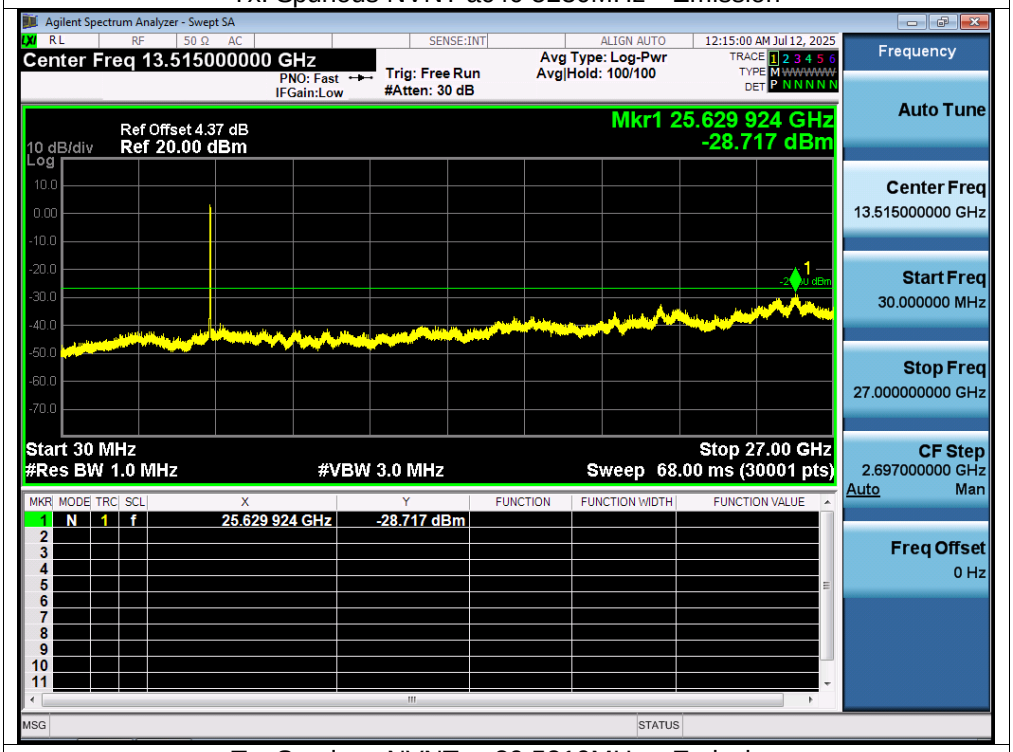
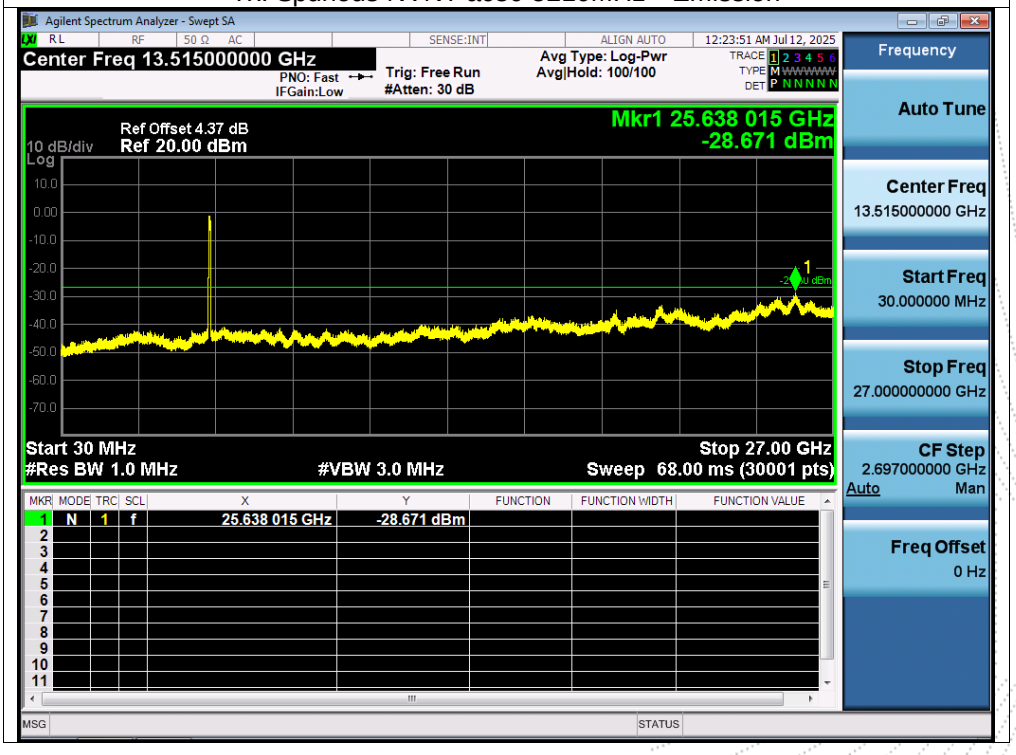
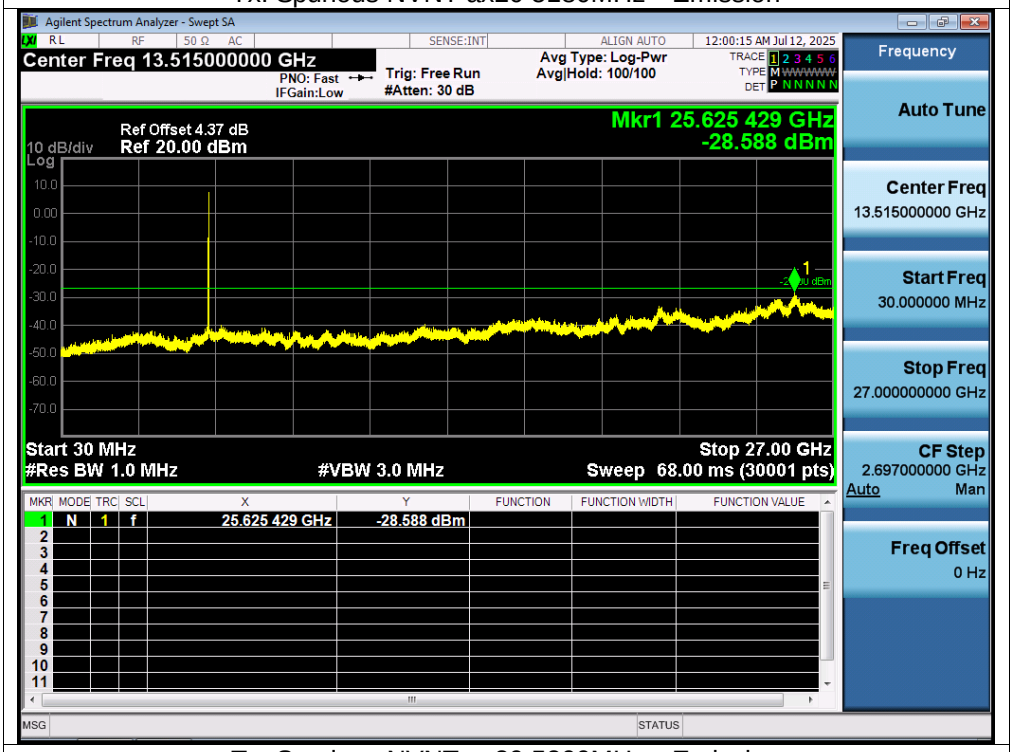
Tx. Spurious NVNT ac40 5230MHz Emission



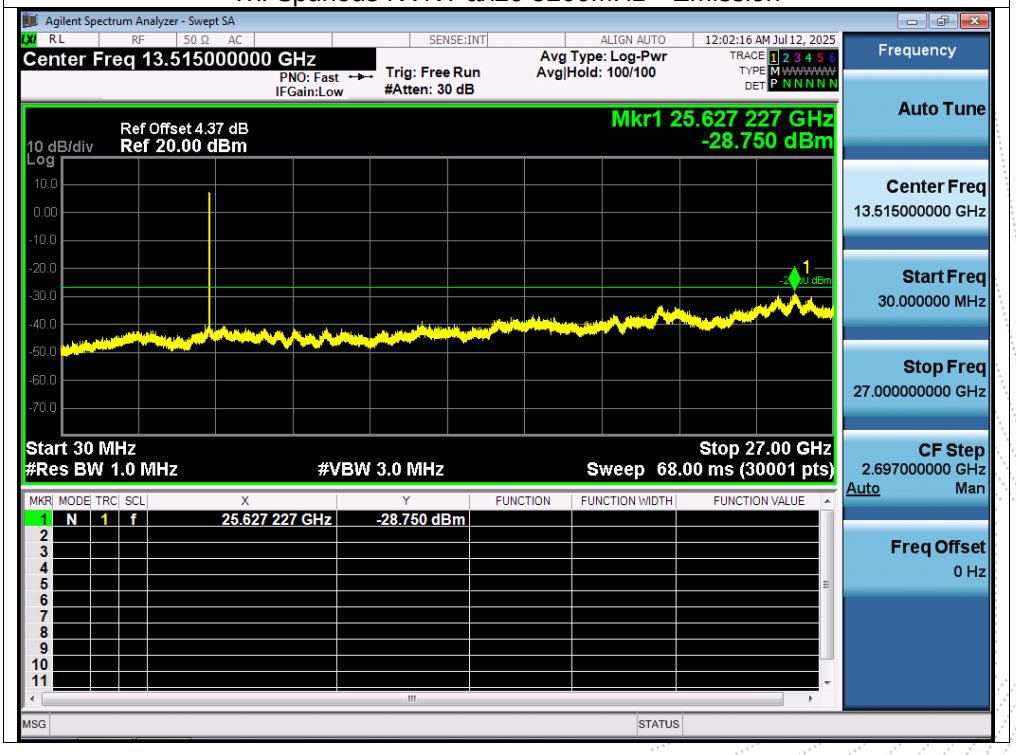
Tx. Spurious NVNT ac80 5210MHz Emission



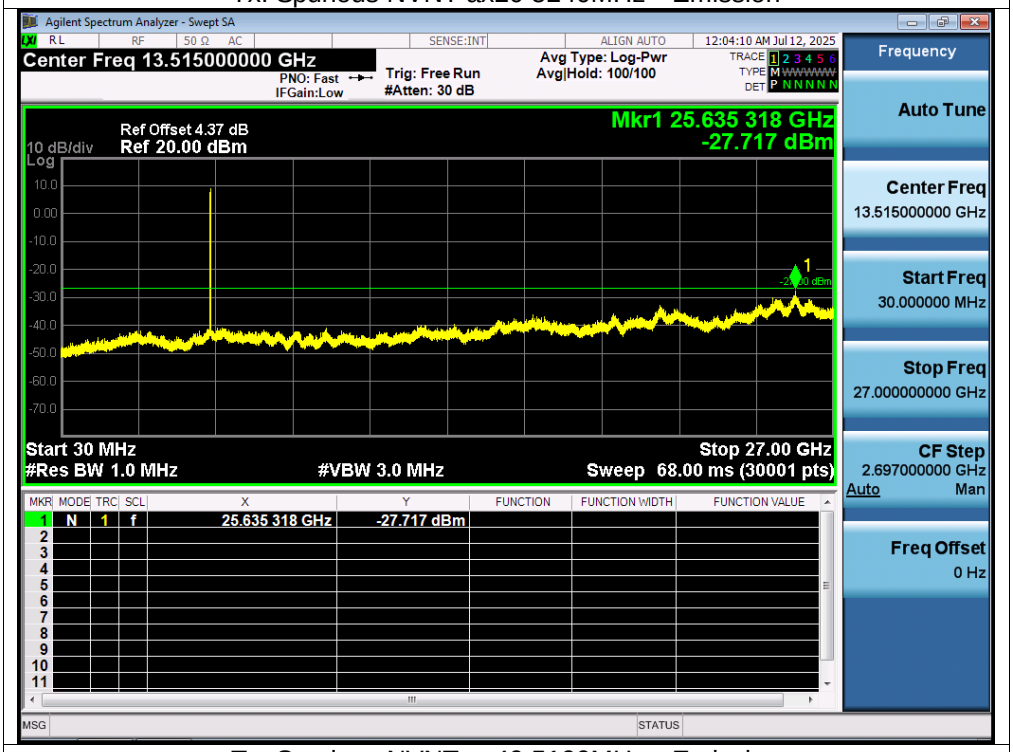
Tx. Spurious NVNT ax20 5180MHz Emission



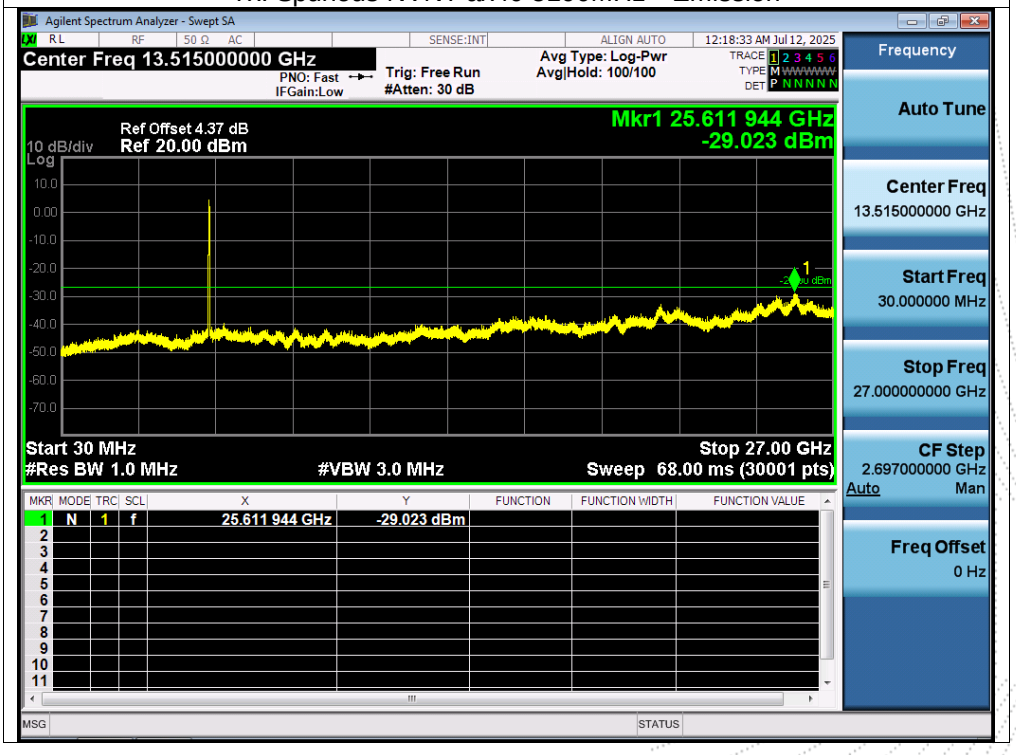
Tx. Spurious NVNT ax20 5200MHz Emission



Tx. Spurious NVNT ax20 5240MHz Emission

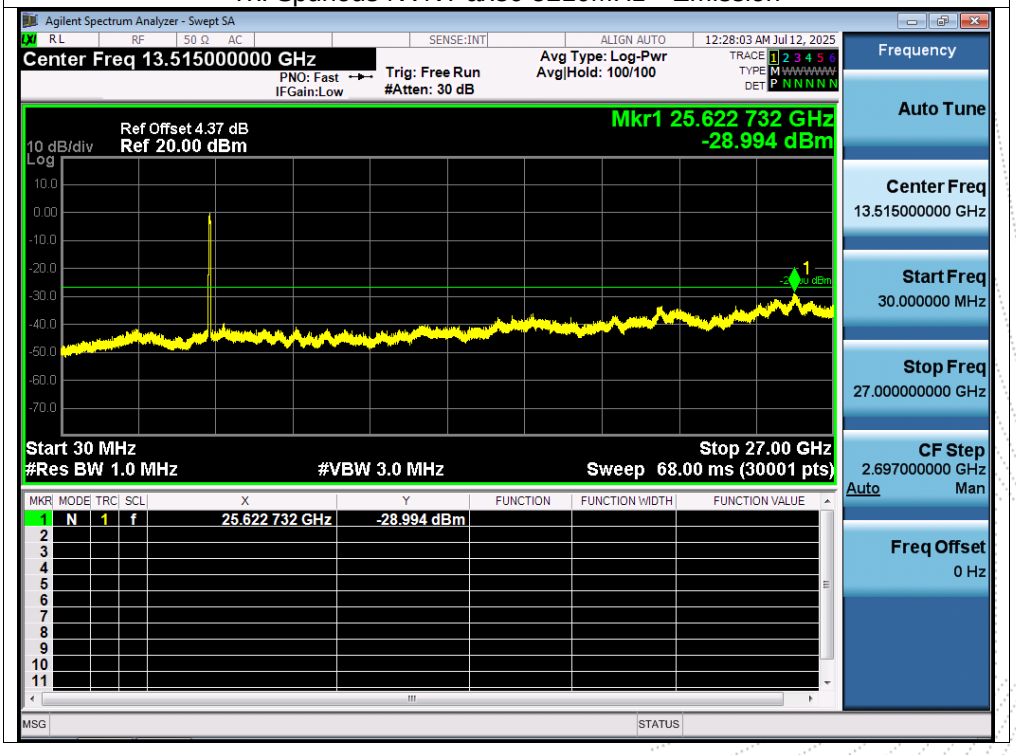


Tx. Spurious NVNT ax40 5190MHz Emission



Tx. Spurious NVNT ax40 5230MHz Emission

Tx. Spurious NVNT ax80 5210MHz Emission

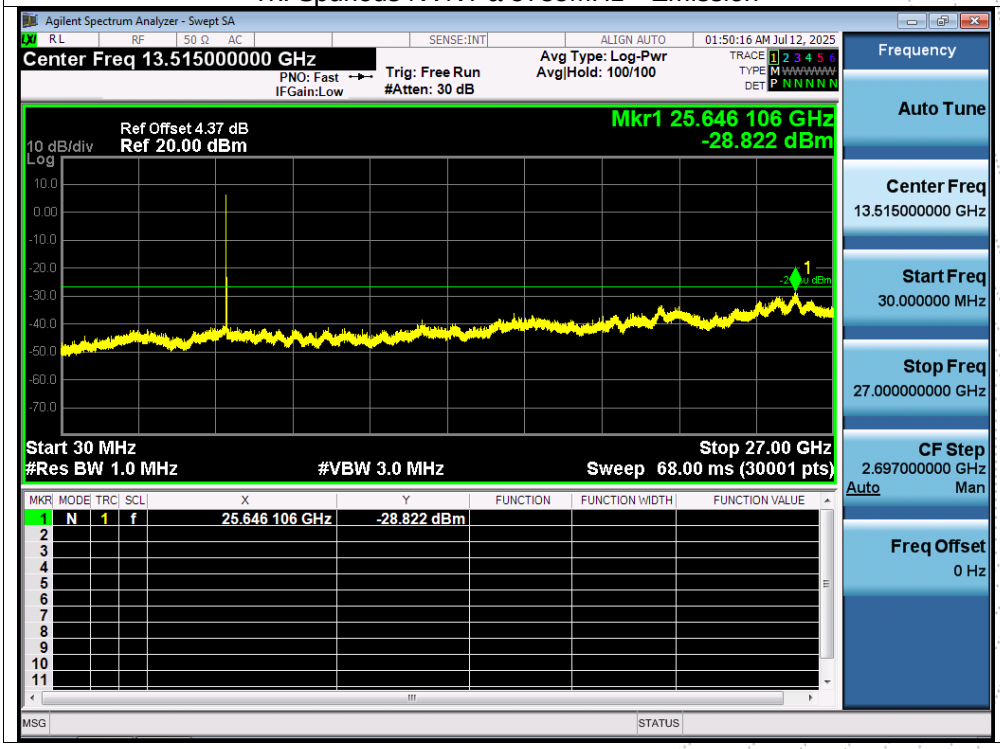


Note: A(B) Represent the value of antenna A and B, The worst data is Antenna A, only shown Antenna A.
Antenna A: 5745-5825MHz

Test Graphs

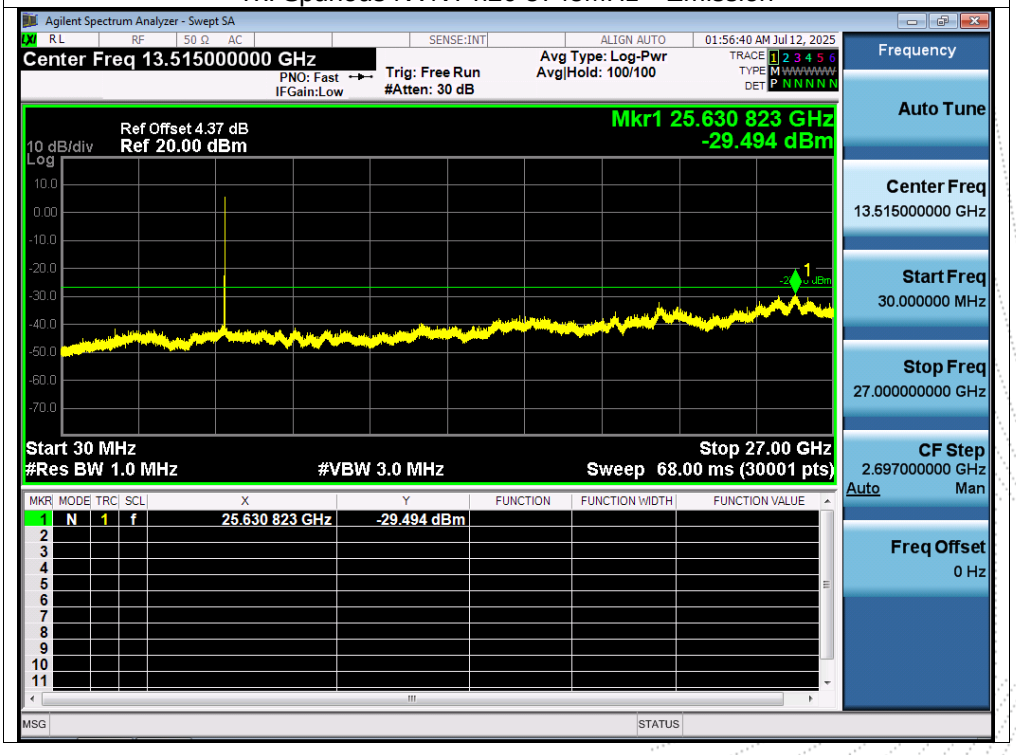
Tx. Spurious NVNT a 5745MHz Emission

Tx. Spurious NVNT a 5785MHz Emission

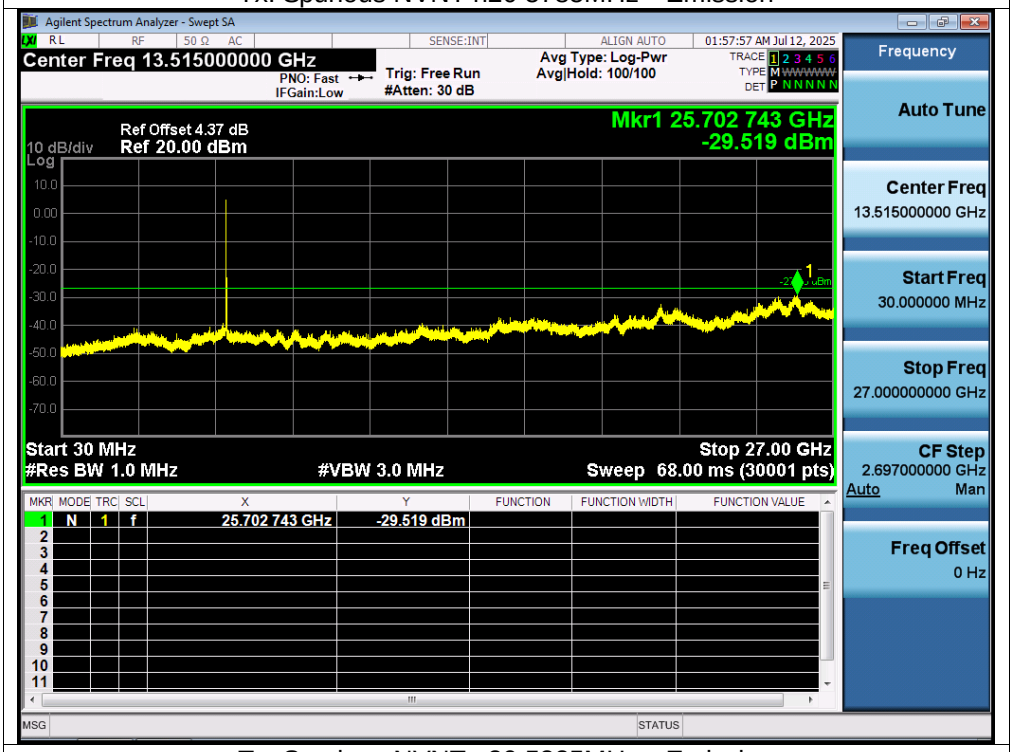


Tx. Spurious NVNT a 5825MHz Emission

Tx. Spurious NVNT n20 5745MHz Emission

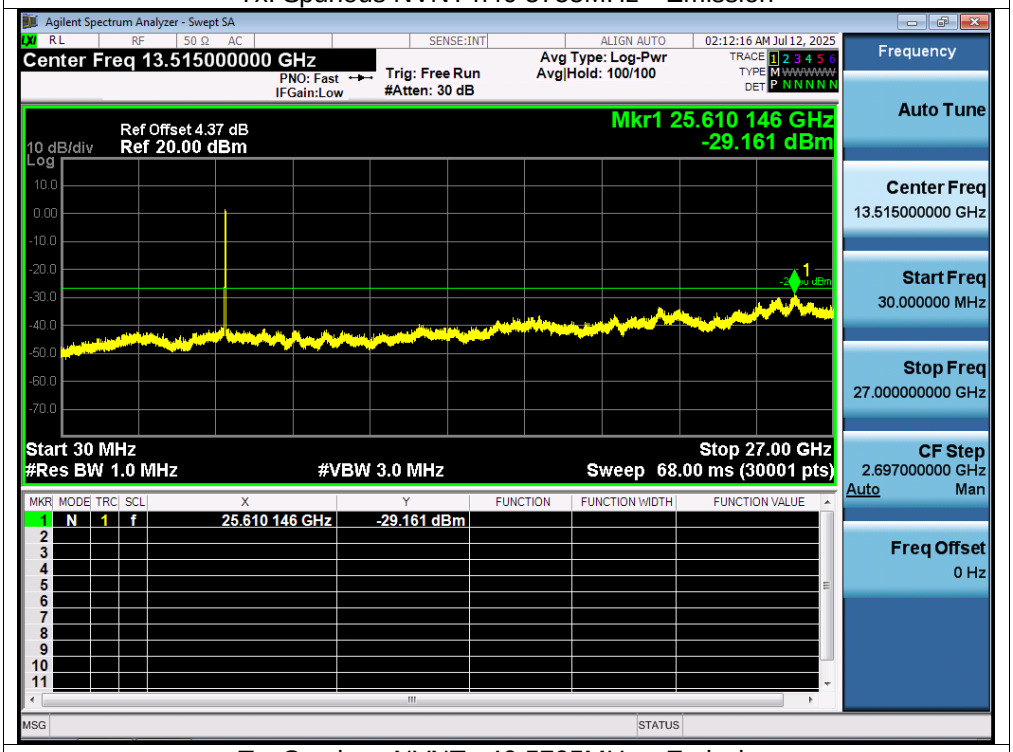


Tx. Spurious NVNT n20 5785MHz Emission

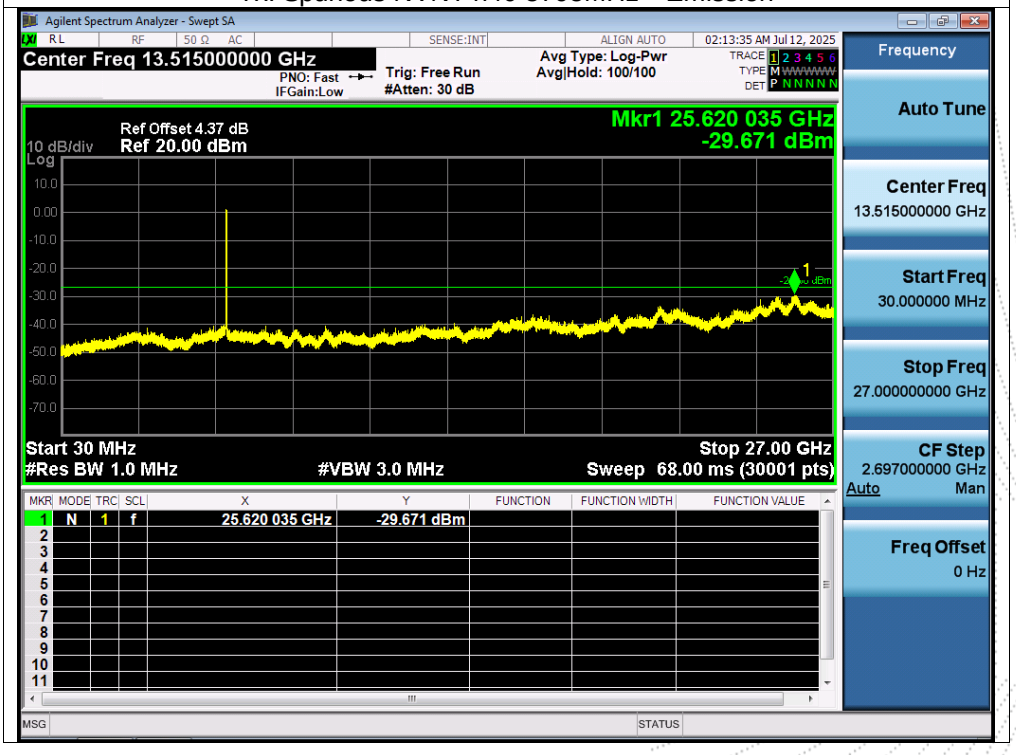


Tx. Spurious NVNT n20 5825MHz Emission

Tx. Spurious NVNT n40 5755MHz Emission



Tx. Spurious NVNT n40 5795MHz Emission



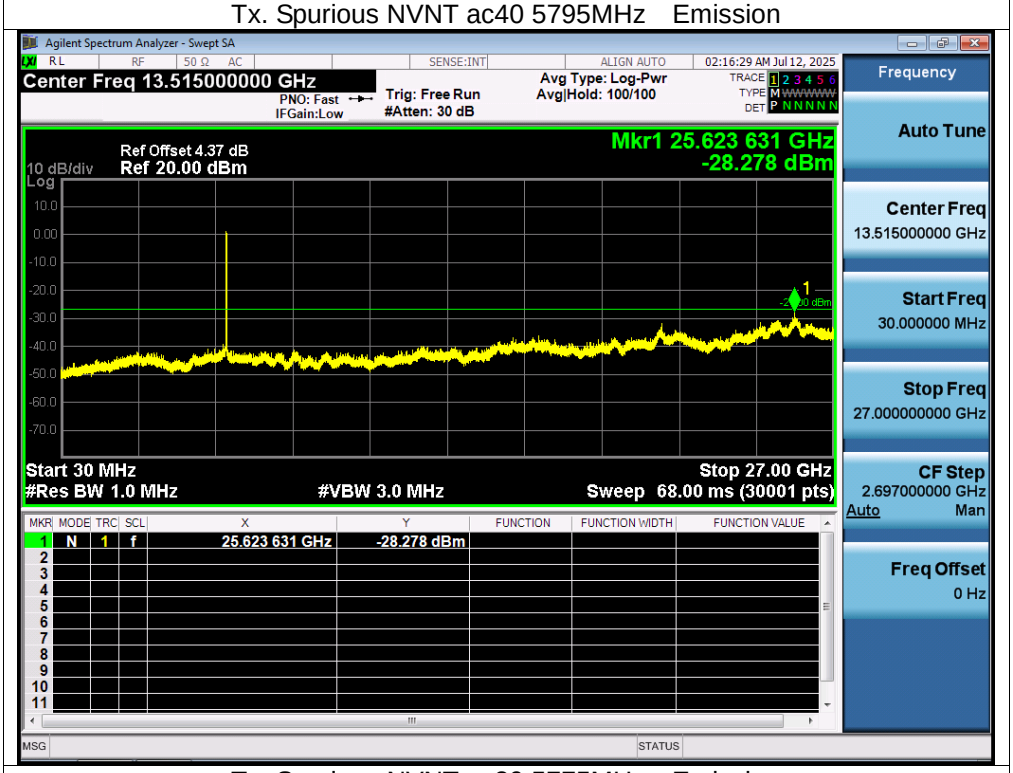
Tx. Spurious NVNT ac20 5745MHz Emission

Tx. Spurious NVNT ac20 5785MHz Emission

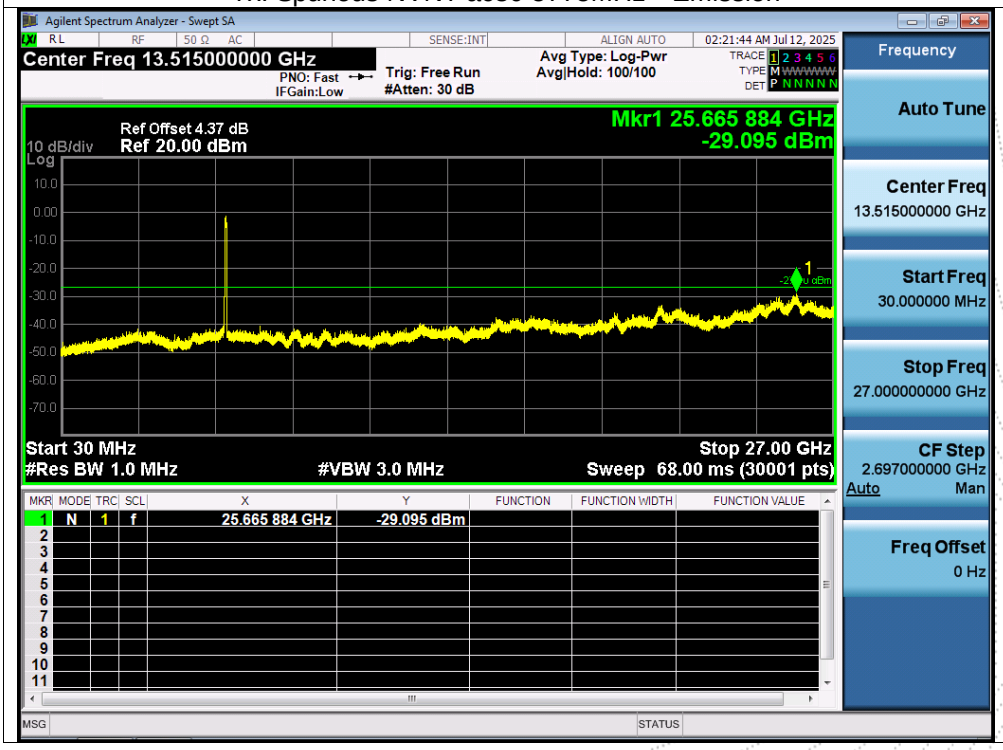
Tx. Spurious NVNT ac20 5825MHz Emission

Tx. Spurious NVNT ac40 5755MHz Emission

Tx. Spurious NVNT ac40 5795MHz Emission



Tx. Spurious NVNT ac80 5775MHz Emission

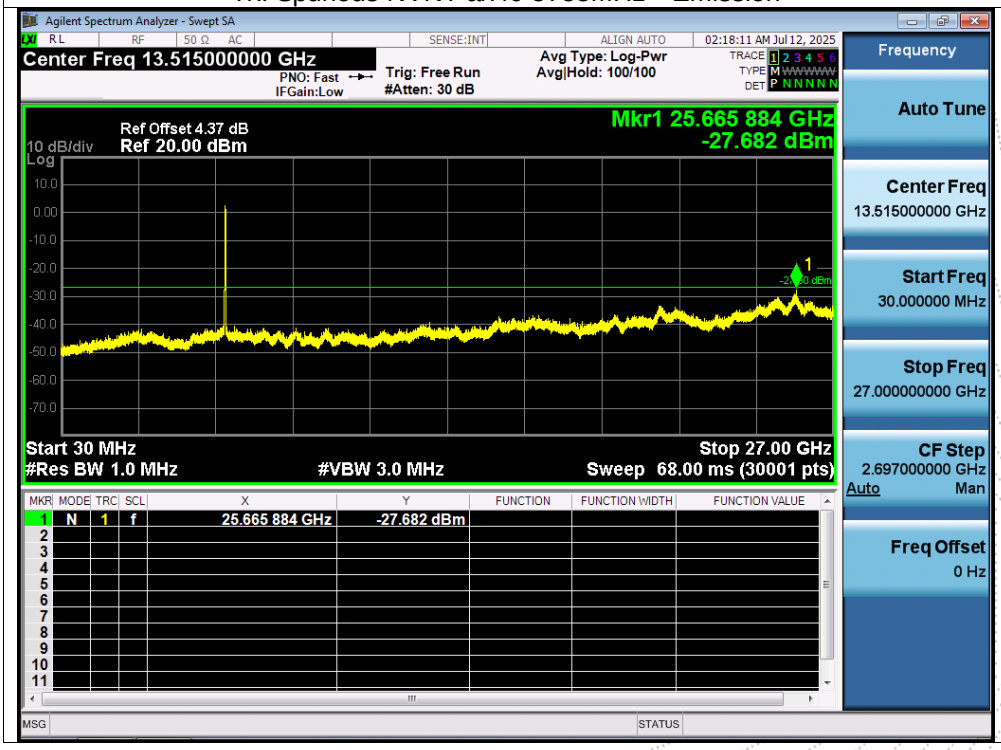


Tx. Spurious NVNT ax20 5745MHz Emission

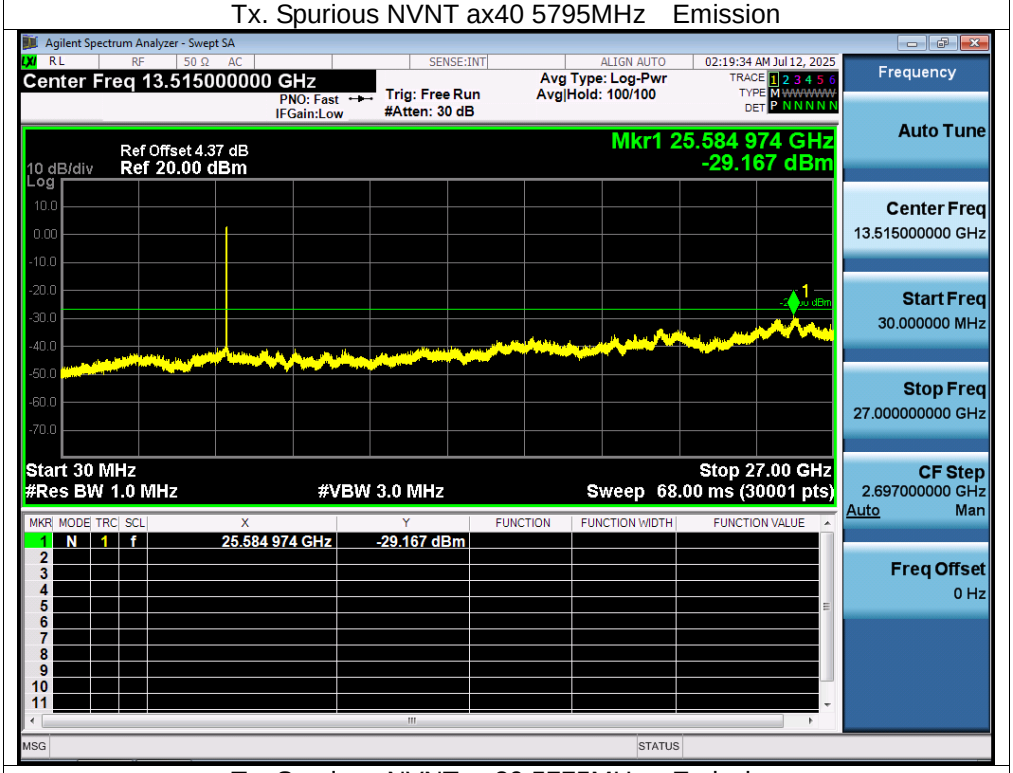
Tx. Spurious NVNT ax20 5785MHz Emission

Tx. Spurious NVNT ax20 5825MHz Emission

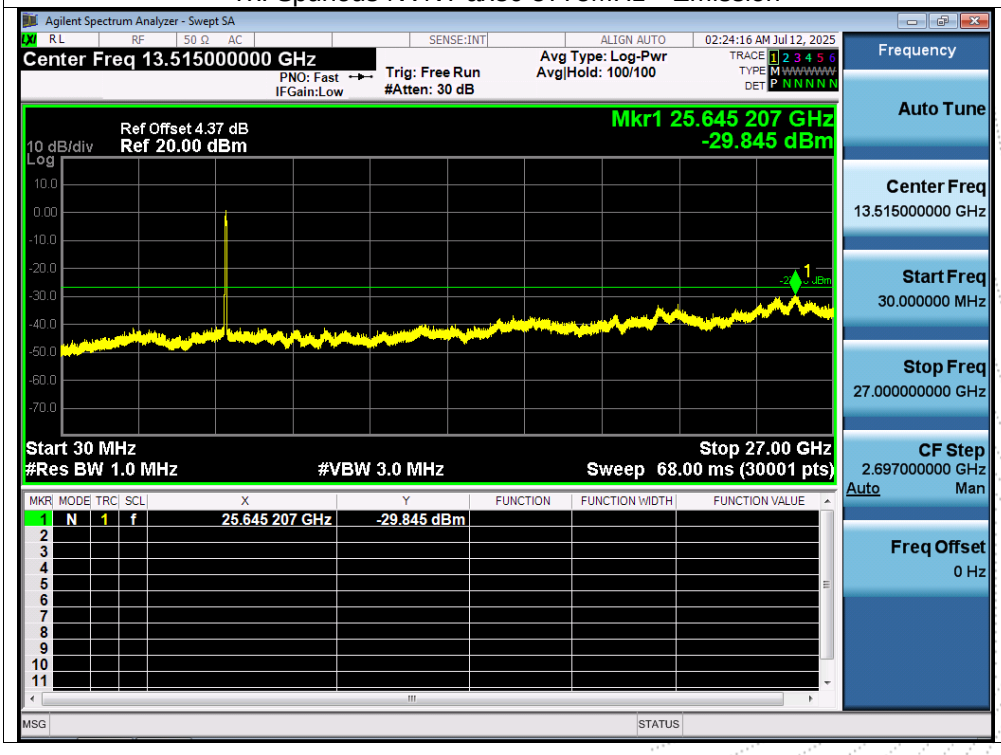
Tx. Spurious NVNT ax40 5755MHz Emission



Tx. Spurious NVNT ax40 5795MHz Emission

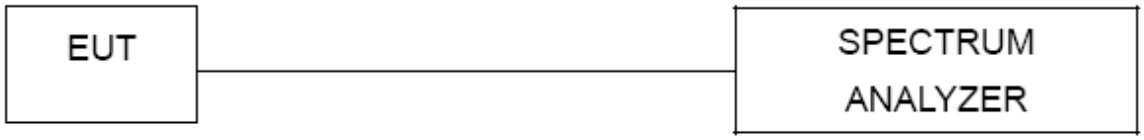


Tx. Spurious NVNT ax80 5775MHz Emission



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. fc is declaring of channel frequency. Then the frequency error formula is (fc-f)/fc × 106 ppm and he limit is less than ±20ppm (IEEE 802.11nspecification).
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°C~70°C.

13.4 Test Result

Temperature:	26 ℃	Relative Humidity:	54%RH
Pressure:	101kPa	Test Voltage:	DC 11.4V
Test Mode:	TX Frequency U-NII-1 (5180-5240MHz)		

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5180MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	11.40	5180.0028	5180	0.0028	0.5405
		V max (V)	13.11	5180.0021	5180	0.0021	0.4054
		V min (V)	9.69	5180.0066	5180	0.0066	1.2741
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)	11.4	T (°C)	-20	5180.0024	5180	0.0024	0.4633
		T (°C)	-10	5180.0010	5180	0.0010	0.1931
		T (°C)	0	5180.0036	5180	0.0036	0.6950
		T (°C)	10	5180.0092	5180	0.0092	1.7761
		T (°C)	20	5180.0134	5180	0.0134	2.5869
		T (°C)	30	5180.0103	5180	0.0103	1.9884
		T (°C)	40	5180.0060	5180	0.0060	1.1583
		T (°C)	50	5180.0039	5180	0.0039	0.7529
		T (°C)	60	5180.0041	5180	0.0041	0.7915
		T (°C)	70	5180.0128	5180	0.0128	2.4710
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)	11.40	5200.0005	5200	0.0005	0.0962
		V max (V)	13.11	5200.0014	5200	0.0014	0.2692
		V min (V)	9.69	5200.0048	5200	0.0048	0.9231
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)	11.4	T (°C)	-20	5200.0112	5200	0.0112	2.1538
		T (°C)	-10	5200.0112	5200	0.0112	2.1538
		T (°C)	0	5200.0061	5200	0.0061	1.1731
		T (°C)	10	5200.0048	5200	0.0048	0.9231
		T (°C)	20	5200.0084	5200	0.0084	1.6154
		T (°C)	30	5200.0010	5200	0.0010	0.1923
		T (°C)	40	5200.0019	5200	0.0019	0.3654
		T (°C)	50	5200.0013	5200	0.0013	0.2500
		T (°C)	60	5200.0106	5200	0.0106	2.0385
		T (°C)	70	5200.0074	5200	0.0074	1.4231
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)	11.40	5240.0071	5240	0.0071	1.3550
		V max (V)	13.11	5240.0092	5240	0.0092	1.7557
		V min (V)	9.69	5240.0112	5240	0.0112	2.1374
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)	11.4	T (°C)	-20	5240.0103	5240	0.0103	1.9656
		T (°C)	-10	5240.0021	5240	0.0021	0.4008
		T (°C)	0	5240.0026	5240	0.0026	0.4962
		T (°C)	10	5240.0051	5240	0.0051	0.9733
		T (°C)	20	5240.0088	5240	0.0088	1.6794
		T (°C)	30	5240.0108	5240	0.0108	2.0611
		T (°C)	40	5240.0076	5240	0.0076	1.4504
		T (°C)	50	5240.0105	5240	0.0105	2.0038
		T (°C)	60	5240.0128	5240	0.0128	2.4427
		T (°C)	70	5240.0109	5240	0.0109	2.0802
Limits				5150-5250 MHz			
Result				Complies			

Temperature:	26 ℃	Relative Humidity:	54%RH
Pressure:	101kPa	Test Voltage:	DC 11.4V
Test Mode:	TX 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)	11.40	5745.0021	5745	0.0021	0.3655
		V max (V)	13.11	5745.0047	5745	0.0047	0.8181
		V min (V)	9.69	5745.0081	5745	0.0081	1.4099
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)	11.4	T (°C)	-20	5745.0005	5745	0.0005	0.0870
		T (°C)	-10	5745.0075	5745	0.0075	1.3055
		T (°C)	0	5745.0011	5745	0.0011	0.1915
		T (°C)	10	5745.0132	5745	0.0132	2.2977
		T (°C)	20	5745.0032	5745	0.0032	0.5570
		T (°C)	30	5745.0096	5745	0.0096	1.6710
		T (°C)	40	5745.0028	5745	0.0028	0.4874
		T (°C)	50	5745.0092	5745	0.0092	1.6014
		T (°C)	60	5745.0115	5745	0.0115	2.0017
		T (°C)	70	5745.0093	5745	0.0093	1.6188
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)	11.40	5785.0070	5785	0.0070	1.2100
		V max (V)	13.11	5785.0041	5785	0.0041	0.7087
		V min (V)	9.69	5785.0065	5785	0.0065	1.1236
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)	11.4	T (°C)	-20	5785.0060	5785	0.0060	1.0372
		T (°C)	-10	5785.0095	5785	0.0095	1.6422
		T (°C)	0	5785.0133	5785	0.0133	2.2990
		T (°C)	10	5785.0046	5785	0.0046	0.7952
		T (°C)	20	5785.0082	5785	0.0082	1.4175
		T (°C)	30	5785.0004	5785	0.0004	0.0691
		T (°C)	40	5785.0072	5785	0.0072	1.2446
		T (°C)	50	5785.0027	5785	0.0027	0.4667
		T (°C)	60	5785.0080	5785	0.0080	1.3829
		T (°C)	70	5785.0017	5785	0.0017	0.2939
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)	11.40	5825.0072	5825	0.0072	1.2361
		V max (V)	13.11	5825.0097	5825	0.0097	1.6652
		V min (V)	9.69	5825.0059	5825	0.0059	1.0129
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)	11.4	T (°C)	-20	5825.0079	5825	0.0079	1.3562
		T (°C)	-10	5825.0130	5825	0.0130	2.2318
		T (°C)	0	5825.0073	5825	0.0073	1.2532
		T (°C)	10	5825.0030	5825	0.0030	0.5150
		T (°C)	20	5825.0069	5825	0.0069	1.1845
		T (°C)	30	5825.0063	5825	0.0063	1.0815
		T (°C)	40	5825.0063	5825	0.0063	1.0815
		T (°C)	50	5825.0117	5825	0.0117	2.0086
		T (°C)	60	5825.0086	5825	0.0086	1.4764
		T (°C)	70	5825.0025	5825	0.0025	0.4292
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 = Ton / (Ton+Toff)

14.3 Test Procedure

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

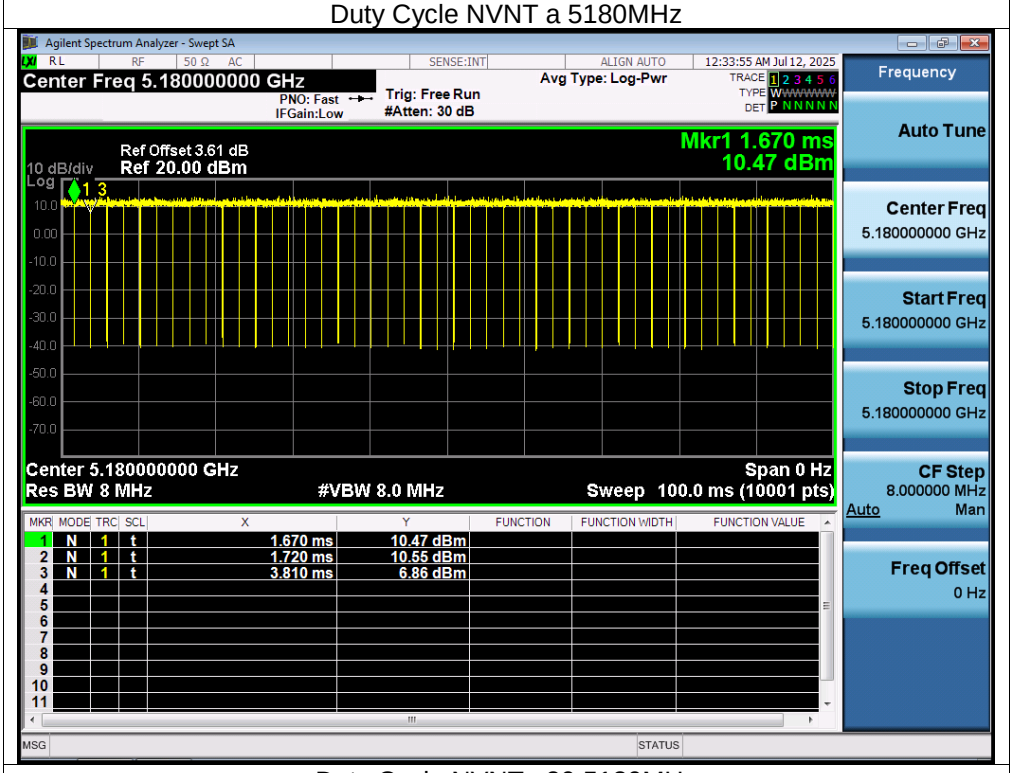
14.4 Test Result

ANT A

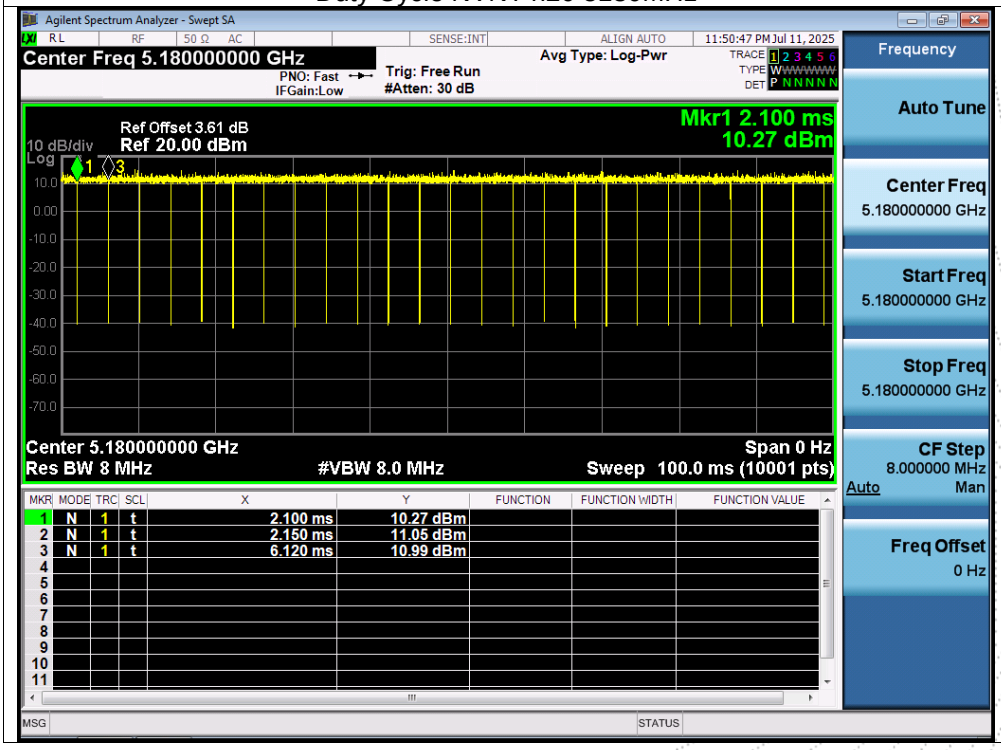
Condition	Mode	Frequency (MHz)	Duty Cycle (%)	Duty Fator(dB)
NVNT	a	5180	97.66	0.1
NVNT	n20	5180	98.76	0
NVNT	n40	5190	99	0
NVNT	ac20	5180	99	0
NVNT	ac40	5190	98.75	0
NVNT	ac80	5210	98.76	0
NVNT	ax20	5180	98.76	0
NVNT	ax40	5190	98.76	0
NVNT	ax80	5210	98.76	0

Test Graphs

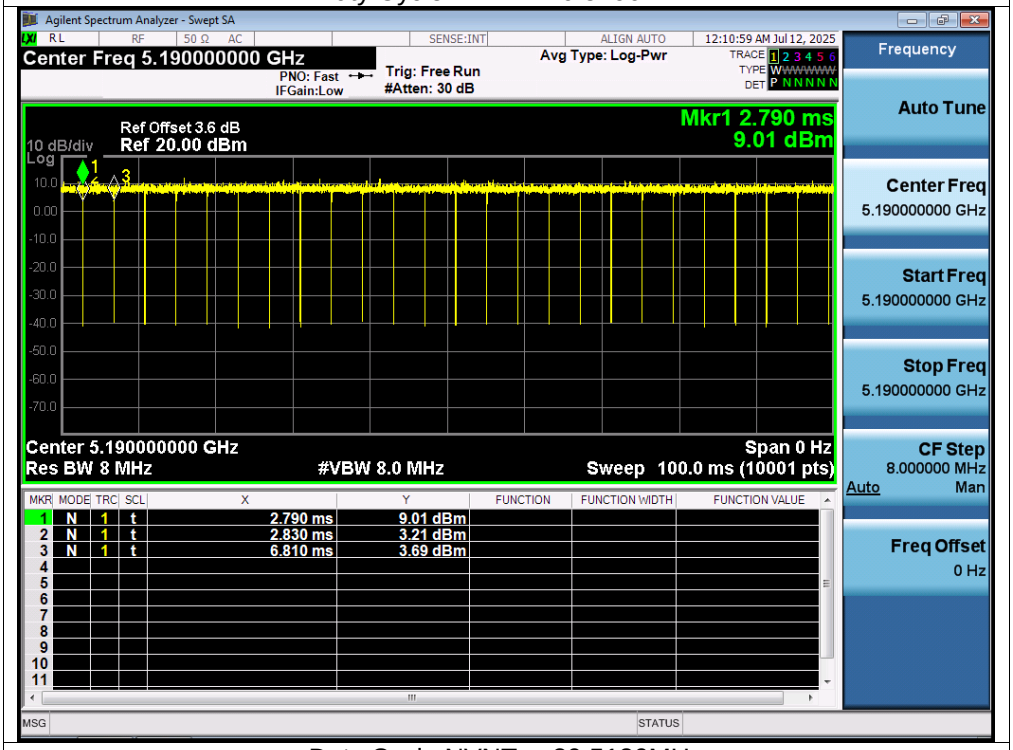
Duty Cycle NVNT a 5180MHz



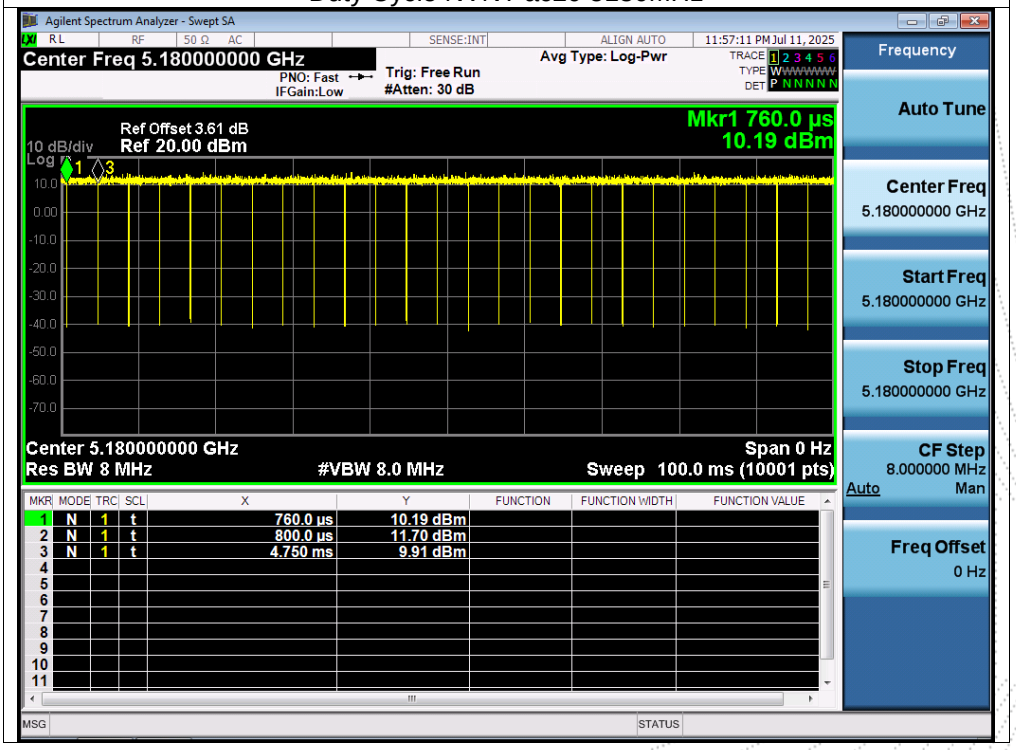
Duty Cycle NVNT n20 5180MHz



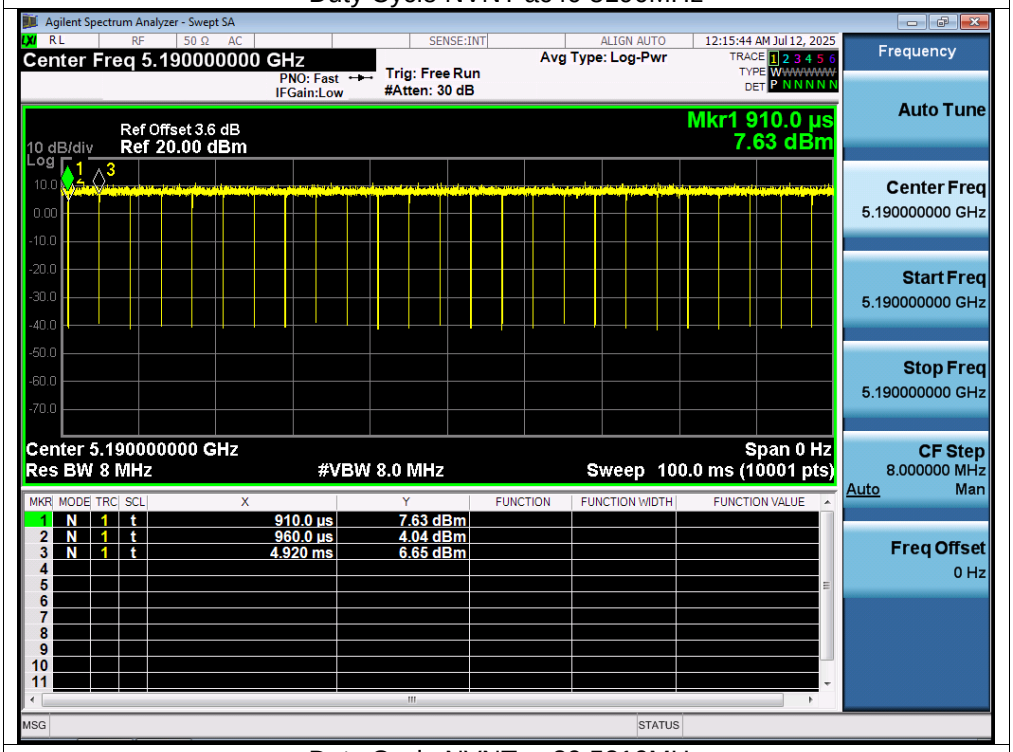
Duty Cycle NVNT n40 5190MHz



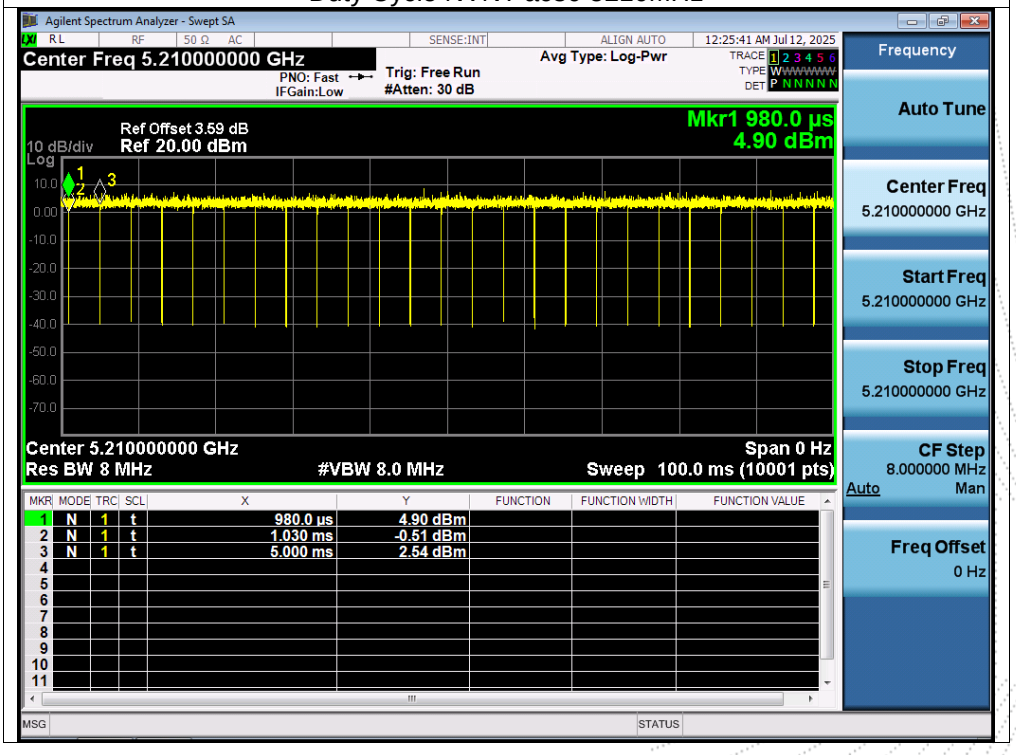
Duty Cycle NVNT ac20 5180MHz



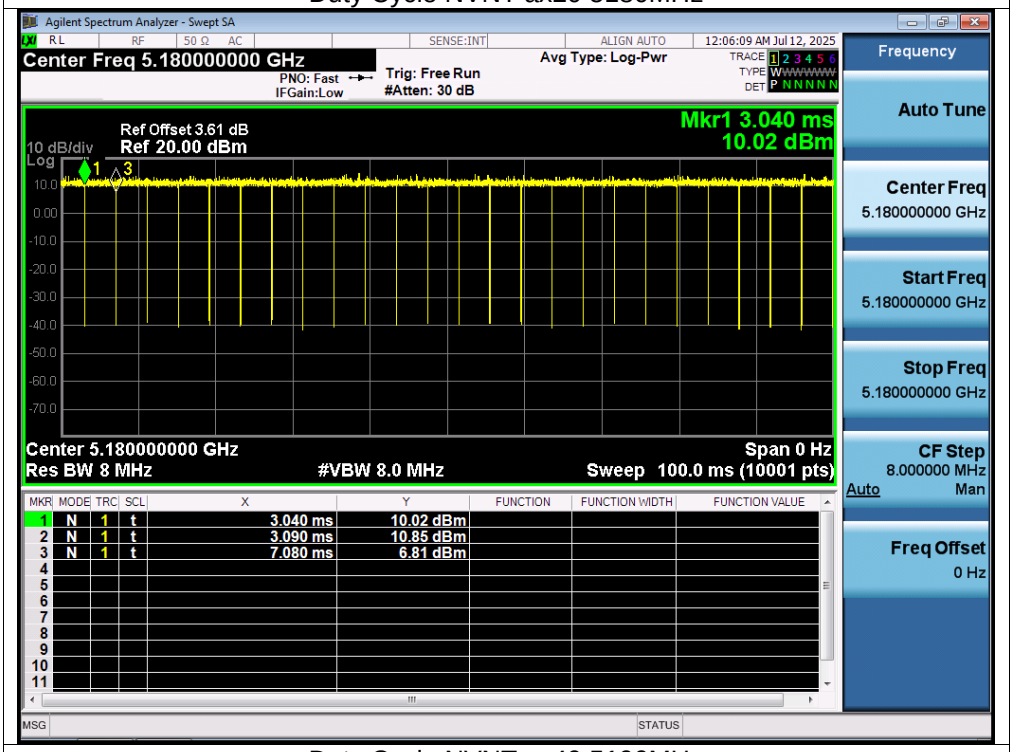
Duty Cycle NVNT ac40 5190MHz



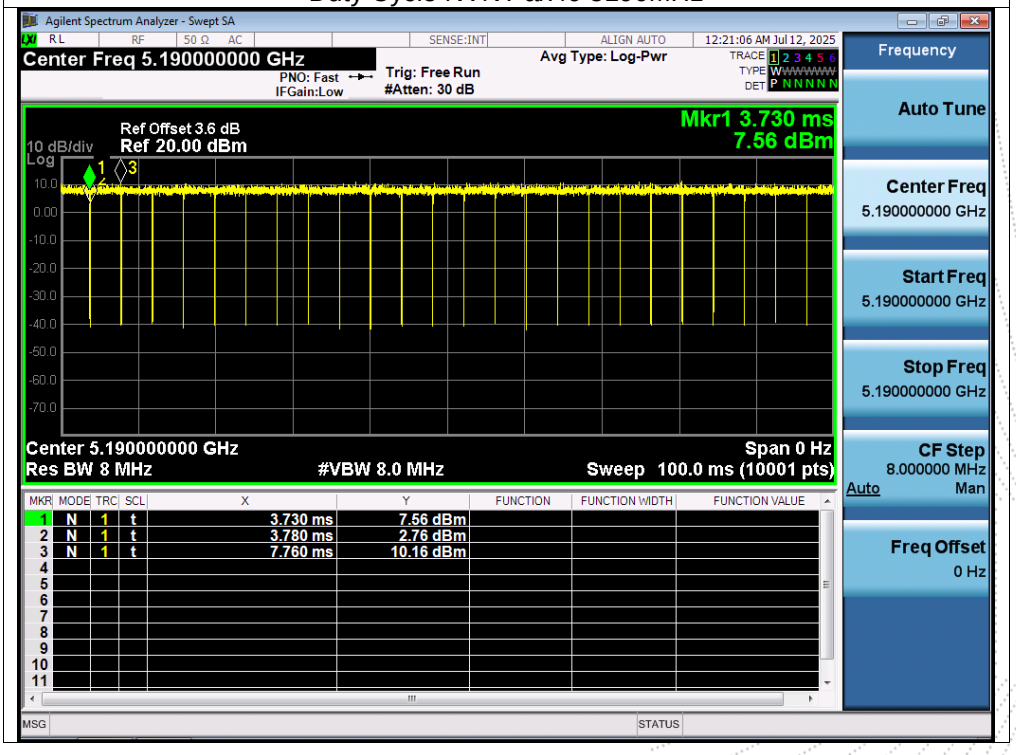
Duty Cycle NVNT ac80 5210MHz



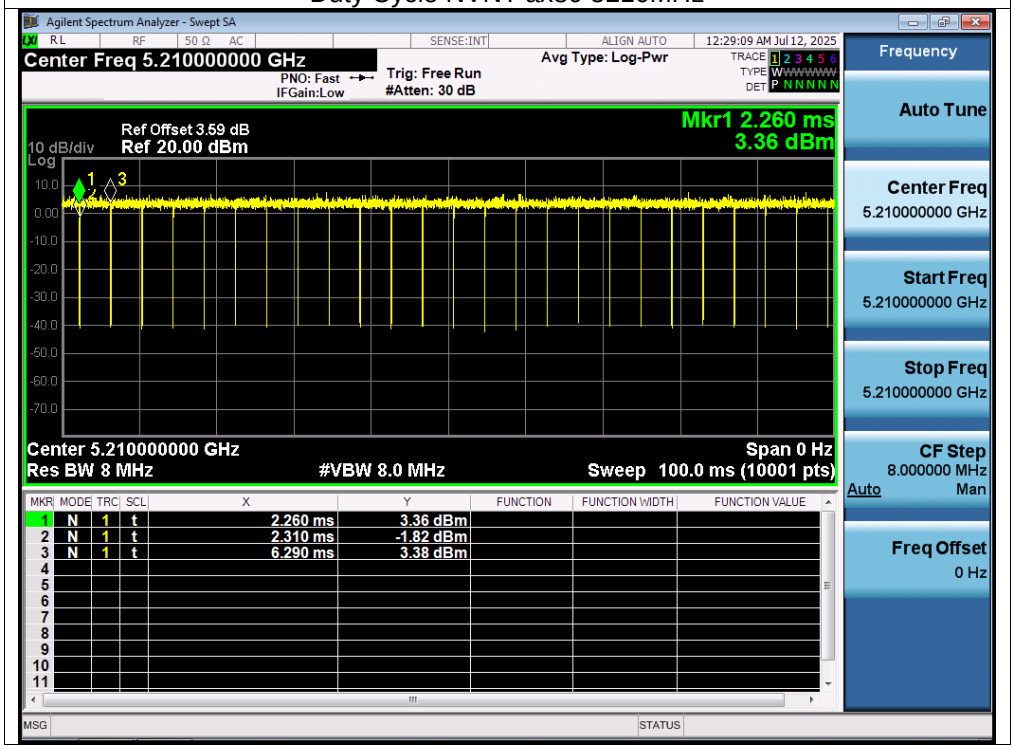
Duty Cycle NVNT ax20 5180MHz



Duty Cycle NVNT ax40 5190MHz



Duty Cycle NVNT ax80 5210MHz

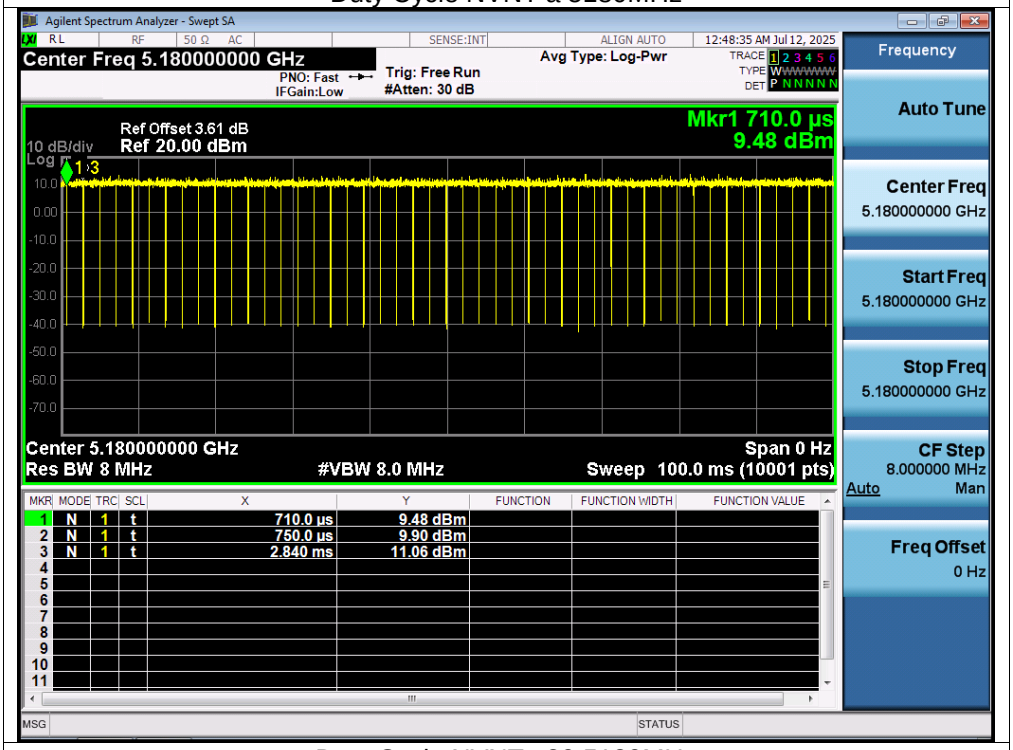


ANT B

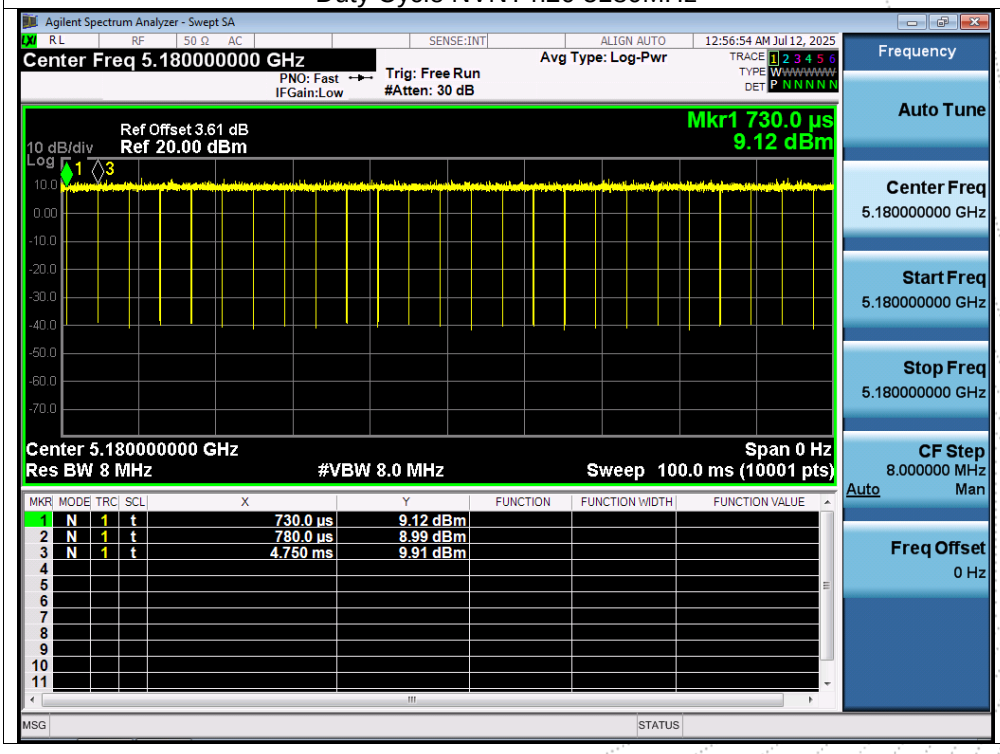
Condition	Mode	Frequency (MHz)	Duty Cycle (%)	Duty Fator(dB)
NVNT	a	5180	98.12	0
NVNT	n20	5180	98.76	0
NVNT	n40	5190	98.76	0
NVNT	ac20	5180	99	0
NVNT	ac40	5190	98.75	0
NVNT	ac80	5210	98.76	0
NVNT	ax20	5180	99.01	0
NVNT	ax40	5190	98.76	0
NVNT	ax80	5210	98.76	0

Test Graphs

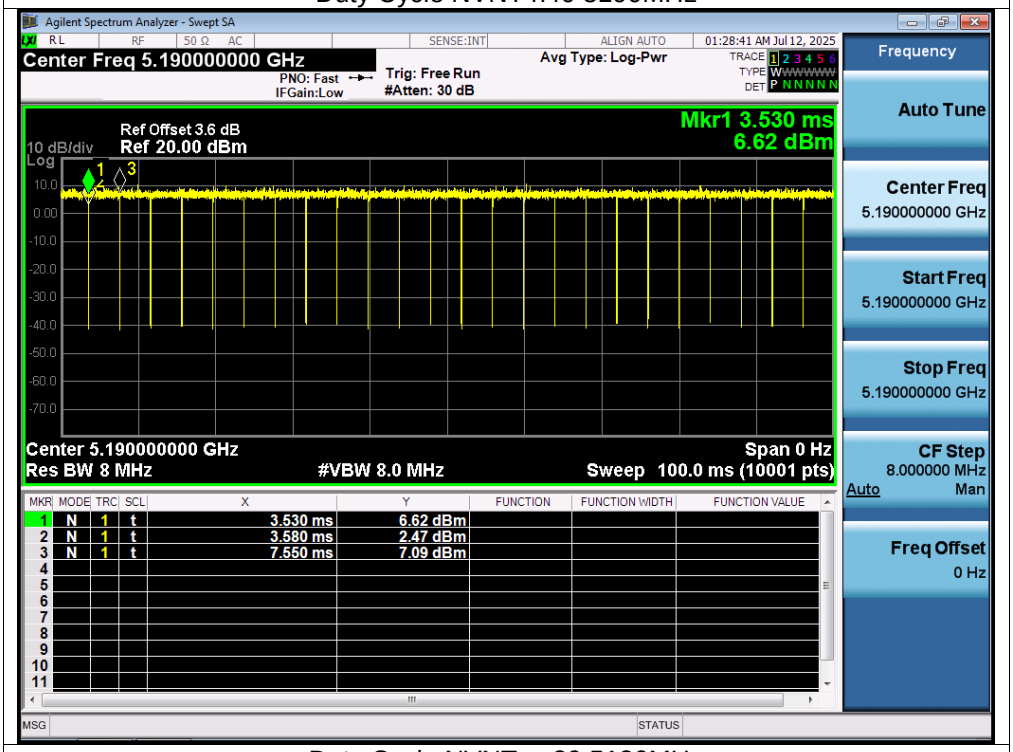
Duty Cycle NVNT a 5180MHz



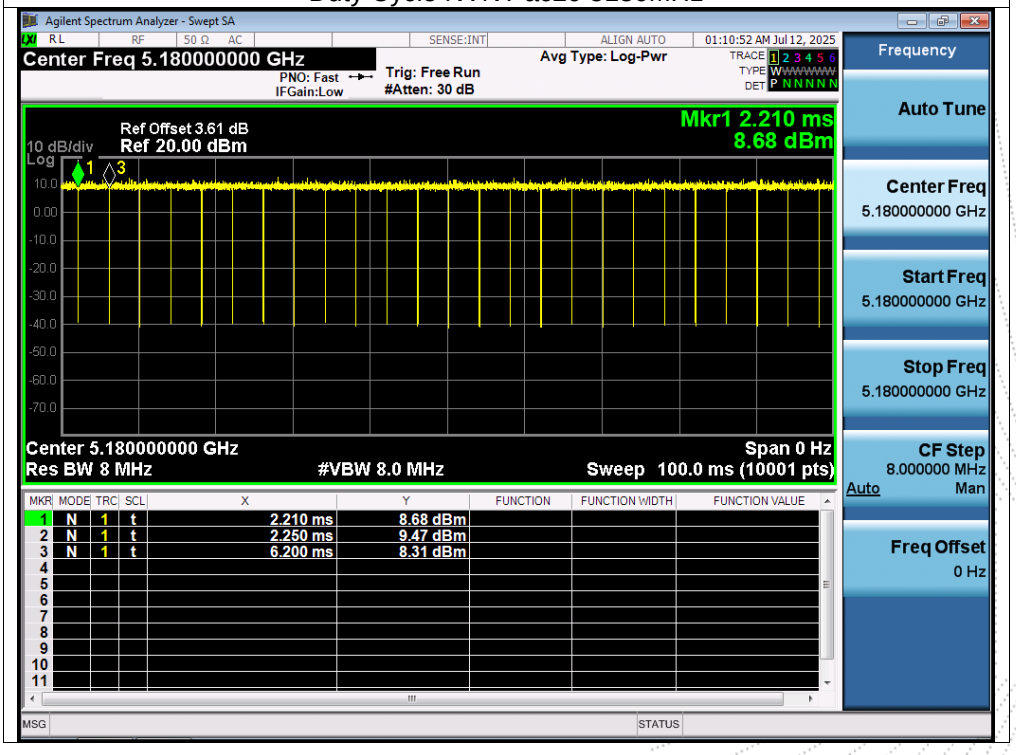
Duty Cycle NVNT n20 5180MHz



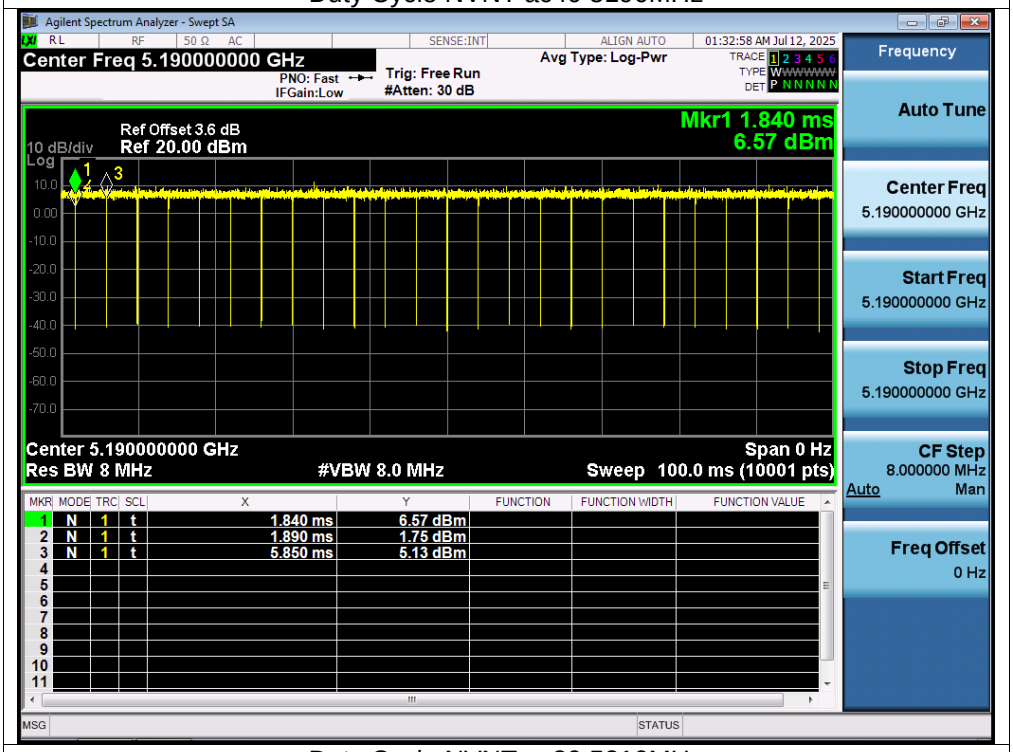
Duty Cycle NVNT n40 5190MHz



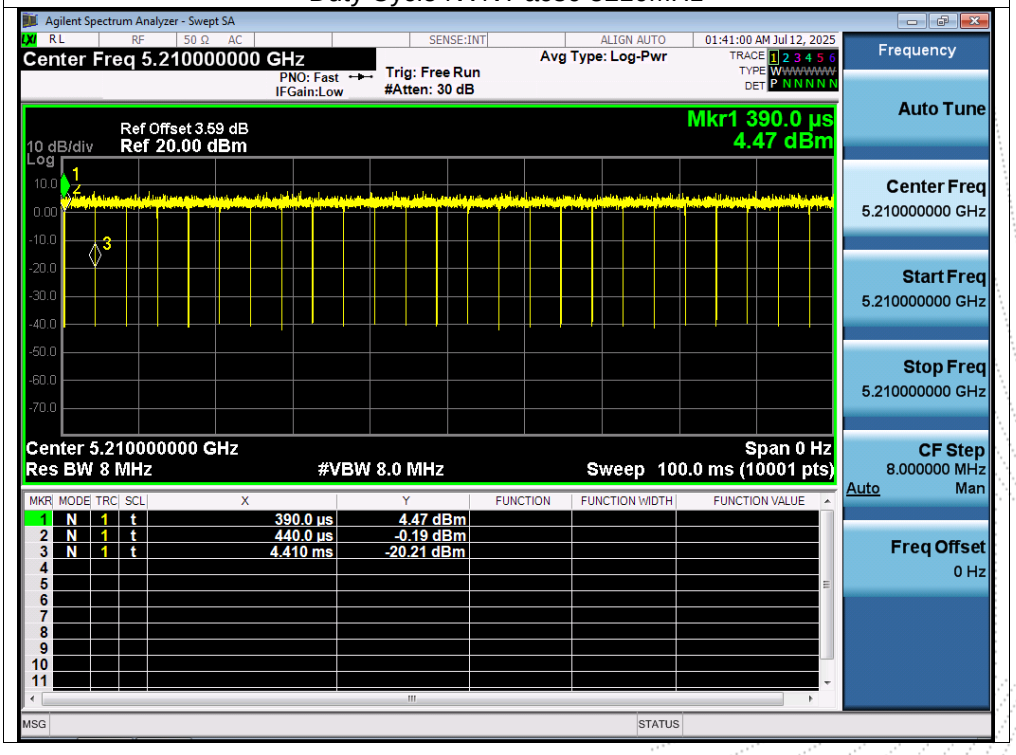
Duty Cycle NVNT ac20 5180MHz



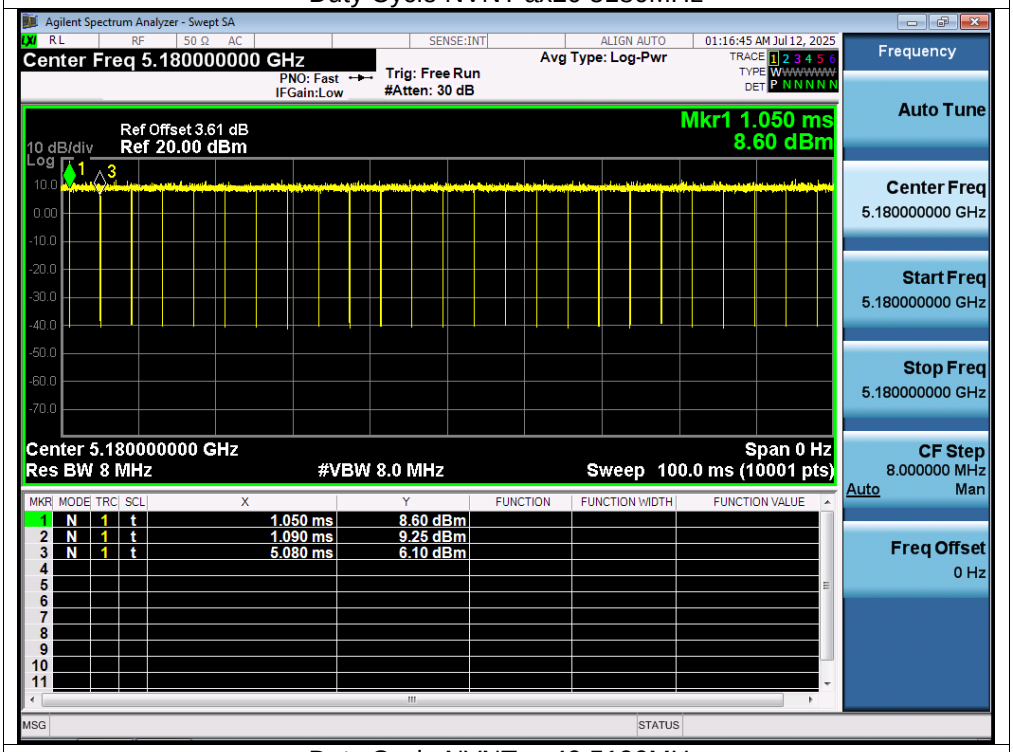
Duty Cycle NVNT ac40 5190MHz



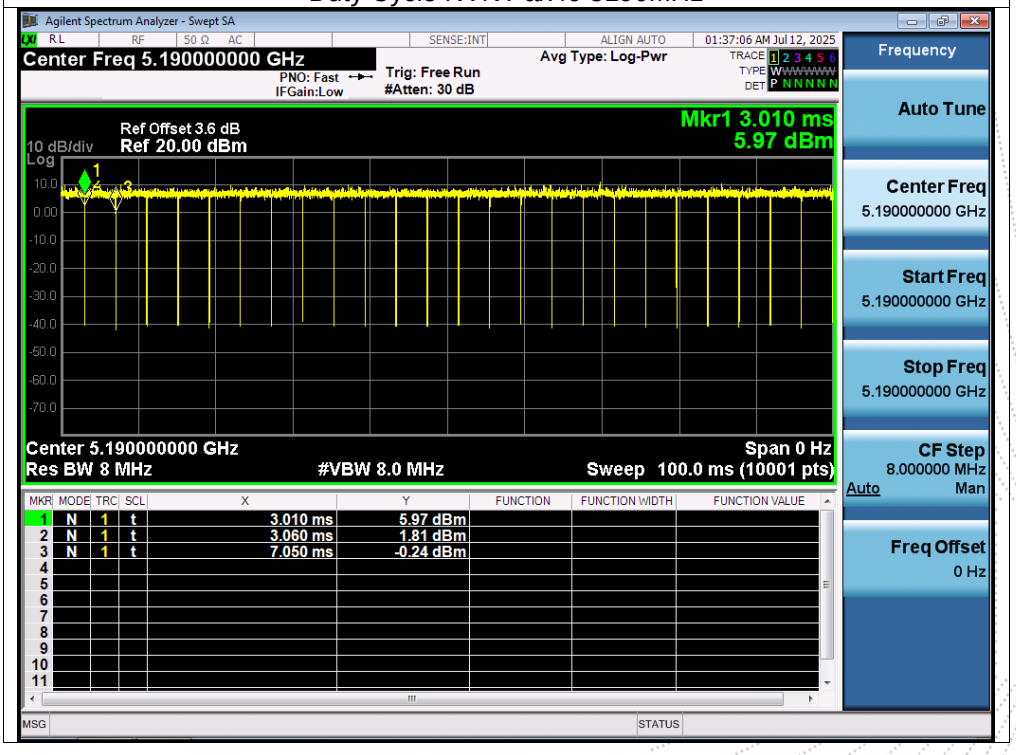
Duty Cycle NVNT ac80 5210MHz



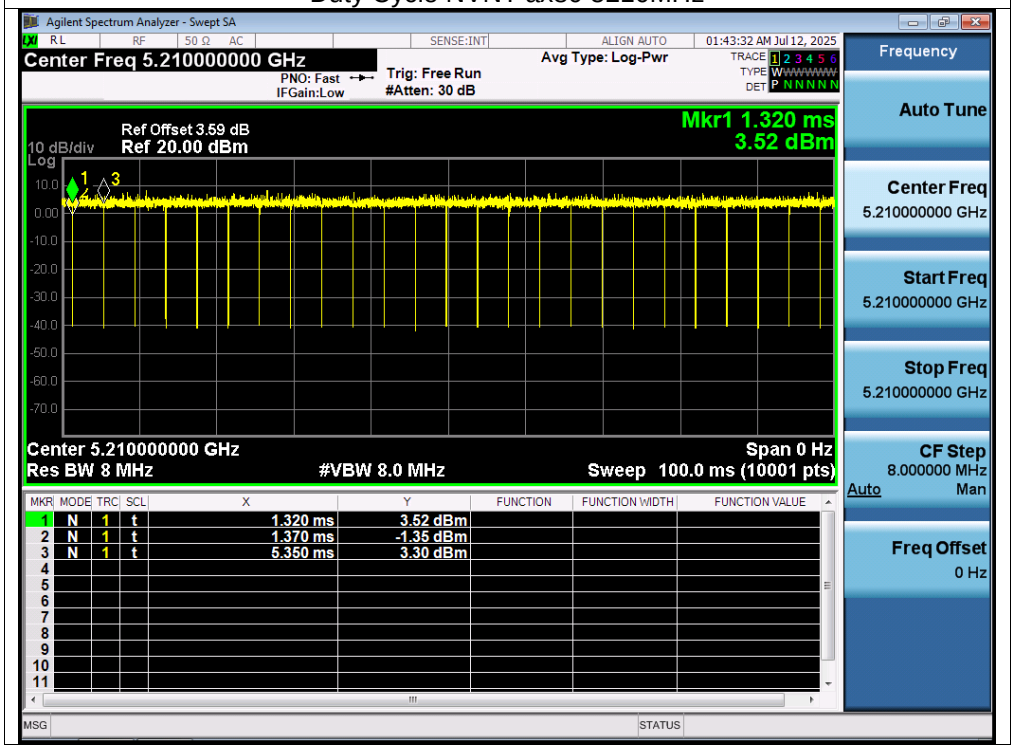
Duty Cycle NVNT ax20 5180MHz



Duty Cycle NVNT ax40 5190MHz



Duty Cycle NVNT ax80 5210MHz

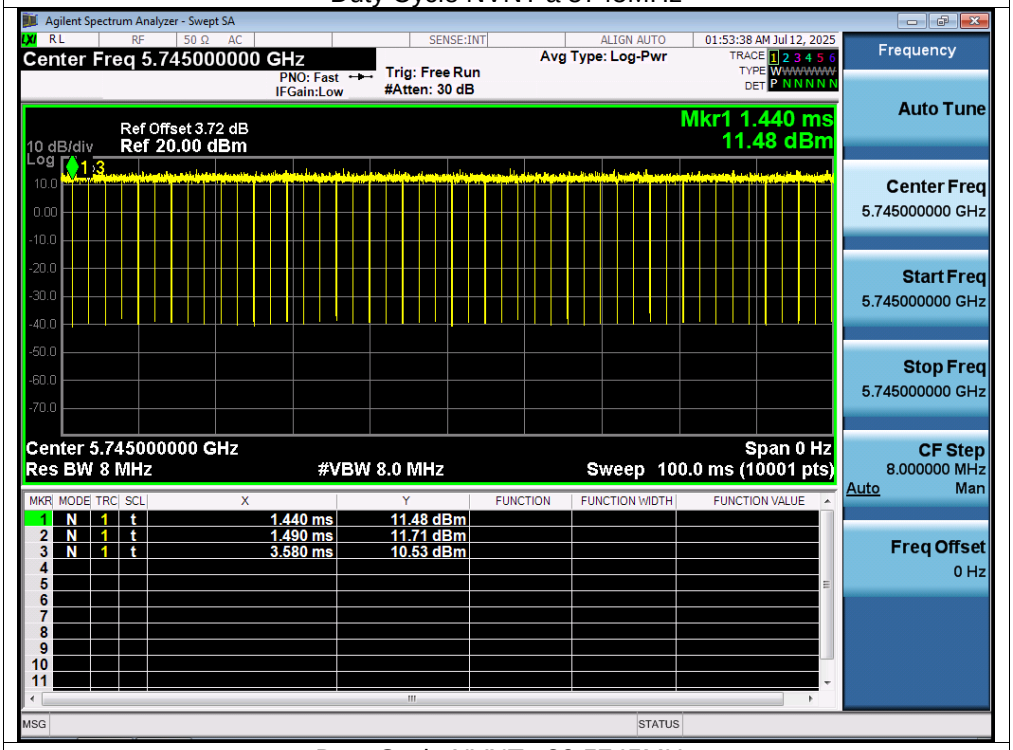


ANT A

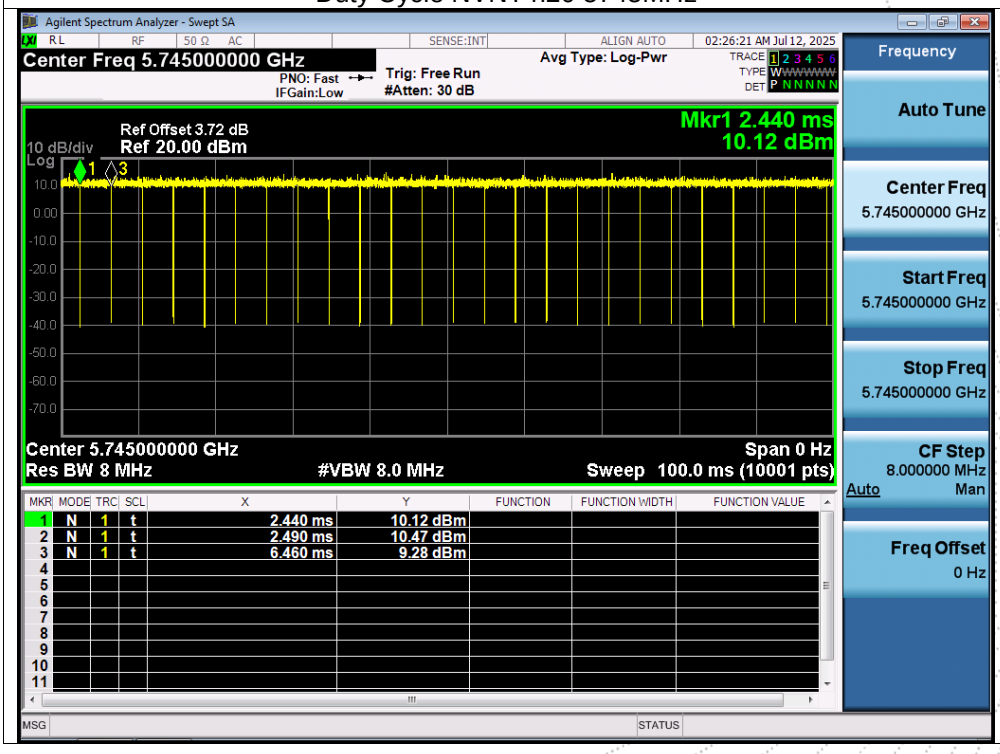
Condition	Mode	Frequency (MHz)	Duty Cycle (%)	Correction Factor (dB)
NVNT	a	5745	97.66	0.1
NVNT	n20	5745	98.76	0
NVNT	n40	5755	98.76	0
NVNT	ac20	5745	98.75	0
NVNT	ac40	5755	98.75	0
NVNT	ac80	5775	99	0
NVNT	ax20	5745	98.76	0
NVNT	ax40	5755	98.76	0
NVNT	ax80	5775	98.83	0

Test Graphs

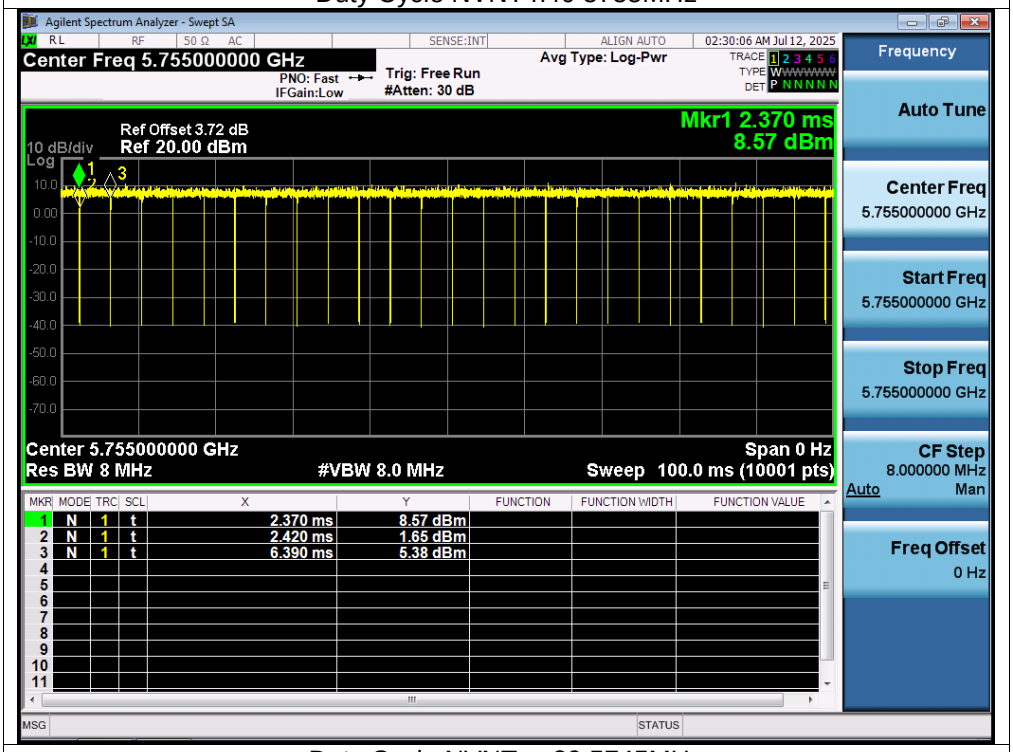
Duty Cycle NVNT a 5745MHz



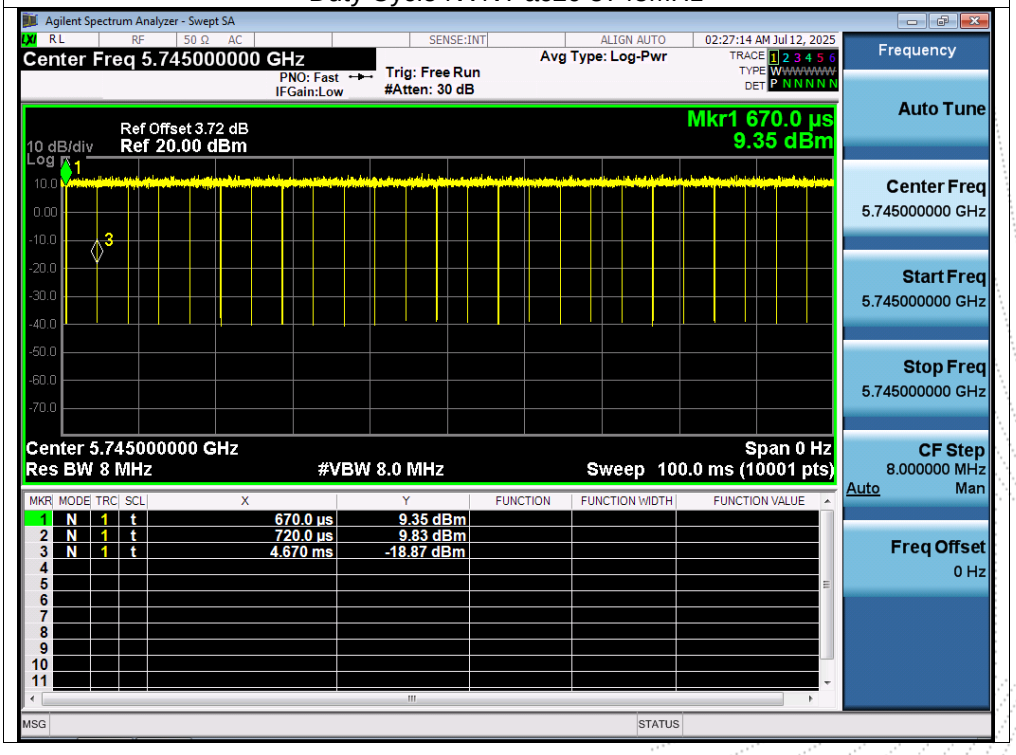
Duty Cycle NVNT n20 5745MHz



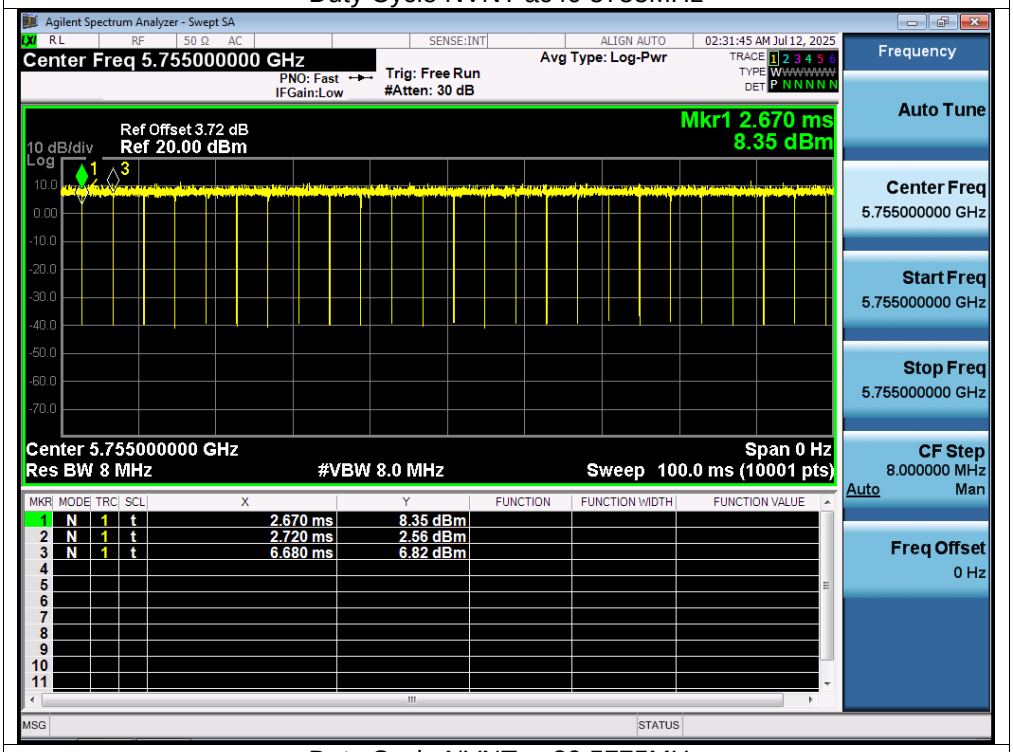
Duty Cycle NVNT n40 5755MHz



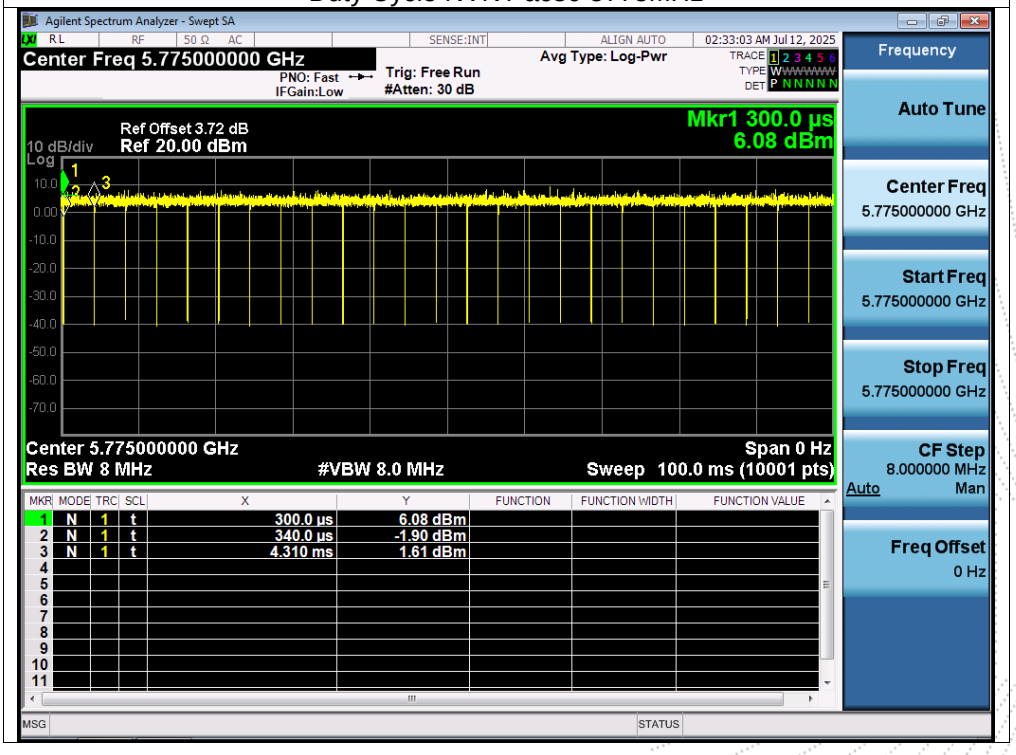
Duty Cycle NVNT ac20 5745MHz



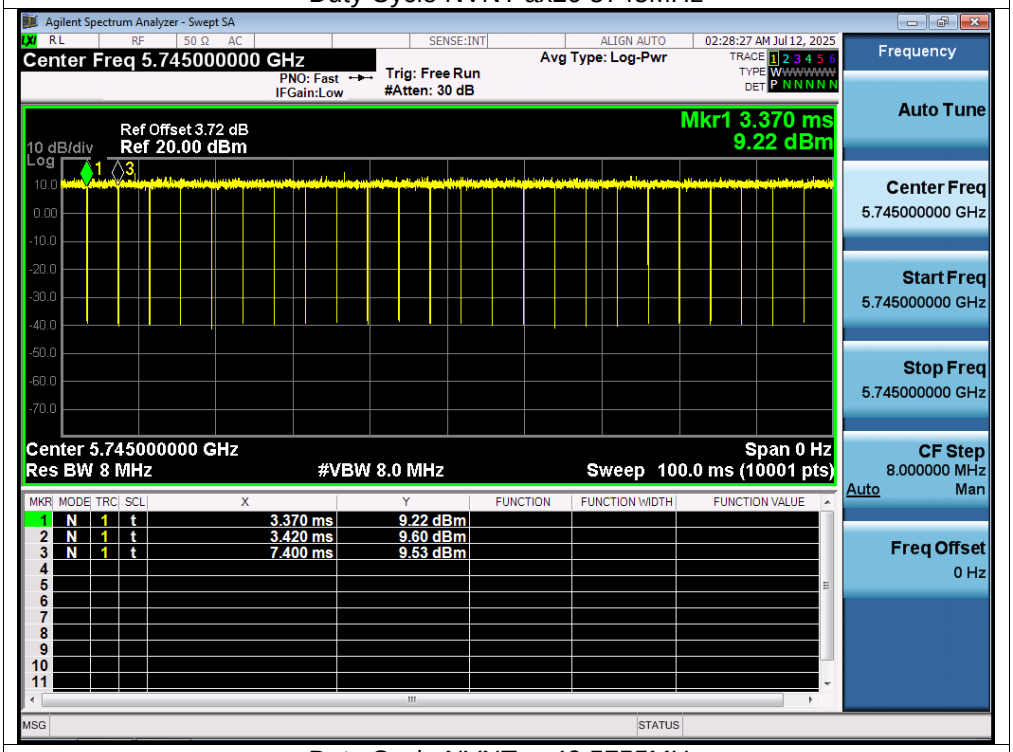
Duty Cycle NVNT ac40 5755MHz



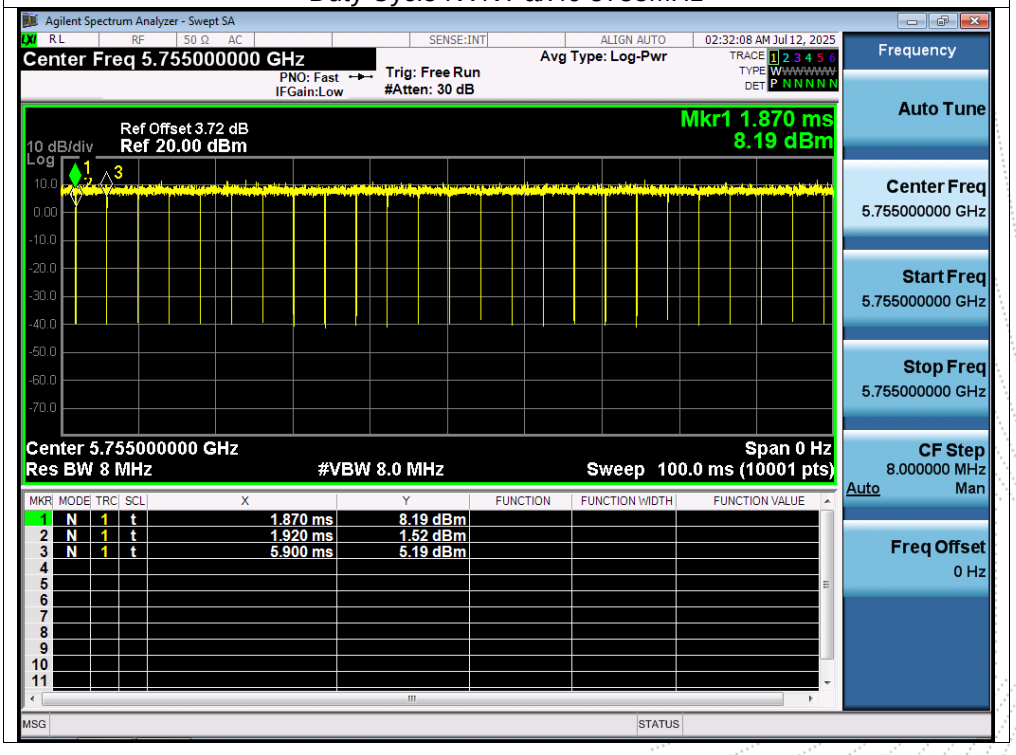
Duty Cycle NVNT ac80 5775MHz



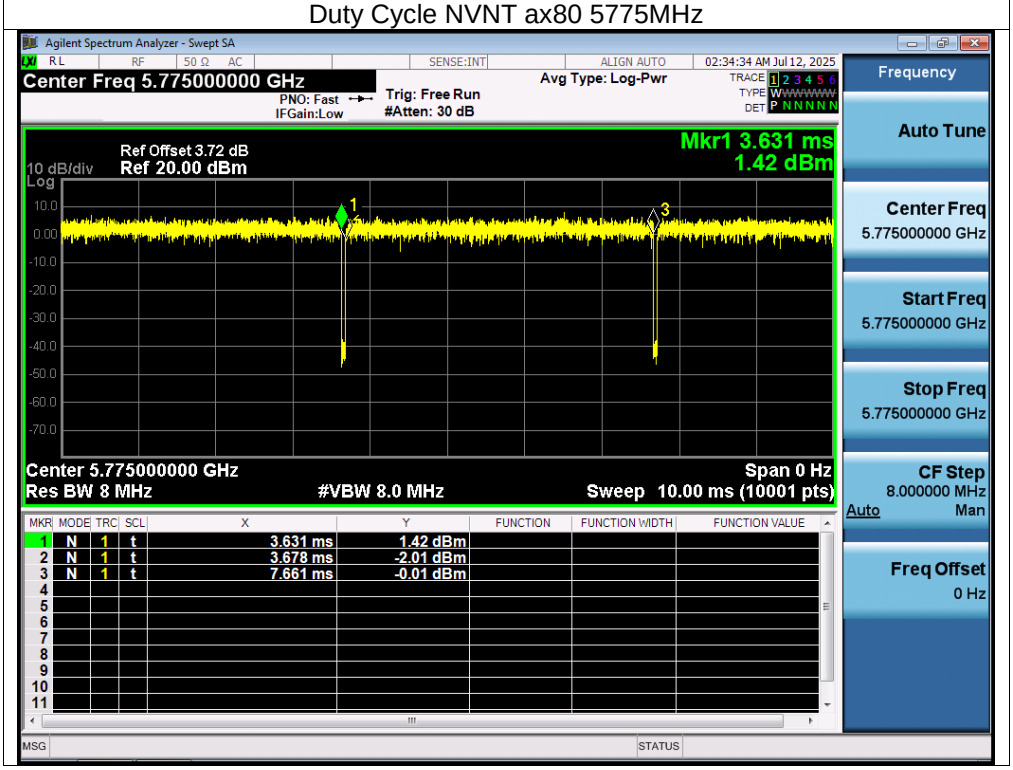
Duty Cycle NVNT ax20 5745MHz



Duty Cycle NVNT ax40 5755MHz



Duty Cycle NVNT ax80 5775MHz

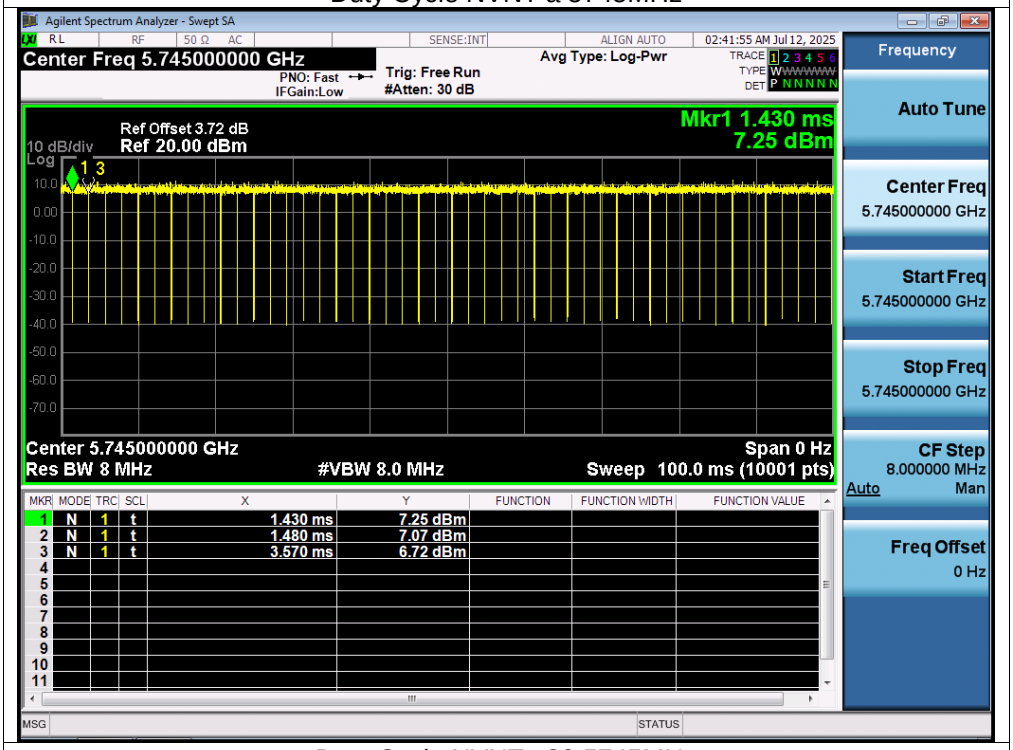


ANT B

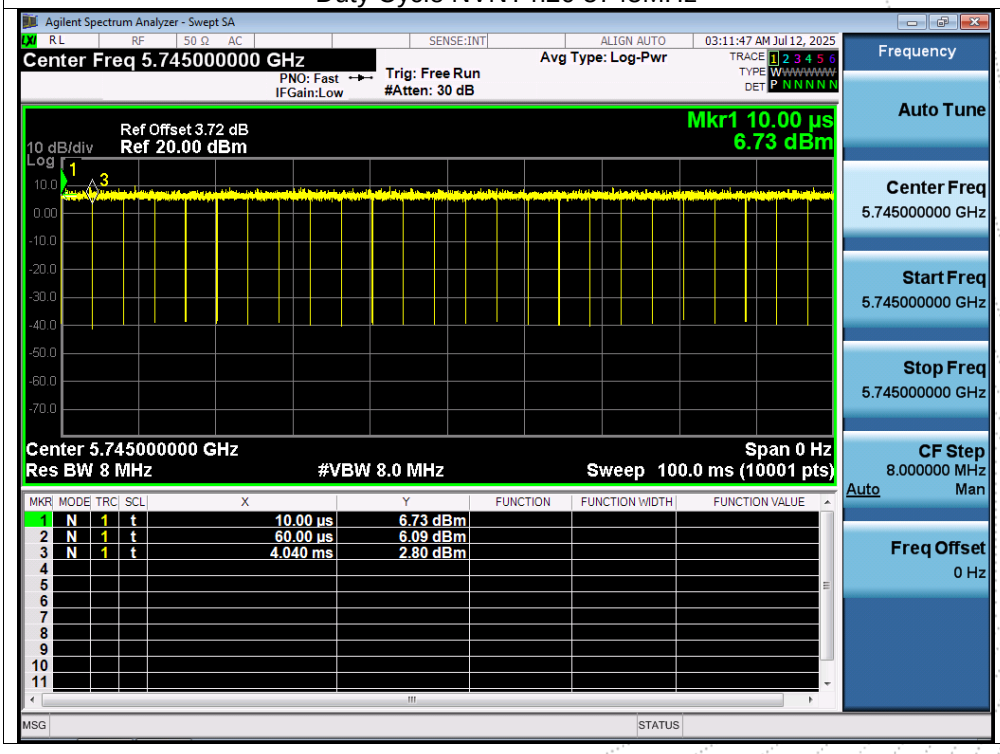
Condition	Mode	Frequency (MHz)	Duty Cycle (%)	Correction Factor (dB)
NVNT	a	5745	97.66	0.1
NVNT	n20	5745	98.76	0
NVNT	n40	5755	98.76	0
NVNT	ac20	5745	98.75	0
NVNT	ac40	5755	98.75	0
NVNT	ac80	5775	98.76	0
NVNT	ax20	5745	98.76	0
NVNT	ax40	5755	98.76	0
NVNT	ax80	5775	98.78	0

Test Graphs

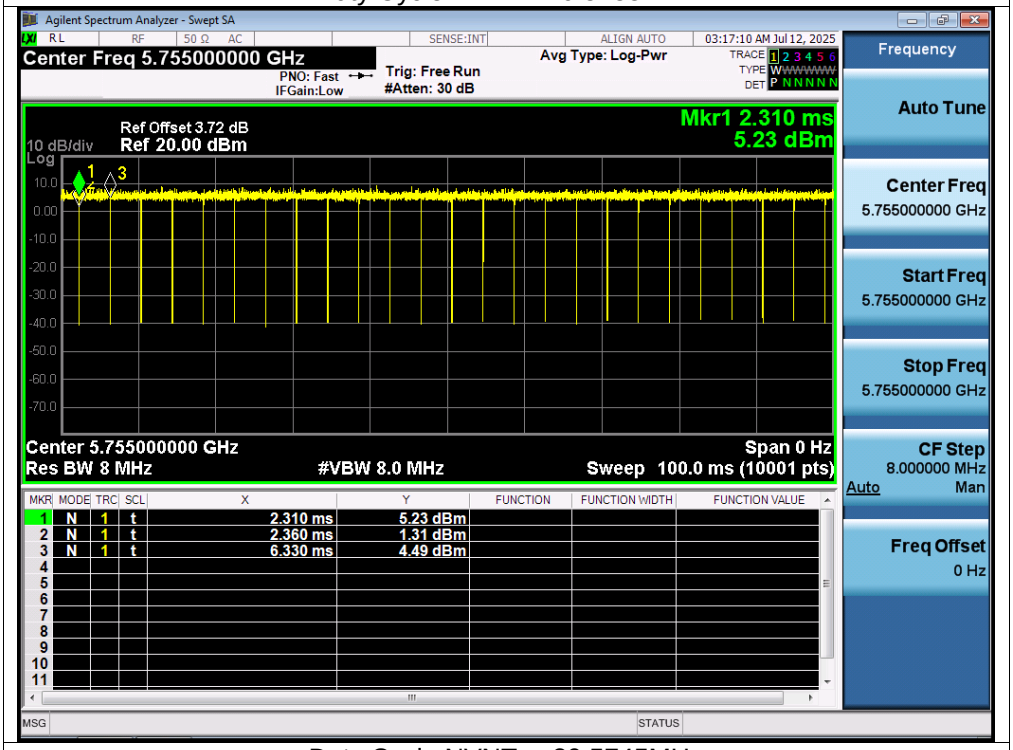
Duty Cycle NVNT a 5745MHz



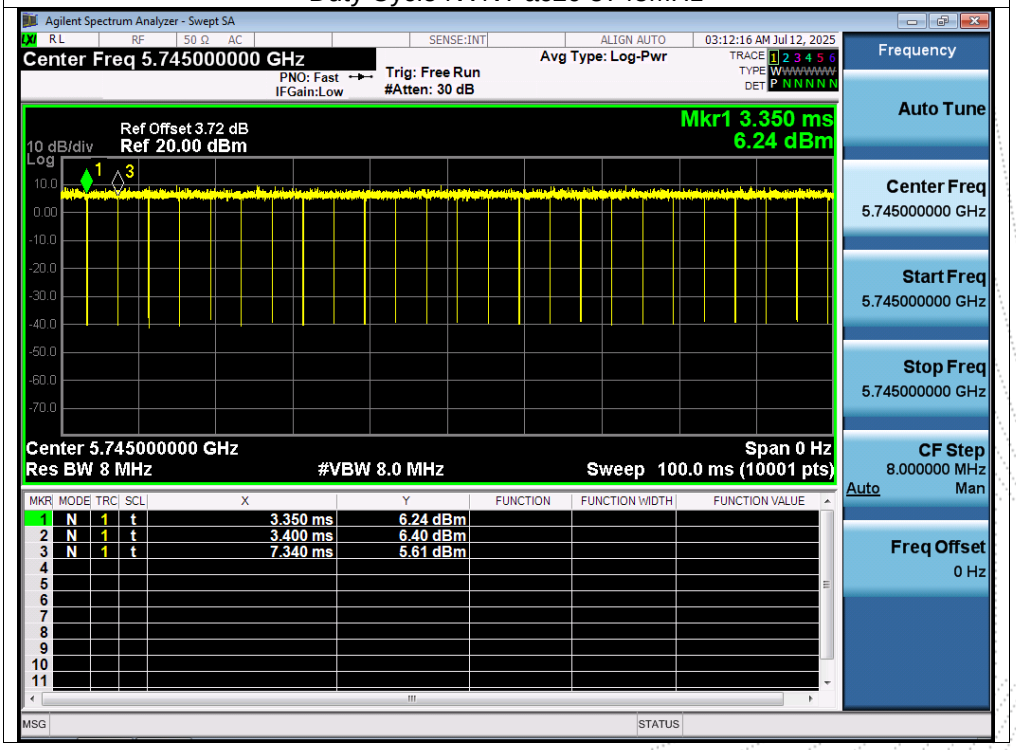
Duty Cycle NVNT n20 5745MHz



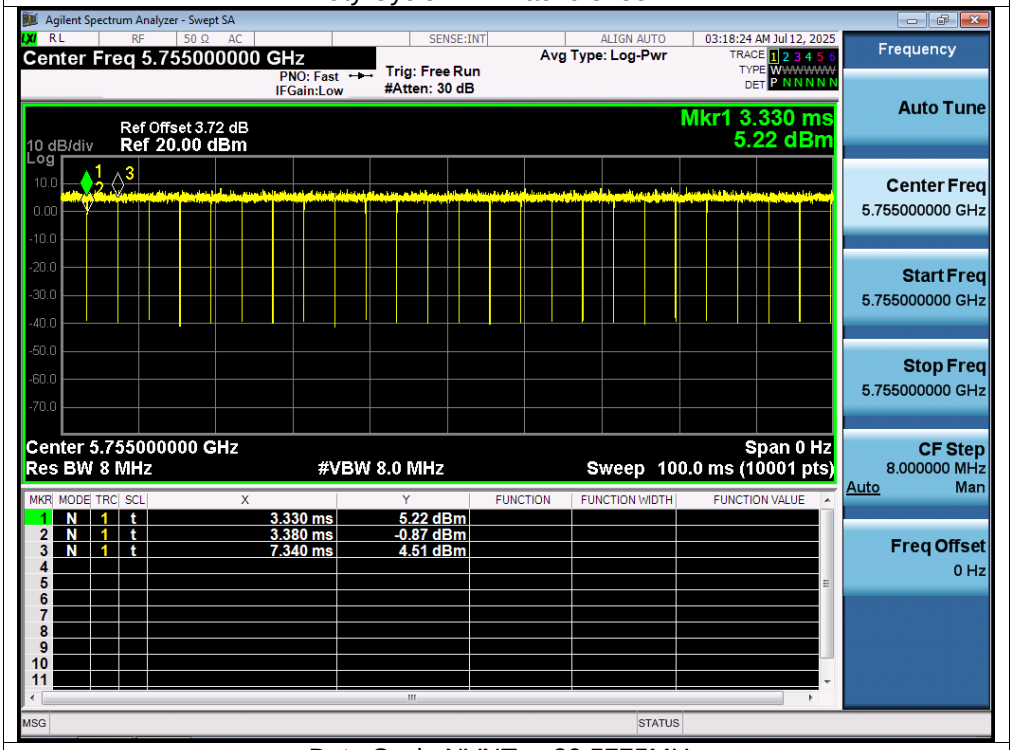
Duty Cycle NVNT n40 5755MHz



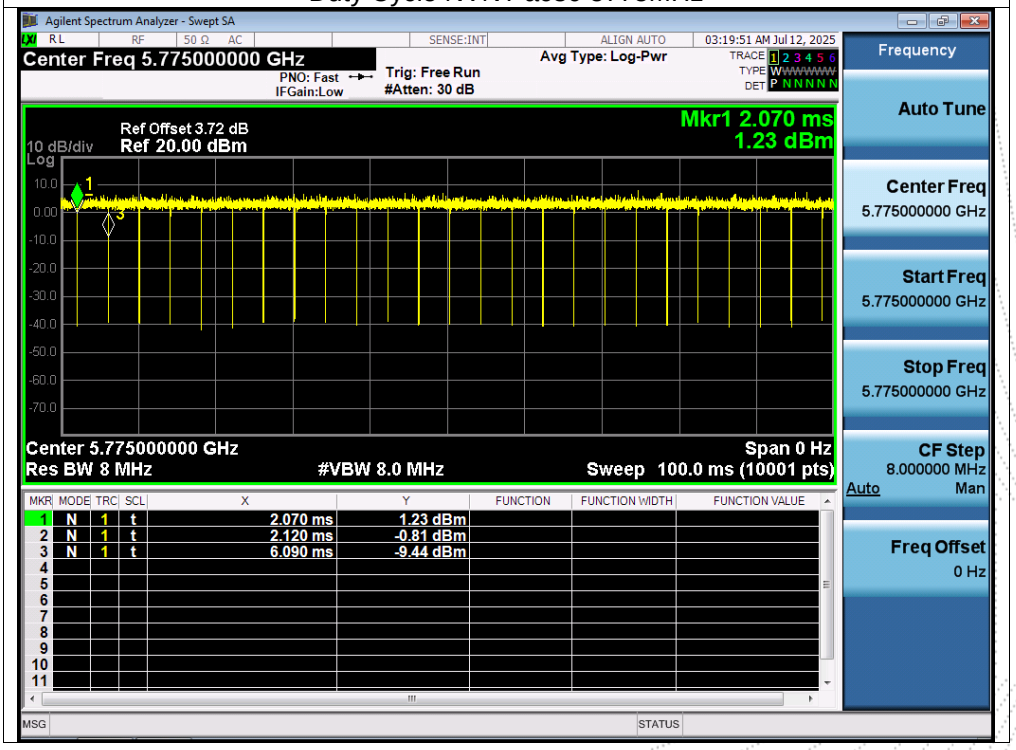
Duty Cycle NVNT ac20 5745MHz



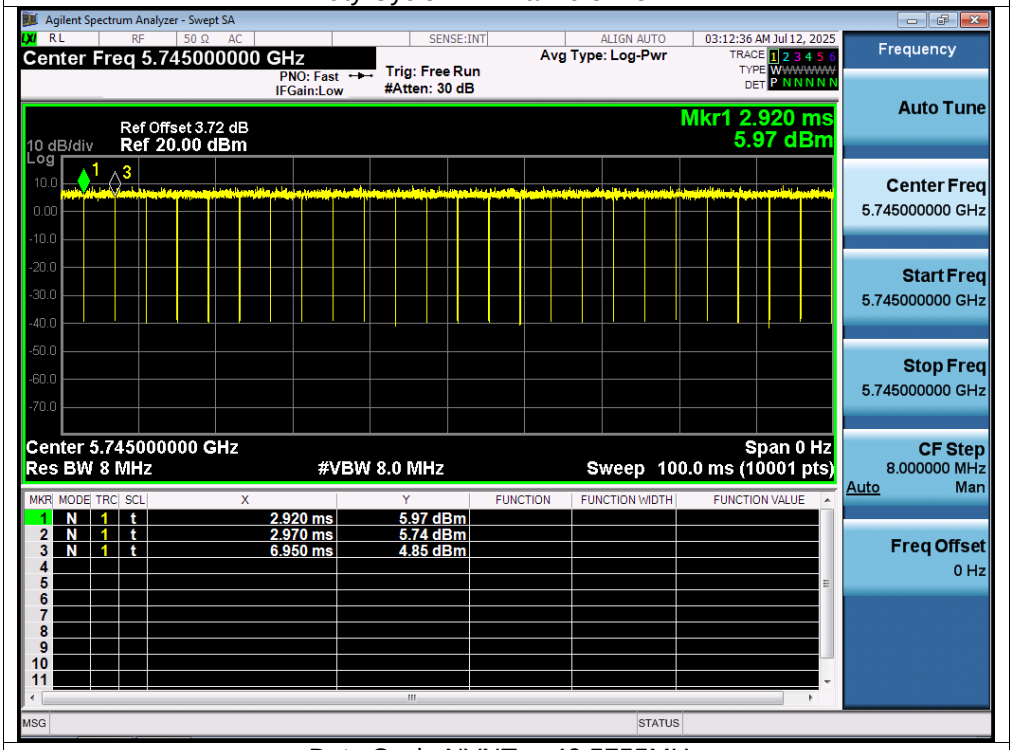
Duty Cycle NVNT ac40 5755MHz



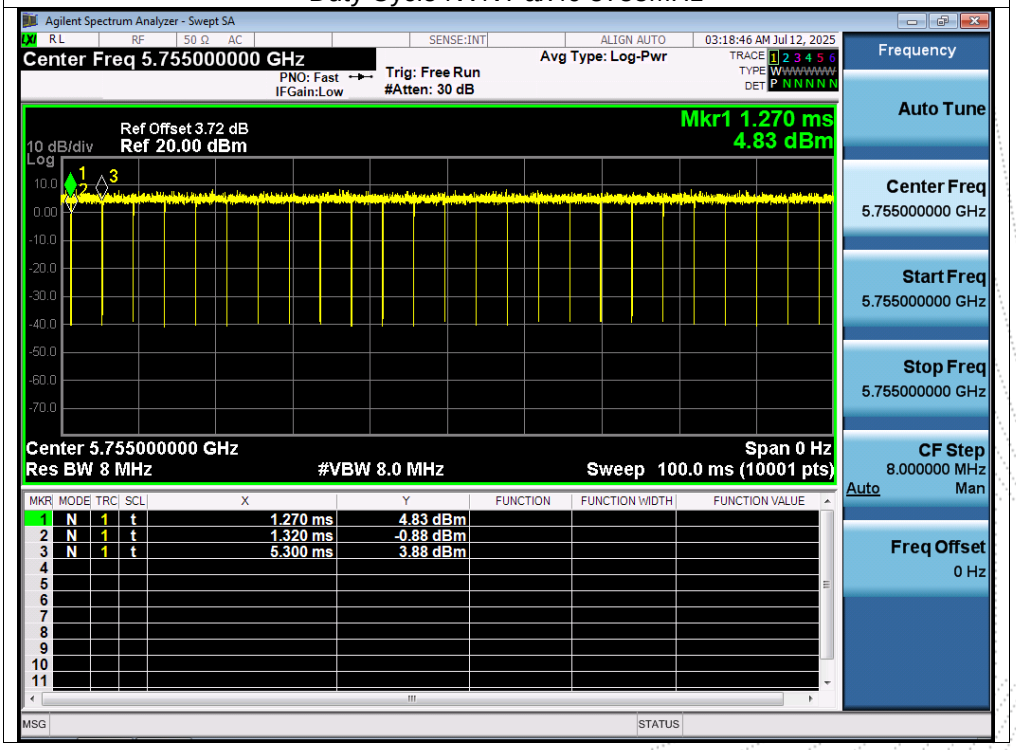
Duty Cycle NVNT ac80 5775MHz



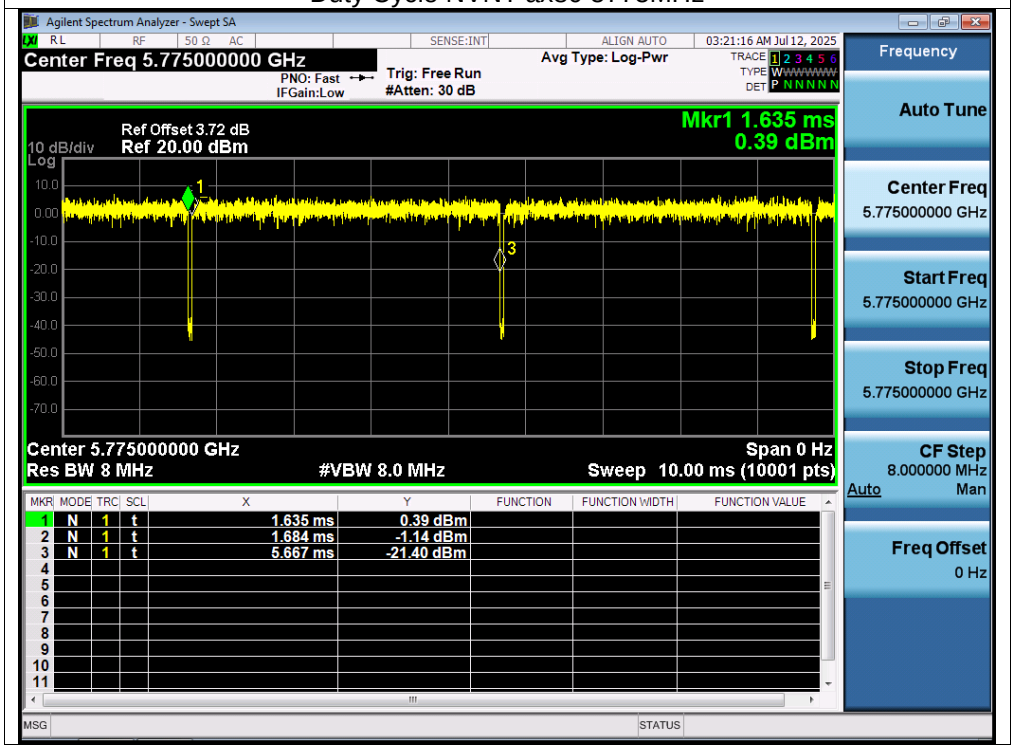
Duty Cycle NVNT ax20 5745MHz



Duty Cycle NVNT ax40 5755MHz



Duty Cycle NVNT ax80 5775MHz



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.

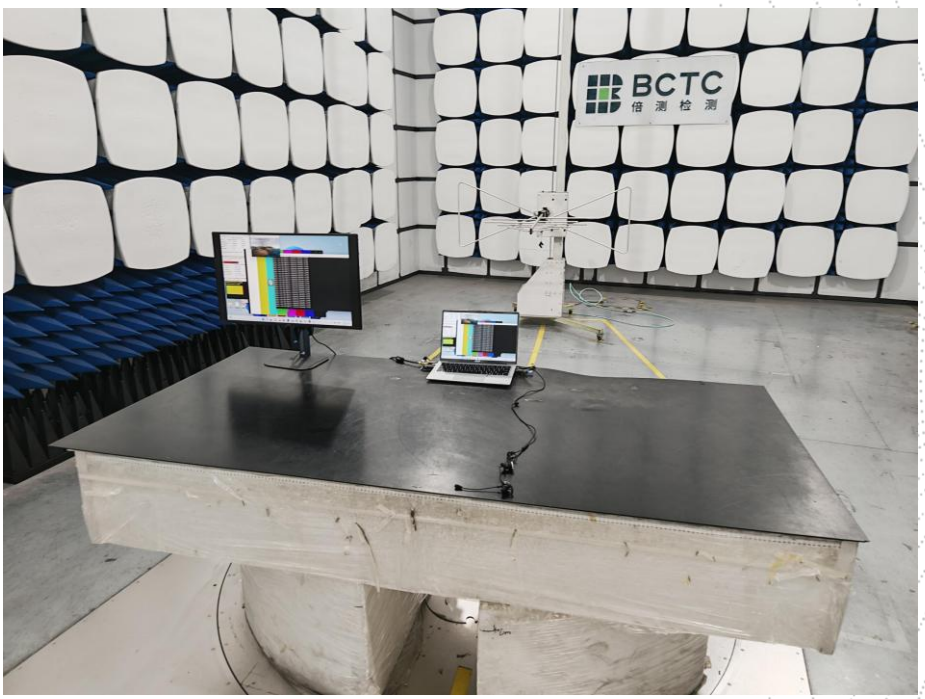
16. EUT Photographs

Appendix-Photographs Of EUT Constructional Details
(Aspire 14 AS14H-53_External & Internal Photos)

17. EUT Test Setup Photographs

Conducted emissions

Radiated Measurement Photos



Spurious emissions

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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