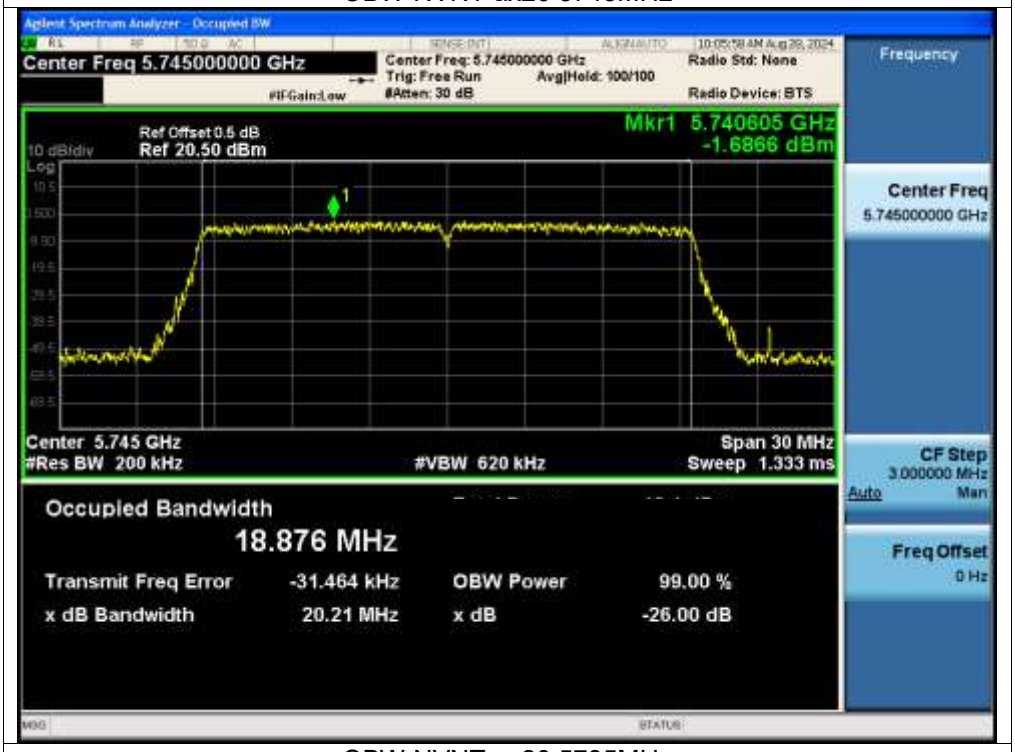
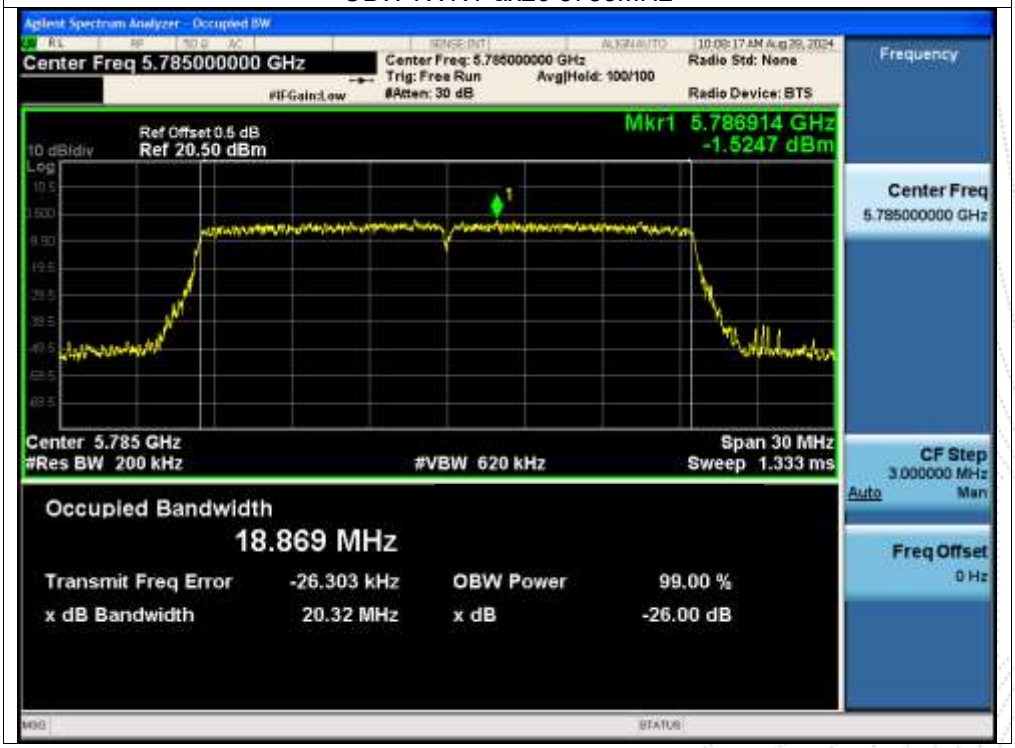
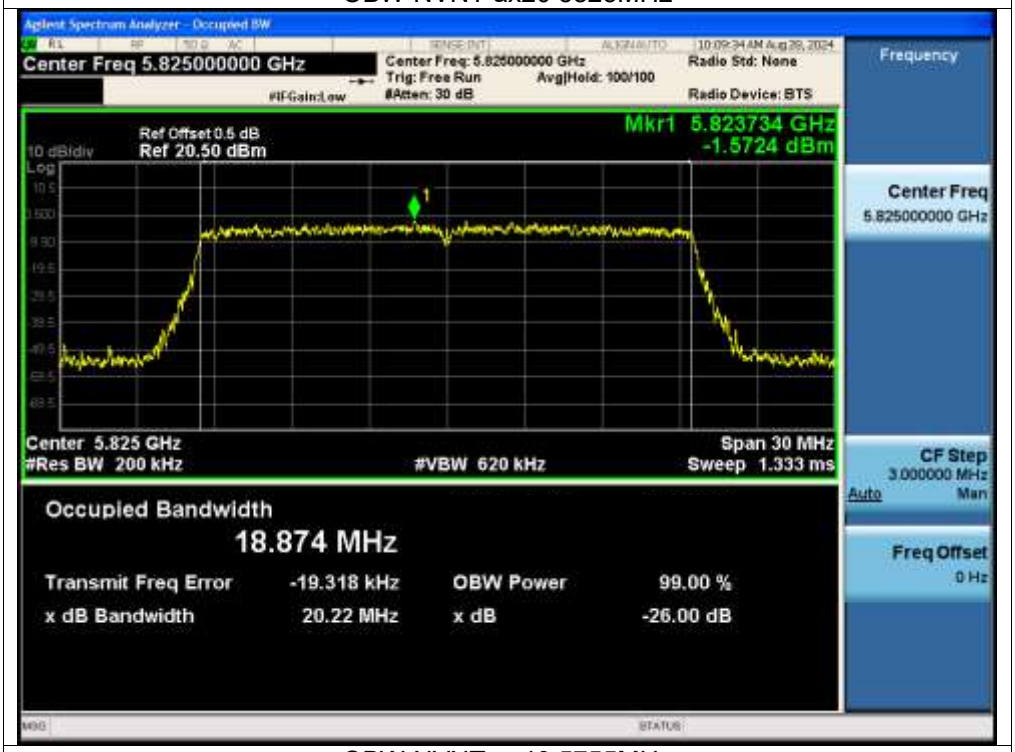
OBW NVNT ax20 5745MHz



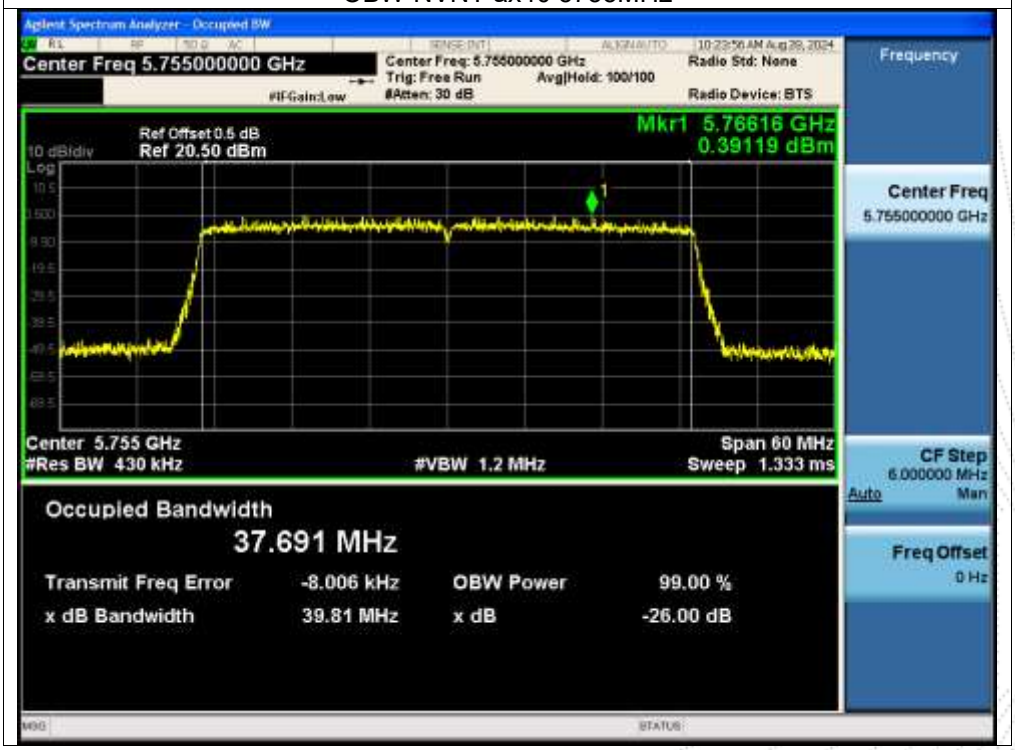
OBW NVNT ax20 5785MHz



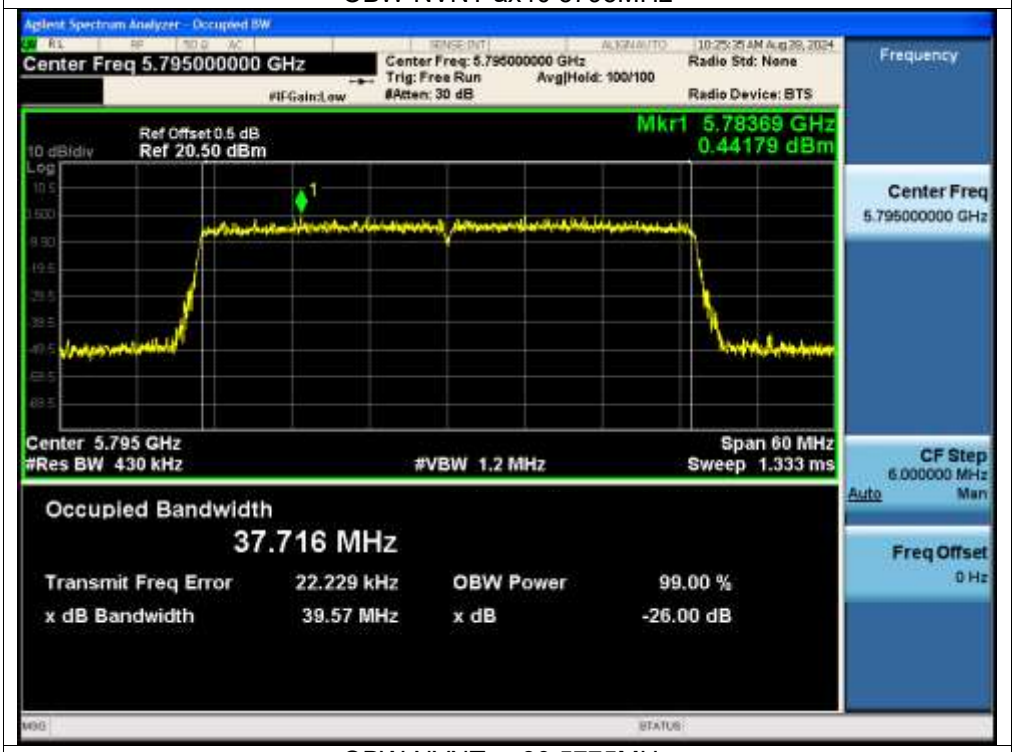
OBW NVNT ax20 5825MHz



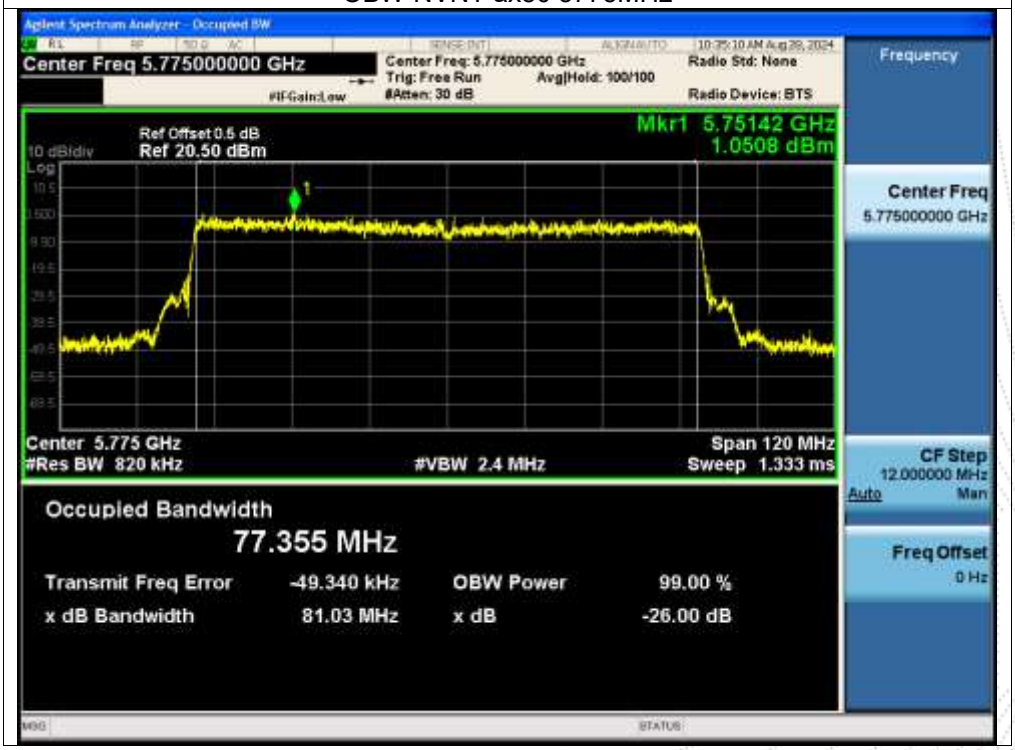
OBW NVNT ax40 5755MHz



OBW NVNT ax40 5795MHz

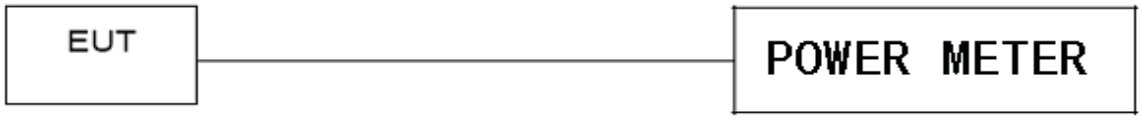


OBW NVNT ax80 5775MHz



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	250mW
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 19V
Test Mode:	TX Frequency U-NII-1 (5180-5240MHz)		

Mode	Channel	Frequency (MHz)	Conducted Power (dBm)			Limit (dBm)	Result
			ANT A	ANT B	Total		
NVNT	a	5180	11.23	11.94	/	24	Pass
NVNT	a	5200	11.01	11.22	/	24	Pass
NVNT	a	5240	10.75	10.53	/	24	Pass
NVNT	n20	5180	10.5	8.73	12.71	24	Pass
NVNT	n20	5200	9.99	8.5	12.32	24	Pass
NVNT	n20	5240	9.42	8.44	11.97	24	Pass
NVNT	n40	5190	9.61	7.16	11.57	24	Pass
NVNT	n40	5230	8.85	6.65	10.90	24	Pass
NVNT	ac20	5180	10.34	8.91	12.69	24	Pass
NVNT	ac20	5200	9.25	8.74	12.01	24	Pass
NVNT	ac20	5240	9.19	8.13	11.70	24	Pass
NVNT	ac40	5190	8.84	6.97	11.02	24	Pass
NVNT	ac40	5230	8.9	6.04	10.71	24	Pass
NVNT	ac80	5210	6.07	7.1	9.63	24	Pass
NVNT	ax20	5180	9.84	8.49	12.23	24	Pass
NVNT	ax20	5200	8.45	7.93	11.21	24	Pass
NVNT	ax20	5240	12.01	7.87	13.43	24	Pass
NVNT	ax40	5190	7.97	7.76	10.88	24	Pass
NVNT	ax40	5230	7.08	7.09	10.10	24	Pass
NVNT	ax80	5210	7.85	6.81	10.37	24	Pass

For power measurements,
The Array gain=0 dB for NANT≤4,
So the directional gain for Power measurements is 5.45 dBi

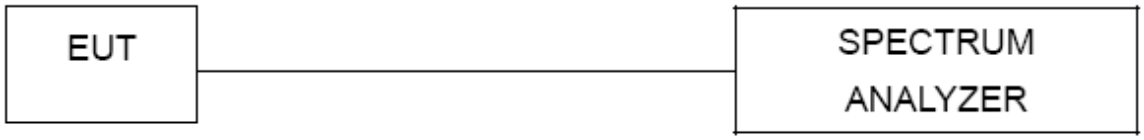
Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101kPa	Test Voltage:	DC 19V
Test Mode:	TX Frequency U-NII-3 (5745-5825MHz)		

Mode	Channel	Frequency (MHz)	Conducted Power (dBm)			Limit (dBm)	Result
			ANT A	ANT B	Total		
NVNT	a	5745	11.33	10.38	/	30	Pass
NVNT	a	5785	11.4	10.68	/	30	Pass
NVNT	a	5825	11.17	10.11	/	30	Pass
NVNT	n20	5745	10.15	9.97	13.07	30	Pass
NVNT	n20	5785	9.83	9.47	12.66	30	Pass
NVNT	n20	5825	9.66	9.86	12.77	30	Pass
NVNT	n40	5755	9.35	8.4	11.91	30	Pass
NVNT	n40	5795	9.03	8.36	11.72	30	Pass
NVNT	ac20	5745	9.63	9.79	12.72	30	Pass
NVNT	ac20	5785	9.8	9.04	12.45	30	Pass
NVNT	ac20	5825	9.28	9.53	12.42	30	Pass
NVNT	ac40	5755	9.07	9.28	12.19	30	Pass
NVNT	ac40	5795	9.79	8.74	12.31	30	Pass
NVNT	ac80	5775	7.45	7.65	10.56	30	Pass
NVNT	ax20	5745	9.88	10.09	13.00	30	Pass
NVNT	ax20	5785	9.45	9.02	12.25	30	Pass
NVNT	ax20	5825	9.52	9.52	12.53	30	Pass
NVNT	ax40	5755	8.89	9.31	12.12	30	Pass
NVNT	ax40	5795	8.86	9.02	11.95	30	Pass
NVNT	ax80	5775	7.73	7.8	10.78	30	Pass

For power measurements,
The Array gain=0 dB for NANT≤4,
So the directional gain for Power measurements is 5.45 dBi

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.

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

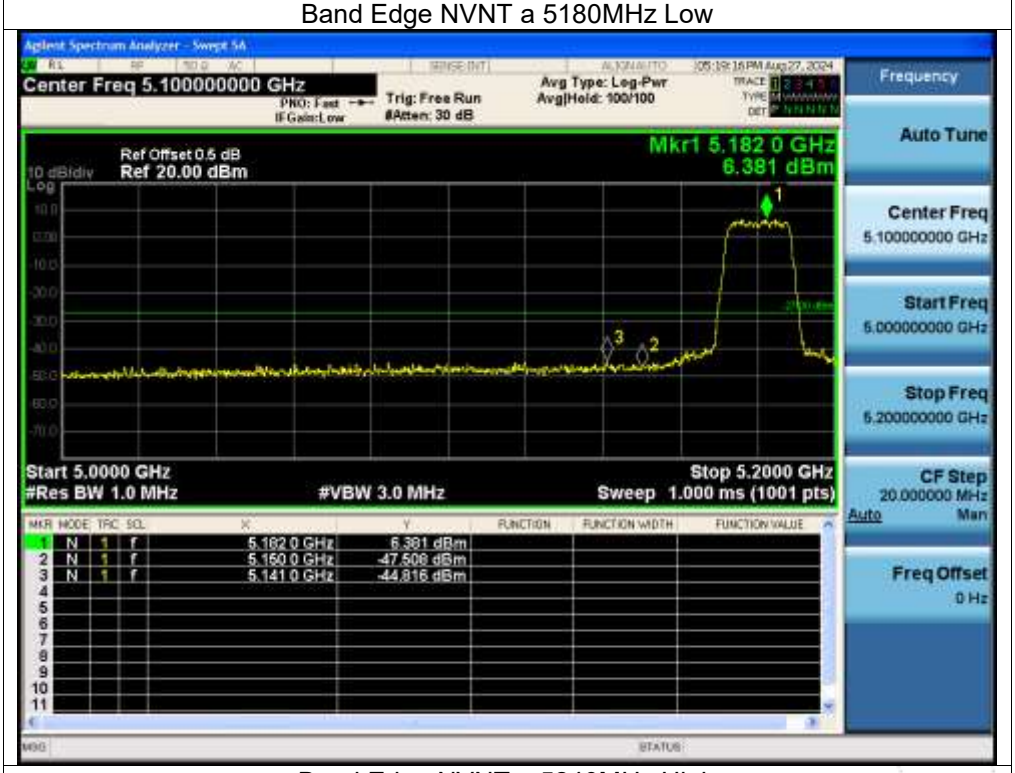
The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data

11.5 Test Result

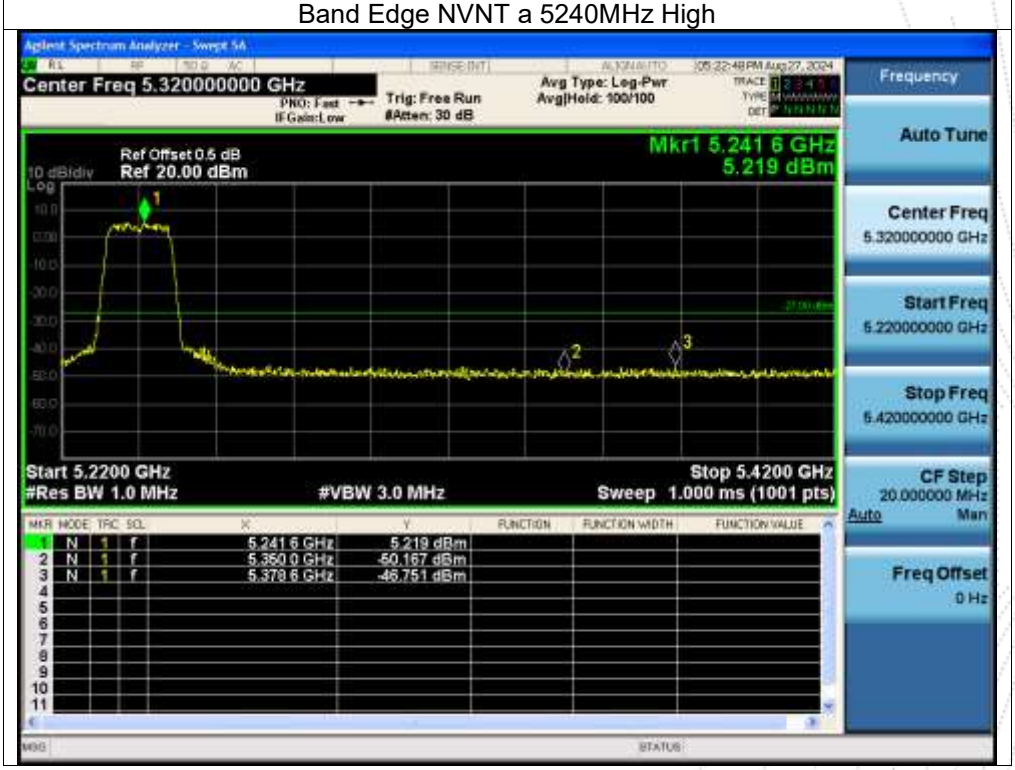
Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101kPa	Test Voltage:	DC 19V

Note: A(B) Represent the value of antenna A and B, The worst data is Antenna A, only shown Antenna A Plot. Antenna A: 5180-5240MHz

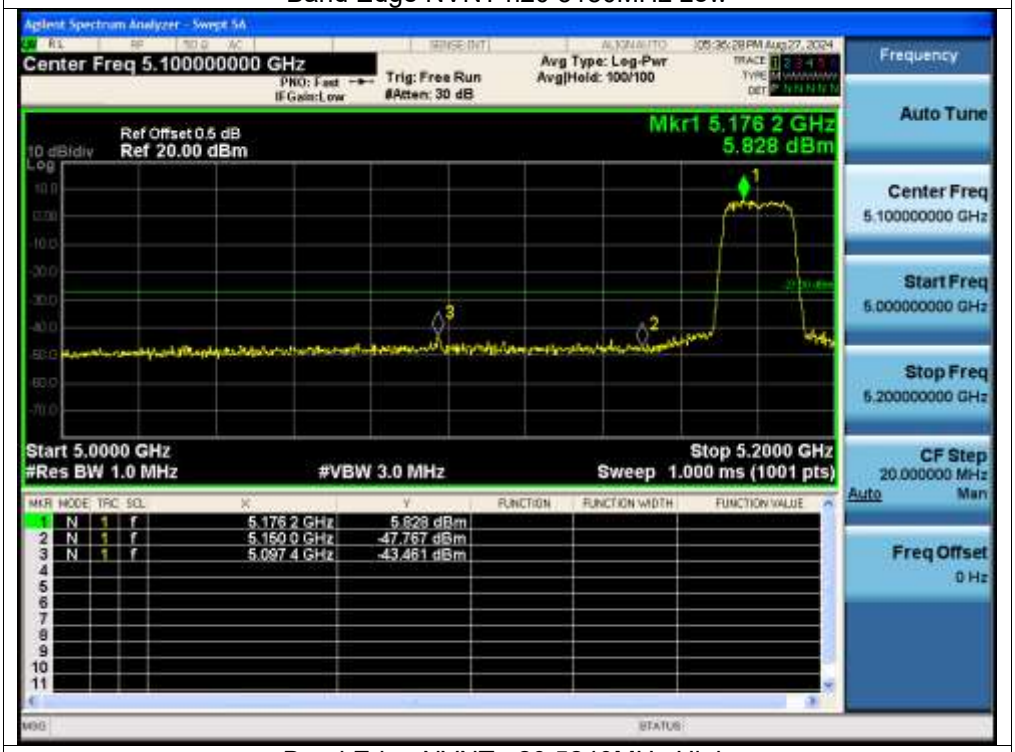
Test Graphs
Band Edge NVNT a 5180MHz Low



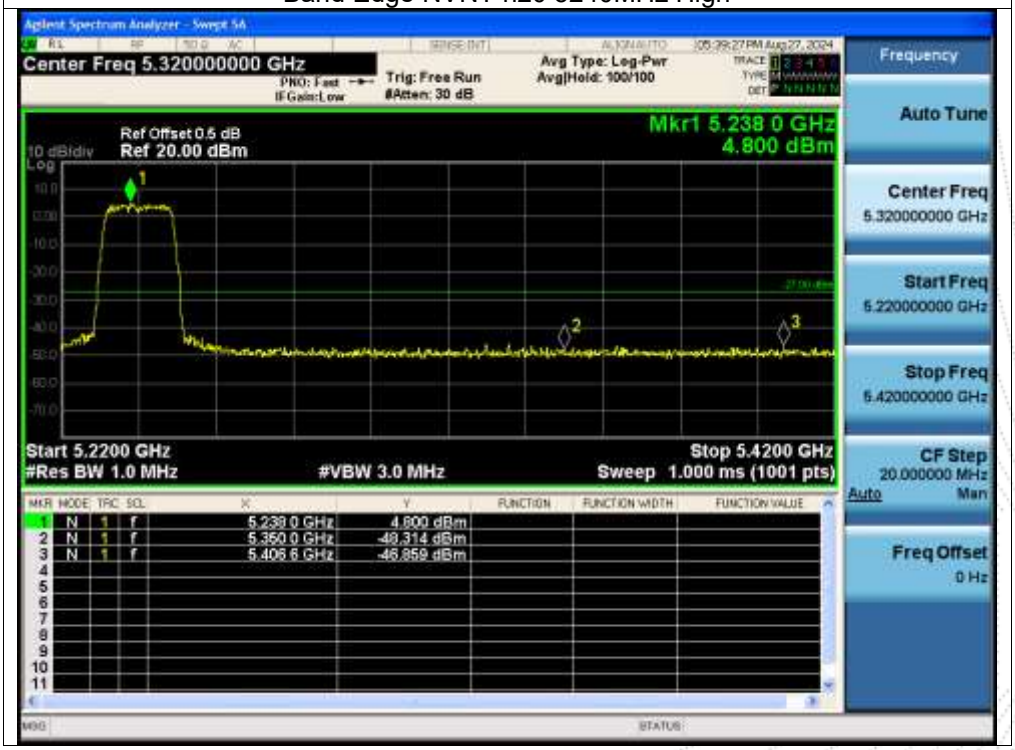
Band Edge NVNT a 5240MHz High



Band Edge NVNT n20 5180MHz Low

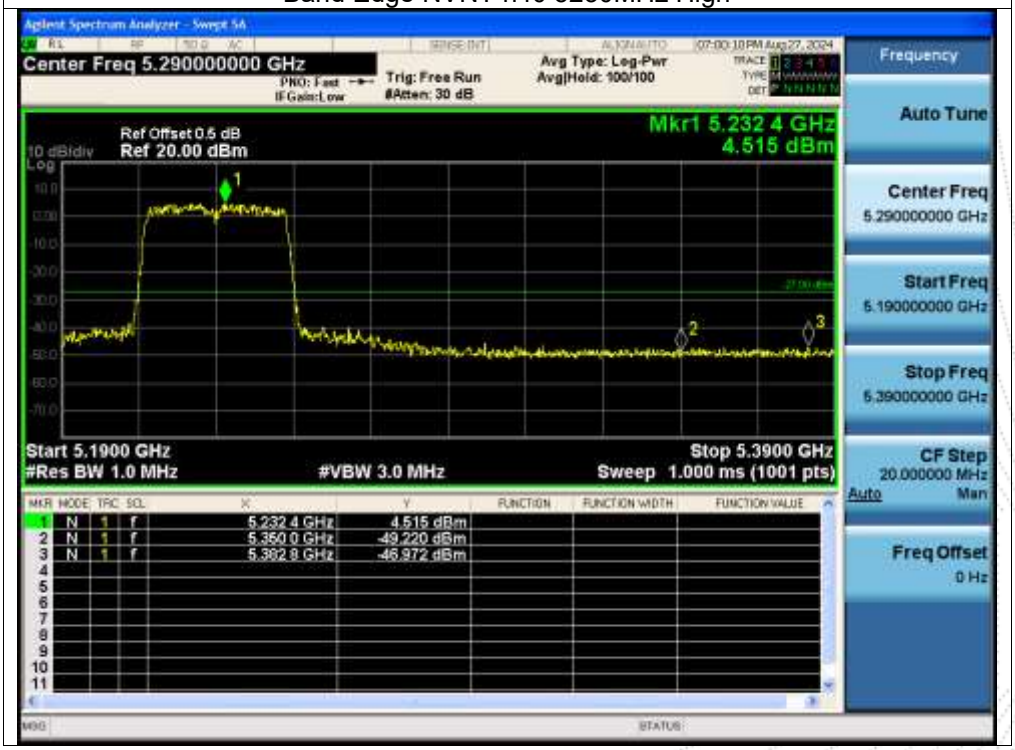


Band Edge NVNT n20 5240MHz High

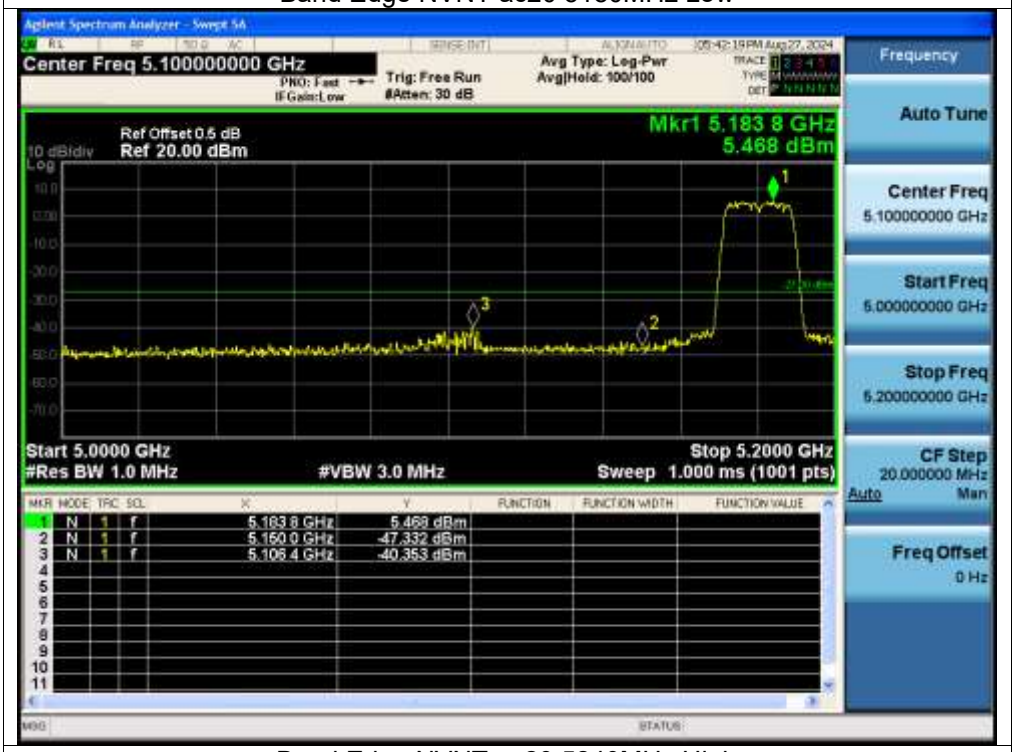


Band Edge NVNT n40 5190MHz Low

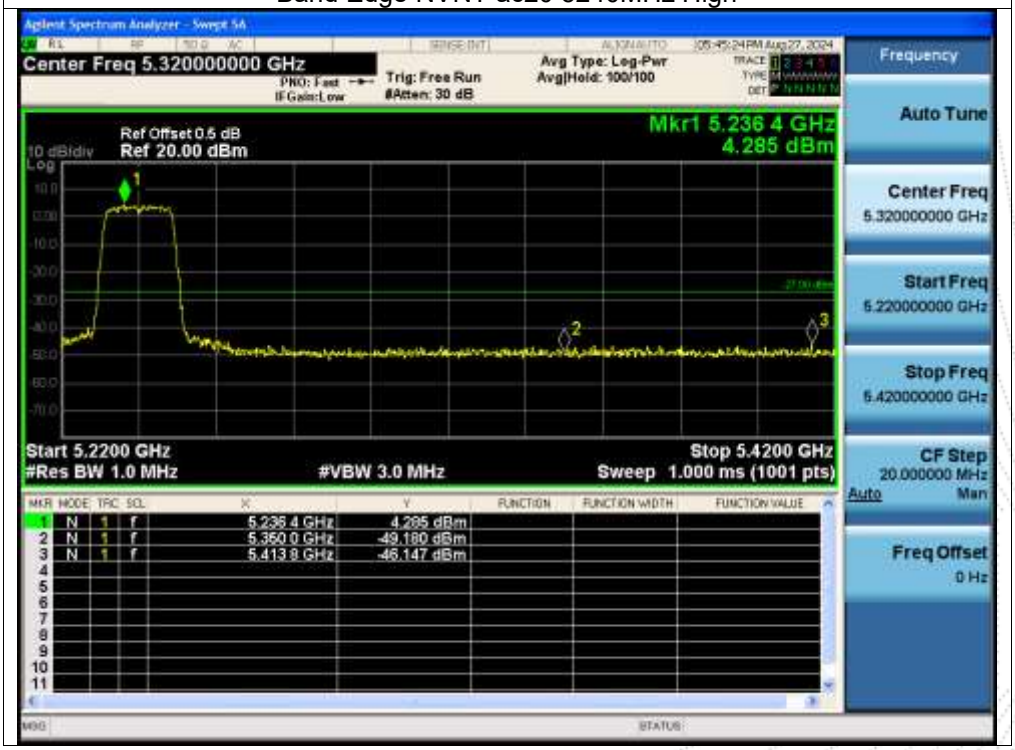
Band Edge NVNT n40 5230MHz High



Band Edge NVNT ac20 5180MHz Low

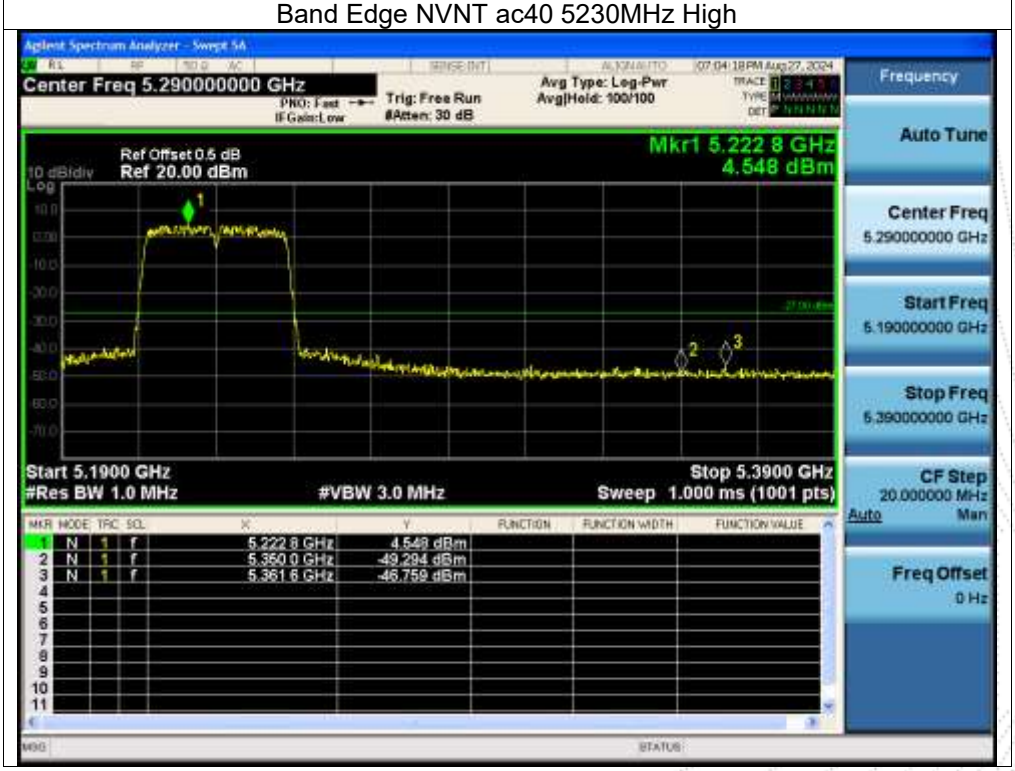


Band Edge NVNT ac20 5240MHz High



Band Edge NVNT ac40 5190MHz Low

Band Edge NVNT ac40 5230MHz High

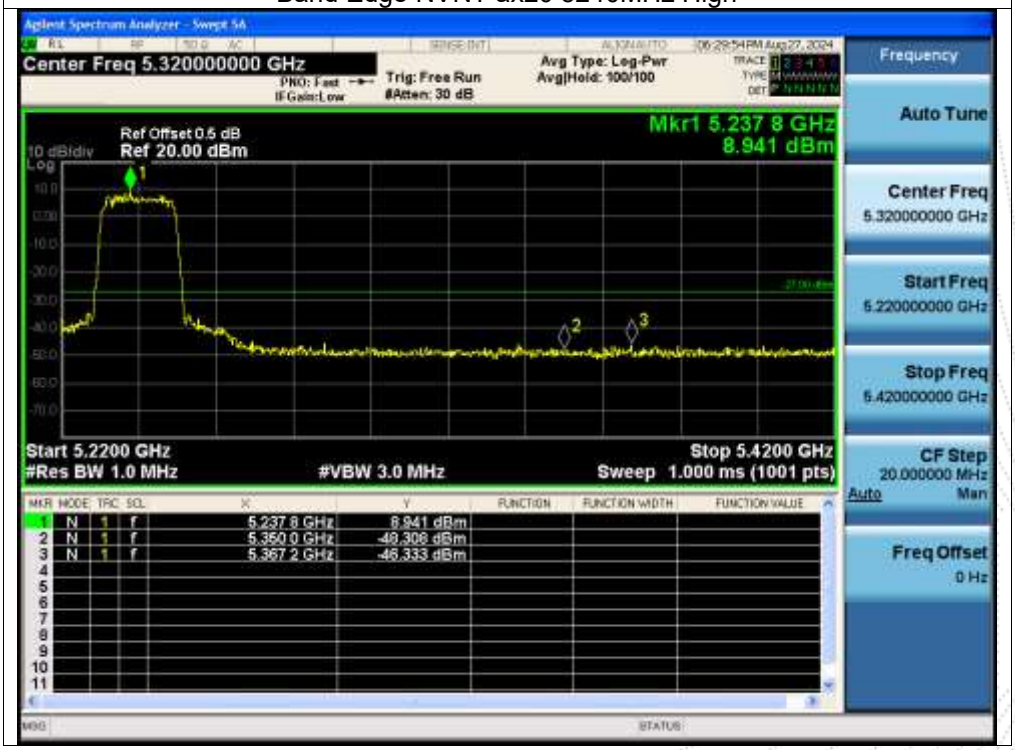


Band Edge NVNT ac80 5210MHz High

Band Edge NVNT ac80 5210MHz Low

Band Edge NVNT ax20 5180MHz Low

Band Edge NVNT ax20 5240MHz High

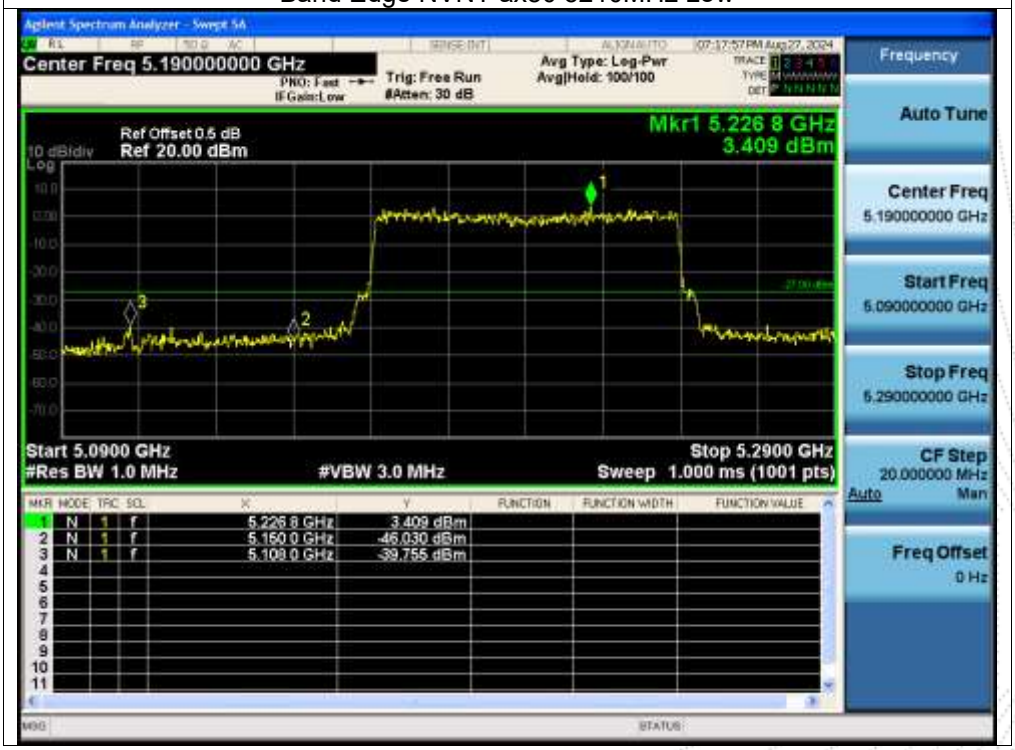


Band Edge NVNT ax40 5190MHz Low

Band Edge NVNT ax40 5230MHz High

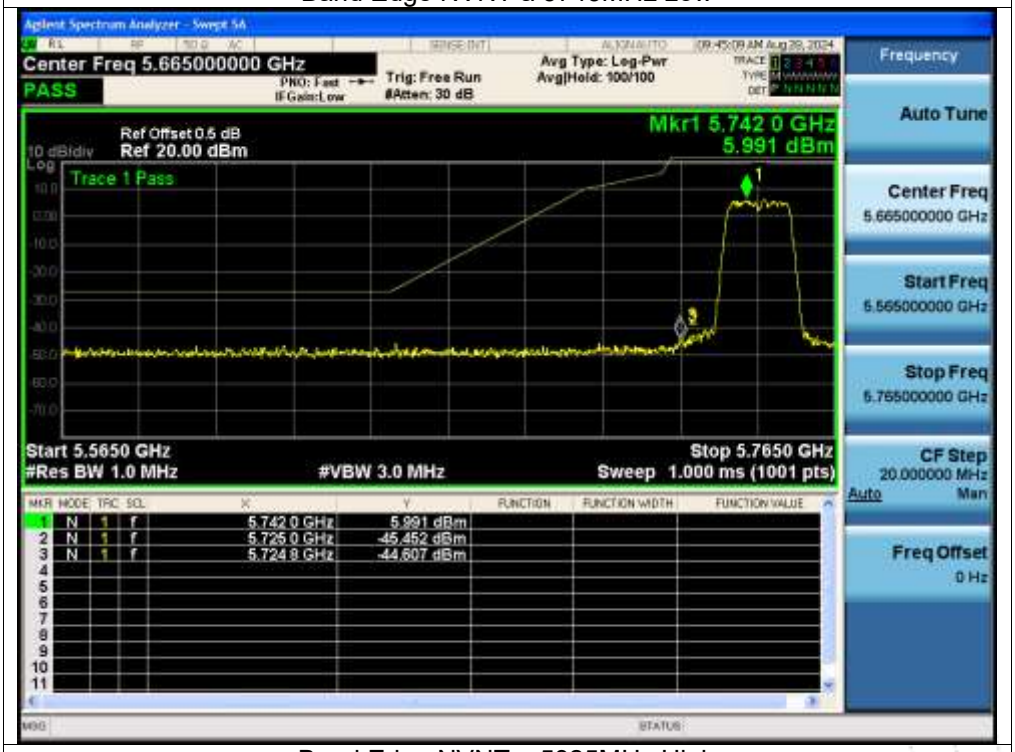
Band Edge NVNT ax80 5210MHz High

Band Edge NVNT ax80 5210MHz Low

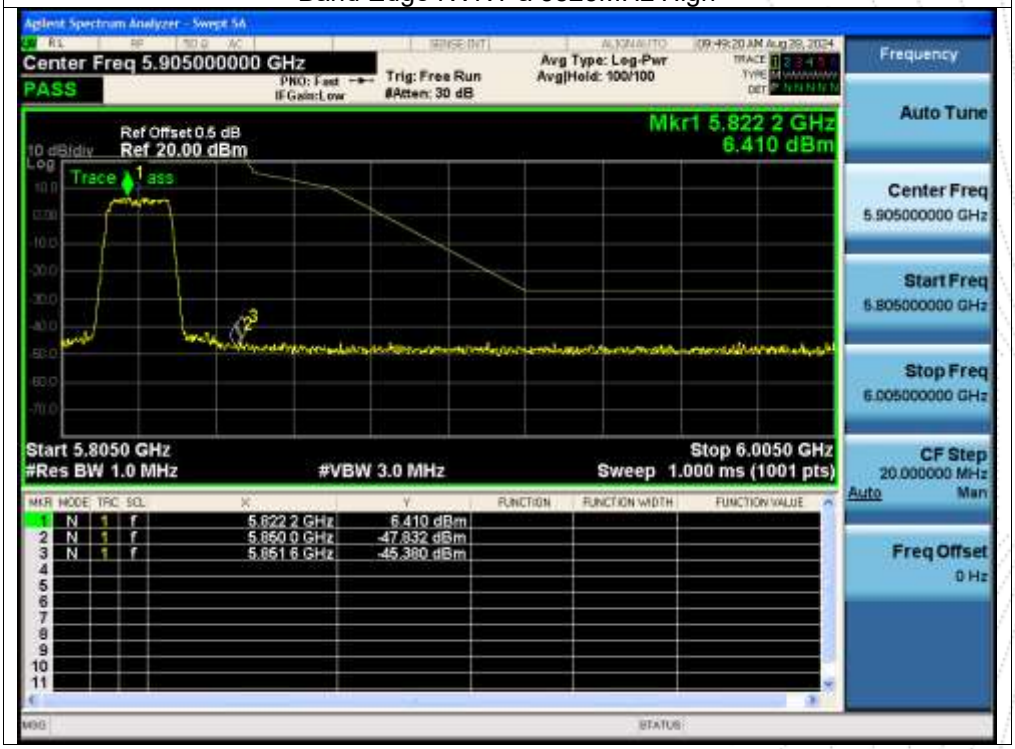


Note: A(B) Represent the value of antenna A and B. The worst data is Antenna A, only shown Antenna A plot.
Antenna A: 5745-58250MHz

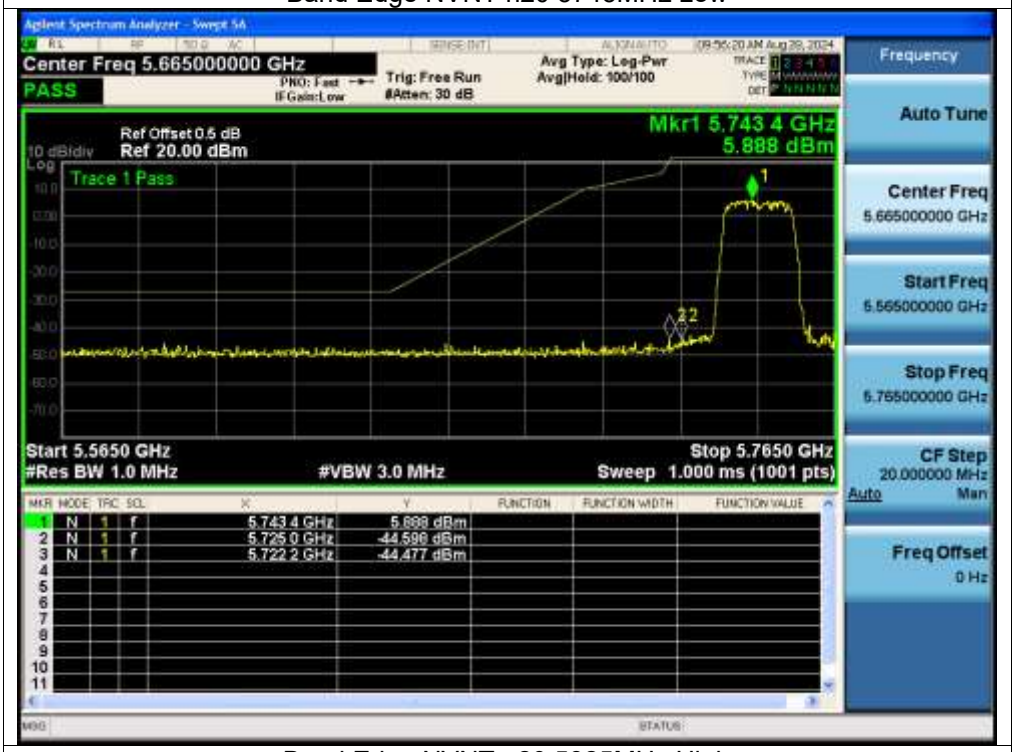
Test Graphs
Band Edge NVNT a 5745MHz Low



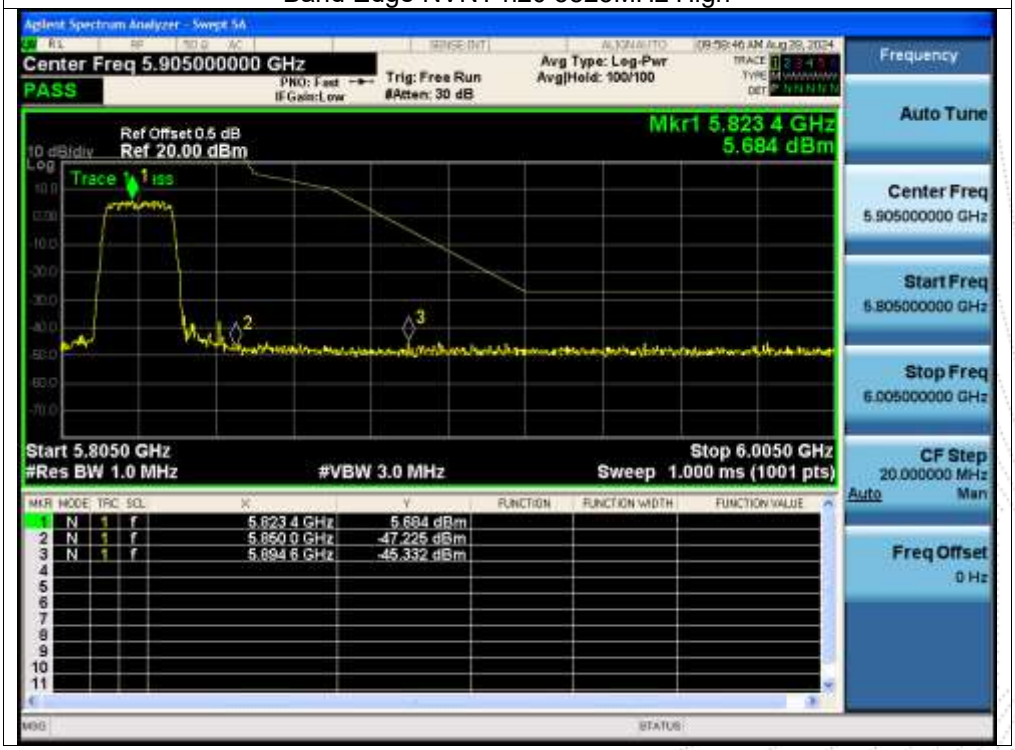
Band Edge NVNT a 5825MHz High



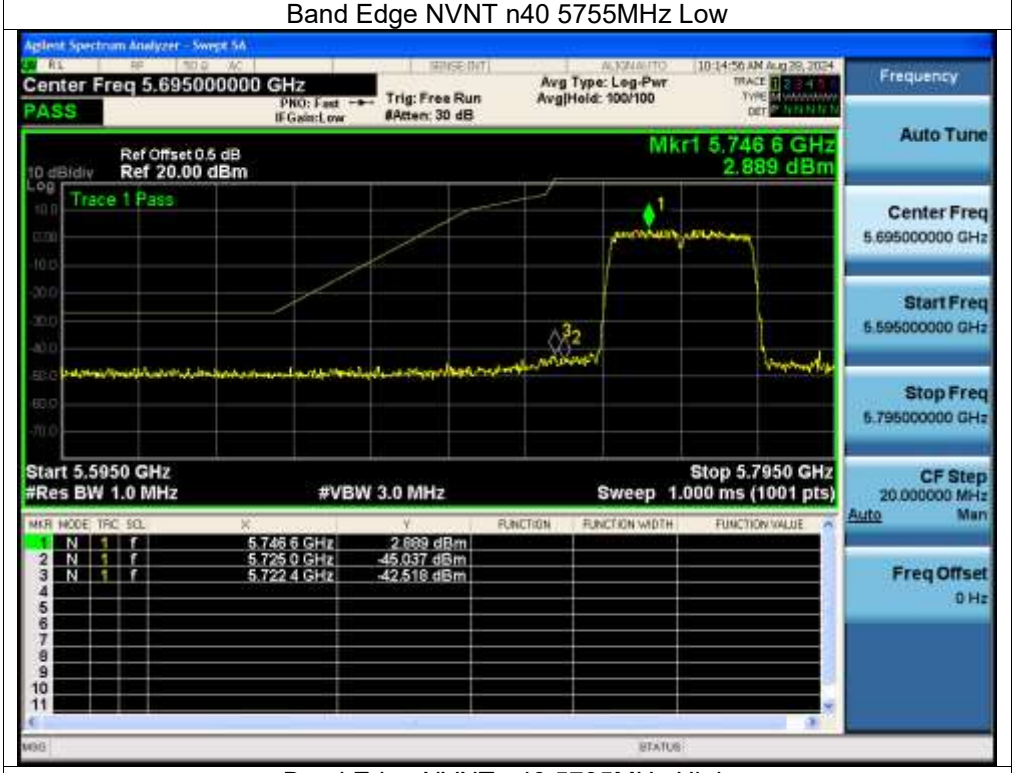
Band Edge NVNT n20 5745MHz Low



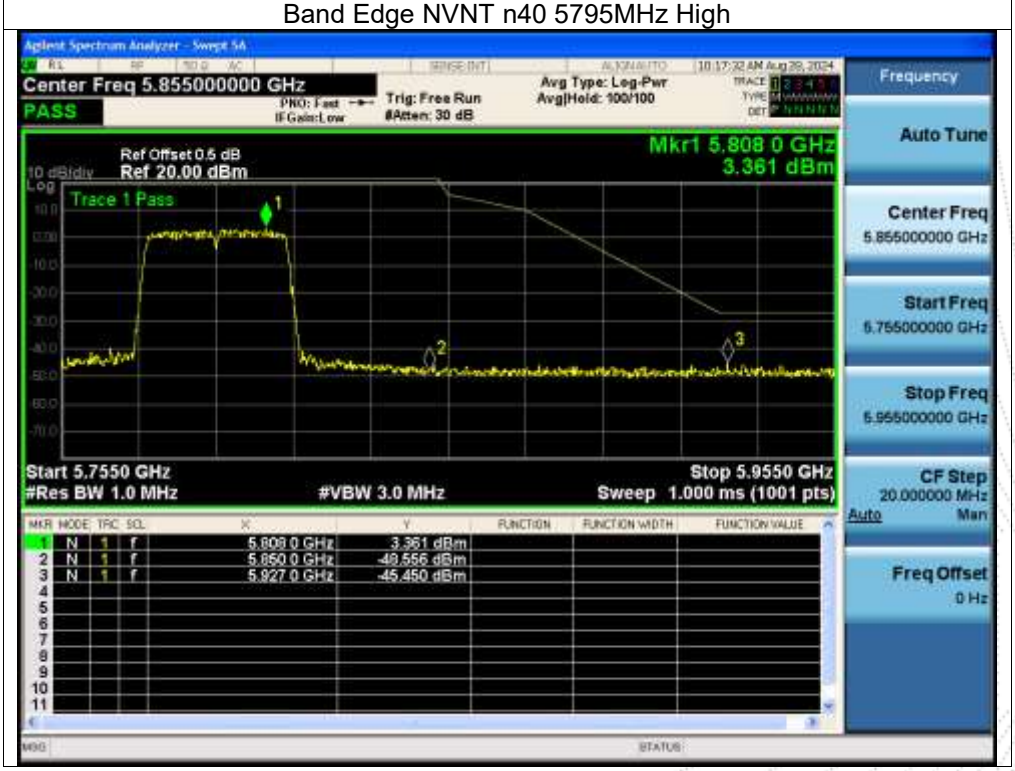
Band Edge NVNT n20 5825MHz High



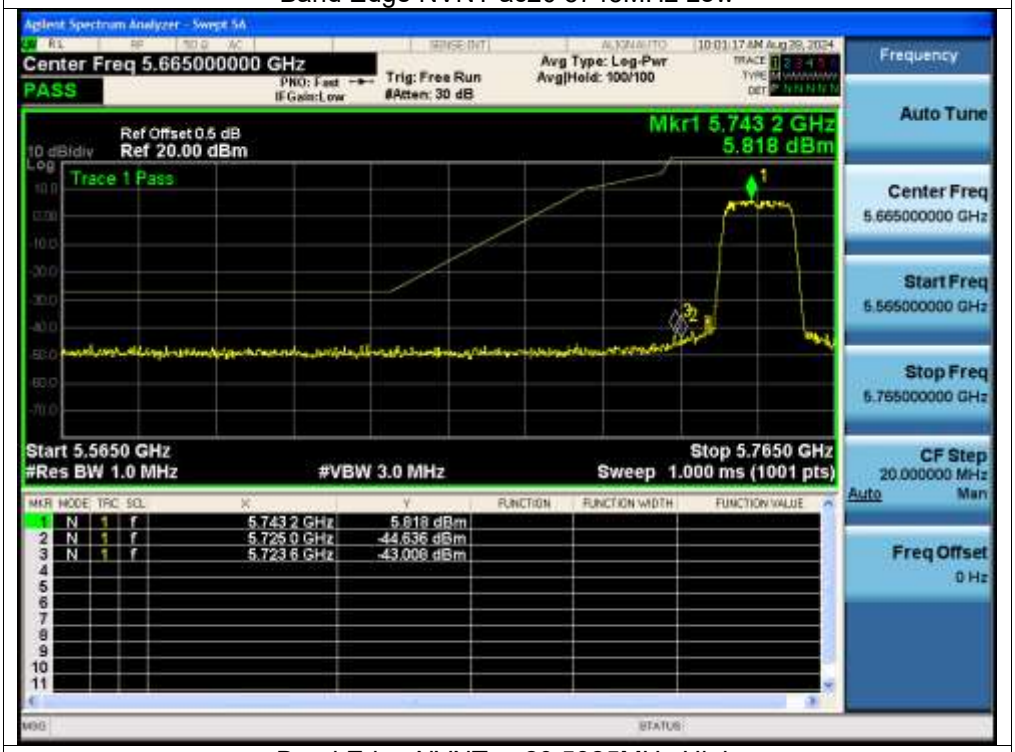
Band Edge NVNT n40 5755MHz Low



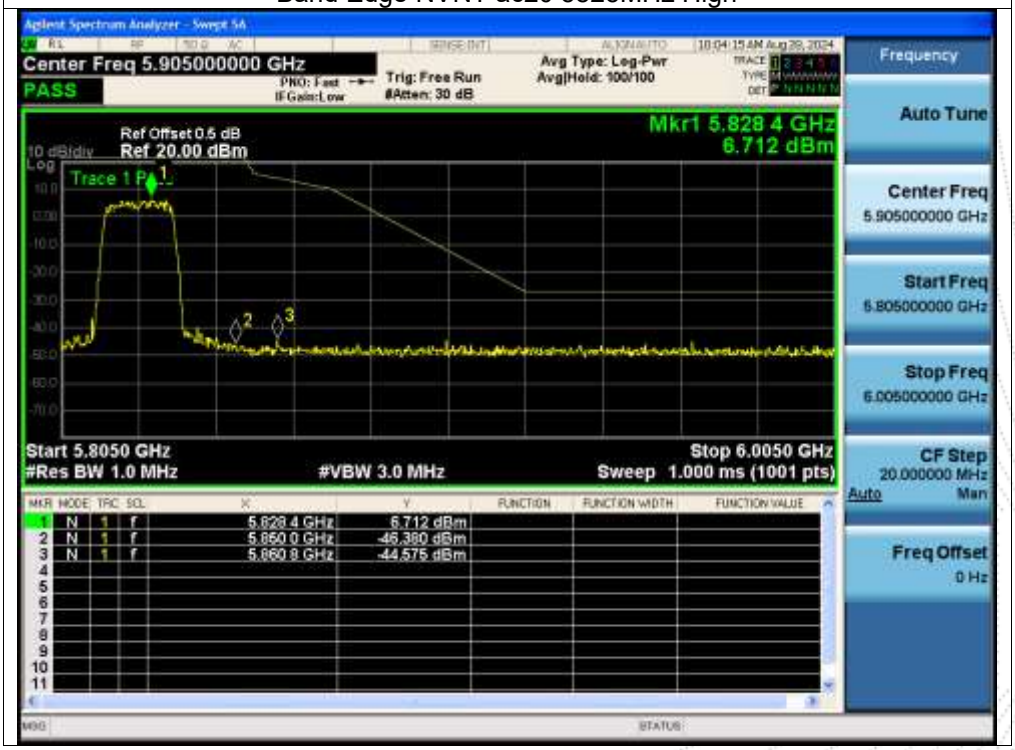
Band Edge NVNT n40 5795MHz High



Band Edge NVNT ac20 5745MHz Low

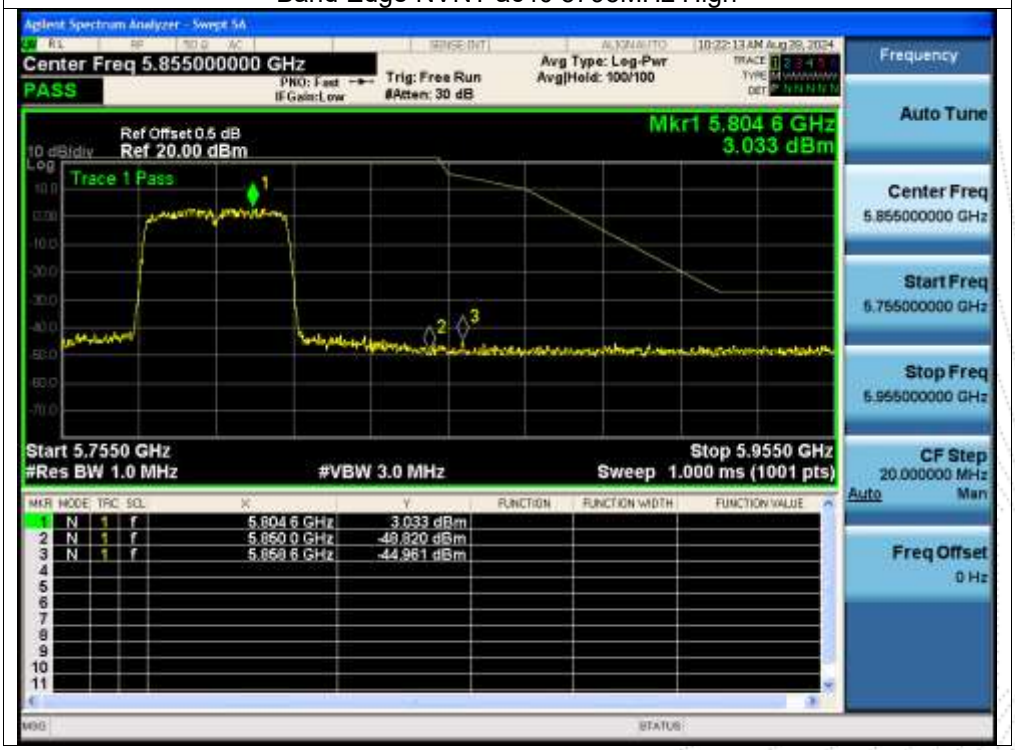


Band Edge NVNT ac20 5825MHz High

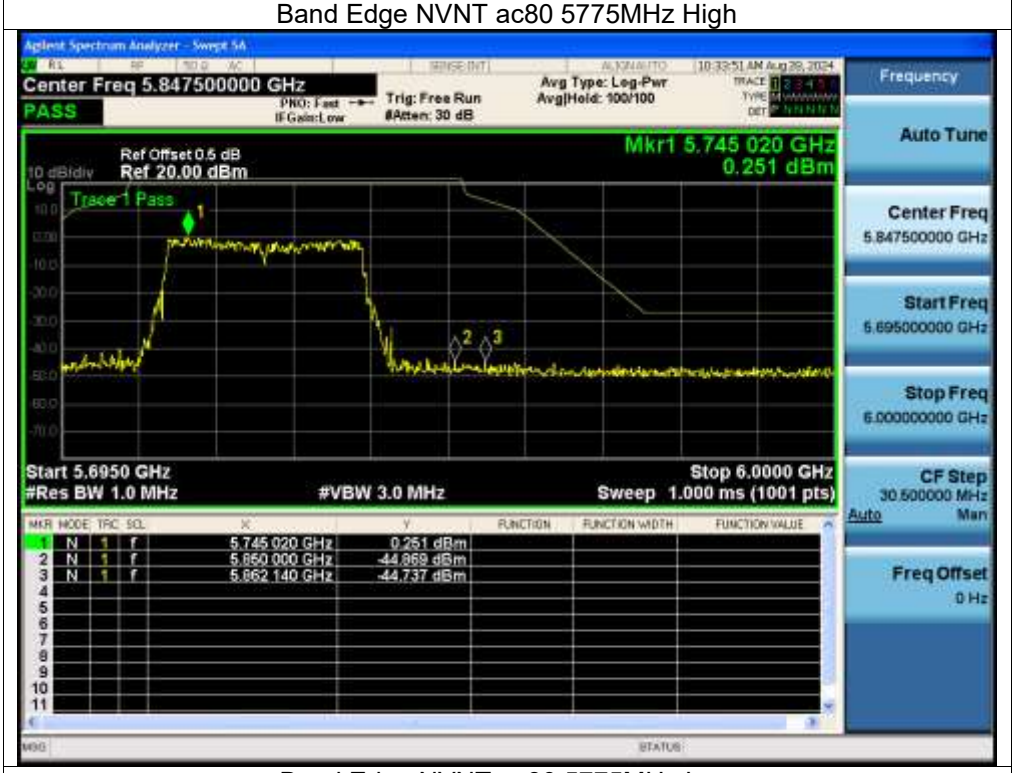


Band Edge NVNT ac40 5755MHz Low

Band Edge NVNT ac40 5795MHz High



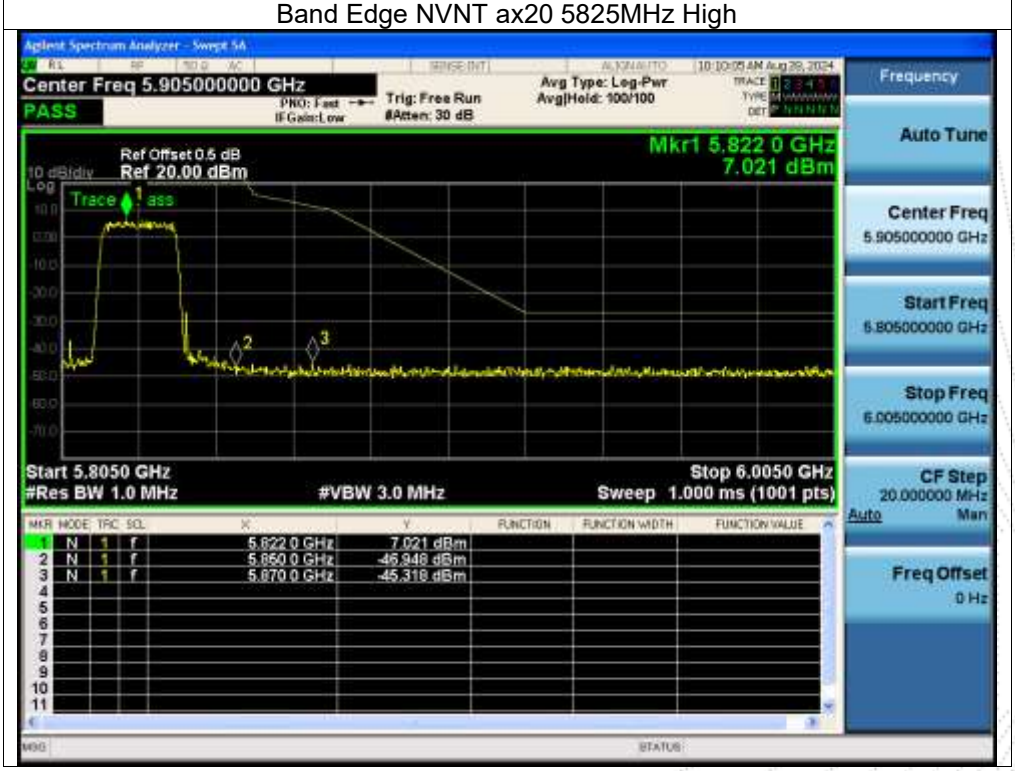
Band Edge NVNT ac80 5775MHz High



Band Edge NVNT ac80 5775MHz Low

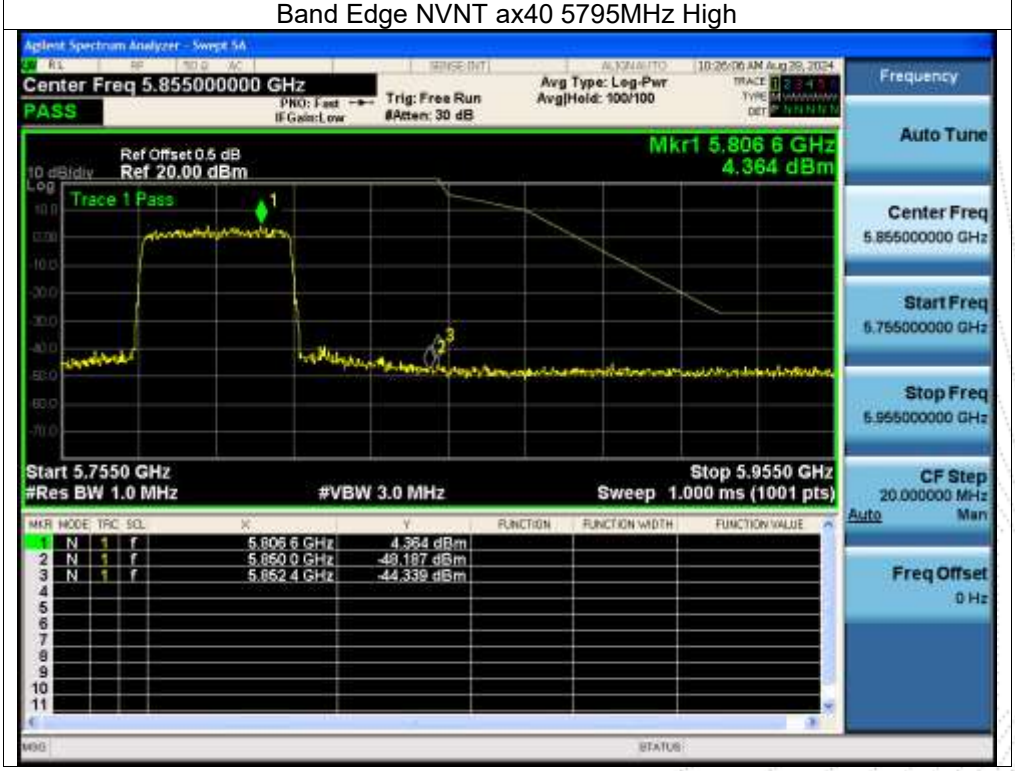
Band Edge NVNT ax20 5745MHz Low

Band Edge NVNT ax20 5825MHz High



Band Edge NVNT ax40 5755MHz Low

Band Edge NVNT ax40 5795MHz High

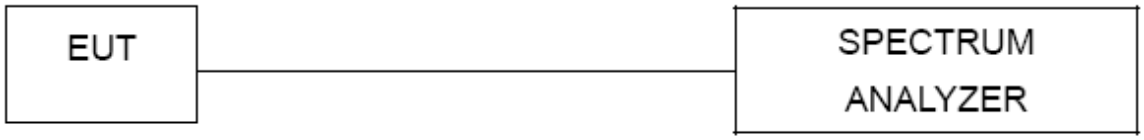


Band Edge NVNT ax80 5775MHz High

Band Edge NVNT ax80 5775MHz Low

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 band edge 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.

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

Tx. Spurious NVNT ax20 5180MHz Emission

Tx. Spurious NVNT ax20 5200MHz Emission

Tx. Spurious NVNT ax20 5240MHz Emission

Tx. Spurious NVNT ax40 5190MHz Emission

Tx. Spurious NVNT ax40 5230MHz Emission

Tx. Spurious NVNT ax80 5210MHz Emission

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

Tx. Spurious NVNT ax20 5745MHz Emission

Tx. Spurious NVNT ax20 5785MHz Emission

Tx. Spurious NVNT ax20 5825MHz Emission

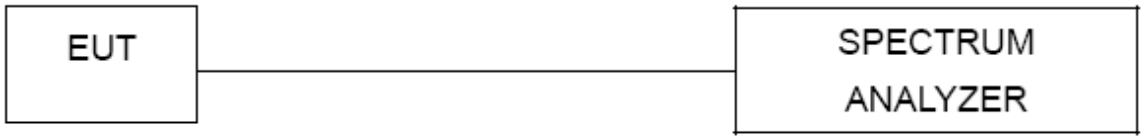
Tx. Spurious NVNT ax40 5755MHz Emission

Tx. Spurious NVNT ax40 5795MHz Emission

Tx. Spurious NVNT ax80 5775MHz Emission

13. Frequency Stability Measurement

13.1 Block Diagram Of Test Setup



13.2 Limit

Manufactures of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.
The transmitter center frequency tolerance shall be ± 20 ppm maximum for the 5 GHz band (IEEE 802.11n specification)..

13.3 Test Procedure

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. EUT have transmitted absence of modulation signal and fixed channelize.
3. Set the spectrum analyzer span to view the entire absence of modulation emissions bandwidth.
4. Set RBW = 10 kHz, VBW = 10 kHz with peak detector and maxhold settings.
5. fc is declaring of channel frequency. Then the frequency error formula is (fc-f)/fc × 106 ppm and he limit is less than ±20ppm (IEEE 802.11nspecification).
6. The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value
7. Extreme temperature is -20°C~70°C.

13.4 Test Result

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101kPa	Test Voltage:	DC 19V
Test Mode:	TX Frequency U-NII-1 (5180-5240MHz)		

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5180MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	19.00	5180.0101	5180	0.0101	1.9498
		V max (V)	21.85	5180.0058	5180	0.0058	1.1197
		V min (V)	16.15	5180.0000	5180	0.0000	0.0000
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)	19	T (°C)	-20	5180.0096	5180	0.0096	1.8533
		T (°C)	-10	5180.0049	5180	0.0049	0.9459
		T (°C)	0	5180.0094	5180	0.0094	1.8147
		T (°C)	10	5180.0077	5180	0.0077	1.4865
		T (°C)	20	5180.0040	5180	0.0040	0.7722
		T (°C)	30	5180.0056	5180	0.0056	1.0811
		T (°C)	40	5180.0063	5180	0.0063	1.2162
		T (°C)	50	5180.0073	5180	0.0073	1.4093
		T (°C)	60	5180.0069	5180	0.0069	1.3320
		T (°C)	70	5180.0010	5180	0.0010	0.1931
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)	19.00	5200.0112	5200	0.0112	2.1538
		V max (V)	21.85	5200.0033	5200	0.0033	0.6346
		V min (V)	16.15	5200.0070	5200	0.0070	1.3462
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)	19	T (°C)	-20	5200.01220	5200	0.01220	2.3462
		T (°C)	-10	5200.00810	5200	0.00810	1.5577
		T (°C)	0	5200.00690	5200	0.00690	1.3269
		T (°C)	10	5200.00160	5200	0.00160	0.3077
		T (°C)	20	5200.00090	5200	0.00090	0.1731
		T (°C)	30	5200.01340	5200	0.01340	2.5769
		T (°C)	40	5200.00760	5200	0.00760	1.4615
		T (°C)	50	5200.00350	5200	0.00350	0.6731
		T (°C)	60	5200.00130	5200	0.00130	0.2500
		T (°C)	70	5200.00910	5200	0.00910	1.7500
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)	19.00	5240.0043	5240	0.0043	0.8206
		V max (V)	21.85	5240.0001	5240	0.0001	0.0191
		V min (V)	16.15	5240.0115	5240	0.0115	2.1947
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)	19	T (°C)	-20	5240.0069	5240	0.0069	1.3168
		T (°C)	-10	5240.0003	5240	0.0003	0.0573
		T (°C)	0	5240.0013	5240	0.0013	0.2481
		T (°C)	10	5240.0064	5240	0.0064	1.2214
		T (°C)	20	5240.0050	5240	0.0050	0.9542
		T (°C)	30	5240.0010	5240	0.0010	0.1908
		T (°C)	40	5240.0066	5240	0.0066	1.2595
		T (°C)	50	5240.0098	5240	0.0098	1.8702
		T (°C)	60	5240.0015	5240	0.0015	0.2863
		T (°C)	70	5240.0100	5240	0.0100	1.9084
Limits				5150-5250 MHz			
Result				Complies			

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101kPa	Test Voltage:	DC 19V
Test Mode:	TX Frequency U-NII-3 (5745-5825MHz)		

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5745MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	19.00	5745.00050	5745	0.00050	0.0870
		V max (V)	21.85	5745.01250	5745	0.01250	2.1758
		V min (V)	16.15	5745.00540	5745	0.00540	0.9399
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)	19	T (°C)	-20	5745.00440	5745	0.00440	0.7659
		T (°C)	-10	5745.00900	5745	0.00900	1.5666
		T (°C)	0	5745.01000	5745	0.01000	1.7406
		T (°C)	10	5745.01310	5745	0.01310	2.2802
		T (°C)	20	5745.00880	5745	0.00880	1.5318
		T (°C)	30	5745.00110	5745	0.00110	0.1915
		T (°C)	40	5745.01350	5745	0.01350	2.3499
		T (°C)	50	5745.00210	5745	0.00210	0.3655
		T (°C)	60	5745.00980	5745	0.00980	1.7058
		T (°C)	70	5745.01340	5745	0.01340	2.3325
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)	19.00	5785.01090	5785	0.01090	1.8842
		V max (V)	21.85	5785.00010	5785	0.00010	0.0173
		V min (V)	16.15	5785.00770	5785	0.00770	1.3310
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)	19	T (°C)	-20	5785.00180	5785	0.00180	0.3111
		T (°C)	-10	5785.00090	5785	0.00090	0.1556
		T (°C)	0	5785.01070	5785	0.01070	1.8496
		T (°C)	10	5785.00700	5785	0.00700	1.2100
		T (°C)	20	5785.00320	5785	0.00320	0.5532
		T (°C)	30	5785.01130	5785	0.01130	1.9533
		T (°C)	40	5785.00660	5785	0.00660	1.1409
		T (°C)	50	5785.01170	5785	0.01170	2.0225
		T (°C)	60	5785.01120	5785	0.01120	1.9360
		T (°C)	70	5785.00730	5785	0.00730	1.2619
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)	19.00	5825.00000	5825	0.00000	0.0000
		V max (V)	21.85	5825.00870	5825	0.00870	1.4936
		V min (V)	16.15	5825.01220	5825	0.01220	2.0944
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)	19	T (°C)	-20	5825.00580	5825	0.00580	0.9957
		T (°C)	-10	5825.00290	5825	0.00290	0.4979
		T (°C)	0	5825.00560	5825	0.00560	0.9614
		T (°C)	10	5825.01060	5825	0.01060	1.8197
		T (°C)	20	5825.00030	5825	0.00030	0.0515
		T (°C)	30	5825.00380	5825	0.00380	0.6524
		T (°C)	40	5825.01300	5825	0.01300	2.2318
		T (°C)	50	5825.00410	5825	0.00410	0.7039
		T (°C)	60	5825.00790	5825	0.00790	1.3562
		T (°C)	70	5825.00110	5825	0.00110	0.1888
Limits				5725-5850 MHz			
Result				Complies			

14. Duty Cycle Of Test Signal

14.1 Standard Requirement

Pre-analysis Check: While conducting average power measurement, duty cycle of each mode shall be checked to ensure its duty cycle in order to compensate for the loss due to insufficient ratio of duty cycle. All duty cycle is pre-scanned, and result as obtained below shows only the most representative ones where duty cycle is conducted as the given transmission with given virtual operation that expresses the percentage.

14.2 Formula

Duty Cycle = Ton / (Ton+Toff)

14.3 Test Procedure

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

14.4 Test Result

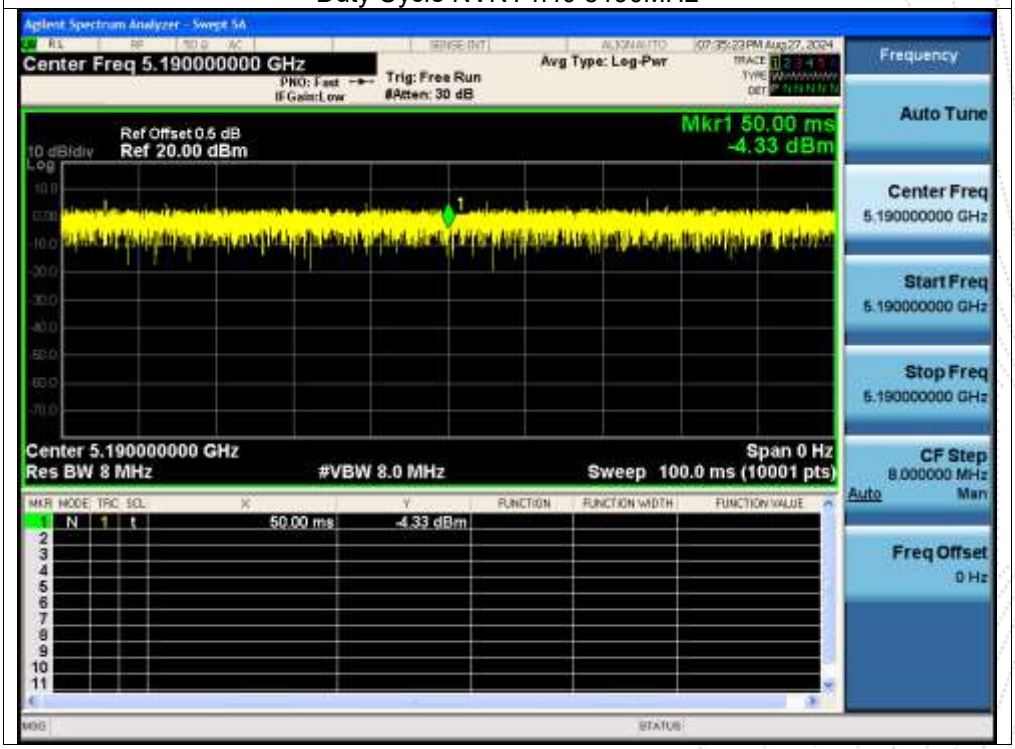
ANT A

Condition	Mode	Frequency (MHz)	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	n20	5180	100	0	0
NVNT	n40	5190	100	0	0
NVNT	ac20	5180	100	0	0
NVNT	ac40	5190	68.15	1.67	0.19
NVNT	ax20	5180	100	0	0
NVNT	ax40	5190	68.23	1.66	0.19

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

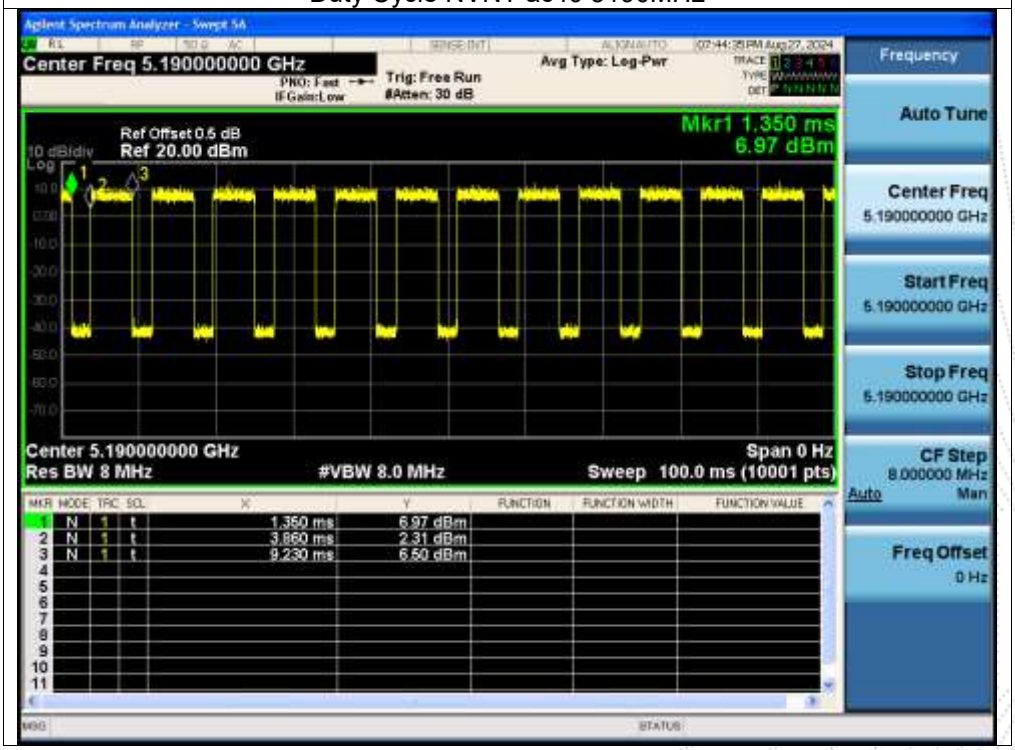
Test Graphs
Duty Cycle NVNT n20 5180MHz

Duty Cycle NVNT n40 5190MHz



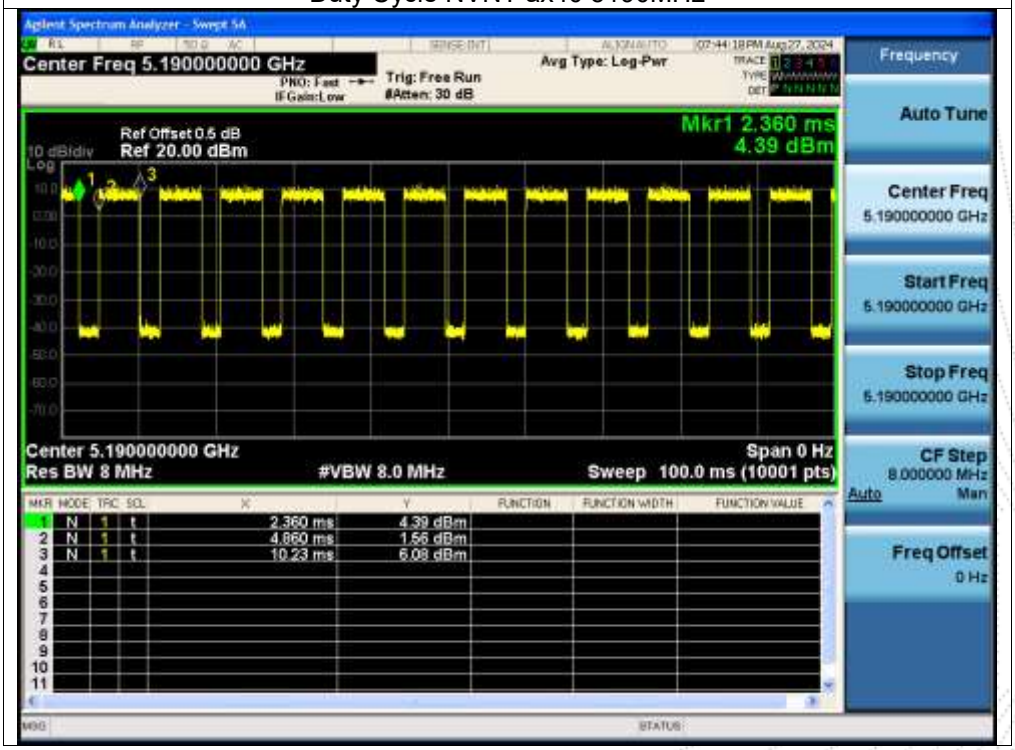
Duty Cycle NVNT ac20 5180MHz

Duty Cycle NVNT ac40 5190MHz



Duty Cycle NVNT ax20 5180MHz

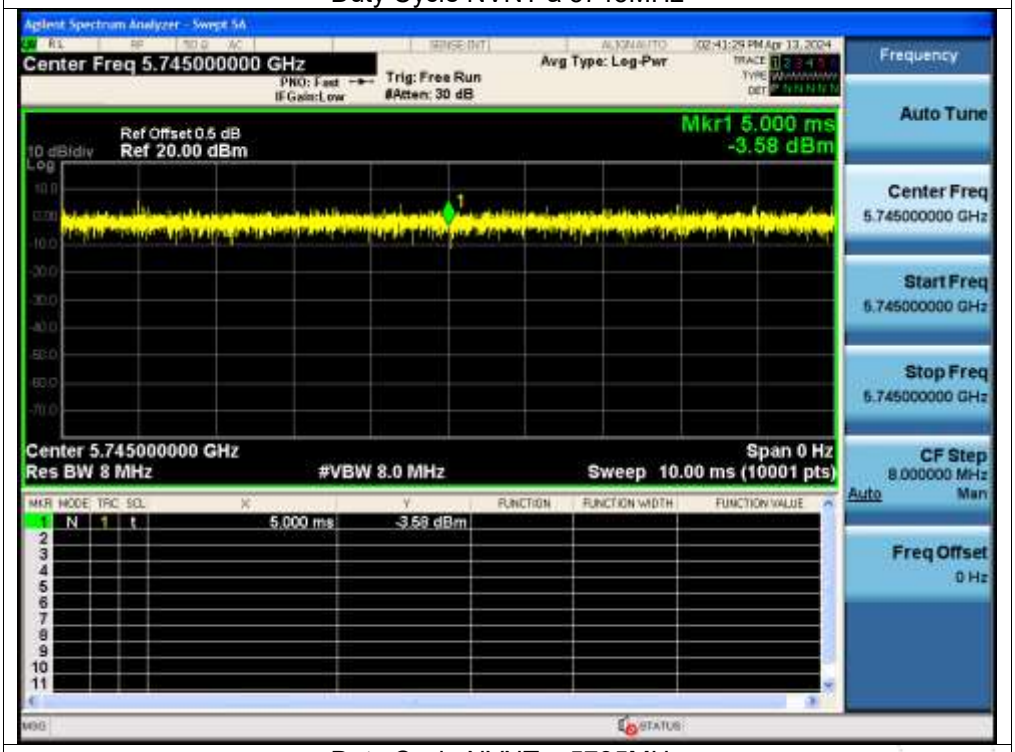
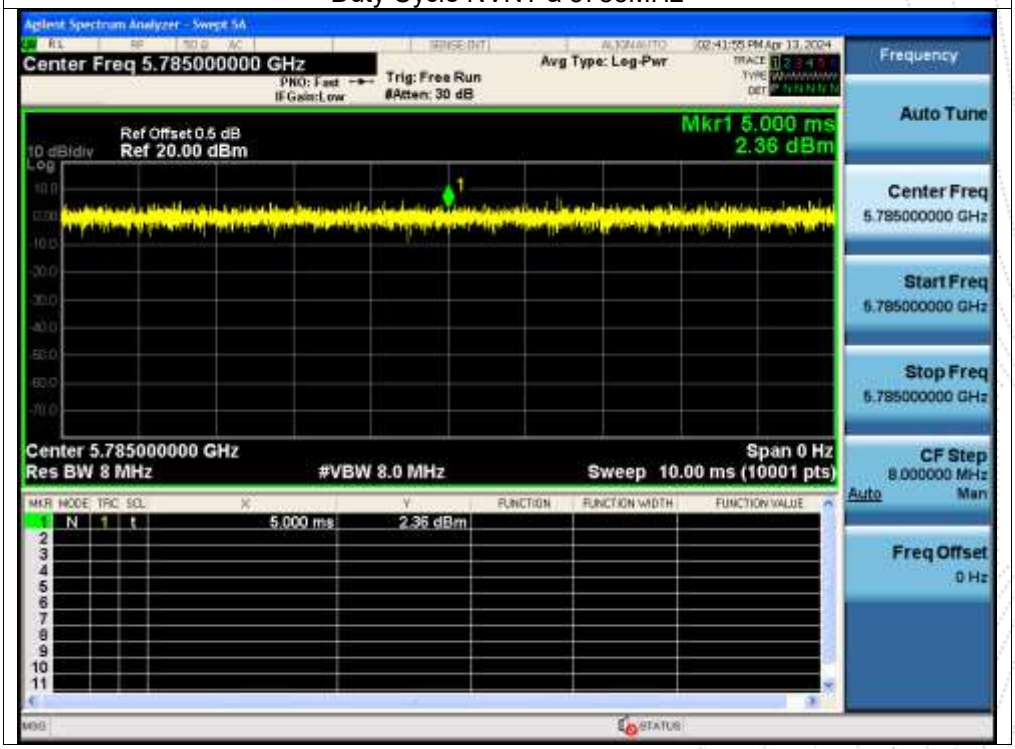
Duty Cycle NVNT ax40 5190MHz



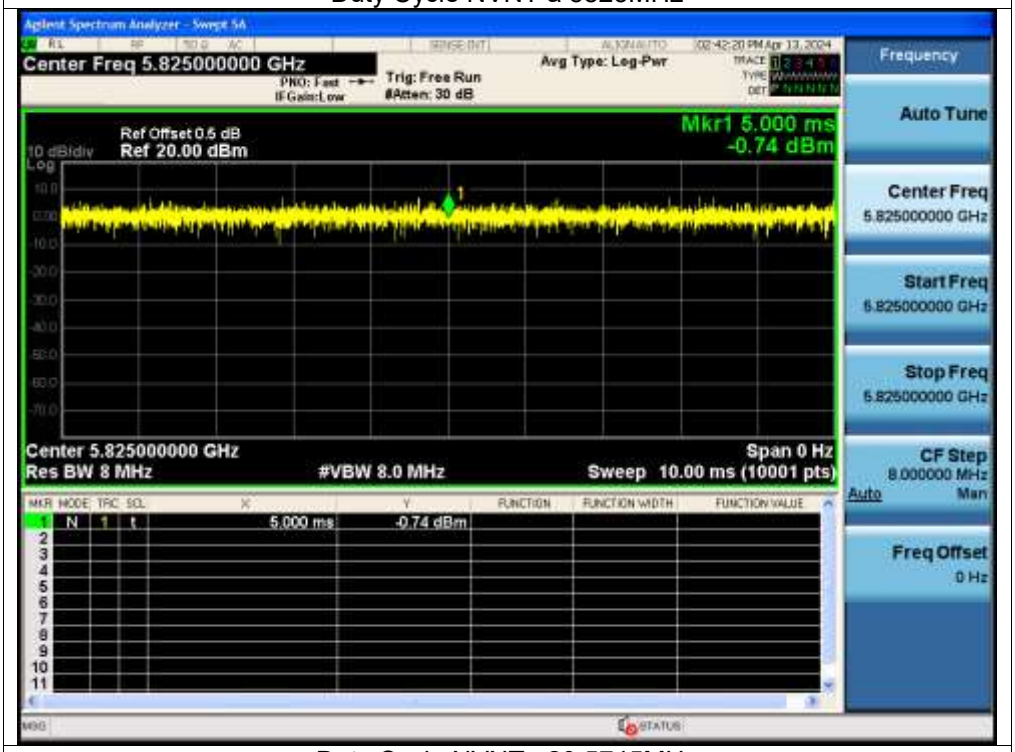
ANT A

Condition	Mode	Frequency (MHz)	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	a	5745	100	0	0
NVNT	a	5785	100	0	0
NVNT	a	5825	100	0	0
NVNT	n20	5745	100	0	0
NVNT	n20	5785	100	0	0
NVNT	n20	5825	100	0	0
NVNT	n40	5755	100	0	0
NVNT	n40	5795	100	0	0
NVNT	ac20	5745	100	0	0
NVNT	ac20	5785	100	0	0
NVNT	ac20	5825	100	0	0
NVNT	ac40	5755	100	0	0
NVNT	ac40	5795	100	0	0
NVNT	ac80	5775	100	0	0
NVNT	ax20	5745	100	0	0
NVNT	ax20	5785	100	0	0
NVNT	ax20	5825	100	0	0
NVNT	ax40	5755	100	0	0
NVNT	ax40	5795	100	0	0
NVNT	ax80	5775	100	0	0

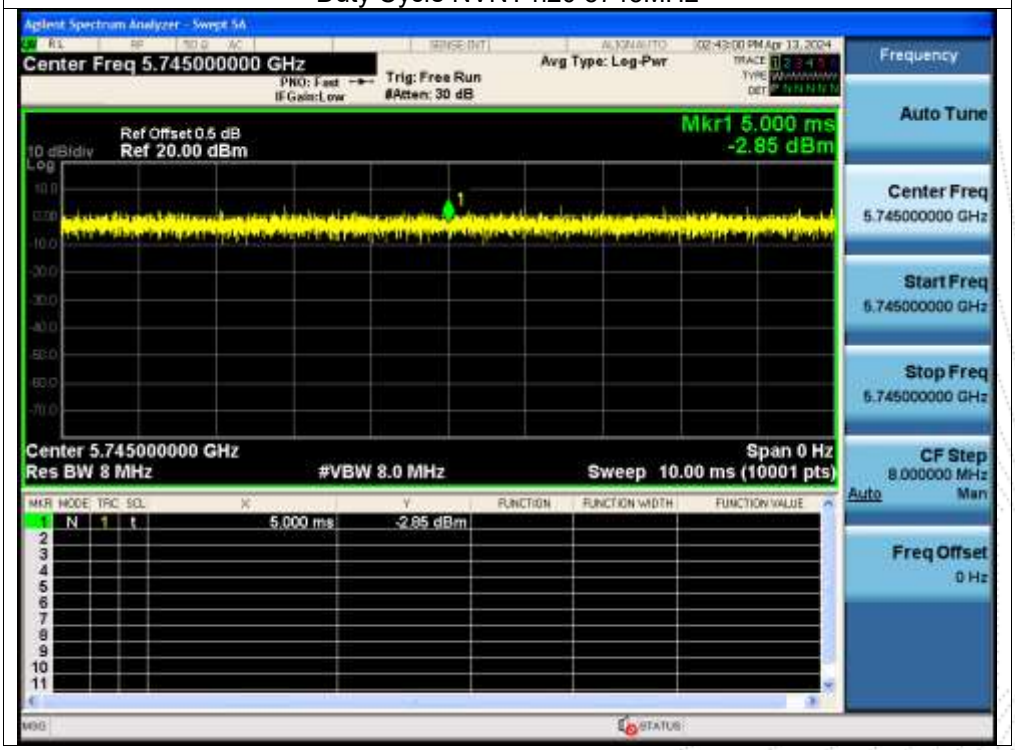
Note: A(B) Represent the value of antenna A and B, The worst data is Antenna A, only shown Antenna A plot.

Test Graphs
Duty Cycle NVNT a 5745MHz

Duty Cycle NVNT a 5785MHz


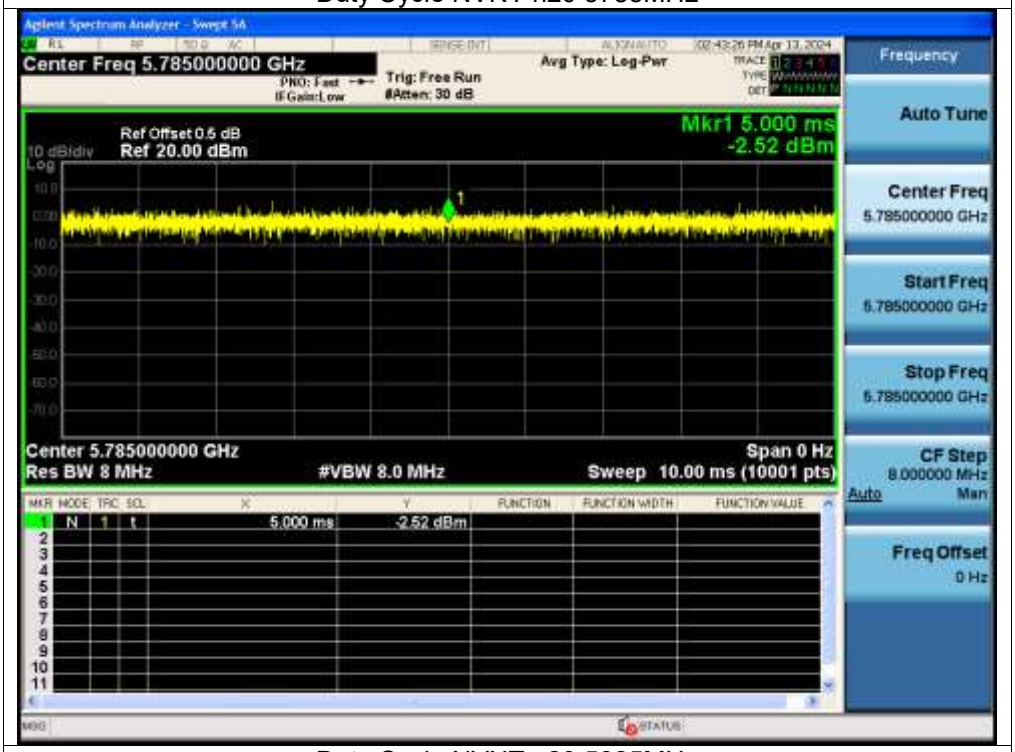
Duty Cycle NVNT a 5825MHz



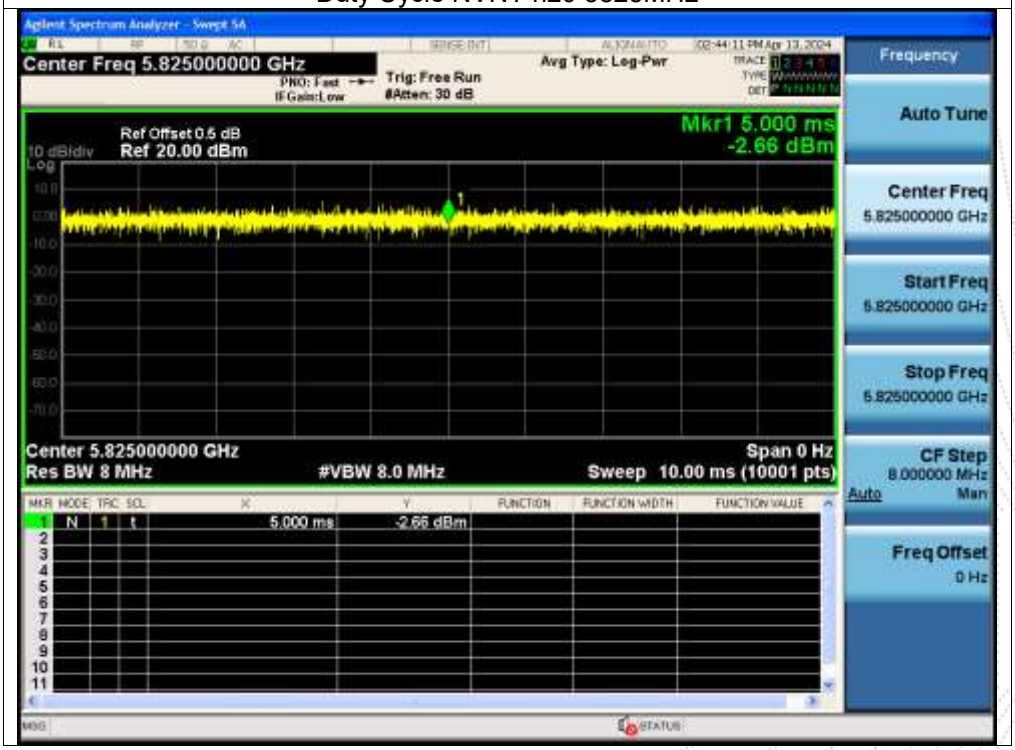
Duty Cycle NVNT n20 5745MHz



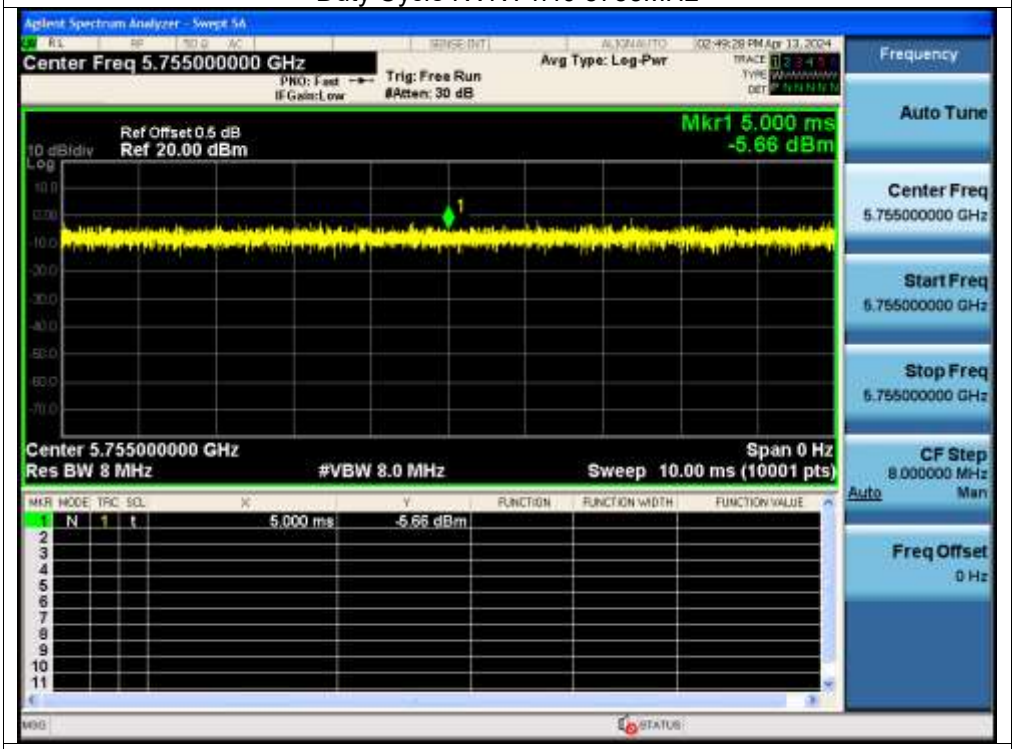
Duty Cycle NVNT n20 5785MHz



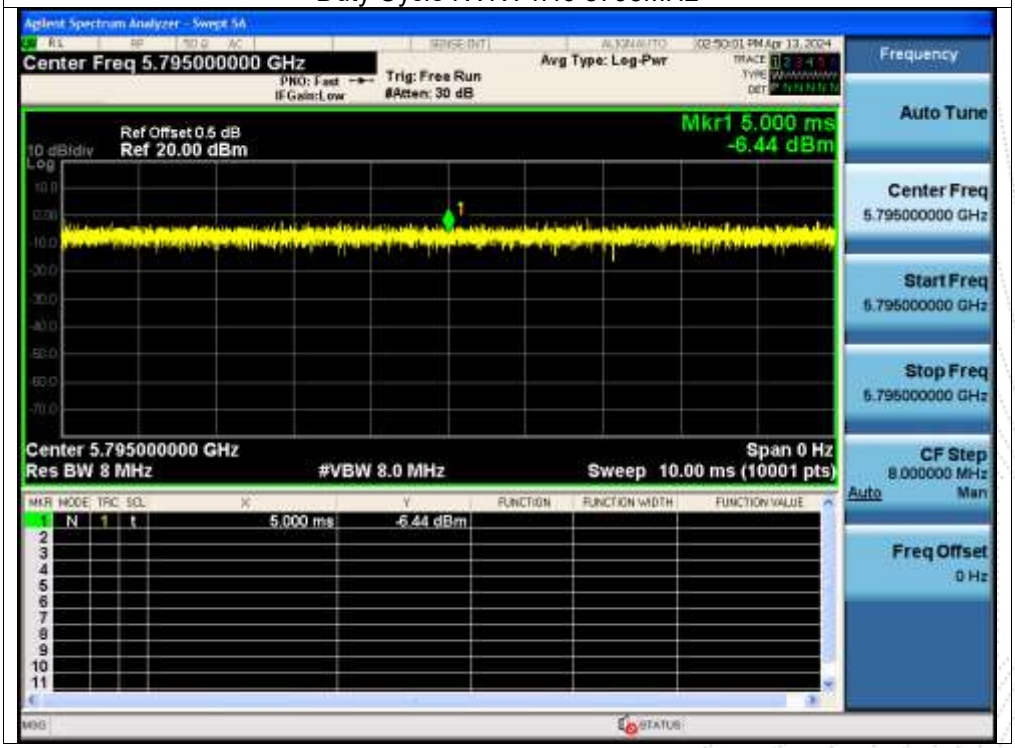
Duty Cycle NVNT n20 5825MHz



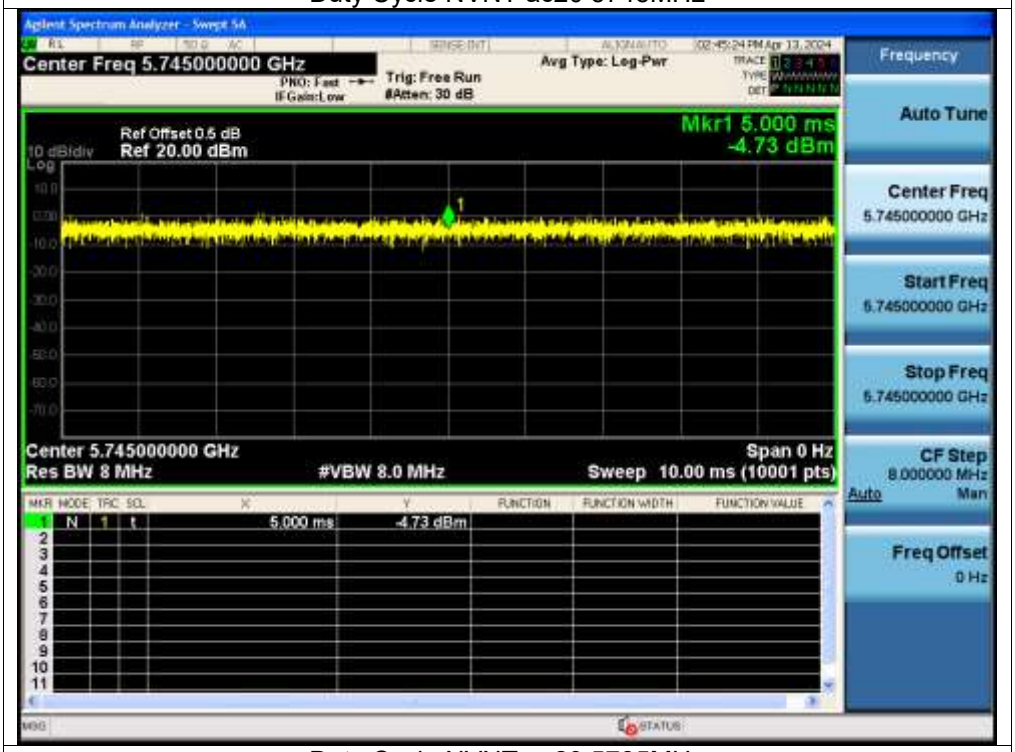
Duty Cycle NVNT n40 5755MHz



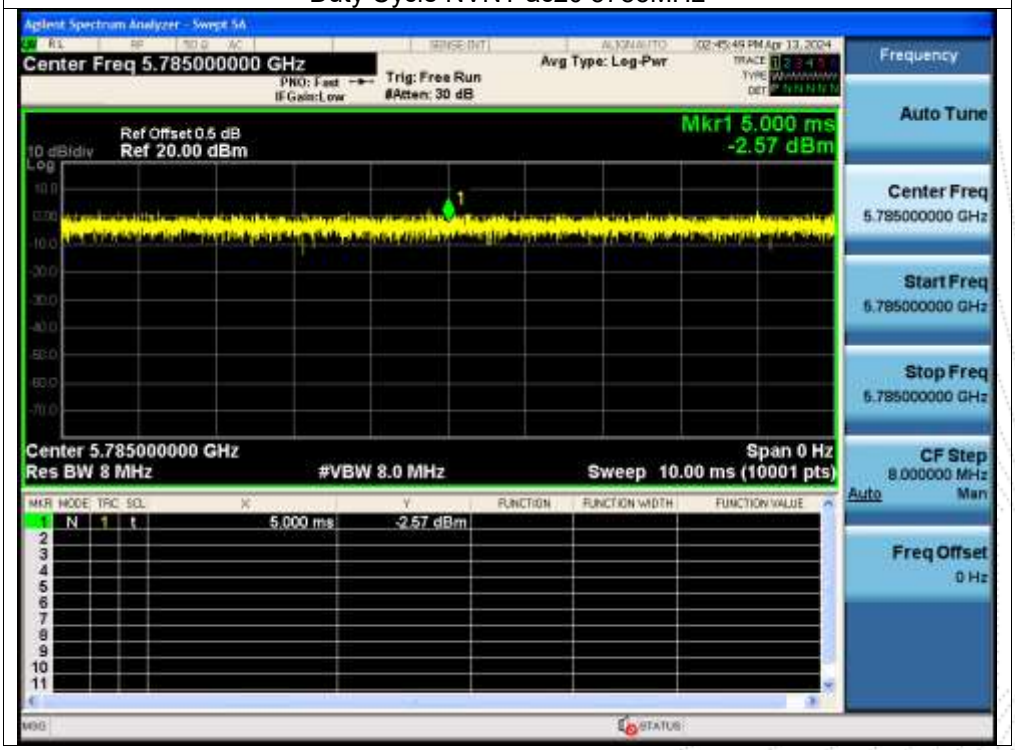
Duty Cycle NVNT n40 5795MHz



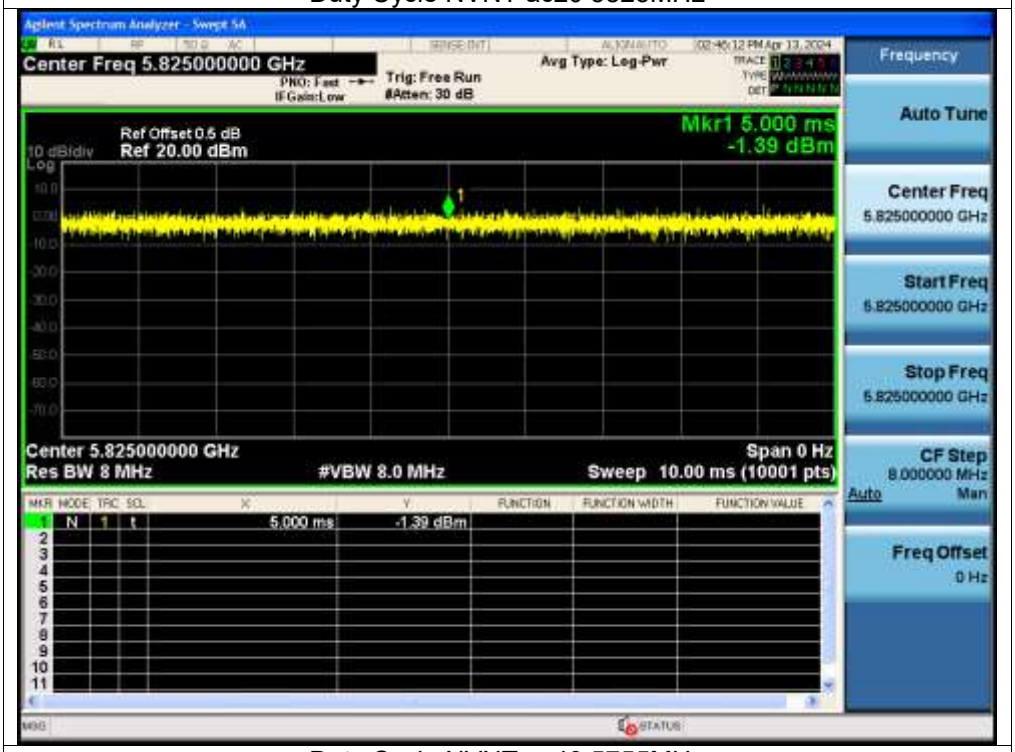
Duty Cycle NVNT ac20 5745MHz



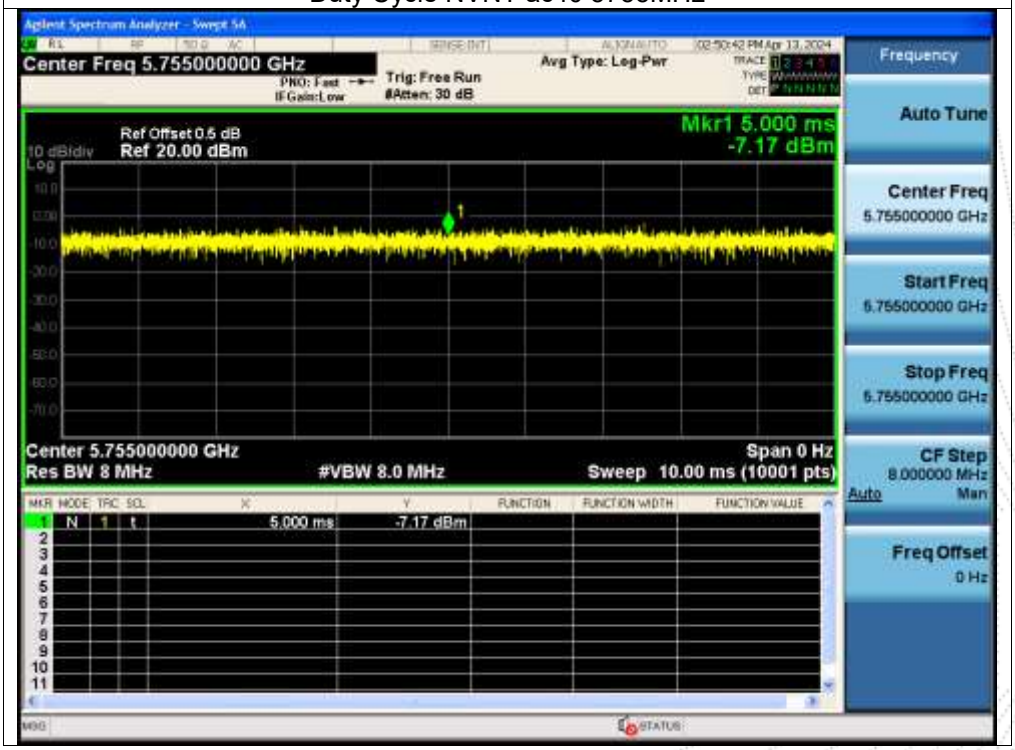
Duty Cycle NVNT ac20 5785MHz



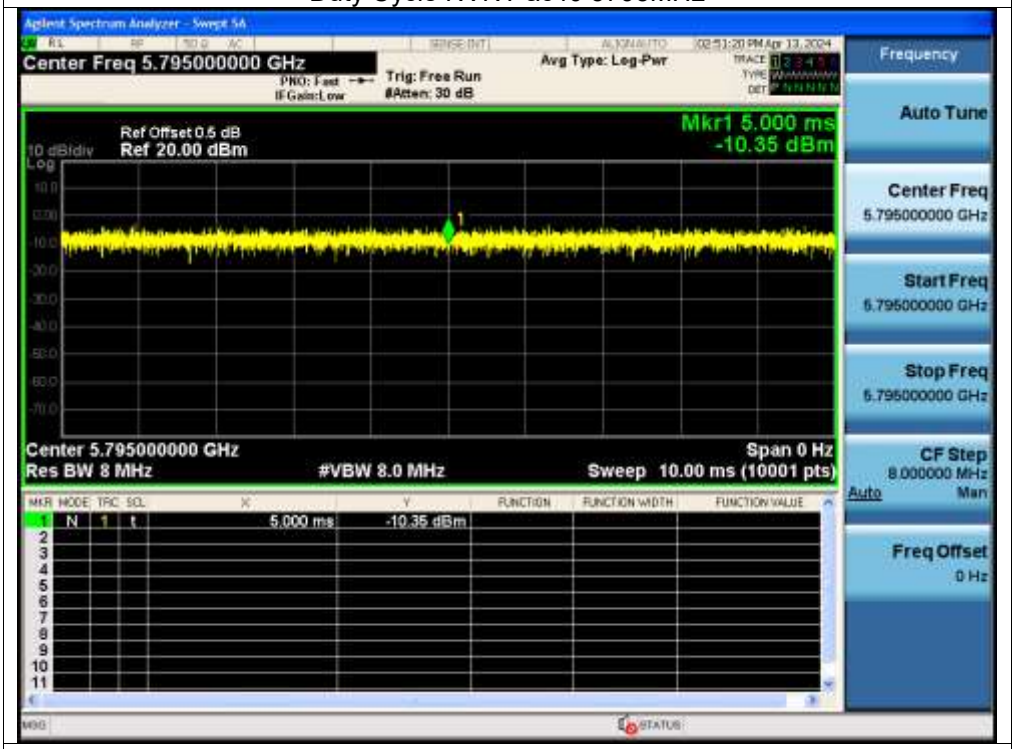
Duty Cycle NVNT ac20 5825MHz



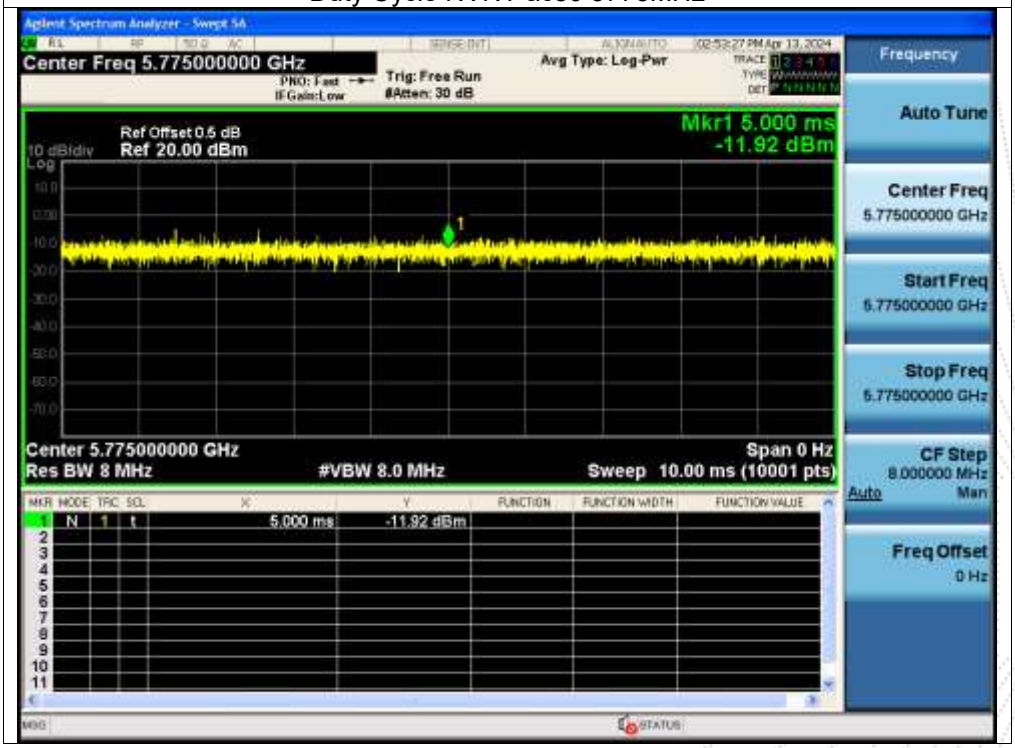
Duty Cycle NVNT ac40 5755MHz



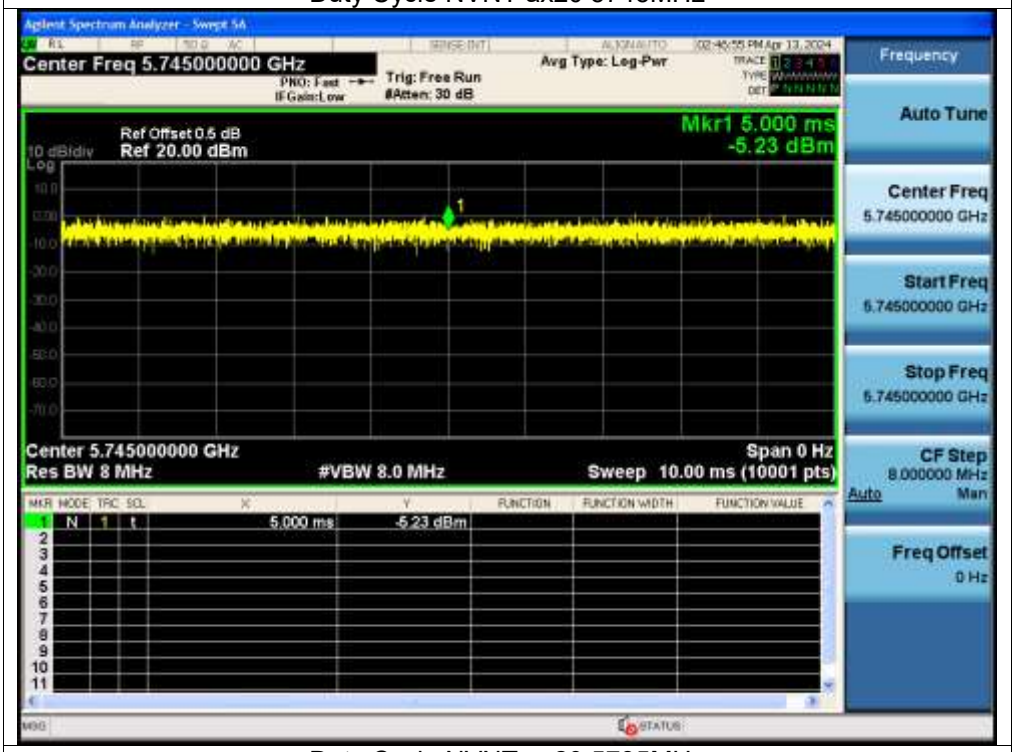
Duty Cycle NVNT ac40 5795MHz



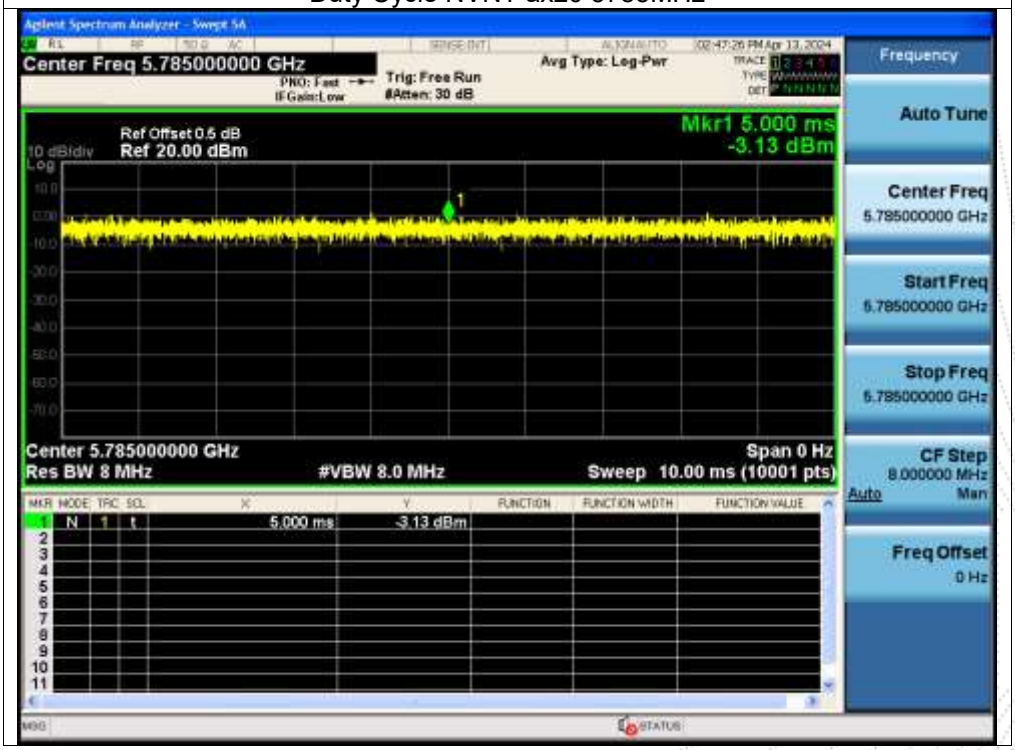
Duty Cycle NVNT ac80 5775MHz



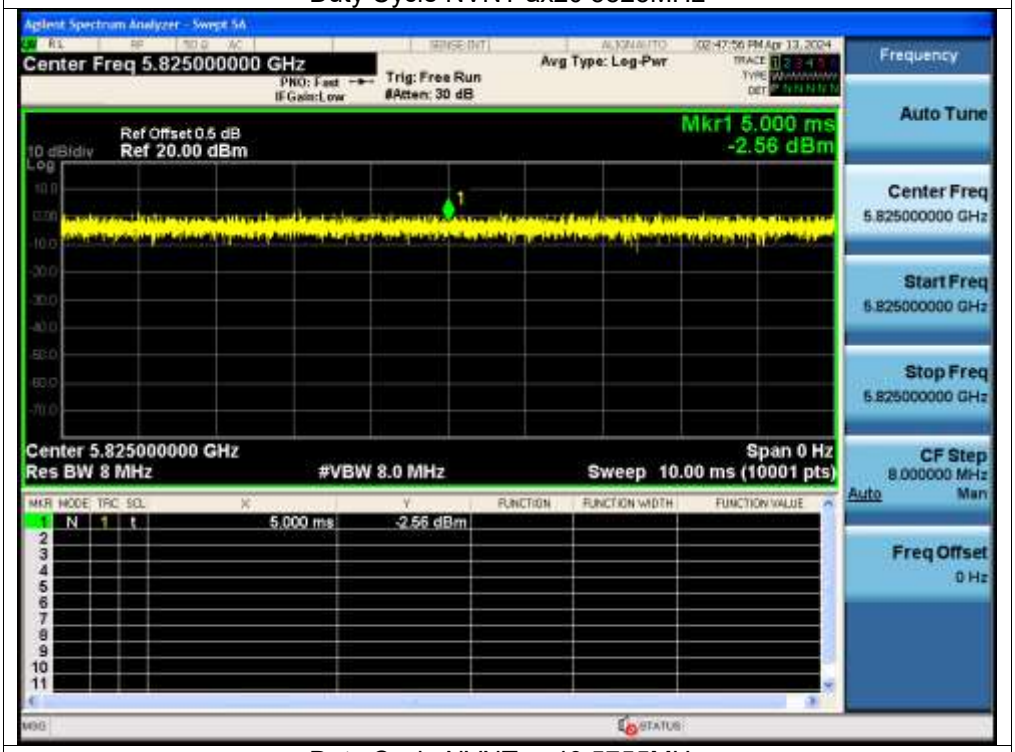
Duty Cycle NVNT ax20 5745MHz



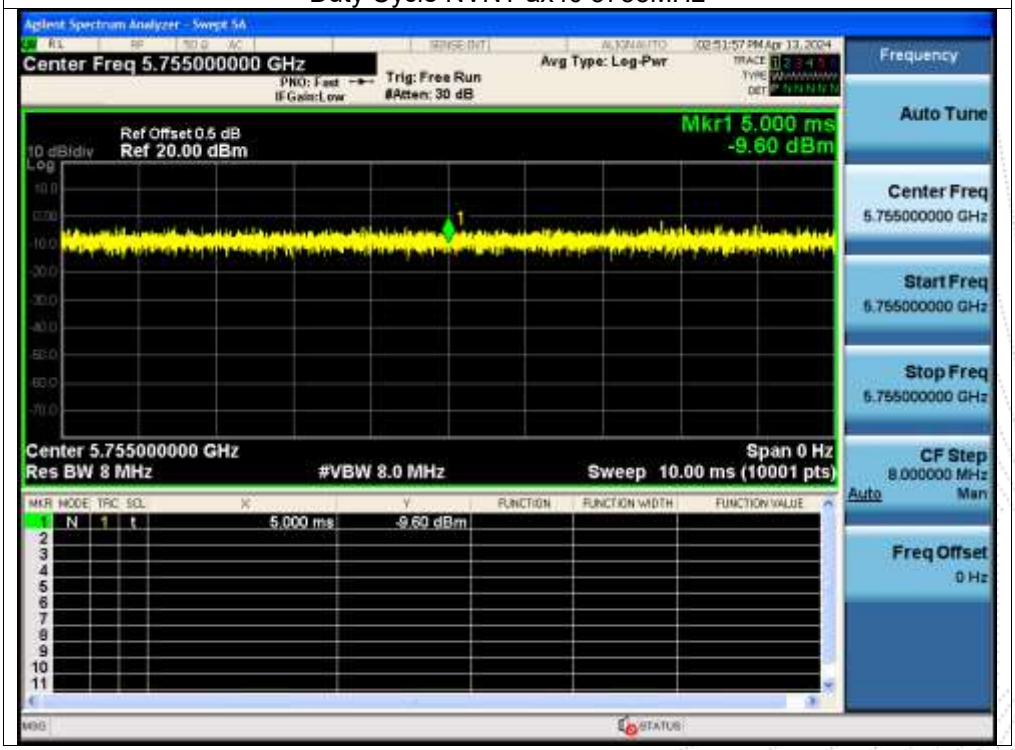
Duty Cycle NVNT ax20 5785MHz



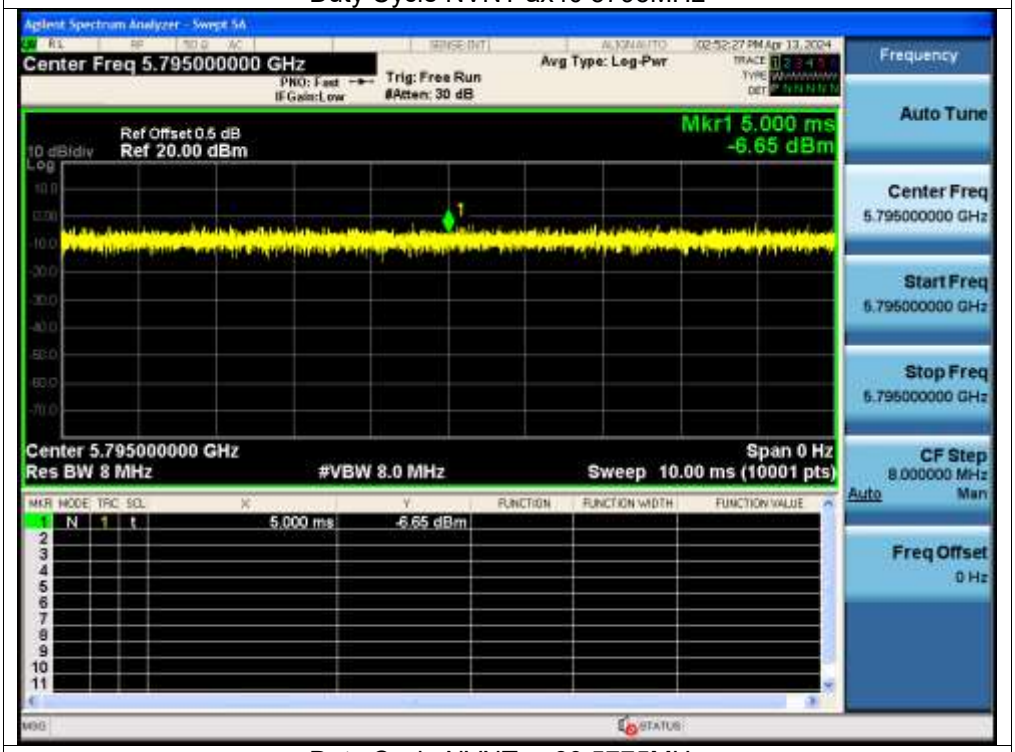
Duty Cycle NVNT ax20 5825MHz



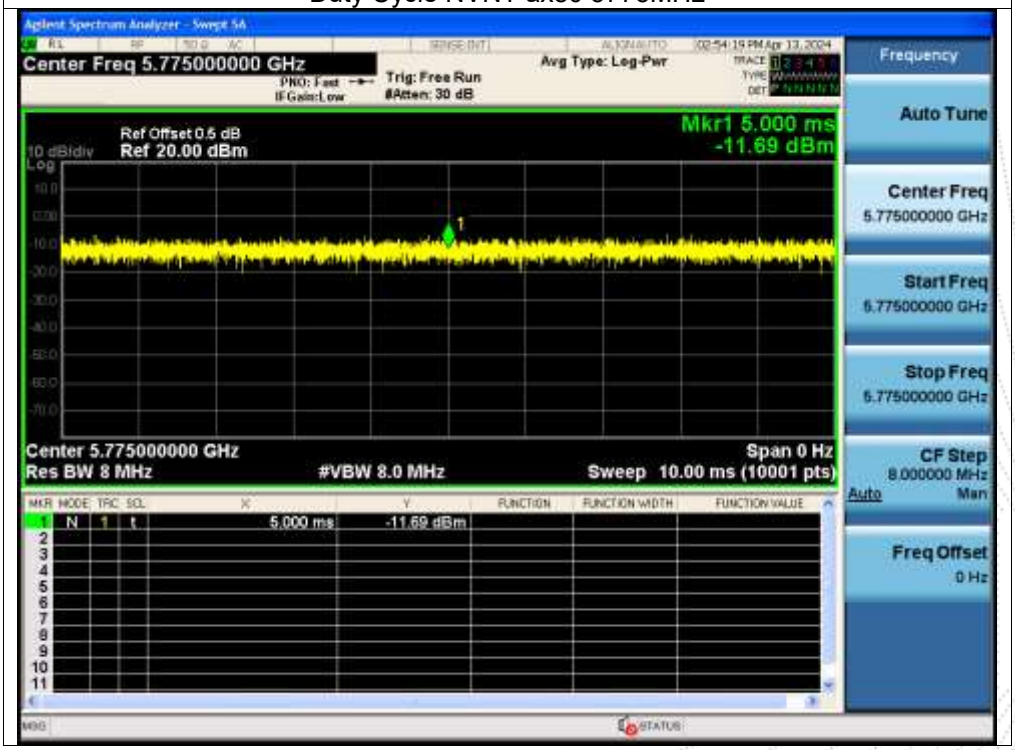
Duty Cycle NVNT ax40 5755MHz



Duty Cycle NVNT ax40 5795MHz



Duty Cycle NVNT ax80 5775MHz



15. Antenna Requirement

15.1 Limit

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

15.2 Test Result

The EUT antenna is Internal antenna (Antenna A gain:5.45 dBi, Antenna B gain: 1.74 dBi). It comply with the standard requirement.

16. EUT Photographs

EUT Photo 1

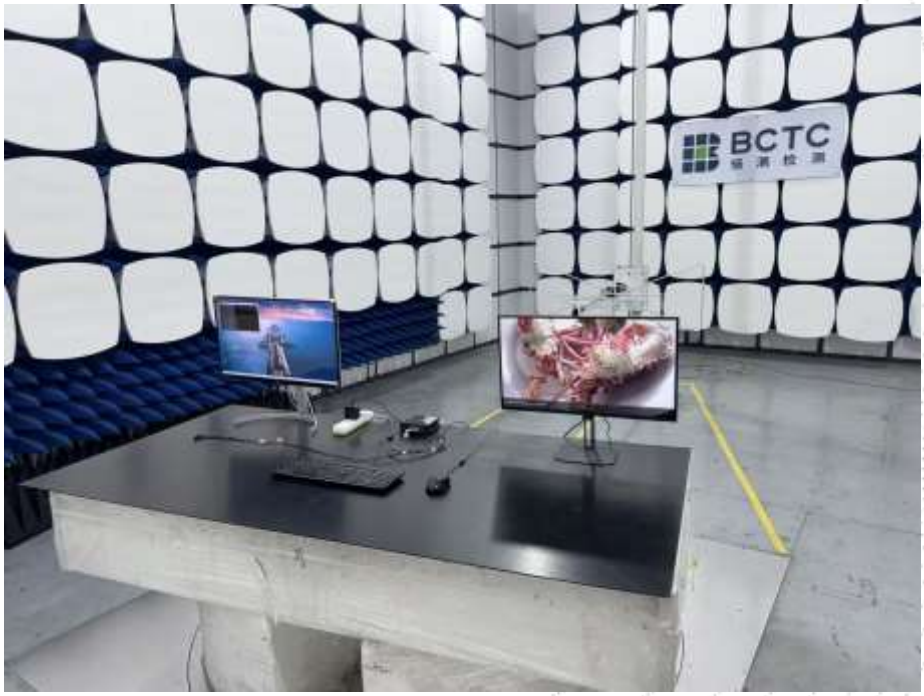
EUT Photo 2

NOTE: Appendix-Photographs Of EUT Constructional Details.

17. EUT Test Setup Photographs

Conducted Measurement Photo

Radiated Measurement Photos

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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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