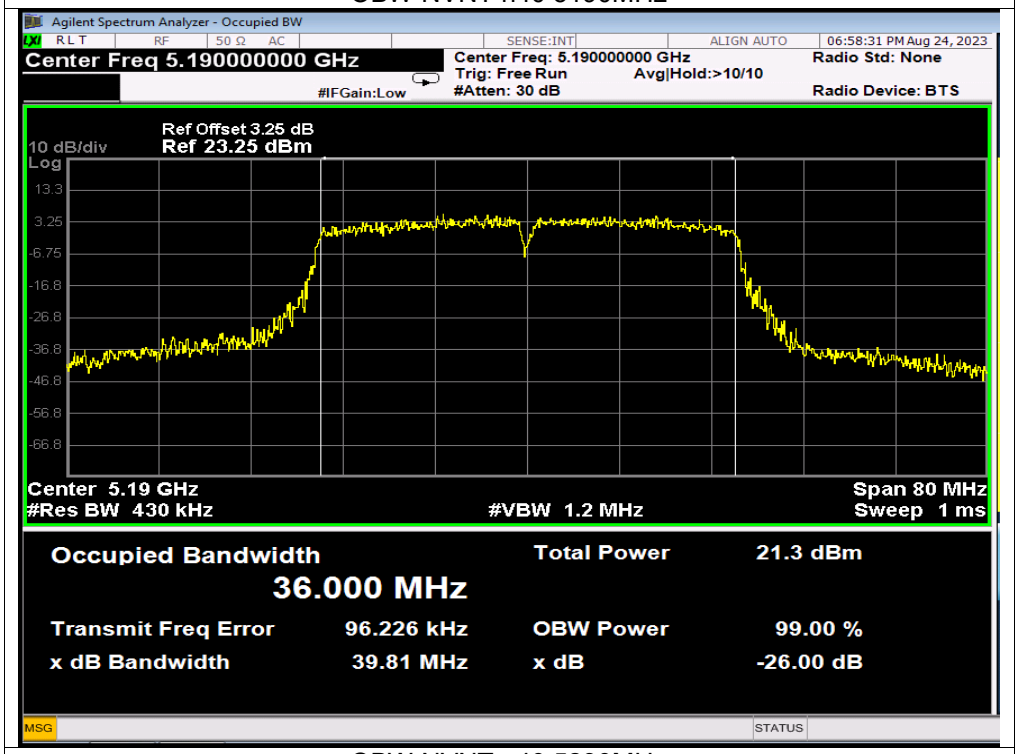
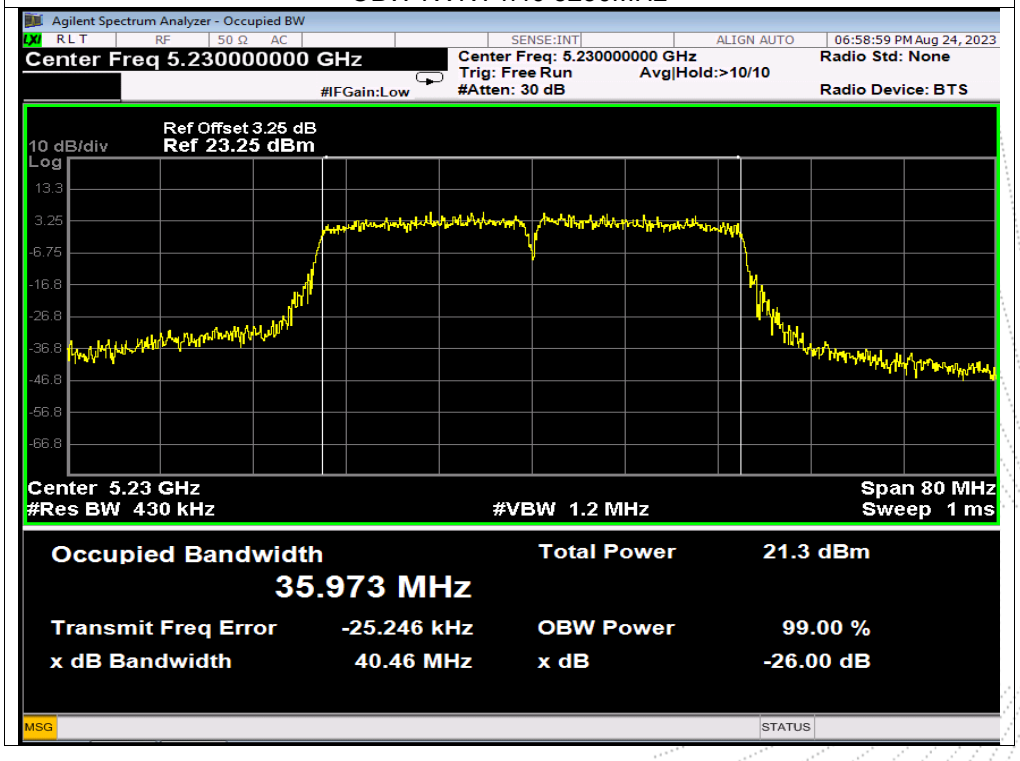
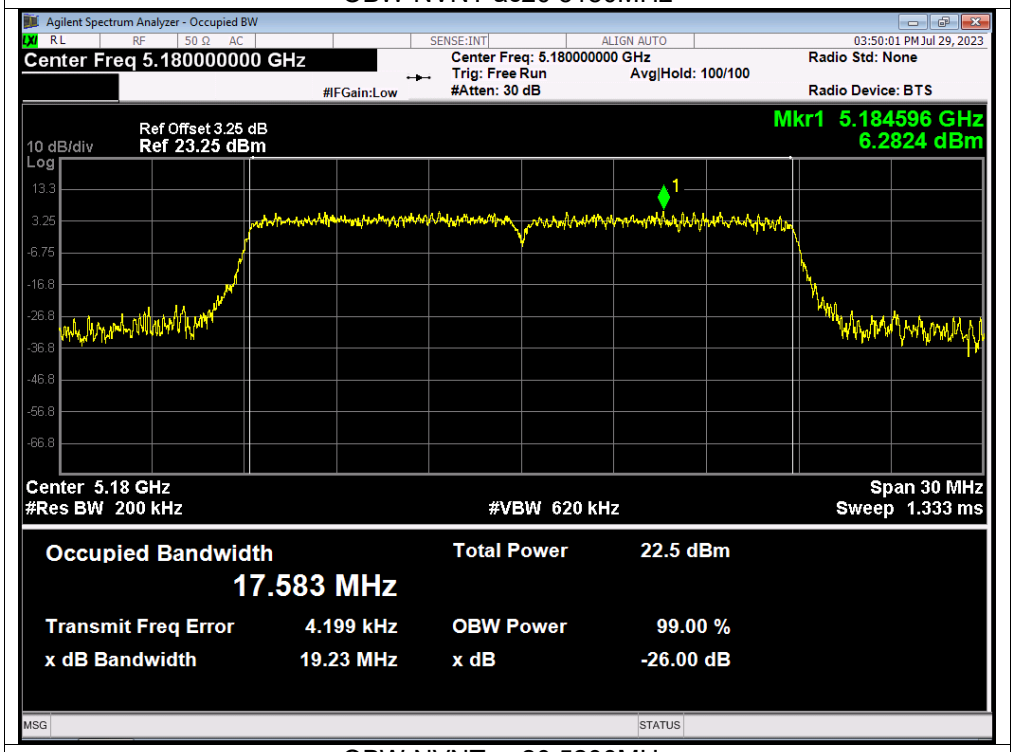
OBW NVNT n40 5190MHz



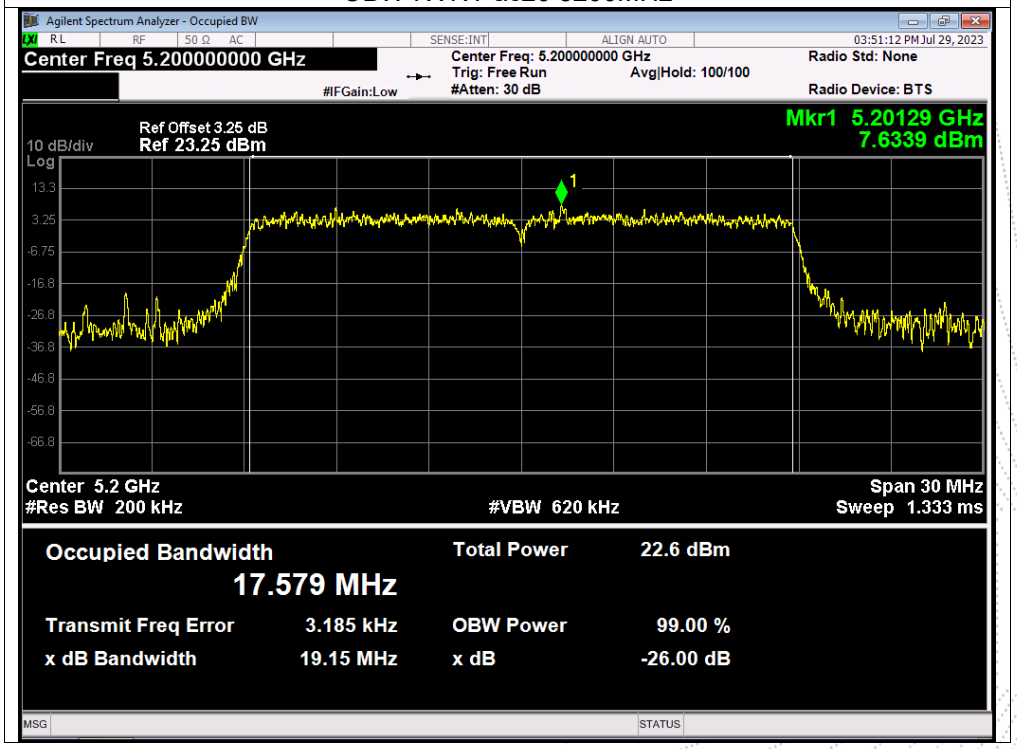
OBW NVNT n40 5230MHz



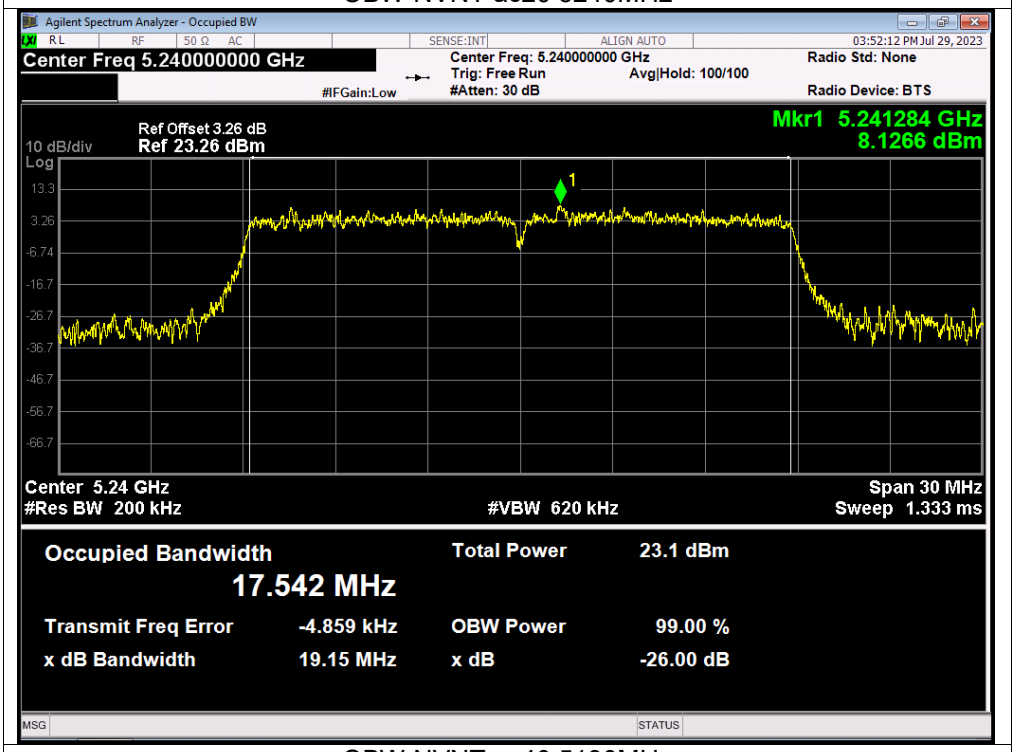
OBW NVNT ac20 5180MHz



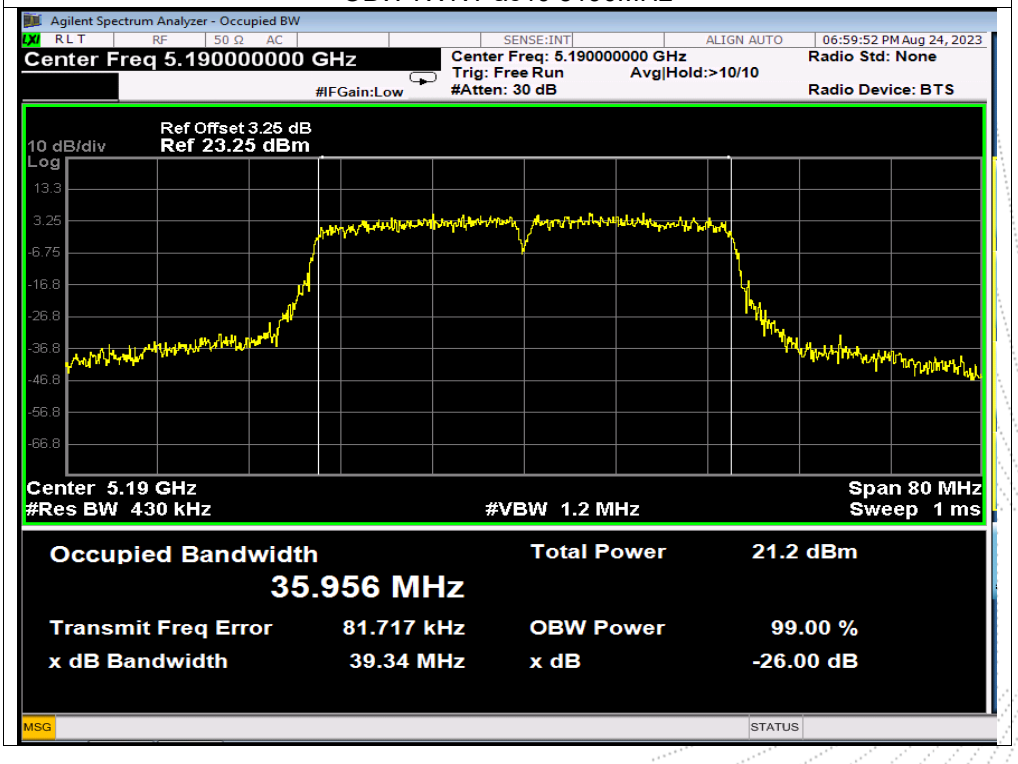
OBW NVNT ac20 5200MHz



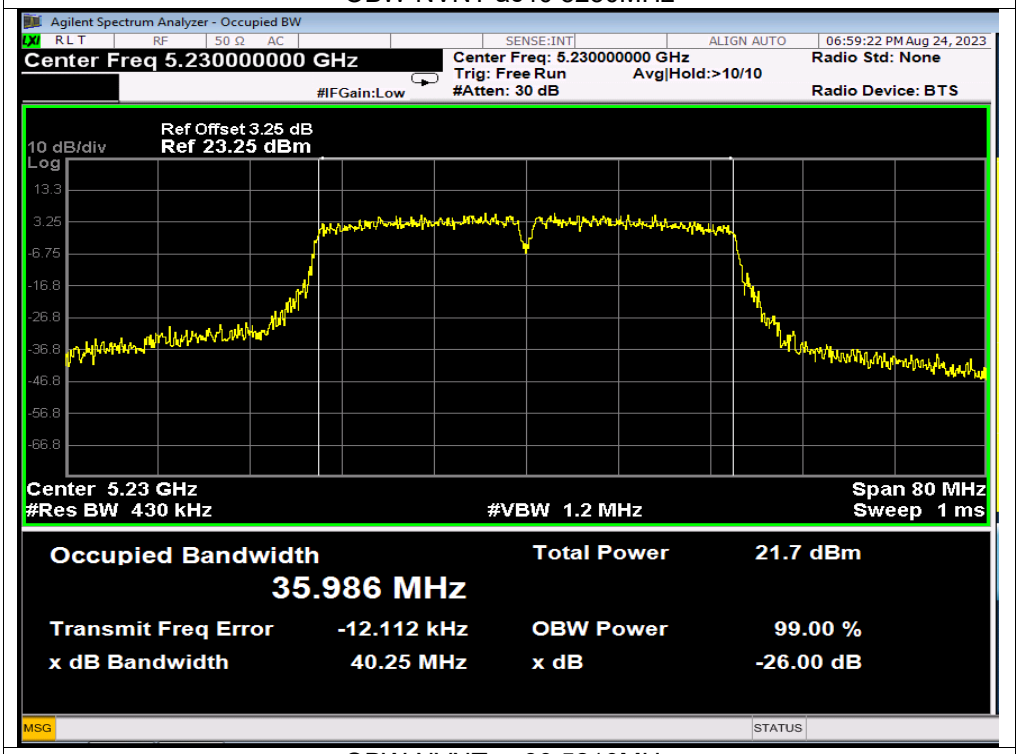
OBW NVNT ac20 5240MHz



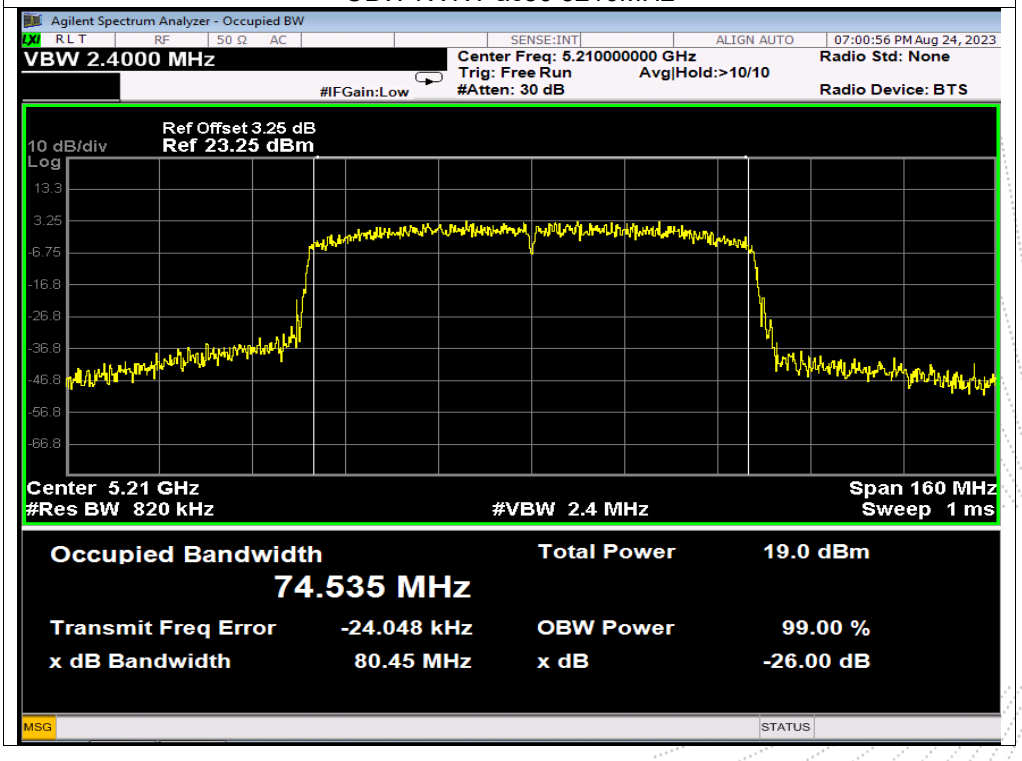
OBW NVNT ac40 5190MHz



OBW NVNT ac40 5230MHz



OBW NVNT ac80 5210MHz



Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	AC 120V/60Hz
Test Mode:	(5260-5320MHz)		

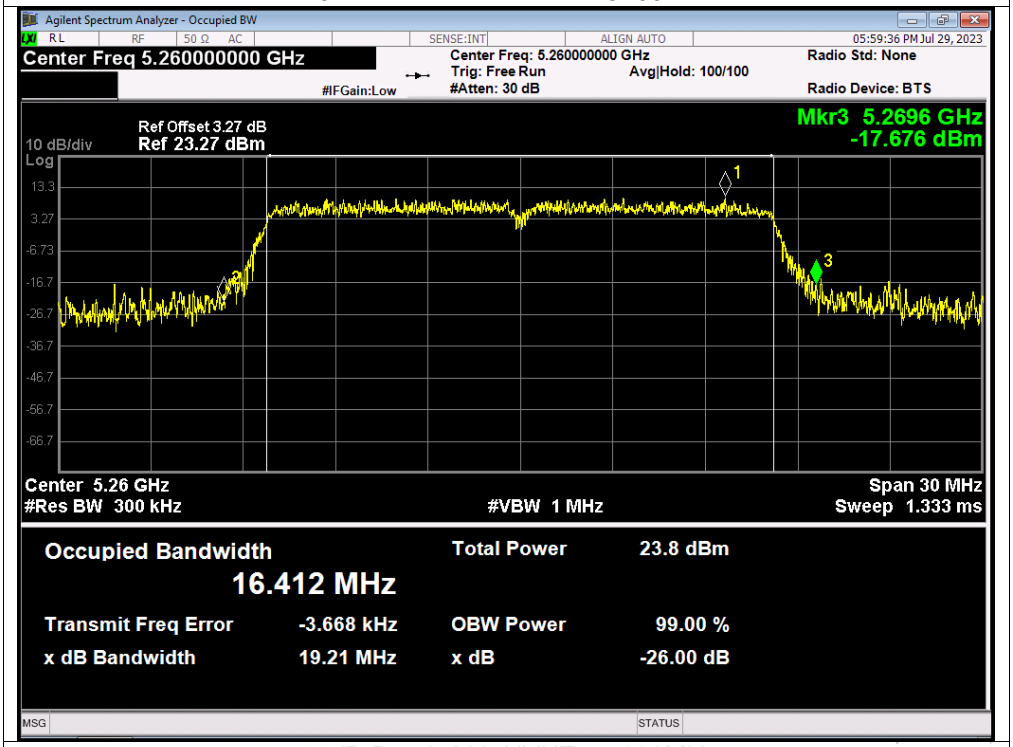
Condition	Mode	Frequency (MHz)	-26 dB Bandwidth (MHz)		Verdict
			Ant A	Ant B	
NVNT	a	5260	19.208	19.077	Pass
NVNT	a	5280	20.854	20.923	Pass
NVNT	a	5320	18.36	18.684	Pass
NVNT	n20	5260	19.456	19.52	Pass
NVNT	n20	5280	19.509	19.428	Pass
NVNT	n20	5320	19.582	19.647	Pass
NVNT	n40	5270	41.740	41.463	Pass
NVNT	n40	5310	41.800	41.771	Pass
NVNT	ac20	5260	19.477	19.729	Pass
NVNT	ac20	5280	19.33	19.513	Pass
NVNT	ac20	5320	19.524	19.368	Pass
NVNT	ac40	5270	41.740	41.05	Pass
NVNT	ac40	5310	41.470	41.471	Pass
NVNT	ac80	5290	80.630	79.836	Pass

Condition	Mode	Frequency (MHz)	99% OBW (MHz)	
			Ant A	Ant B
NVNT	a	5260	16.358	16.396
NVNT	a	5280	16.369	16.381
NVNT	a	5320	16.394	16.399
NVNT	n20	5260	17.531	17.559
NVNT	n20	5280	17.573	17.561
NVNT	n20	5320	17.56	17.56
NVNT	n40	5270	35.972	35.979
NVNT	n40	5310	36.045	35.991
NVNT	ac20	5260	17.562	17.555
NVNT	ac20	5280	17.586	17.561
NVNT	ac20	5320	17.548	17.56
NVNT	ac40	5270	35.962	36.027
NVNT	ac40	5310	36.030	36.017
NVNT	ac80	5290	74.823	74.416

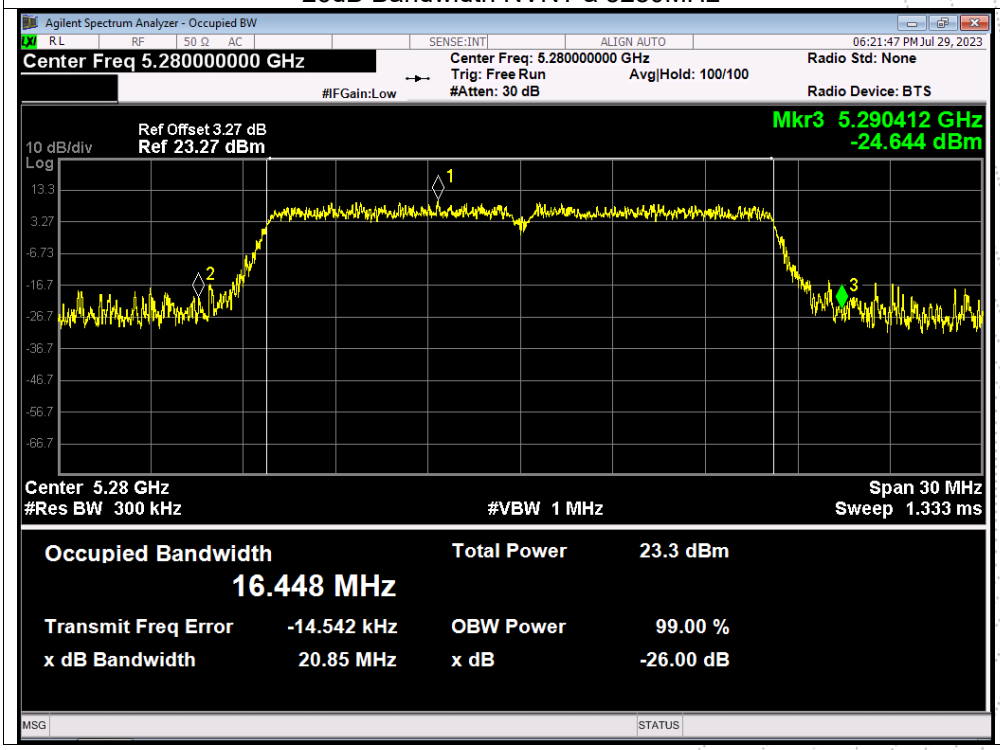
Note: A(B) Represent the value of antenna A and B, The worst data is Antenna A, only shown Antenna A Plot.

Test Graphs

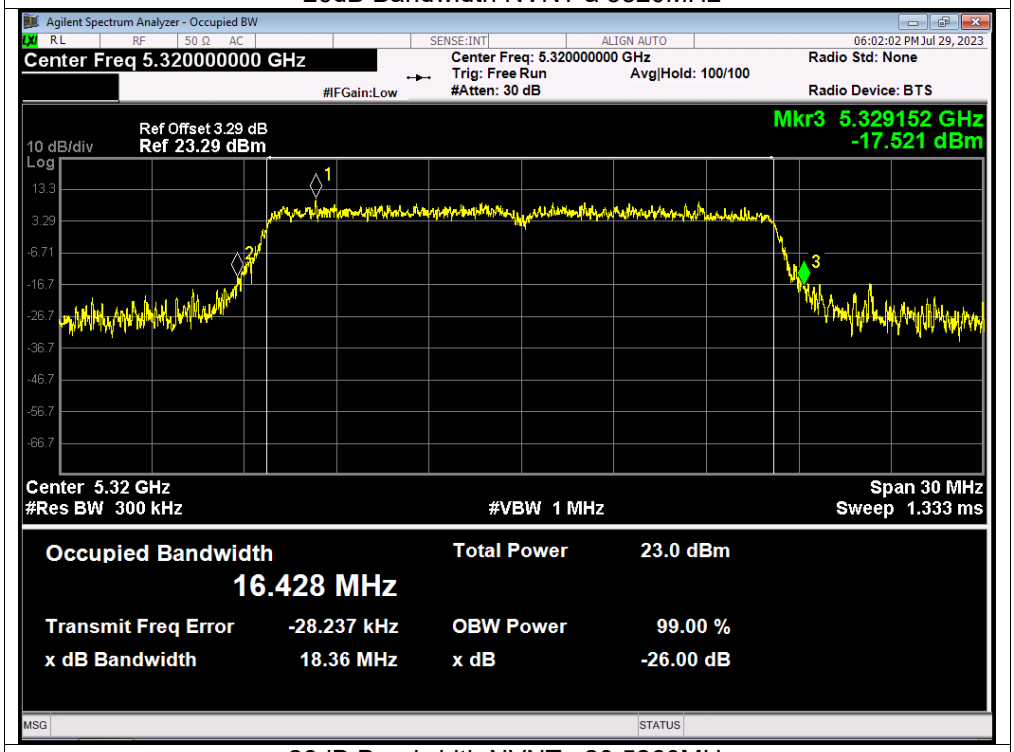
-26dB Bandwidth NVNT a 5260MHz



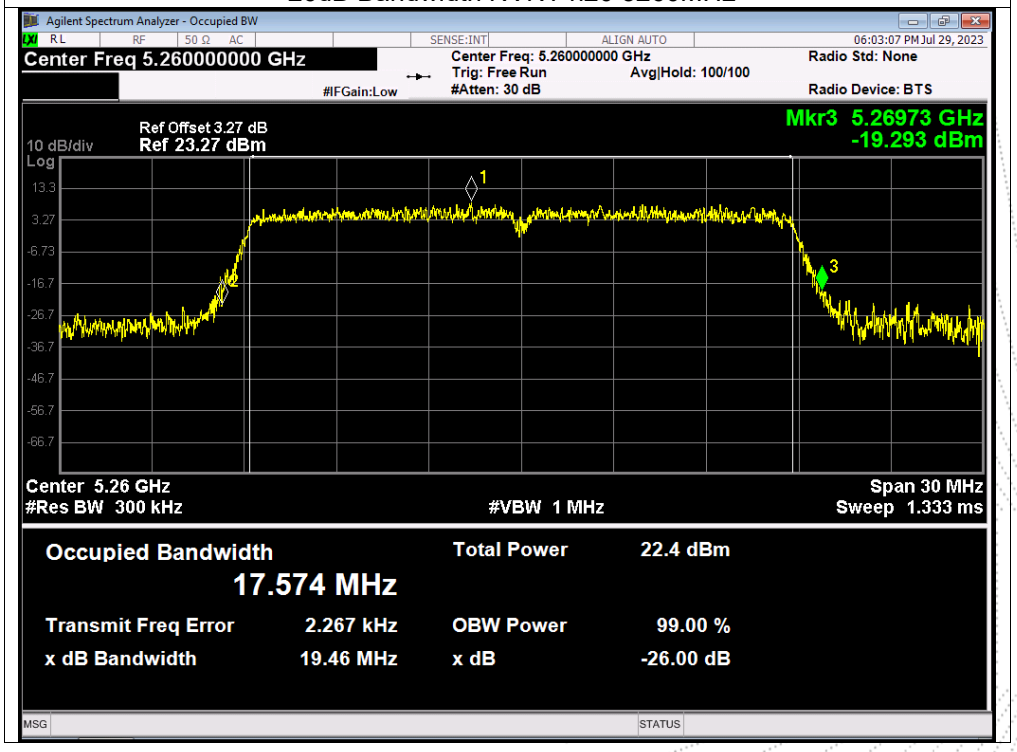
-26dB Bandwidth NVNT a 5280MHz



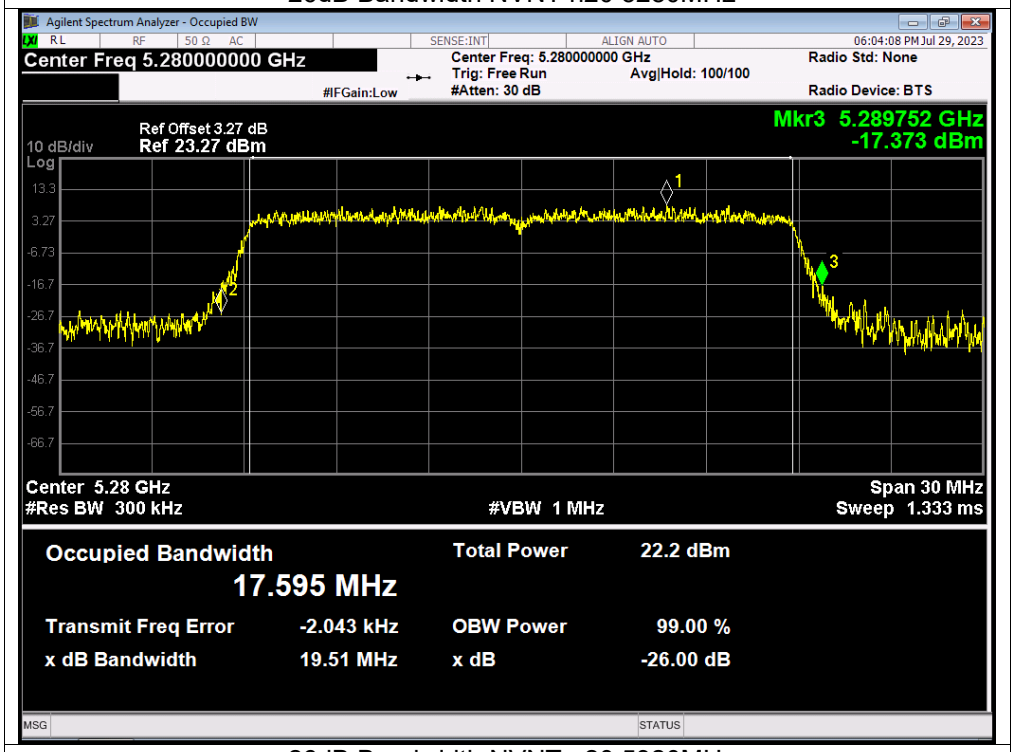
-26dB Bandwidth NVNT a 5320MHz



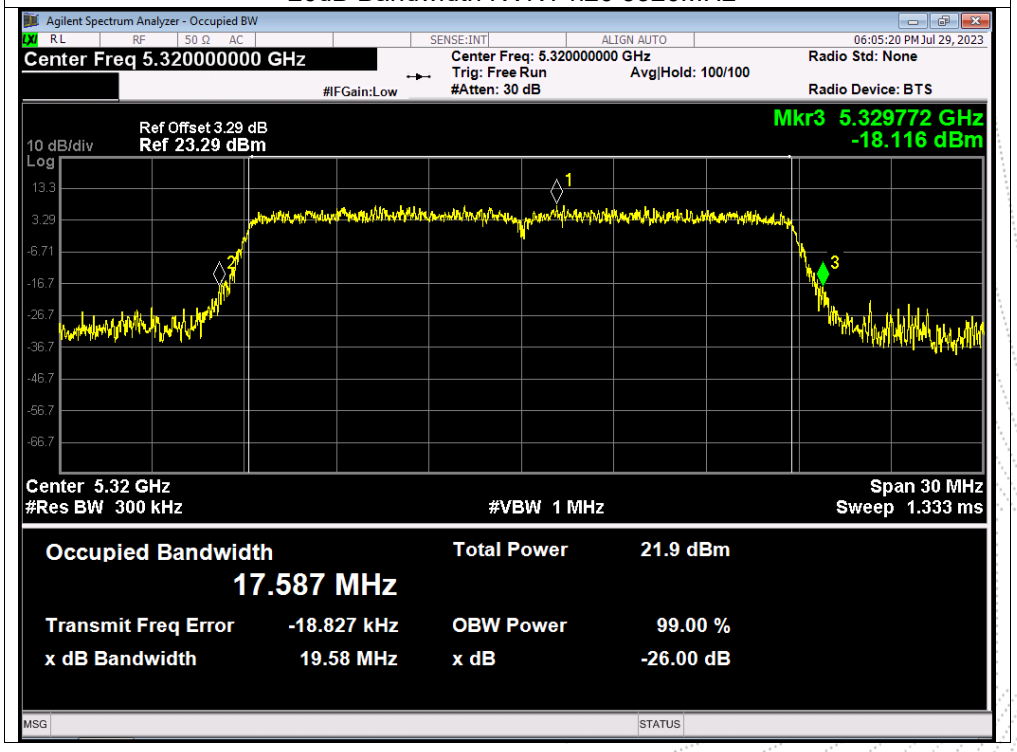
-26dB Bandwidth NVNT n20 5260MHz



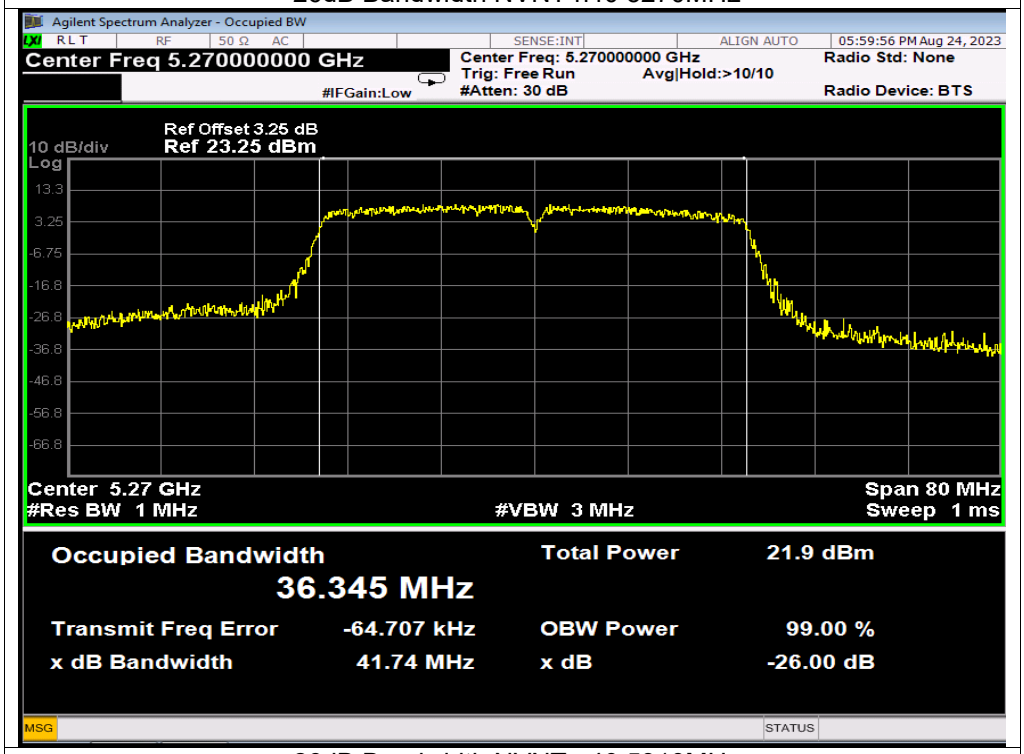
-26dB Bandwidth NVNT n20 5280MHz



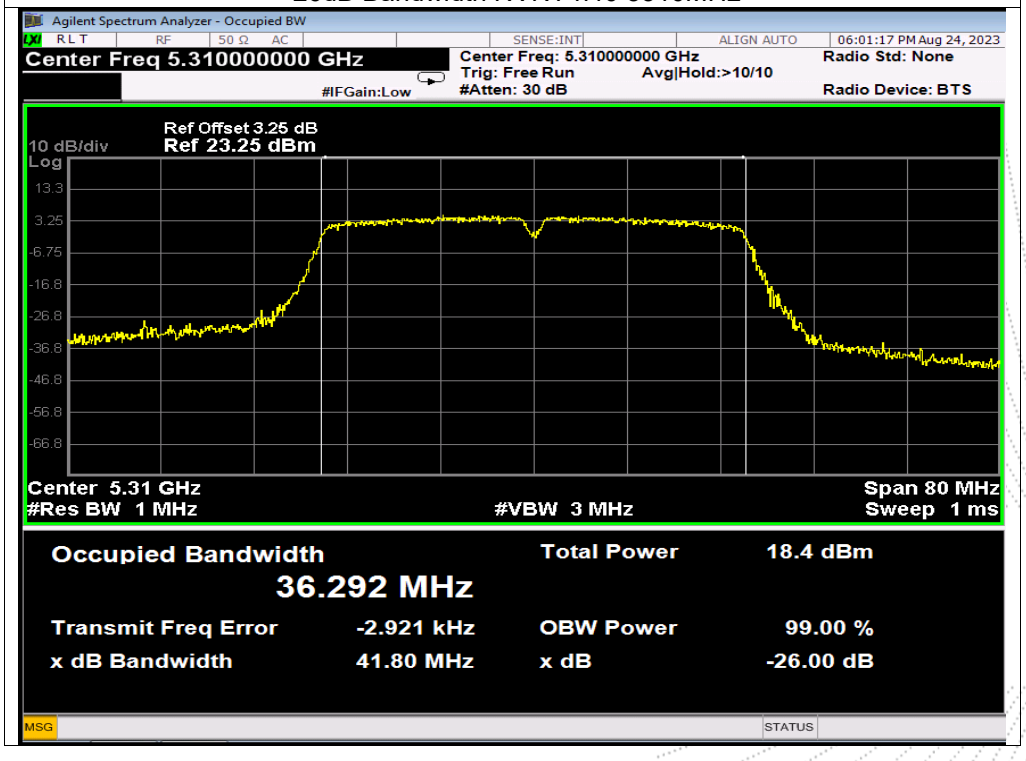
-26dB Bandwidth NVNT n20 5320MHz



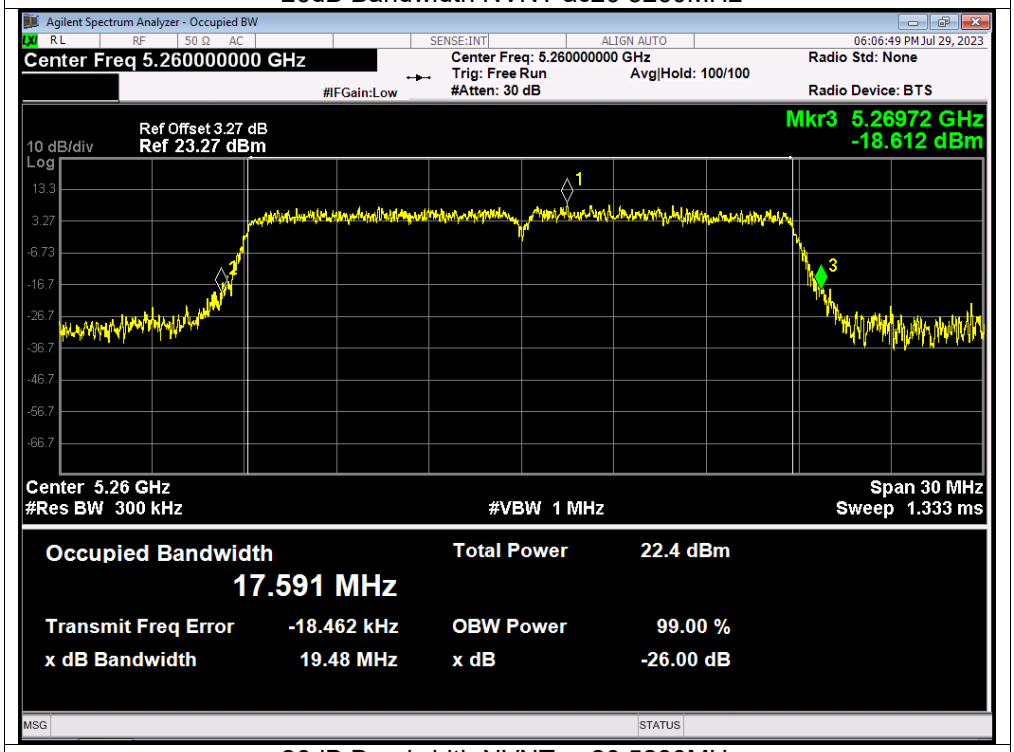
-26dB Bandwidth NVNT n40 5270MHz



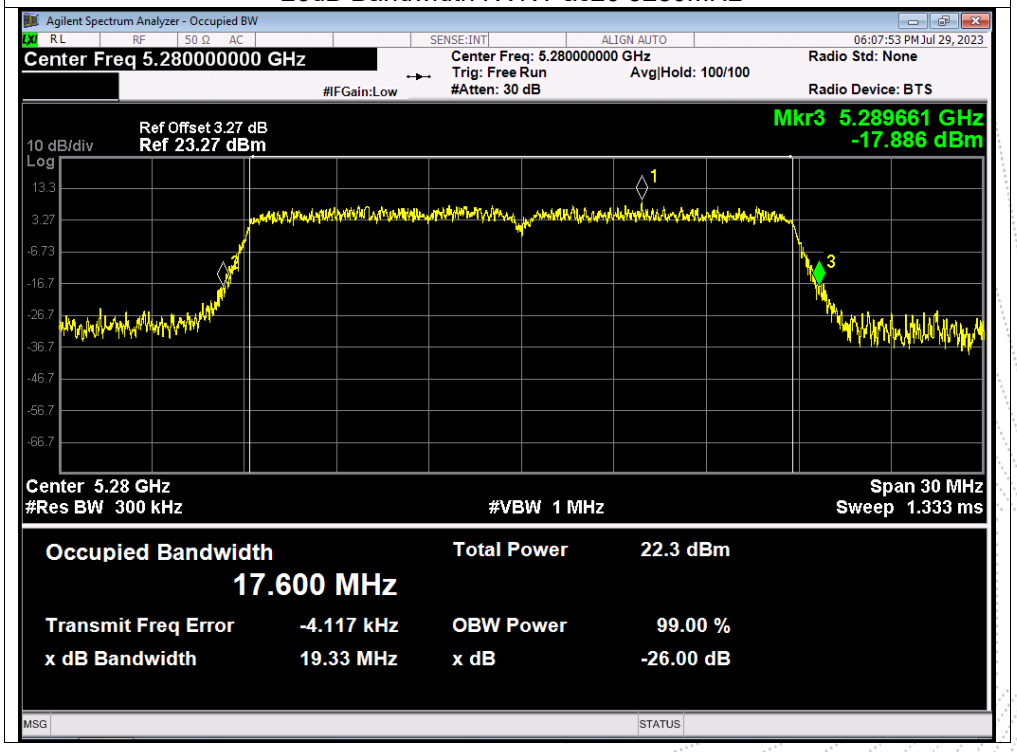
-26dB Bandwidth NVNT n40 5310MHz



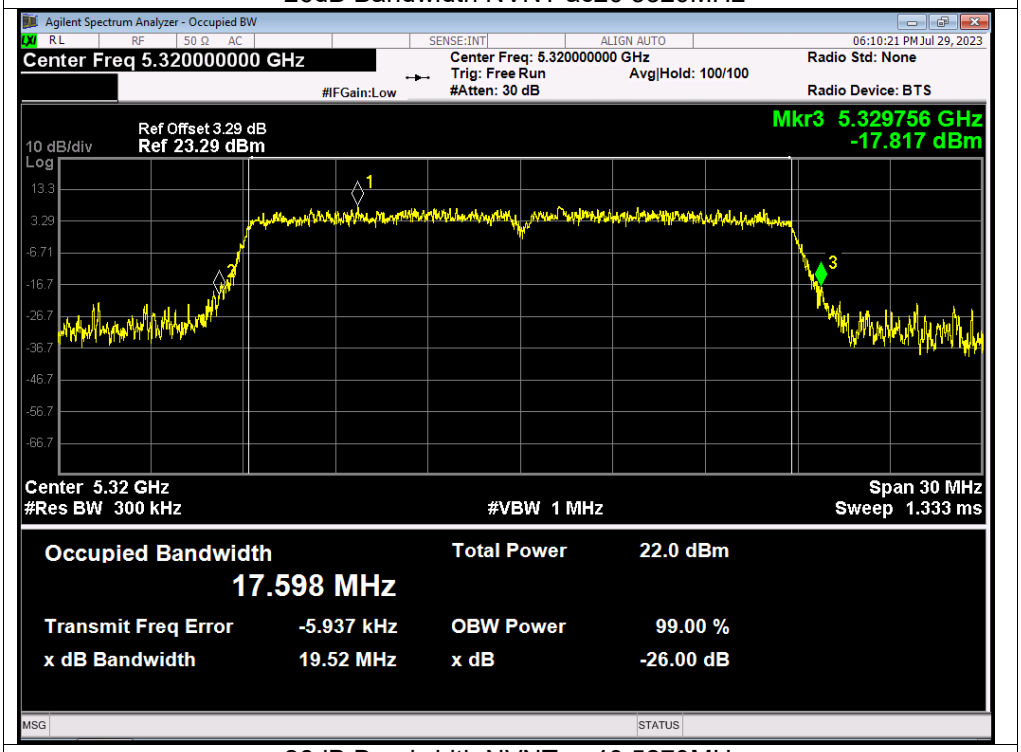
-26dB Bandwidth NVNT ac20 5260MHz



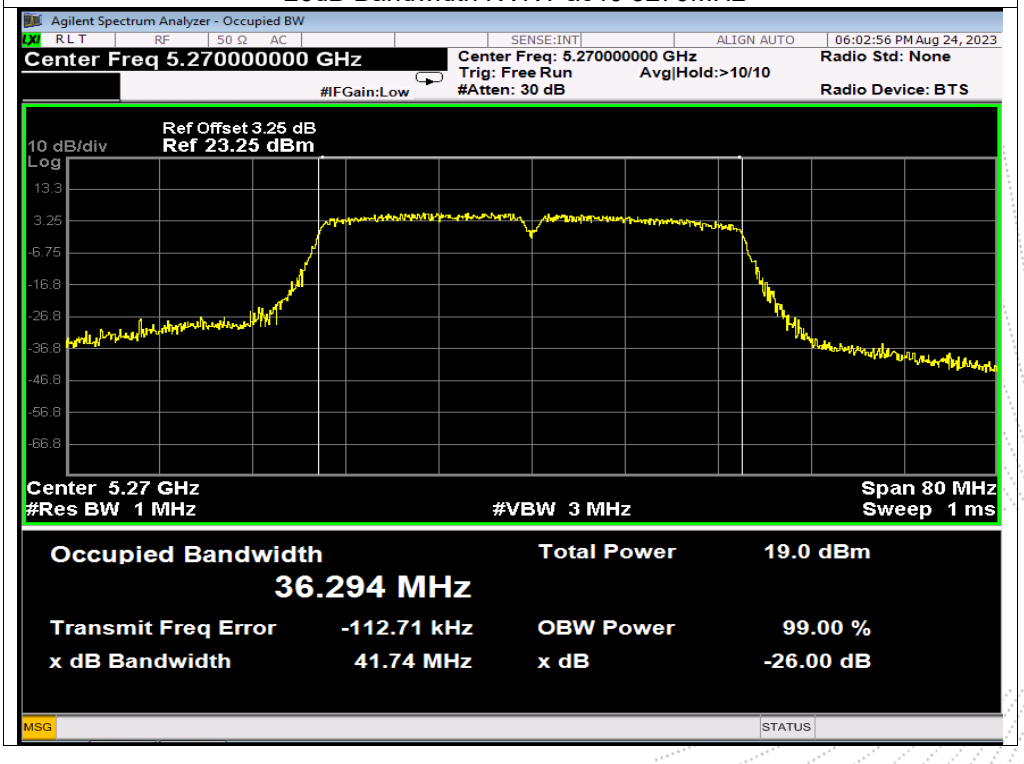
-26dB Bandwidth NVNT ac20 5280MHz



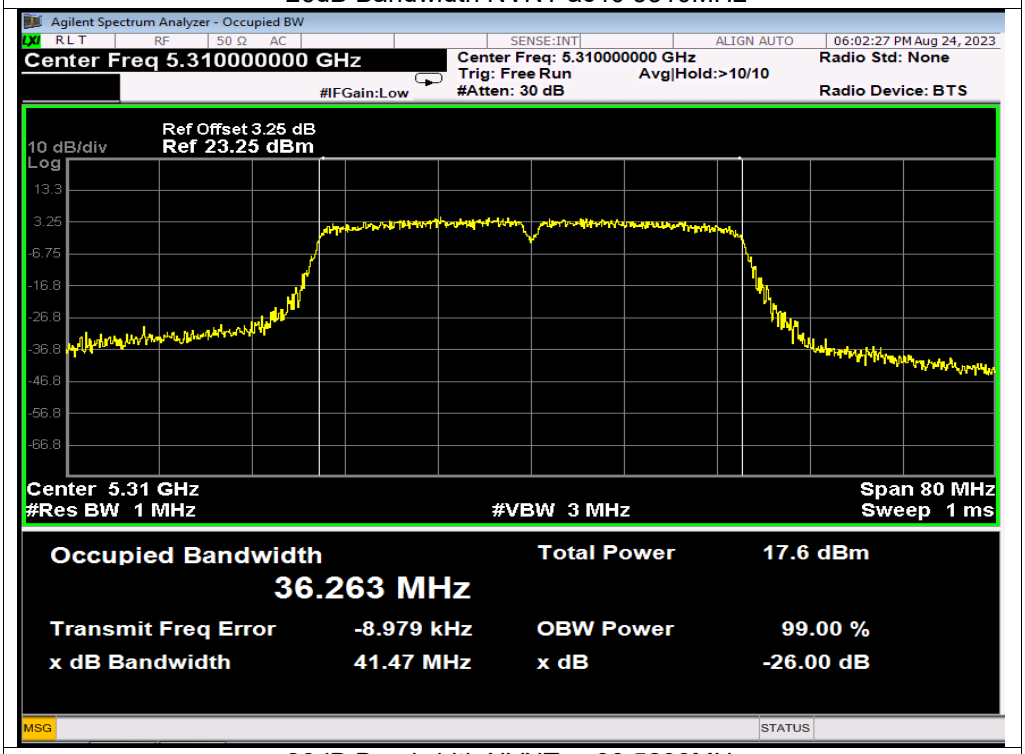
-26dB Bandwidth NVNT ac20 5320MHz



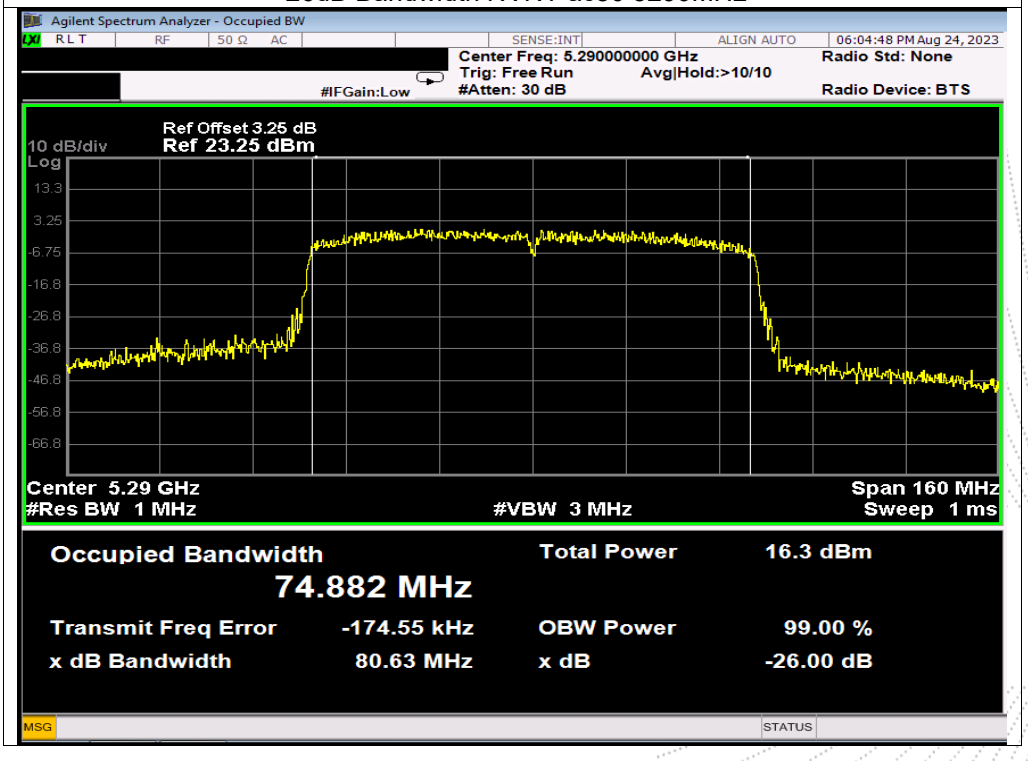
-26dB Bandwidth NVNT ac40 5270MHz



-26dB Bandwidth NVNT ac40 5310MHz

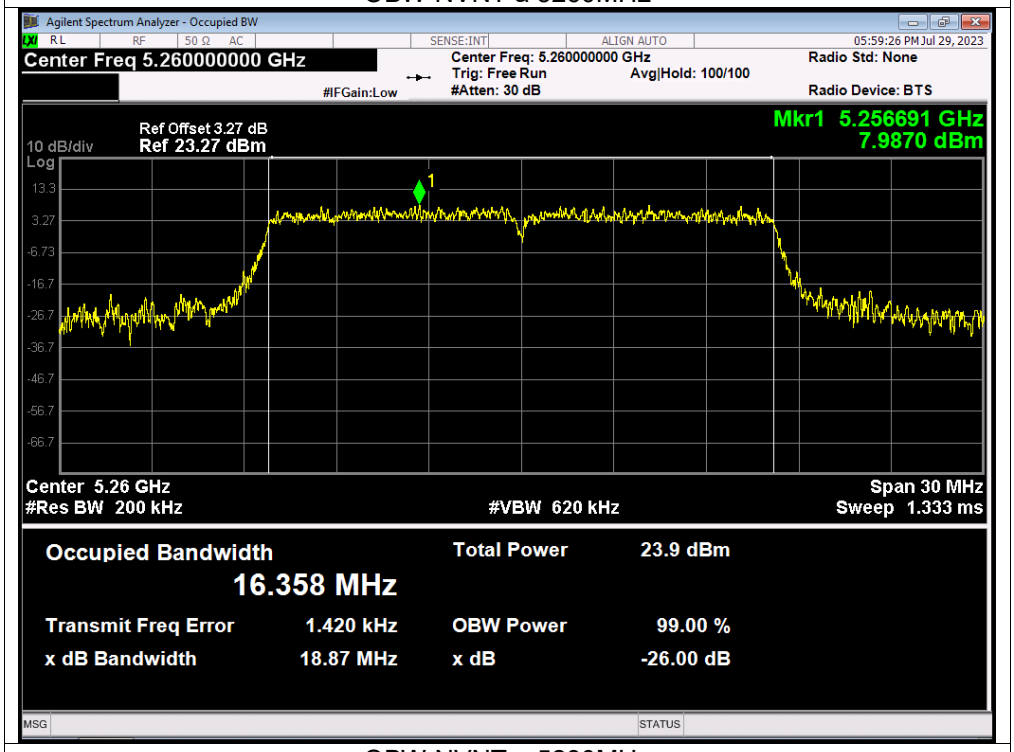


-26dB Bandwidth NVNT ac80 5290MHz

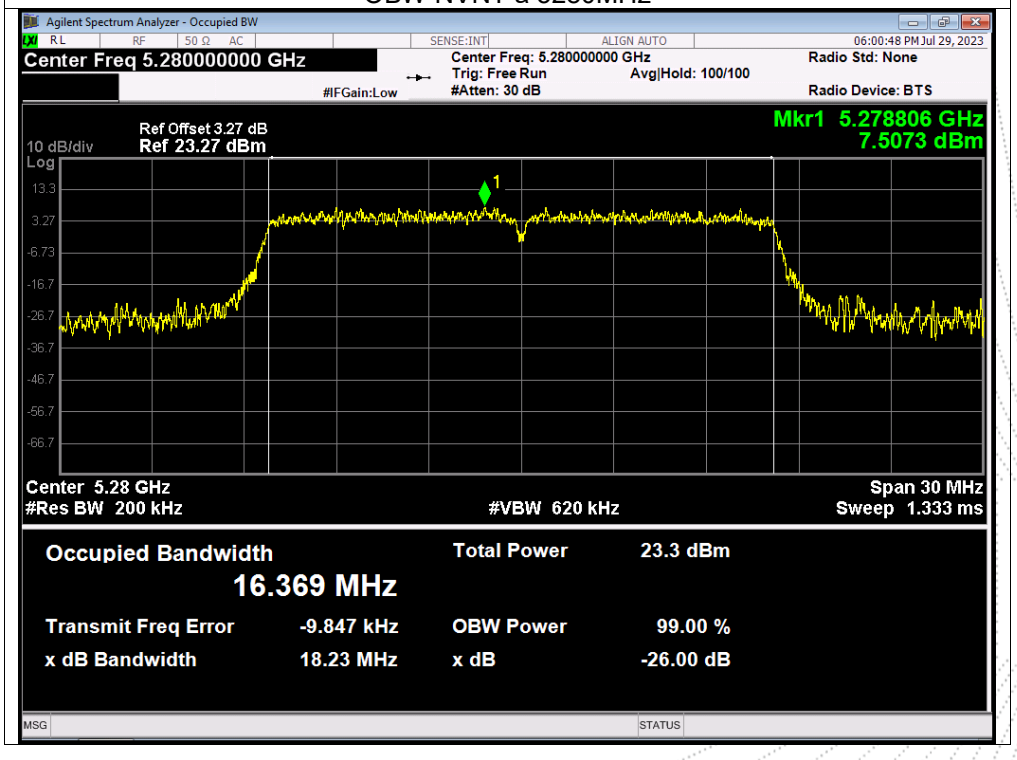


Test Graphs

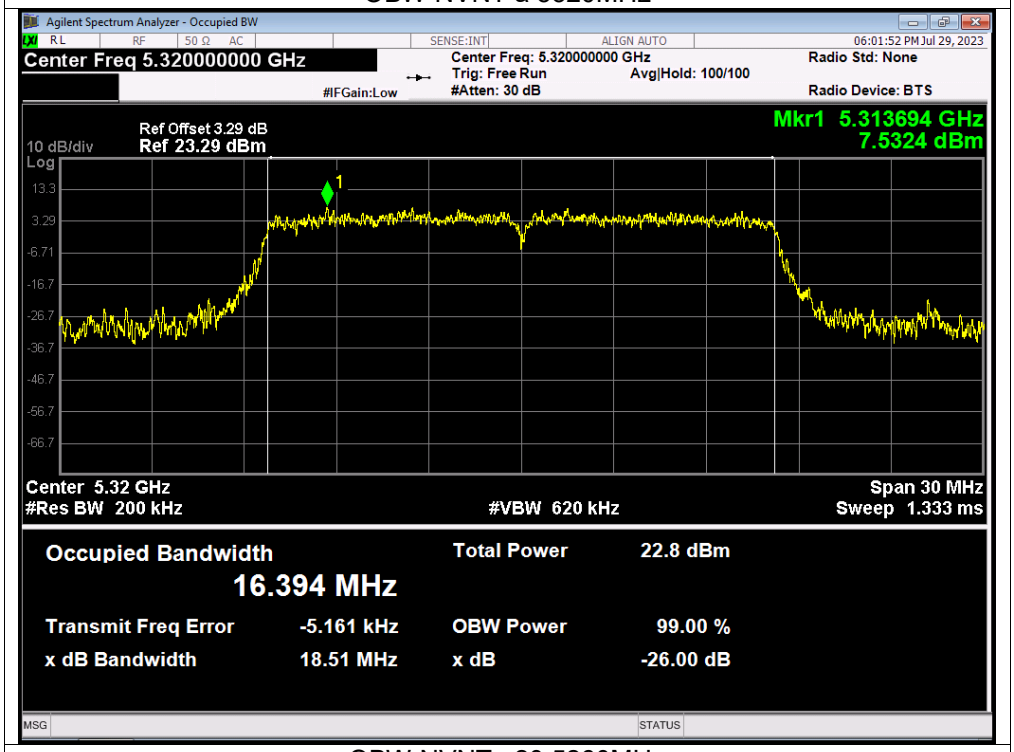
OBW NVNT a 5260MHz



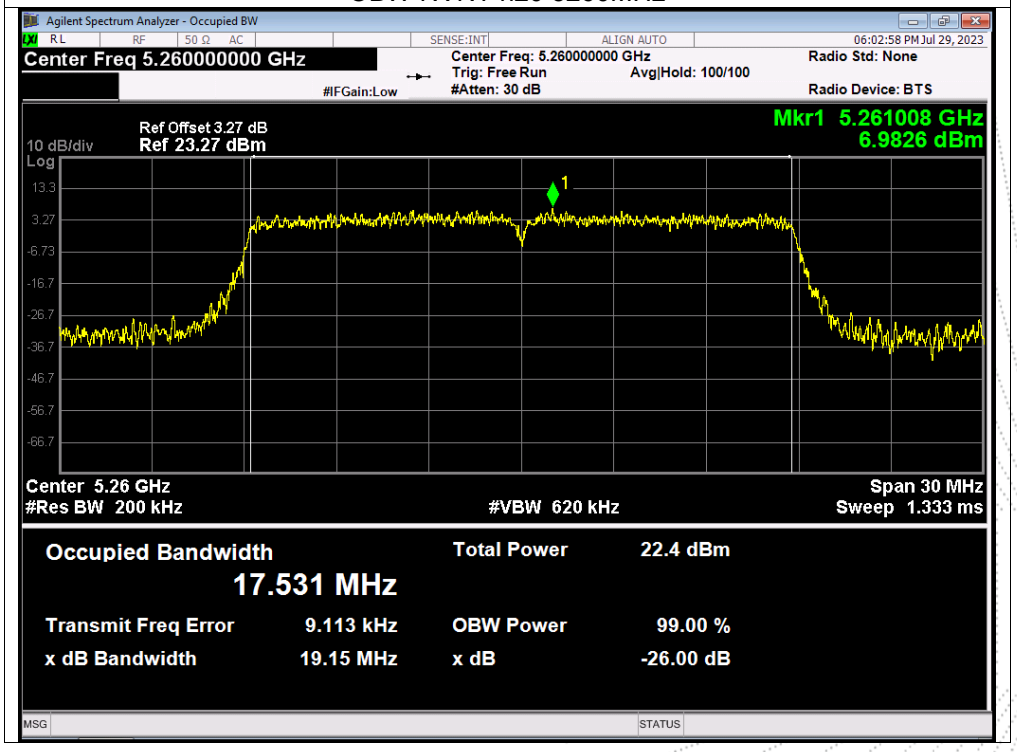
OBW NVNT a 5280MHz



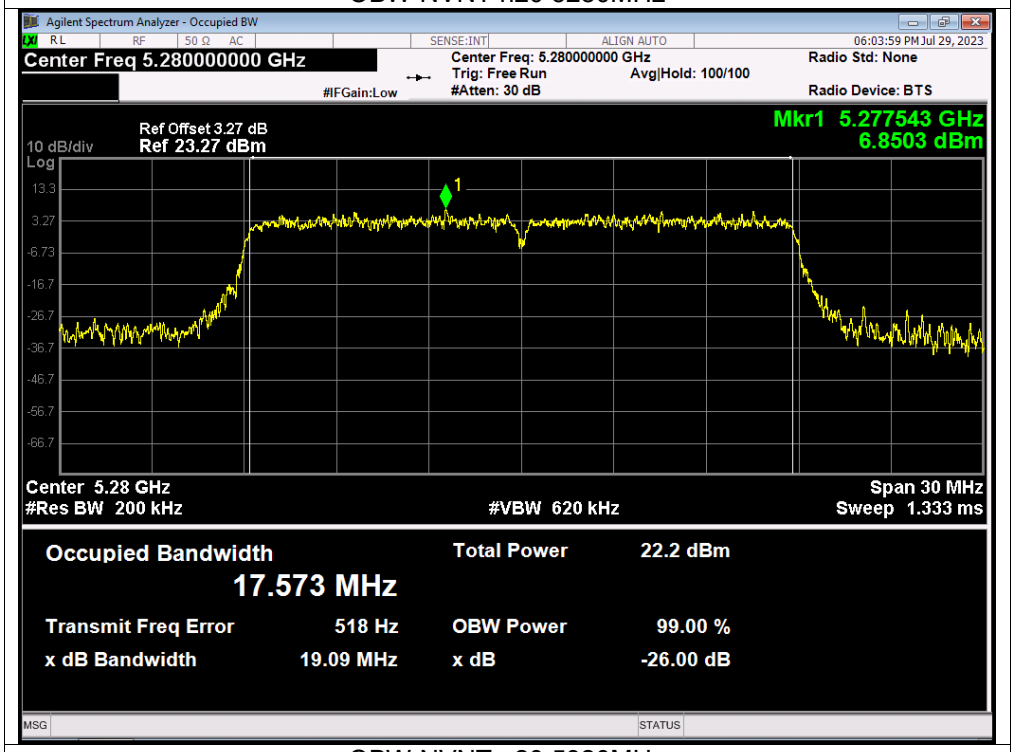
OBW NVNT a 5320MHz



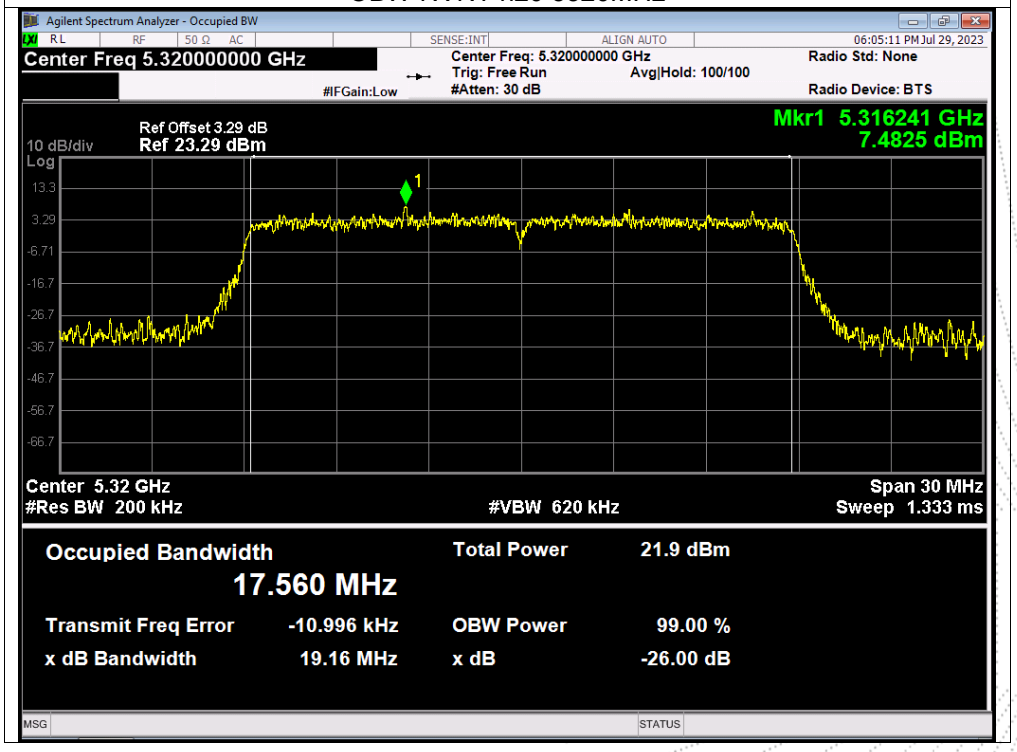
OBW NVNT n20 5260MHz



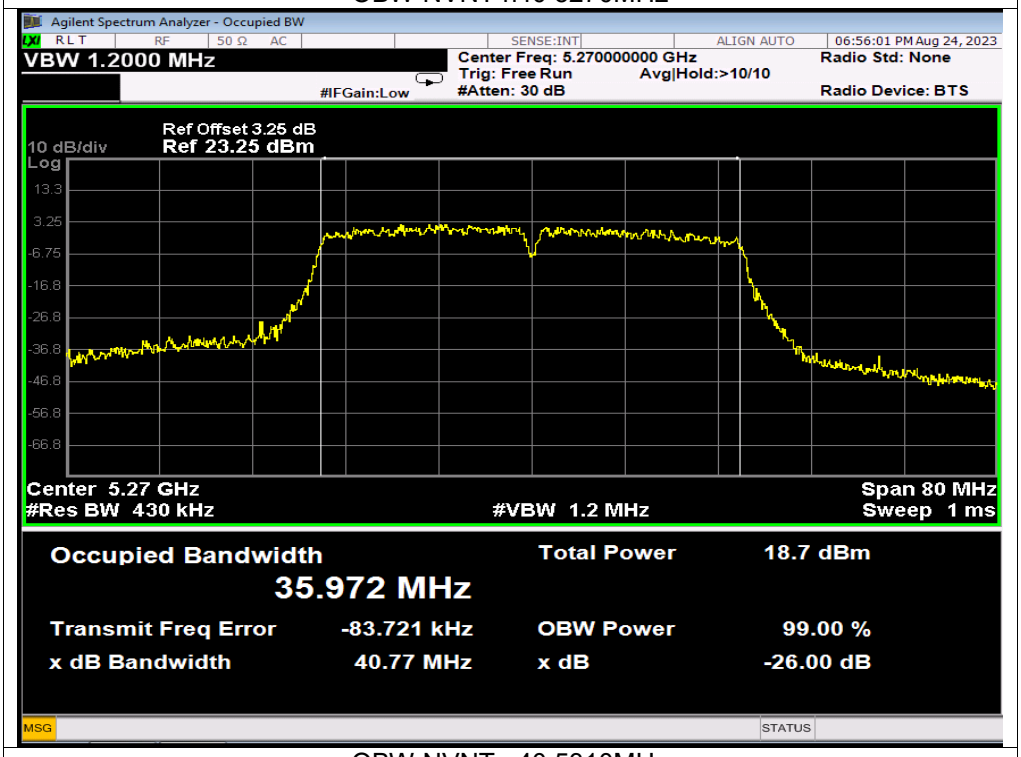
OBW NVNT n20 5280MHz



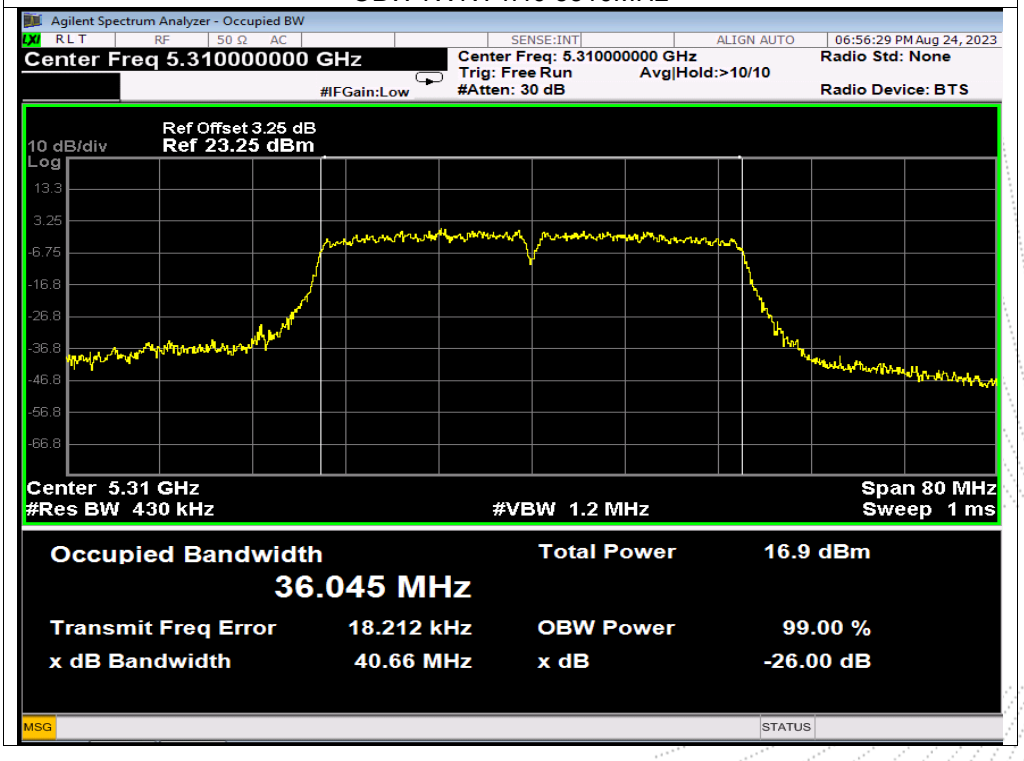
OBW NVNT n20 5320MHz



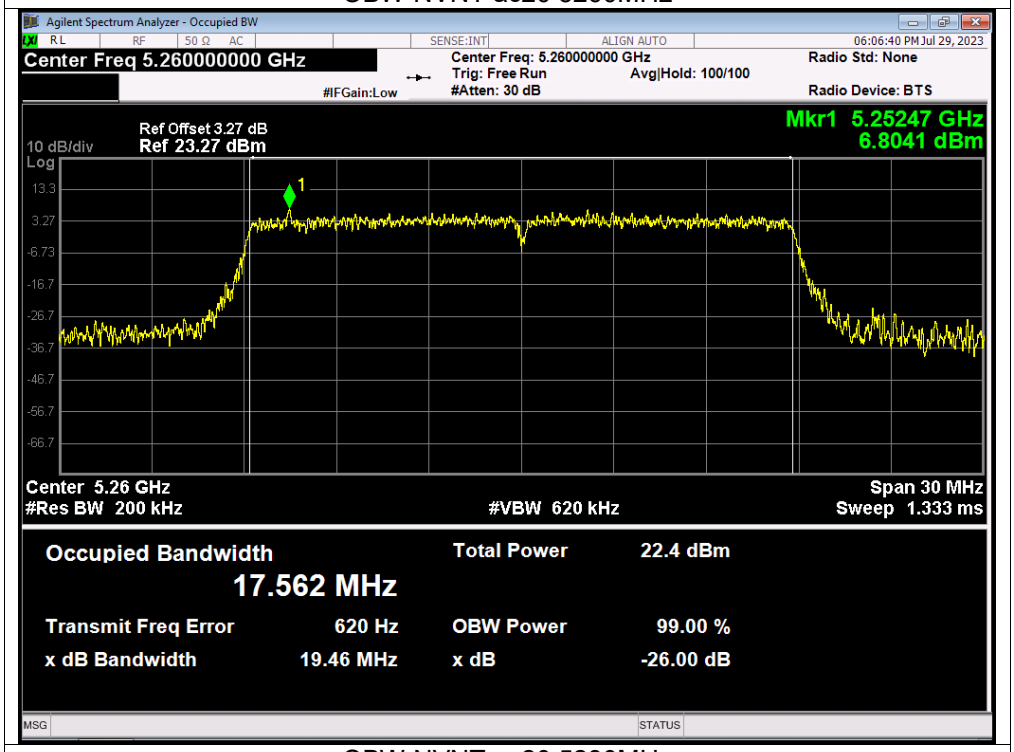
OBW NVNT n40 5270MHz



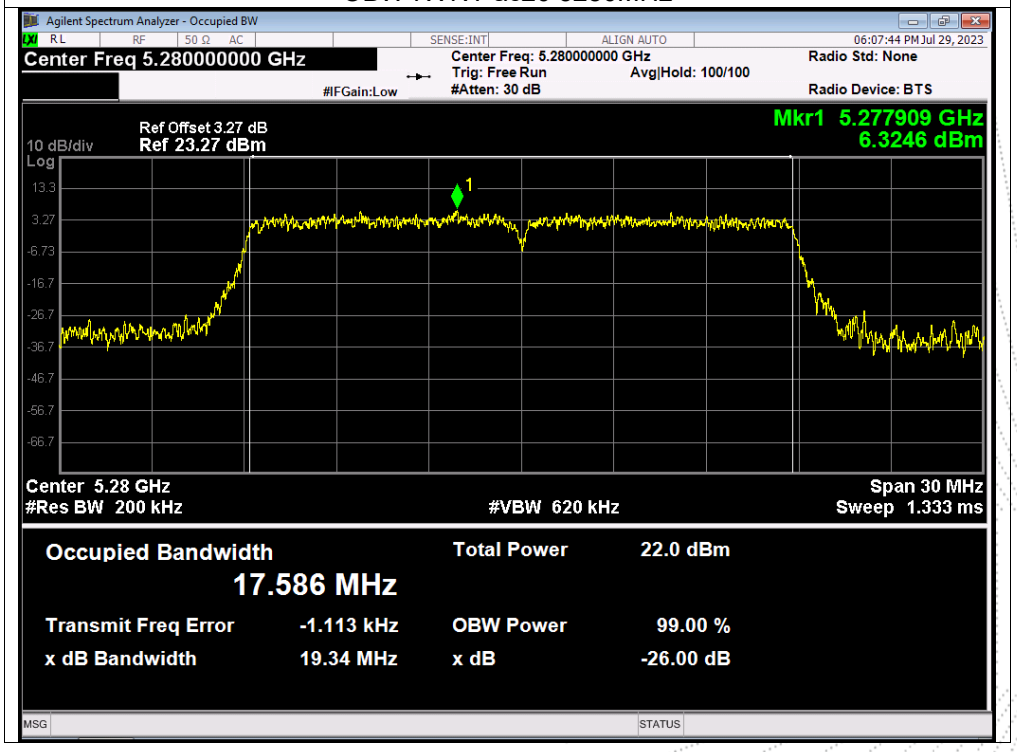
OBW NVNT n40 5310MHz



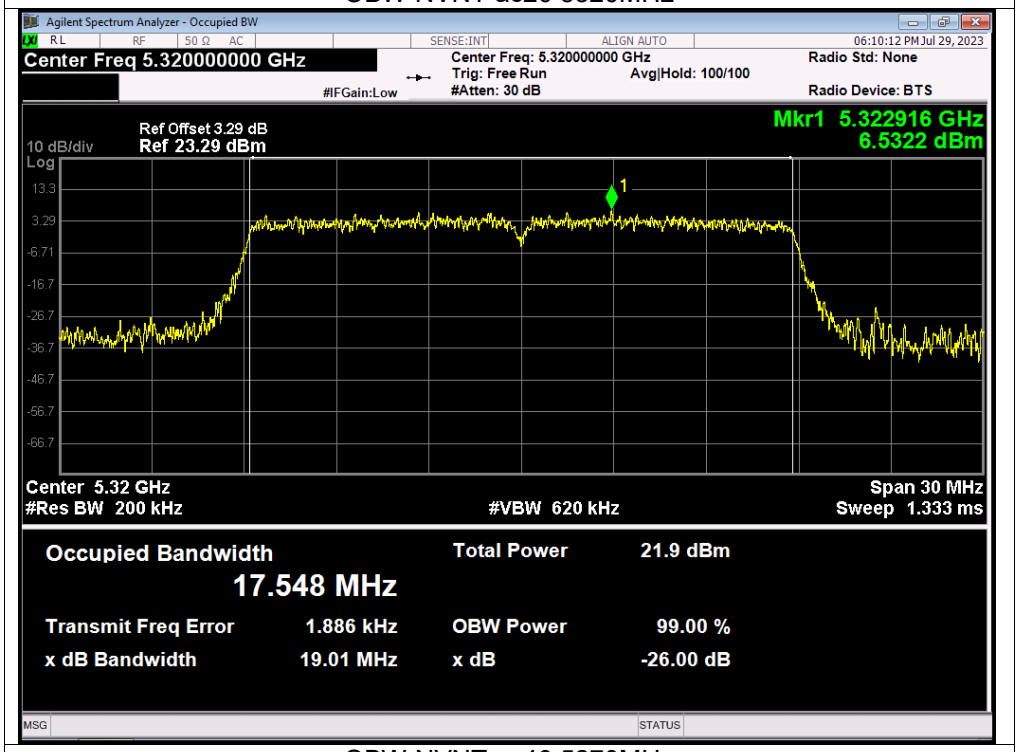
OBW NVNT ac20 5260MHz



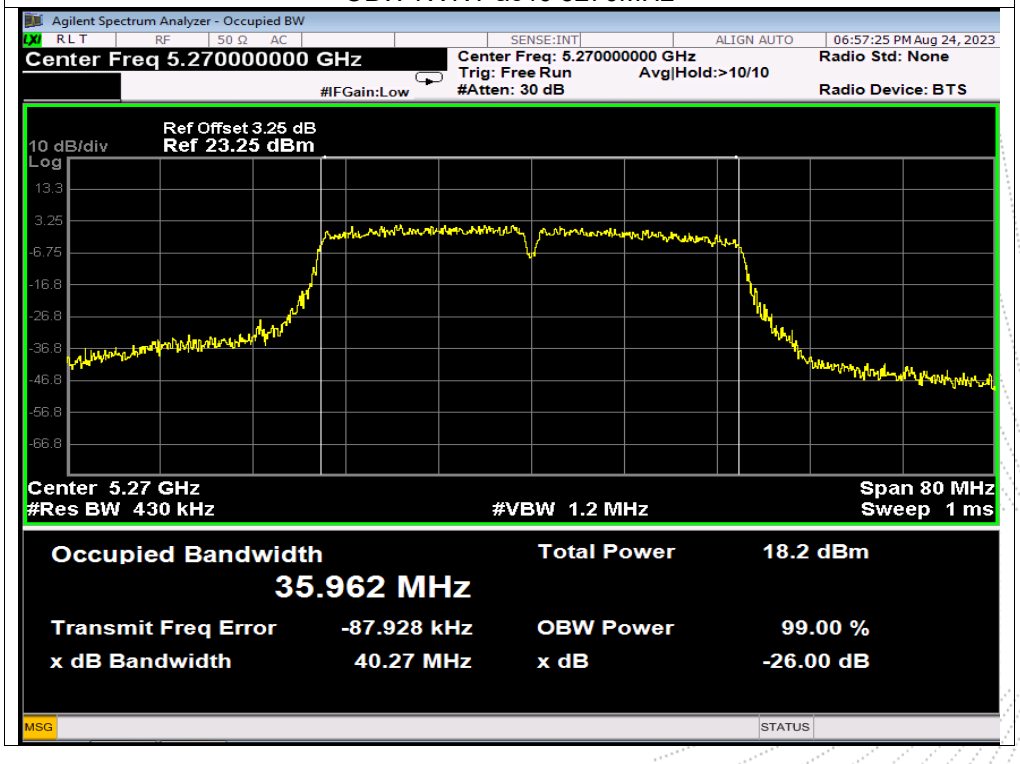
OBW NVNT ac20 5280MHz



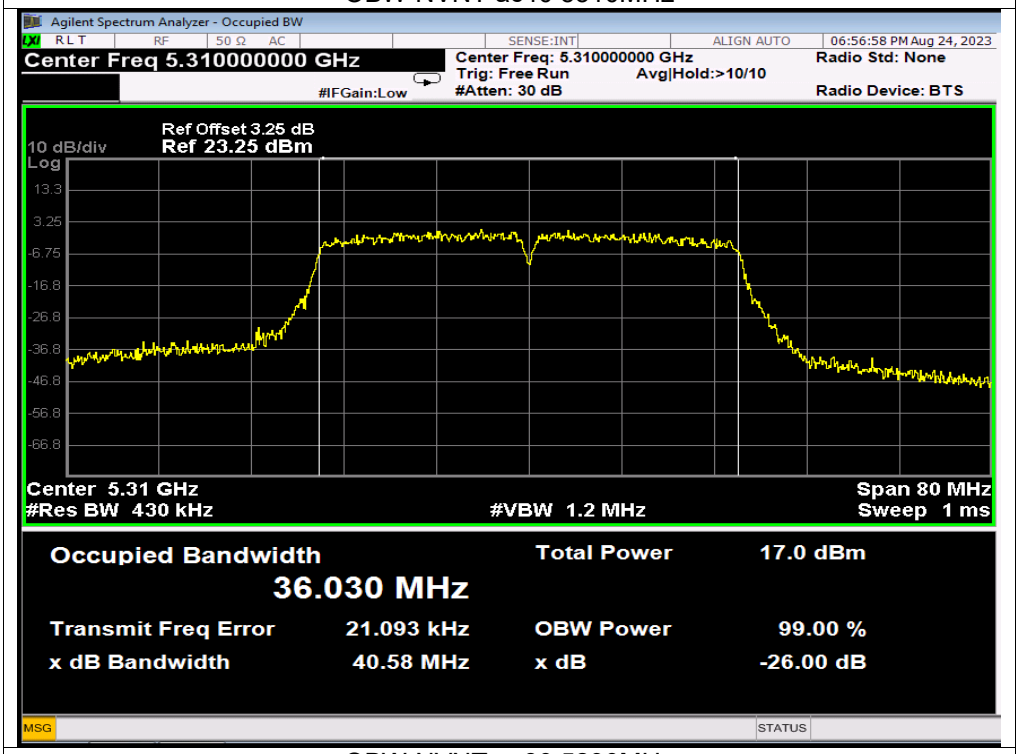
OBW NVNT ac20 5320MHz



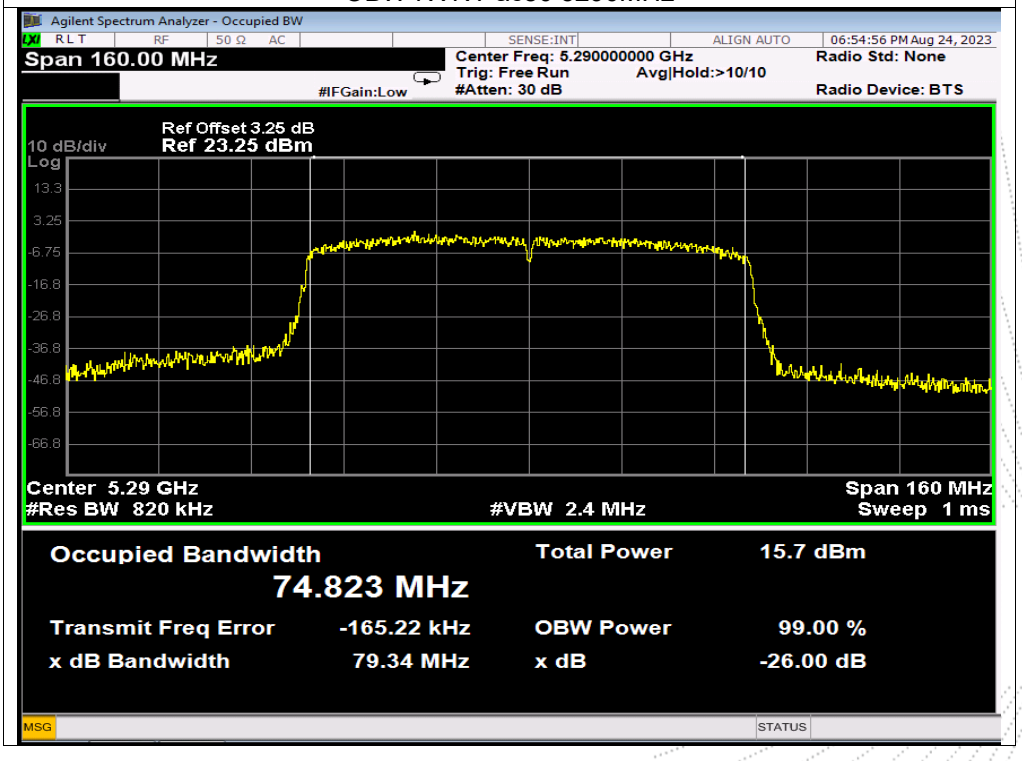
OBW NVNT ac40 5270MHz



OBW NVNT ac40 5310MHz



OBW NVNT ac80 5290MHz



Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	AC 120V/60Hz
Test Mode:	(5500-5700MHz)		

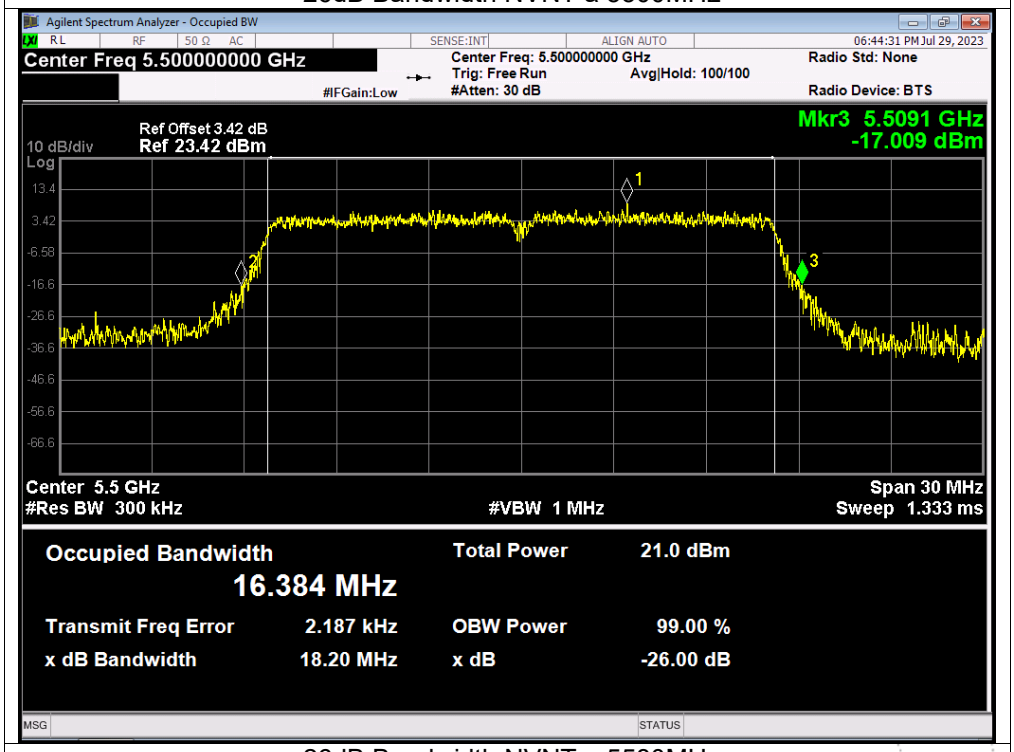
Condition	Mode	Frequency (MHz)	-26 dB Bandwidth (MHz)		Verdict
			Ant A	Ant B	
NVNT	a	5500	18.196	20.971	Pass
NVNT	a	5580	18.469	18.687	Pass
NVNT	a	5700	18.335	18.911	Pass
NVNT	n20	5500	19.563	19.458	Pass
NVNT	n20	5580	22.338	19.315	Pass
NVNT	n20	5700	19.438	19.348	Pass
NVNT	n40	5510	41.040	41.924	Pass
NVNT	n40	5590	41.960	41.621	Pass
NVNT	n40	5670	41.170	41.235	Pass
NVNT	ac20	5500	19.363	19.376	Pass
NVNT	ac20	5580	19.307	19.598	Pass
NVNT	ac20	5700	19.501	19.568	Pass
NVNT	ac40	5510	40.740	41.526	Pass
NVNT	ac40	5590	41.440	40.681	Pass
NVNT	ac40	5670	41.500	41.314	Pass
NVNT	ac80	5530	80.240	78.658	Pass

Condition	Mode	Frequency (MHz)	99% OBW (MHz)	
			Ant A	Ant B
NVNT	a	5500	16.349	16.376
NVNT	a	5580	16.361	16.365
NVNT	a	5700	16.361	16.347
NVNT	n20	5500	17.571	17.559
NVNT	n20	5580	17.563	17.555
NVNT	n20	5700	17.548	17.571
NVNT	n40	5510	36.001	36.034
NVNT	n40	5590	36.000	35.971
NVNT	n40	5670	36.005	35.985
NVNT	ac20	5500	17.554	17.579
NVNT	ac20	5580	17.561	17.563
NVNT	ac20	5700	17.559	17.568
NVNT	ac40	5510	35.933	35.986
NVNT	ac40	5590	36.094	36.05
NVNT	ac40	5670	35.996	36.12
NVNT	ac80	5530	74.620	74.237

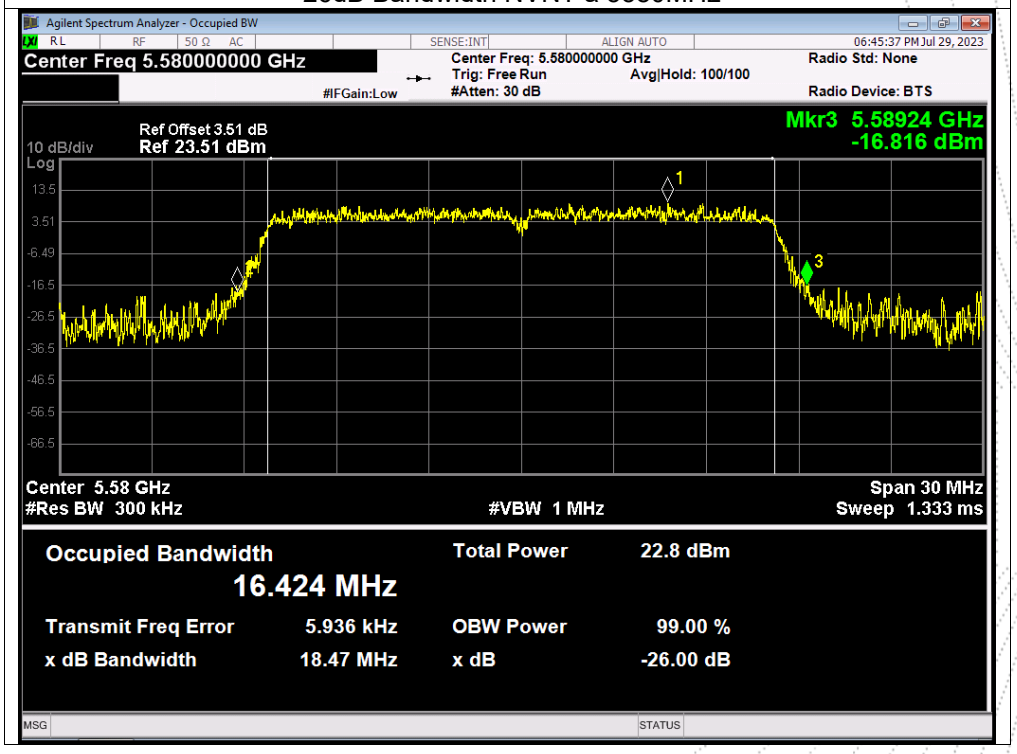
Note: A(B) Represent the value of antenna A and B, The worst data is Antenna A, only shown Antenna A Plot.

Test Graphs

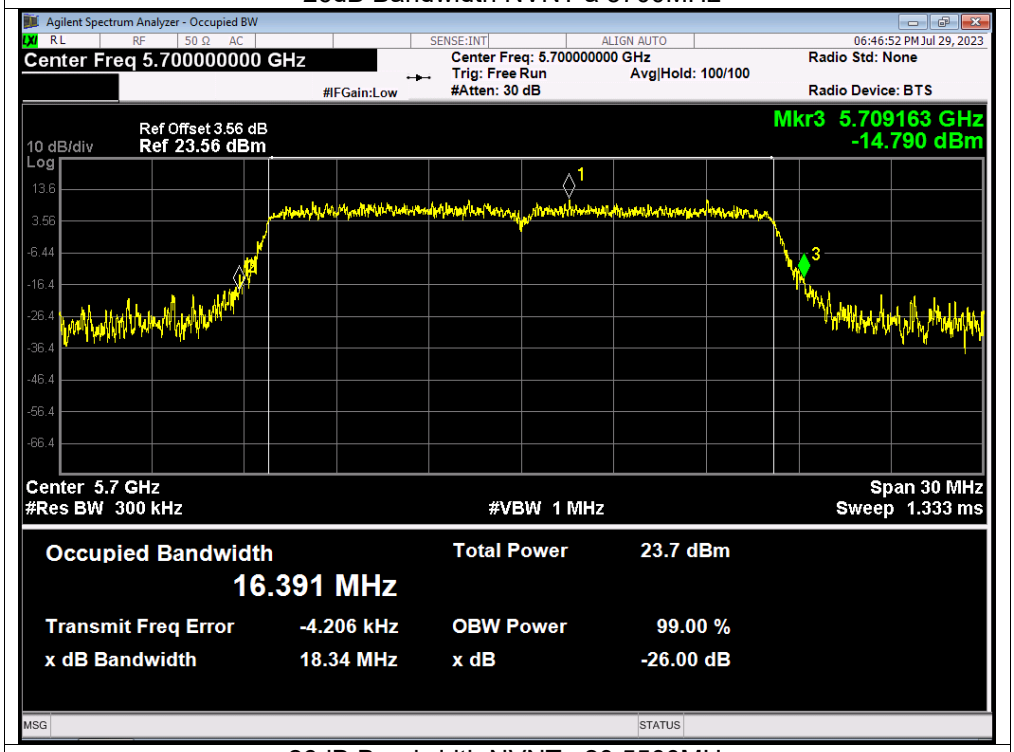
-26dB Bandwidth NVNT a 5500MHz



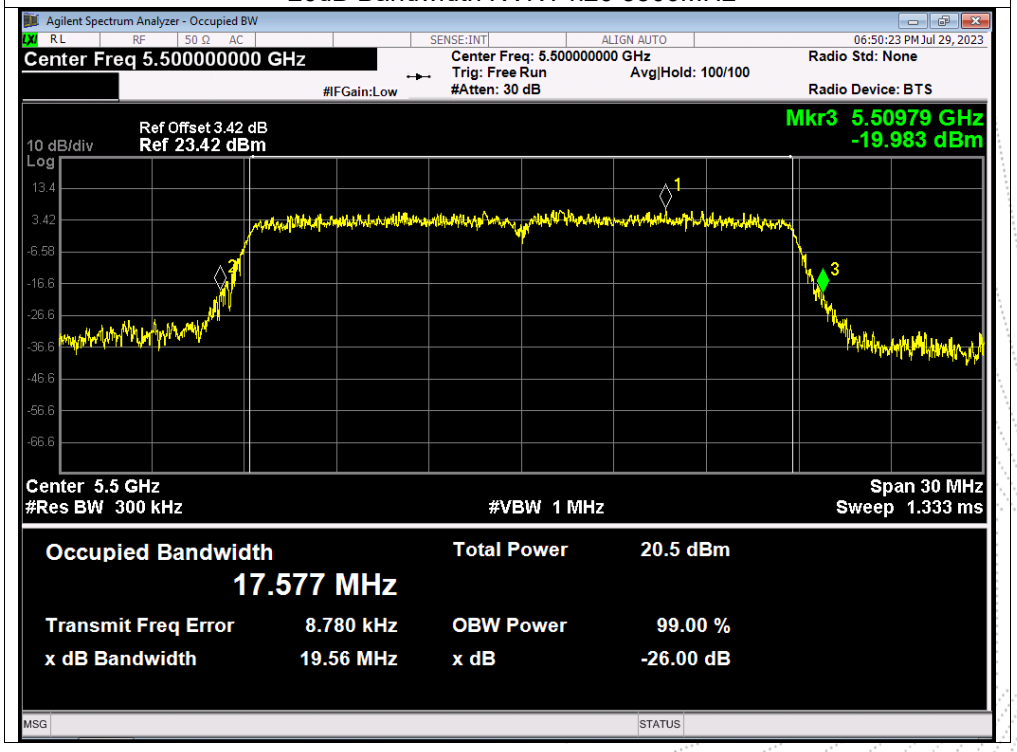
-26dB Bandwidth NVNT a 5580MHz



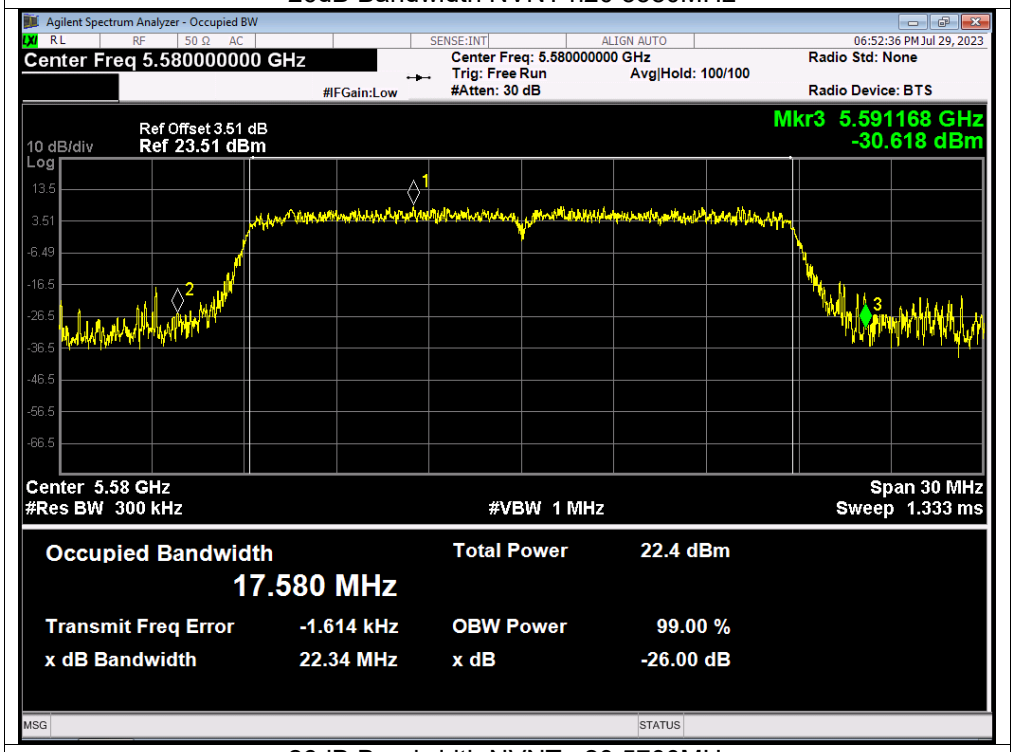
-26dB Bandwidth NVNT a 5700MHz



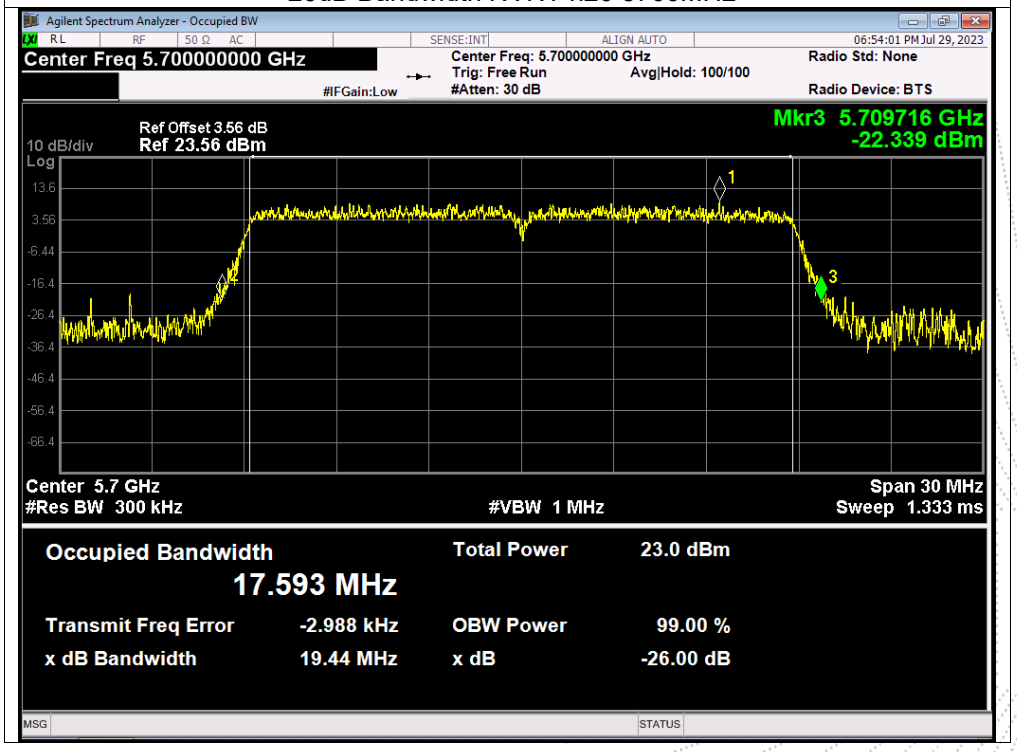
-26dB Bandwidth NVNT n20 5500MHz



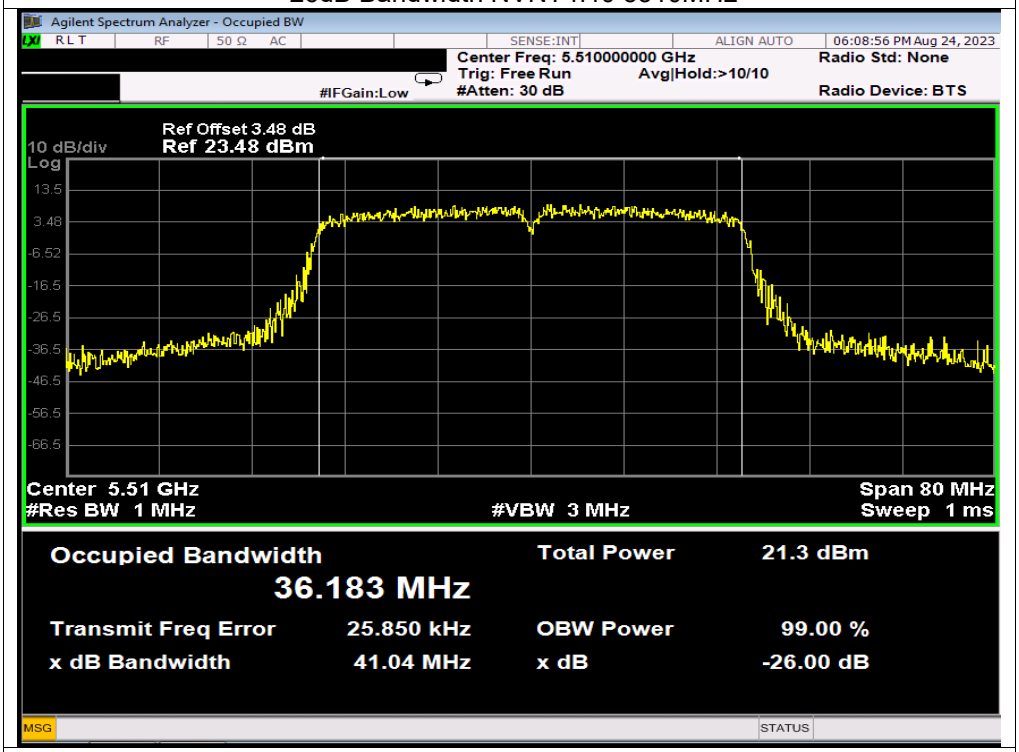
-26dB Bandwidth NVNT n20 5580MHz



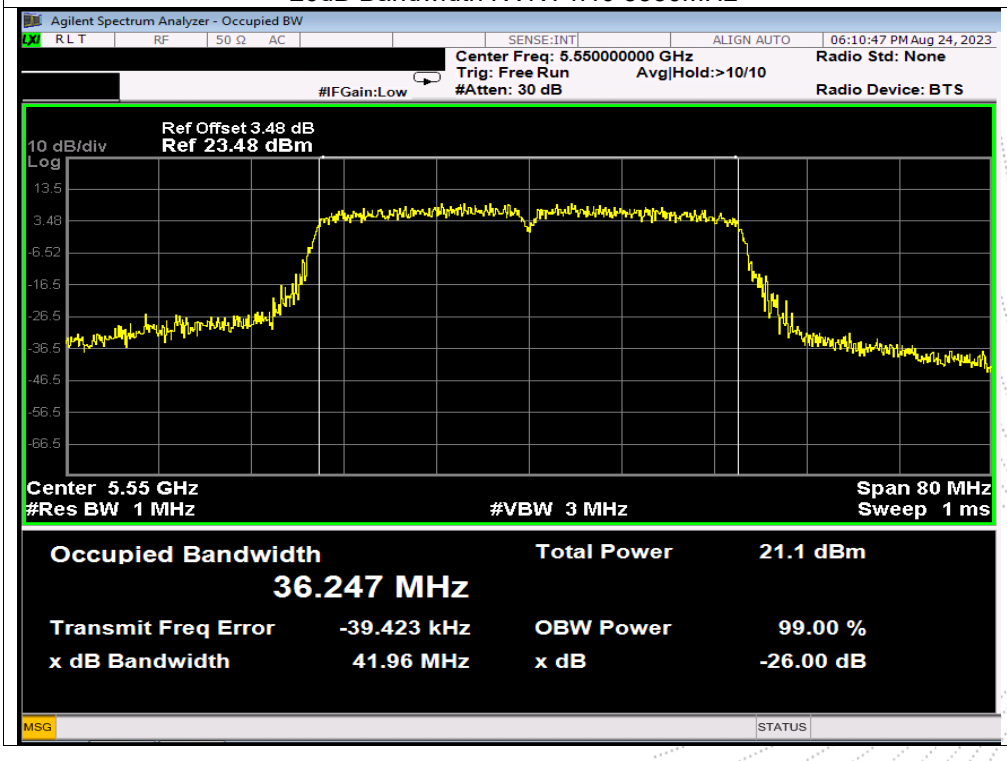
-26dB Bandwidth NVNT n20 5700MHz



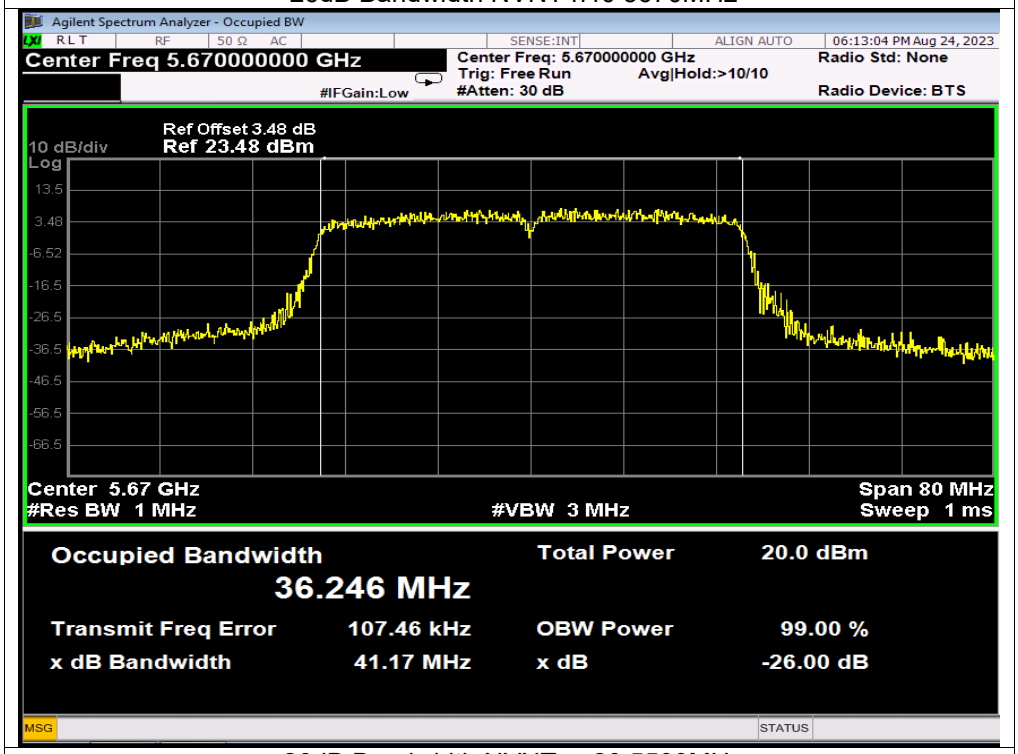
-26dB Bandwidth NVNT n40 5510MHz



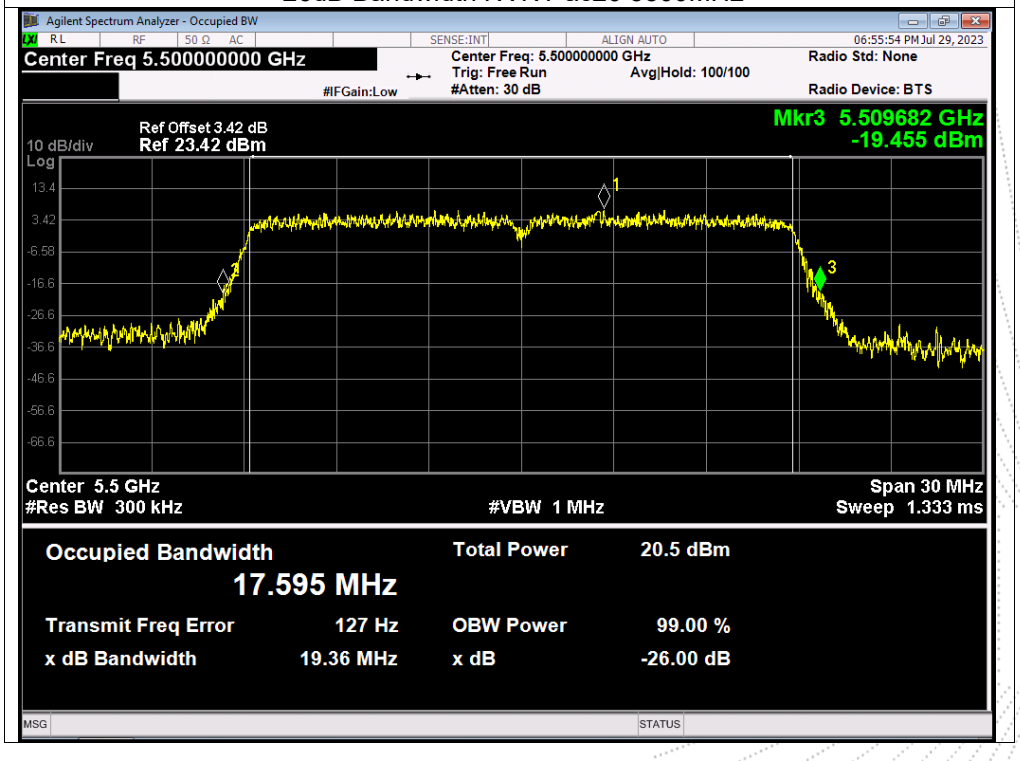
-26dB Bandwidth NVNT n40 5550MHz



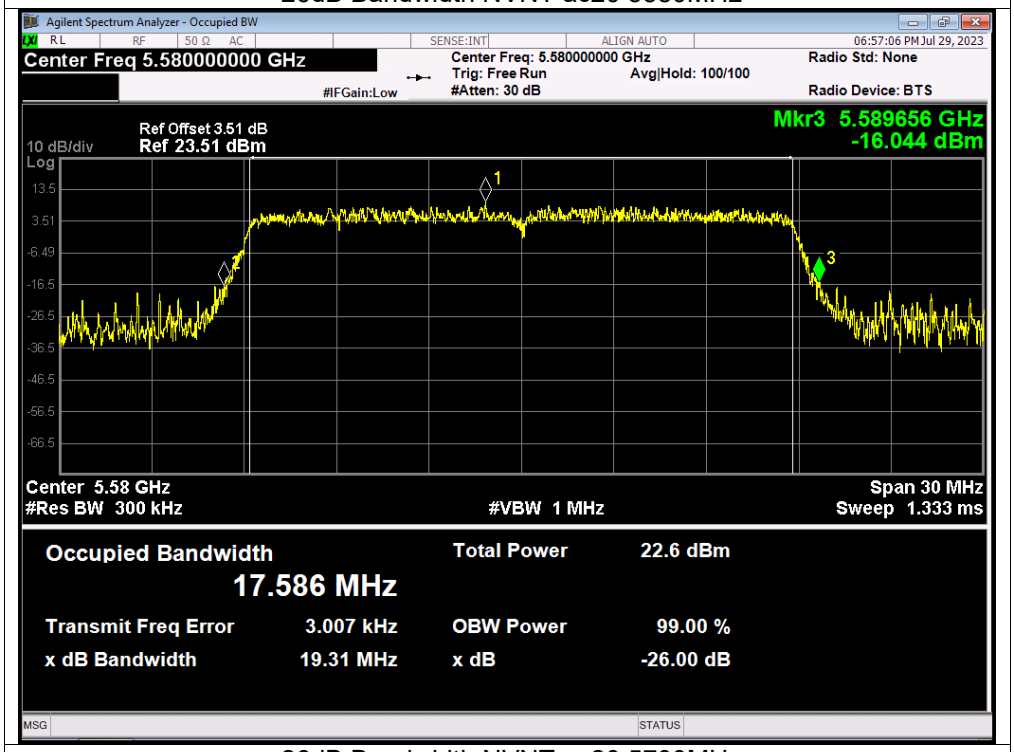
-26dB Bandwidth NVNT n40 5670MHz



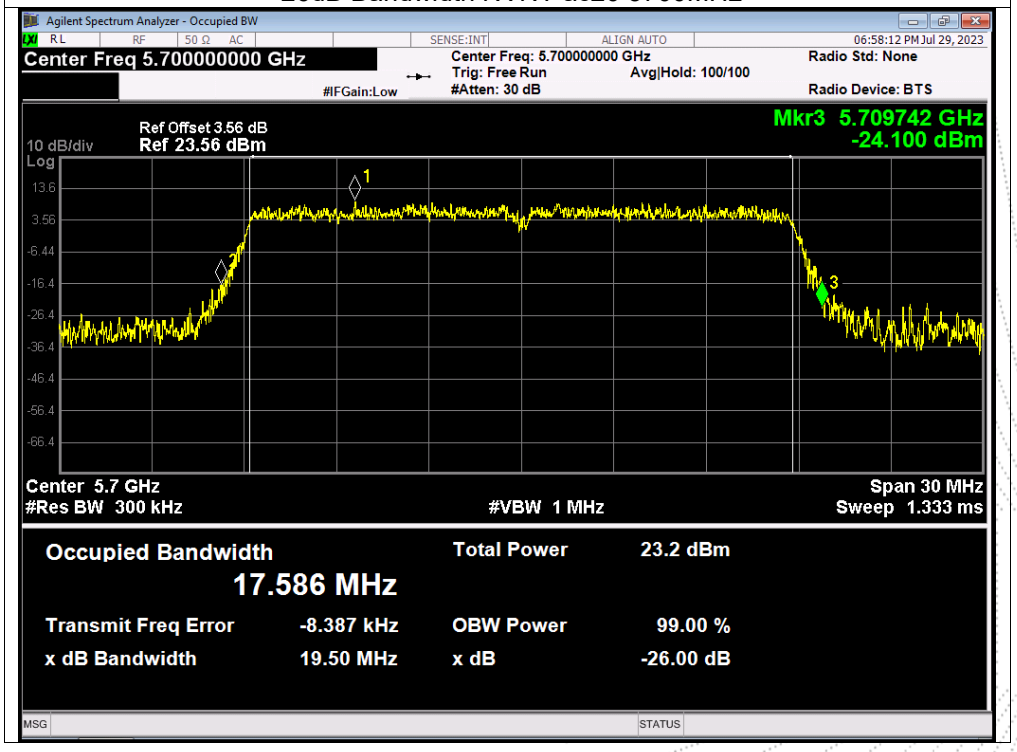
-26dB Bandwidth NVNT ac20 5500MHz



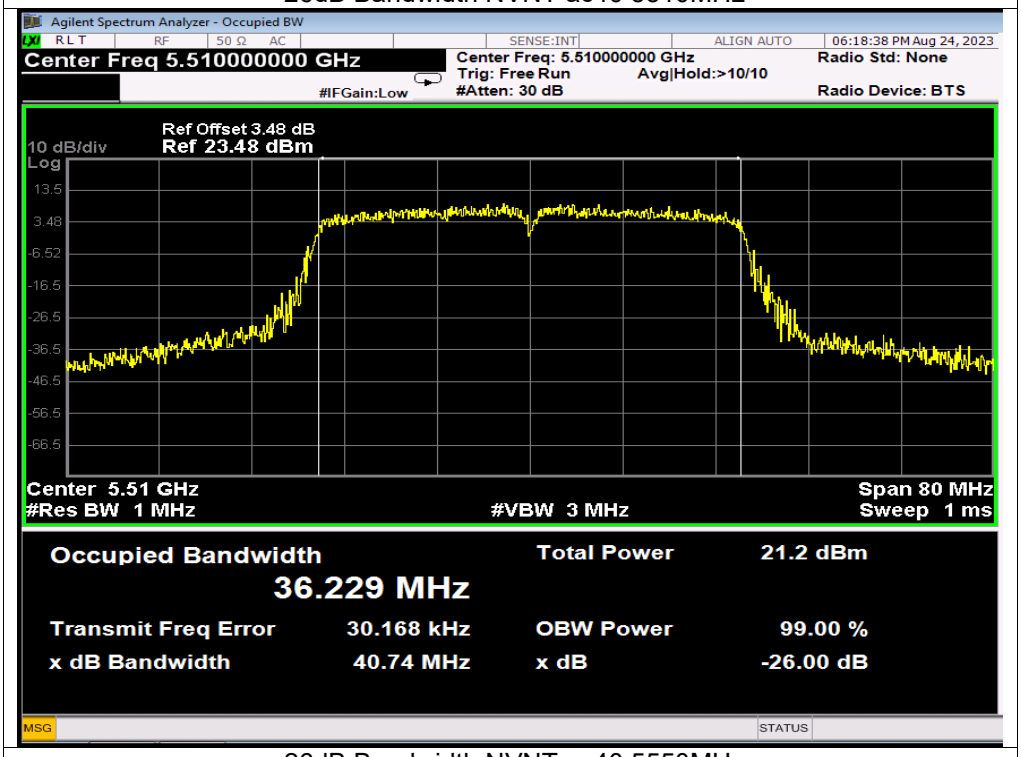
-26dB Bandwidth NVNT ac20 5580MHz



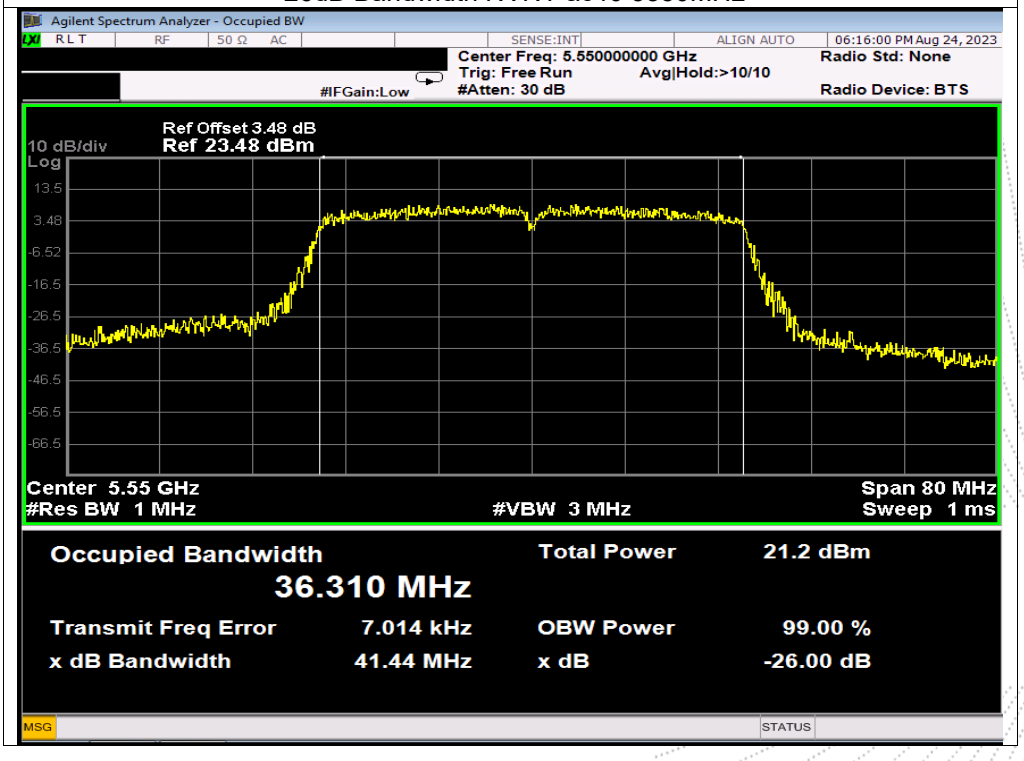
-26dB Bandwidth NVNT ac20 5700MHz



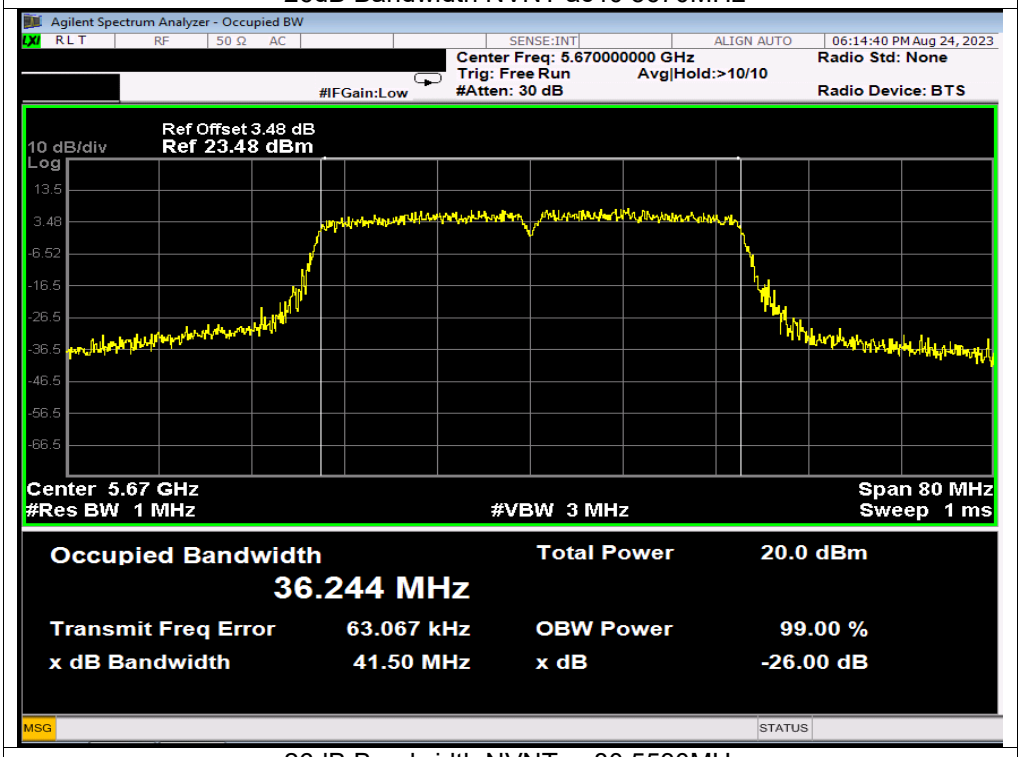
-26dB Bandwidth NVNT ac40 5510MHz



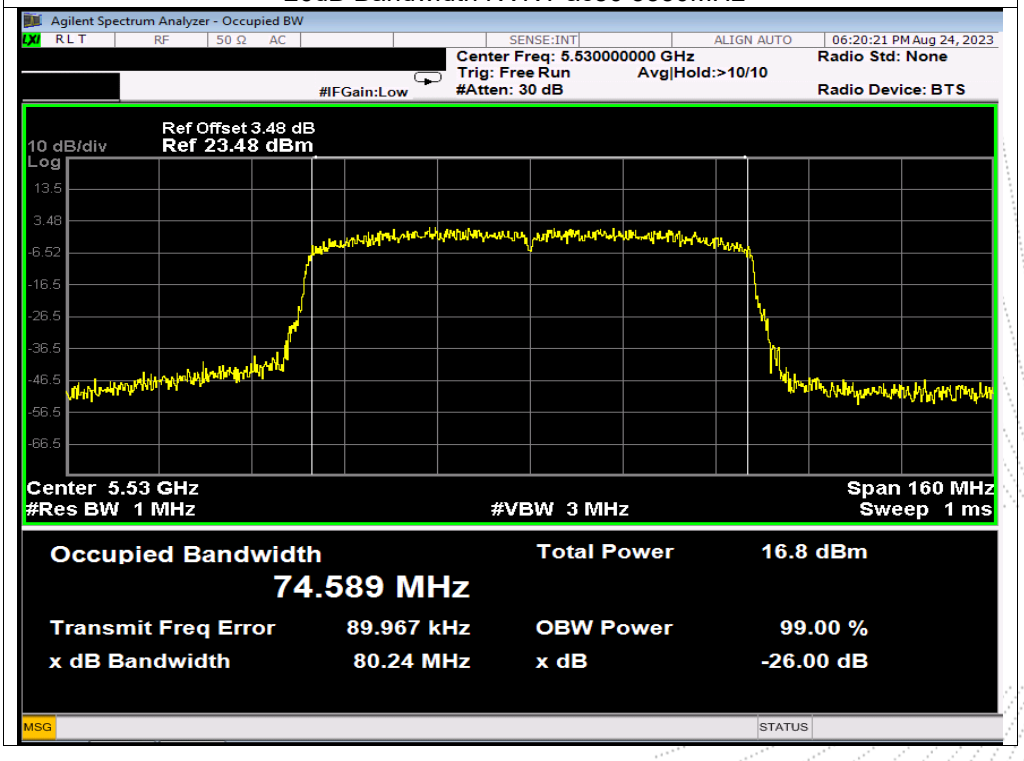
-26dB Bandwidth NVNT ac40 5550MHz



-26dB Bandwidth NVNT ac40 5670MHz

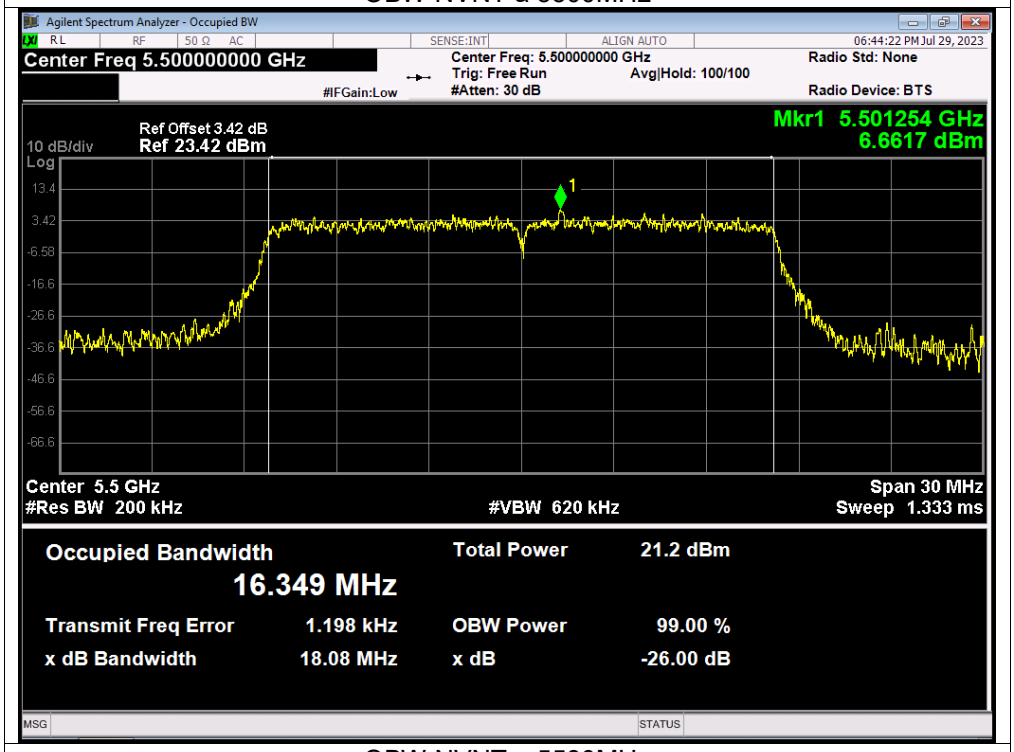


-26dB Bandwidth NVNT ac80 5530MHz

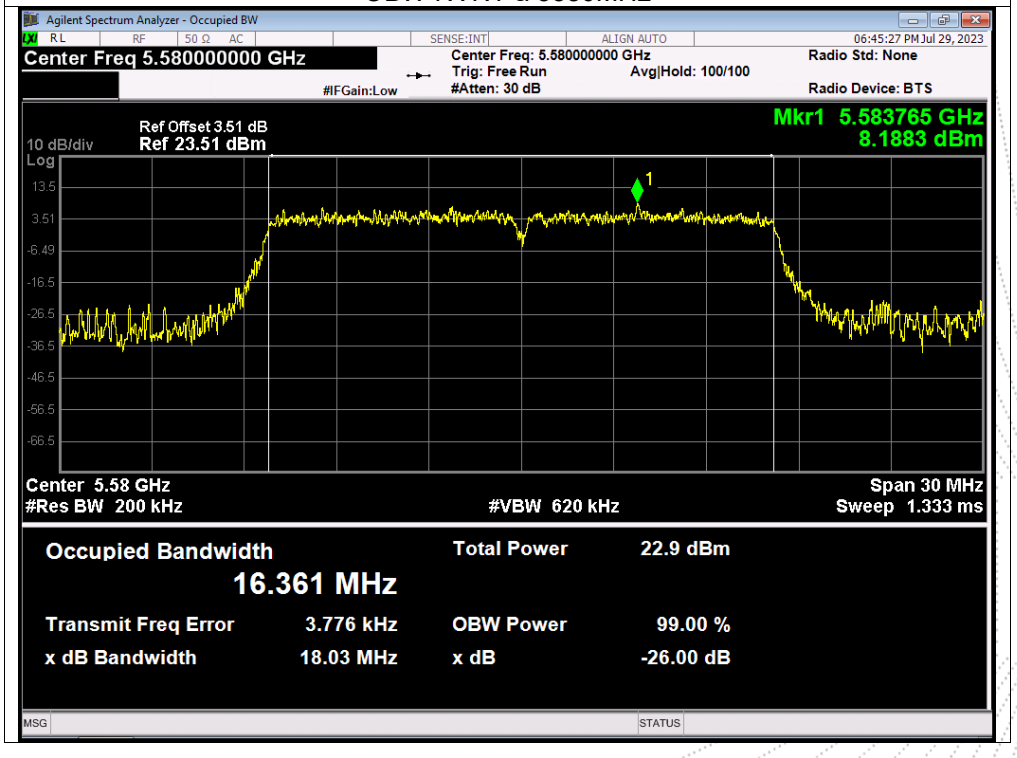


Test Graphs

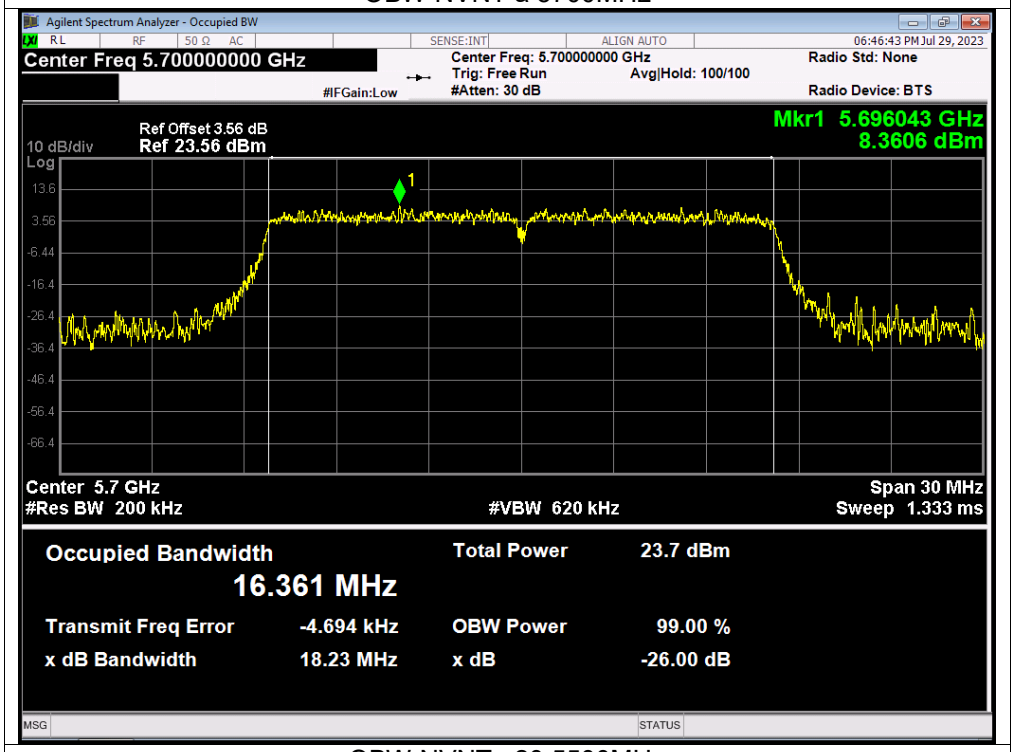
OBW NVNT a 5500MHz



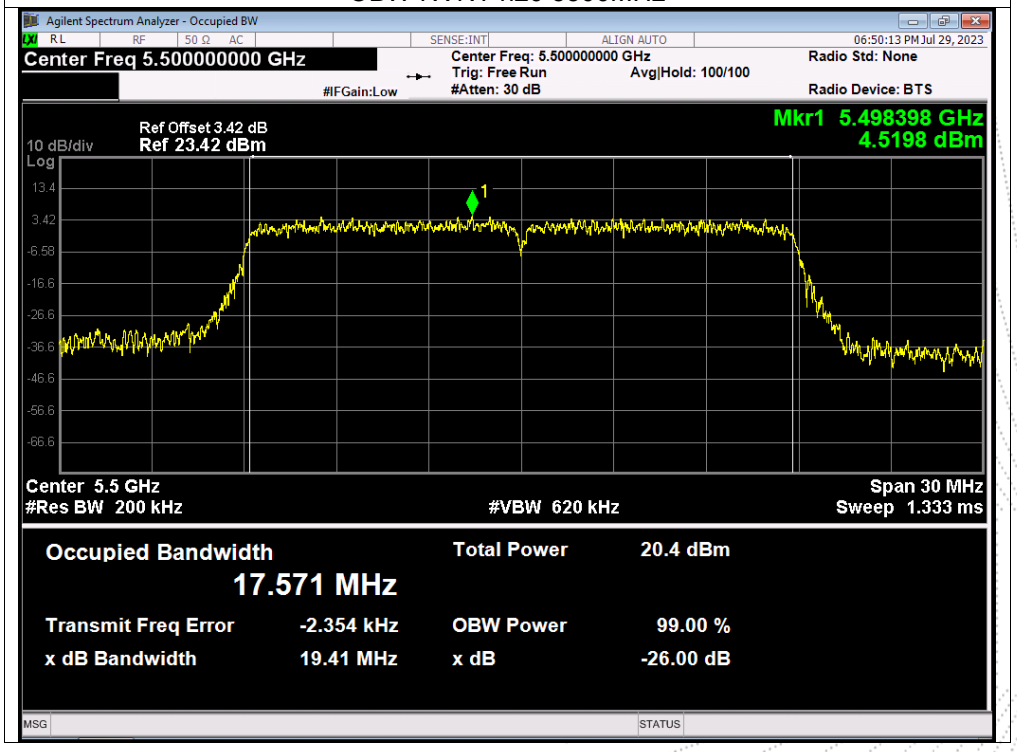
OBW NVNT a 5580MHz



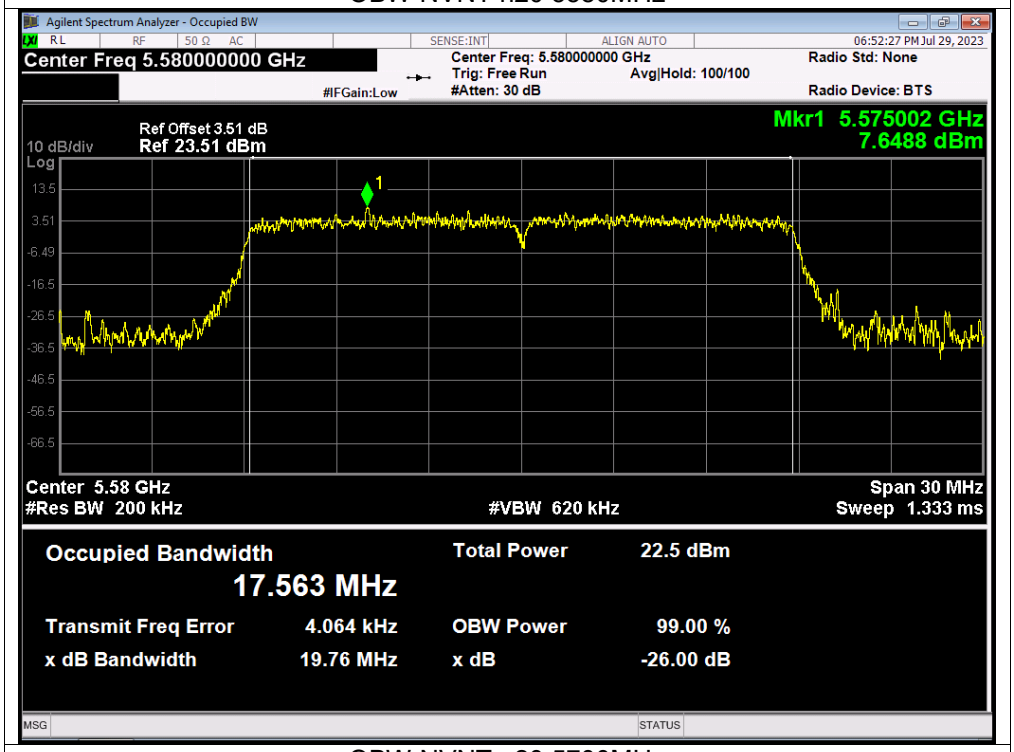
OBW NVNT a 5700MHz



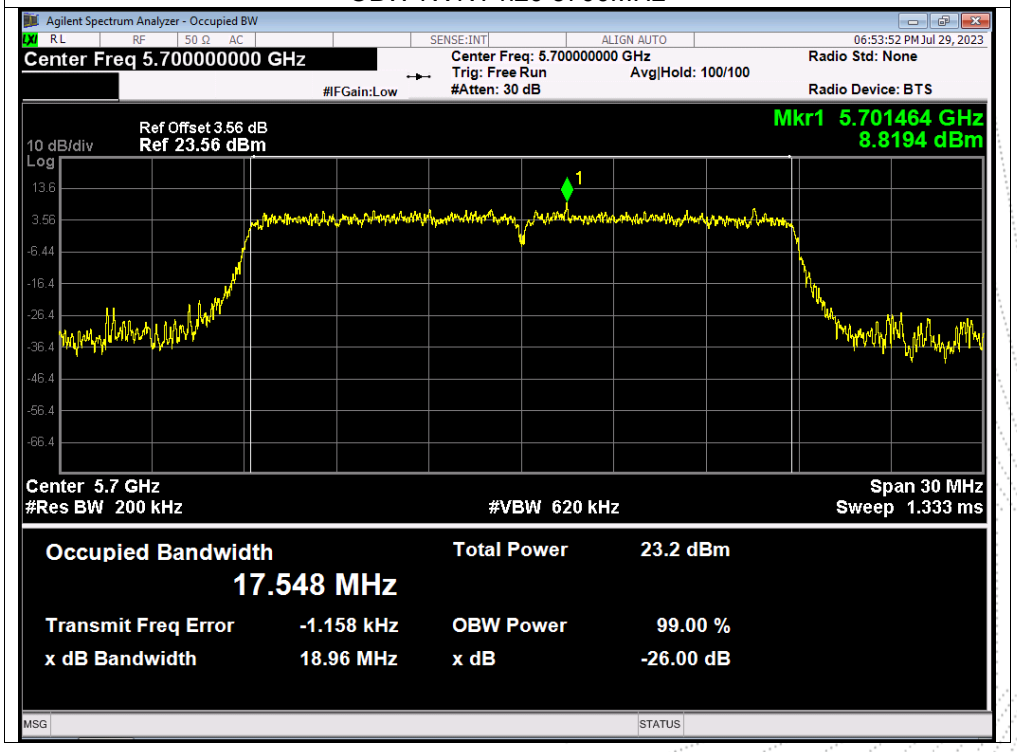
OBW NVNT n20 5500MHz



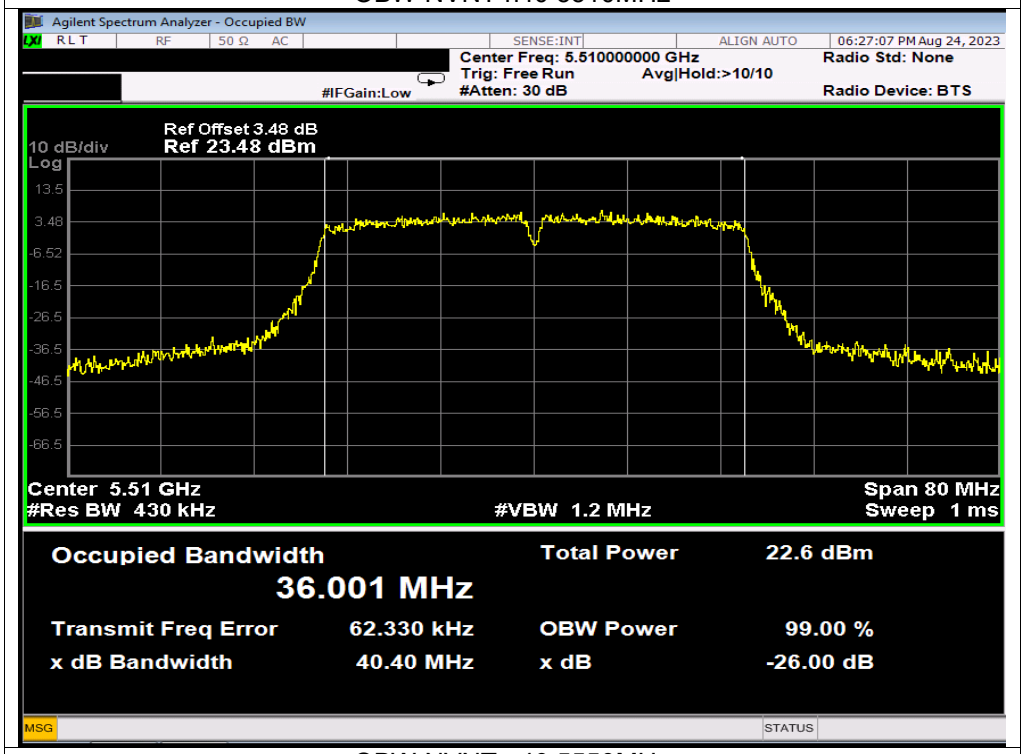
OBW NVNT n20 5580MHz



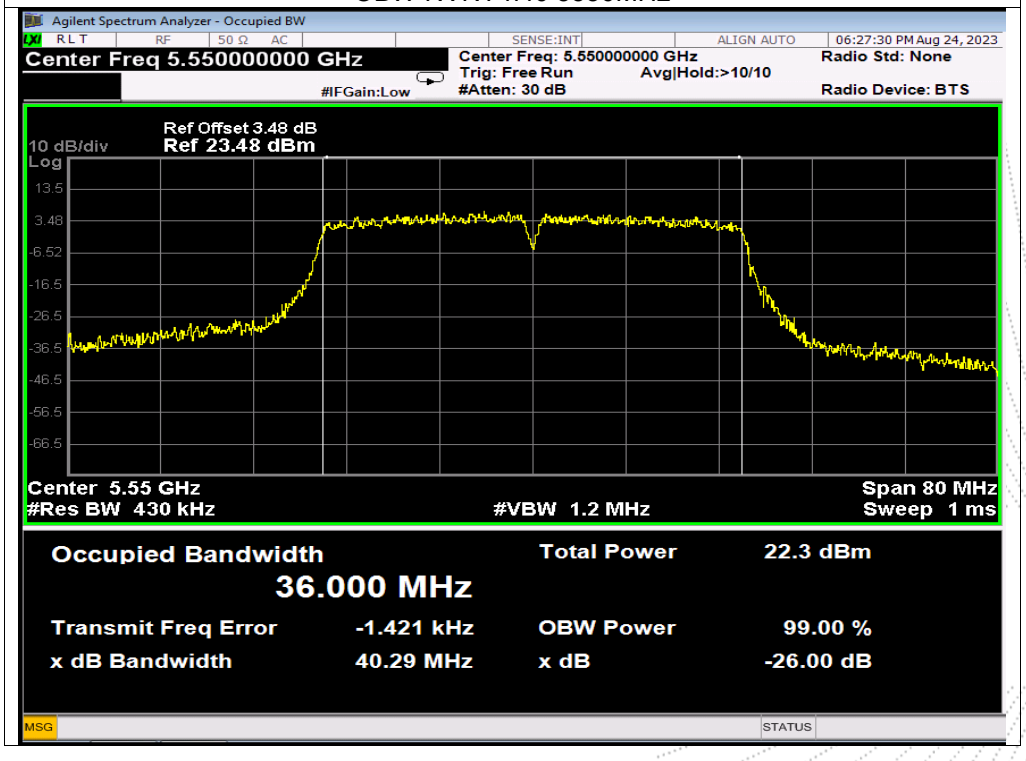
OBW NVNT n20 5700MHz



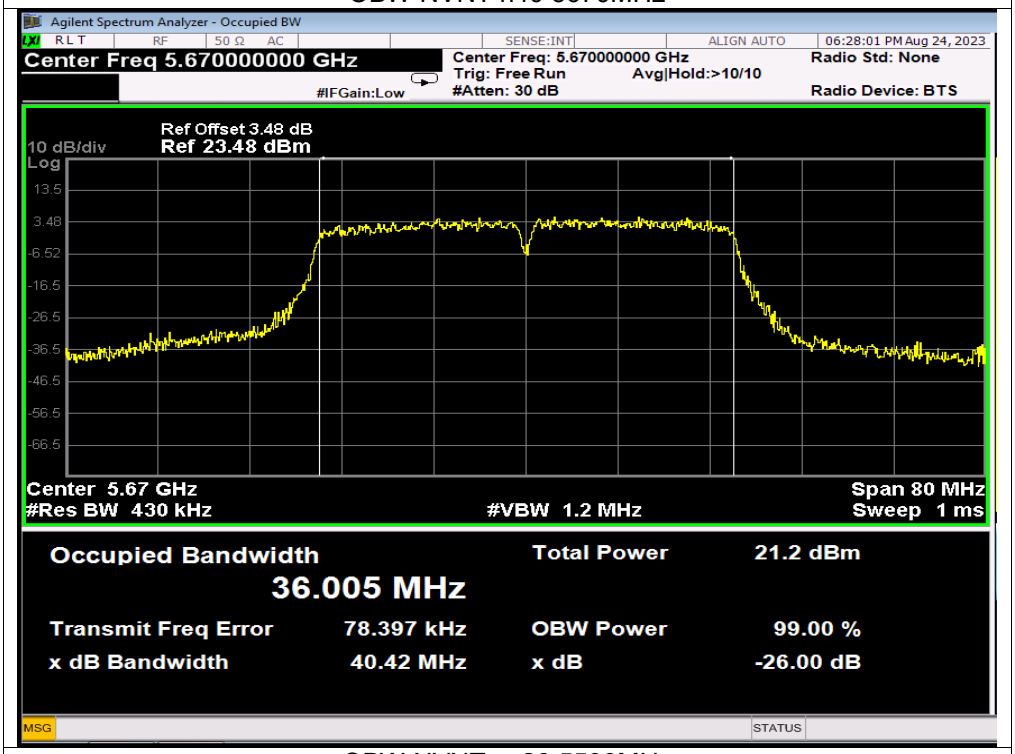
OBW NVNT n40 5510MHz



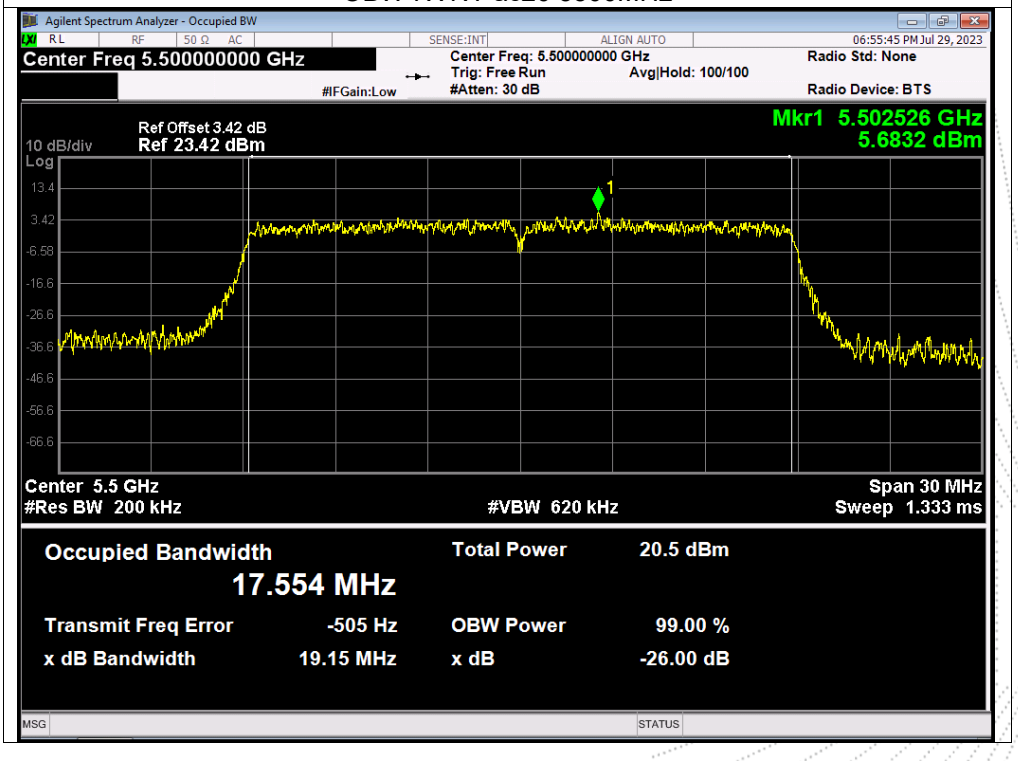
OBW NVNT n40 5550MHz



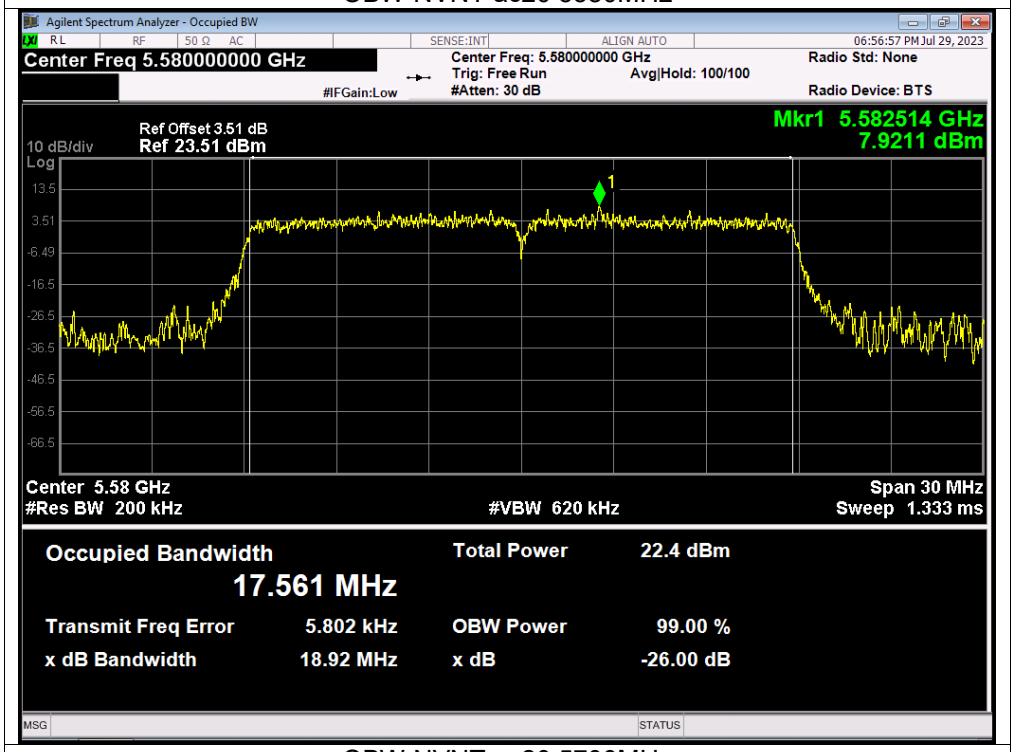
OBW NVNT n40 5670MHz



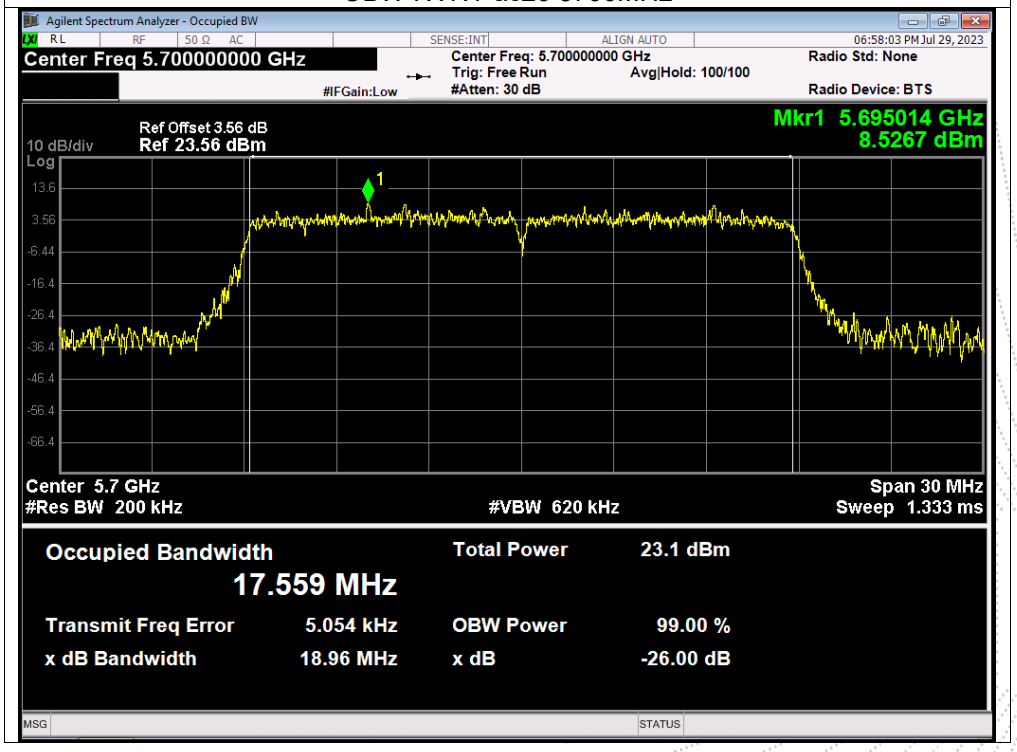
OBW NVNT ac20 5500MHz



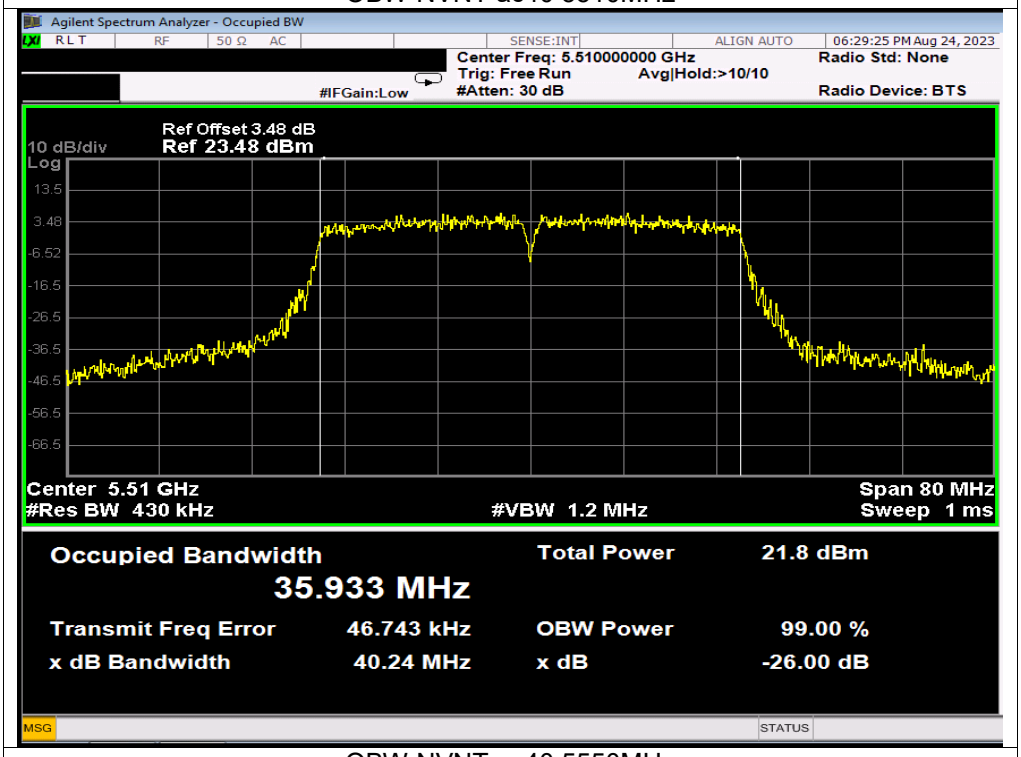
OBW NVNT ac20 5580MHz



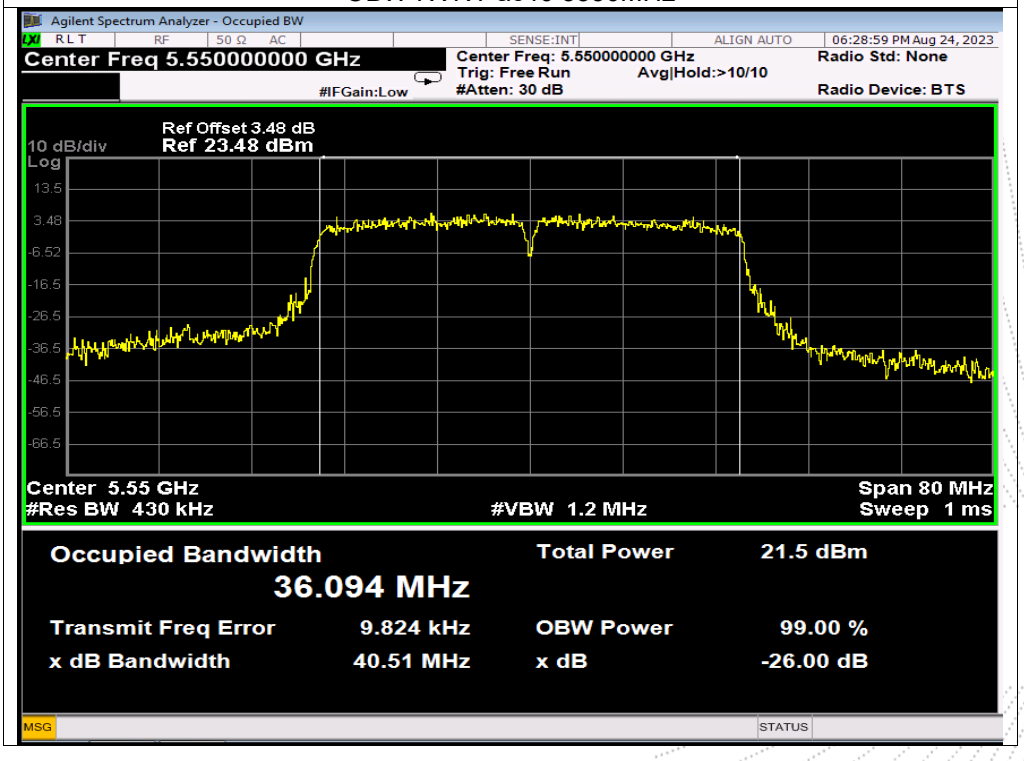
OBW NVNT ac20 5700MHz



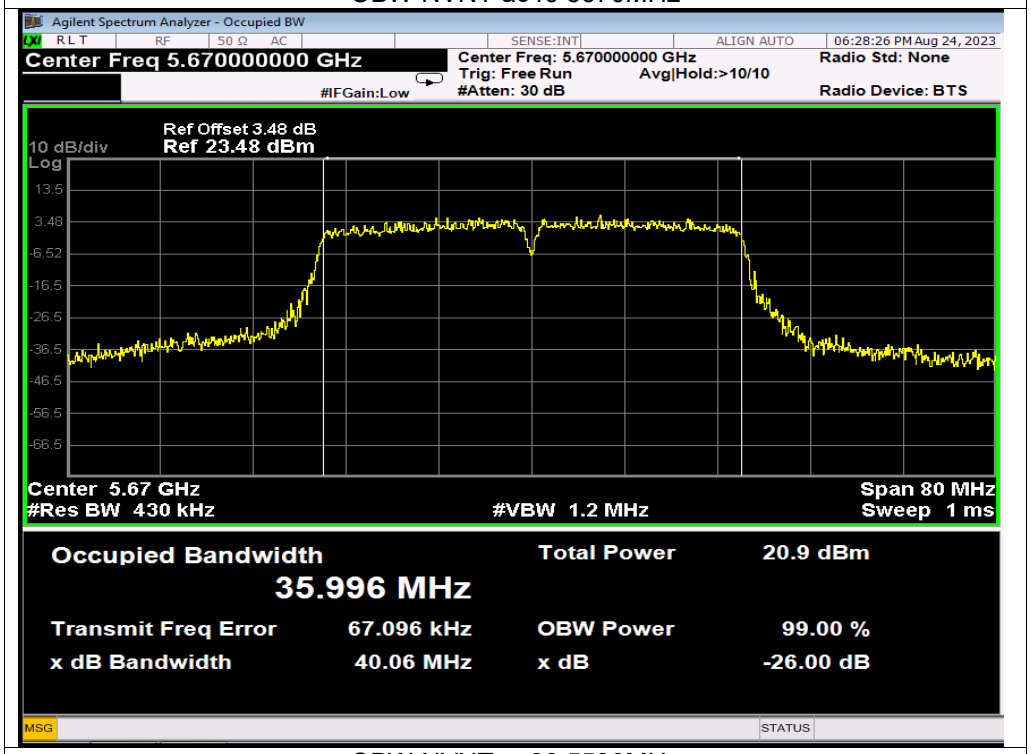
OBW NVNT ac40 5510MHz



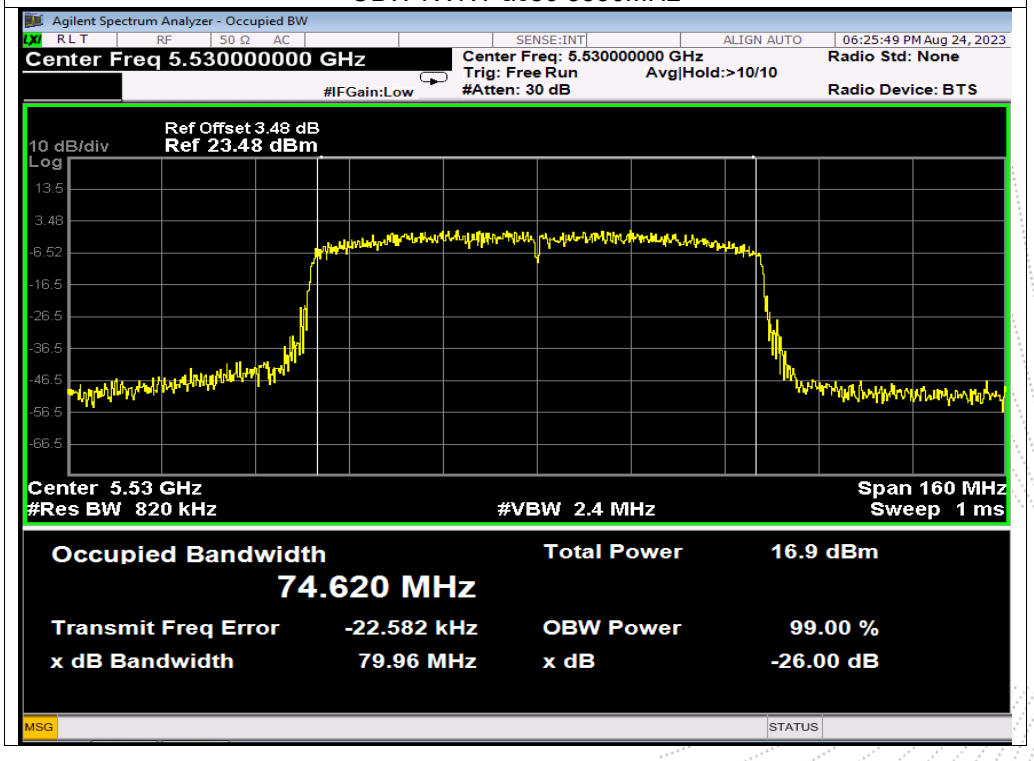
OBW NVNT ac40 5550MHz



OBW NVNT ac40 5670MHz



OBW NVNT ac80 5530MHz



Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	AC 120V/60Hz
Test Mode:	(5745-5825MHz)		

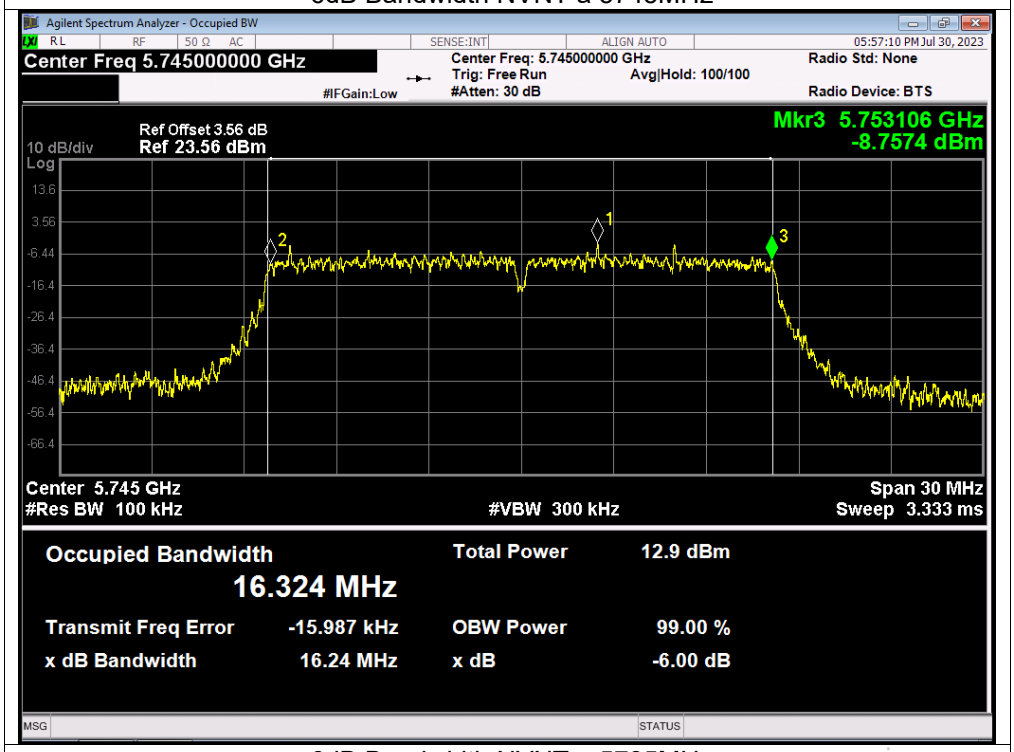
Condition	Mode	Frequency (MHz)	-6 dB Bandwidth (MHz)		Limit -6 dB Bandwidth (MHz)	Verdict
			Ant A	Ant B		
NVNT	a	5745	16.327	16.244	0.5	Pass
NVNT	a	5785	16.289	16.368	0.5	Pass
NVNT	a	5825	15.673	16.284	0.5	Pass
NVNT	n20	5745	17.591	17.576	0.5	Pass
NVNT	n20	5785	17.568	17.544	0.5	Pass
NVNT	n20	5825	17.058	17.362	0.5	Pass
NVNT	n40	5755	35.132	36.360	0.5	Pass
NVNT	n40	5795	34.206	36.340	0.5	Pass
NVNT	ac20	5745	17.512	17.53	0.5	Pass
NVNT	ac20	5785	17.604	16.78	0.5	Pass
NVNT	ac20	5825	17.008	17.288	0.5	Pass
NVNT	ac40	5755	34.313	36.390	0.5	Pass
NVNT	ac40	5795	36.326	36.380	0.5	Pass
NVNT	ac80	5775	70.611	71.60	0.5	Pass

Condition	Mode	Frequency (MHz)	99% OBW (MHz)	
			Ant A	Ant B
NVNT	a	5745	16.347	16.344
NVNT	a	5785	16.366	16.356
NVNT	a	5825	16.347	16.336
NVNT	n20	5745	17.543	17.539
NVNT	n20	5785	17.568	17.568
NVNT	n20	5825	17.565	17.552
NVNT	n40	5755	35.969	35.979
NVNT	n40	5795	35.957	35.977
NVNT	ac20	5745	17.546	17.56
NVNT	ac20	5785	17.555	17.568
NVNT	ac20	5825	17.545	17.57
NVNT	ac40	5755	35.955	35.955
NVNT	ac40	5795	35.977	36.001
NVNT	ac80	5775	74.454	74.314

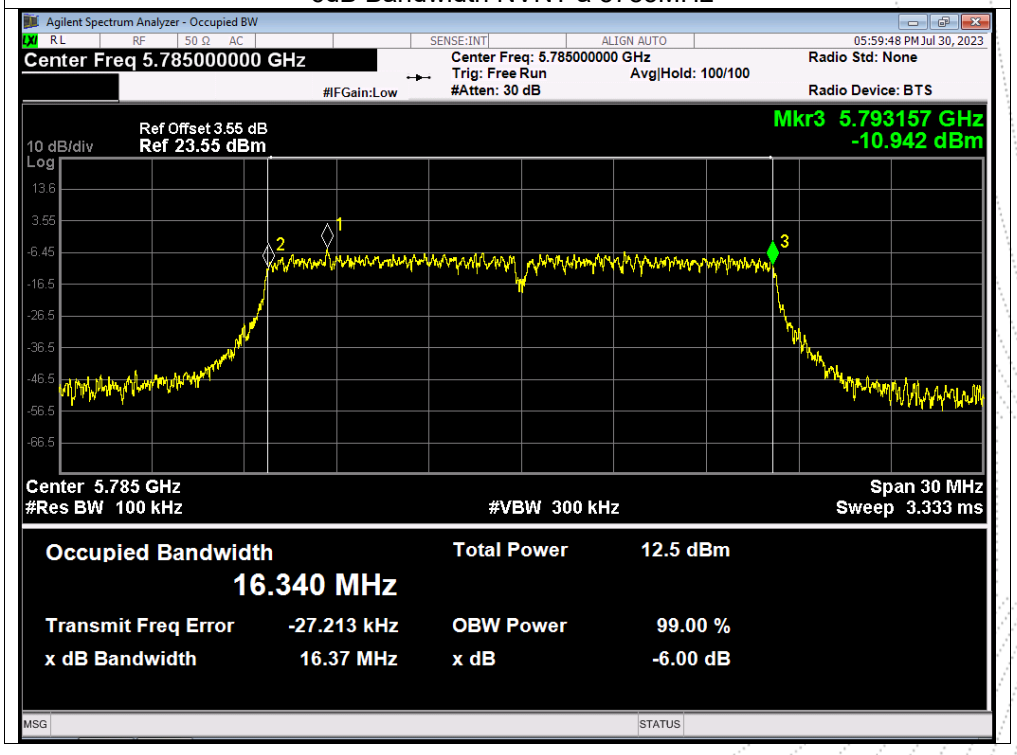
Note: A(B) Represent the value of antenna A and B, The worst data is Antenna B, only shown Antenna B Plot.

Test Graphs

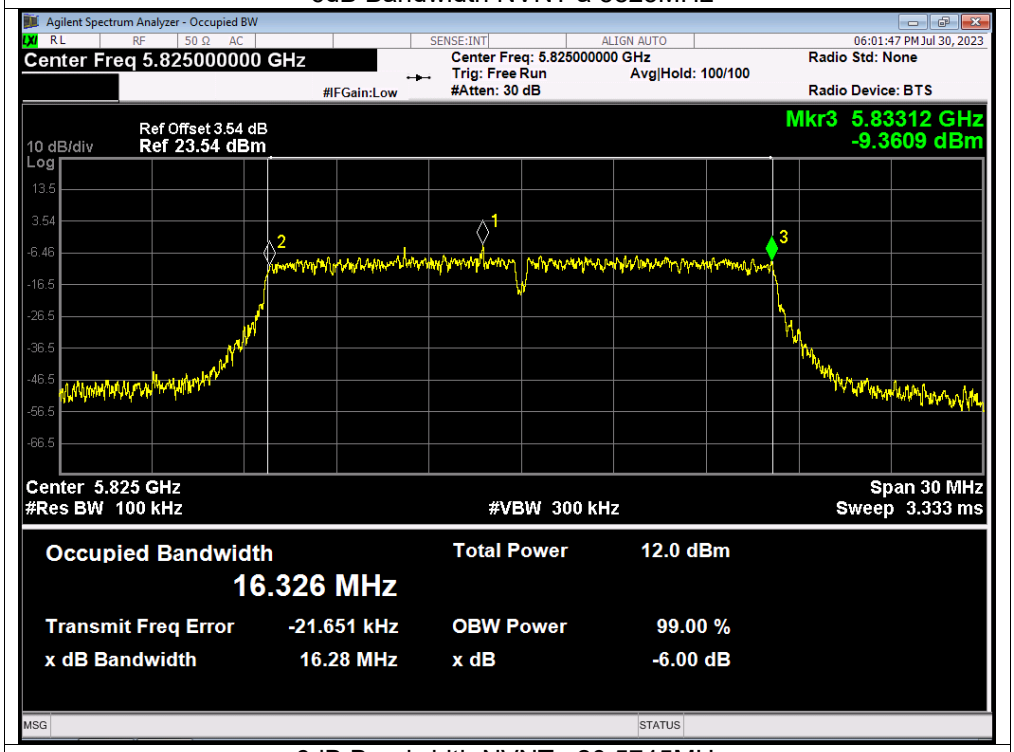
-6dB Bandwidth NVNT a 5745MHz



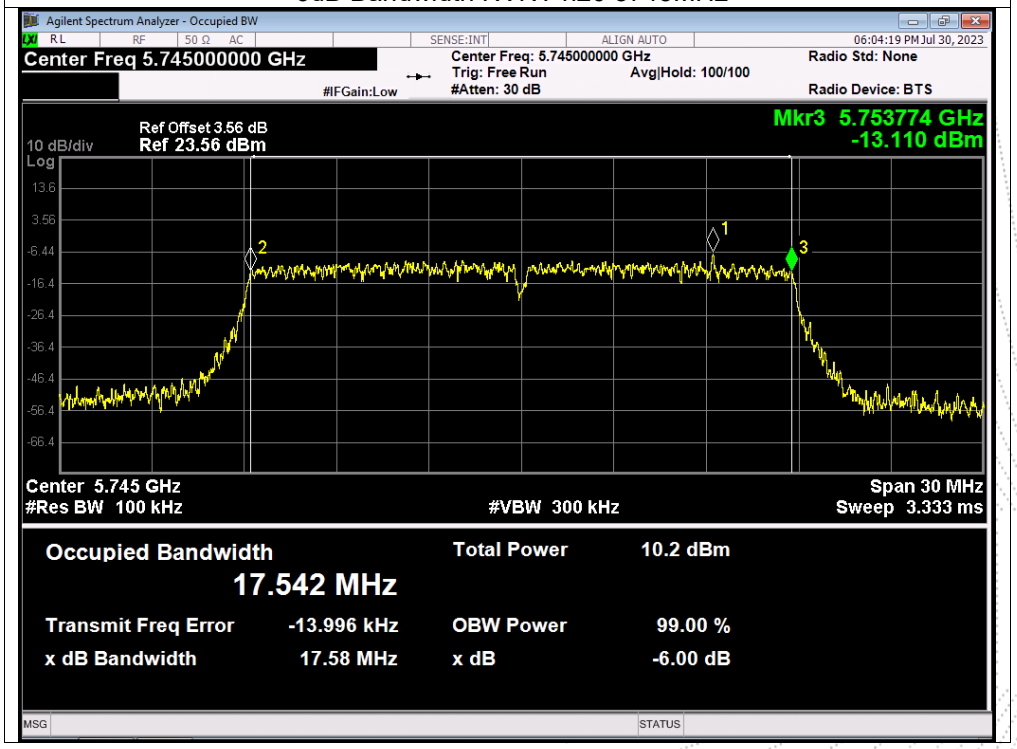
-6dB Bandwidth NVNT a 5785MHz



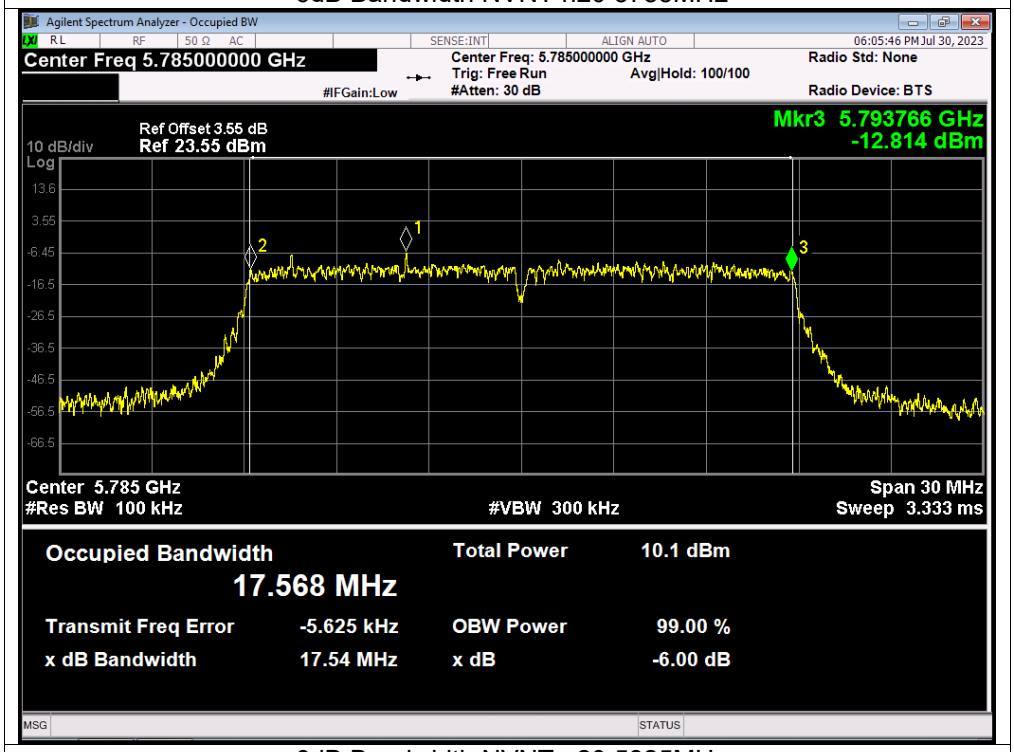
-6dB Bandwidth NVNT a 5825MHz



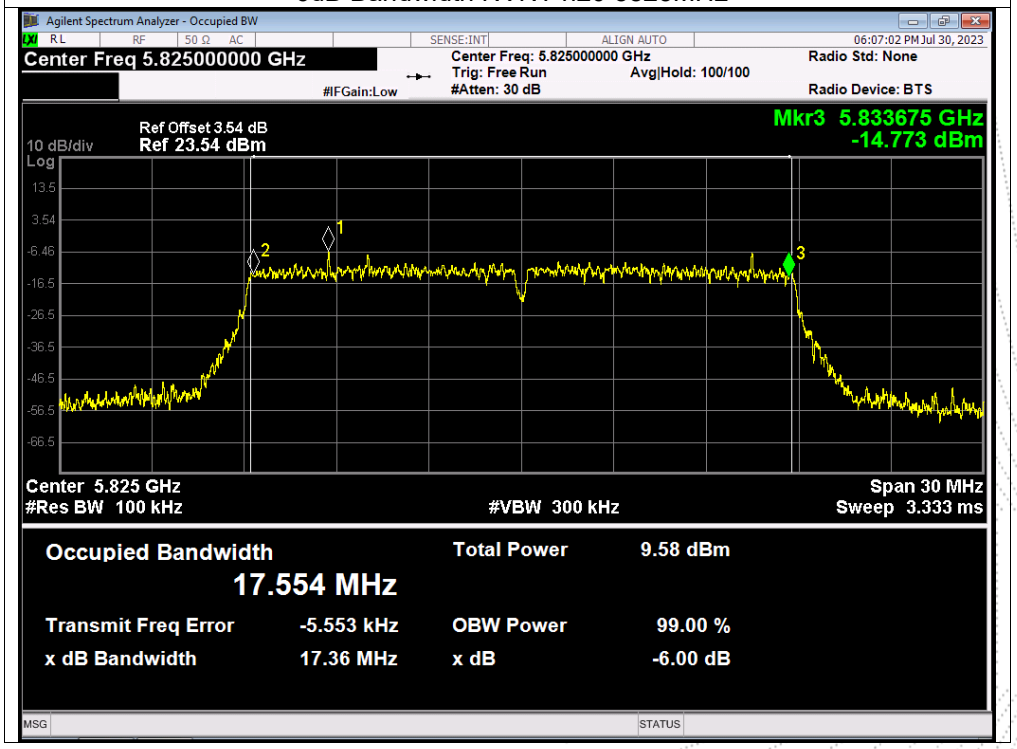
-6dB Bandwidth NVNT n20 5745MHz



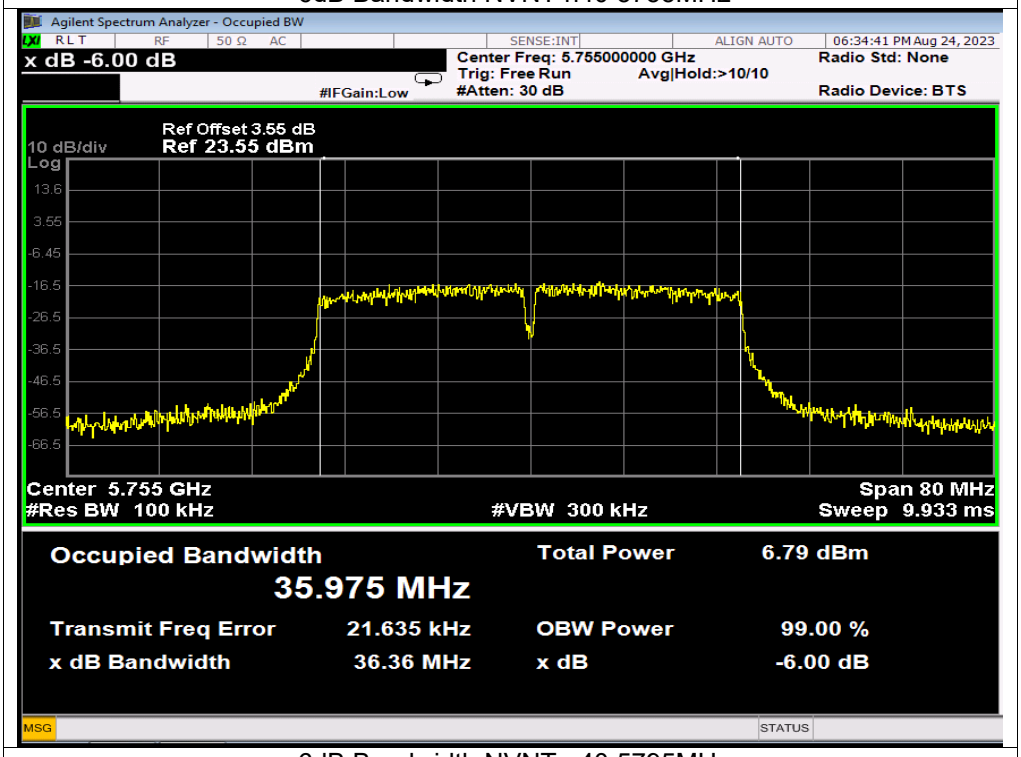
-6dB Bandwidth NVNT n20 5785MHz



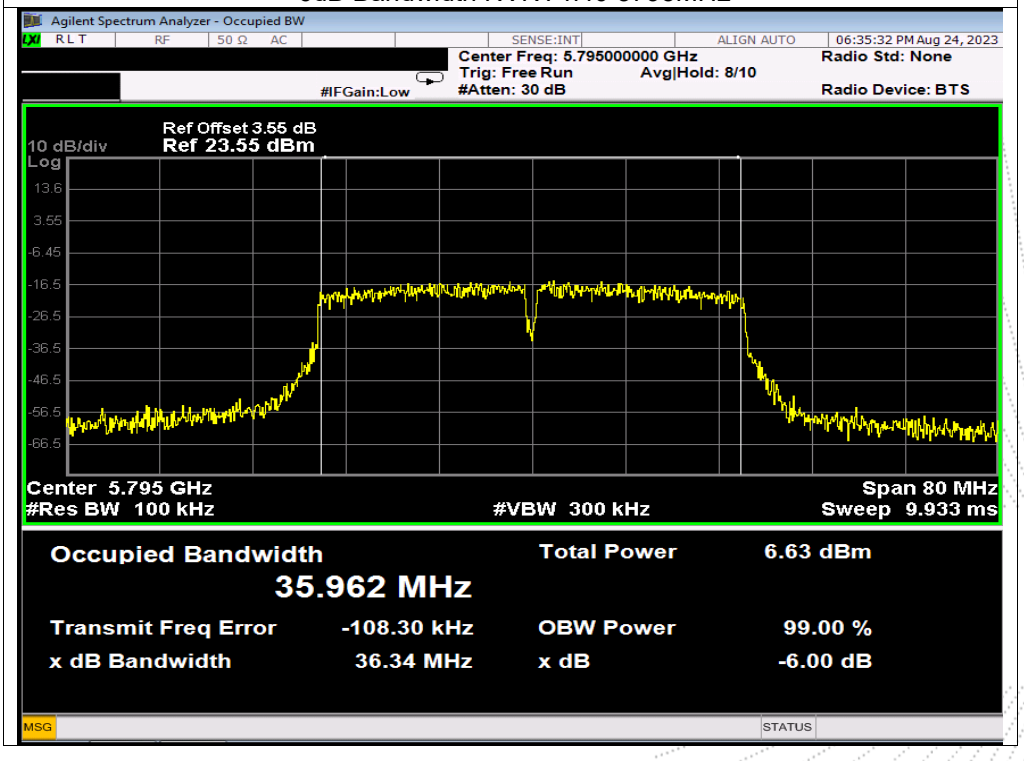
-6dB Bandwidth NVNT n20 5825MHz



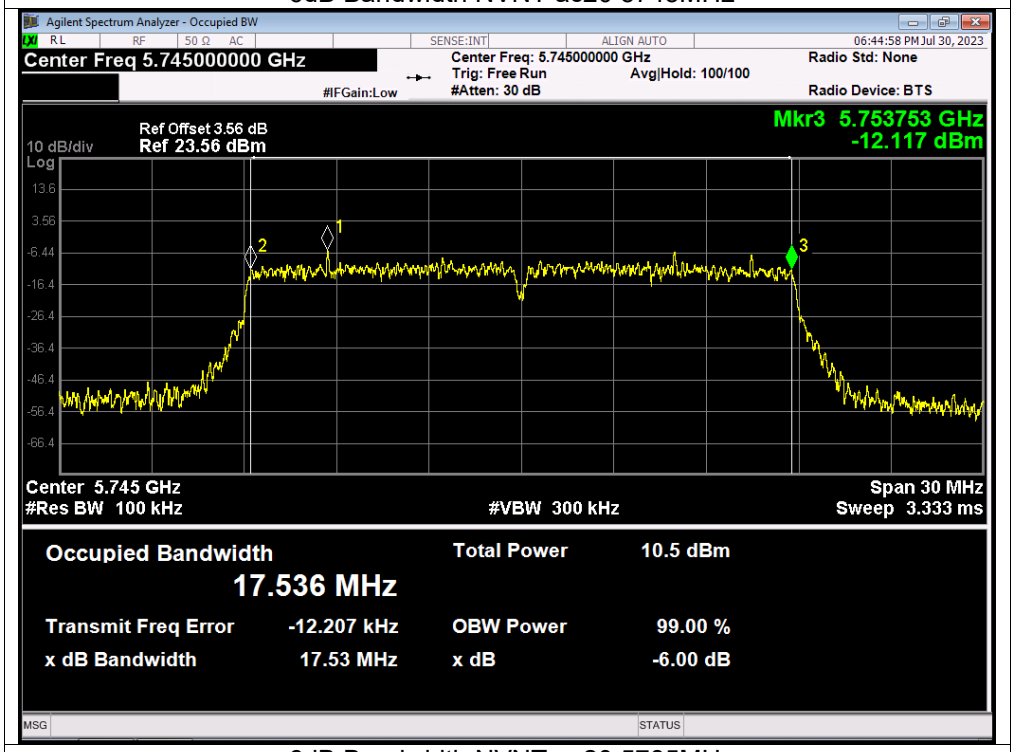
-6dB Bandwidth NVNT n40 5755MHz



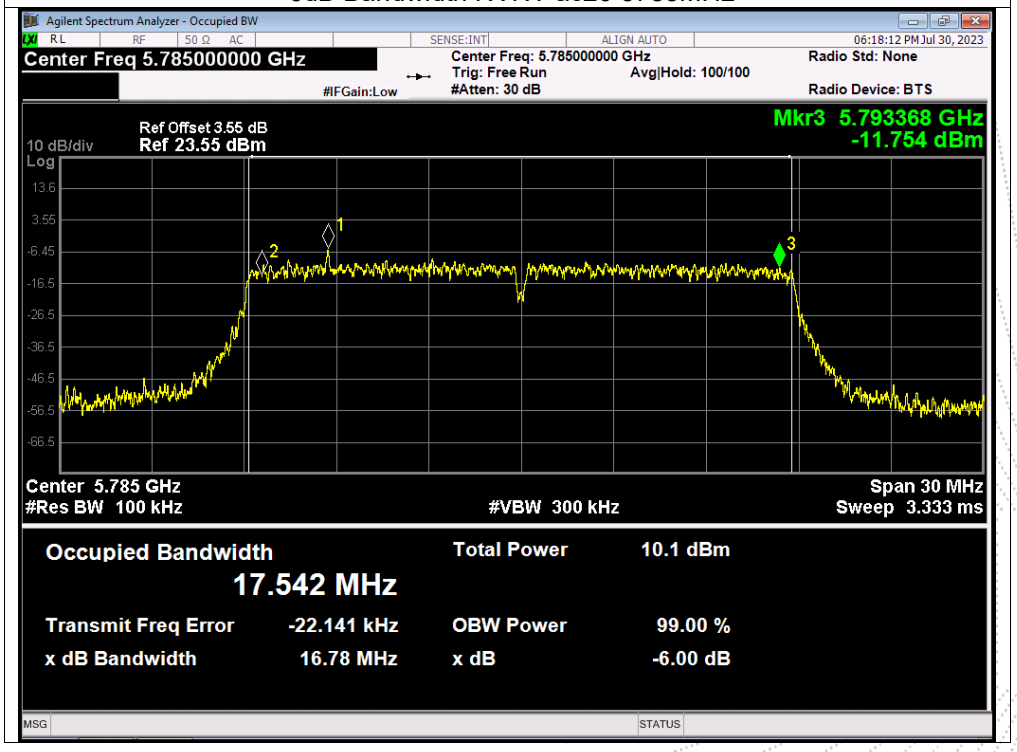
-6dB Bandwidth NVNT n40 5795MHz



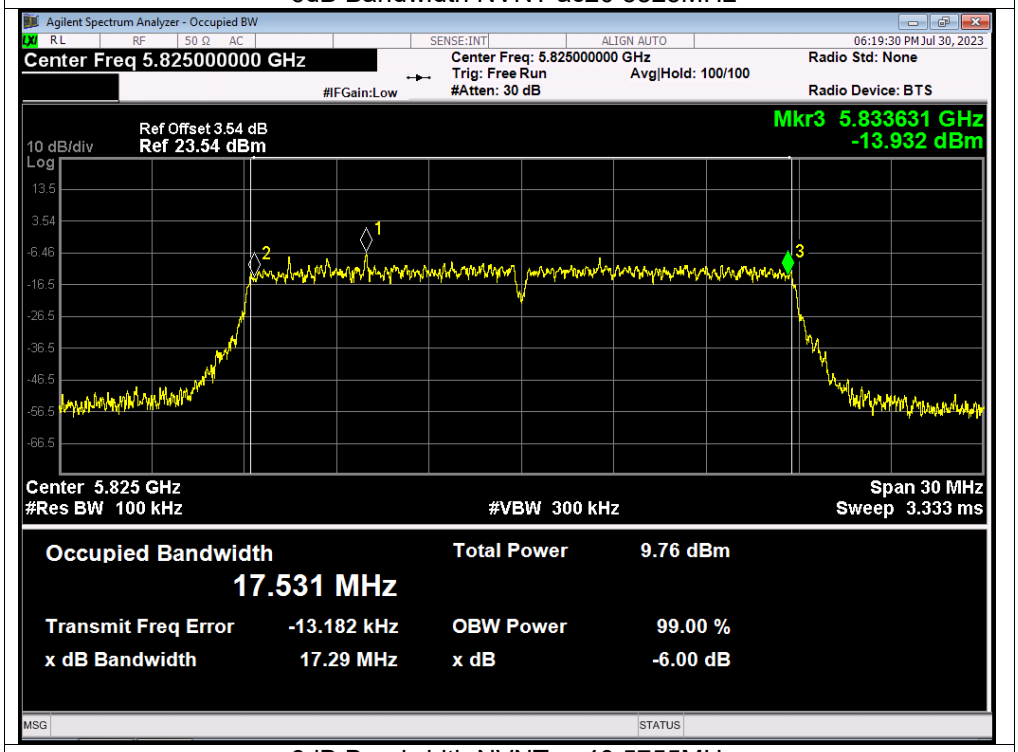
-6dB Bandwidth NVNT ac20 5745MHz



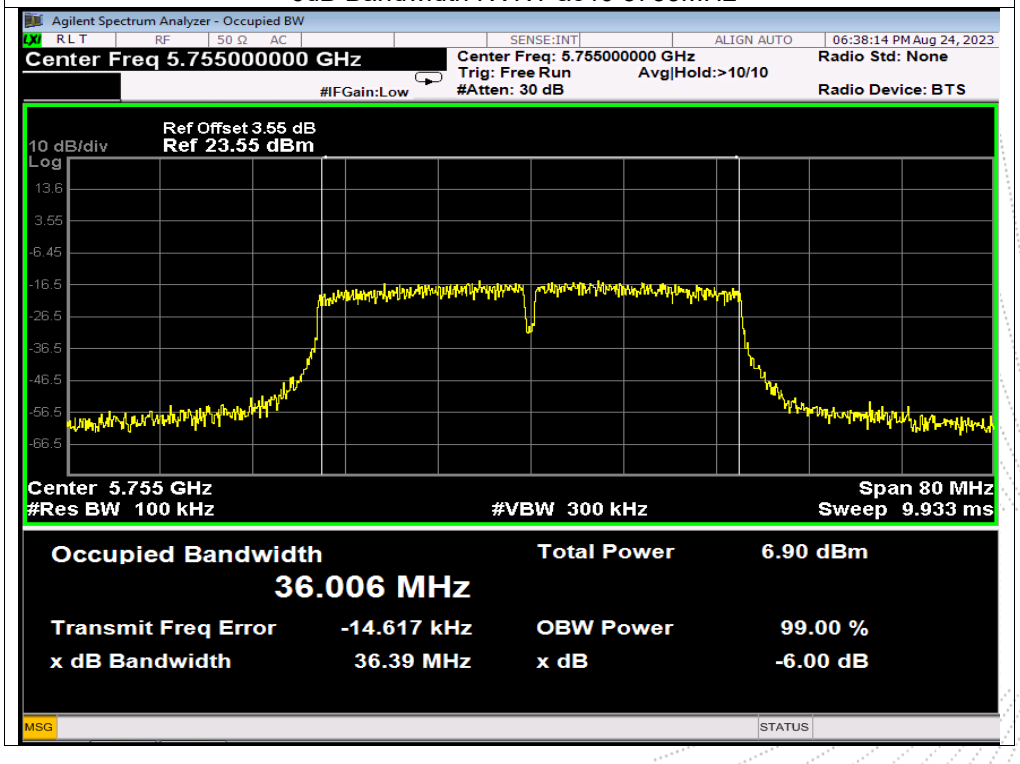
-6dB Bandwidth NVNT ac20 5785MHz



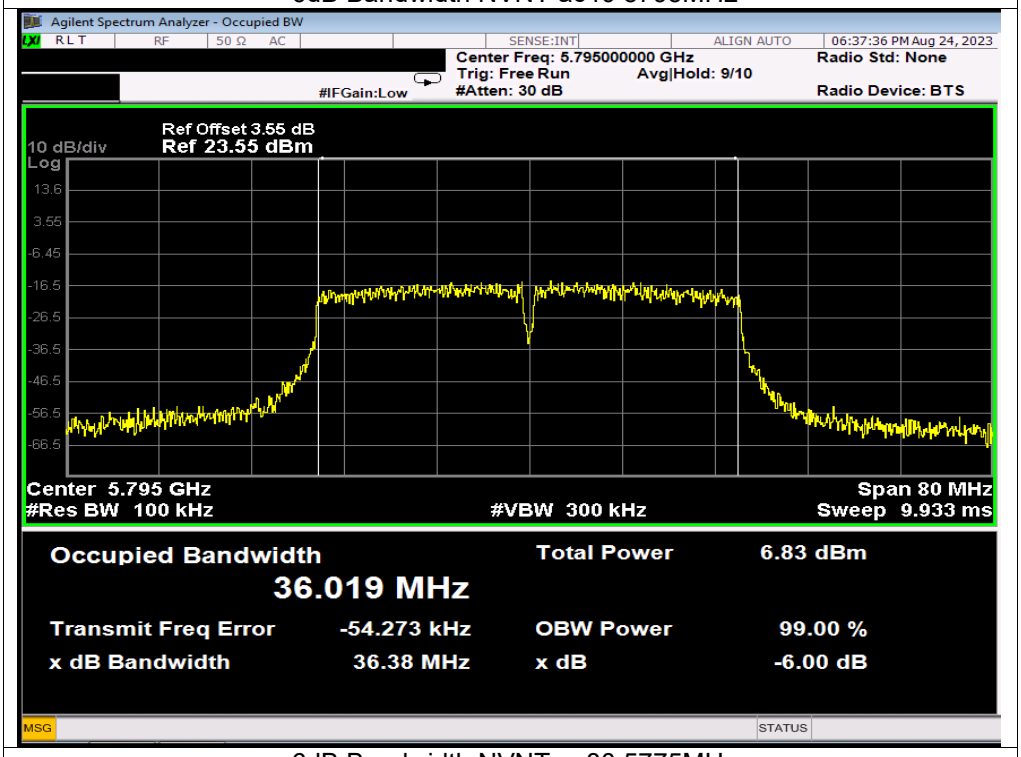
-6dB Bandwidth NVNT ac20 5825MHz



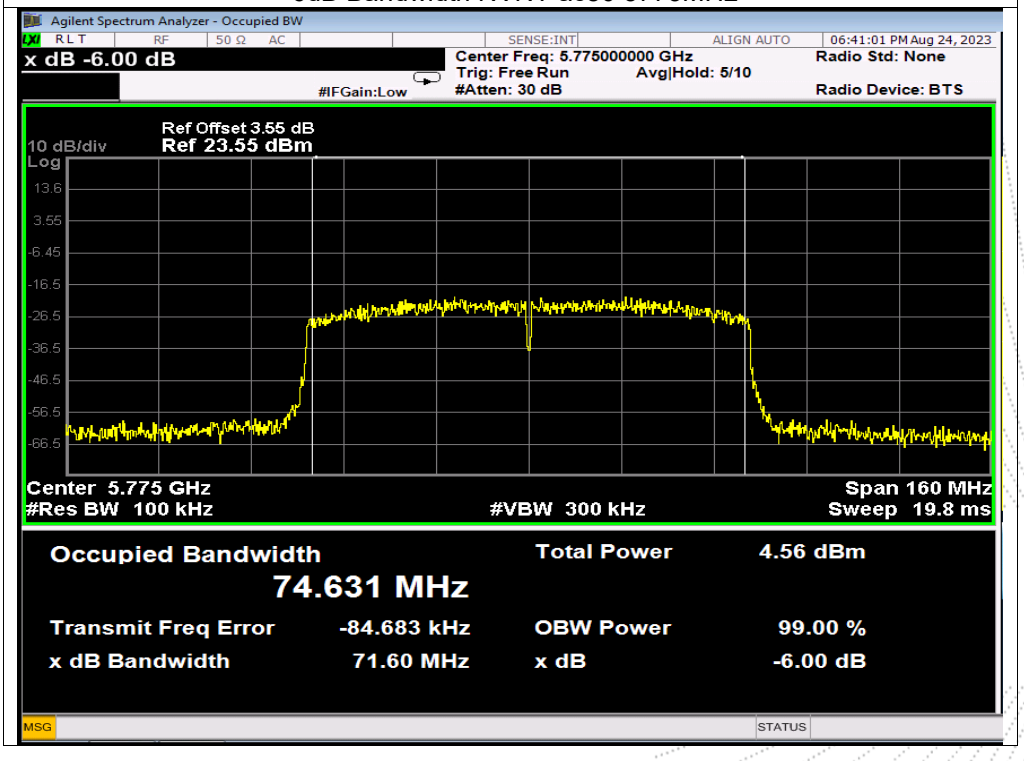
-6dB Bandwidth NVNT ac40 5755MHz



-6dB Bandwidth NVNT ac40 5795MHz



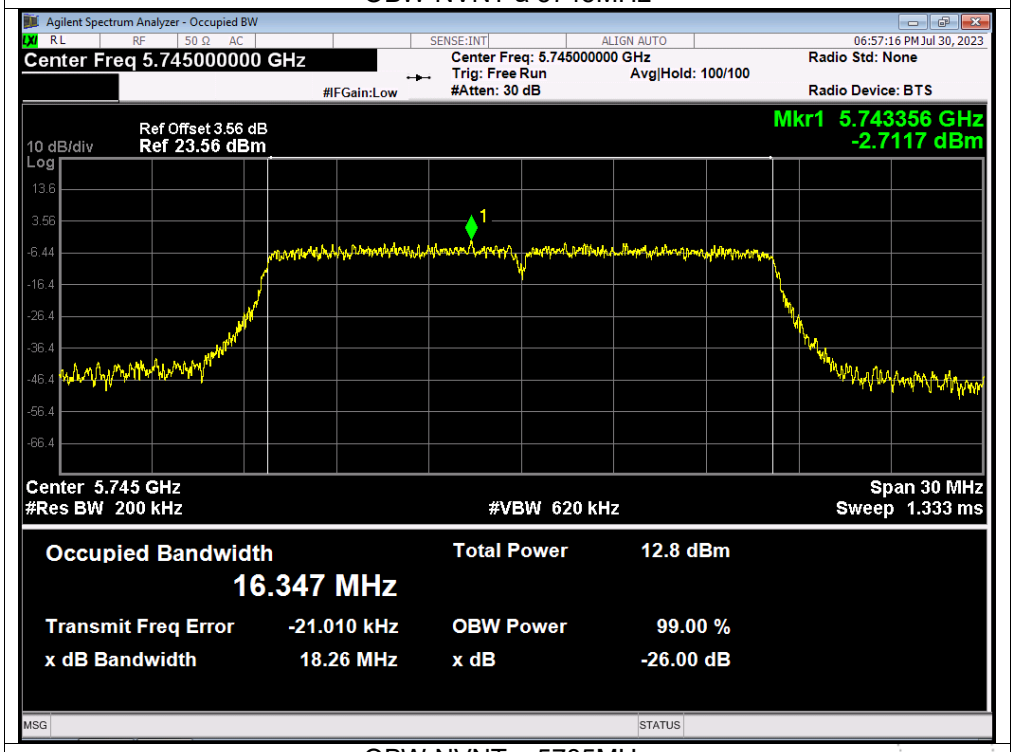
-6dB Bandwidth NVNT ac80 5775MHz



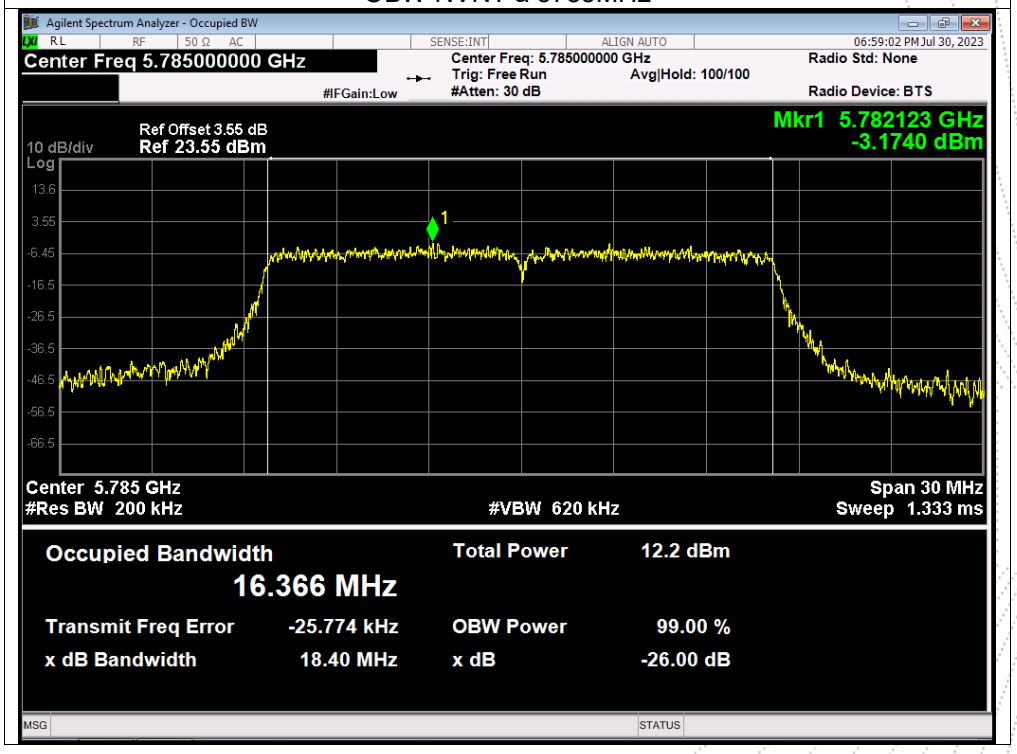
Note: A(B) Represent the value of antenna A and B, The worst data is Antenna A, only shown Antenna A Plot.

Test Graphs

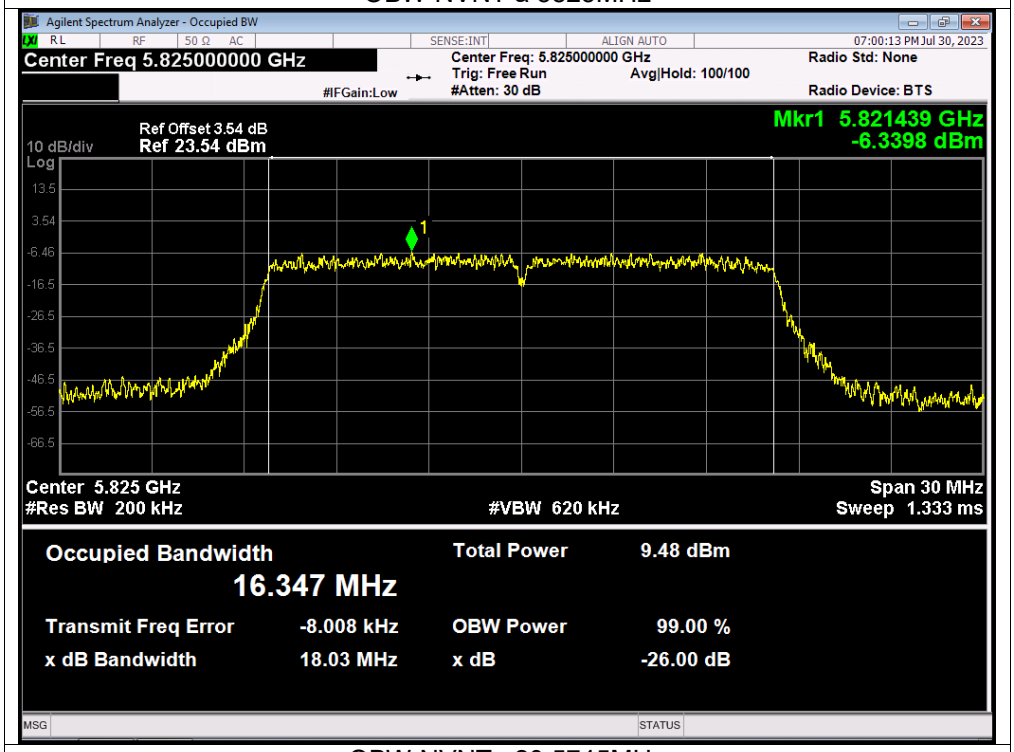
OBW NVNT a 5745MHz



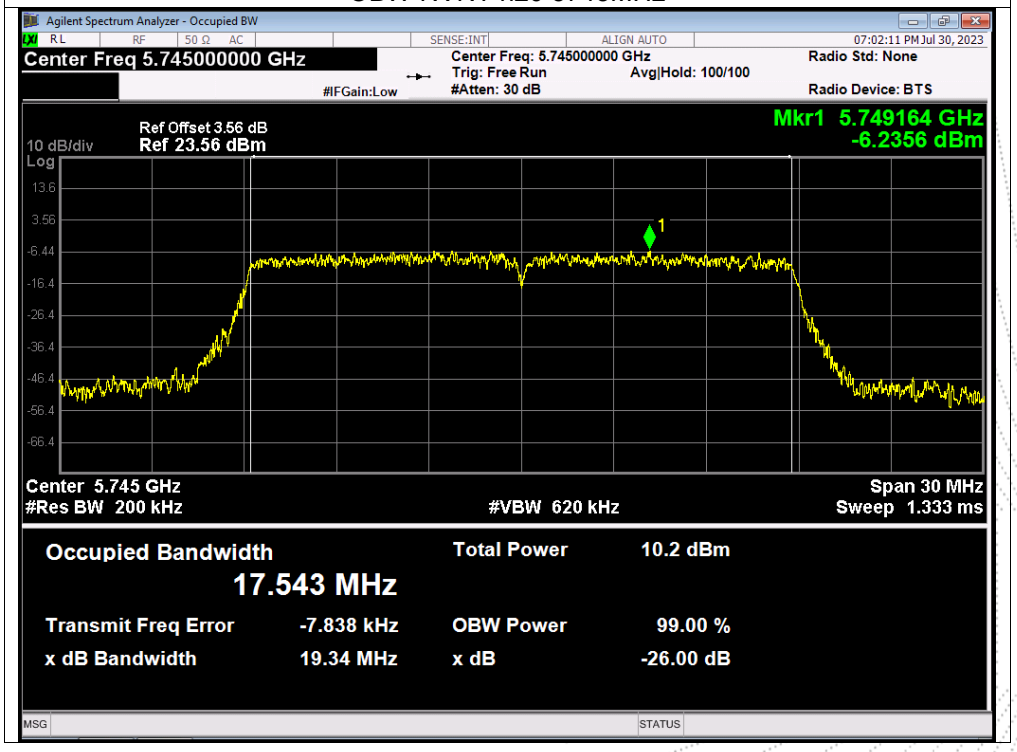
OBW NVNT a 5785MHz



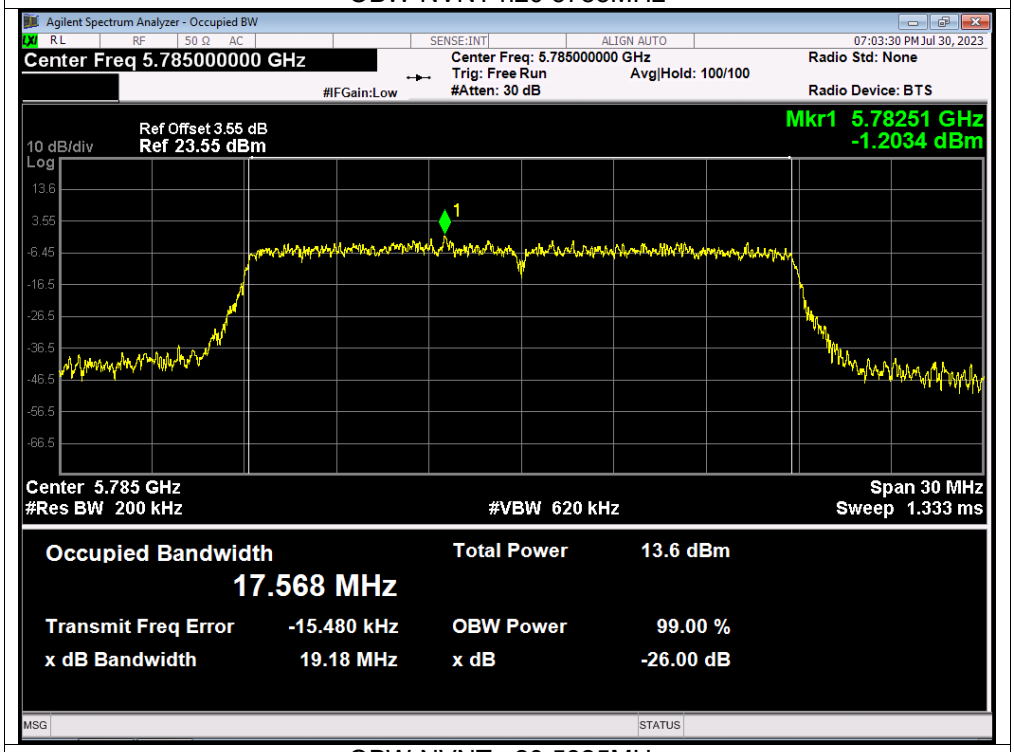
OBW NVNT a 5825MHz



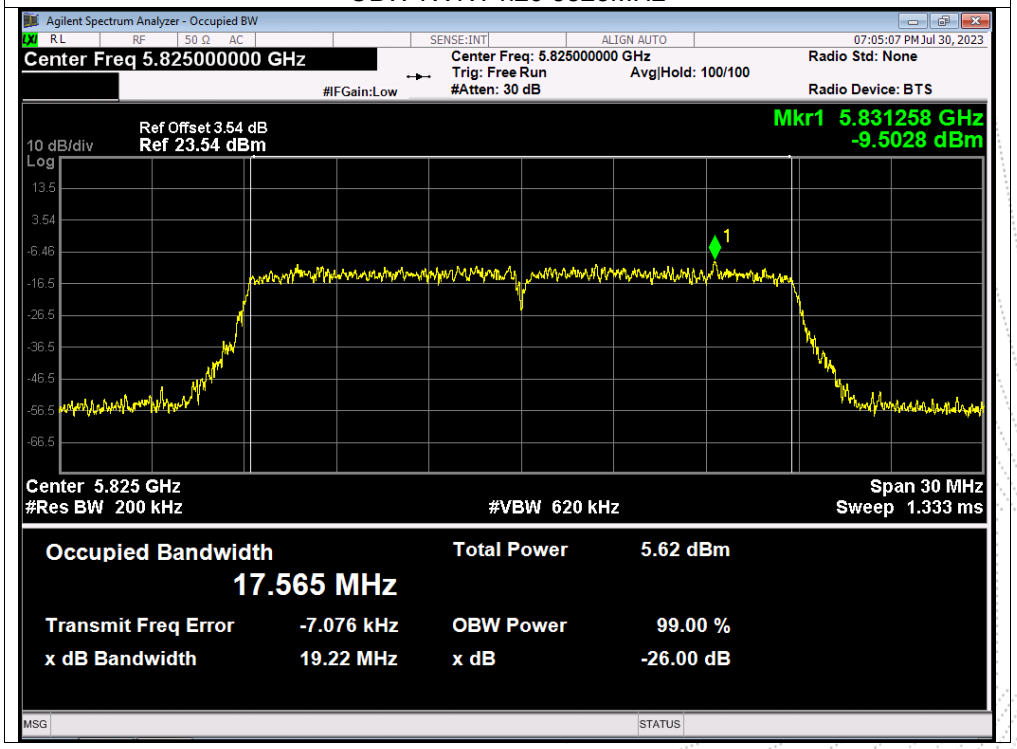
OBW NVNT n20 5745MHz



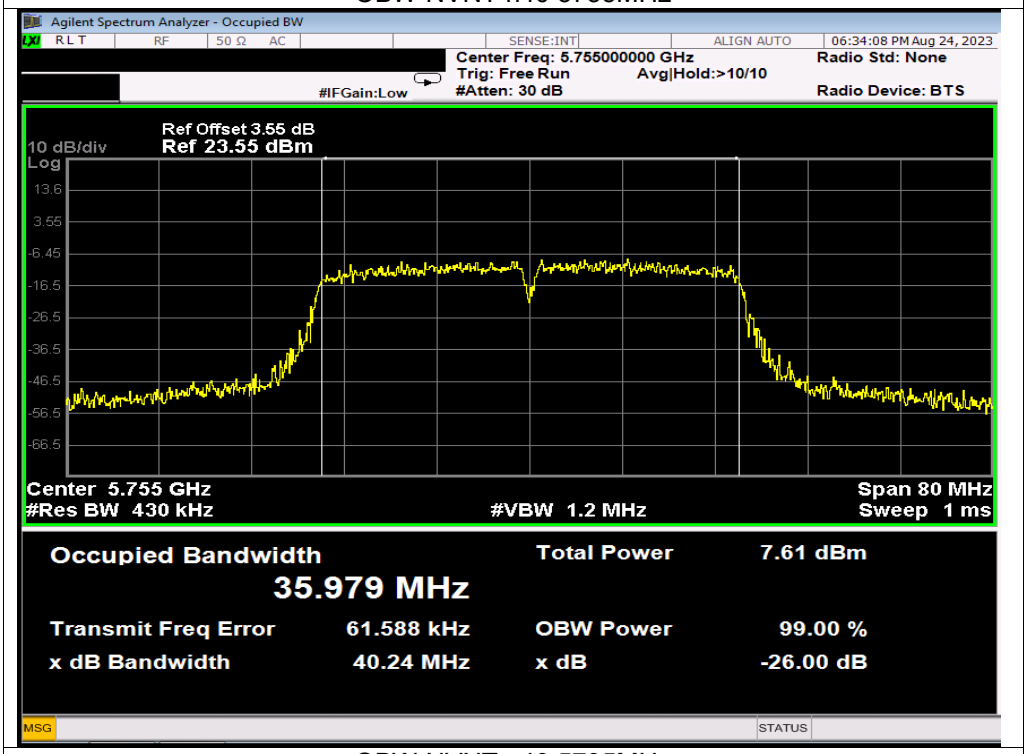
OBW NVNT n20 5785MHz



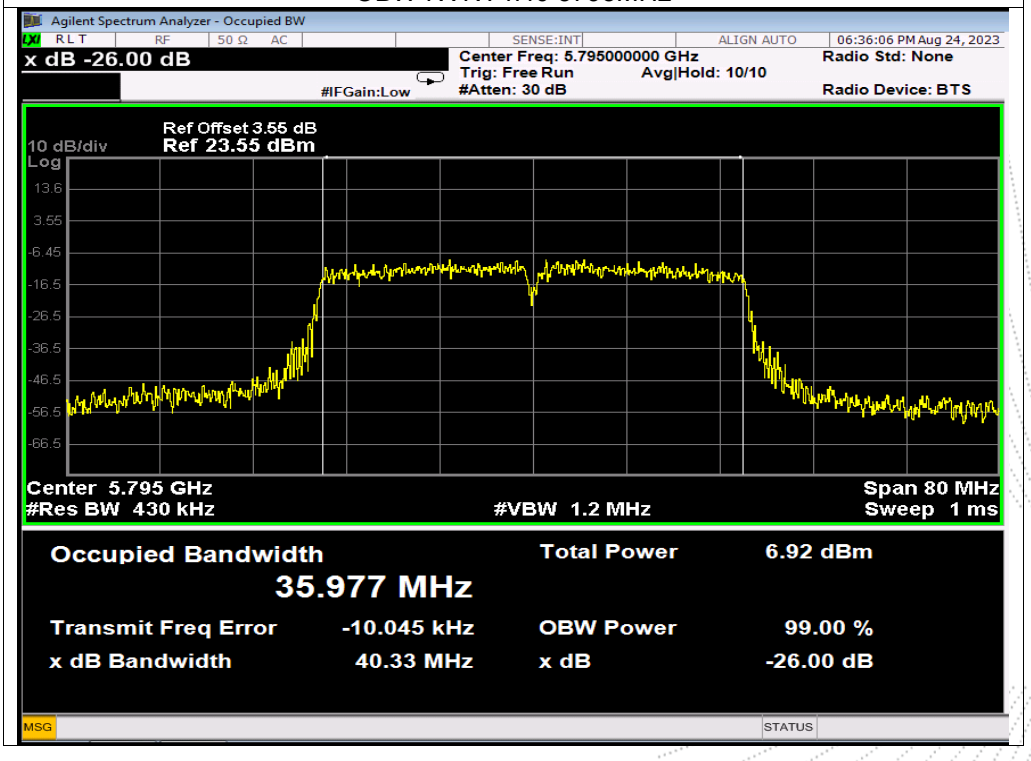
OBW NVNT n20 5825MHz



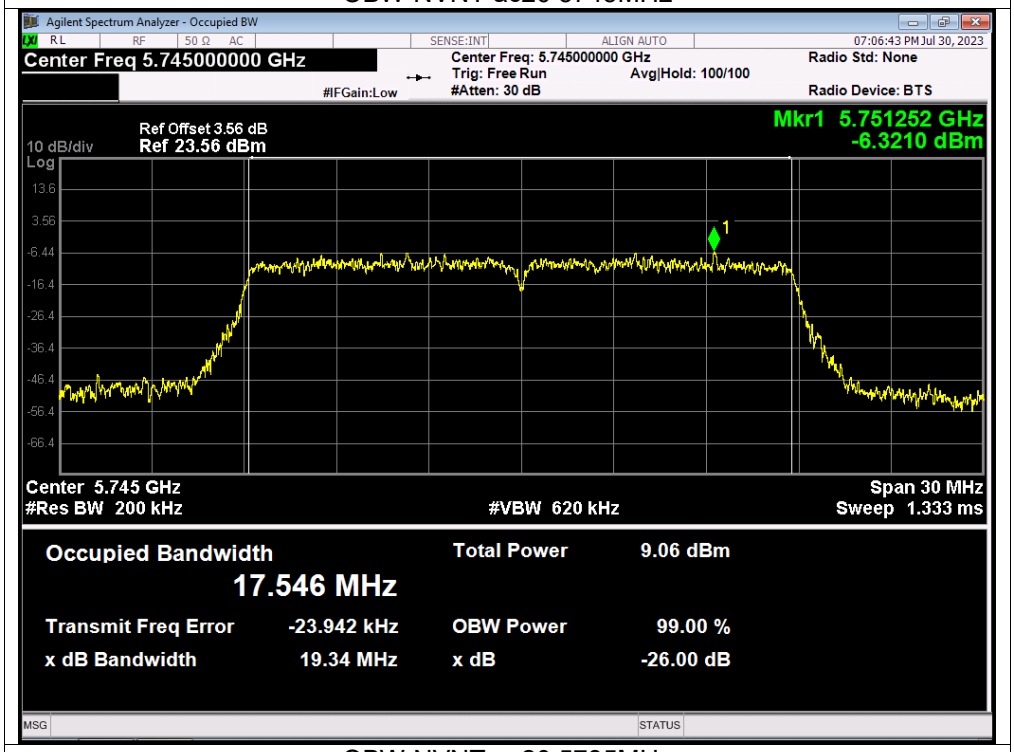
OBW NVNT n40 5755MHz



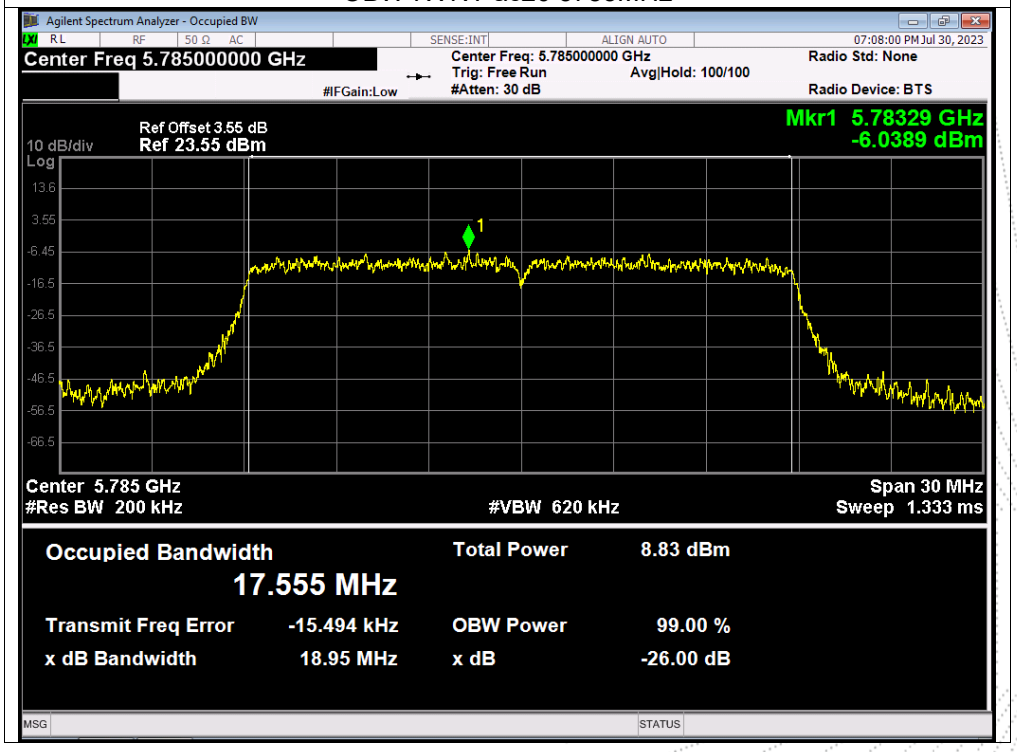
OBW NVNT n40 5795MHz



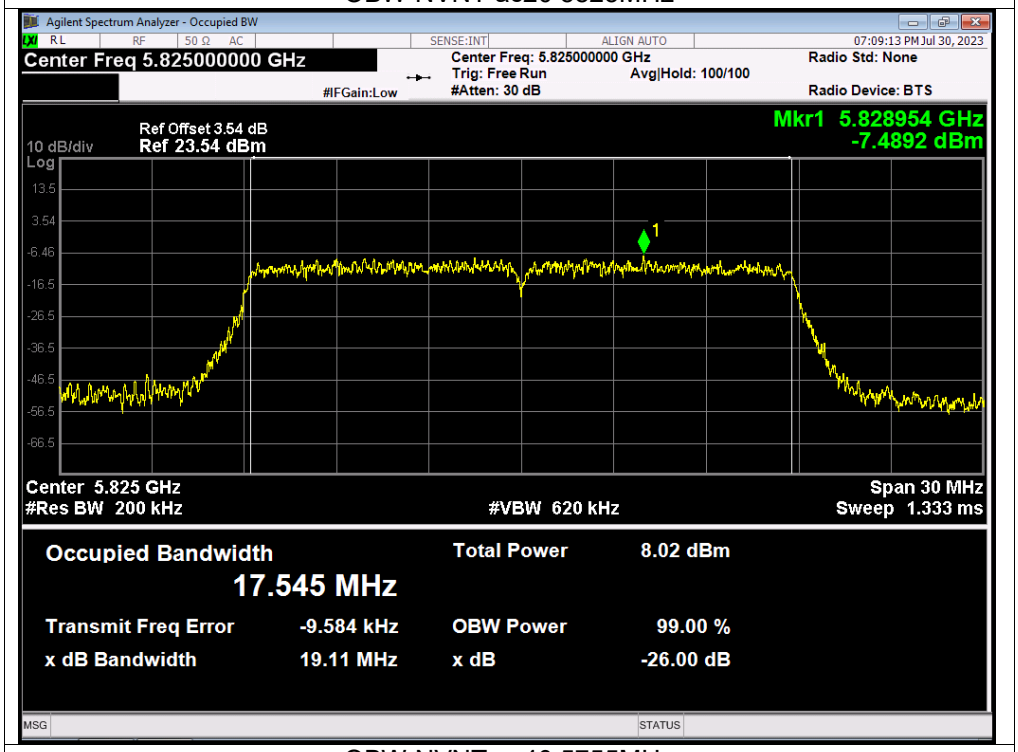
OBW NVNT ac20 5745MHz



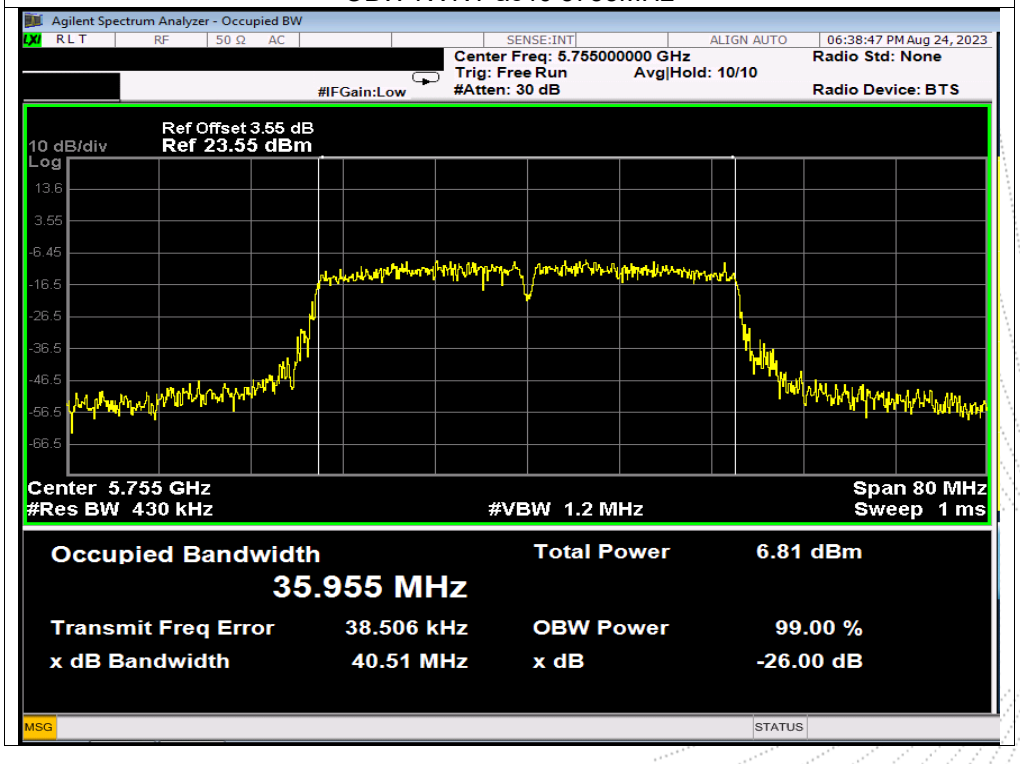
OBW NVNT ac20 5785MHz



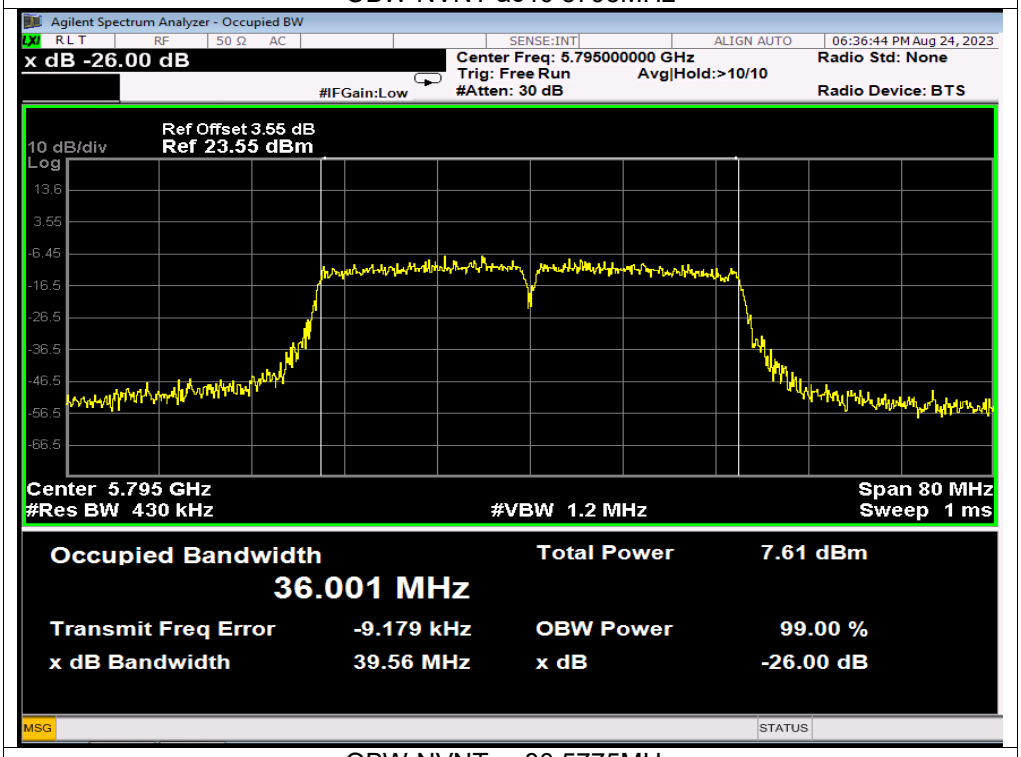
OBW NVNT ac20 5825MHz



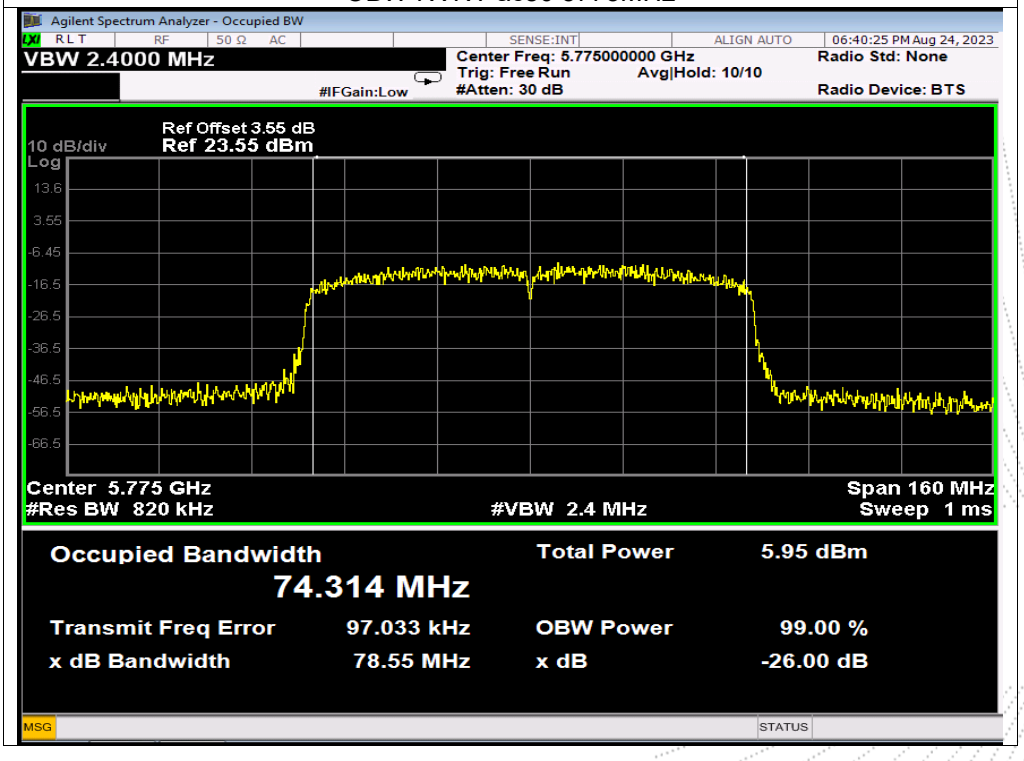
OBW NVNT ac40 5755MHz



OBW NVNT ac40 5795MHz

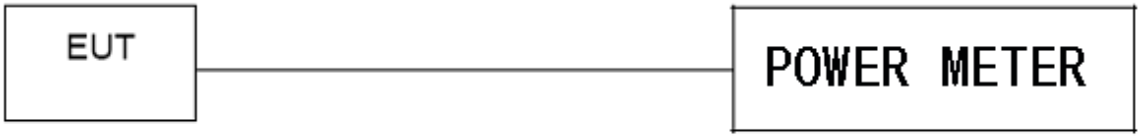


OBW NVNT ac80 5775MHz



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	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:	AC 120V/60Hz
Test Mode:	5180-5240MHz		

Condition	Mode	Frequency (MHz)	Conducted Power (dBm)		Total(dBm)	Limit (dBm)	Verdict
			Ant A	Ant B			
NVNT	a	5180	11.78	12.28	/	24	Pass
NVNT	a	5200	12.82	12.58	/	24	Pass
NVNT	a	5240	12.26	12.15	/	24	Pass
NVNT	n20	5180	11.61	10.42	14.07	24	Pass
NVNT	n20	5200	11.09	9.59	13.41	24	Pass
NVNT	n20	5240	11.4	11.17	14.30	24	Pass
NVNT	n40	5190	9.94	8.31	12.21	24	Pass
NVNT	n40	5230	9.75	10.07	12.92	24	Pass
NVNT	ac20	5180	9.97	11.28	13.68	24	Pass
NVNT	ac20	5200	11.19	10.58	13.91	24	Pass
NVNT	ac20	5240	11.14	10.84	14.00	24	Pass
NVNT	ac40	5190	9.32	9.91	12.64	24	Pass
NVNT	ac40	5230	9.13	9.75	12.46	24	Pass
NVNT	ac80	5210	8.74	7.44	11.15	24	Pass

Note:
For power measurements.
The Array gain=0 for NANT≤4
So the directional gain foe Power measurements is 2.55dBi

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	AC 120V/60Hz
Test Mode:	5260-5320MHz		

Condition	Mode	Frequency (MHz)	Conducted Power (dBm)		Total(dBm)	Limit (dBm)	Verdict
			Ant A	Ant B			
NVNT	a	5260	12.8	12.15	/	24	Pass
NVNT	a	5280	11.42	11.7	/	24	Pass
NVNT	a	5320	11.21	11.13	/	24	Pass
NVNT	n20	5260	11.82	10.94	14.41	24	Pass
NVNT	n20	5280	10.36	10.16	13.27	24	Pass
NVNT	n20	5320	10.59	10.19	13.40	24	Pass
NVNT	n40	5270	9.3	8.28	11.83	24	Pass
NVNT	n40	5310	7.15	8.39	10.82	24	Pass
NVNT	ac20	5260	11.23	10.67	13.97	24	Pass
NVNT	ac20	5280	10.68	11.32	14.02	24	Pass
NVNT	ac20	5320	10.92	10.35	13.65	24	Pass
NVNT	ac40	5270	8.51	8.69	11.61	24	Pass
NVNT	ac40	5310	6.61	8.01	10.38	24	Pass
NVNT	ac80	5290	7.11	6.08	9.64	24	Pass

Note:
For power measurements.
The Array gain=0 for NANT≤4
So the directional gain foe Power measurements is 2.55dBi

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	AC 120V/60Hz
Test Mode:	5500-5700MHz		

Condition	Mode	Frequency (MHz)	Conducted Power (dBm)		Total(dBm)	Limit (dBm)	Verdict
			Ant A	Ant B			
NVNT	a	5500	9.93	10.56	/	24	Pass
NVNT	a	5580	11.59	11.25	/	24	Pass
NVNT	a	5700	11.94	12.73	/	24	Pass
NVNT	n20	5500	8.07	8.12	11.11	24	Pass
NVNT	n20	5580	10.63	8.86	12.84	24	Pass
NVNT	n20	5700	10.85	11.02	13.95	24	Pass
NVNT	n40	5510	5.97	5.2	8.61	24	Pass
NVNT	n40	5590	6.32	7.67	10.06	24	Pass
NVNT	n40	5670	9.17	10.05	12.64	24	Pass
NVNT	ac20	5500	8.73	7.07	10.99	24	Pass
NVNT	ac20	5580	10.55	8.04	12.48	24	Pass
NVNT	ac20	5700	11.19	10.65	13.94	24	Pass
NVNT	ac40	5510	5.95	5.91	8.94	24	Pass
NVNT	ac40	5590	7.13	7.18	10.17	24	Pass
NVNT	ac40	5670	9.66	8.37	12.07	24	Pass
NVNT	ac80	5530	7.13	8.26	10.74	24	Pass

Note:
For power measurements.
The Array gain=0 for NANT≤4
So the directional gain foe Power measurements is 2.55dBi

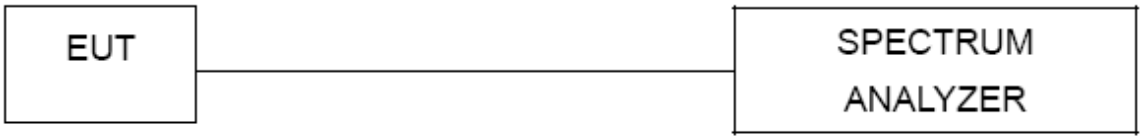
Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	AC 120V/60Hz
Test Mode:	5745-5825MHz		

Condition	Mode	Frequency (MHz)	Conducted Power (dBm)		Total(dBm)	Limit (dBm)	Verdict
			Ant A	Ant B			
NVNT	a	5745	12.1	11.53	/	30	Pass
NVNT	a	5785	11.46	11.26	/	30	Pass
NVNT	a	5825	10.54	10.8	/	30	Pass
NVNT	n20	5745	9.29	8.92	12.12	30	Pass
NVNT	n20	5785	9.11	7.26	11.29	30	Pass
NVNT	n20	5825	8.1	6.86	10.53	30	Pass
NVNT	n40	5755	4.59	7.89	9.56	30	Pass
NVNT	n40	5795	6.32	6.22	9.28	30	Pass
NVNT	ac20	5745	7.98	9.13	11.60	30	Pass
NVNT	ac20	5785	7.93	8.62	11.30	30	Pass
NVNT	ac20	5825	7.08	8.34	10.77	30	Pass
NVNT	ac40	5755	4.85	7.8	9.58	30	Pass
NVNT	ac40	5795	6.23	7.34	9.83	30	Pass
NVNT	ac80	5775	3.02	6.95	8.43	30	Pass

Note:
For power measurements.
The Array gain=0 for NANT≤4
So the directional gain foe Power measurements is 2.55dBi

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

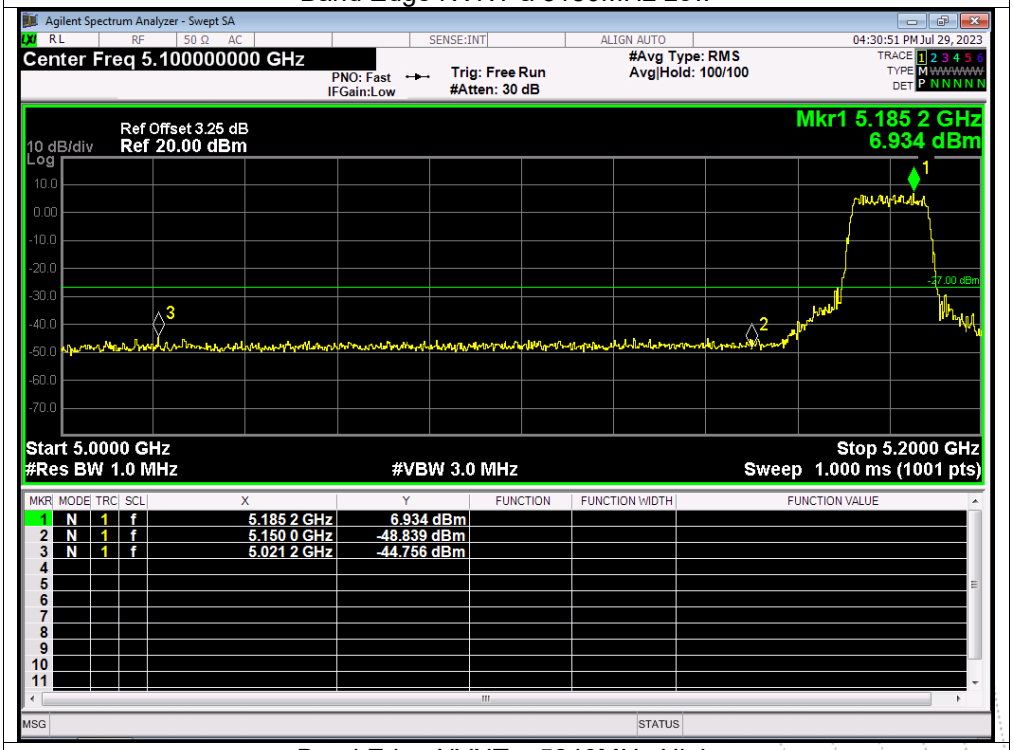
The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data

11.5 Test Result

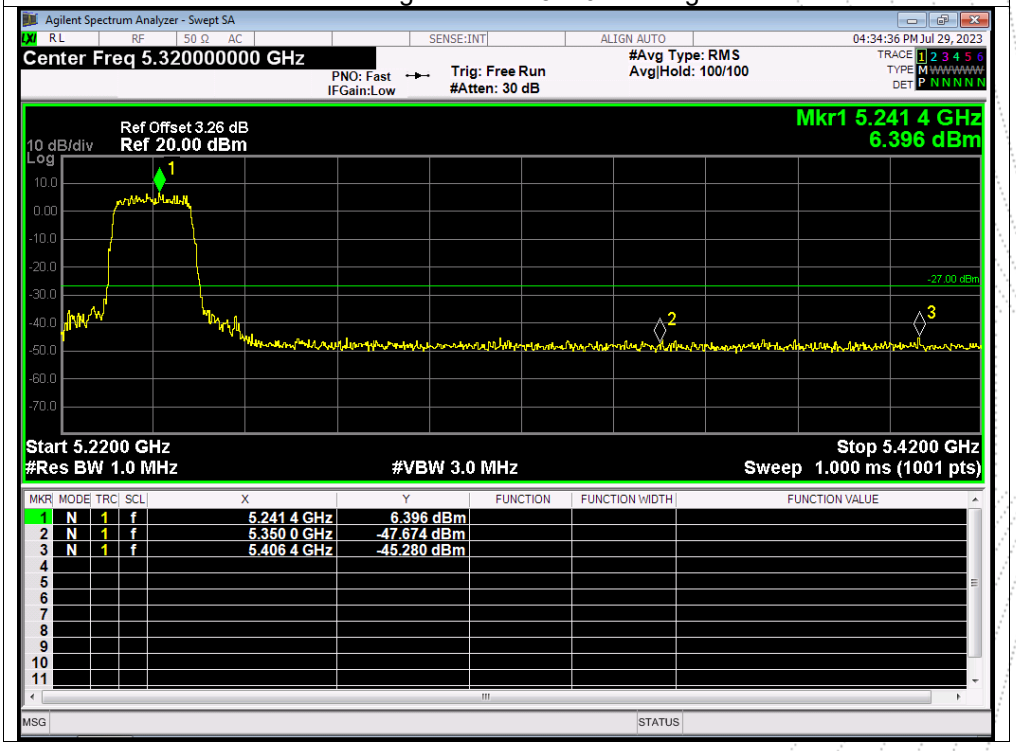
Note: A(B) Represent the value of antenna A and B, The worst data is Antenna A, only shown Antenna A.
Plot. Antenna A: 5180-5240MHz

Test Graphs

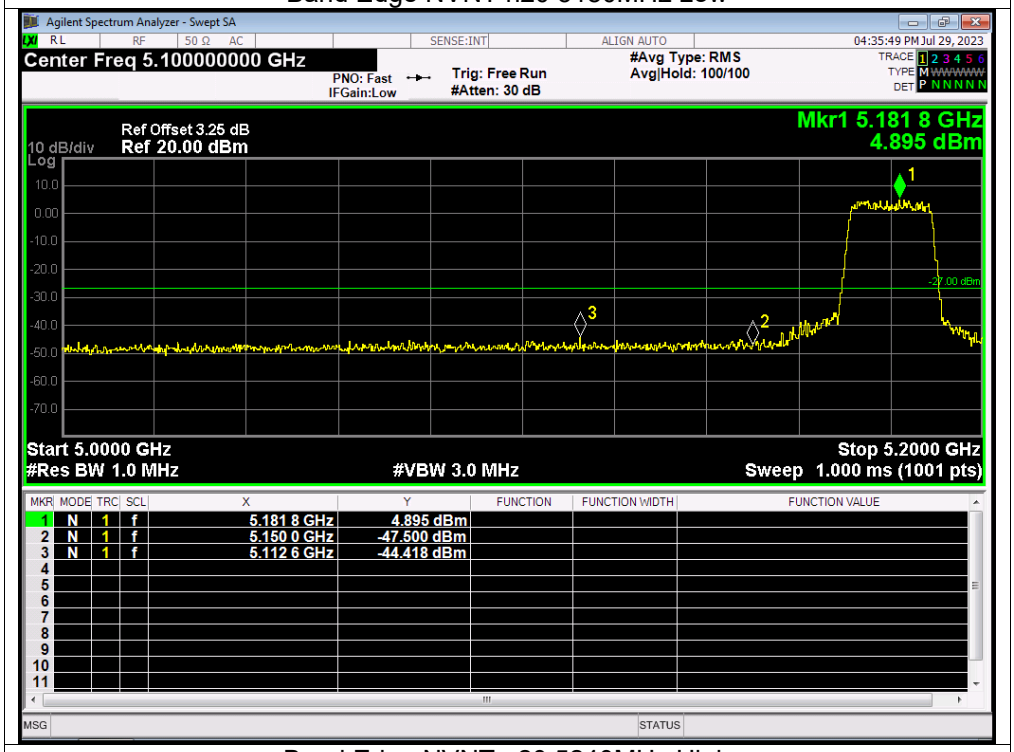
Band Edge NVNT a 5180MHz Low



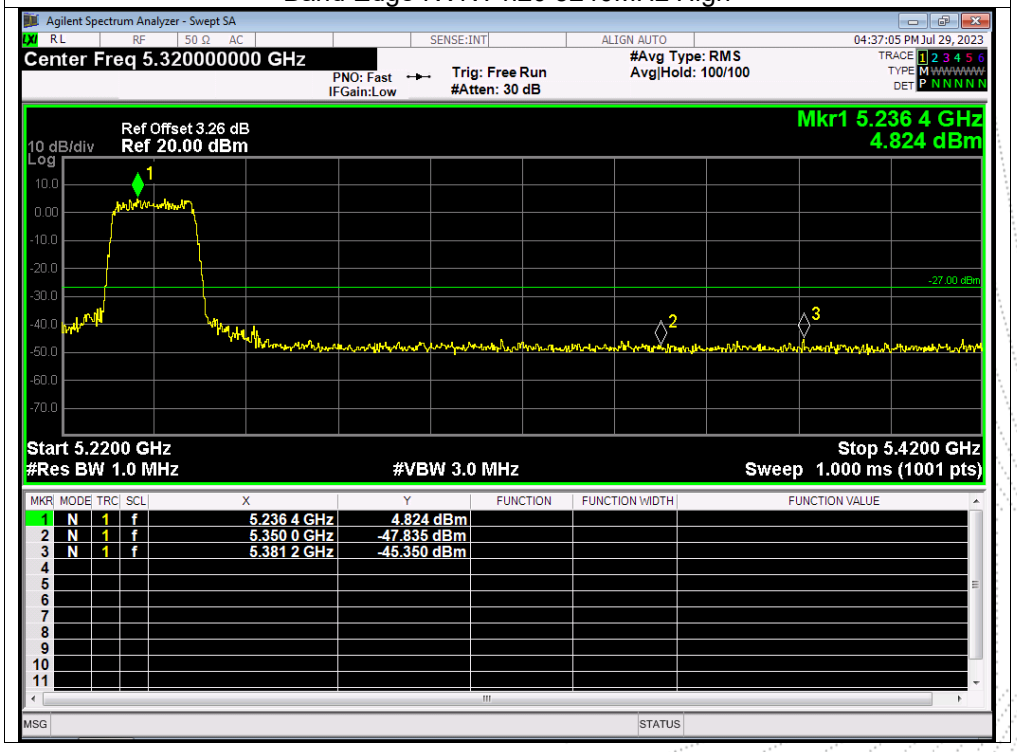
Band Edge NVNT a 5240MHz High



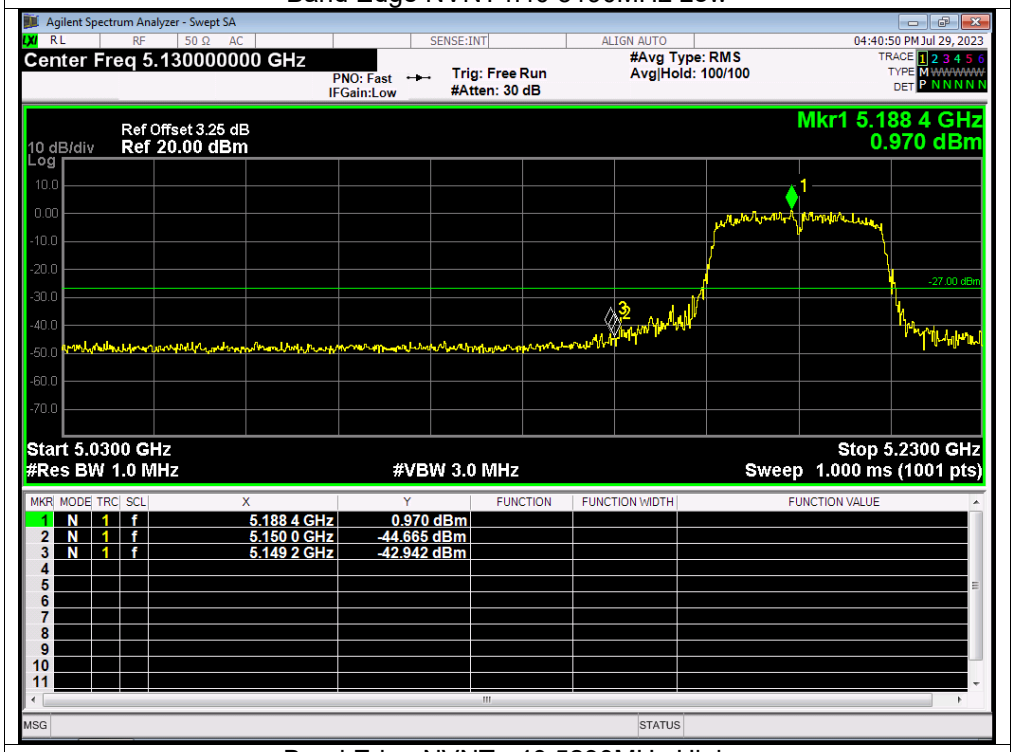
Band Edge NVNT n20 5180MHz Low



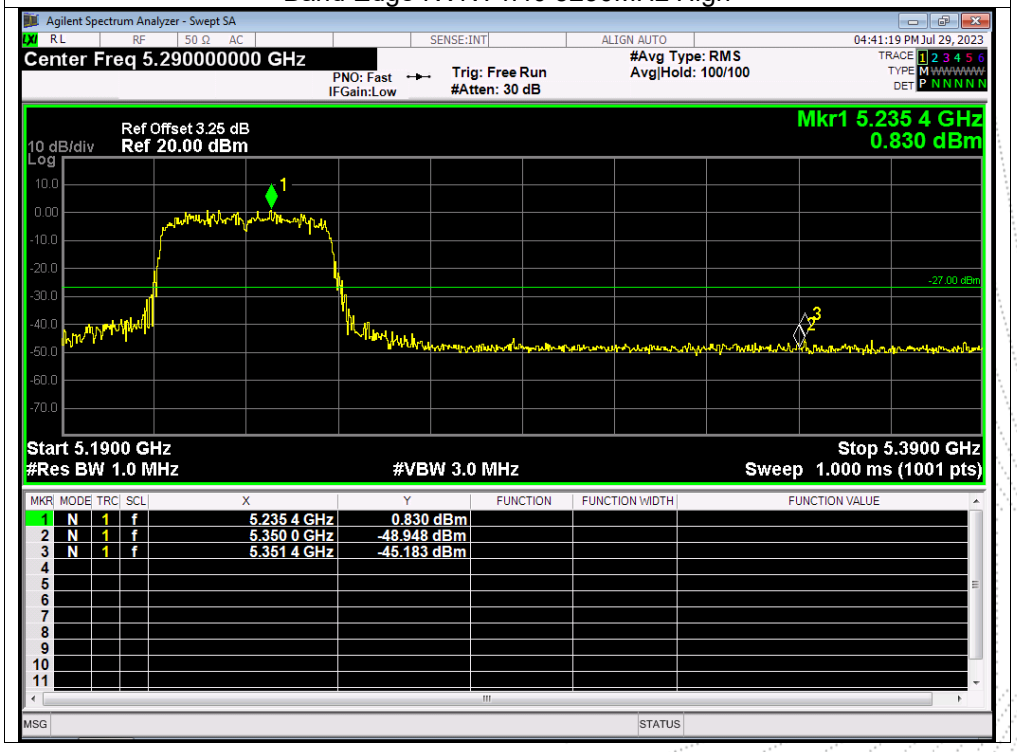
Band Edge NVNT n20 5240MHz High



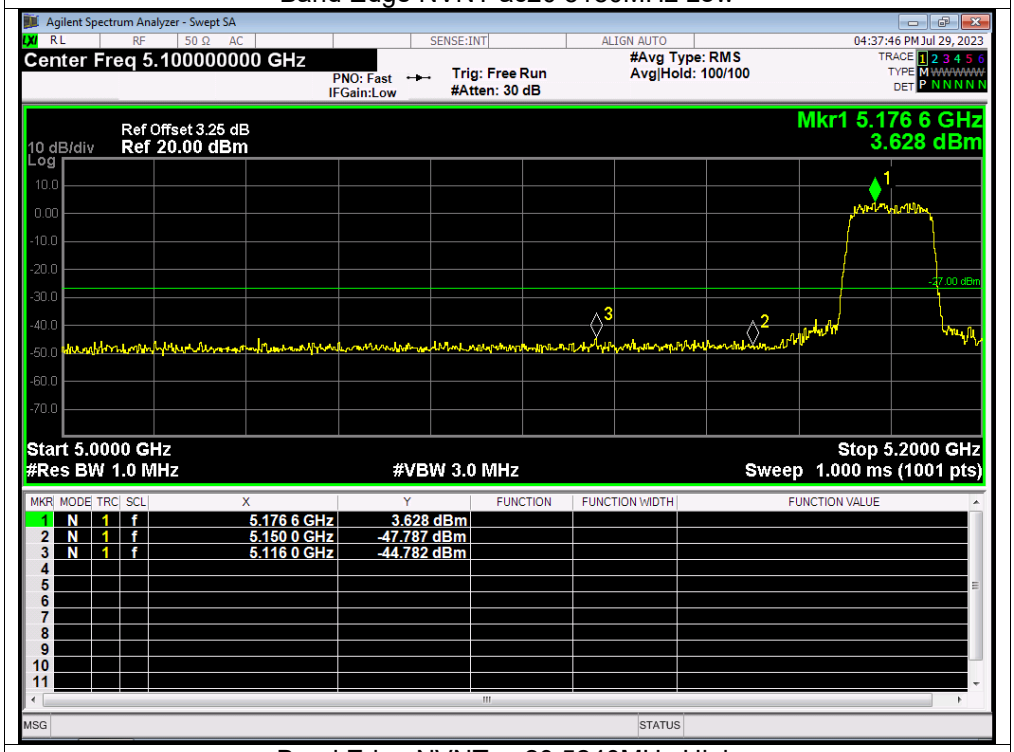
Band Edge NVNT n40 5190MHz Low



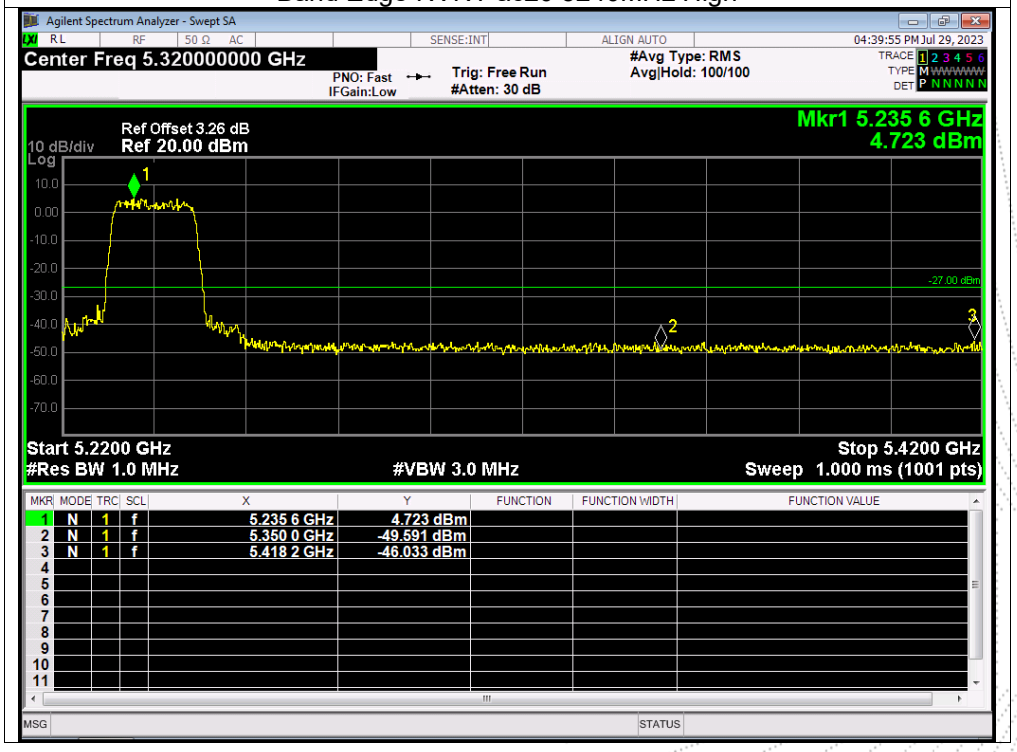
Band Edge NVNT n40 5230MHz High



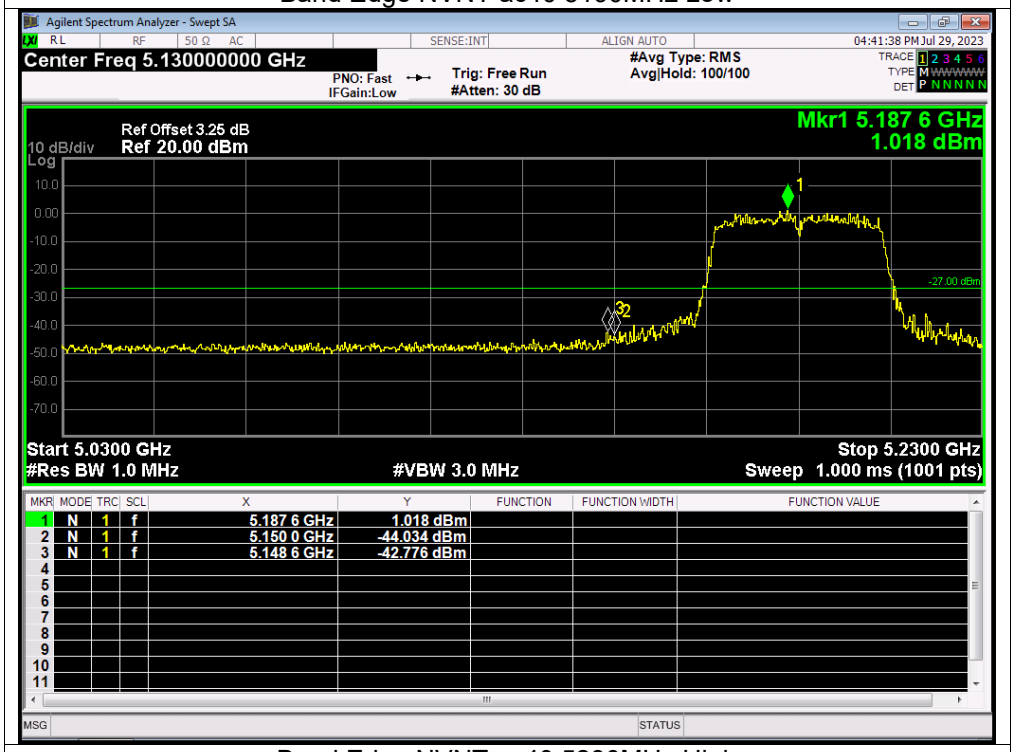
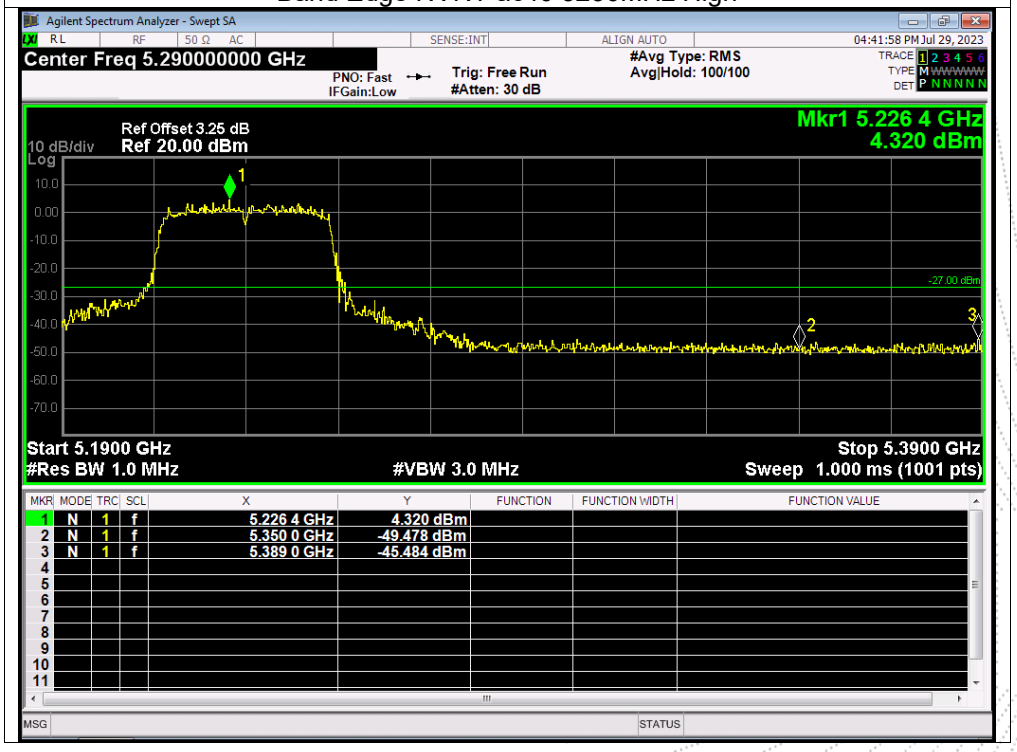
Band Edge NVNT ac20 5180MHz Low



Band Edge NVNT ac20 5240MHz High



Band Edge NVNT ac40 5190MHz Low



Band Edge NVNT ac40 5230MHz High