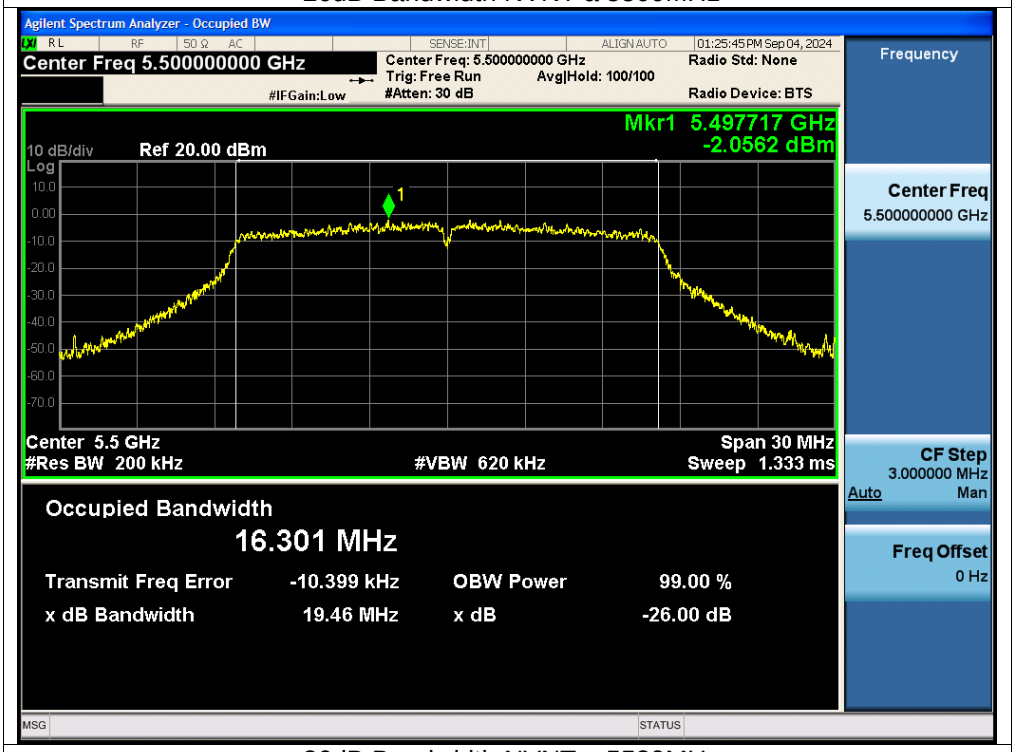
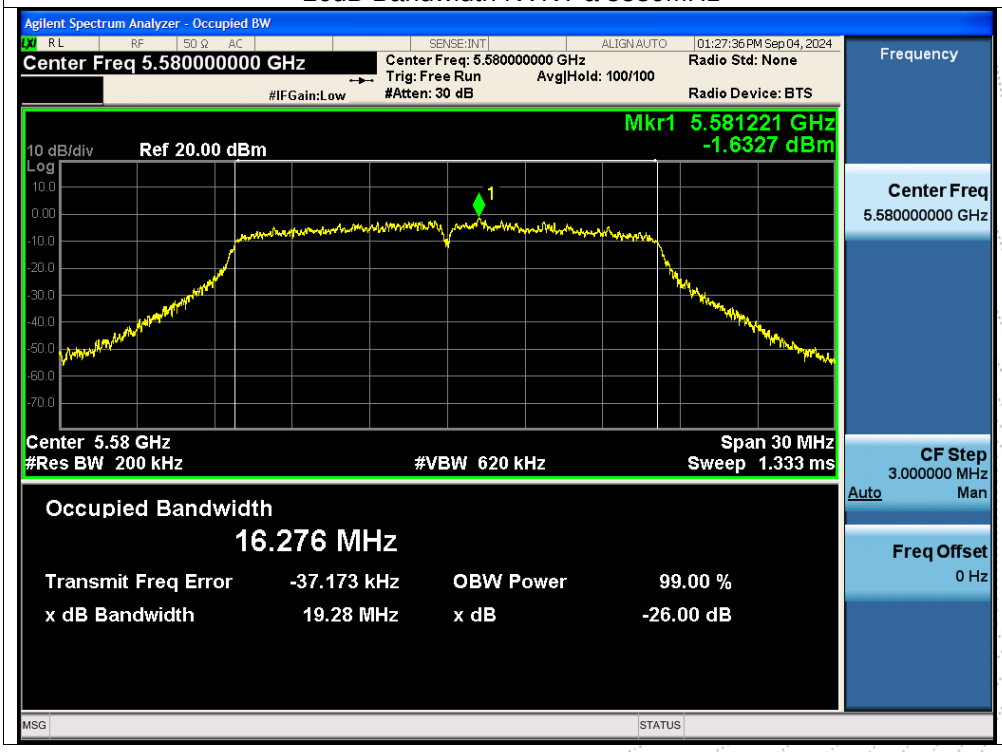
Test Graphs

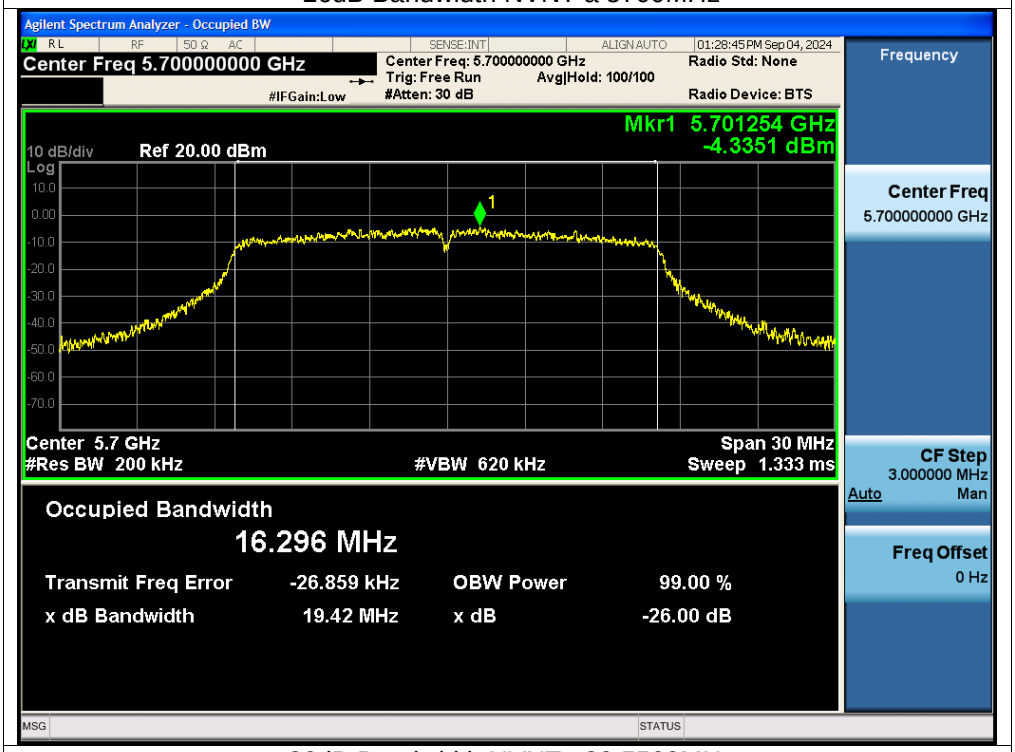
-26dB Bandwidth NVNT a 5500MHz



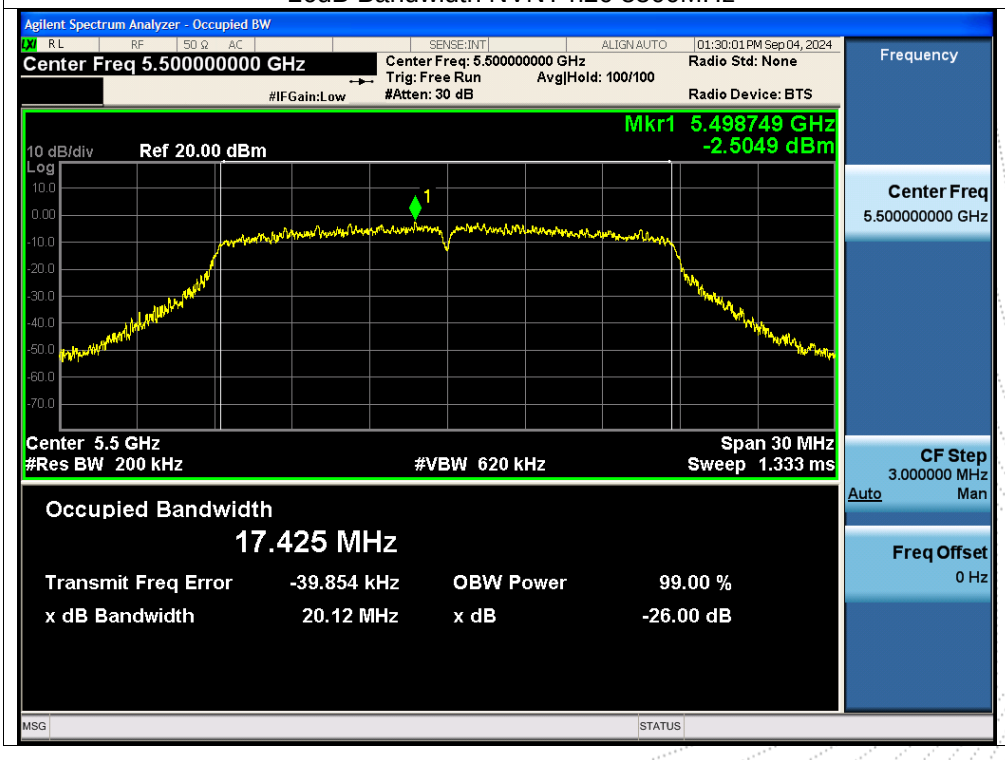
-26dB Bandwidth NVNT a 5580MHz



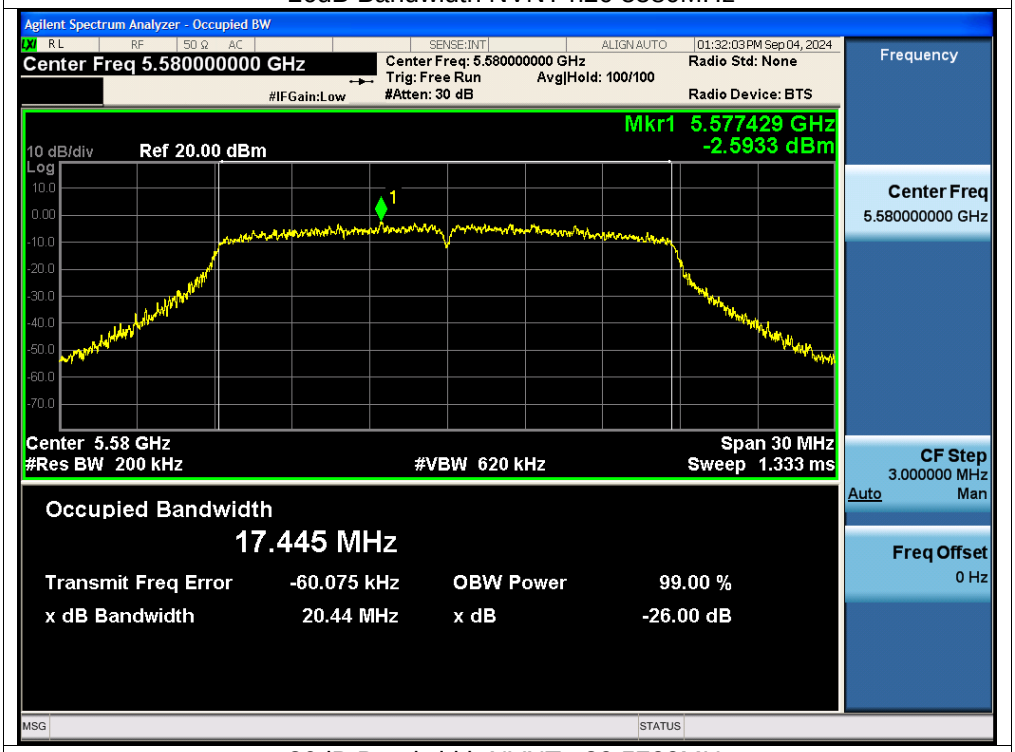
-26dB Bandwidth NVNT a 5700MHz



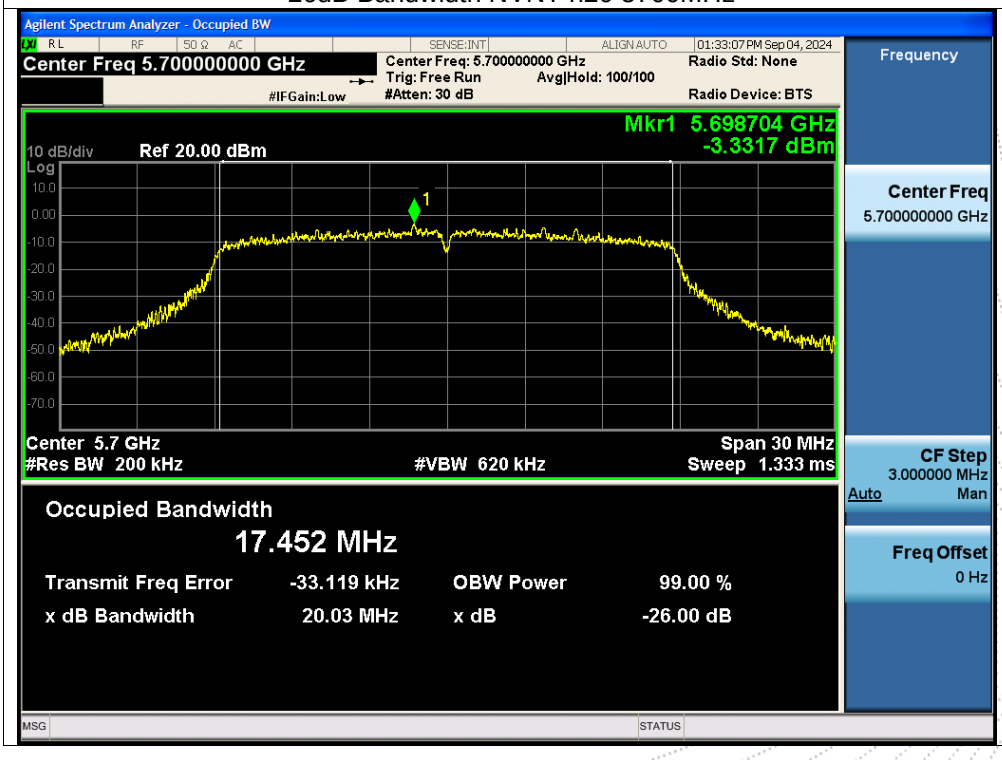
-26dB Bandwidth NVNT n20 5500MHz



-26dB Bandwidth NVNT n20 5580MHz

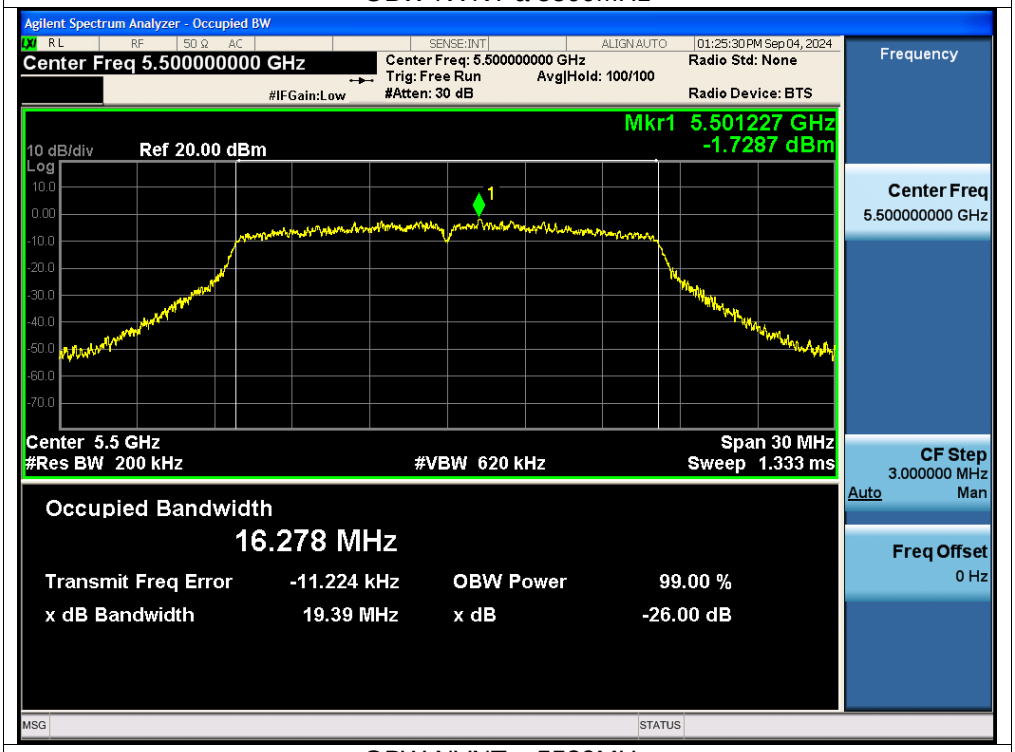


-26dB Bandwidth NVNT n20 5700MHz

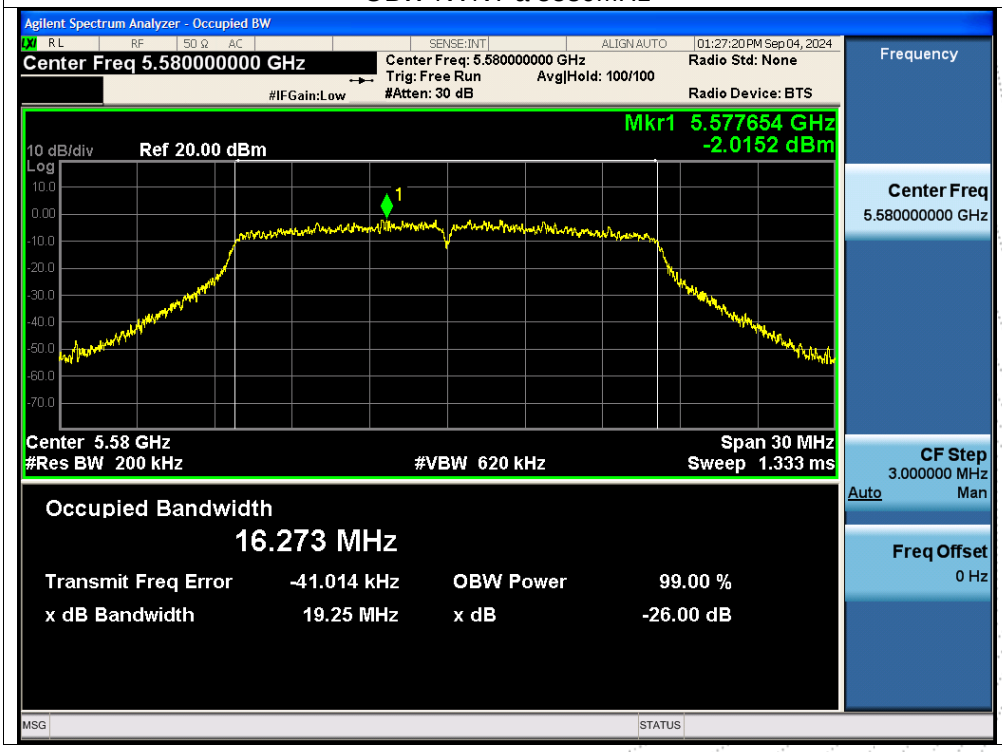


Test Graphs

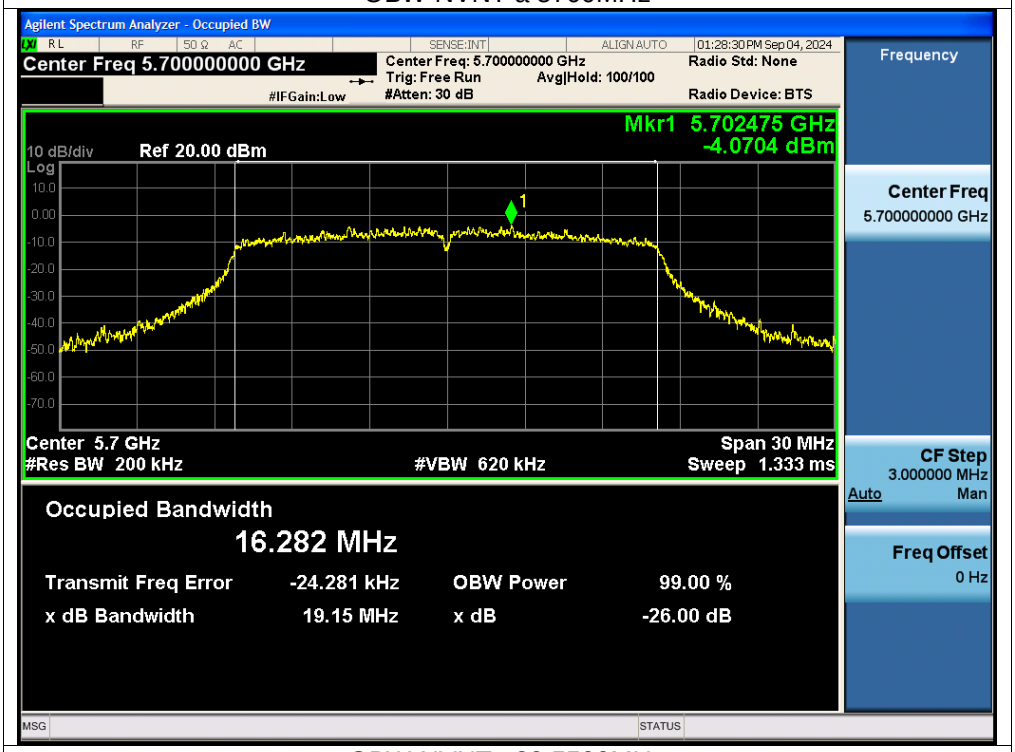
OBW NVNT a 5500MHz



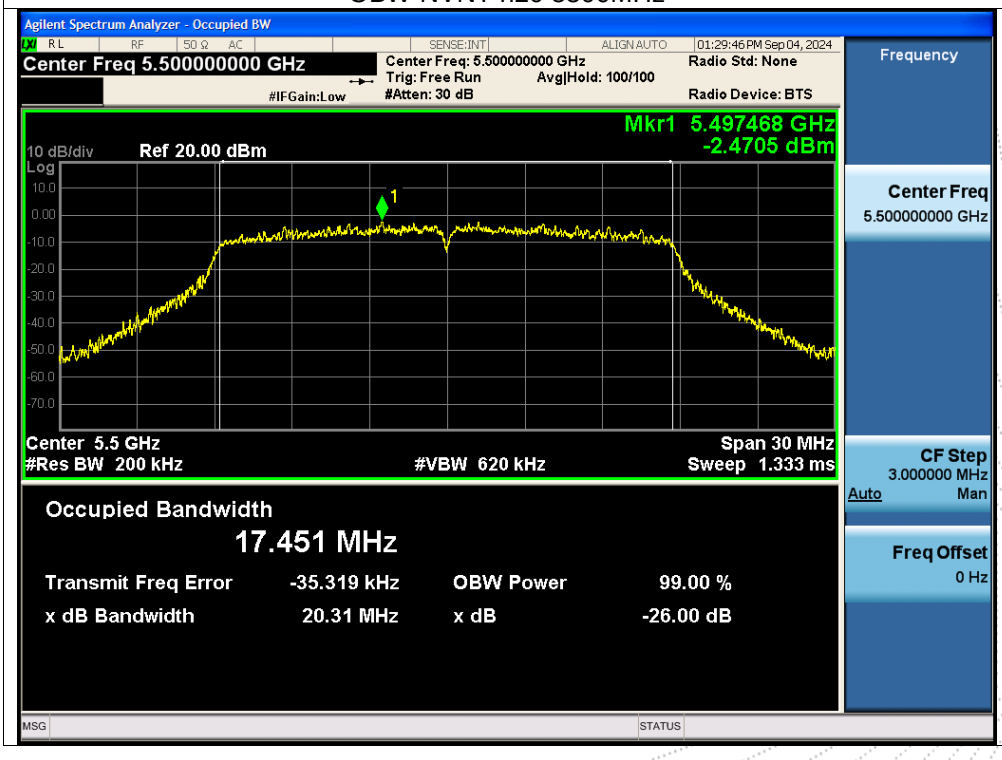
OBW NVNT a 5580MHz



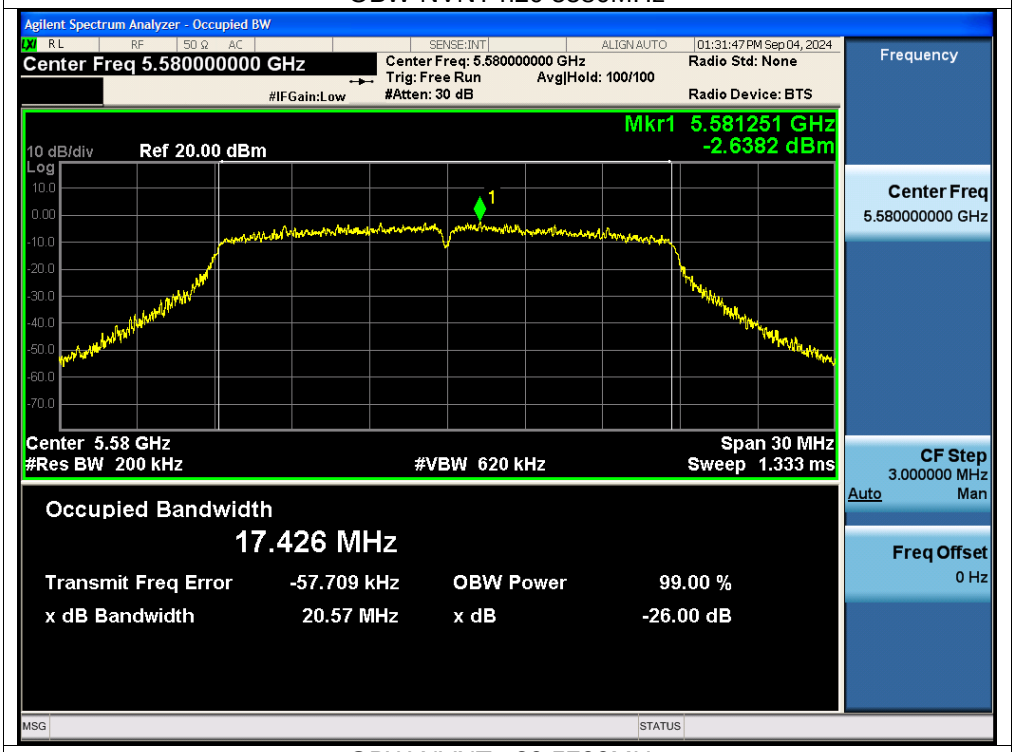
OBW NVNT a 5700MHz



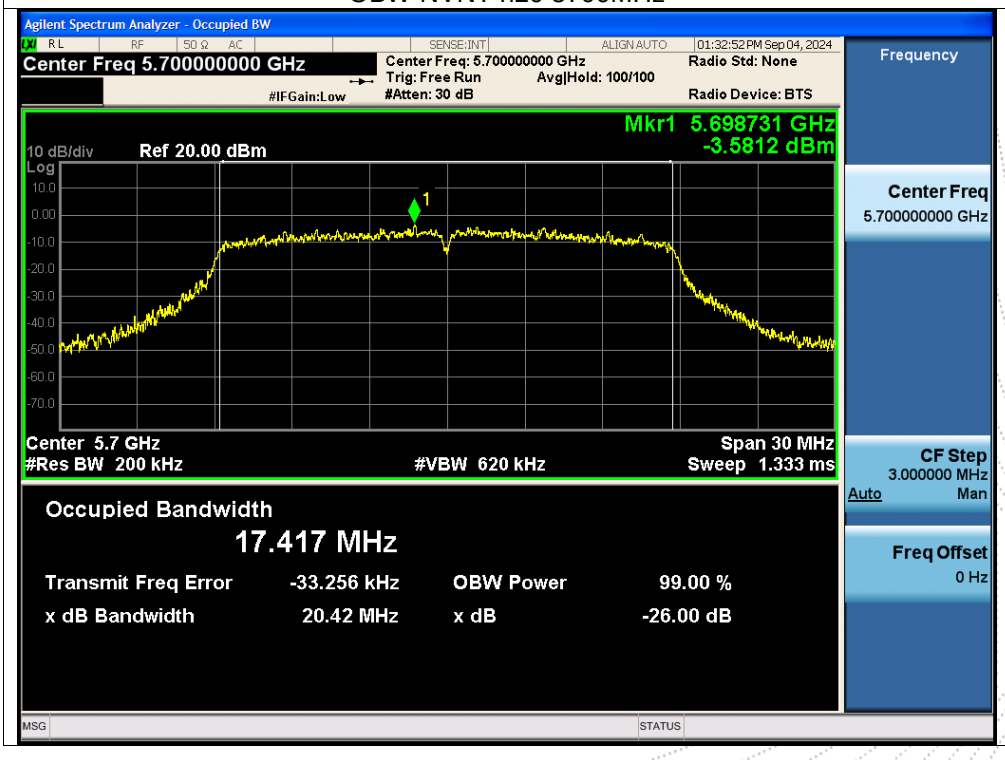
OBW NVNT n20 5500MHz



OBW NVNT n20 5580MHz



OBW NVNT n20 5700MHz

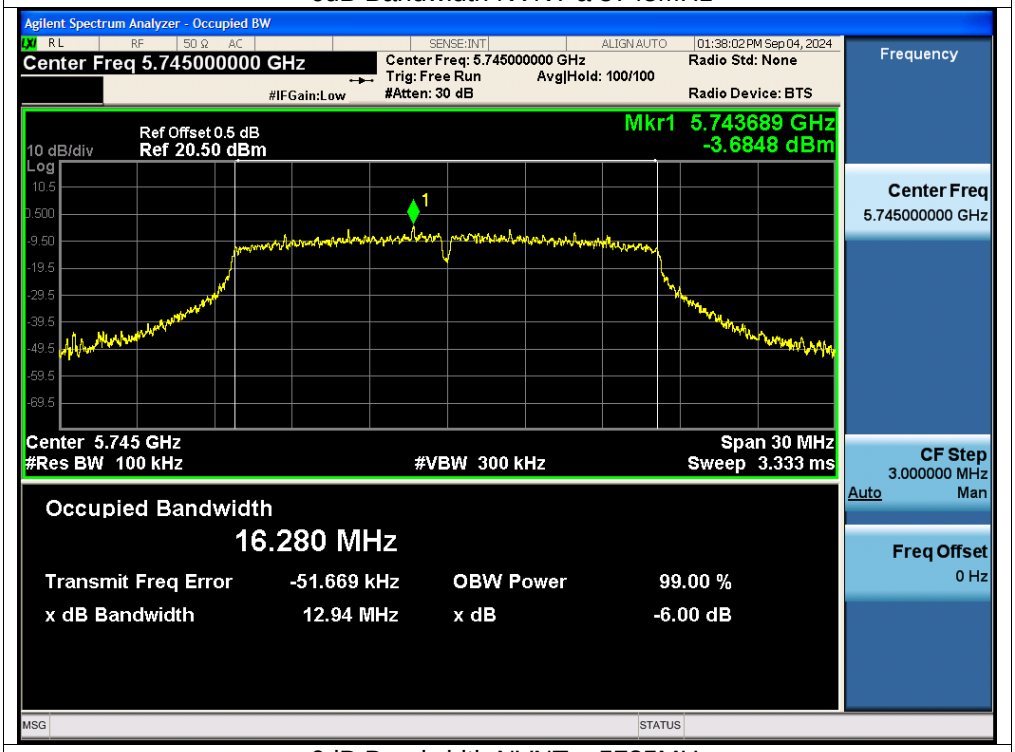


Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	DC 12V
Test Mode:	(5745-5825MHz)		

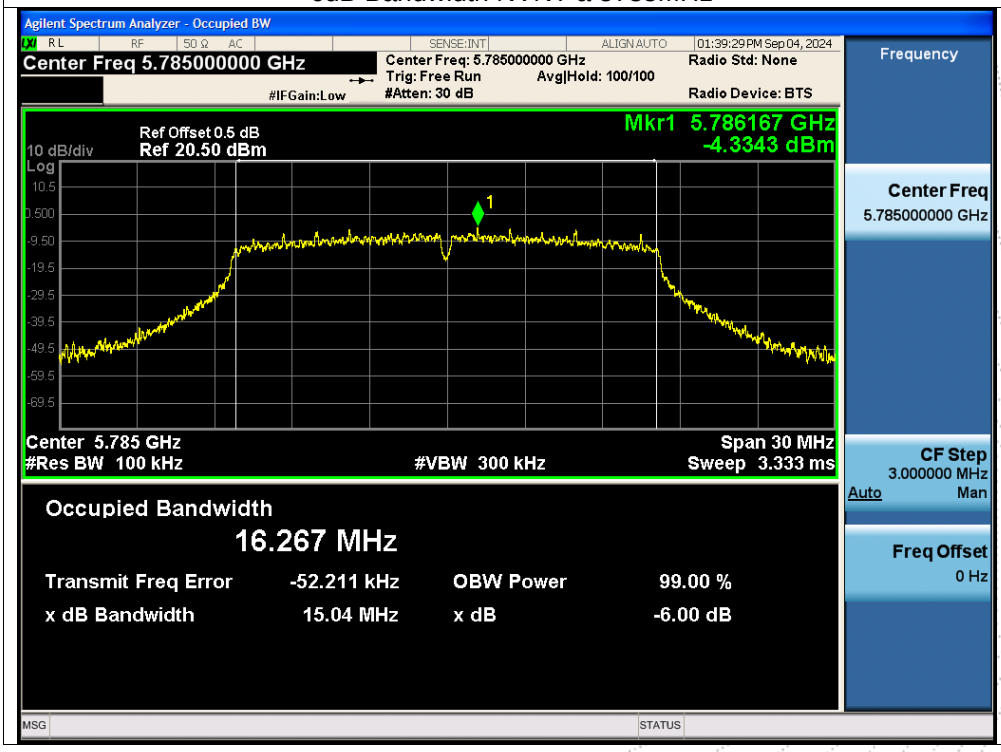
Condition	Mode	Frequency (MHz)	99% OBW (MHz)	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	a	5745	16.293	12.936	0.5	Pass
NVNT	a	5785	16.283	15.044	0.5	Pass
NVNT	a	5825	16.281	14.055	0.5	Pass
NVNT	n20	5745	17.431	13.778	0.5	Pass
NVNT	n20	5785	17.431	15.137	0.5	Pass
NVNT	n20	5825	17.414	13.868	0.5	Pass

Test Graphs

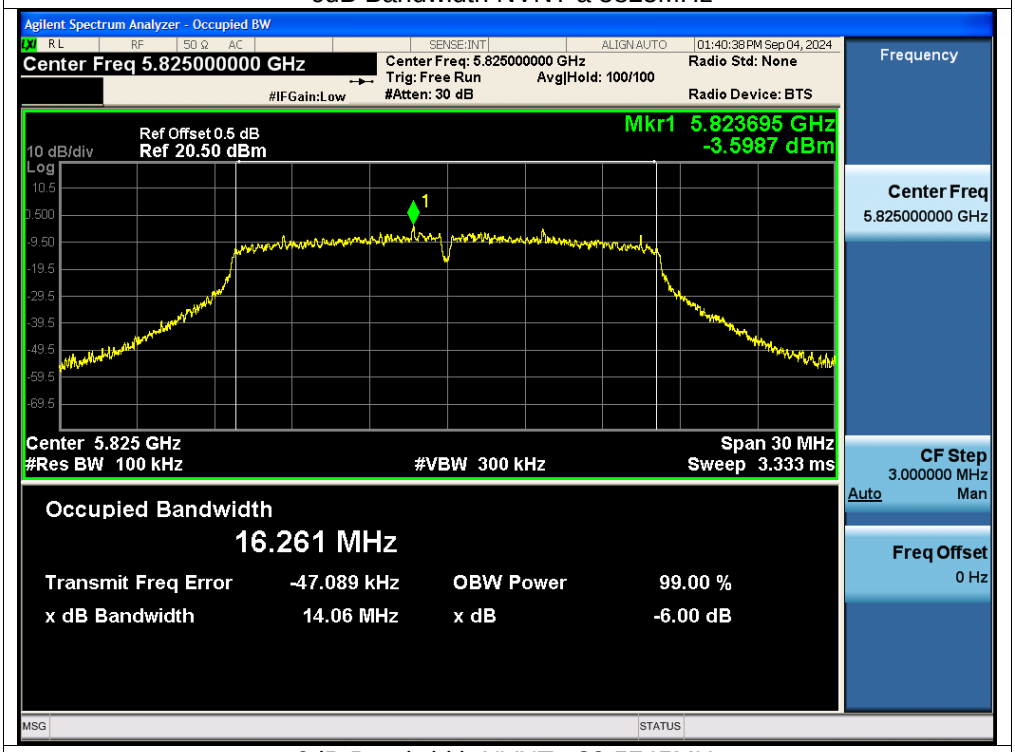
-6dB Bandwidth NVNT a 5745MHz



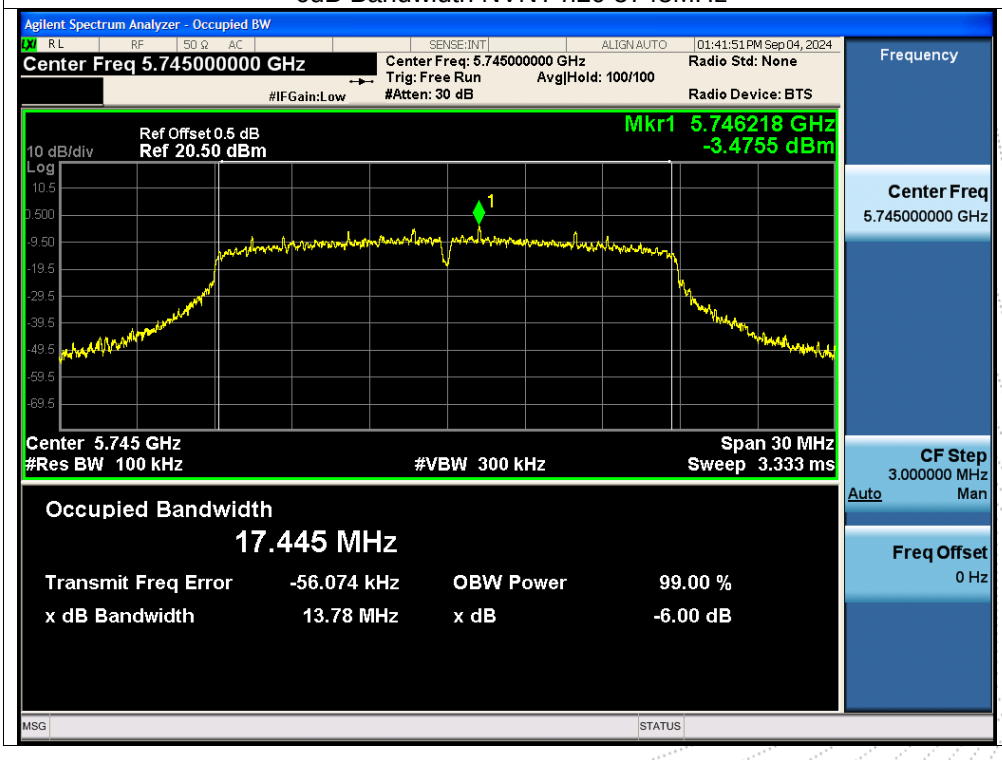
-6dB Bandwidth NVNT a 5785MHz



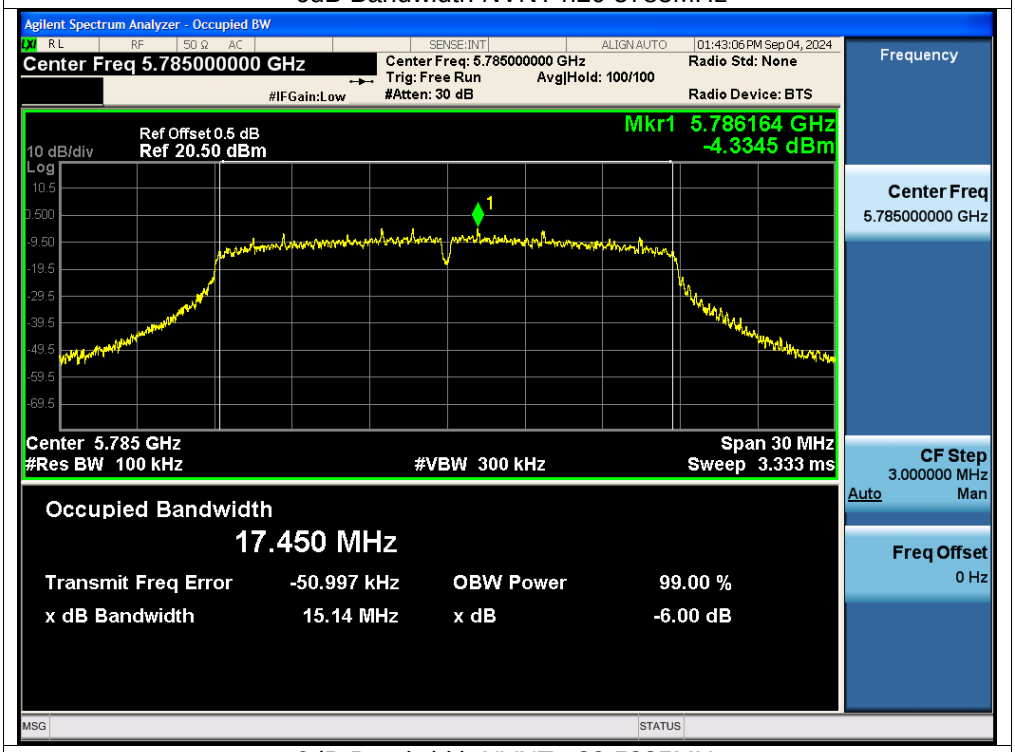
-6dB Bandwidth NVNT a 5825MHz



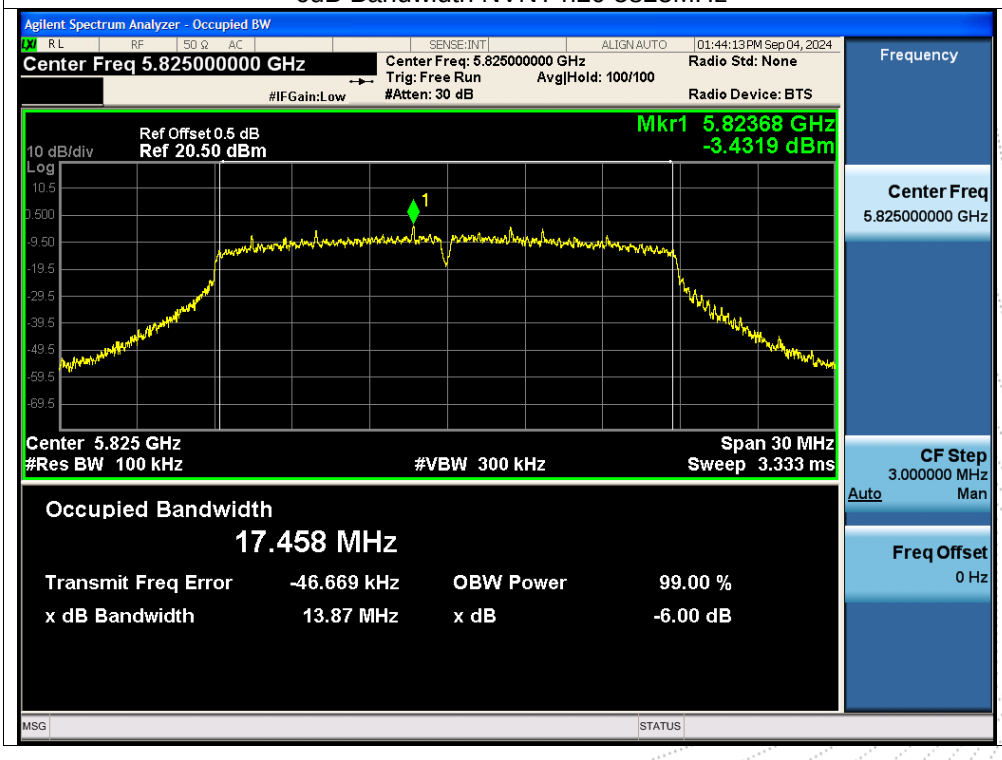
-6dB Bandwidth NVNT n20 5745MHz



-6dB Bandwidth NVNT n20 5785MHz

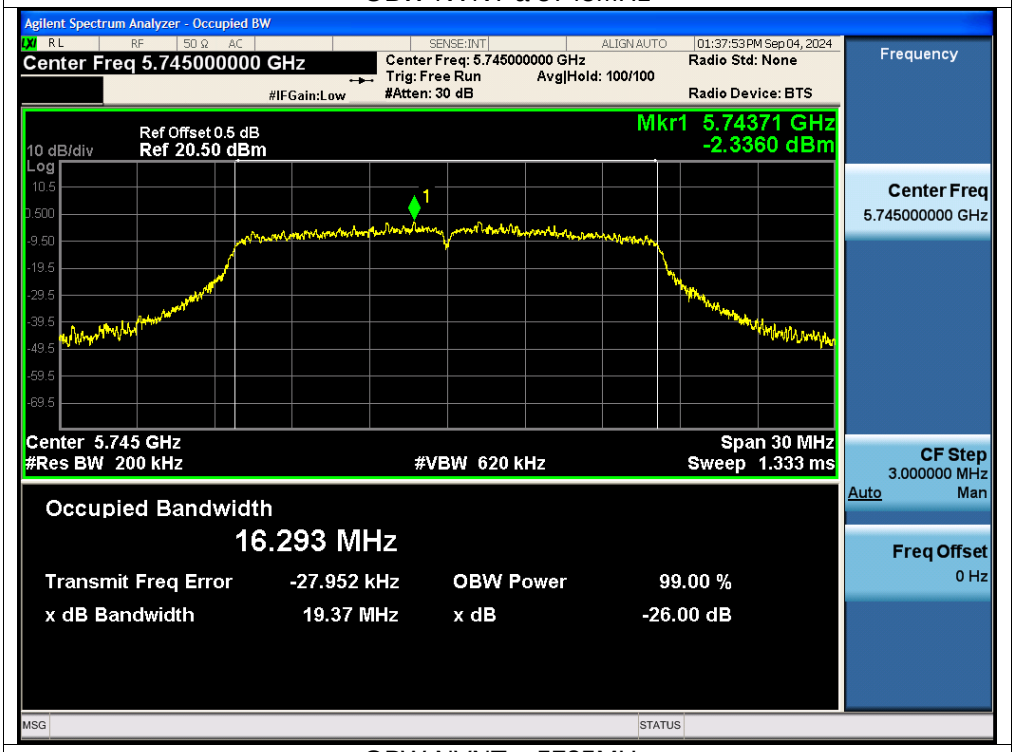


-6dB Bandwidth NVNT n20 5825MHz

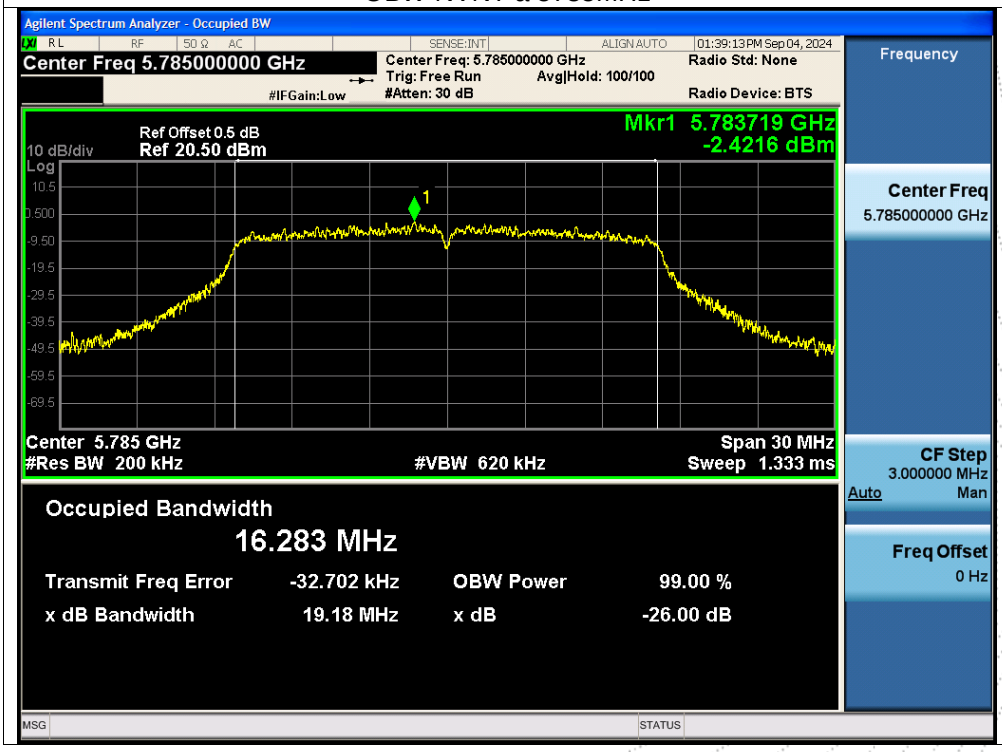


Test Graphs

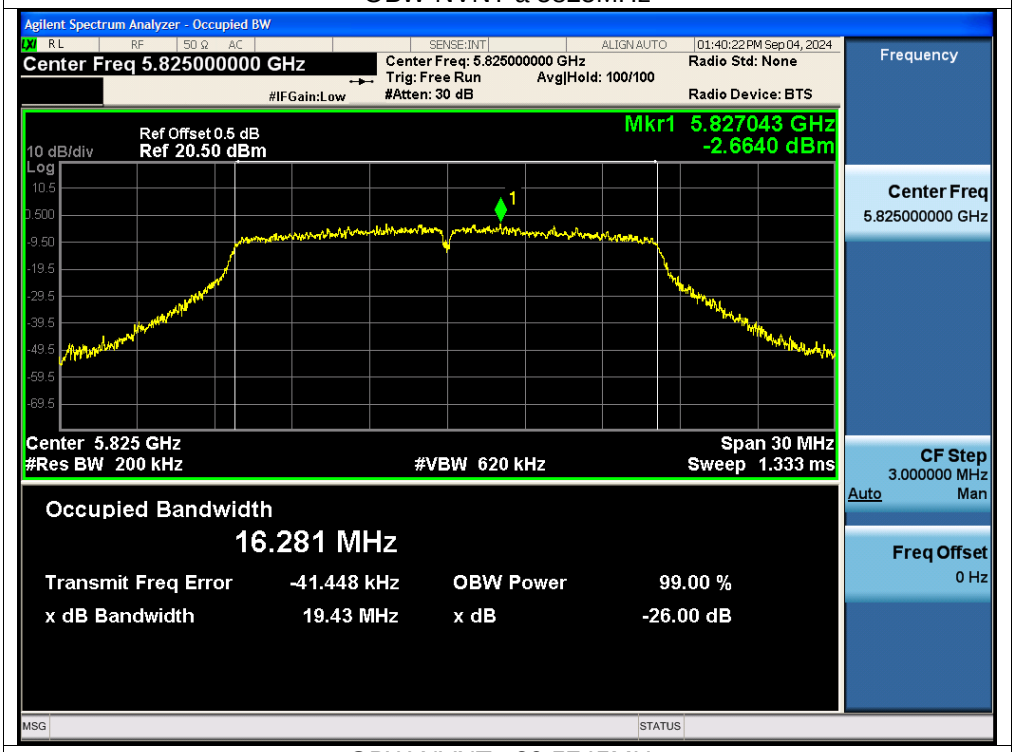
OBW NVNT a 5745MHz



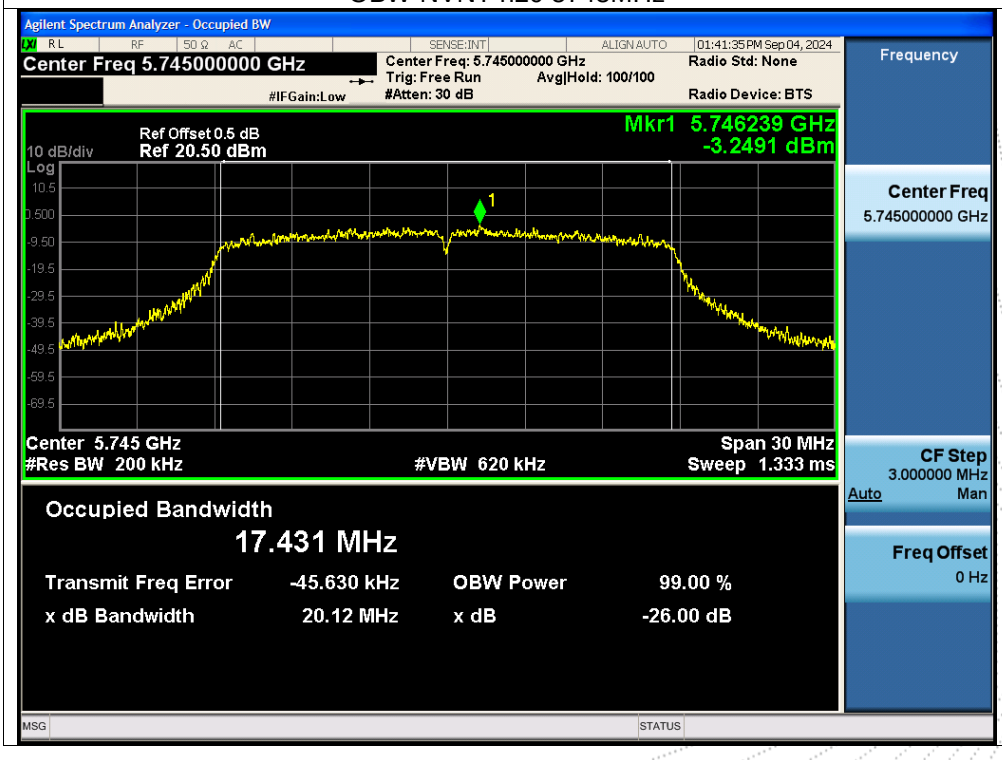
OBW NVNT a 5785MHz



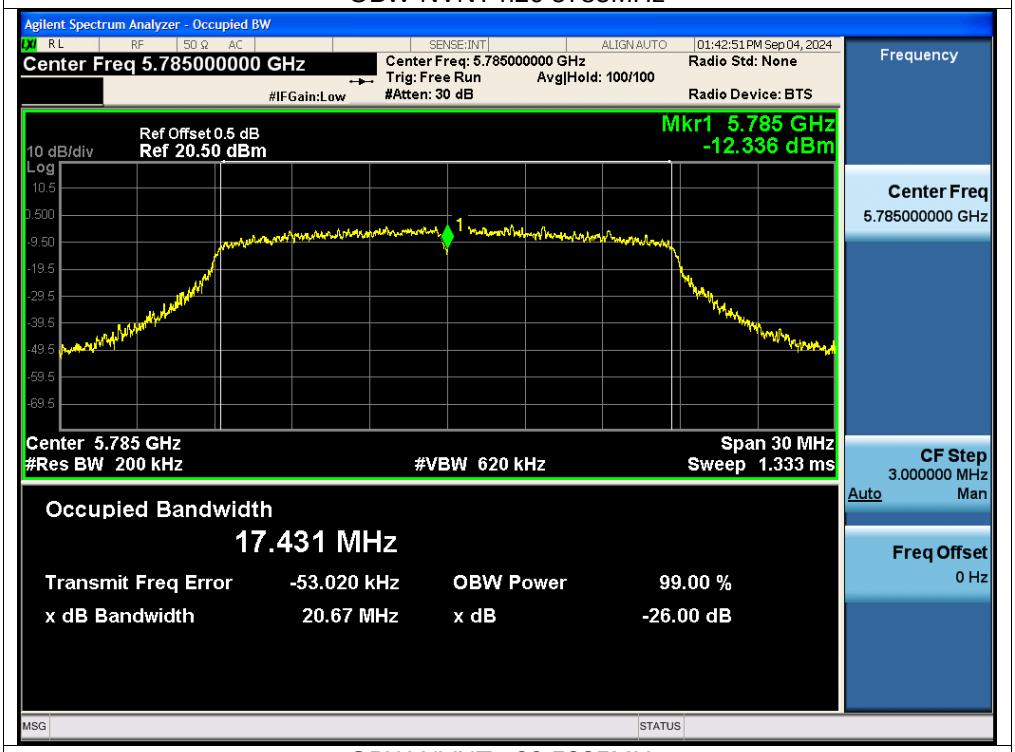
OBW NVNT a 5825MHz



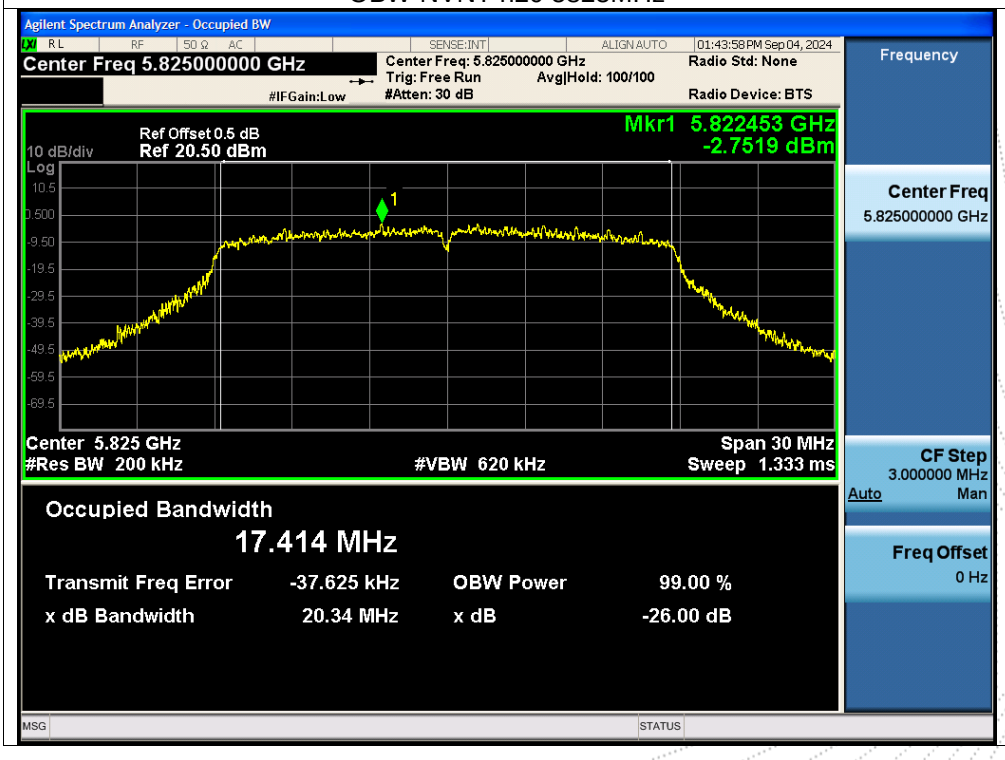
OBW NVNT n20 5745MHz



OBW NVNT n20 5785MHz

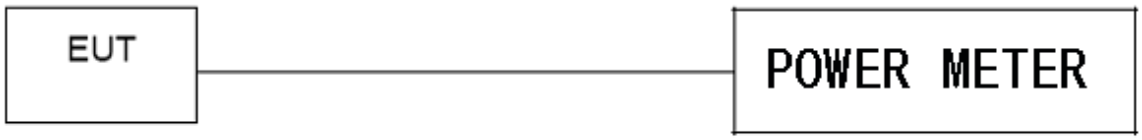


OBW NVNT n20 5825MHz



10. Maximum Conducted Output Power

10.1 Block Diagram Of Test Setup



10.2 Limit

According to FCC §15.407
The maximum conduced output power should not exceed**:**

Frequency Band(MHz)	Limit
5150~5250	0.25W
5250~5350	0.25W
5500~5700	0.25W
5725~5850	1W

10.3 Test Procedure

Maximum conducted output power may be measured using a spectrum analyzer/EMI receiver or an RF power meter.

1. Device Configuration
If possible, configure or modify the operation of the EUT so that it transmits continuously at its maximum power control level (see section II.B.).
a) The intent is to test at 100 percent duty cycle; however a small reduction in duty cycle (to no lower than 98 percent) is permitted if required by the EUT for amplitude control purposes. Manufacturers are expected to provide software to the test lab to permit such continuous operation.
b) If continuous transmission (or at least 98 percent duty cycle) cannot be achieved due to hardware limitations (e.g., overheating), the EUT shall be operated at its maximum power control level with the transmit duration as long as possible and the duty cycle as high as possible.

2. Measurement using a Spectrum Analyzer or EMI Receiver (SA)
Measurement of maximum conducted output power using a spectrum analyzer requires integrating the spectrum across a frequency span that encompasses, at a minimum, either the EBW or the 99-percent occupied bandwidth of the signal.1 However, the EBW must be used to determine bandwidth dependent limits on maximum conducted output power in accordance with § 15.407(a).
a) The test method shall be selected as follows: (i) Method SA-1 or SA-1 Alternative (averaging with the EUT transmitting at full power throughout each sweep) shall be applied if either of the following conditions can be satisfied:
• The EUT transmits continuously (or with a duty cycle ≥ 98 percent).
• Sweep triggering or gating can be implemented in a way that the device transmits at the maximum power control level throughout the duration of each of the instrument sweeps to be averaged. This condition can generally be achieved by triggering the instrument's sweep if the duration of the sweep (with the analyzer configured as in Method SA-1, below) is equal to or shorter than the duration T of each transmission from the EUT and if those transmissions exhibit full power throughout their durations.

(ii) Method SA-2 or SA-2 Alternative (averaging across on and off times of the EUT transmissions, followed by duty cycle correction) shall be applied if the conditions of (i) cannot be achieved and the transmissions exhibit a constant duty cycle during the measurement duration. Duty cycle will be considered to be constant if variations are less than ± 2 percent.

(iii) Method SA-3 (RMS detection with max hold) or SA-3 Alternative (reduced VBW with max hold) shall be applied if the conditions of (i) and (ii) cannot be achieved.

b) Method SA-1 (trace averaging with the EUT transmitting at full power throughout each sweep): (i) Set span to encompass the entire emission bandwidth (EBW) (or, alternatively, the entire 99% occupied bandwidth) of the signal.
(ii) Set RBW = 1 MHz.
(iii) Set VBW ≥ 3 MHz.
(iv) Number of points in sweep ≥ 2 Span / RBW. (This ensures that bin-to-bin spacing is ≤ RBW/2, so that narrowband signals are not lost between frequency bins.)
(v) Sweep time = auto.
(vi) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.
(vii) If transmit duty cycle < 98 percent, use a video trigger with the trigger level set to enable triggering only on full power pulses. Transmitter must operate at maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no off intervals) or at duty cycle ≥ 98 percent, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to “free run”.
(viii) Trace average at least 100 traces in power averaging (i.e., RMS) mode.
(ix) Compute power by integrating the spectrum across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal using the instrument’s band power measurement function with band limits set equal to the EBW (or occupied bandwidth) band edges. If the instrument does not have a band power function, sum the spectrum

10.4 EUT Operating Conditions

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

10.5 Test Result

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	DC 12V
Test Mode:	5180-5240MHz		

Condition	Mode	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	a	5180	10.23	24	Pass
NVNT	a	5200	9.95	24	Pass
NVNT	a	5240	9.98	24	Pass
NVNT	n20	5180	9.77	24	Pass
NVNT	n20	5200	9.31	24	Pass
NVNT	n20	5240	10.15	24	Pass

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	DC 12V
Test Mode:	5260-5320MHz		

Condition	Mode	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	a	5260	10.2	24	Pass
NVNT	a	5280	9.97	24	Pass
NVNT	a	5320	9.18	24	Pass
NVNT	n20	5260	10.06	24	Pass
NVNT	n20	5280	9.84	24	Pass
NVNT	n20	5320	9.01	24	Pass

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	DC 12V
Test Mode:	5500-5700MHz		

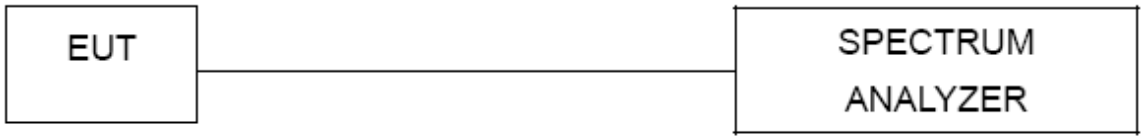
Condition	Mode	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	a	5500	10.13	24	Pass
NVNT	a	5580	10.19	24	Pass
NVNT	a	5700	8.25	24	Pass
NVNT	n20	5500	9.82	24	Pass
NVNT	n20	5580	10.07	24	Pass
NVNT	n20	5700	8.4	24	Pass

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	DC 12V
Test Mode:	5745-5825MHz		

Condition	Mode	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	a	5745	9.45	30	Pass
NVNT	a	5785	9.47	30	Pass
NVNT	a	5825	9.67	30	Pass
NVNT	n20	5745	8.97	30	Pass
NVNT	n20	5785	9.35	30	Pass
NVNT	n20	5825	9.58	30	Pass

11. Out Of Band Emissions

11.1 Block Diagram Of Test Setup



11.2 Limit

According to FCC §15.407(b)
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) 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 5.47-5.725 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.
(4) 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

11.3 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.

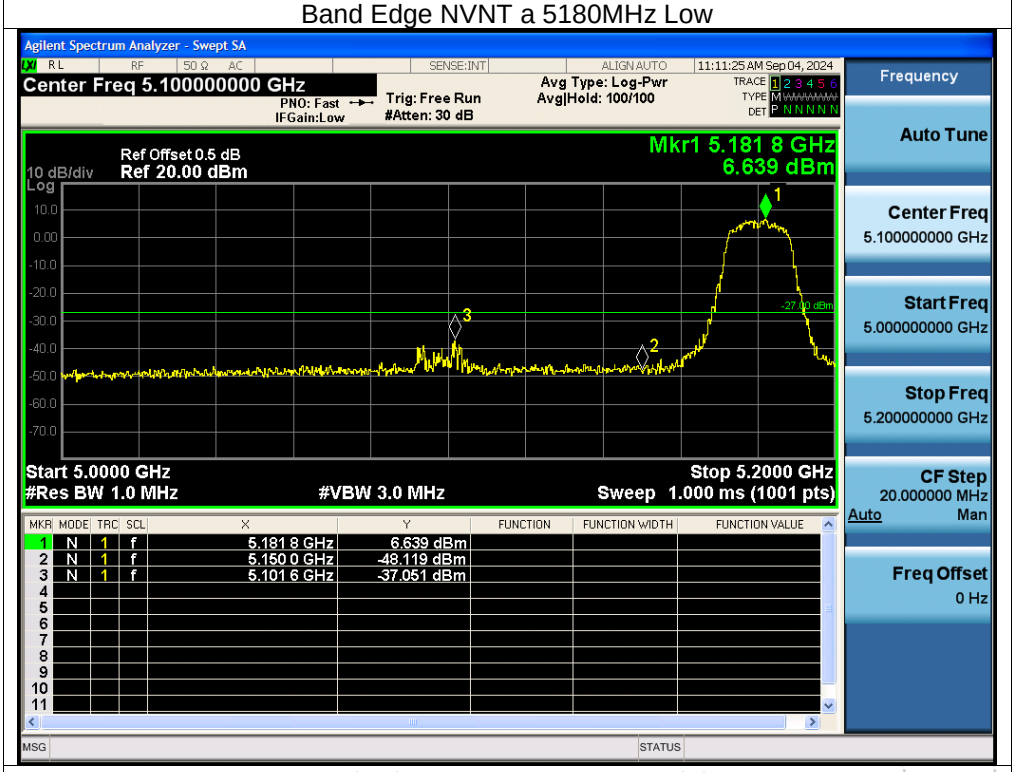
11.4 EUT Operating Conditions

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data

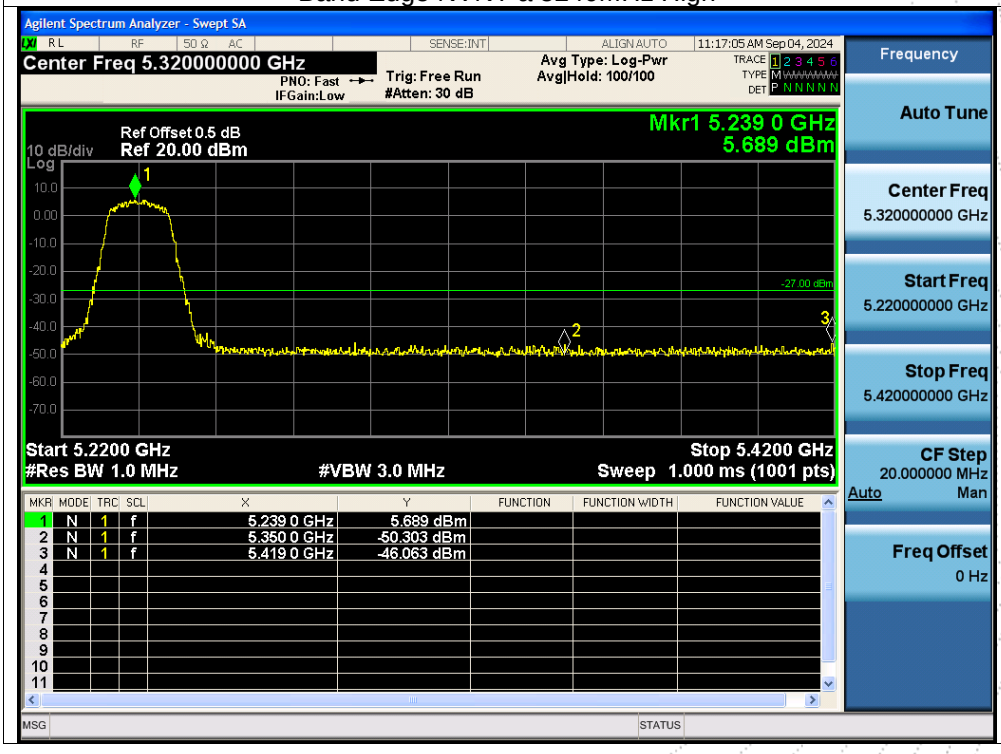
11.5 Test Result

Test Graphs

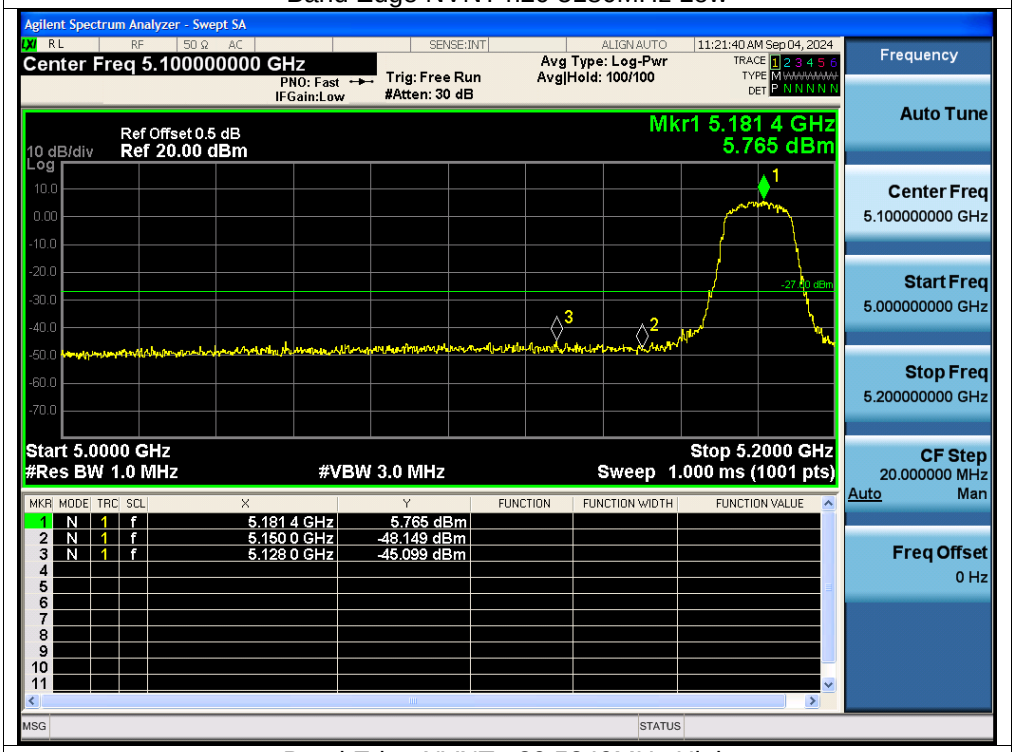
Band Edge NVNT a 5180MHz Low



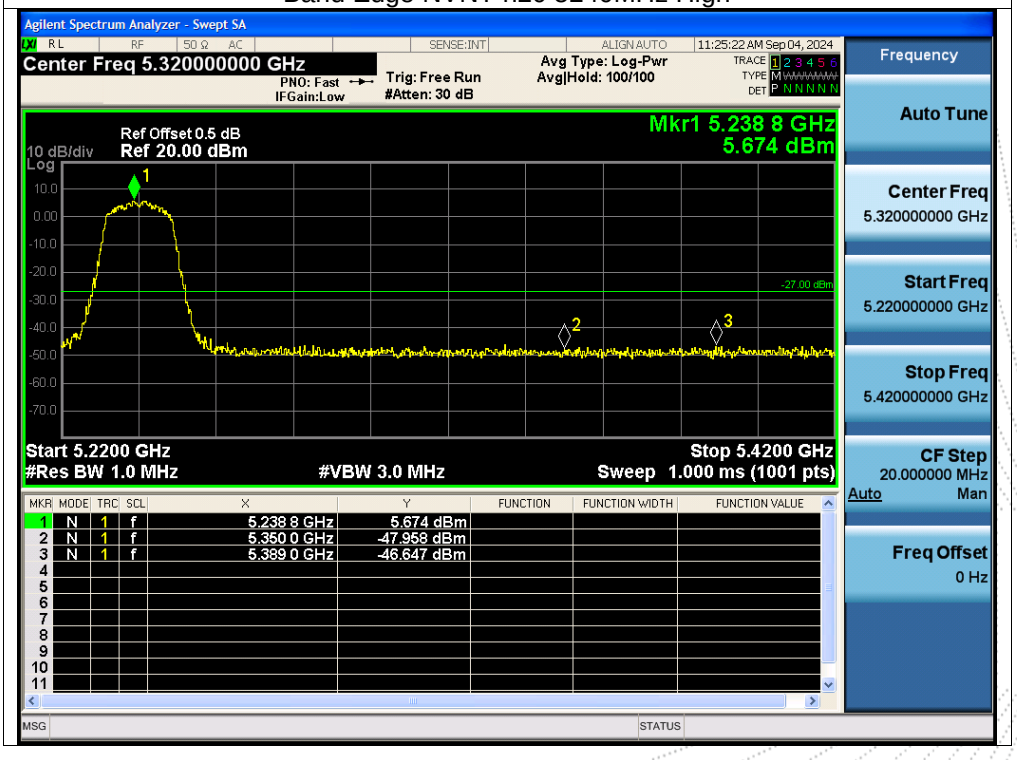
Band Edge NVNT a 5240MHz High



Band Edge NVNT n20 5180MHz Low

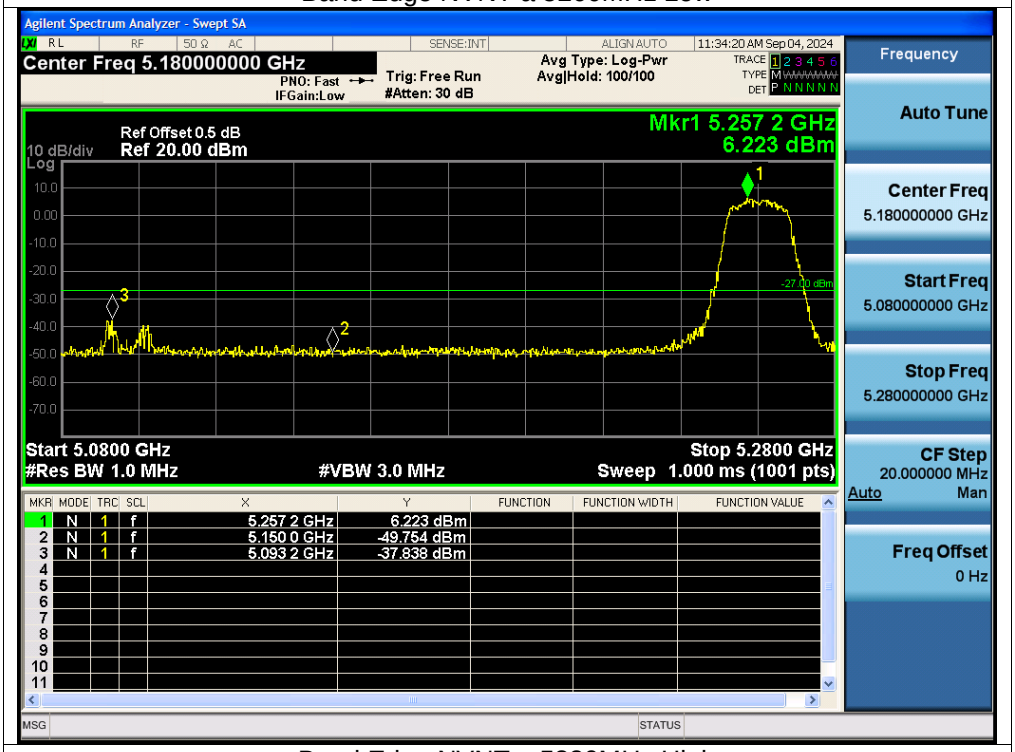


Band Edge NVNT n20 5240MHz High

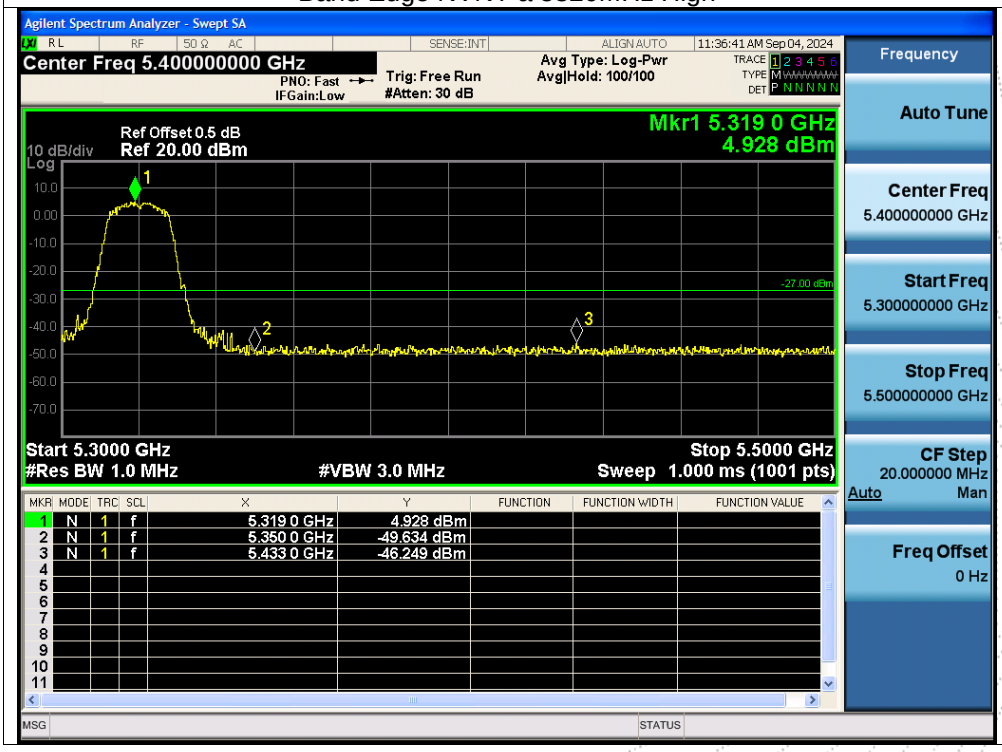


Test Graphs

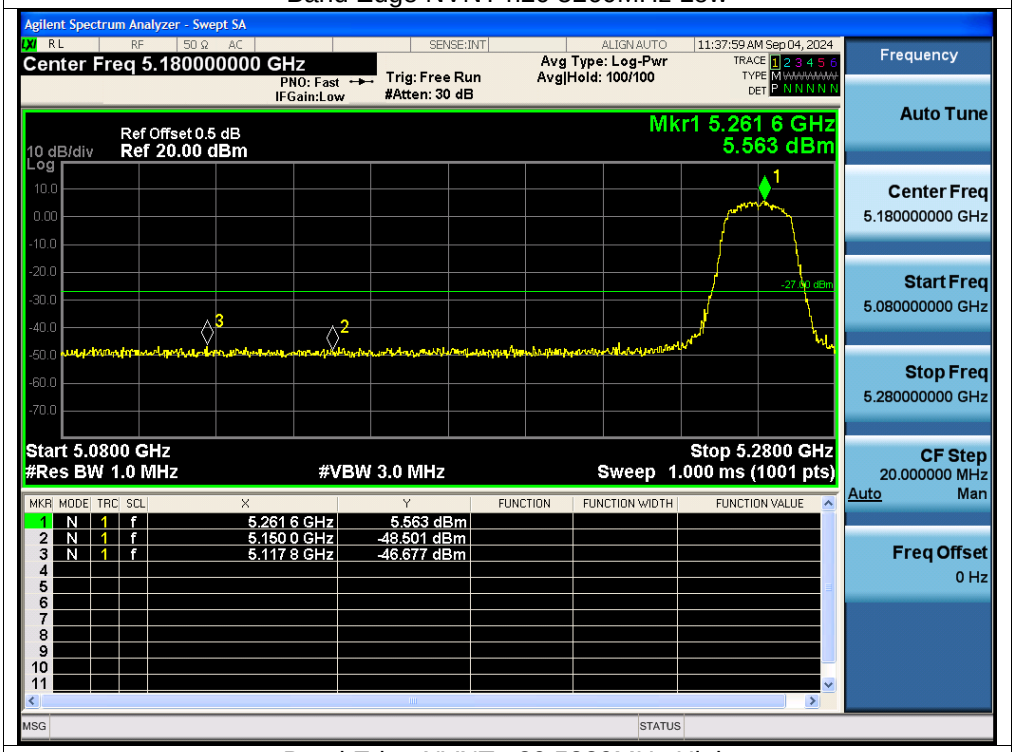
Band Edge NVNT a 5260MHz Low



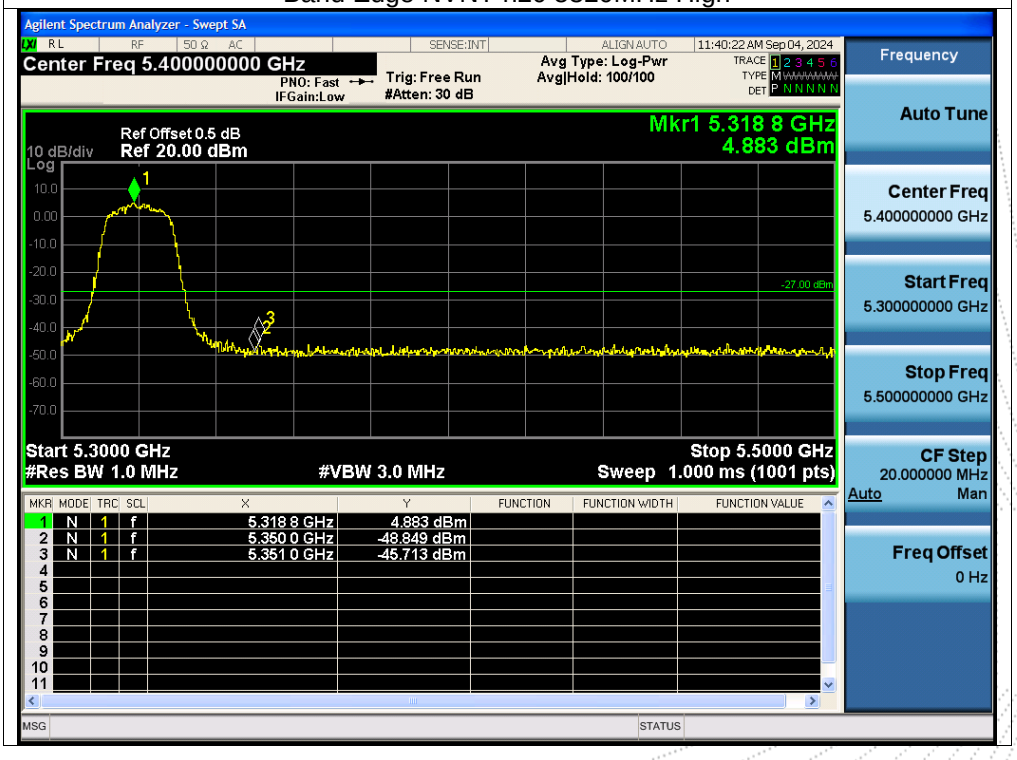
Band Edge NVNT a 5320MHz High



Band Edge NVNT n20 5260MHz Low

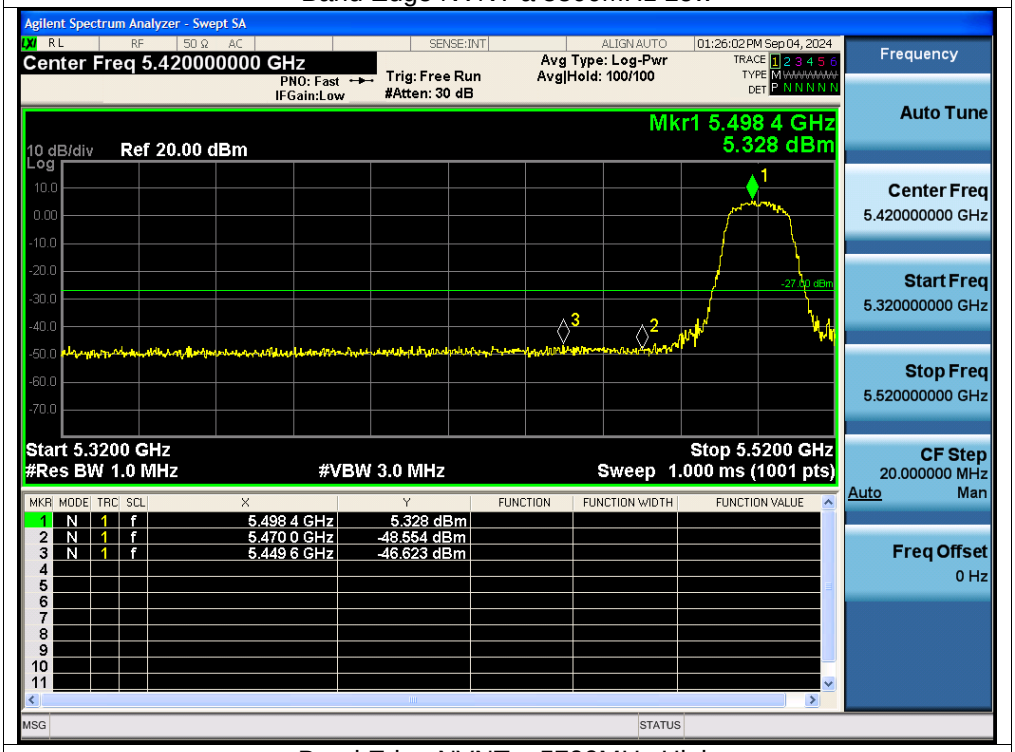


Band Edge NVNT n20 5320MHz High

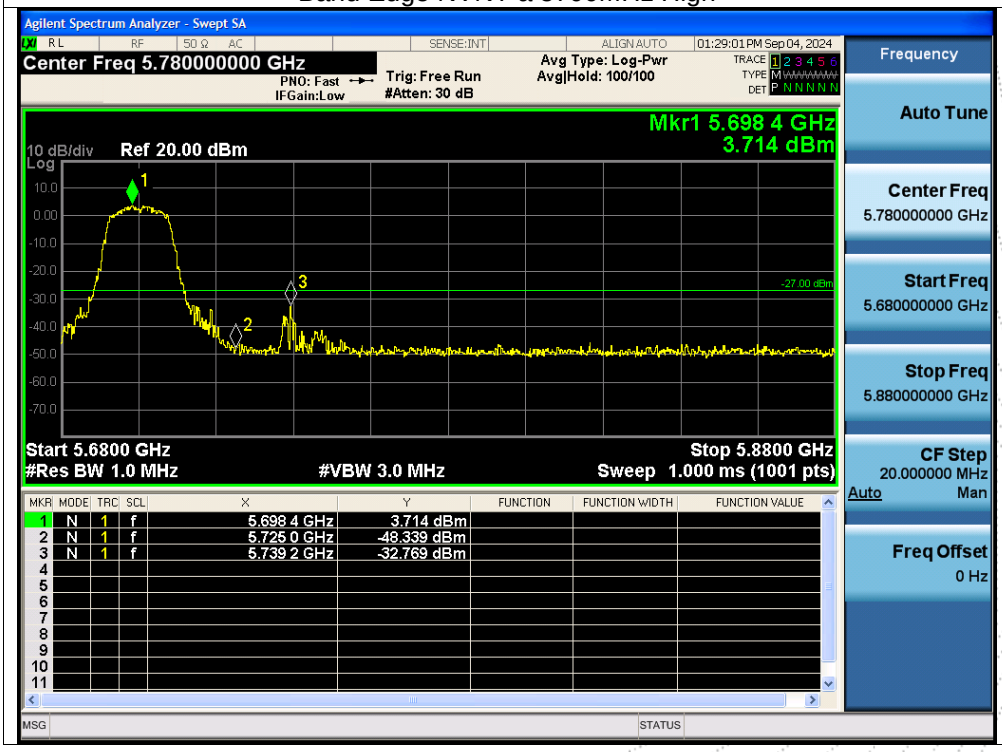


Test Graphs

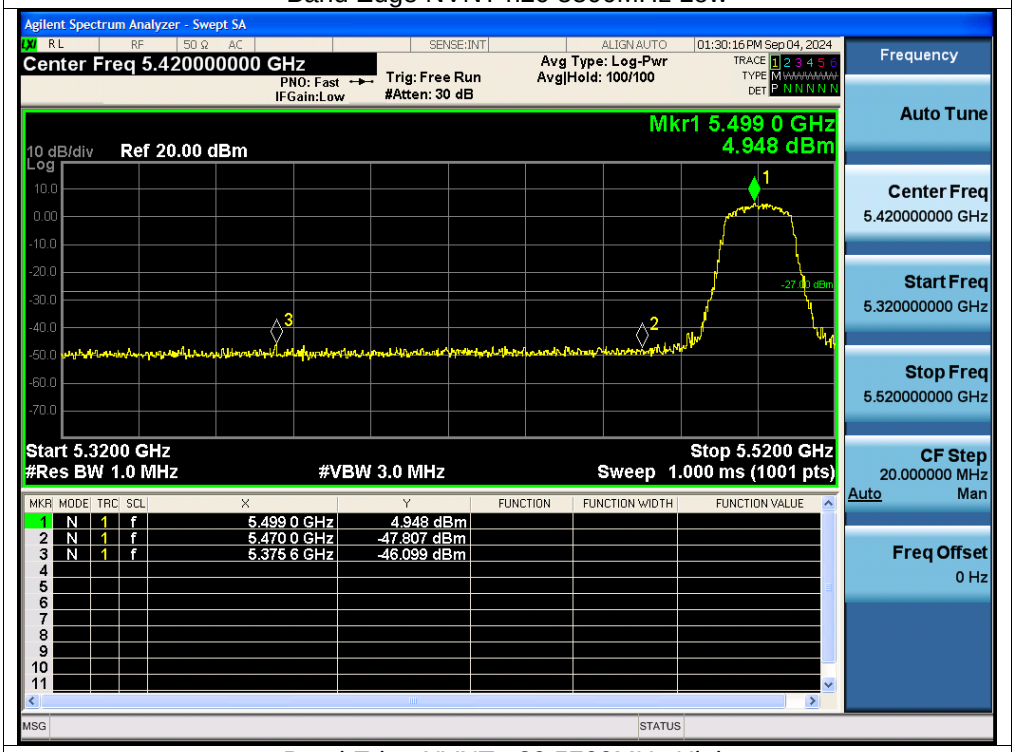
Band Edge NVNT a 5500MHz Low



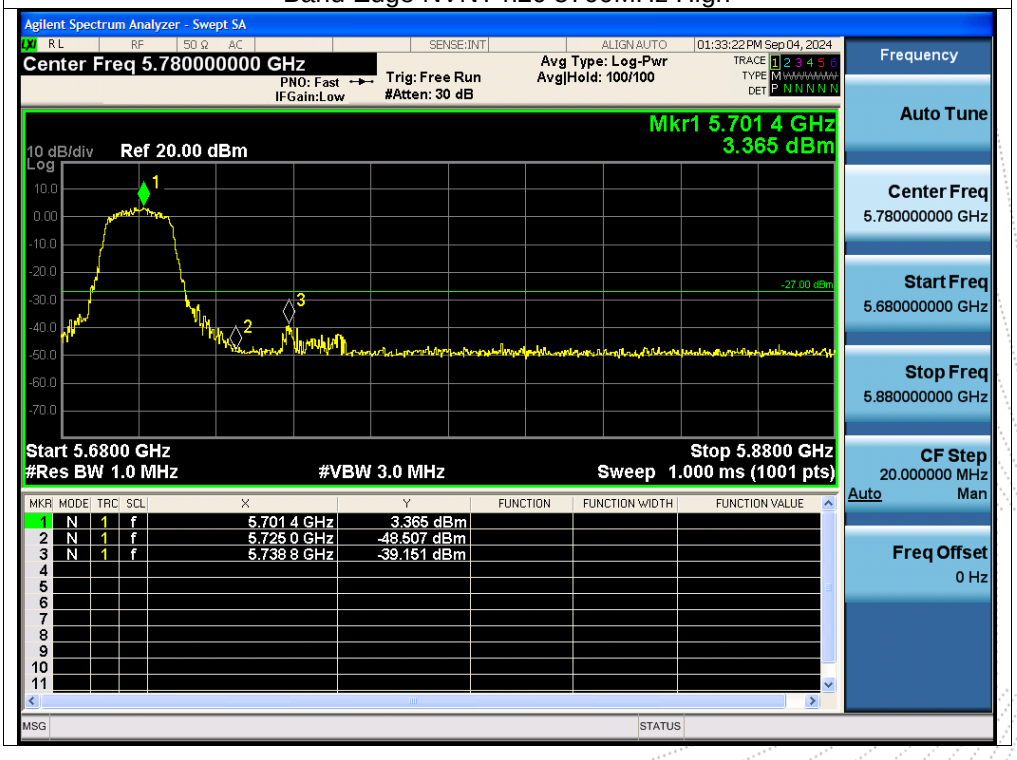
Band Edge NVNT a 5700MHz High



Band Edge NVNT n20 5500MHz Low

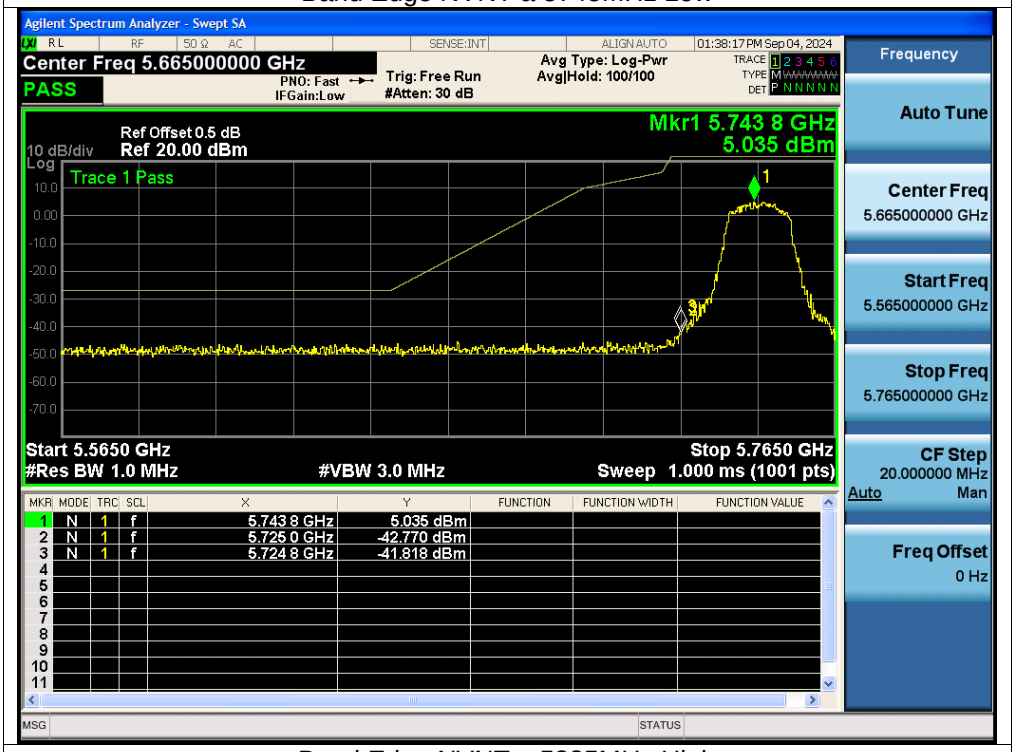


Band Edge NVNT n20 5700MHz High

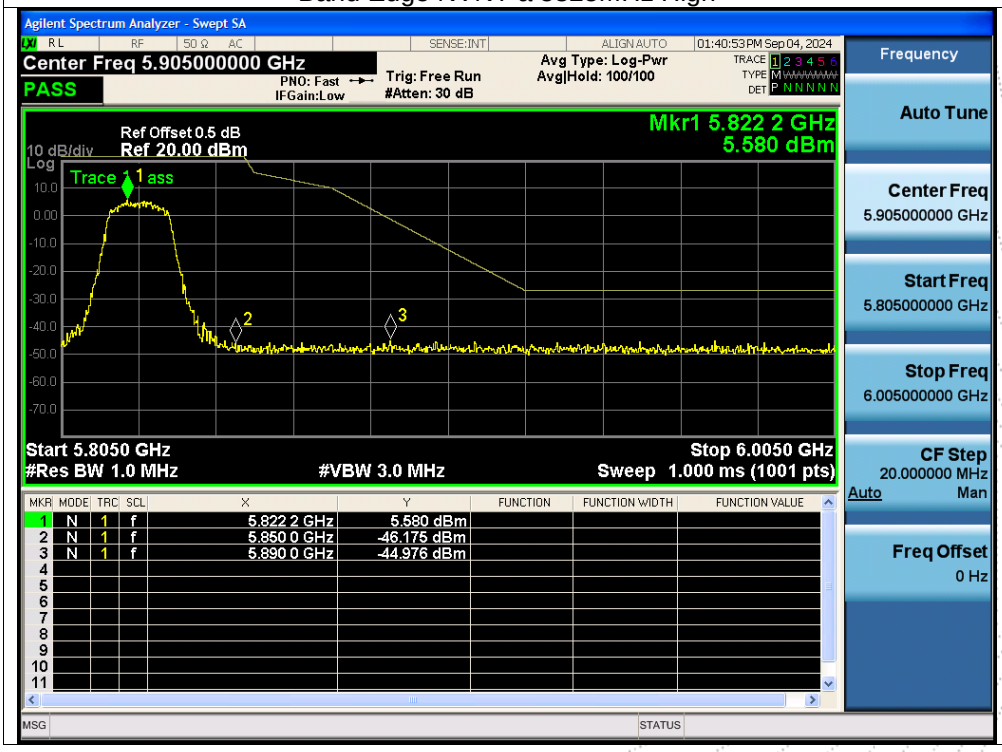


Test Graphs

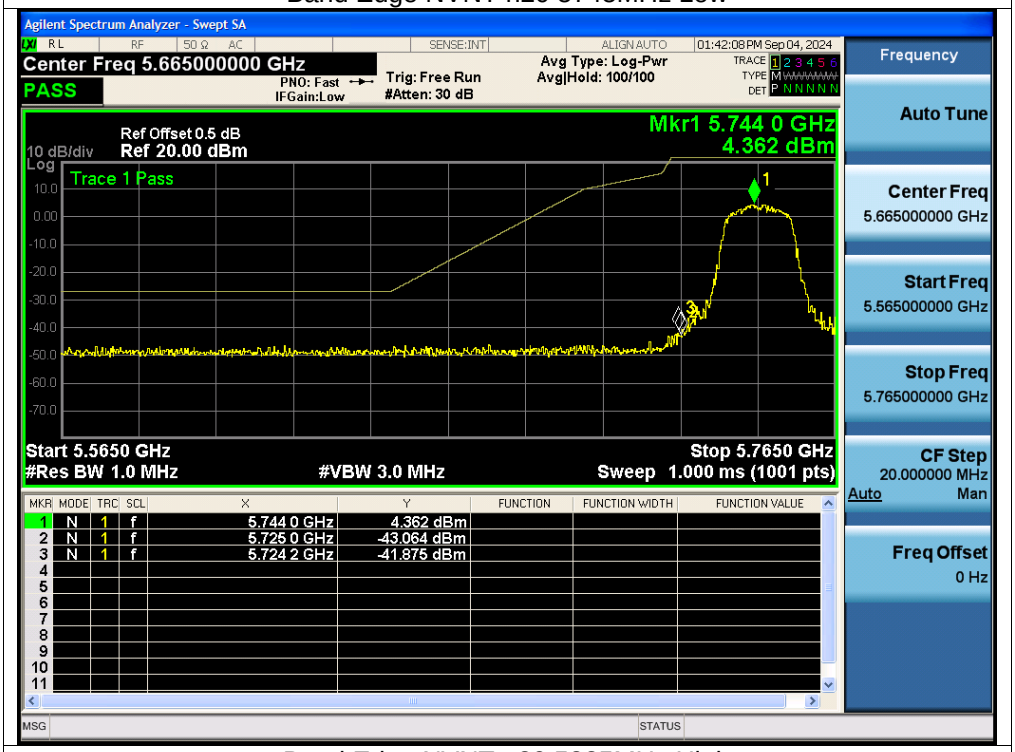
Band Edge NVNT a 5745MHz Low



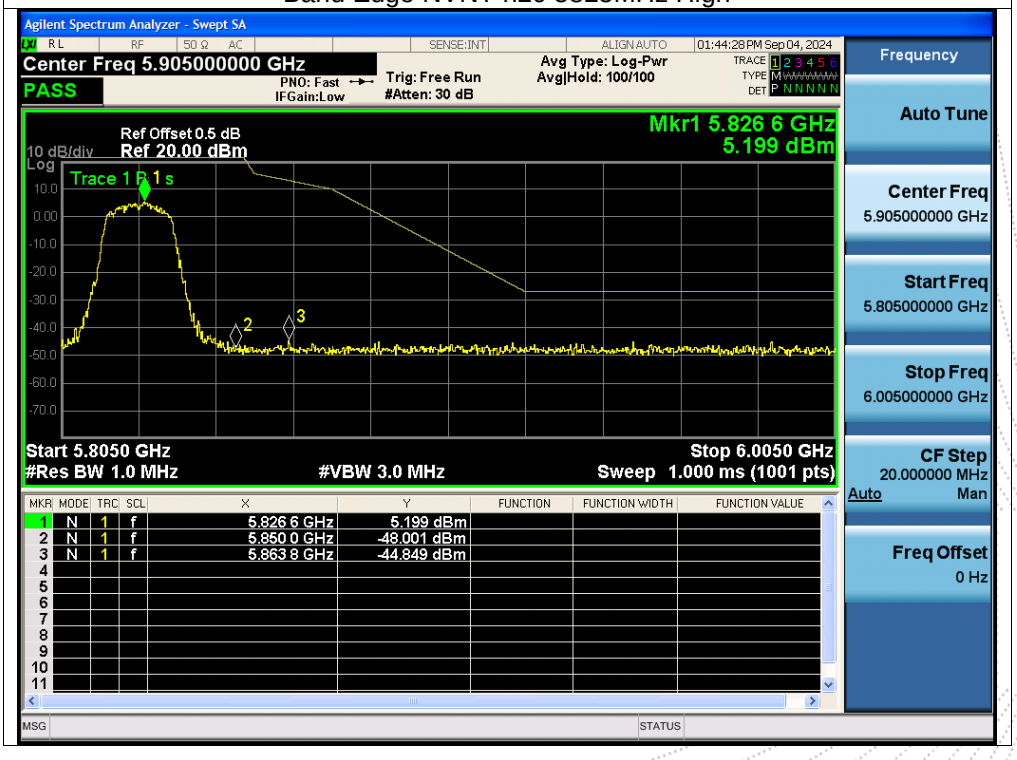
Band Edge NVNT a 5825MHz High



Band Edge NVNT n20 5745MHz Low

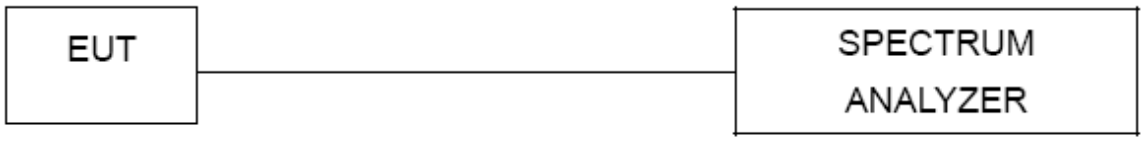


Band Edge NVNT n20 5825MHz High



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

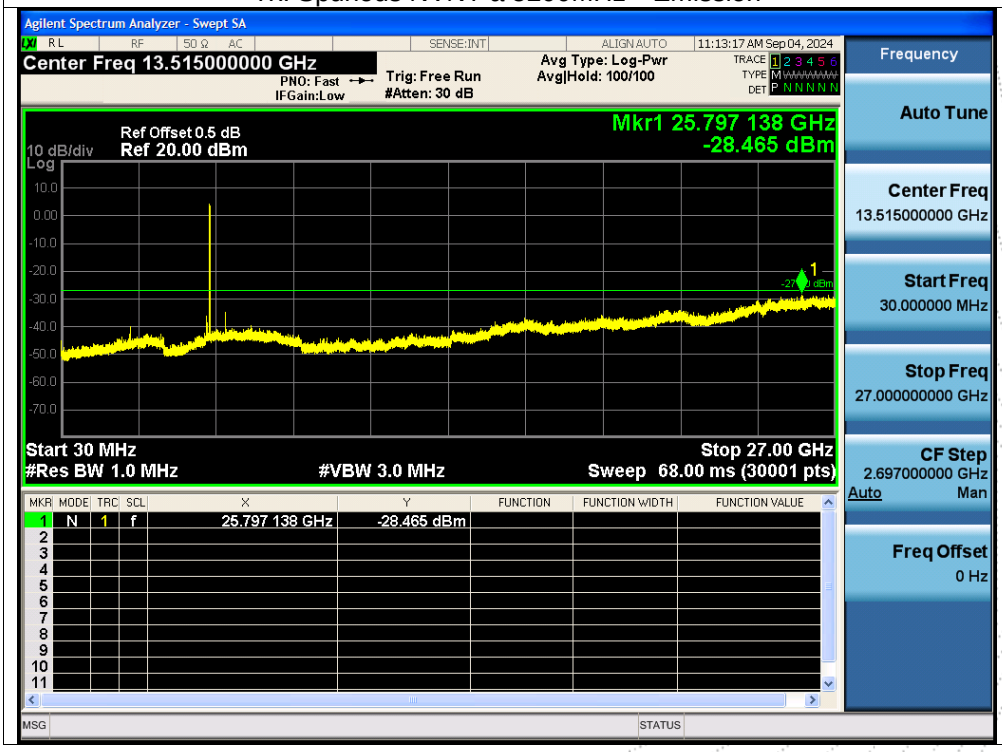
Remark: The measurement frequency range is from 9KHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the spurious emissions and bandege measurement data.

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.

Test Graphs

Tx. Spurious NVNT a 5180MHz Emission

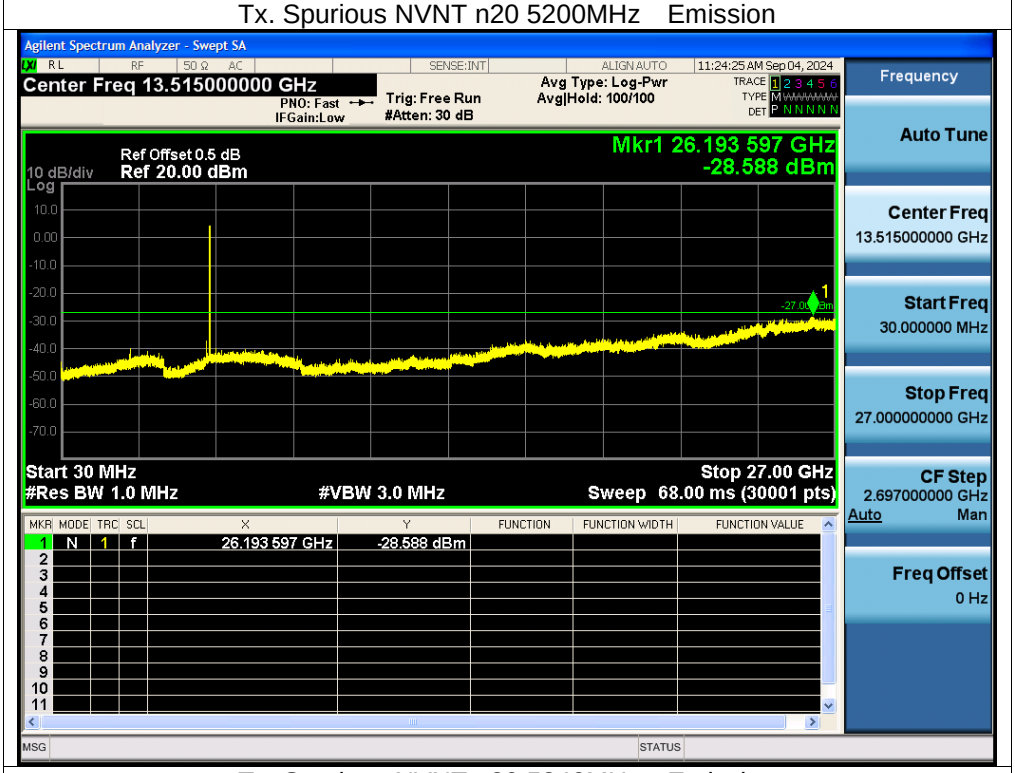
Tx. Spurious NVNT a 5200MHz Emission



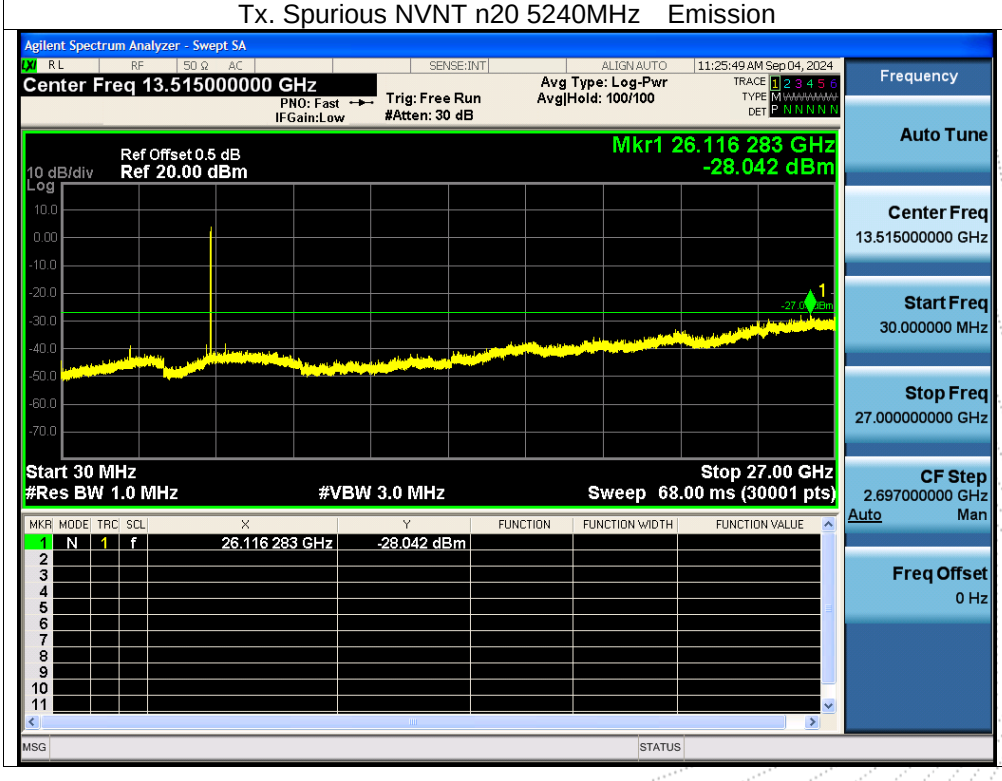
Tx. Spurious NVNT a 5240MHz Emission

Tx. Spurious NVNT n20 5180MHz Emission

Tx. Spurious NVNT n20 5200MHz Emission



Tx. Spurious NVNT n20 5240MHz Emission

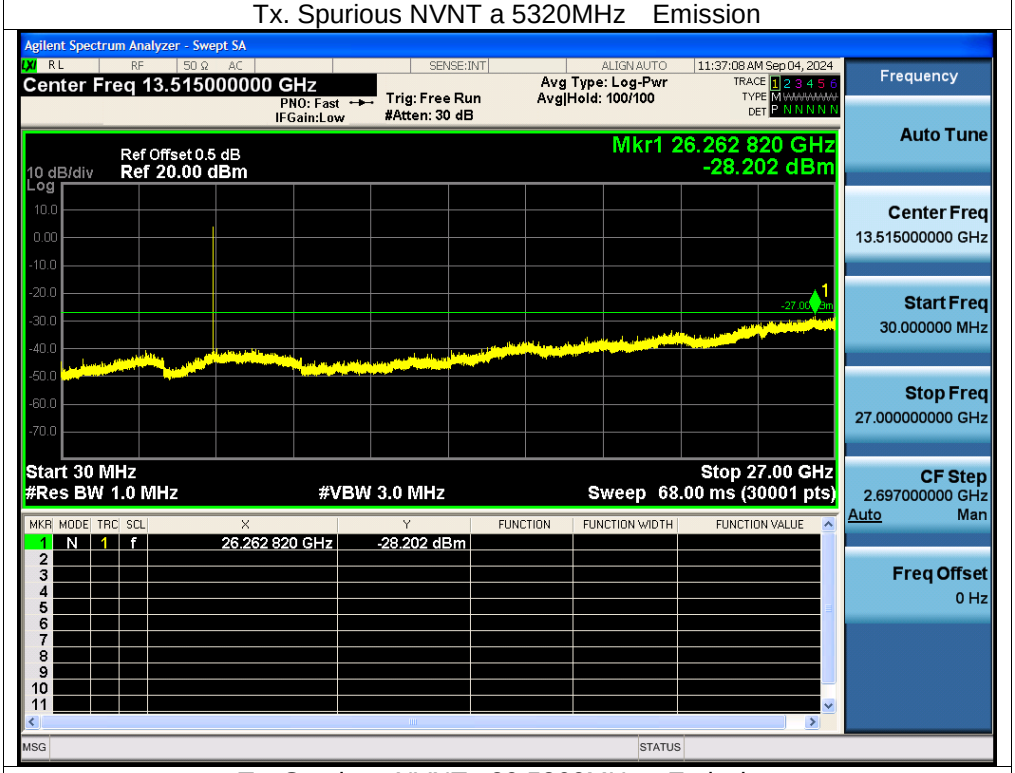


Test Graphs

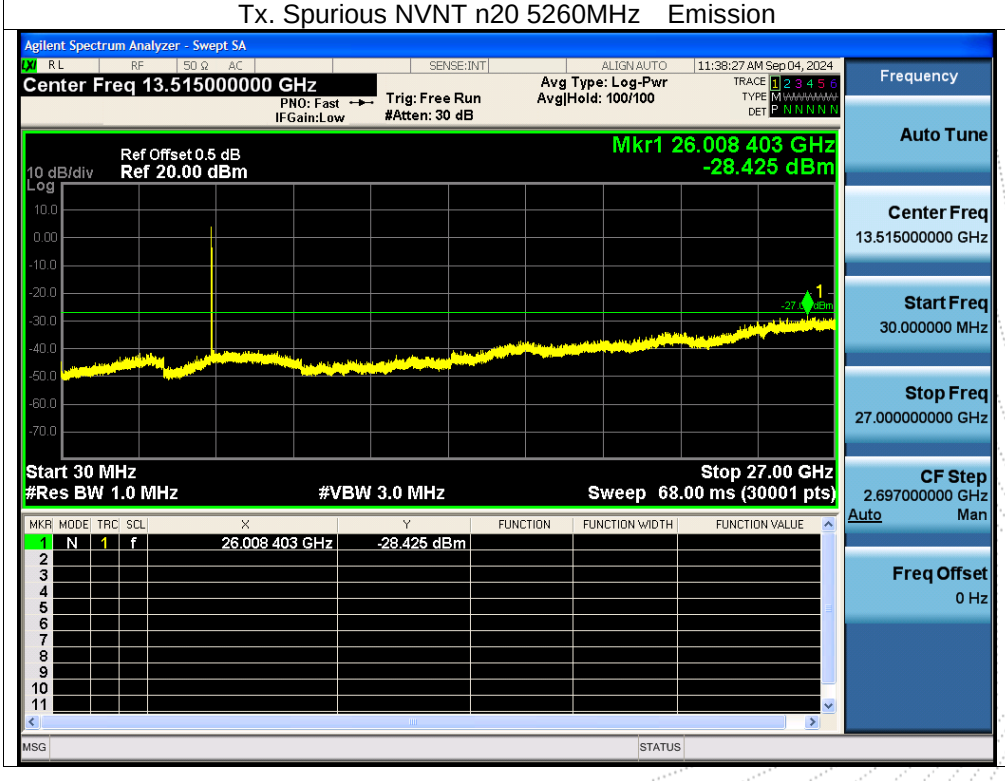
Tx. Spurious NVNT a 5260MHz Emission

Tx. Spurious NVNT a 5280MHz Emission

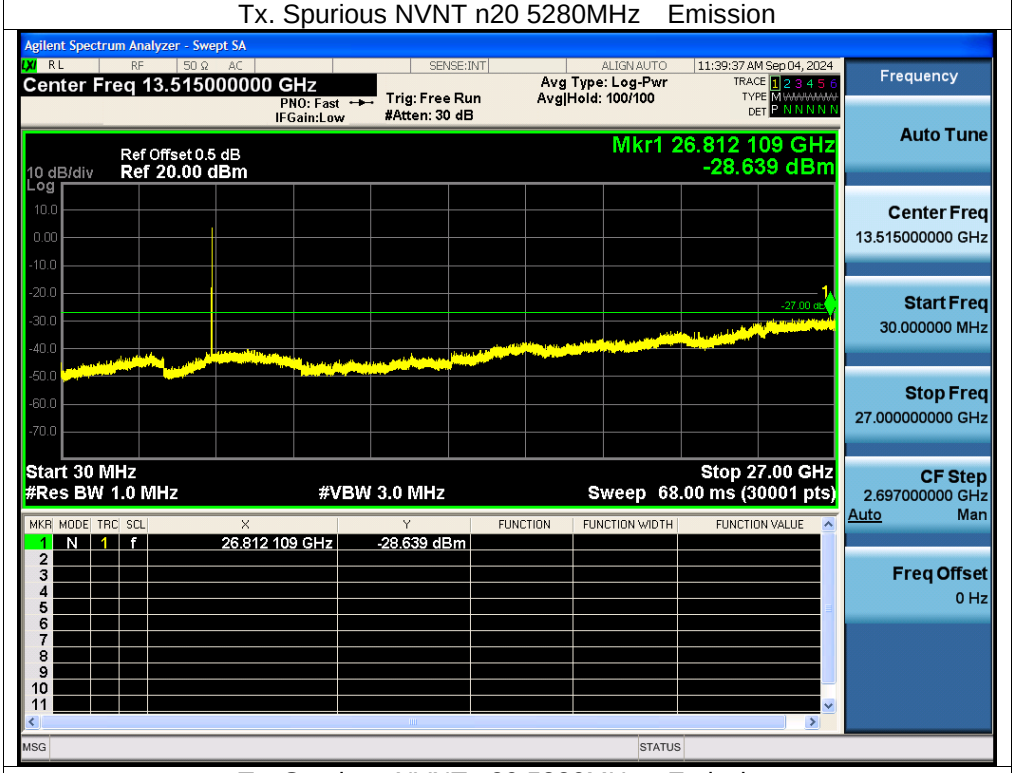
Tx. Spurious NVNT a 5320MHz Emission



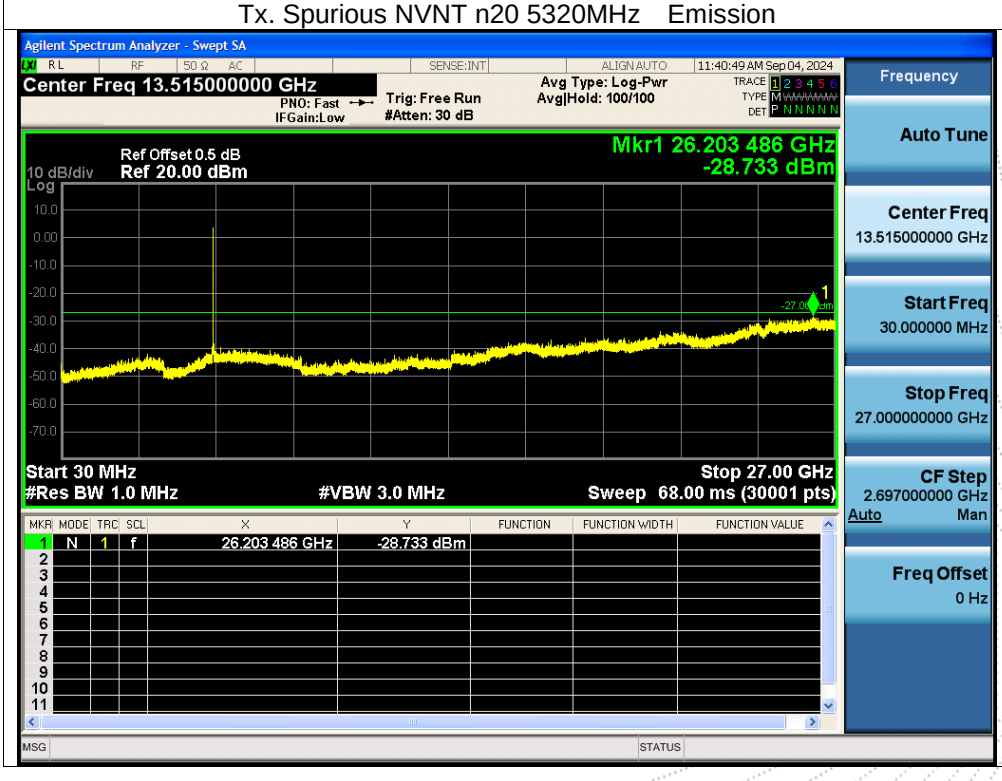
Tx. Spurious NVNT n20 5260MHz Emission



Tx. Spurious NVNT n20 5280MHz Emission



Tx. Spurious NVNT n20 5320MHz Emission



Test Graphs

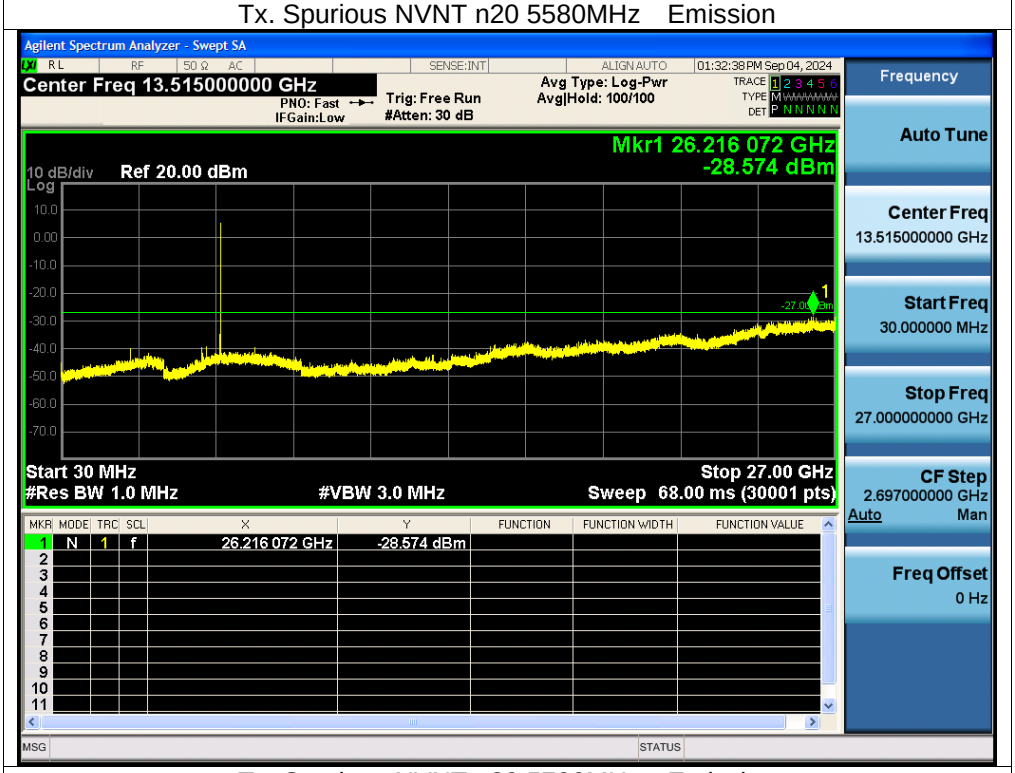
Tx. Spurious NVNT a 5500MHz Emission

Tx. Spurious NVNT a 5580MHz Emission

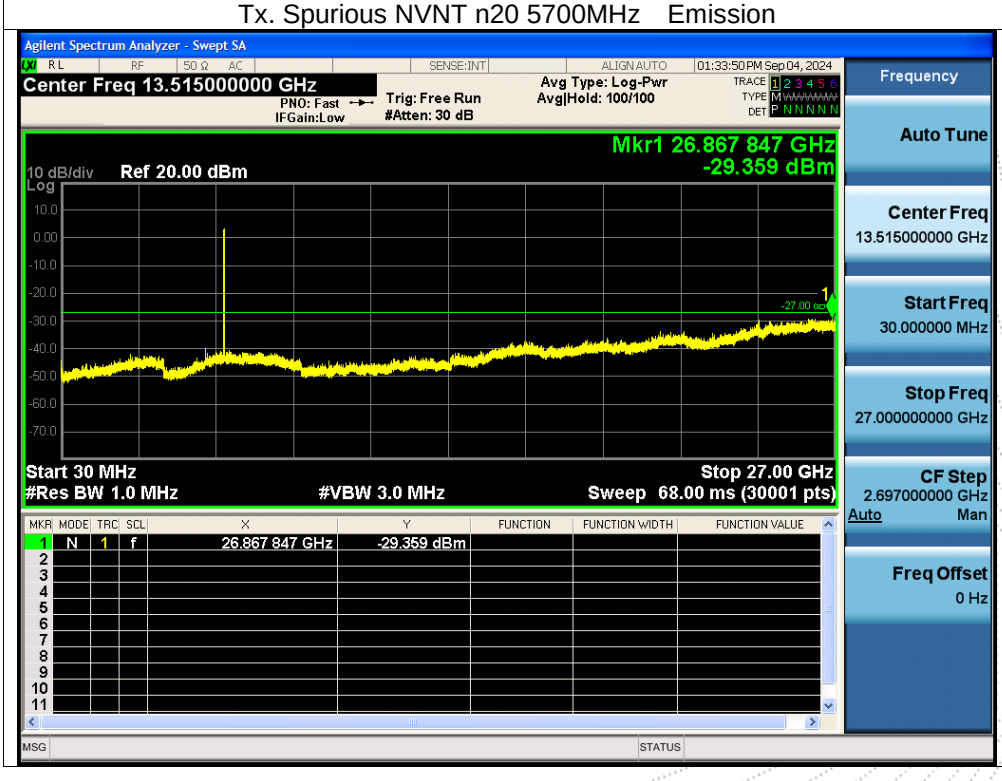
Tx. Spurious NVNT a 5700MHz Emission

Tx. Spurious NVNT n20 5500MHz Emission

Tx. Spurious NVNT n20 5580MHz Emission



Tx. Spurious NVNT n20 5700MHz Emission

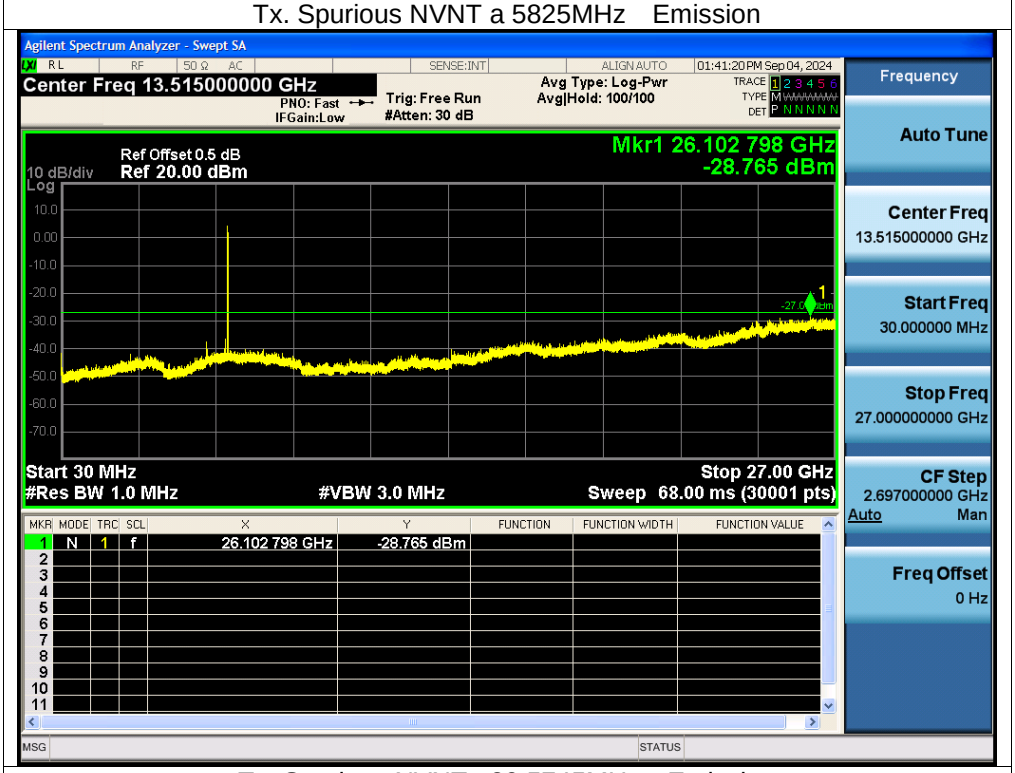


Test Graphs

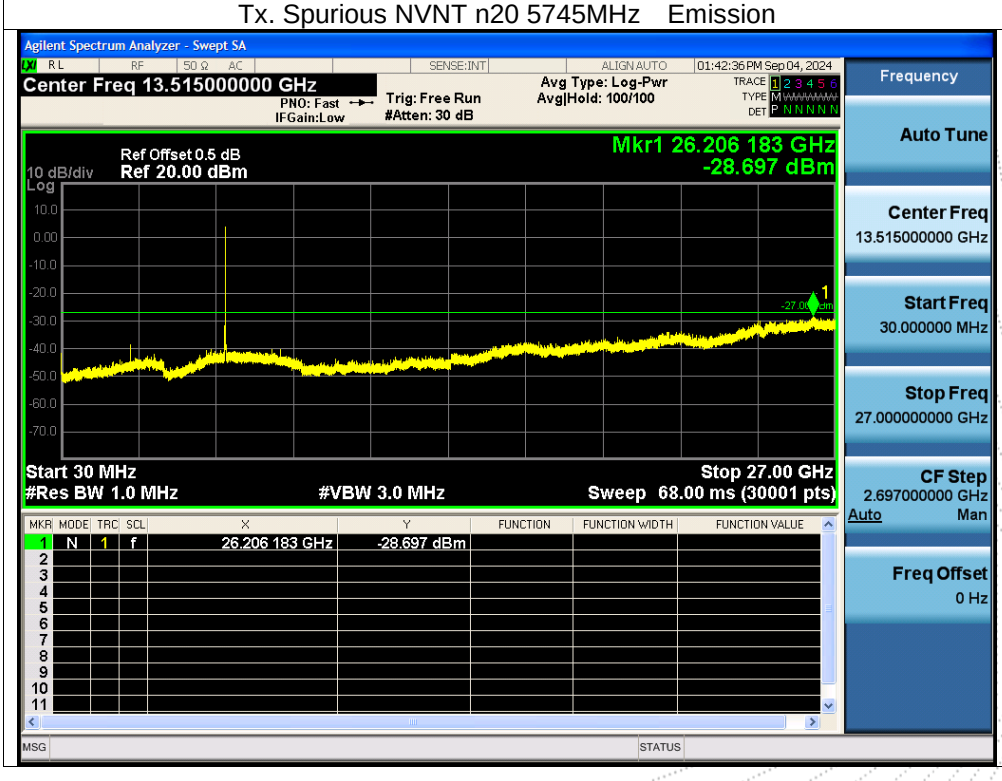
Tx. Spurious NVNT a 5745MHz Emission

Tx. Spurious NVNT a 5785MHz Emission

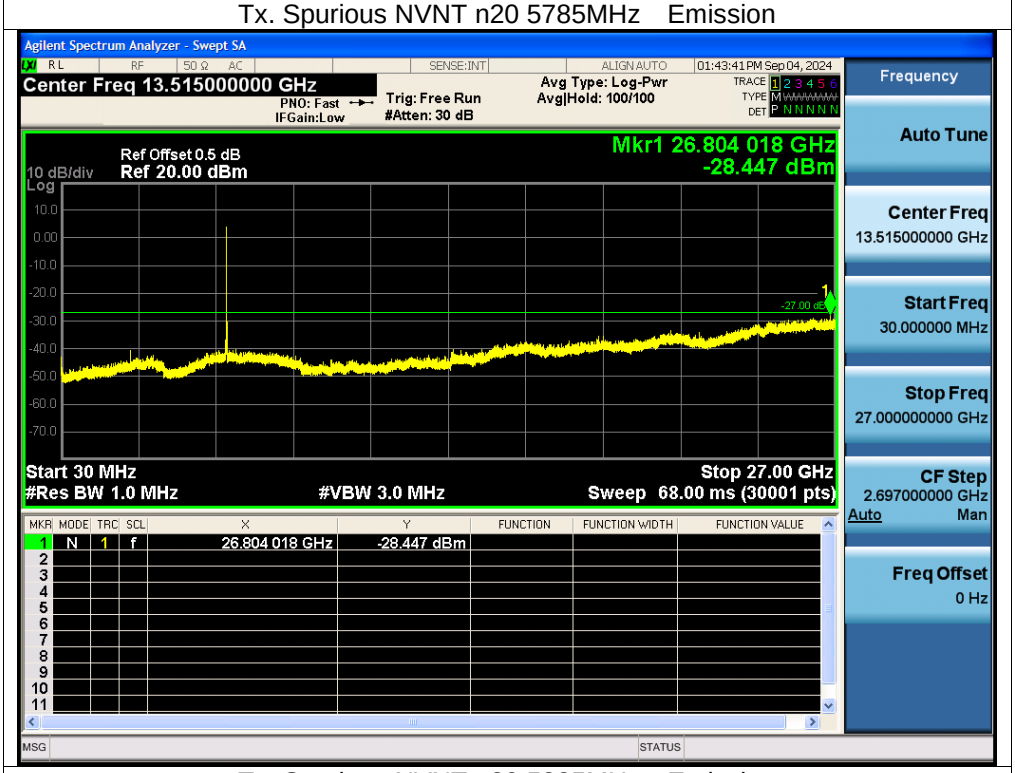
Tx. Spurious NVNT a 5825MHz Emission



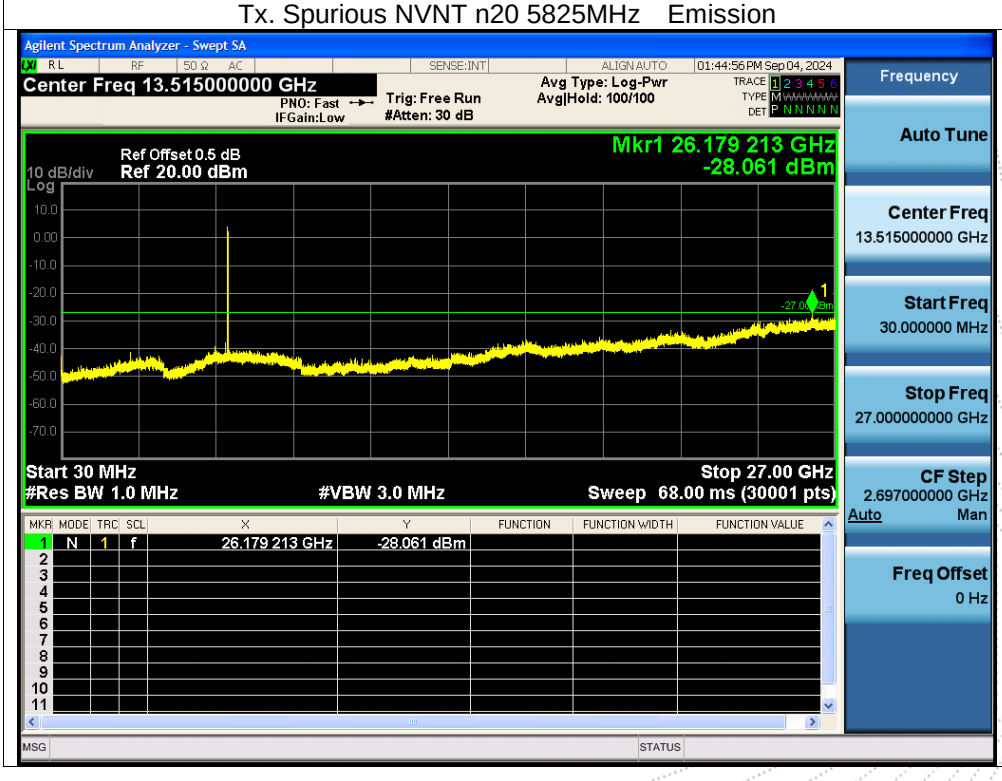
Tx. Spurious NVNT n20 5745MHz Emission



Tx. Spurious NVNT n20 5785MHz Emission

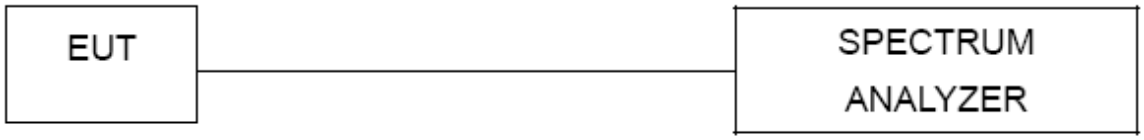


Tx. Spurious NVNT n20 5825MHz Emission



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%
Pressure:	101KPa	Test Voltage:	DC 12V
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)	12.00	5180.0069	5180	0.0069	1.3320
		V max (V)	13.80	5180.0119	5180	0.0119	2.2973
		V min (V)	10.20	5180.0099	5180	0.0099	1.9112
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)	12	T (°C)	-20	5180.0116	5180	0.0116	2.2394
		T (°C)	-10	5180.0048	5180	0.0048	0.9266
		T (°C)	0	5180.0041	5180	0.0041	0.7915
		T (°C)	10	5180.0094	5180	0.0094	1.8147
		T (°C)	20	5180.0015	5180	0.0015	0.2896
		T (°C)	30	5180.0028	5180	0.0028	0.5405
		T (°C)	40	5180.0008	5180	0.0008	0.1544
		T (°C)	50	5180.0115	5180	0.0115	2.2201
		T (°C)	60	5180.0086	5180	0.0086	1.6602
		T (°C)	70	5180.0050	5180	0.0050	0.9653
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)	12.00	5200.0016	5200	0.0016	0.3077
		V max (V)	13.80	5200.0073	5200	0.0073	1.4038
		V min (V)	10.20	5200.0053	5200	0.0053	1.0192
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)	12	T (°C)	-20	5200.00840	5200	0.00840	1.6154
		T (°C)	-10	5200.01320	5200	0.01320	2.5385
		T (°C)	0	5200.00940	5200	0.00940	1.8077
		T (°C)	10	5200.00360	5200	0.00360	0.6923
		T (°C)	20	5200.00790	5200	0.00790	1.5192
		T (°C)	30	5200.01300	5200	0.01300	2.5000
		T (°C)	40	5200.00080	5200	0.00080	0.1538
		T (°C)	50	5200.00130	5200	0.00130	0.2500
		T (°C)	60	5200.00940	5200	0.00940	1.8077
		T (°C)	70	5200.01330	5200	0.01330	2.5577
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)	12.00	5240.0118	5240	0.0118	2.2519
		V max (V)	13.80	5240.0015	5240	0.0015	0.2863
		V min (V)	10.20	5240.0016	5240	0.0016	0.3053
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)	12	T (°C)	-20	5240.0086	5240	0.0086	1.6412
		T (°C)	-10	5240.0117	5240	0.0117	2.2328
		T (°C)	0	5240.0068	5240	0.0068	1.2977
		T (°C)	10	5240.0044	5240	0.0044	0.8397
		T (°C)	20	5240.0096	5240	0.0096	1.8321
		T (°C)	30	5240.0032	5240	0.0032	0.6107
		T (°C)	40	5240.0021	5240	0.0021	0.4008
		T (°C)	50	5240.0018	5240	0.0018	0.3435
		T (°C)	60	5240.0010	5240	0.0010	0.1908
		T (°C)	70	5240.0134	5240	0.0134	2.5573
Limits				5150-5250 MHz			
Result				Complies			

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	DC 12V
Test Mode:	TX (5.3G) Mode Frequency U-NII-2A (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)	12.00	5260.0056	5260	0.0056	1.0646
		V max (V)	13.80	5260.0024	5260	0.0024	0.4563
		V min (V)	10.20	5260.0007	5260	0.0007	0.1331
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)	12	T (°C)	-20	5260.0088	5260	0.0088	1.6730
		T (°C)	-10	5260.0066	5260	0.0066	1.2548
		T (°C)	0	5260.0022	5260	0.0022	0.4183
		T (°C)	10	5260.0063	5260	0.0063	1.1977
		T (°C)	20	5260.0126	5260	0.0126	2.3954
		T (°C)	30	5260.0094	5260	0.0094	1.7871
		T (°C)	40	5260.0127	5260	0.0127	2.4144
		T (°C)	50	5260.0107	5260	0.0107	2.0342
		T (°C)	60	5260.0108	5260	0.0108	2.0532
		T (°C)	70	5260.0027	5260	0.0027	0.5133
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)	12.00	5280.0046	5280	0.0046	0.8712
		V max (V)	13.80	5280.0050	5280	0.0050	0.9470
		V min (V)	10.20	5280.0003	5280	0.0003	0.0568
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)	12	T (°C)	-20	5280.00320	5280	0.00320	0.6061
		T (°C)	-10	5280.01110	5280	0.01110	2.1023
		T (°C)	0	5280.00110	5280	0.00110	0.2083
		T (°C)	10	5280.00920	5280	0.00920	1.7424
		T (°C)	20	5280.00700	5280	0.00700	1.3258
		T (°C)	30	5280.00410	5280	0.00410	0.7765
		T (°C)	40	5280.01040	5280	0.01040	1.9697
		T (°C)	50	5280.01150	5280	0.01150	2.1780
		T (°C)	60	5280.01030	5280	0.01030	1.9508
		T (°C)	70	5280.00780	5280	0.00780	1.4773
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)	12.00	5320.0107	5320	0.0107	2.0113
		V max (V)	13.80	5320.0131	5320	0.0131	2.4624
		V min (V)	10.20	5320.0082	5320	0.0082	1.5414
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)	12	T (°C)	-20	5320.0128	5320	0.0128	2.4060
		T (°C)	-10	5320.0115	5320	0.0115	2.1617
		T (°C)	0	5320.0038	5320	0.0038	0.7143
		T (°C)	10	5320.0073	5320	0.0073	1.3722
		T (°C)	20	5320.0030	5320	0.0030	0.5639
		T (°C)	30	5320.0007	5320	0.0007	0.1316
		T (°C)	40	5320.0089	5320	0.0089	1.6729
		T (°C)	50	5320.0075	5320	0.0075	1.4098
		T (°C)	60	5320.0103	5320	0.0103	1.9361
		T (°C)	70	5320.0042	5320	0.0042	0.7895
Limits				5260-5320 MHz			
Result				Complies			

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	DC 12V
Test Mode:	TX (5.6G) Mode Frequency U-NII-2C (5500-5700MHz)		

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5500MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	12.00	5500.0125	5500	0.0125	2.2727
		V max (V)	13.80	5500.0081	5500	0.0081	1.4727
		V min (V)	10.20	5500.0059	5500	0.0059	1.0727
Limits				5500-5700 MHz			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5500MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	12	T (°C)	-20	5500.0124	5500	0.0124	2.2545
		T (°C)	-10	5500.0093	5500	0.0093	1.6909
		T (°C)	0	5500.0058	5500	0.0058	1.0545
		T (°C)	10	5500.0059	5500	0.0059	1.0727
		T (°C)	20	5500.0094	5500	0.0094	1.7091
		T (°C)	30	5500.0013	5500	0.0013	0.2364
		T (°C)	40	5500.0063	5500	0.0063	1.1455
		T (°C)	50	5500.0090	5500	0.0090	1.6364
		T (°C)	60	5500.0113	5500	0.0113	2.0545
		T (°C)	70	5500.0091	5500	0.0091	1.6545
Limits				5500-5700 MHz			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5580MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	12.00	5580.0074	5580	0.0074	1.3262
		V max (V)	13.80	5580.0097	5580	0.0097	1.7384
		V min (V)	10.20	5580.0085	5580	0.0085	1.5233
Limits				5500-5700 MHz			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5580MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	12	T (°C)	-20	5580.00090	5580	0.00090	0.1613
		T (°C)	-10	5580.00780	5580	0.00780	1.3978
		T (°C)	0	5580.00800	5580	0.00800	1.4337
		T (°C)	10	5580.00770	5580	0.00770	1.3799
		T (°C)	20	5580.00770	5580	0.00770	1.3799
		T (°C)	30	5580.00110	5580	0.00110	0.1971
		T (°C)	40	5580.00550	5580	0.00550	0.9857
		T (°C)	50	5580.00610	5580	0.00610	1.0932
		T (°C)	60	5580.00690	5580	0.00690	1.2366
		T (°C)	70	5580.00350	5580	0.00350	0.6272
Limits				5500-5700 MHz			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5700MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	12.00	5700.0112	5700	0.0112	1.9649
		V max (V)	13.80	5700.0078	5700	0.0078	1.3684
		V min (V)	10.20	5700.0053	5700	0.0053	0.9298
Limits				5725-5850 MHz			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5700MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	12	T (°C)	-20	5700.0022	5700	0.0022	0.3860
		T (°C)	-10	5700.0084	5700	0.0084	1.4737
		T (°C)	0	5700.0012	5700	0.0012	0.2105
		T (°C)	10	5700.0075	5700	0.0075	1.3158
		T (°C)	20	5700.0026	5700	0.0026	0.4561
		T (°C)	30	5700.0111	5700	0.0111	1.9474
		T (°C)	40	5700.0084	5700	0.0084	1.4737
		T (°C)	50	5700.0092	5700	0.0092	1.6140
		T (°C)	60	5700.0033	5700	0.0033	0.5789
		T (°C)	70	5700.0109	5700	0.0109	1.9123
Limits				5725-5850 MHz			
Result				Complies			

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	DC 12V
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)	12.00	5745.00310	5745	0.00310	0.5396
		V max (V)	13.80	5745.00650	5745	0.00650	1.1314
		V min (V)	10.20	5745.01210	5745	0.01210	2.1062
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)	12	T (°C)	-20	5745.01190	5745	0.01190	2.0714
		T (°C)	-10	5745.00850	5745	0.00850	1.4795
		T (°C)	0	5745.00610	5745	0.00610	1.0618
		T (°C)	10	5745.01030	5745	0.01030	1.7929
		T (°C)	20	5745.01350	5745	0.01350	2.3499
		T (°C)	30	5745.00310	5745	0.00310	0.5396
		T (°C)	40	5745.00160	5745	0.00160	0.2785
		T (°C)	50	5745.00140	5745	0.00140	0.2437
		T (°C)	60	5745.00990	5745	0.00990	1.7232
		T (°C)	70	5745.00470	5745	0.00470	0.8181
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)	12.00	5785.00770	5785	0.00770	1.3310
		V max (V)	13.80	5785.01200	5785	0.01200	2.0743
		V min (V)	10.20	5785.00580	5785	0.00580	1.0026
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)	12	T (°C)	-20	5785.00100	5785	0.00100	0.1729
		T (°C)	-10	5785.01120	5785	0.01120	1.9360
		T (°C)	0	5785.01130	5785	0.01130	1.9533
		T (°C)	10	5785.00160	5785	0.00160	0.2766
		T (°C)	20	5785.00070	5785	0.00070	0.1210
		T (°C)	30	5785.01100	5785	0.01100	1.9015
		T (°C)	40	5785.00830	5785	0.00830	1.4347
		T (°C)	50	5785.01070	5785	0.01070	1.8496
		T (°C)	60	5785.00790	5785	0.00790	1.3656
		T (°C)	70	5785.00800	5785	0.00800	1.3829
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)	12.00	5825.00840	5825	0.00840	1.4421
		V max (V)	13.80	5825.01320	5825	0.01320	2.2661
		V min (V)	10.20	5825.00360	5825	0.00360	0.6180
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)	12	T (°C)	-20	5825.00310	5825	0.00310	0.5322
		T (°C)	-10	5825.00770	5825	0.00770	1.3219
		T (°C)	0	5825.00270	5825	0.00270	0.4635
		T (°C)	10	5825.00580	5825	0.00580	0.9957
		T (°C)	20	5825.00440	5825	0.00440	0.7554
		T (°C)	30	5825.00280	5825	0.00280	0.4807
		T (°C)	40	5825.00280	5825	0.00280	0.4807
		T (°C)	50	5825.00650	5825	0.00650	1.1159
		T (°C)	60	5825.00600	5825	0.00600	1.0300
		T (°C)	70	5825.01300	5825	0.01300	2.2318
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

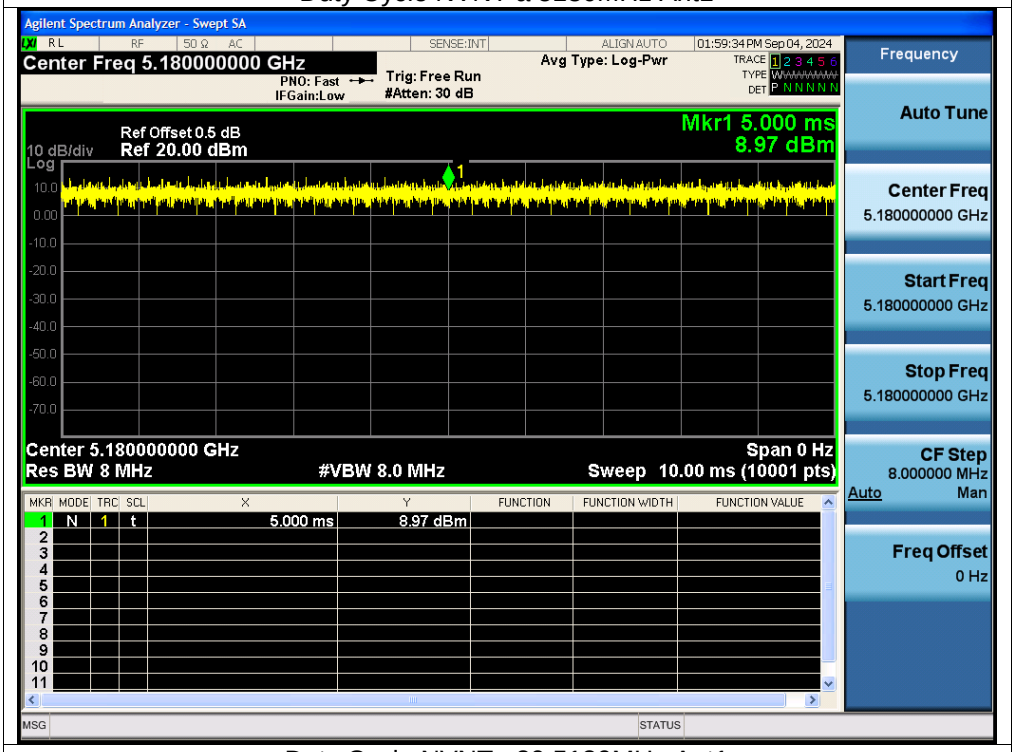
14.4 Test Result

5.1G

Condition	Mode	Frequency (MHz)	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	a	5180	100	0	0
NVNT	n20	5180	100	0	0

Test Graphs

Duty Cycle NVNT a 5180MHz Ant1



Duty Cycle NVNT n20 5180MHz Ant1