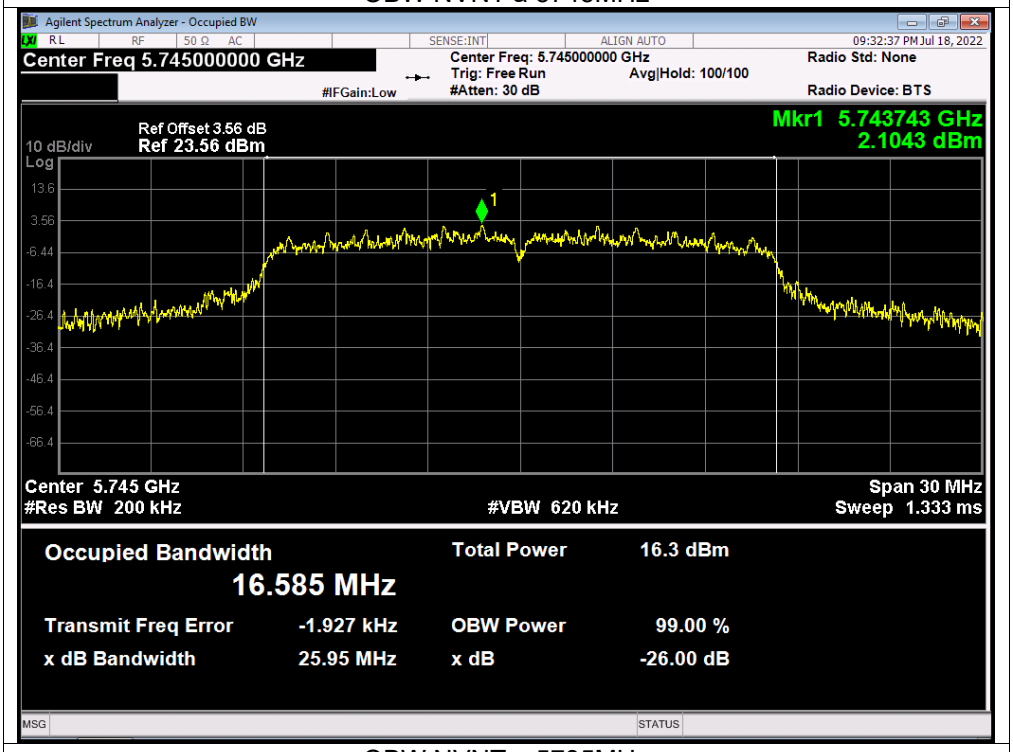
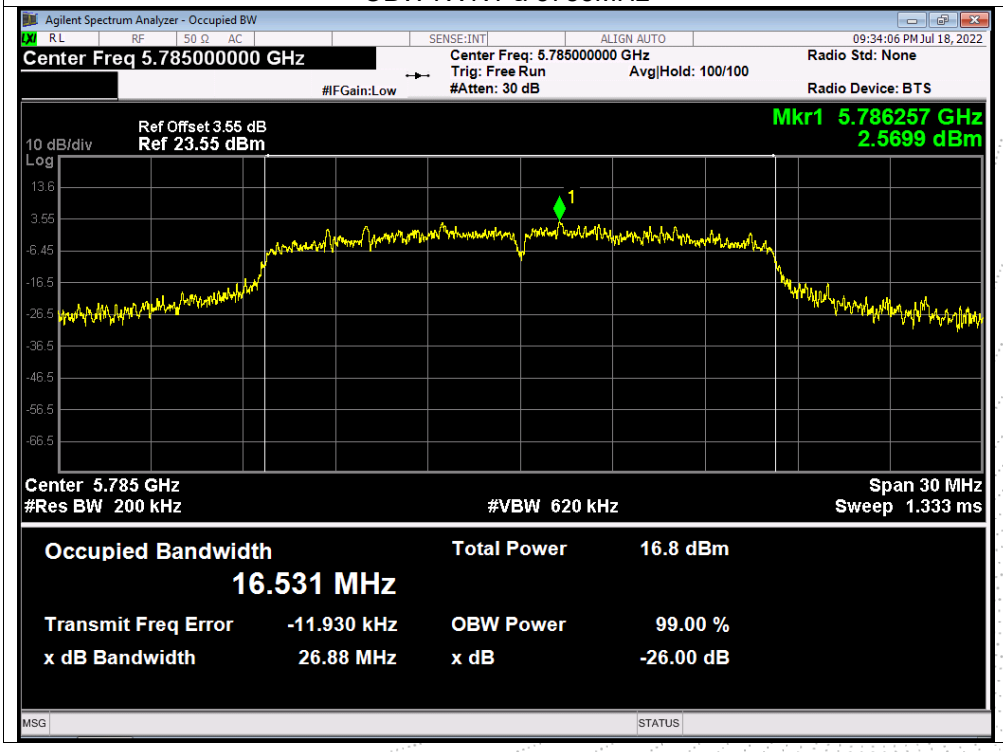
Test Graphs

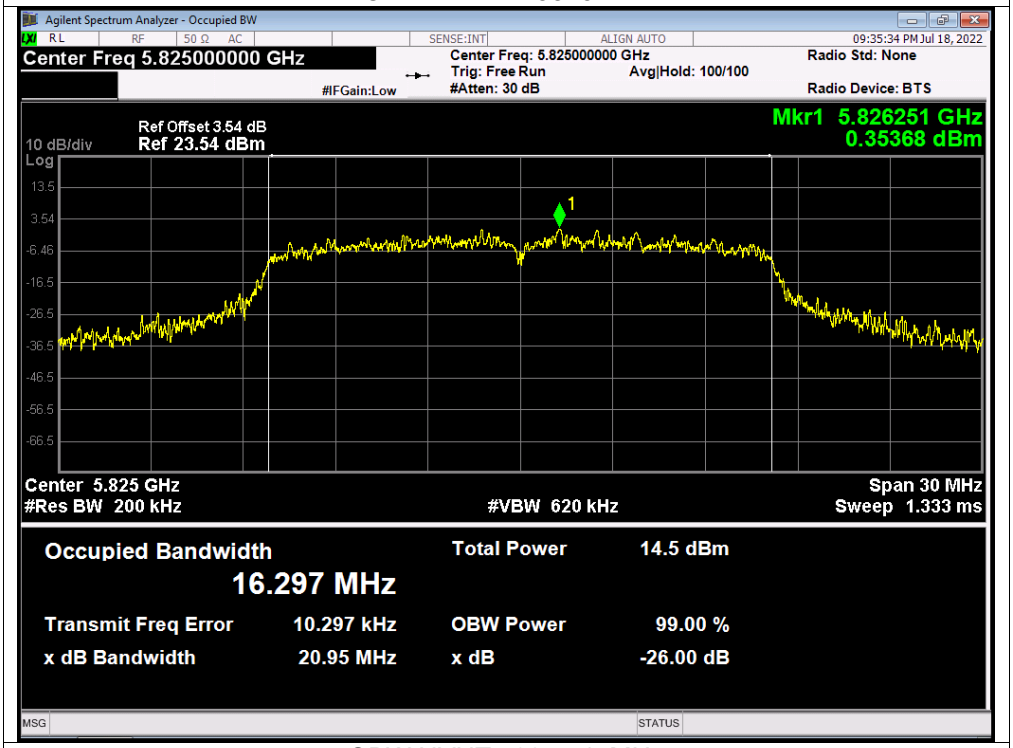
OBW NVNT a 5745MHz



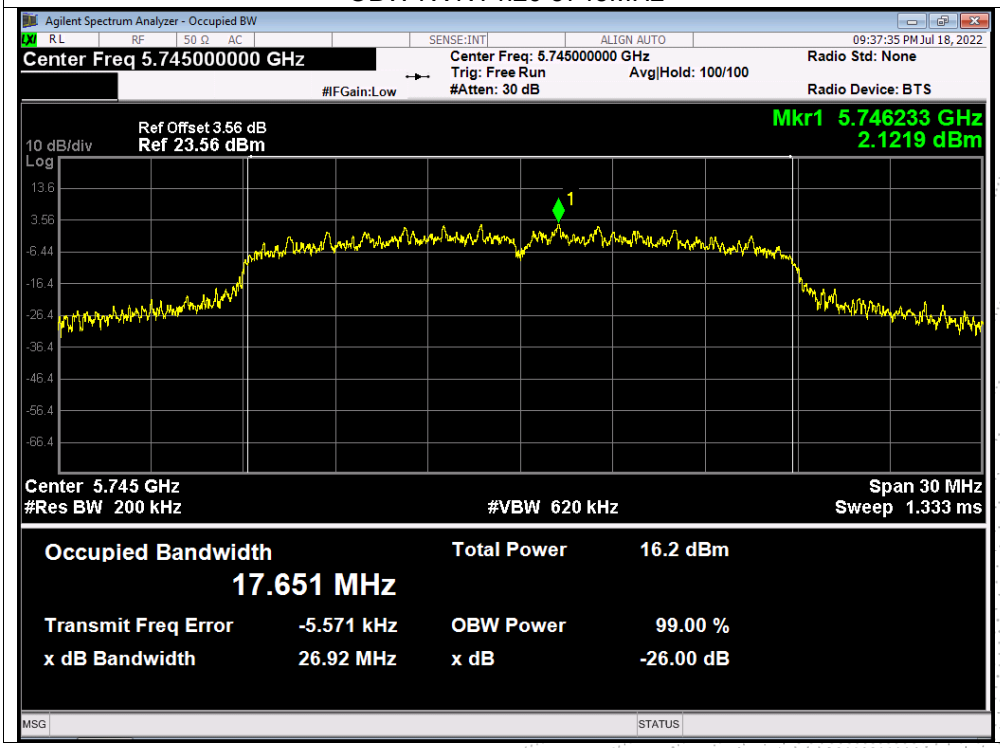
OBW NVNT a 5785MHz



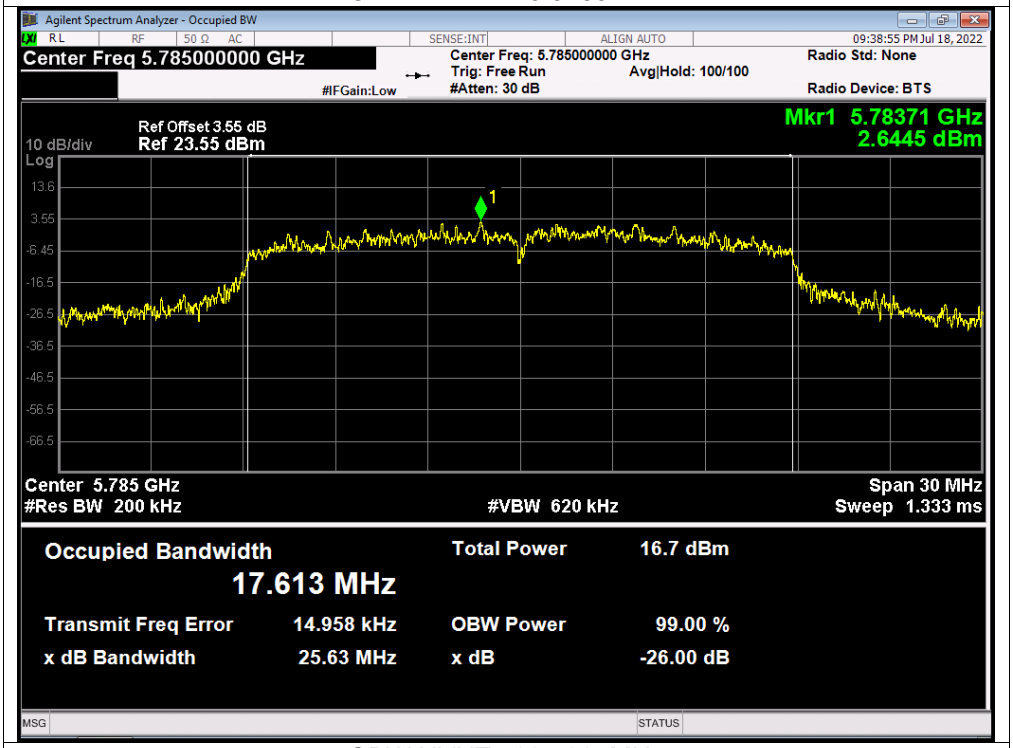
OBW NVNT a 5825MHz



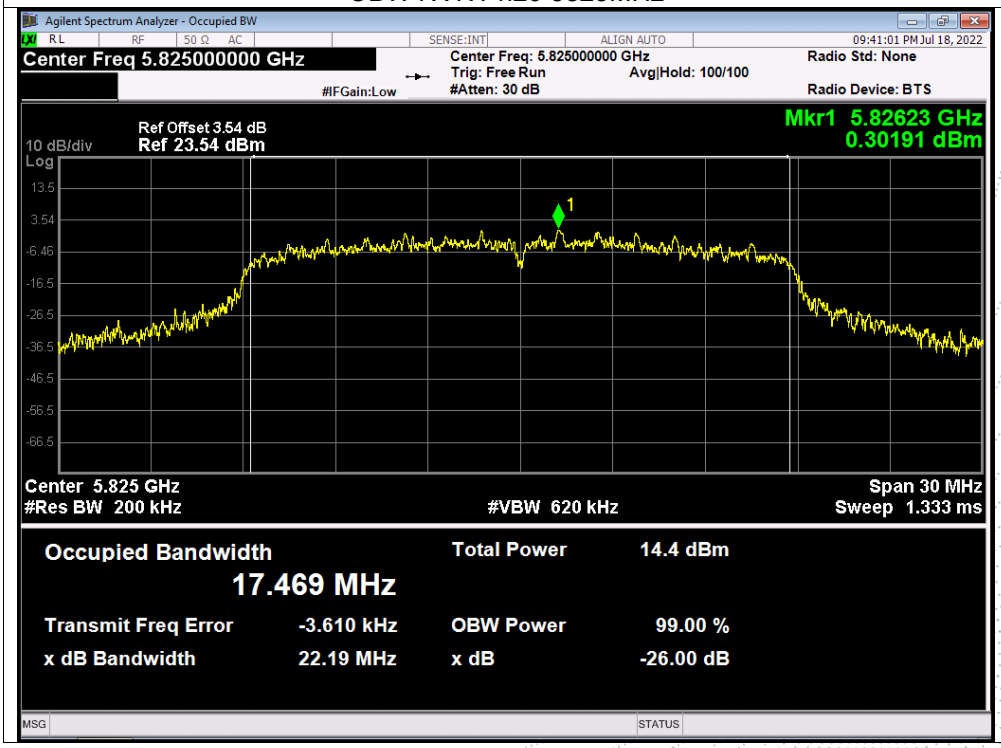
OBW NVNT n20 5745MHz



OBW NVNT n20 5785MHz

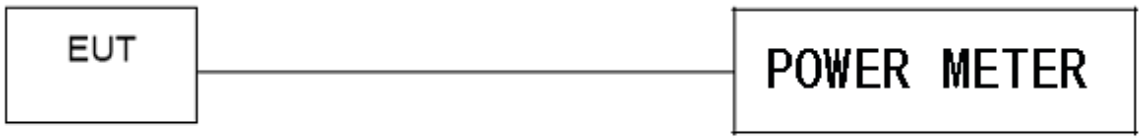


OBW NVNT n20 5825MHz



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:	AC120V/60Hz
Test Mode:	(U-NII-1, U-NII-2A, U-NII-2C, U-NII-3)		

Condition	Mode	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	a	5180	3.38	24	Pass
NVNT	a	5200	2.70	24	Pass
NVNT	a	5240	4.10	24	Pass
NVNT	n20	5180	3.57	24	Pass
NVNT	n20	5200	2.49	24	Pass
NVNT	n20	5240	4.32	24	Pass

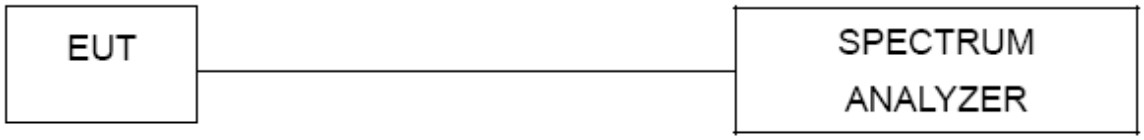
Condition	Mode	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	a	5260	4.68	24	Pass
NVNT	a	5280	5.44	24	Pass
NVNT	a	5320	5.68	24	Pass
NVNT	n20	5260	4.85	24	Pass
NVNT	n20	5280	5.16	24	Pass
NVNT	n20	5320	5.44	24	Pass

Condition	Mode	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	a	5500	5.73	24	Pass
NVNT	a	5580	7.71	24	Pass
NVNT	a	5700	6.54	24	Pass
NVNT	n20	5500	5.40	24	Pass
NVNT	n20	5580	7.81	24	Pass
NVNT	n20	5700	5.72	24	Pass

Condition	Mode	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	a	5745	6.07	30	Pass
NVNT	a	5785	6.61	30	Pass
NVNT	a	5825	6.52	30	Pass
NVNT	n20	5745	5.88	30	Pass
NVNT	n20	5785	6.65	30	Pass
NVNT	n20	5825	5.80	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

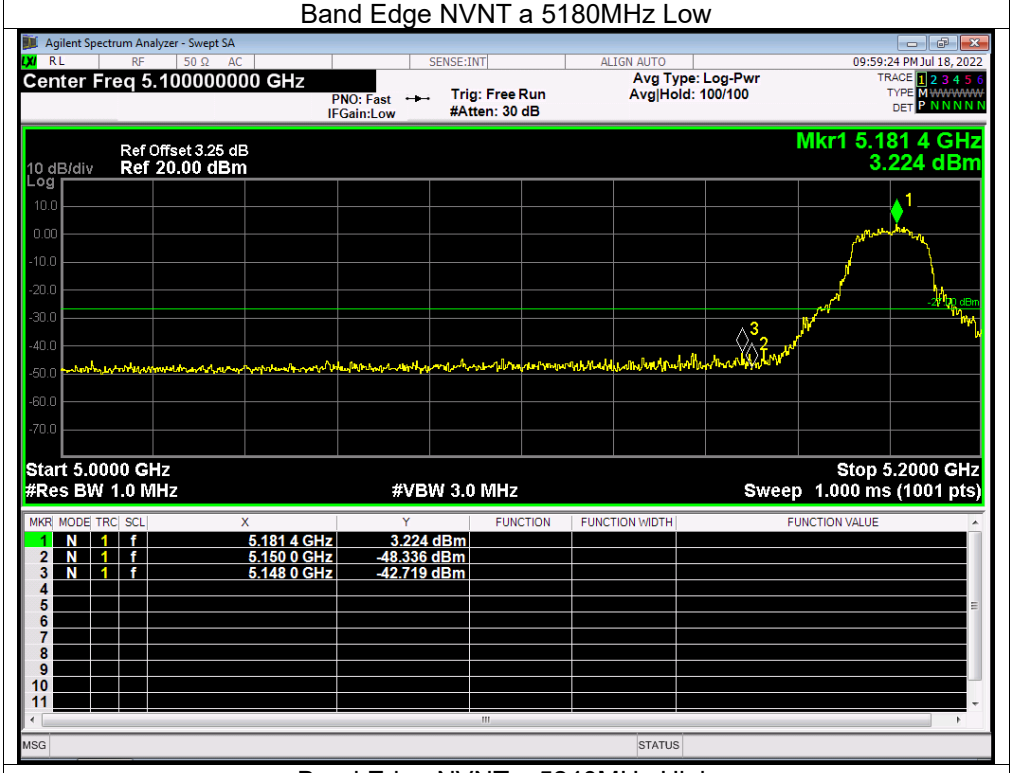
The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data

11.5 Test Result

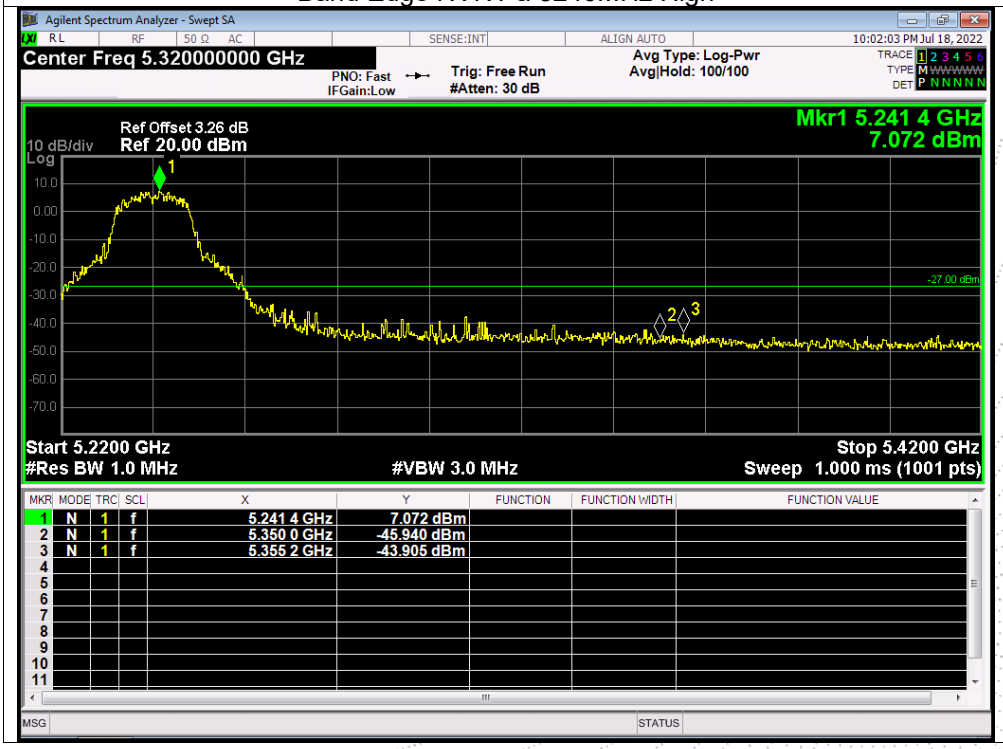
Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101kPa	Test Voltage:	AC 120V/60Hz

Test Graphs

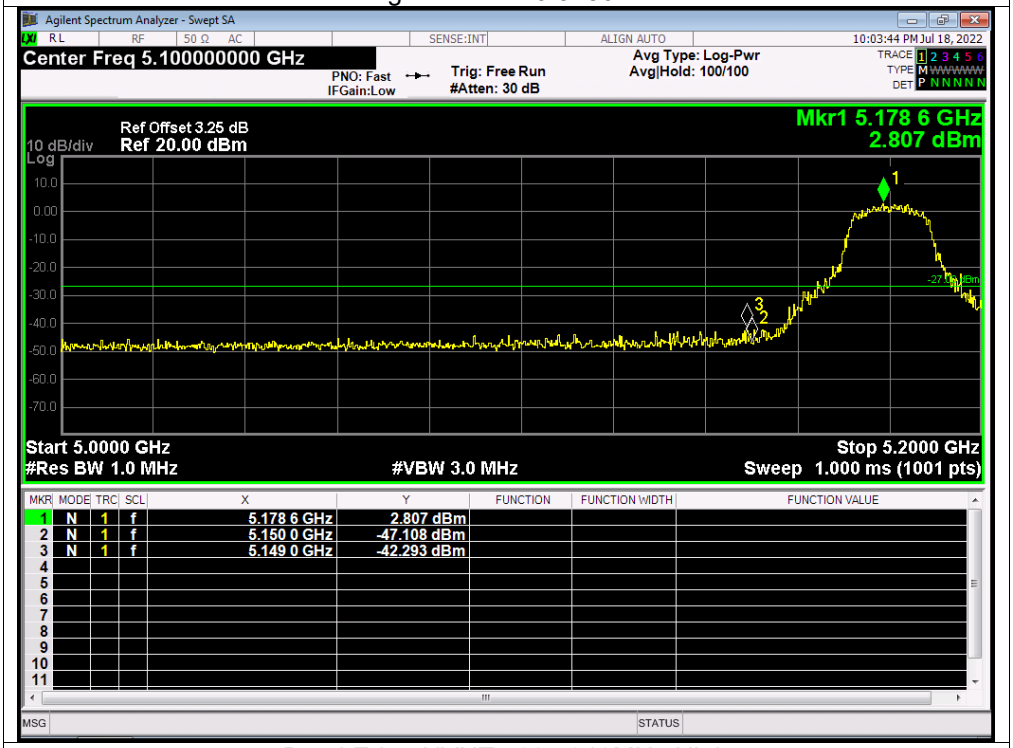
Band Edge NVNT a 5180MHz Low



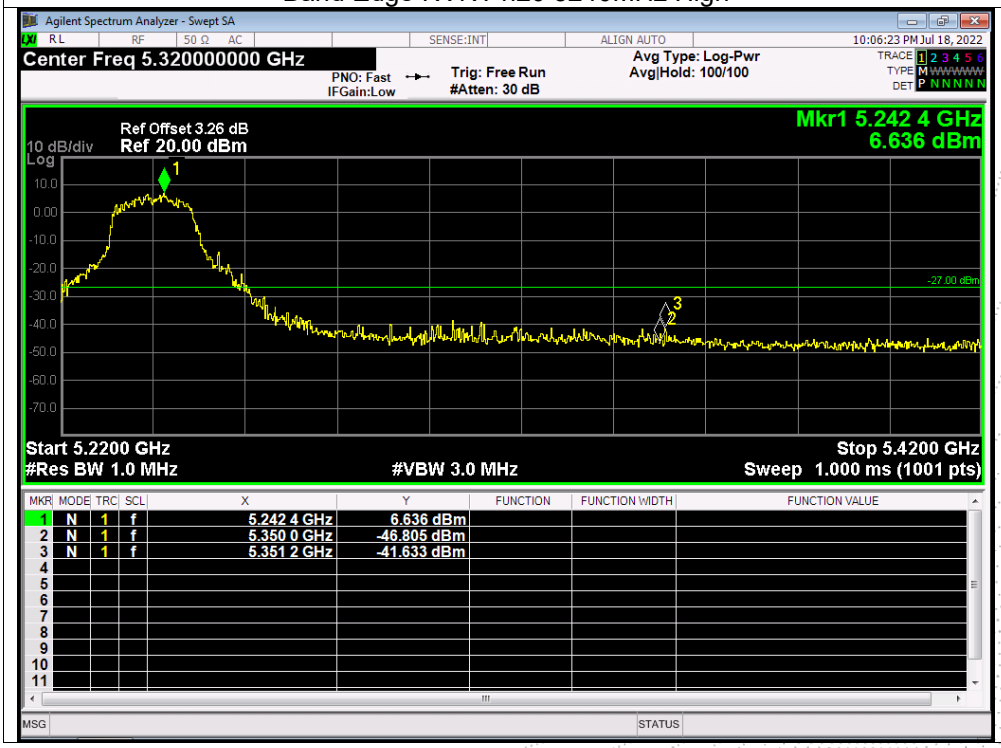
Band Edge NVNT a 5240MHz High



Band Edge NVNT n20 5180MHz Low

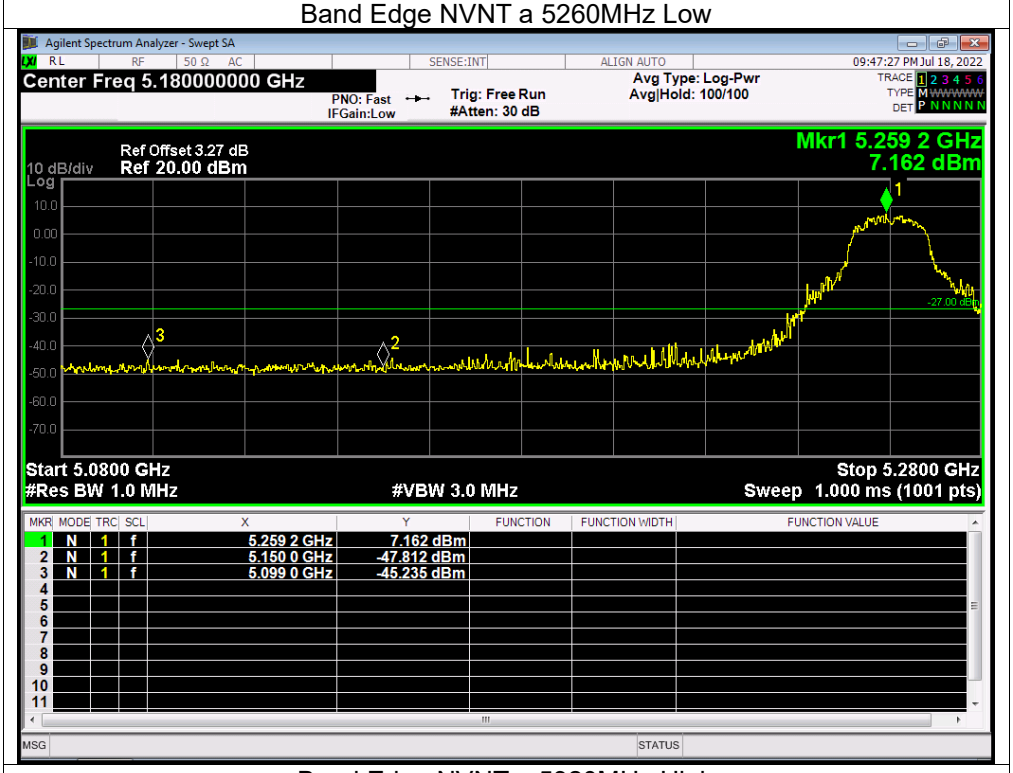


Band Edge NVNT n20 5240MHz High

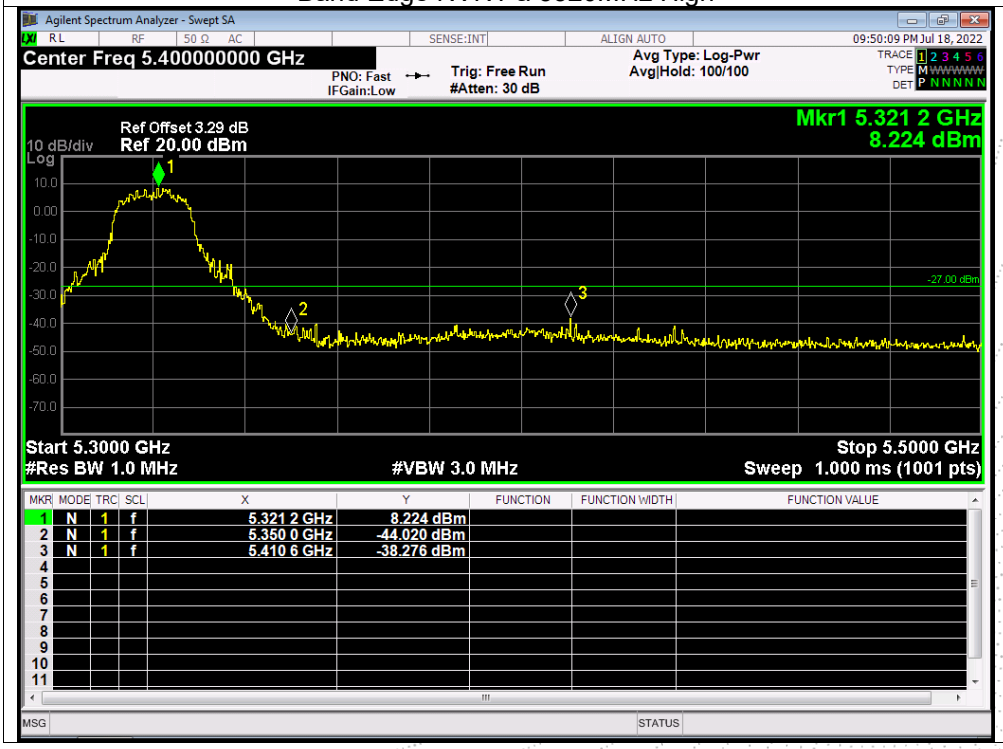


Test Graphs

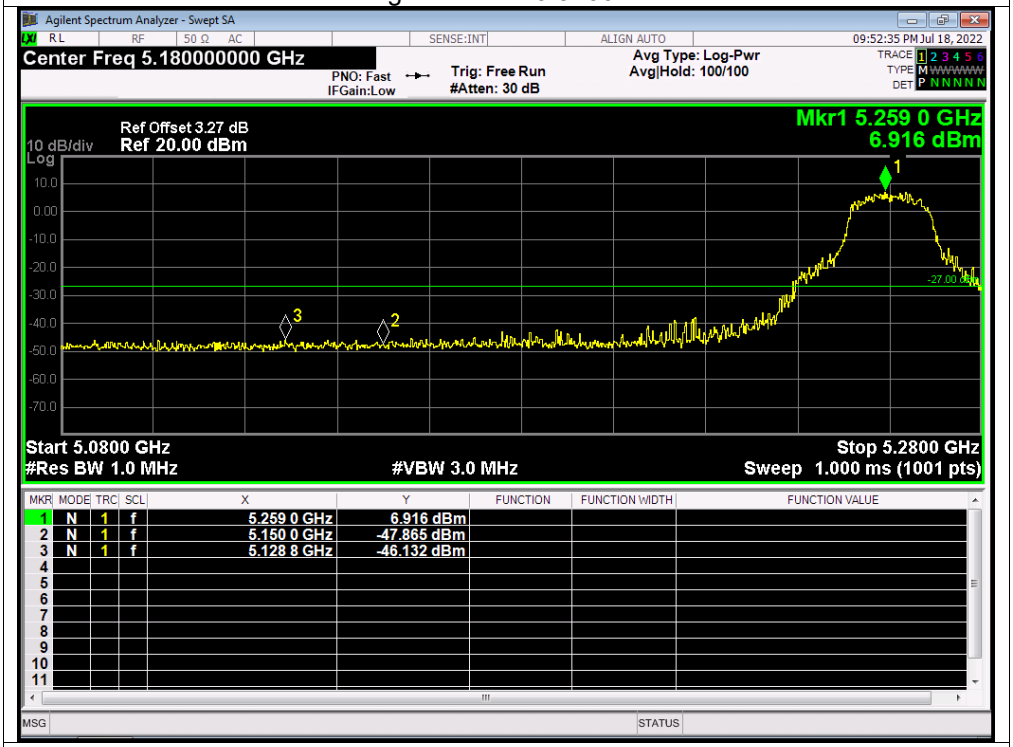
Band Edge NVNT a 5260MHz Low



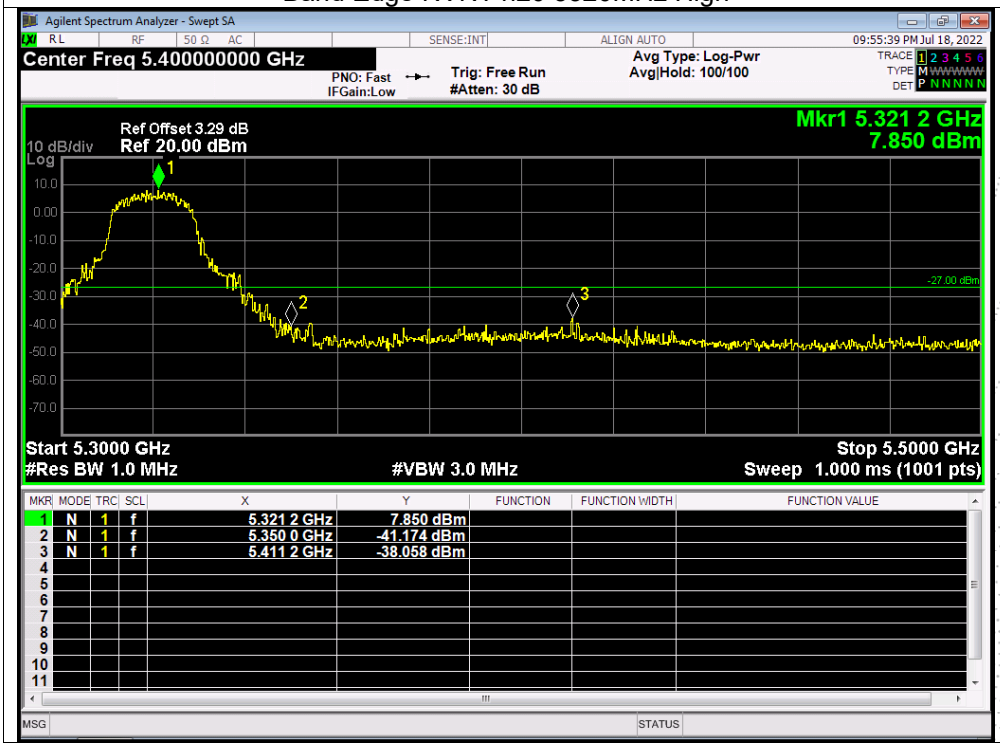
Band Edge NVNT a 5320MHz High



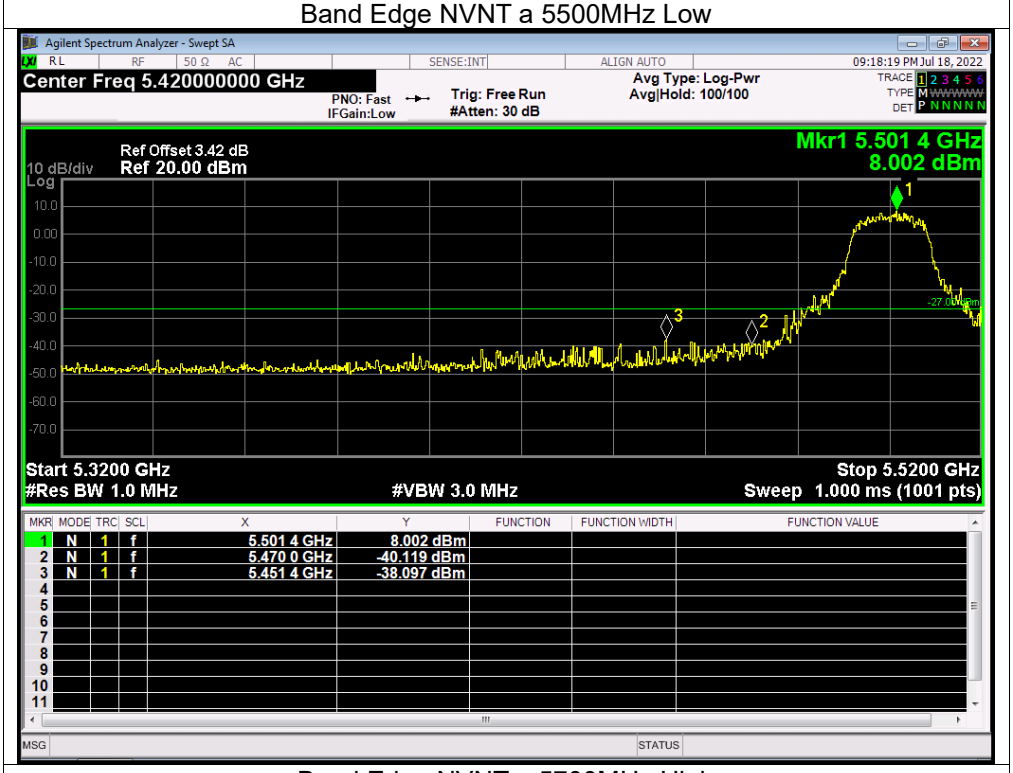
Band Edge NVNT n20 5260MHz Low



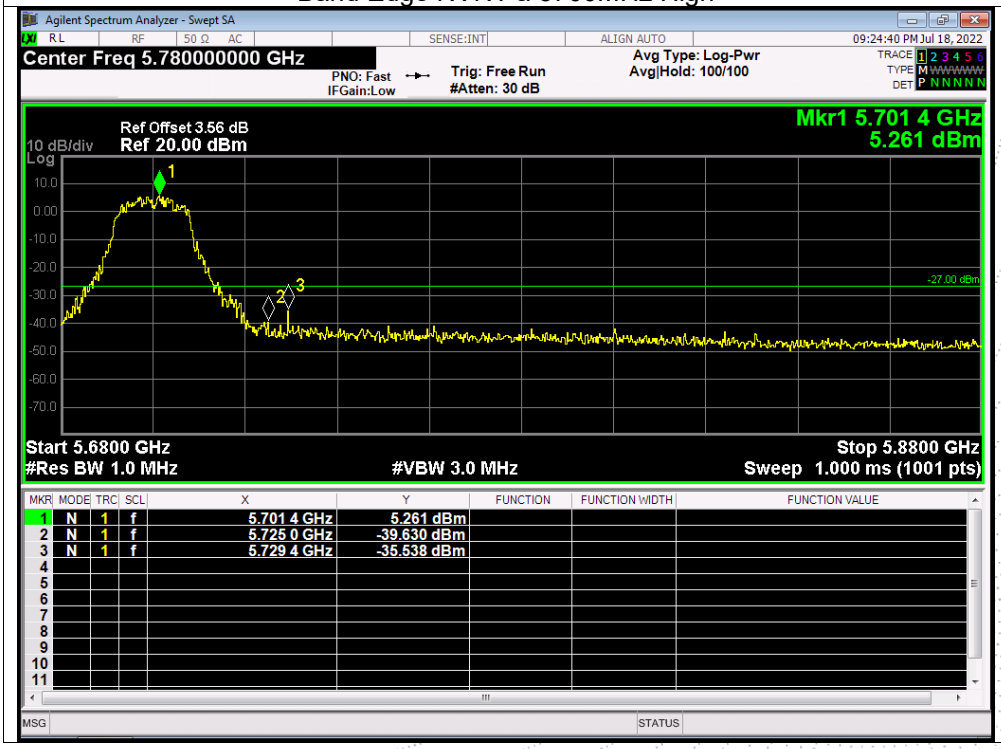
Band Edge NVNT n20 5320MHz High



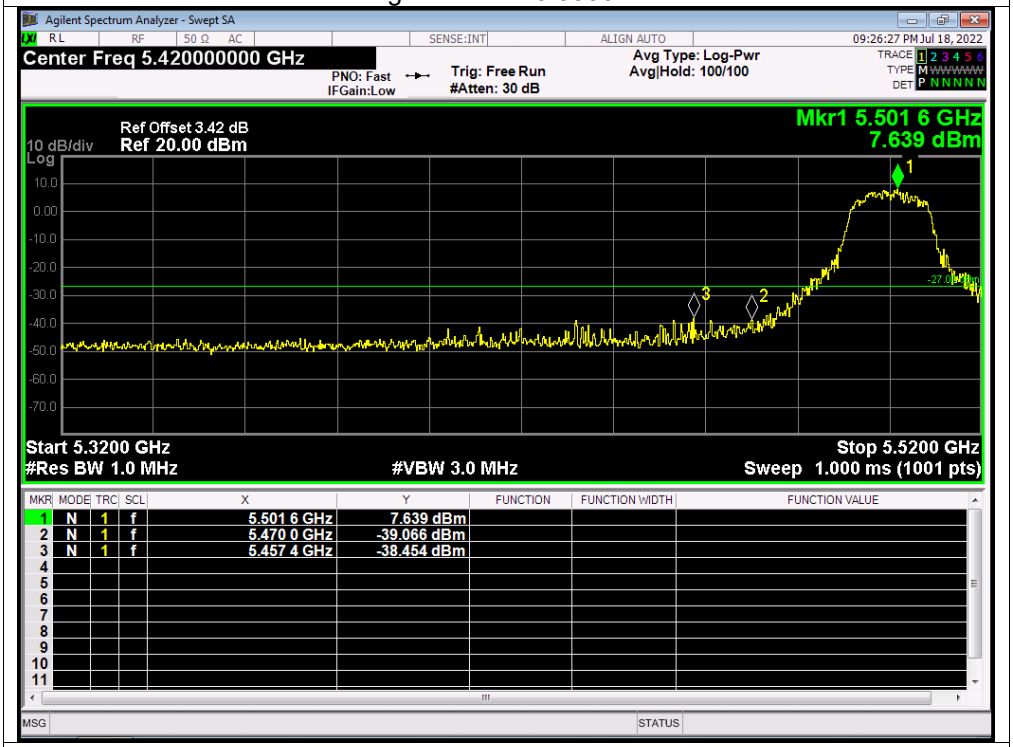
Test Graphs
Band Edge NVNT a 5500MHz Low



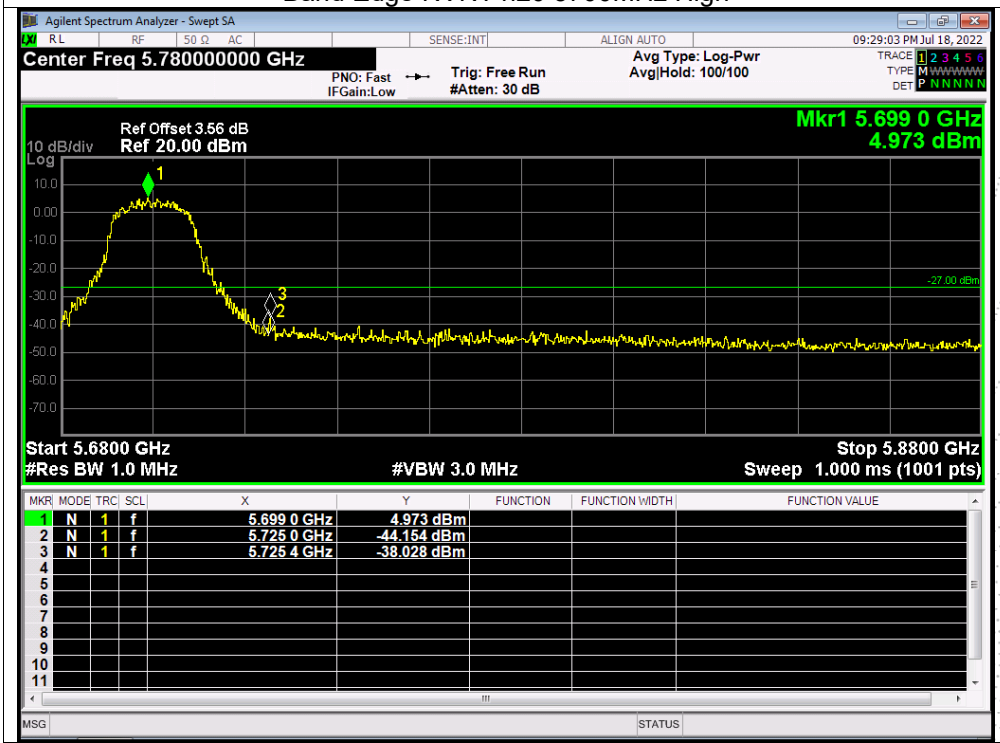
Band Edge NVNT a 5700MHz High



Band Edge NVNT n20 5500MHz Low

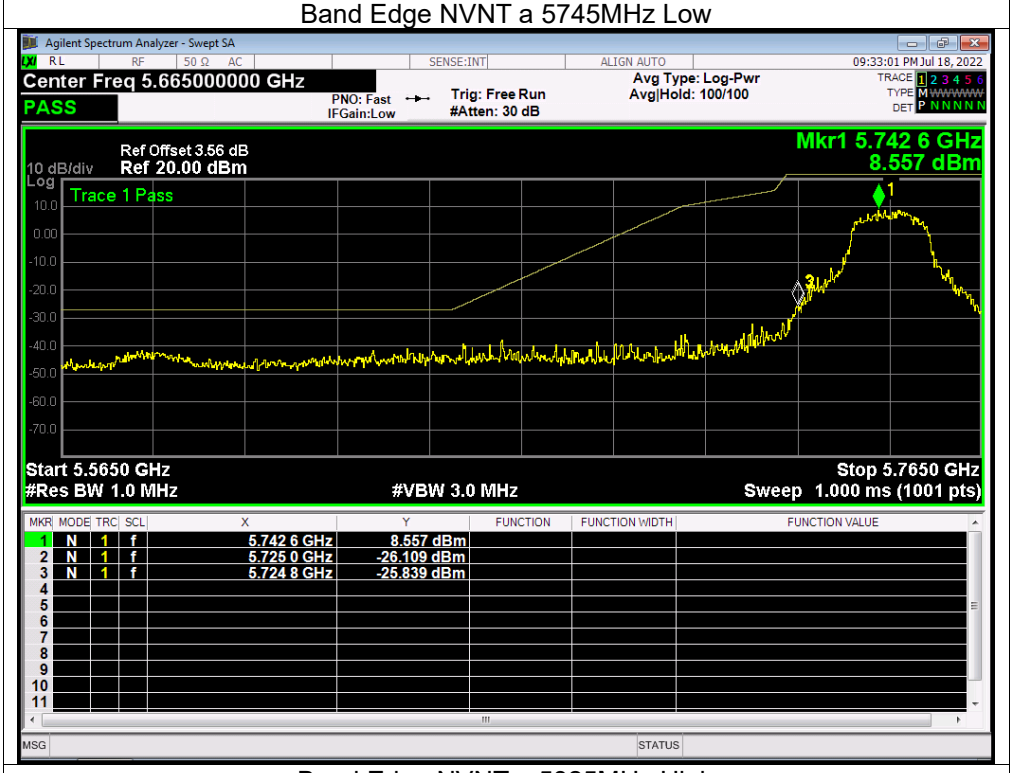


Band Edge NVNT n20 5700MHz High

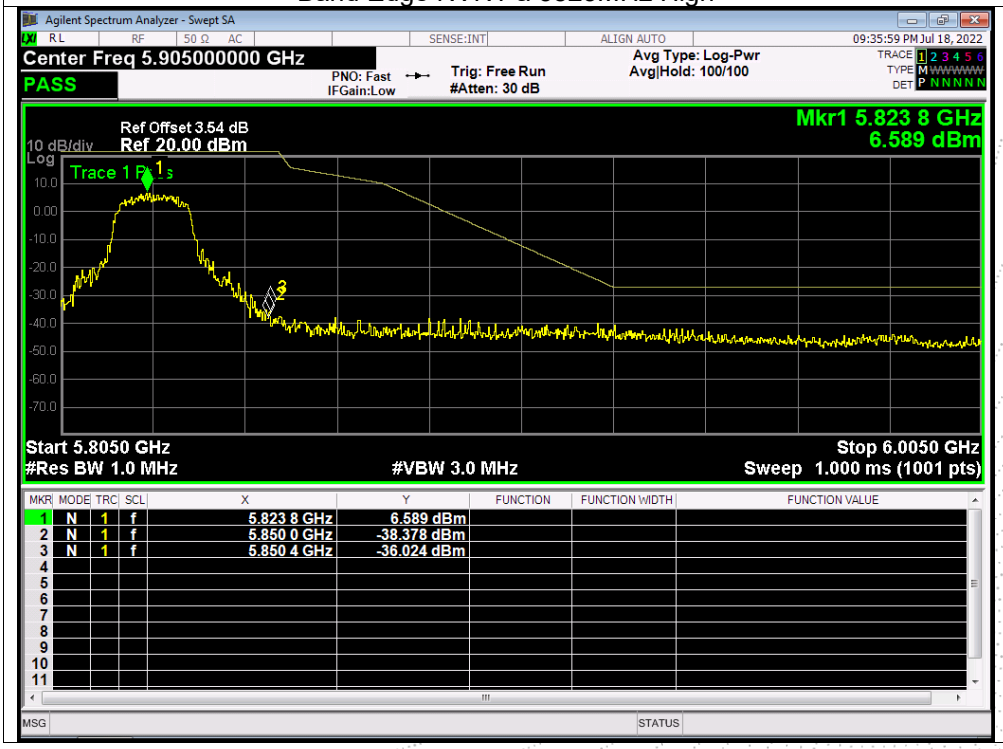


Test Graphs

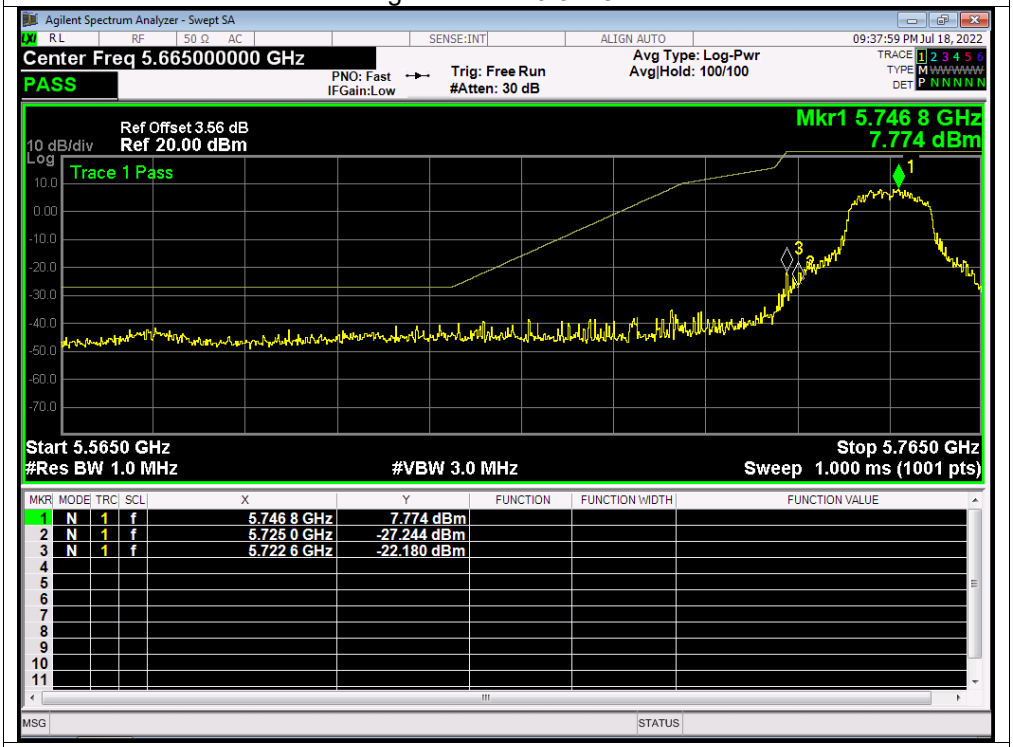
Band Edge NVNT a 5745MHz Low



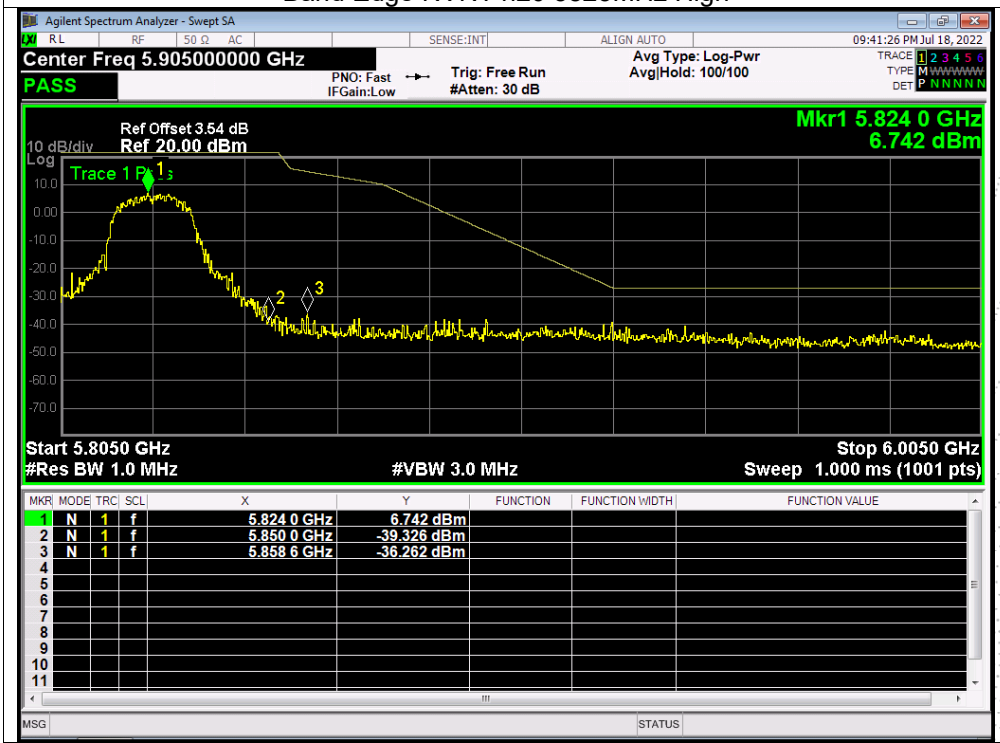
Band Edge NVNT a 5825MHz High



Band Edge NVNT n20 5745MHz Low

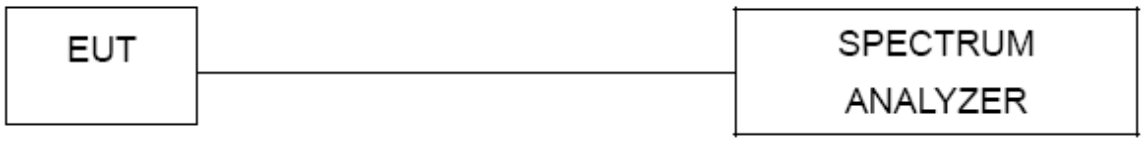


Band Edge NVNT n20 5825MHz High



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.

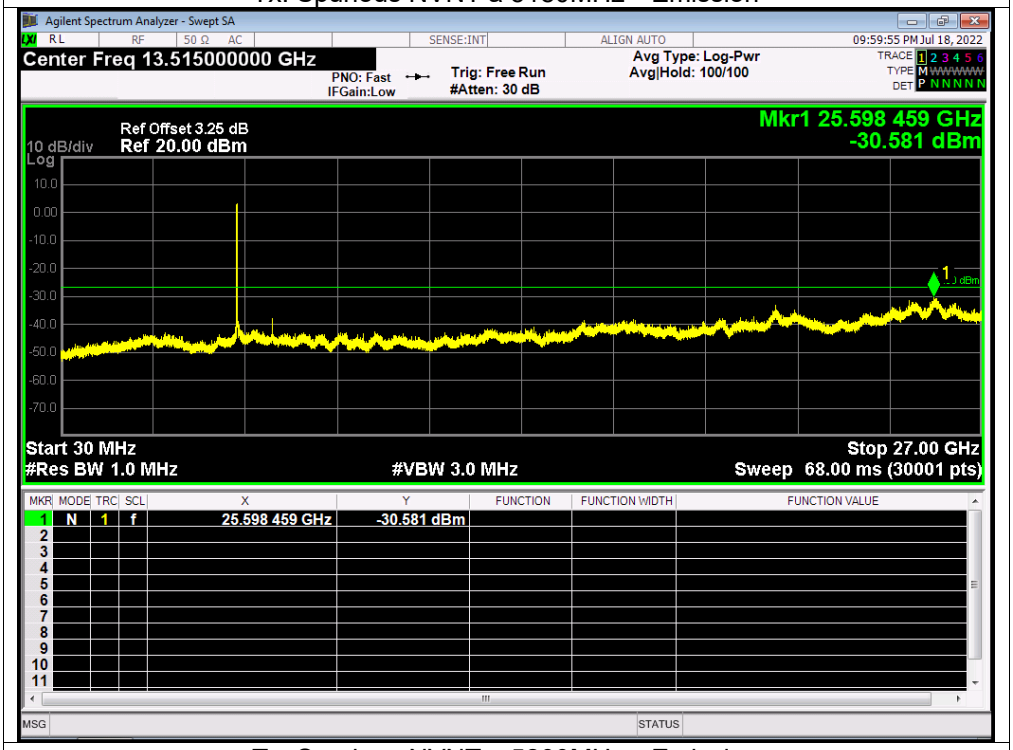
12.4 Test Result

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.

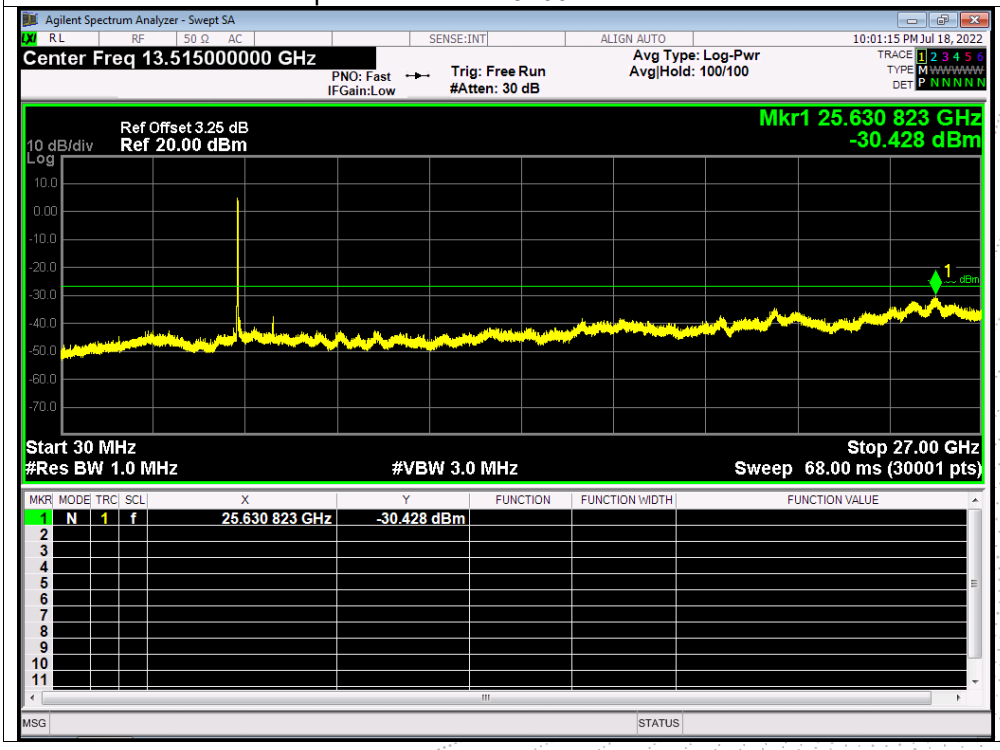
About:26.5GHz-40GHz, The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Test Graphs

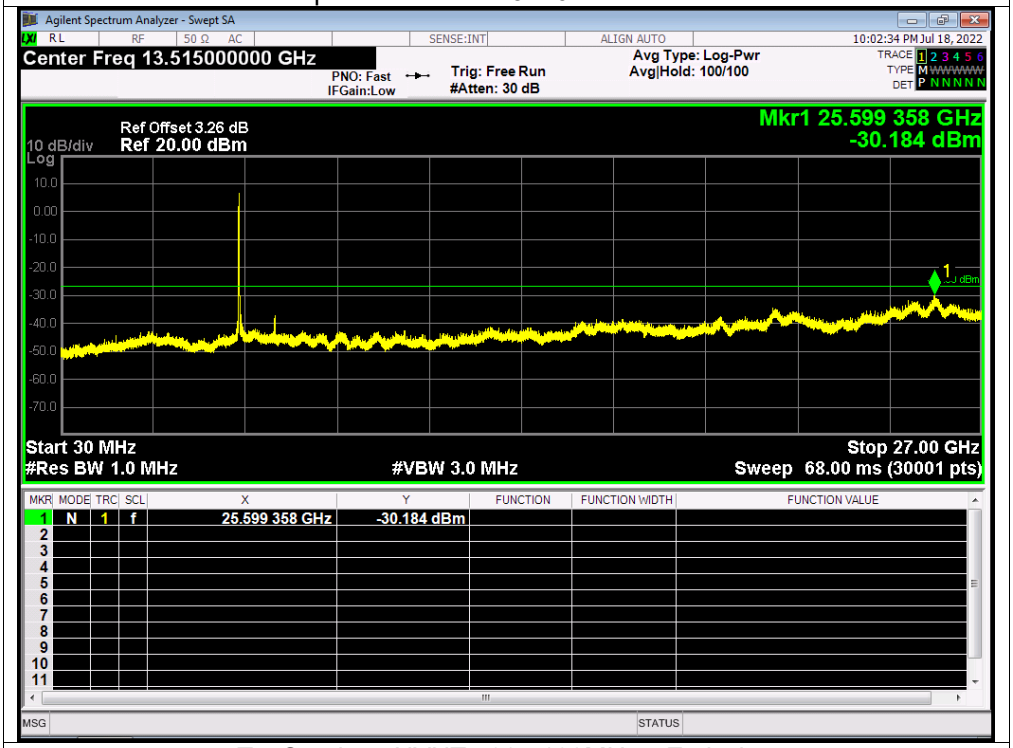
Tx. Spurious NVNT a 5180MHz Emission



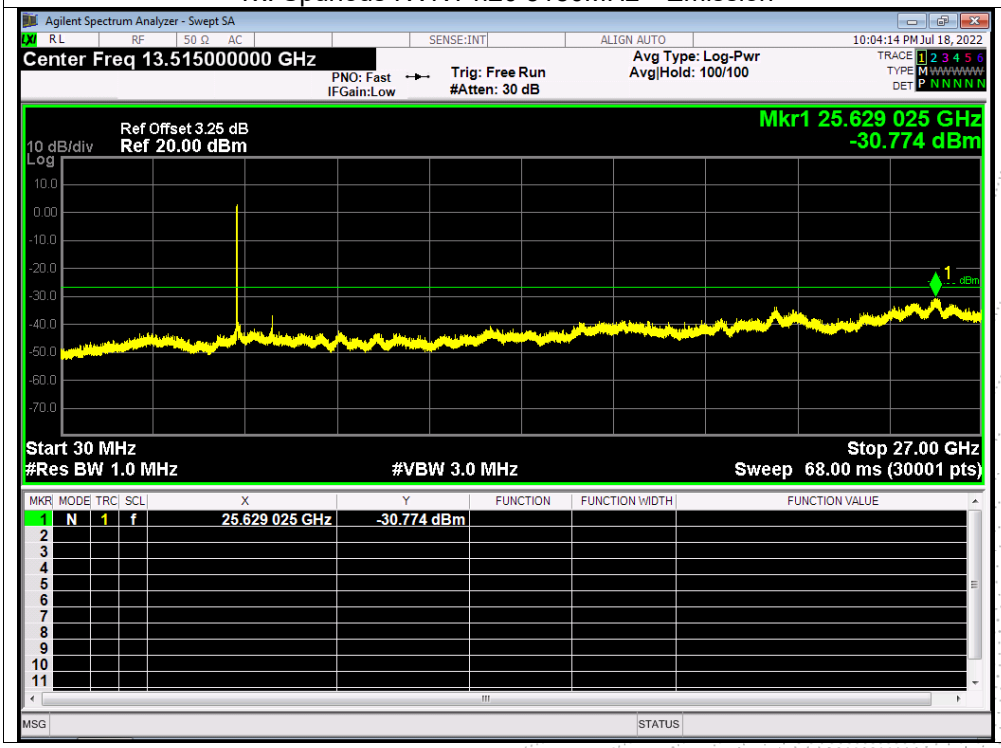
Tx. Spurious NVNT a 5200MHz Emission



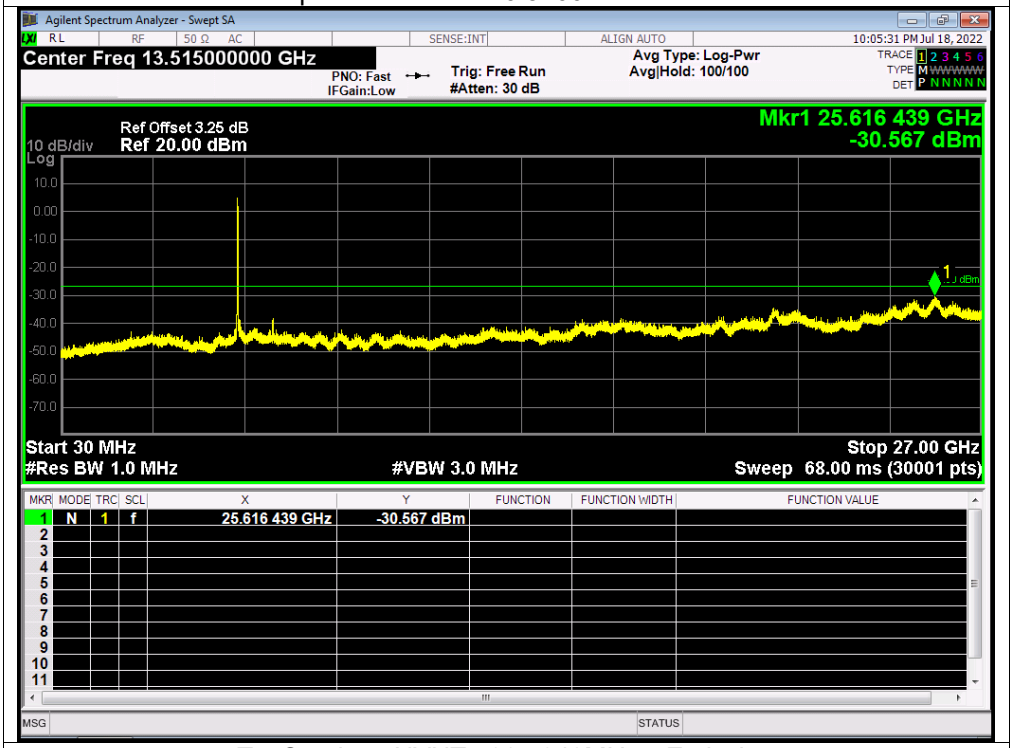
Tx. Spurious NVNT a 5240MHz Emission



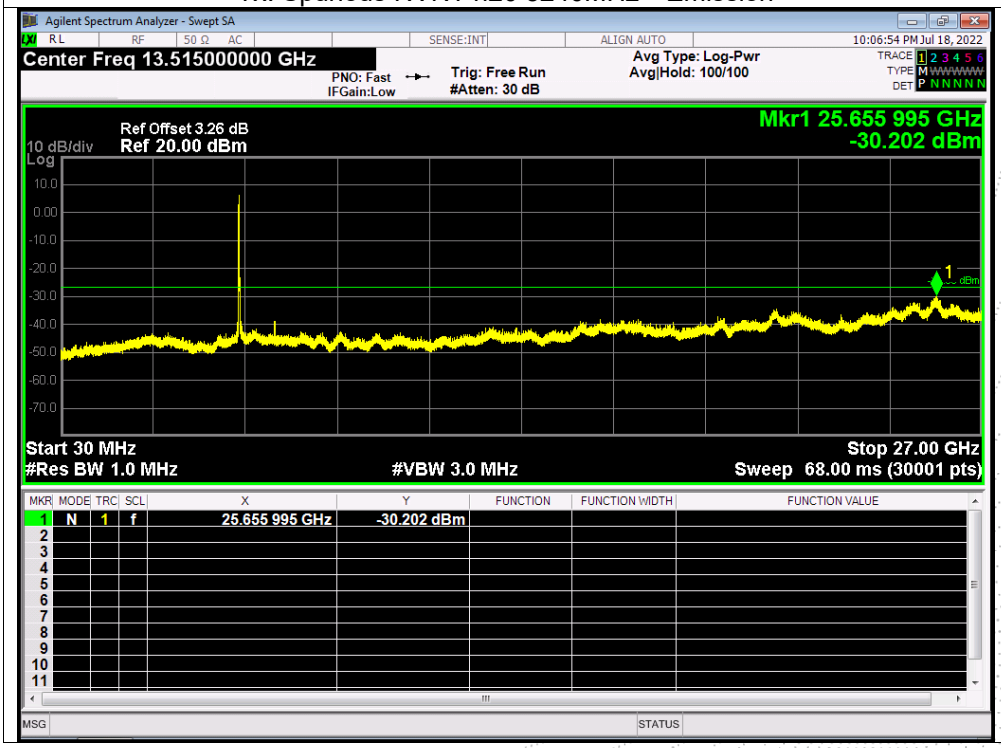
Tx. Spurious NVNT n20 5180MHz Emission



Tx. Spurious NVNT n20 5200MHz Emission

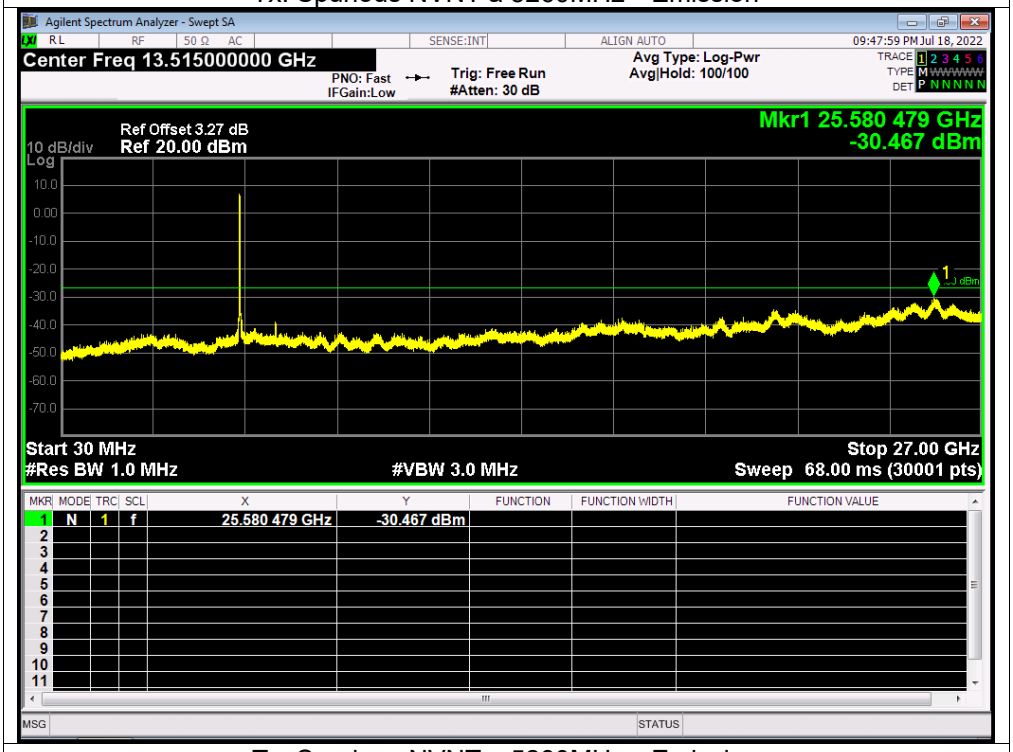


Tx. Spurious NVNT n20 5240MHz Emission

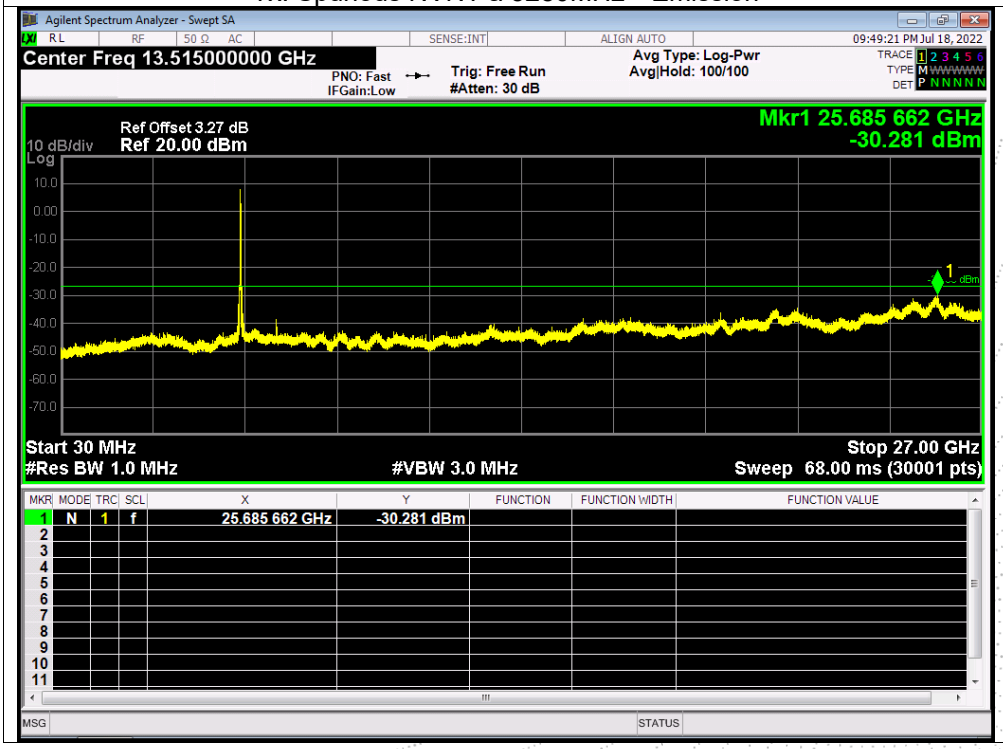


Test Graphs

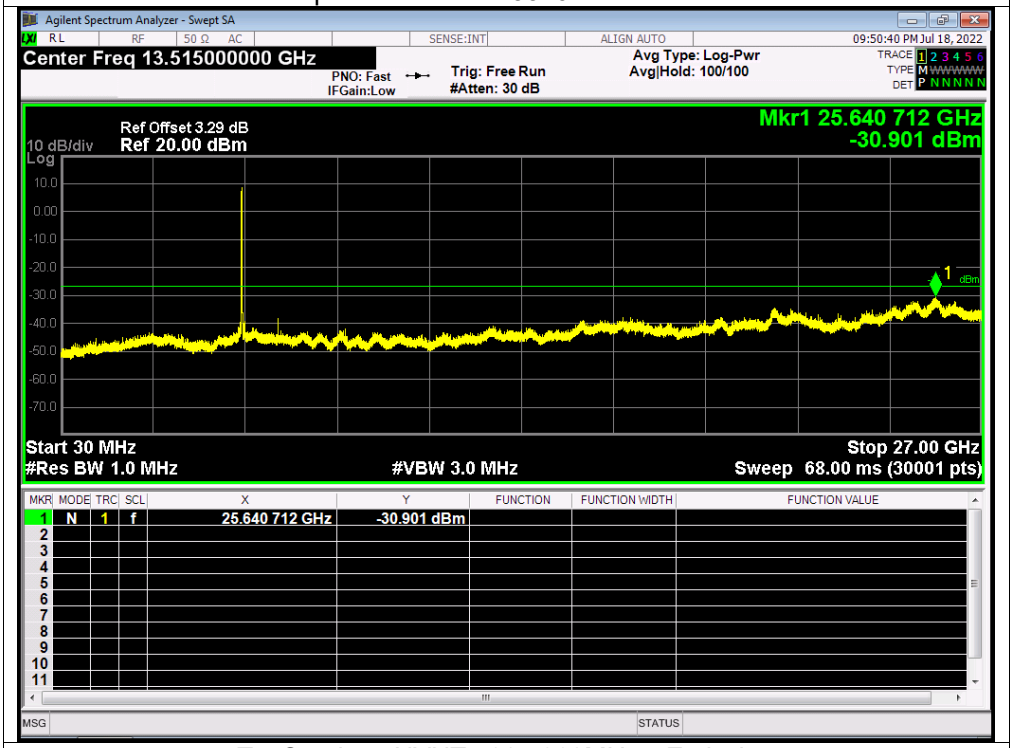
Tx. Spurious NVNT a 5260MHz Emission



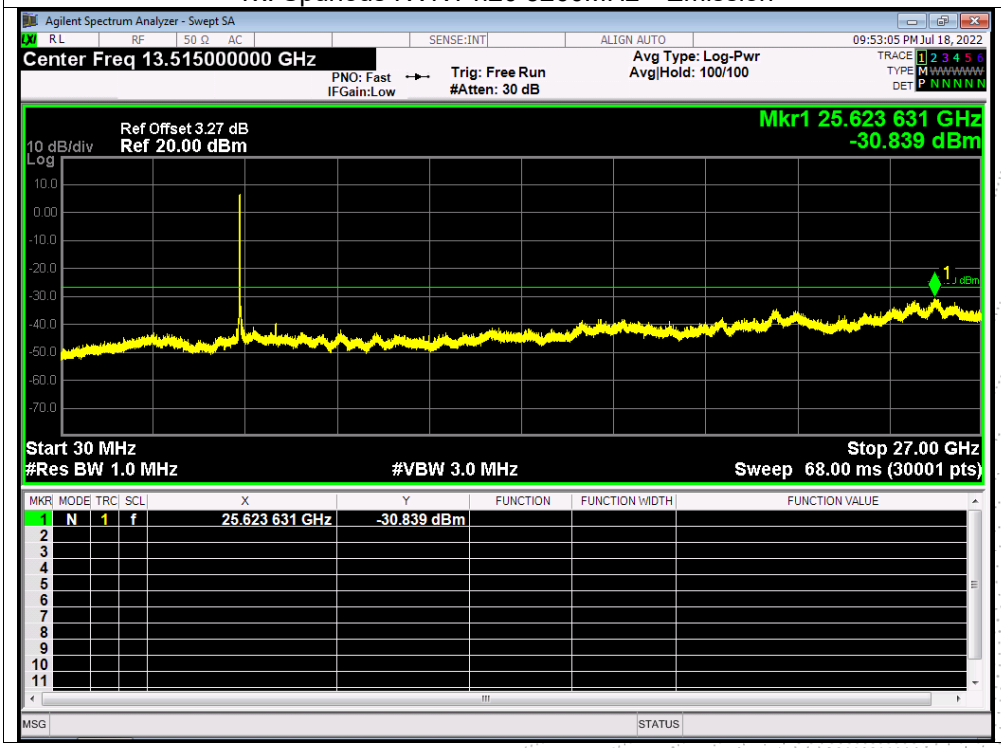
Tx. Spurious NVNT a 5280MHz Emission



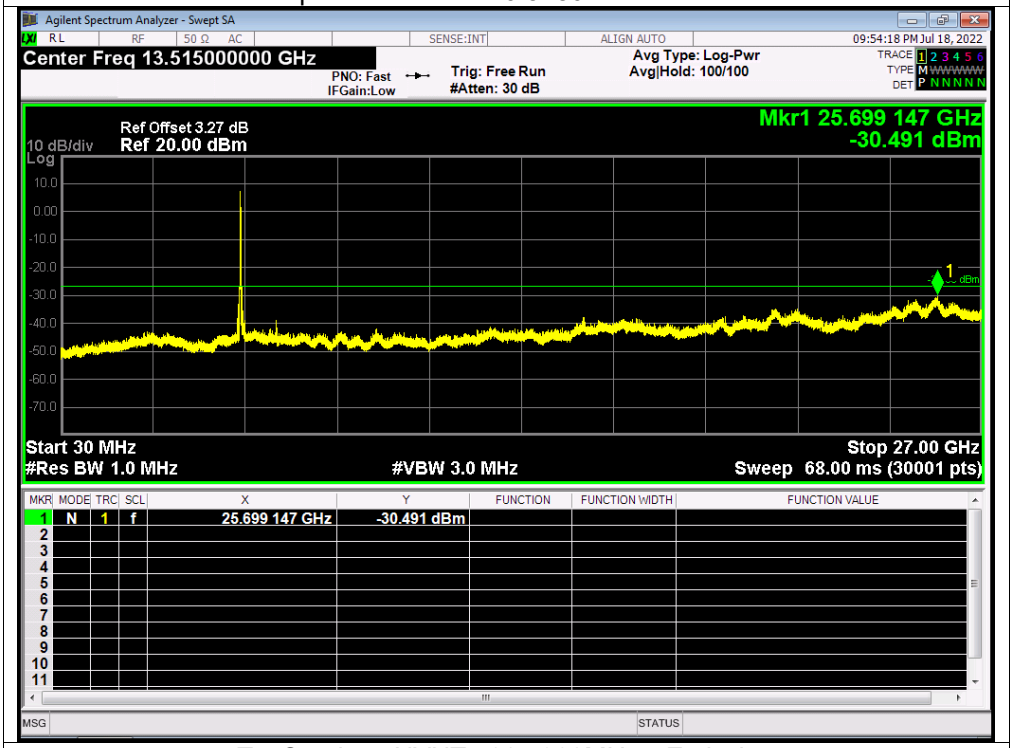
Tx. Spurious NVNT a 5320MHz Emission



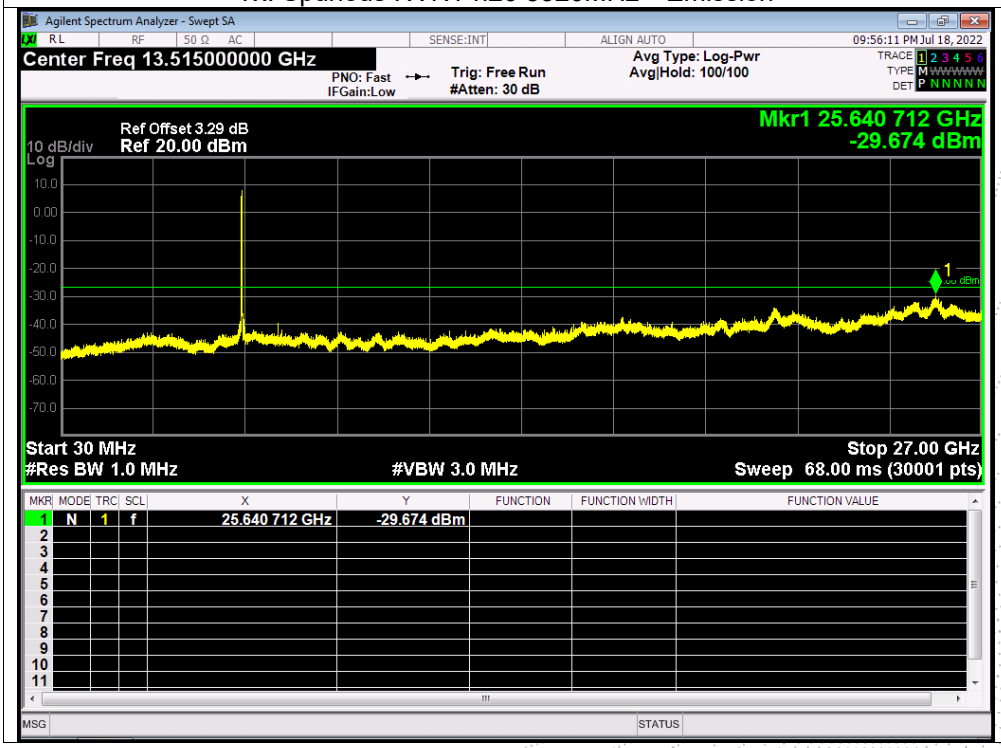
Tx. Spurious NVNT n20 5260MHz Emission



Tx. Spurious NVNT n20 5280MHz Emission

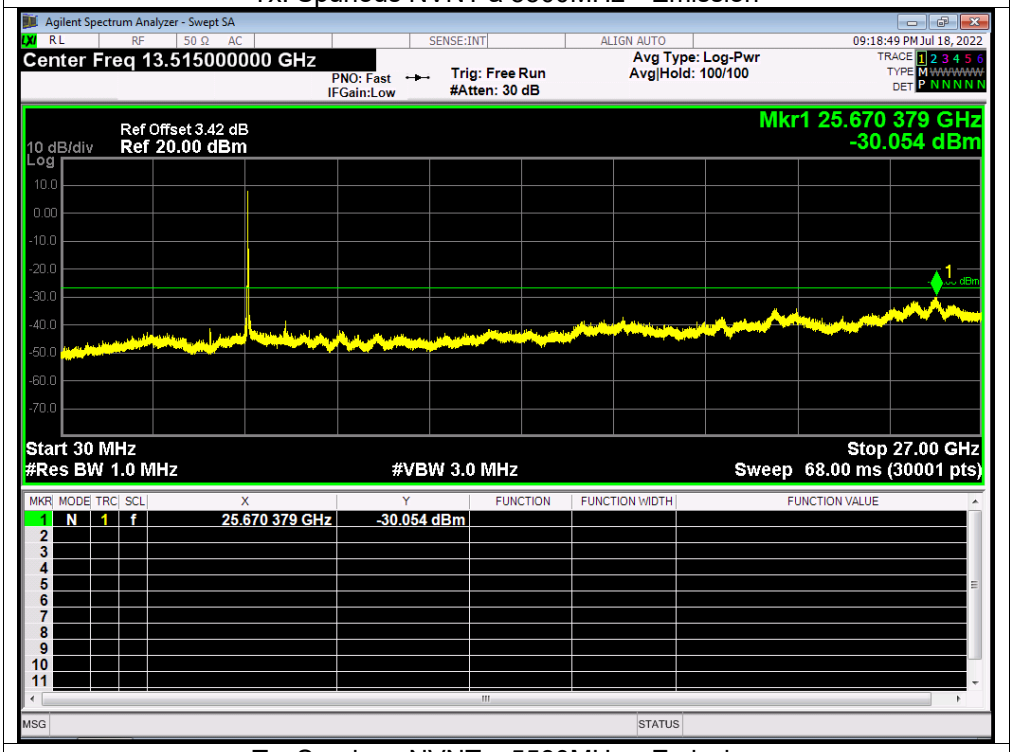


Tx. Spurious NVNT n20 5320MHz Emission

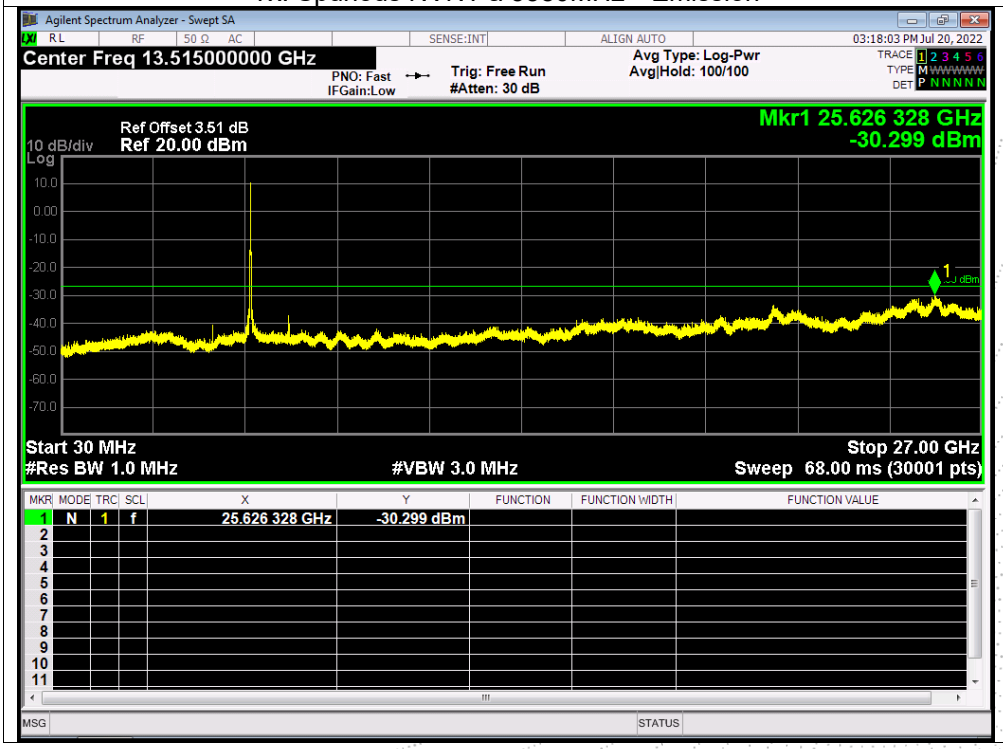


Test Graphs

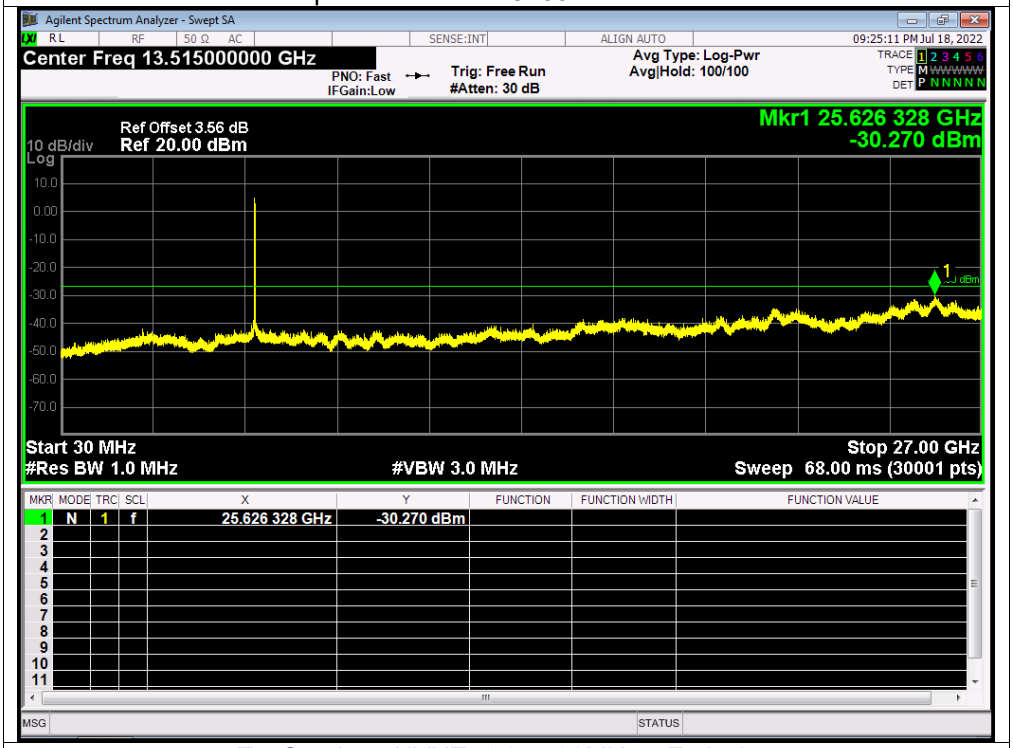
Tx. Spurious NVNT a 5500MHz Emission



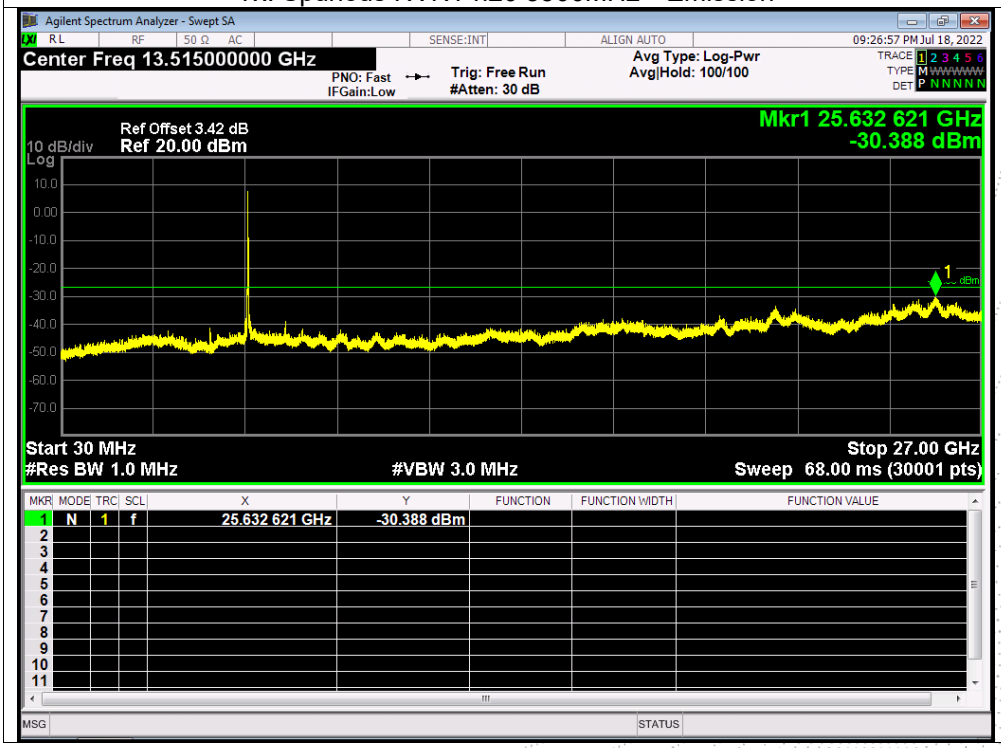
Tx. Spurious NVNT a 5580MHz Emission



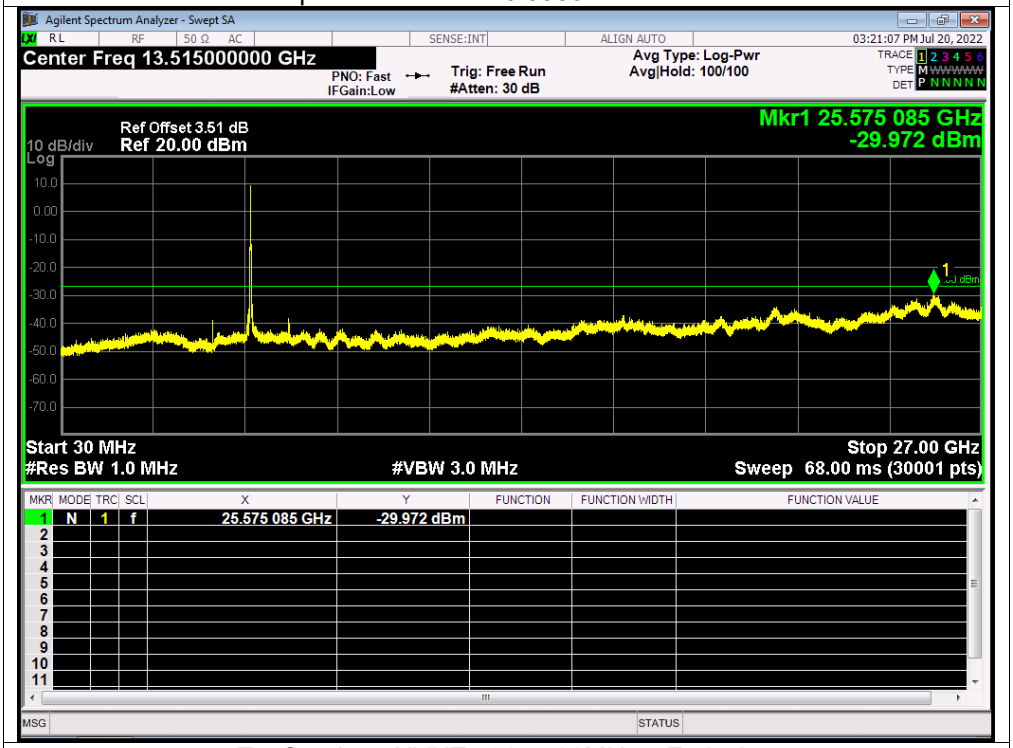
Tx. Spurious NVNT a 5700MHz Emission



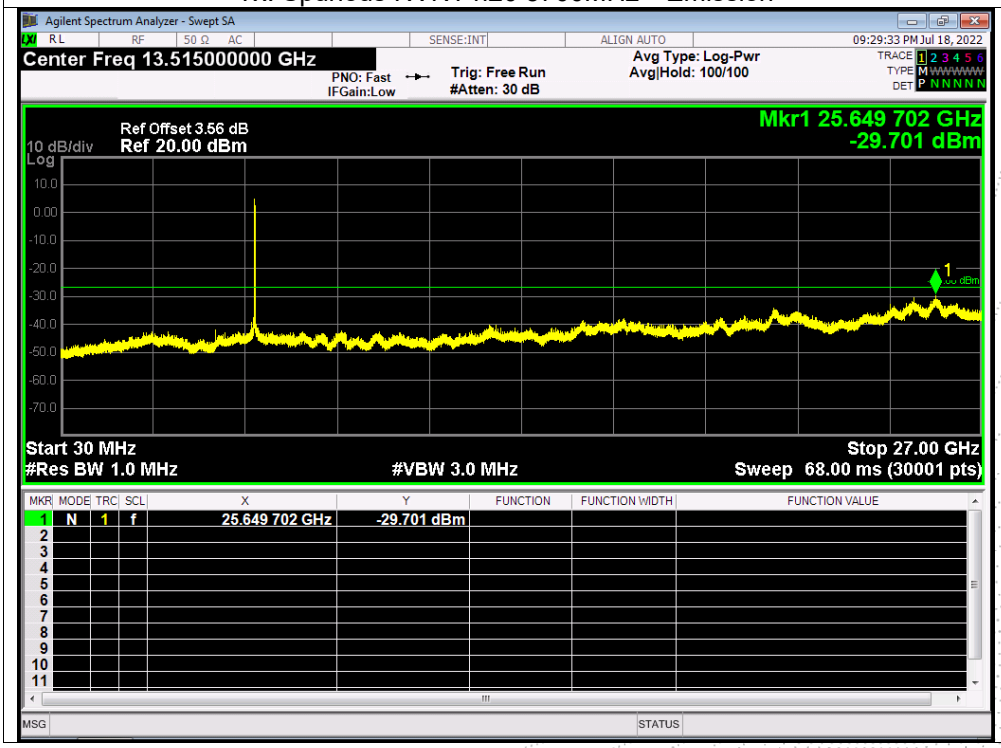
Tx. Spurious NVNT n20 5500MHz Emission



Tx. Spurious NVNT n20 5580MHz Emission

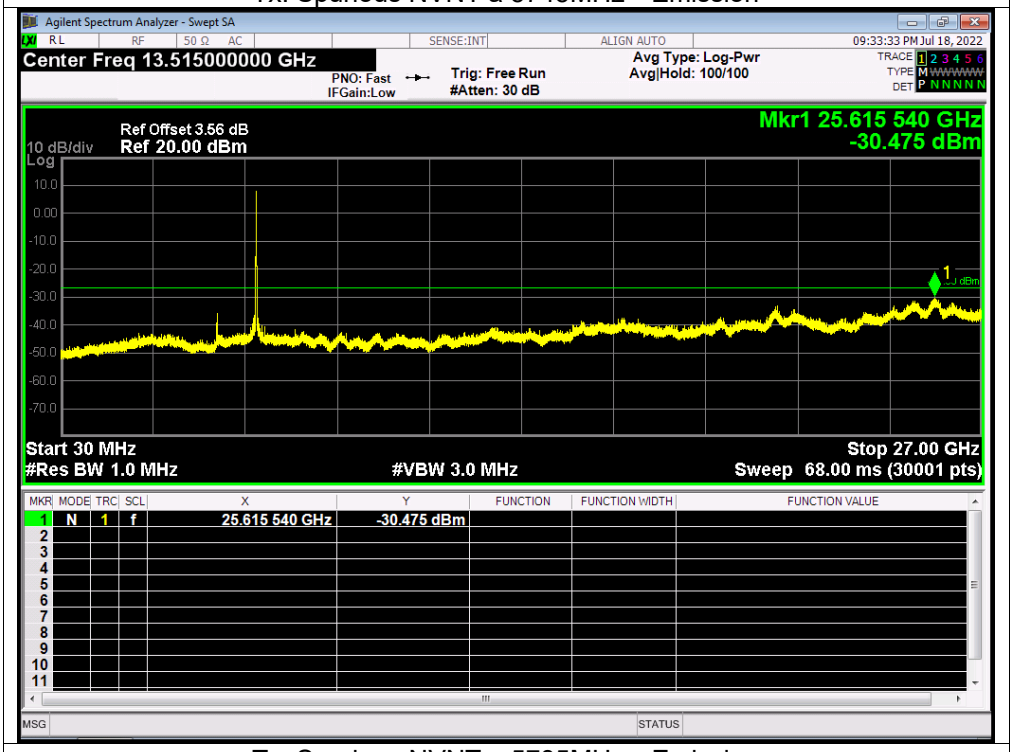


Tx. Spurious NVNT n20 5700MHz Emission

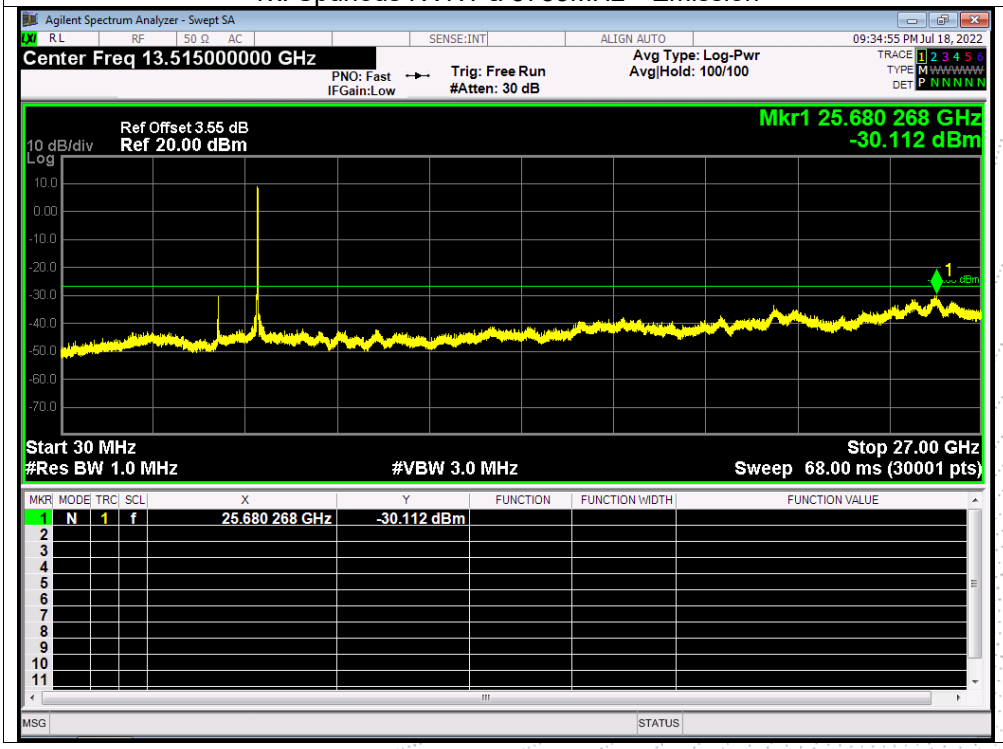


Test Graphs

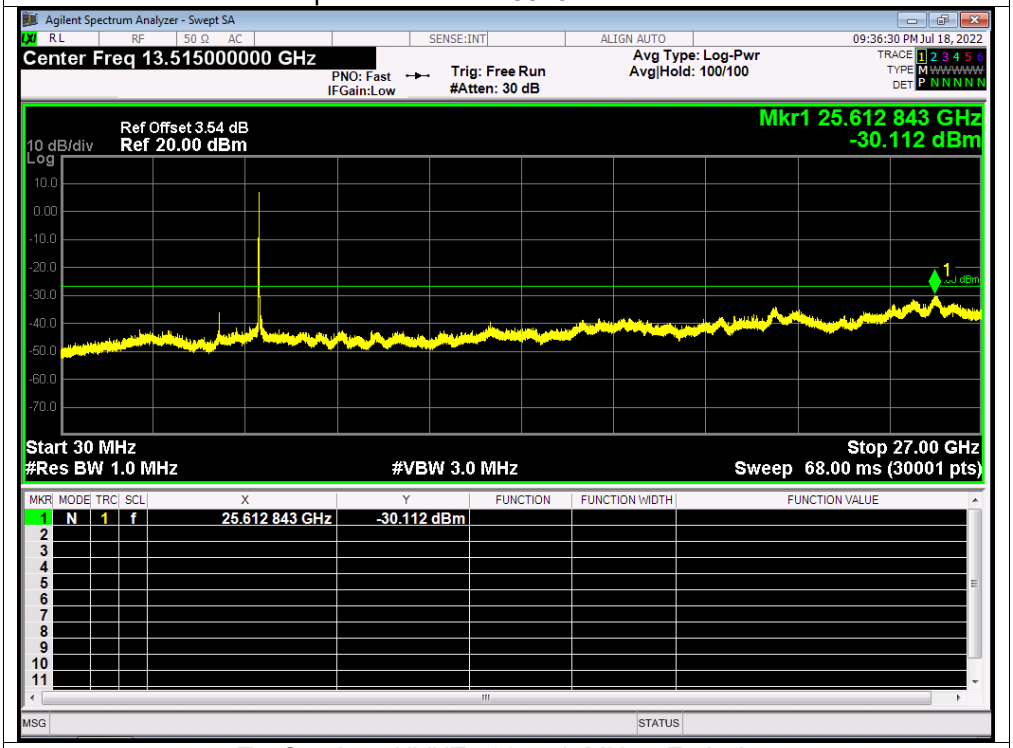
Tx. Spurious NVNT a 5745MHz Emission



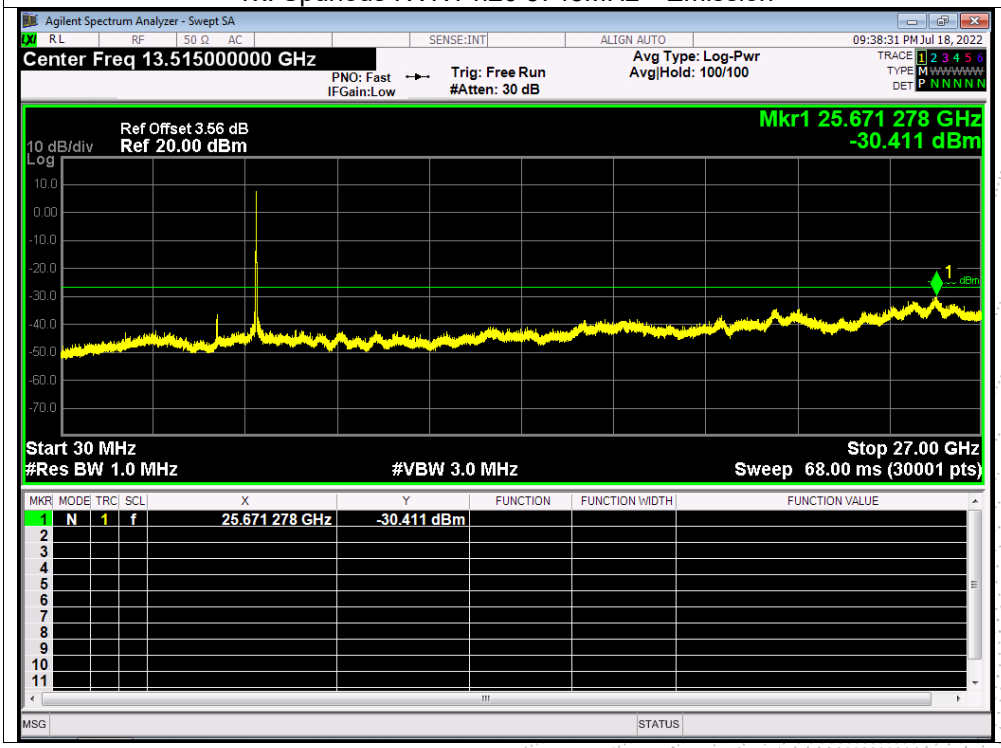
Tx. Spurious NVNT a 5785MHz Emission



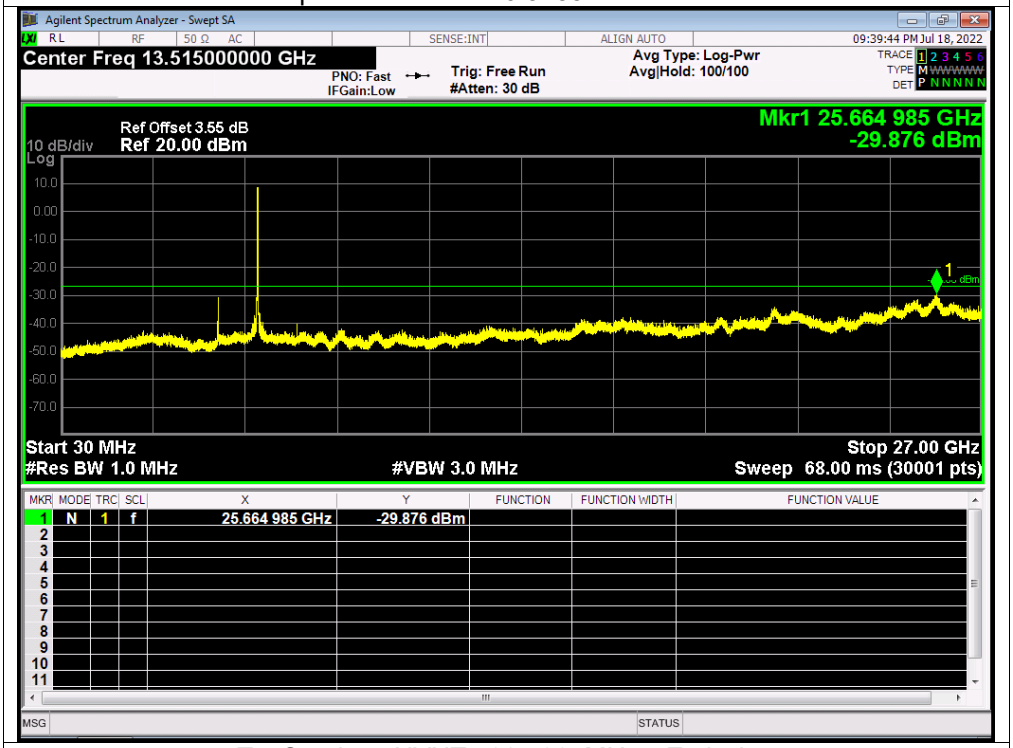
Tx. Spurious NVNT a 5825MHz Emission



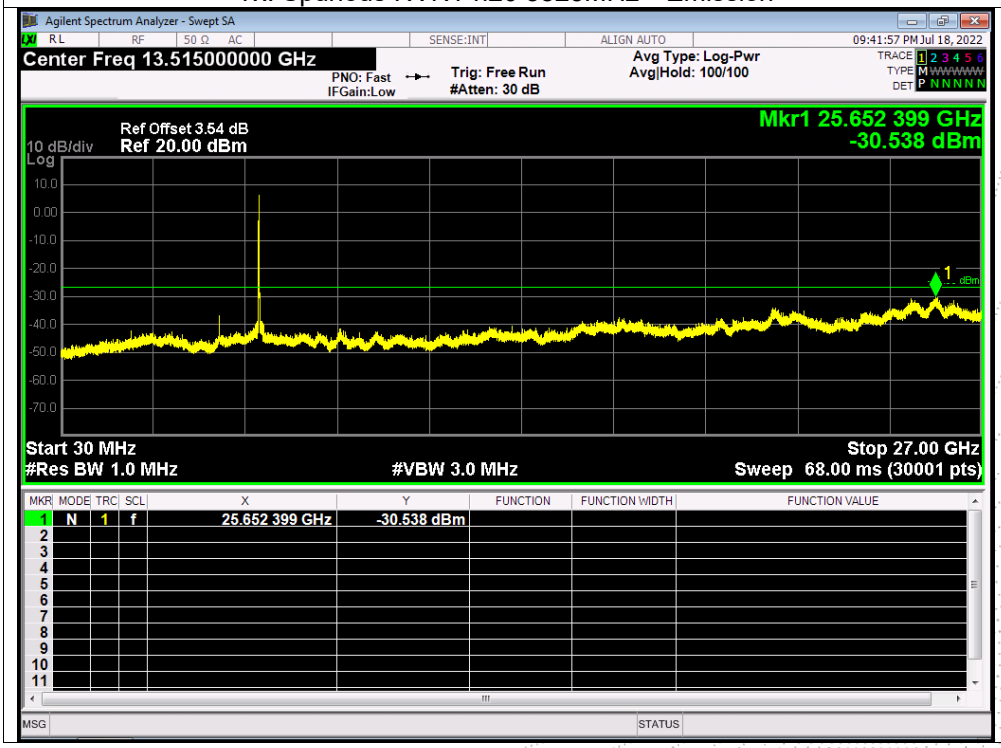
Tx. Spurious NVNT n20 5745MHz Emission



Tx. Spurious NVNT n20 5785MHz Emission

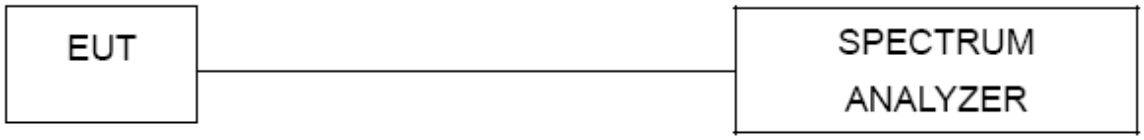


Tx. Spurious NVNT n20 5825MHz Emission



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

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5180MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120.00	5180.0202	5180	0.0202	3.8974
		V max (V)	138.00	5180.0110	5180	0.0110	2.1300
		V min (V)	102.00	5180.0166	5180	0.0166	3.1982
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)	120	T (°C)	-20	5180.0090	5180	0.0090	1.7382
		T (°C)	-10	5180.0058	5180	0.0058	1.1139
		T (°C)	0	5180.0113	5180	0.0113	2.1768
		T (°C)	10	5180.0057	5180	0.0057	1.1028
		T (°C)	20	5180.0030	5180	0.0030	0.5747
		T (°C)	30	5180.0133	5180	0.0133	2.5743
		T (°C)	40	5180.0121	5180	0.0121	2.3298
		T (°C)	50	5180.0106	5180	0.0106	2.0543
		T (°C)	60	5180.0060	5180	0.0060	1.1679
		T (°C)	70	5180.0119	5180	0.0119	2.2879
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)	120.00	5200.0118	5200	0.0118	2.2713
		V max (V)	138.00	5200.0038	5200	0.0038	0.7282
		V min (V)	102.00	5200.0015	5200	0.0015	0.2899
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)	120	T (°C)	-20	5200.01078	5200	0.01078	2.0721
		T (°C)	-10	5200.01095	5200	0.01095	2.1067
		T (°C)	0	5200.00105	5200	0.00105	0.2016
		T (°C)	10	5200.01255	5200	0.01255	2.4136
		T (°C)	20	5200.00208	5200	0.00208	0.3998
		T (°C)	30	5200.00601	5200	0.00601	1.1556
		T (°C)	40	5200.00733	5200	0.00733	1.4091
		T (°C)	50	5200.00573	5200	0.00573	1.1015
		T (°C)	60	5200.00728	5200	0.00728	1.4007
		T (°C)	70	5200.00343	5200	0.00343	0.6594
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)	120.00	5240.0007	5240	0.0007	0.1332
		V max (V)	138.00	5240.0119	5240	0.0119	2.2699
		V min (V)	102.00	5240.0015	5240	0.0015	0.2769
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)	120	T (°C)	-20	5240.0020	5240	0.0020	0.3836
		T (°C)	-10	5240.0087	5240	0.0087	1.6527
		T (°C)	0	5240.0060	5240	0.0060	1.1482
		T (°C)	10	5240.0077	5240	0.0077	1.4662
		T (°C)	20	5240.0104	5240	0.0104	1.9752
		T (°C)	30	5240.0049	5240	0.0049	0.9263
		T (°C)	40	5240.0106	5240	0.0106	2.0166
		T (°C)	50	5240.0097	5240	0.0097	1.8562
		T (°C)	60	5240.0058	5240	0.0058	1.1120
		T (°C)	70	5240.0069	5240	0.0069	1.3166
Limits				5150-5250 MHz			
Result				Complies			

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	AC120V/60Hz
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)	120.00	5260.0069	5260	0.0069	1.3033
		V max (V)	138.00	5260.0013	5260	0.0013	0.2477
		V min (V)	102.00	5260.0167	5260	0.0167	3.1655
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)	120	T (°C)	-20	5260.0036	5260	0.0036	0.6913
		T (°C)	-10	5260.0134	5260	0.0134	2.5405
		T (°C)	0	5260.0095	5260	0.0095	1.8139
		T (°C)	10	5260.0129	5260	0.0129	2.4510
		T (°C)	20	5260.0044	5260	0.0044	0.8279
		T (°C)	30	5260.0084	5260	0.0084	1.5970
		T (°C)	40	5260.0044	5260	0.0044	0.8298
		T (°C)	50	5260.0101	5260	0.0101	1.9122
		T (°C)	60	5260.0014	5260	0.0014	0.2710
		T (°C)	70	5260.0019	5260	0.0019	0.3607
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)	120.00	5280.0072	5280	0.0072	1.3673
		V max (V)	138.00	5280.0062	5280	0.0062	1.1765
		V min (V)	102.00	5280.0021	5280	0.0021	0.4062
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)	120	T (°C)	-20	5280.00419	5280	0.00419	0.7941
		T (°C)	-10	5280.00967	5280	0.00967	1.8307
		T (°C)	0	5280.00382	5280	0.00382	0.7237
		T (°C)	10	5280.00199	5280	0.00199	0.3774
		T (°C)	20	5280.00965	5280	0.00965	1.8276
		T (°C)	30	5280.00186	5280	0.00186	0.3515
		T (°C)	40	5280.00577	5280	0.00577	1.0936
		T (°C)	50	5280.00858	5280	0.00858	1.6244
		T (°C)	60	5280.00879	5280	0.00879	1.6657
		T (°C)	70	5280.00214	5280	0.00214	0.4052
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)	120.00	5320.0030	5320	0.0030	0.5574
		V max (V)	138.00	5320.0093	5320	0.0093	1.7570
		V min (V)	102.00	5320.0051	5320	0.0051	0.9680
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)	120	T (°C)	-20	5320.0069	5320	0.0069	1.3050
		T (°C)	-10	5320.0045	5320	0.0045	0.8538
		T (°C)	0	5320.0058	5320	0.0058	1.0881
		T (°C)	10	5320.0001	5320	0.0001	0.0256
		T (°C)	20	5320.0034	5320	0.0034	0.6390
		T (°C)	30	5320.0074	5320	0.0074	1.3960
		T (°C)	40	5320.0121	5320	0.0121	2.2805
		T (°C)	50	5320.0022	5320	0.0022	0.4207
		T (°C)	60	5320.0113	5320	0.0113	2.1193
		T (°C)	70	5320.0104	5320	0.0104	1.9631
Limits				5260-5320 MHz			
Result				Complies			

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	AC120V/60Hz
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)	120.00	5500.0205	5500	0.0205	3.7351
		V max (V)	138.00	5500.0038	5500	0.0038	0.6892
		V min (V)	102.00	5500.0196	5500	0.0196	3.5599
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)	120	T (°C)	-20	5500.0072	5500	0.0072	1.3045
		T (°C)	-10	5500.0100	5500	0.0100	1.8227
		T (°C)	0	5500.0091	5500	0.0091	1.6548
		T (°C)	10	5500.0112	5500	0.0112	2.0367
		T (°C)	20	5500.0059	5500	0.0059	1.0748
		T (°C)	30	5500.0126	5500	0.0126	2.2889
		T (°C)	40	5500.0061	5500	0.0061	1.1049
		T (°C)	50	5500.0129	5500	0.0129	2.3539
		T (°C)	60	5500.0081	5500	0.0081	1.4786
		T (°C)	70	5500.0002	5500	0.0002	0.0336
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)	120.00	5580.0014	5580	0.0014	0.2576
		V max (V)	138.00	5580.0082	5580	0.0082	1.4688
		V min (V)	102.00	5580.0007	5580	0.0007	0.1293
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)	120	T (°C)	-20	5580.00899	5580	0.00899	1.6117
		T (°C)	-10	5580.01257	5580	0.01257	2.2531
		T (°C)	0	5580.00016	5580	0.00016	0.0286
		T (°C)	10	5580.00751	5580	0.00751	1.3450
		T (°C)	20	5580.00412	5580	0.00412	0.7385
		T (°C)	30	5580.01023	5580	0.01023	1.8325
		T (°C)	40	5580.00196	5580	0.00196	0.3511
		T (°C)	50	5580.01010	5580	0.01010	1.8094
		T (°C)	60	5580.00516	5580	0.00516	0.9241
		T (°C)	70	5580.00658	5580	0.00658	1.1784
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)	120.00	5700.0061	5700	0.0061	1.0739
		V max (V)	138.00	5700.0028	5700	0.0028	0.4883
		V min (V)	102.00	5700.0018	5700	0.0018	0.3211
Limits				5500-5700 MHz			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5700MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	-20	5700.0040	5700	0.0040	0.7073
		T (°C)	-10	5700.0087	5700	0.0087	1.5277
		T (°C)	0	5700.0072	5700	0.0072	1.2671
		T (°C)	10	5700.0129	5700	0.0129	2.2647
		T (°C)	20	5700.0039	5700	0.0039	0.6842
		T (°C)	30	5700.0130	5700	0.0130	2.2822
		T (°C)	40	5700.0048	5700	0.0048	0.8425
		T (°C)	50	5700.0115	5700	0.0115	2.0146
		T (°C)	60	5700.0132	5700	0.0132	2.3184
		T (°C)	70	5700.0011	5700	0.0011	0.1942
Limits				5500-5700 MHz			
Result				Complies			

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	AC120V/60Hz
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)	120.00	5745.00109	5745	0.00109	0.1905
		V max (V)	138.00	5745.00877	5745	0.00877	1.5273
		V min (V)	102.00	5745.00859	5745	0.00859	1.4948
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)	120	T (°C)	-20	5745.01150	5745	0.01150	2.0021
		T (°C)	-10	5745.00274	5745	0.00274	0.4768
		T (°C)	0	5745.00658	5745	0.00658	1.1450
		T (°C)	10	5745.01223	5745	0.01223	2.1282
		T (°C)	20	5745.00400	5745	0.00400	0.6960
		T (°C)	30	5745.00132	5745	0.00132	0.2304
		T (°C)	40	5745.00266	5745	0.00266	0.4625
		T (°C)	50	5745.01291	5745	0.01291	2.2465
		T (°C)	60	5745.00565	5745	0.00565	0.9828
		T (°C)	70	5745.00530	5745	0.00530	0.9229
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)	120.00	5785.00121	5785	0.00121	0.2090
		V max (V)	138.00	5785.01005	5785	0.01005	1.7381
		V min (V)	102.00	5785.00126	5785	0.00126	0.2178
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)	120	T (°C)	-20	5785.00233	5785	0.00233	0.4030
		T (°C)	-10	5785.00995	5785	0.00995	1.7198
		T (°C)	0	5785.01059	5785	0.01059	1.8300
		T (°C)	10	5785.00293	5785	0.00293	0.5066
		T (°C)	20	5785.01101	5785	0.01101	1.9029
		T (°C)	30	5785.01194	5785	0.01194	2.0645
		T (°C)	40	5785.00984	5785	0.00984	1.7004
		T (°C)	50	5785.00418	5785	0.00418	0.7221
		T (°C)	60	5785.00525	5785	0.00525	0.9068
		T (°C)	70	5785.00531	5785	0.00531	0.9179
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)	120.00	5825.00453	5825	0.00453	0.7778
		V max (V)	138.00	5825.00734	5825	0.00734	1.2602
		V min (V)	102.00	5825.00913	5825	0.00913	1.5667
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)	120	T (°C)	-20	5825.00654	5825	0.00654	1.1225
		T (°C)	-10	5825.00728	5825	0.00728	1.2500
		T (°C)	0	5825.01031	5825	0.01031	1.7697
		T (°C)	10	5825.00822	5825	0.00822	1.4104
		T (°C)	20	5825.01003	5825	0.01003	1.7214
		T (°C)	30	5825.00303	5825	0.00303	0.5195
		T (°C)	40	5825.00341	5825	0.00341	0.5854
		T (°C)	50	5825.00361	5825	0.00361	0.6204
		T (°C)	60	5825.01111	5825	0.01111	1.9079
		T (°C)	70	5825.00047	5825	0.00047	0.0804
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

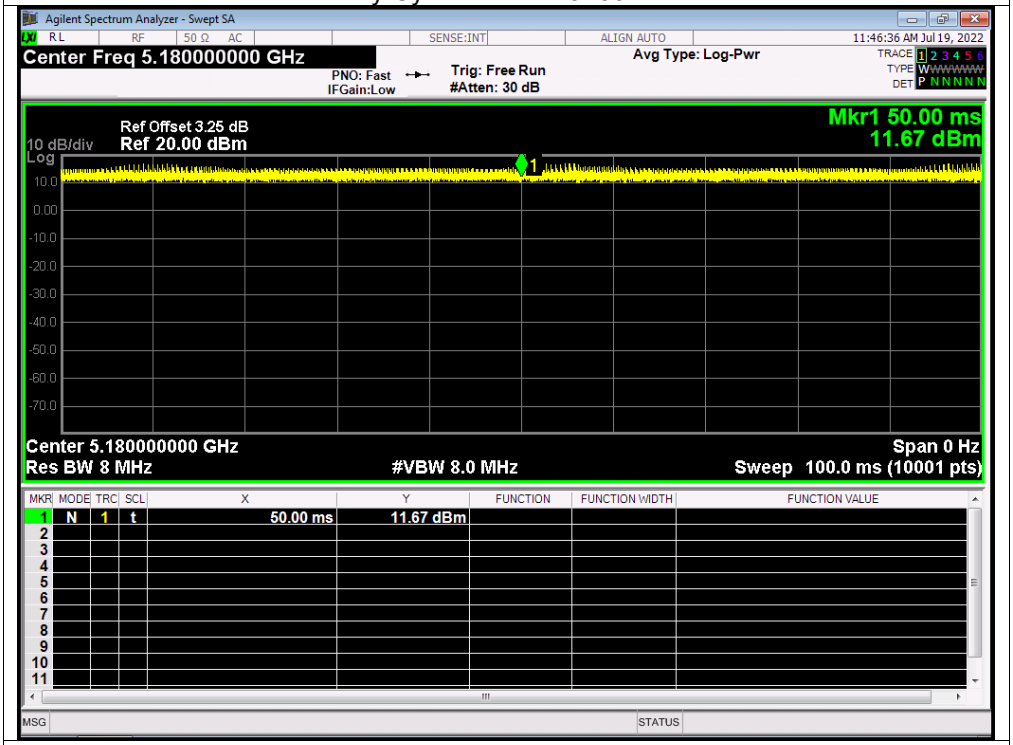
1.Set span = Zero
2. RBW = 8MHz
3. VBW = 8MHz,
4. Detector = Peak

14.4 Test Result

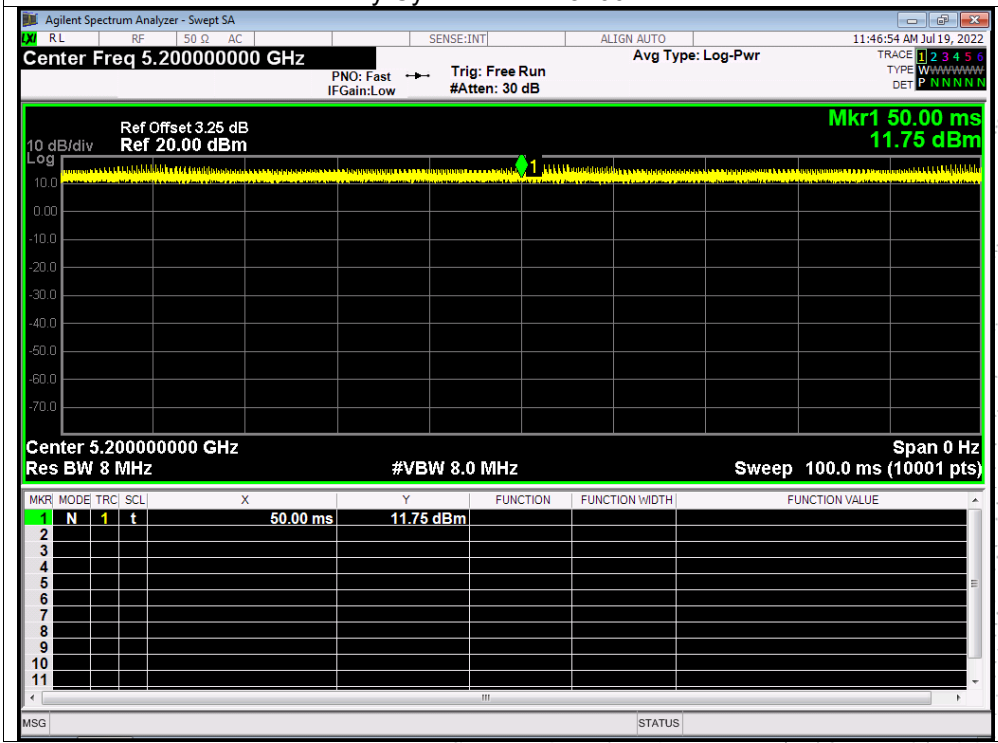
Condition	Mode	Frequency (MHz)	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	a	5180	100	0	0
NVNT	a	5200	100	0	0
NVNT	a	5240	100	0	0
NVNT	n20	5180	100	0	0
NVNT	n20	5200	100	0	0
NVNT	n20	5240	100	0	0
NVNT	a	5260	100	0	0
NVNT	a	5280	100	0	0
NVNT	a	5320	100	0	0
NVNT	n20	5260	100	0	0
NVNT	n20	5280	100	0	0
NVNT	n20	5320	100	0	0
NVNT	a	5500	100	0	0
NVNT	a	5580	100	0	0
NVNT	a	5700	100	0	0
NVNT	n20	5500	100	0	0
NVNT	n20	5580	100	0	0
NVNT	n20	5700	100	0	0
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

Test Graphs

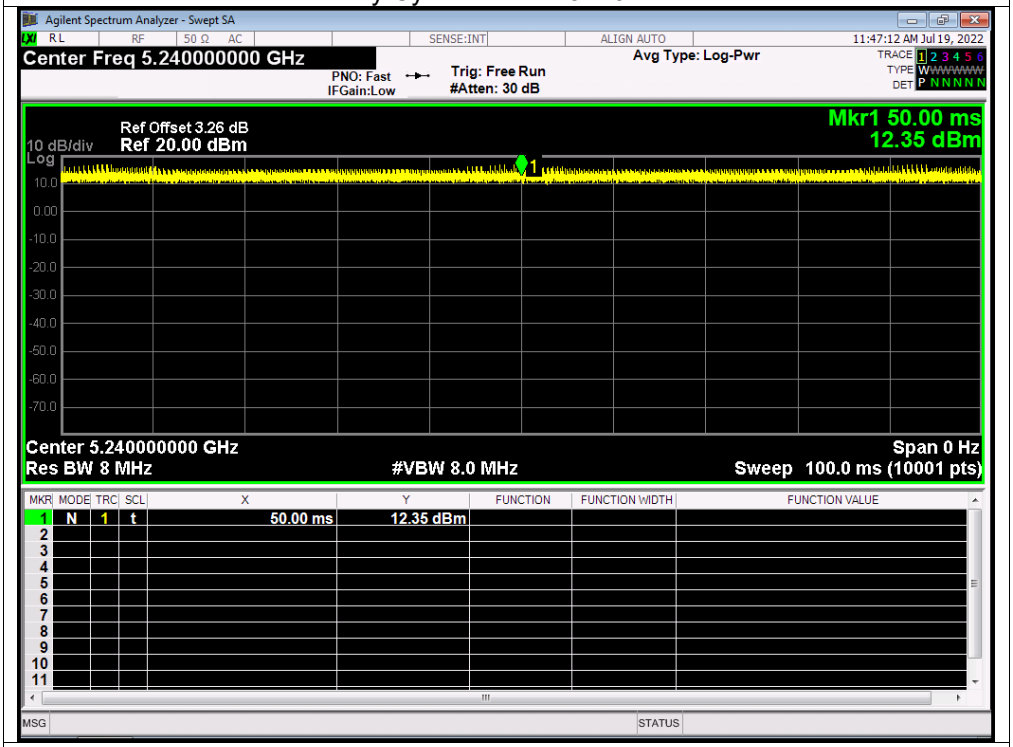
Duty Cycle NVNT a 5180MHz



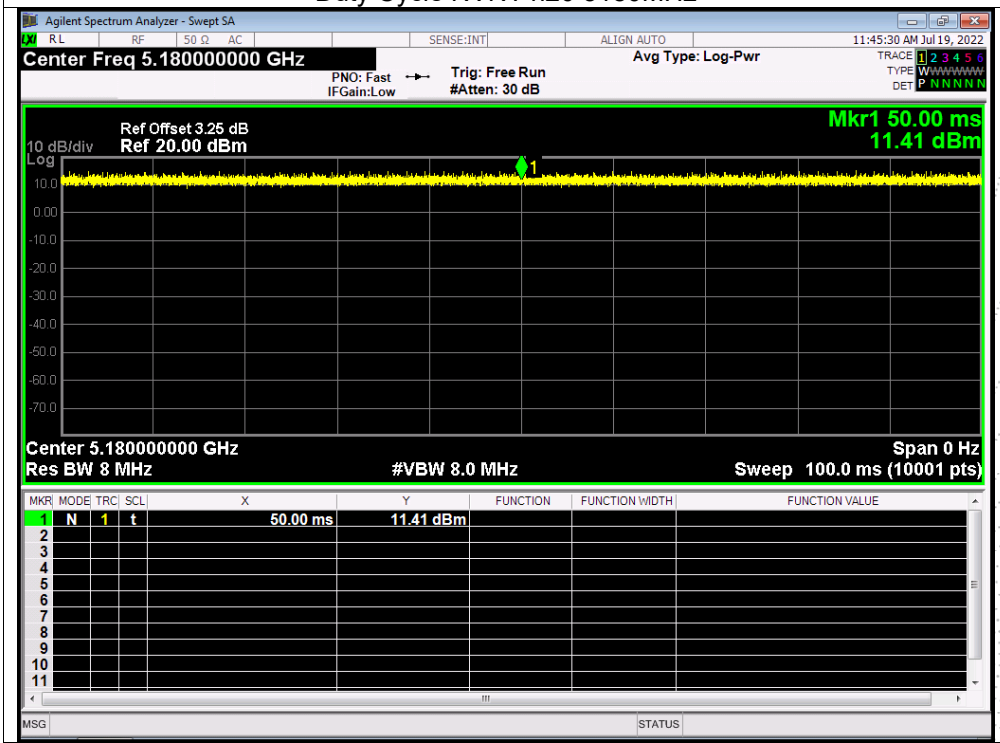
Duty Cycle NVNT a 5200MHz



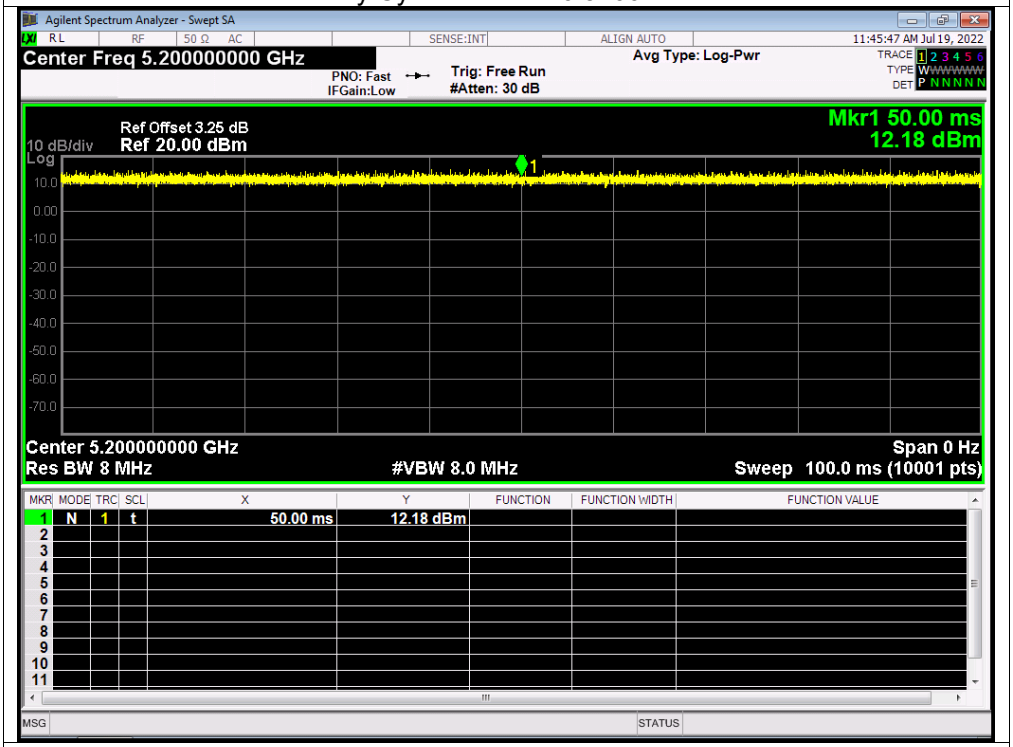
Duty Cycle NVNT a 5240MHz



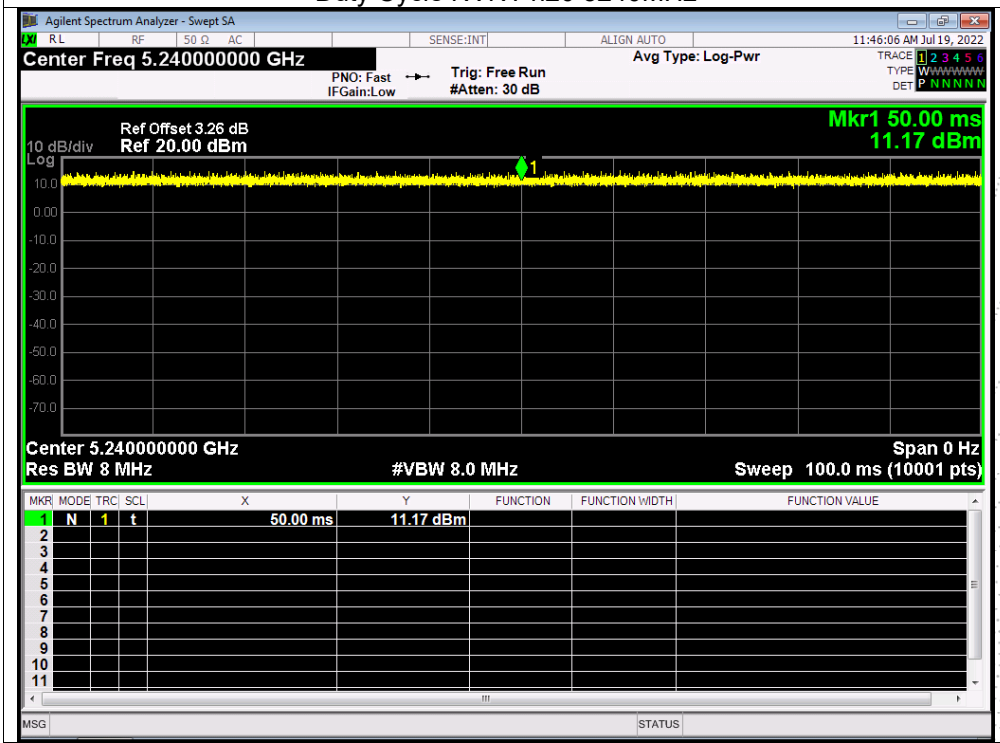
Duty Cycle NVNT n20 5180MHz



Duty Cycle NVNT n20 5200MHz

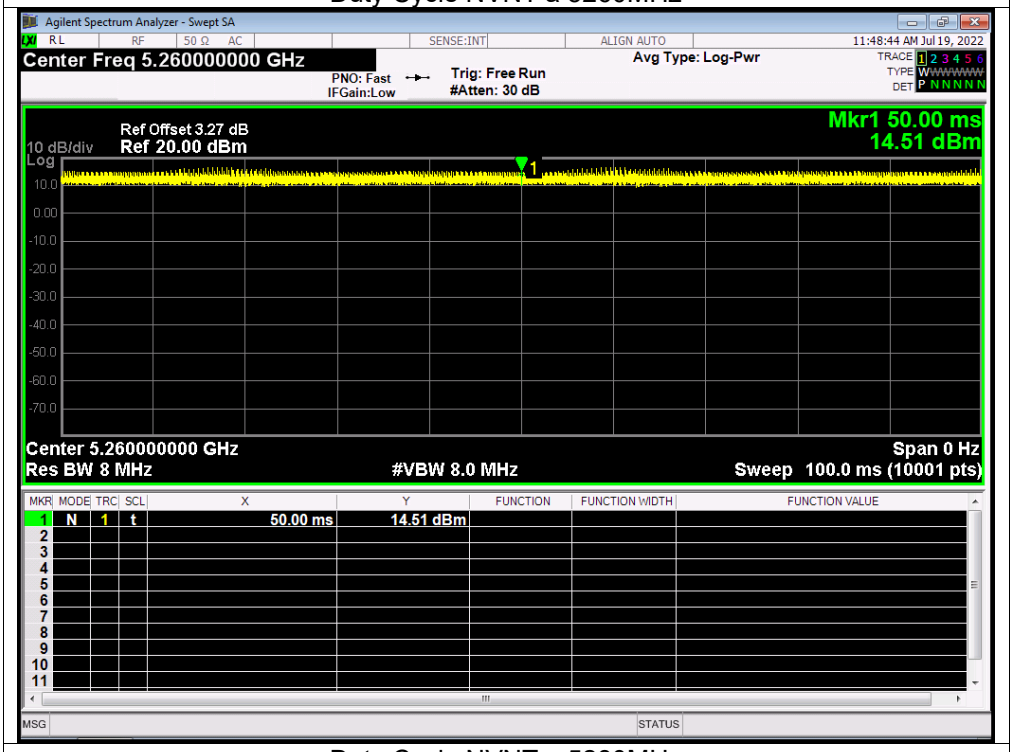


Duty Cycle NVNT n20 5240MHz

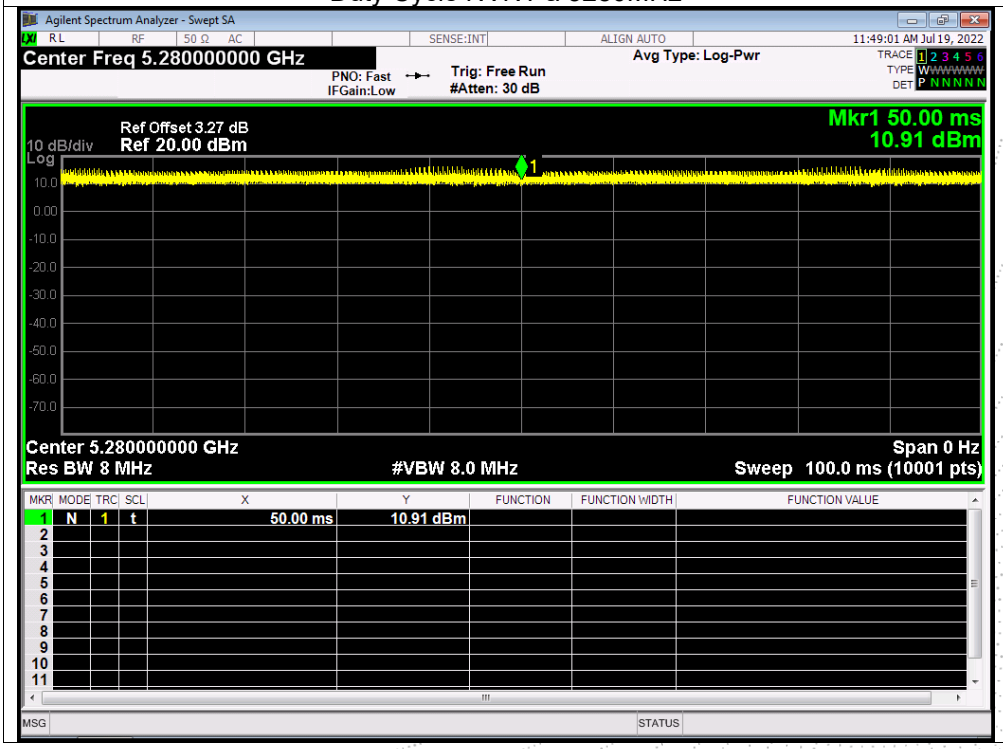


Test Graphs

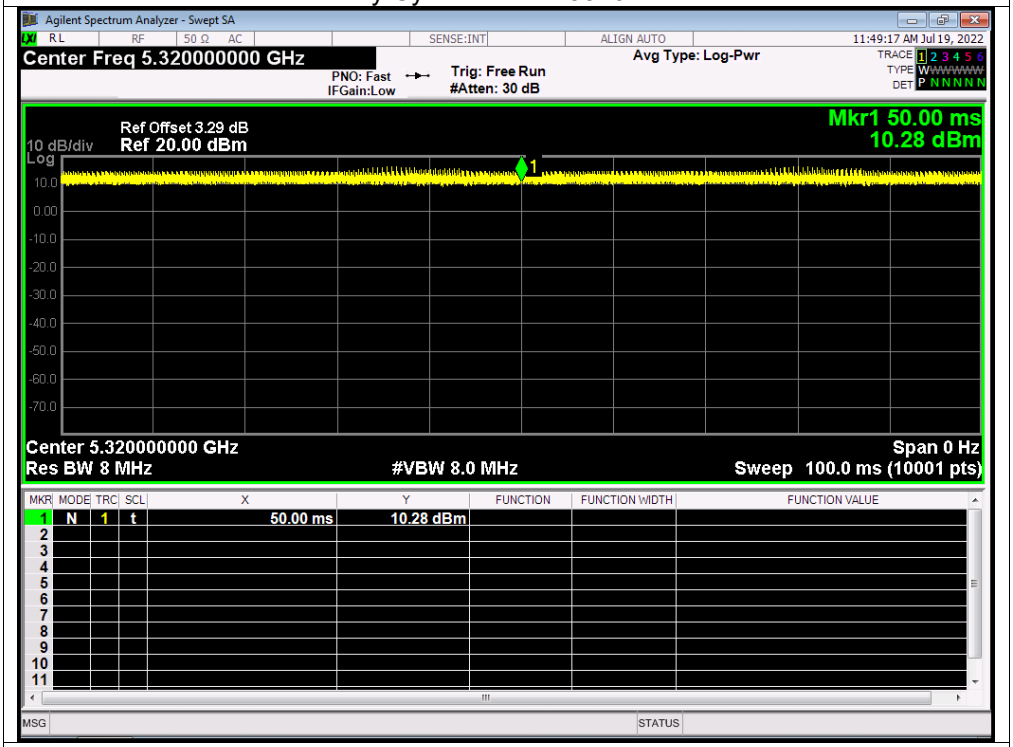
Duty Cycle NVNT a 5260MHz



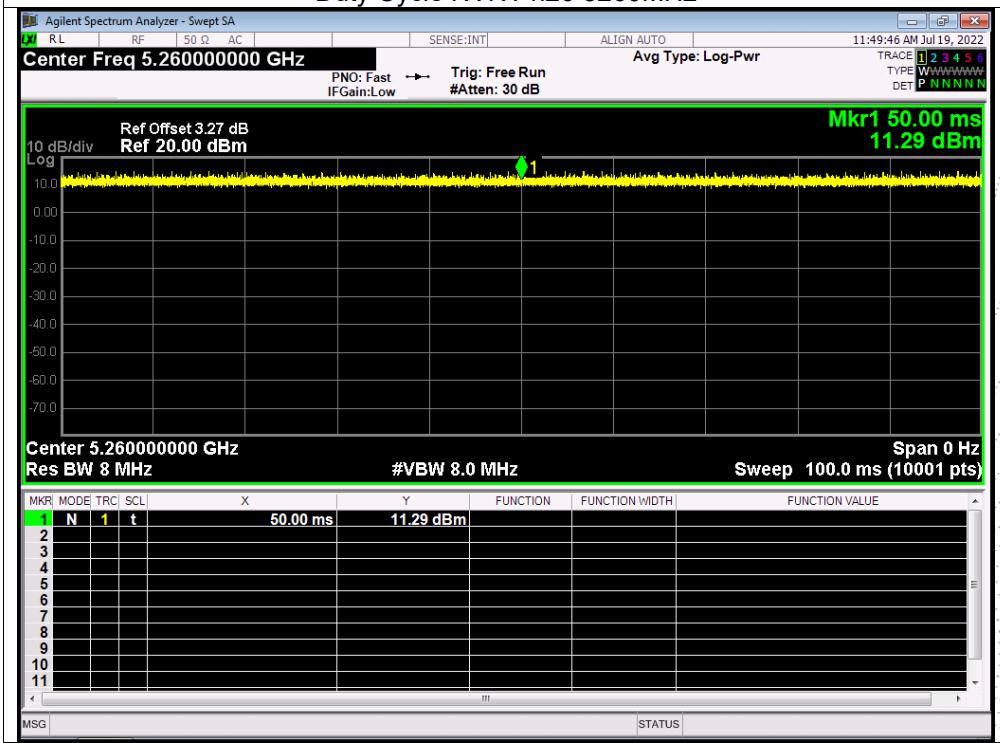
Duty Cycle NVNT a 5280MHz



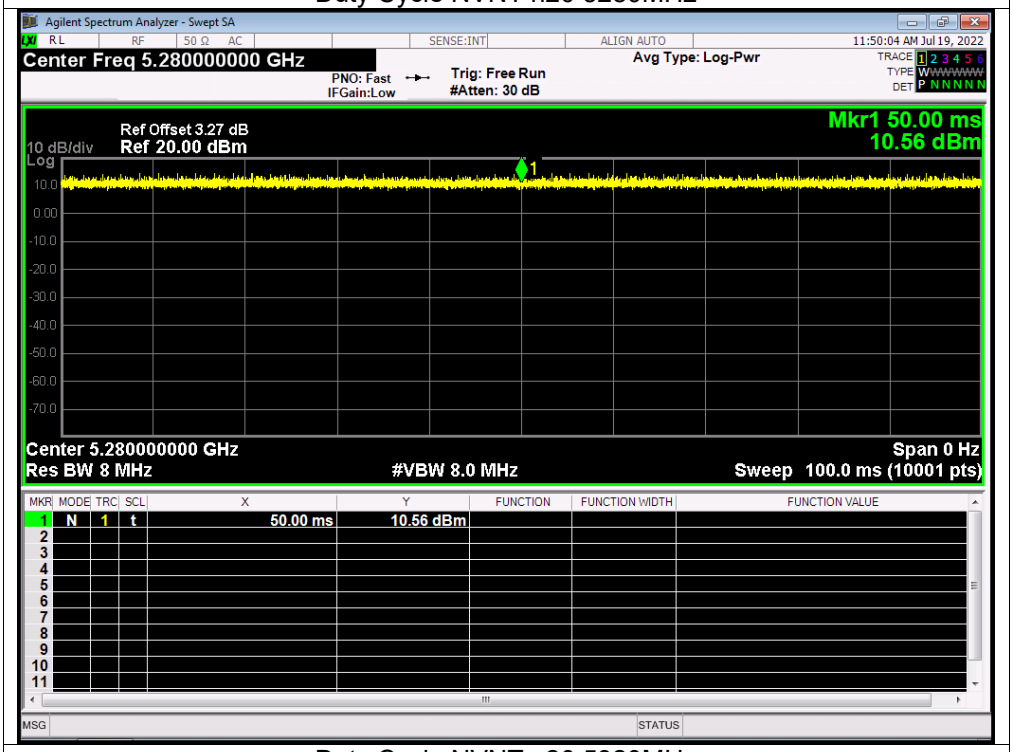
Duty Cycle NVNT a 5320MHz



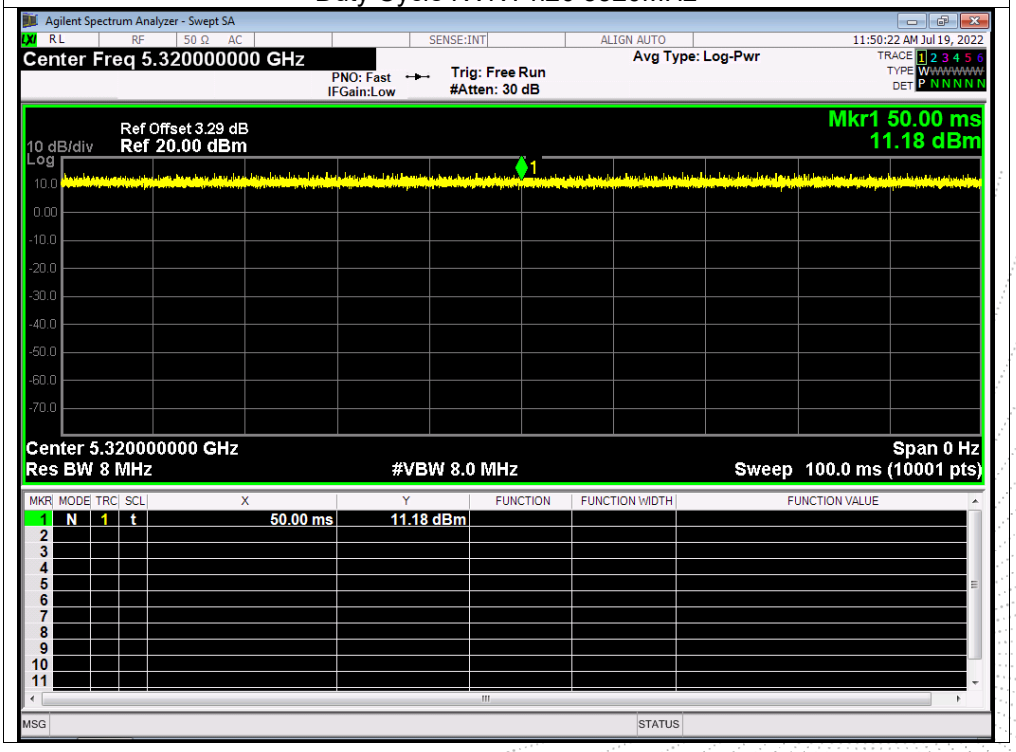
Duty Cycle NVNT n20 5260MHz



Duty Cycle NVNT n20 5280MHz

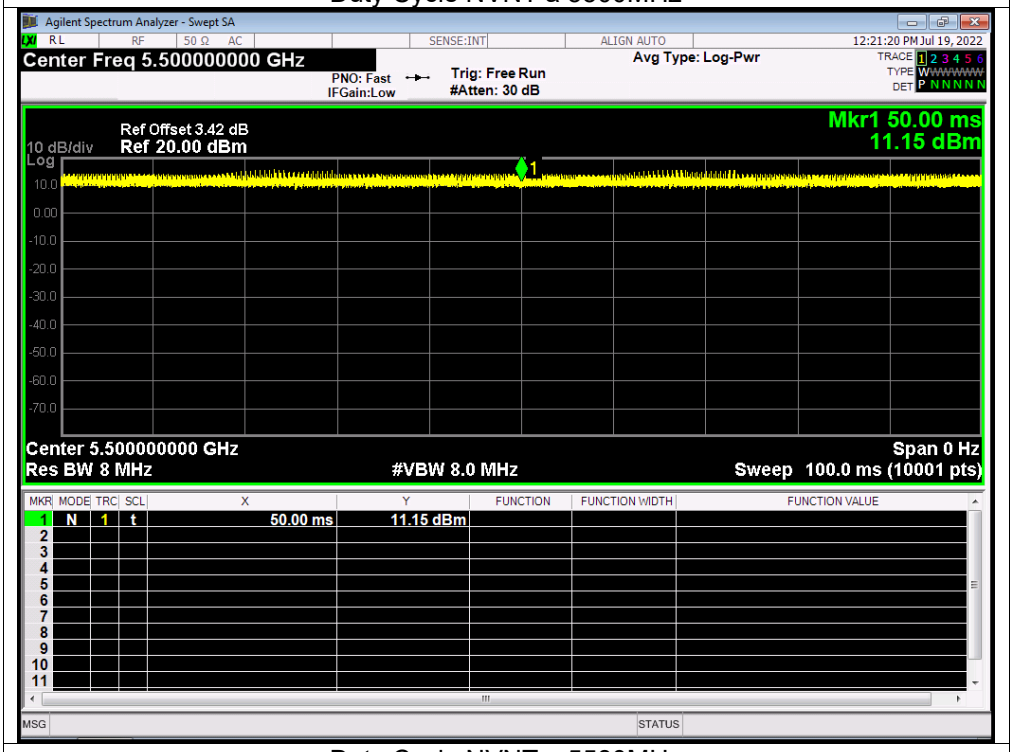


Duty Cycle NVNT n20 5320MHz

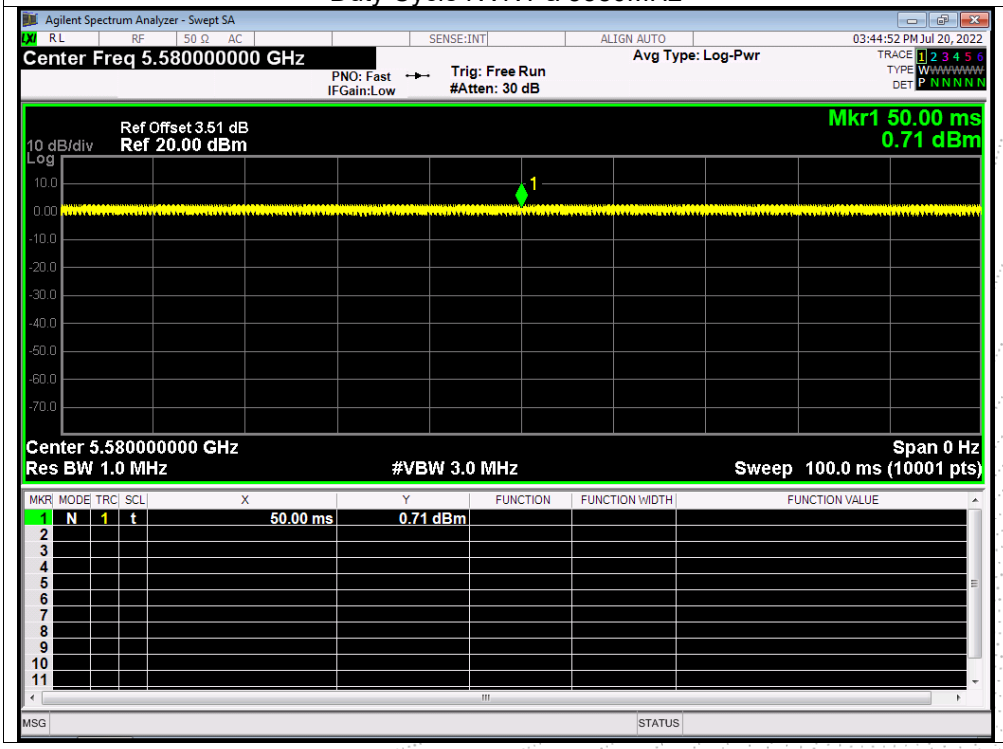


Test Graphs

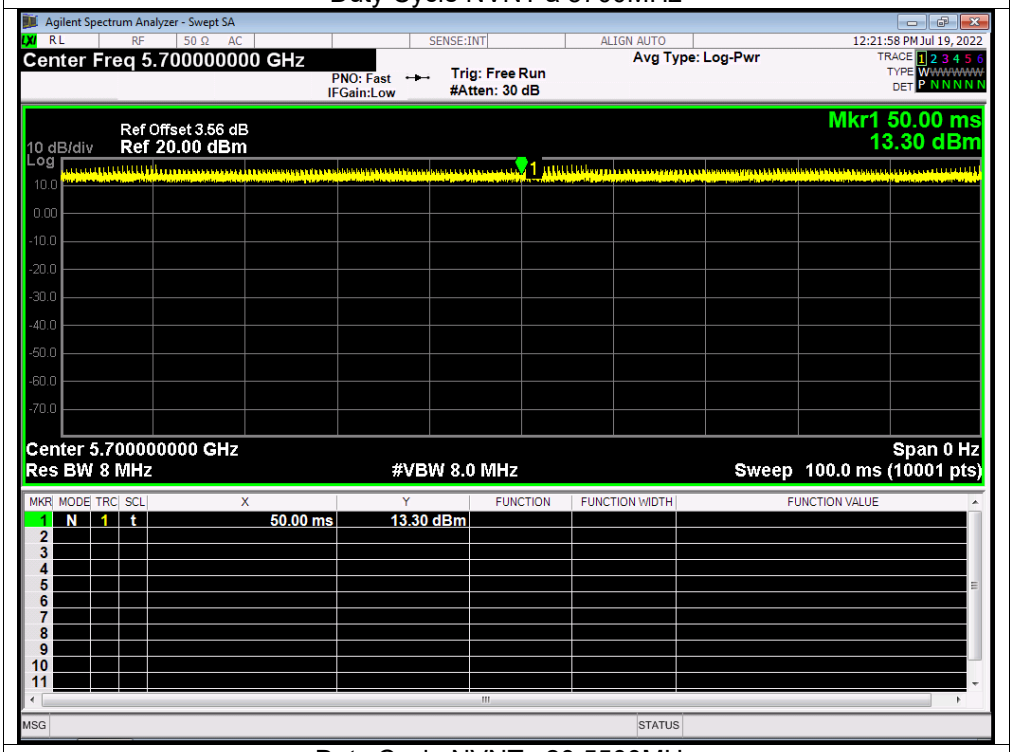
Duty Cycle NVNT a 5500MHz



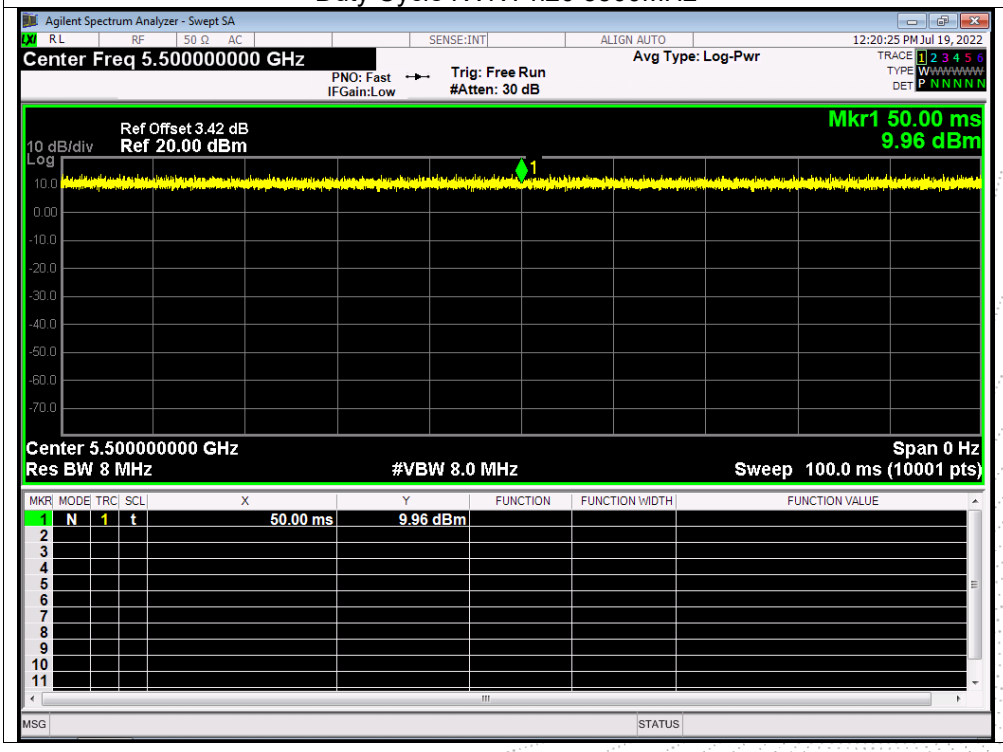
Duty Cycle NVNT a 5580MHz



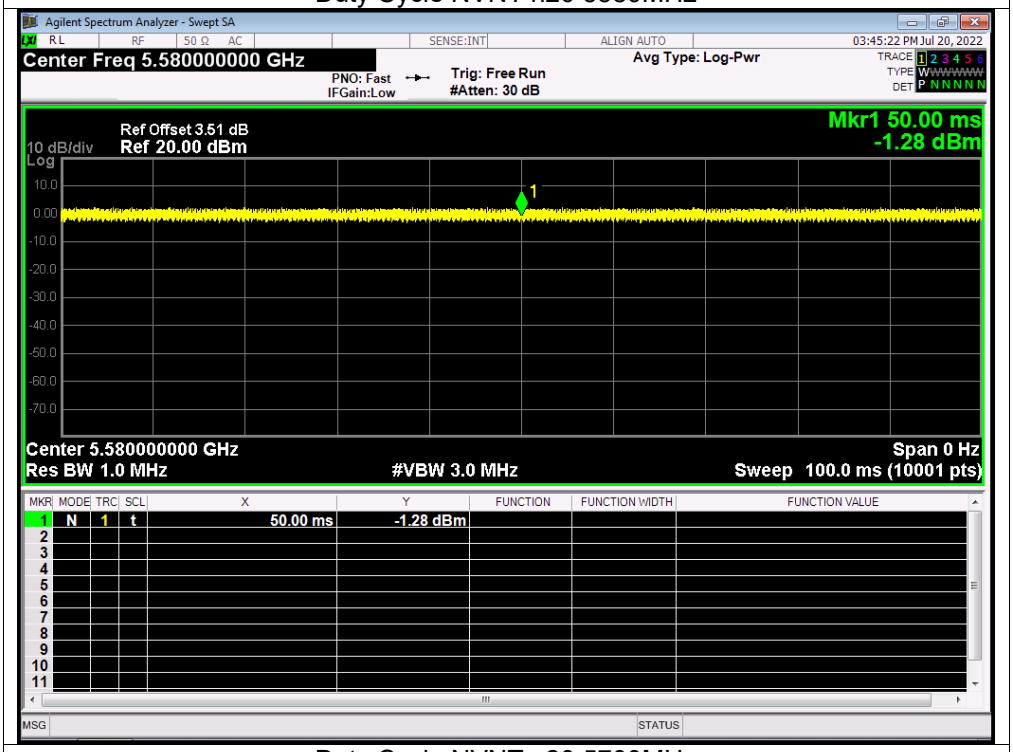
Duty Cycle NVNT a 5700MHz



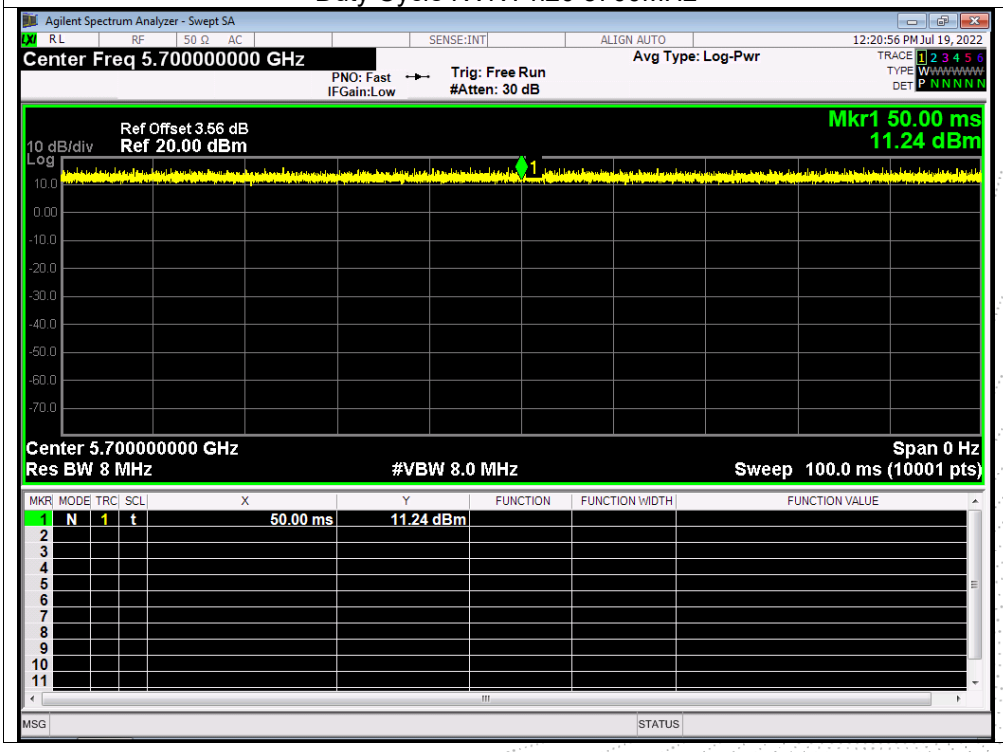
Duty Cycle NVNT n20 5500MHz



Duty Cycle NVNT n20 5580MHz

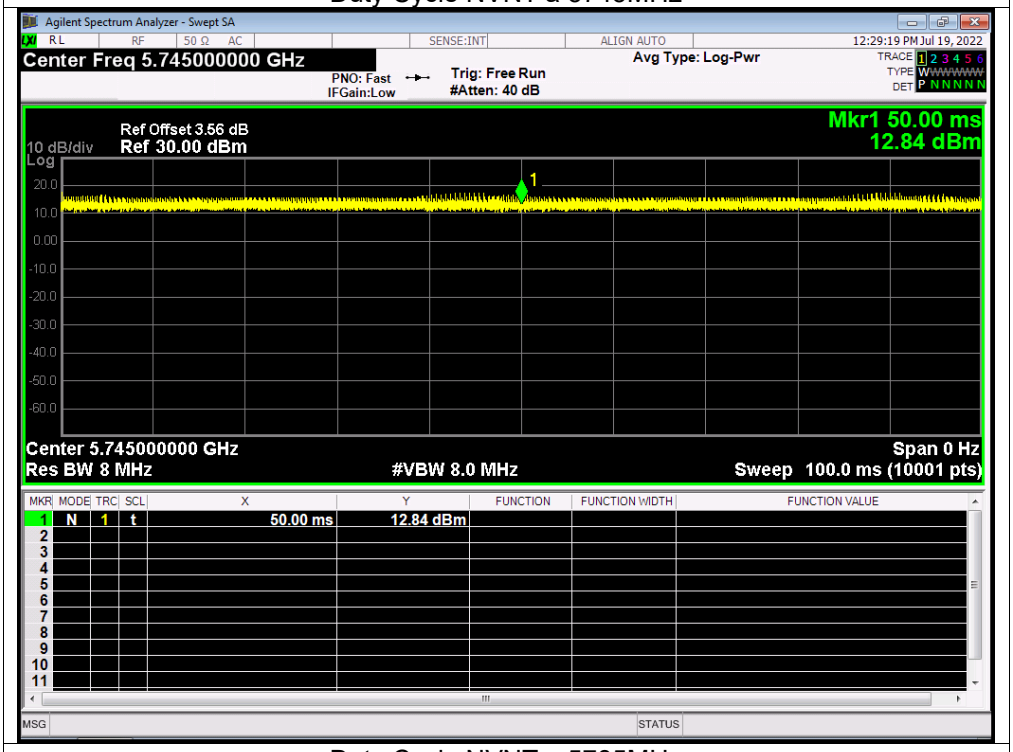


Duty Cycle NVNT n20 5700MHz

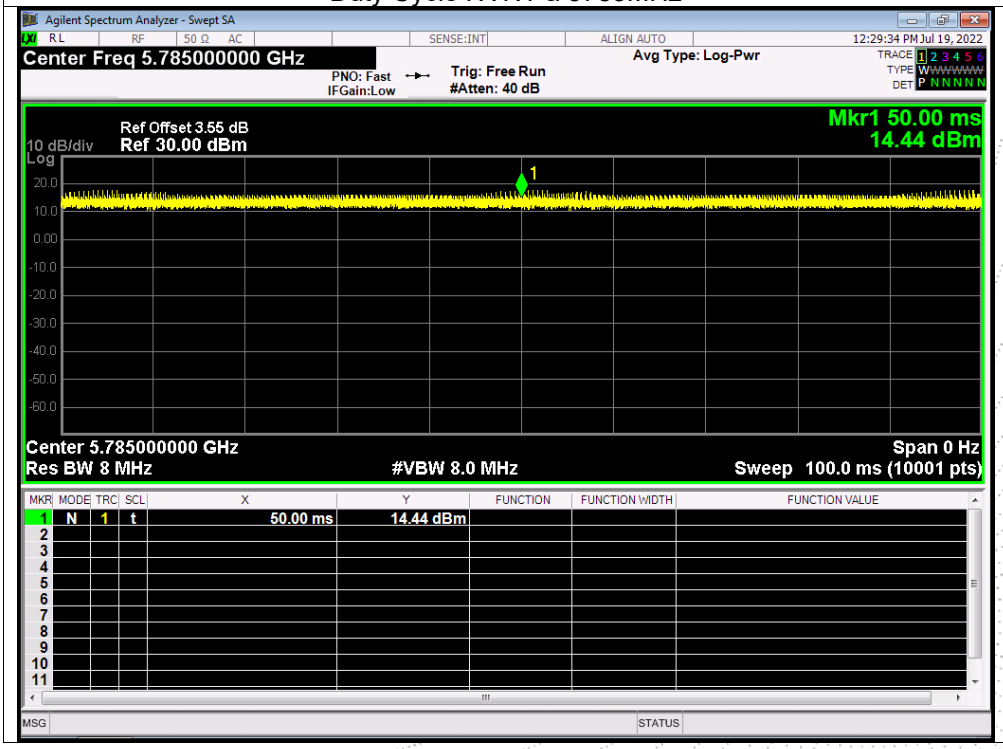


Test Graphs

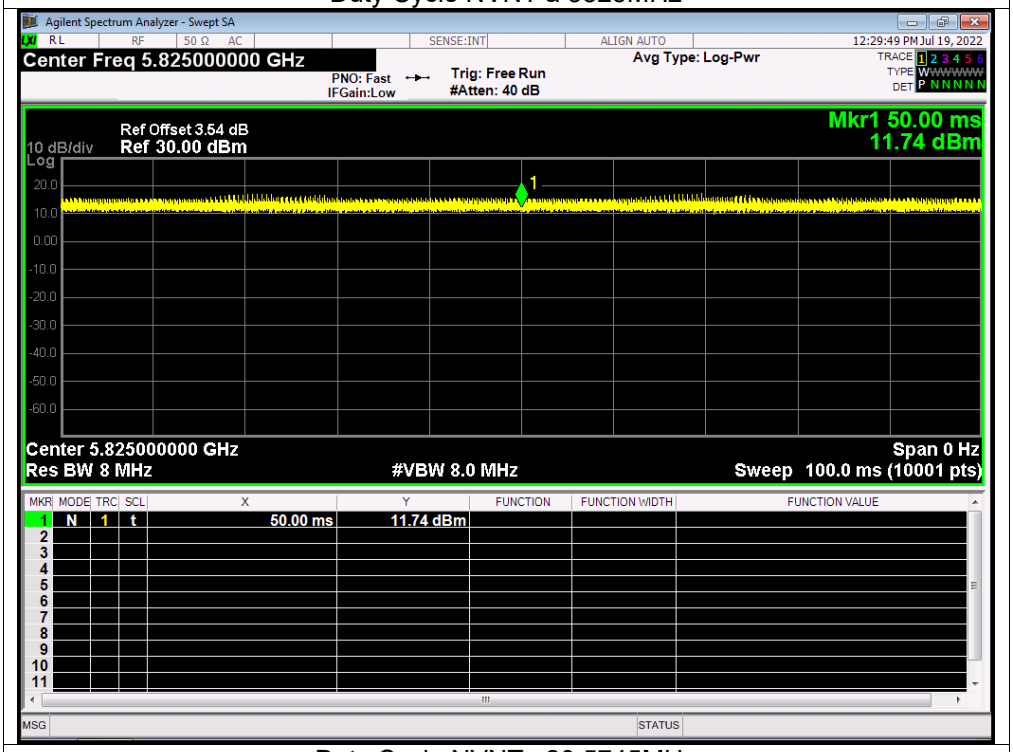
Duty Cycle NVNT a 5745MHz



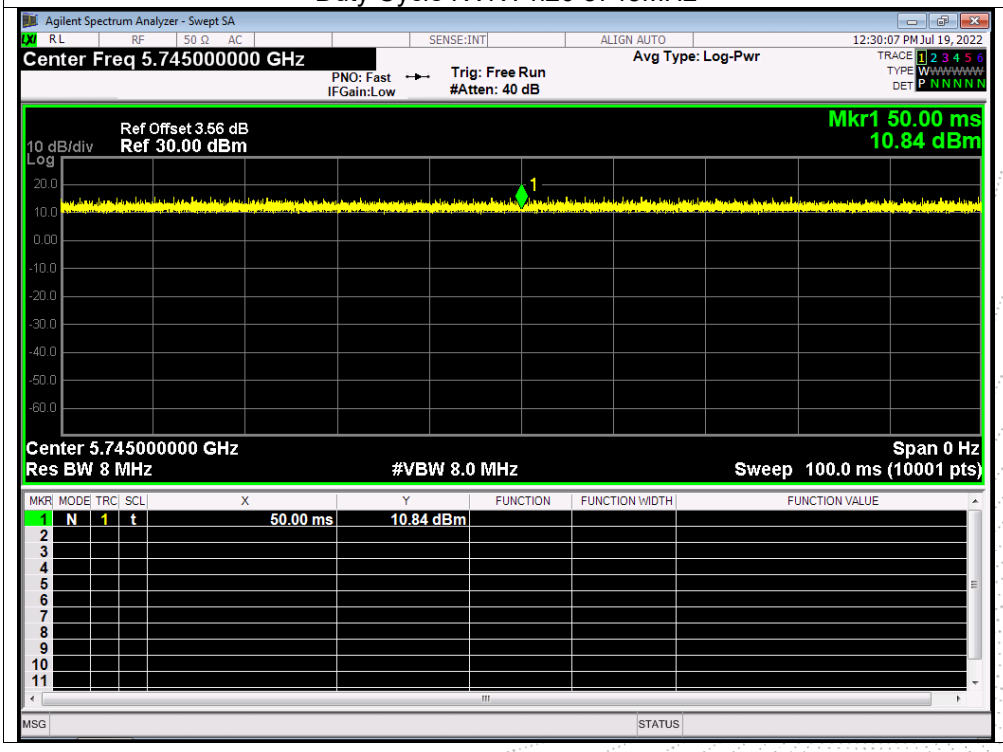
Duty Cycle NVNT a 5785MHz



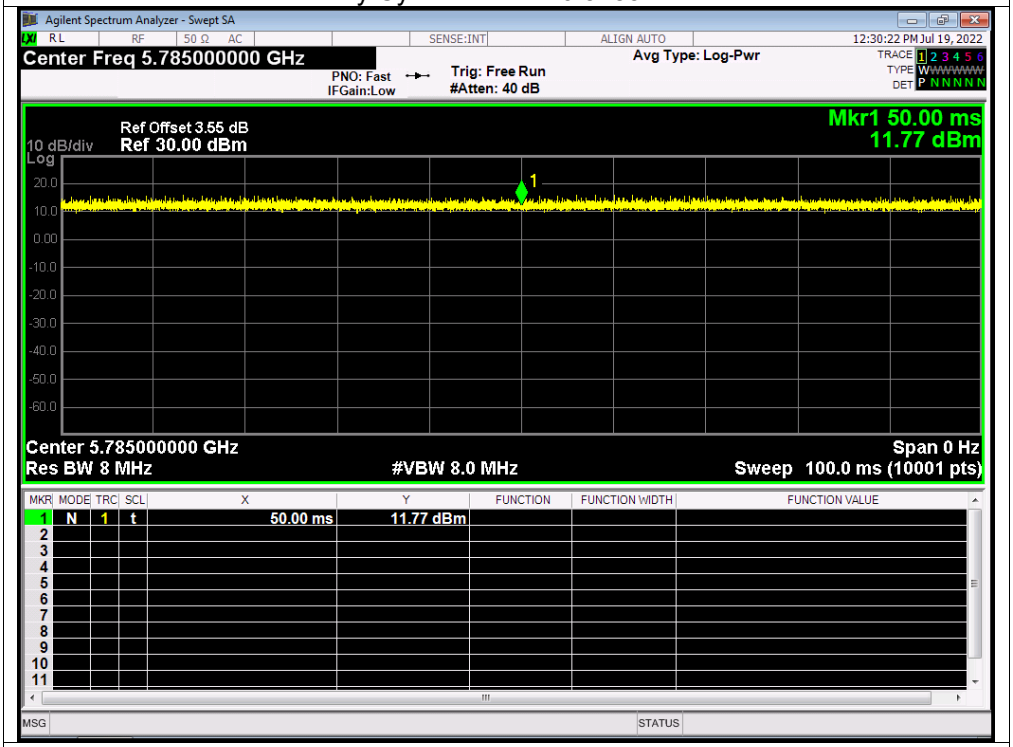
Duty Cycle NVNT a 5825MHz



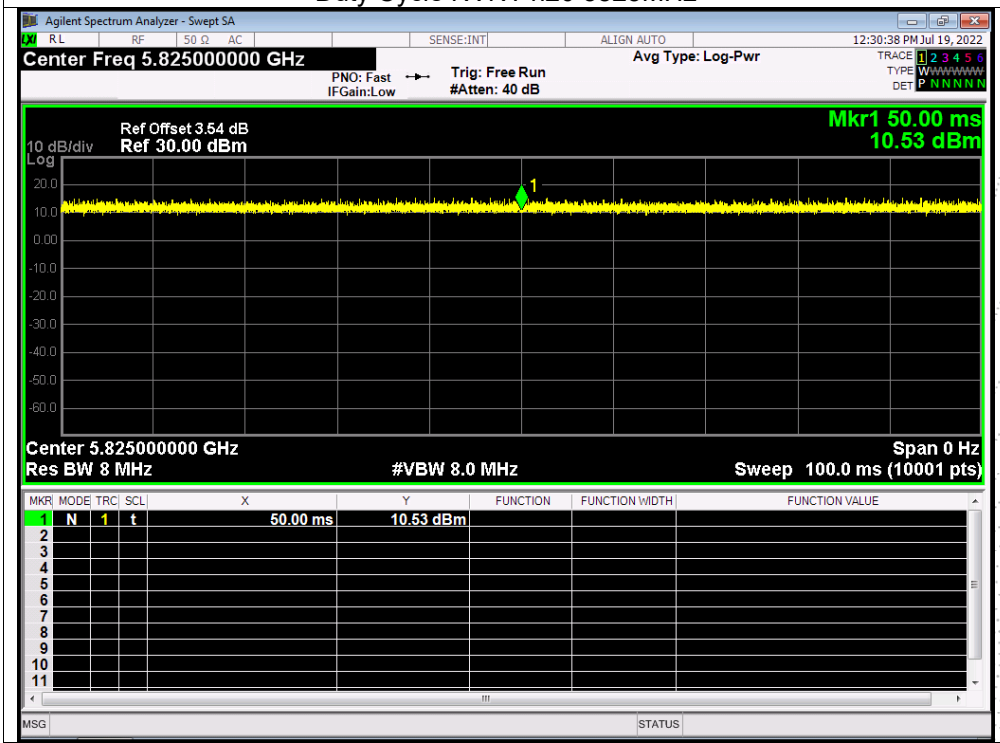
Duty Cycle NVNT n20 5745MHz



Duty Cycle NVNT n20 5785MHz



Duty Cycle NVNT n20 5825MHz



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, fulfill the requirement of this section.

16. EUT Photographs

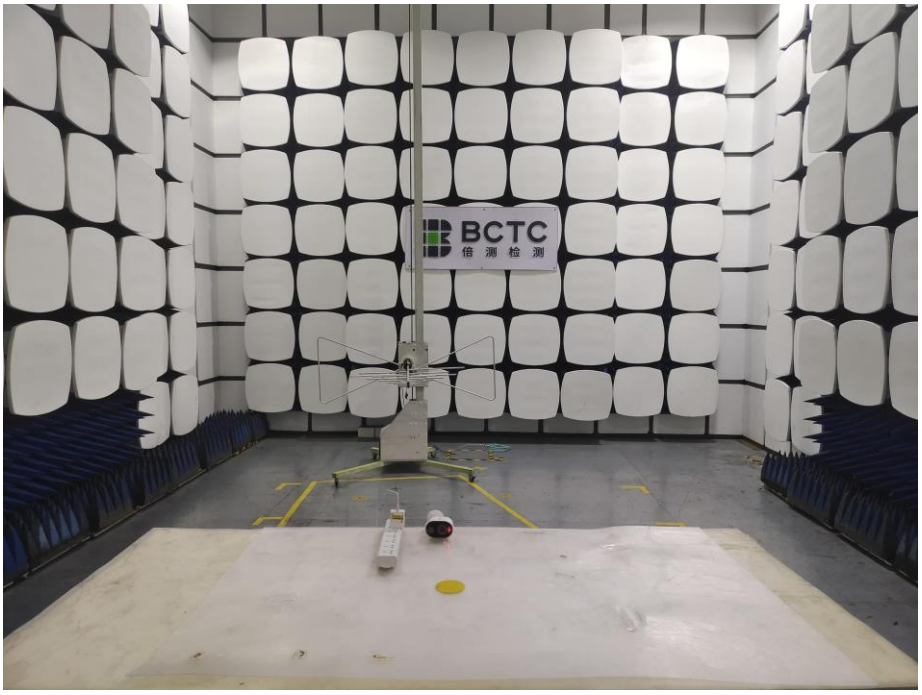
EUT Photo

NOTE: Appendix-Photographs Of EUT Constructional Details

17. EUT Test Setup Photographs

Conducted emissions

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 test report without CMA mark is only used for scientific research, teaching, enterprise product development and internal quality control purposes.

8. The quality system of our laboratory is in accordance with ISO/IEC17025.

9. 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.

Address:
1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Zhancheng, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China

TEL：400-788-9558

P.C.: 518103

FAX：0755-33229357

Website：http://www.chnbctc.com

E-Mail：bctc@bctc-lab.com.cn

※※※※※ **END** ※※※※※