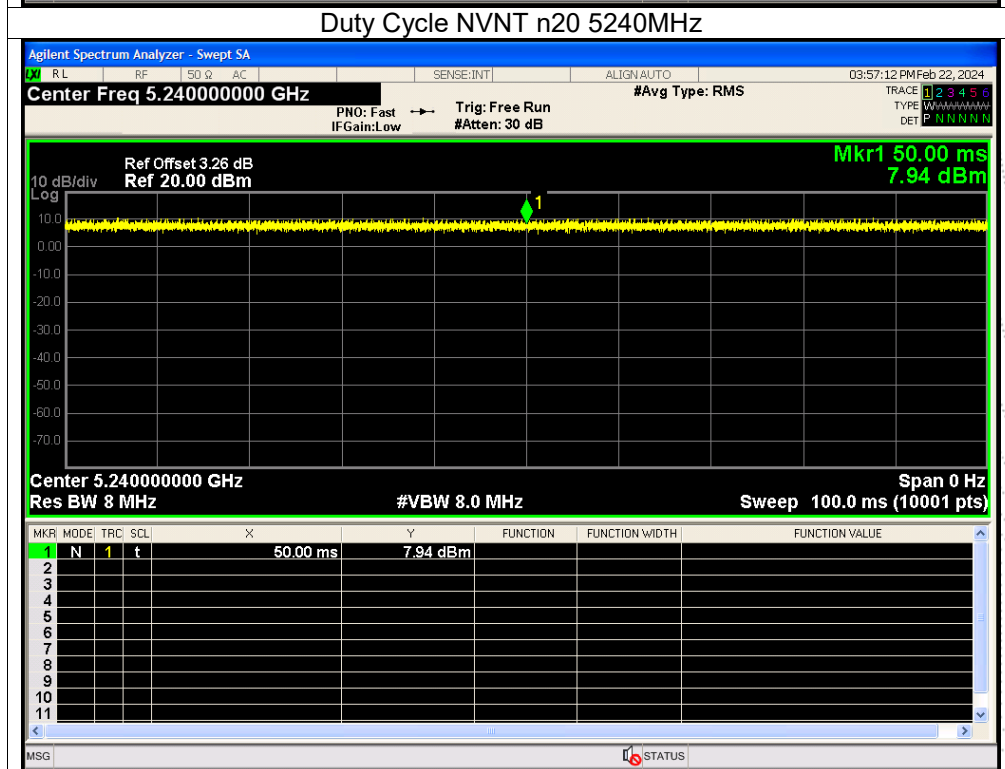
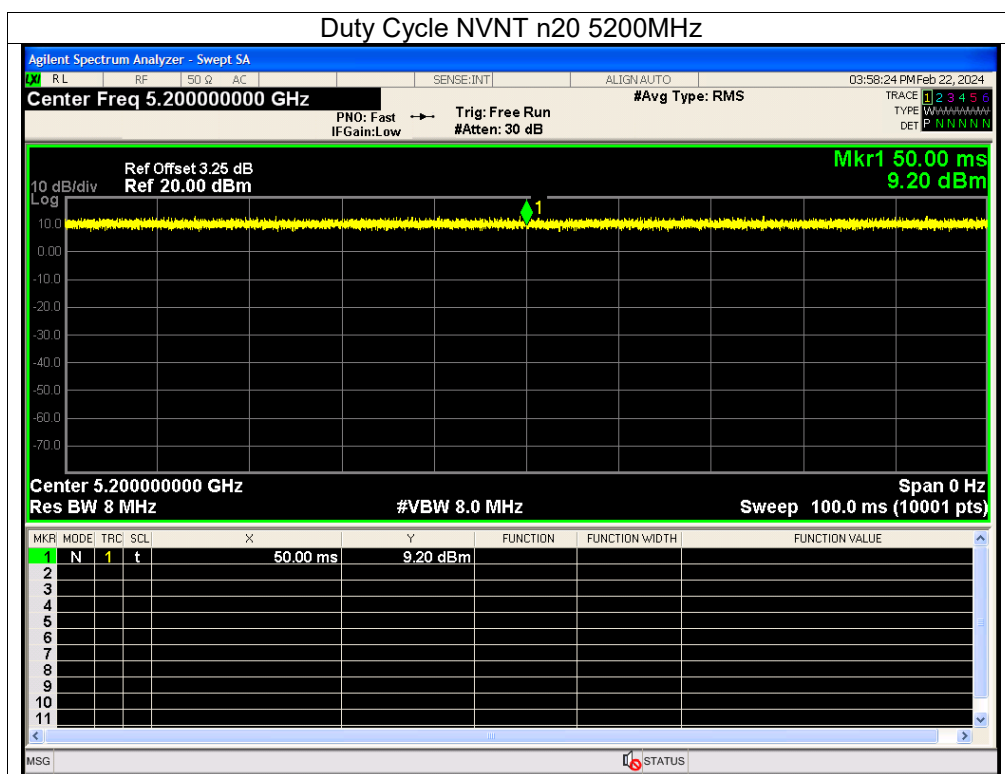
14.4 Test Result

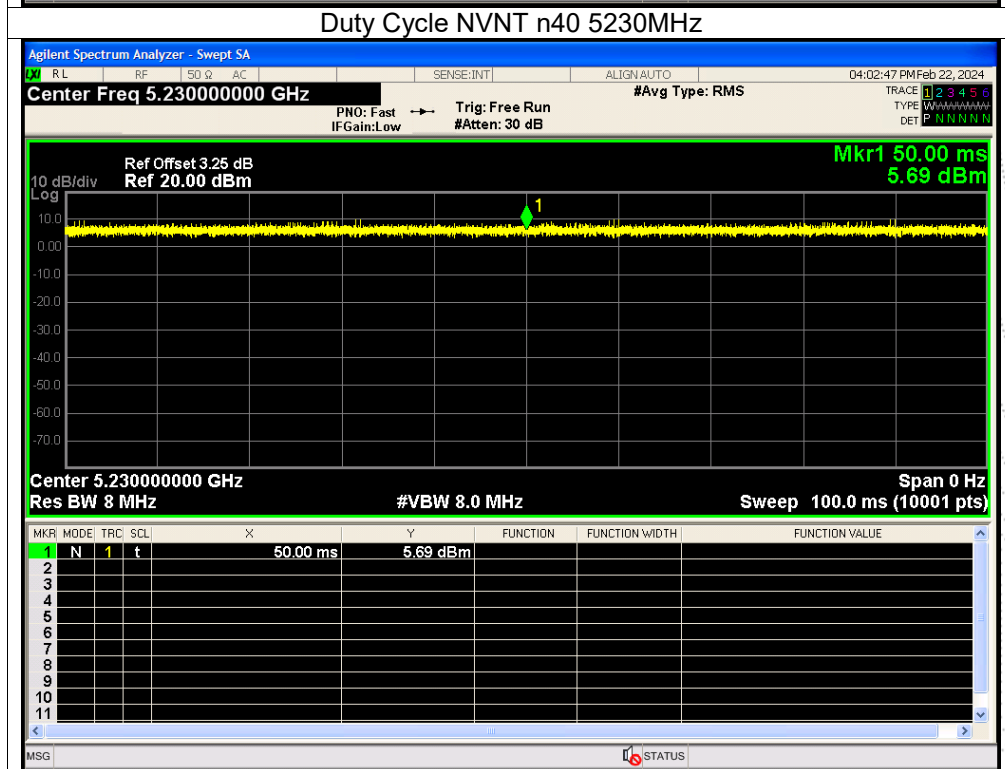
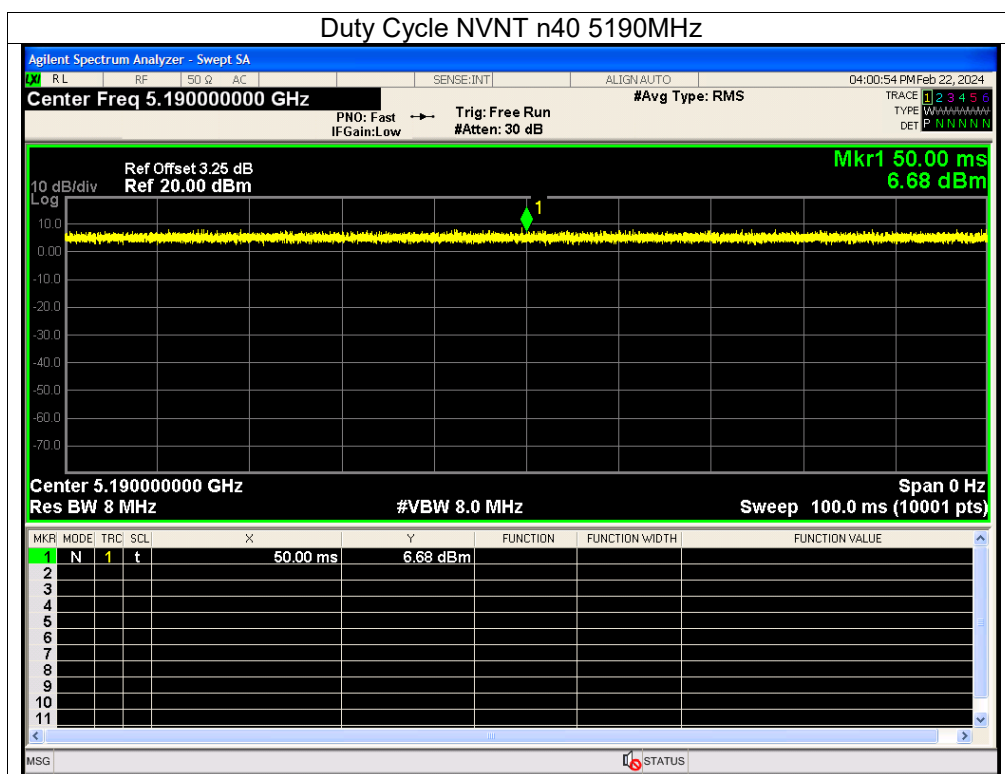
Condition	Mode	Frequency (MHz)	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	a	5180	100	0	0
NVNT	a	5200	100	0	0
NVNT	a	5240	100	0	0
NVNT	n20	5180	100	0	0
NVNT	n20	5200	100	0	0
NVNT	n20	5240	100	0	0
NVNT	n40	5190	100	0	0
NVNT	n40	5230	100	0	0
NVNT	ac20	5180	100	0	0
NVNT	ac20	5200	100	0	0
NVNT	ac20	5240	100	0	0
NVNT	ac40	5190	100	0	0
NVNT	ac40	5230	100	0	0
NVNT	ac80	5210	100	0	0

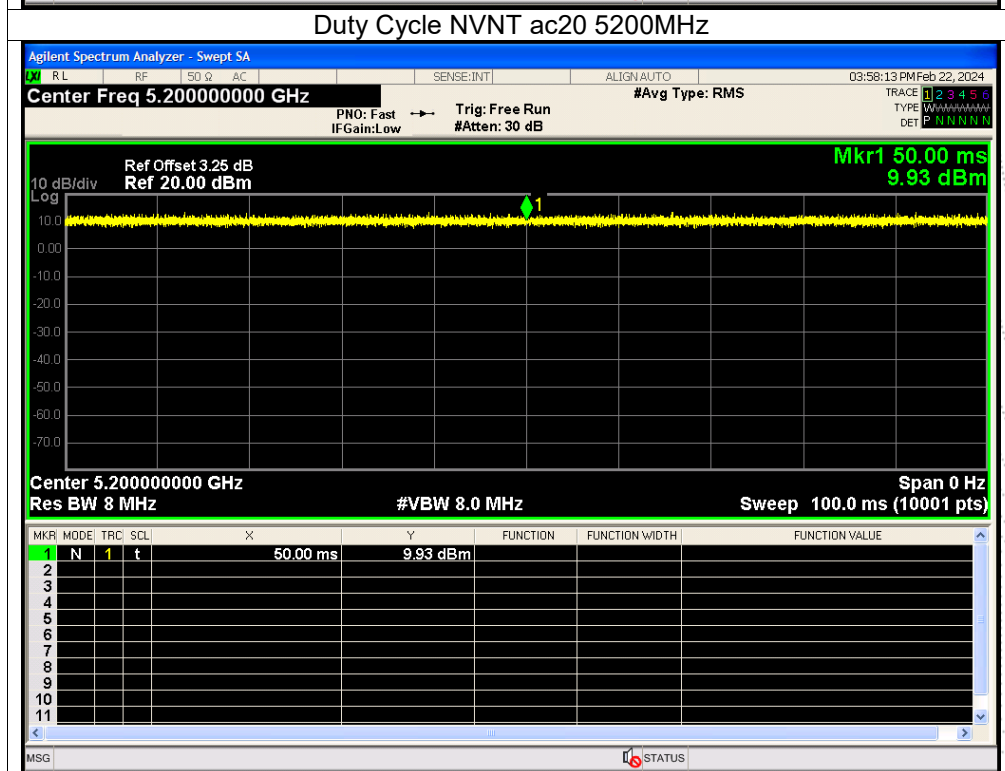
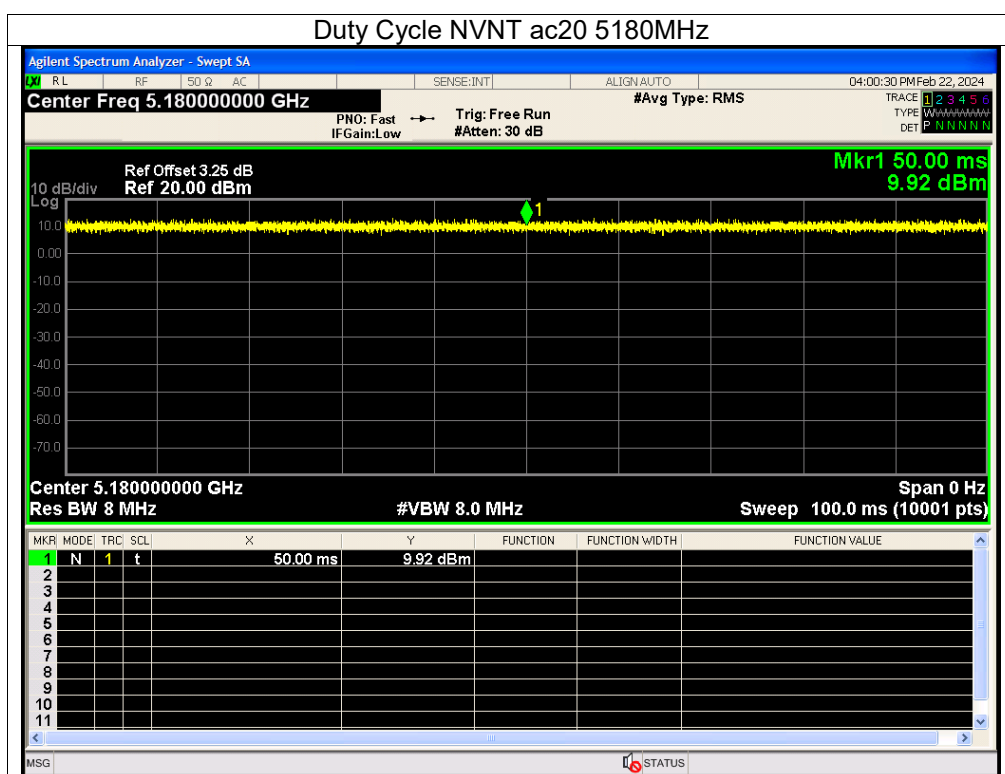
Note: A(B) Represent the value of antenna A/B/C and D, The worst data is Antenna A, only shown Antenna A Plot.

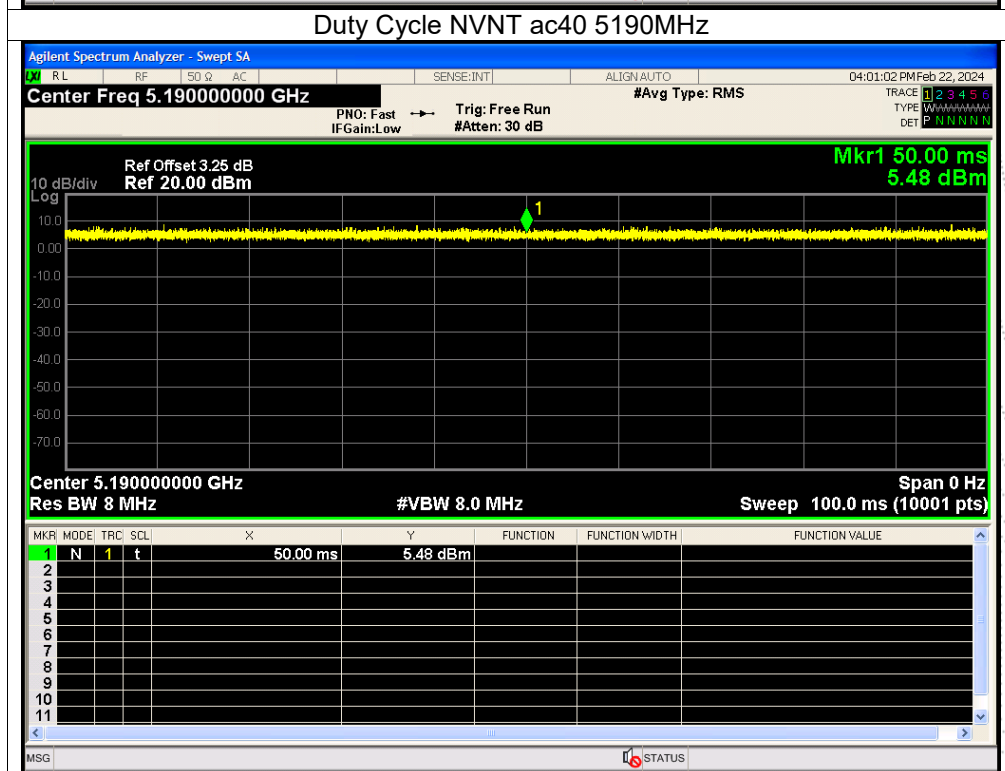
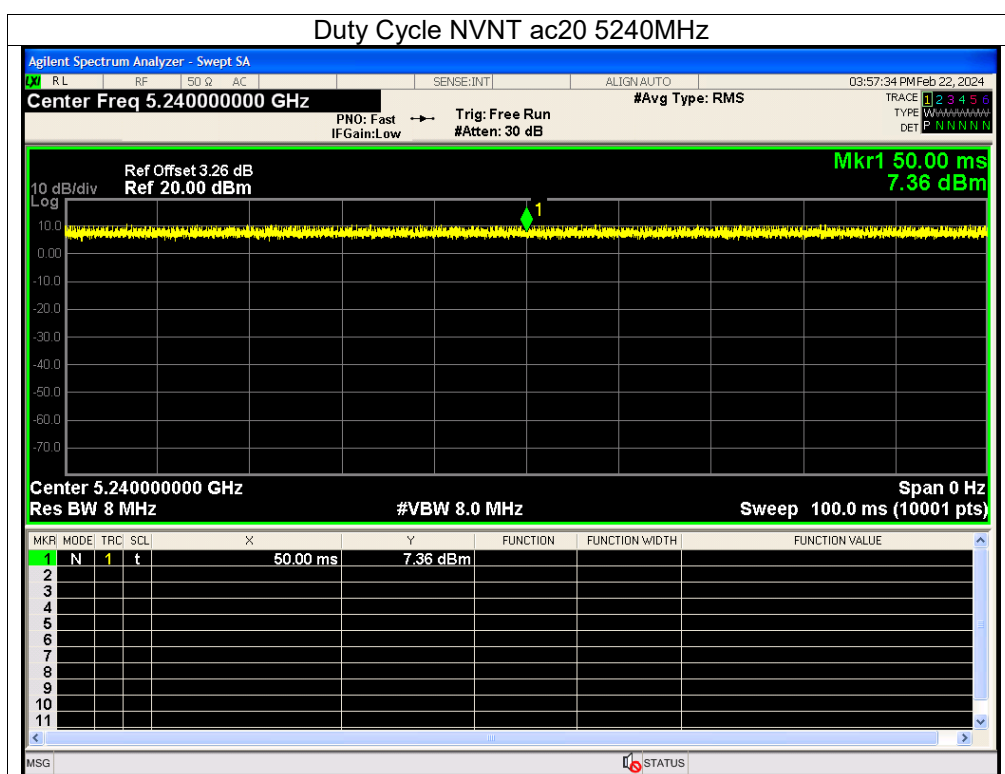


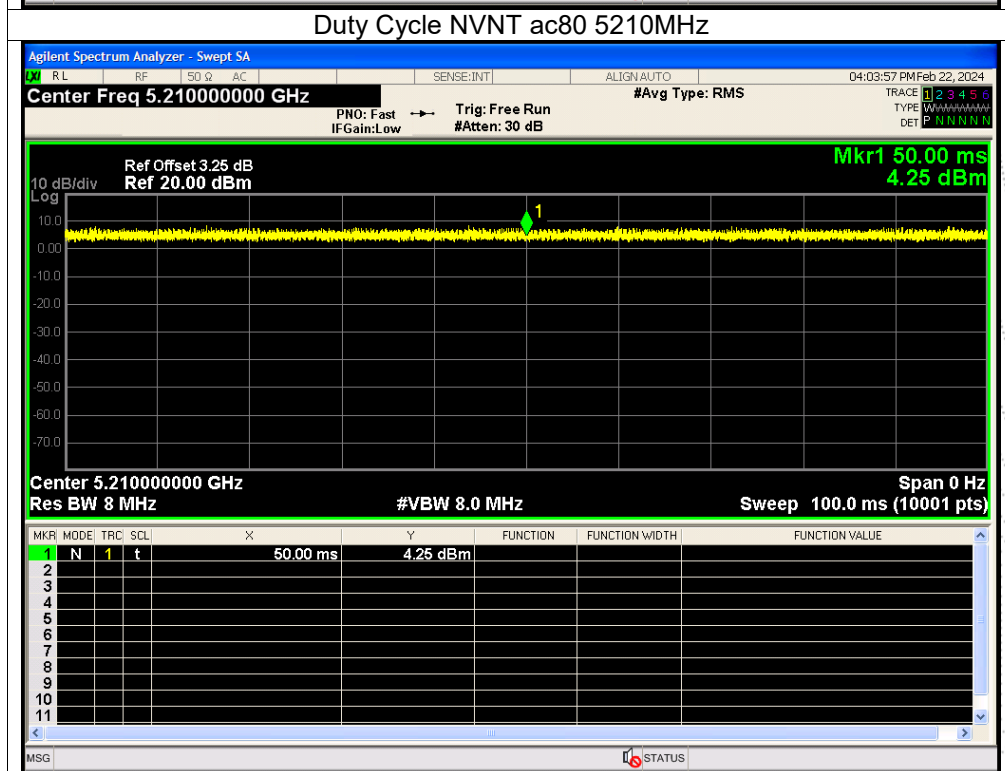
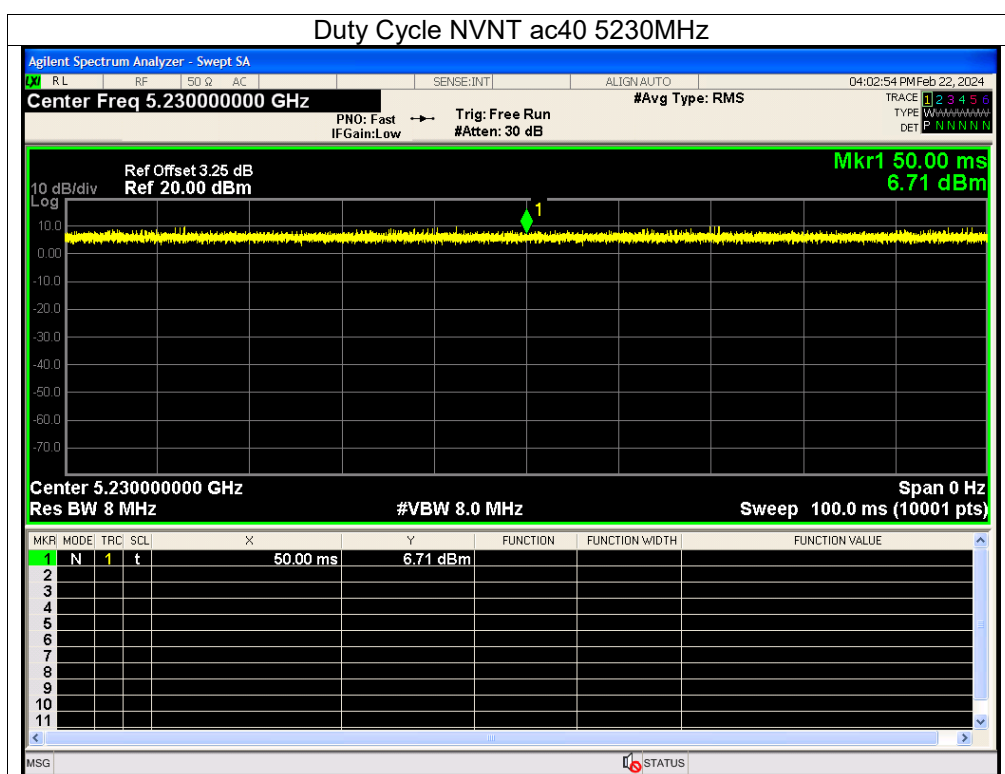




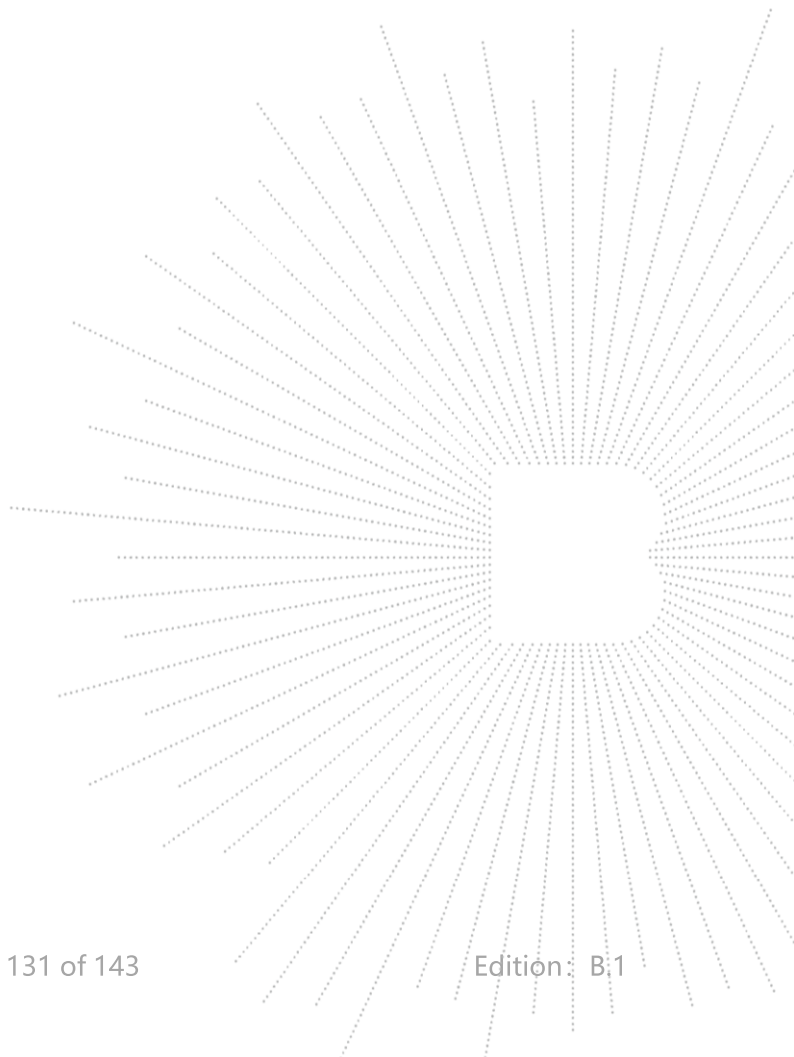




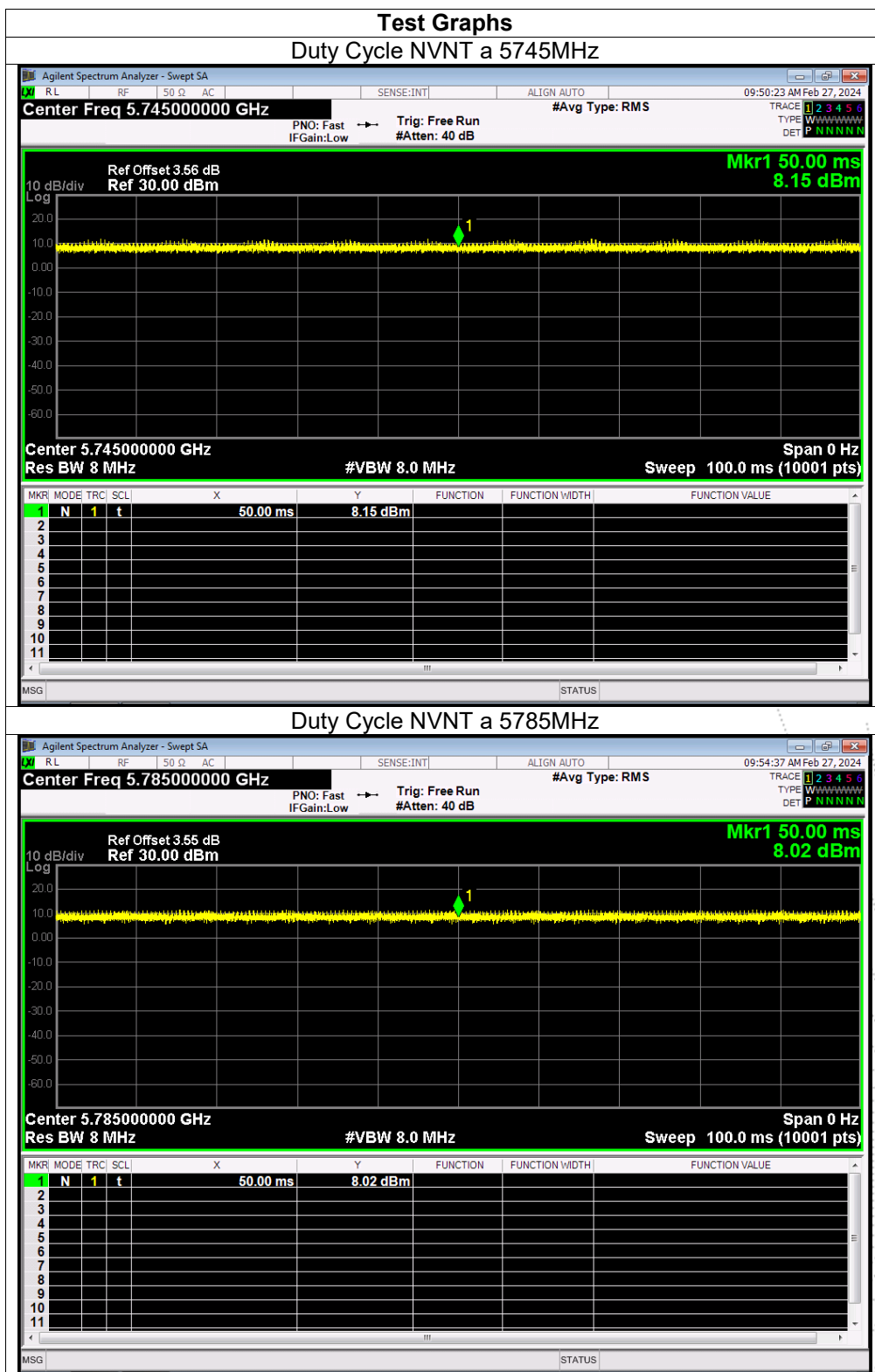


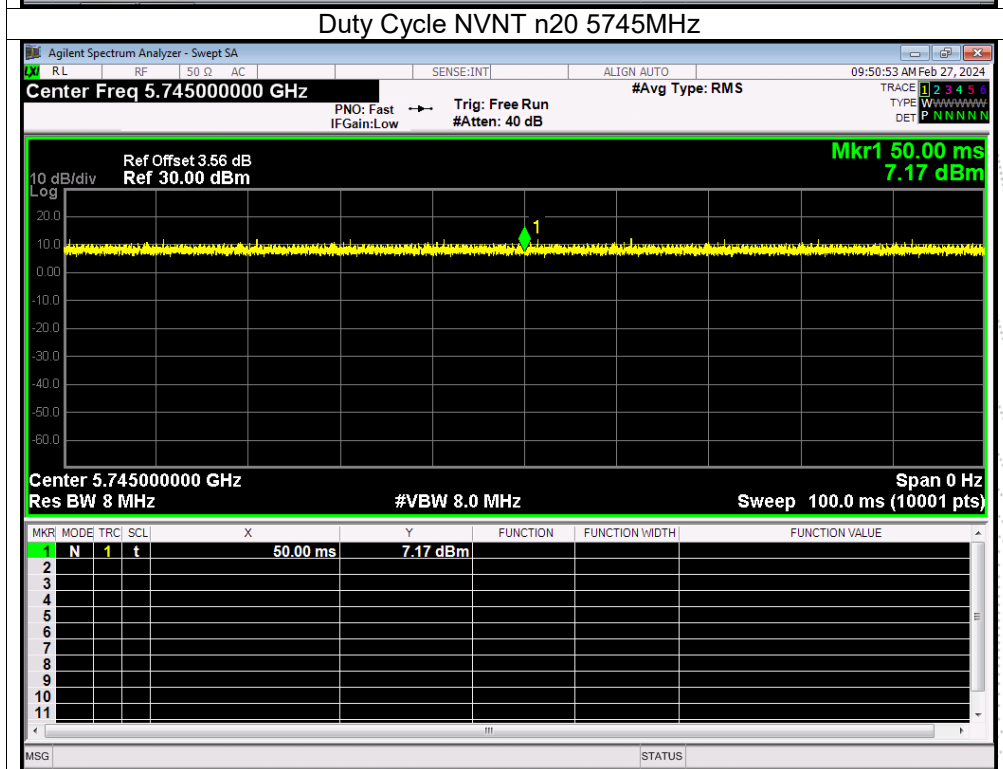
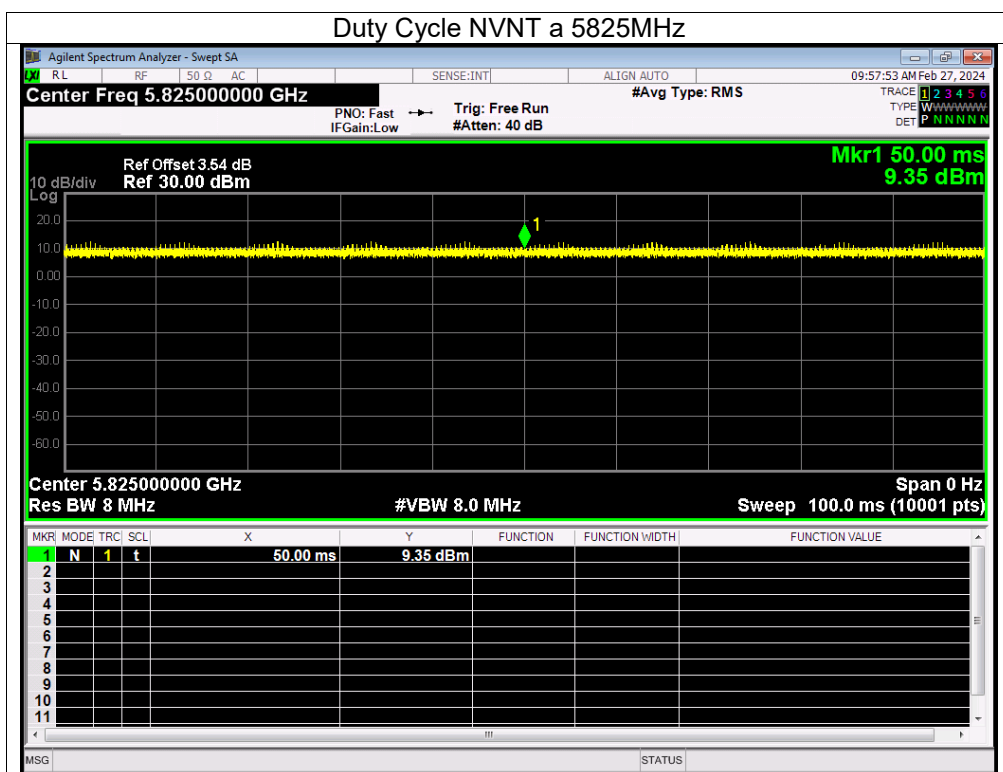


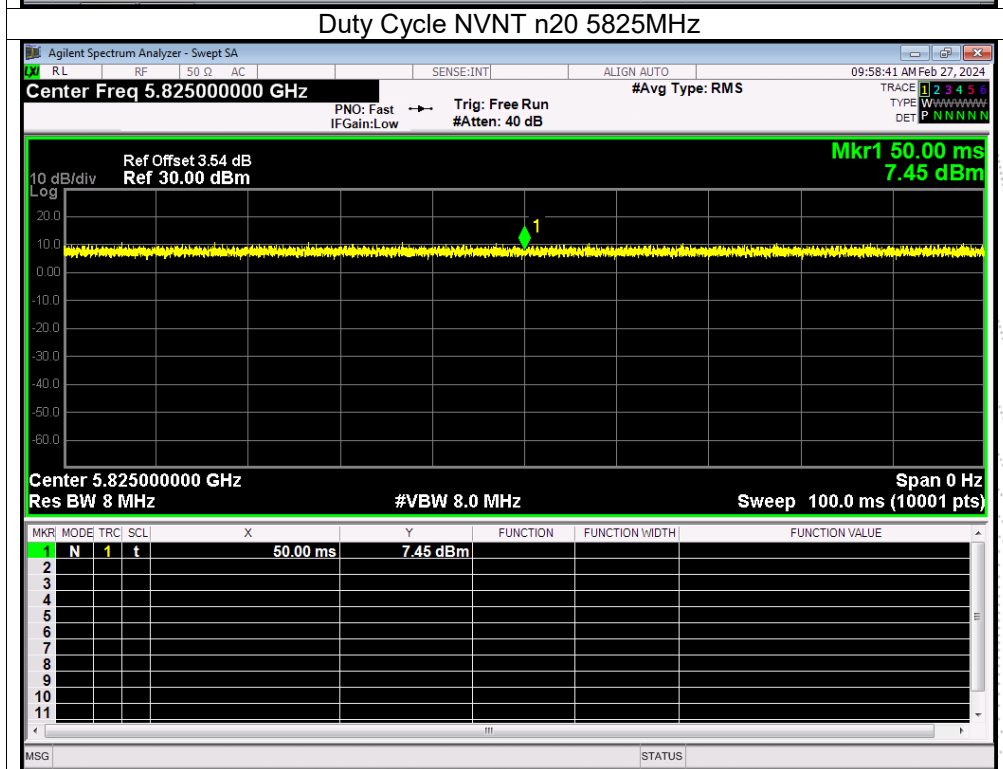
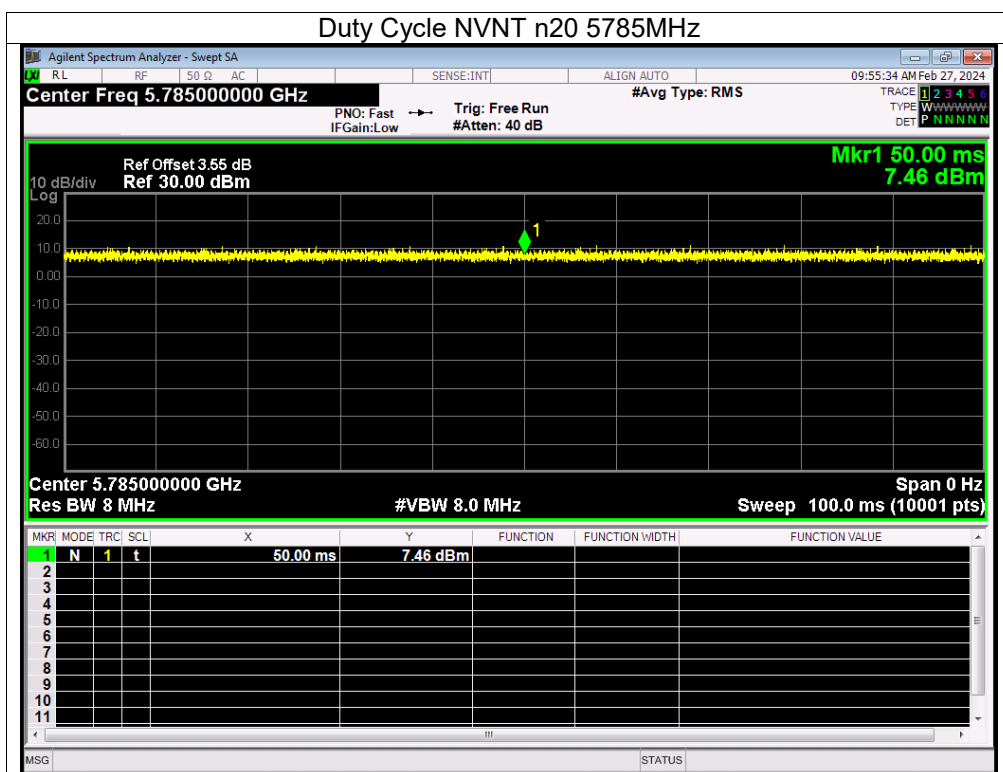
Condition	Mode	Frequency (MHz)	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	a	5745	100	0	0
NVNT	a	5785	100	0	0
NVNT	a	5825	100	0	0
NVNT	n20	5745	100	0	0
NVNT	n20	5785	100	0	0
NVNT	n20	5825	100	0	0
NVNT	n40	5755	100	0	0
NVNT	n40	5795	100	0	0
NVNT	ac20	5745	100	0	0
NVNT	ac20	5785	100	0	0
NVNT	ac20	5825	100	0	0
NVNT	ac40	5755	100	0	0
NVNT	ac40	5795	100	0	0
NVNT	ac80	5775	100	0	0

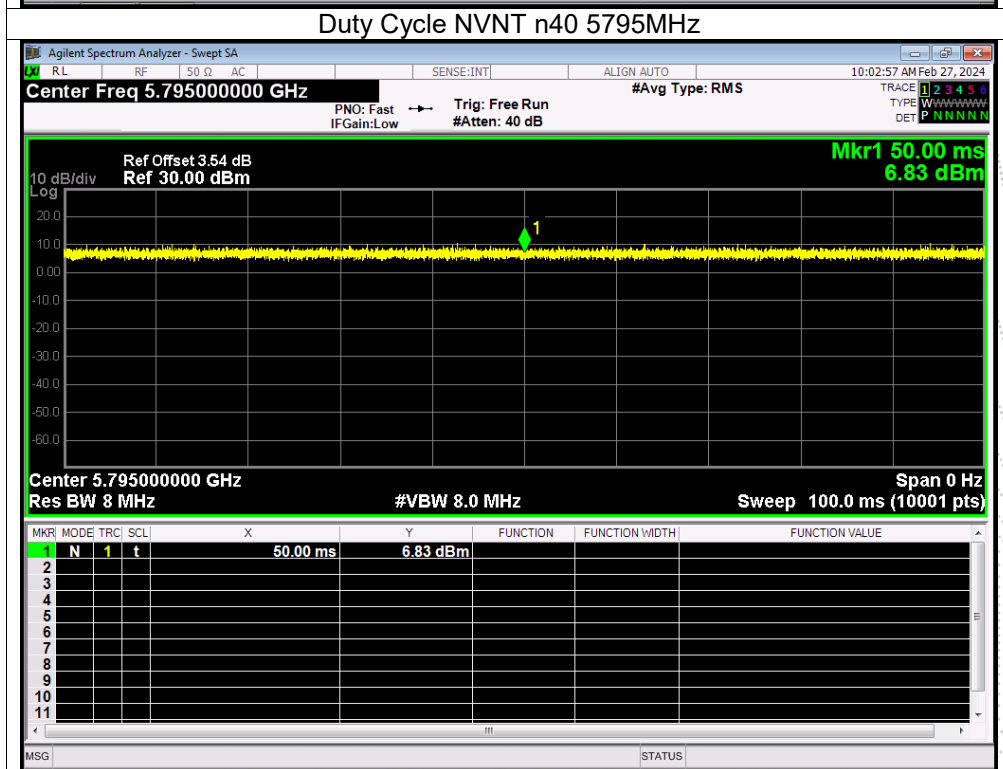
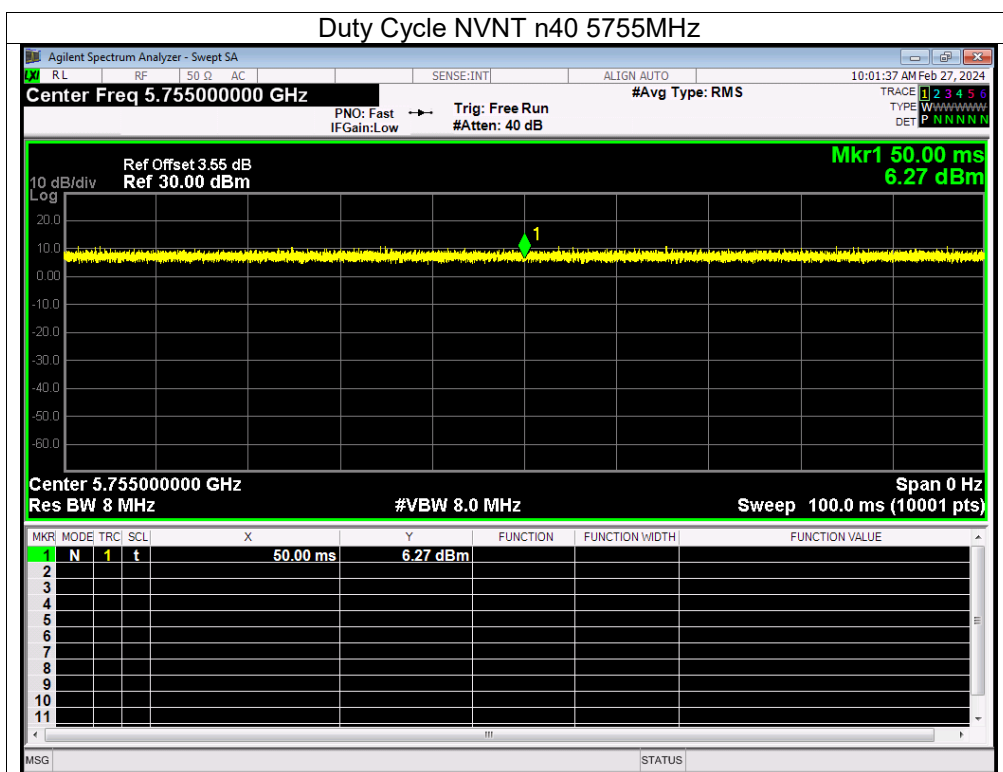


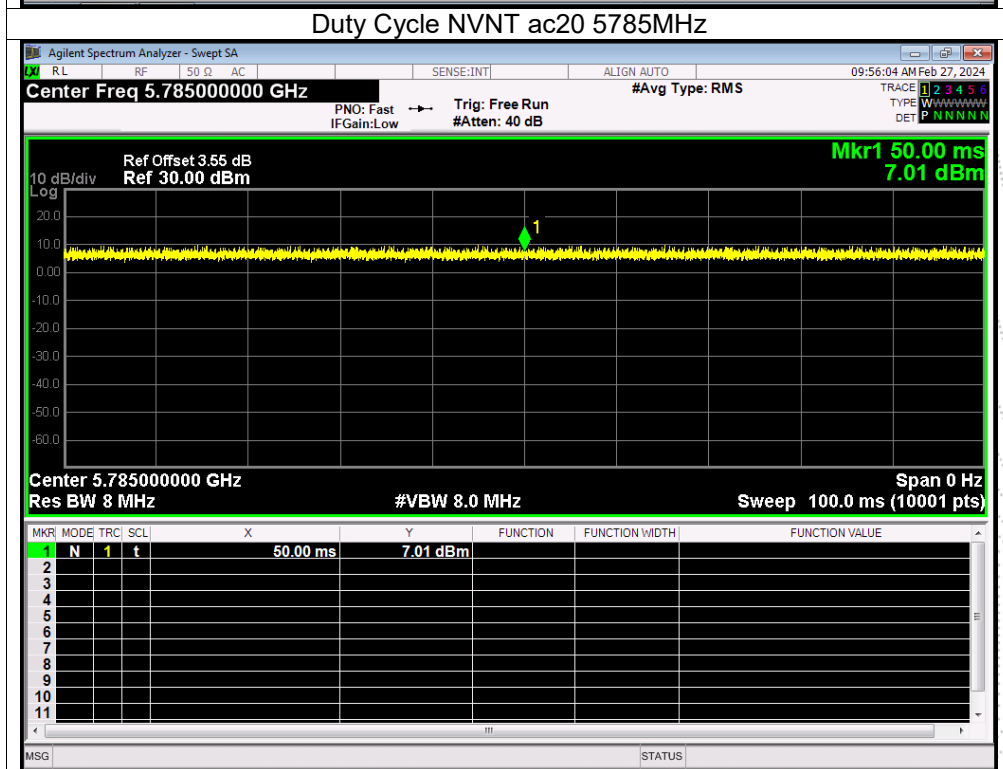
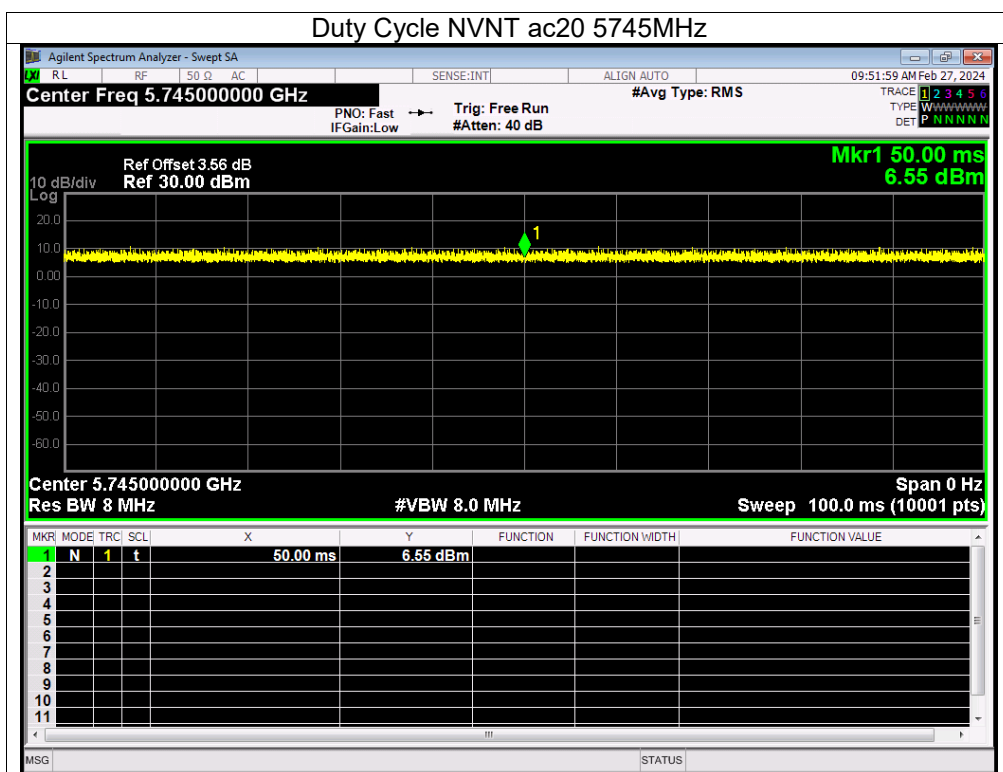
Note: A(B) Represent the value of antenna A/B/C and D, The worst data is Antenna A, only shown Antenna A Plot.

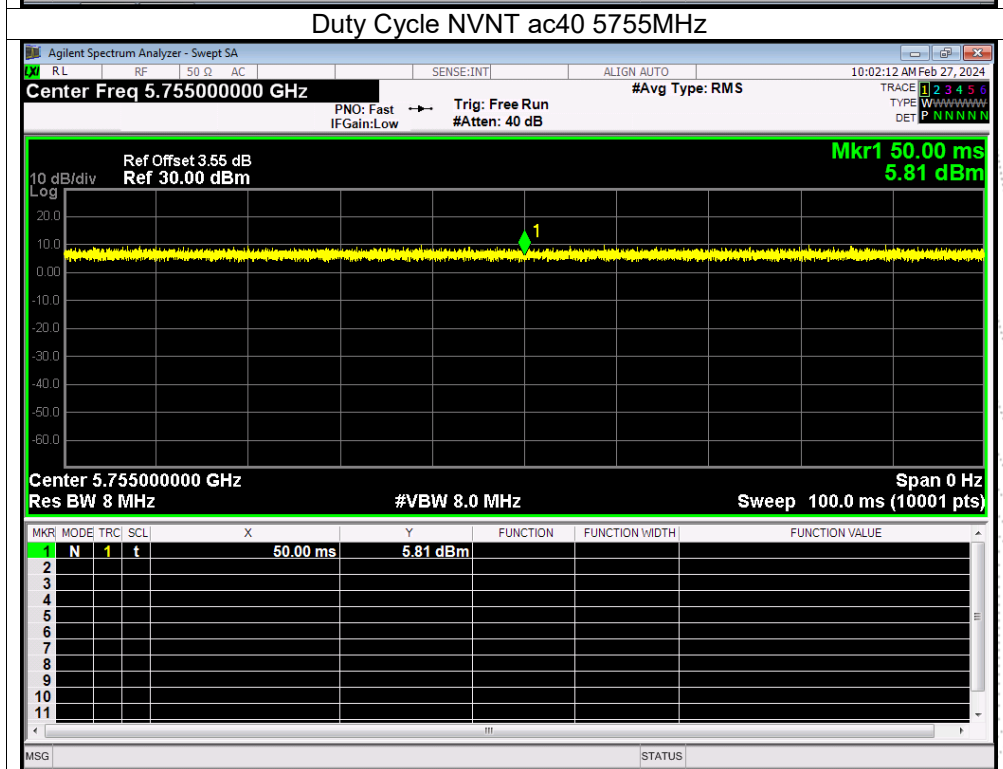
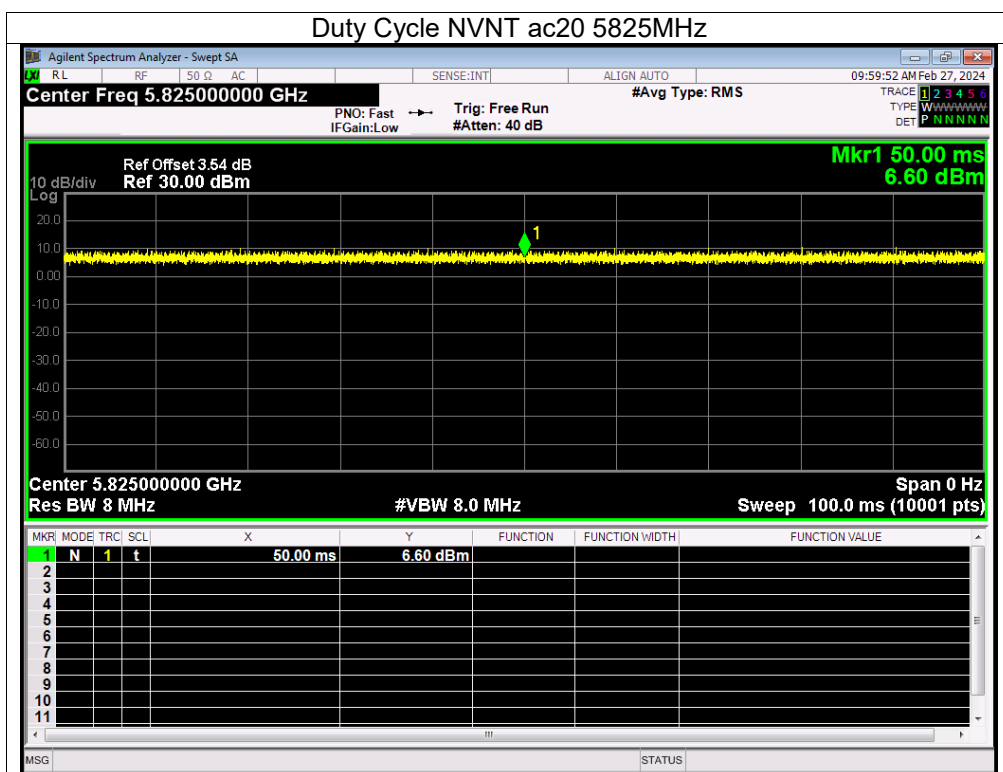


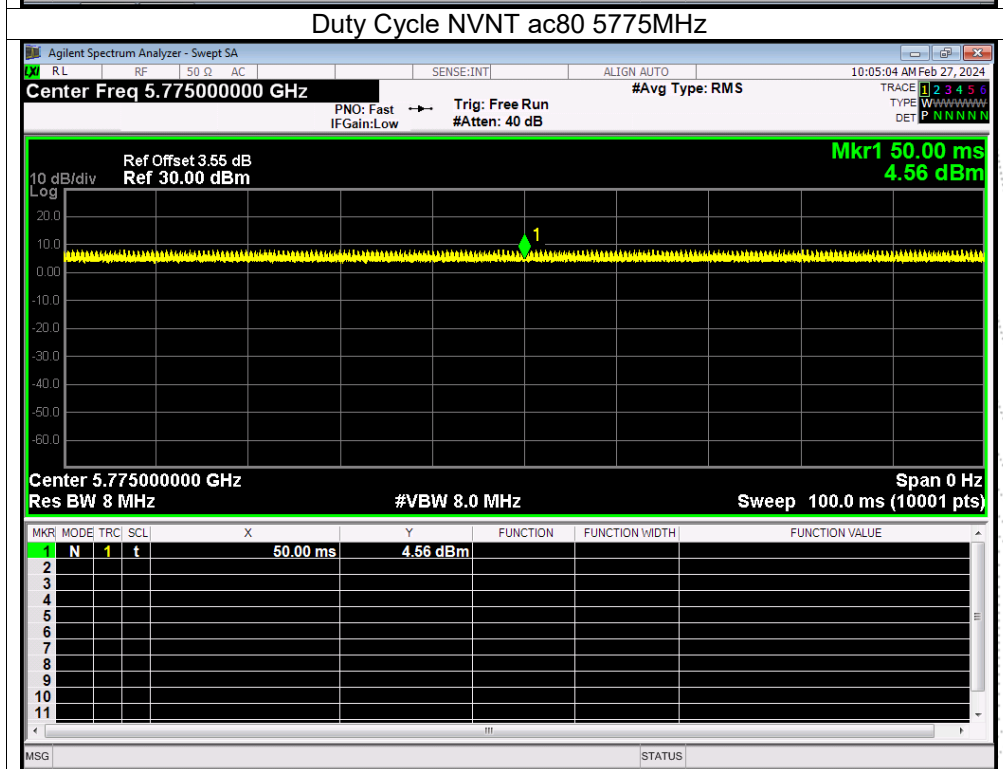
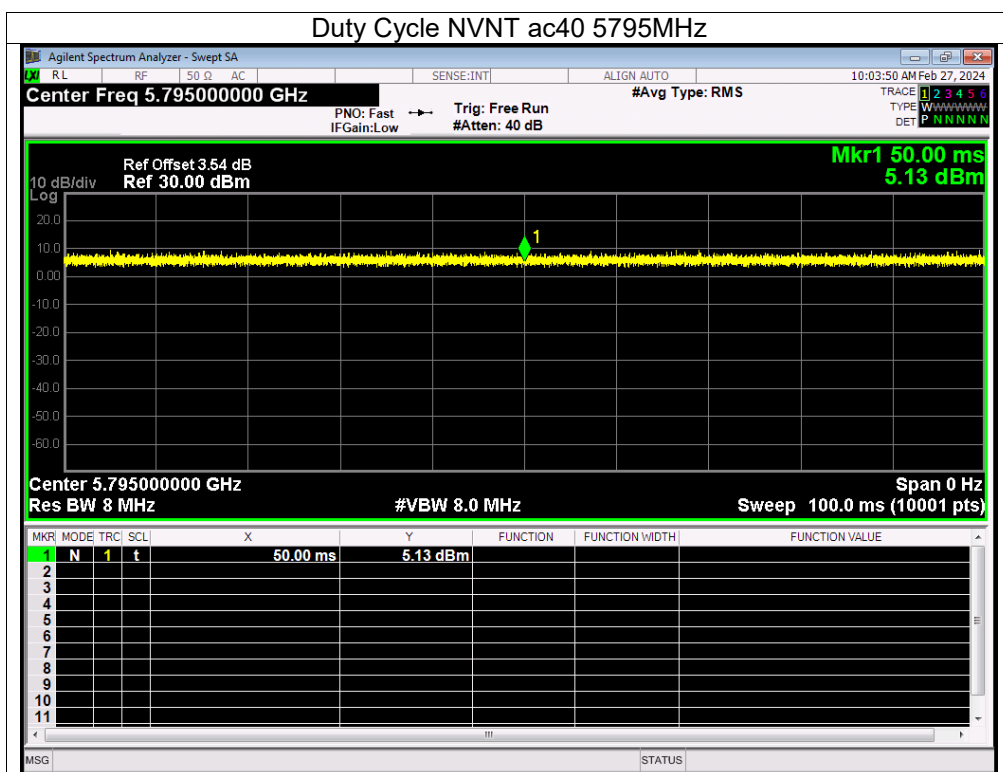












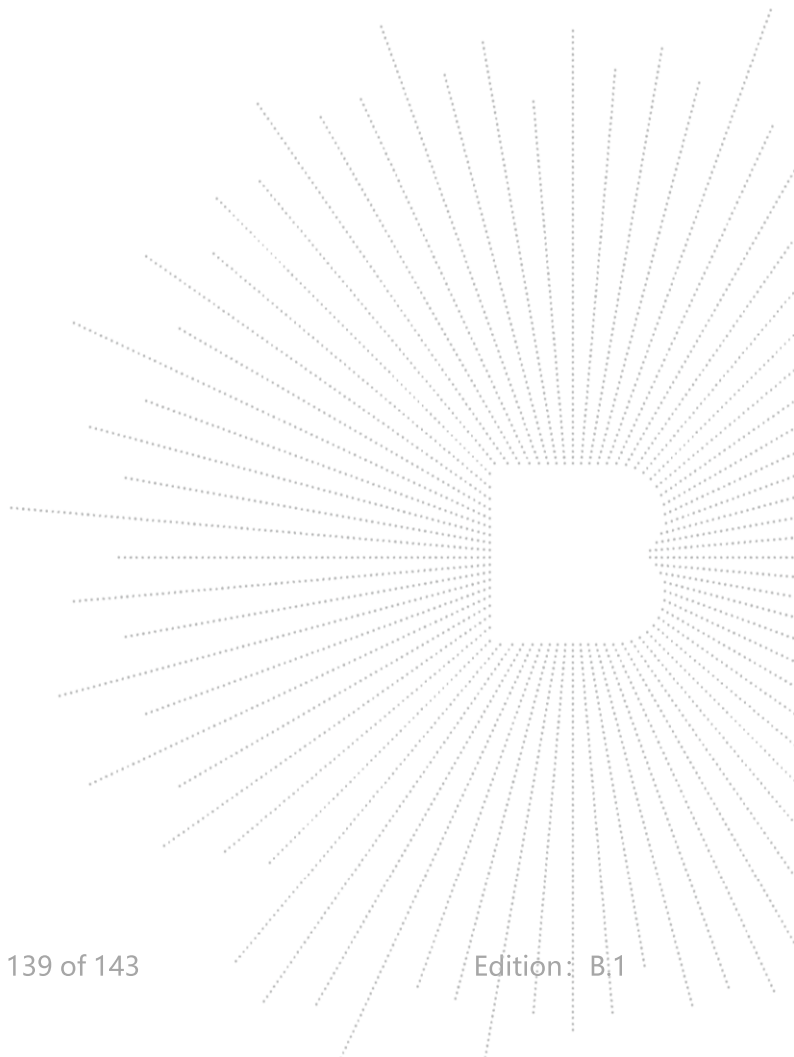
15. Antenna Requirement

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 (antenna gain (A & B): 3.87 dBi; antenna gain (C & D) : 3.86 dBi). It comply with the standard requirement.

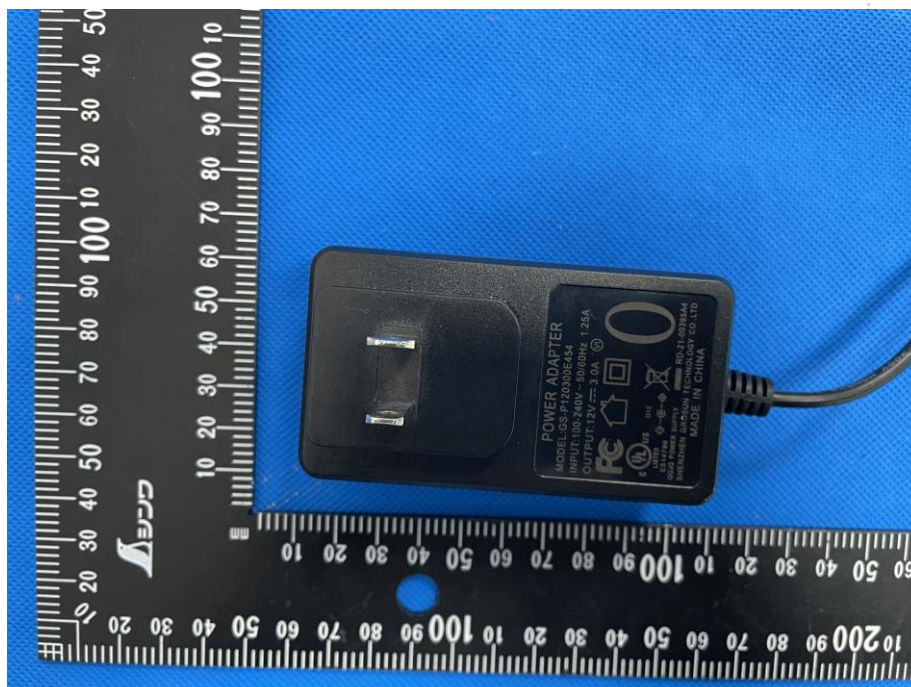


16. EUT Photographs

EUT Photo 1



EUT Photo 2



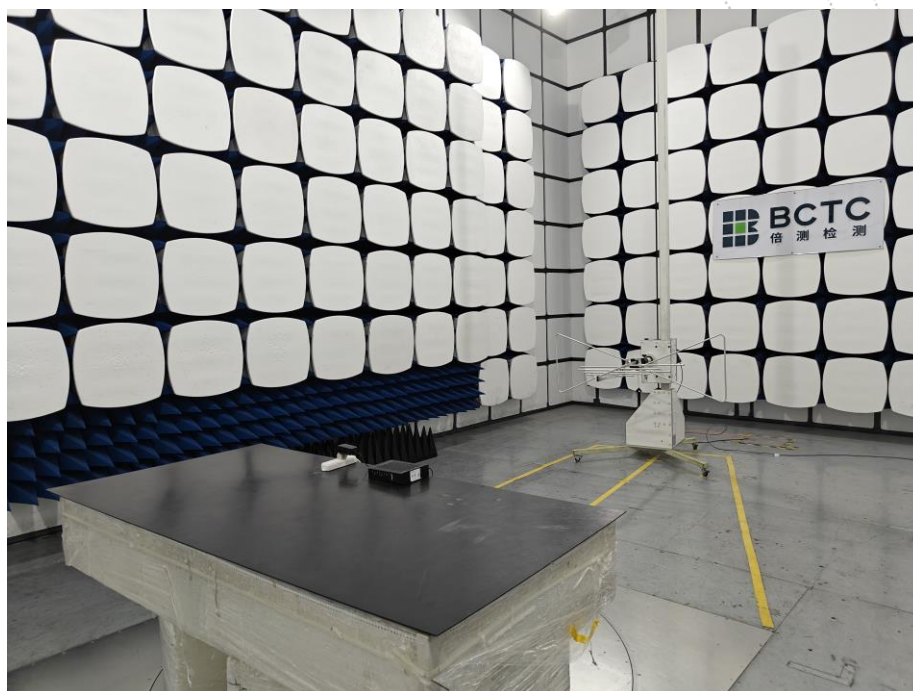
NOTE: Appendix-Photographs Of EUT Constructional Details

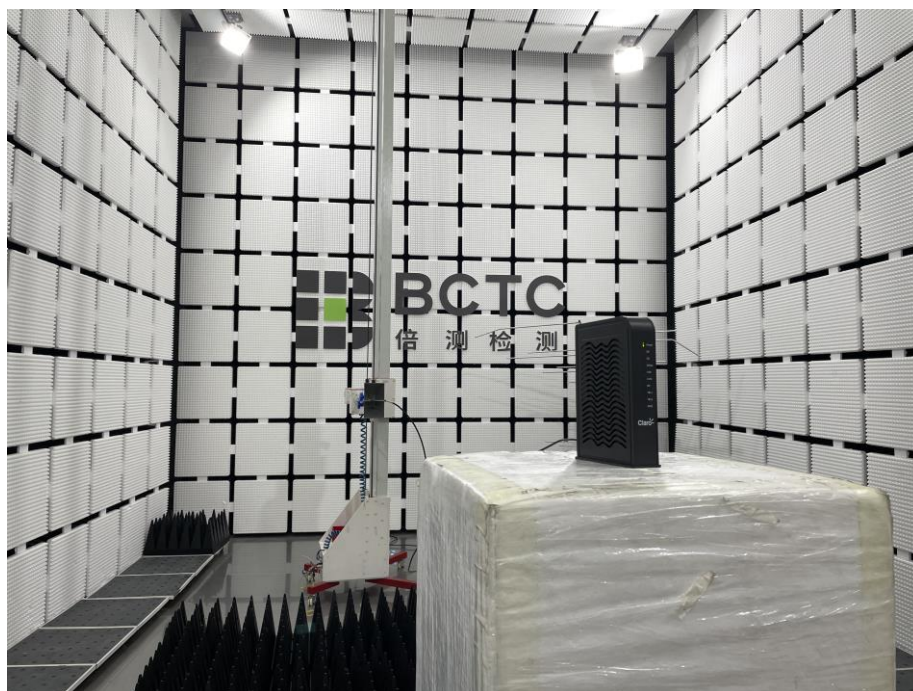
17. EUT Test Setup Photographs

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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P.C.: 518103

FAX: 0755-33229357

Website: <http://www.chnbctc.com>

E-Mail: bctc@bctc-lab.com.cn

***** END *****