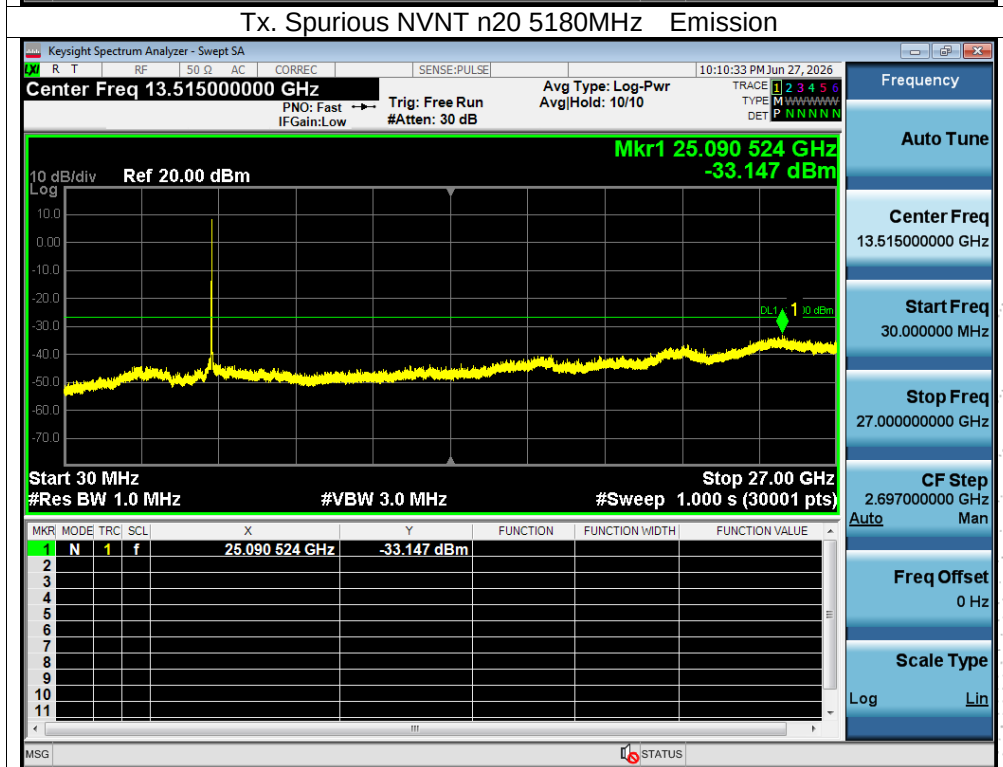
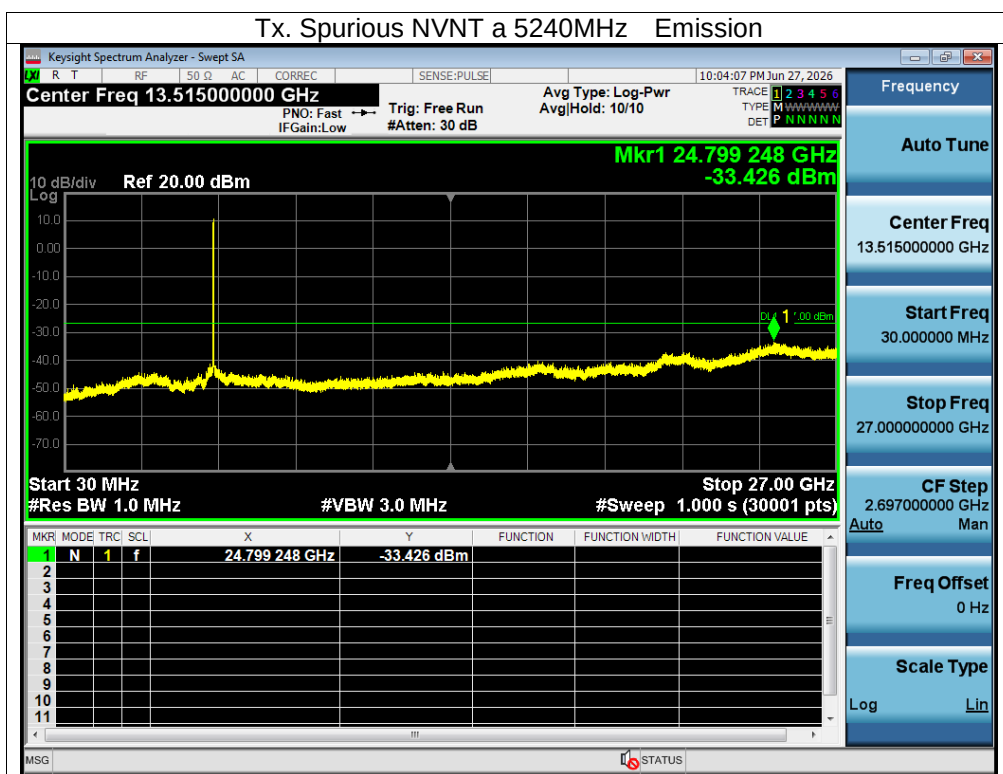
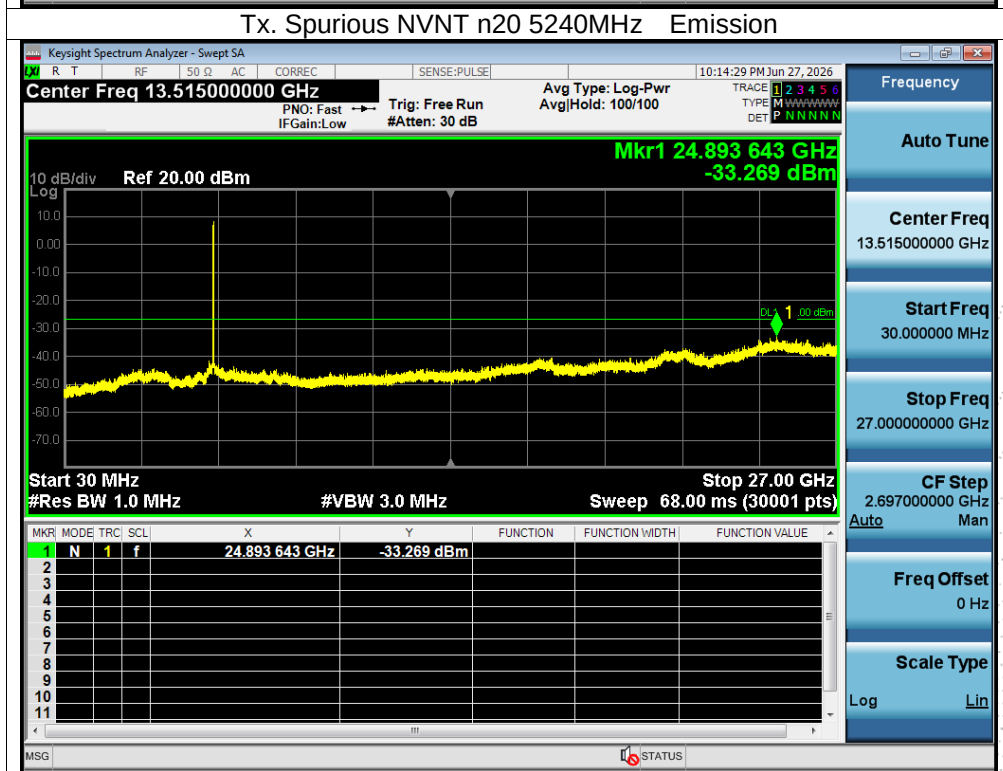
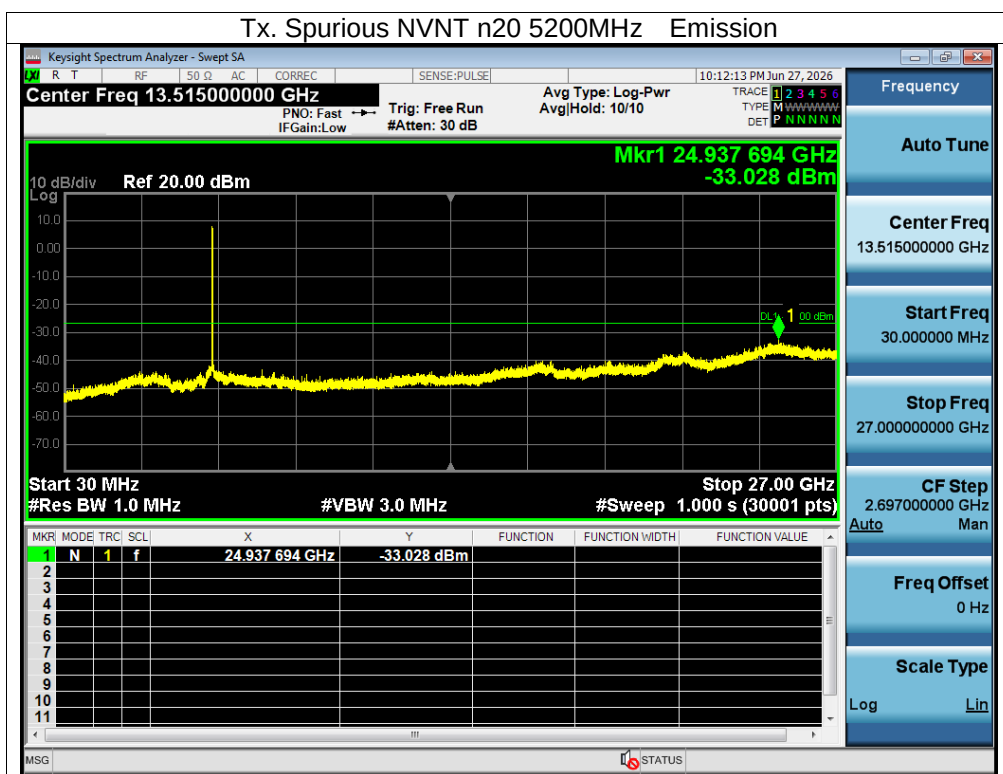
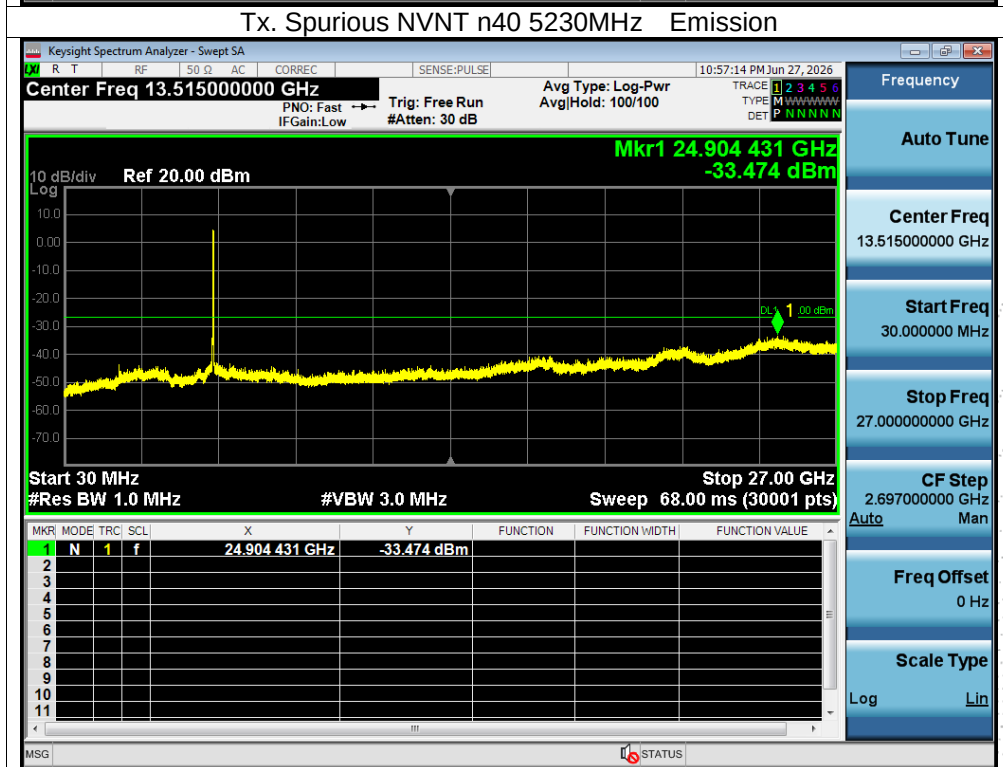
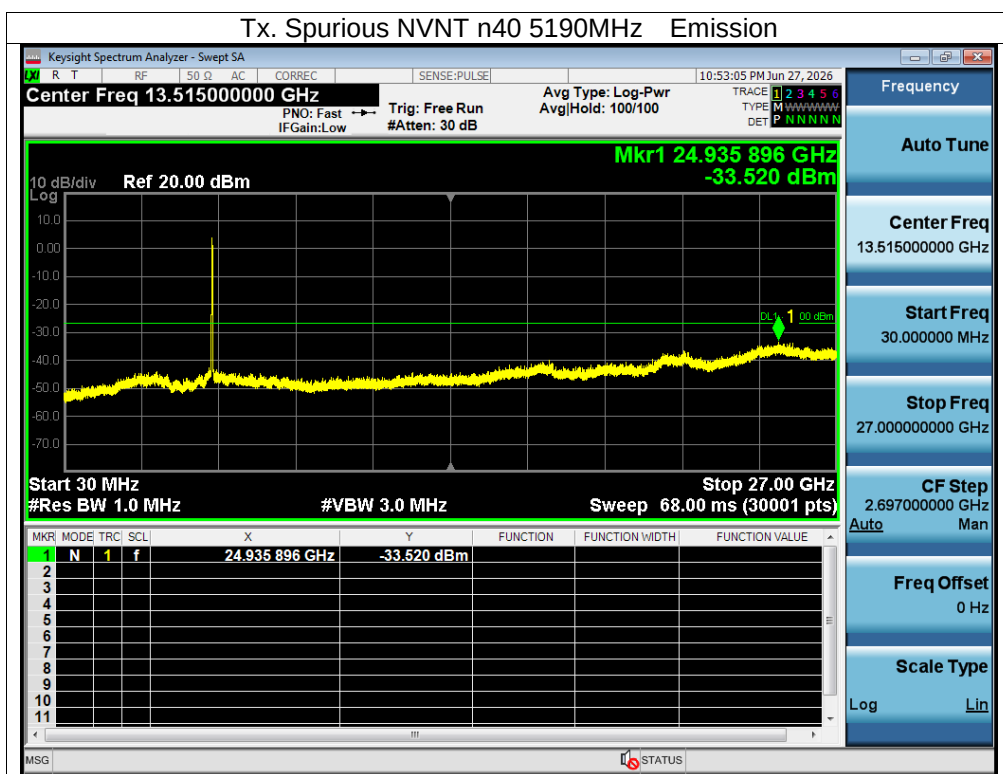
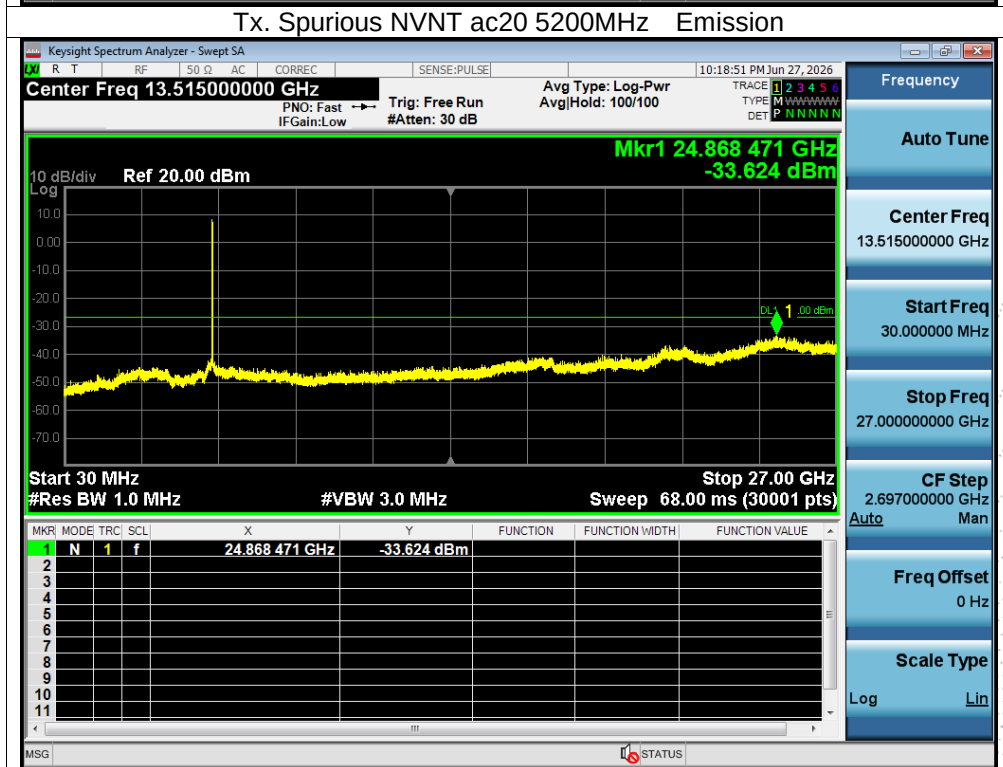
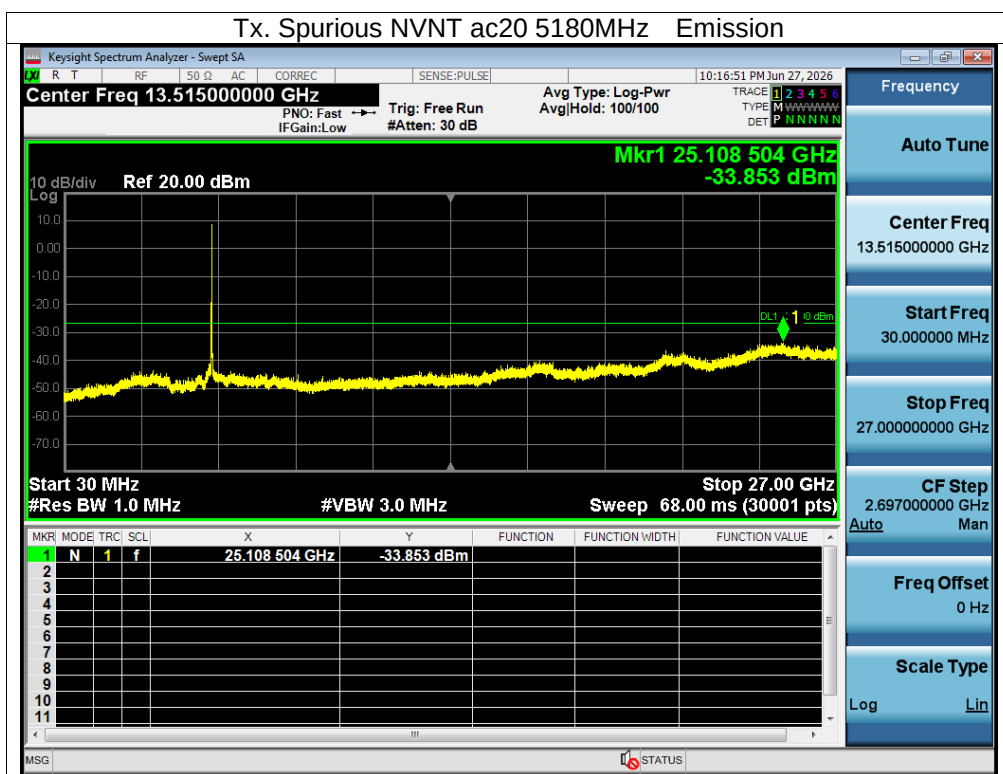
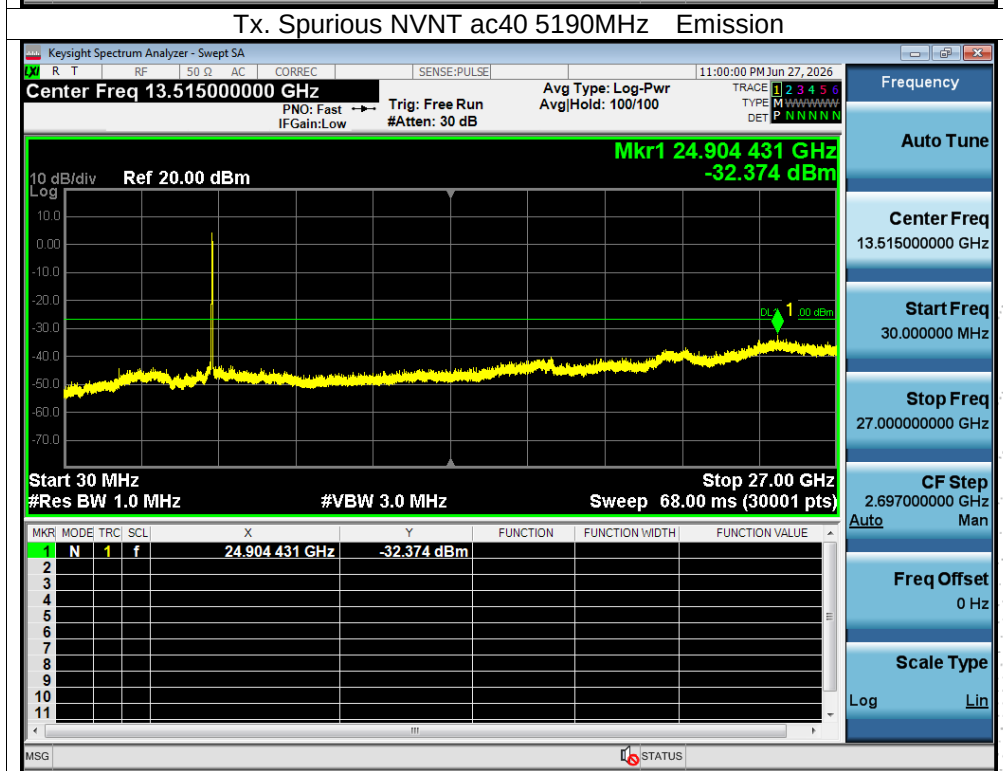
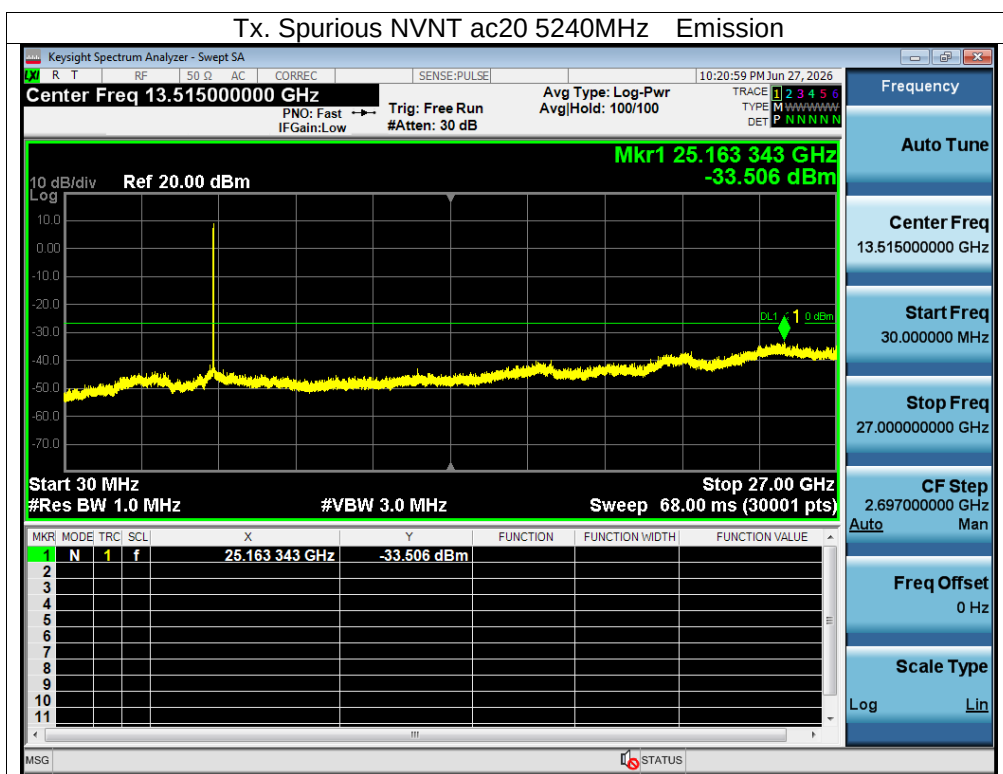


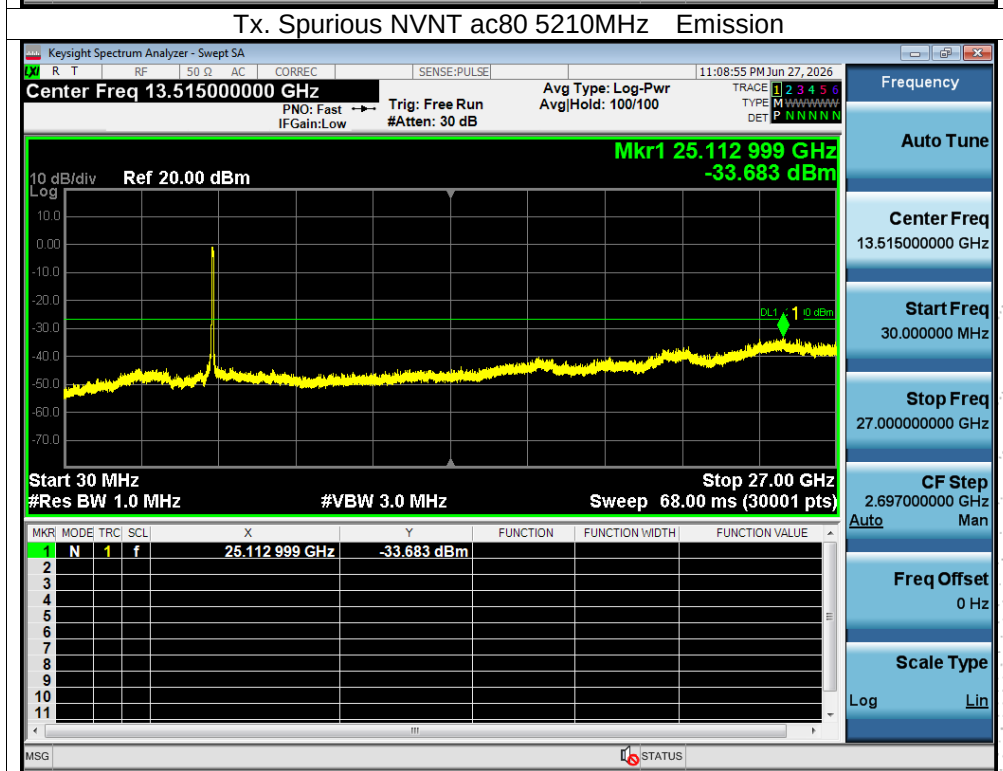
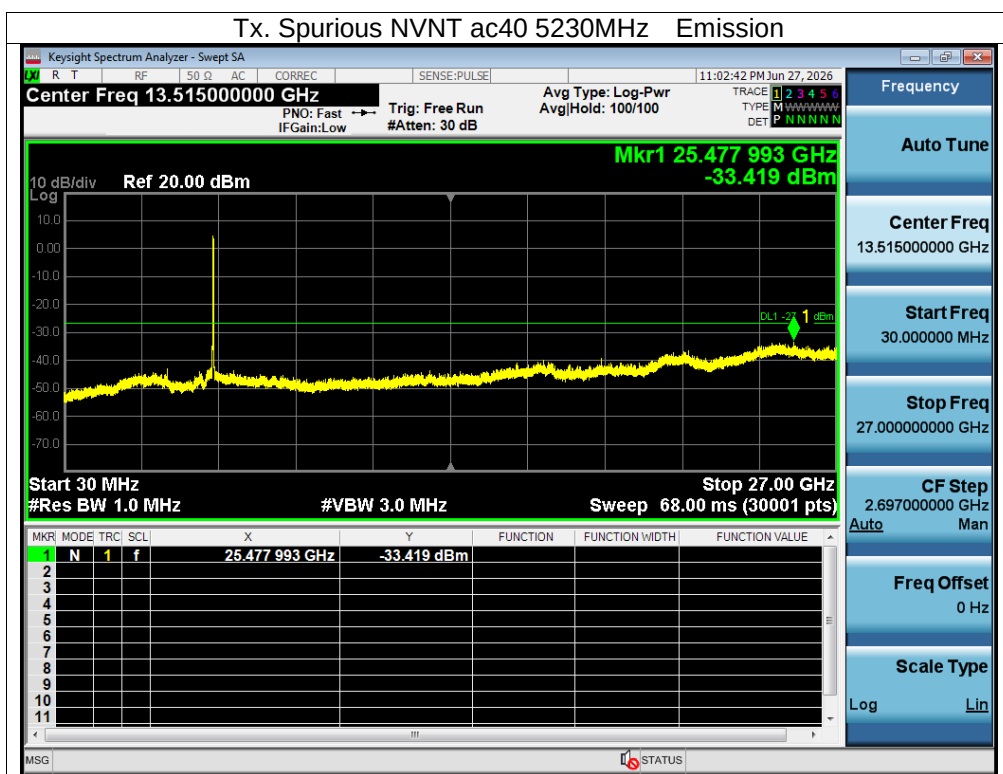








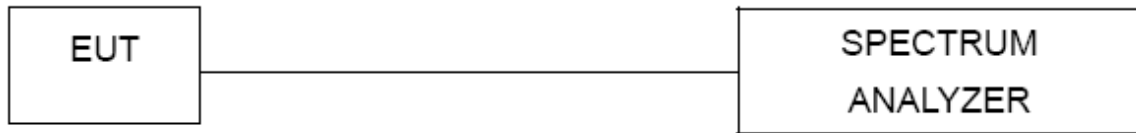




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13. Frequency Stability Measurement

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)..

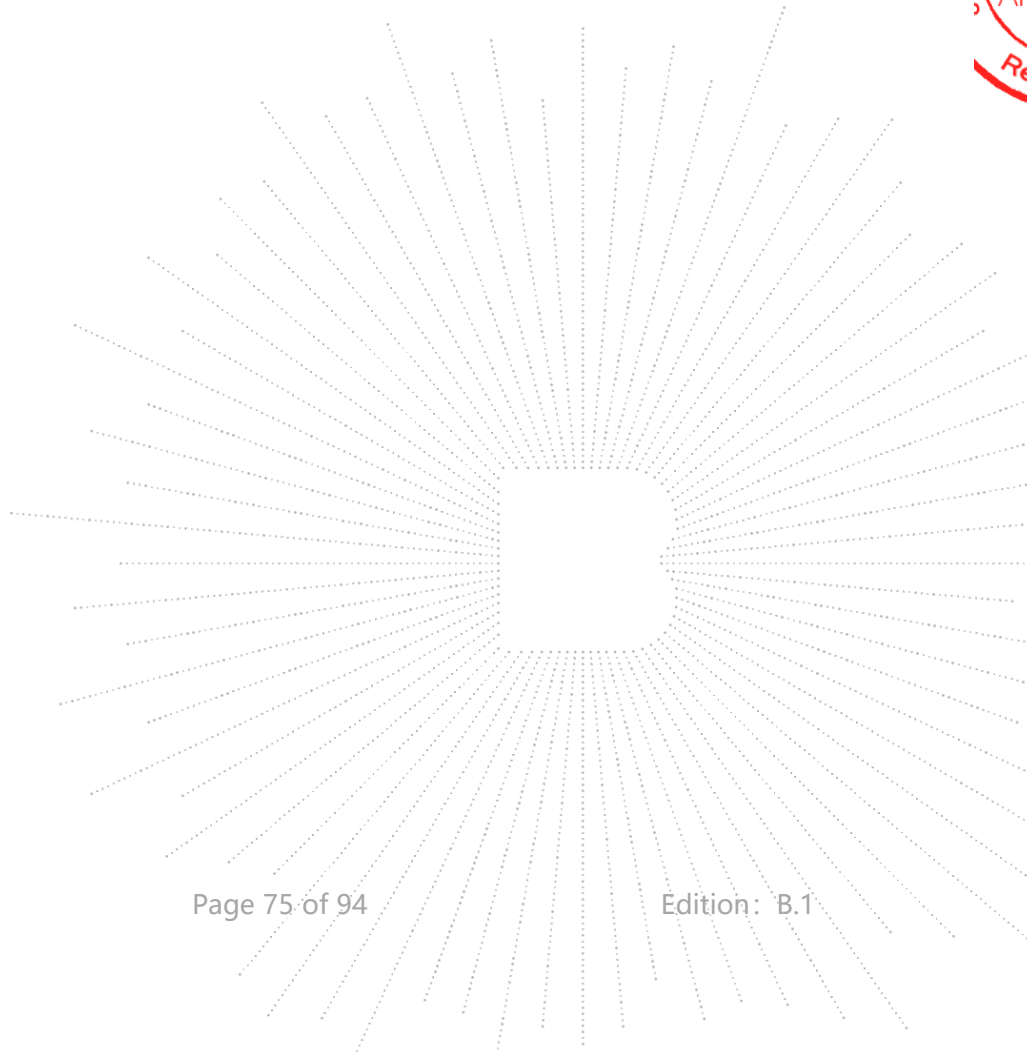
13.3 Test Procedure

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

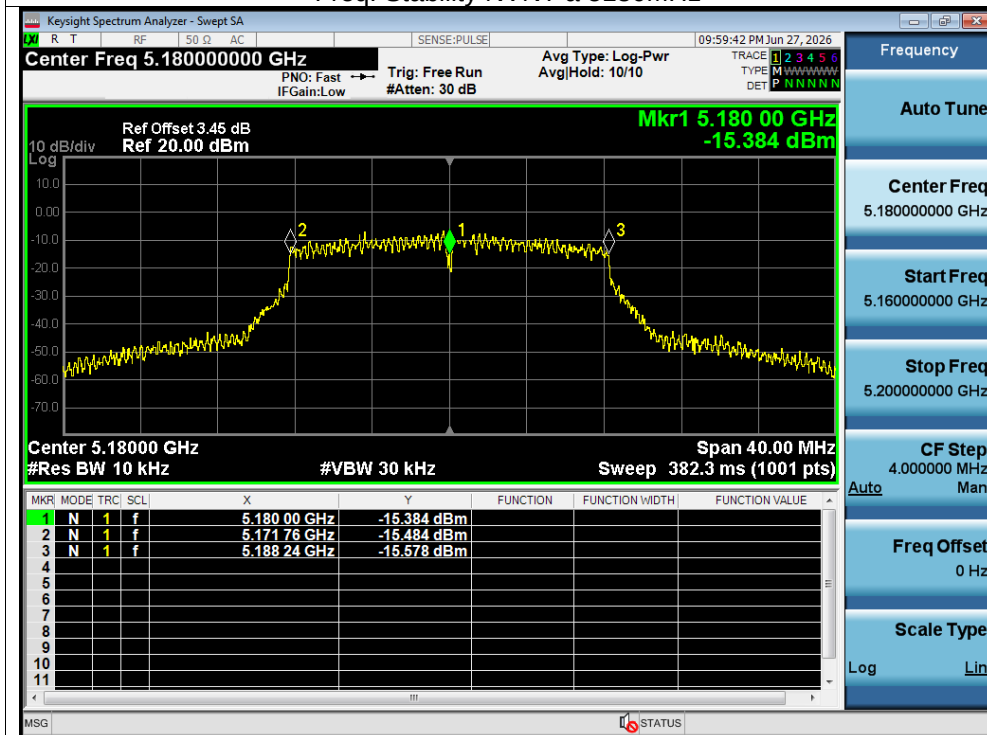
Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	DC 3.87V
Test Mode:	TX (5.1G) Mode Frequency U-NII-1 (5180-5240MHz)		

Condition	Mode	Frequency (MHz)	Measured Frequency (MHz)	Frequency Error (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
NVNT	a	5180	5180	0	0	25	Pass
NVNT	a	5200	5200	0	0	25	Pass
NVNT	a	5240	5240	0	0	25	Pass
NVNT	n20	5180	5179.98	-20000	-3.86	25	Pass
NVNT	n20	5200	5200.02	20000	3.87	25	Pass
NVNT	n20	5240	5240	0	0	25	Pass
NVNT	n40	5190	5190	0	0	25	Pass
NVNT	n40	5230	5230.04	40000	7.65	25	Pass
NVNT	ac20	5180	5180.02	20000	3.86	25	Pass
NVNT	ac20	5200	5199.98	-20000	-3.87	25	Pass
NVNT	ac20	5240	5240	0	0	25	Pass
NVNT	ac40	5190	5190.04	40000	7.71	25	Pass
NVNT	ac40	5230	5230	0	0	25	Pass
NVNT	ac80	5210	5210	0	0	25	Pass

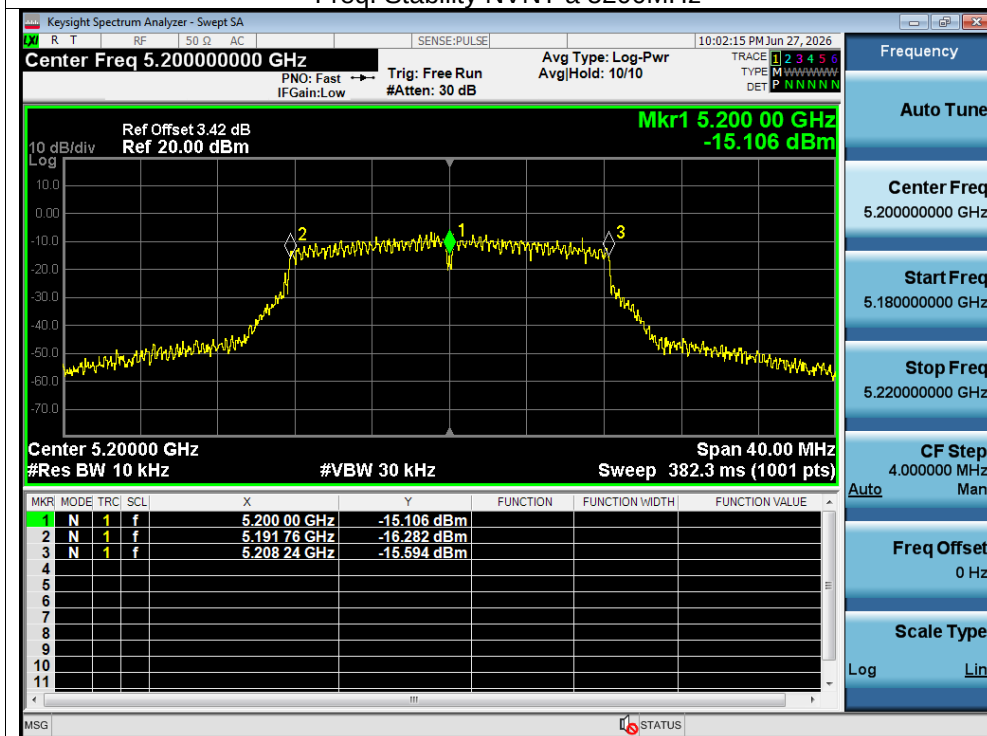


Test Graphs

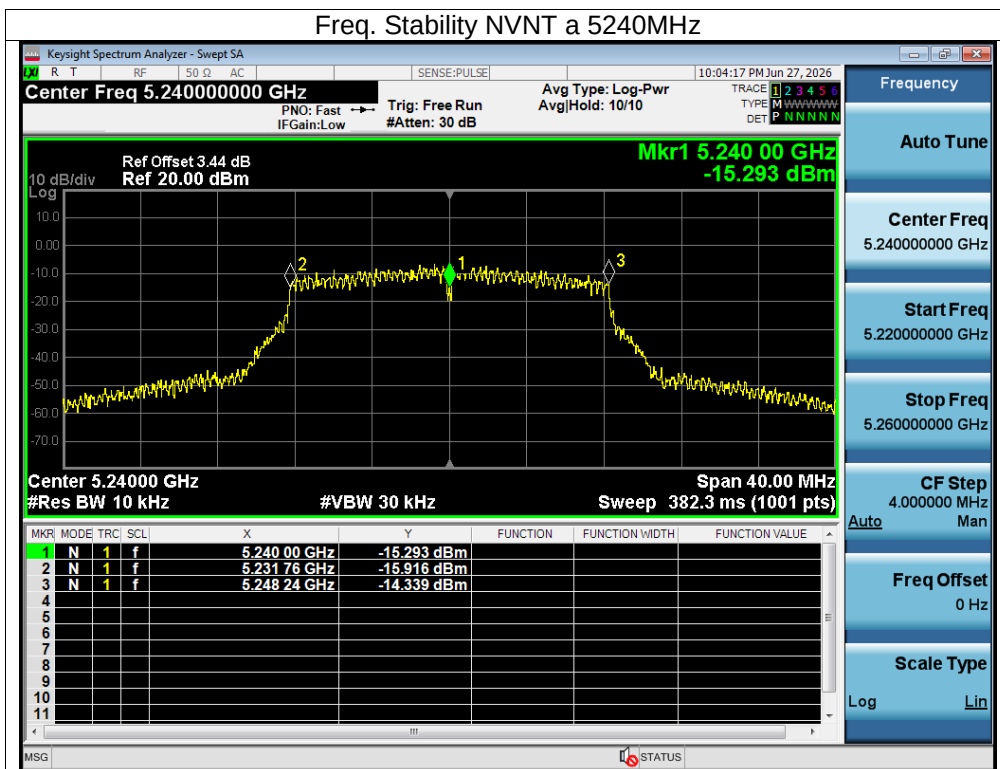
Freq. Stability NVNT a 5180MHz



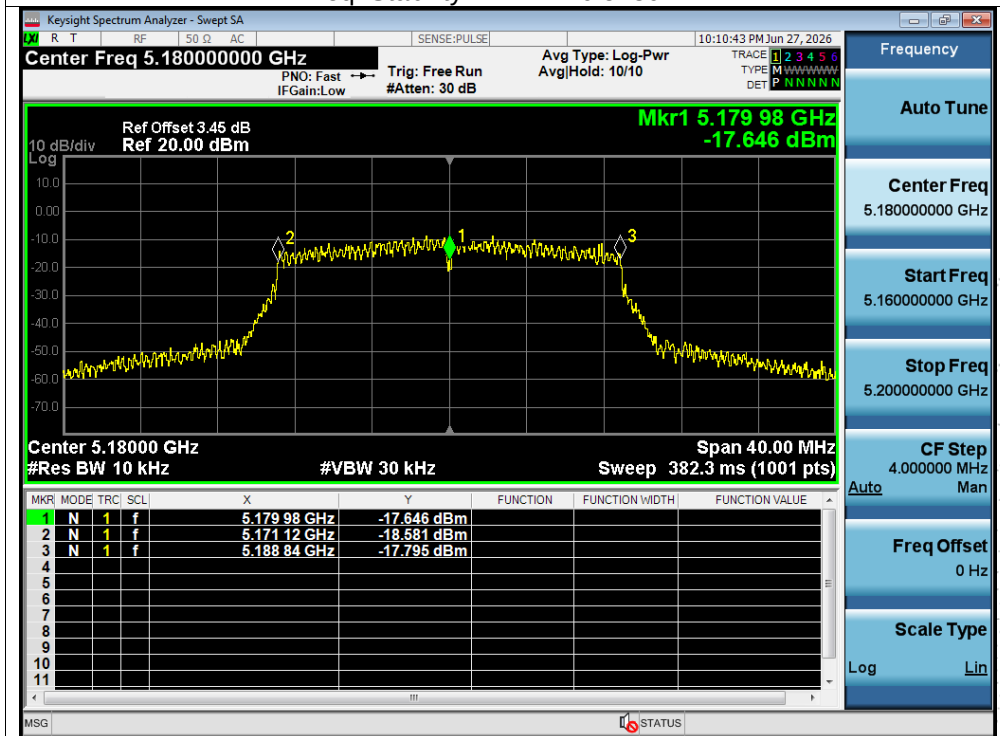
Freq. Stability NVNT a 5200MHz

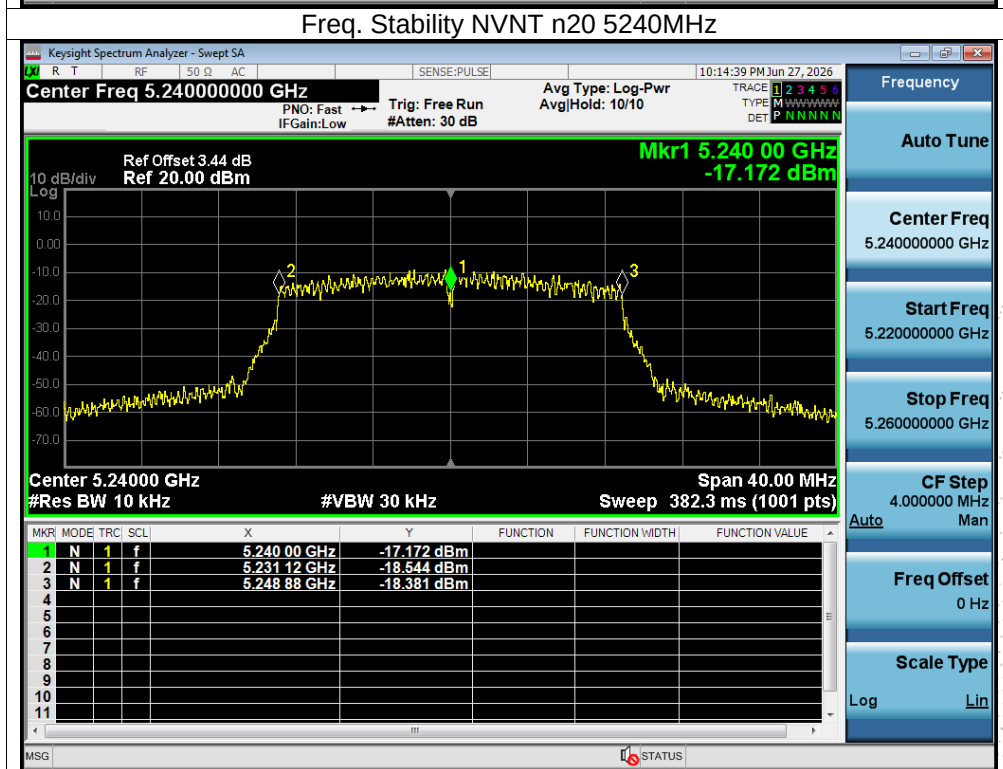
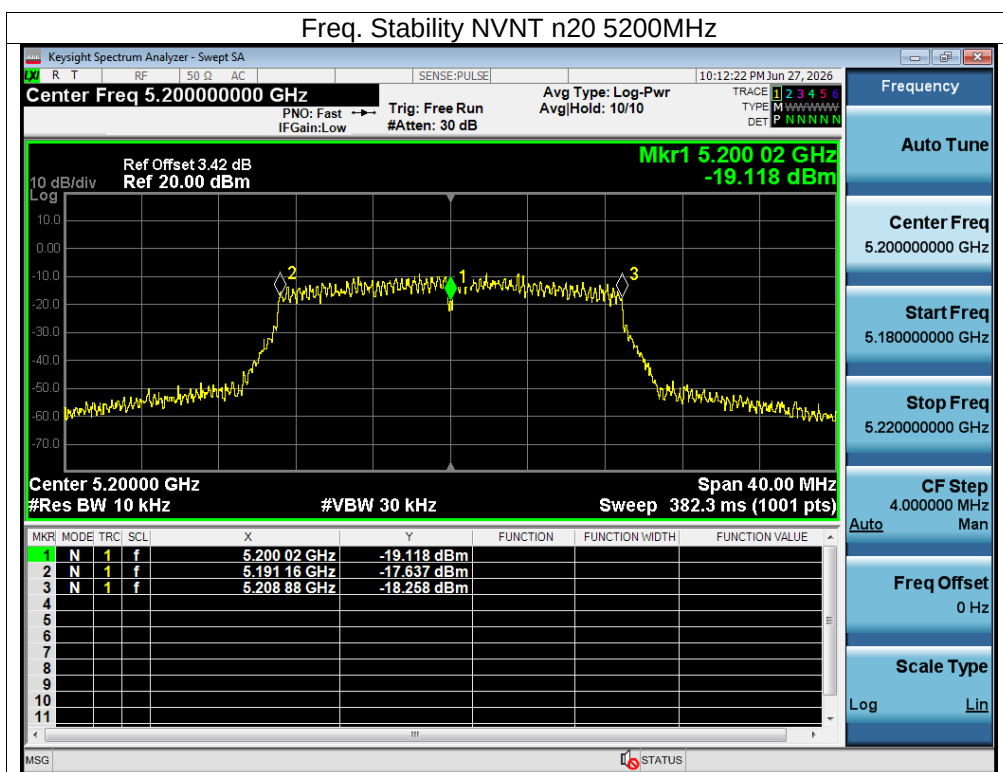


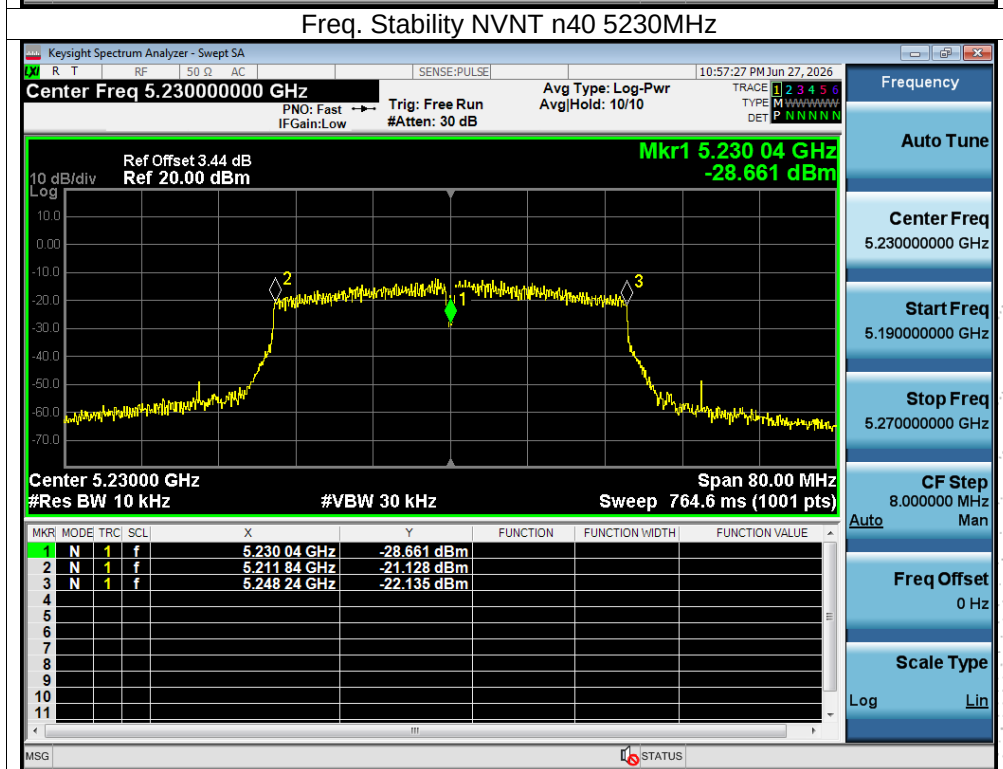
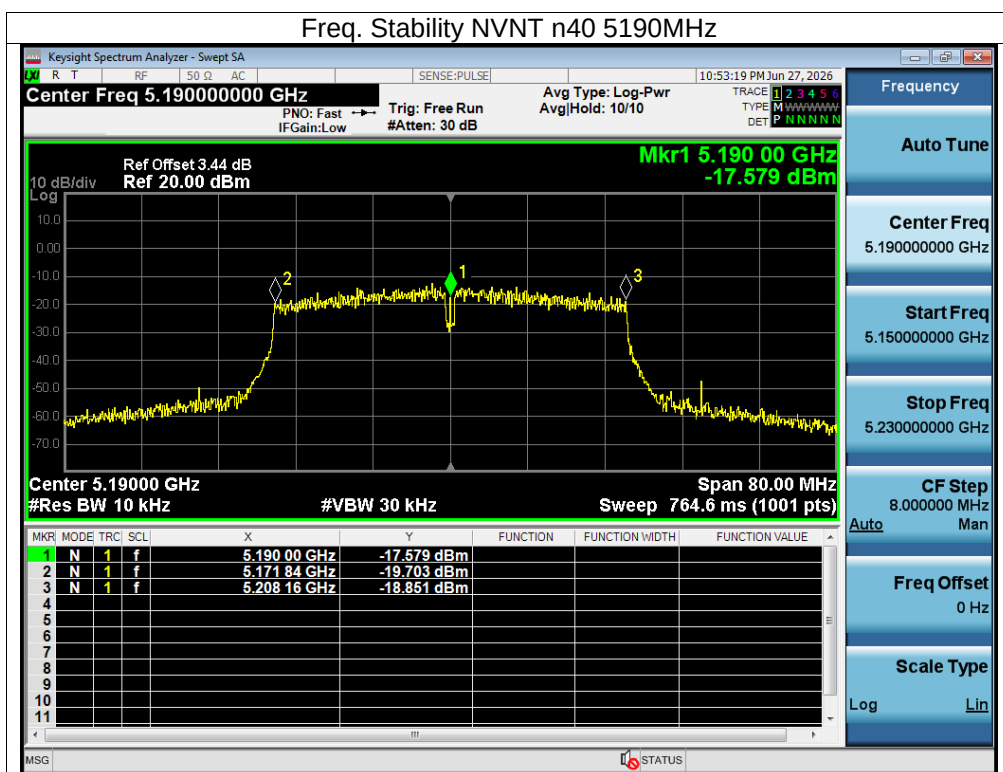
Freq. Stability NVNT a 5240MHz



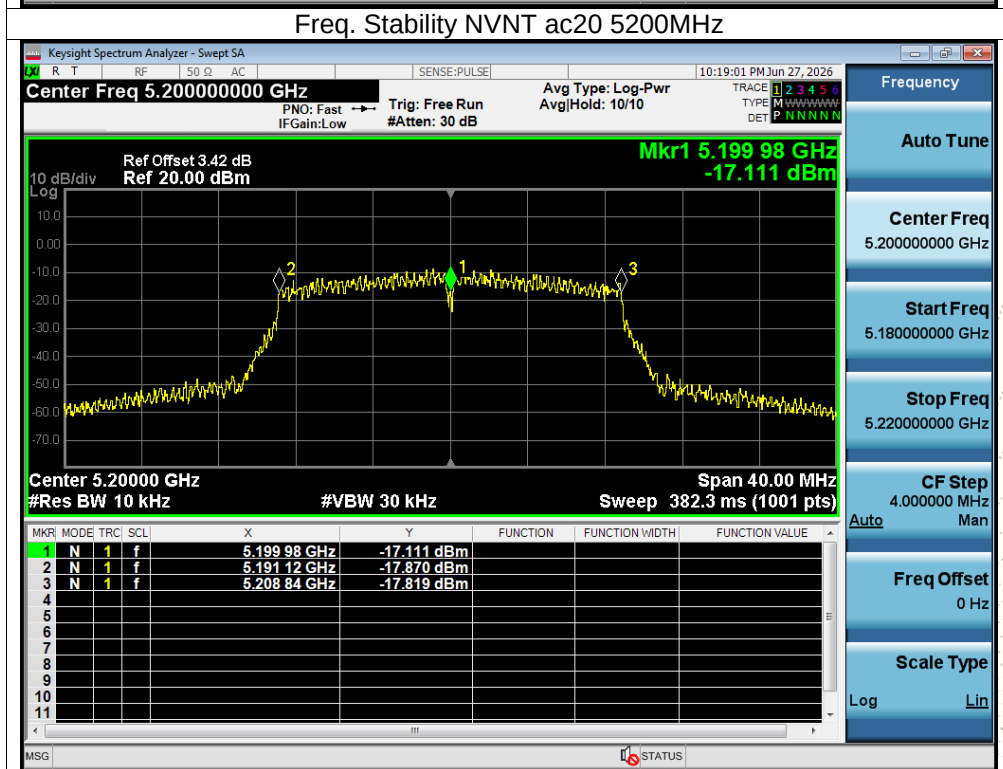
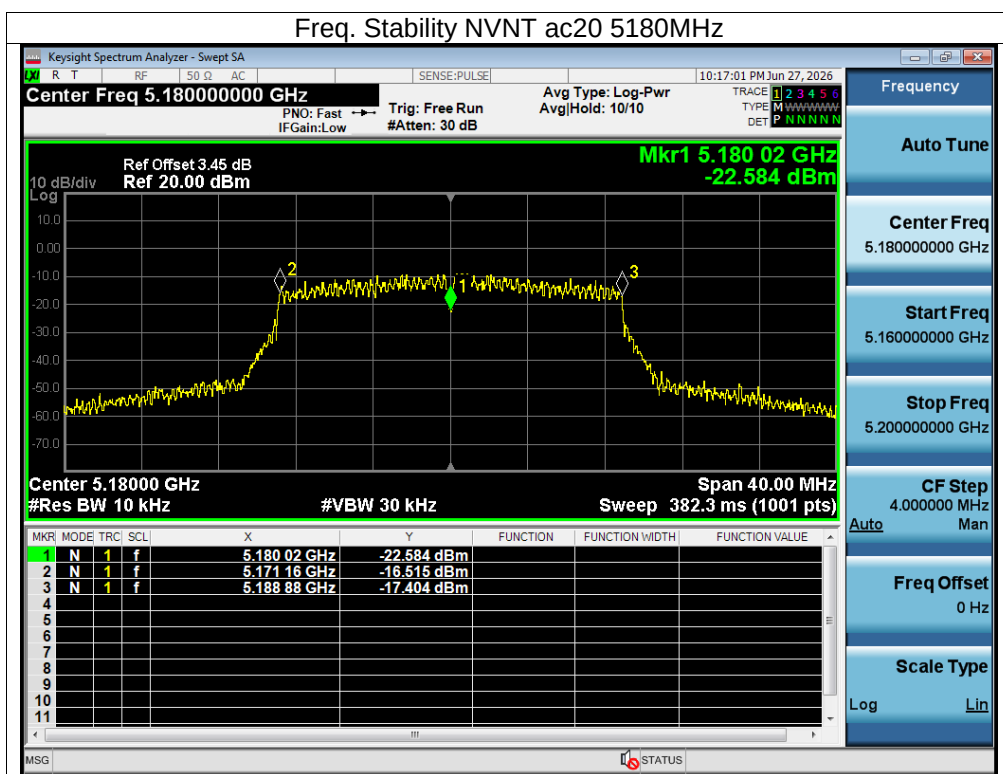
Freq. Stability NVNT n20 5180MHz

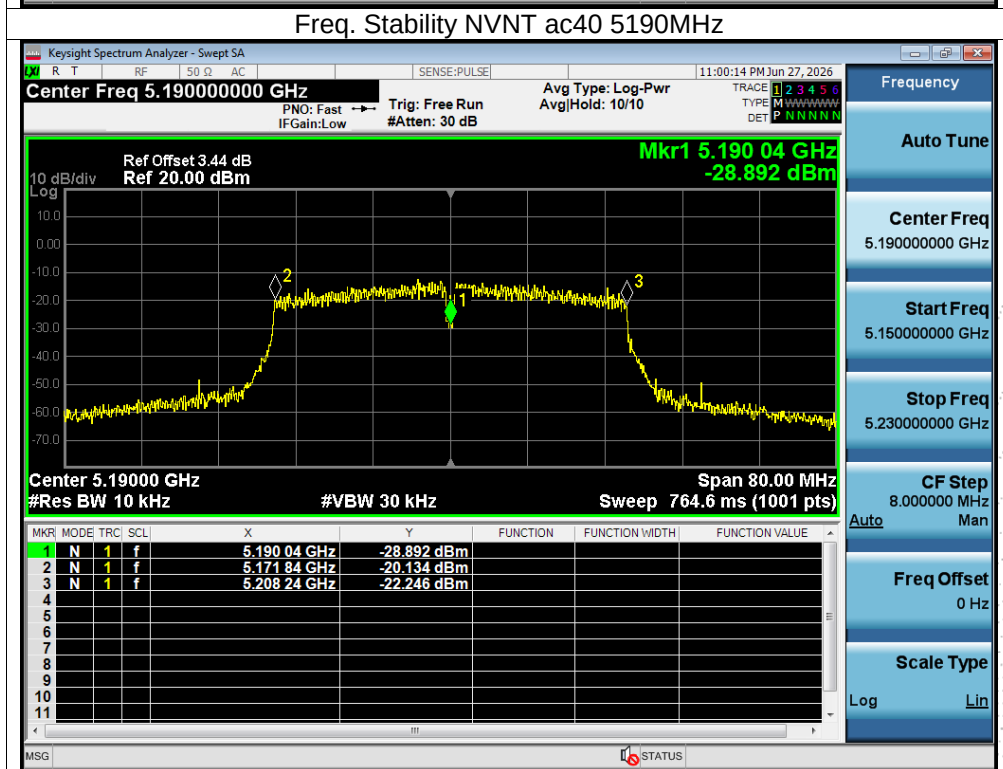
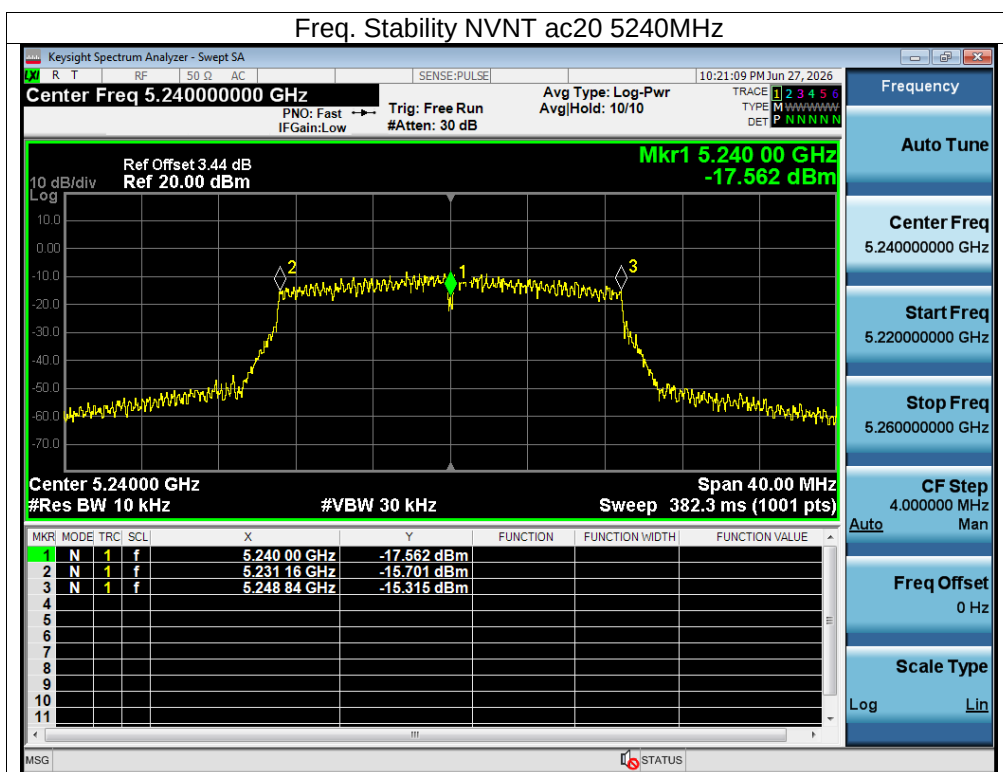


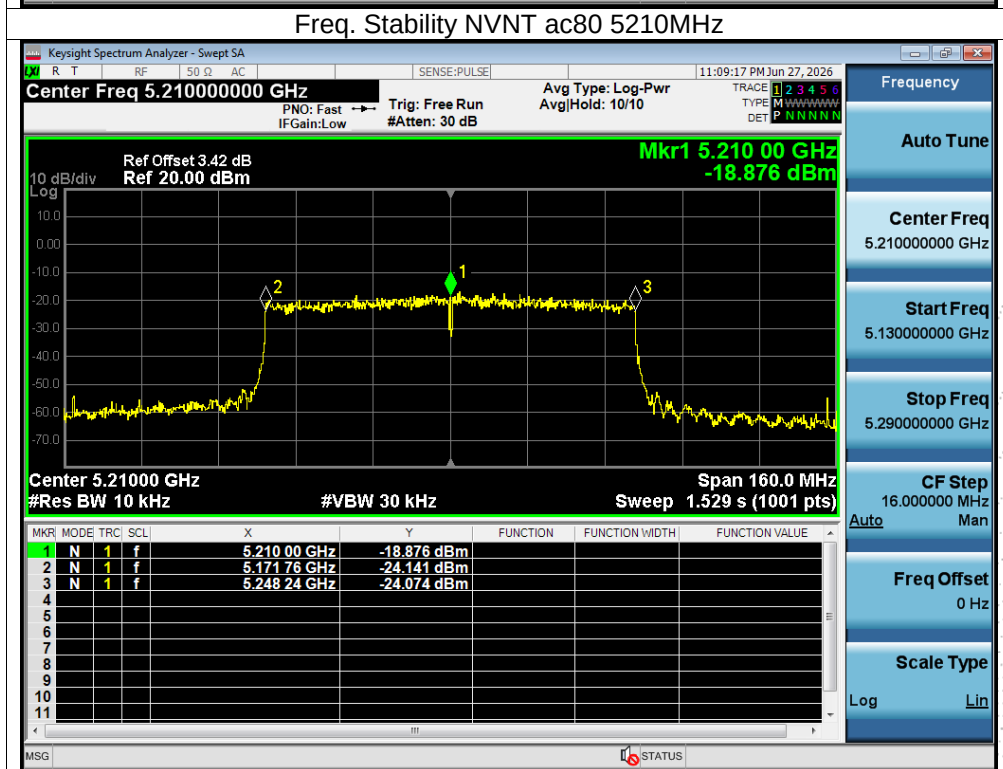
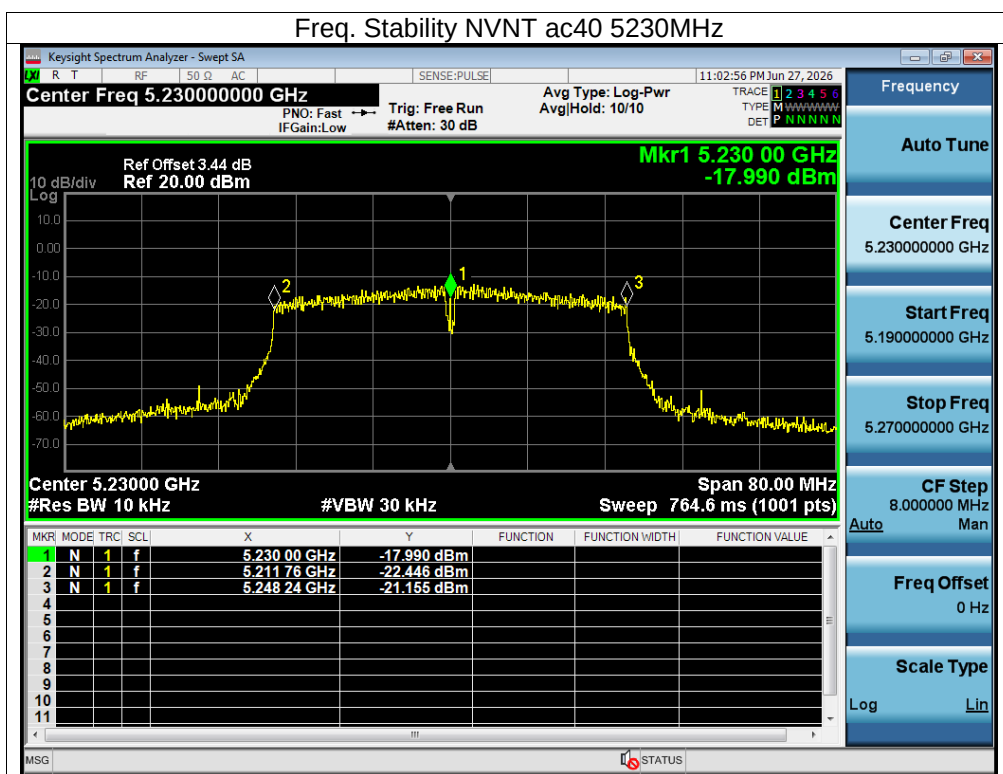




CO., LTD







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

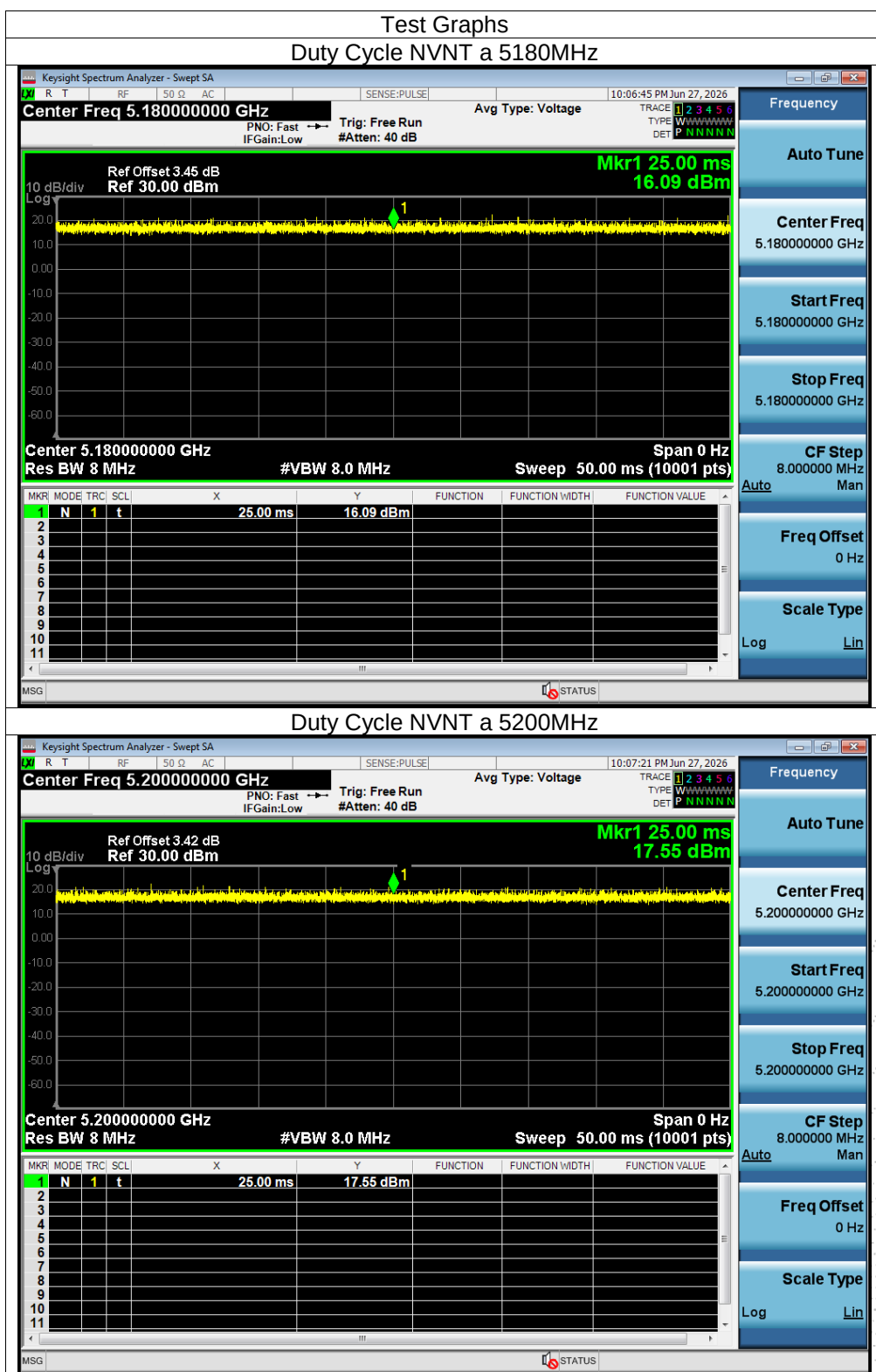
Duty Cycle = $T_{on} / (T_{on} + T_{off})$

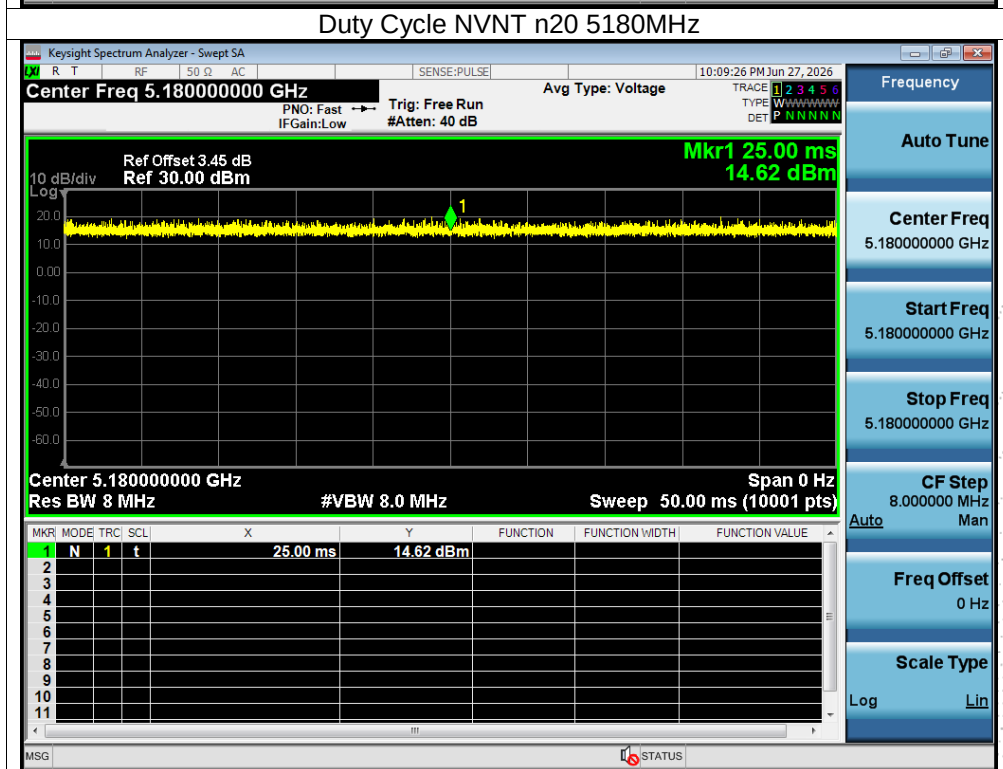
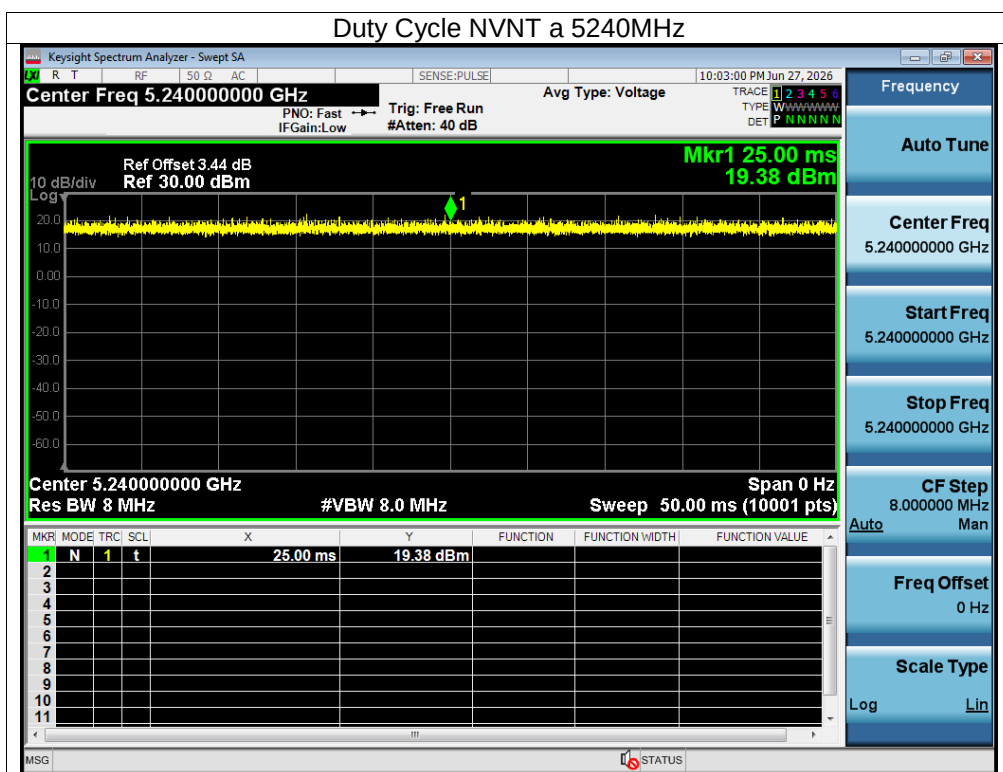
14.3 Test Procedure

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

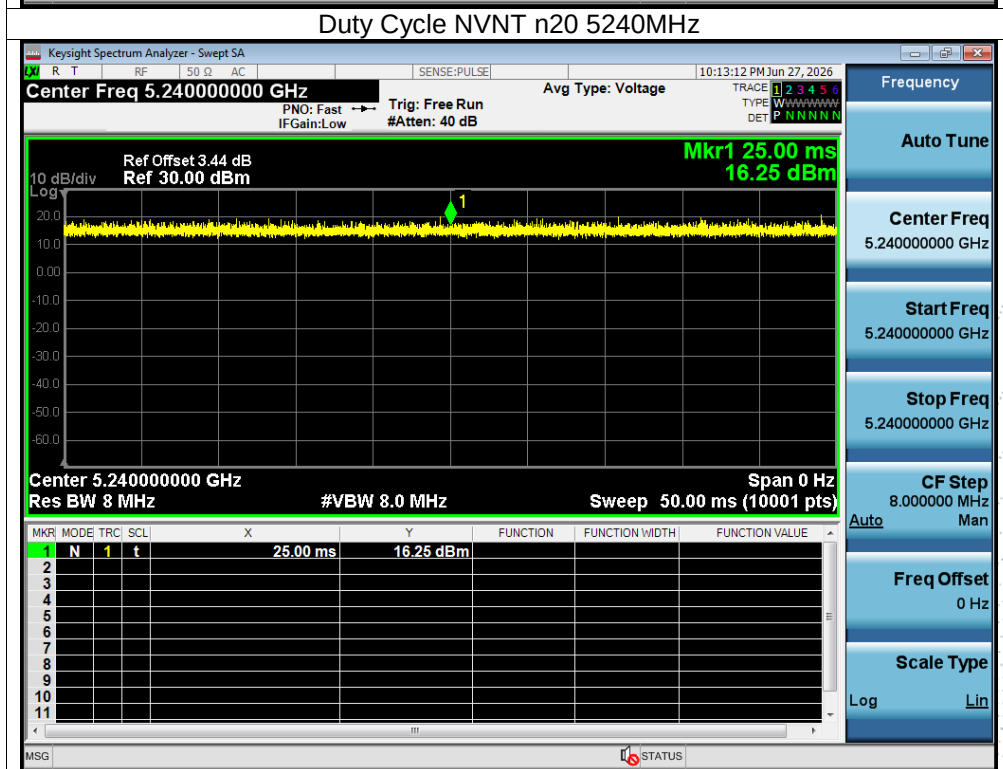
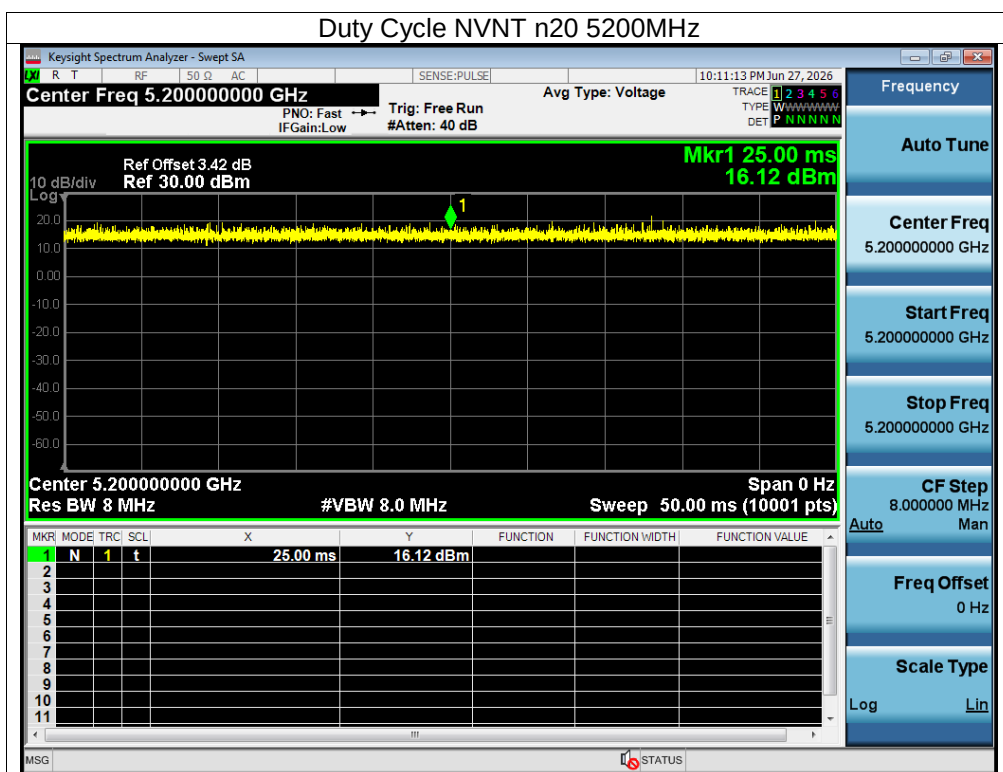
14.4 Test Result

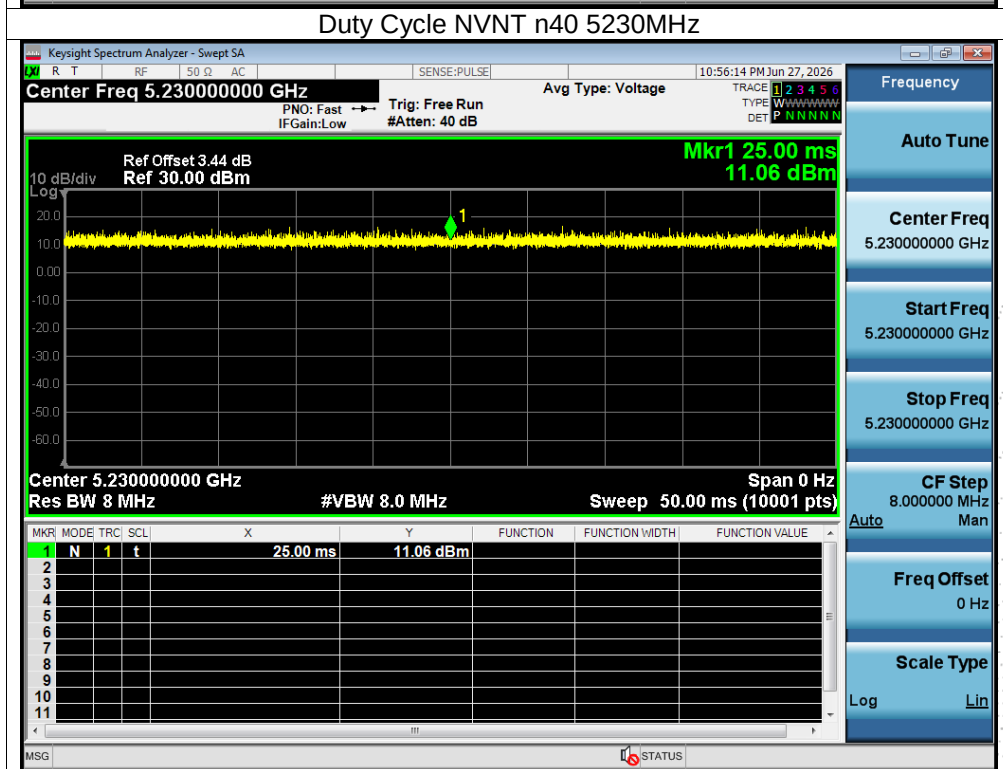
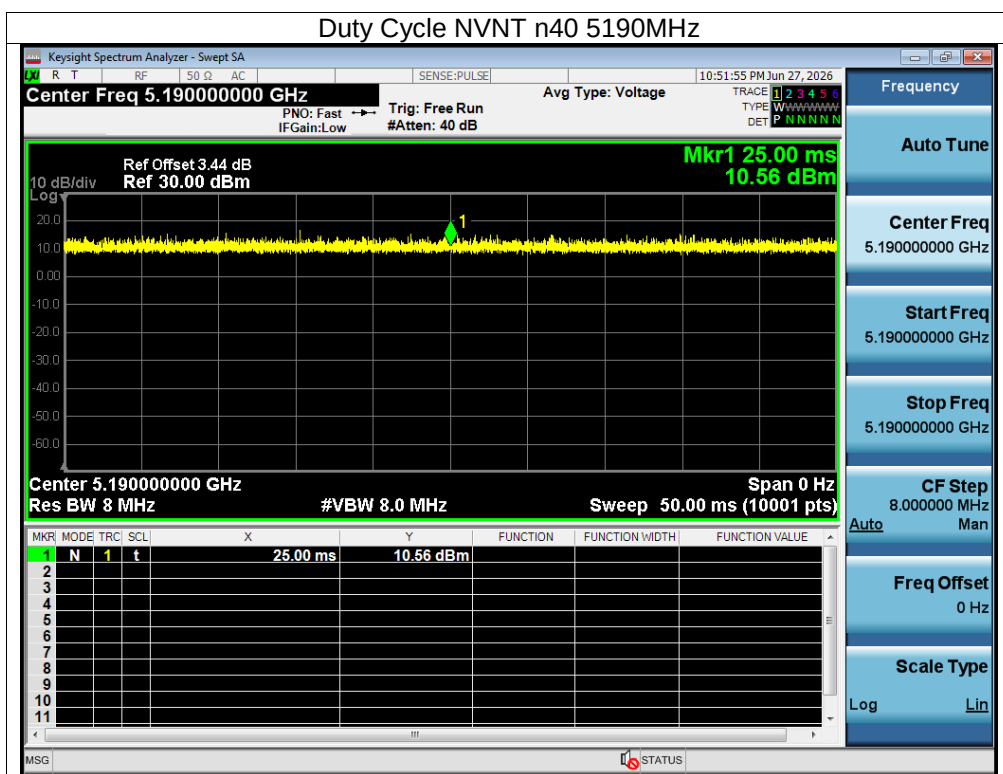
Condition	Mode	Frequency (MHz)	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	a	5180	100	0	0
NVNT	a	5200	100	0	0
NVNT	a	5240	100	0	0
NVNT	n20	5180	100	0	0
NVNT	n20	5200	100	0	0
NVNT	n20	5240	100	0	0
NVNT	n40	5190	100	0	0
NVNT	n40	5230	100	0	0
NVNT	ac20	5180	100	0	0
NVNT	ac20	5200	100	0	0
NVNT	ac20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

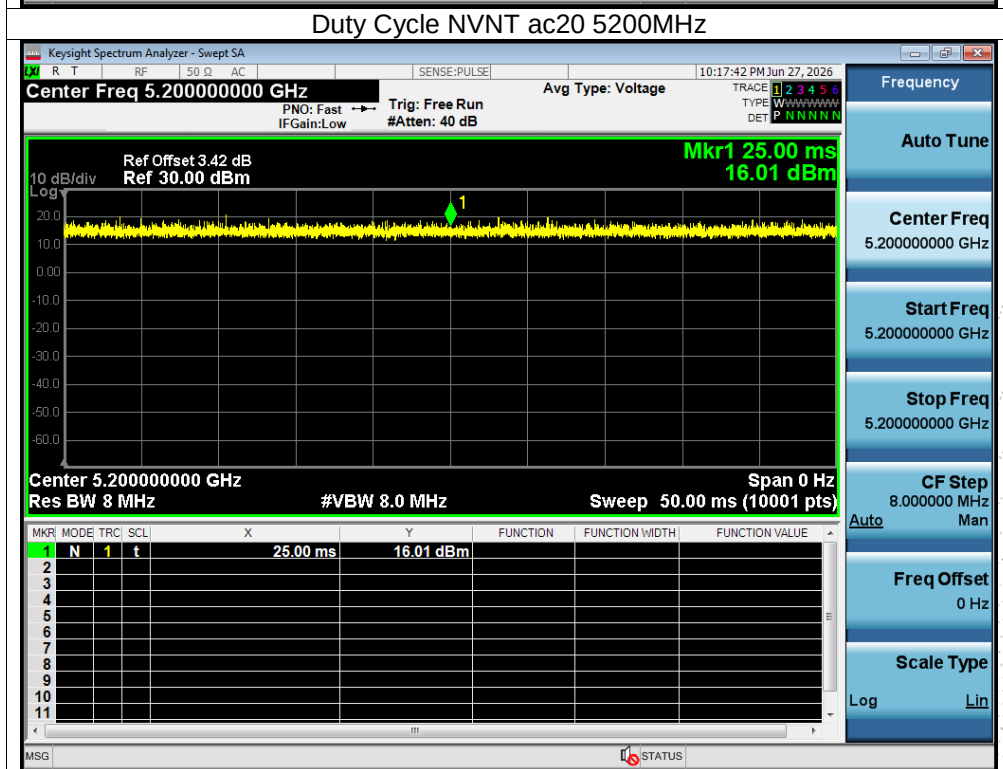
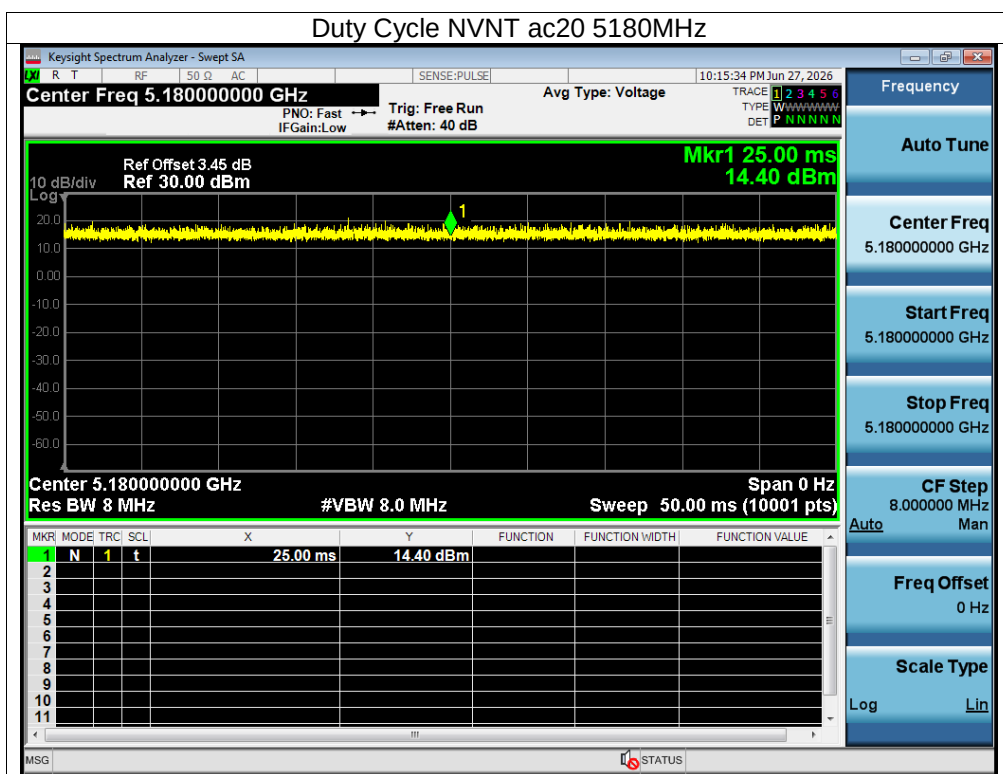


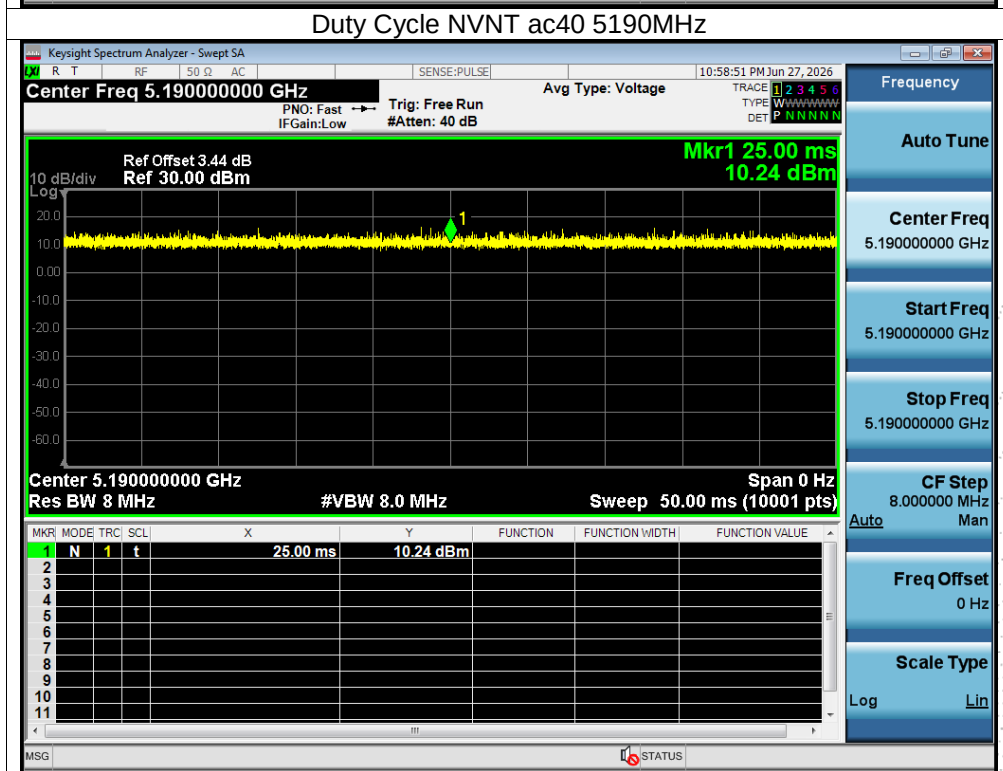
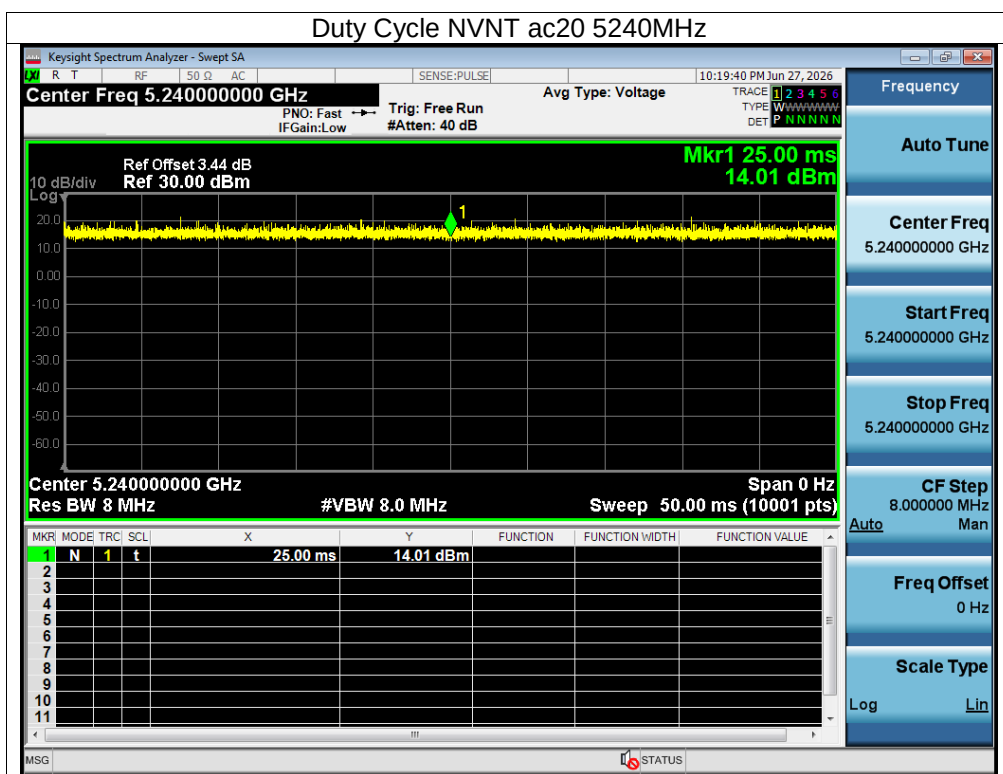


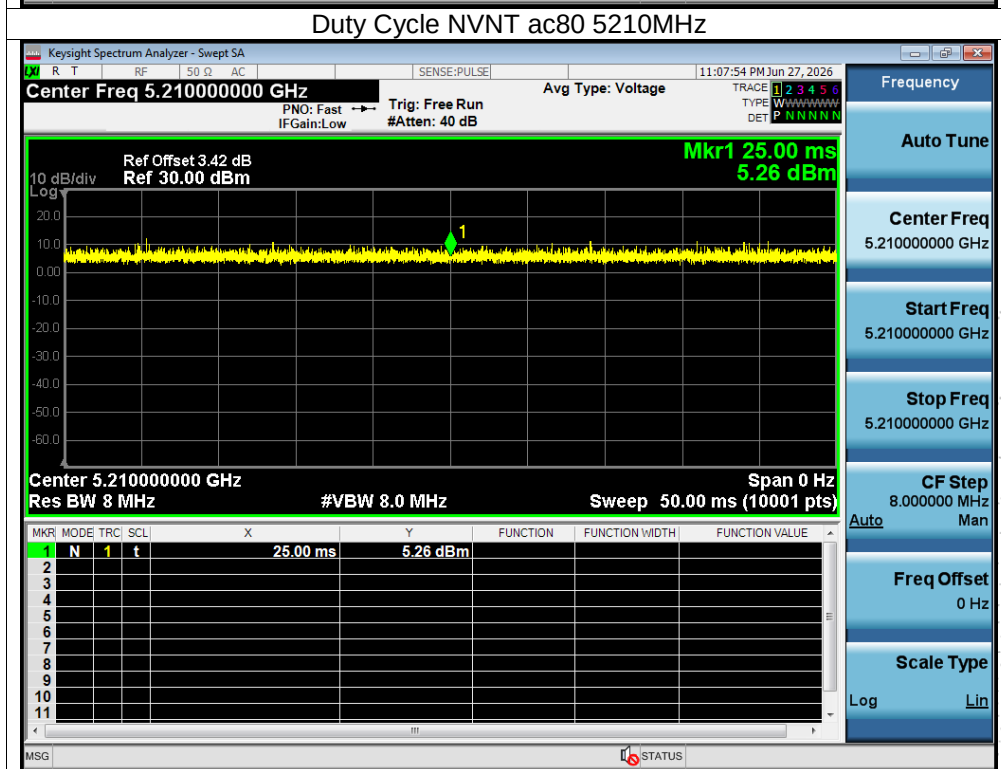
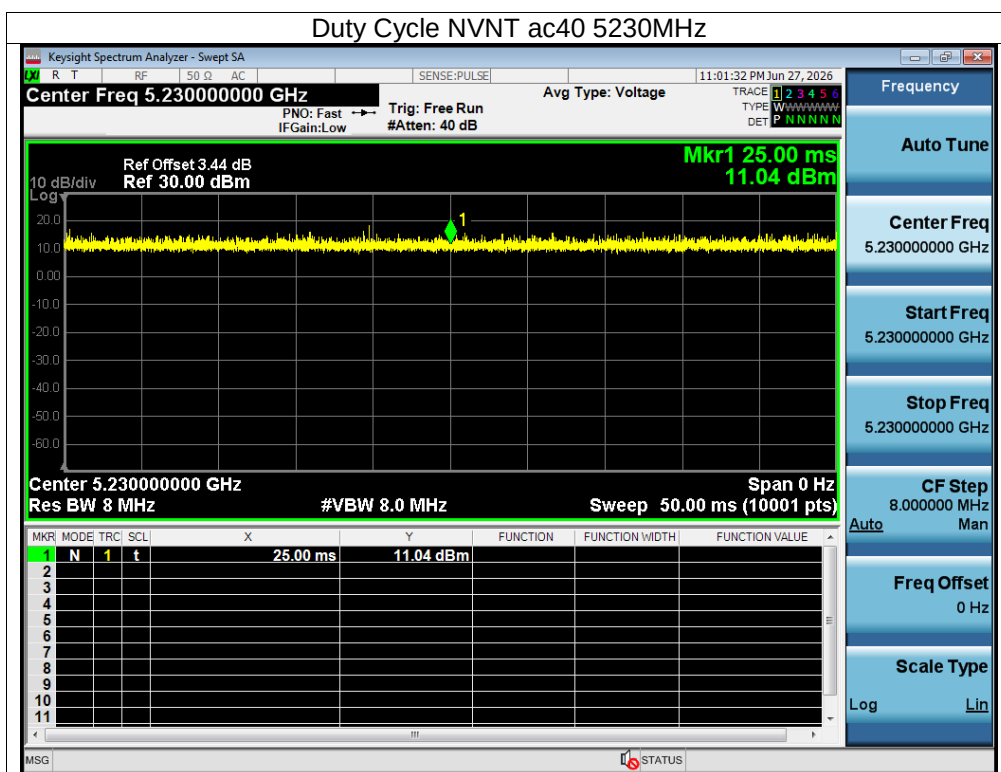
KJ CO., LTD











15. Antenna Requirement

15.1 Limit

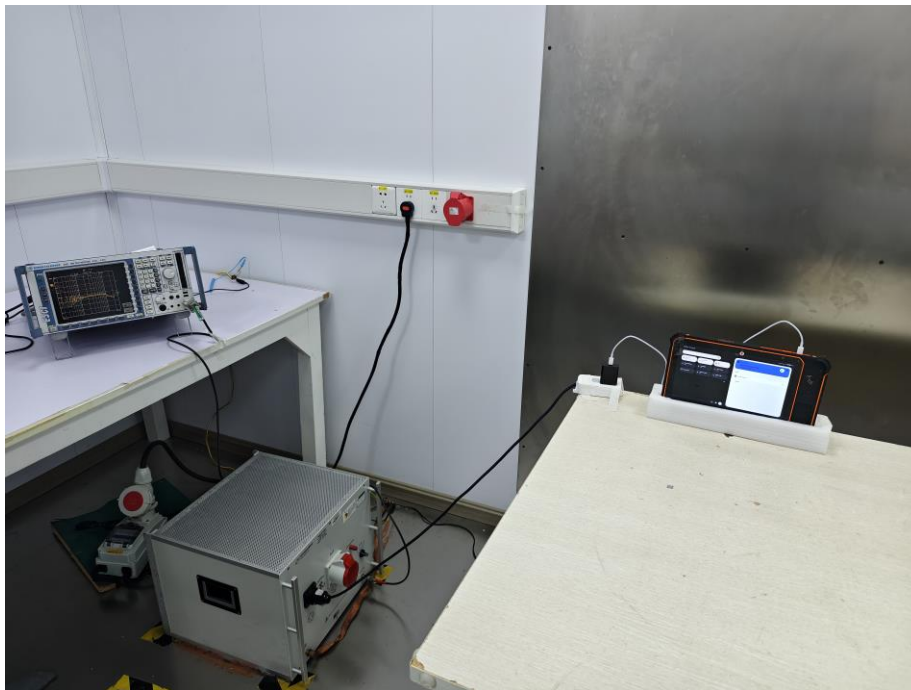
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply 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

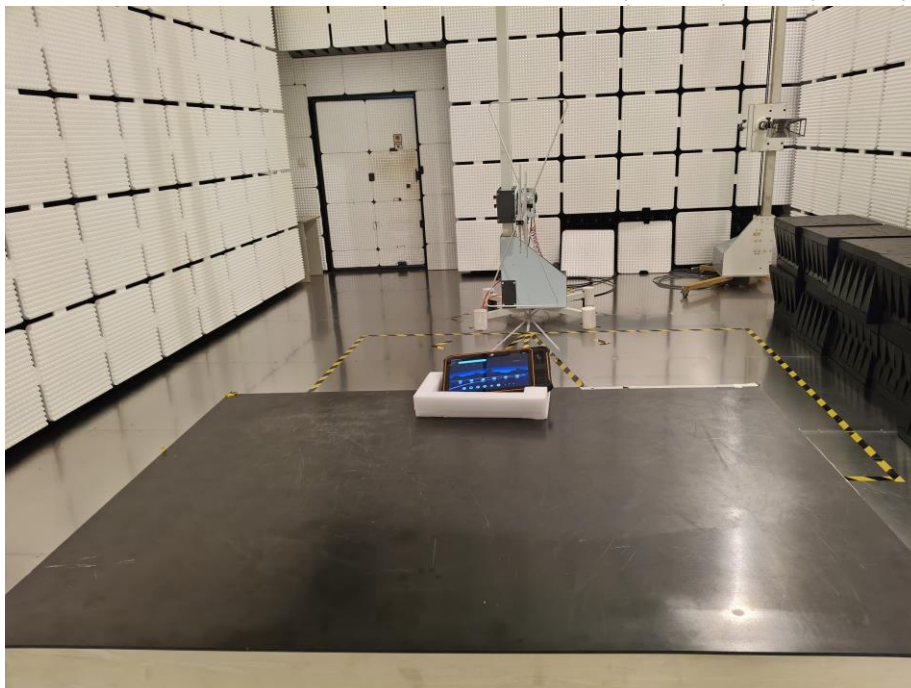
The EUT antenna is internal antenna, fulfill the requirement of this section.

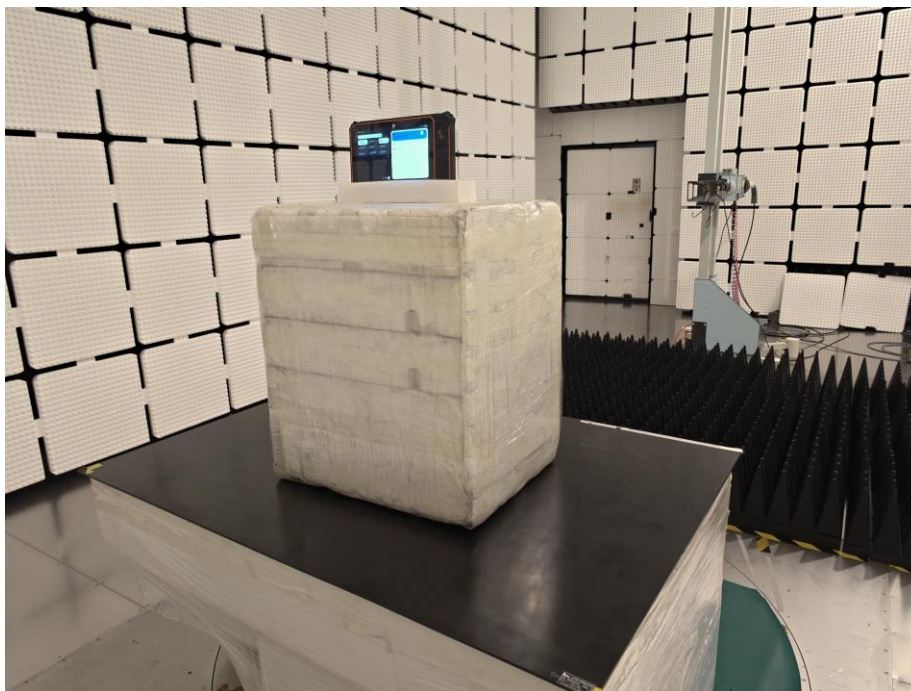
16. EUT Test Setup Photographs

Conducted Emissions Photo

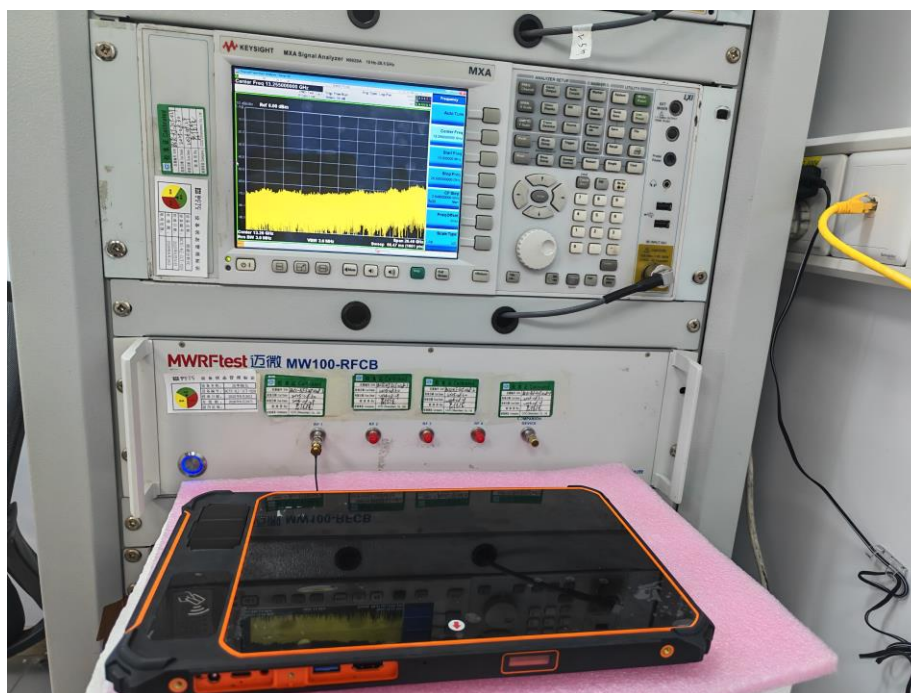


Radiated Measurement Photos





Radiated 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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Consultation E-mail: bctc@bctc-lab.com.cn

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***** END *****