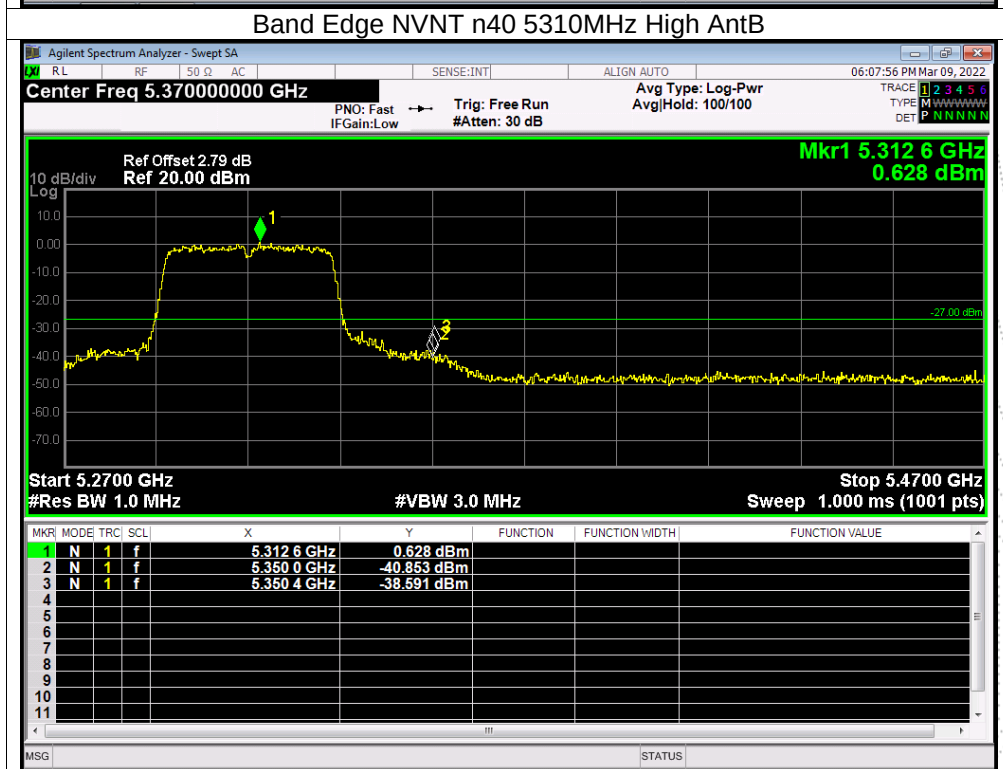
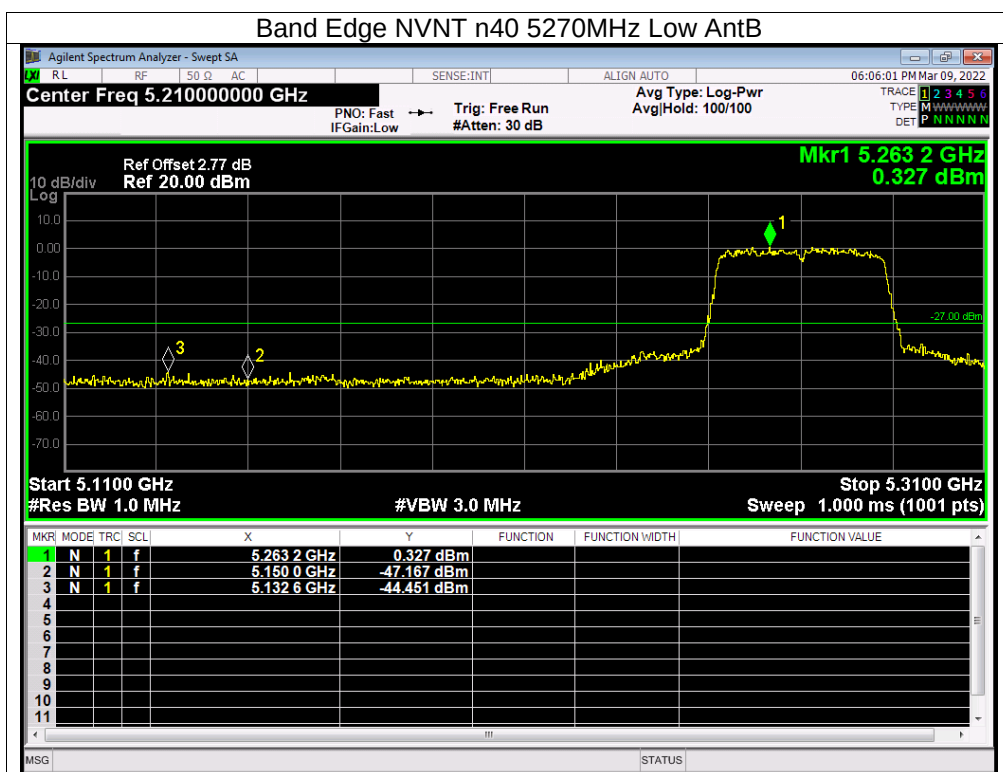
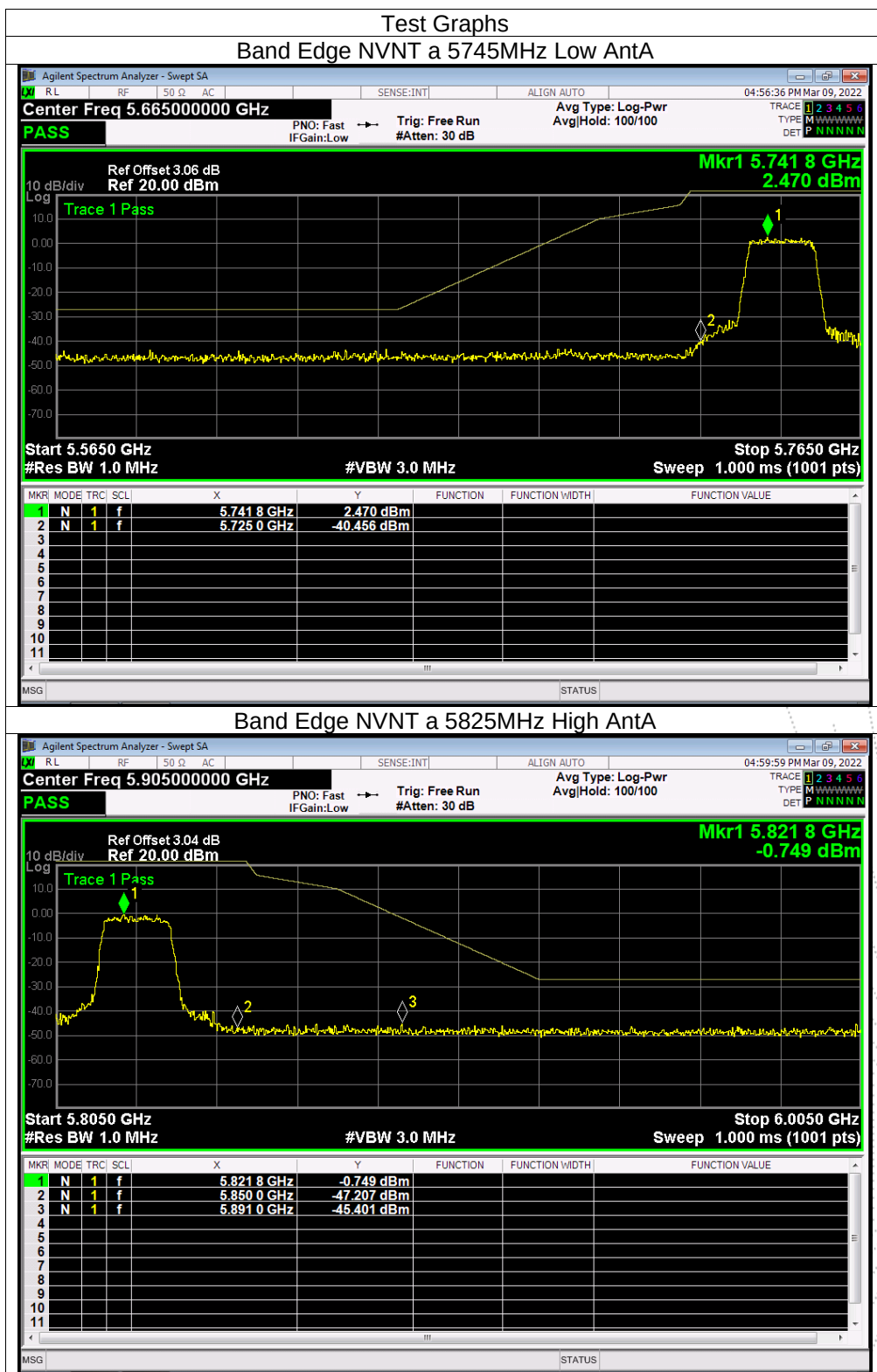
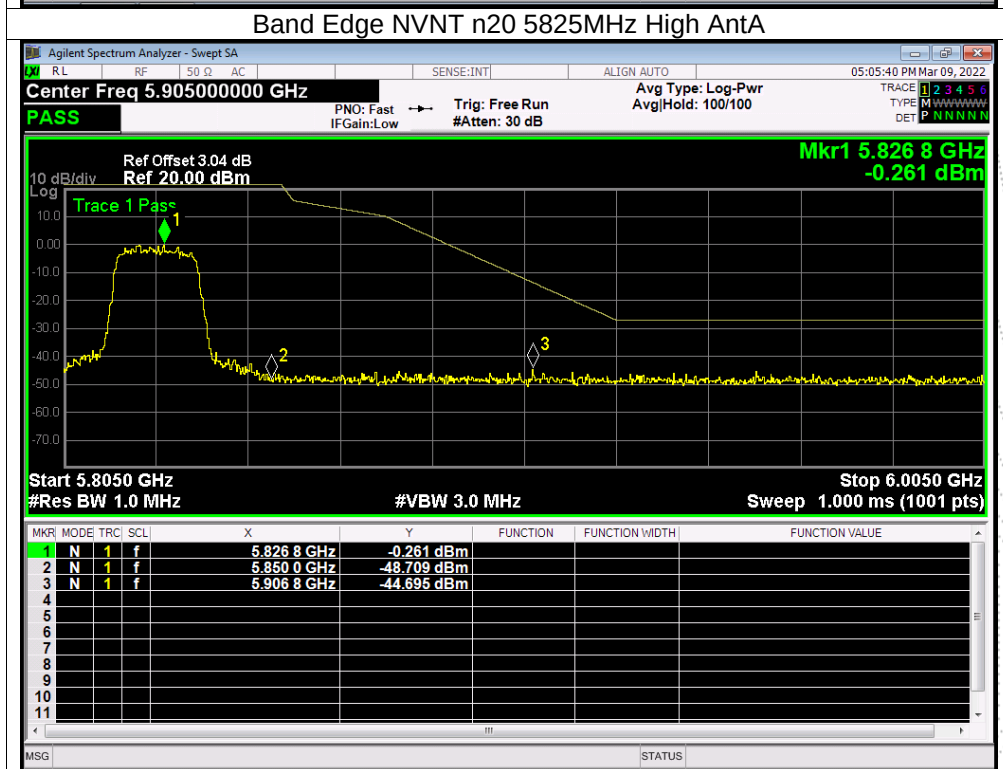
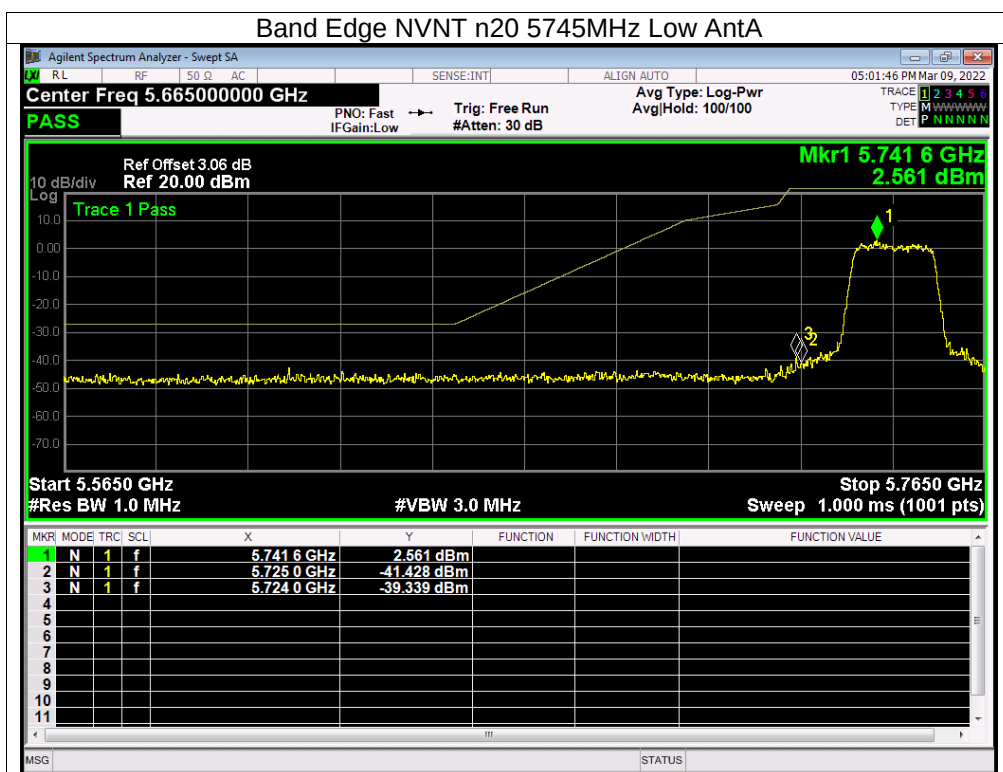
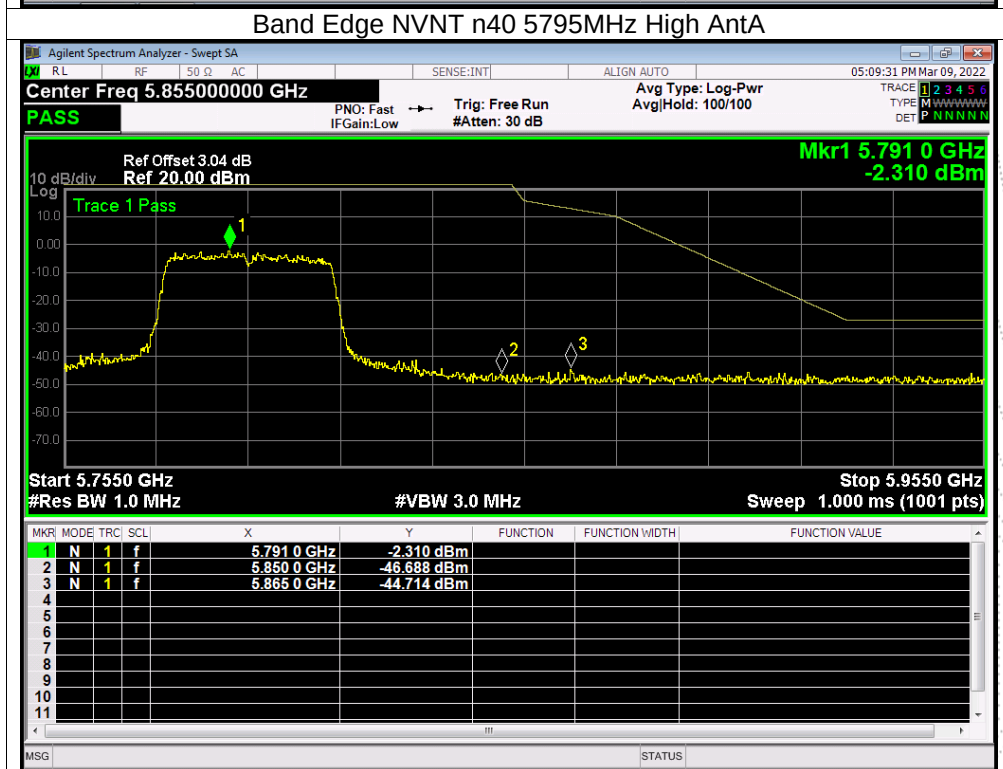
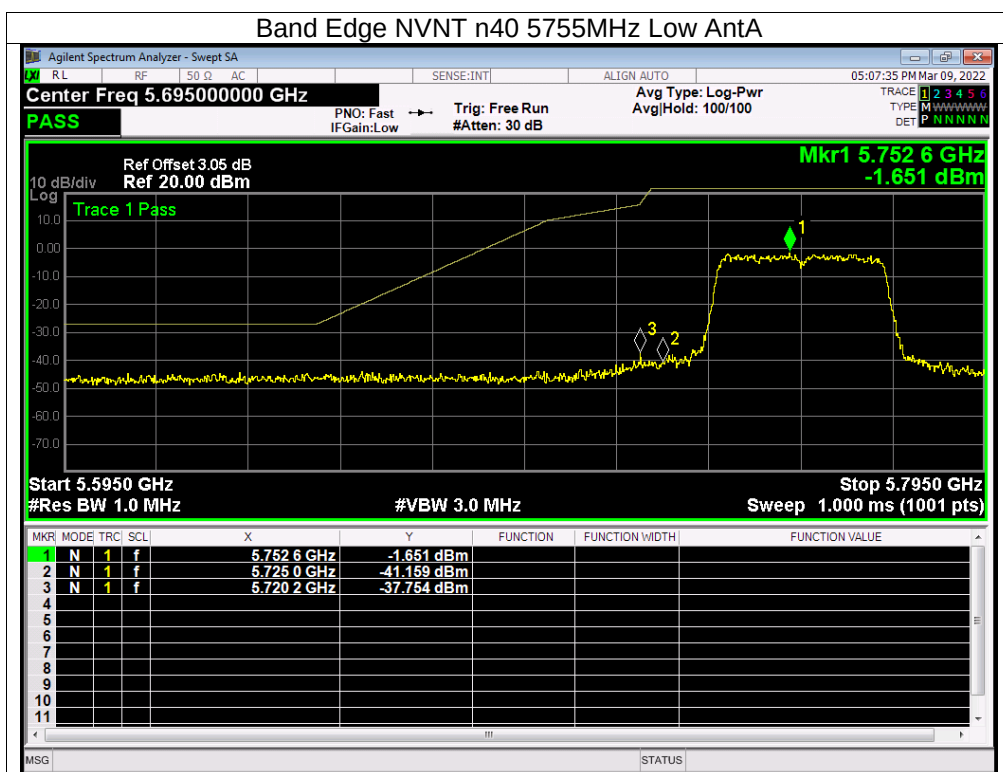




Note: A(B) Represent the value of antenna A and B, The worst data is Antenna A, only shown Antenna A.
Antenna A: 5745-5825MHz

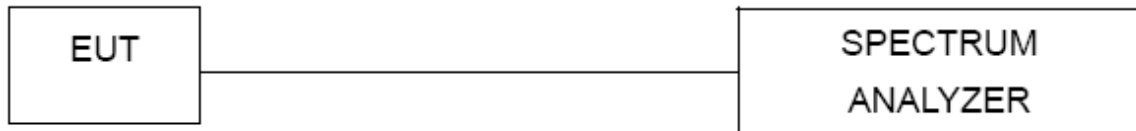






12. Spurious RF Conducted Emissions

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

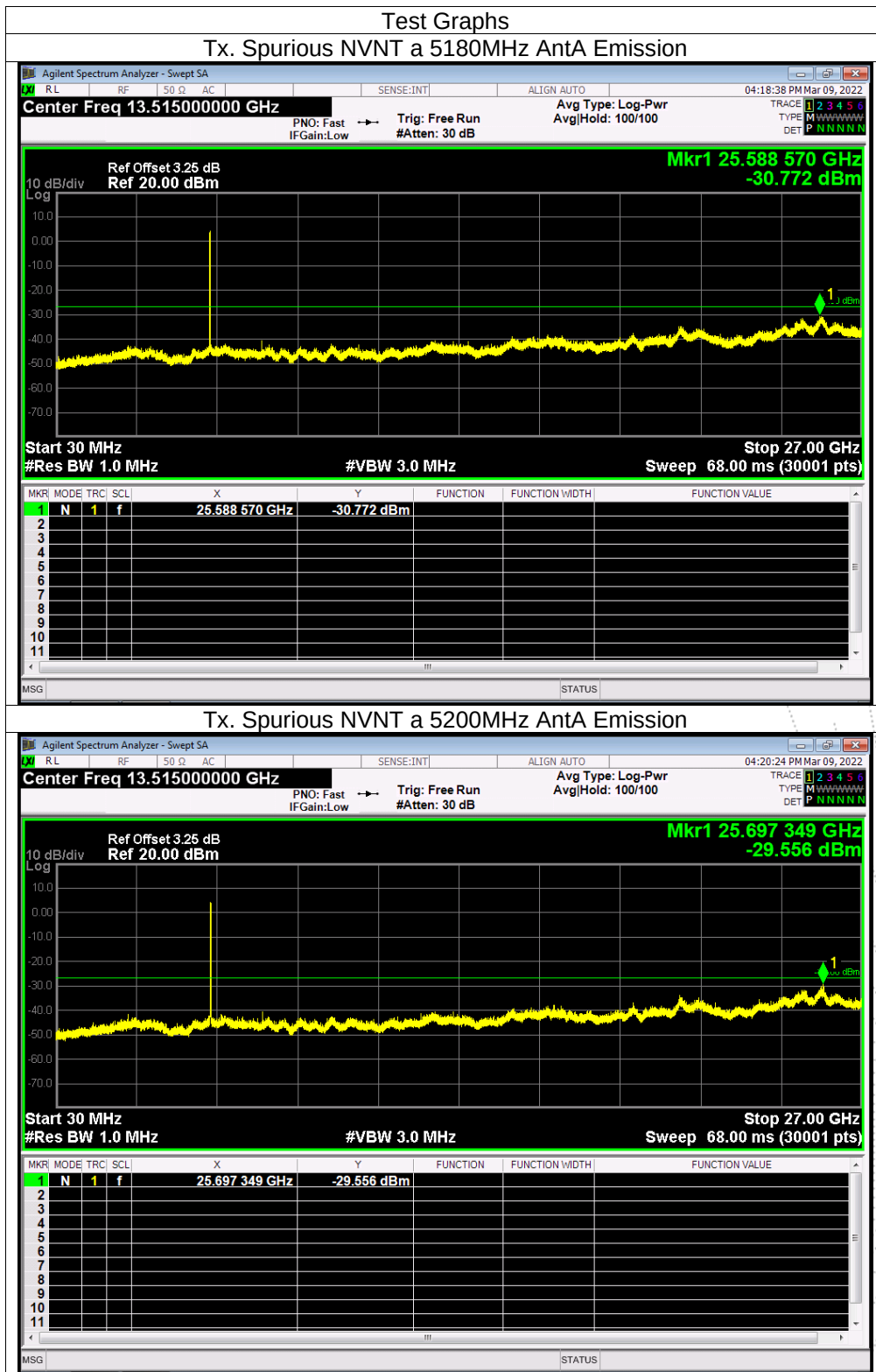
1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then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

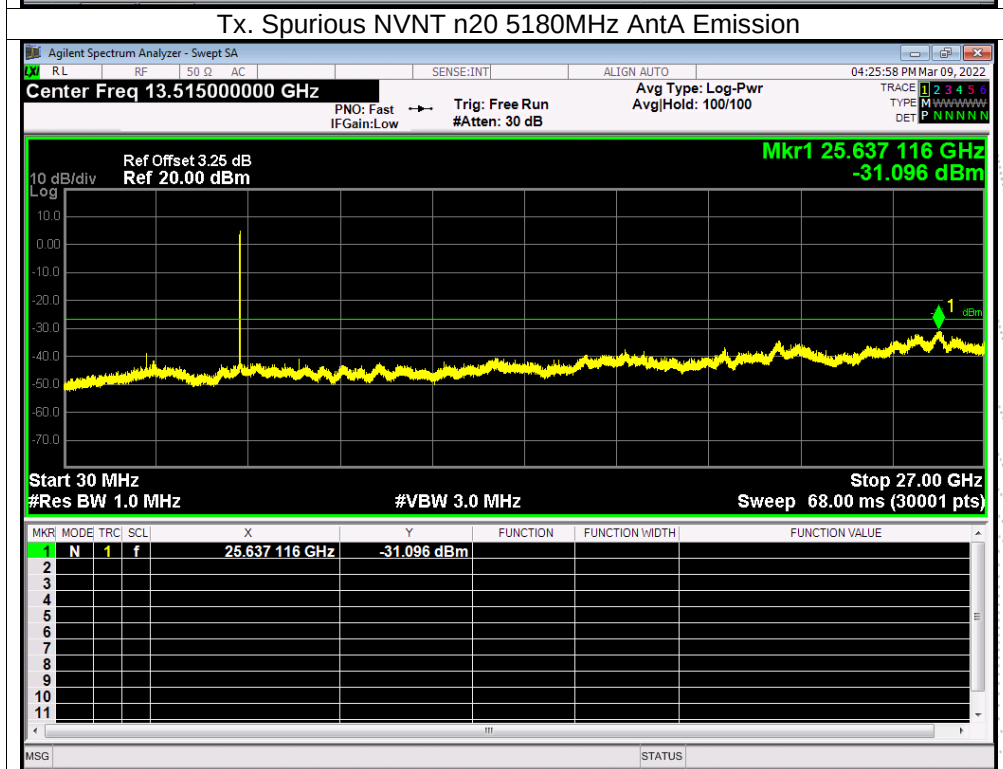
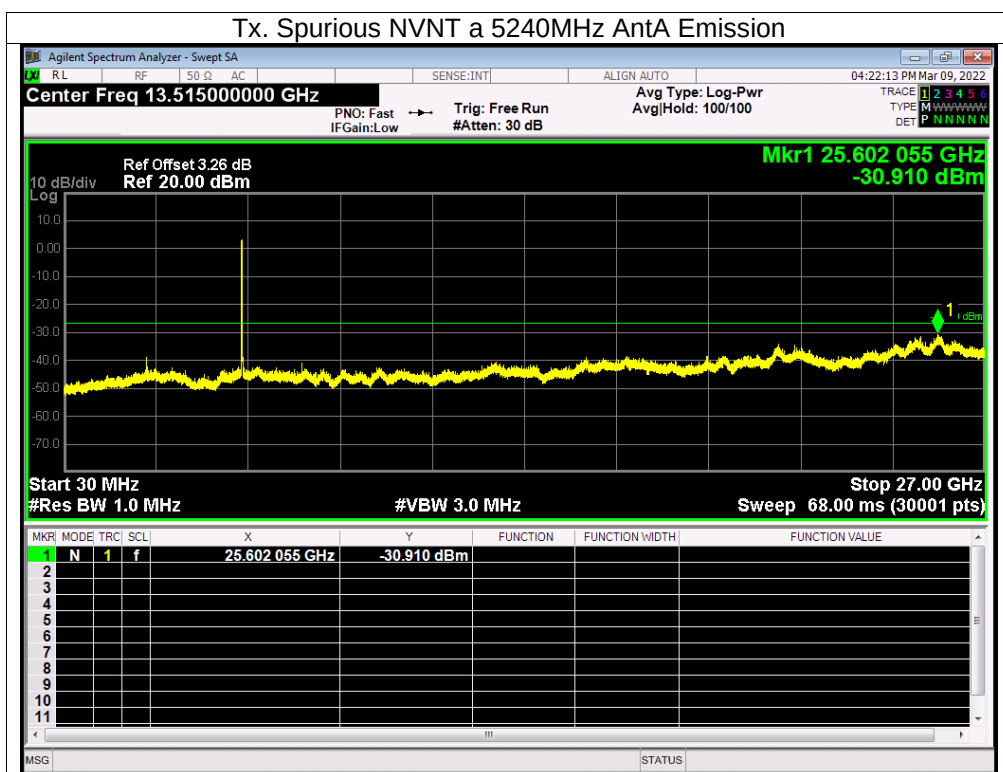
12.4 Test Result

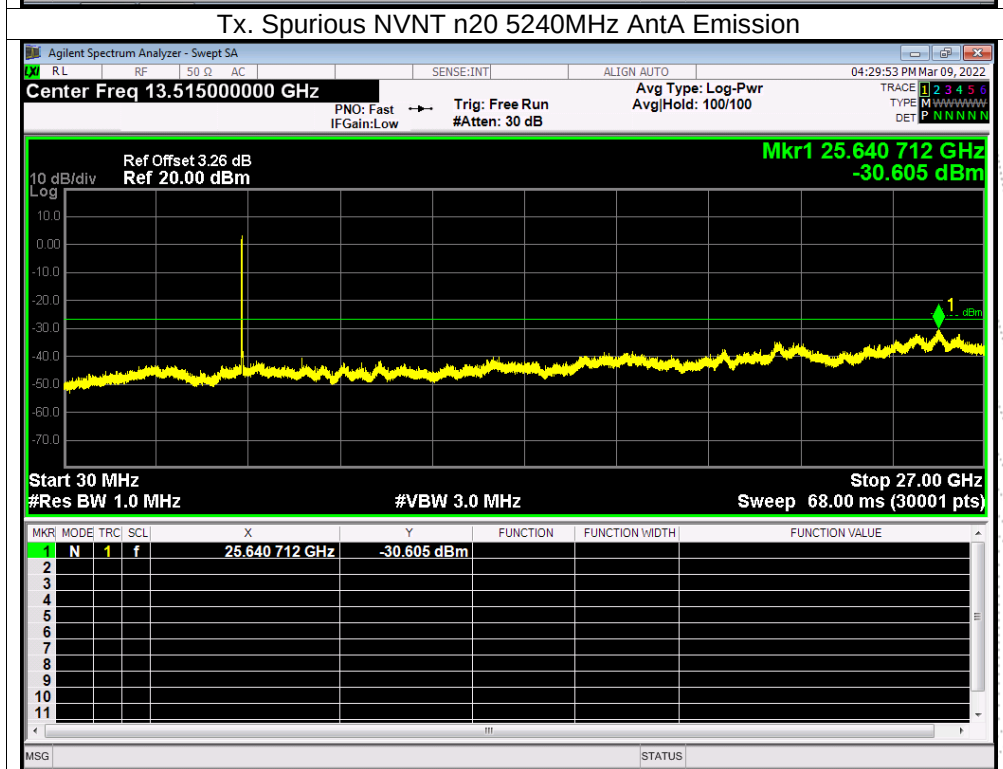
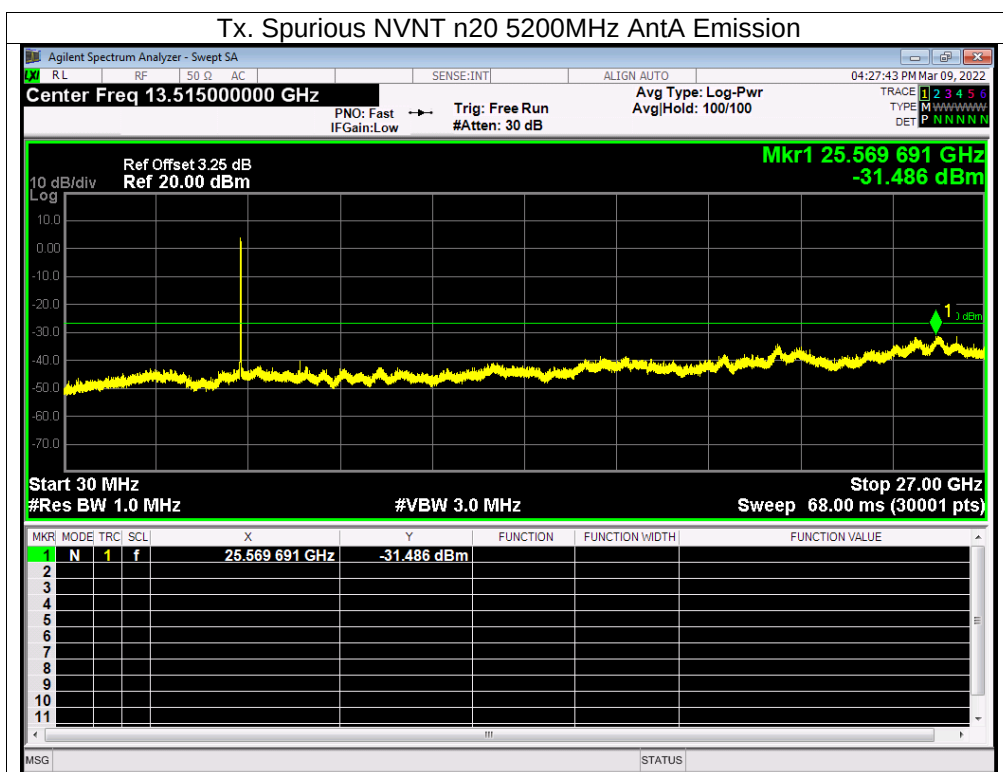
Remark: The measurement frequency range is from 9KHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the spurious emissions and bandedge measurement data.

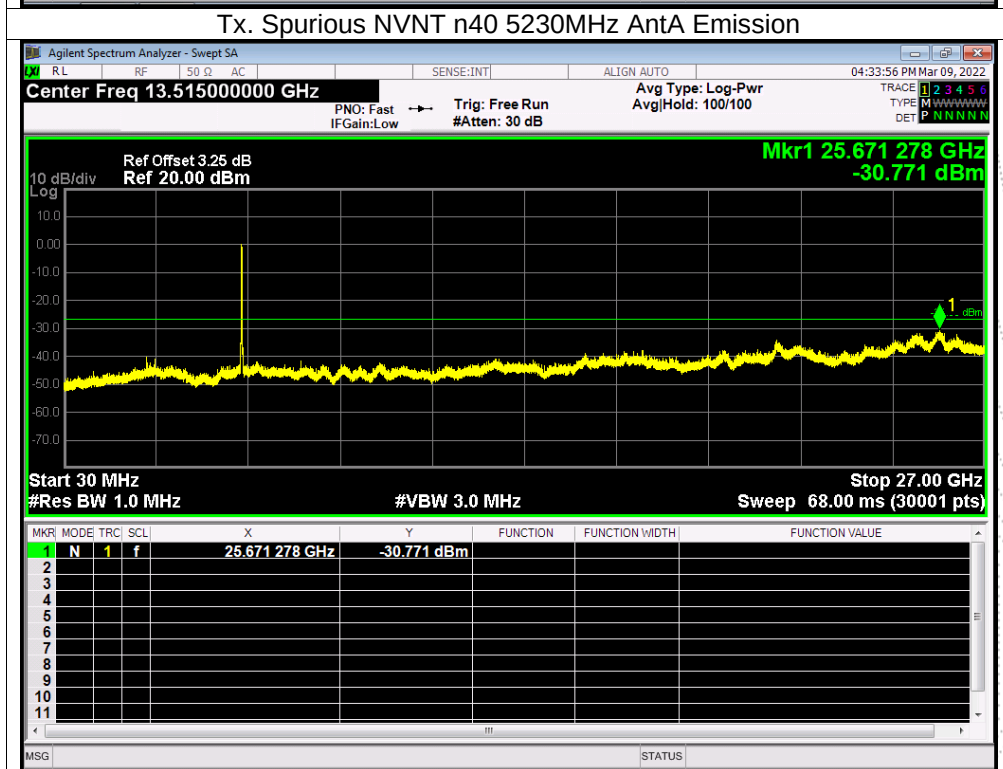
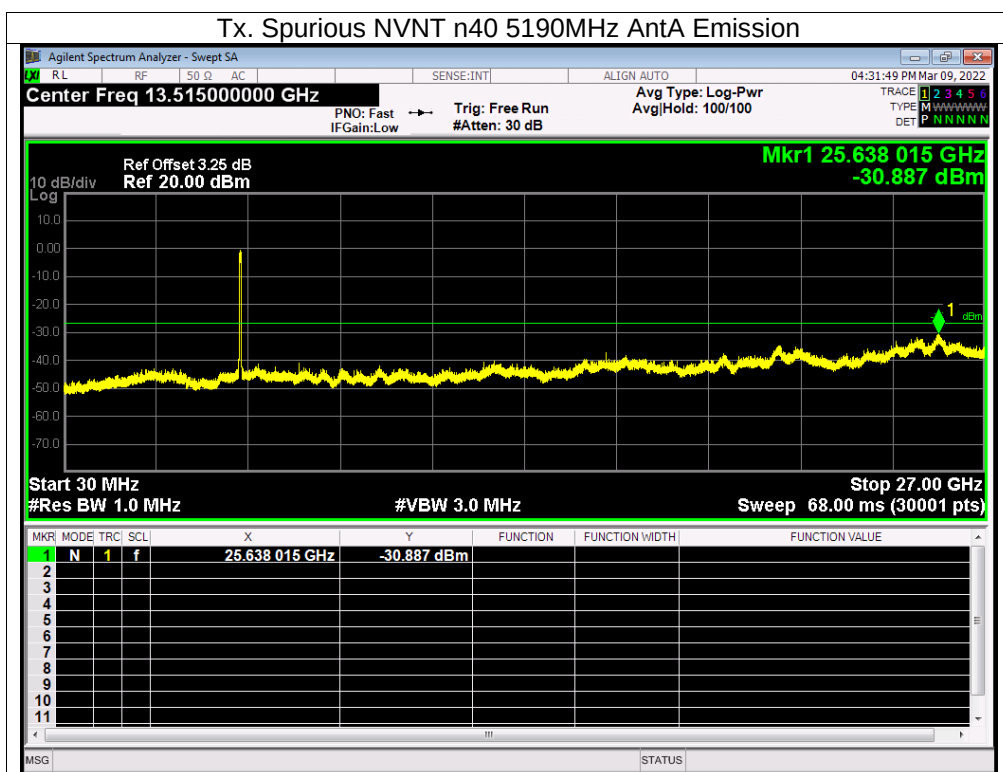
About: 26.5GHz-40GHz, The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

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

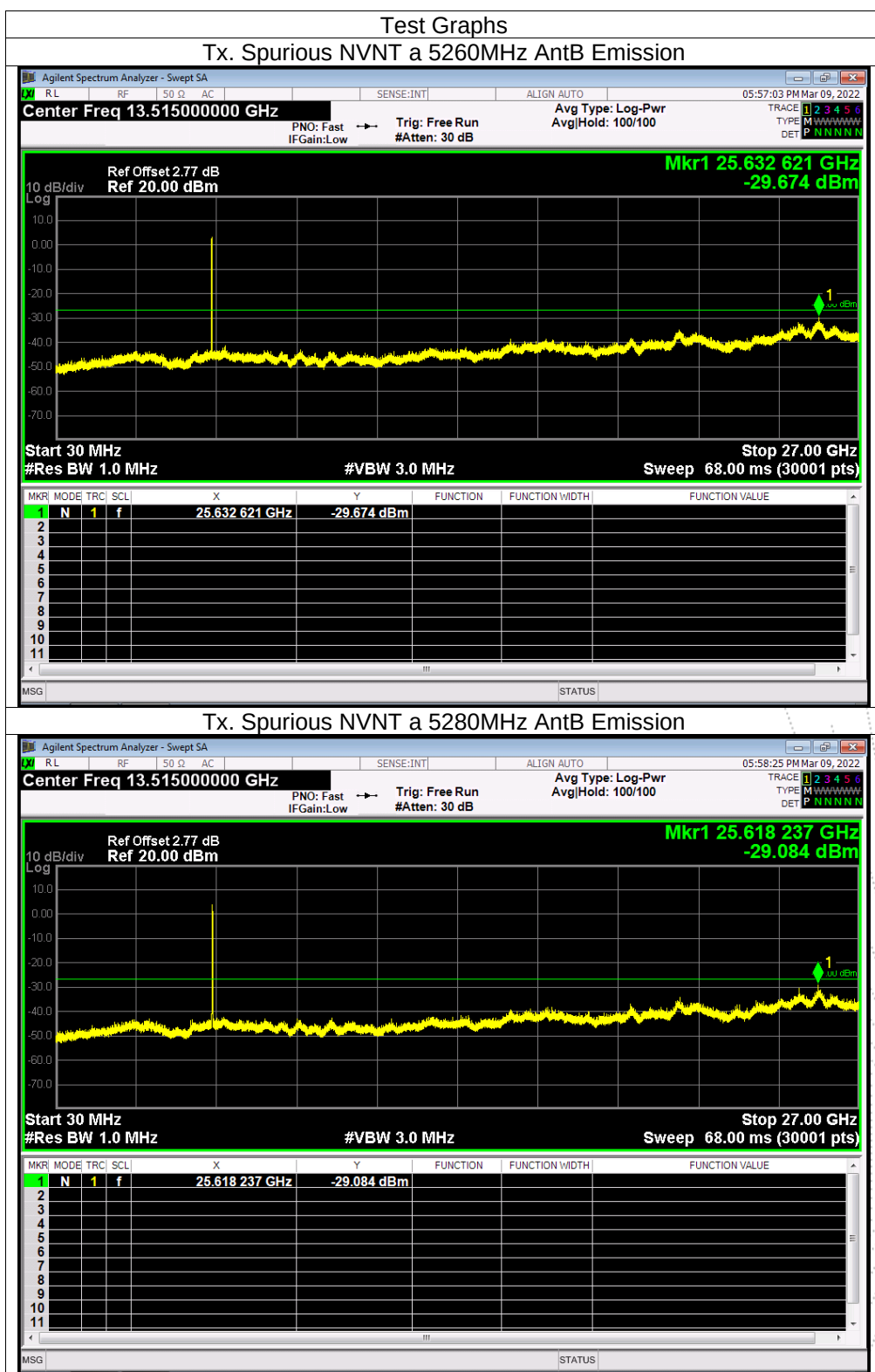


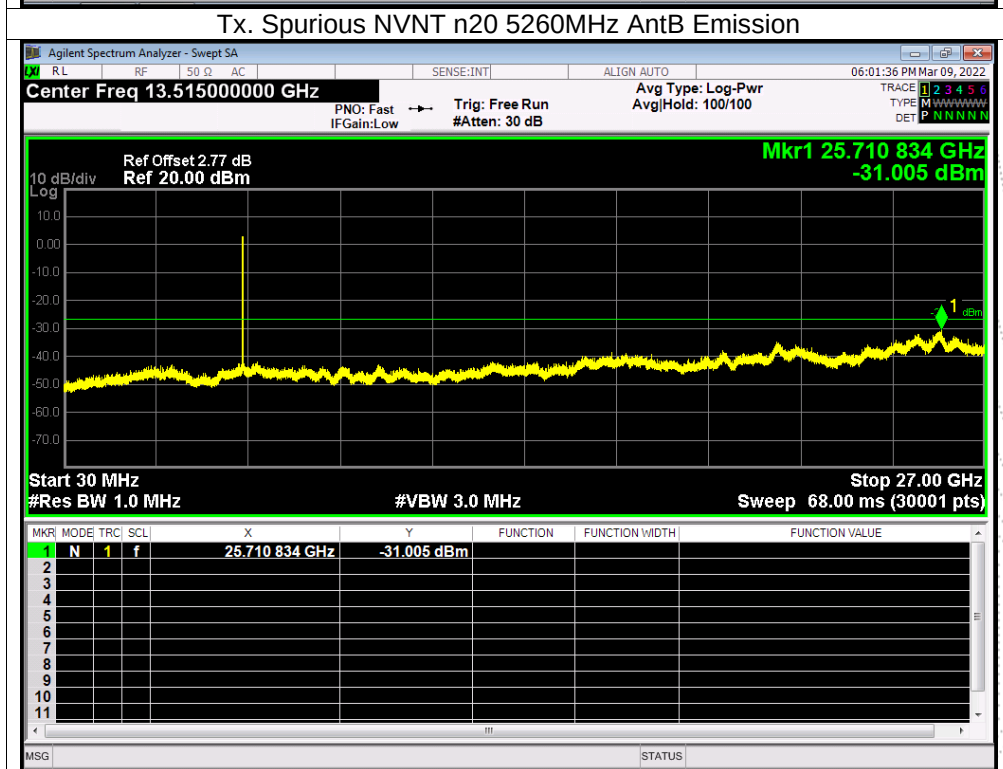
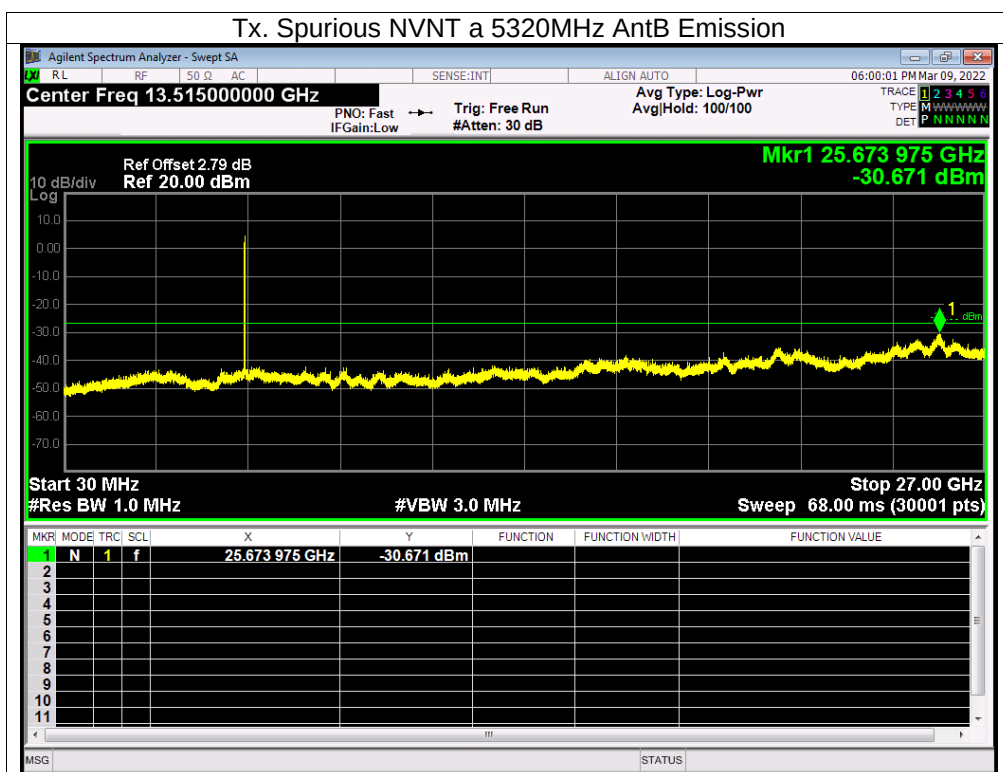


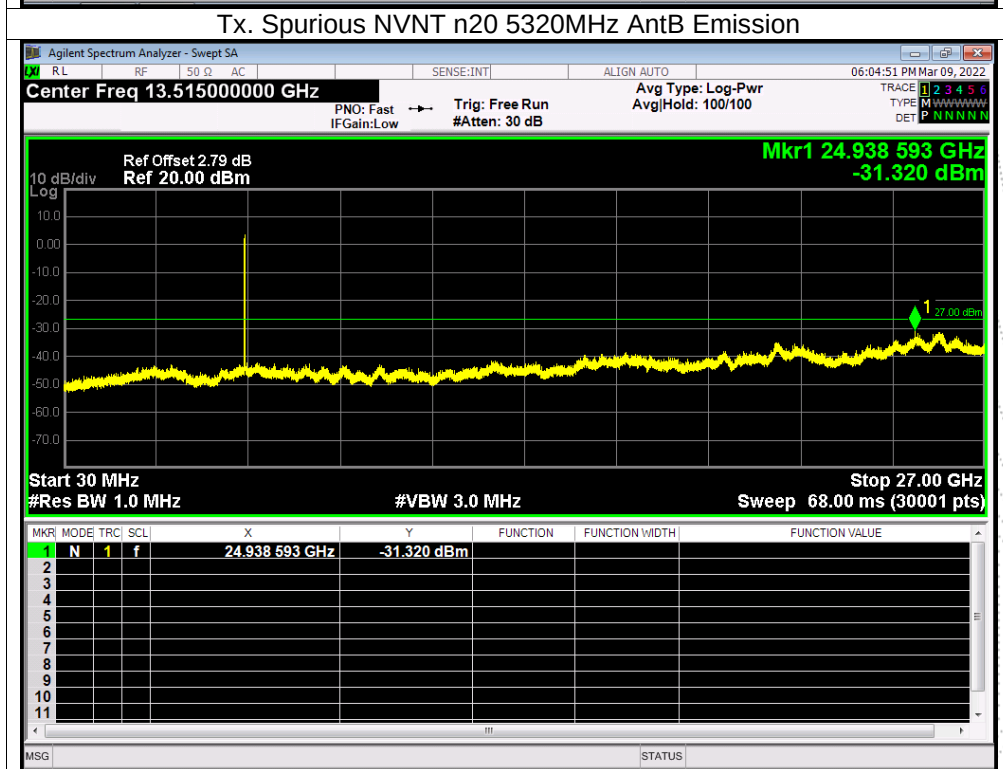
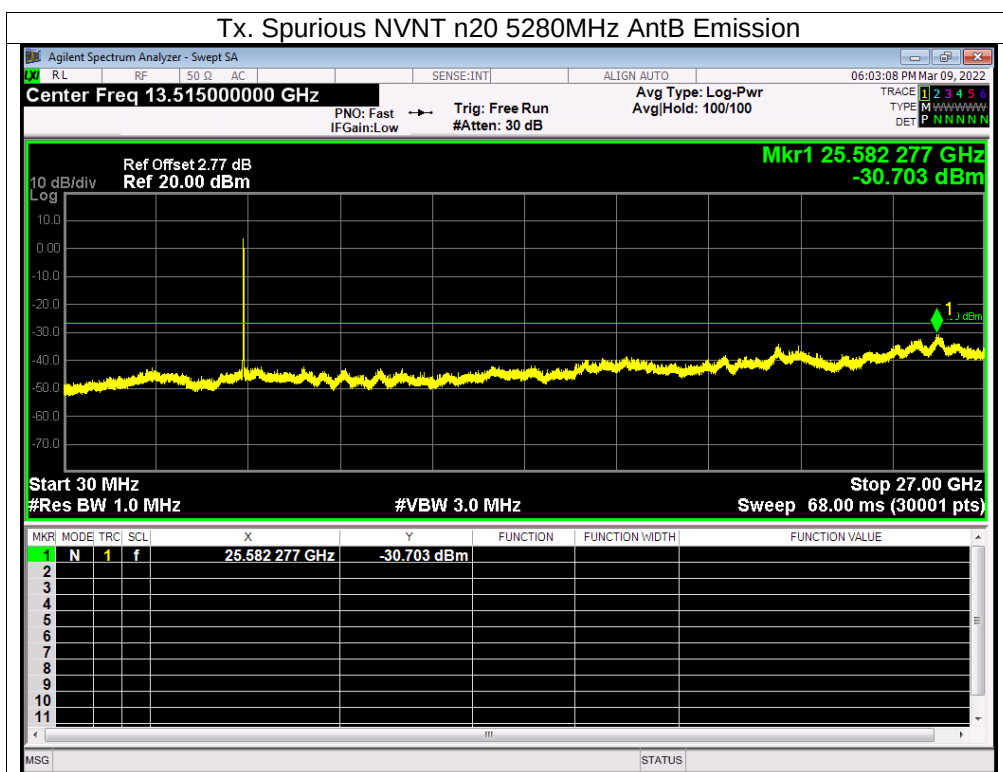


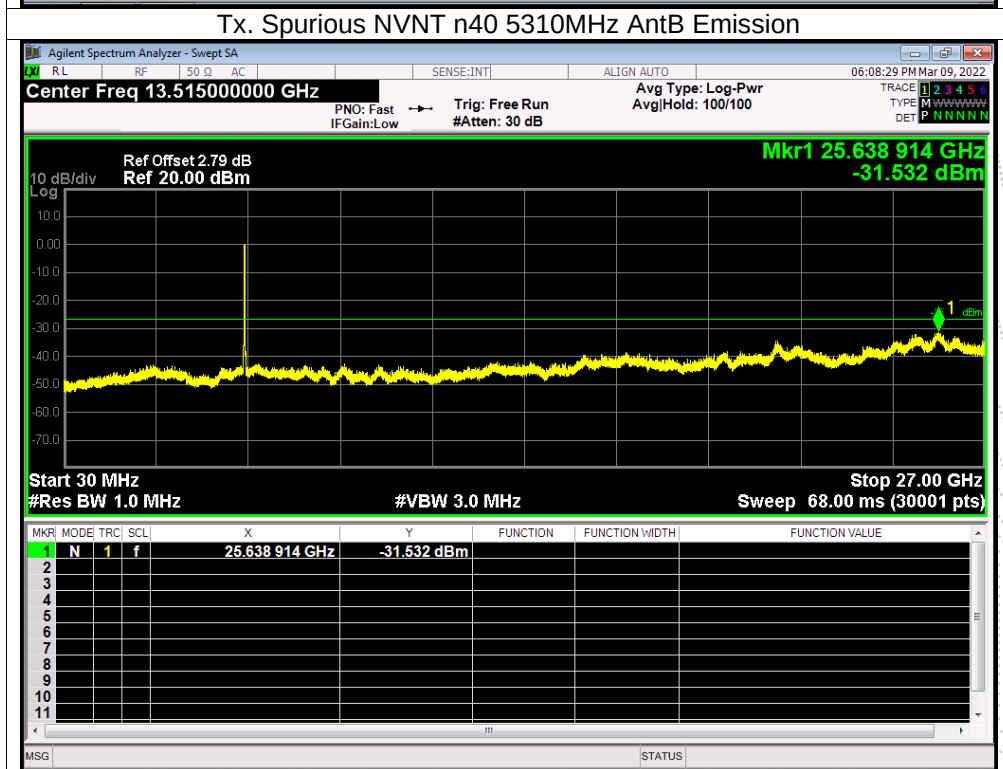
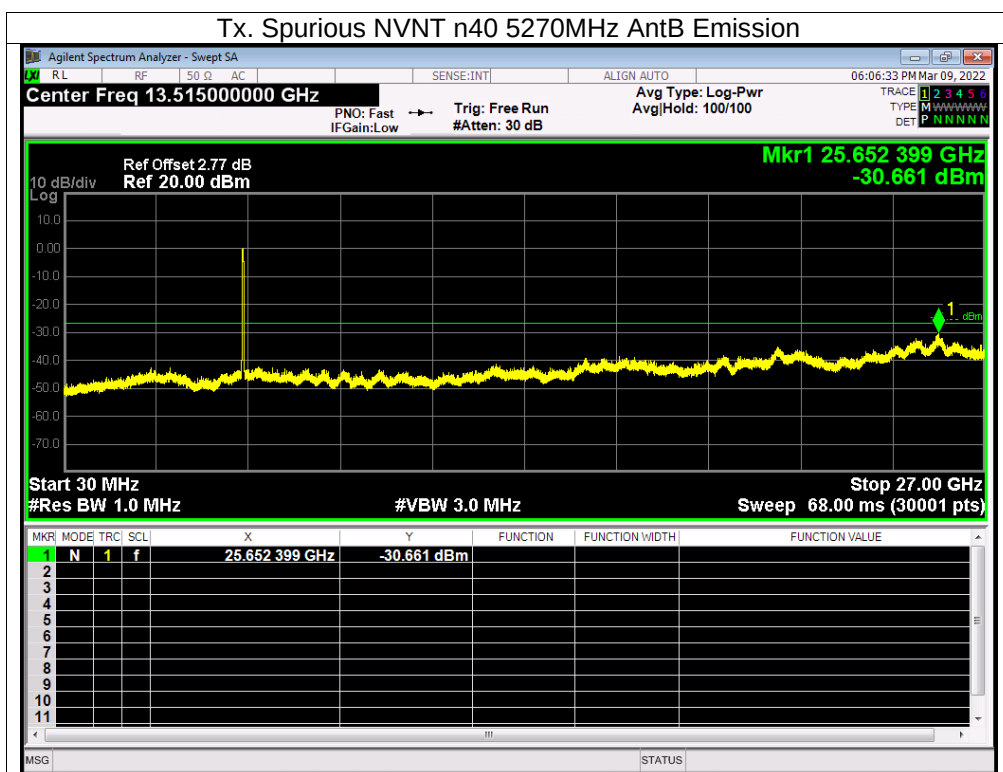


Note: A(B) Represent the value of antenna A and B, The worst data is Antenna B, only shown Antenna B.
Antenna B: 5260-5320MHz

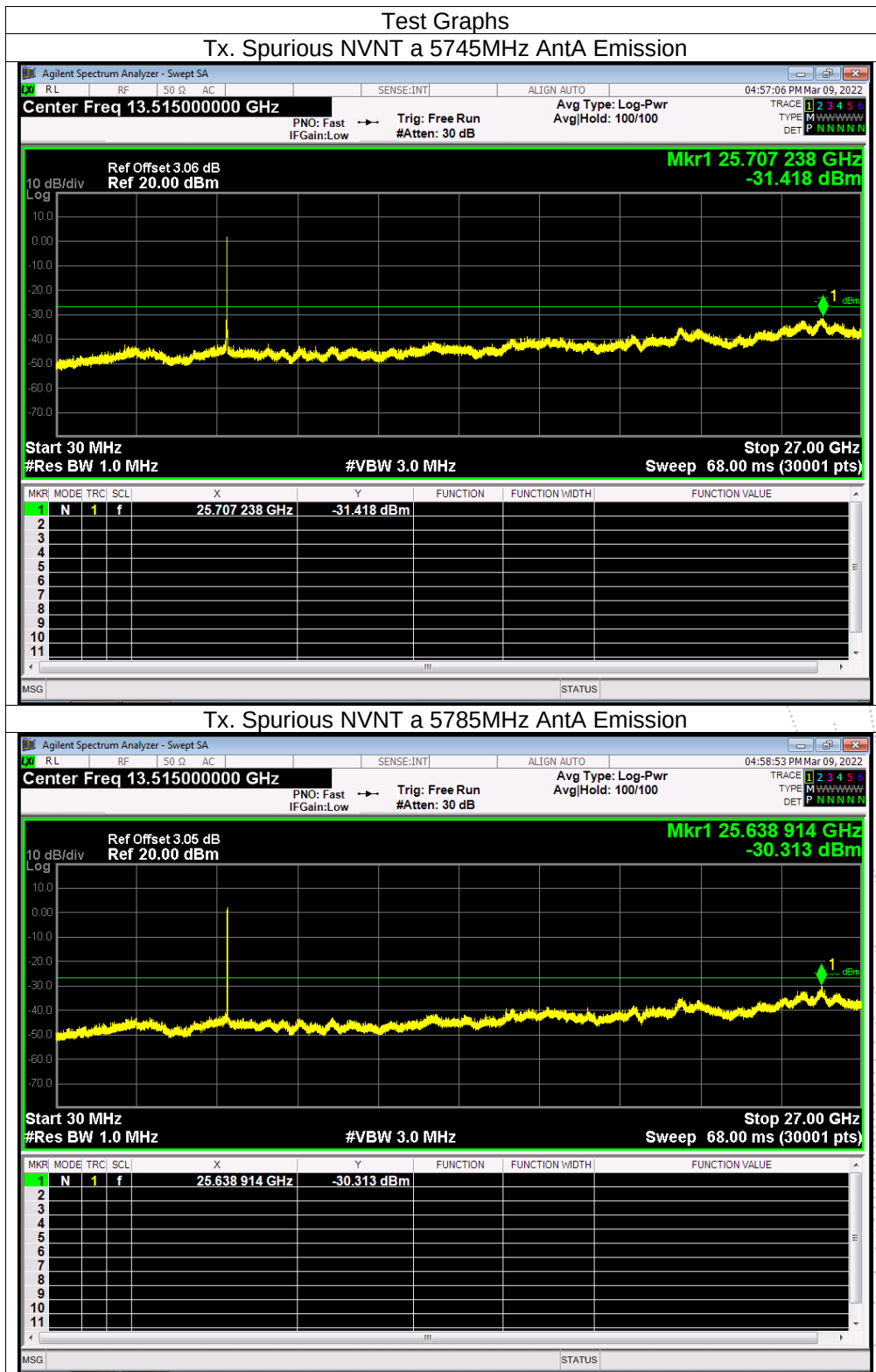


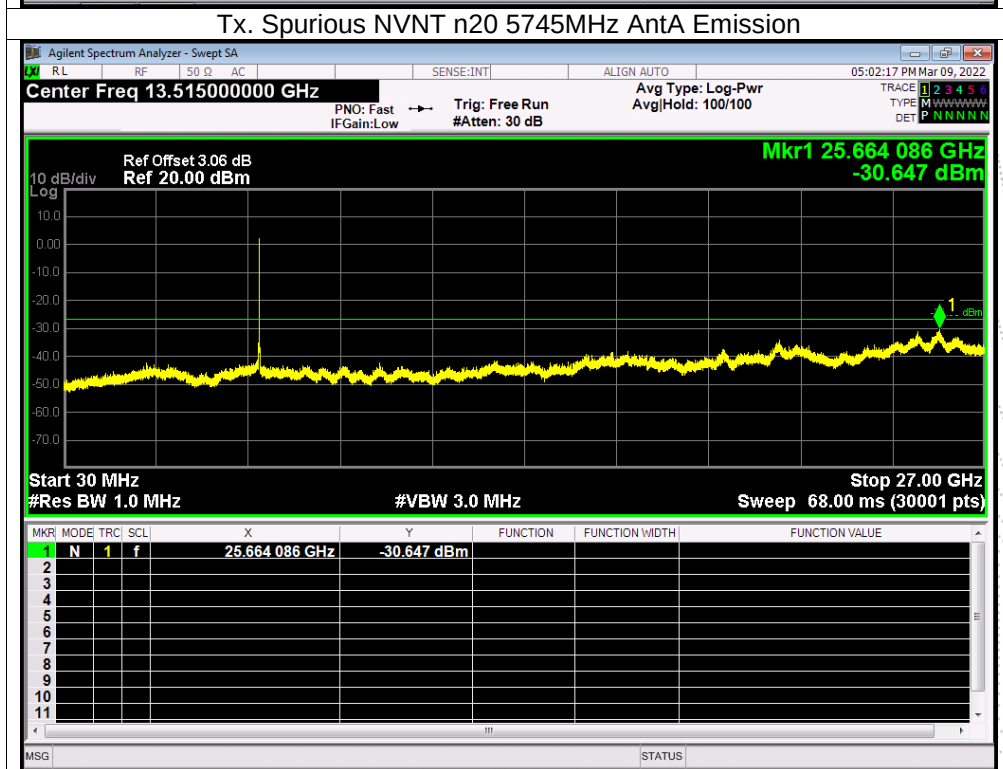
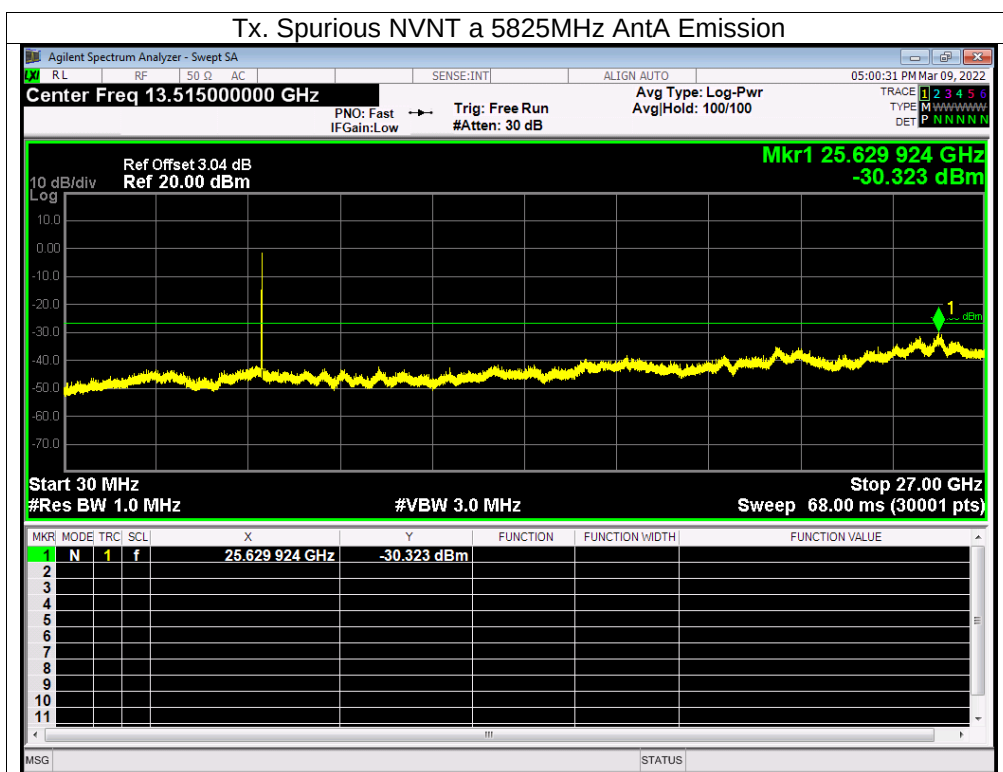


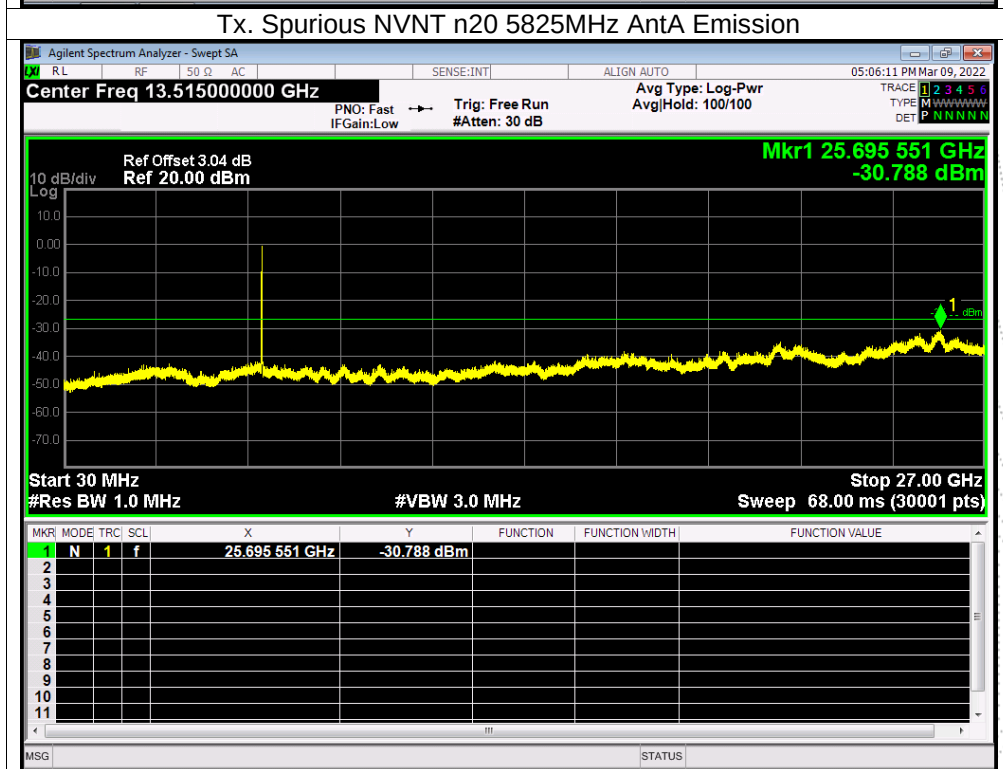
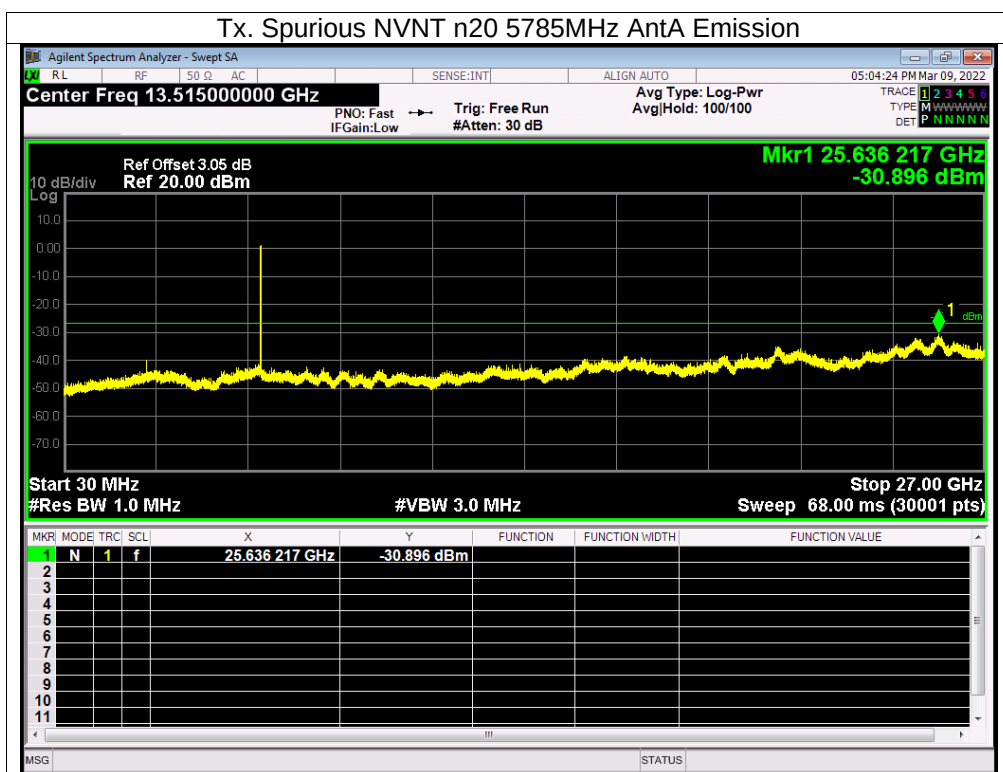


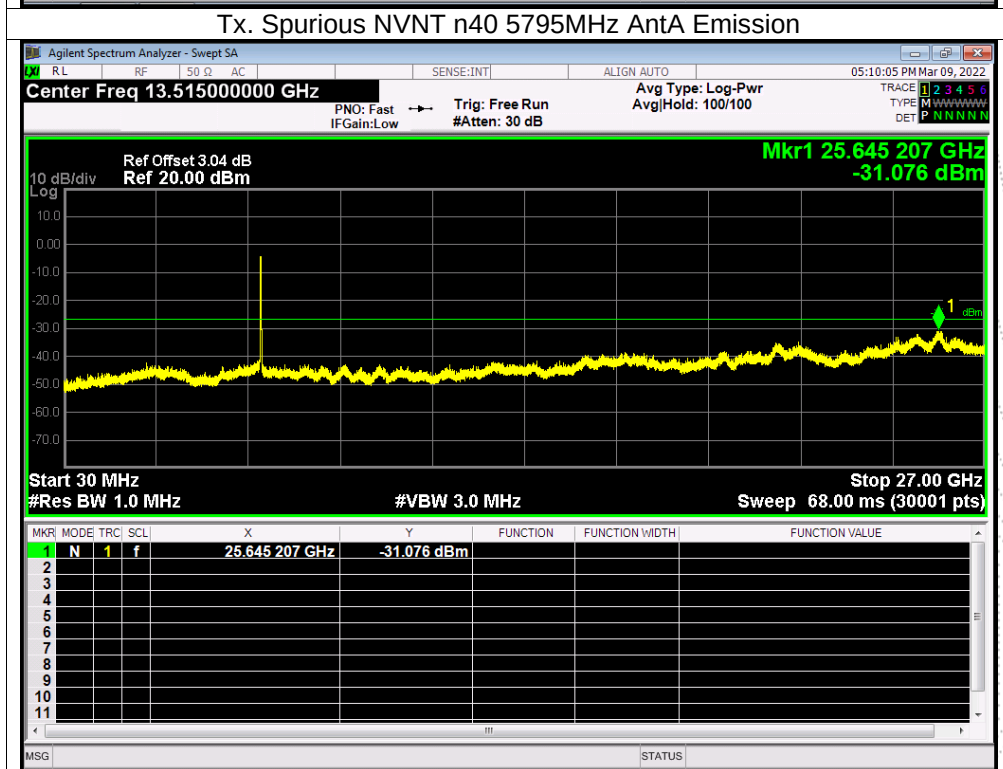
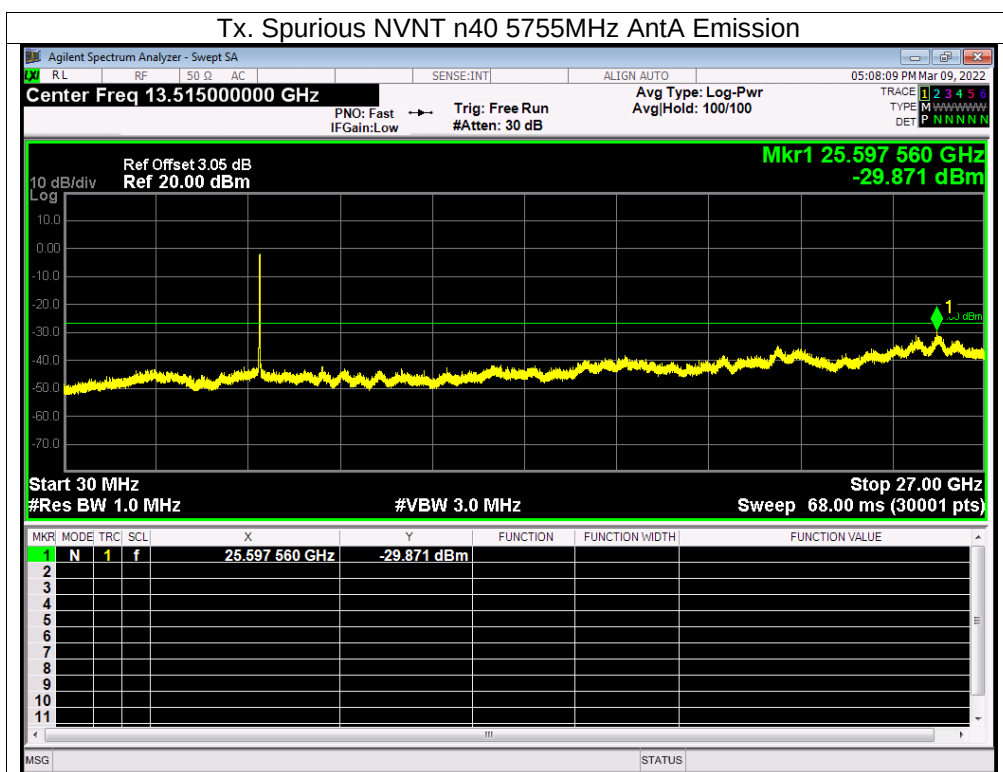


Note: A(B) Represent the value of antenna A and B, The worst data is Antenna A, only shown Antenna A.
Antenna A: 5745-58250MHz









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 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)	120	V nom (V)	120.00	5180.0197	5180	0.0197	3.7946
		V max (V)	138.00	5180.0085	5180	0.0085	1.6379
		V min (V)	102.00	5180.0208	5180	0.0208	4.0175
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	5180.0112	5180	0.0112	2.1686
		T (°C)	-10	5180.0116	5180	0.0116	2.2340
		T (°C)	0	5180.0035	5180	0.0035	0.6821
		T (°C)	10	5180.0089	5180	0.0089	1.7265
		T (°C)	20	5180.0038	5180	0.0038	0.7273
		T (°C)	30	5180.0064	5180	0.0064	1.2404
		T (°C)	40	5180.0106	5180	0.0106	2.0412
		T (°C)	50	5180.0042	5180	0.0042	0.8057
		T (°C)	60	5180.0120	5180	0.0120	2.3224
		T (°C)	70	5180.0112	5180	0.0112	2.1656
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	5200.0088	5200	0.0088	1.6832
		V max (V)	138.00	5200.0060	5200	0.0060	1.1540
		V min (V)	102.00	5200.0034	5200	0.0034	0.6557
Limits				5150-5250 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	5200.01132	5200	0.01132	2.1777
		T (°C)	-10	5200.00519	5200	0.00519	0.9989
		T (°C)	0	5200.00291	5200	0.00291	0.5591
		T (°C)	10	5200.00479	5200	0.00479	0.9213
		T (°C)	20	5200.01149	5200	0.01149	2.2102
		T (°C)	30	5200.00173	5200	0.00173	0.3335
		T (°C)	40	5200.00536	5200	0.00536	1.0300
		T (°C)	50	5200.00870	5200	0.00870	1.6731
		T (°C)	60	5200.00352	5200	0.00352	0.6761
		T (°C)	70	5200.00267	5200	0.00267	0.5129
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	5240.0029	5240	0.0029	0.5484
		V max (V)	138.00	5240.0069	5240	0.0069	1.3260
		V min (V)	102.00	5240.0117	5240	0.0117	2.2355
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	5240.0033	5240	0.0033	0.6220
		T (°C)	-10	5240.0038	5240	0.0038	0.7345
		T (°C)	0	5240.0101	5240	0.0101	1.9248
		T (°C)	10	5240.0043	5240	0.0043	0.8232
		T (°C)	20	5240.0097	5240	0.0097	1.8514
		T (°C)	30	5240.0010	5240	0.0010	0.1821
		T (°C)	40	5240.0116	5240	0.0116	2.2071
		T (°C)	50	5240.0014	5240	0.0014	0.2670
		T (°C)	60	5240.0097	5240	0.0097	1.8531
		T (°C)	70	5240.0051	5240	0.0051	0.9645
Limits				5150-5250 MHz			
Result				Complies			

Temperature :	26 °C	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX Frequency U-NII-1 (5260-5320MHz)		

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency : 5260MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120.00	5260.0015	5260	0.0015	0.2885
		V max (V)	138.00	5260.0082	5260	0.0082	1.5504
		V min (V)	102.00	5260.0183	5260	0.0183	3.4867
Limits				5260-5320 MHz			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5260MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	-20	5260.0054	5260	0.0054	1.0292
		T (°C)	-10	5260.0023	5260	0.0023	0.4401
		T (°C)	0	5260.0011	5260	0.0011	0.1999
		T (°C)	10	5260.0107	5260	0.0107	2.0409
		T (°C)	20	5260.0101	5260	0.0101	1.9226
		T (°C)	30	5260.0037	5260	0.0037	0.7064
		T (°C)	40	5260.0025	5260	0.0025	0.4697
		T (°C)	50	5260.0016	5260	0.0016	0.2988
		T (°C)	60	5260.0079	5260	0.0079	1.5080
		T (°C)	70	5260.0014	5260	0.0014	0.2653
Limits				5260-5320 MHz			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5280MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120.00	5280.0100	5280	0.0100	1.8956
		V max (V)	138.00	5280.0042	5280	0.0042	0.7980
		V min (V)	102.00	5280.0026	5280	0.0026	0.4879
Limits				5260-5320 MHz			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5280MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	-20	5280.00155	5280	0.00155	0.2945
		T (°C)	-10	5280.01300	5280	0.01300	2.4625
		T (°C)	0	5280.00704	5280	0.00704	1.3327
		T (°C)	10	5280.00311	5280	0.00311	0.5888
		T (°C)	20	5280.01201	5280	0.01201	2.2751
		T (°C)	30	5280.00723	5280	0.00723	1.3688
		T (°C)	40	5280.00765	5280	0.00765	1.4488
		T (°C)	50	5280.00910	5280	0.00910	1.7237
		T (°C)	60	5280.00783	5280	0.00783	1.4829
		T (°C)	70	5280.01075	5280	0.01075	2.0358
Limits				5260-5320 MHz			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5320MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120.00	5320.0123	5320	0.0123	2.3026
		V max (V)	138.00	5320.0055	5320	0.0055	1.0360
		V min (V)	102.00	5320.0134	5320	0.0134	2.5240
Limits				5260-5320 MHz			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5320MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	-20	5320.0099	5320	0.0099	1.8700
		T (°C)	-10	5320.0016	5320	0.0016	0.2971
		T (°C)	0	5320.0073	5320	0.0073	1.3636
		T (°C)	10	5320.0131	5320	0.0131	2.4596
		T (°C)	20	5320.0129	5320	0.0129	2.4316
		T (°C)	30	5320.0083	5320	0.0083	1.5694
		T (°C)	40	5320.0068	5320	0.0068	1.2747
		T (°C)	50	5320.0071	5320	0.0071	1.3421
		T (°C)	60	5320.0012	5320	0.0012	0.2173
		T (°C)	70	5320.0079	5320	0.0079	1.4783
Limits				5260-5320 MHz			
Result				Complies			

Temperature :	26 °C	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	AC 120V/60Hz
Hrst Mode :	TX Frequency(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	5745.00862	5745	0.00862	1.5006
		V max (V)	138.00	5745.00568	5745	0.00568	0.9894
		V min (V)	102.00	5745.00654	5745	0.00654	1.1388
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	5745.00824	5745	0.00824	1.4342
		T (°C)	-10	5745.00984	5745	0.00984	1.7120
		T (°C)	0	5745.00228	5745	0.00228	0.3964
		T (°C)	10	5745.00677	5745	0.00677	1.1784
		T (°C)	20	5745.01025	5745	0.01025	1.7848
		T (°C)	30	5745.00719	5745	0.00719	1.2510
		T (°C)	40	5745.00408	5745	0.00408	0.7101
		T (°C)	50	5745.00308	5745	0.00308	0.5353
		T (°C)	60	5745.01273	5745	0.01273	2.2163
		T (°C)	70	5745.00751	5745	0.00751	1.3064
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	5785.01327	5785	0.01327	2.2947
		V max (V)	138.00	5785.00565	5785	0.00565	0.9771
		V min (V)	102.00	5785.00657	5785	0.00657	1.1362
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	5785.00292	5785	0.00292	0.5051
		T (°C)	-10	5785.01310	5785	0.01310	2.2637
		T (°C)	0	5785.00367	5785	0.00367	0.6347
		T (°C)	10	5785.01039	5785	0.01039	1.7966
		T (°C)	20	5785.00717	5785	0.00717	1.2395
		T (°C)	30	5785.00309	5785	0.00309	0.5345
		T (°C)	40	5785.00632	5785	0.00632	1.0921
		T (°C)	50	5785.00070	5785	0.00070	0.1216
		T (°C)	60	5785.00558	5785	0.00558	0.9654
		T (°C)	70	5785.00307	5785	0.00307	0.5313
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	5825.01145	5825	0.01145	1.9655
		V max (V)	138.00	5825.00257	5825	0.00257	0.4413
		V min (V)	102.00	5825.01166	5825	0.01166	2.0020
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	5825.01285	5825	0.01285	2.2055
		T (°C)	-10	5825.00059	5825	0.00059	0.1019
		T (°C)	0	5825.00327	5825	0.00327	0.5615
		T (°C)	10	5825.01102	5825	0.01102	1.8920
		T (°C)	20	5825.00064	5825	0.00064	0.1093
		T (°C)	30	5825.00640	5825	0.00640	1.0980
		T (°C)	40	5825.01303	5825	0.01303	2.2375
		T (°C)	50	5825.00348	5825	0.00348	0.5968
		T (°C)	60	5825.01036	5825	0.01036	1.7787
		T (°C)	70	5825.00410	5825	0.00410	0.7042
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 = $T_{on} / (T_{on} + T_{off})$

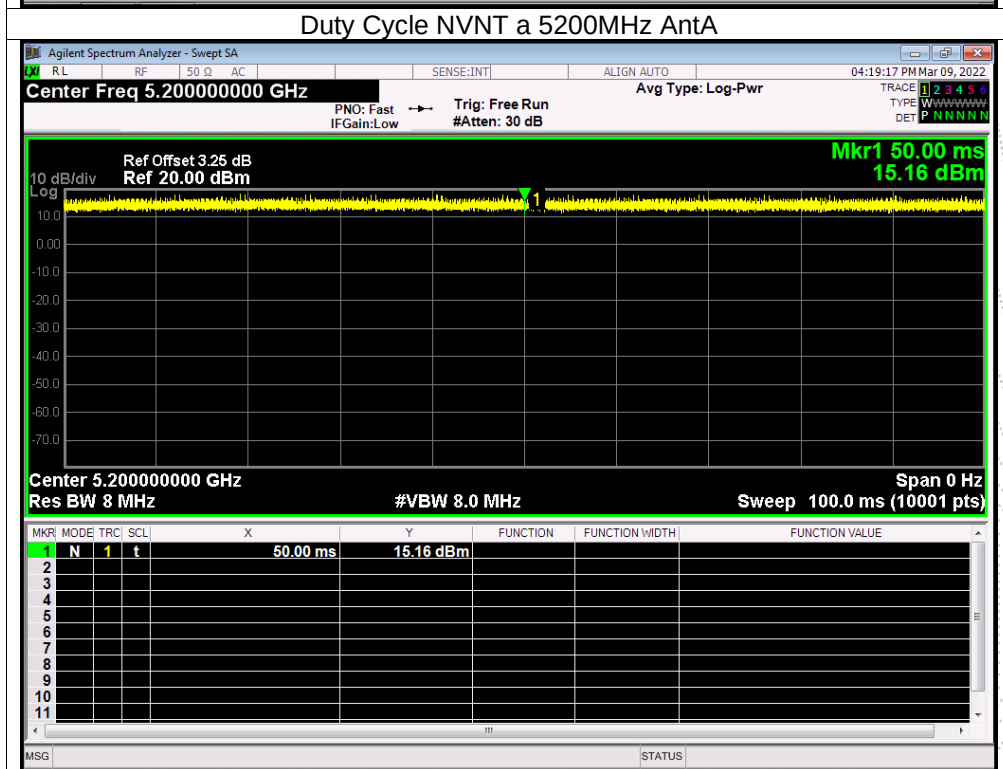
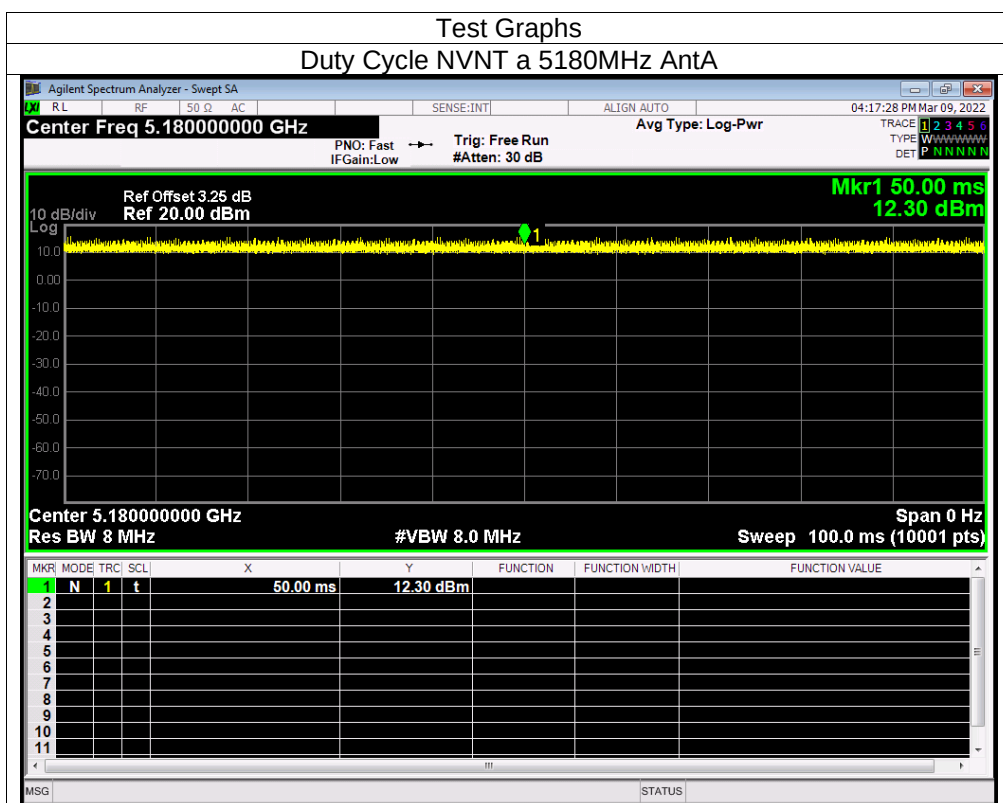
14.3 Test Procedure

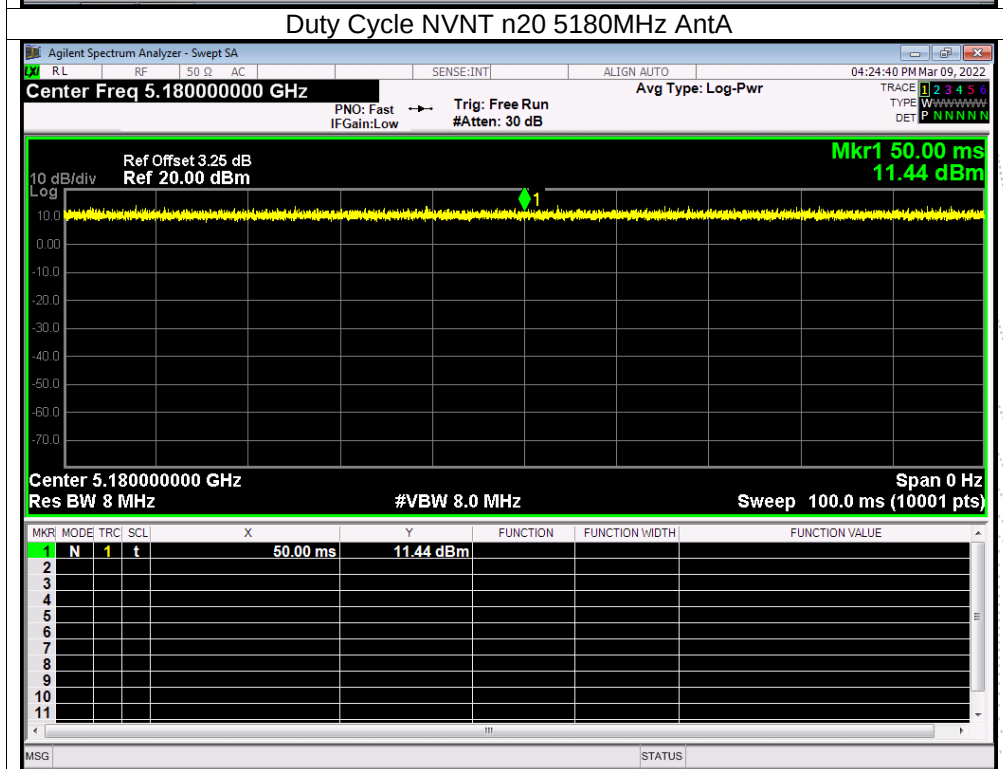
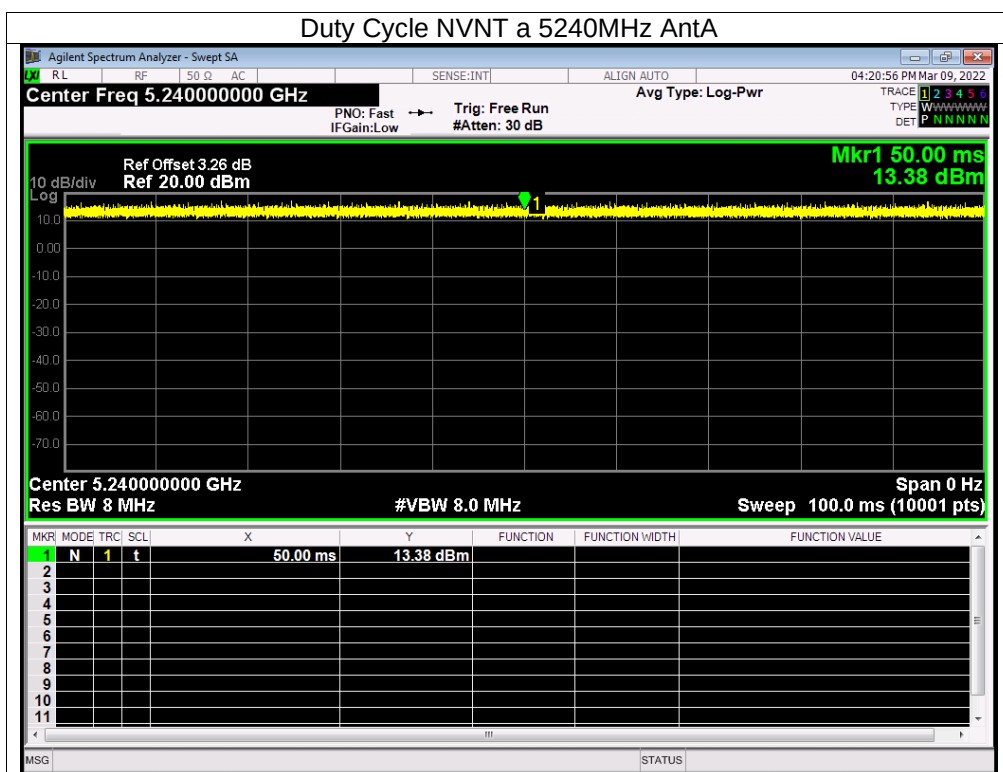
1. Set span = Zero
2. RBW = 8MHz
3. VBW = 8MHz,
4. Detector = Peak

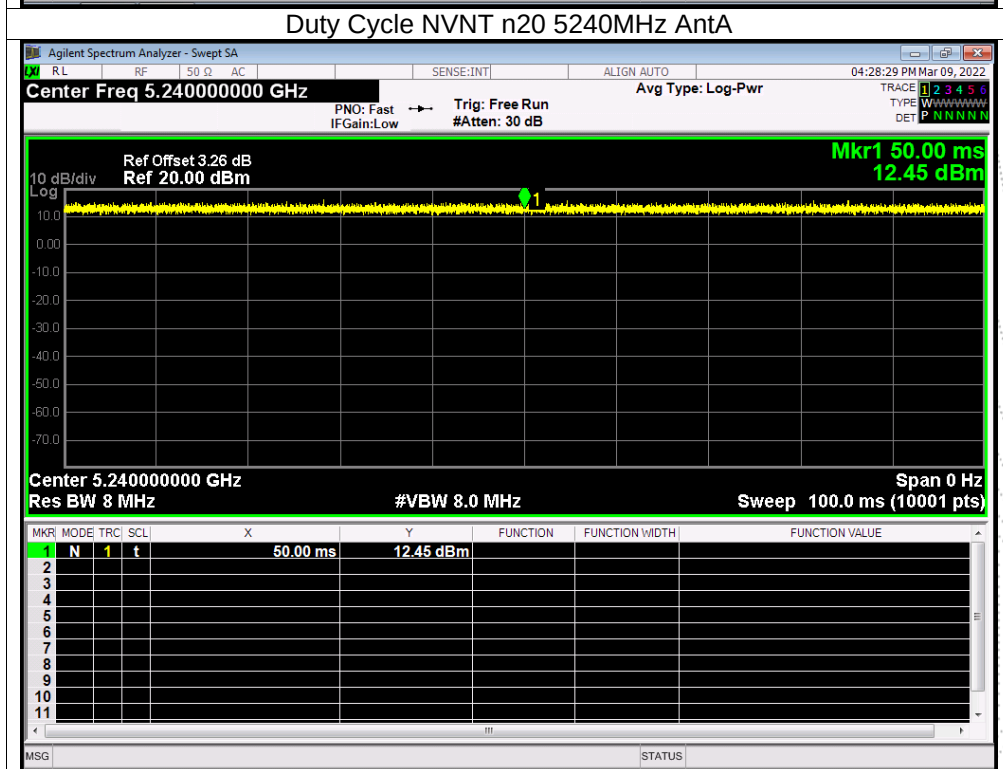
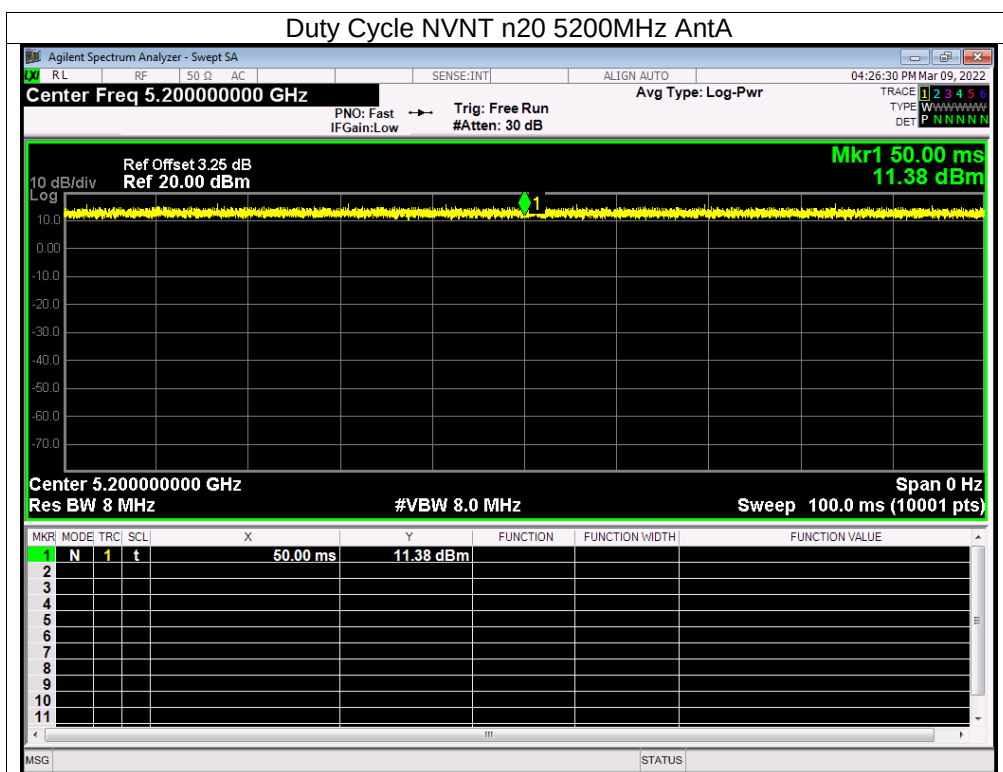
14.4 Test Result

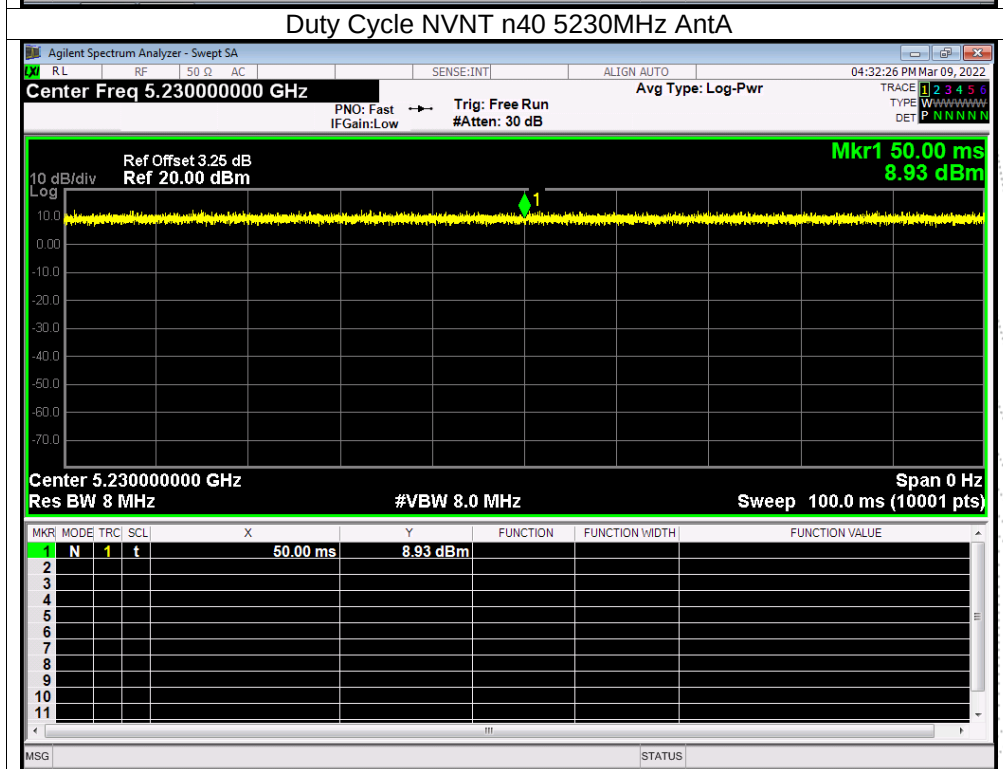
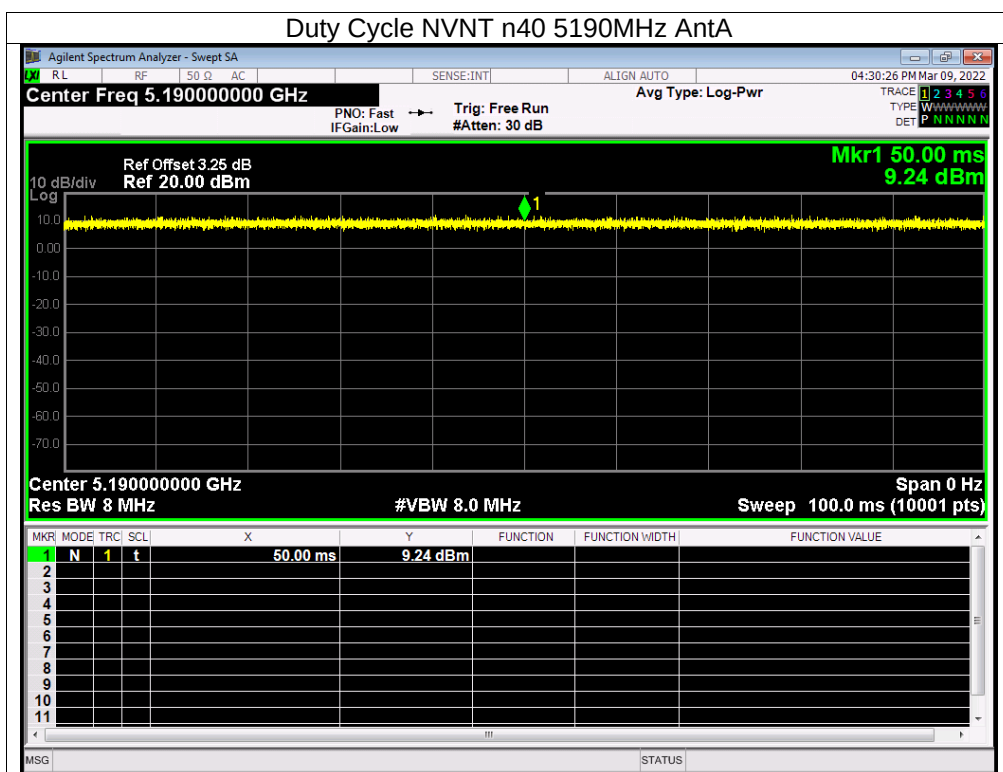
5.1G ANT A

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



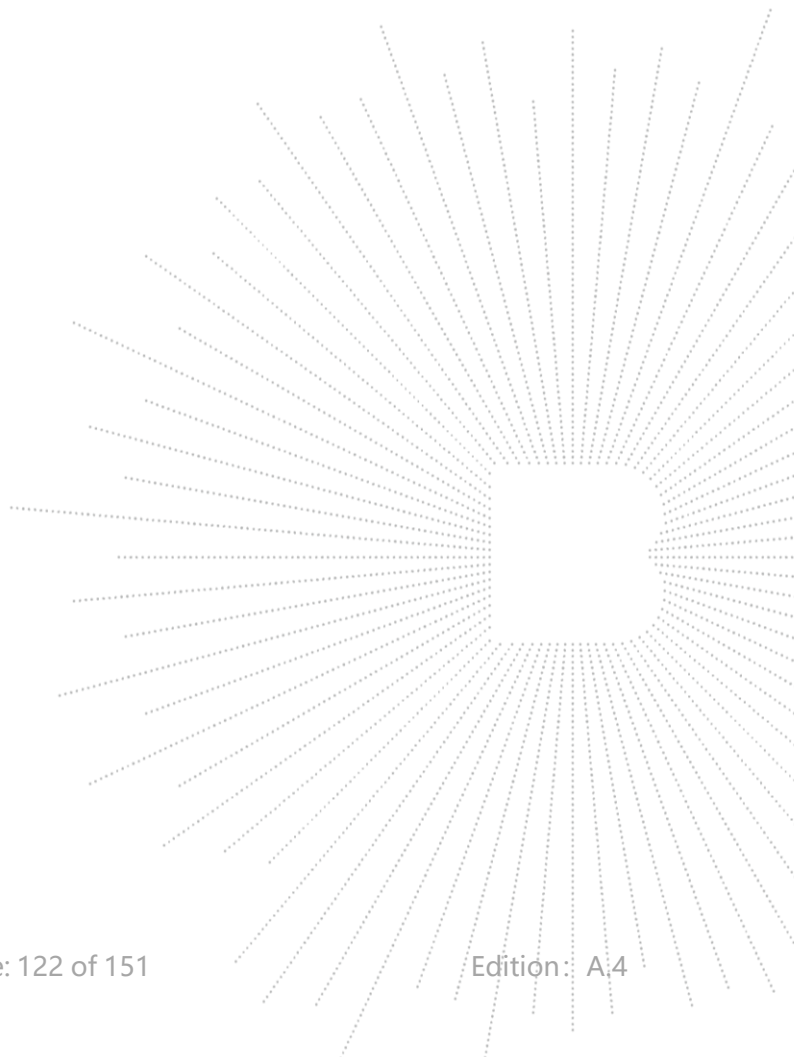


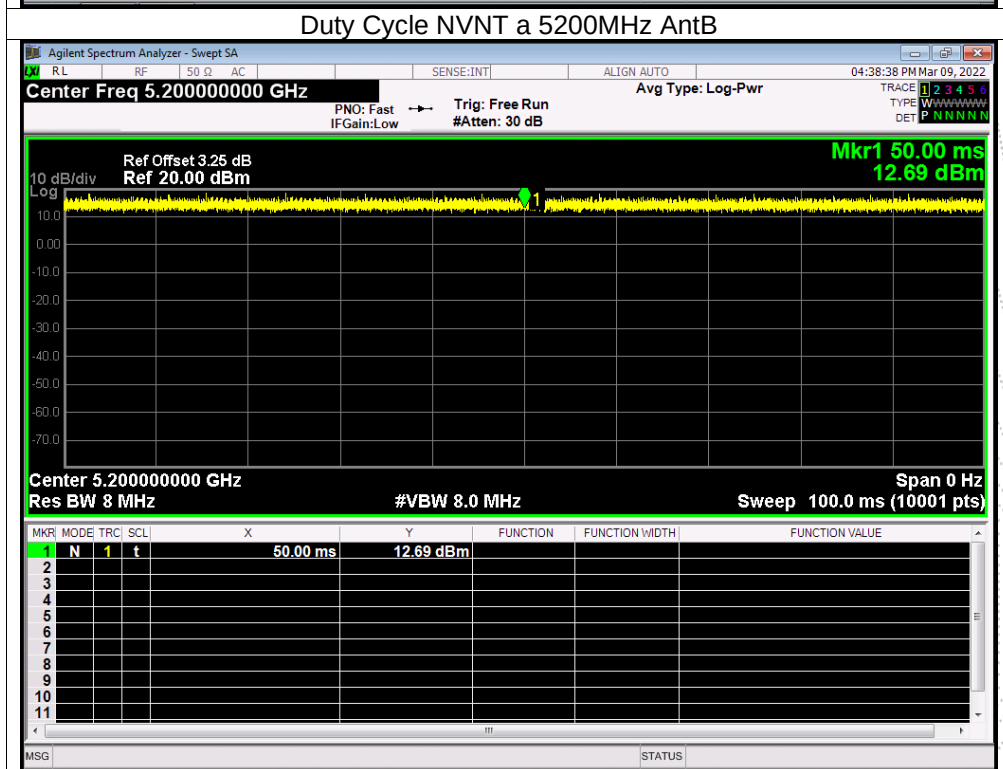
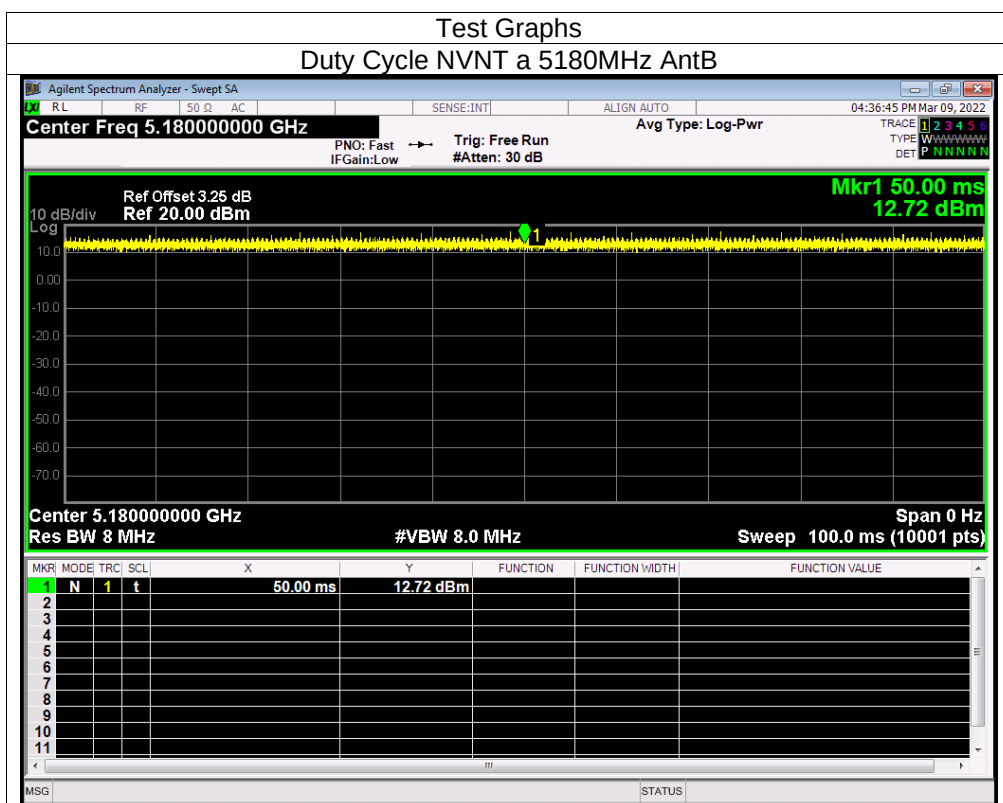


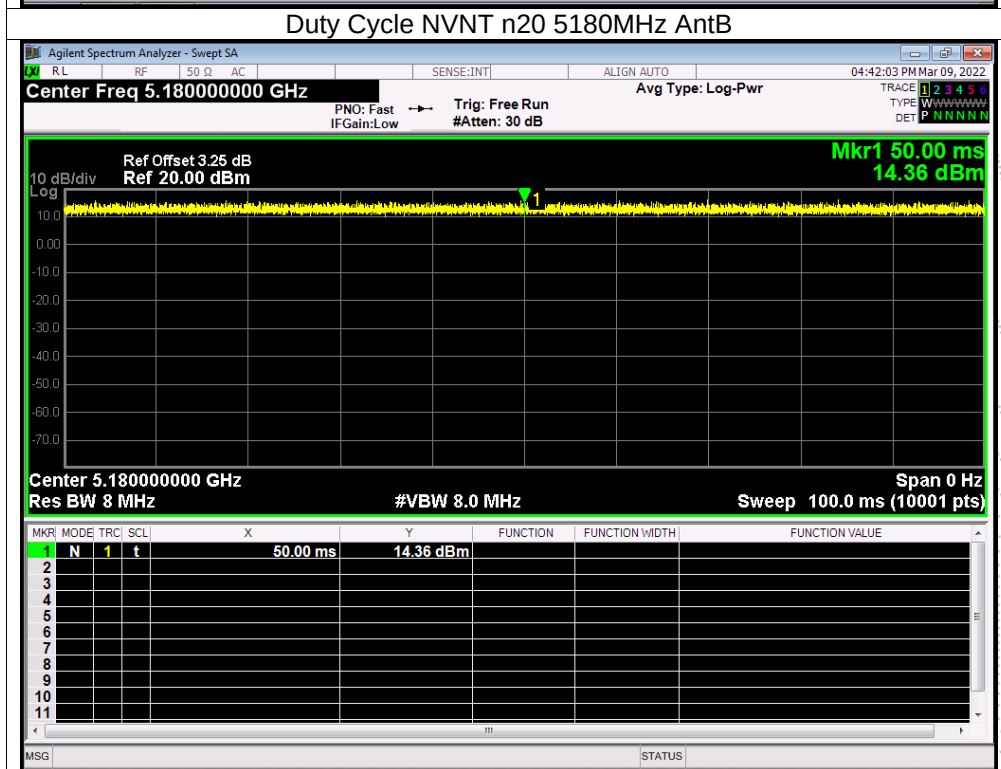
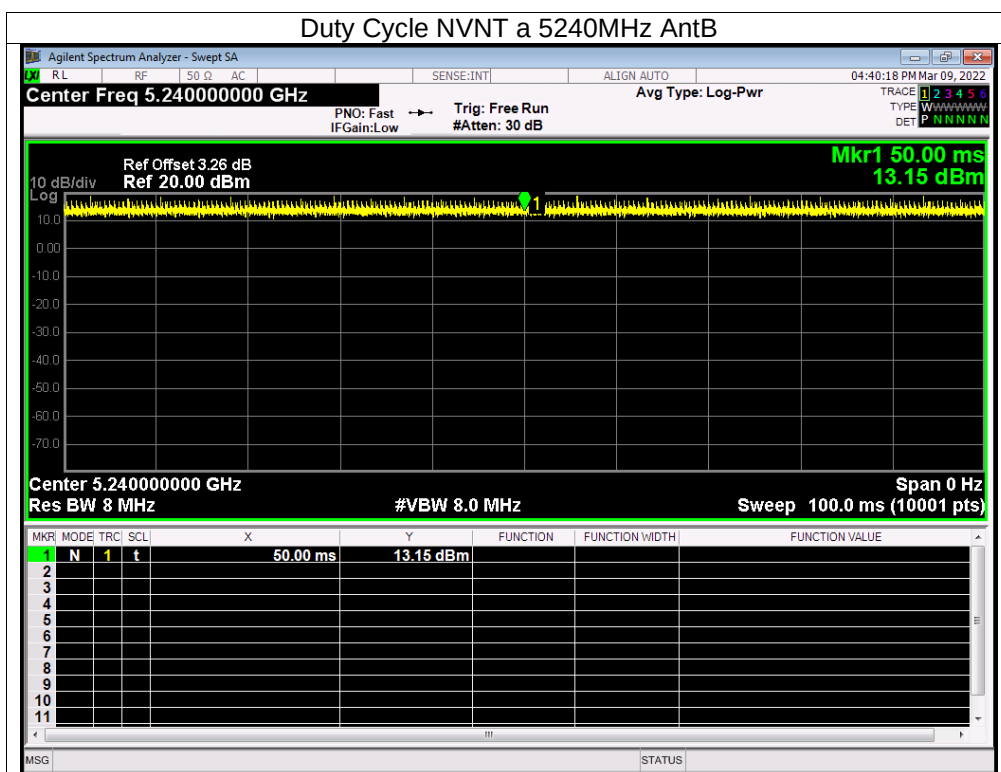


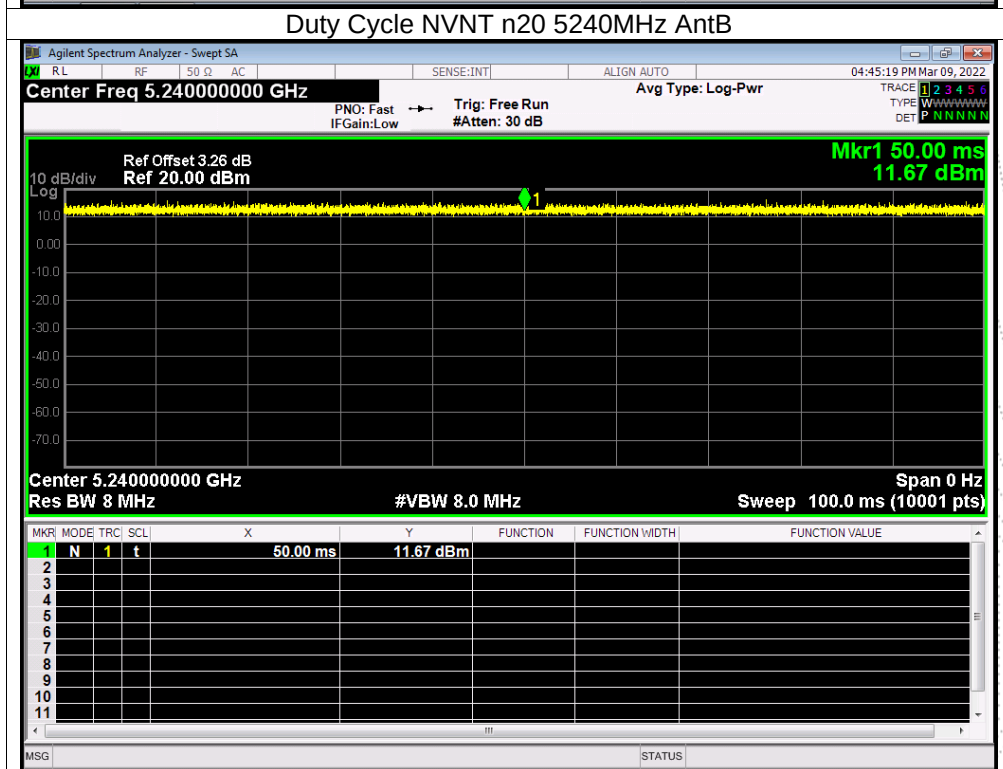
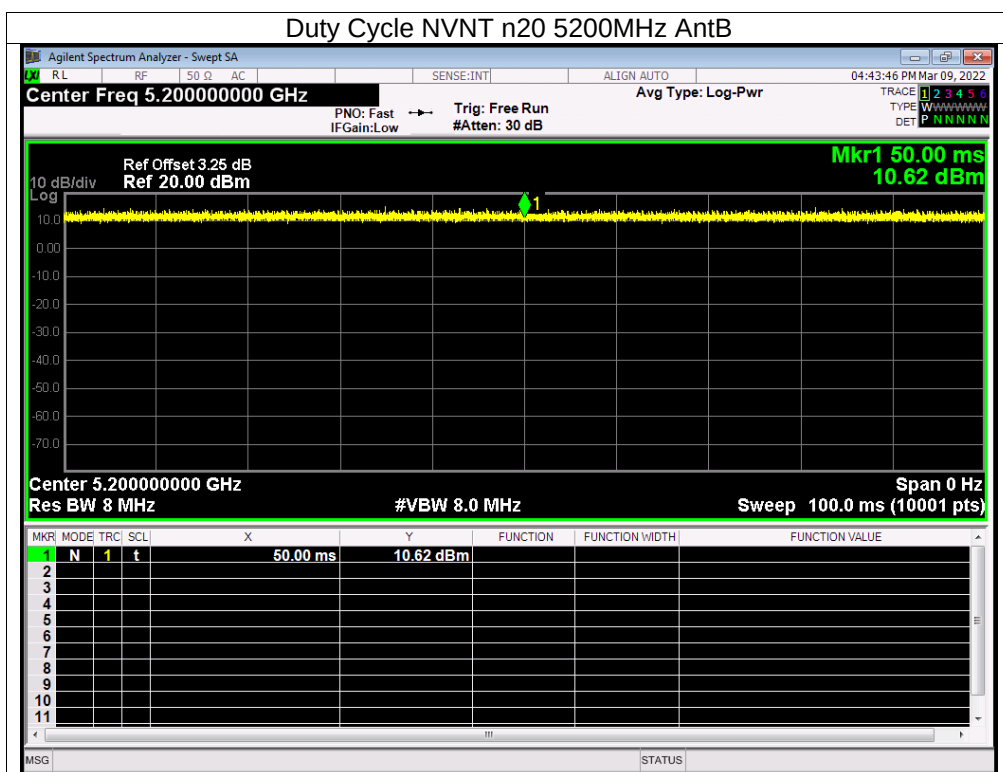
5.1G ANT B

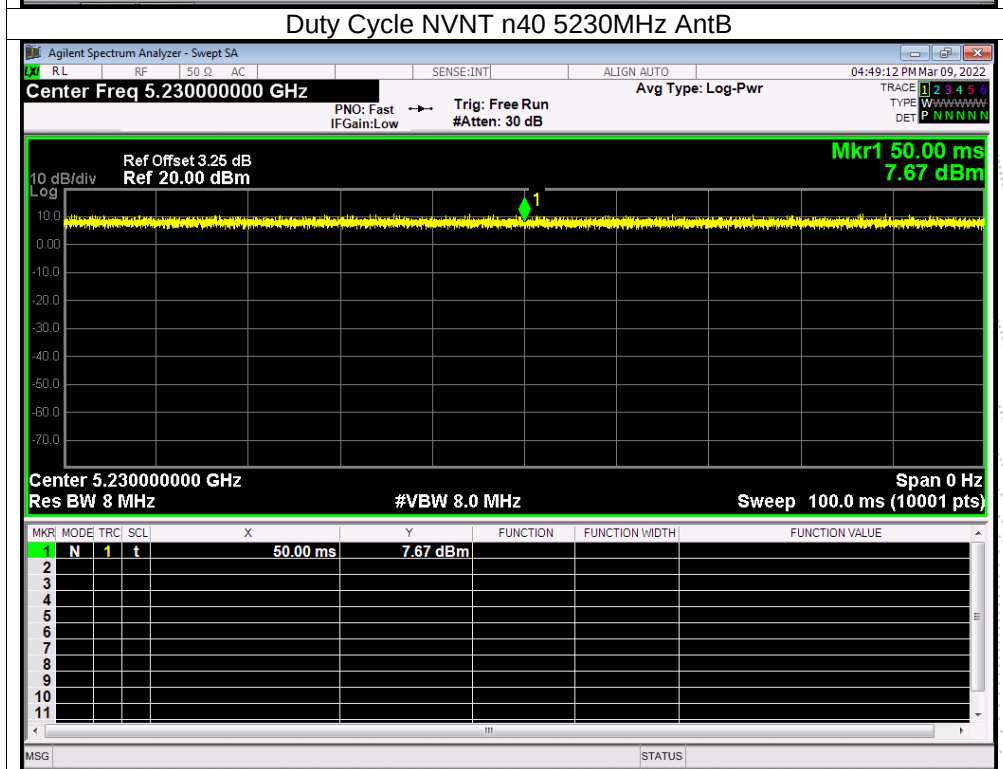
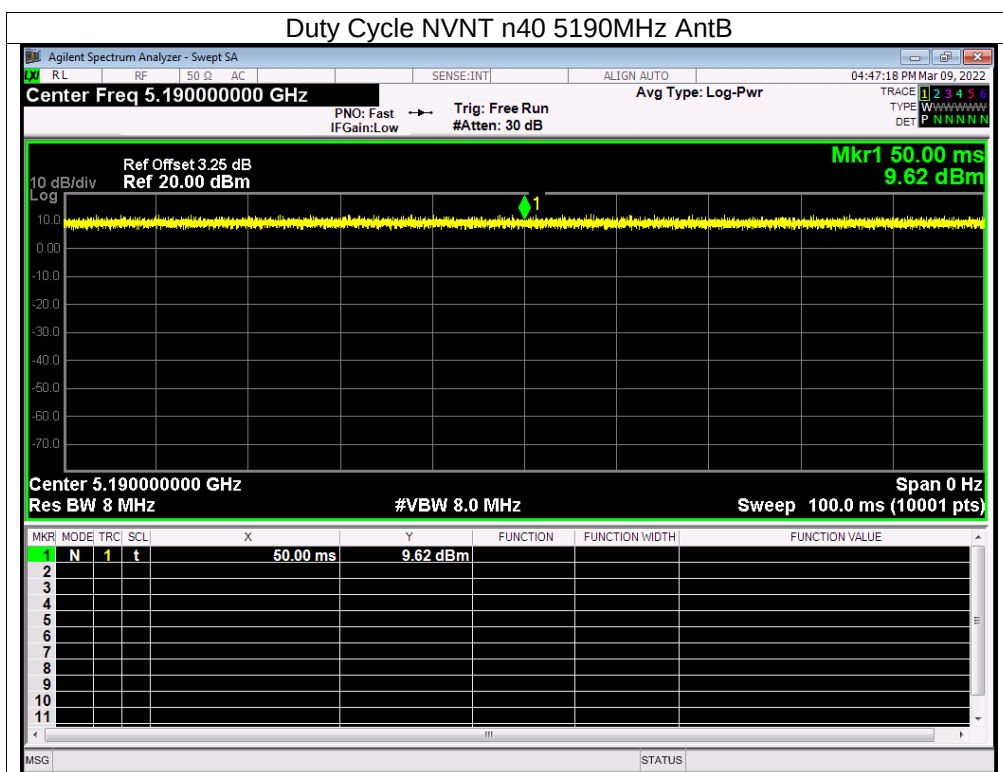
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	a	5180	AntB	100	0	0
NVNT	a	5200	AntB	100	0	0
NVNT	a	5240	AntB	100	0	0
NVNT	n20	5180	AntB	100	0	0
NVNT	n20	5200	AntB	100	0	0
NVNT	n20	5240	AntB	100	0	0
NVNT	n40	5190	AntB	100	0	0
NVNT	n40	5230	AntB	100	0	0





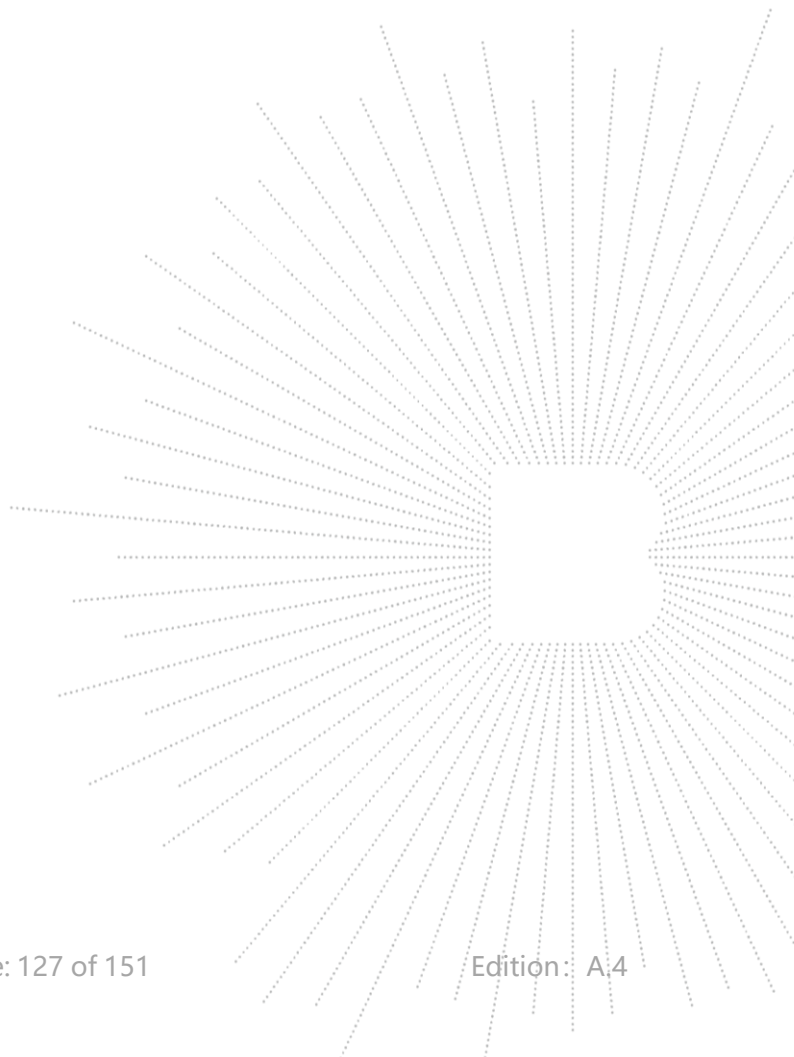


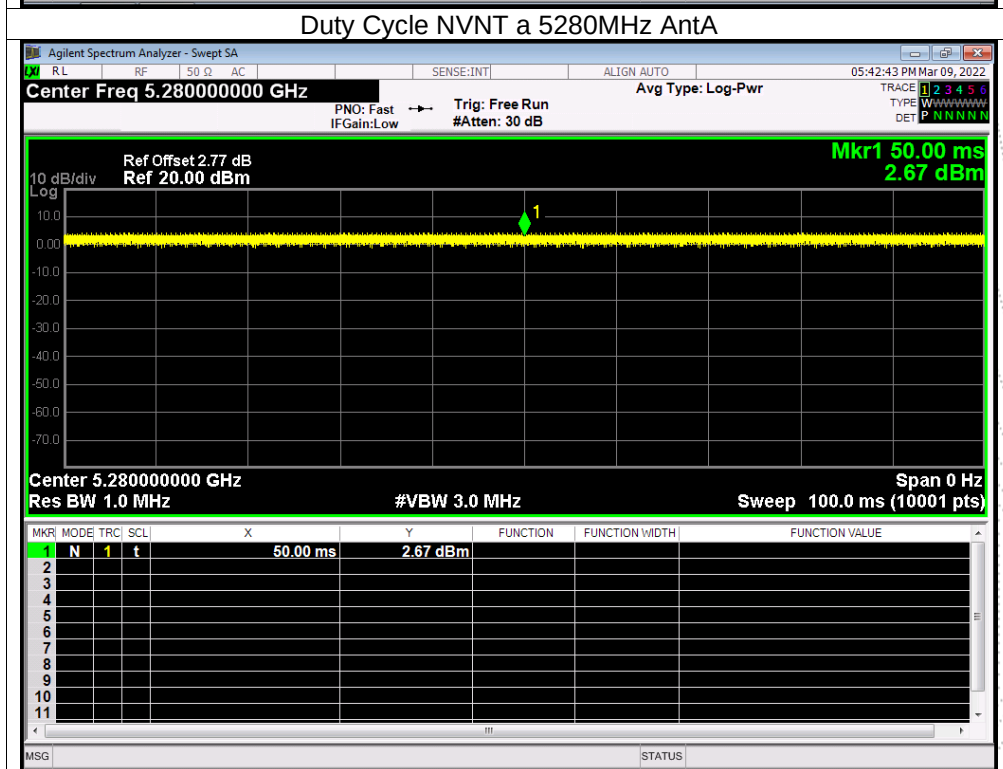
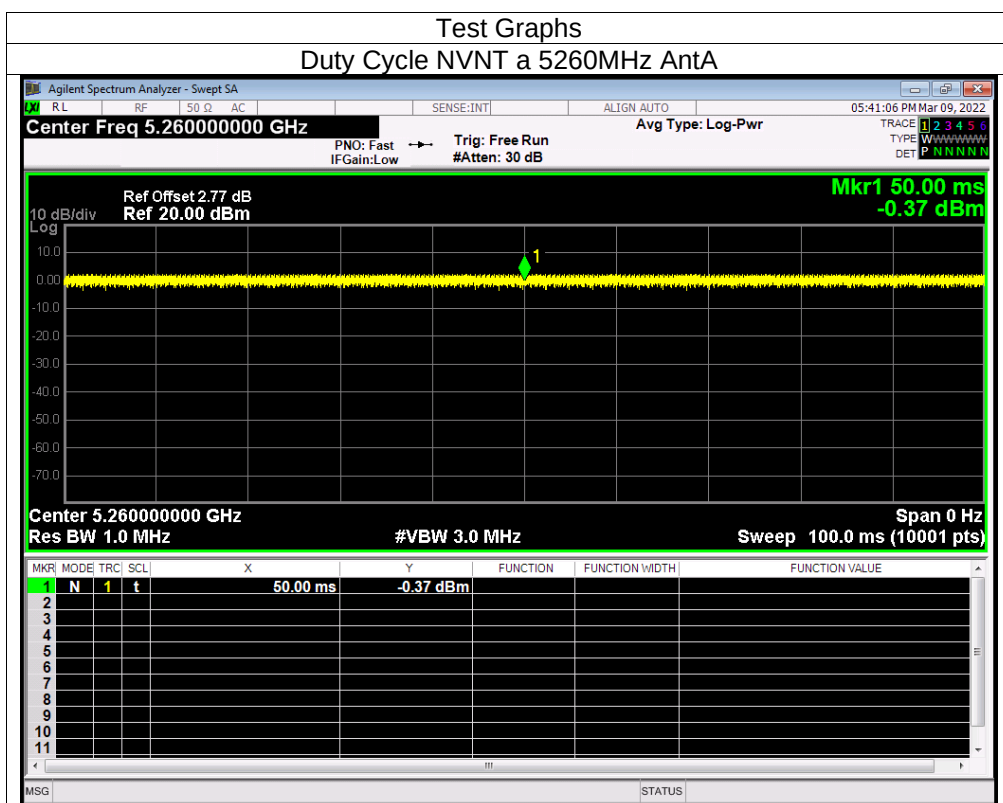


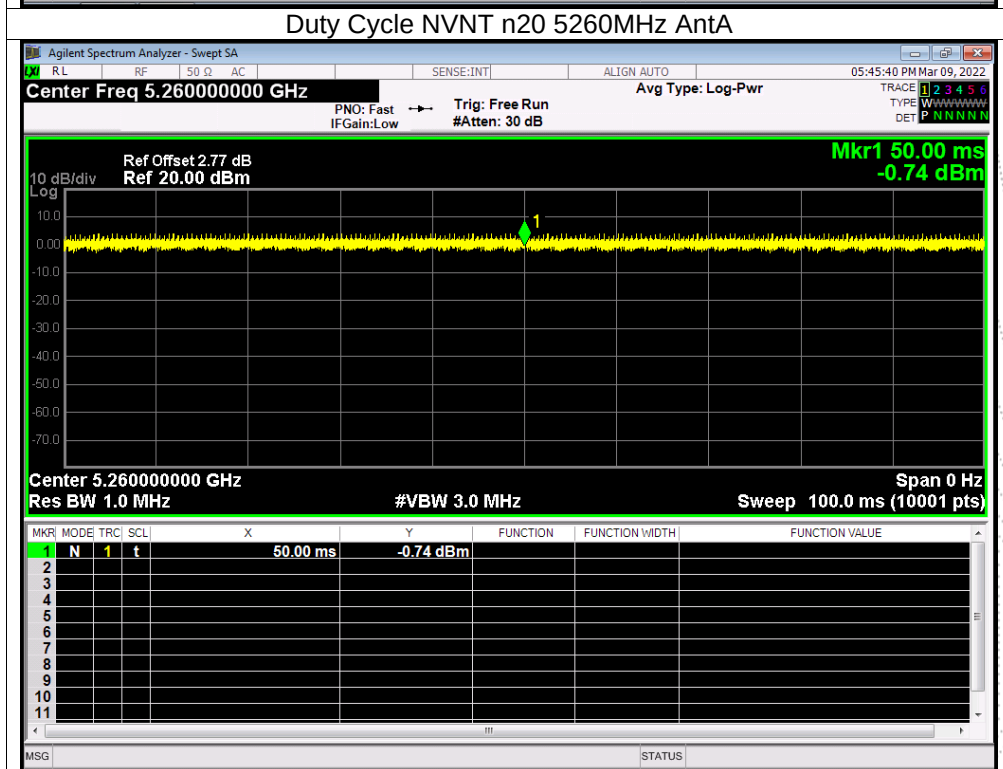
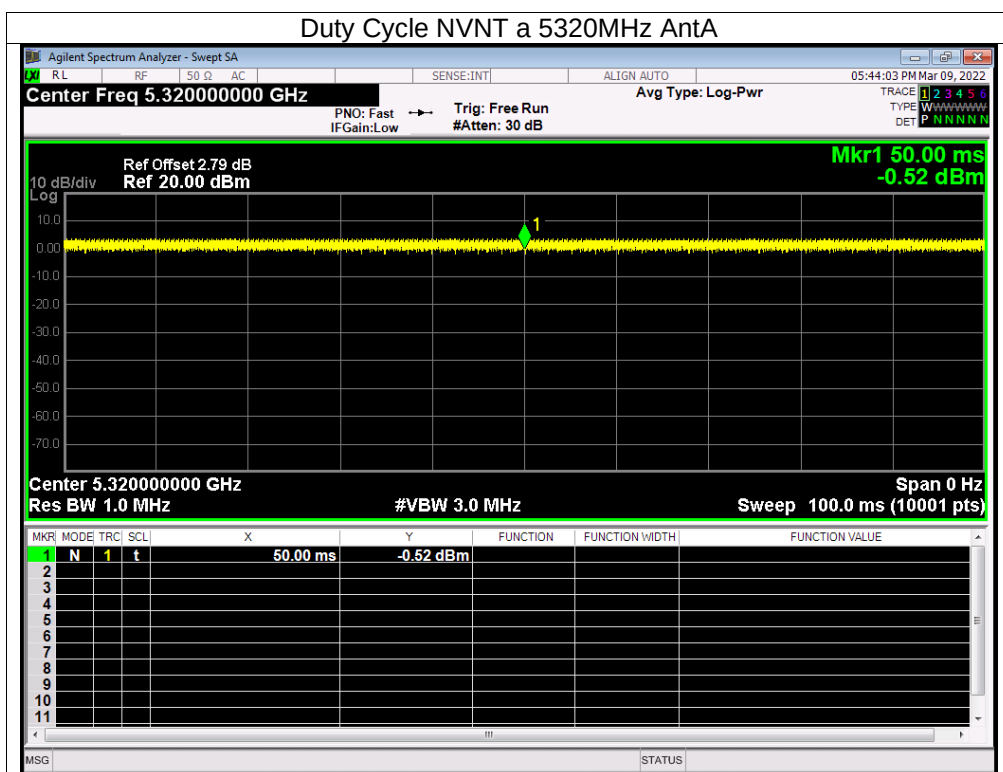


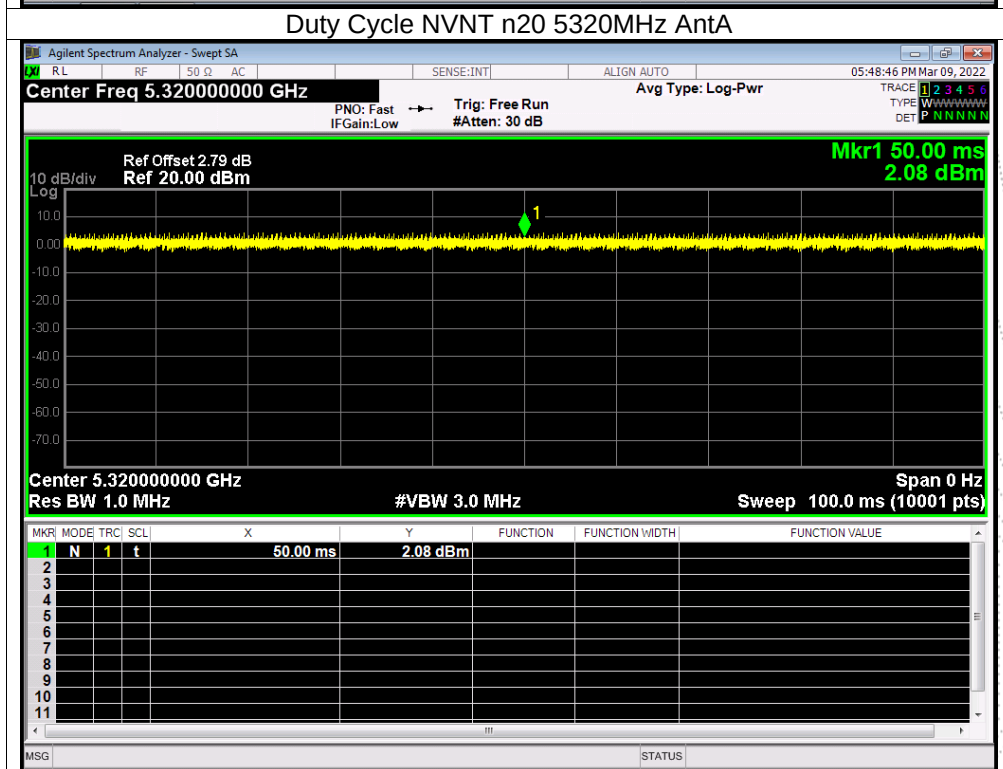
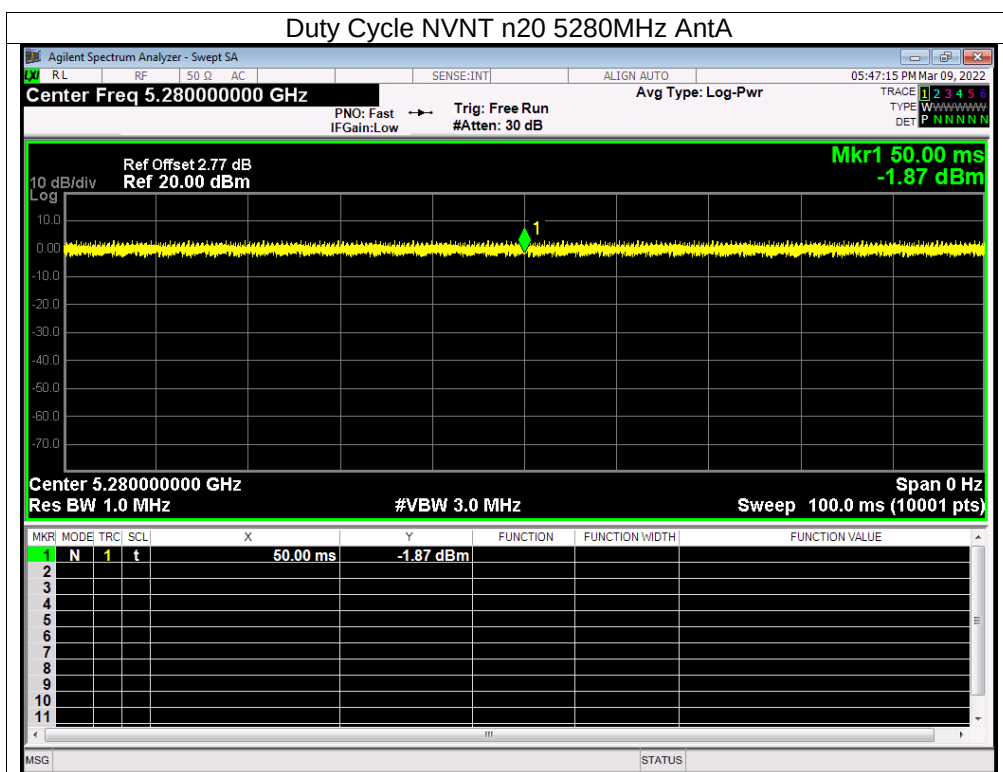
5.3G ANT A

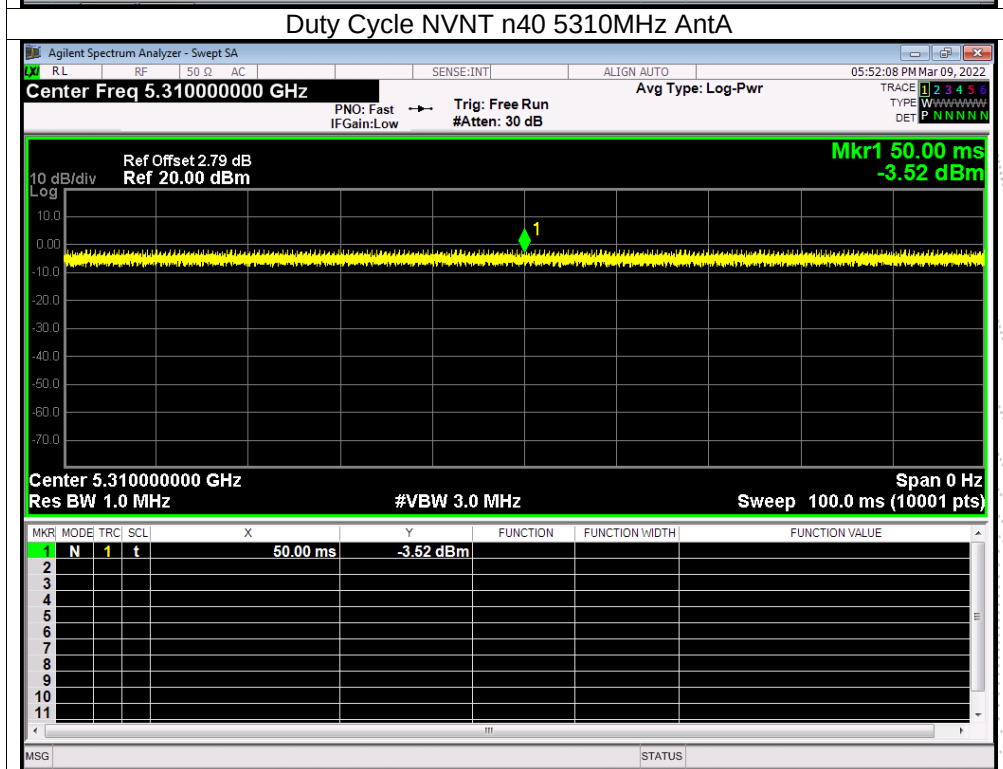
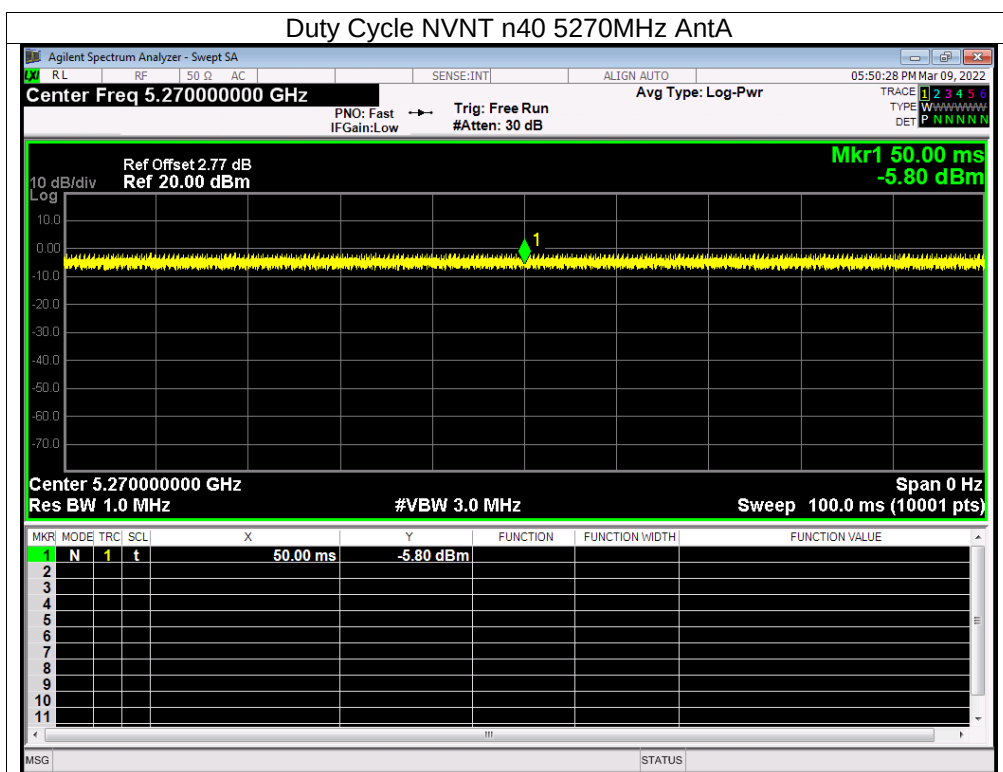
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	a	5260	AntA	100	0	0
NVNT	a	5280	AntA	100	0	0
NVNT	a	5320	AntA	100	0	0
NVNT	n20	5260	AntA	100	0	0
NVNT	n20	5280	AntA	100	0	0
NVNT	n20	5320	AntA	100	0	0
NVNT	n40	5270	AntA	100	0	0
NVNT	n40	5310	AntA	100	0	0





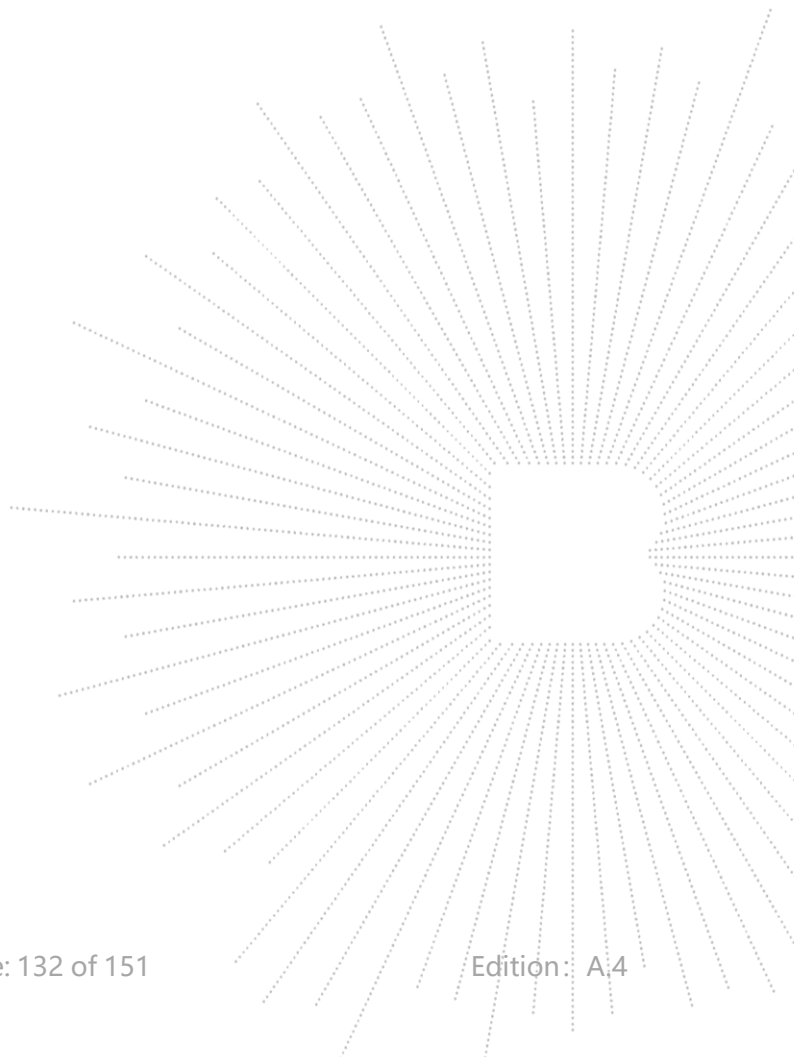


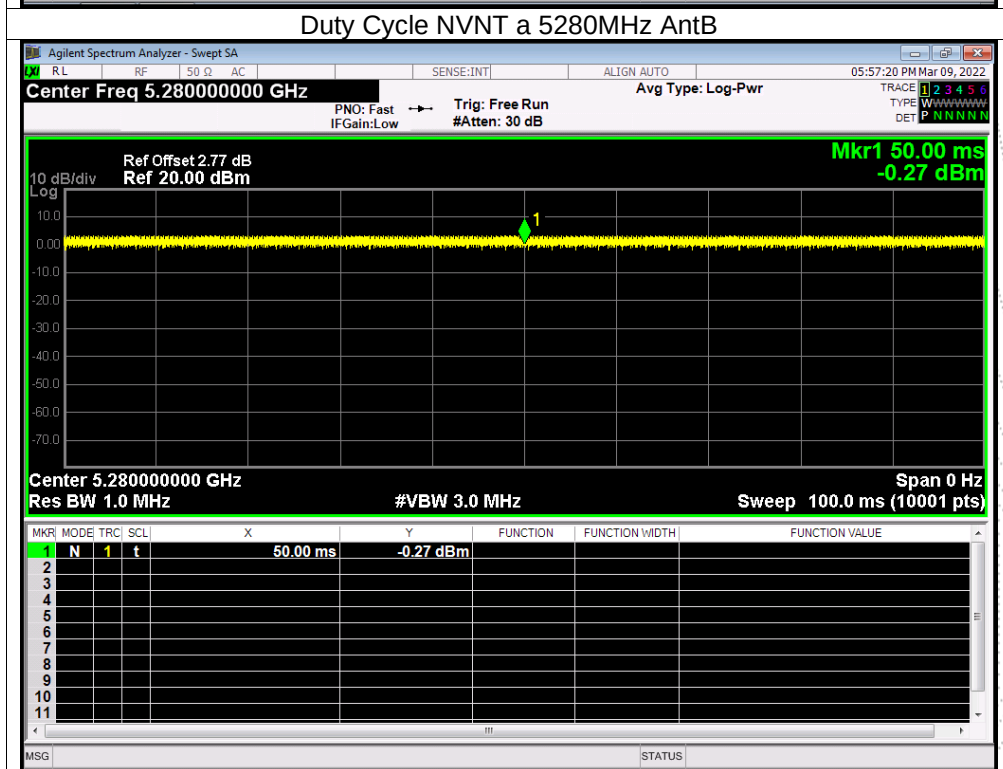
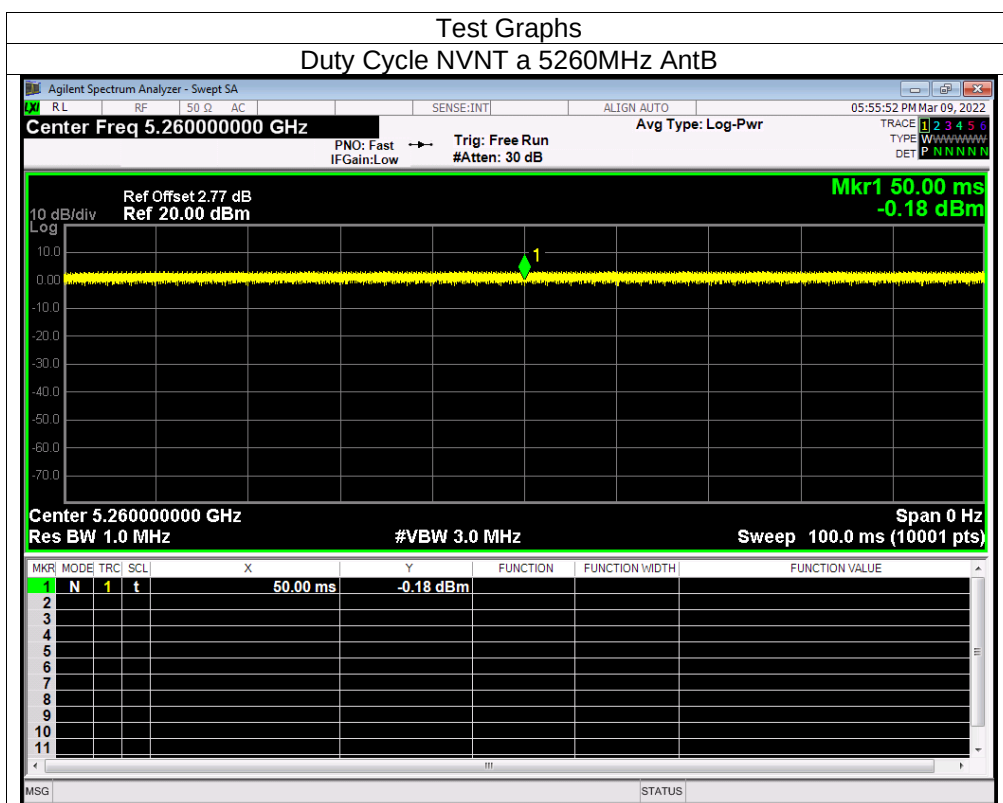


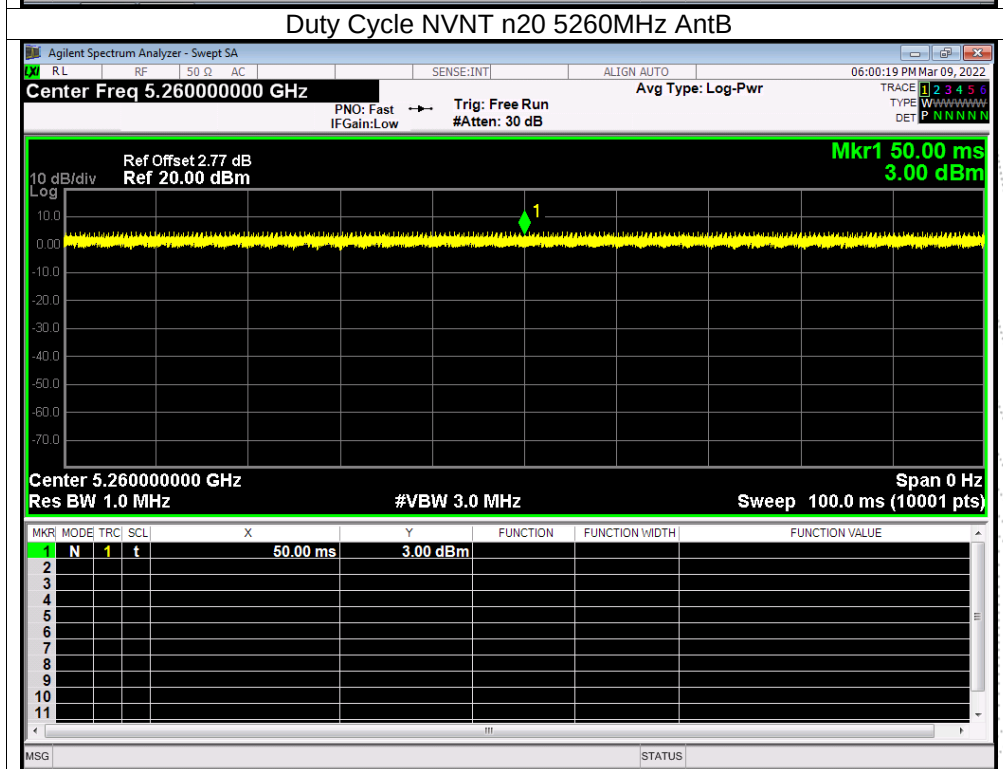
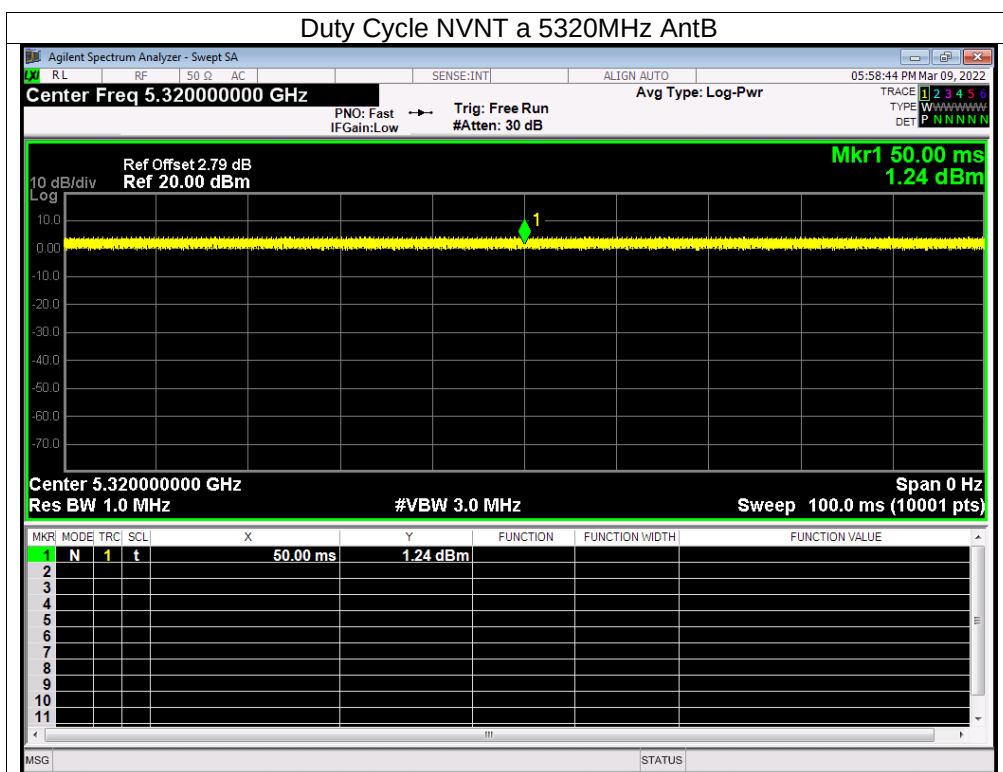


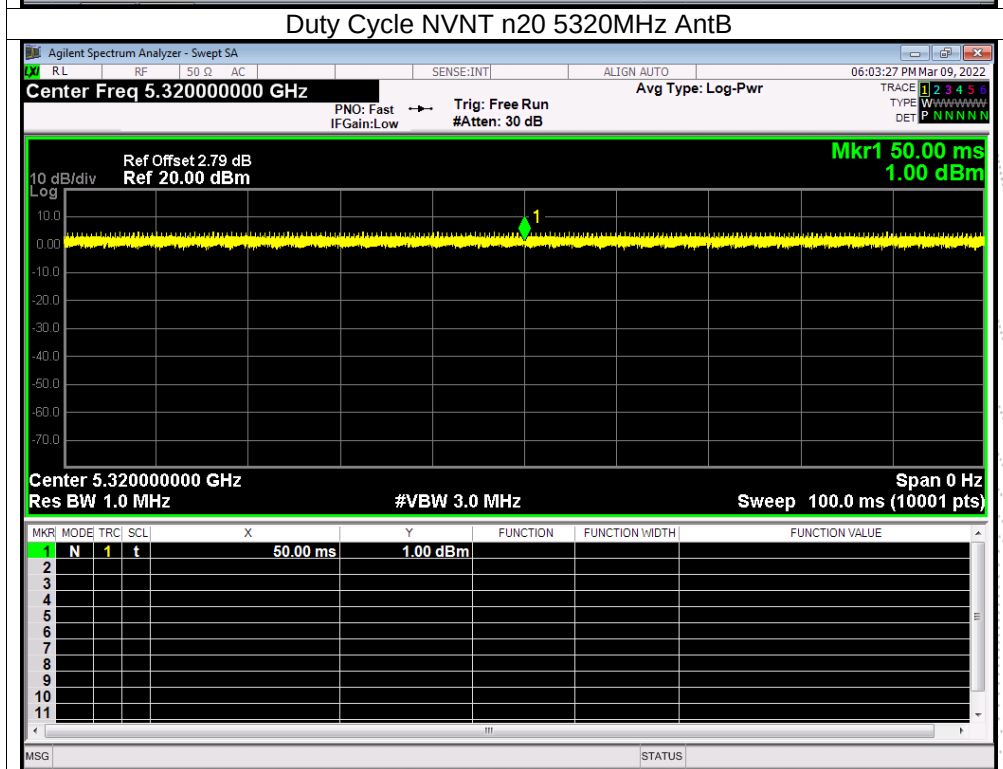
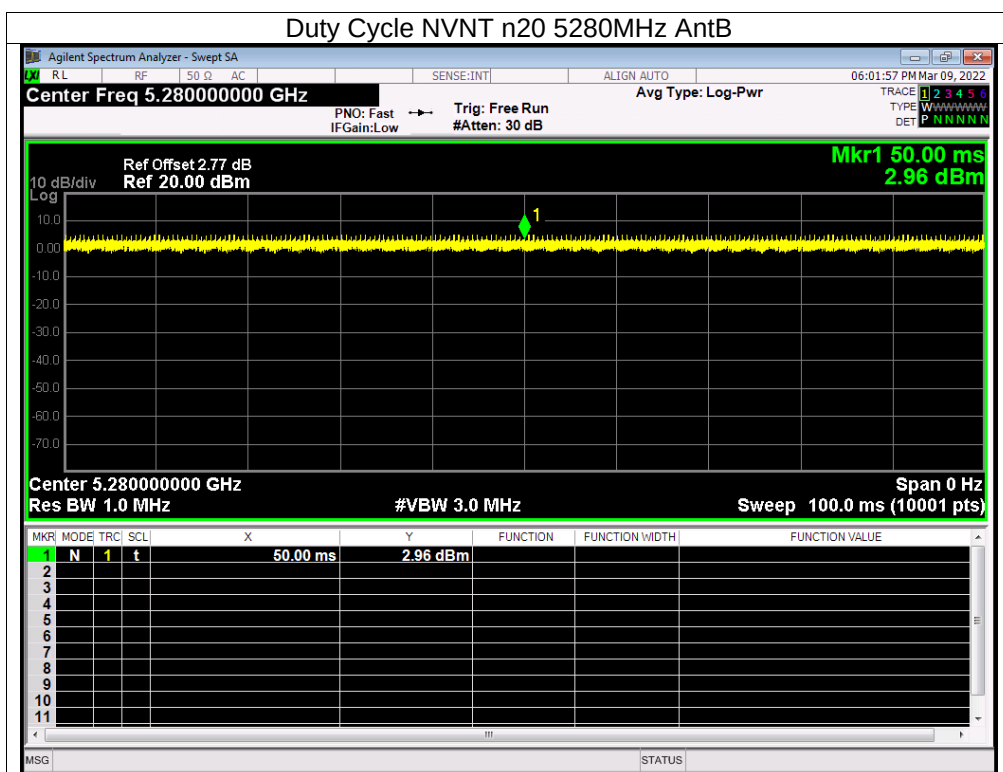
5.3G ANT B

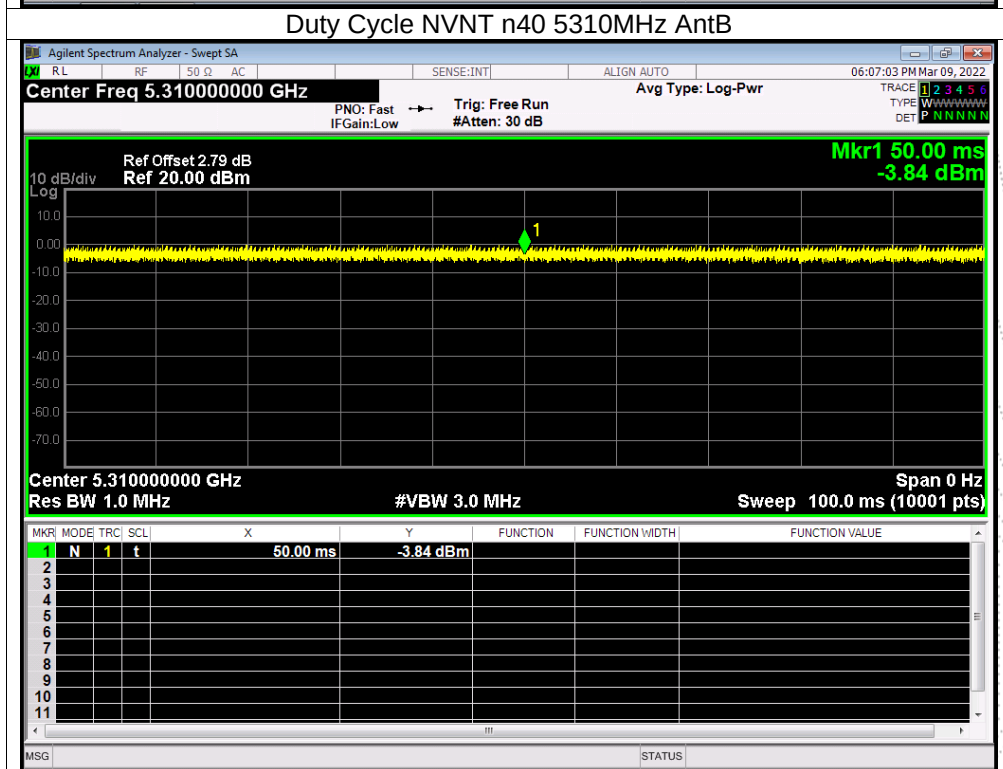
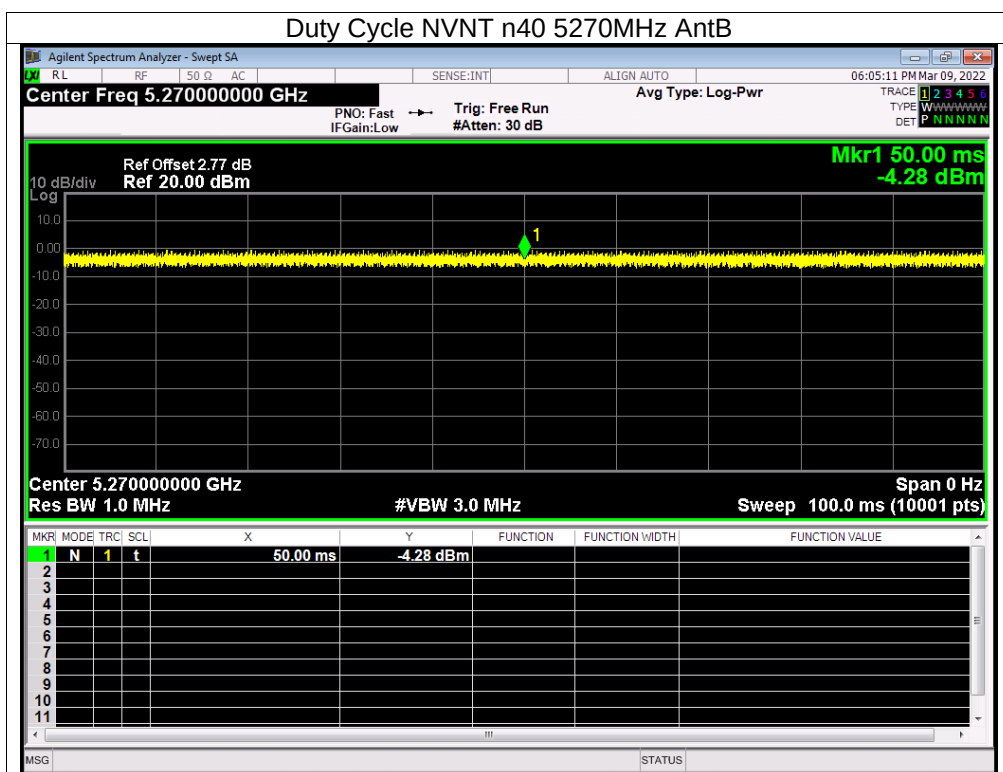
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	a	5260	AntB	100	0	0
NVNT	a	5280	AntB	100	0	0
NVNT	a	5320	AntB	100	0	0
NVNT	n20	5260	AntB	100	0	0
NVNT	n20	5280	AntB	100	0	0
NVNT	n20	5320	AntB	100	0	0
NVNT	n40	5270	AntB	100	0	0
NVNT	n40	5310	AntB	100	0	0











5.8G ANT A

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

