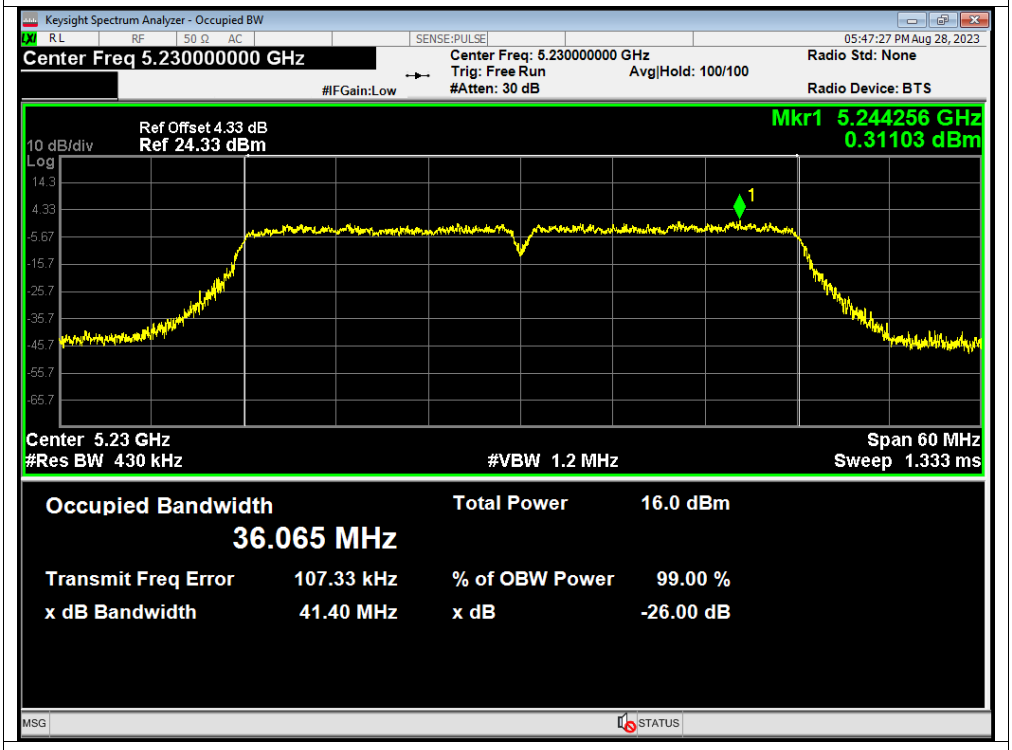
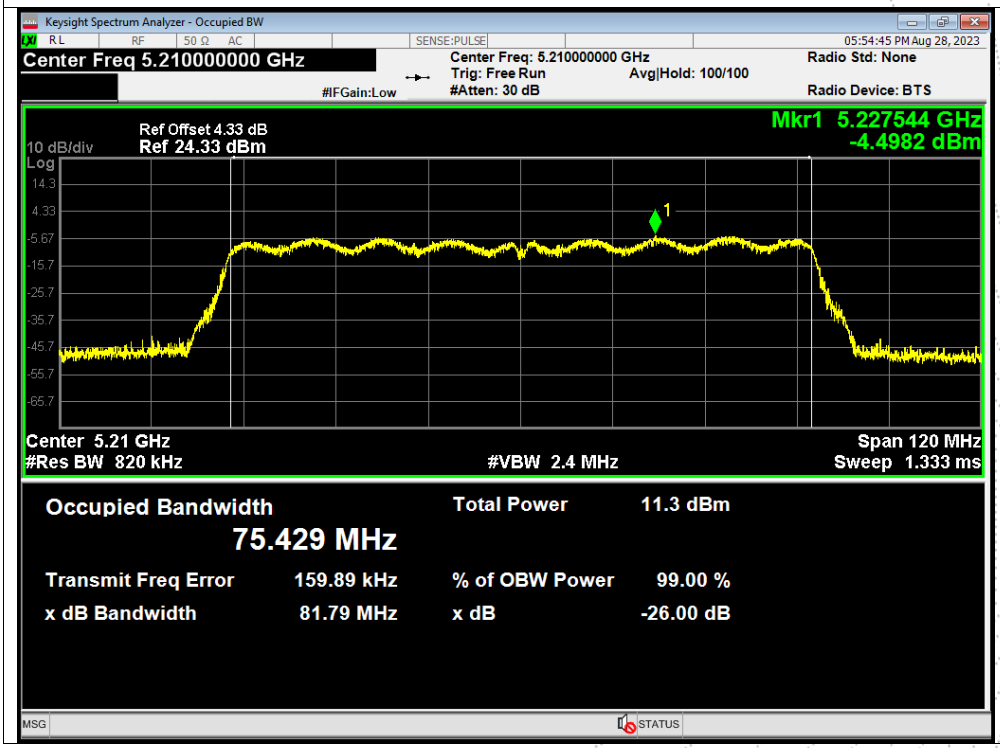
OBW NVNT ac40 5230MHz Ant1



OBW NVNT ac80 5210MHz Ant1



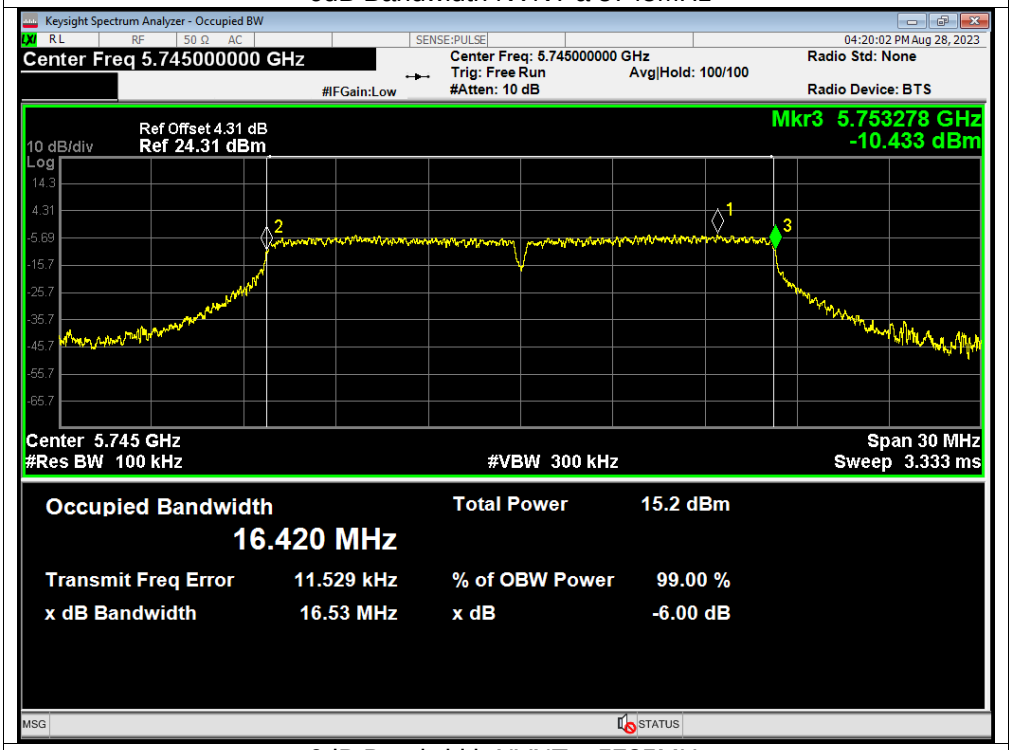
Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	DC 12V
Test Mode:	(5745-5825MHz)		

Condition	Mode	Frequency (MHz)	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	a	5745	16.532	0.5	Pass
NVNT	a	5785	16.525	0.5	Pass
NVNT	a	5825	16.508	0.5	Pass
NVNT	n20	5745	17.669	0.5	Pass
NVNT	n20	5785	17.612	0.5	Pass
NVNT	n20	5825	17.617	0.5	Pass
NVNT	n40	5755	36.336	0.5	Pass
NVNT	n40	5795	36.381	0.5	Pass
NVNT	ac20	5745	17.631	0.5	Pass
NVNT	ac20	5785	17.648	0.5	Pass
NVNT	ac20	5825	17.646	0.5	Pass
NVNT	ac40	5755	36.348	0.5	Pass
NVNT	ac40	5795	36.354	0.5	Pass
NVNT	ac80	5775	75.844	0.5	Pass

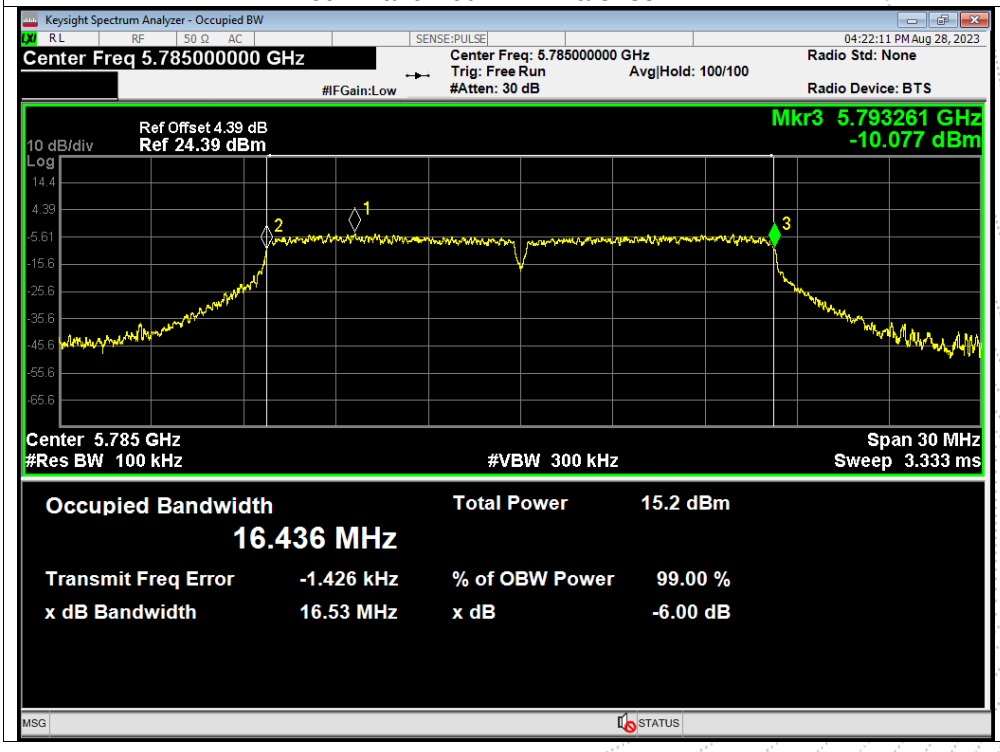
Condition	Mode	Frequency (MHz)	99% OBW (MHz)
NVNT	a	5745	16.507
NVNT	a	5785	16.513
NVNT	a	5825	16.5
NVNT	n20	5745	17.636
NVNT	n20	5785	17.666
NVNT	n20	5825	17.631
NVNT	n40	5755	36.036
NVNT	n40	5795	36.027
NVNT	ac20	5745	17.654
NVNT	ac20	5785	17.675
NVNT	ac20	5825	17.644
NVNT	ac40	5755	36.022
NVNT	ac40	5795	36.032
NVNT	ac80	5775	75.21

Test Graphs

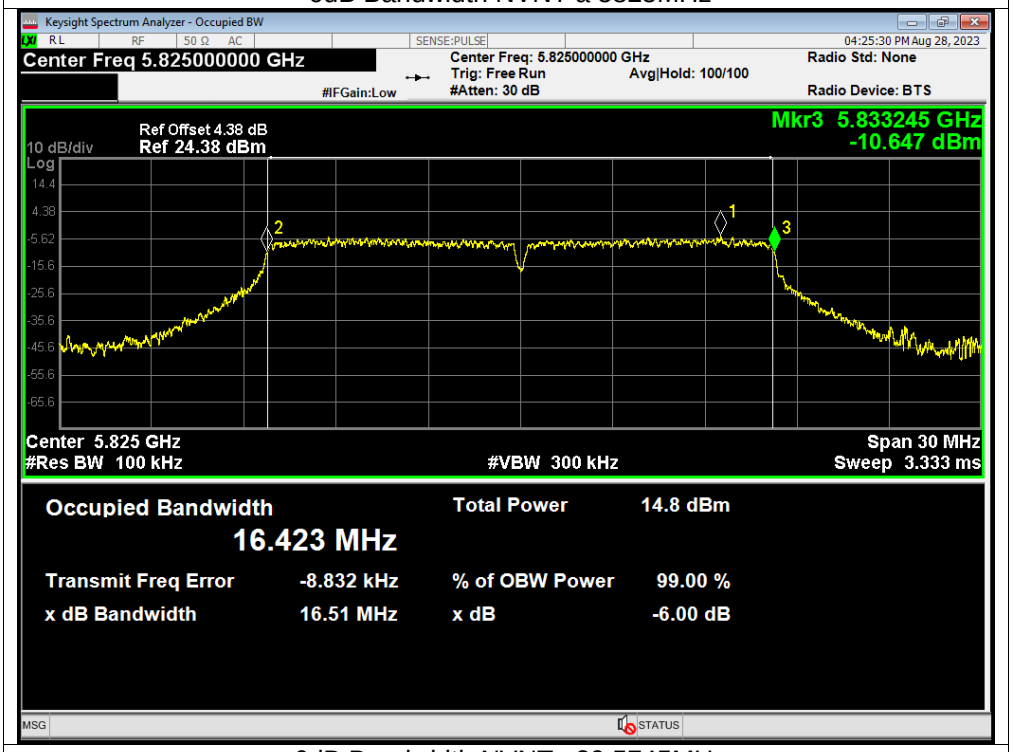
-6dB Bandwidth NVNT a 5745MHz



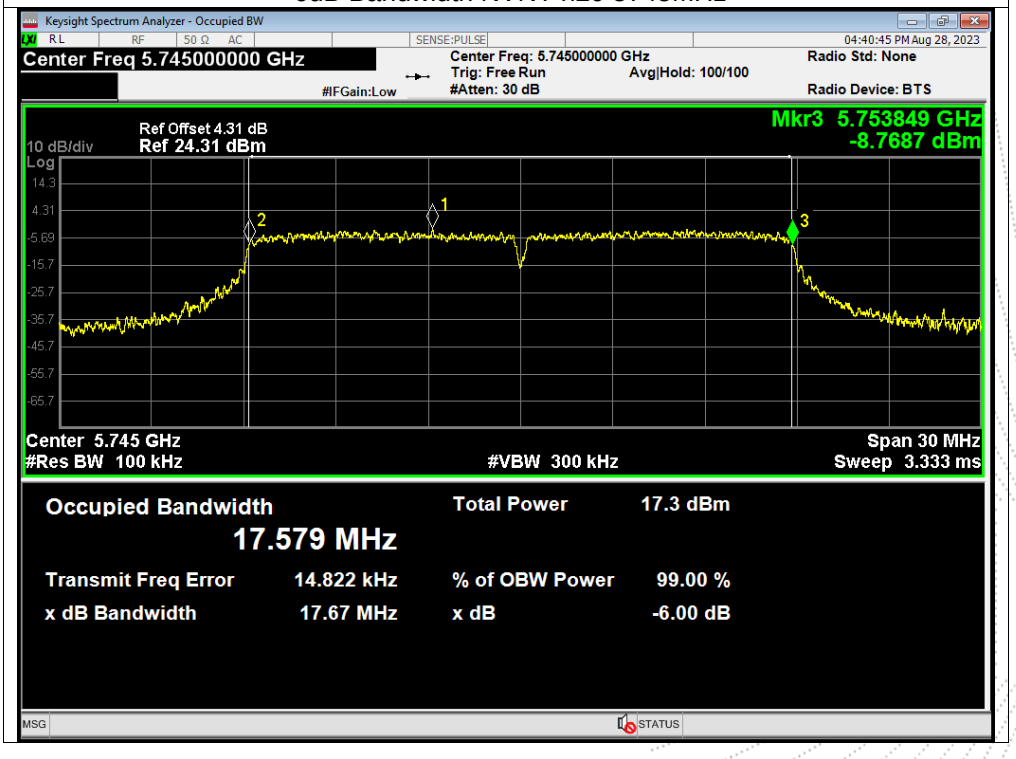
-6dB Bandwidth NVNT a 5785MHz



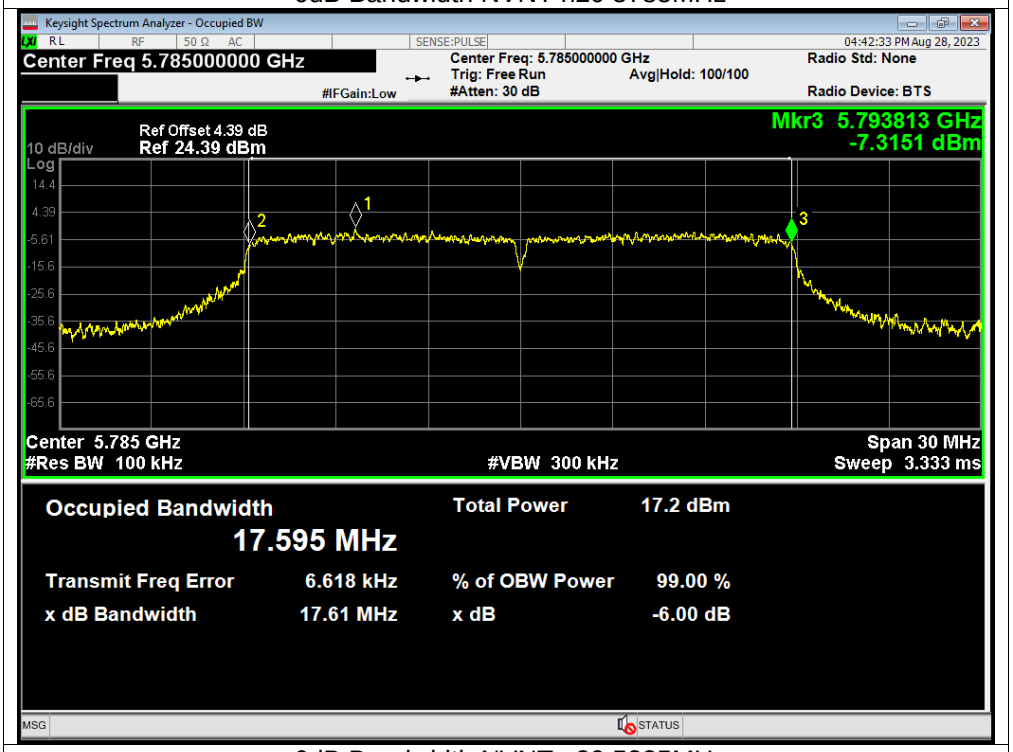
-6dB Bandwidth NVNT a 5825MHz



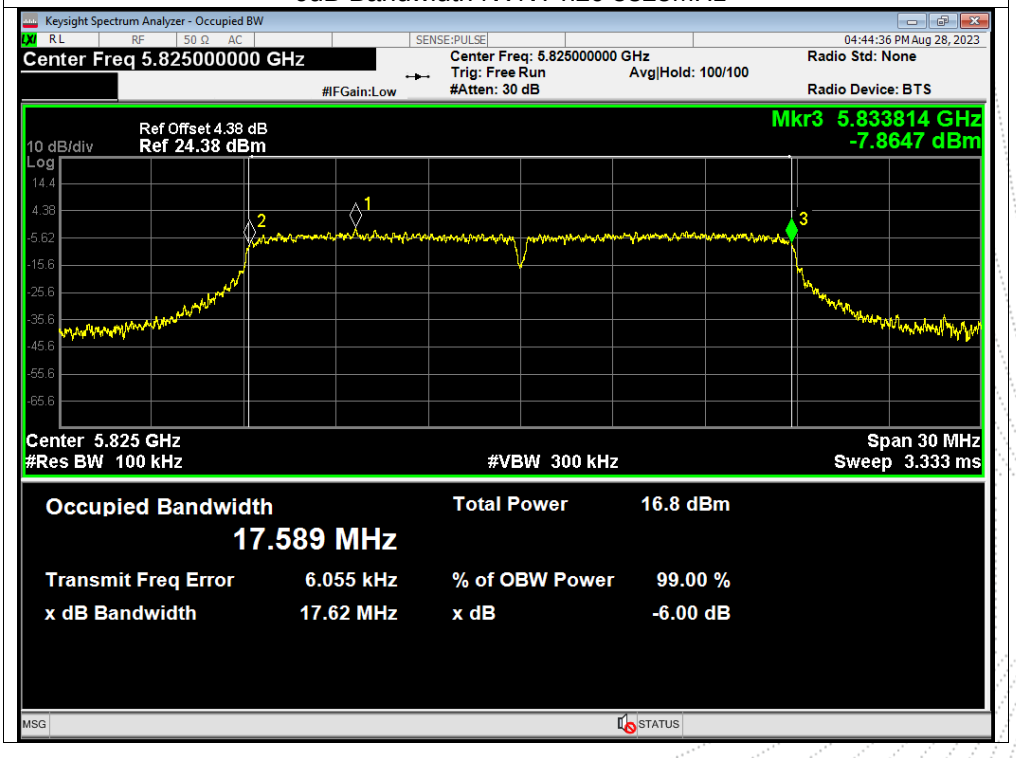
-6dB Bandwidth NVNT n20 5745MHz



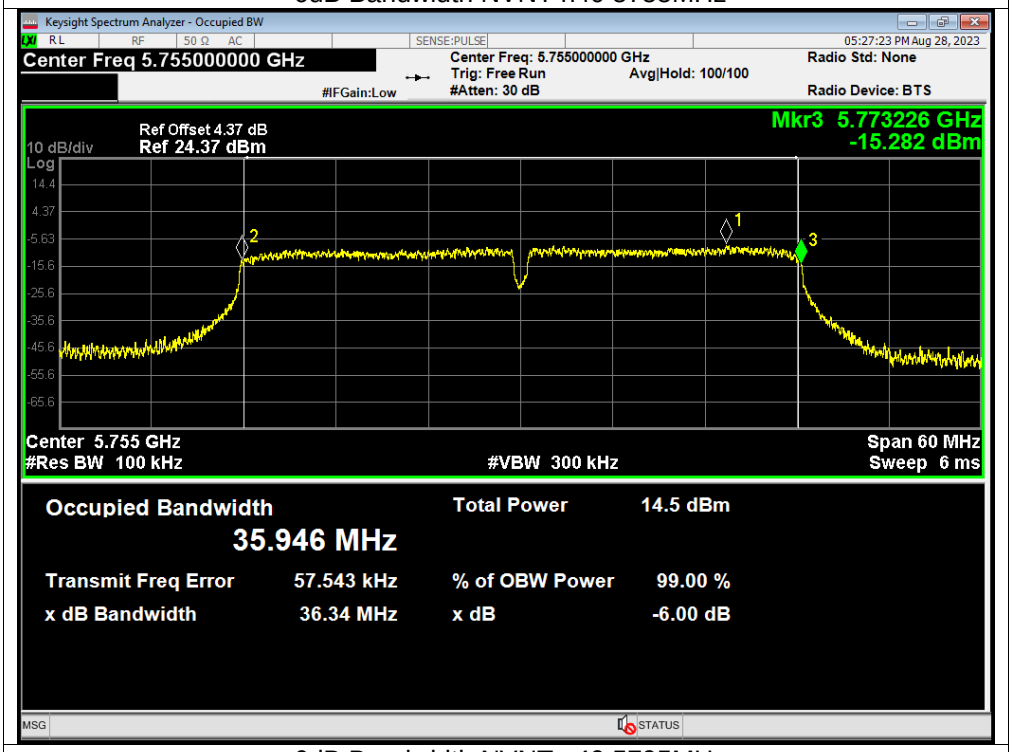
-6dB Bandwidth NVNT n20 5785MHz



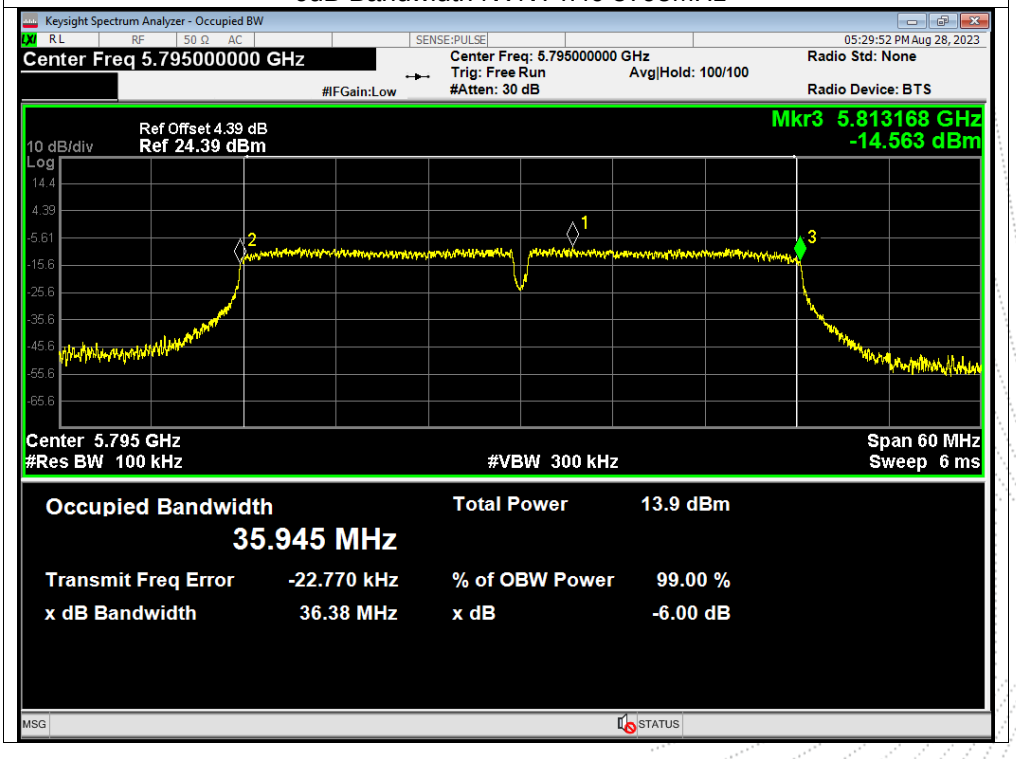
-6dB Bandwidth NVNT n20 5825MHz



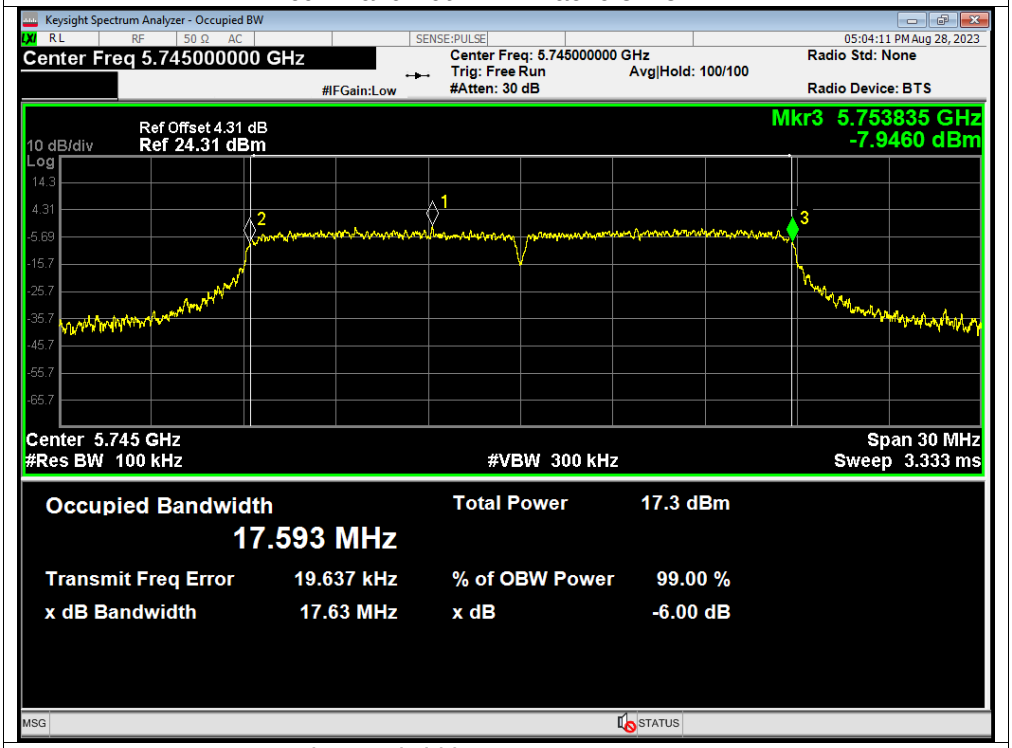
-6dB Bandwidth NVNT n40 5755MHz



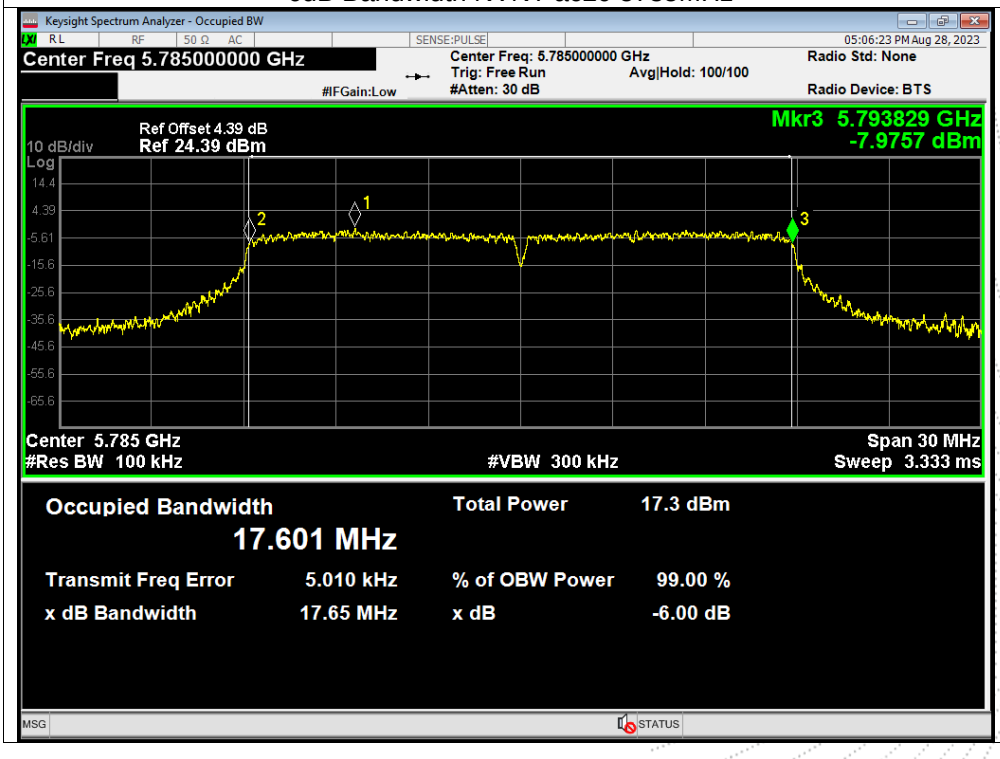
-6dB Bandwidth NVNT n40 5795MHz



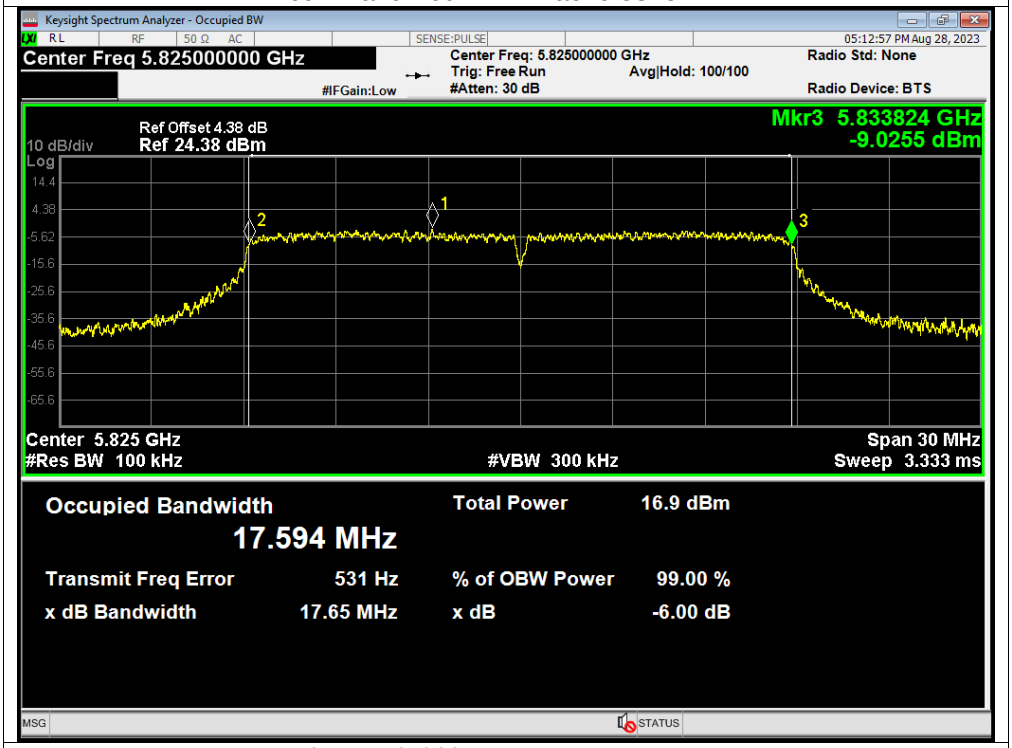
-6dB Bandwidth NVNT ac20 5745MHz



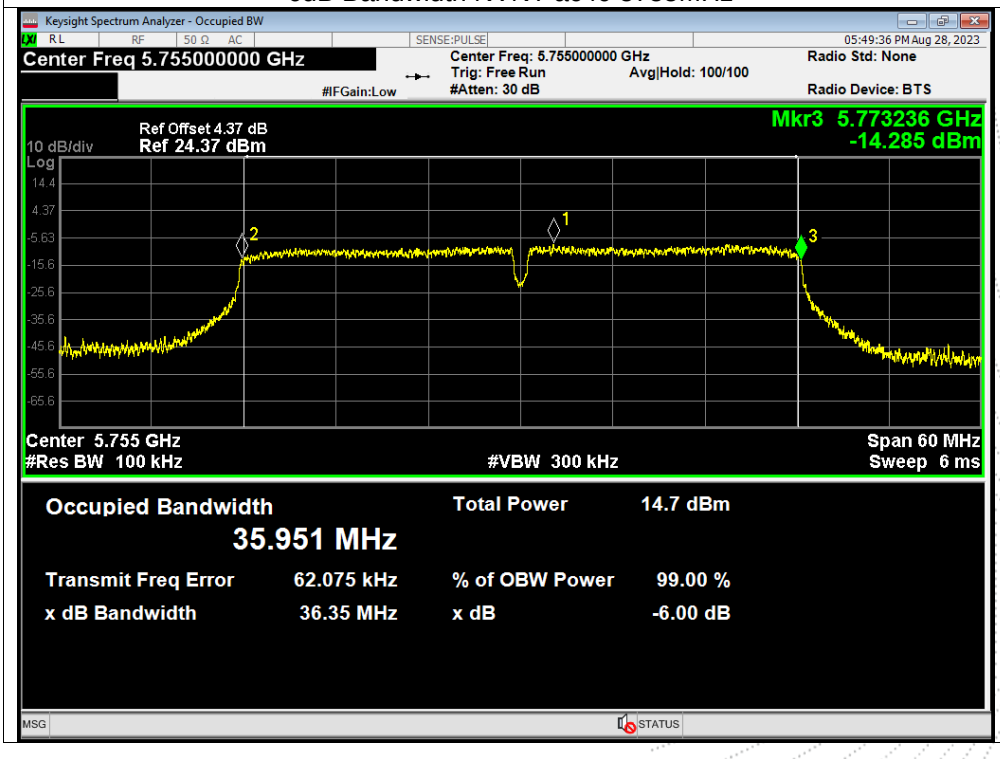
-6dB Bandwidth NVNT ac20 5785MHz



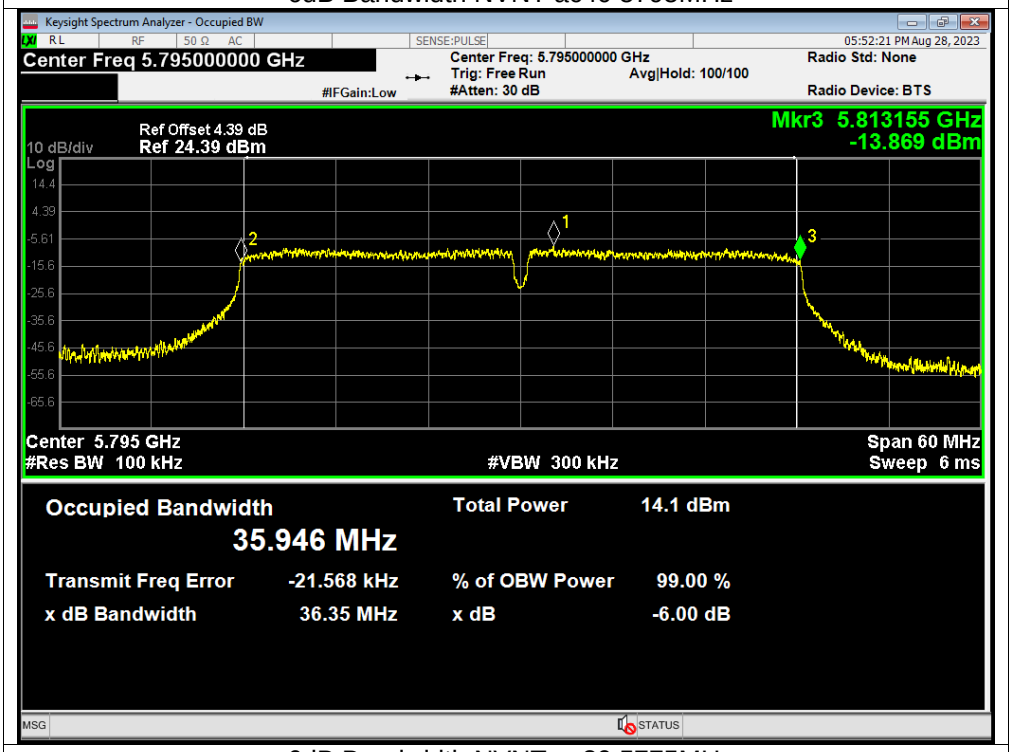
-6dB Bandwidth NVNT ac20 5825MHz



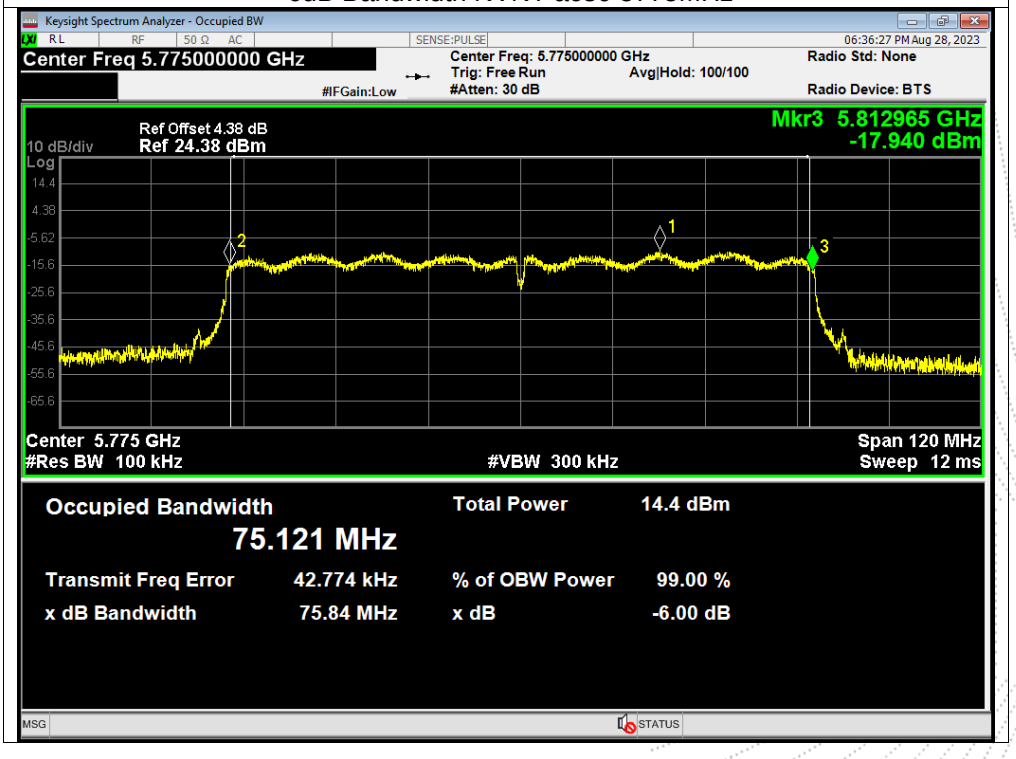
-6dB Bandwidth NVNT ac40 5755MHz



-6dB Bandwidth NVNT ac40 5795MHz

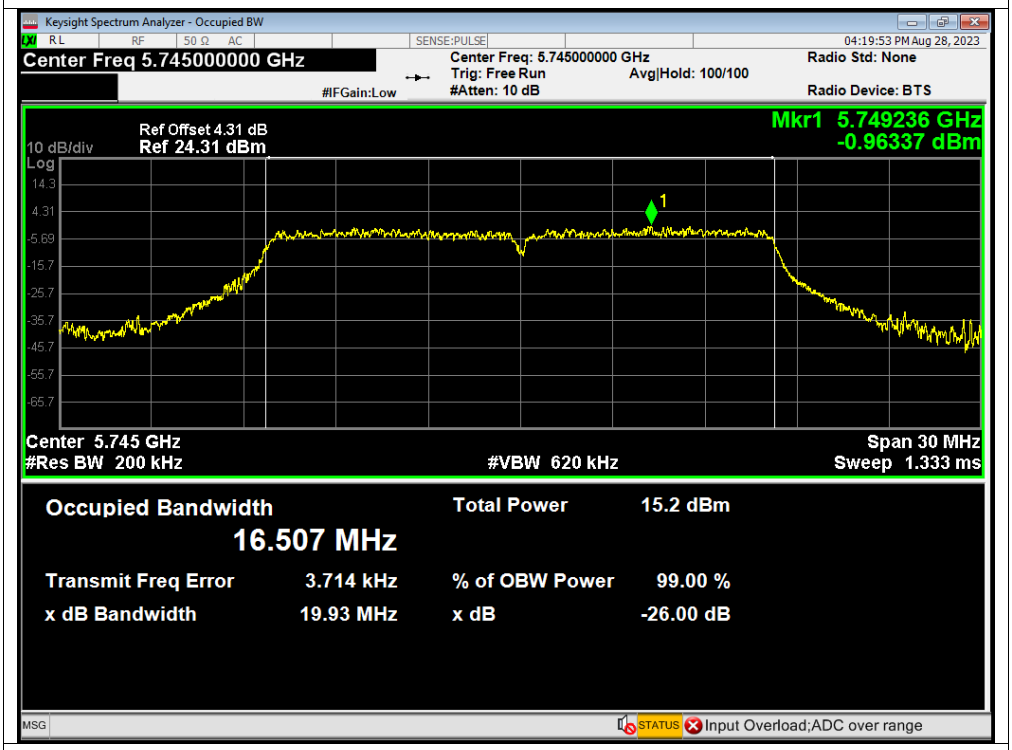


-6dB Bandwidth NVNT ac80 5775MHz

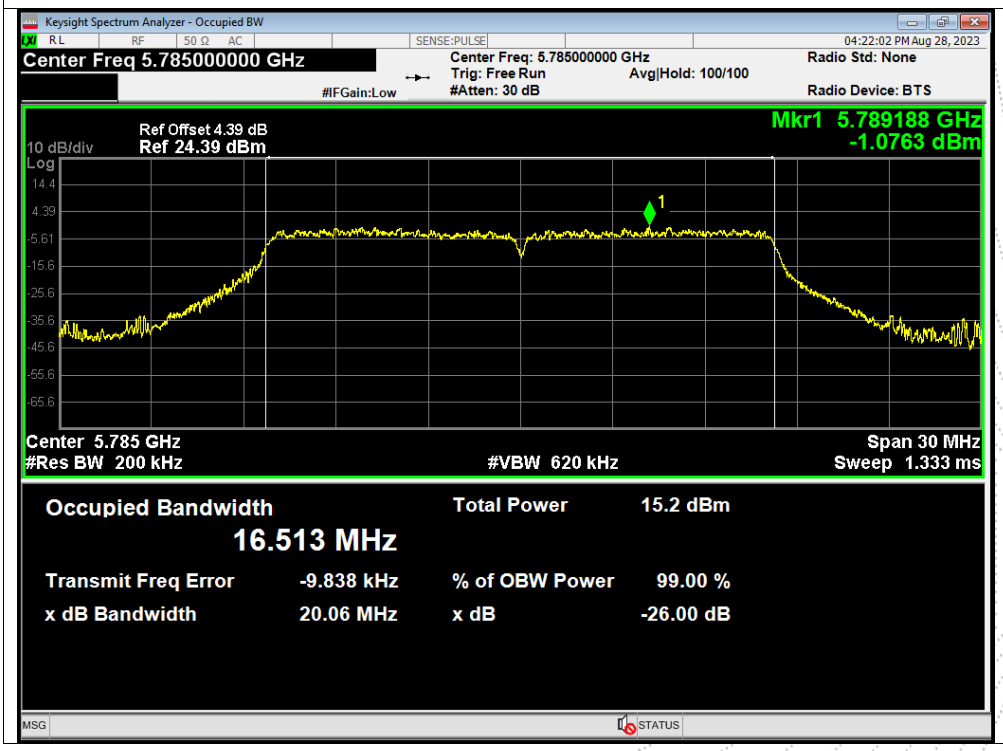


Test Graphs

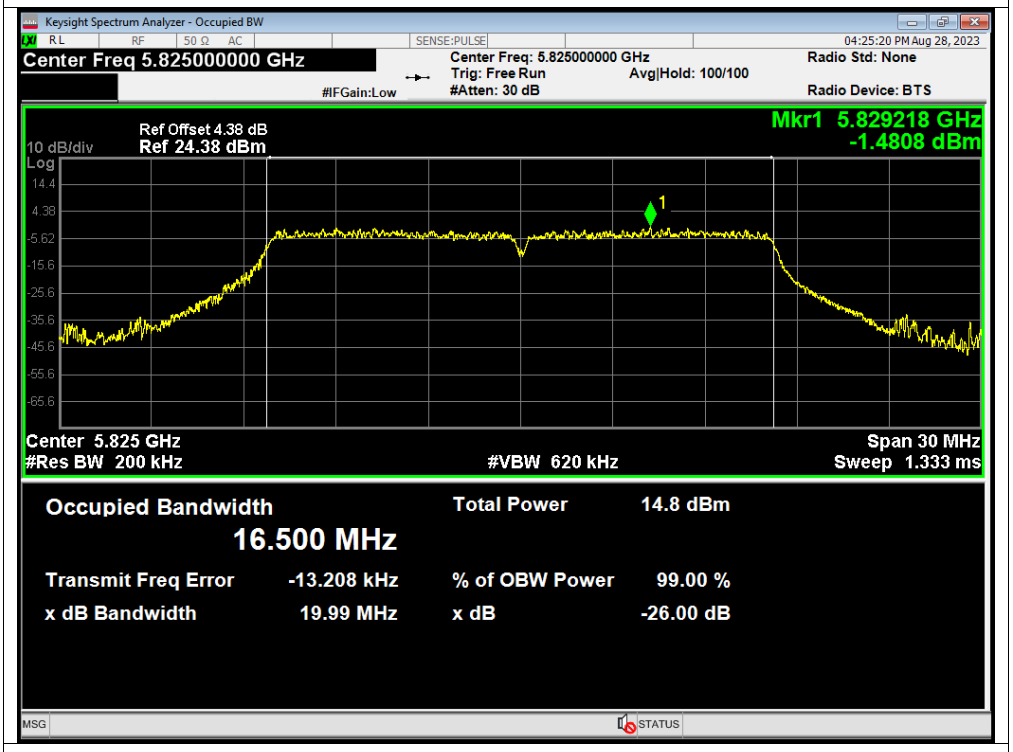
OBW NVNT a 5745MHz Ant1



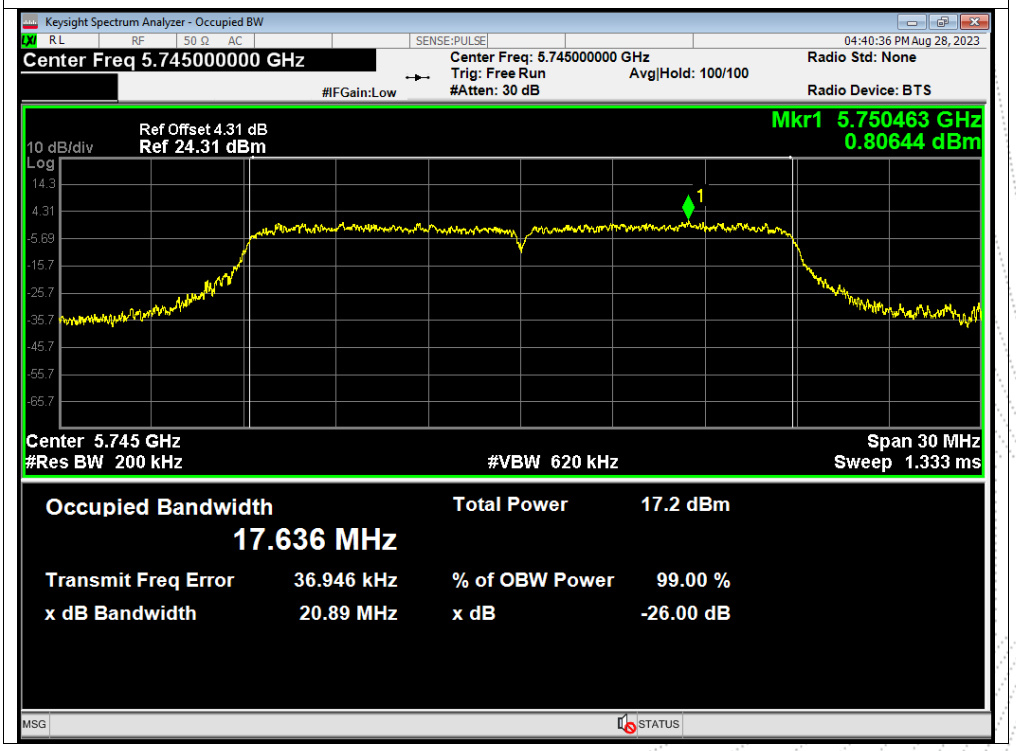
OBW NVNT a 5785MHz Ant1



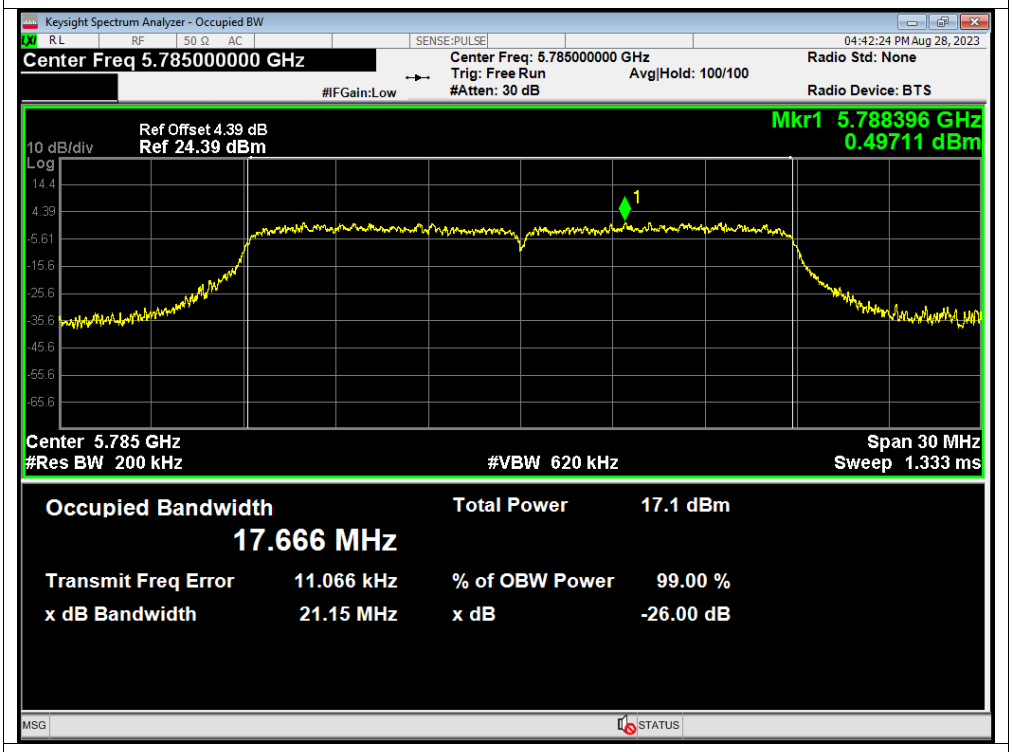
OBW NVNT a 5825MHz Ant1



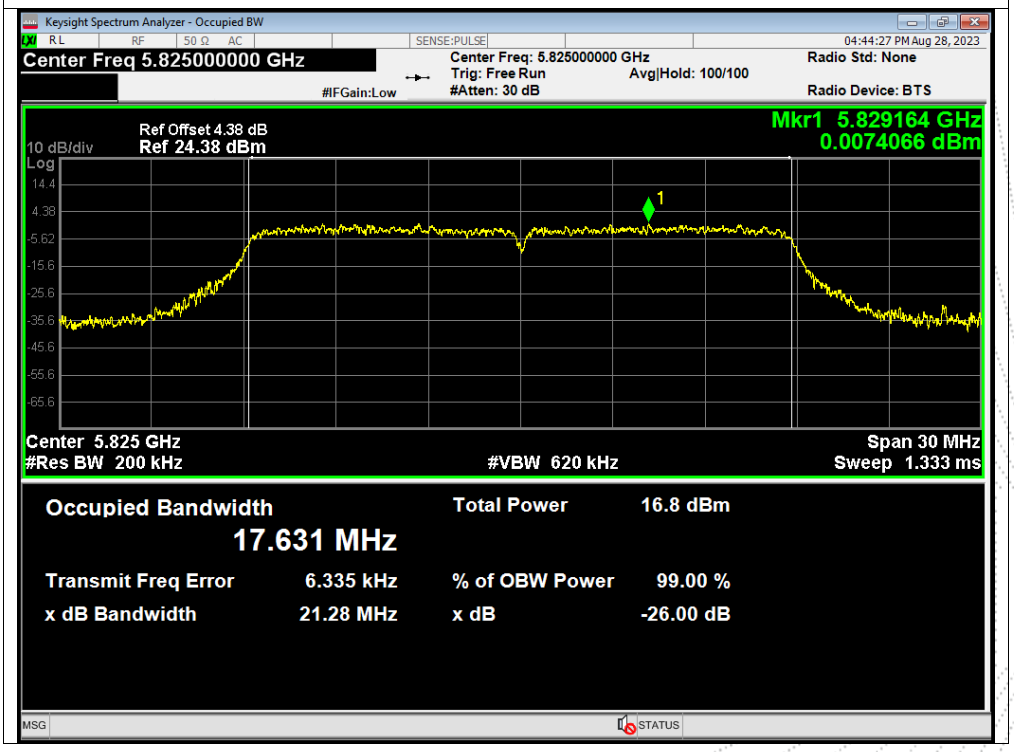
OBW NVNT n20 5745MHz Ant1



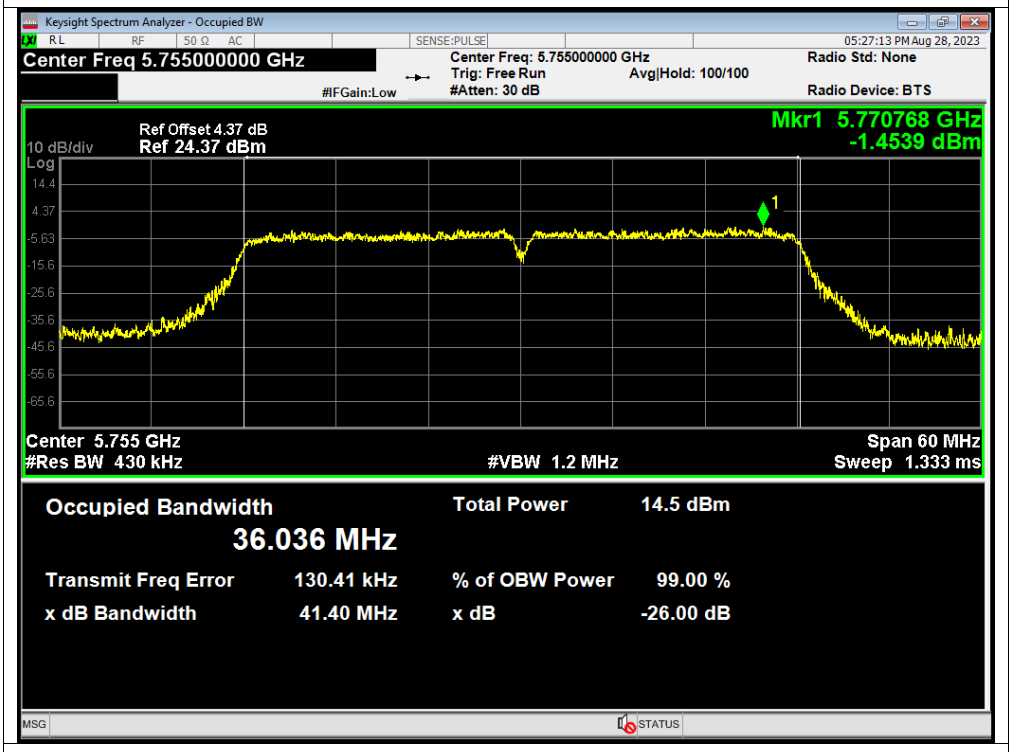
OBW NVNT n20 5785MHz Ant1



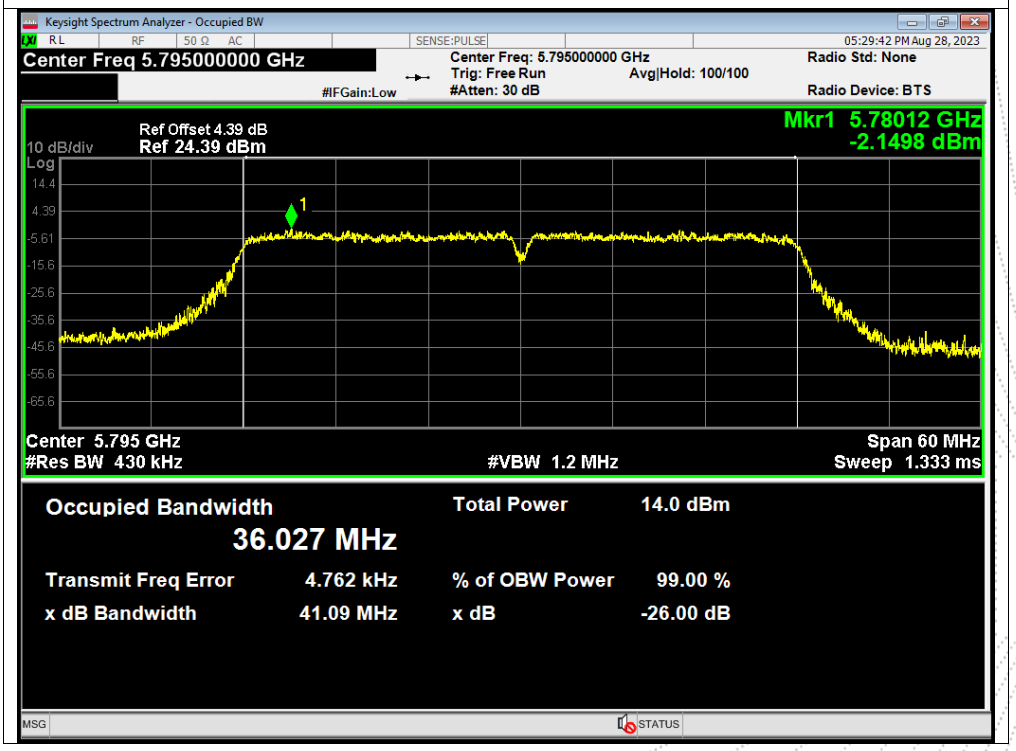
OBW NVNT n20 5825MHz Ant1



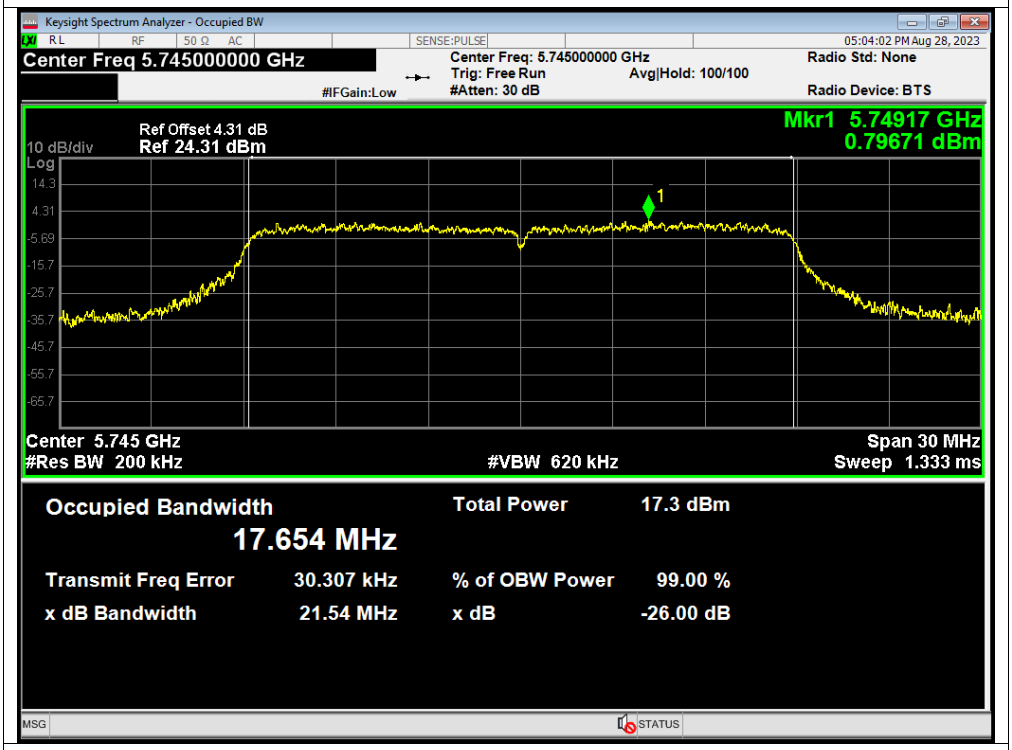
OBW NVNT n40 5755MHz Ant1



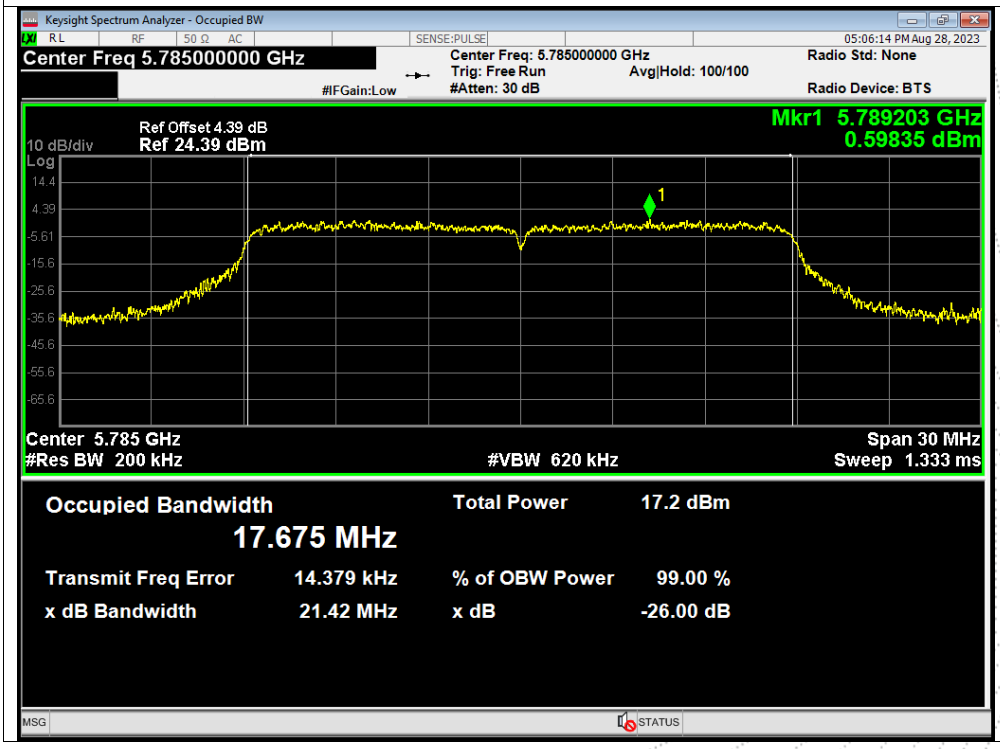
OBW NVNT n40 5795MHz Ant1



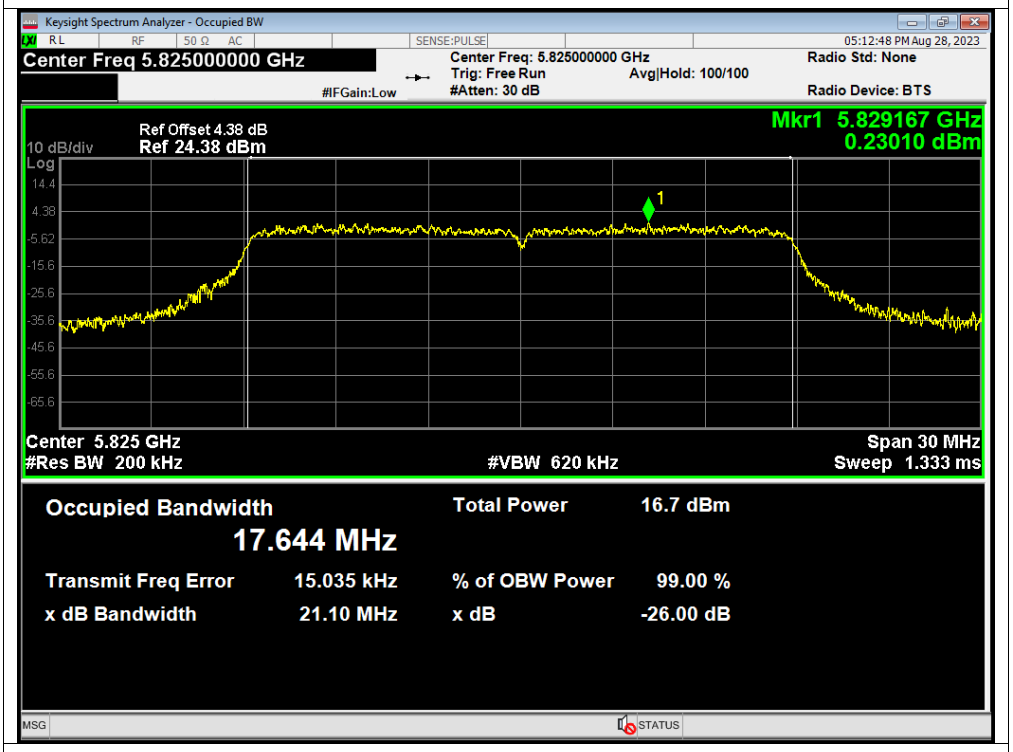
OBW NVNT ac20 5745MHz Ant1



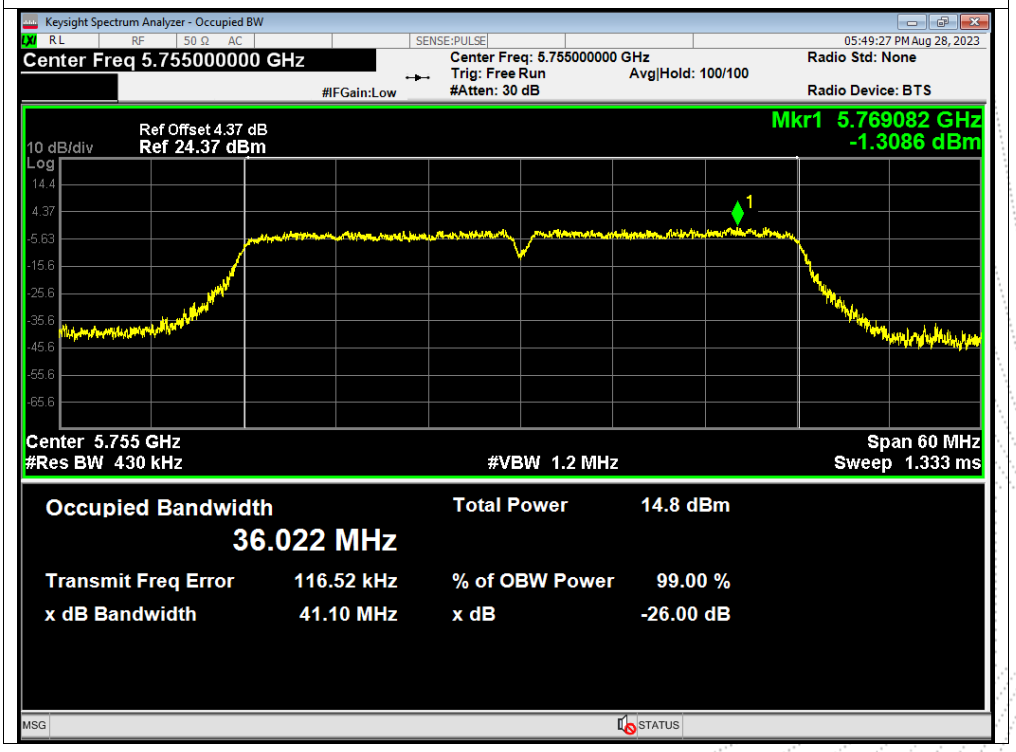
OBW NVNT ac20 5785MHz Ant1



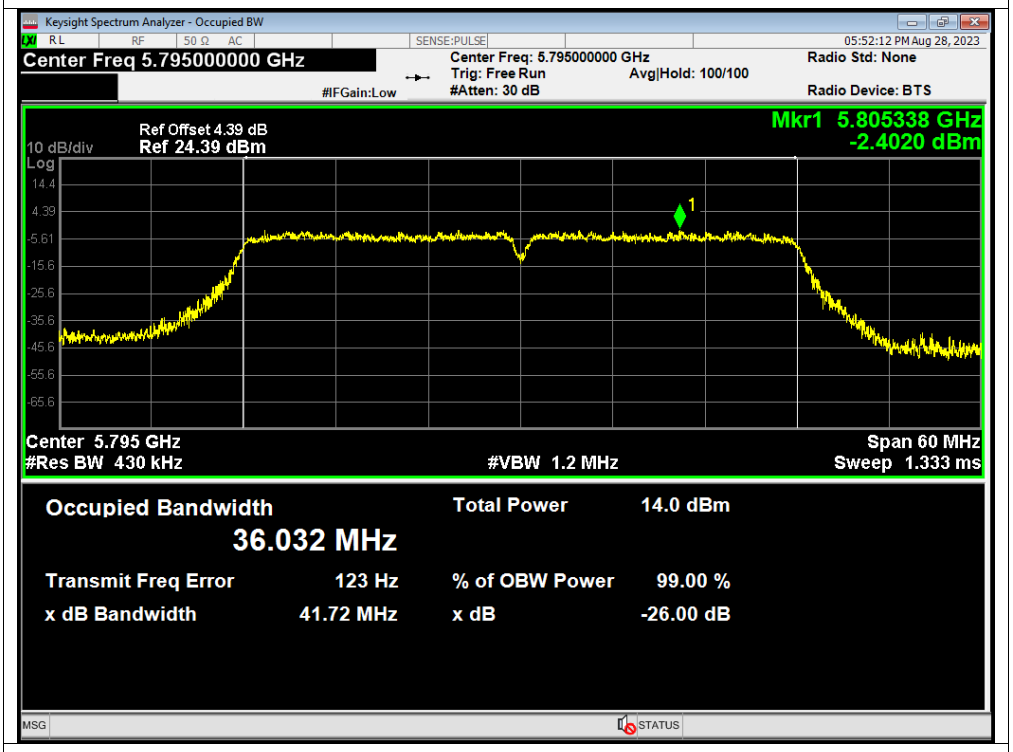
OBW NVNT ac20 5825MHz Ant1



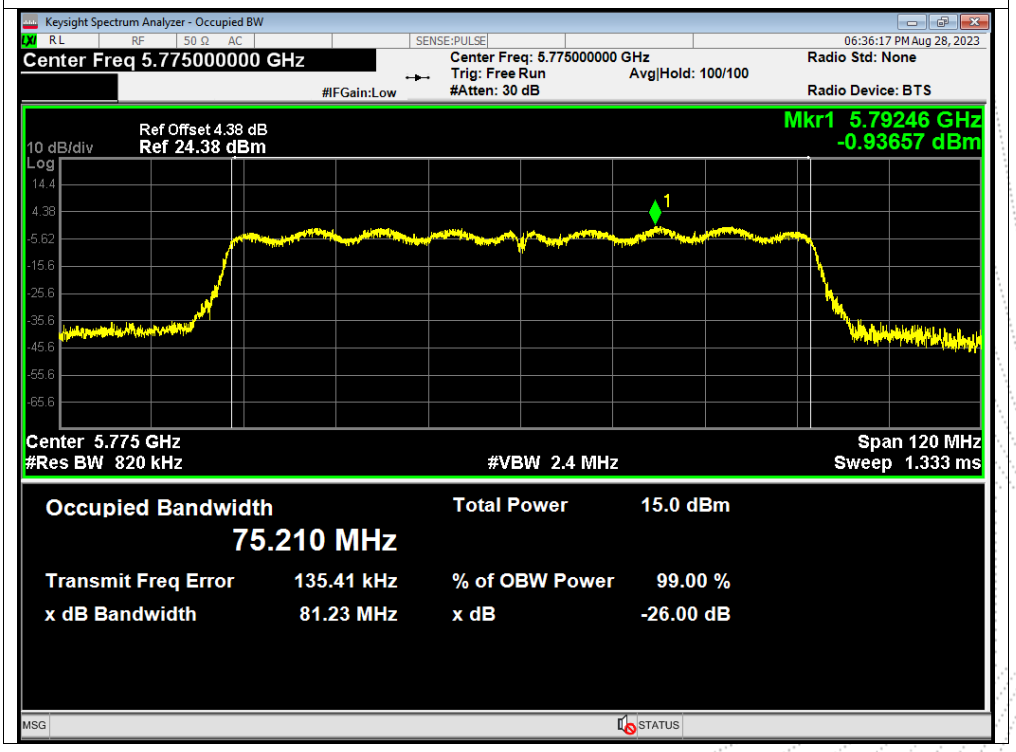
OBW NVNT ac40 5755MHz Ant1



OBW NVNT ac40 5795MHz Ant1

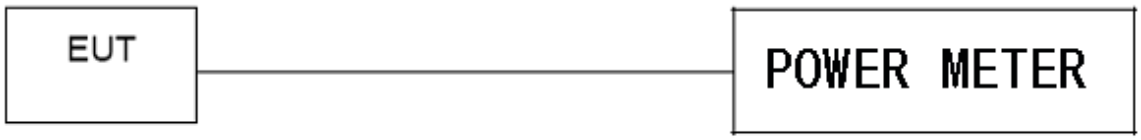


OBW NVNT ac80 5775MHz Ant1



10. Maximum Conducted Output Power

10.1 Block Diagram Of Test Setup



10.2 Limit

■ For the band 5.15-5.25 GHz,

(a) (1) (i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(a) (1) (ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(a) (1) (iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(a) (1) (iv) For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

■ For the 5.25-5.35 GHz and 5.47-5.725 GHz bands

(a) (2) The maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting

antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

■ For the band 5.725-5.85 GHz

(a) (3) for the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations

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		

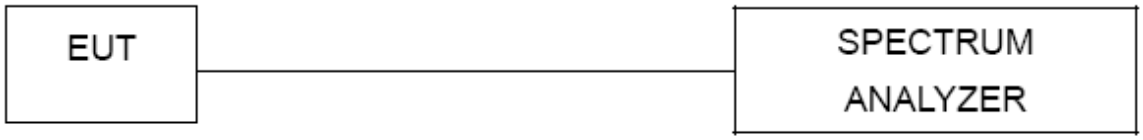
Condition	Mode	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	a	5180	9.11	24	Pass
NVNT	a	5200	11.47	24	Pass
NVNT	a	5240	11.28	24	Pass
NVNT	n20	5180	10.75	24	Pass
NVNT	n20	5200	11.9	24	Pass
NVNT	n20	5240	10.28	24	Pass
NVNT	n40	5190	10.16	24	Pass
NVNT	n40	5230	10.99	24	Pass
NVNT	ac20	5180	10.96	24	Pass
NVNT	ac20	5200	12.21	24	Pass
NVNT	ac20	5240	10.47	24	Pass
NVNT	ac40	5190	7.65	24	Pass
NVNT	ac40	5230	10.58	24	Pass
NVNT	ac80	5210	10.9	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	9.88	30	Pass
NVNT	a	5785	9.91	30	Pass
NVNT	a	5825	9.46	30	Pass
NVNT	n20	5745	11.96	30	Pass
NVNT	n20	5785	11.91	30	Pass
NVNT	n20	5825	11.54	30	Pass
NVNT	n40	5755	9.11	30	Pass
NVNT	n40	5795	8.5	30	Pass
NVNT	ac20	5745	12.06	30	Pass
NVNT	ac20	5785	12.01	30	Pass
NVNT	ac20	5825	11.54	30	Pass
NVNT	ac40	5755	9.26	30	Pass
NVNT	ac40	5795	8.63	30	Pass
NVNT	ac80	5775	8.49	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.

FCC Part15 C Section 15.209 and 15.205

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
[1]0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	([2])
13.36-13.41			

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

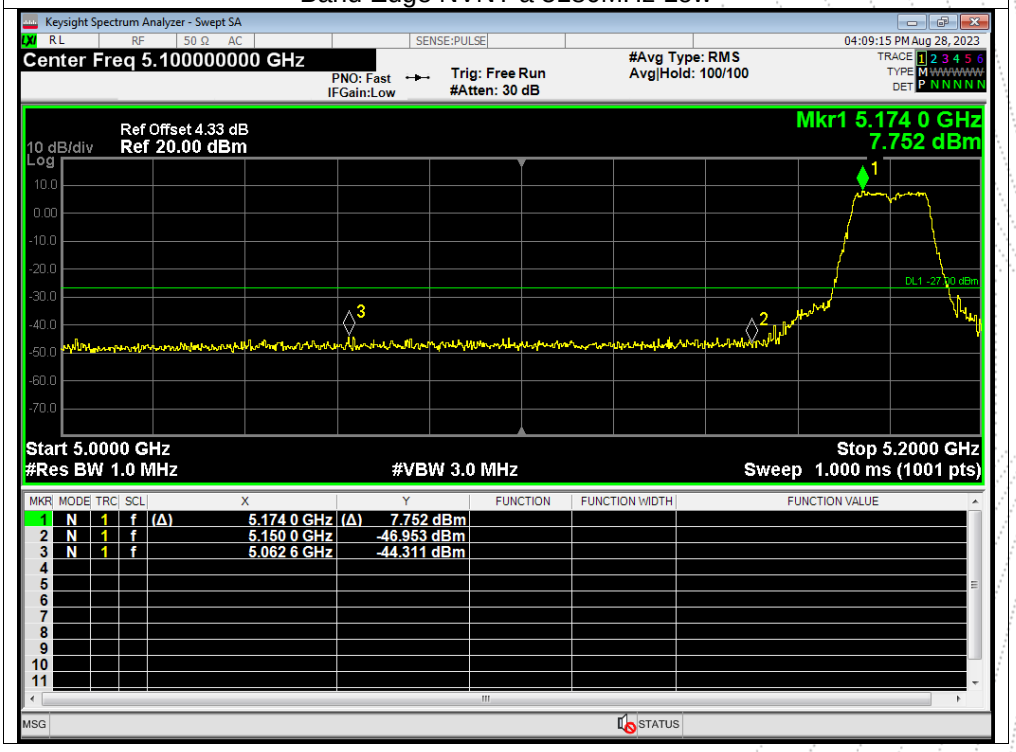
11.5 Test Result

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101kPa	Test Voltage:	DC 12V

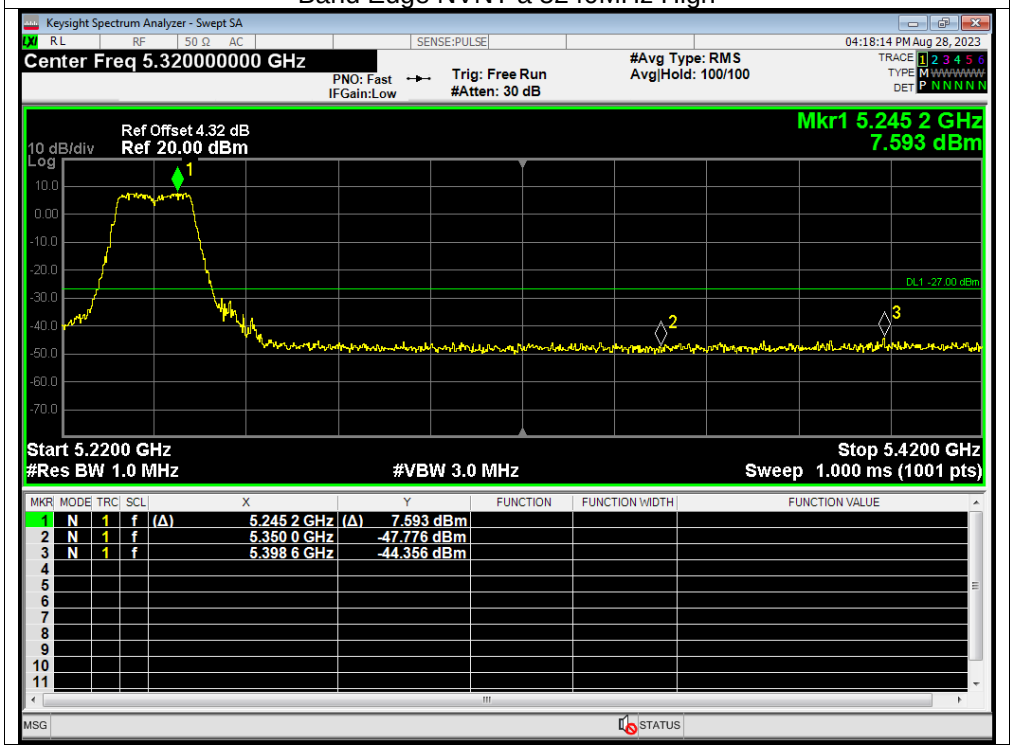
Plot.: 5180-5240MHz

Test Graphs

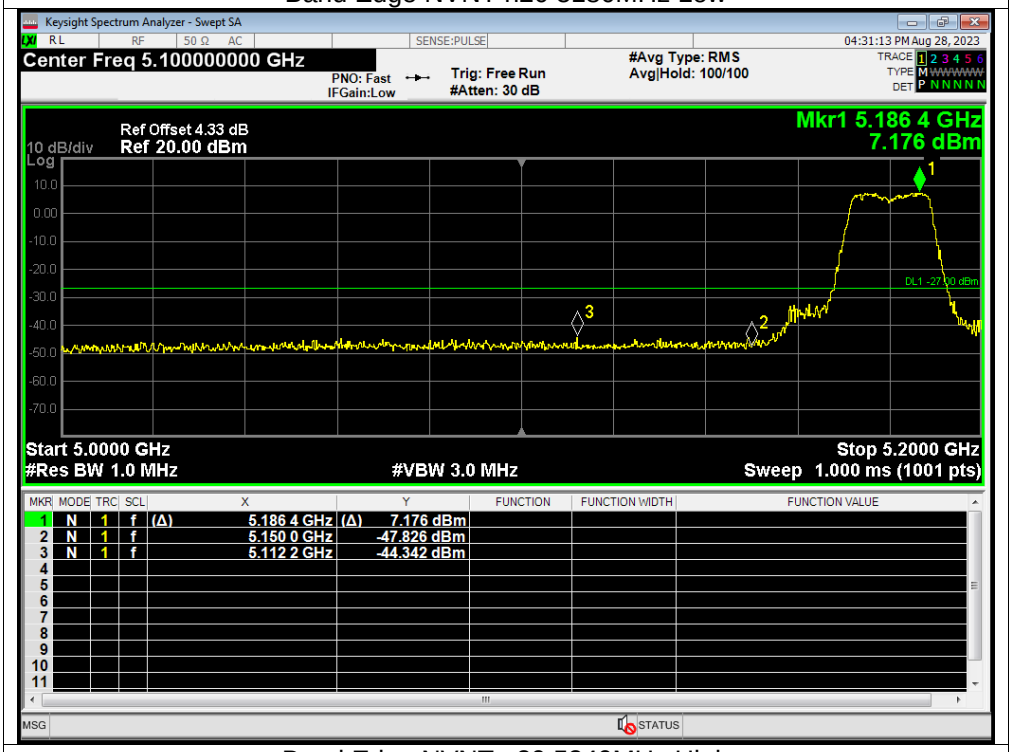
Band Edge NVNT a 5180MHz Low



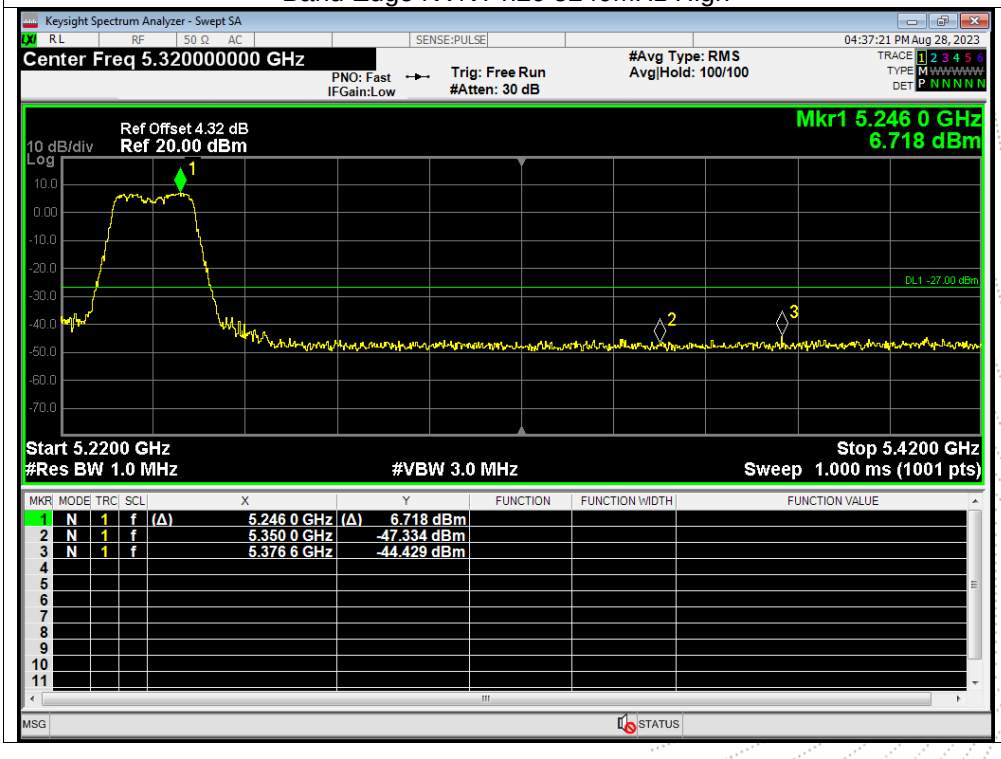
Band Edge NVNT a 5240MHz High



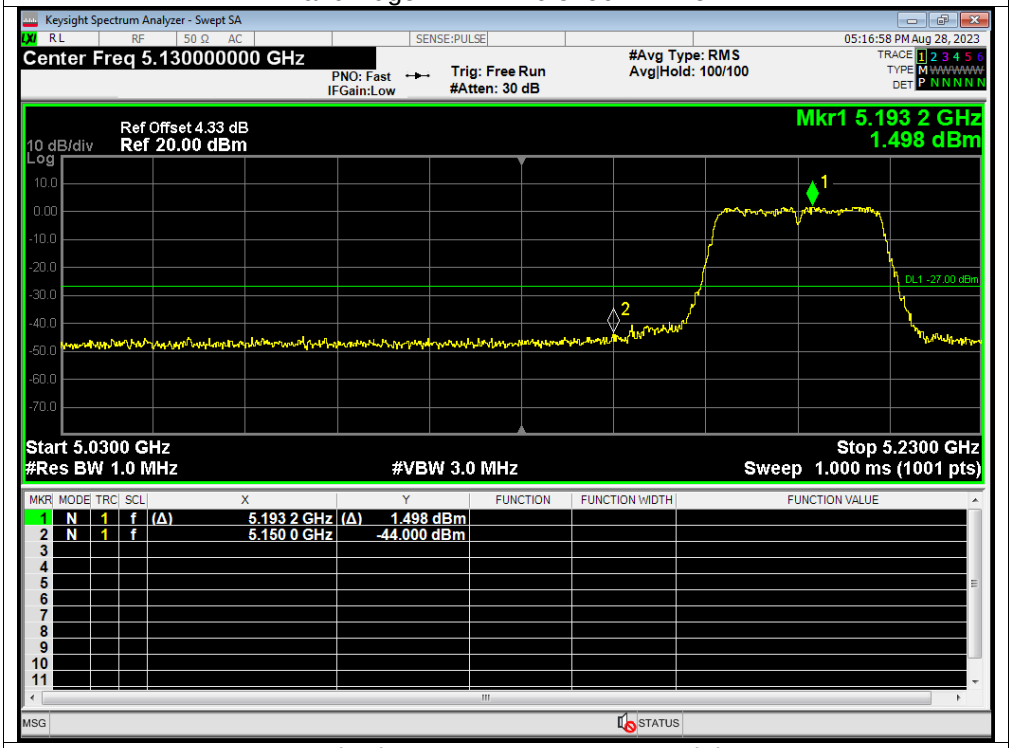
Band Edge NVNT n20 5180MHz Low



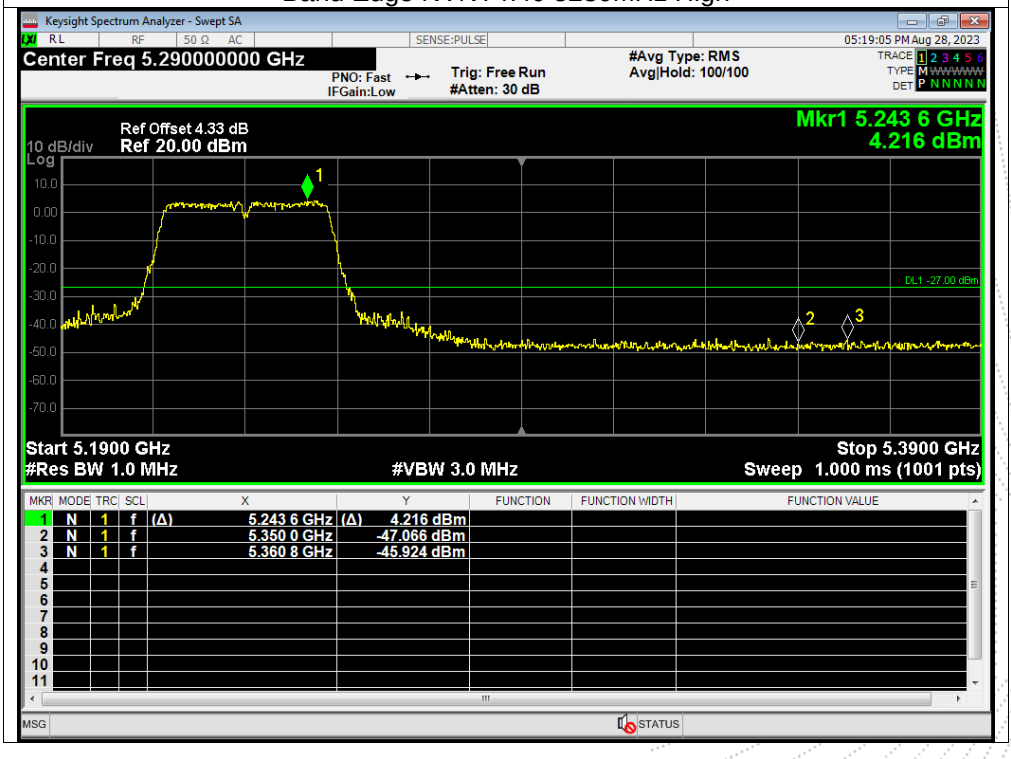
Band Edge NVNT n20 5240MHz High



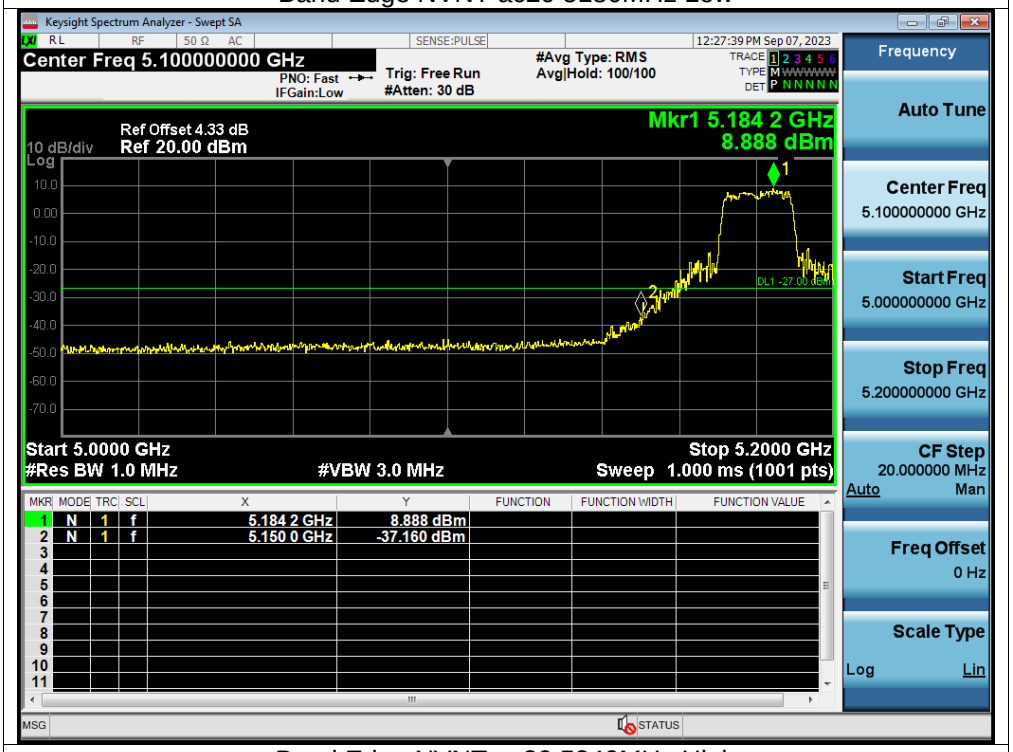
Band Edge NVNT n40 5190MHz Low



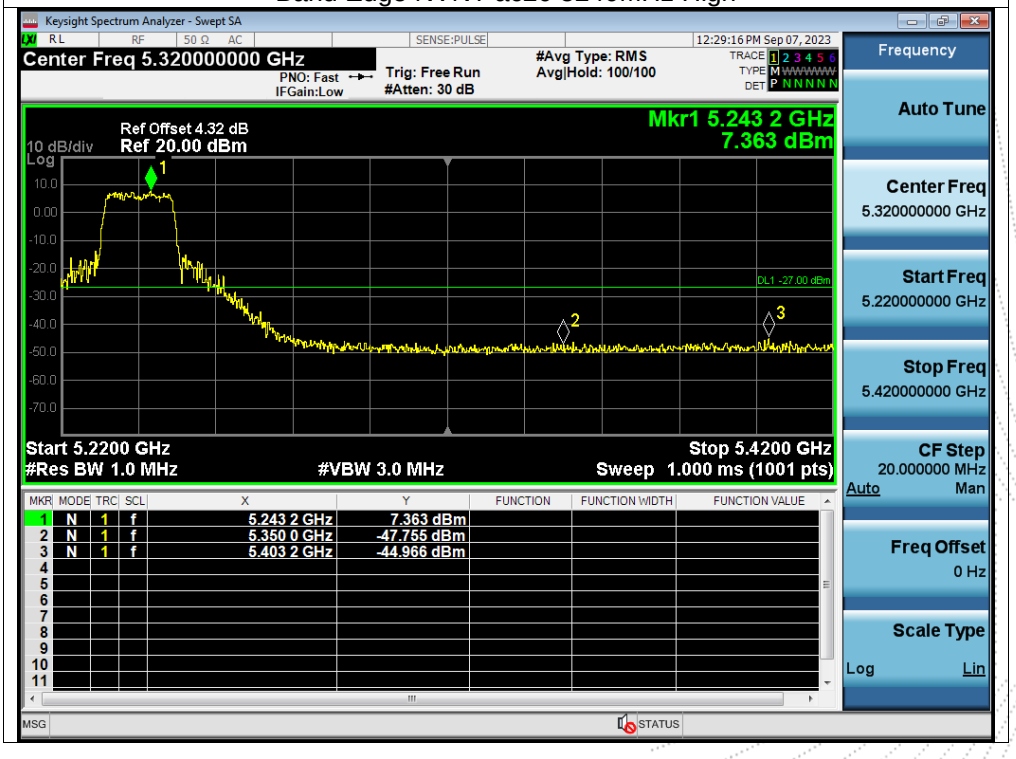
Band Edge NVNT n40 5230MHz High



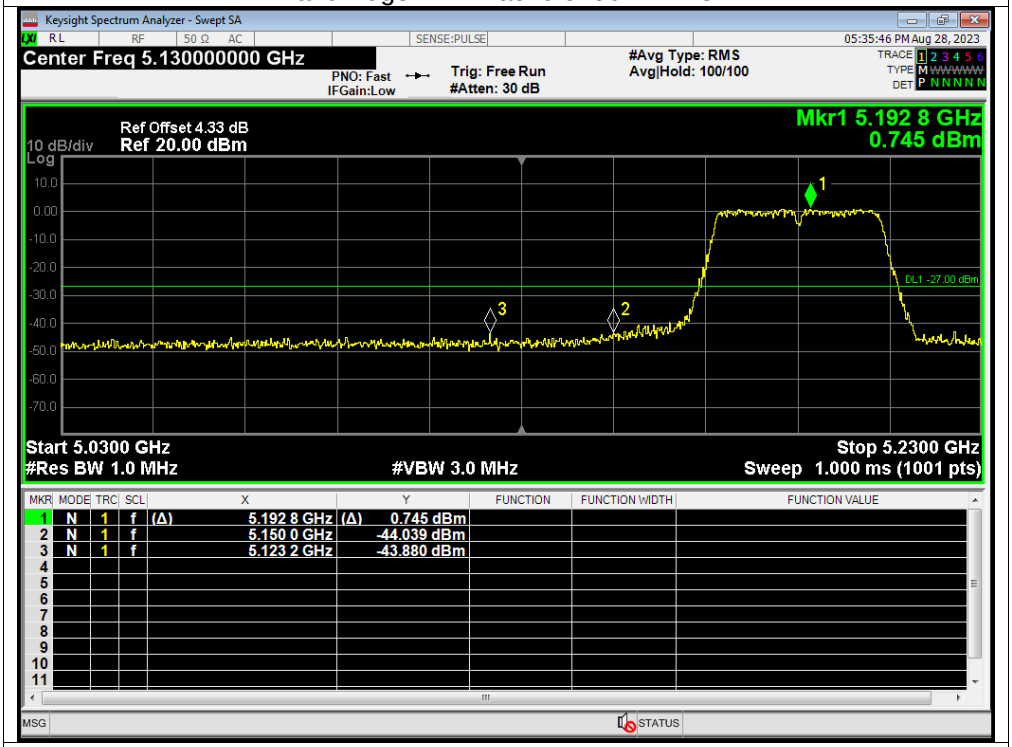
Band Edge NVNT ac20 5180MHz Low



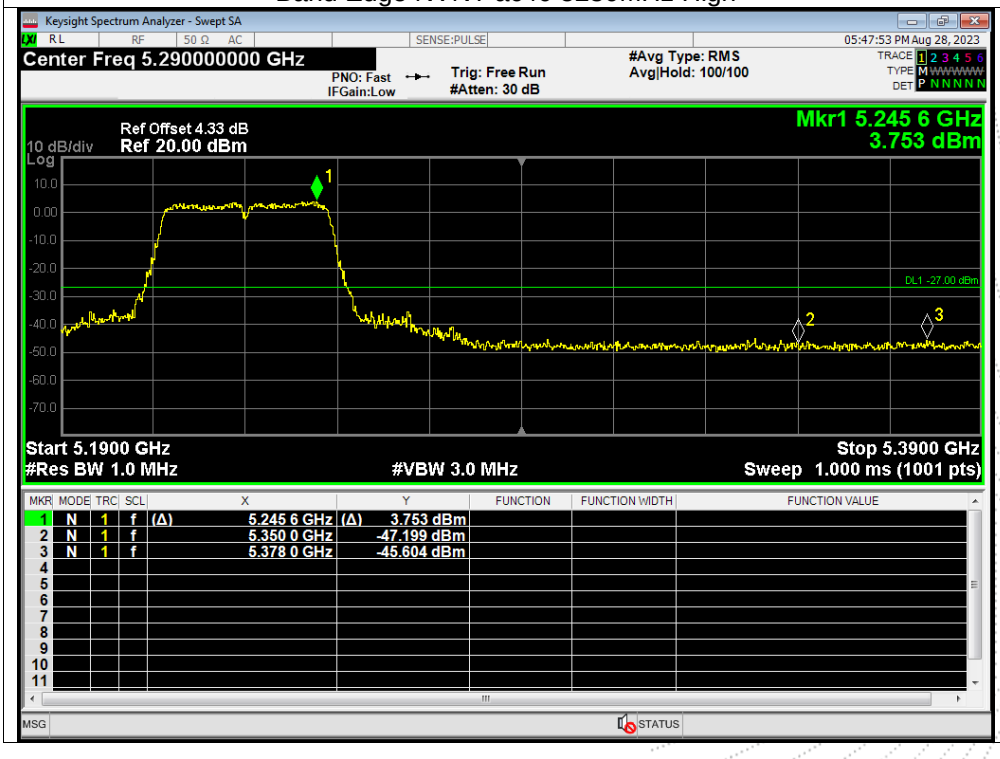
Band Edge NVNT ac20 5240MHz High



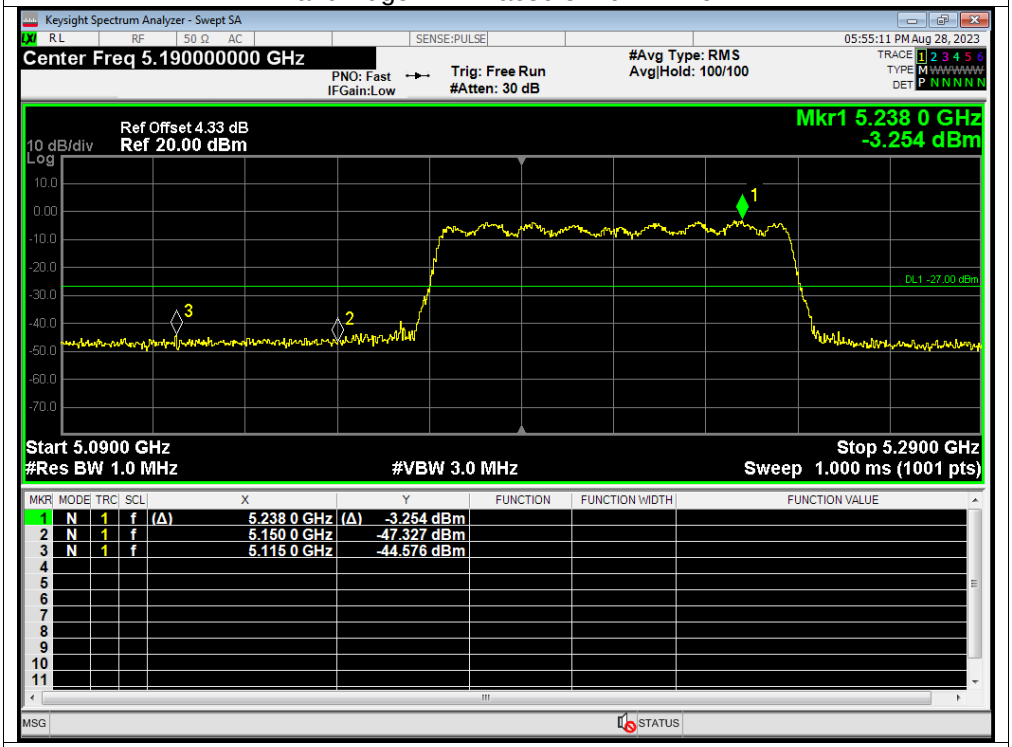
Band Edge NVNT ac40 5190MHz Low



Band Edge NVNT ac40 5230MHz High



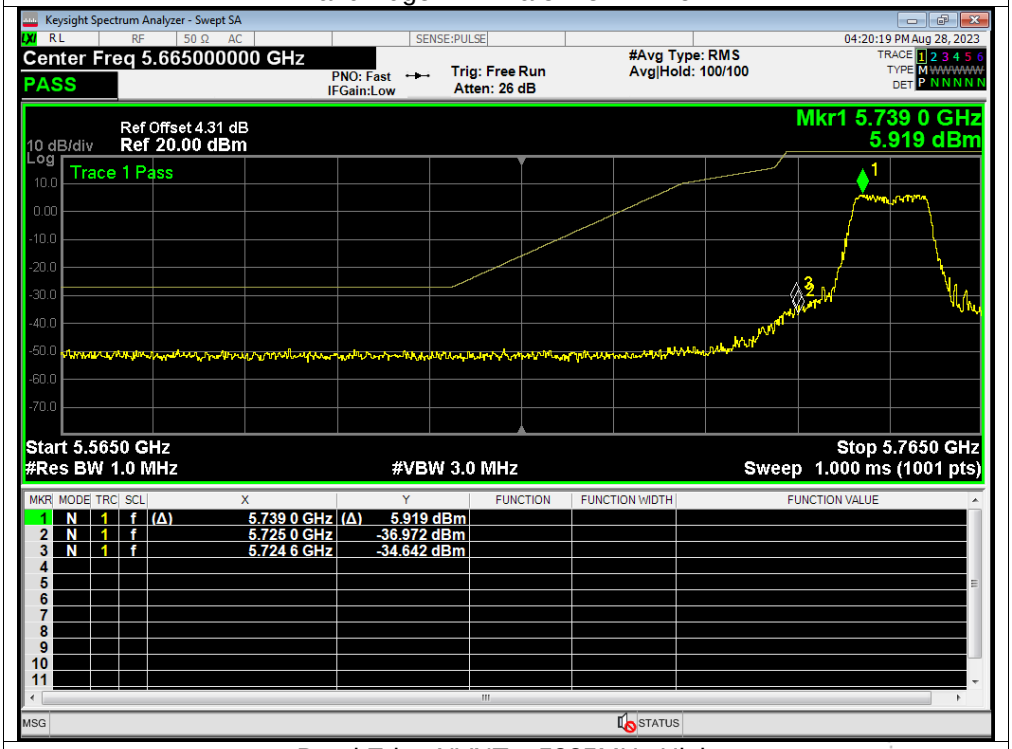
Band Edge NVNT ac80 5210MHz Low



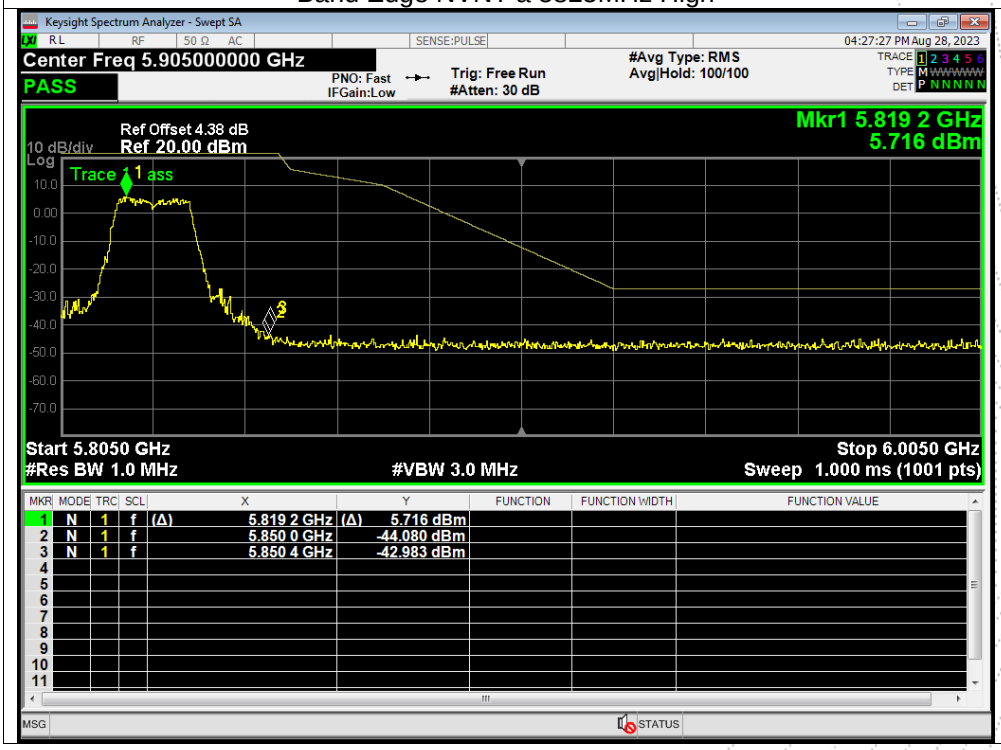
Band Edge NVNT ac80 5210MHz High

: 5745-5825MHz

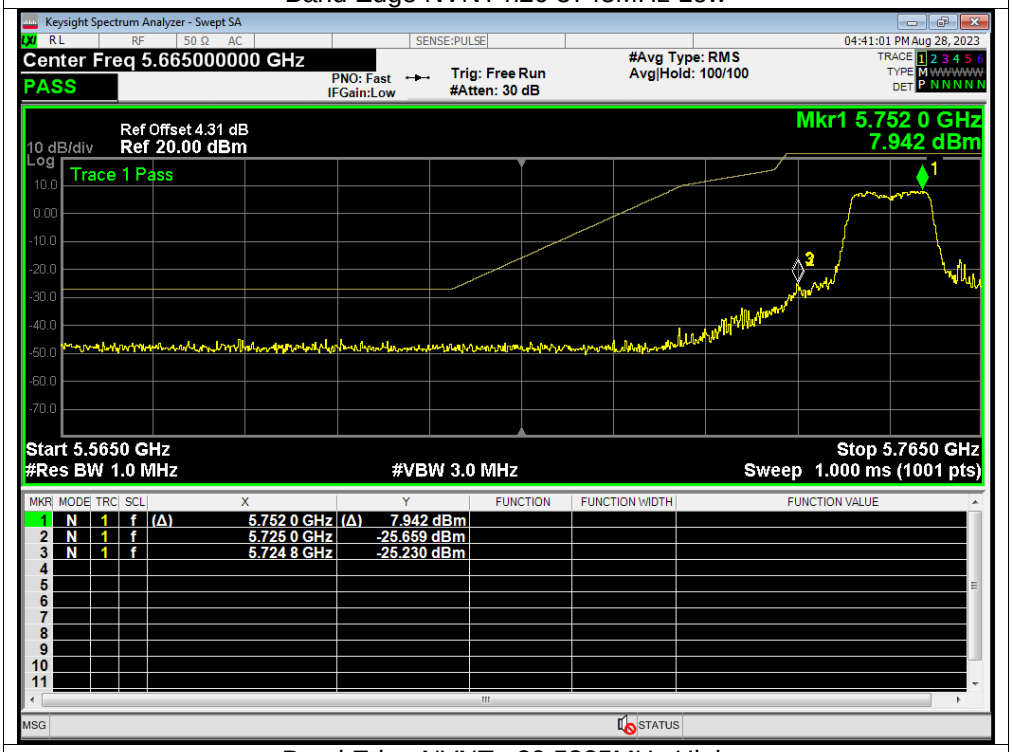
Test Graphs
Band Edge NVNT a 5745MHz Low



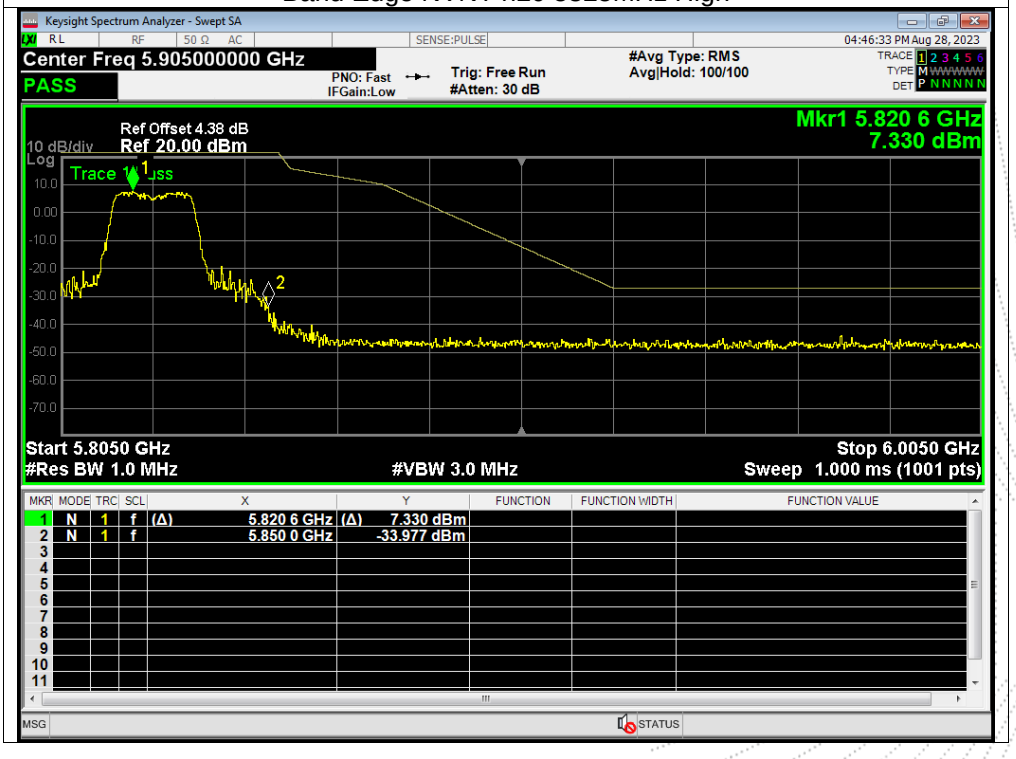
Band Edge NVNT a 5825MHz High



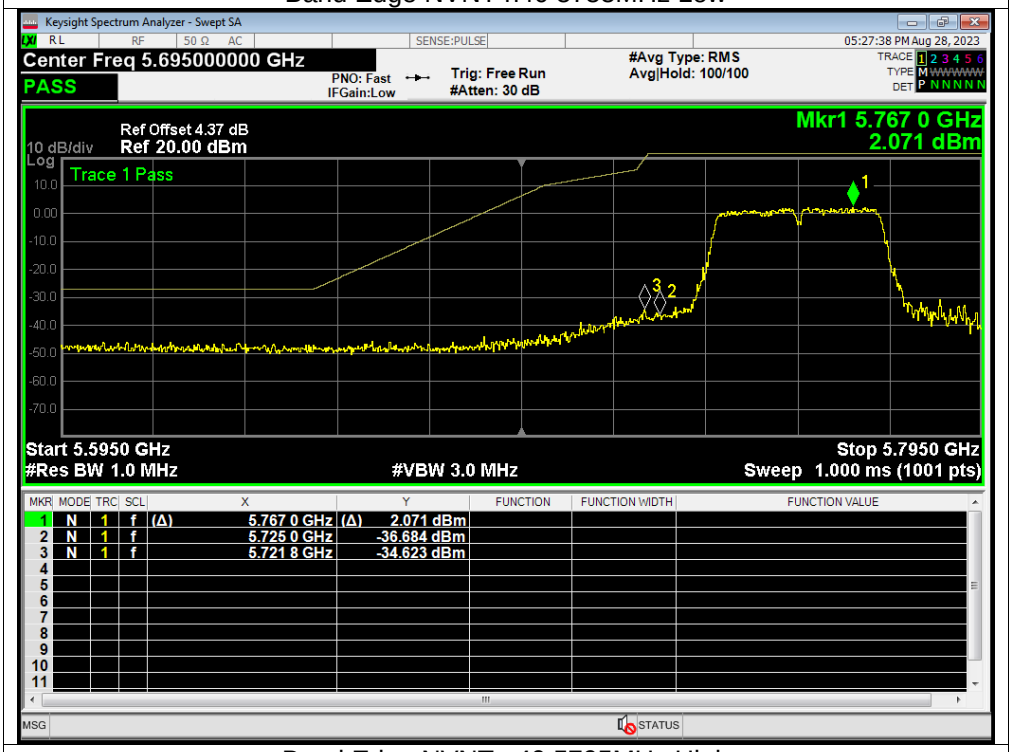
Band Edge NVNT n20 5745MHz Low



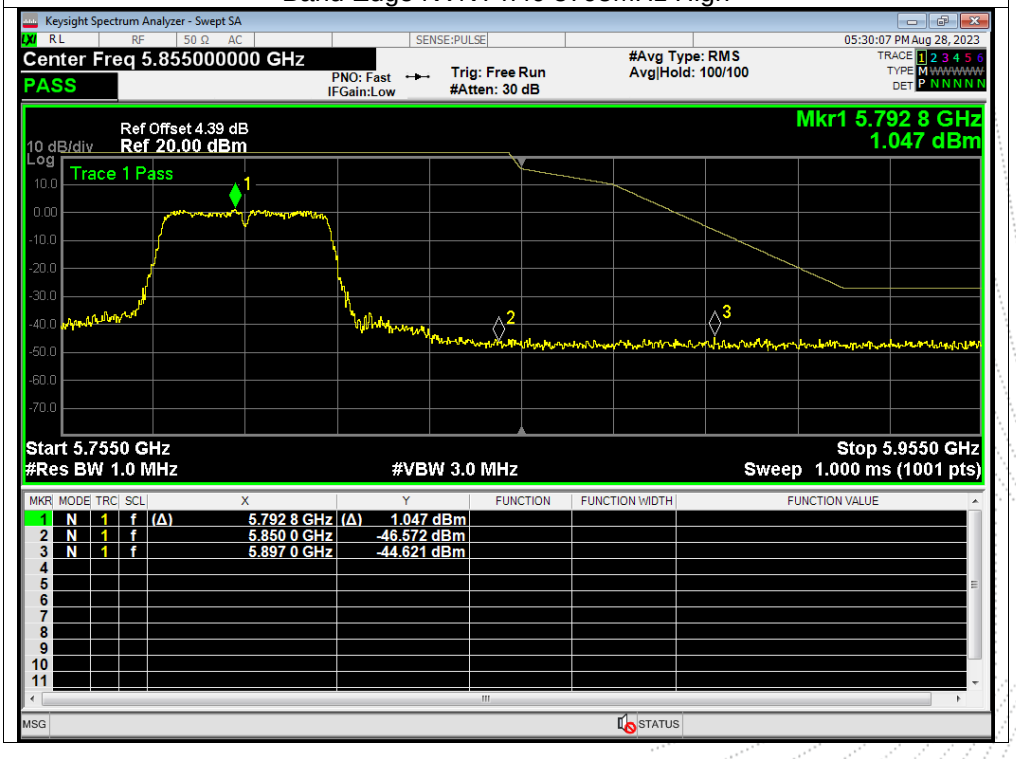
Band Edge NVNT n20 5825MHz High



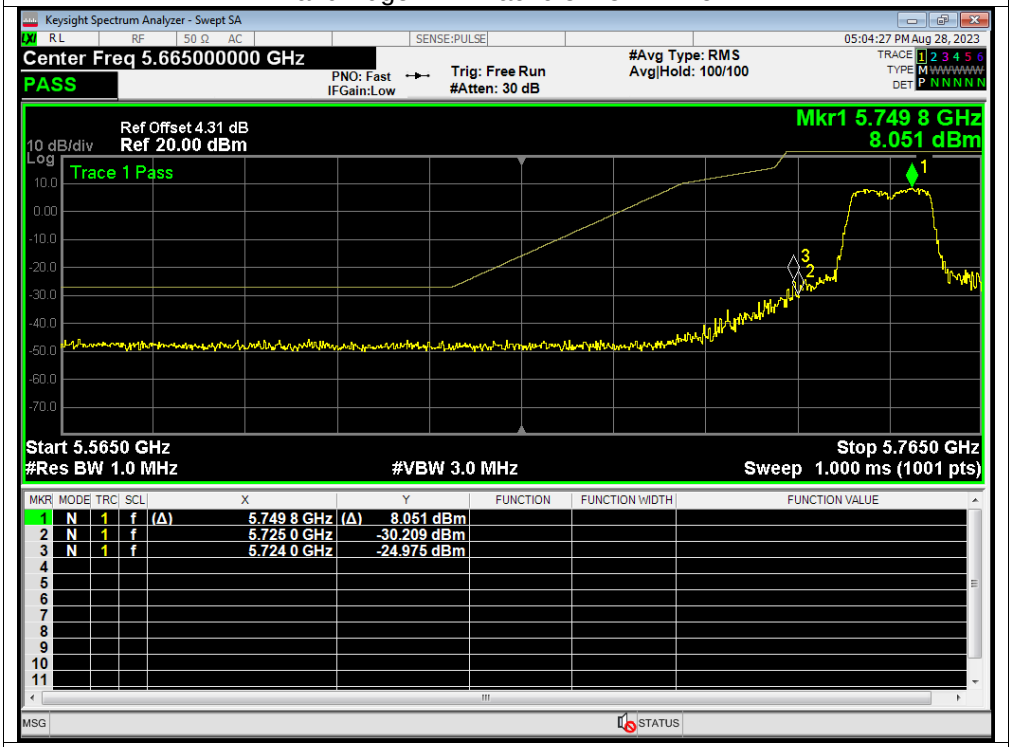
Band Edge NVNT n40 5755MHz Low



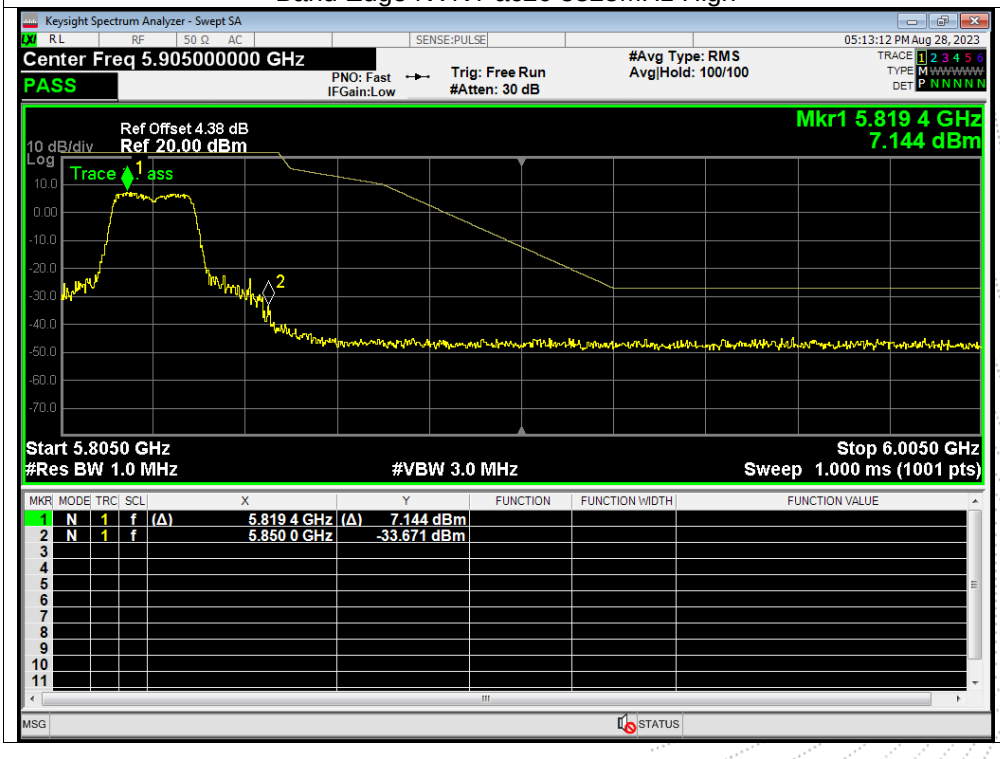
Band Edge NVNT n40 5795MHz High



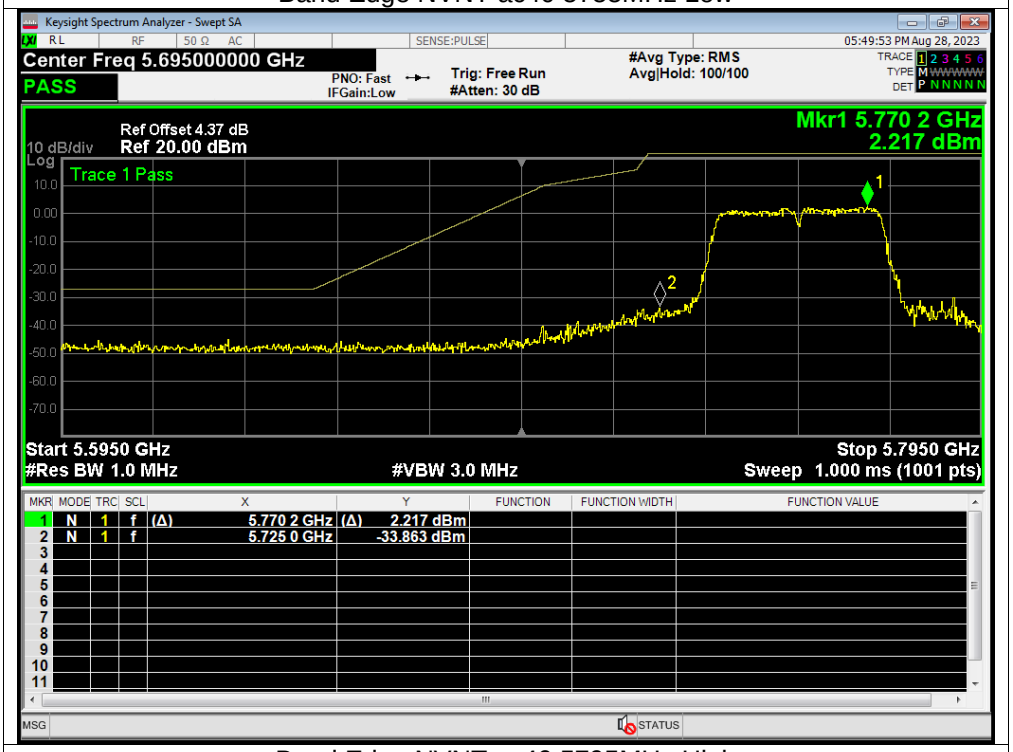
Band Edge NVNT ac20 5745MHz Low



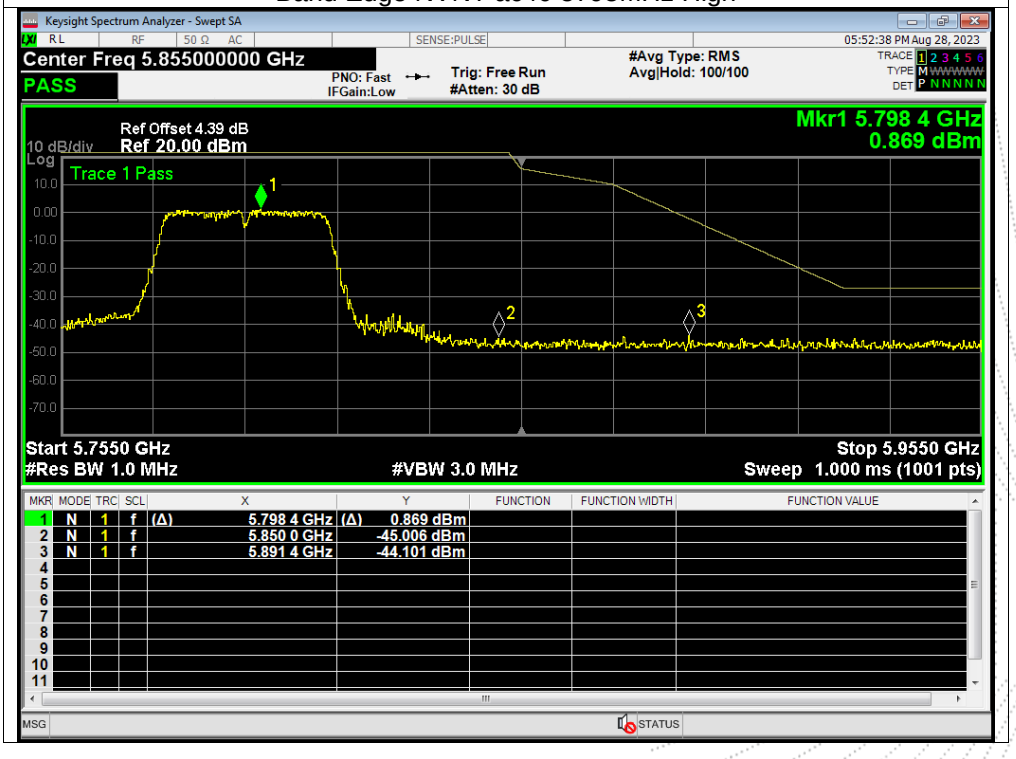
Band Edge NVNT ac20 5825MHz High



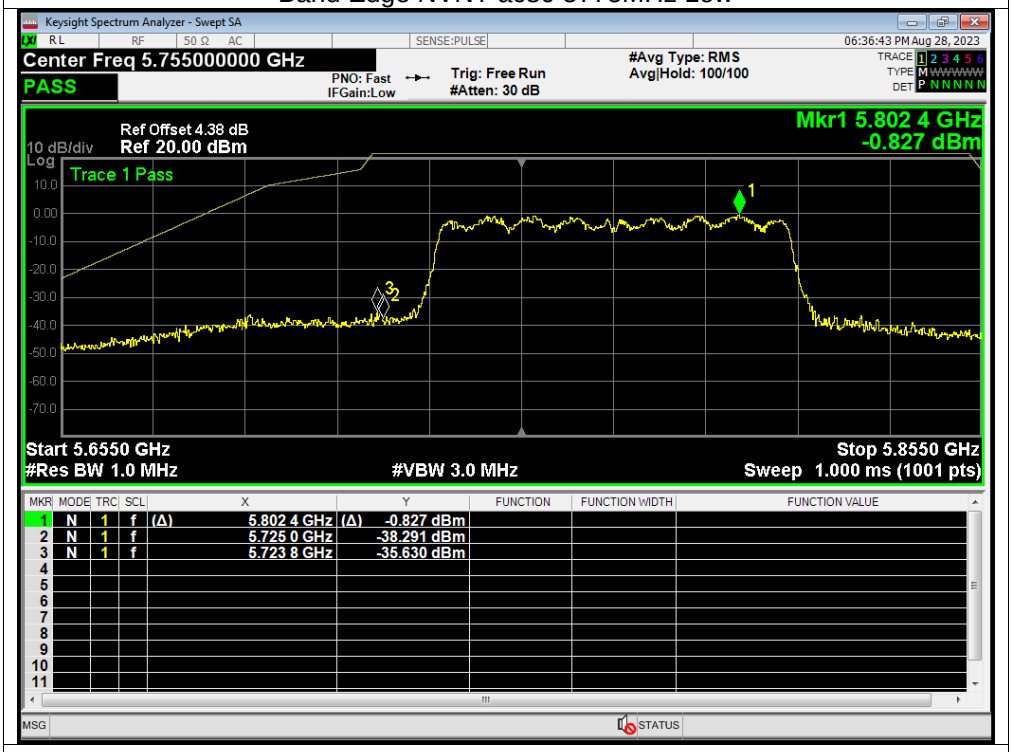
Band Edge NVNT ac40 5755MHz Low



Band Edge NVNT ac40 5795MHz High



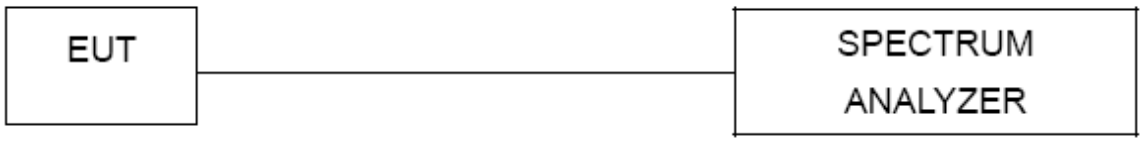
Band Edge NVNT ac80 5775MHz Low



Band Edge NVNT ac80 5775MHz 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..

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

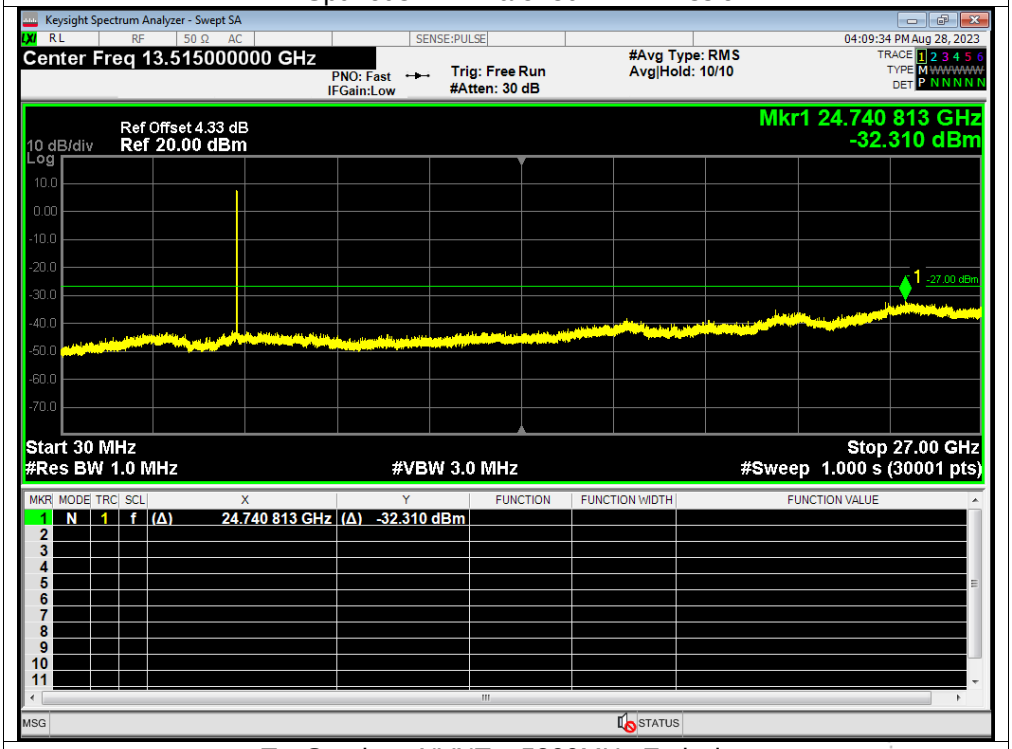
Remark: The measurement frequency range is from 9KHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the spurious emissions and bandege measurement data.

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.

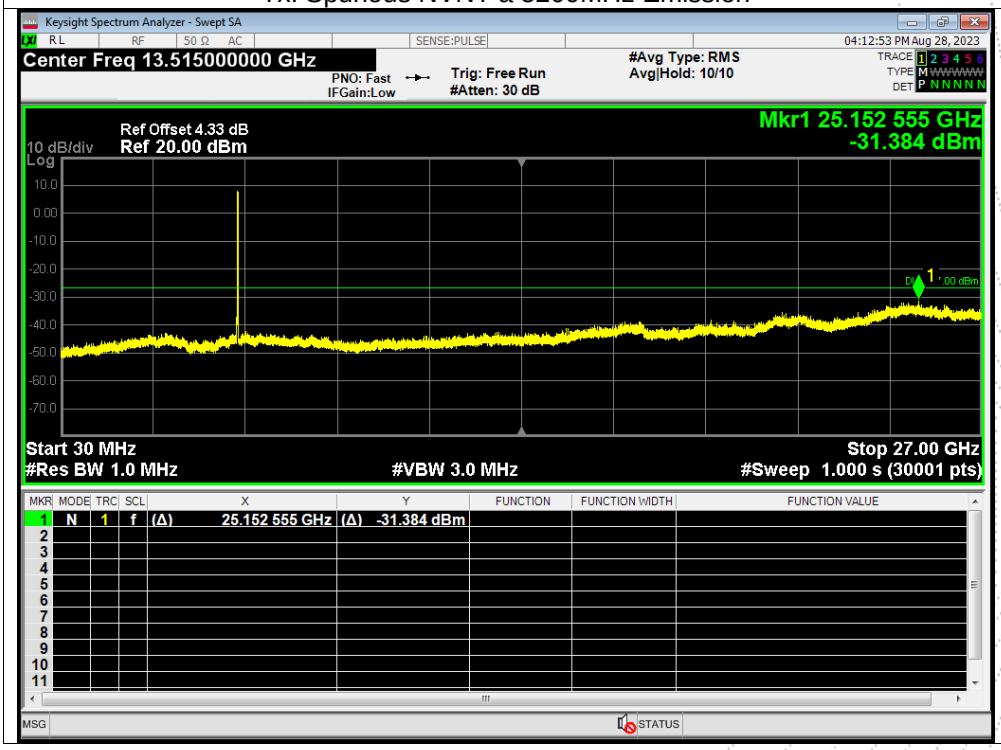
.

Plot.: 5180-5240MHz

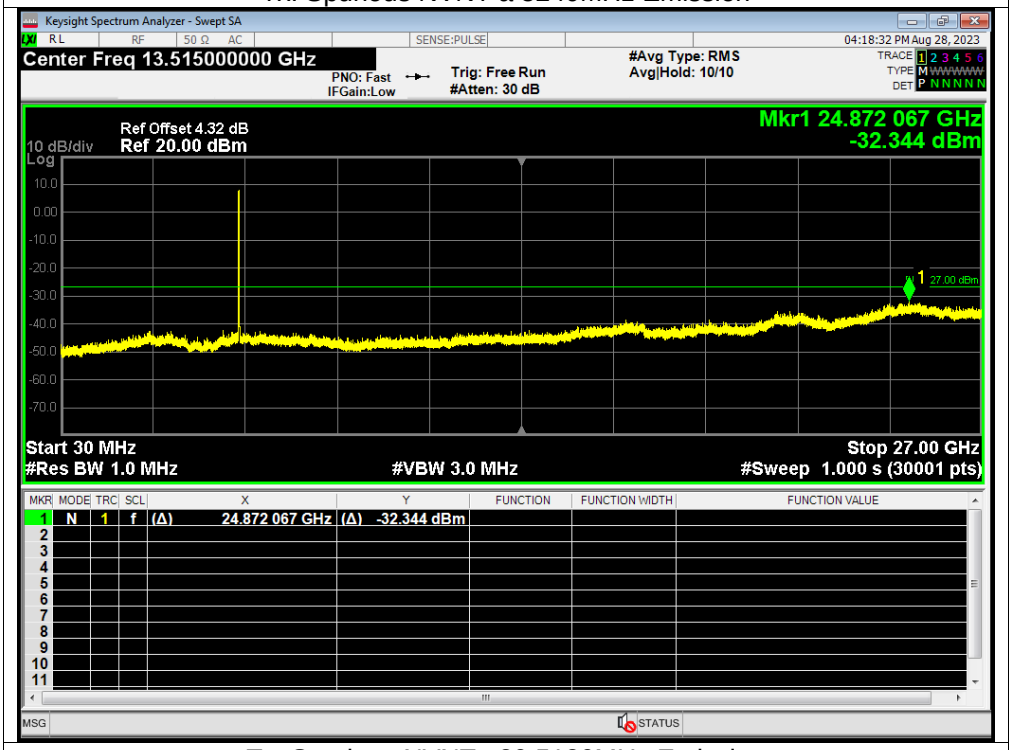
Test Graphs
Tx. Spurious NVNT a 5180MHz Emission



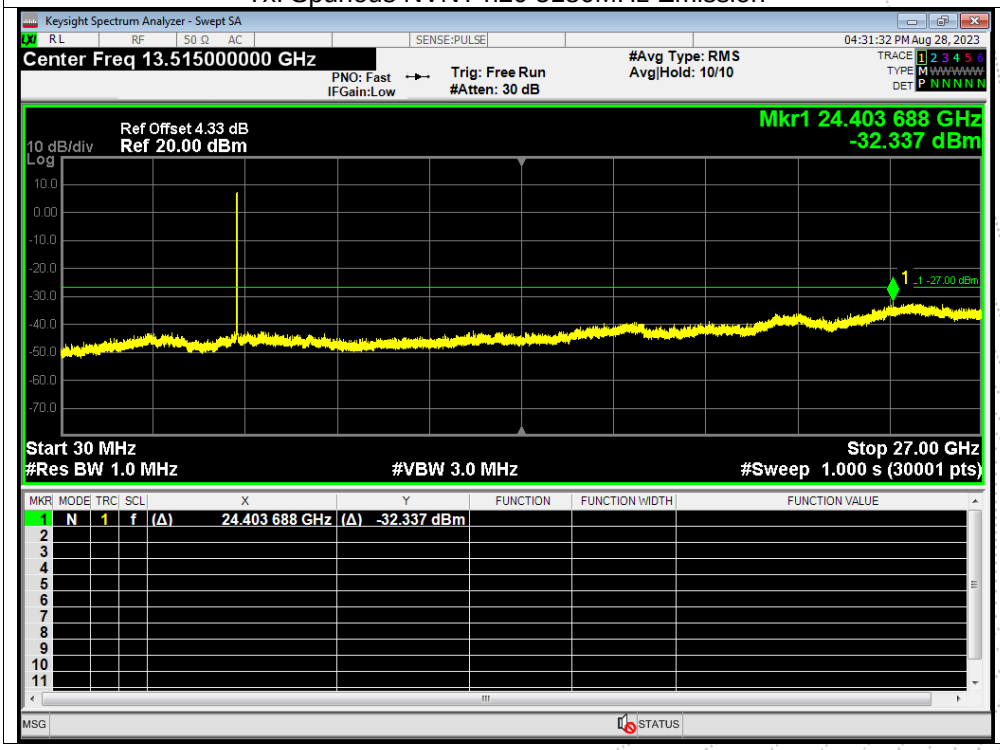
Tx. Spurious NVNT a 5200MHz Emission



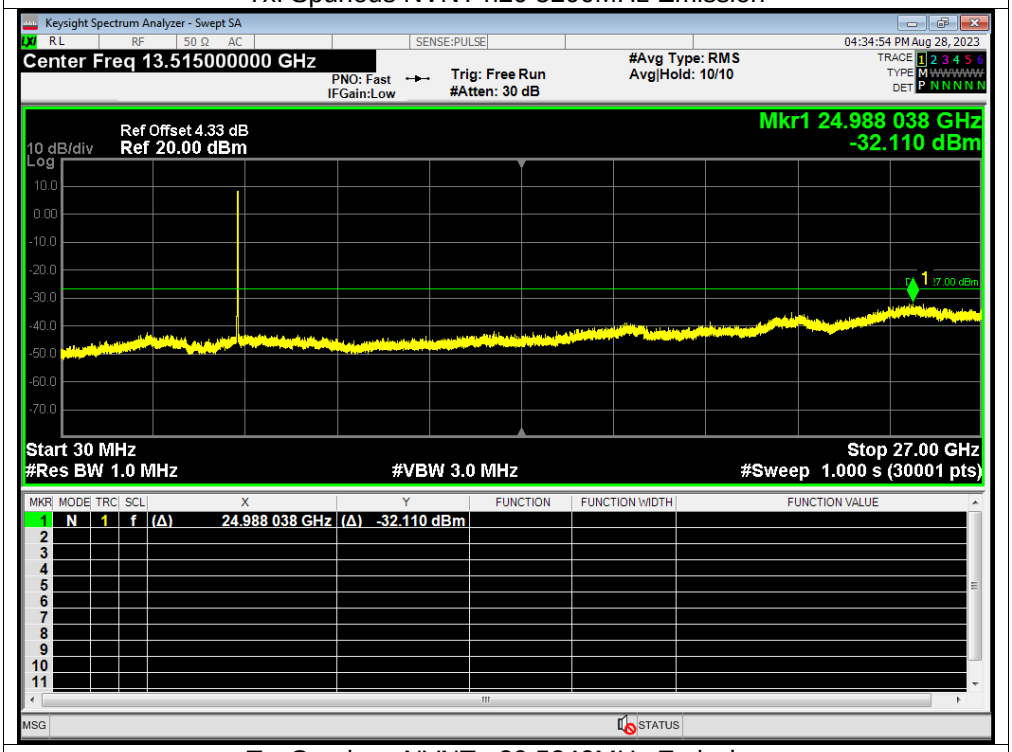
Tx. Spurious NVNT a 5240MHz Emission



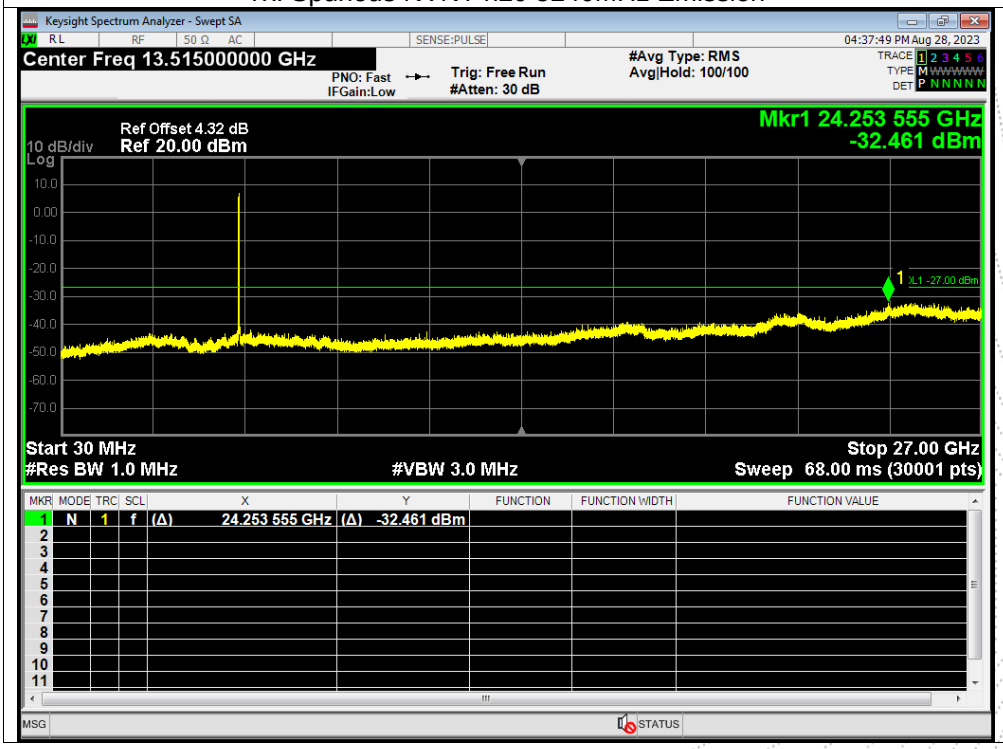
Tx. Spurious NVNT n20 5180MHz Emission



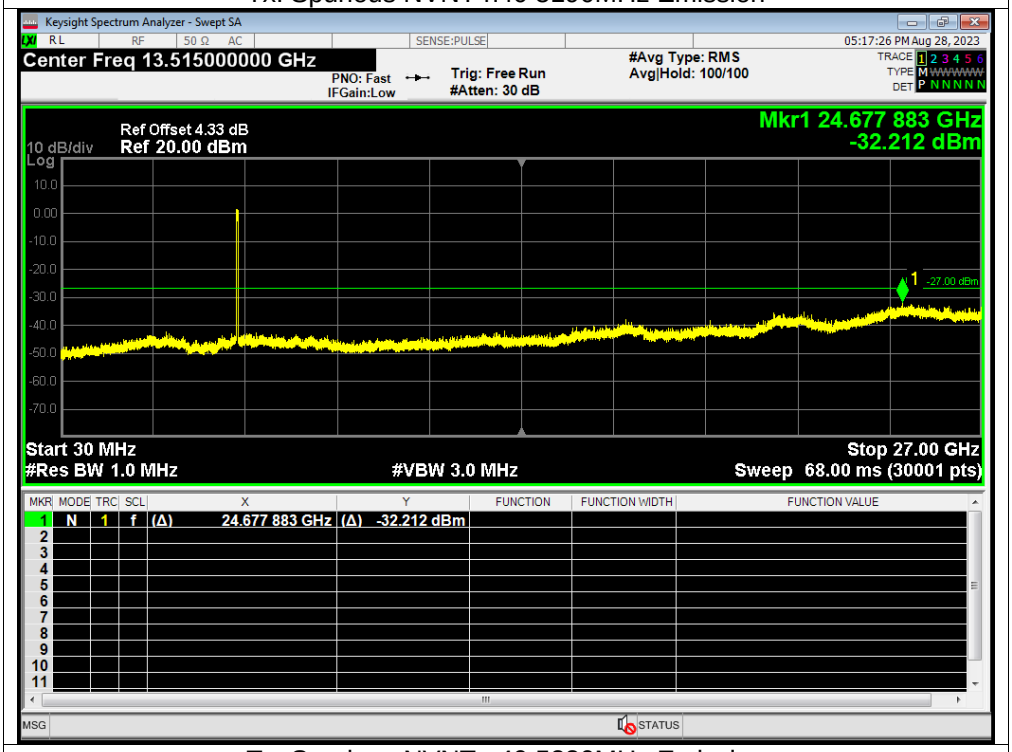
Tx. Spurious NVNT n20 5200MHz Emission



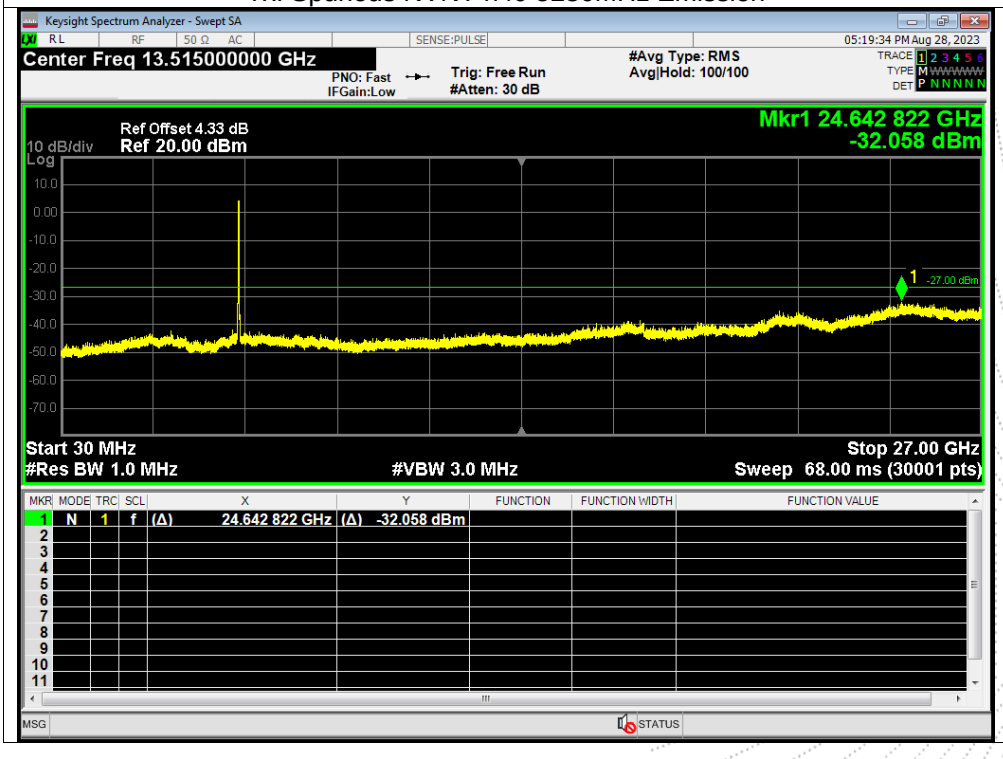
Tx. Spurious NVNT n20 5240MHz Emission



Tx. Spurious NVNT n40 5190MHz Emission

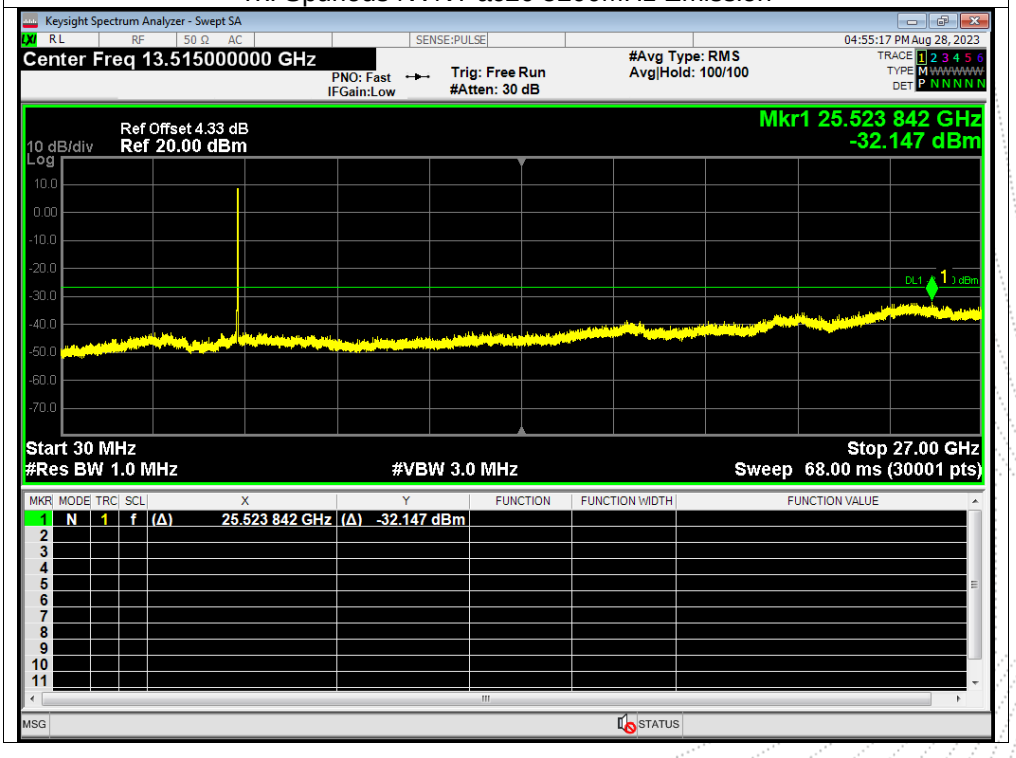


Tx. Spurious NVNT n40 5230MHz Emission

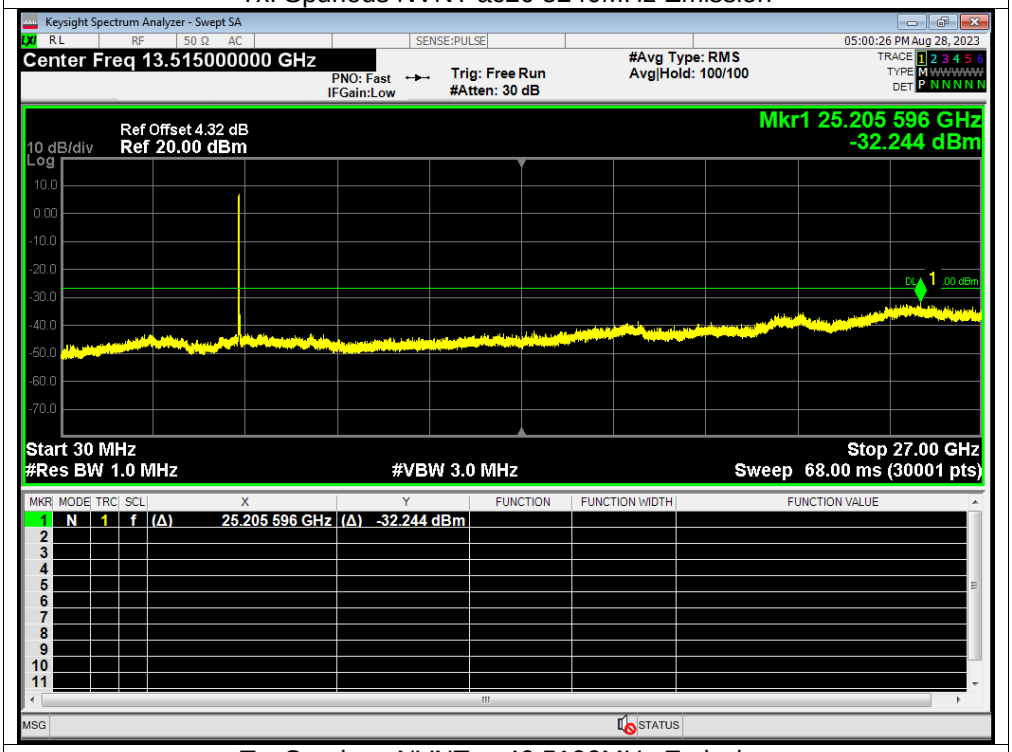


Tx. Spurious NVNT ac20 5180MHz Emission

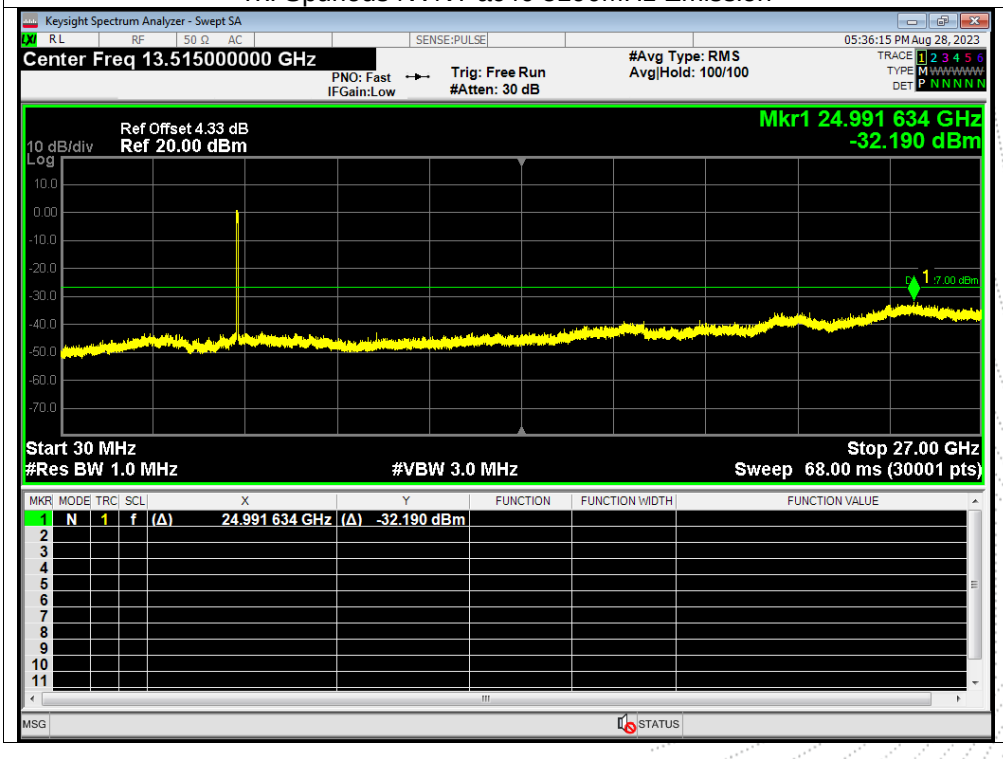
Tx. Spurious NVNT ac20 5200MHz Emission



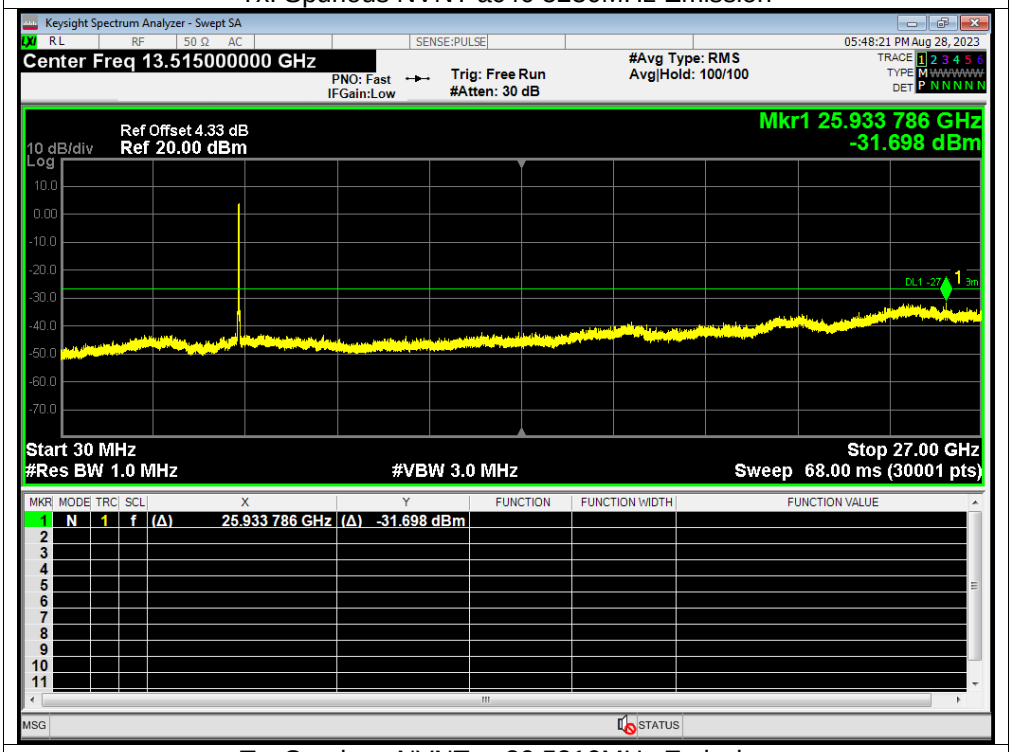
Tx. Spurious NVNT ac20 5240MHz Emission



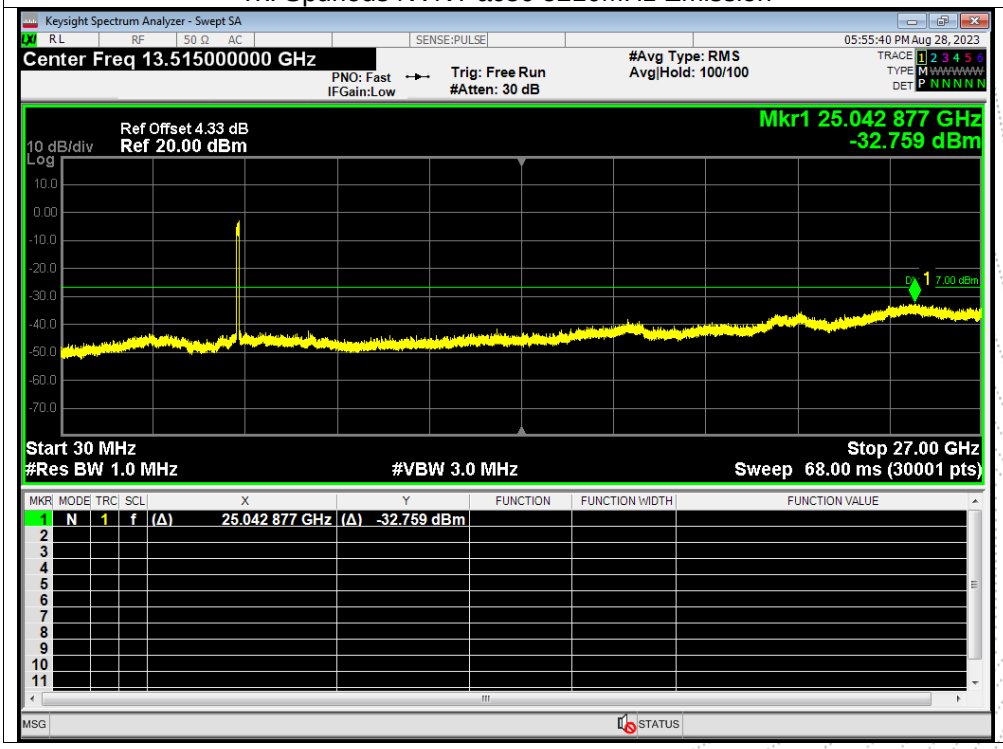
Tx. Spurious NVNT ac40 5190MHz Emission



Tx. Spurious NVNT ac40 5230MHz Emission

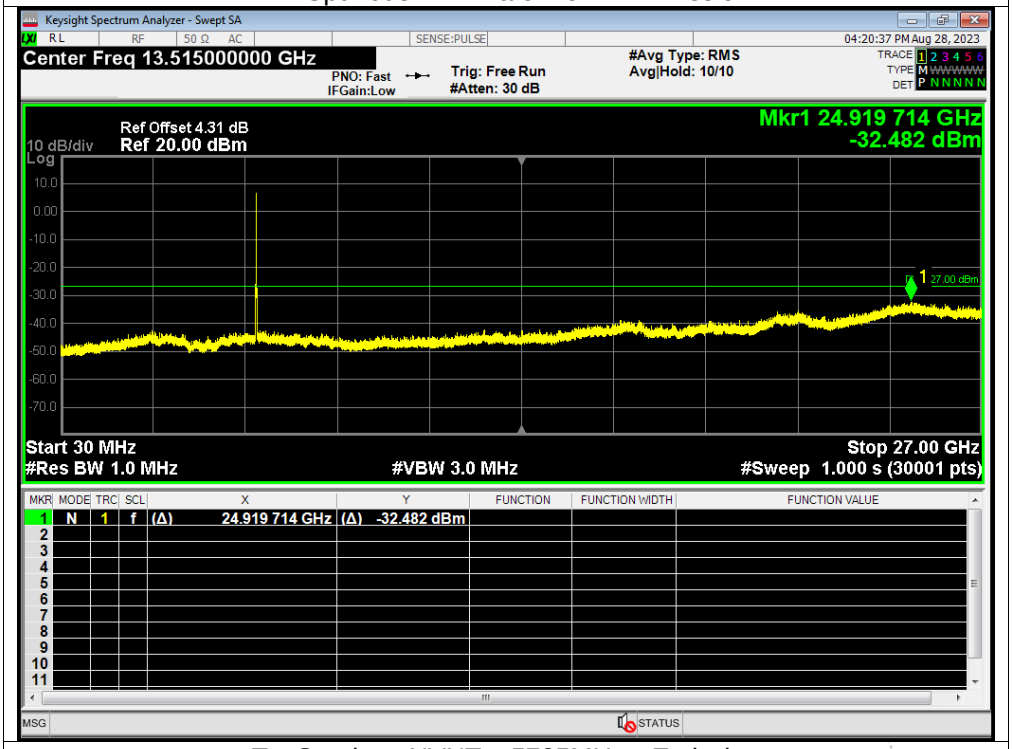


Tx. Spurious NVNT ac80 5210MHz Emission

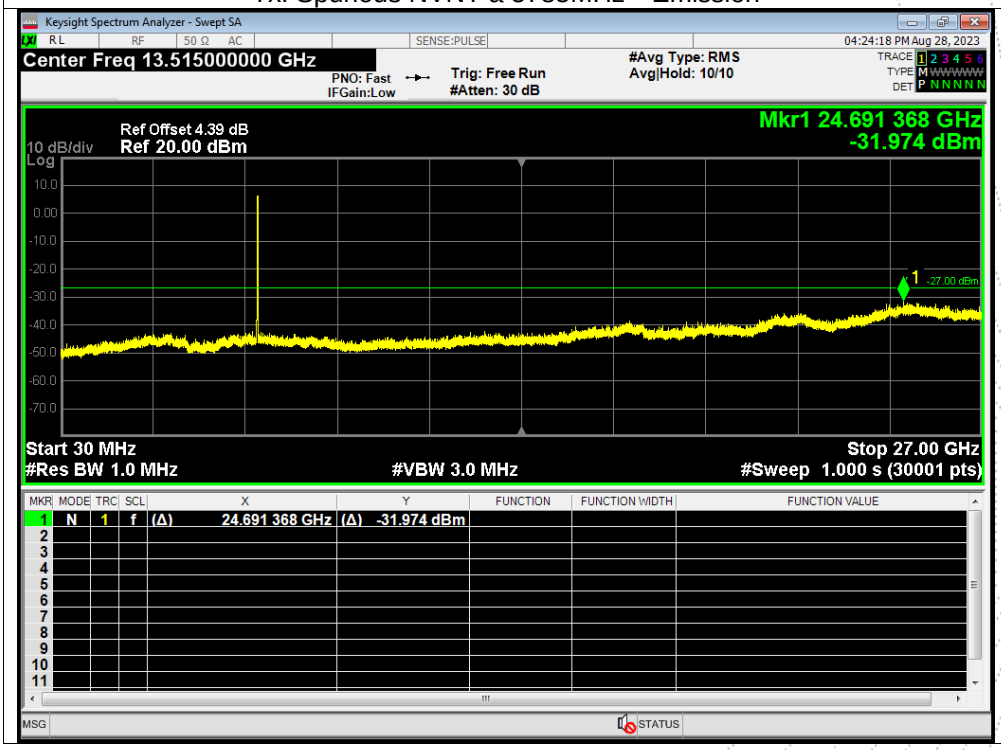


: 5745-58250MHz

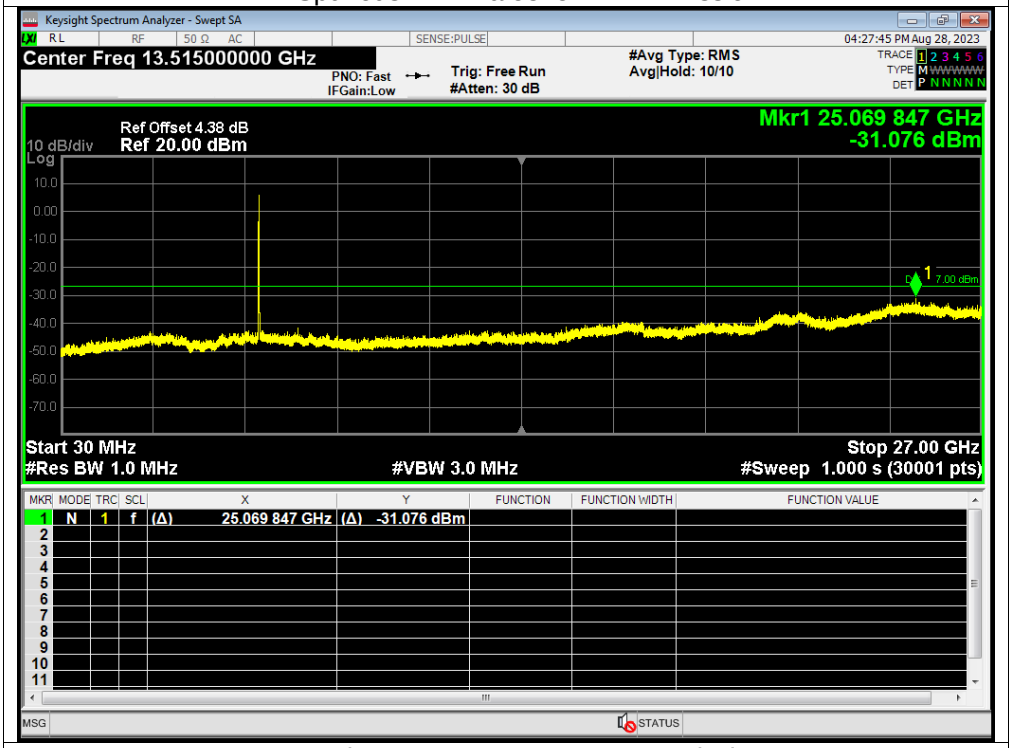
Test Graphs
Tx. Spurious NVNT a 5745MHz Emission



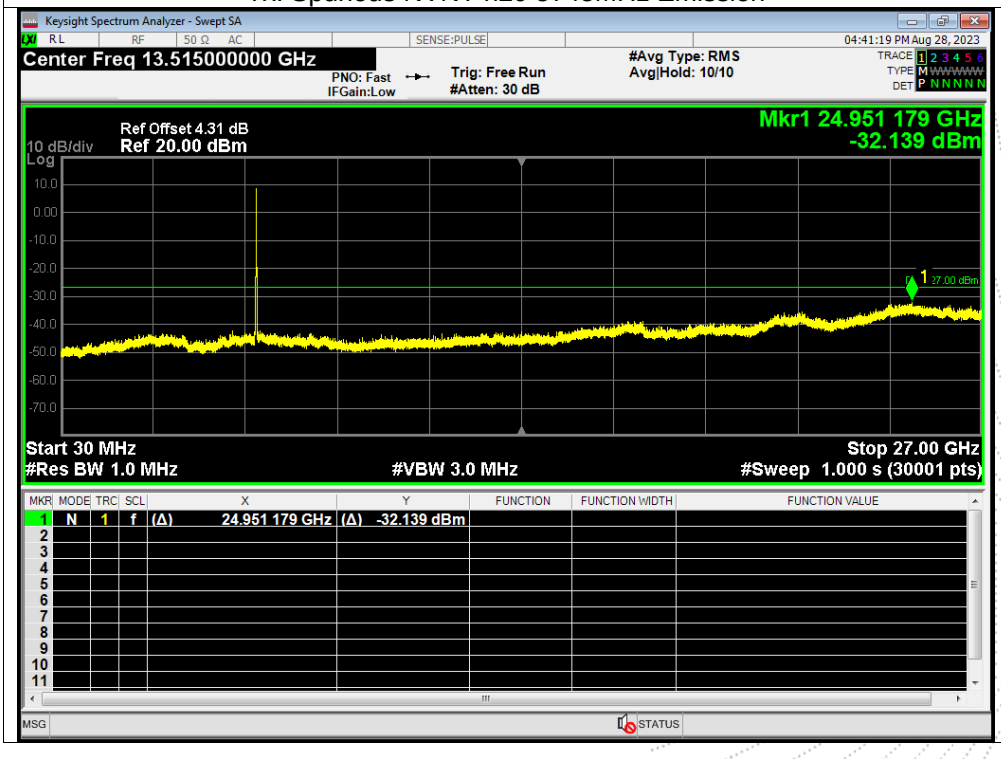
Tx. Spurious NVNT a 5785MHz Emission



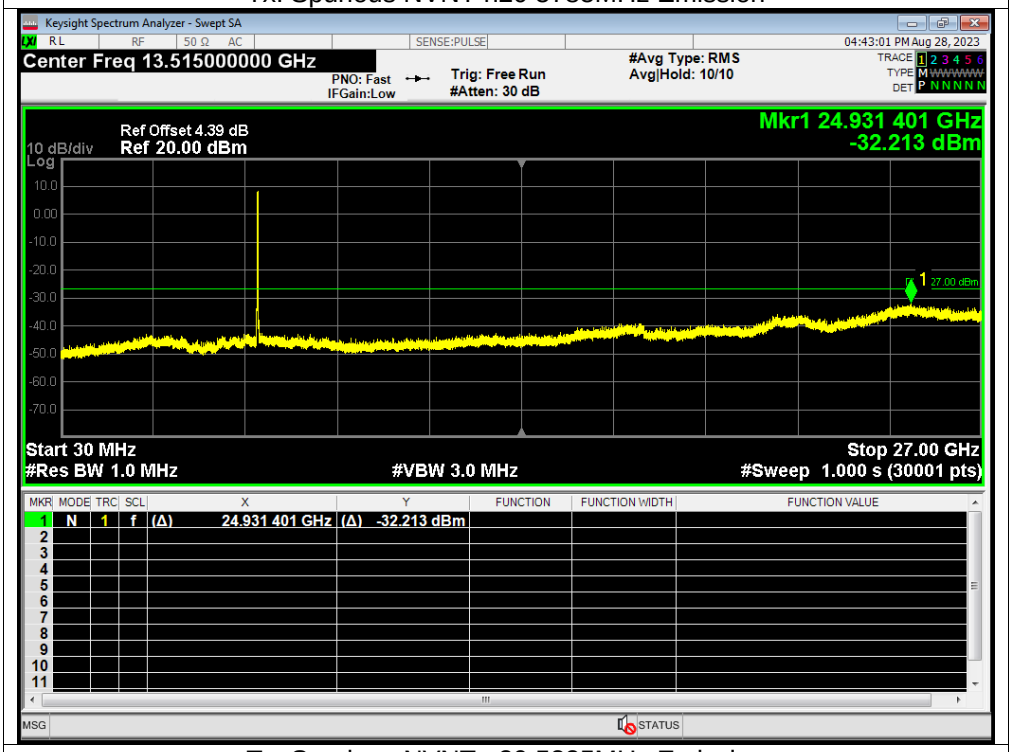
Tx. Spurious NVNT a 5825MHz Emission



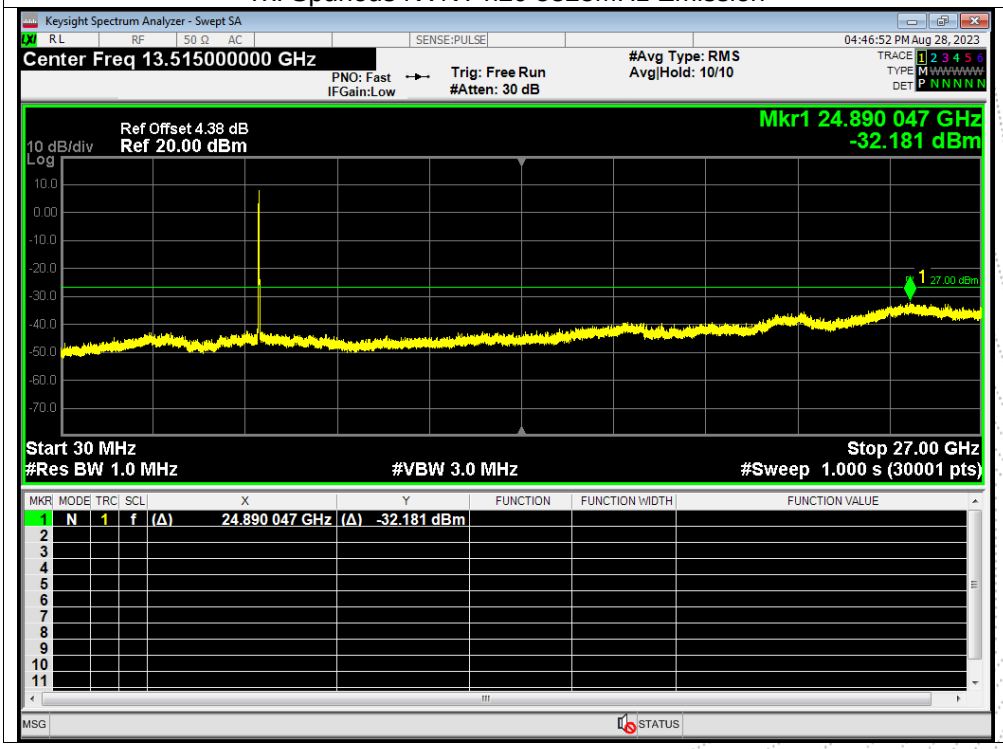
Tx. Spurious NVNT n20 5745MHz Emission



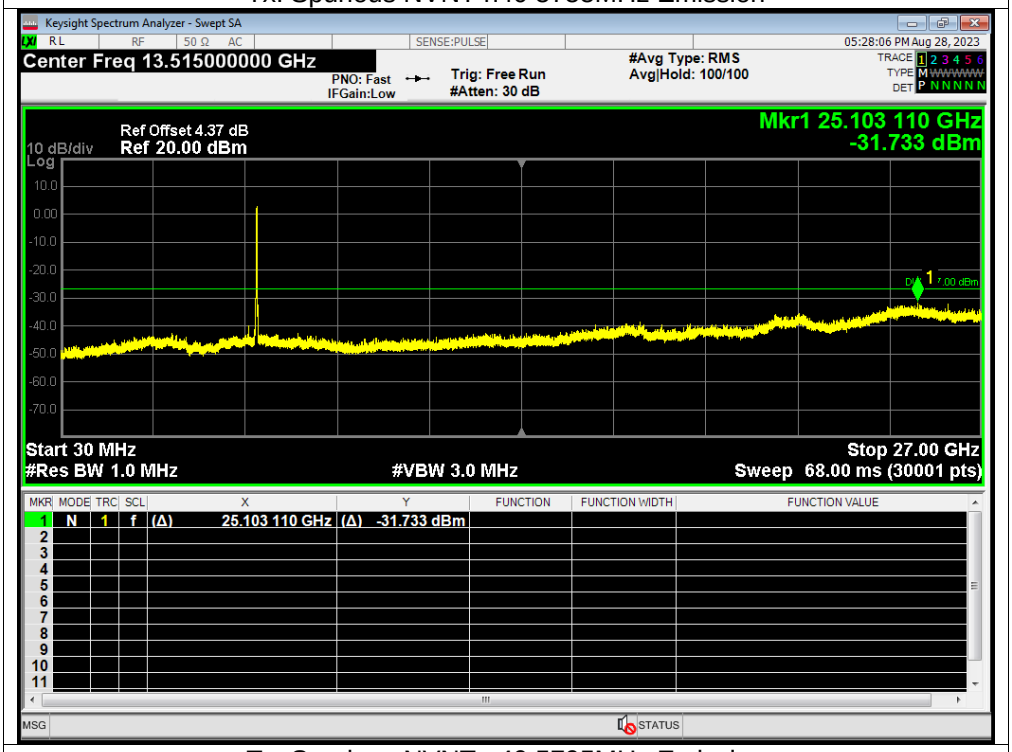
Tx. Spurious NVNT n20 5785MHz Emission



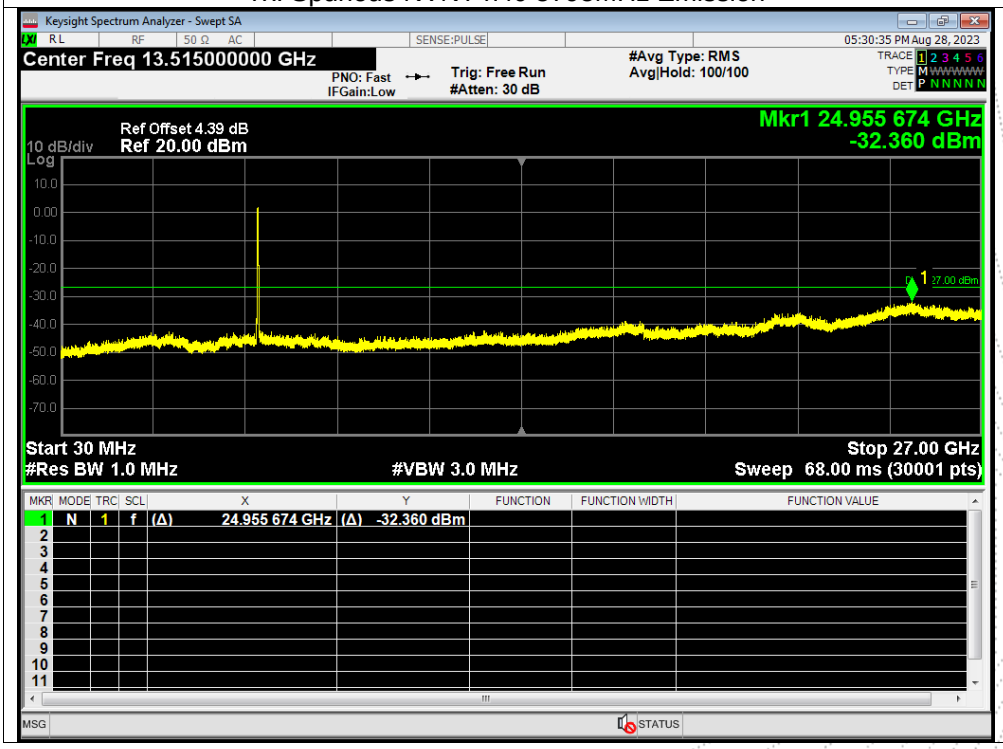
Tx. Spurious NVNT n20 5825MHz Emission



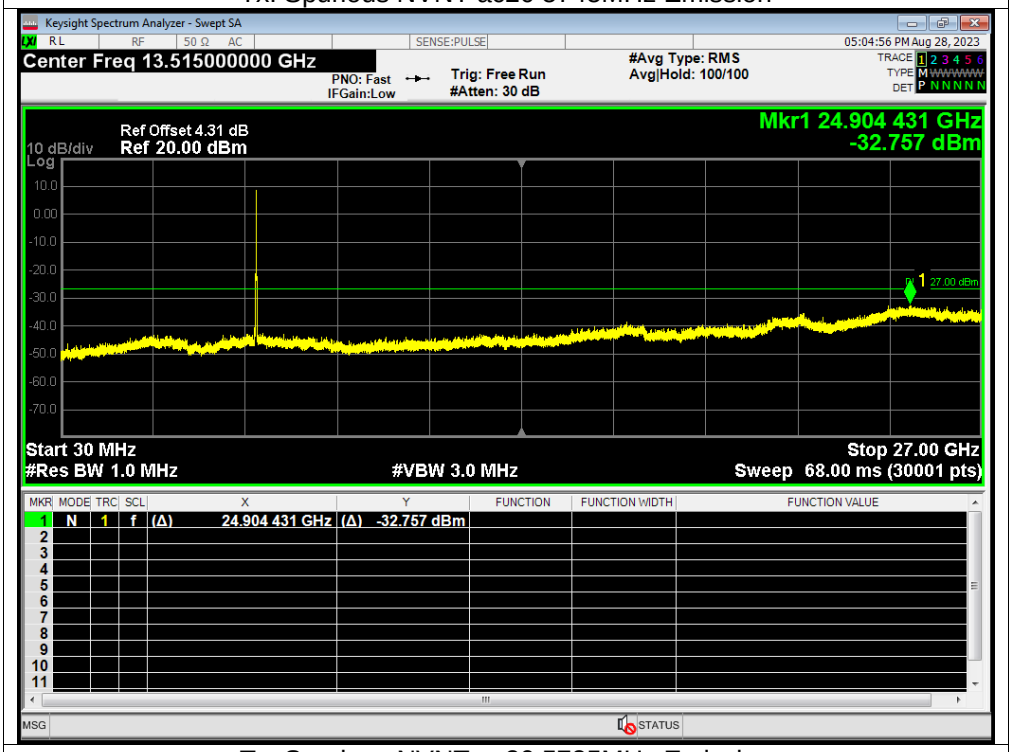
Tx. Spurious NVNT n40 5755MHz Emission



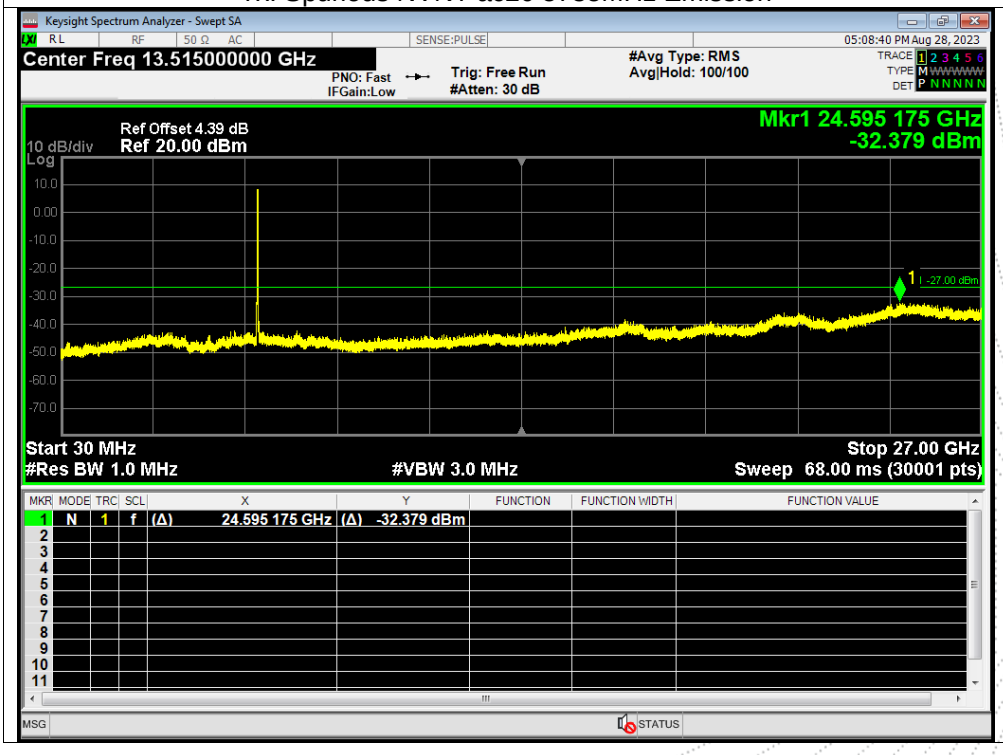
Tx. Spurious NVNT n40 5795MHz Emission



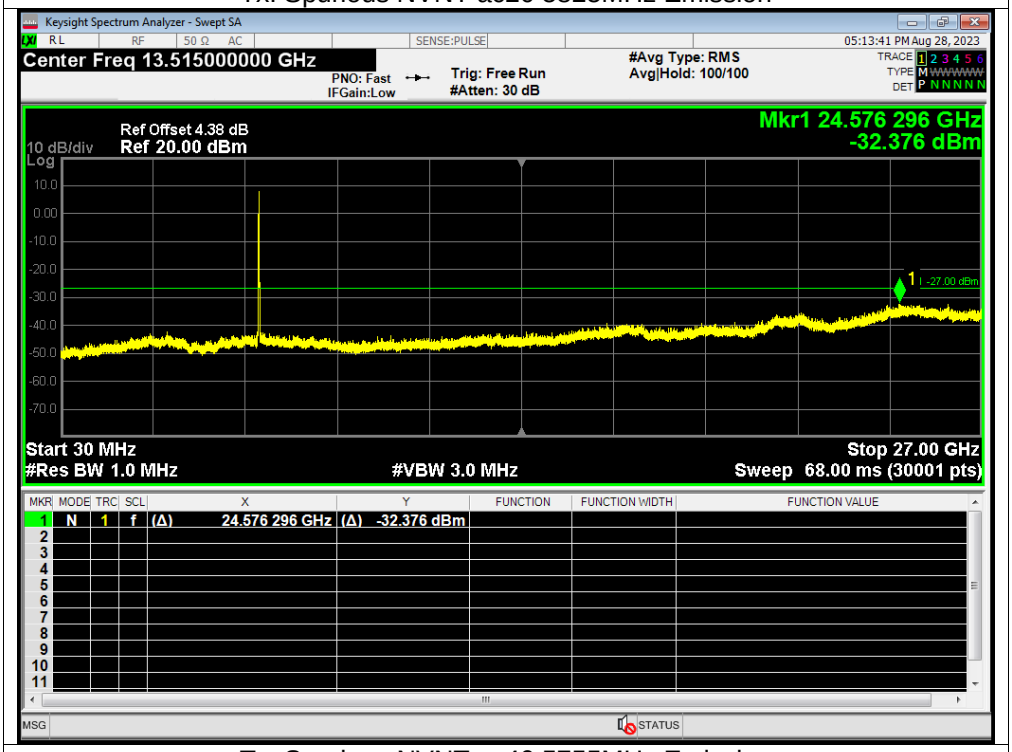
Tx. Spurious NVNT ac20 5745MHz Emission



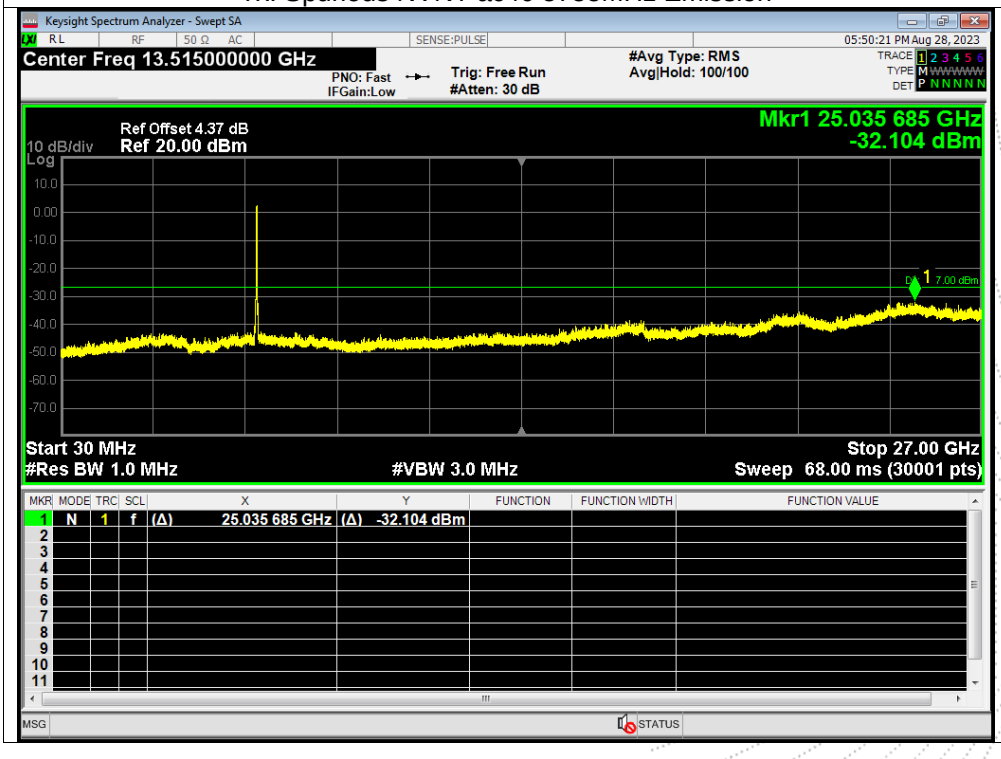
Tx. Spurious NVNT ac20 5785MHz Emission



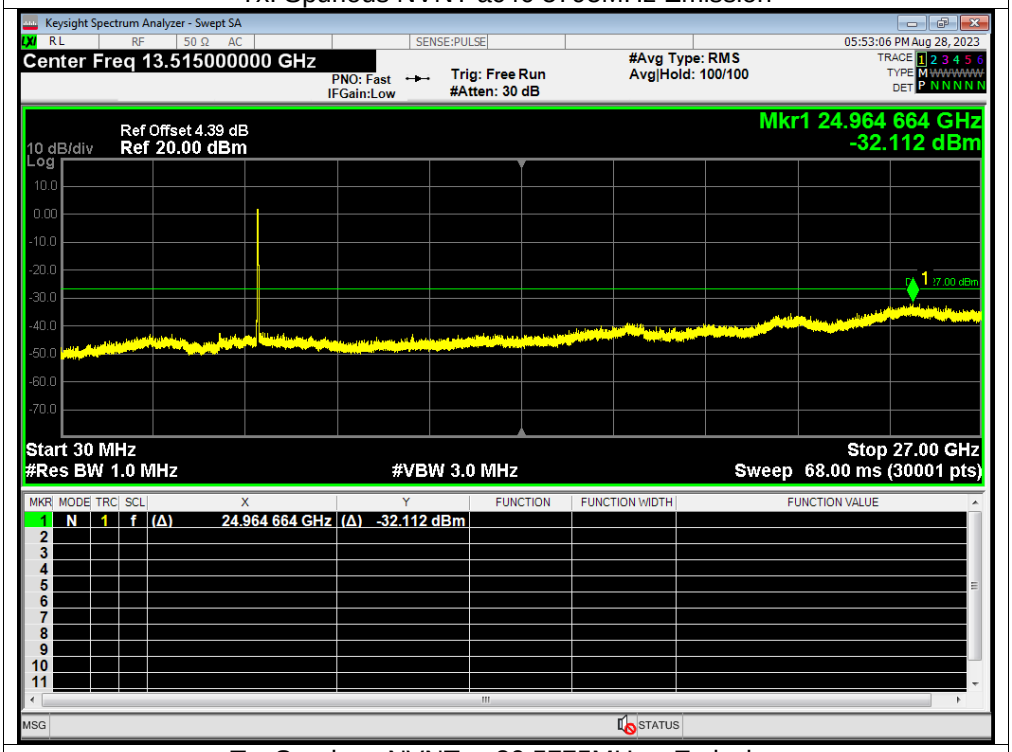
Tx. Spurious NVNT ac20 5825MHz Emission



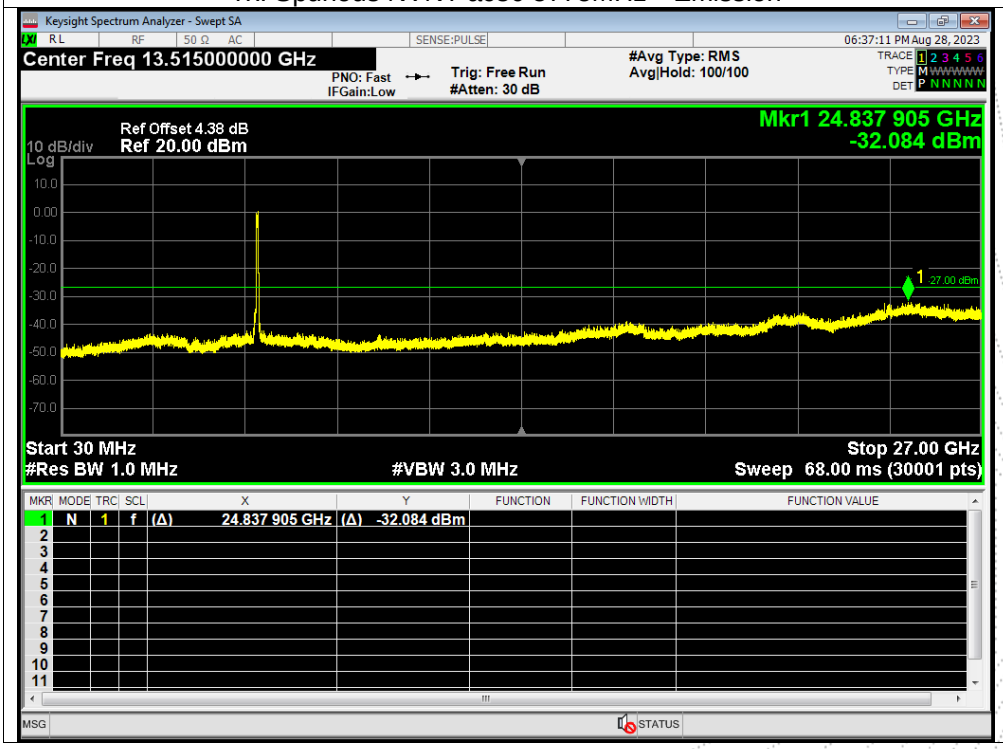
Tx. Spurious NVNT ac40 5755MHz Emission



Tx. Spurious NVNT ac40 5795MHz Emission

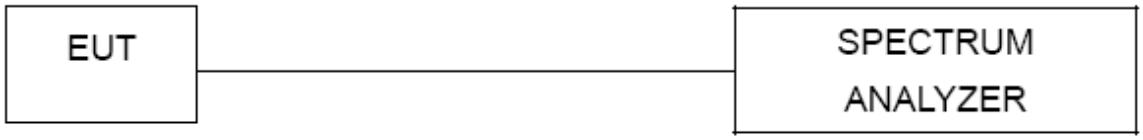


Tx. Spurious NVNT ac80 5775MHz Emission



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 24V
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)	24.00	5180.0123	5180	0.0123	2.3829
		V max (V)	27.60	5180.0112	5180	0.0112	2.1702
		V min (V)	10.20	5180.0157	5180	0.0157	3.0384
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)	24	T (°C)	-20	5180.0032	5180	0.0032	0.6140
		T (°C)	-10	5180.0086	5180	0.0086	1.6697
		T (°C)	0	5180.0048	5180	0.0048	0.9292
		T (°C)	10	5180.0081	5180	0.0081	1.5695
		T (°C)	20	5180.0104	5180	0.0104	2.0166
		T (°C)	30	5180.0102	5180	0.0102	1.9742
		T (°C)	40	5180.0048	5180	0.0048	0.9246
		T (°C)	50	5180.0090	5180	0.0090	1.7451
		T (°C)	60	5180.0110	5180	0.0110	2.1260
		T (°C)	70	5180.0074	5180	0.0074	1.4312
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)	24.00	5200.0092	5200	0.0092	1.7599
		V max (V)	27.60	5200.0122	5200	0.0122	2.3451
		V min (V)	10.20	5200.0085	5200	0.0085	1.6261
Limits				5725-5850 MHz			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5200MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	24	T (°C)	-20	5200.00241	5200	0.00241	0.4626
		T (°C)	-10	5200.00617	5200	0.00617	1.1861
		T (°C)	0	5200.01061	5200	0.01061	2.0395
		T (°C)	10	5200.01123	5200	0.01123	2.1589
		T (°C)	20	5200.00864	5200	0.00864	1.6607
		T (°C)	30	5200.01258	5200	0.01258	2.4192
		T (°C)	40	5200.00073	5200	0.00073	0.1396
		T (°C)	50	5200.00250	5200	0.00250	0.4812
		T (°C)	60	5200.01124	5200	0.01124	2.1611
		T (°C)	70	5200.00876	5200	0.00876	1.6852
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)	24.00	5240.0103	5240	0.0103	1.9727
		V max (V)	27.60	5240.0077	5240	0.0077	1.4784
		V min (V)	10.20	5240.0025	5240	0.0025	0.4759
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)	24	T (°C)	-20	5240.0016	5240	0.0016	0.3124
		T (°C)	-10	5240.0065	5240	0.0065	1.2423
		T (°C)	0	5240.0022	5240	0.0022	0.4168
		T (°C)	10	5240.0056	5240	0.0056	1.0771
		T (°C)	20	5240.0010	5240	0.0010	0.2001
		T (°C)	30	5240.0036	5240	0.0036	0.6880
		T (°C)	40	5240.0027	5240	0.0027	0.5162
		T (°C)	50	5240.0037	5240	0.0037	0.7129
		T (°C)	60	5240.0097	5240	0.0097	1.8455
		T (°C)	70	5240.0078	5240	0.0078	1.4882
Limits				5150-5250 MHz			
Result				Complies			

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	DC 24V
Test Mode:	TX (5.8G) Mode Frequency U-NII-3 (5745-5825MHz)		

Voltage vs. Frequency Stabilit

TEST CONDITIONS				Reference Frequency:5745MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	24.00	5745.00730	5745	0.00730	1.2703
		V max (V)	27.60	5745.00275	5745	0.00275	0.4783
		V min (V)	10.20	5745.01117	5745	0.01117	1.9435
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)	24	T (°C)	-20	5745.00948	5745	0.00948	1.6495
		T (°C)	-10	5745.00242	5745	0.00242	0.4221
		T (°C)	0	5745.01291	5745	0.01291	2.2465
		T (°C)	10	5745.00224	5745	0.00224	0.3904
		T (°C)	20	5745.01310	5745	0.01310	2.2805
		T (°C)	30	5745.00605	5745	0.00605	1.0531
		T (°C)	40	5745.00678	5745	0.00678	1.1797
		T (°C)	50	5745.00894	5745	0.00894	1.5568
		T (°C)	60	5745.00941	5745	0.00941	1.6385
		T (°C)	70	5745.00147	5745	0.00147	0.2566
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)	24.00	5745.00730	5745	0.00730	1.2703
		V max (V)	27.60	5745.00275	5745	0.00275	0.4783
		V min (V)	10.20	5745.01117	5745	0.01117	1.9435
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)	24	T (°C)	-20	5785.00353	5785	0.00353	0.6109
		T (°C)	-10	5785.00831	5785	0.00831	1.4369
		T (°C)	0	5785.00868	5785	0.00868	1.5004
		T (°C)	10	5785.00784	5785	0.00784	1.3554
		T (°C)	20	5785.00231	5785	0.00231	0.3996
		T (°C)	30	5785.01135	5785	0.01135	1.9627
		T (°C)	40	5785.00263	5785	0.00263	0.4546
		T (°C)	50	5785.01001	5785	0.01001	1.7311
		T (°C)	60	5785.00145	5785	0.00145	0.2509
		T (°C)	70	5785.00075	5785	0.00075	0.1291
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)	24.00	5825.00923	5825	0.00923	1.5839
		V max (V)	27.60	5825.00443	5825	0.00443	0.7601
		V min (V)	10.20	5825.00627	5825	0.00627	1.0763
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)	24	T (°C)	-20	5825.00338	5825	0.00338	0.5799
		T (°C)	-10	5825.00965	5825	0.00965	1.6558
		T (°C)	0	5825.01251	5825	0.01251	2.1471
		T (°C)	10	5825.00253	5825	0.00253	0.4336
		T (°C)	20	5825.00811	5825	0.00811	1.3925
		T (°C)	30	5825.00694	5825	0.00694	1.1912
		T (°C)	40	5825.01063	5825	0.01063	1.8250
		T (°C)	50	5825.00190	5825	0.00190	0.3263
		T (°C)	60	5825.00154	5825	0.00154	0.2635
		T (°C)	70	5825.00684	5825	0.00684	1.1745
Limits				5725-5850 MHz			
Result				Complies			

14. Antenna Requirement

14.1 Limit

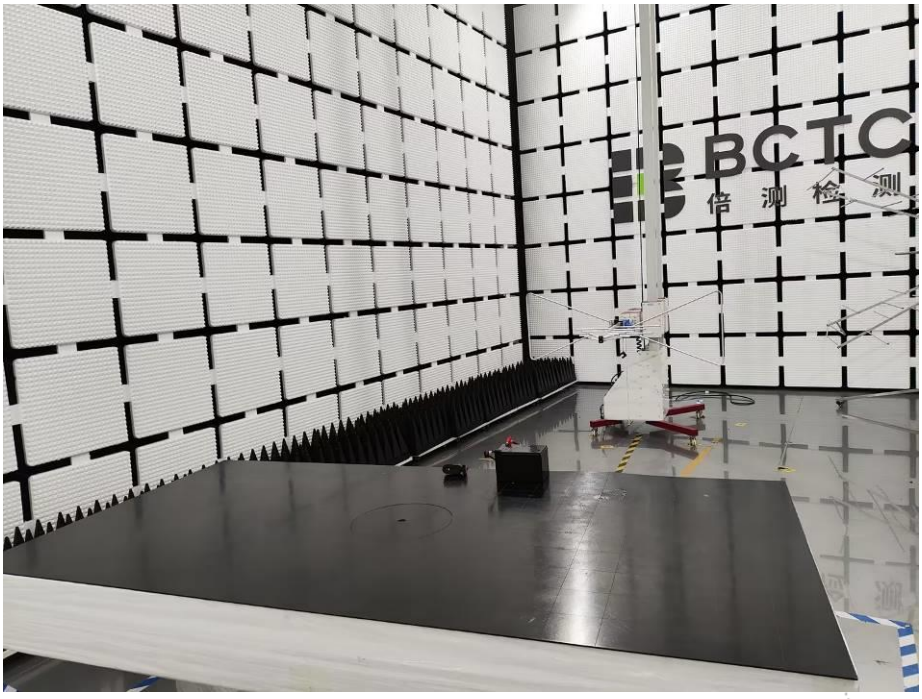
15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

14.2 Test Result

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

15. EUT Test Setup Photographs

Radiated Measurement Photos



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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