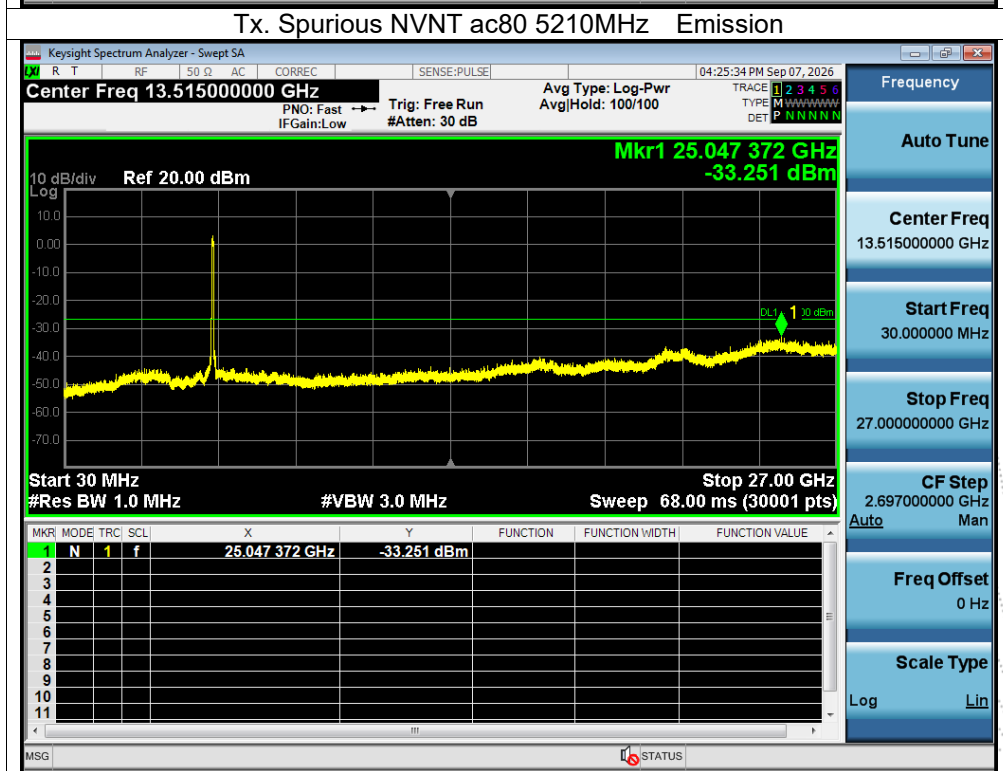
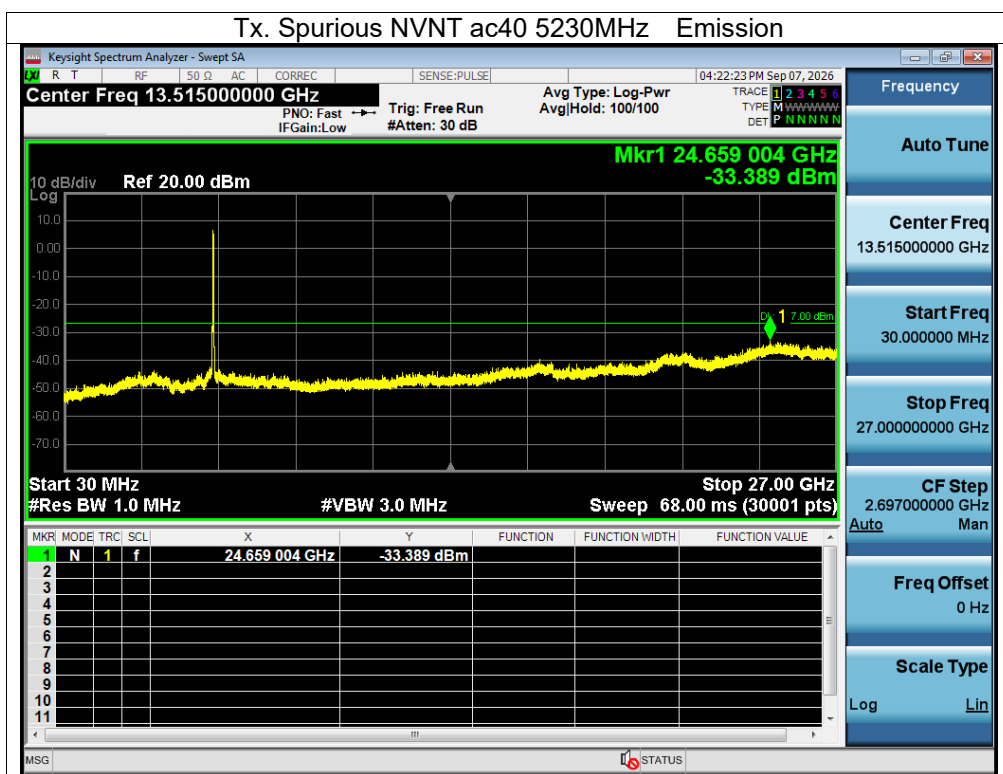
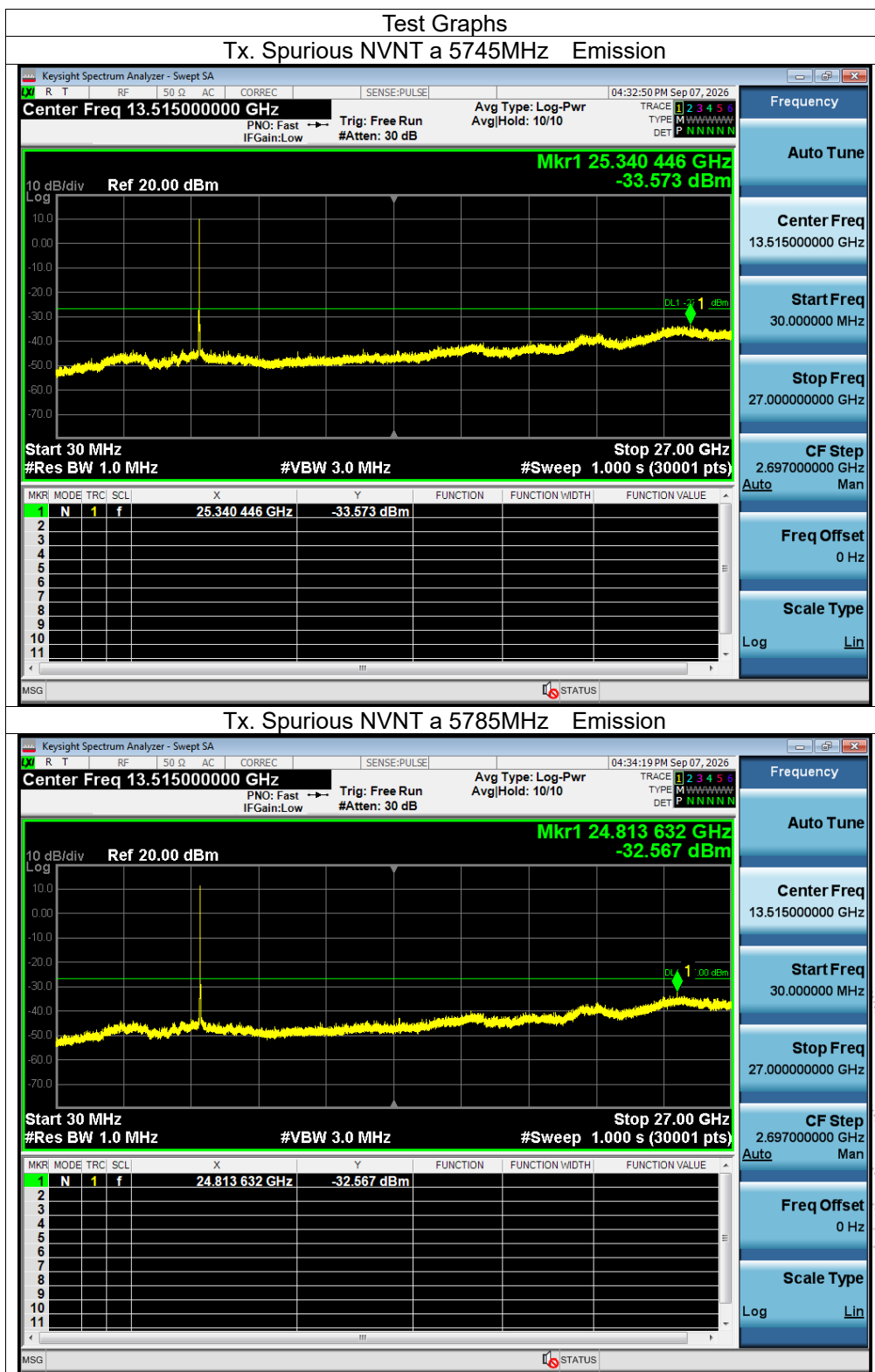
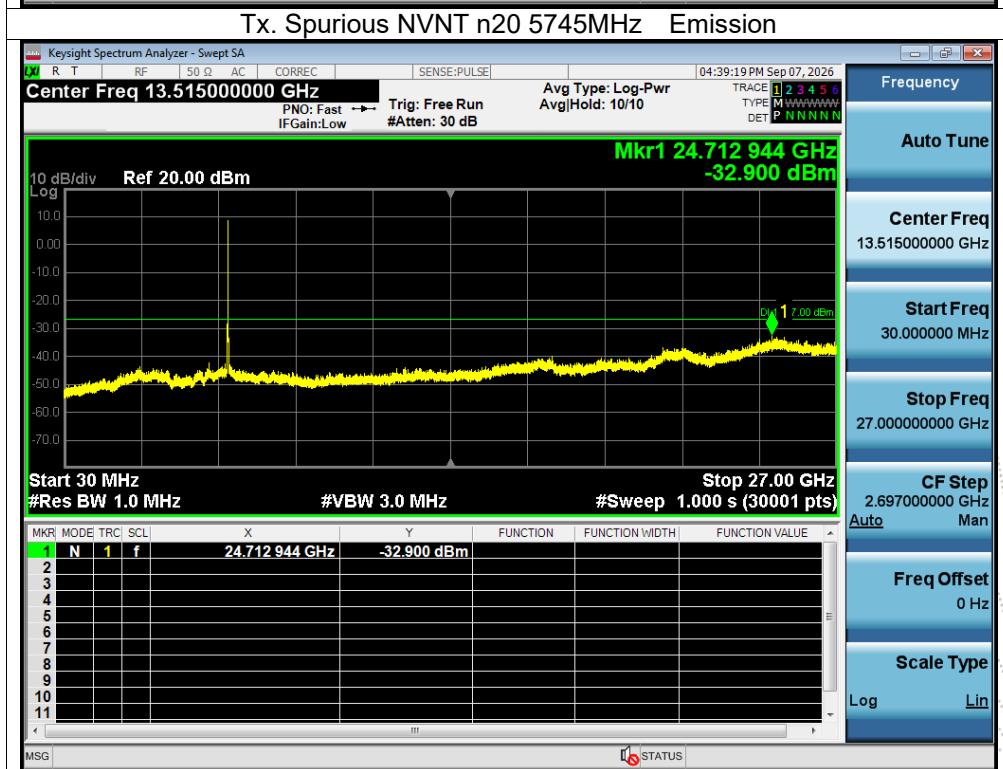
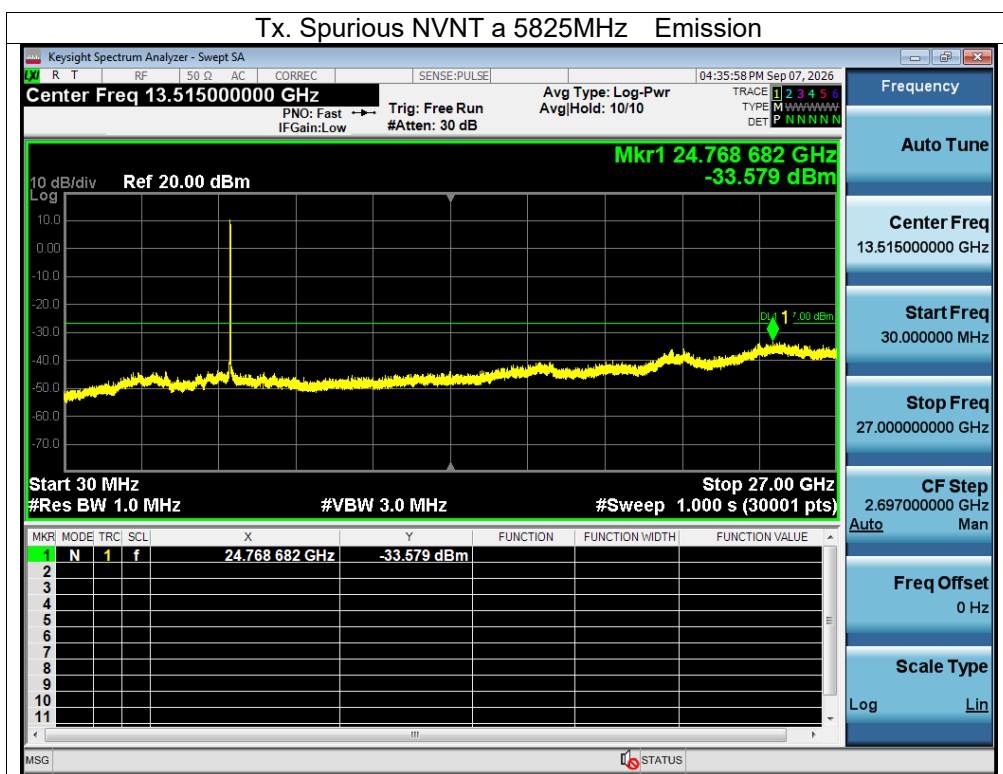
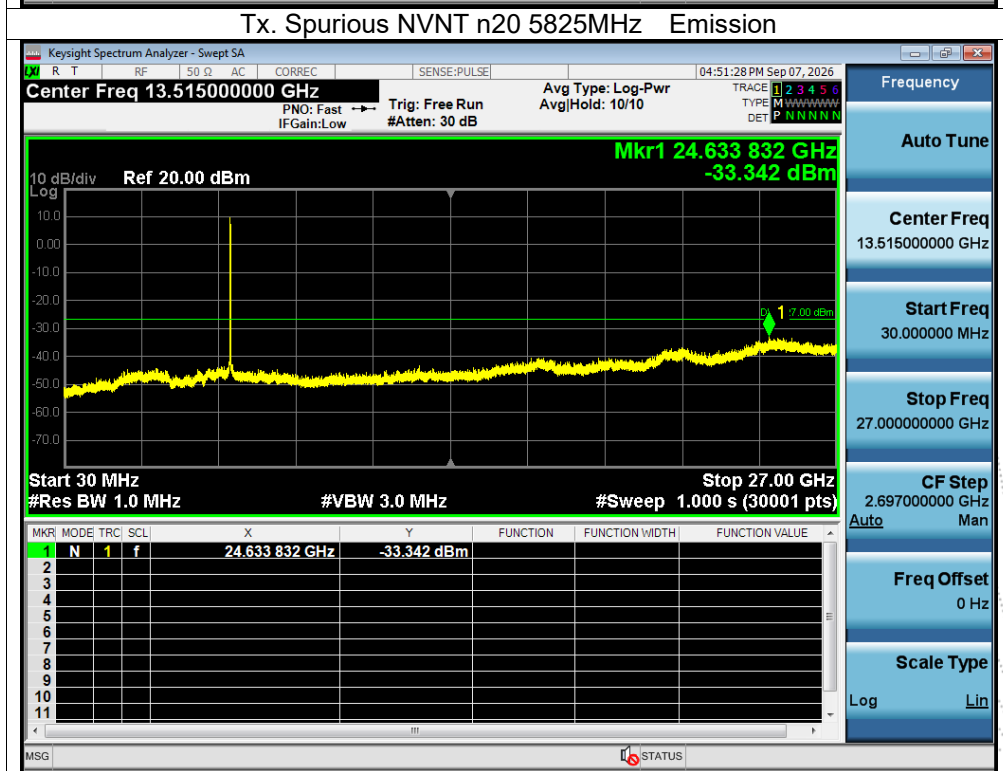
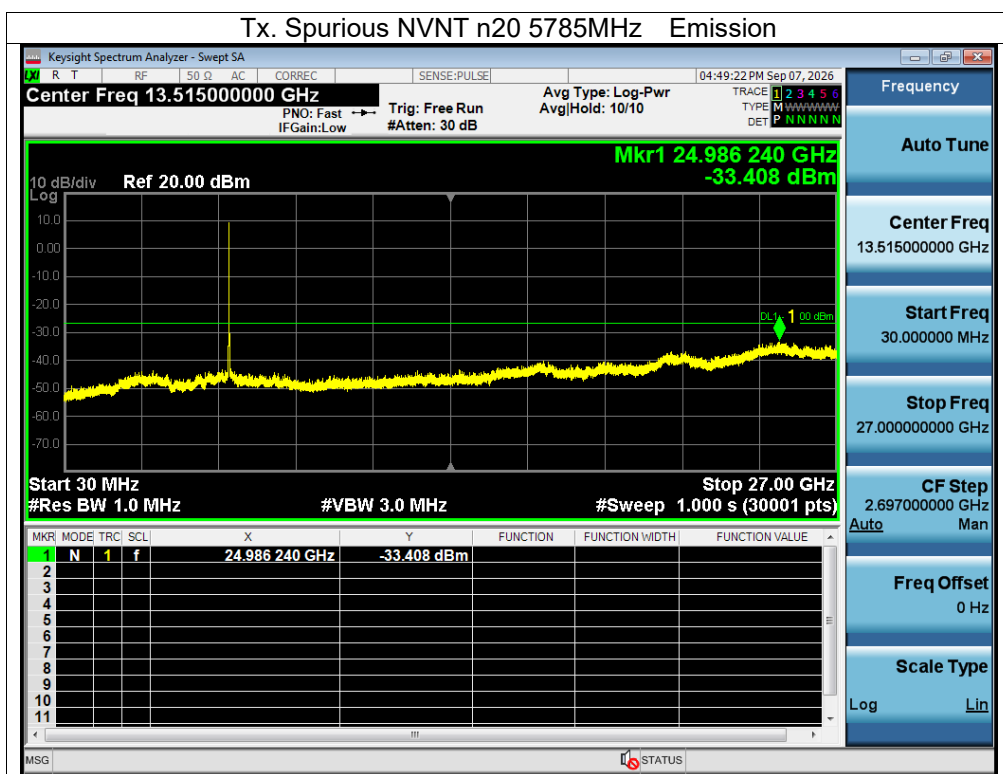


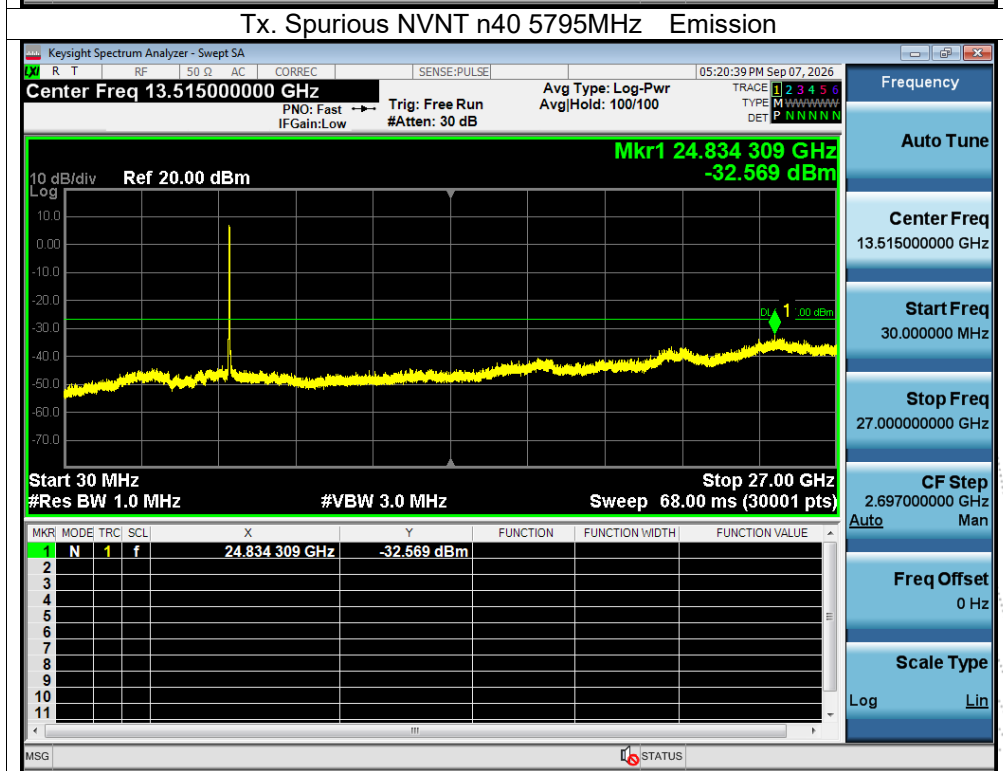
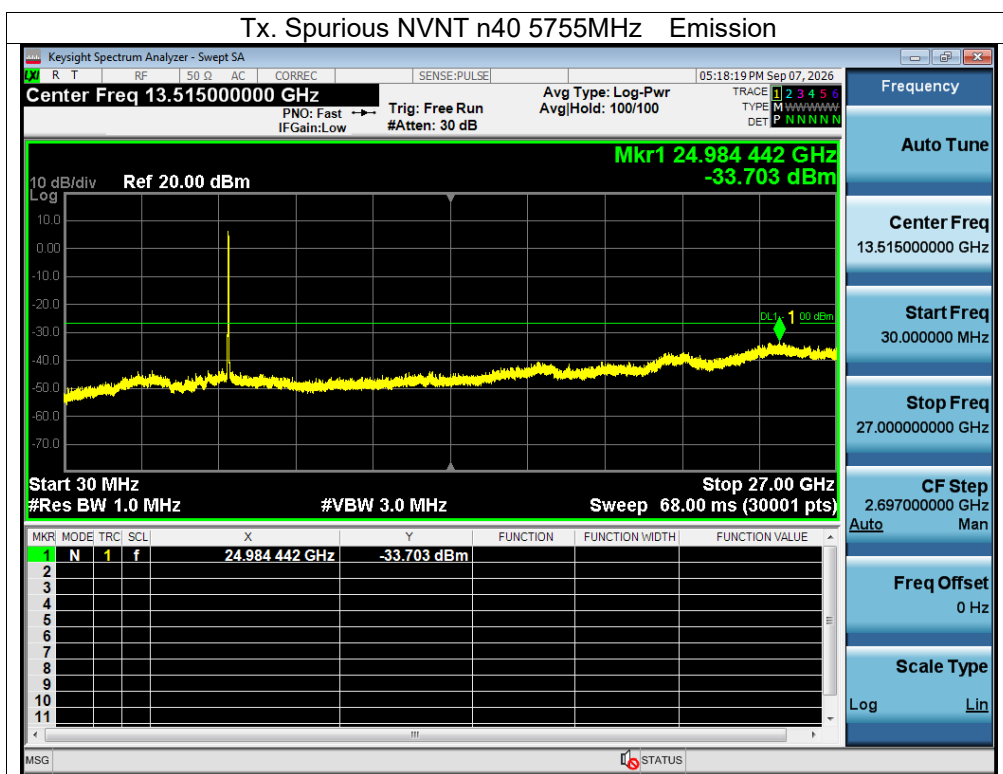


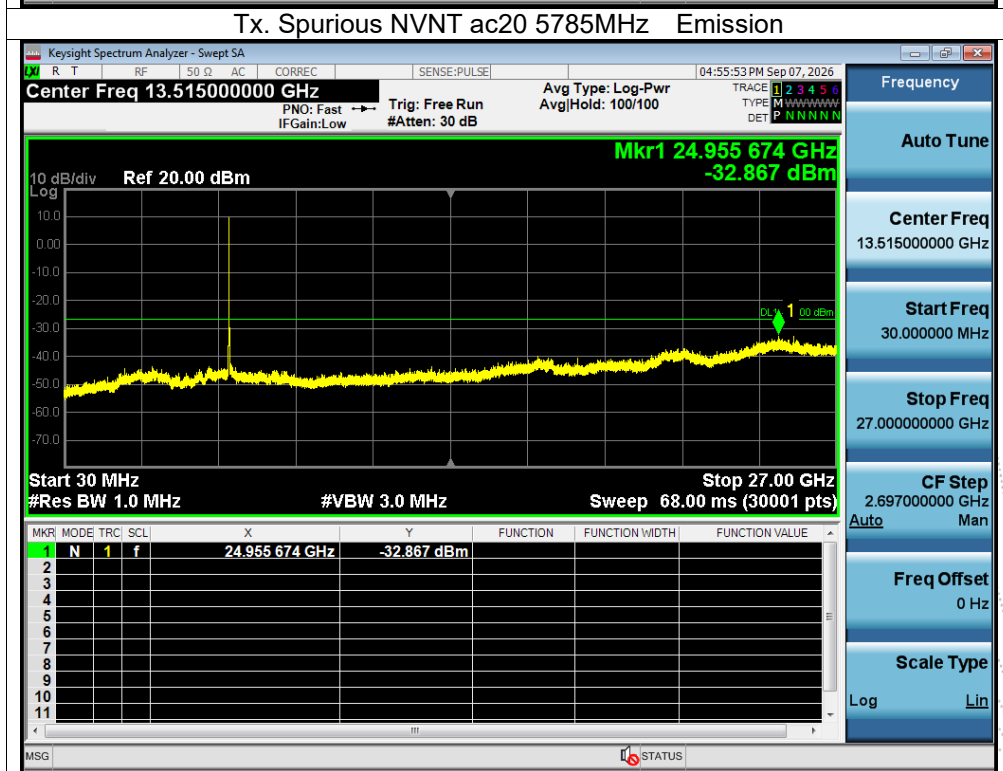
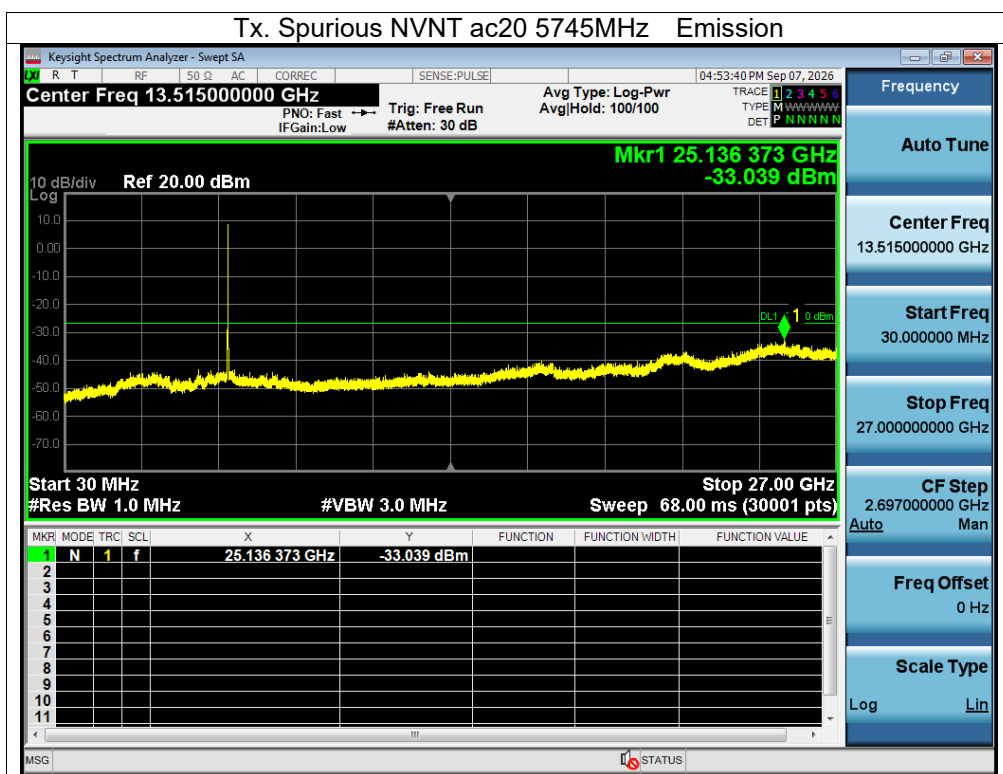
Note: A(B) Represent the value of antenna A and B , The worst data is Antenna A, only shown Antenna A.
Antenna A: 5725-5850MHz



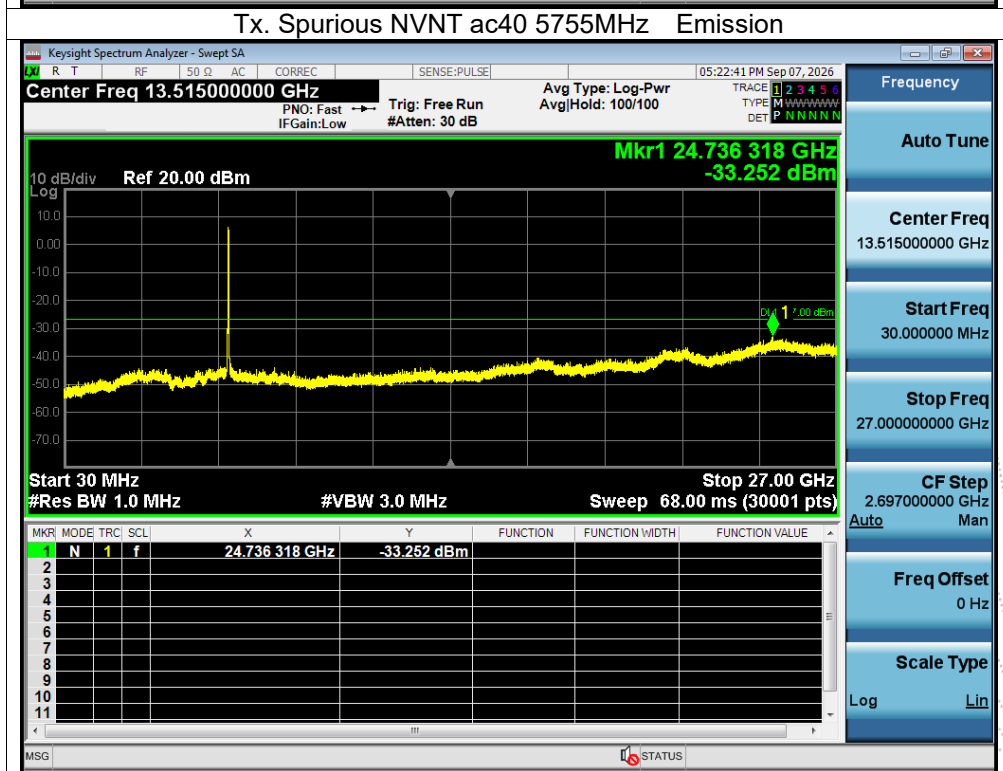
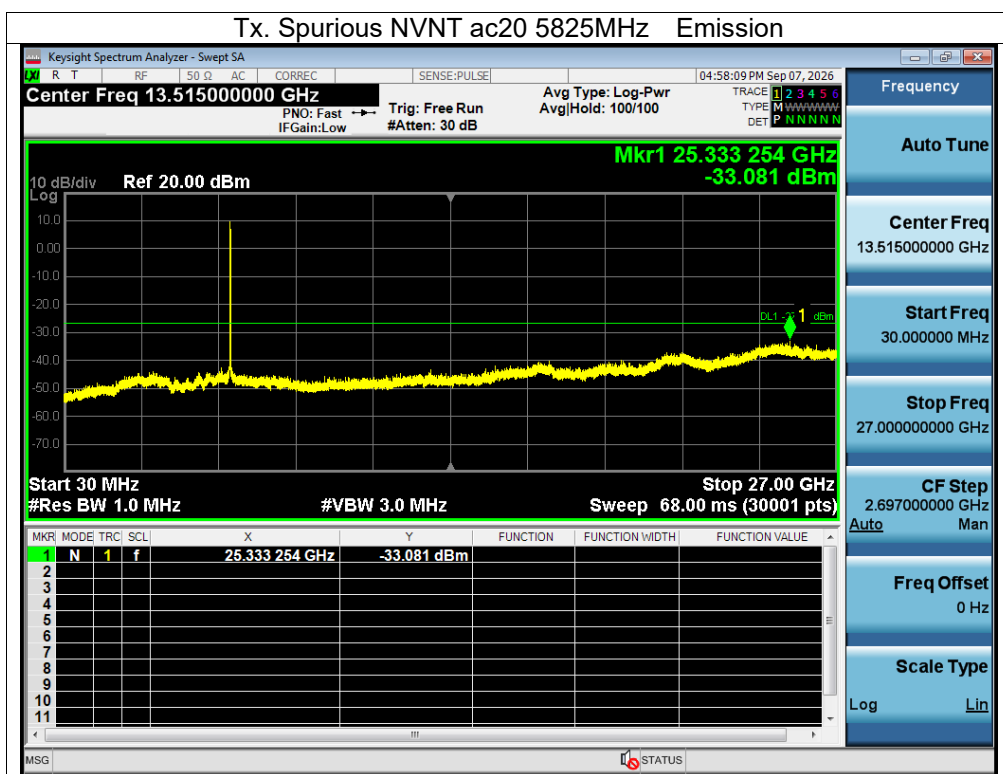


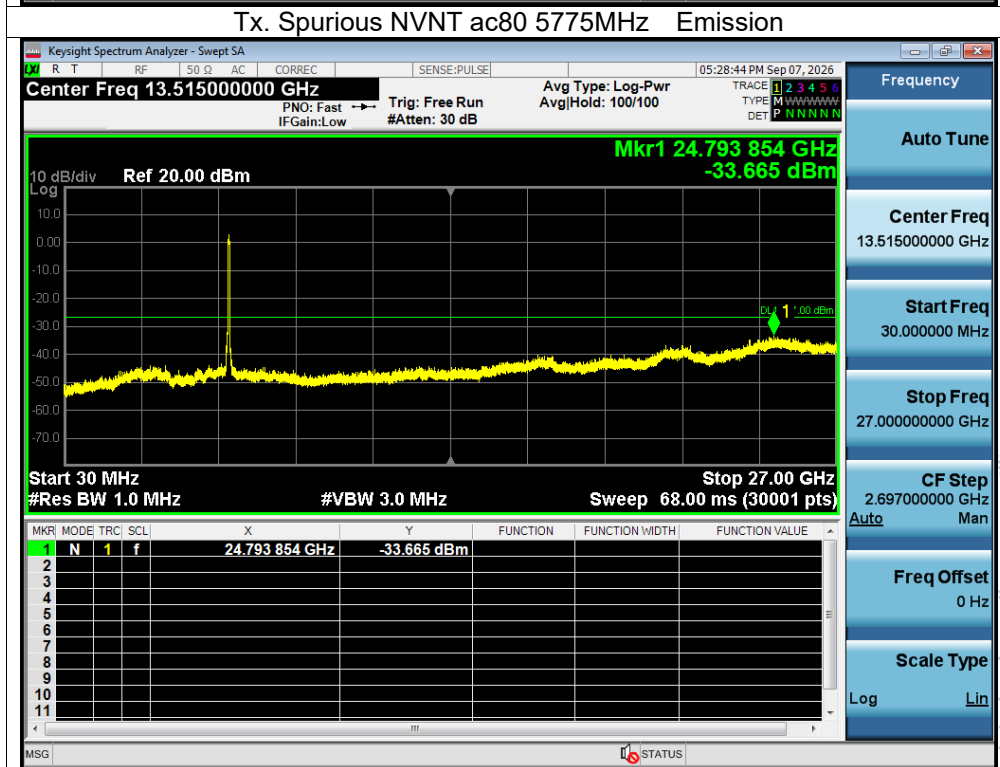
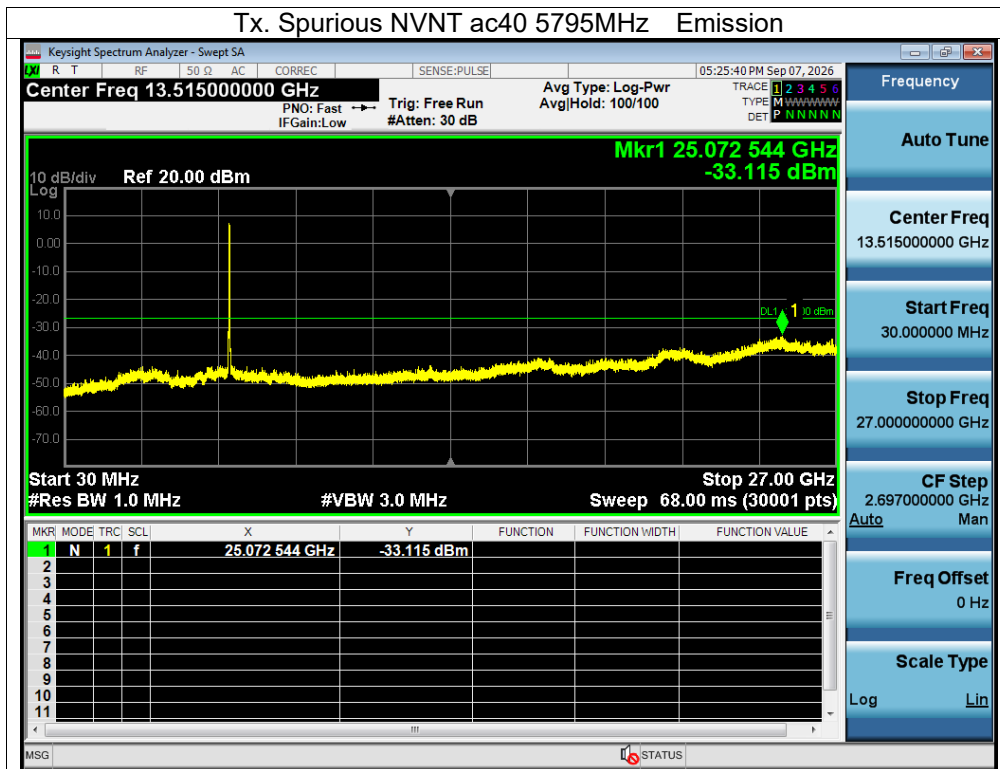






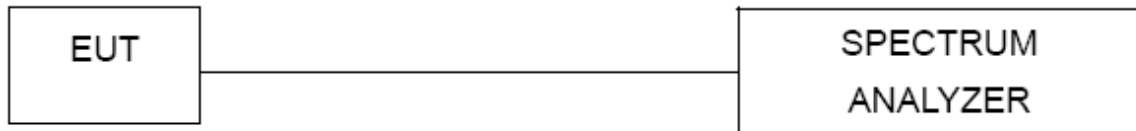
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13. Frequency Stability Measurement

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:	23.6 °C	Relative Humidity:	50%
Pressure:	101KPa	Test Voltage:	AC 120V/60Hz
Test Mode:	TX (5.1G) Mode Frequency U-NII-1 (5180-5240MHz)		

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

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5180MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	5.00	5180.0032	5180	0.0032	0.6178
		V max (V)	5.75	5180.0129	5180	0.0129	2.4903
		V min (V)	4.25	5180.0124	5180	0.0124	2.3938
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 (DV)	11.4	T (°C)	-20	5180.0054	5180	0.0054	1.0425
		T (°C)	-10	5180.0015	5180	0.0015	0.2896
		T (°C)	0	5180.0047	5180	0.0047	0.9073
		T (°C)	10	5180.0023	5180	0.0023	0.4440
		T (°C)	20	5180.0040	5180	0.0040	0.7722
		T (°C)	30	5180.0049	5180	0.0049	0.9459
		T (°C)	40	5180.0101	5180	0.0101	1.9498
		T (°C)	50	5180.0010	5180	0.0010	0.1931
		T (°C)	60	5180.0050	5180	0.0050	0.9653
		T (°C)	70	5180.0049	5180	0.0049	0.9459
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)	5.00	5200.0045	5200	0.0045	0.8654
		V max (V)	5.75	5200.0066	5200	0.0066	1.2692
		V min (V)	4.25	5200.0112	5200	0.0112	2.1538
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 (DV)	11.4	T (°C)	-20	5200.0025	5200	0.0025	0.4808
		T (°C)	-10	5200.0102	5200	0.0102	1.9615
		T (°C)	0	5200.0063	5200	0.0063	1.2115
		T (°C)	10	5200.0077	5200	0.0077	1.4808
		T (°C)	20	5200.0043	5200	0.0043	0.8269
		T (°C)	30	5200.0058	5200	0.0058	1.1154
		T (°C)	40	5200.0106	5200	0.0106	2.0385
		T (°C)	50	5200.0018	5200	0.0018	0.3462
		T (°C)	60	5200.0085	5200	0.0085	1.6346
		T (°C)	70	5200.0129	5200	0.0129	2.4808
Limits				5150-5250 MHz			
Result				Complies			

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Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency : 5240MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	5.00	5240.0054	5240	0.0054	1.0305
		V max (V)	5.75	5240.0091	5240	0.0091	1.7366
		V min (V)	4.25	5240.0073	5240	0.0073	1.3931
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 (DV)	11.4	T (°C)	-20	5240.0006	5240	0.0006	0.1145
		T (°C)	-10	5240.0050	5240	0.0050	0.9542
		T (°C)	0	5240.0074	5240	0.0074	1.4122
		T (°C)	10	5240.0055	5240	0.0055	1.0496
		T (°C)	20	5240.0093	5240	0.0093	1.7748
		T (°C)	30	5240.0100	5240	0.0100	1.9084
		T (°C)	40	5240.0110	5240	0.0110	2.0992
		T (°C)	50	5240.0000	5240	0.0000	0.0000
		T (°C)	60	5240.0004	5240	0.0004	0.0763
		T (°C)	70	5240.0020	5240	0.0020	0.3817
Limits				5150-5250 MHz			
Result				Complies			



Temperature:	23.6 °C	Relative Humidity:	50%
Pressure:	101KPa	Test Voltage:	AC 120V/60Hz
Test Mode:	TX (5.8G) Mode Frequency U-NII-3 (5745-5825MHz)		

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

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5745MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	5.00	5745.0098	5745	0.0098	1.7058
		V max (V)	5.75	5745.0118	5745	0.0118	2.0540
		V min (V)	4.25	5745.0101	5745	0.0101	1.7581
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 (DV)	11.4	T (°C)	-20	5745.0090	5745	0.0090	1.5666
		T (°C)	-10	5745.0062	5745	0.0062	1.0792
		T (°C)	0	5745.0096	5745	0.0096	1.6710
		T (°C)	10	5745.0044	5745	0.0044	0.7659
		T (°C)	20	5745.0001	5745	0.0001	0.0174
		T (°C)	30	5745.0008	5745	0.0008	0.1393
		T (°C)	40	5745.0099	5745	0.0099	1.7232
		T (°C)	50	5745.0088	5745	0.0088	1.5318
		T (°C)	60	5745.0031	5745	0.0031	0.5396
		T (°C)	70	5745.0102	5745	0.0102	1.7755
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)	5.00	5785.0092	5785	0.0092	1.5903
		V max (V)	5.75	5785.0087	5785	0.0087	1.5039
		V min (V)	4.25	5785.0004	5785	0.0004	0.0691
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 (DV)	11.4	T (°C)	-20	5785.0073	5785	0.0073	1.2619
		T (°C)	-10	5785.0066	5785	0.0066	1.1409
		T (°C)	0	5785.0060	5785	0.0060	1.0372
		T (°C)	10	5785.0068	5785	0.0068	1.1755
		T (°C)	20	5785.0011	5785	0.0011	0.1901
		T (°C)	30	5785.0063	5785	0.0063	1.0890
		T (°C)	40	5785.0097	5785	0.0097	1.6768
		T (°C)	50	5785.0016	5785	0.0016	0.2766
		T (°C)	60	5785.0088	5785	0.0088	1.5212
		T (°C)	70	5785.0004	5785	0.0004	0.0691
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)	5.00	5825.0127	5825	0.0127	2.1803
		V max (V)	5.75	5825.0117	5825	0.0117	2.0086
		V min (V)	4.25	5825.0084	5825	0.0084	1.4421
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 (DV)	11.4	T (°C)	-20	5825.0039	5825	0.0039	0.6695
		T (°C)	-10	5825.0111	5825	0.0111	1.9056
		T (°C)	0	5825.0001	5825	0.0001	0.0172
		T (°C)	10	5825.0044	5825	0.0044	0.7554
		T (°C)	20	5825.0043	5825	0.0043	0.7382
		T (°C)	30	5825.0040	5825	0.0040	0.6867
		T (°C)	40	5825.0036	5825	0.0036	0.6180
		T (°C)	50	5825.0047	5825	0.0047	0.8069
		T (°C)	60	5825.0039	5825	0.0039	0.6695
		T (°C)	70	5825.0079	5825	0.0079	1.3562
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

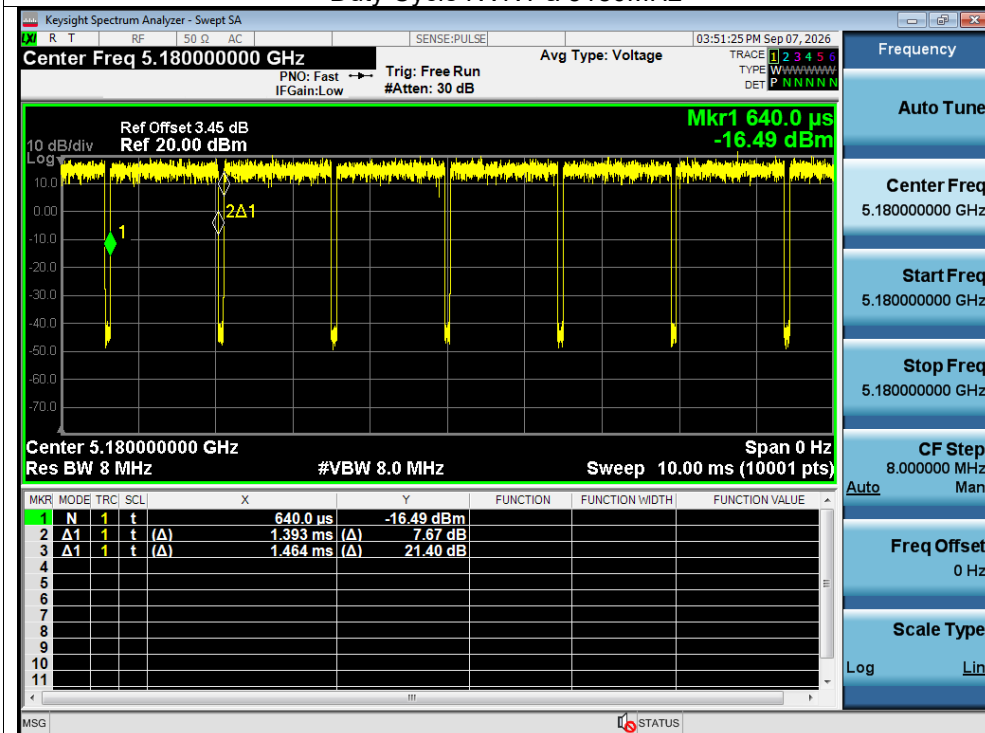
1. Set span = Zero
2. RBW = 8MHz
3. VBW = 8MHz,
4. Detector = Peak

14.4 Test Result

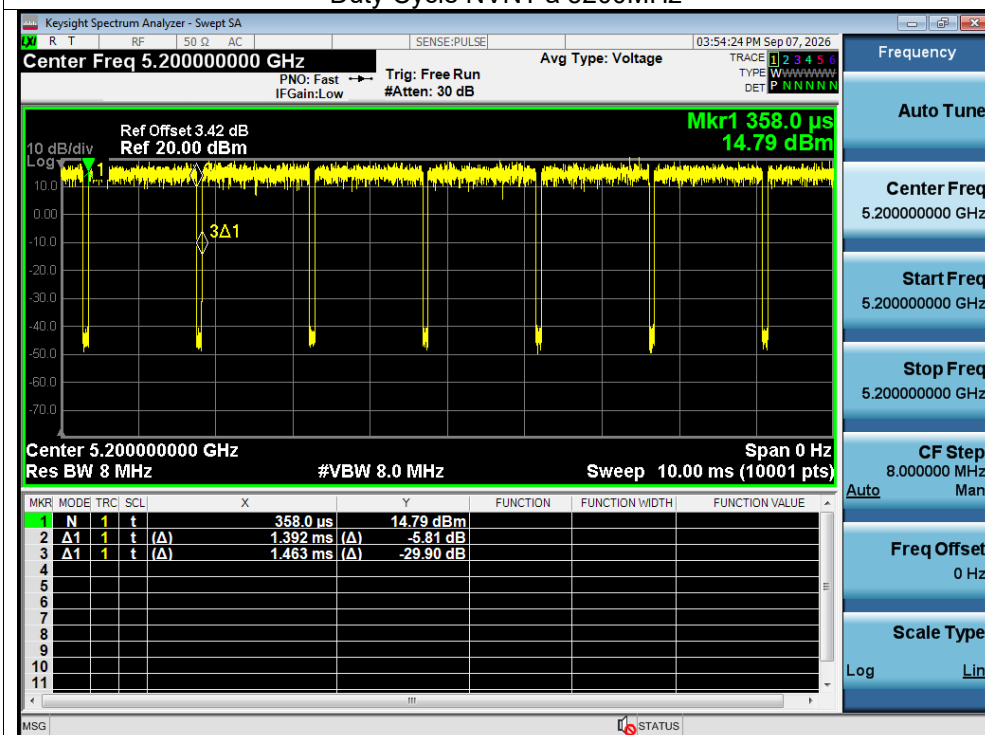
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	a	5180	A	95.15	0.22	0.72
NVNT	a	5200	A	95.15	0.22	0.72
NVNT	a	5240	A	95.15	0.22	0.72
NVNT	n20	5180	A	94.83	0.23	0.77
NVNT	n20	5200	A	94.83	0.23	0.77
NVNT	n20	5240	A	94.75	0.23	0.77
NVNT	n40	5190	A	90.28	0.44	1.54
NVNT	n40	5230	A	90.28	0.44	1.54
NVNT	ac20	5180	A	94.87	0.23	0.76
NVNT	ac20	5200	A	94.8	0.23	0.76
NVNT	ac20	5240	A	94.87	0.23	0.76
NVNT	ac40	5190	A	90.41	0.44	1.52
NVNT	ac40	5230	A	90.28	0.44	1.54
NVNT	ac80	5210	A	82.05	0.86	3.13

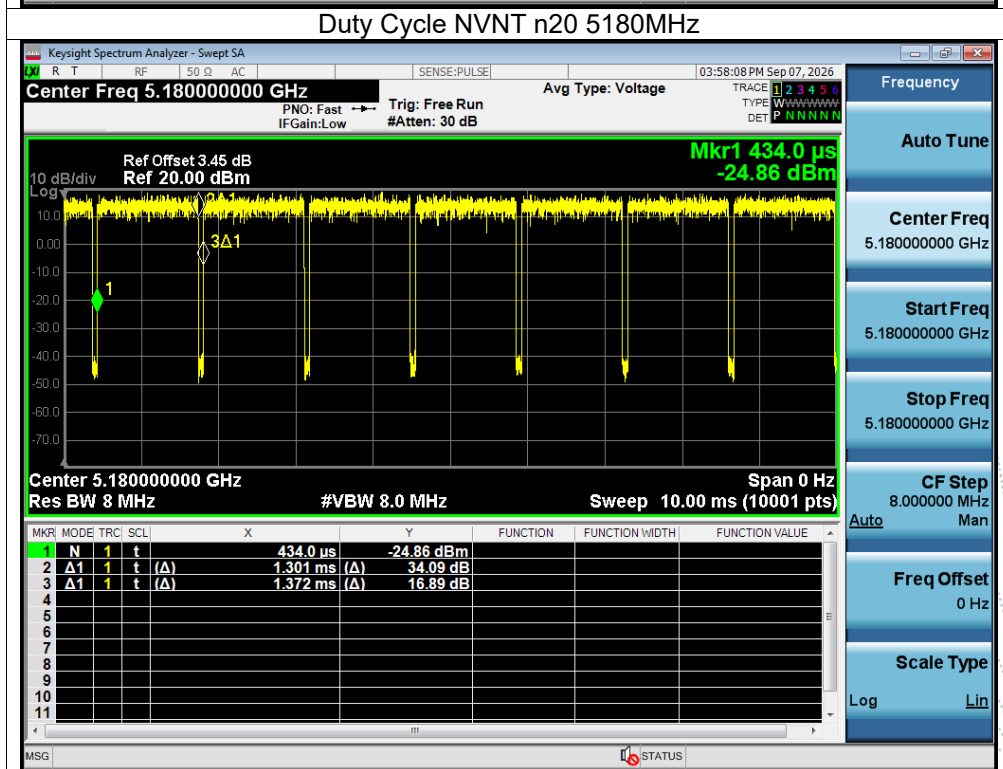
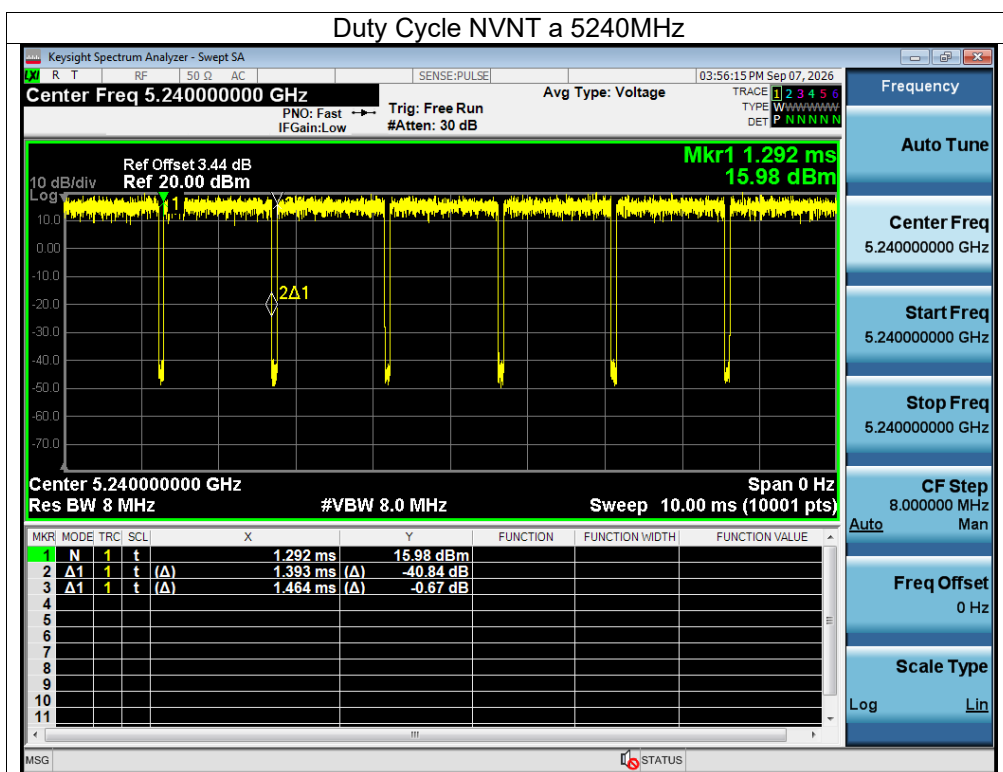
Test Graphs

Duty Cycle NVNT a 5180MHz

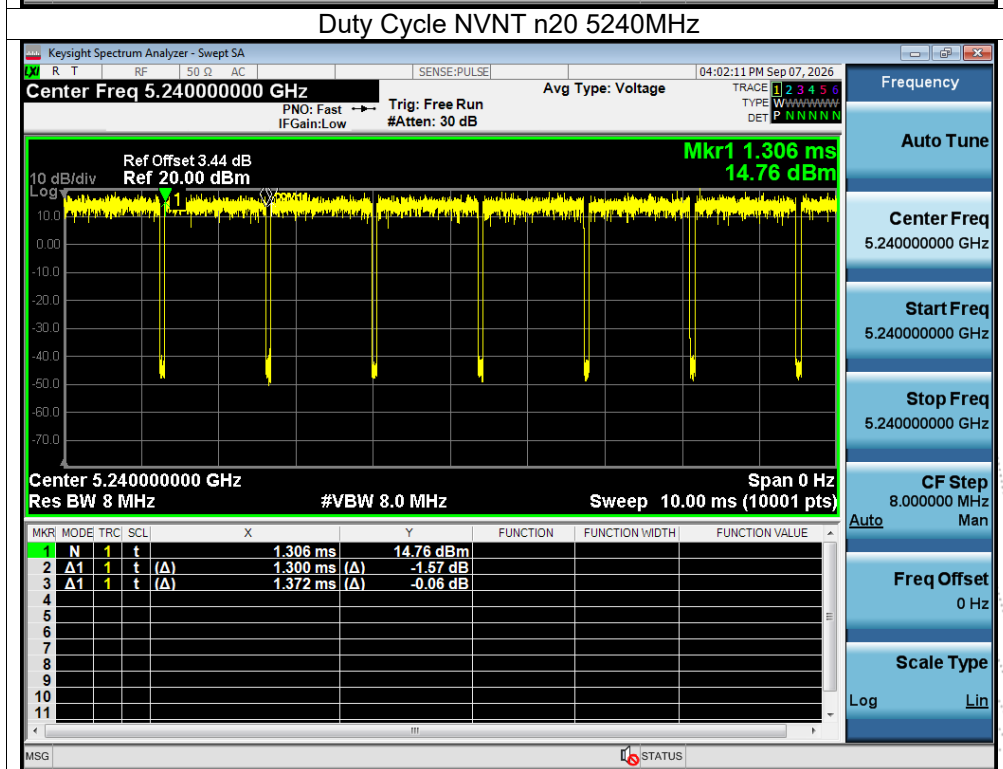
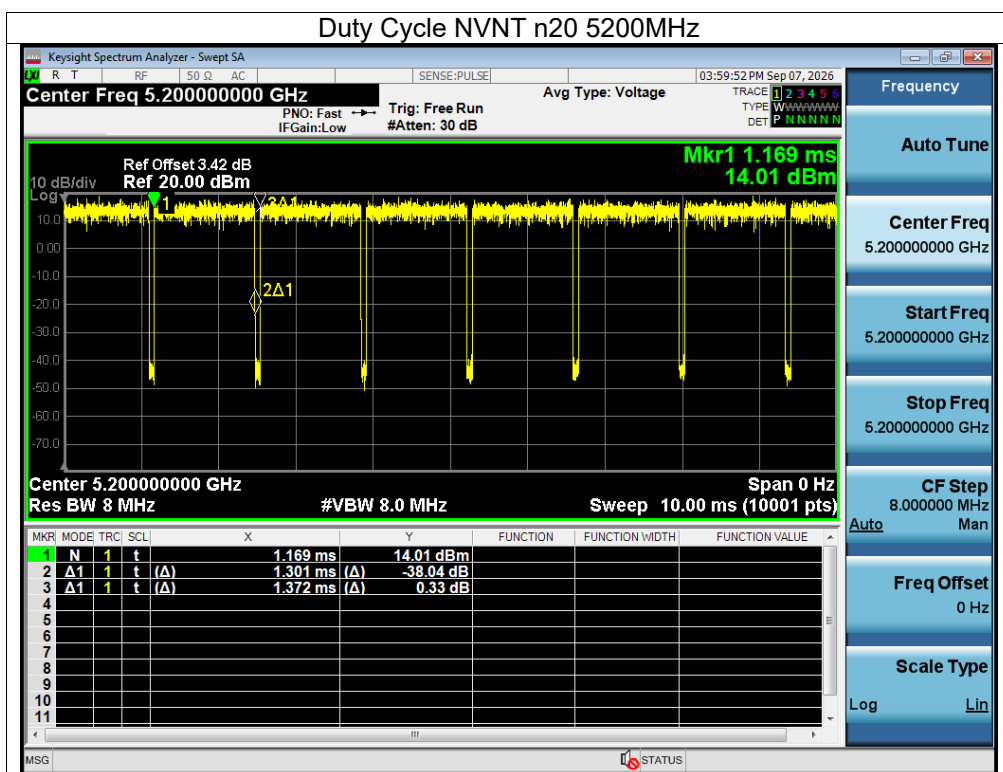


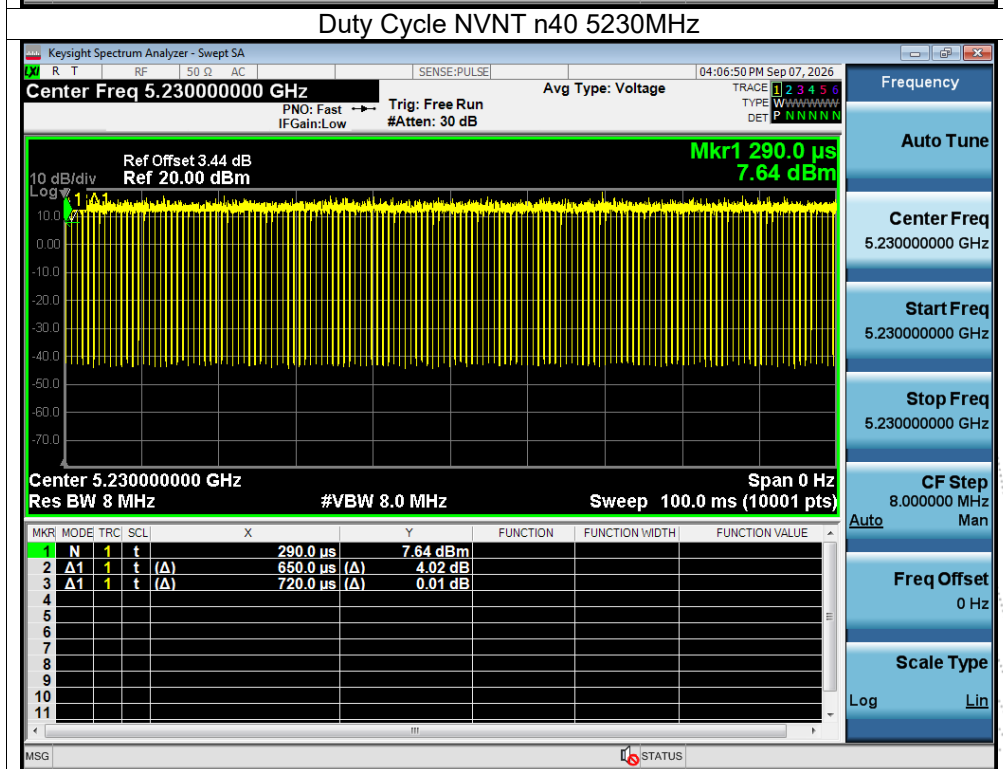
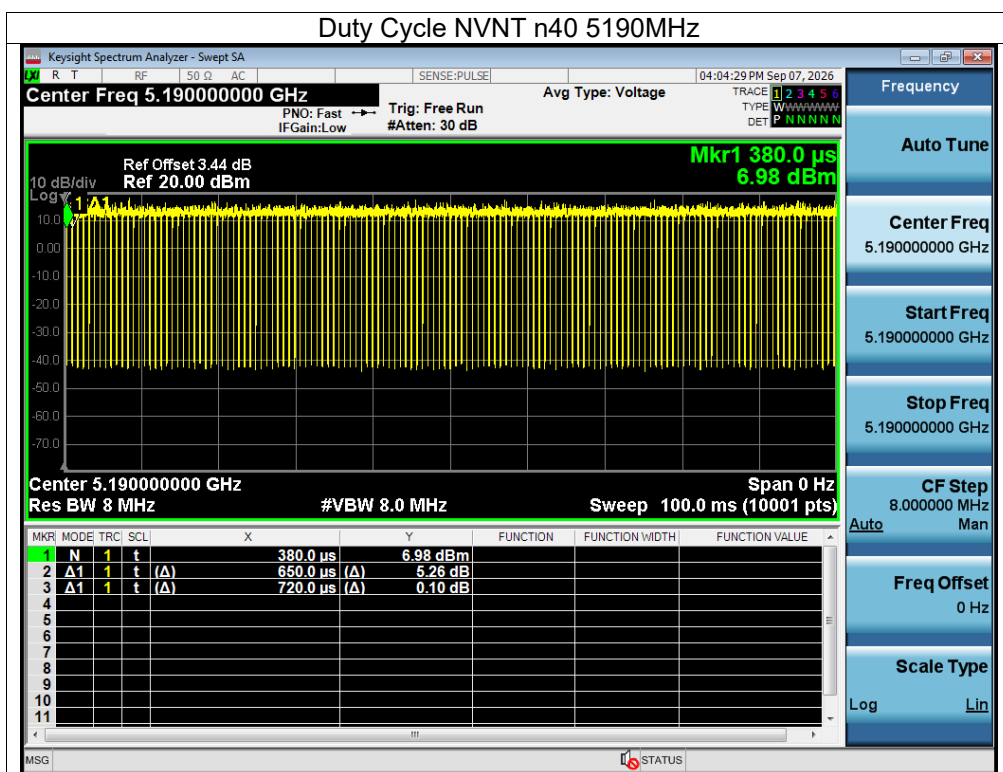
Duty Cycle NVNT a 5200MHz

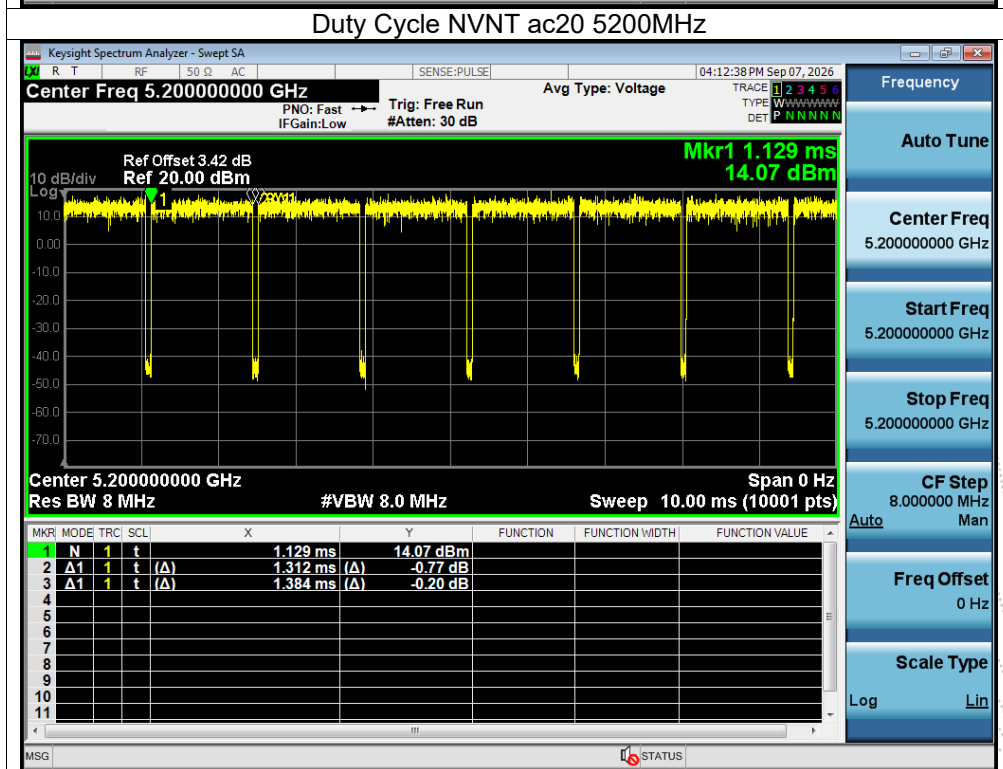
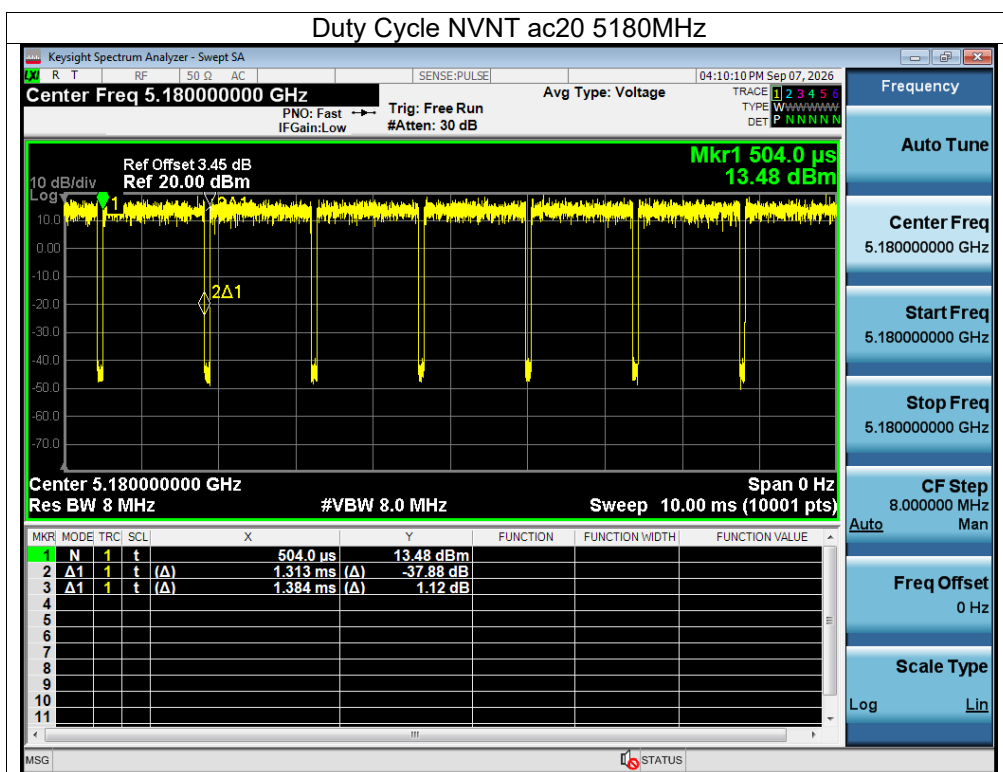


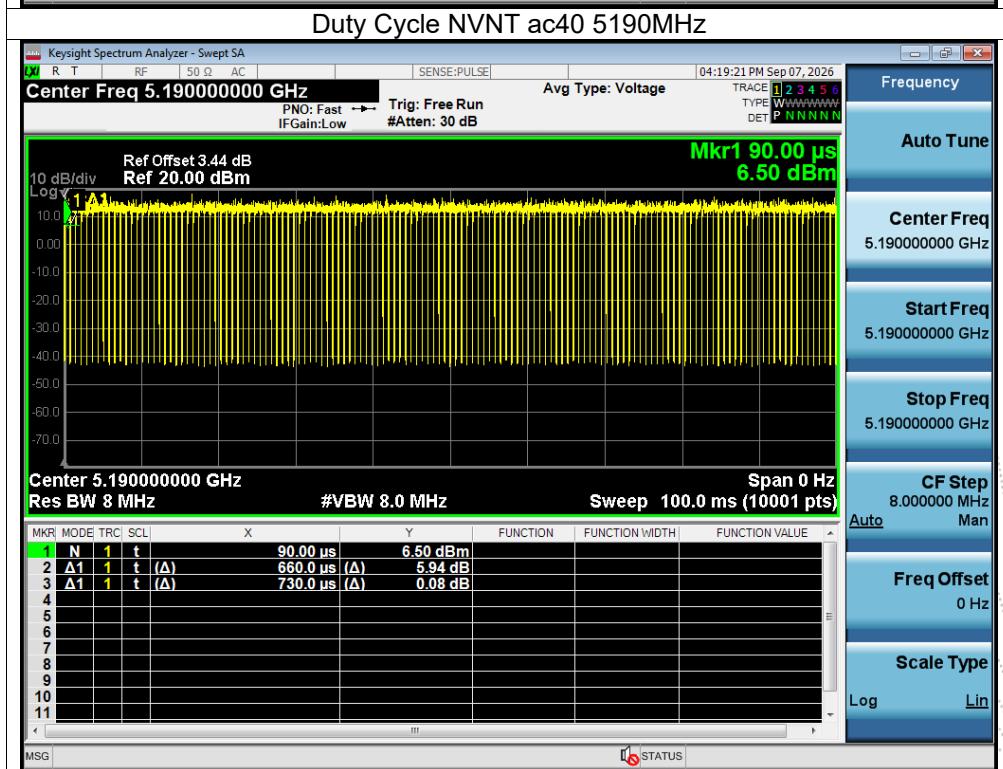
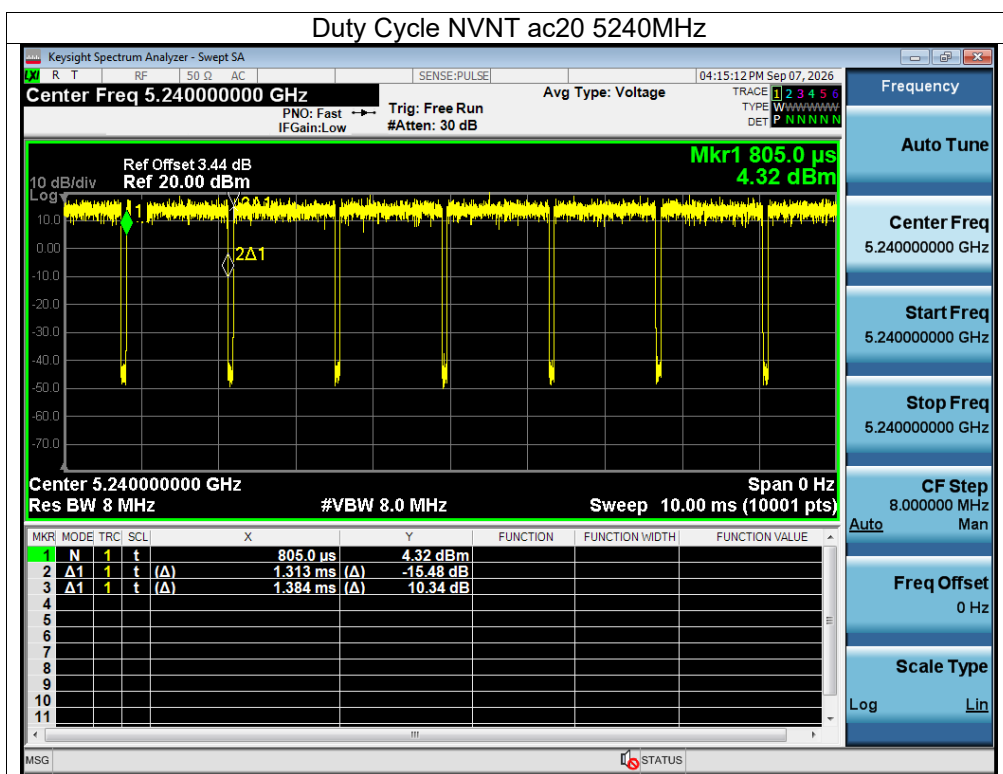


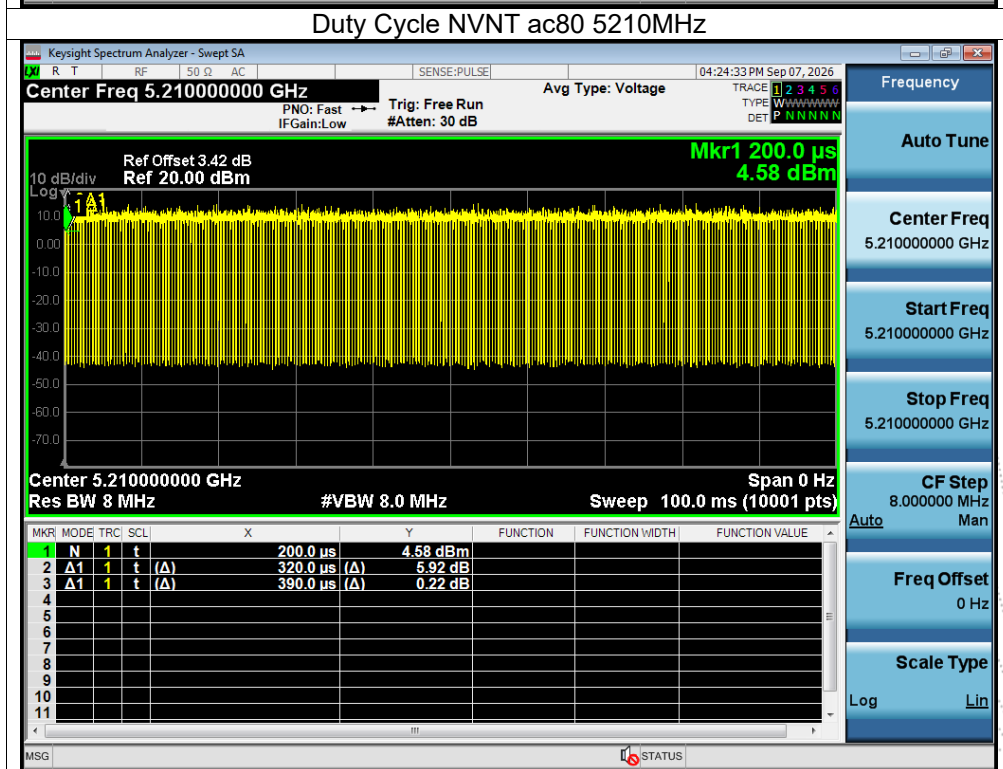
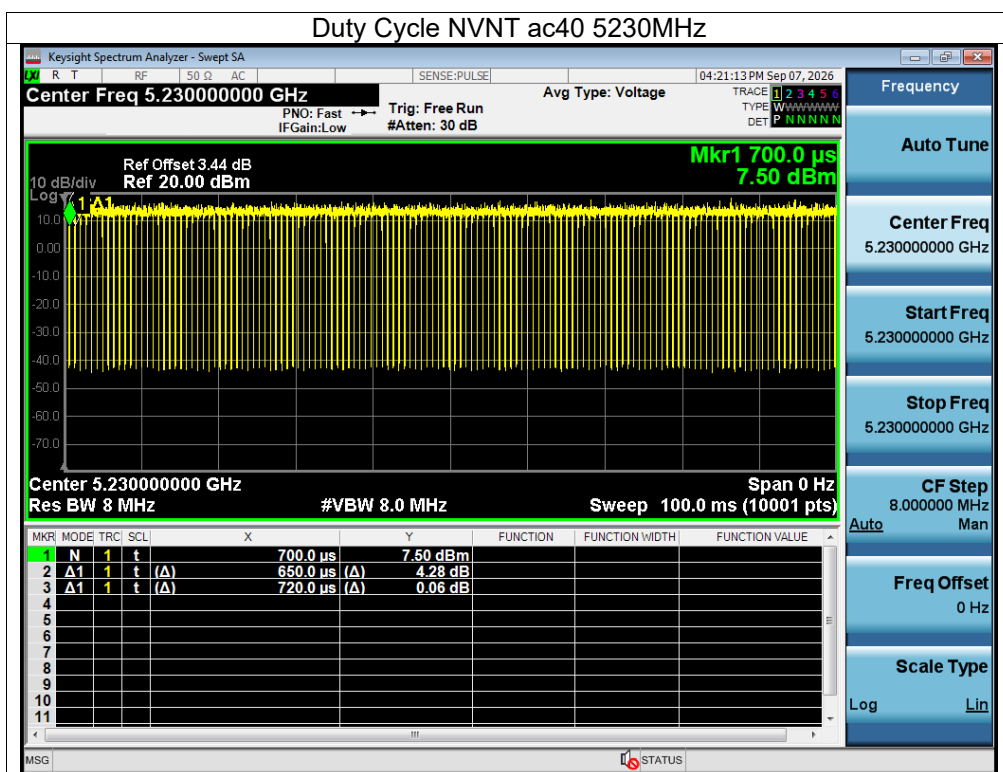
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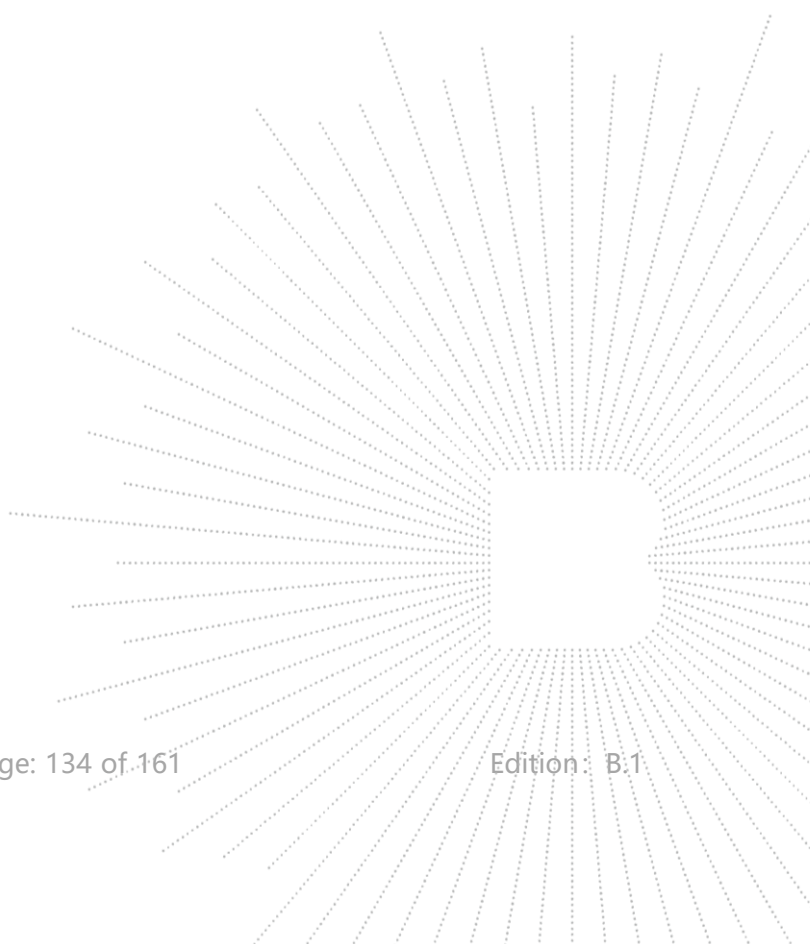






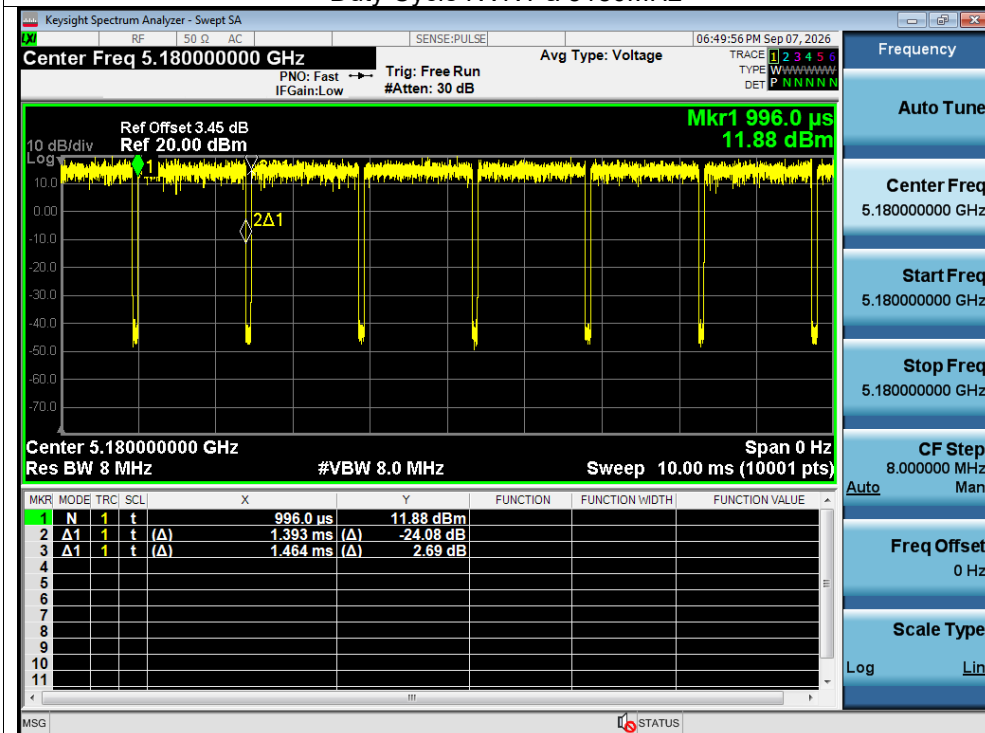


Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	a	5180	B	95.15	0.22	0.72
NVNT	a	5200	B	95.15	0.22	0.72
NVNT	a	5240	B	95.15	0.22	0.72
NVNT	n20	5180	B	94.75	0.23	0.77
NVNT	n20	5200	B	94.75	0.23	0.77
NVNT	n20	5240	B	94.75	0.23	0.77
NVNT	n40	5190	B	90.28	0.44	1.54
NVNT	n40	5230	B	90.28	0.44	1.54
NVNT	ac20	5180	B	94.86	0.23	0.76
NVNT	ac20	5200	B	94.78	0.23	0.76
NVNT	ac20	5240	B	94.85	0.23	0.76
NVNT	ac40	5190	B	90.28	0.44	1.54
NVNT	ac40	5230	B	90.28	0.44	1.54
NVNT	ac80	5210	B	82.05	0.86	3.13

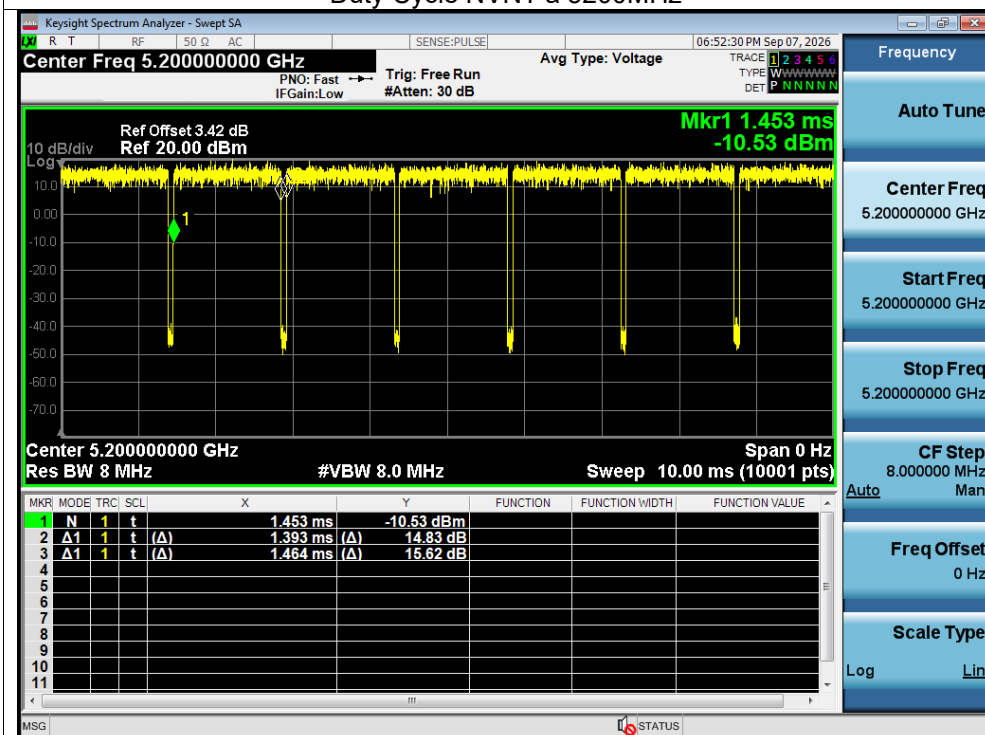


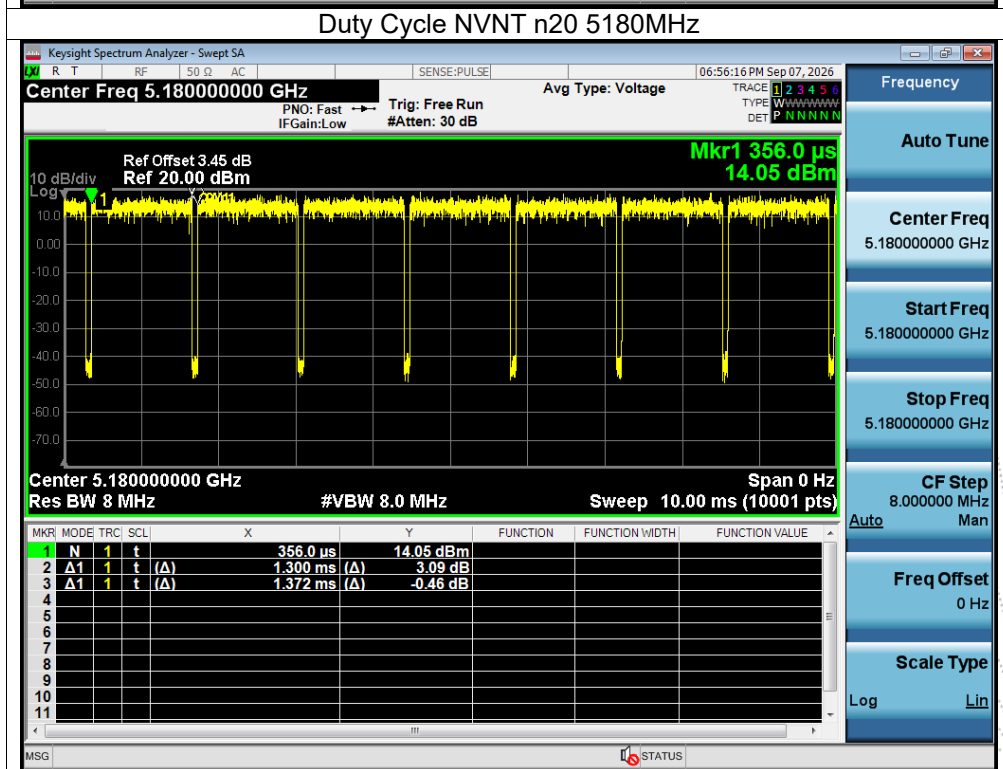
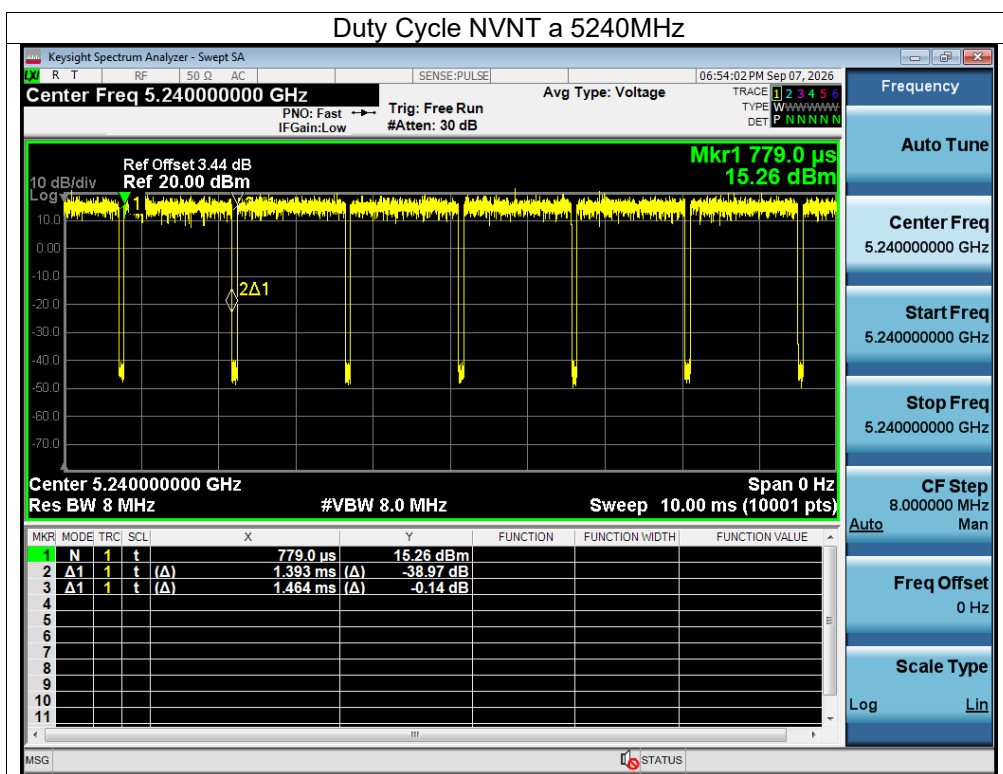
Test Graphs

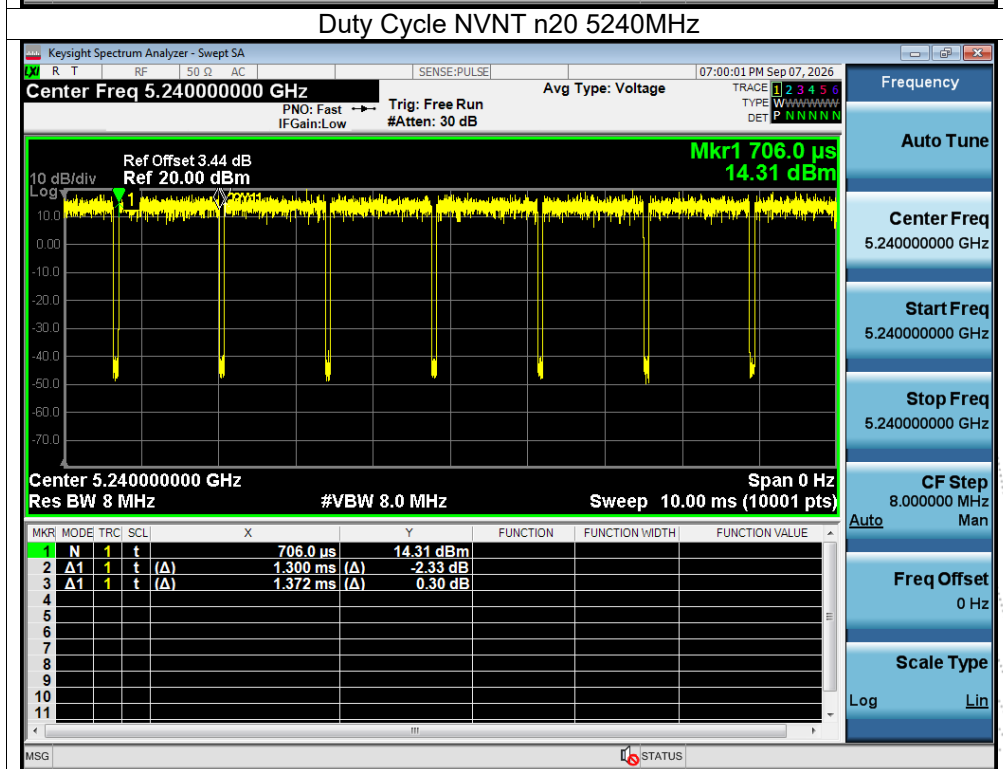
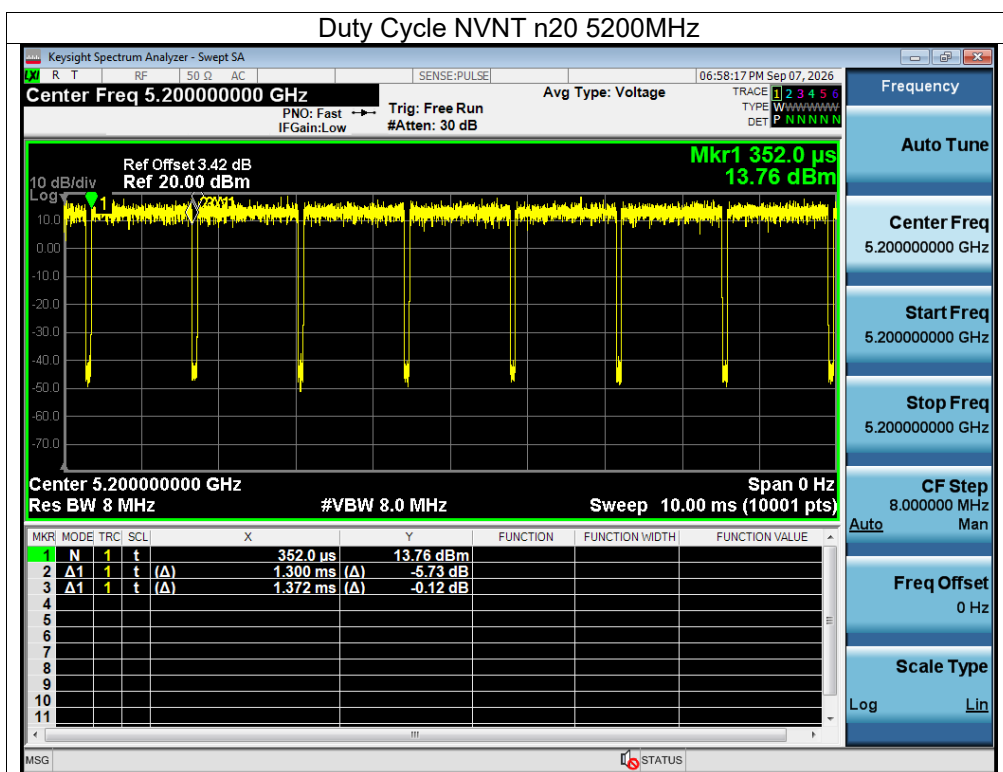
Duty Cycle NVNT a 5180MHz

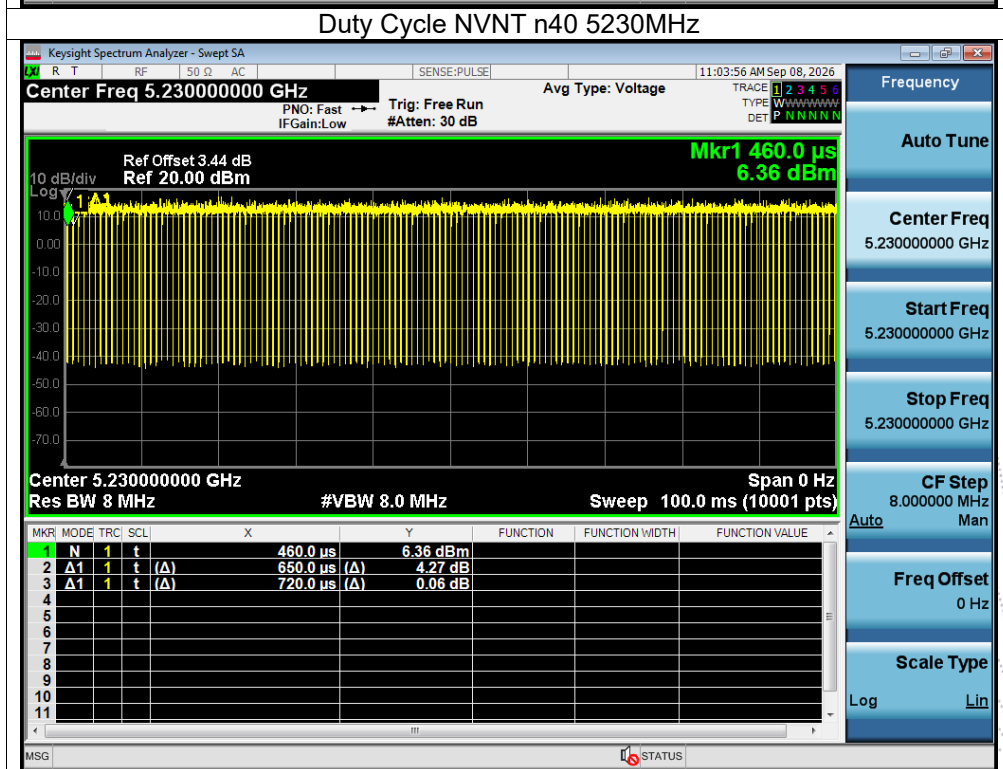
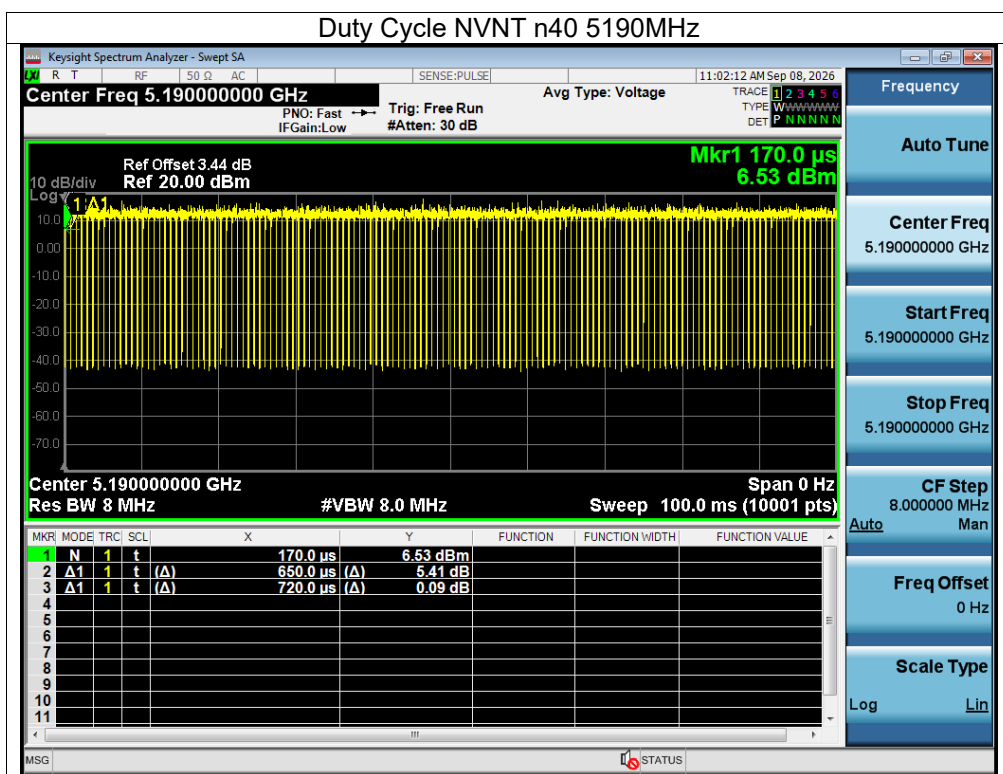


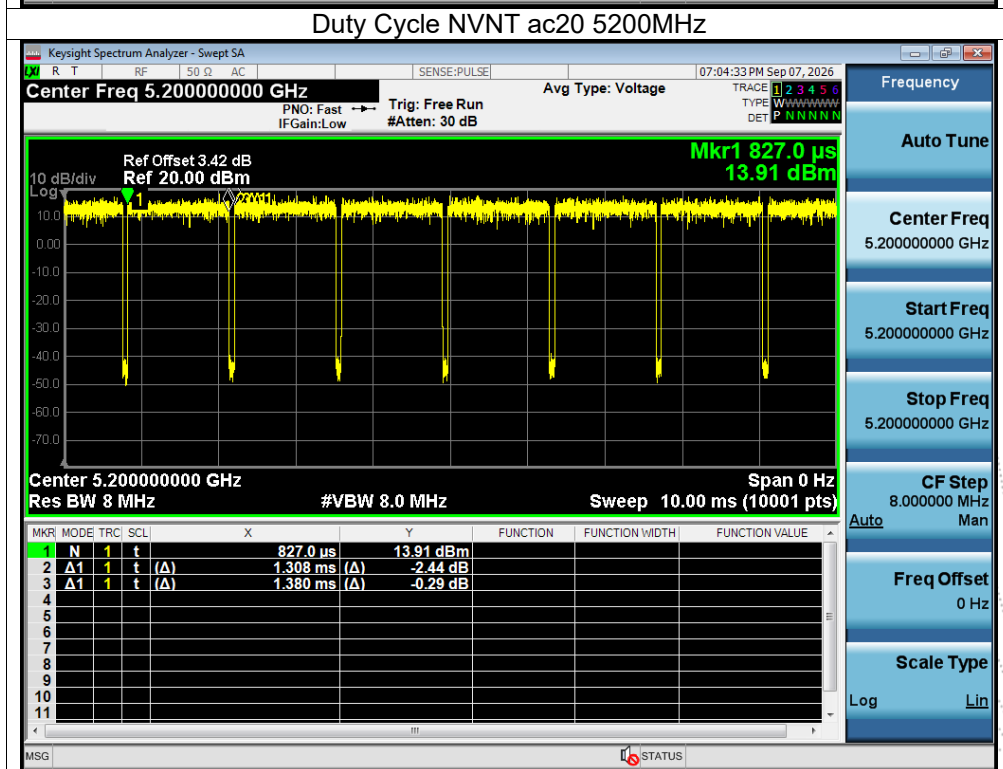
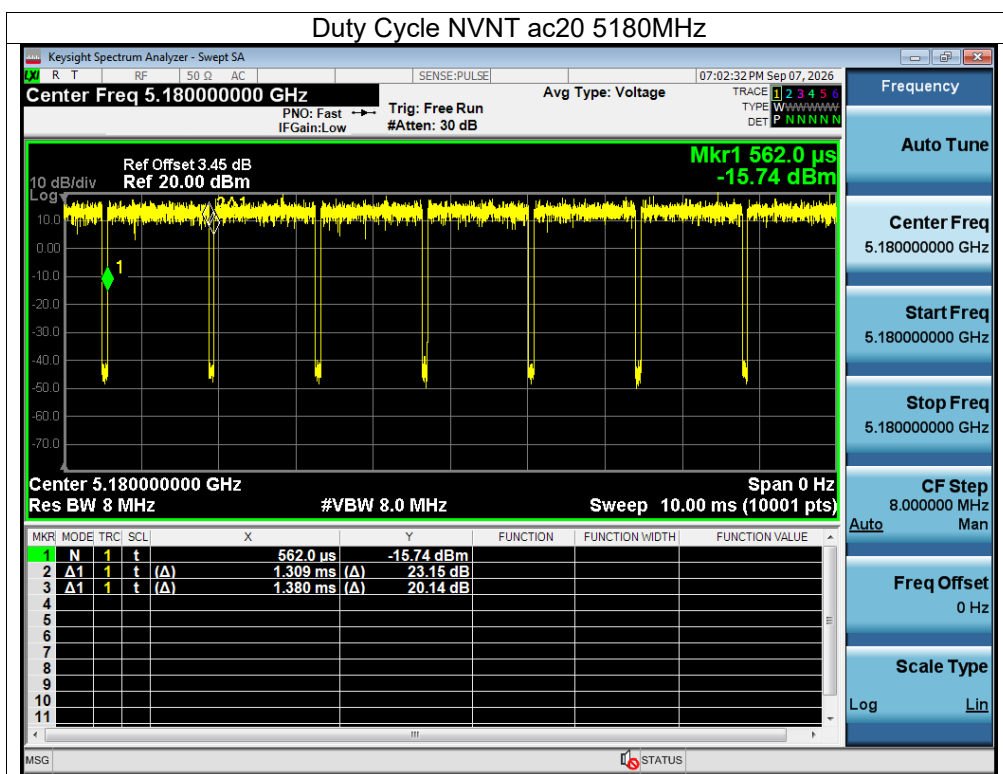
Duty Cycle NVNT a 5200MHz

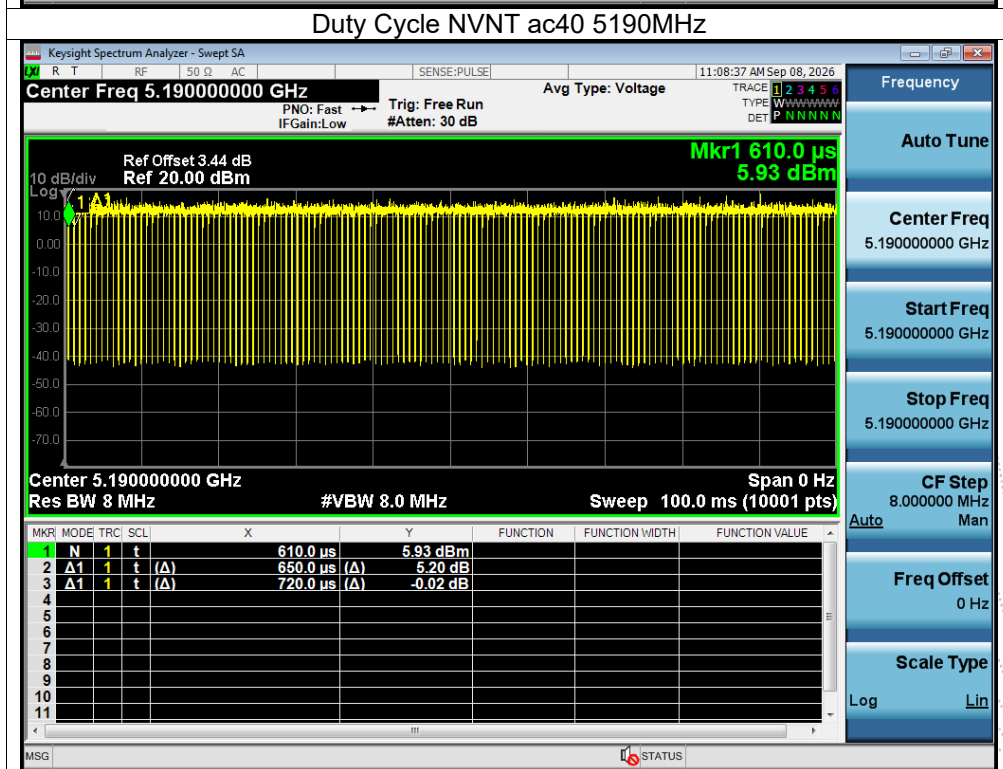
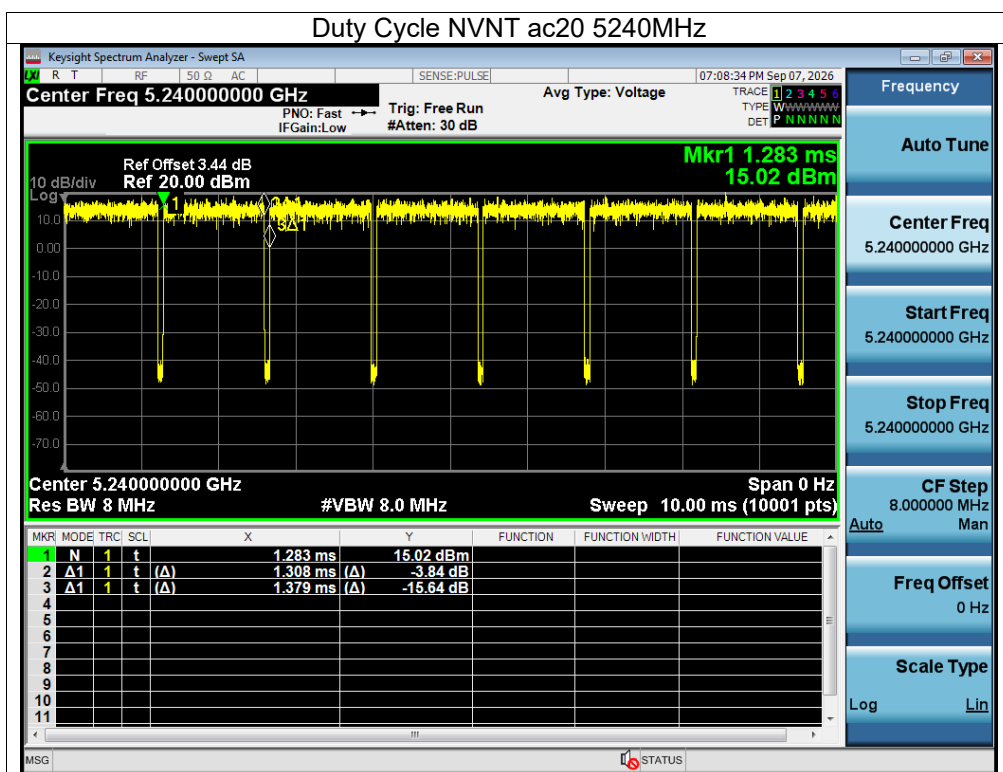




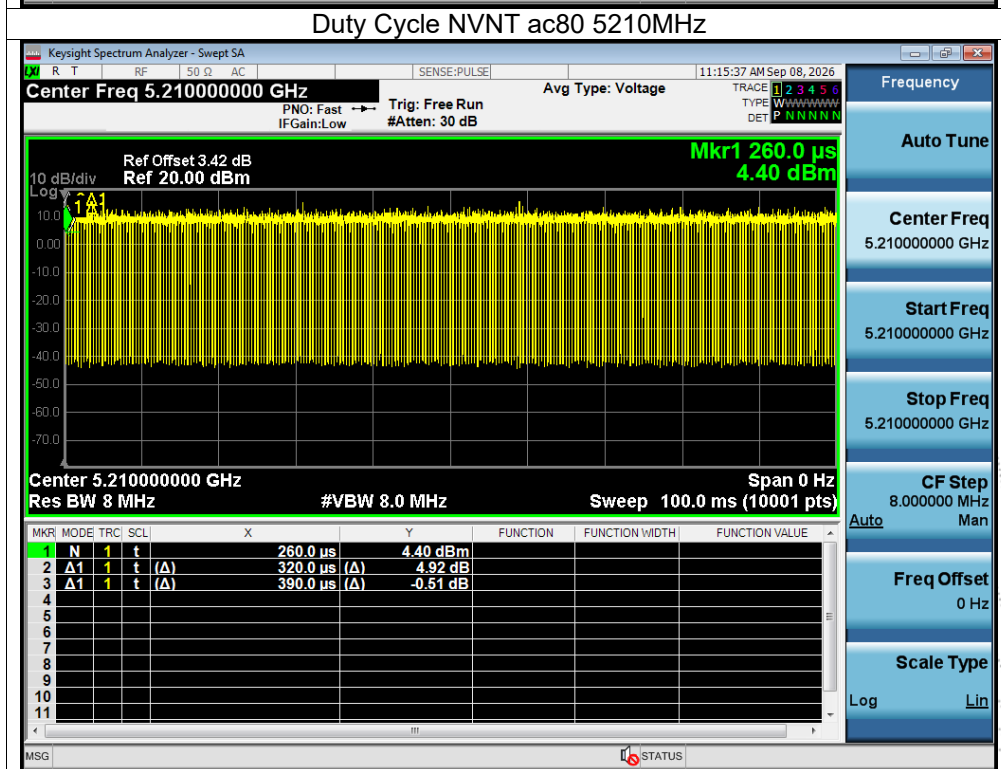
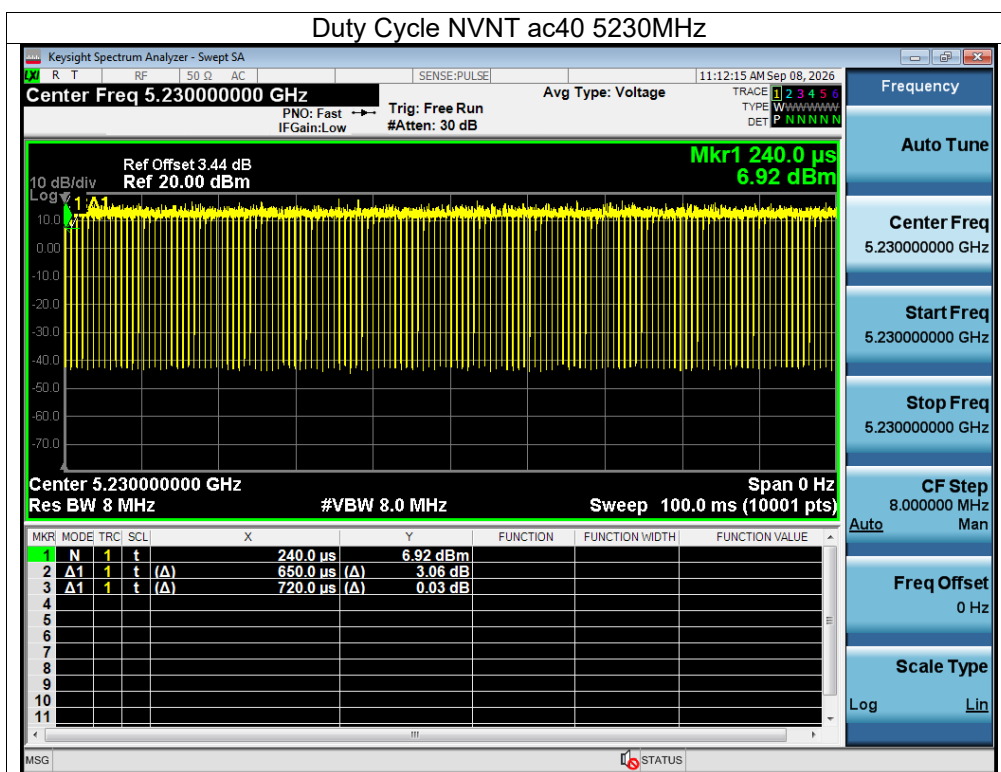






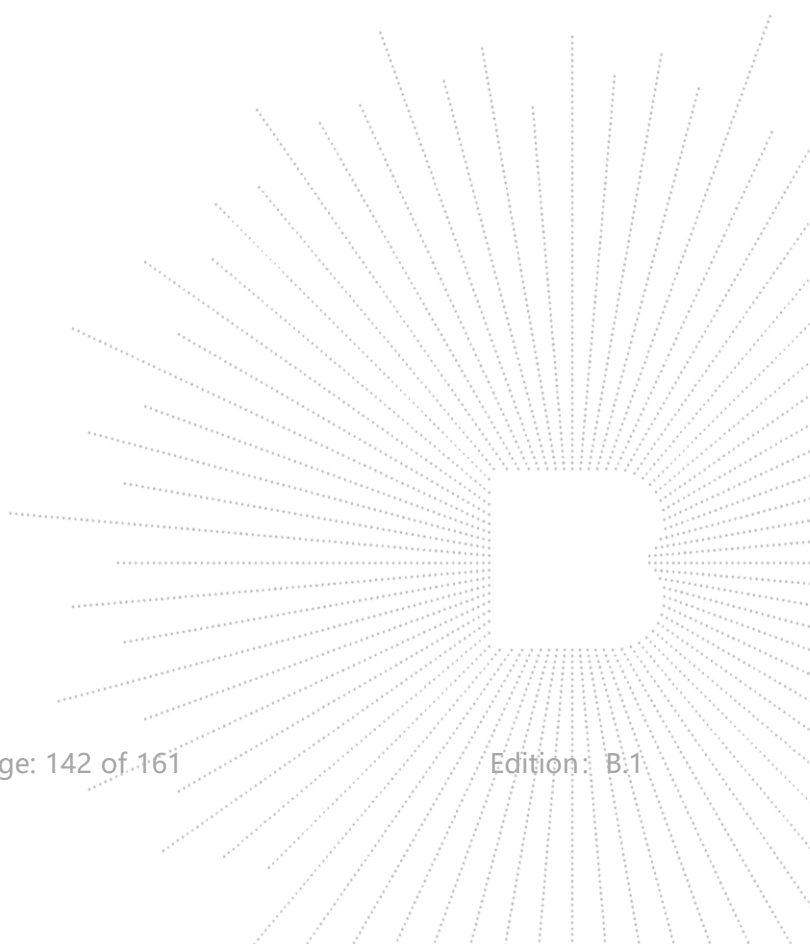


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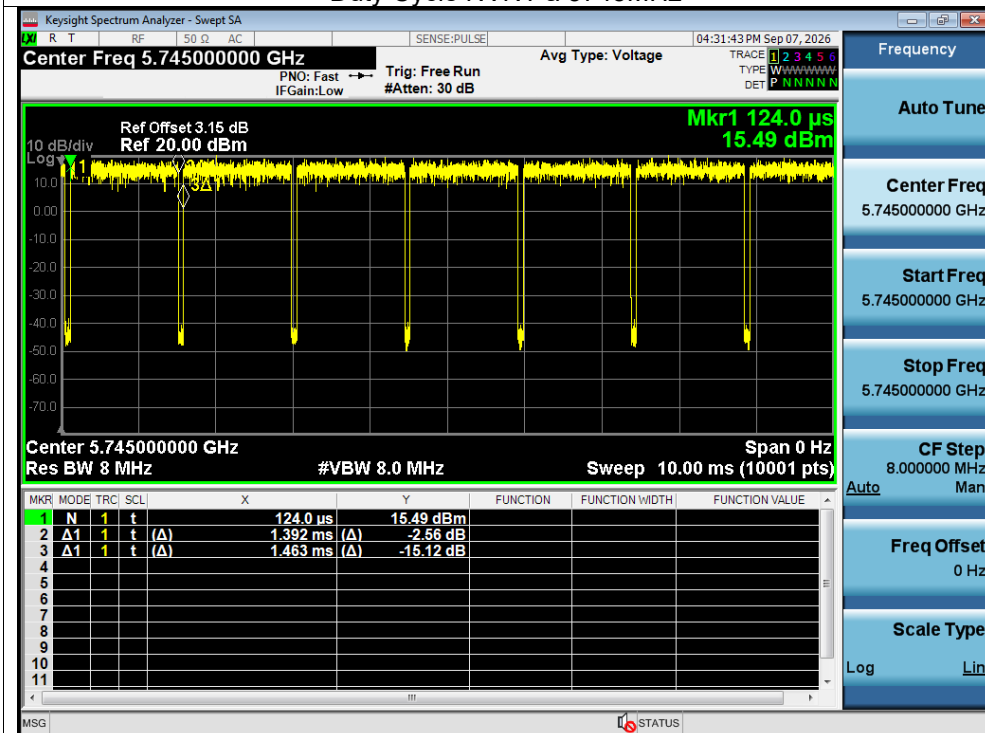
SHENZHEN

Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	a	5745	A	95.15	0.22	0.72
NVNT	a	5785	A	95.15	0.22	0.72
NVNT	a	5825	A	95.15	0.22	0.72
NVNT	n20	5745	A	94.83	0.23	0.77
NVNT	n20	5785	A	94.83	0.23	0.77
NVNT	n20	5825	A	94.75	0.23	0.77
NVNT	n40	5755	A	90.28	0.44	1.54
NVNT	n40	5795	A	90.28	0.44	1.54
NVNT	ac20	5745	A	94.87	0.23	0.76
NVNT	ac20	5785	A	94.8	0.23	0.76
NVNT	ac20	5825	A	94.8	0.23	0.76
NVNT	ac40	5755	A	90.28	0.44	1.54
NVNT	ac40	5795	A	90.41	0.44	1.52
NVNT	ac80	5775	A	82.05	0.86	3.13

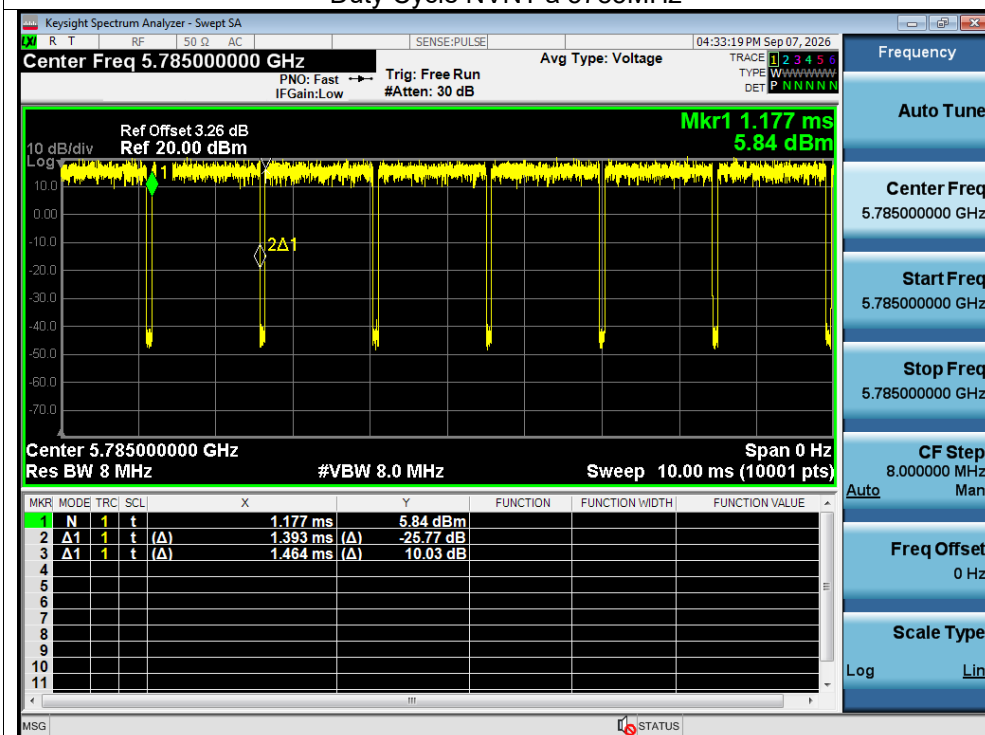


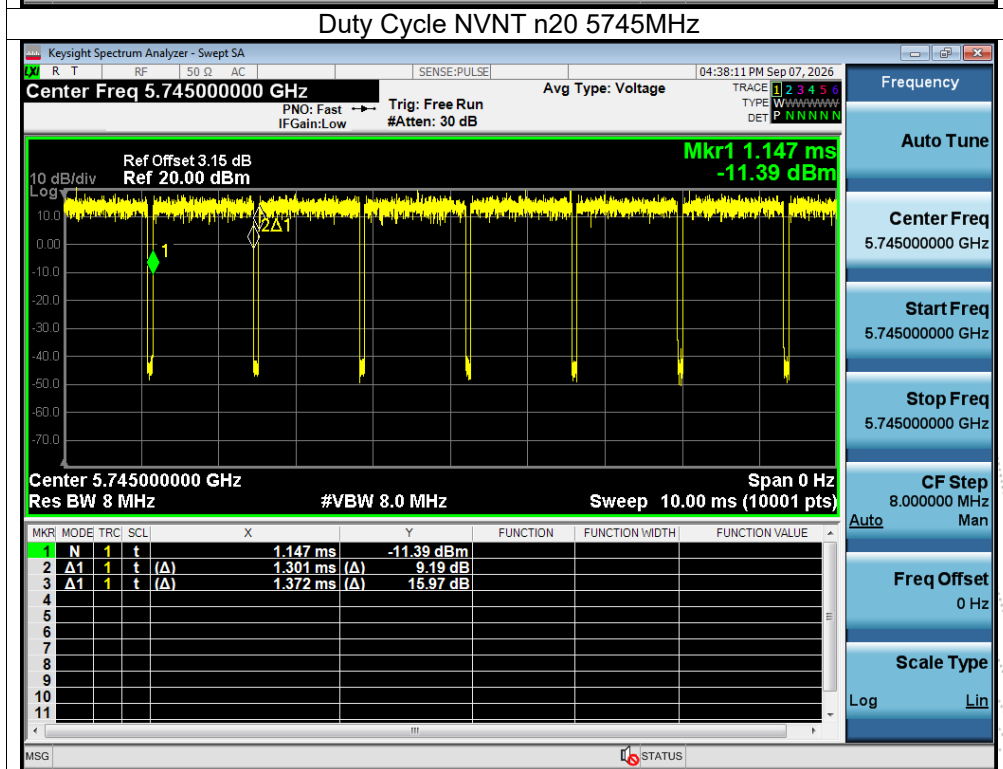
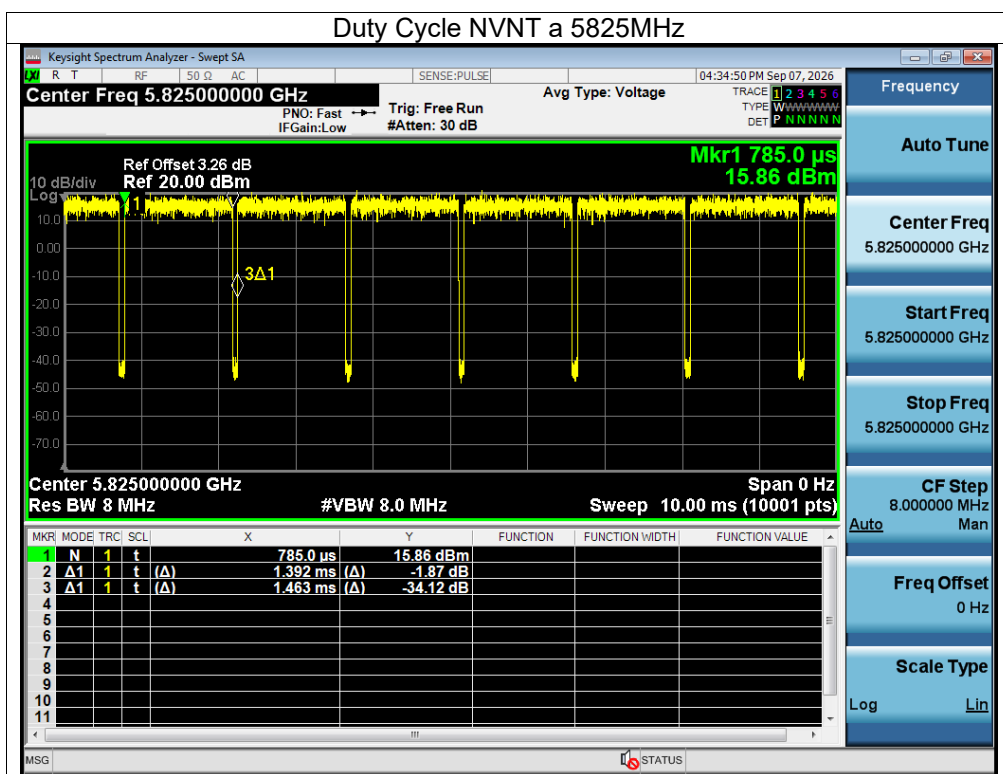
Test Graphs

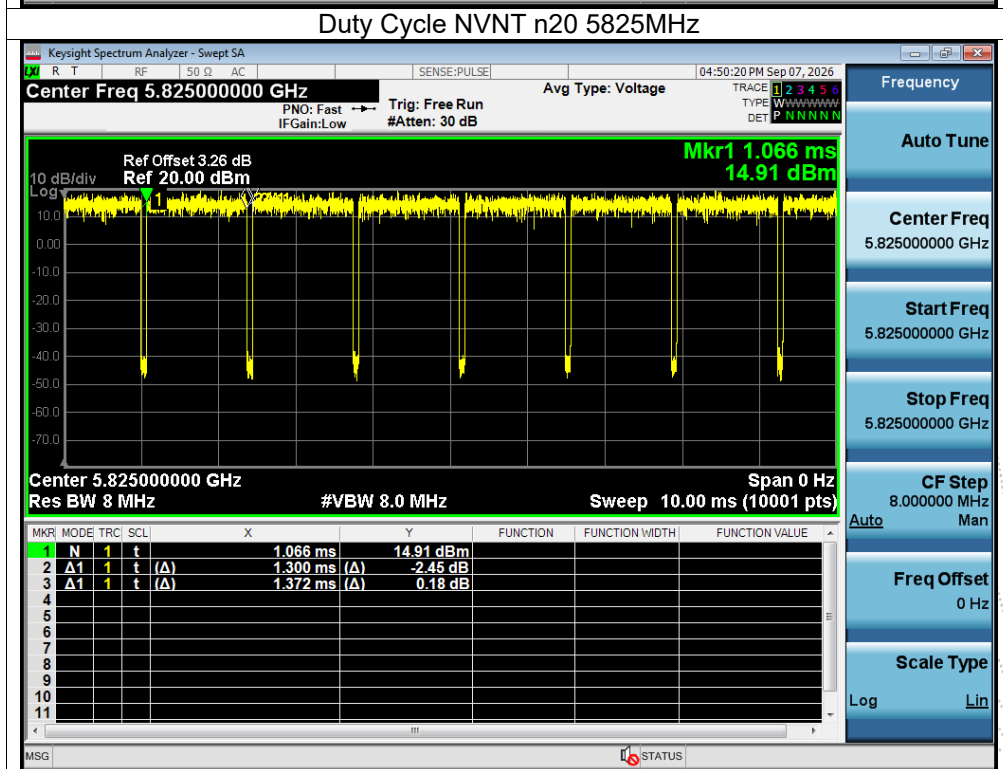
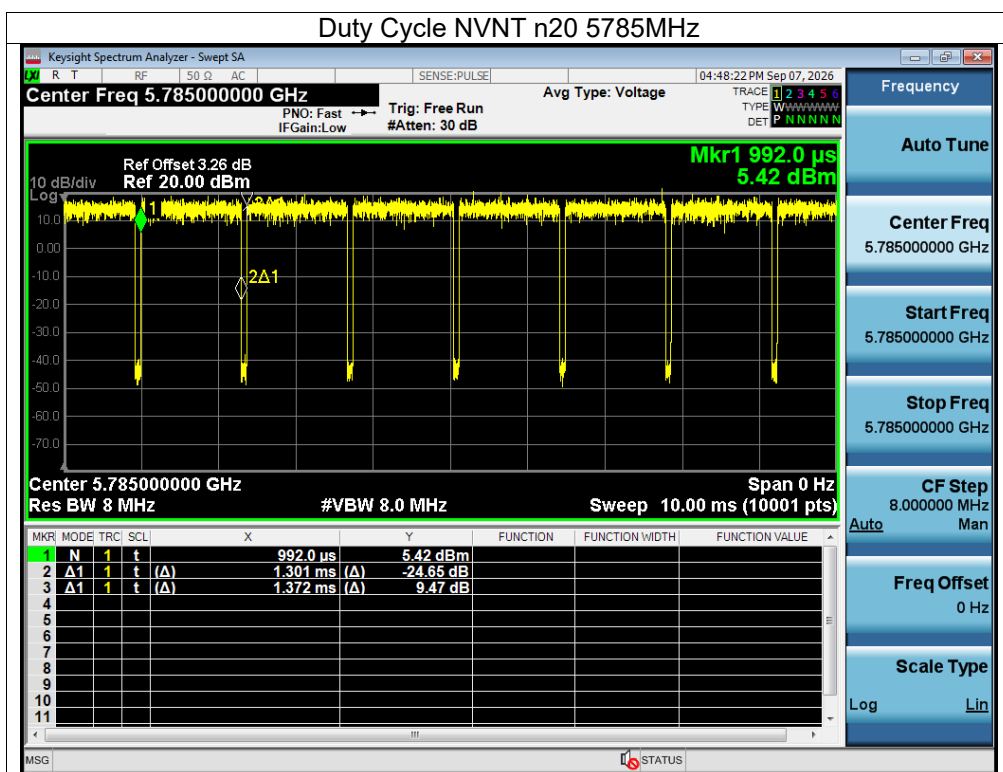
Duty Cycle NVNT a 5745MHz

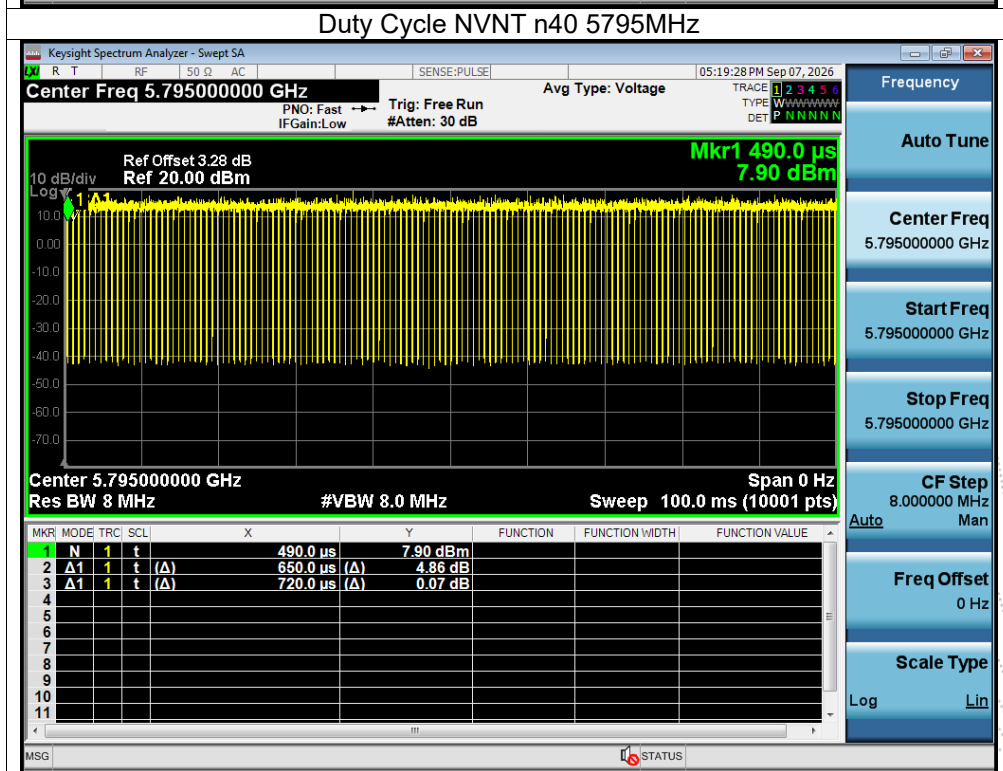
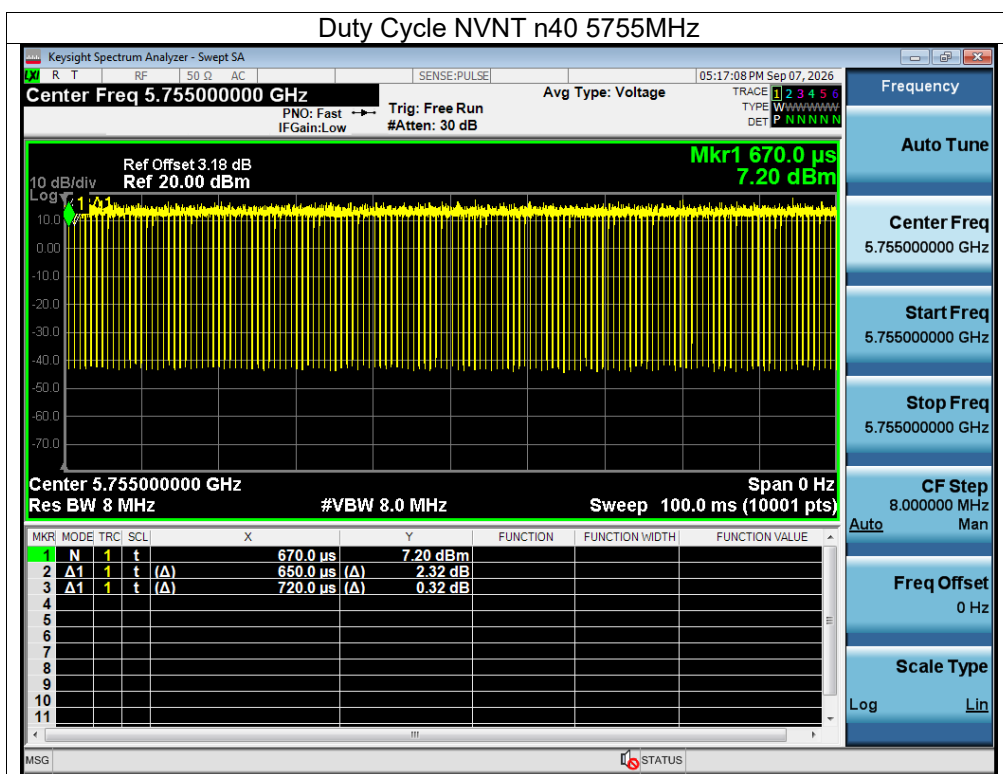


Duty Cycle NVNT a 5785MHz

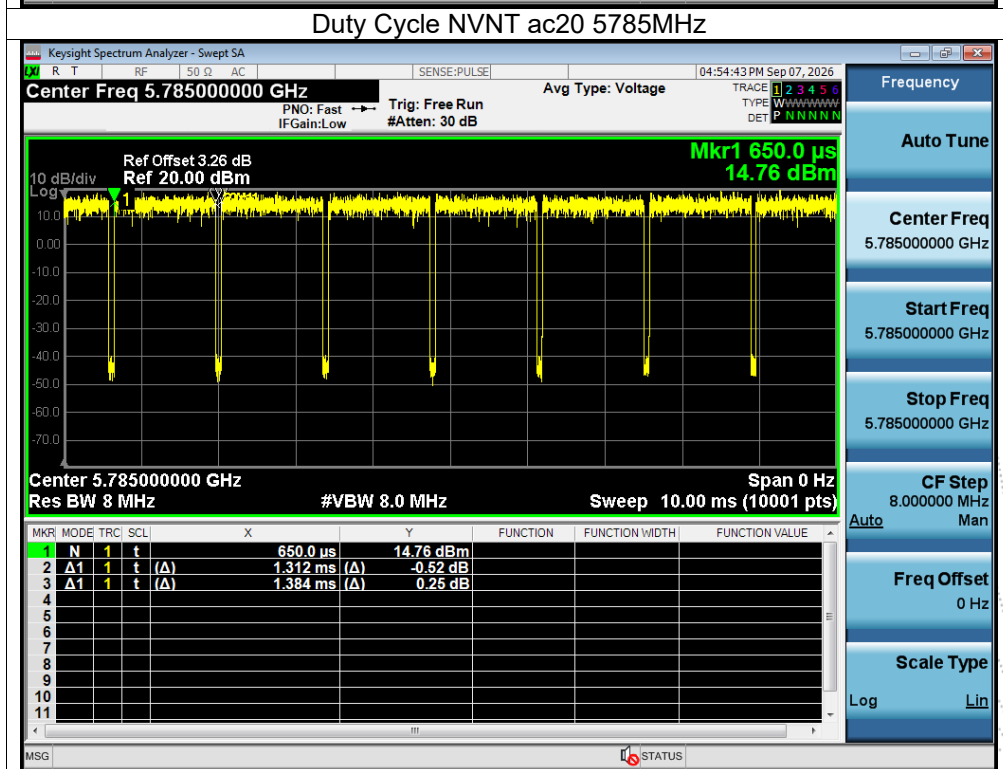
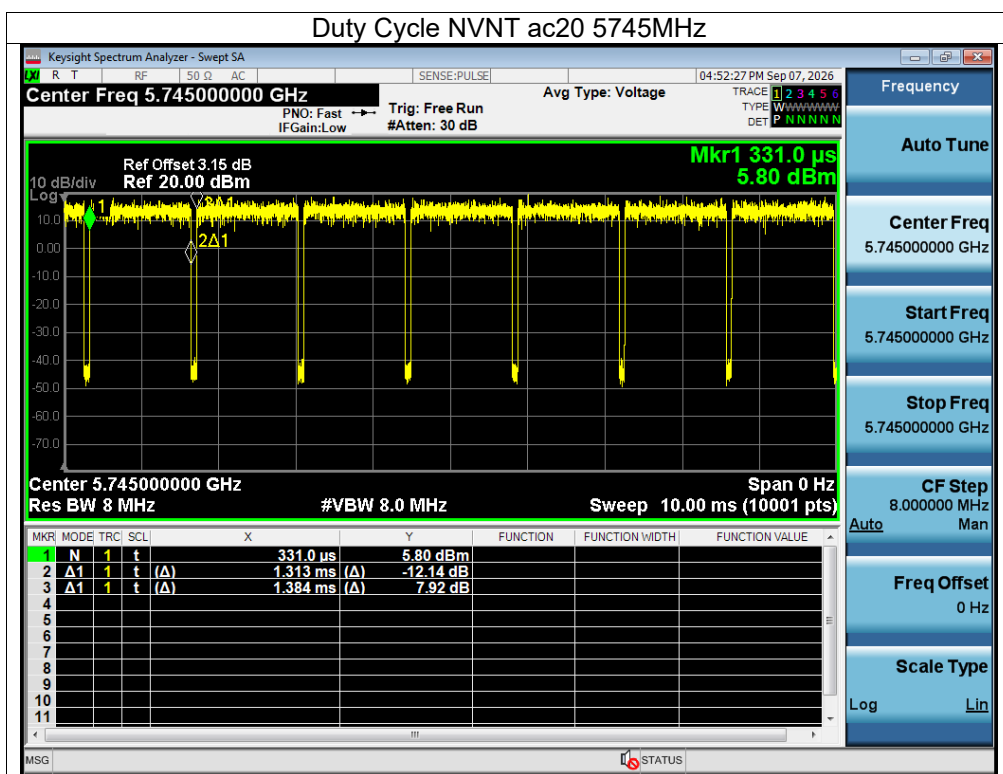


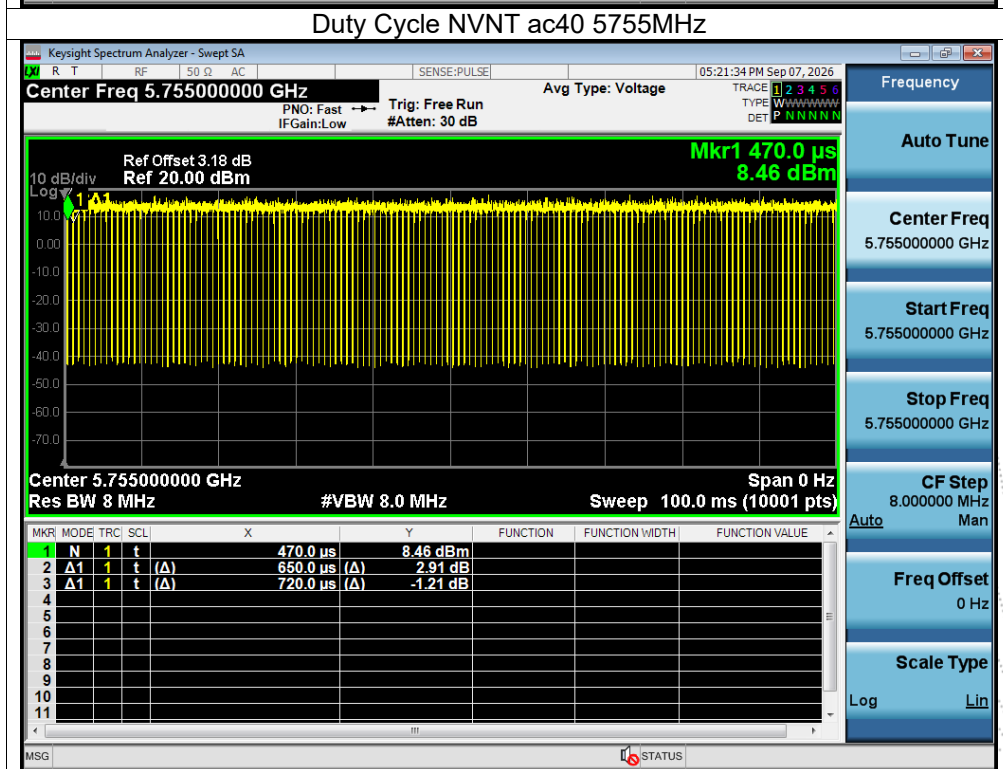
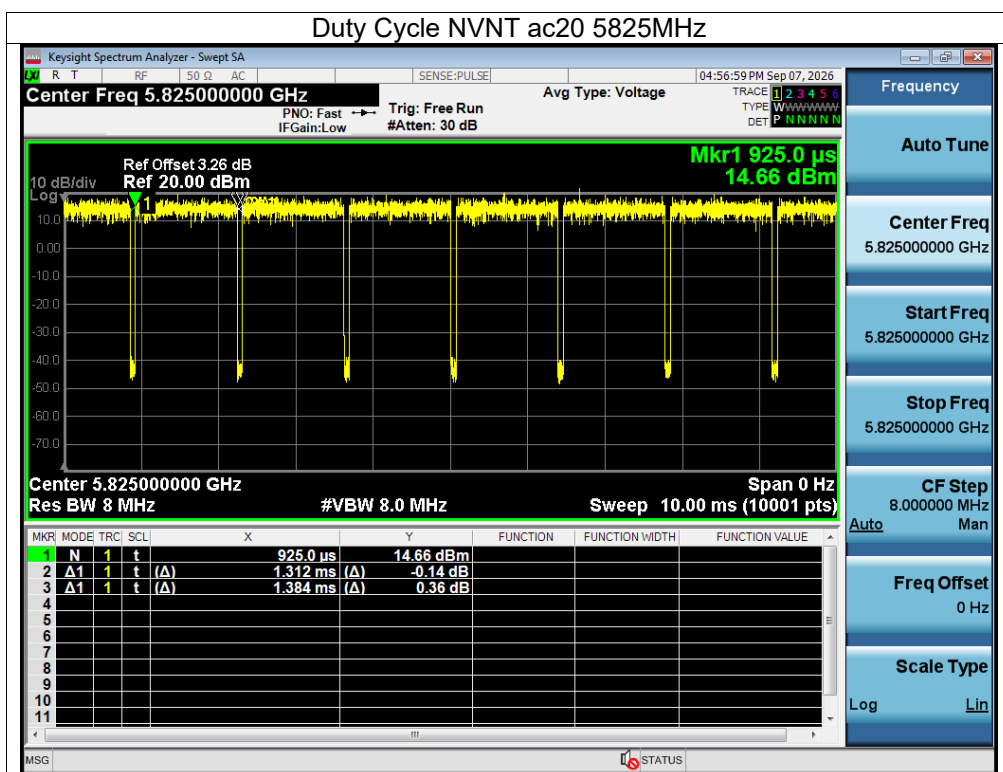


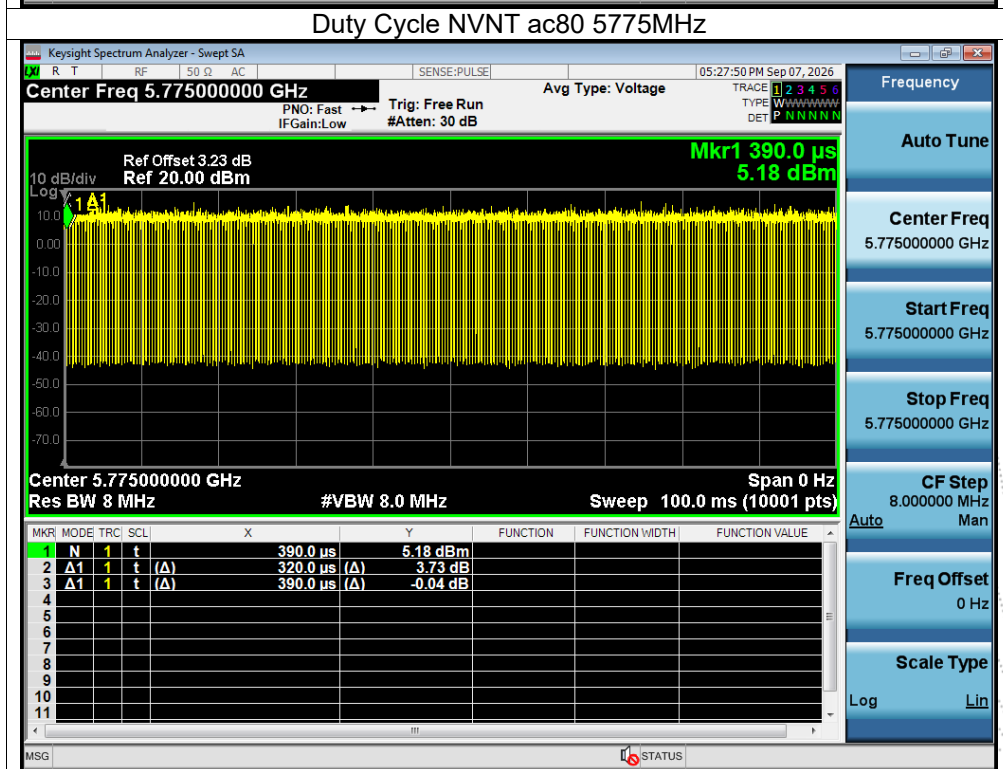
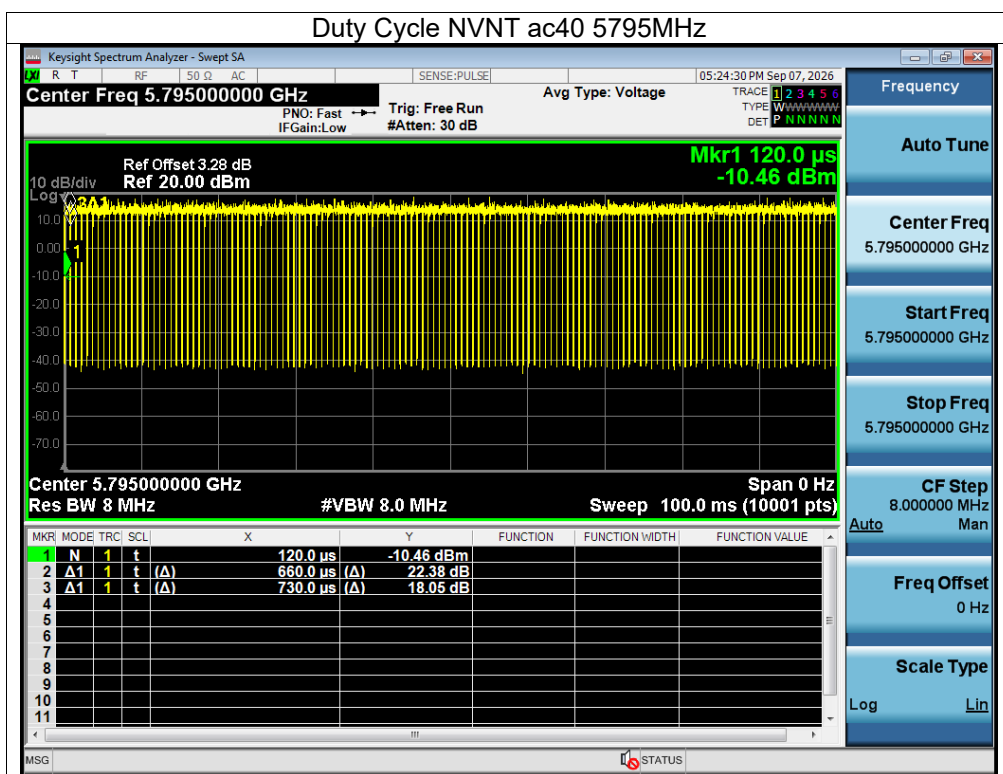




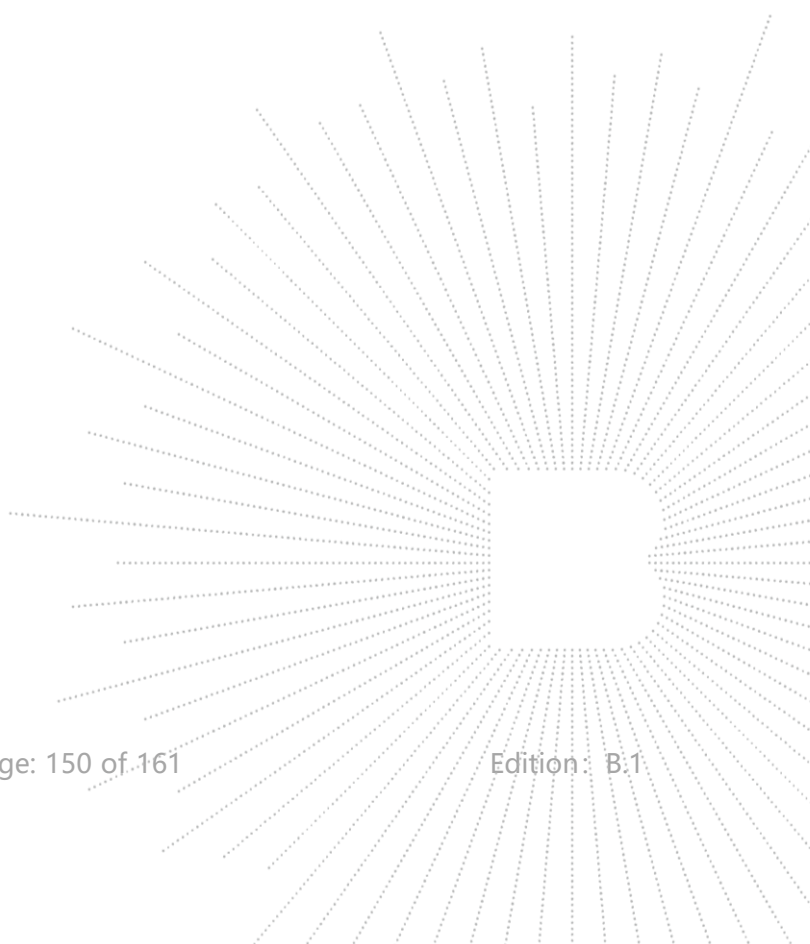
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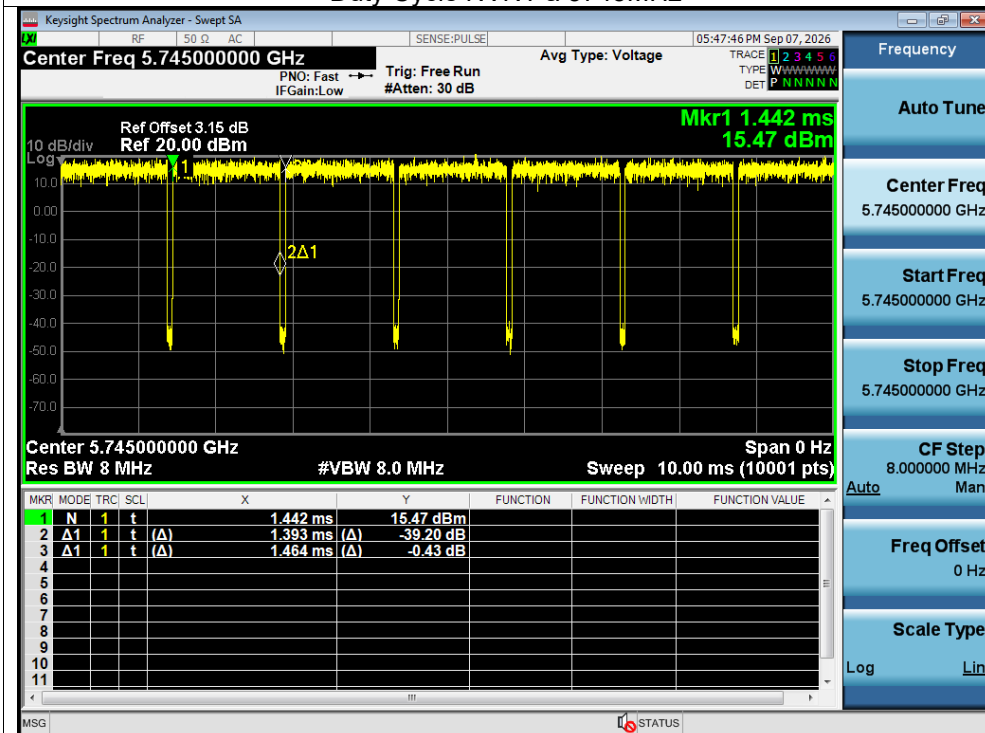


Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	a	5745	B	95.15	0.22	0.72
NVNT	a	5785	B	95.08	0.22	0.72
NVNT	a	5825	B	95.08	0.22	0.72
NVNT	n20	5745	B	94.75	0.23	0.77
NVNT	n20	5785	B	94.83	0.23	0.77
NVNT	n20	5825	B	94.83	0.23	0.77
NVNT	n40	5755	B	90.28	0.44	1.54
NVNT	n40	5795	B	90.28	0.44	1.54
NVNT	ac20	5745	B	94.78	0.23	0.76
NVNT	ac20	5785	B	94.86	0.23	0.76
NVNT	ac20	5825	B	94.85	0.23	0.76
NVNT	ac40	5755	B	90.28	0.44	1.54
NVNT	ac40	5795	B	90.28	0.44	1.54
NVNT	ac80	5775	B	80	0.97	3.13

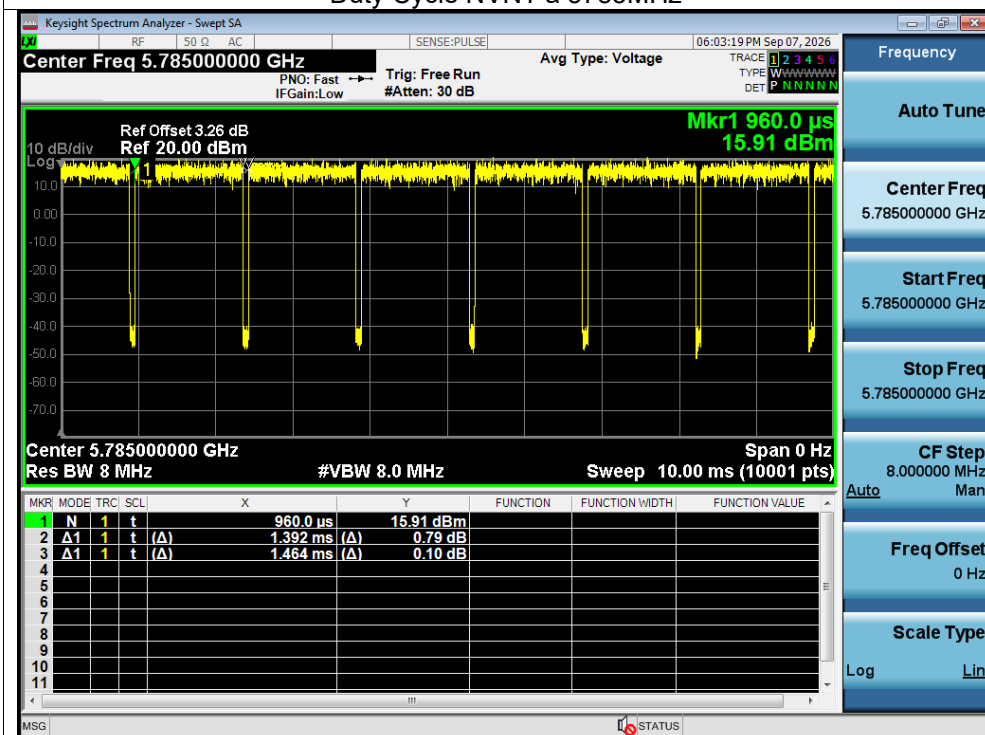


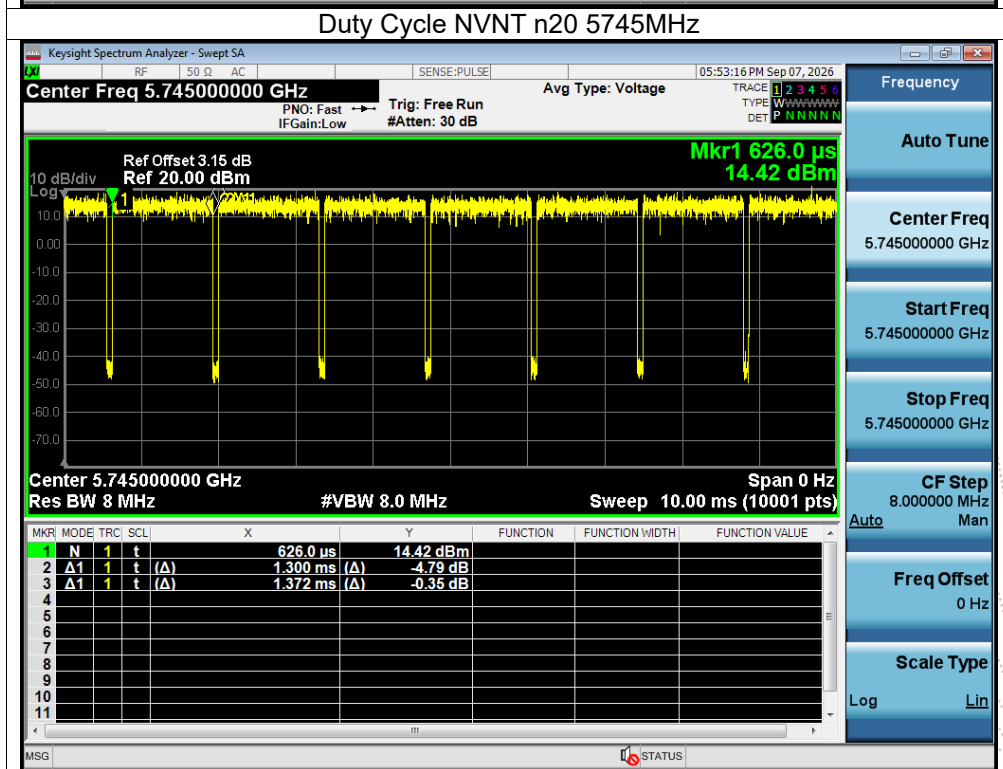
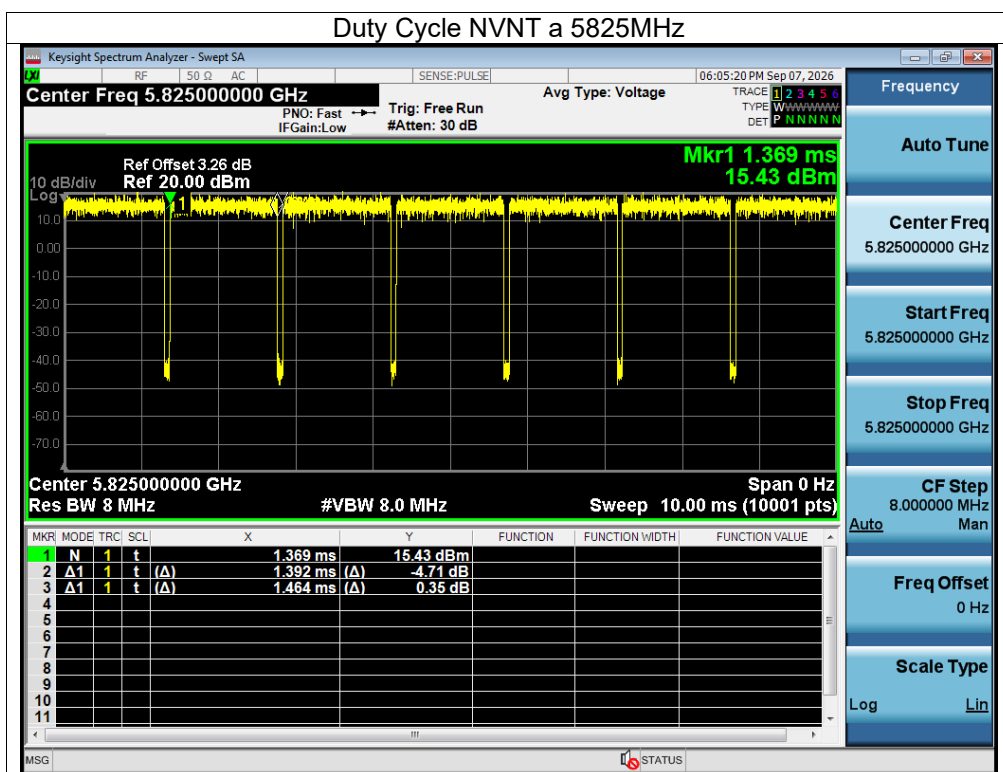
Test Graphs

Duty Cycle NVNT a 5745MHz

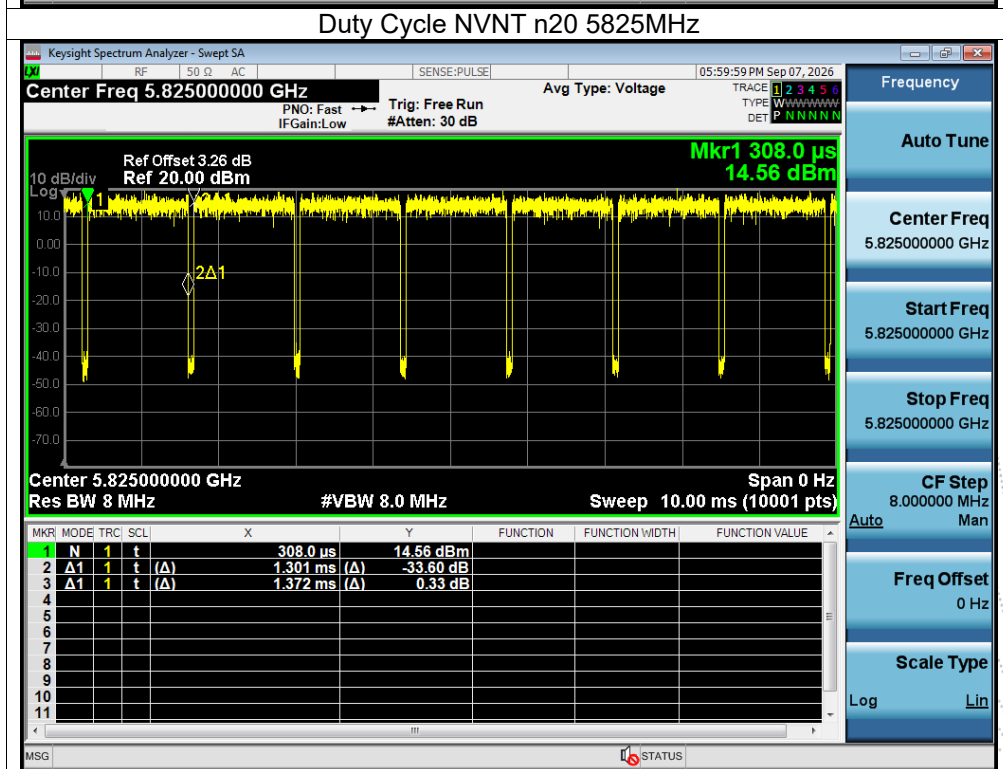
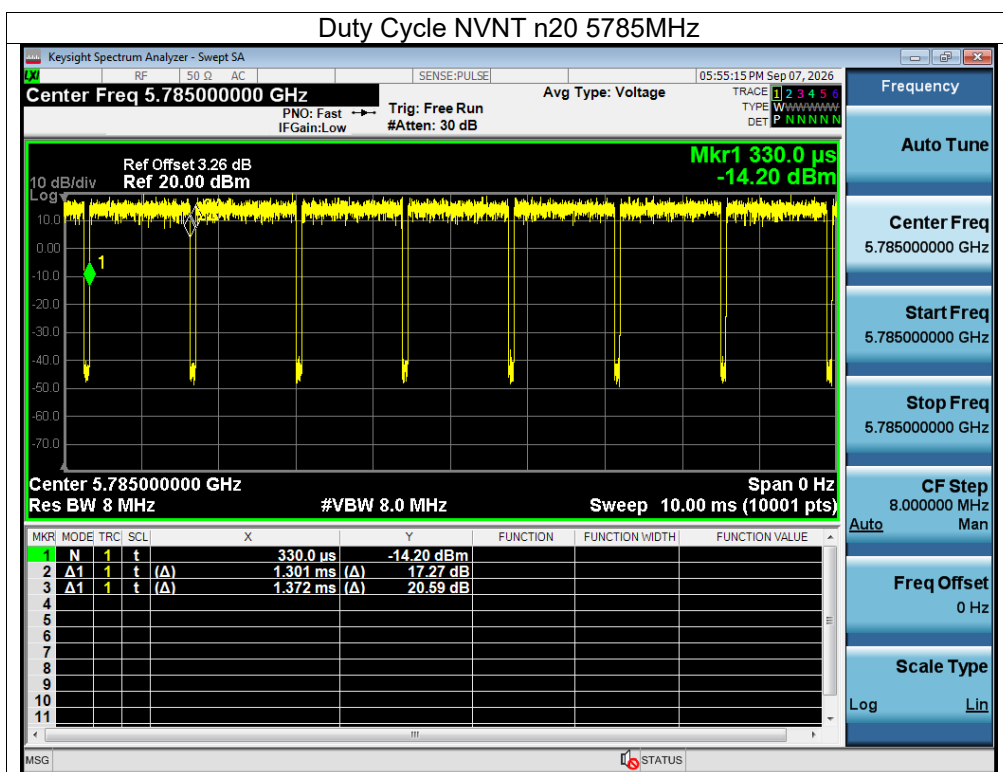


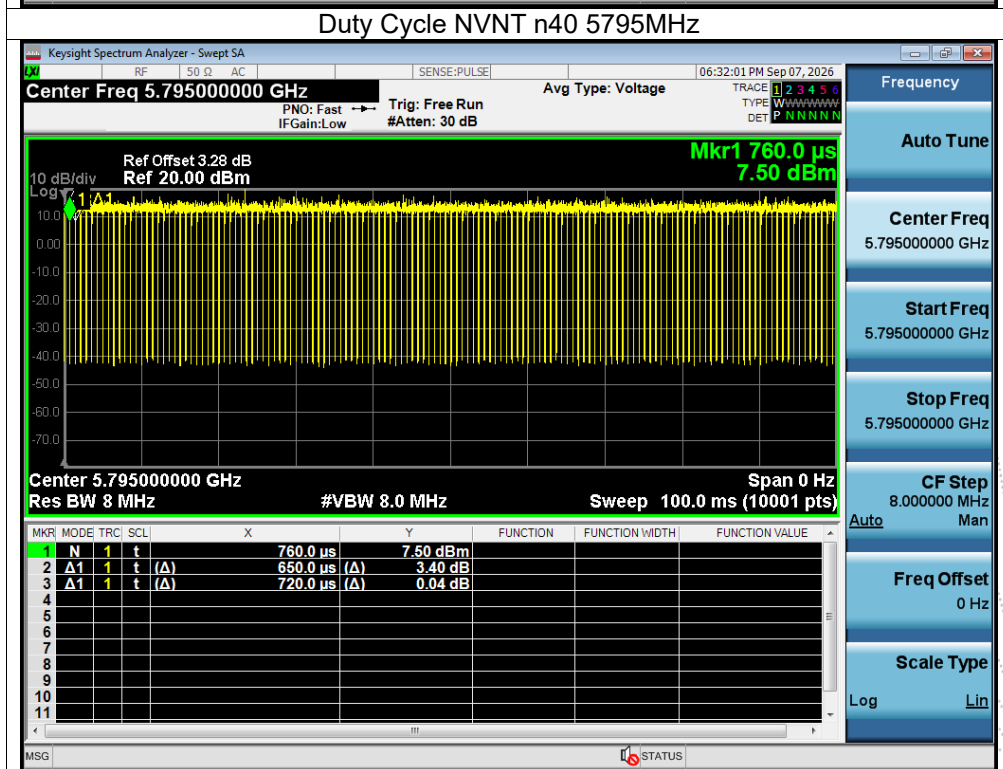
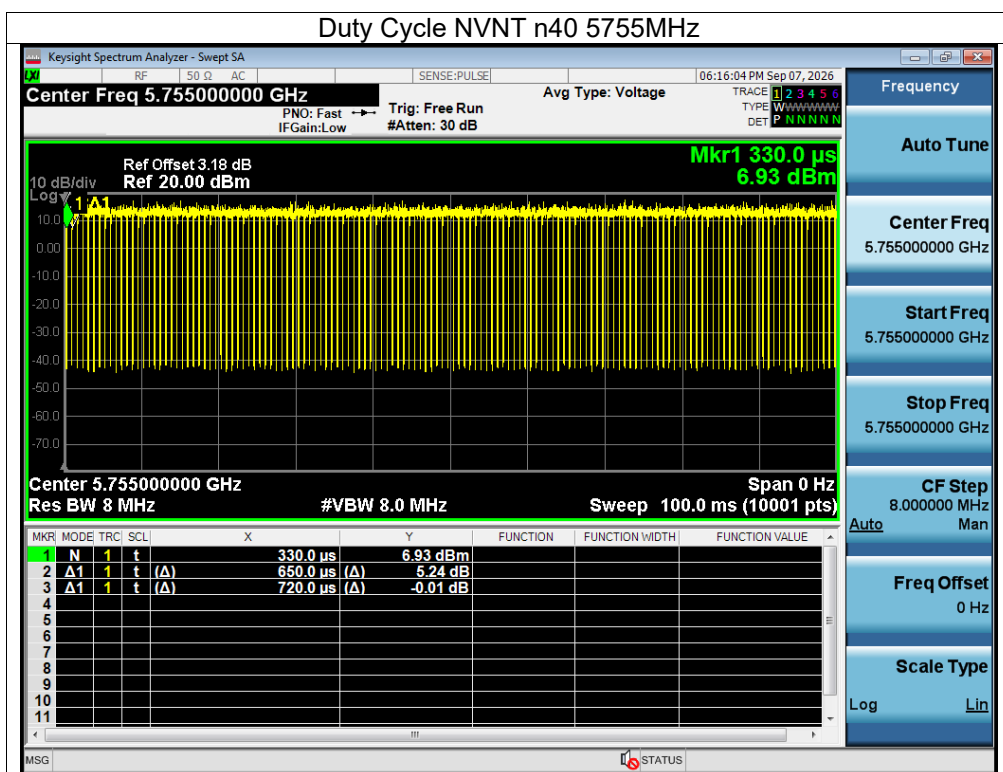
Duty Cycle NVNT a 5785MHz

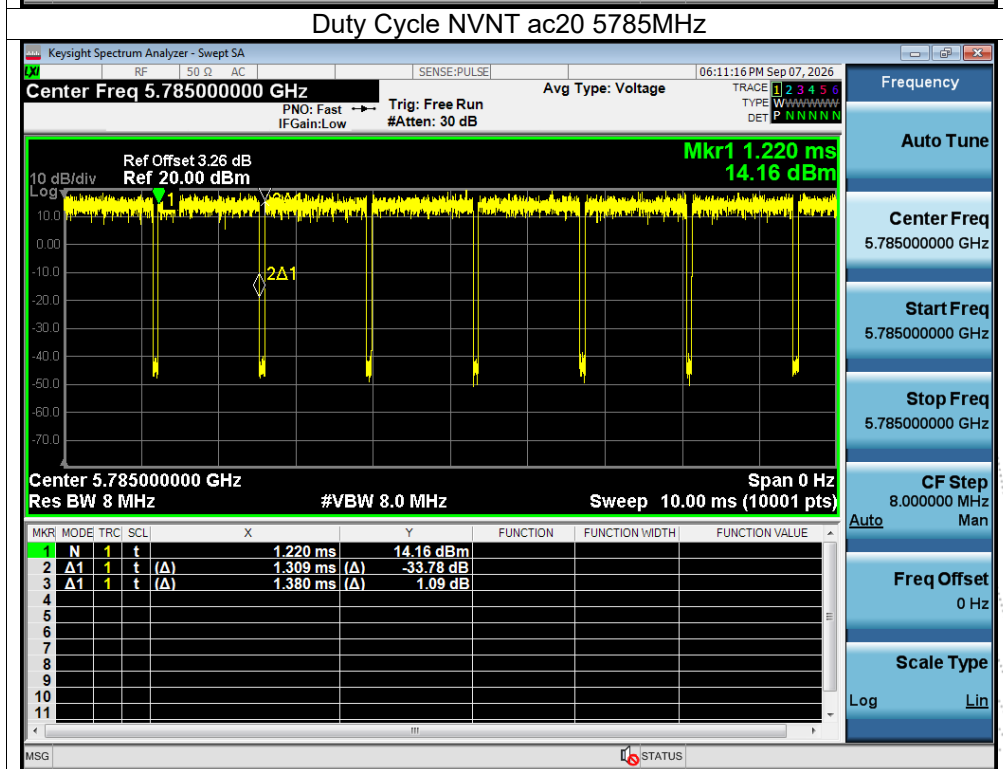
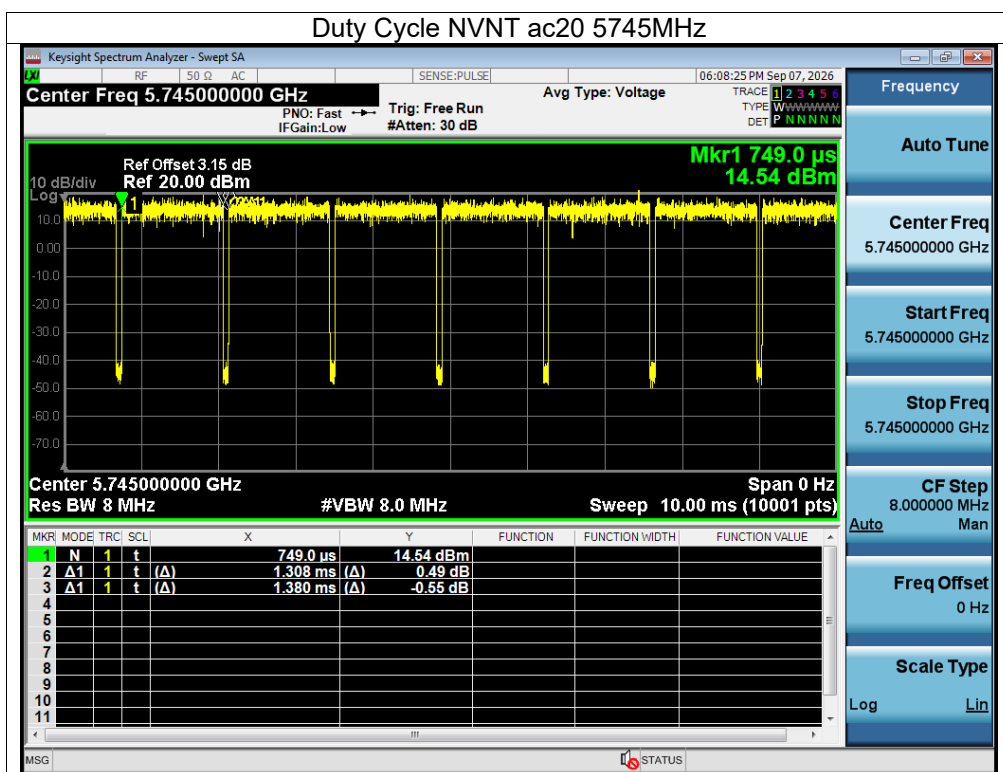


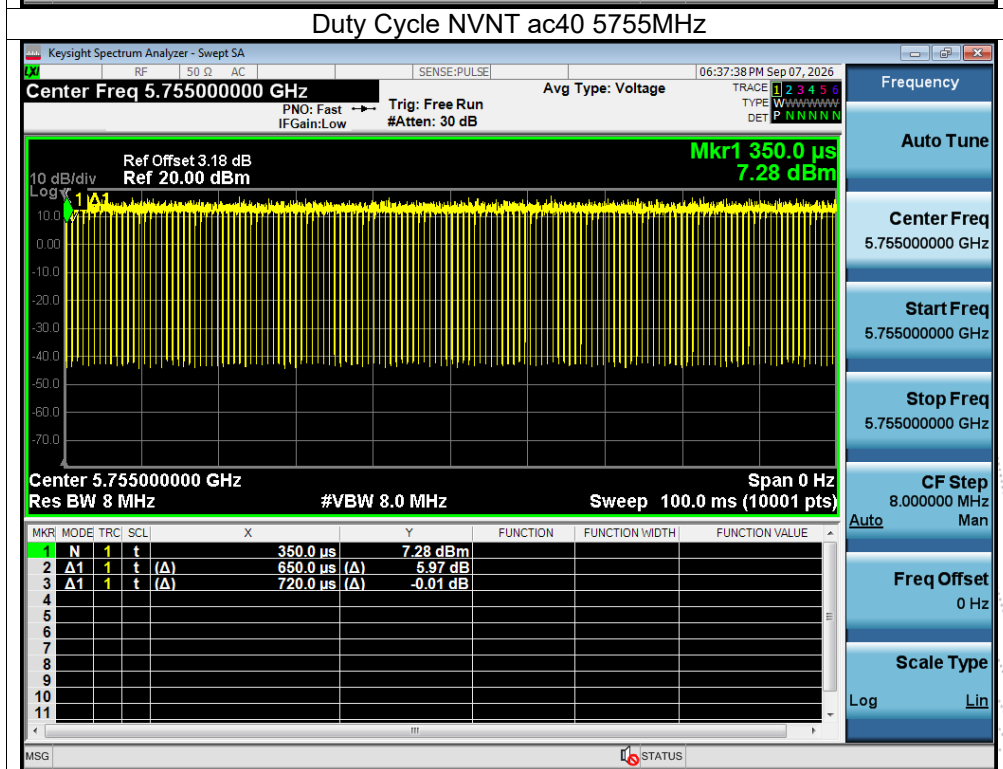
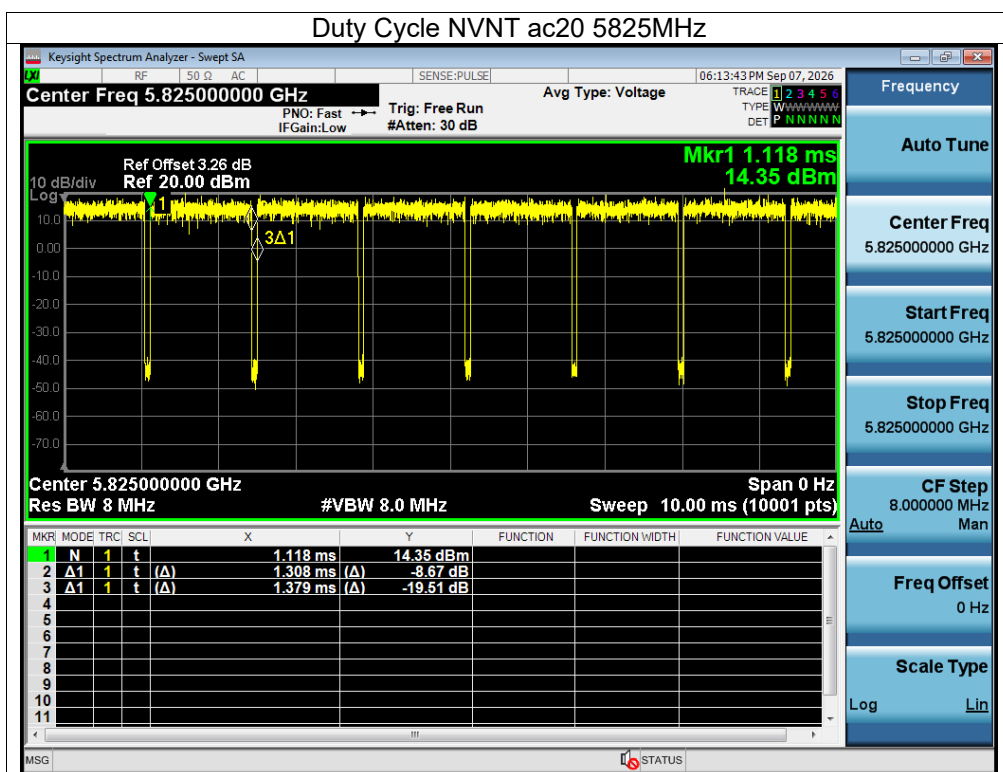


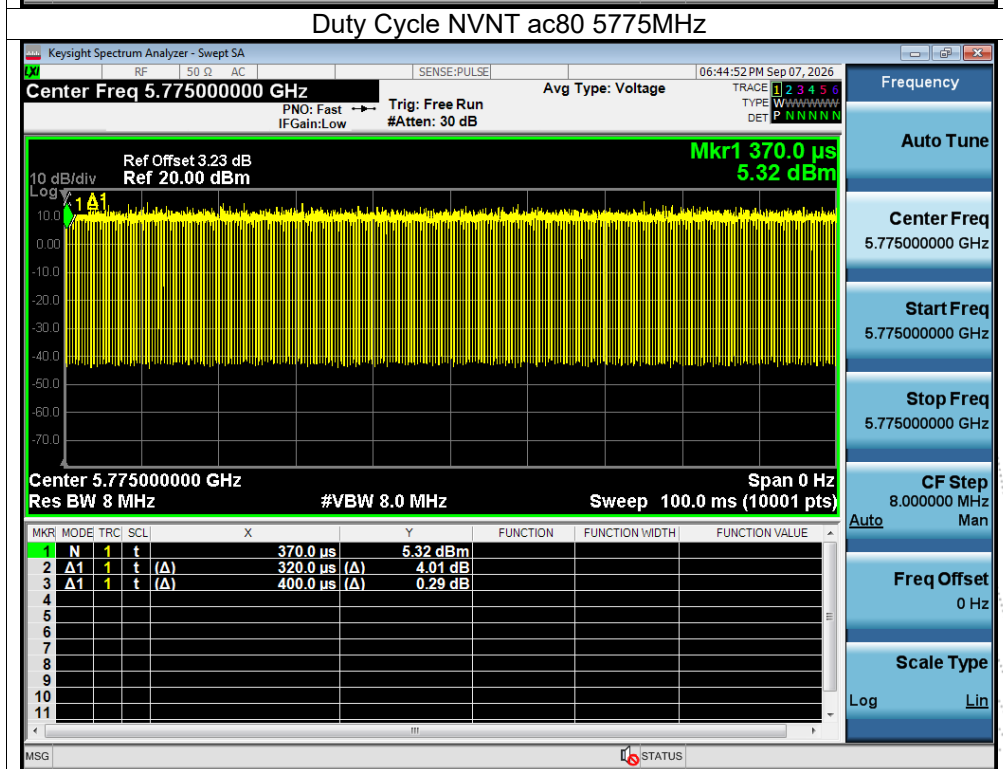
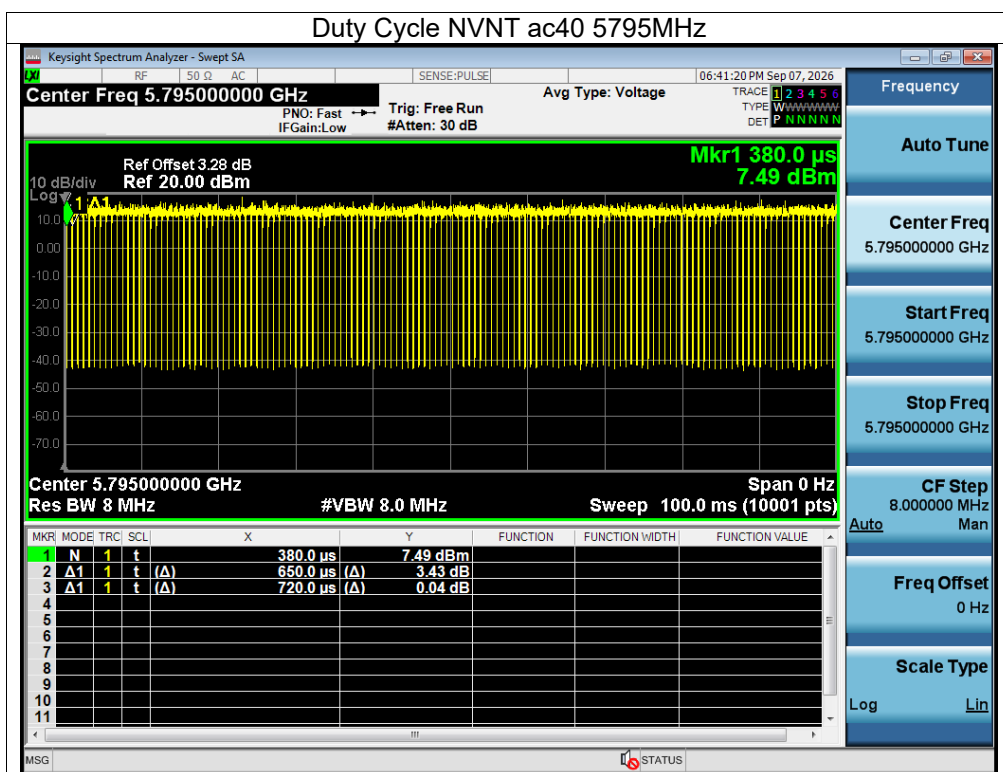
KJ CO., LTD











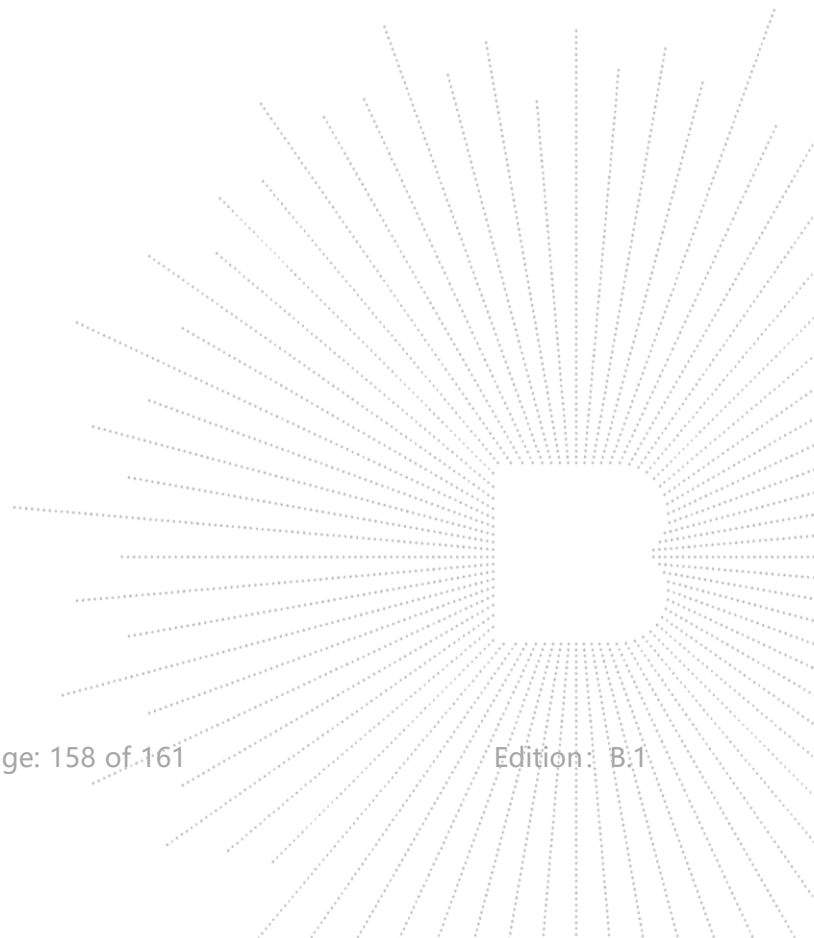
15. Antenna Requirement

15.1 Limit

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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §§ 15.211, 15.213, 15.217, 15.219, 15.221, or § 15.236. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with § 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

15.2 Test Result

The EUT antenna is PCB antenna, fulfill the requirement of this section.

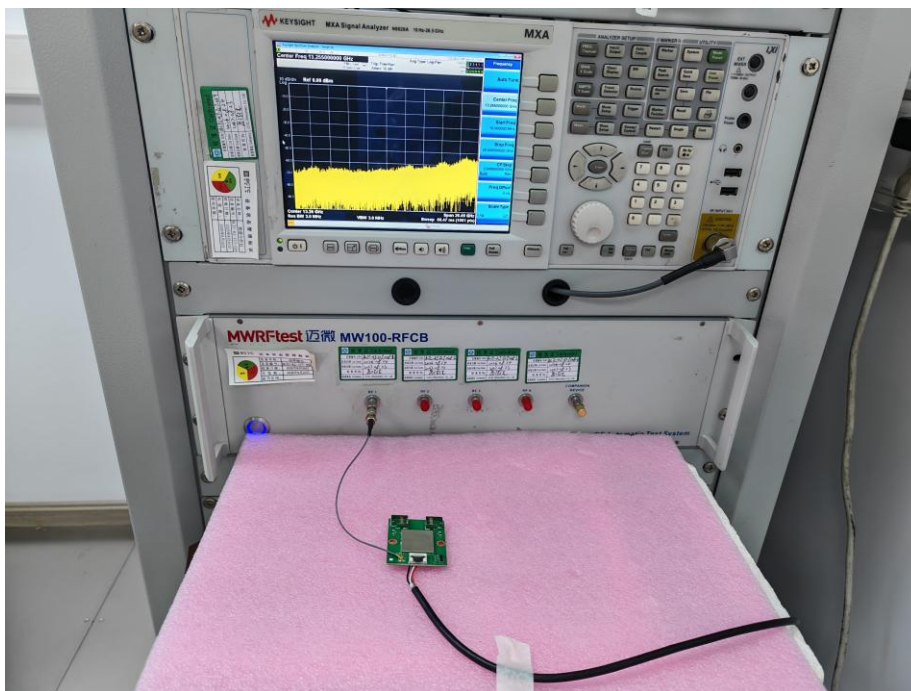


16. EUT Test Setup Photographs

Conducted Emission Measurement Photos



RF conducted



Radiated Emission Measurement Photos



STATEMENT

1. The equipment lists are traceable to the International System of Units (SI)
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/IEC 17025:2017.
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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Complaint/Advice E-mail: advice@bctc-lab.com.cn

***** END *****