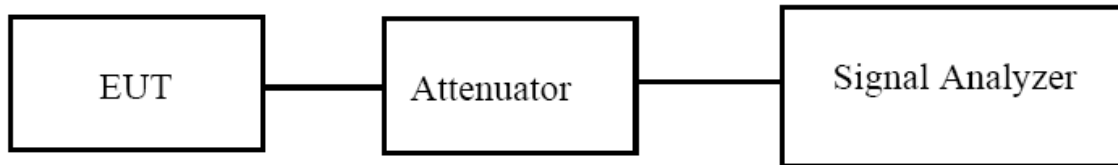


9. 26dB & 6dB & 99% Emission Bandwidth

9.1 Block Diagram Of Test Setup



9.2 Limit

(1) For the band 5.15-5.25 GHz.

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

(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

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

9.3 Test Procedure

- Set RBW = approximately 1% of the emission bandwidth.
- Set the VBW > RBW.
- Detector = Peak.
- Trace mode = max hold.
- Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

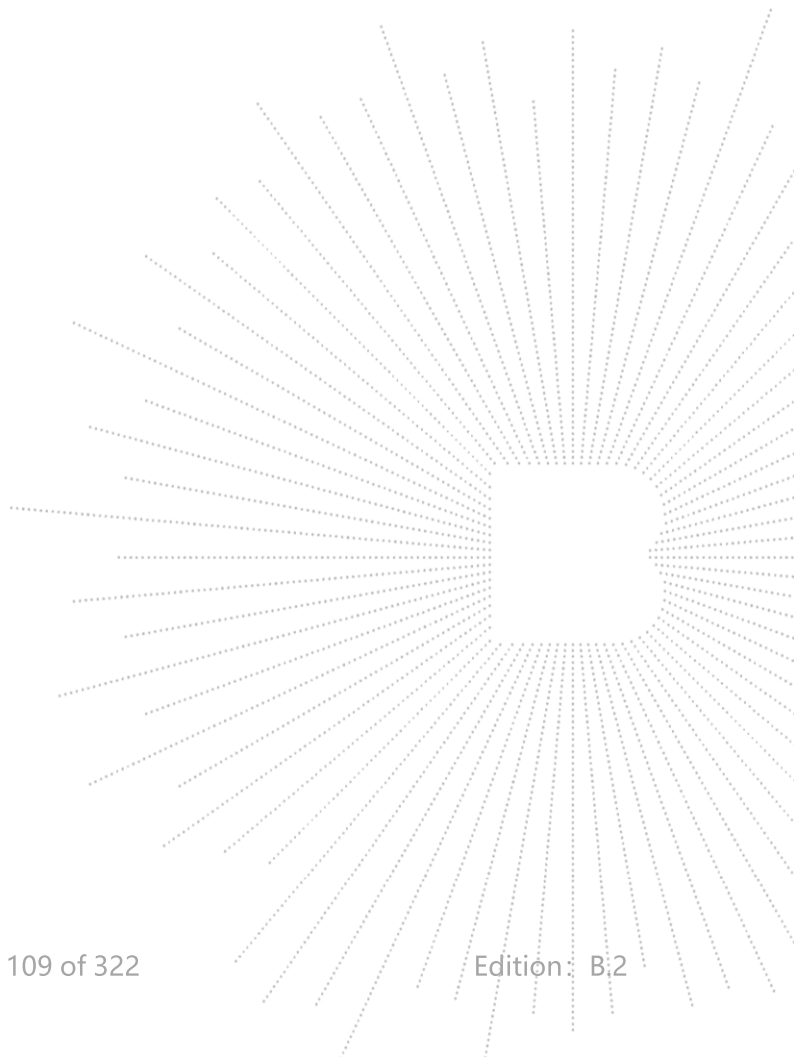
The following procedure shall be used for measuring (99 %) power bandwidth:

- Set center frequency to the nominal EUT channel center frequency.
- Set span = 1.5 times to 5.0 times the OBW.

3. Set RBW = 1 % to 5 % of the OBW
4. Set VBW $\geq 3 \cdot$ RBW
5. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
6. Use the 99 % power bandwidth function of the instrument (if available).
7. If the instrument does not have a 99 % power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 % of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5 % of the total is reached; that frequency is recorded as the upper frequency. The 99% occupied bandwidth is the difference between these two frequencies.

9.4 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.

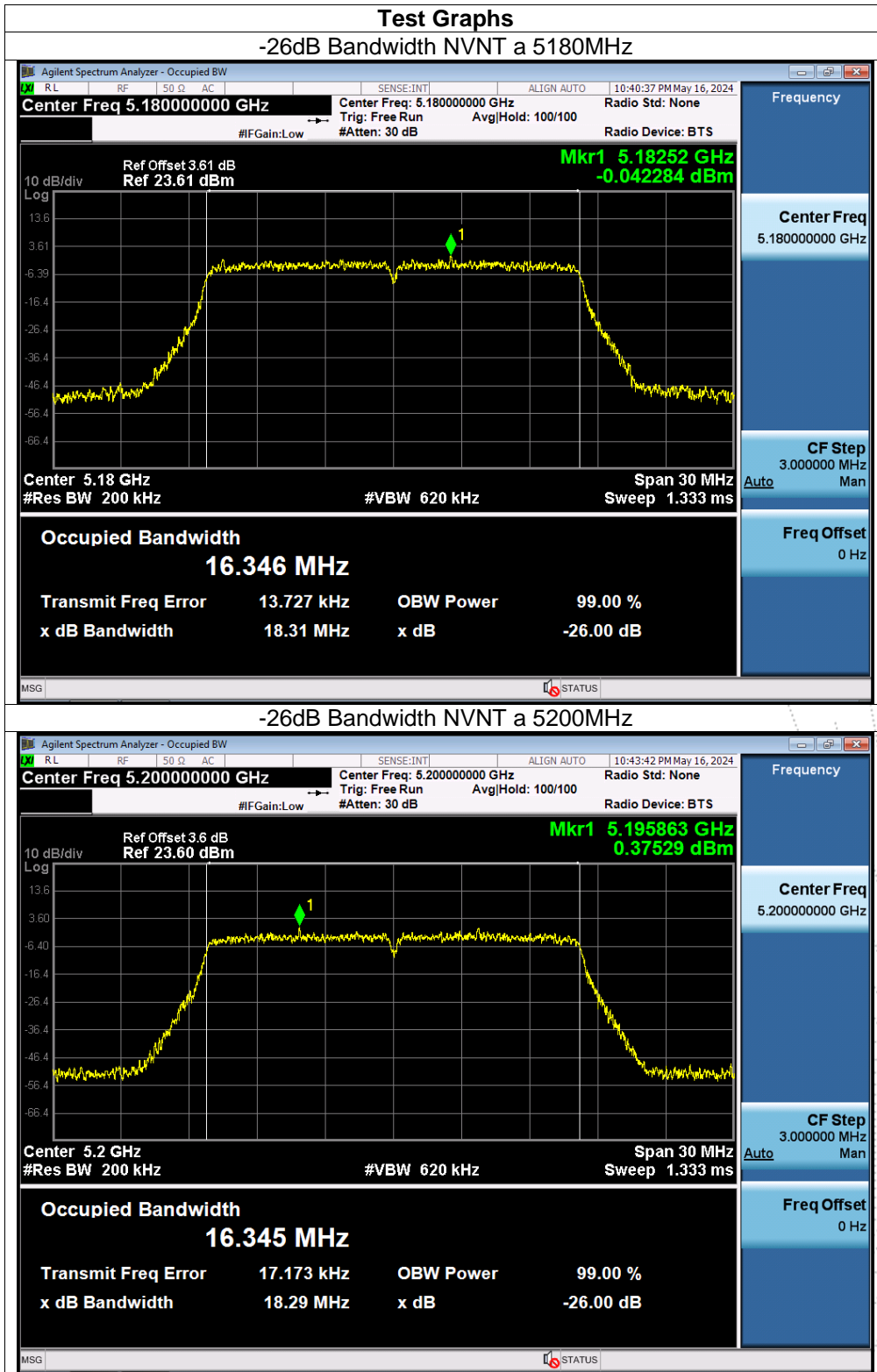


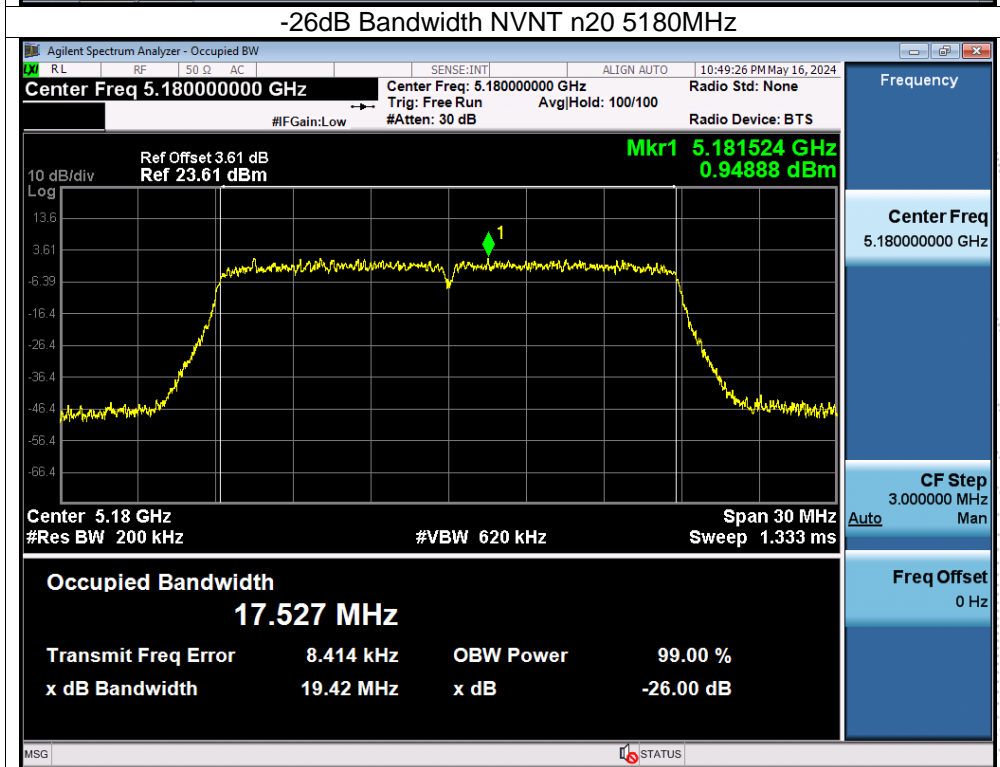
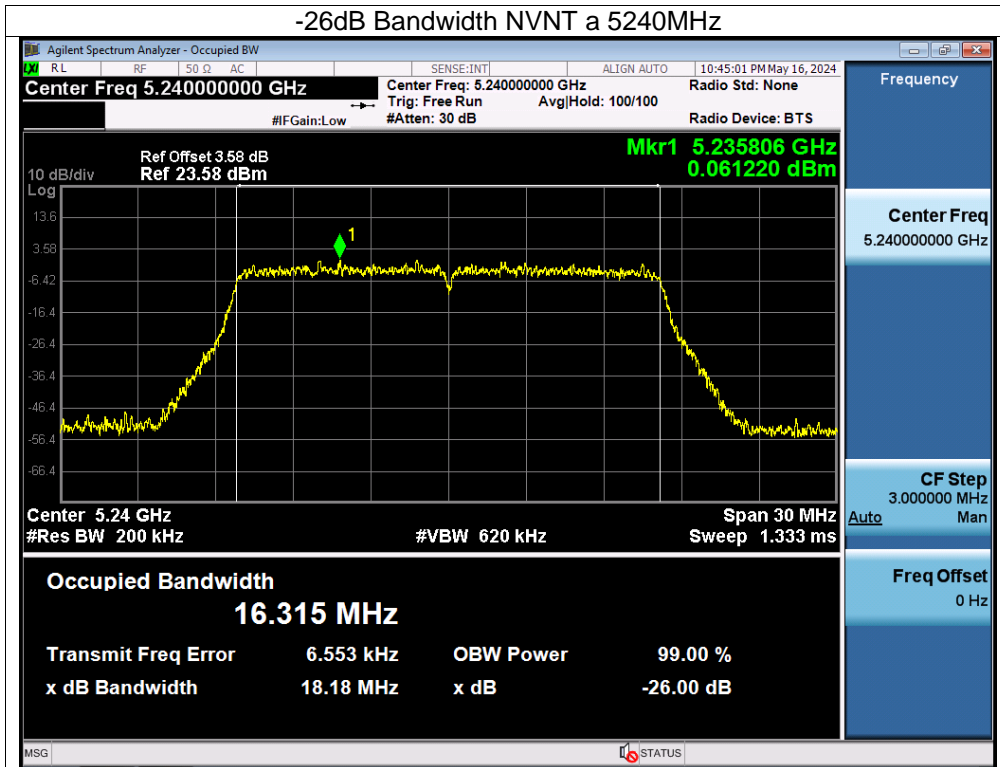
9.5 Test Result

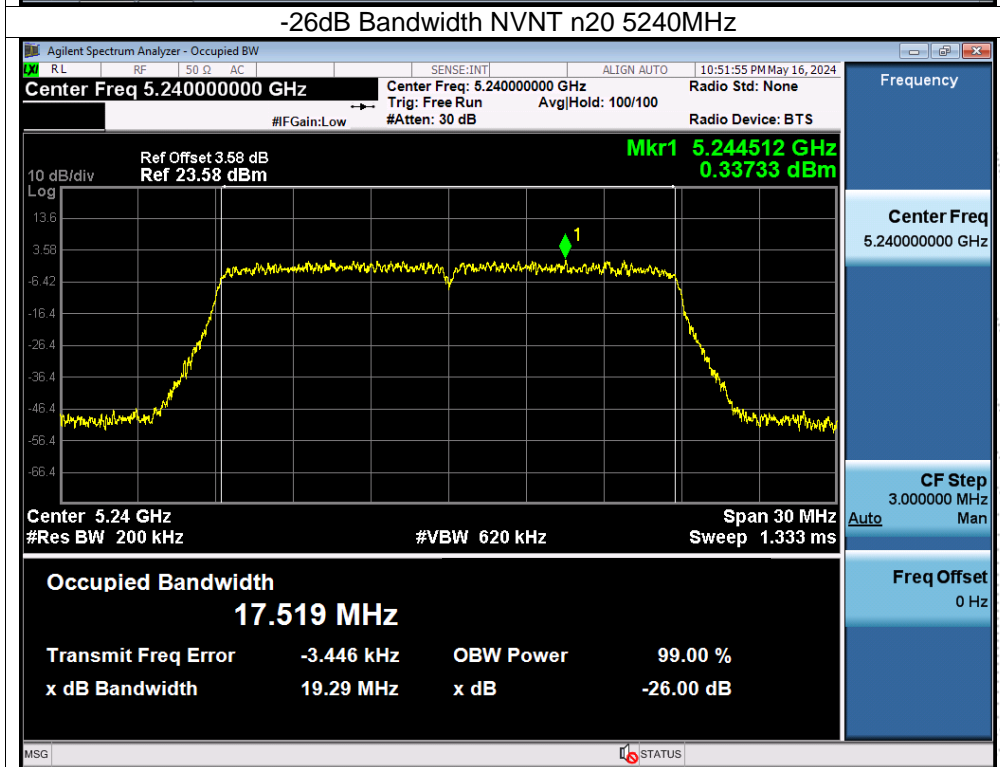
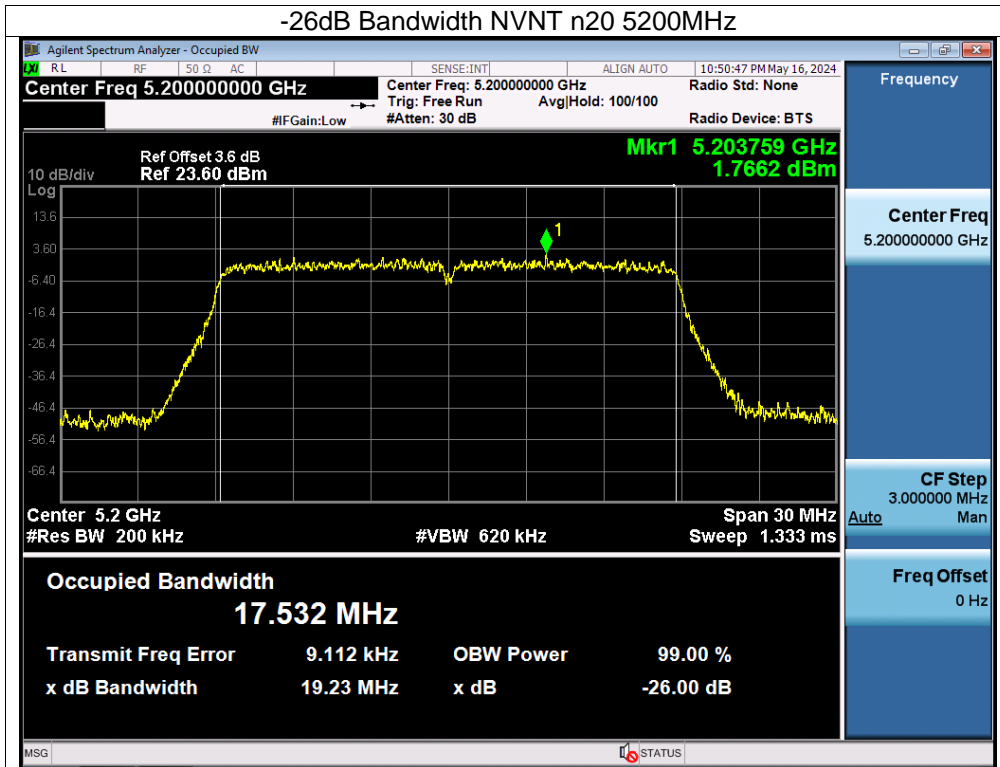
Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	DC 12V
Test Mode:	(5180-5240MHz)		

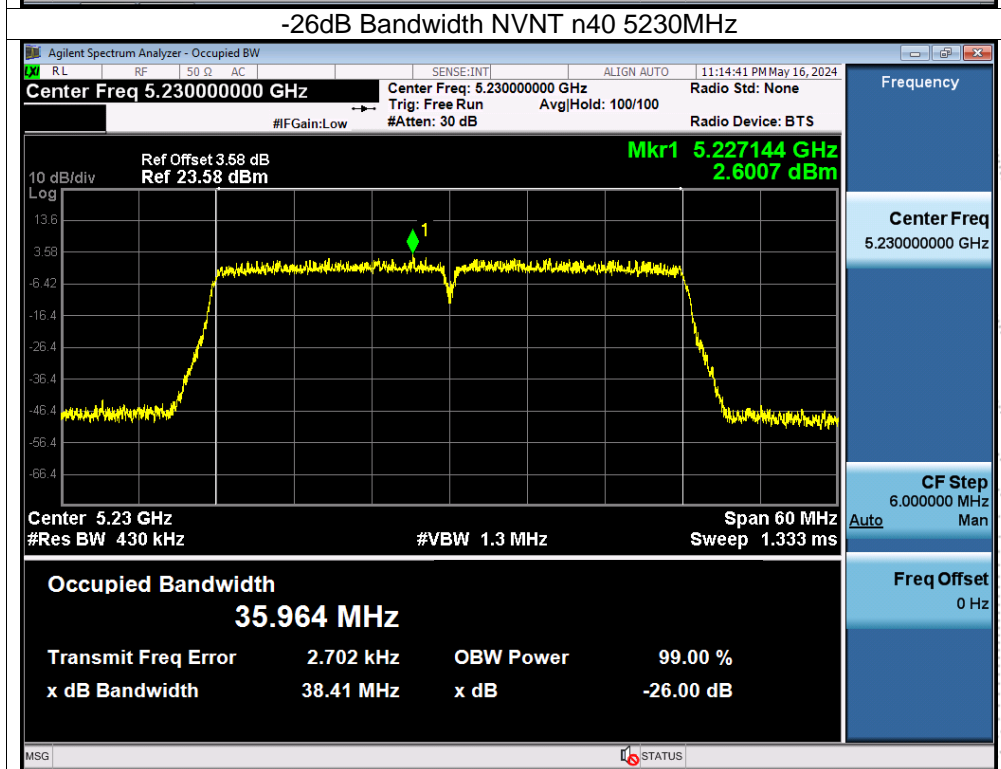
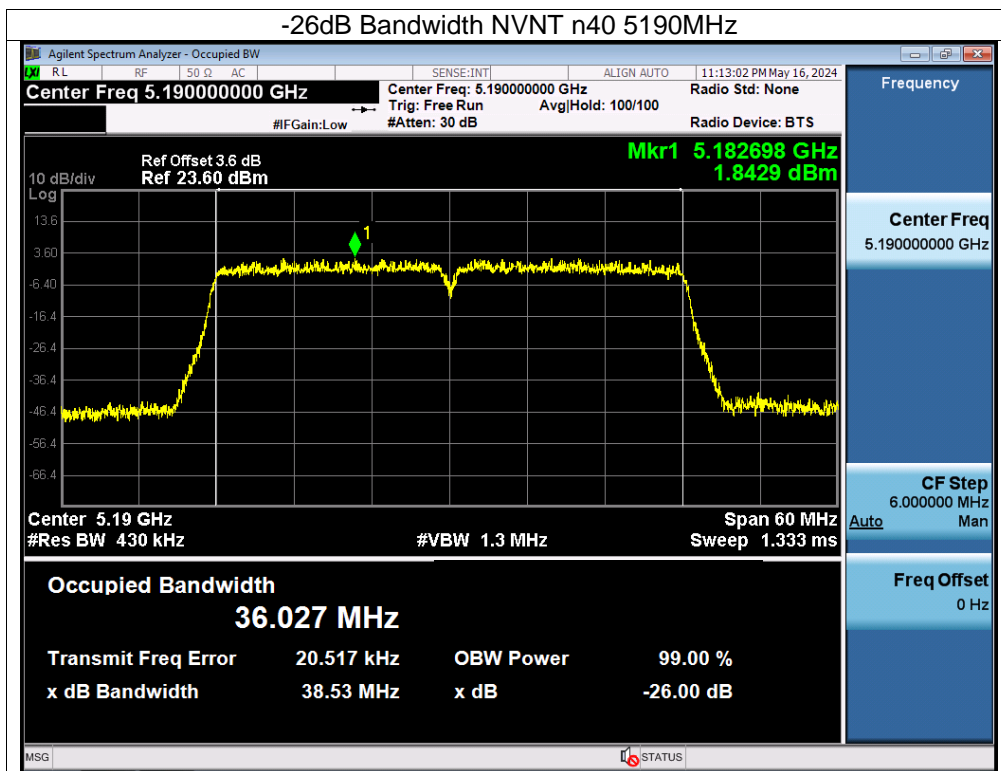
Condition	Mode	Frequency (MHz)	-26 dB Bandwidth (MHz)		99% OBW (MHz)		Verdict
			Ant A	Ant B	Ant A	Ant B	
NVNT	a	5180	18.311	18.277	16.328	16.344	Pass
NVNT	a	5200	18.285	18.344	16.335	16.345	Pass
NVNT	a	5240	18.181	18.385	16.322	16.333	Pass
NVNT	n20	5180	19.421	19.437	17.526	17.522	Pass
NVNT	n20	5200	19.226	19.238	17.534	17.538	Pass
NVNT	n20	5240	19.29	19.31	17.52	17.53	Pass
NVNT	n40	5190	38.531	38.592	36.031	36.057	Pass
NVNT	n40	5230	38.409	38.63	35.994	36.071	Pass
NVNT	ac20	5180	19.282	19.423	17.524	17.526	Pass
NVNT	ac20	5200	19.307	19.128	17.518	17.523	Pass
NVNT	ac20	5240	19.278	19.387	17.507	17.539	Pass
NVNT	ac40	5190	38.502	38.707	35.999	36.049	Pass
NVNT	ac40	5230	38.595	38.974	36.035	36.091	Pass
NVNT	ac80	5210	84.456	83.422	75.669	75.576	Pass
NVNT	ax20	5180	20.25	20.102	18.866	18.882	Pass
NVNT	ax20	5200	20.173	20.43	18.886	18.882	Pass
NVNT	ax20	5240	20.221	20.282	18.869	18.886	Pass
NVNT	ax40	5190	39.598	39.377	37.681	37.649	Pass
NVNT	ax40	5230	39.574	39.498	37.72	37.685	Pass
NVNT	ax80	5210	80.045	80.087	76.711	76.77	Pass

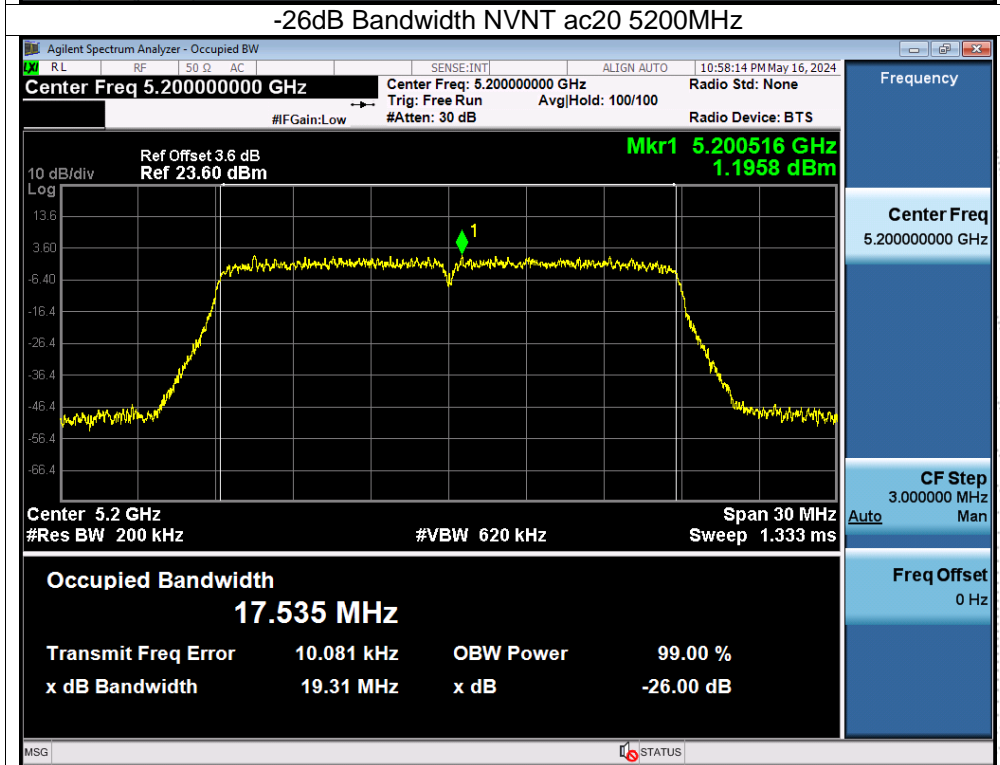
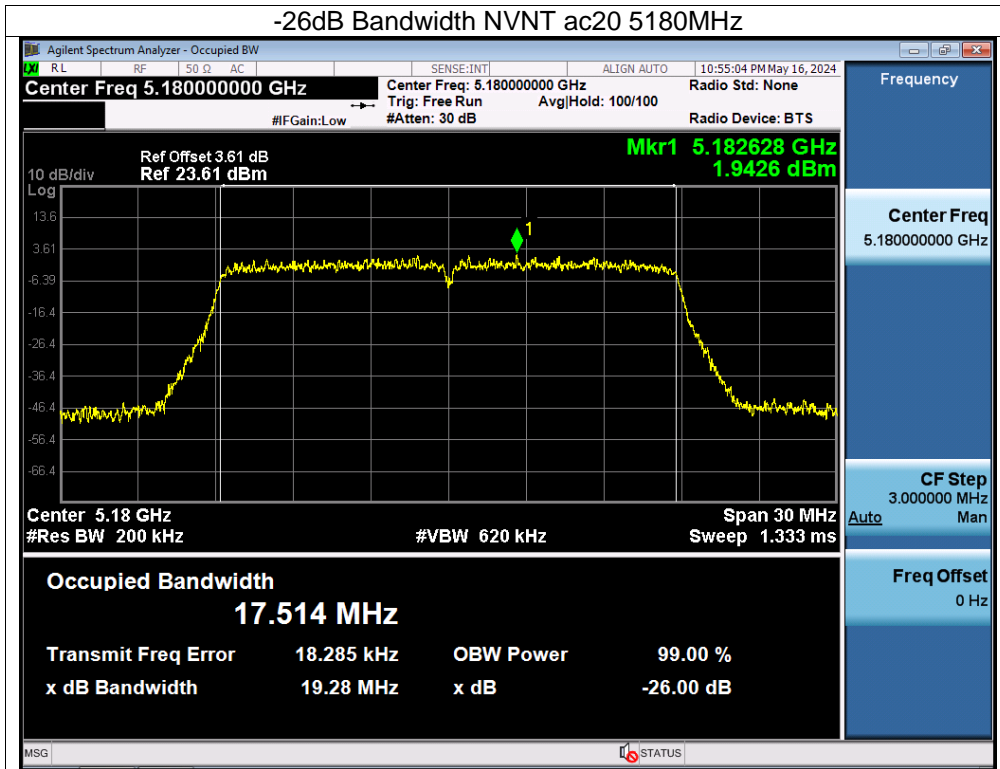
Note: A(B) Represent the value of antenna A and B, The worst data is Antenna A, only shown Antenna A Plot.

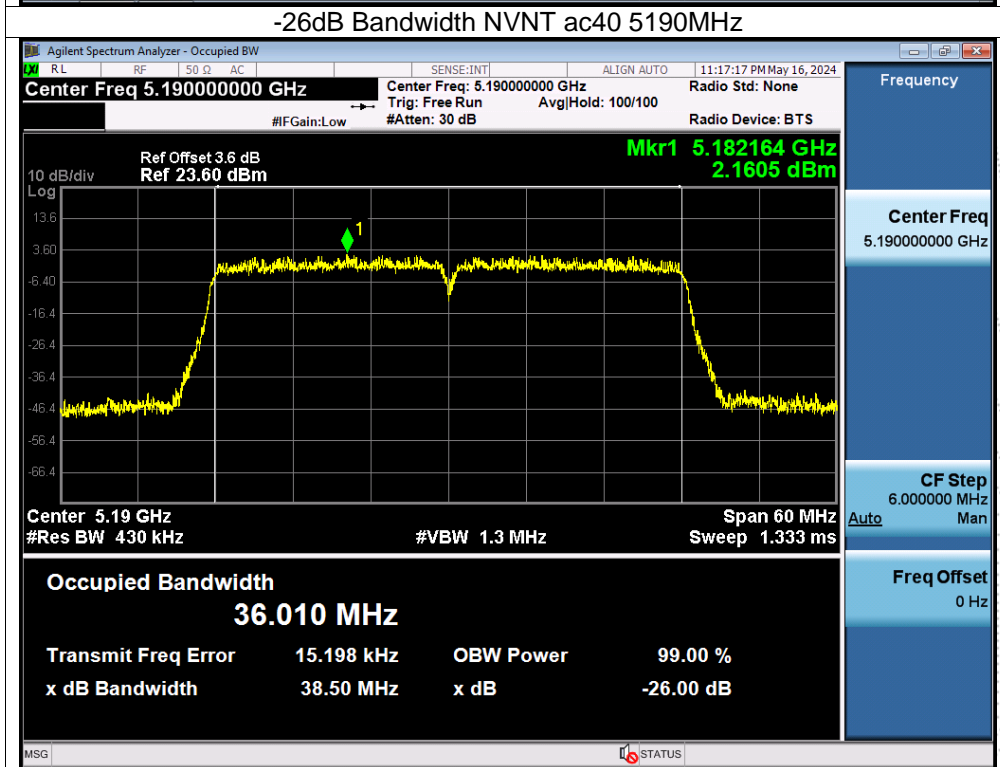
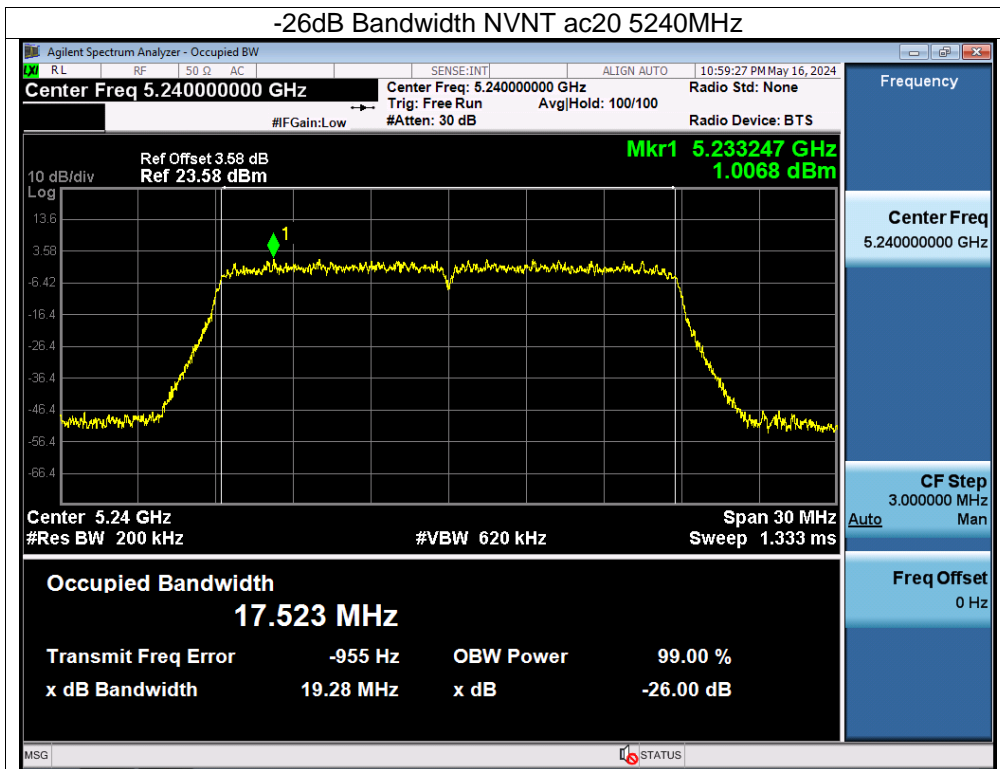


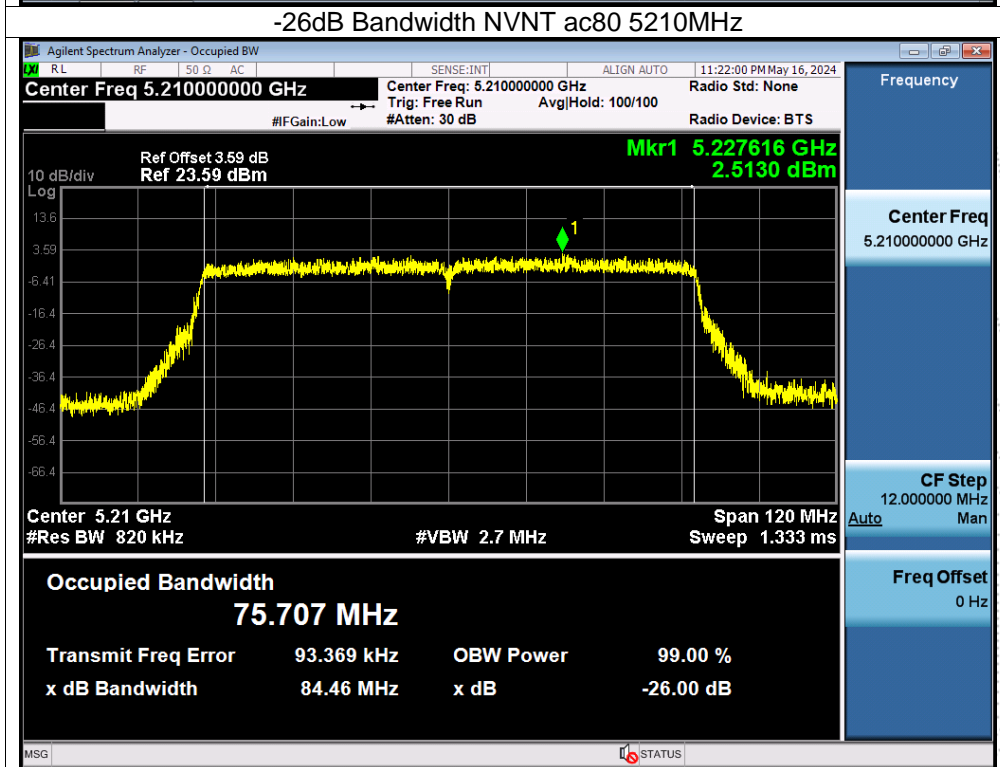
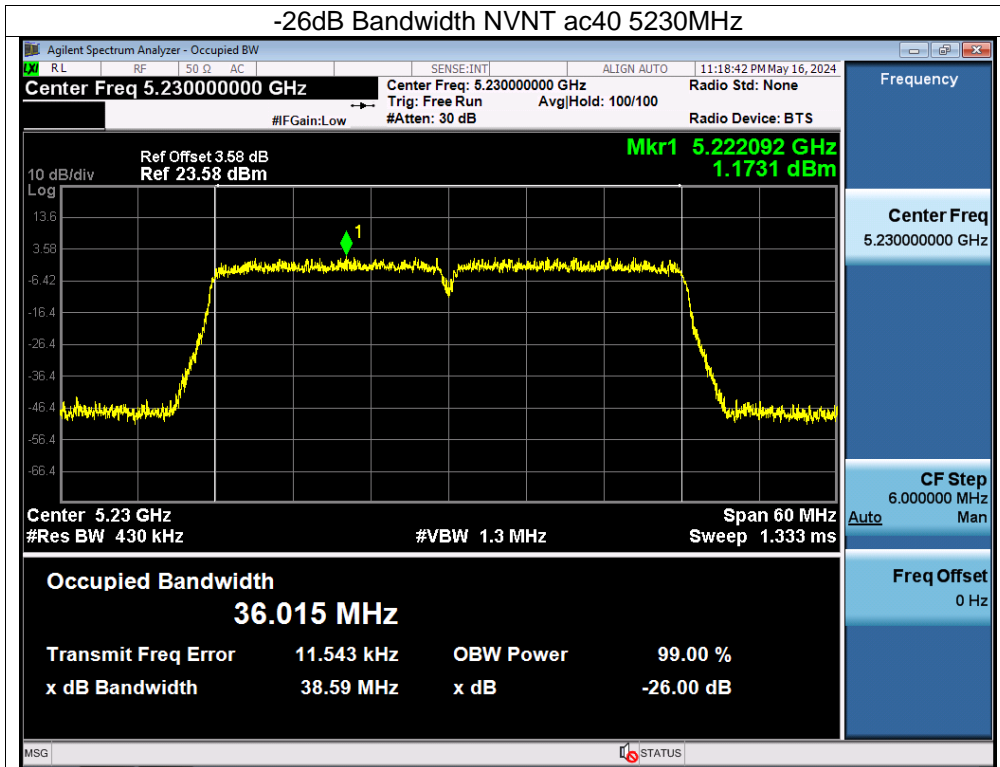


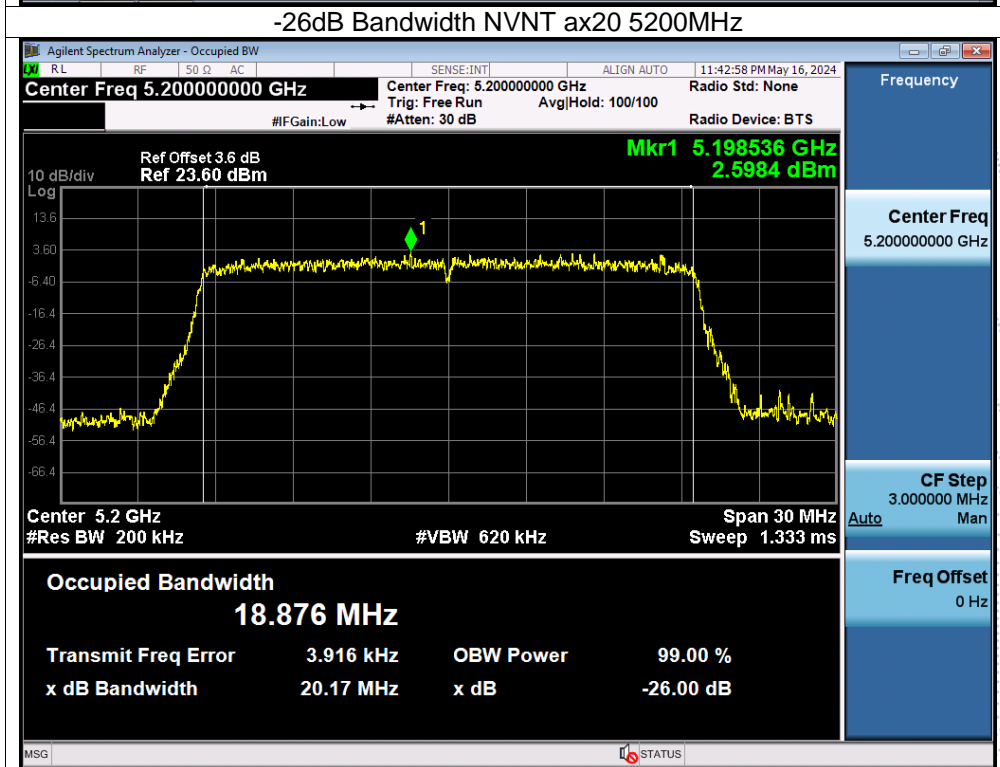
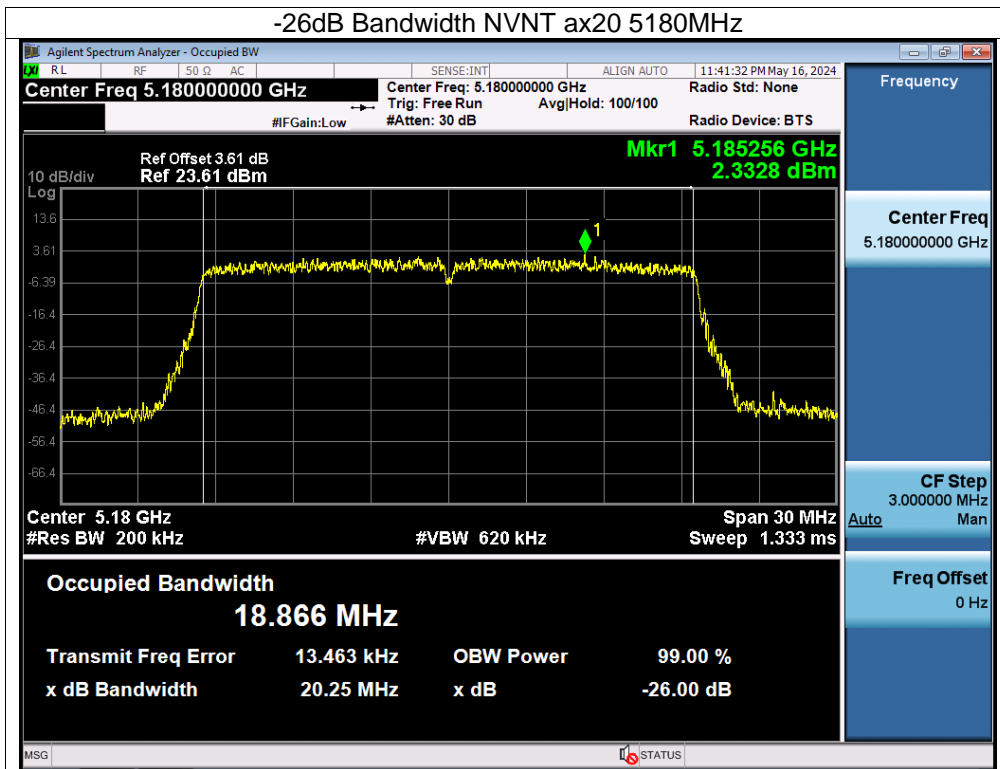


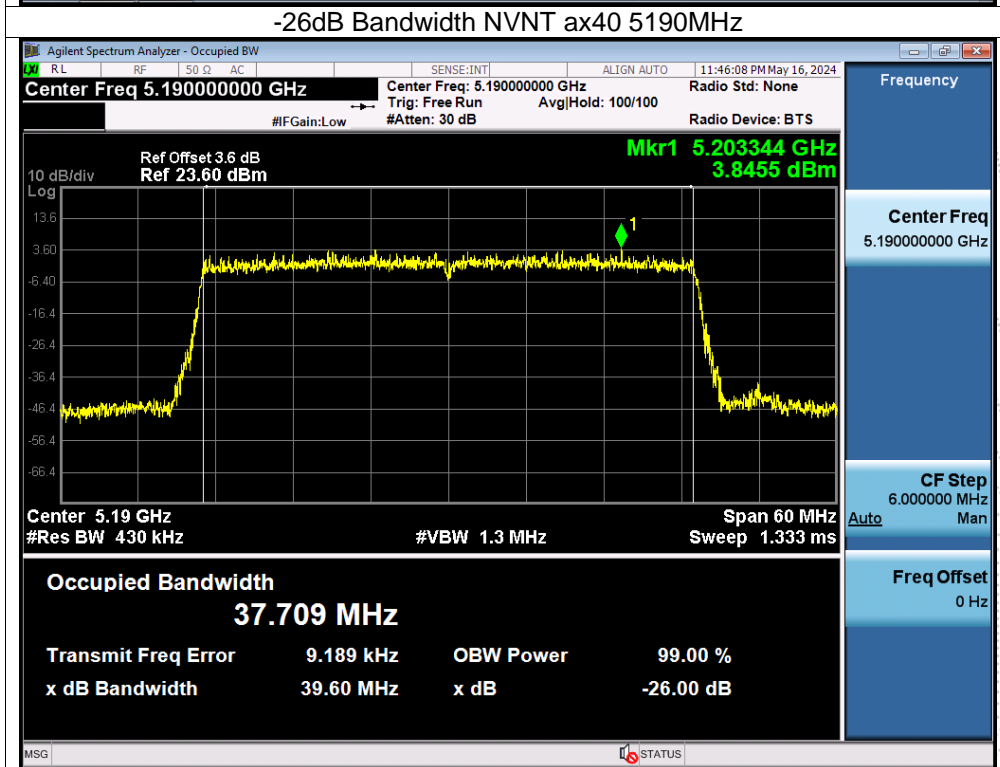
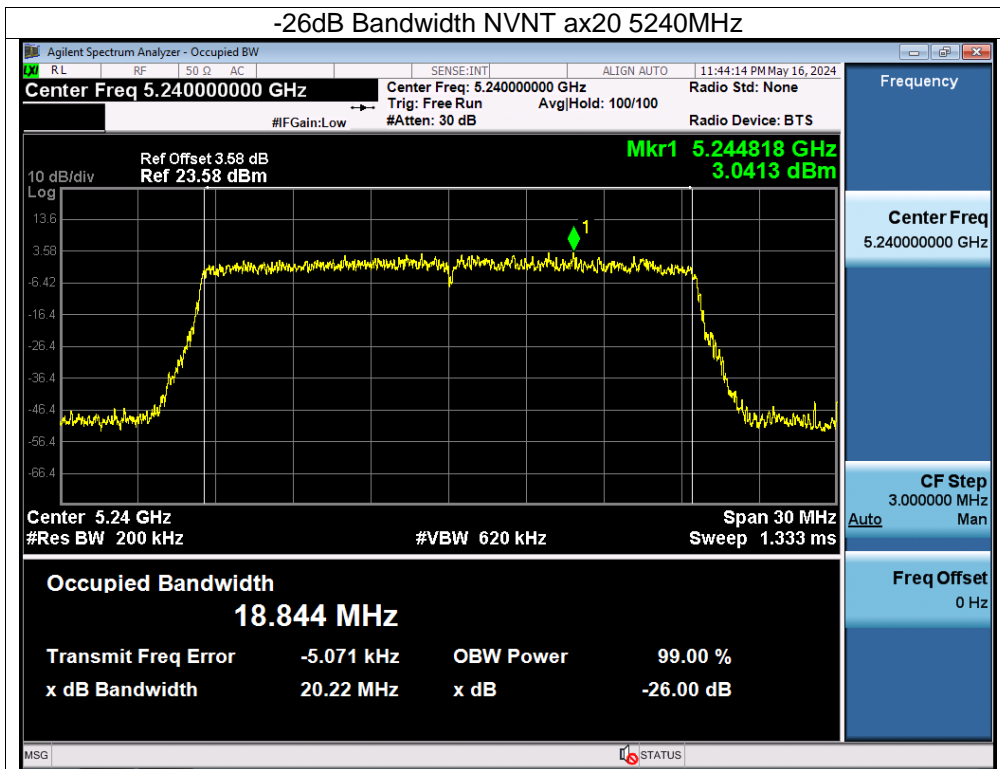


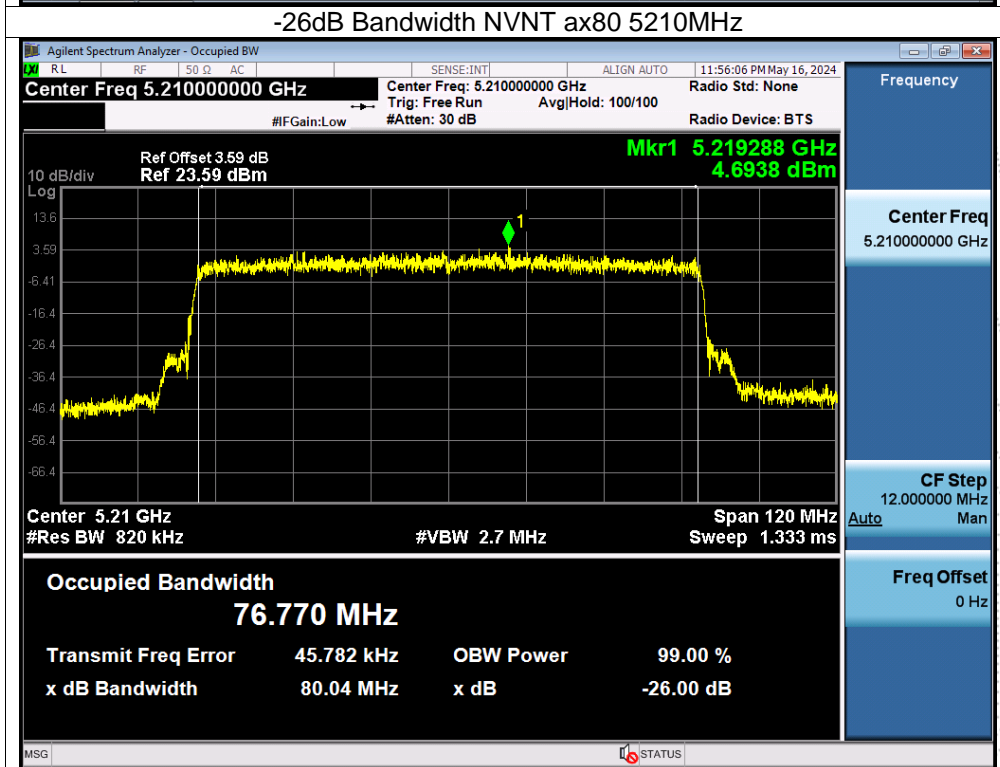
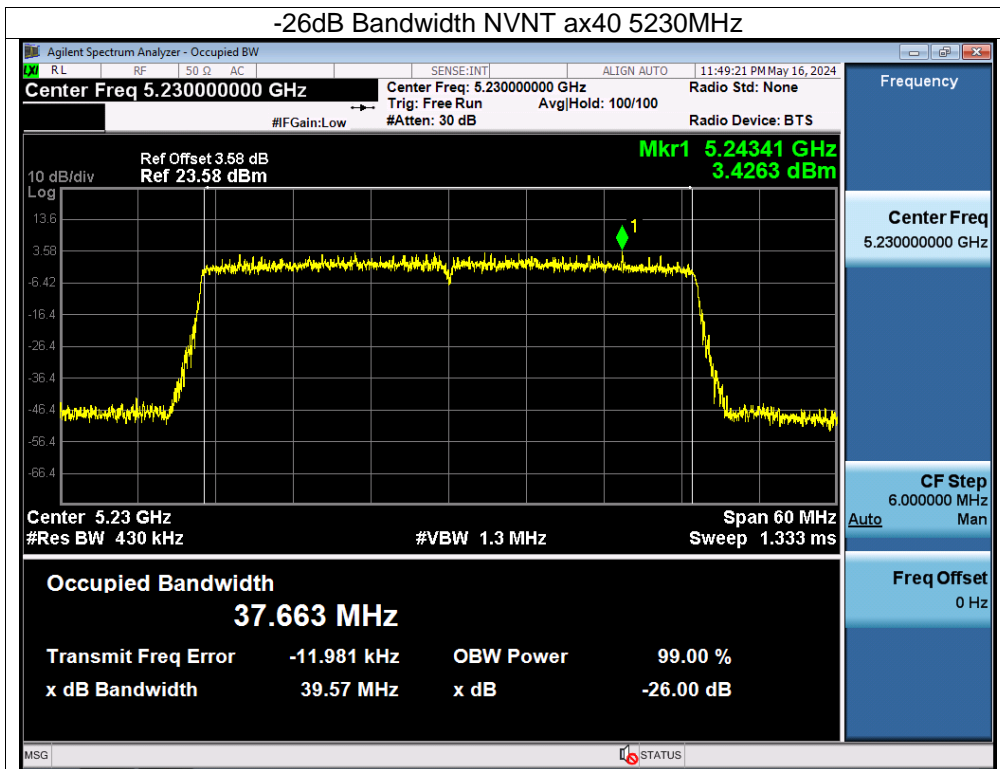




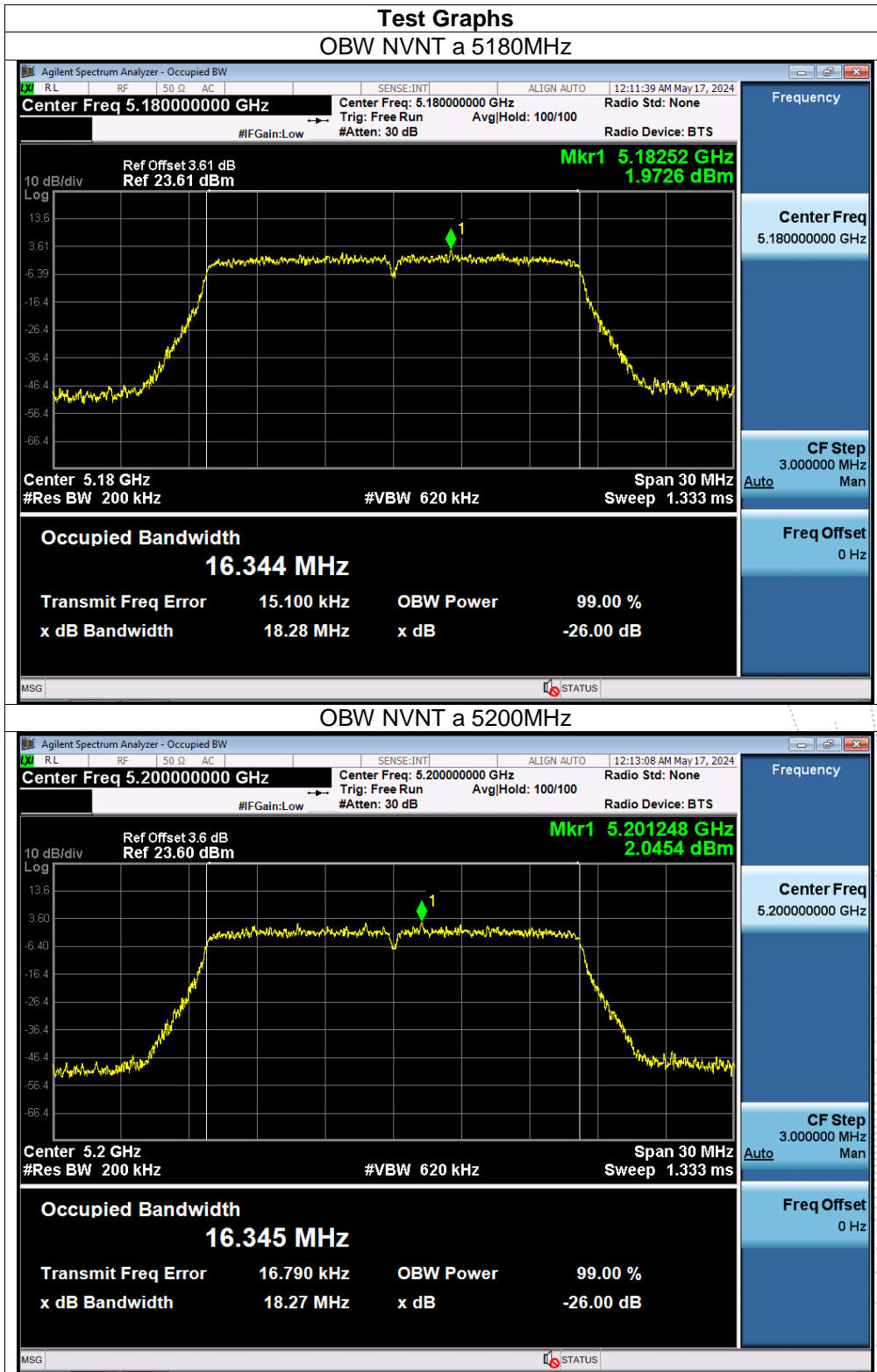


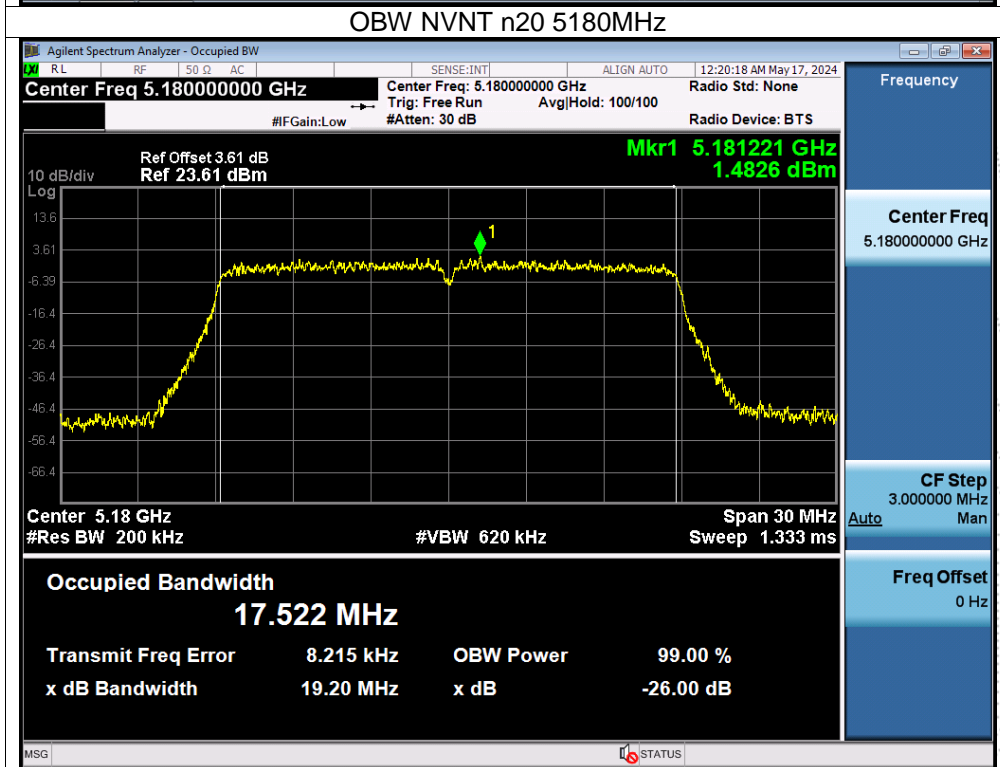
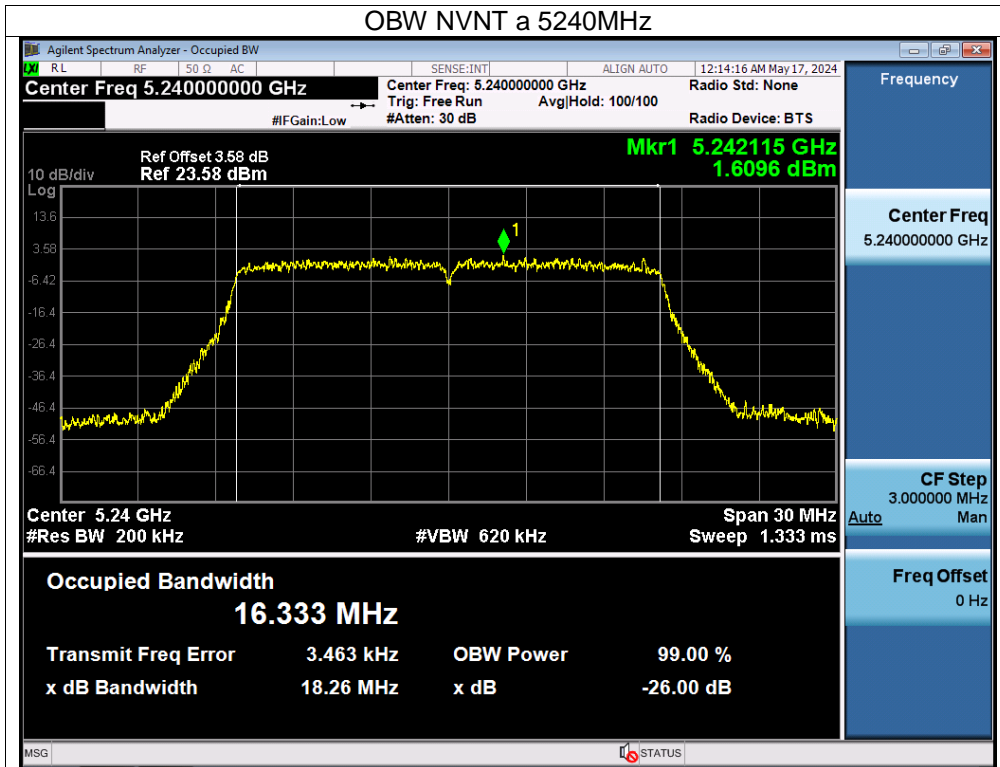


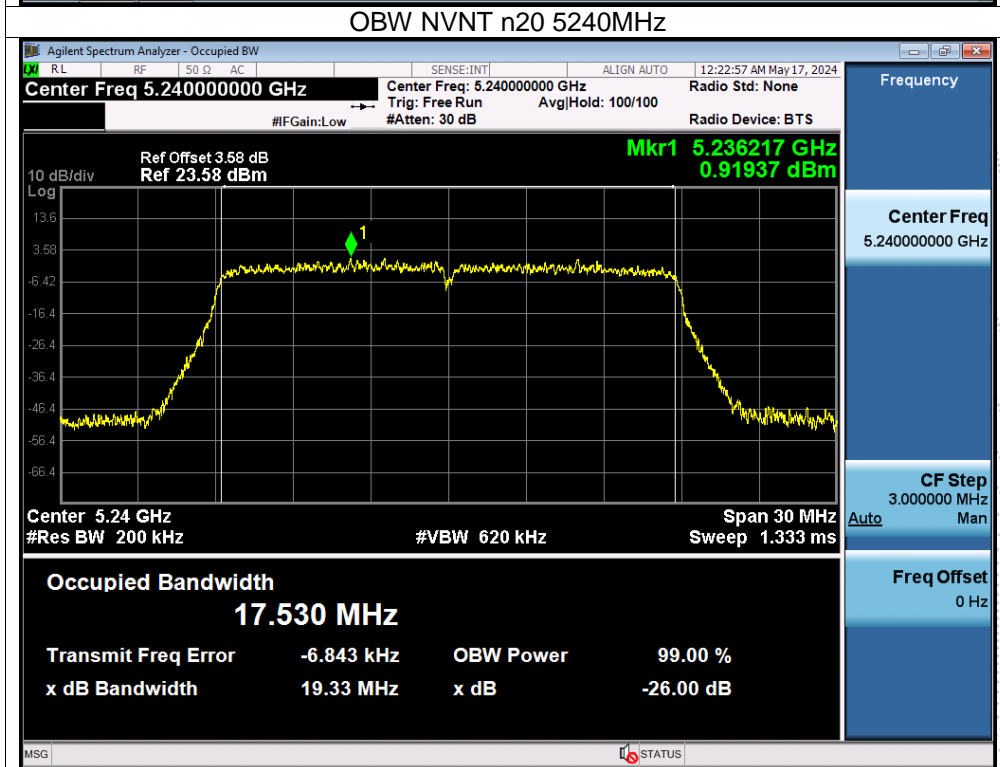
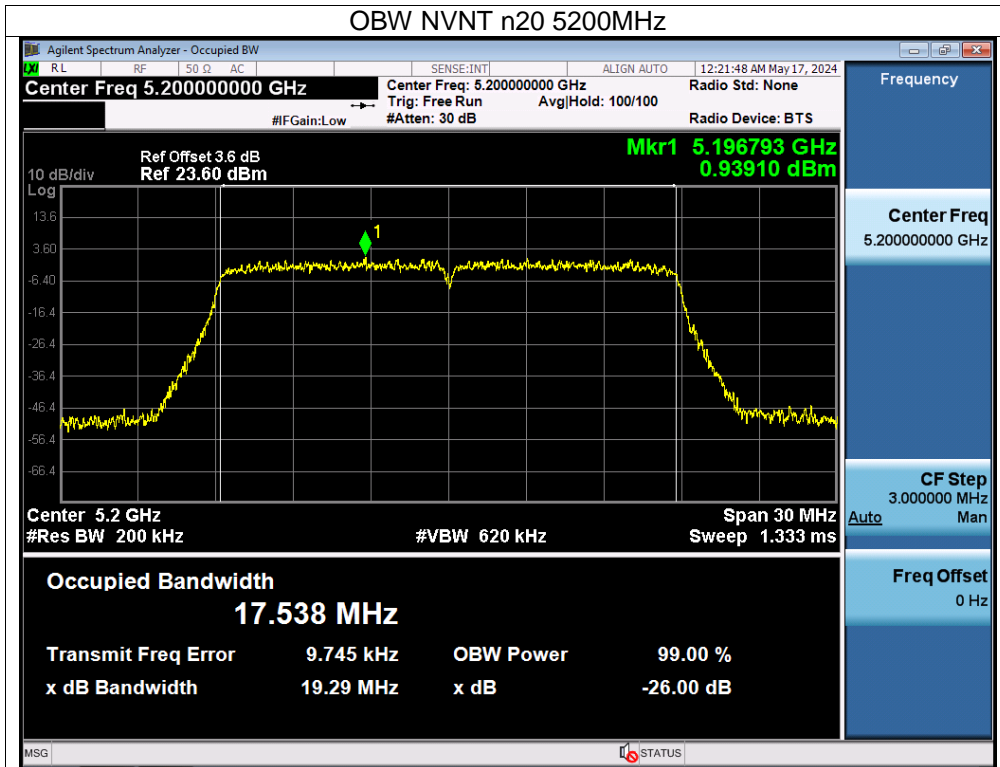


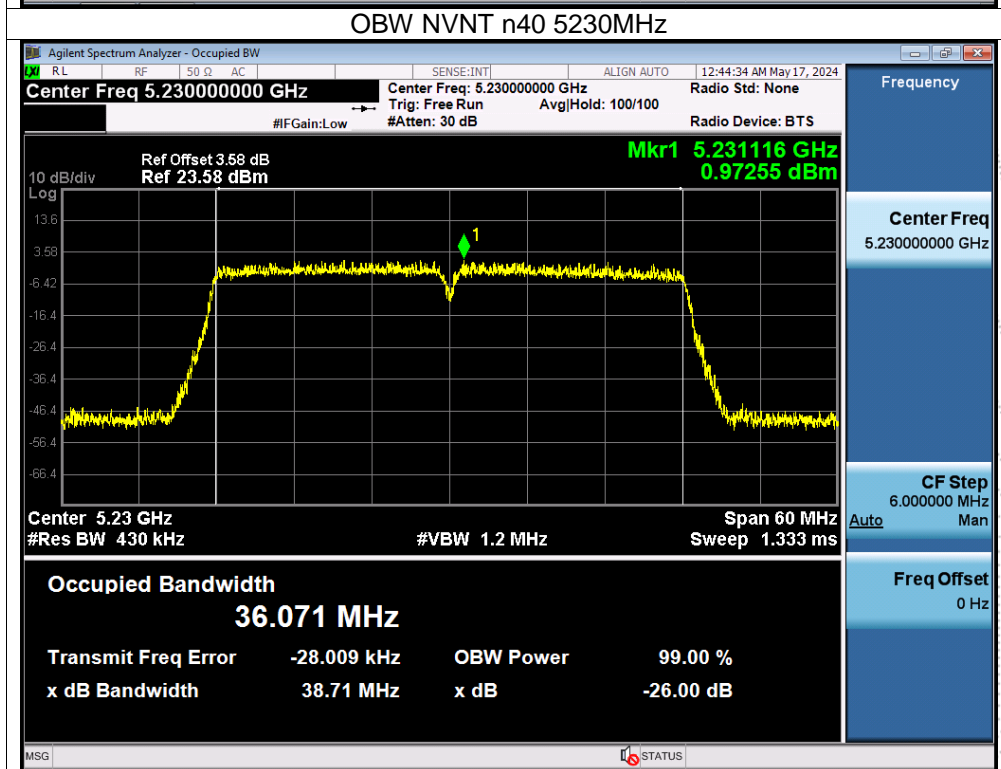
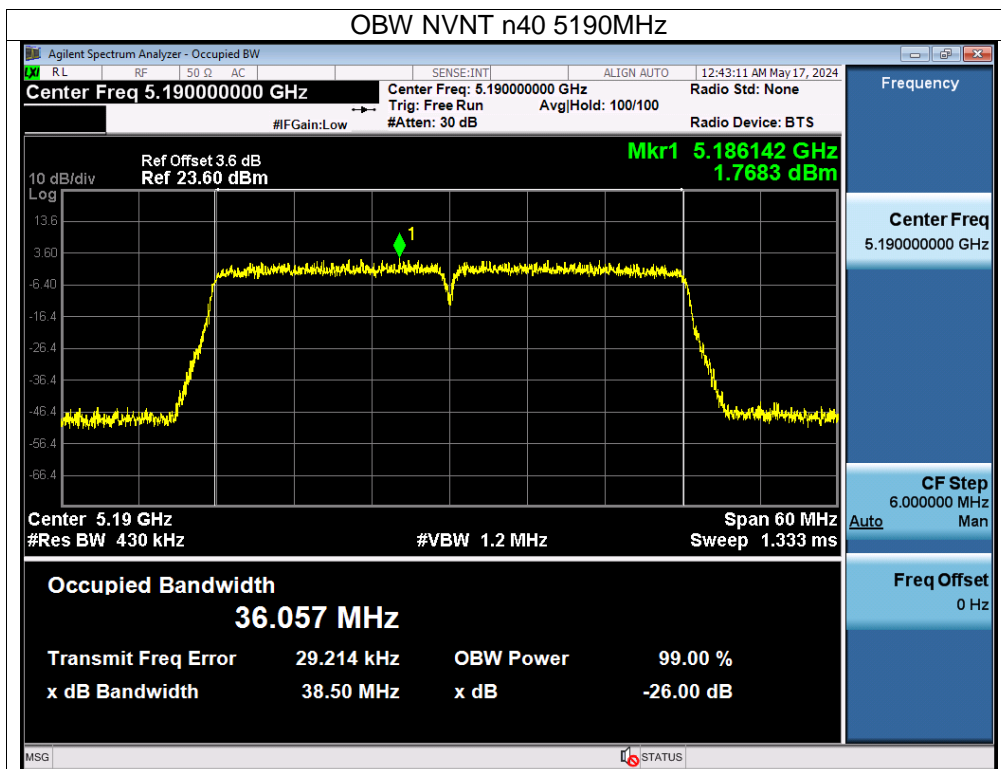


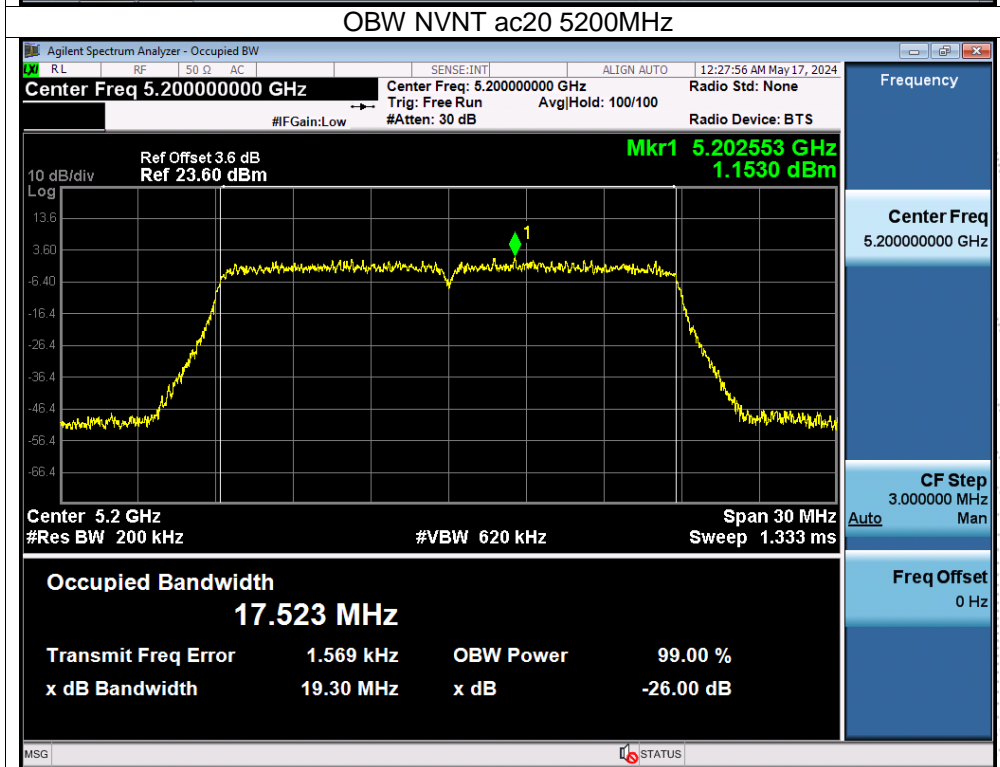
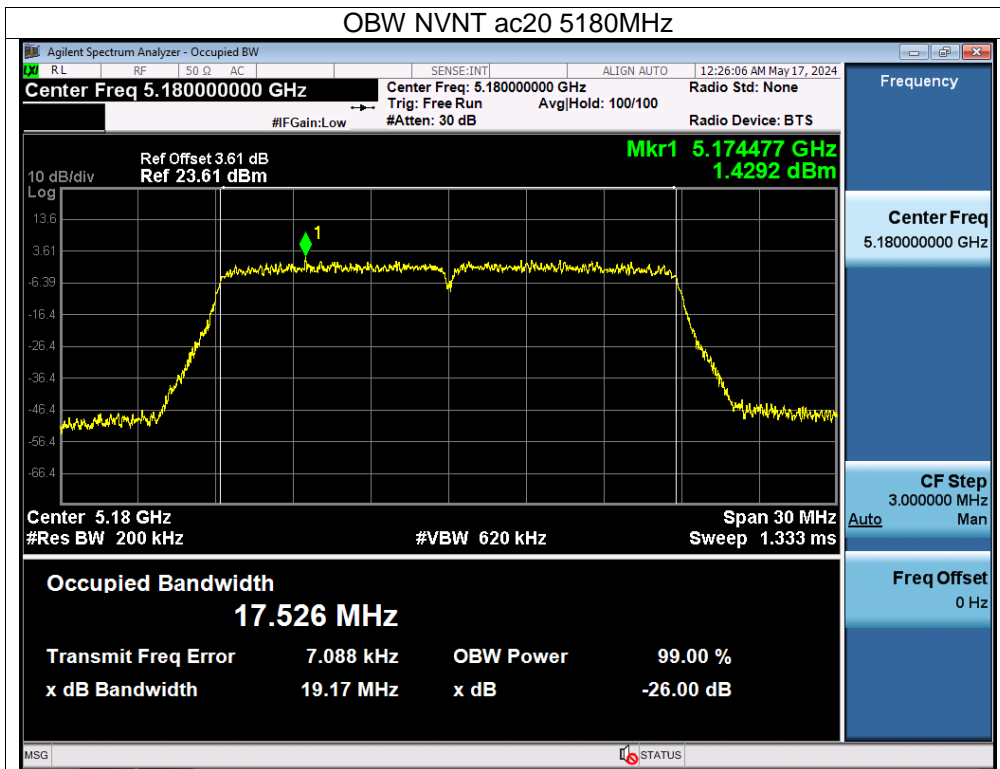
Note: A(B) Represent the value of antenna A and B, The worst data is Antenna B, only shown Antenna B Plot.

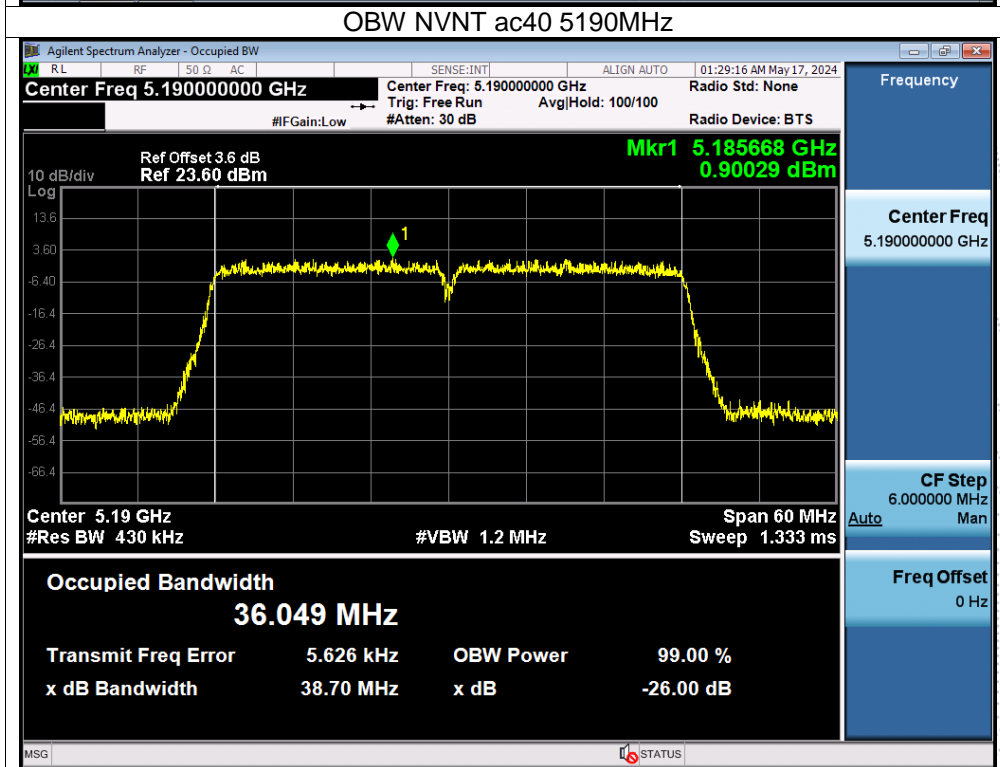
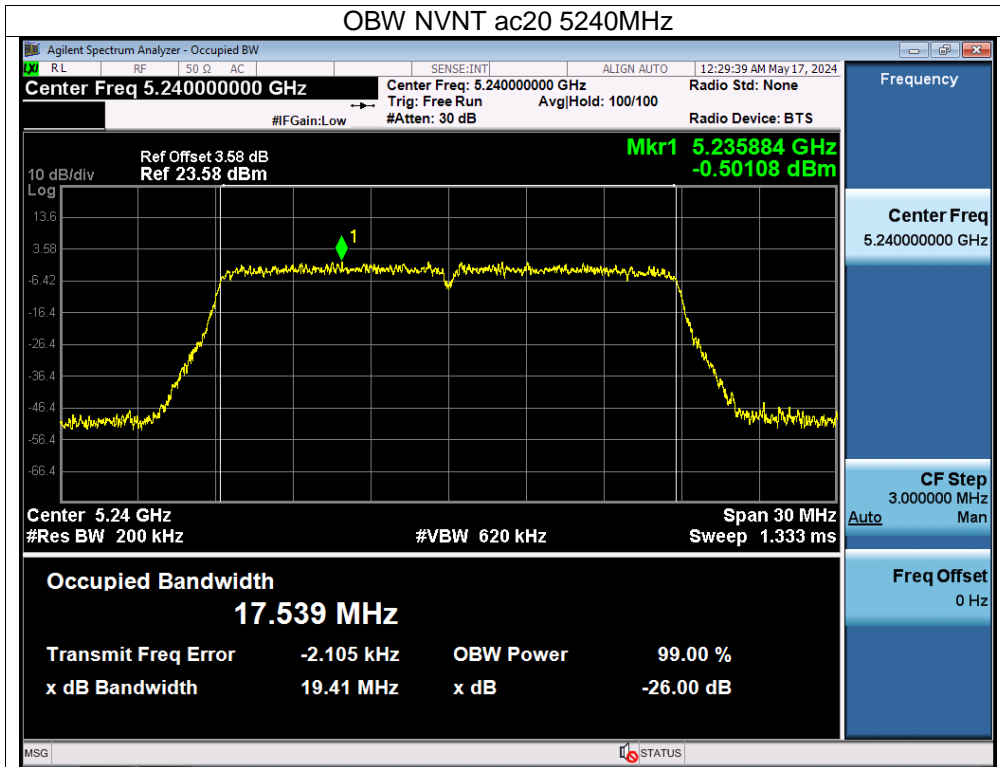


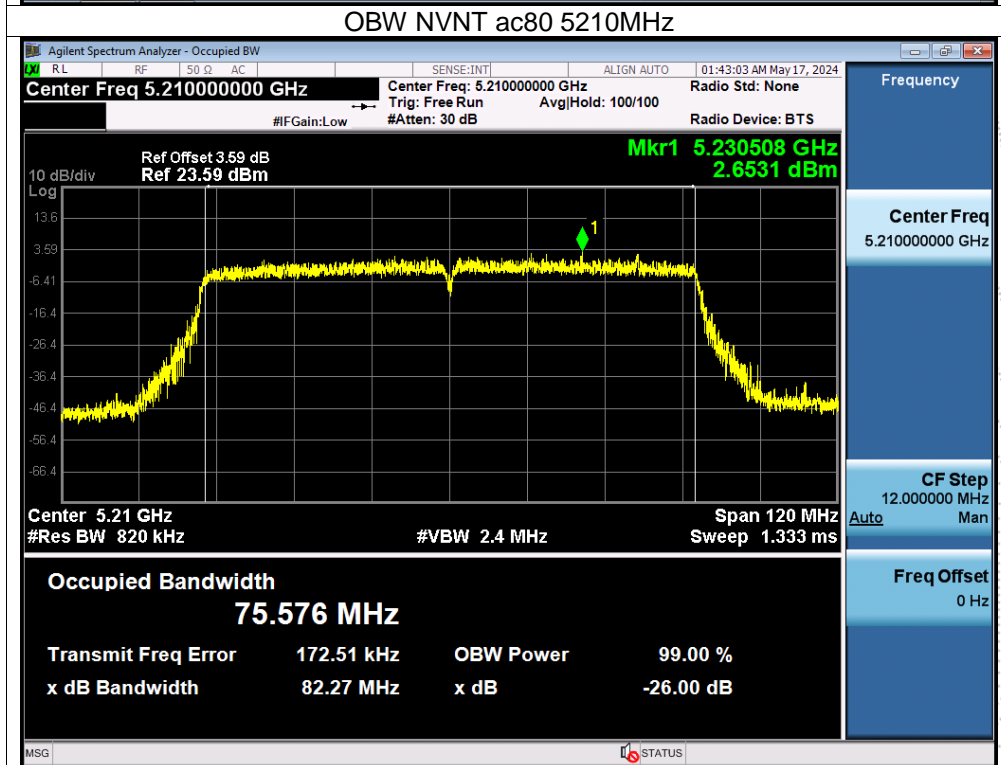
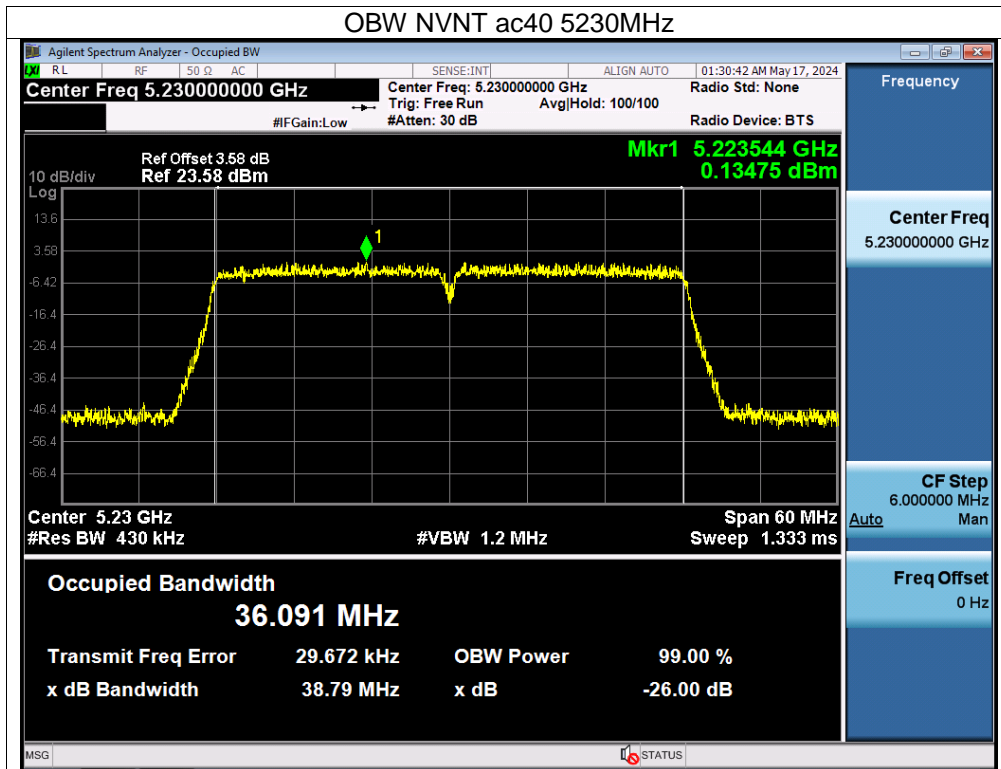


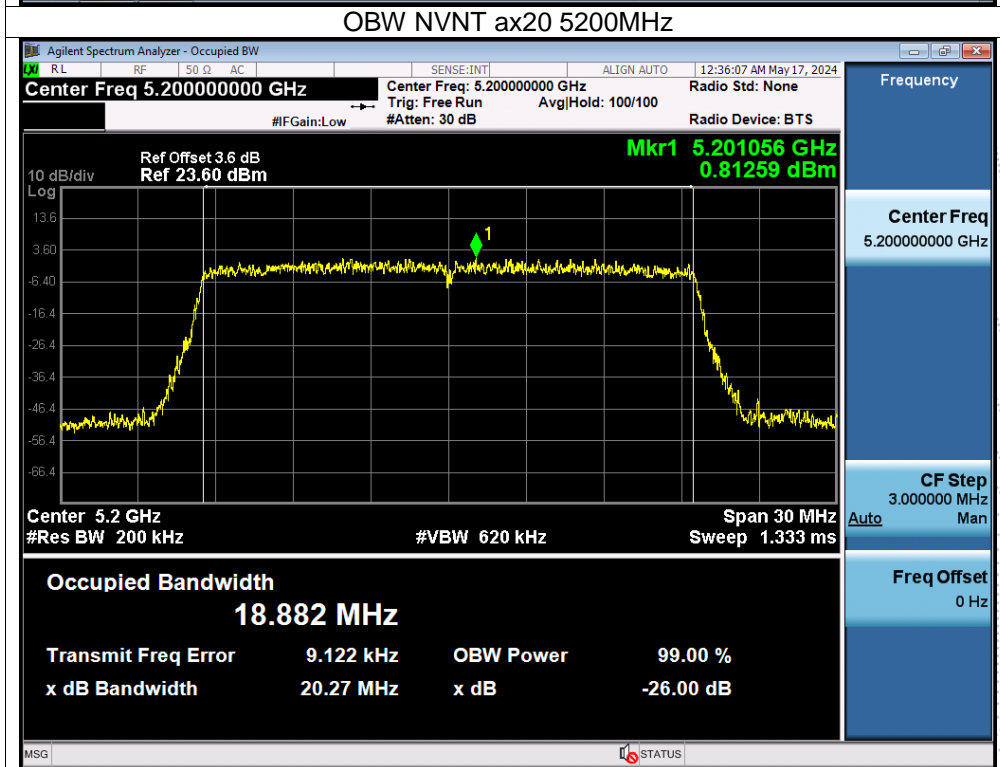
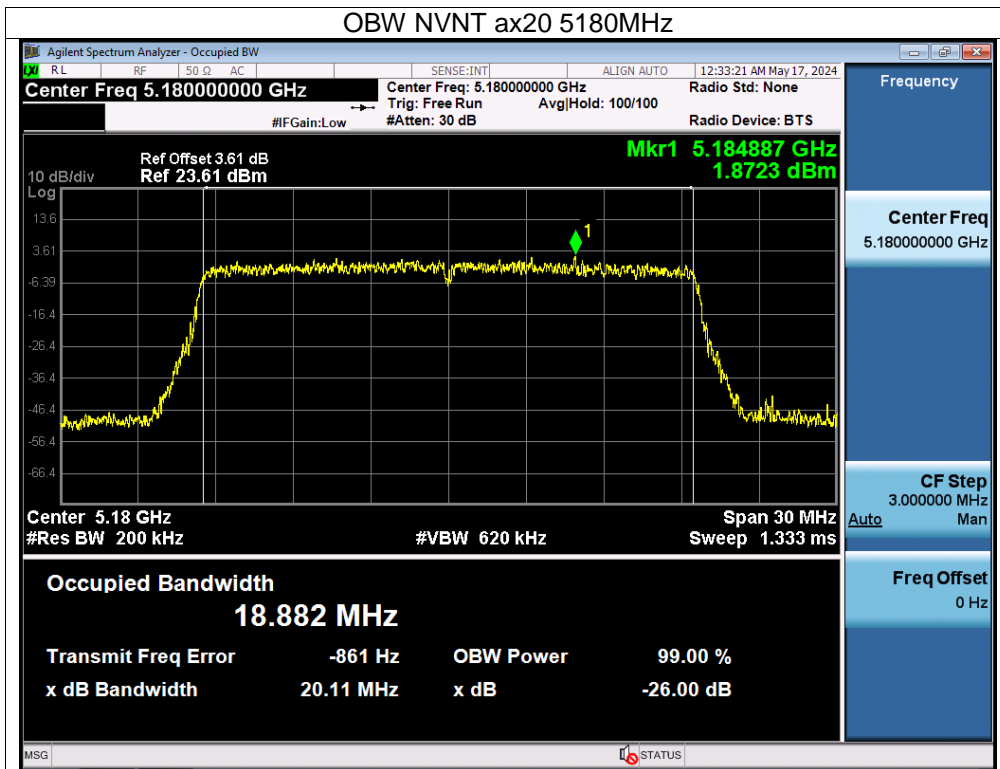


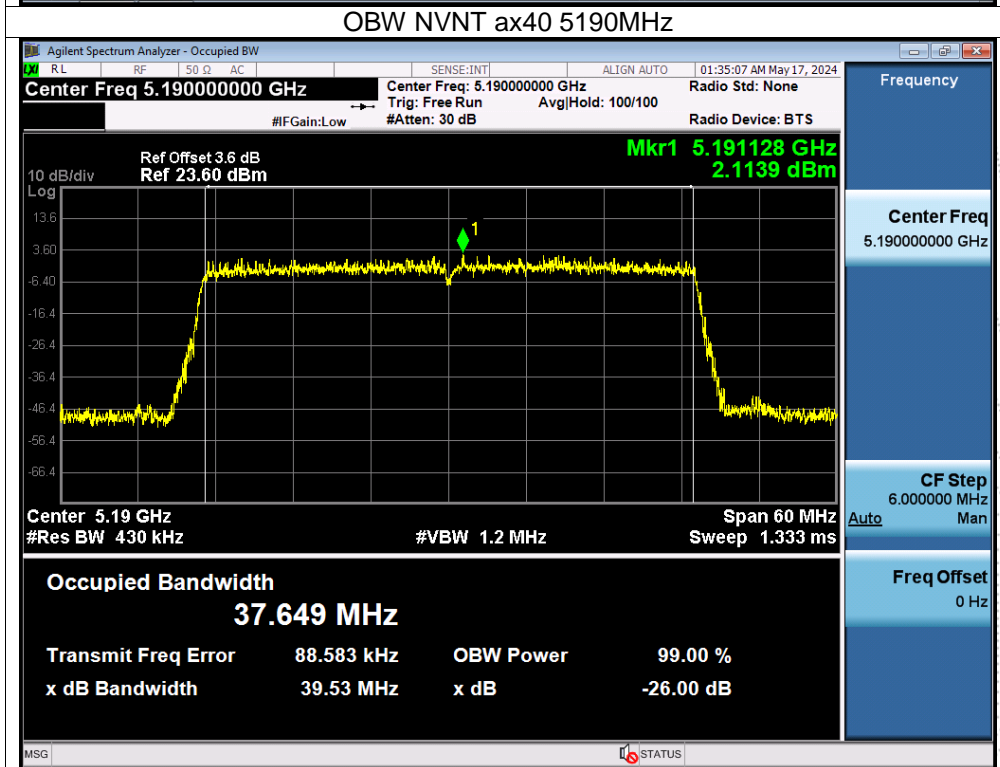
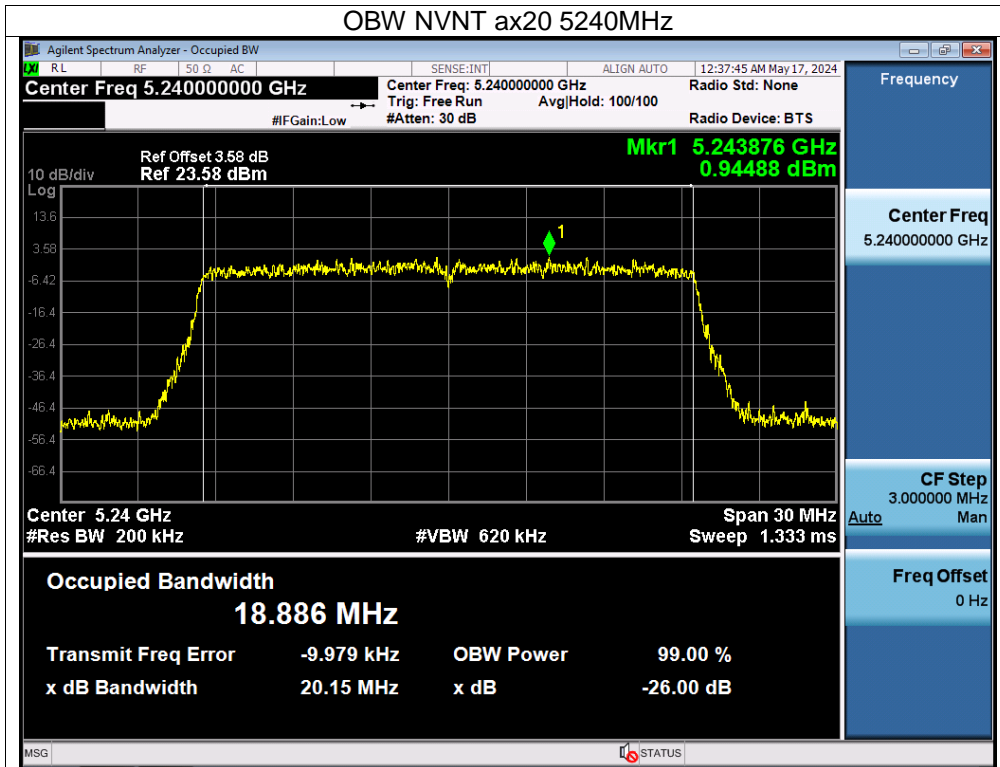


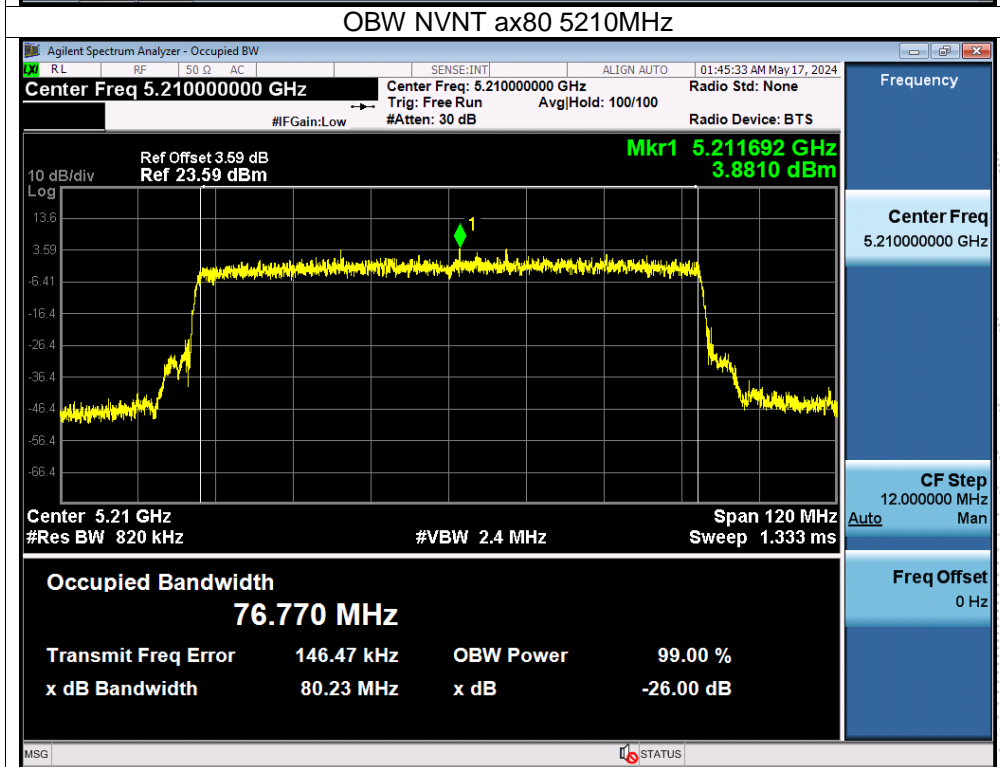
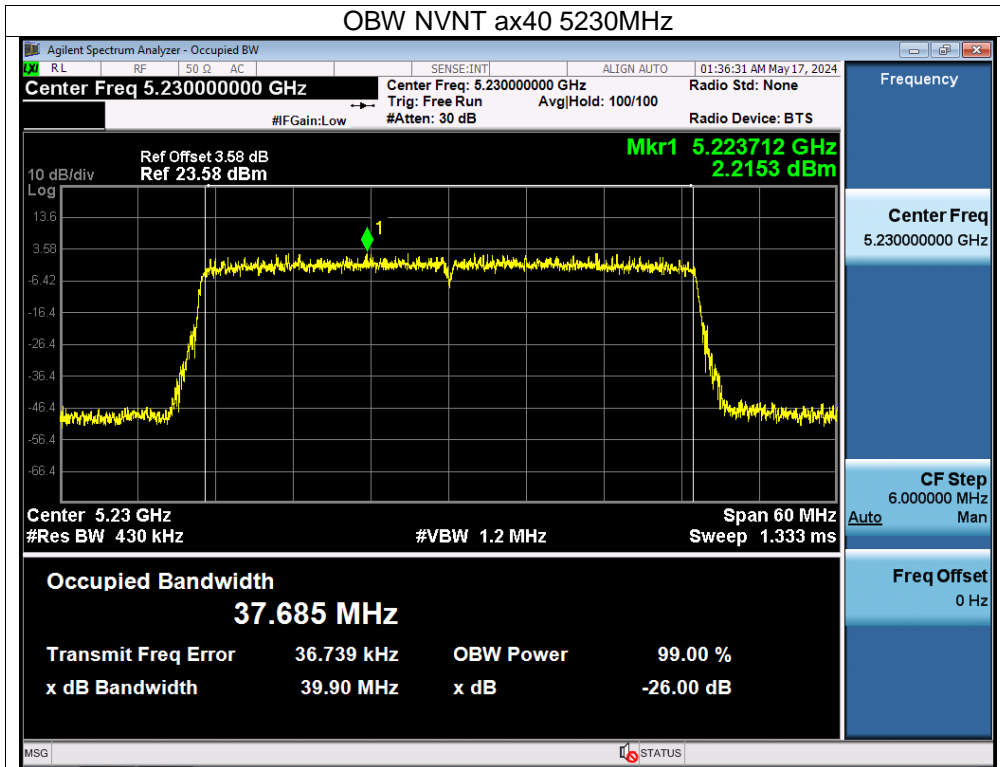








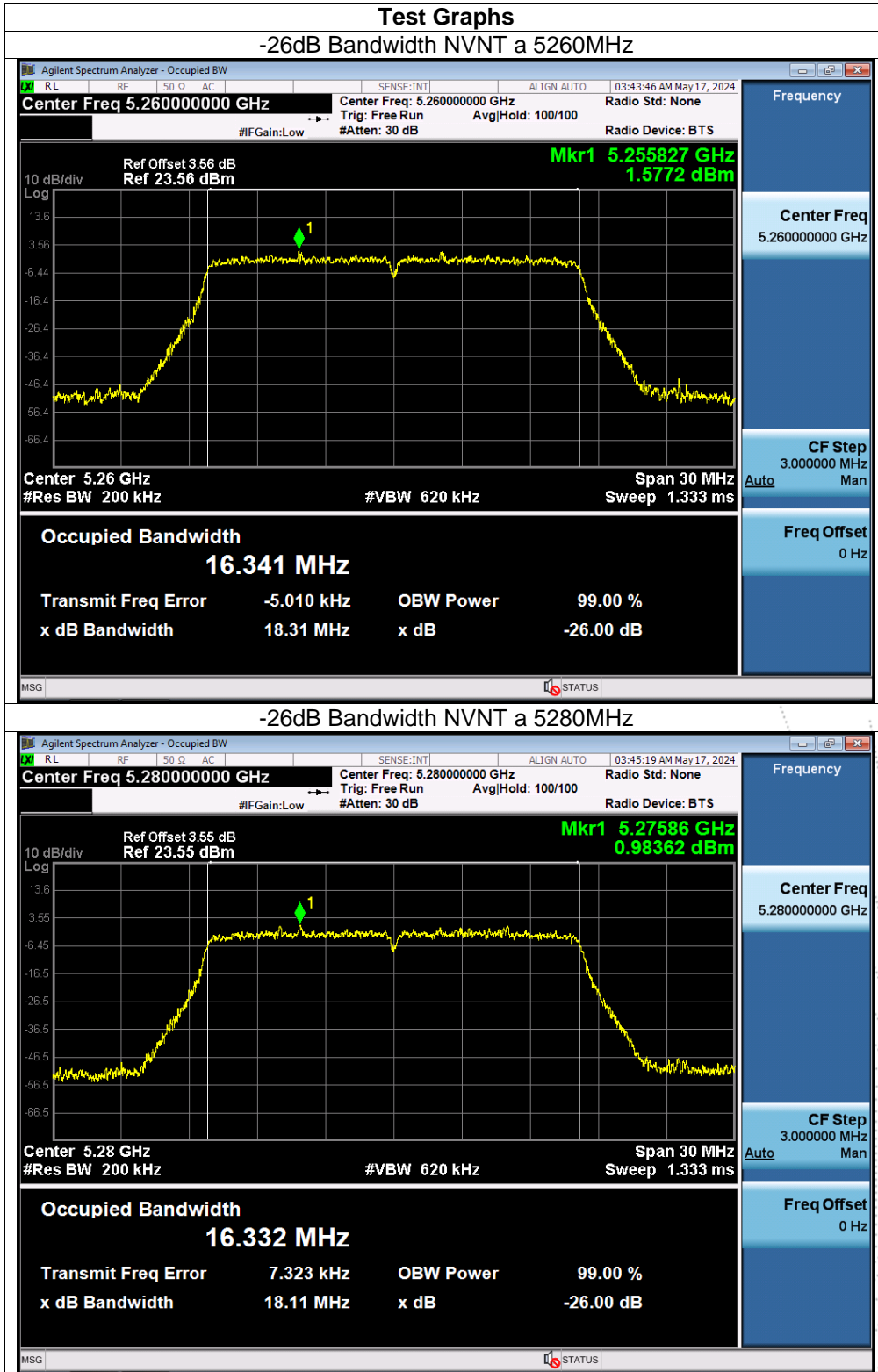


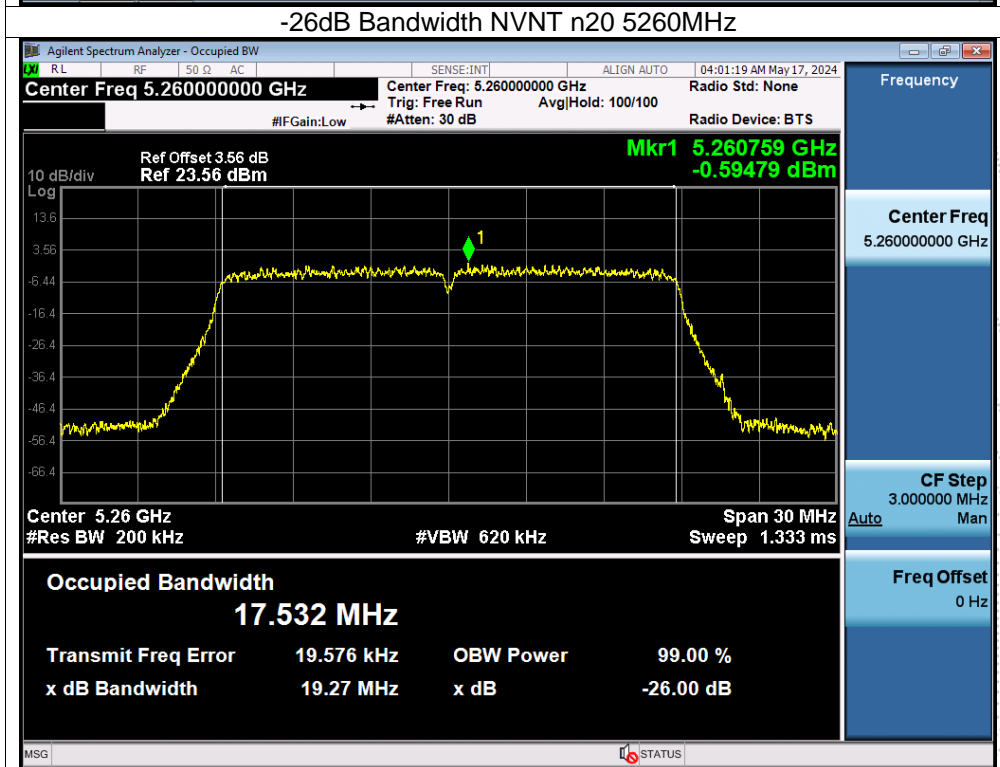
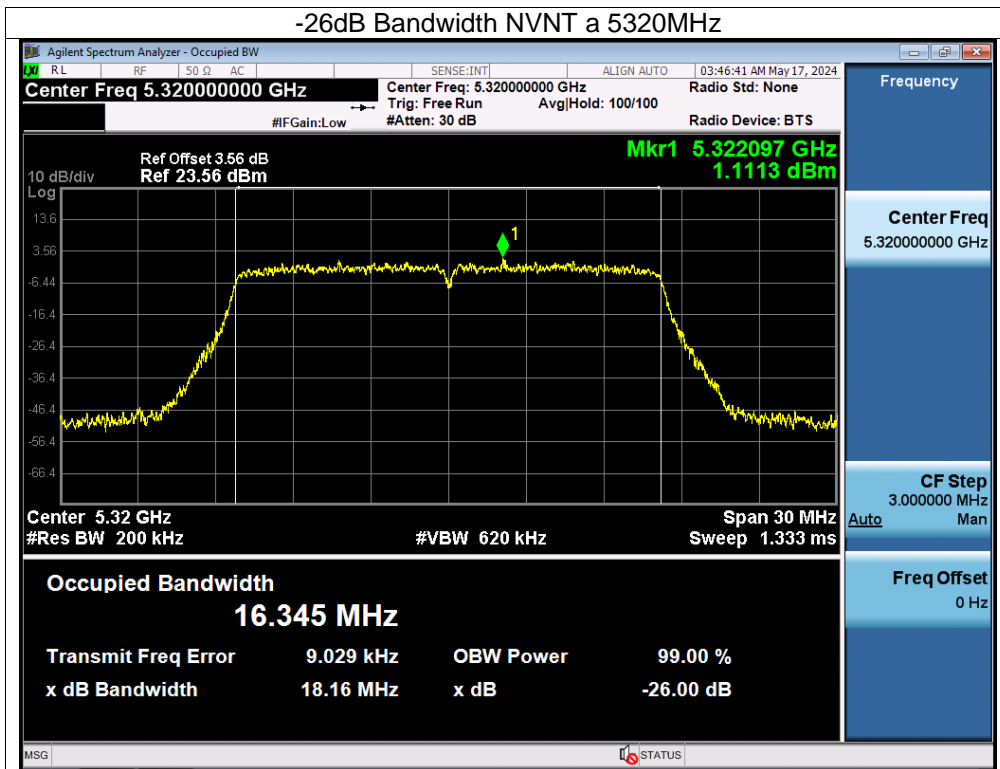


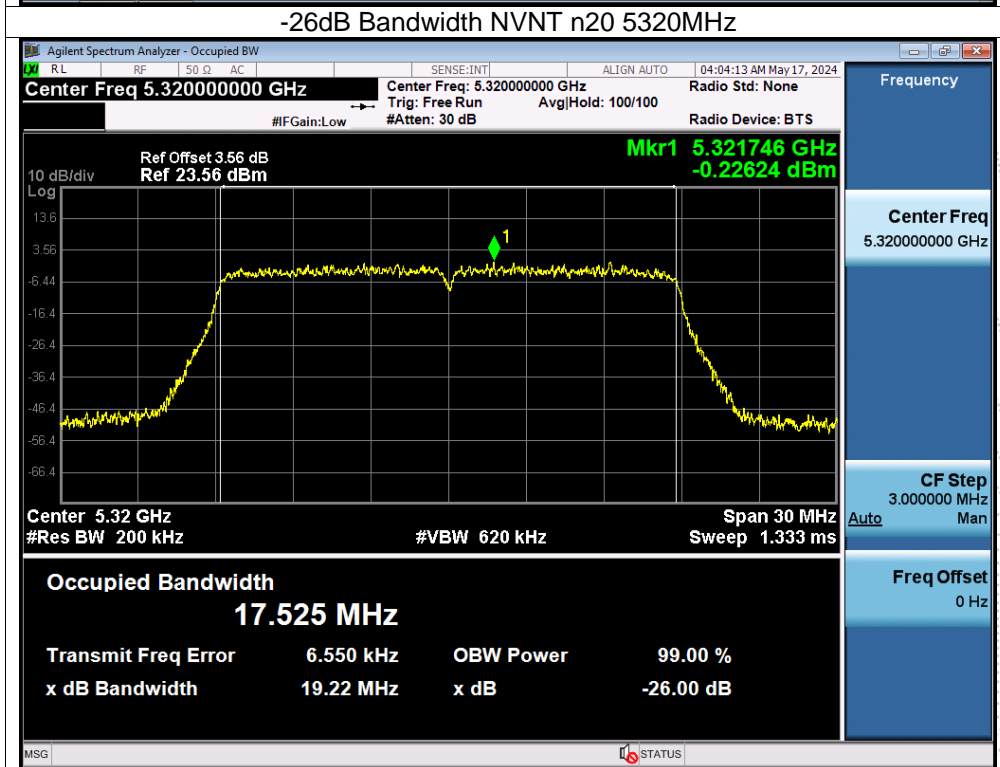
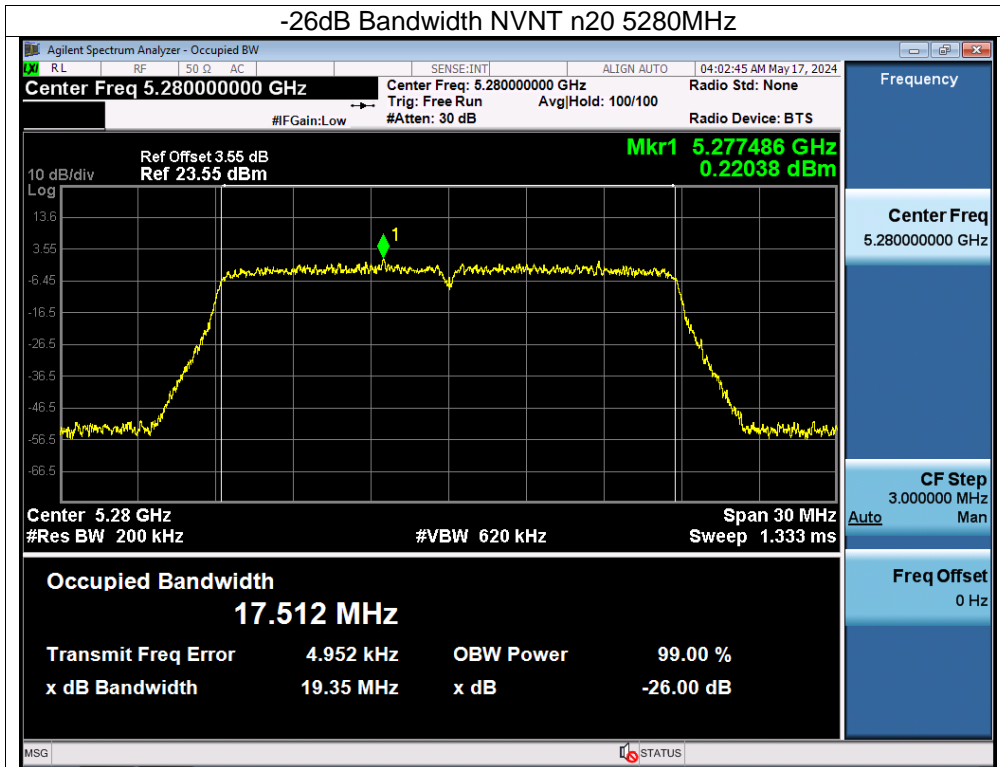
Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	DC 12V
Test Mode:	(5260-5320MHz)		

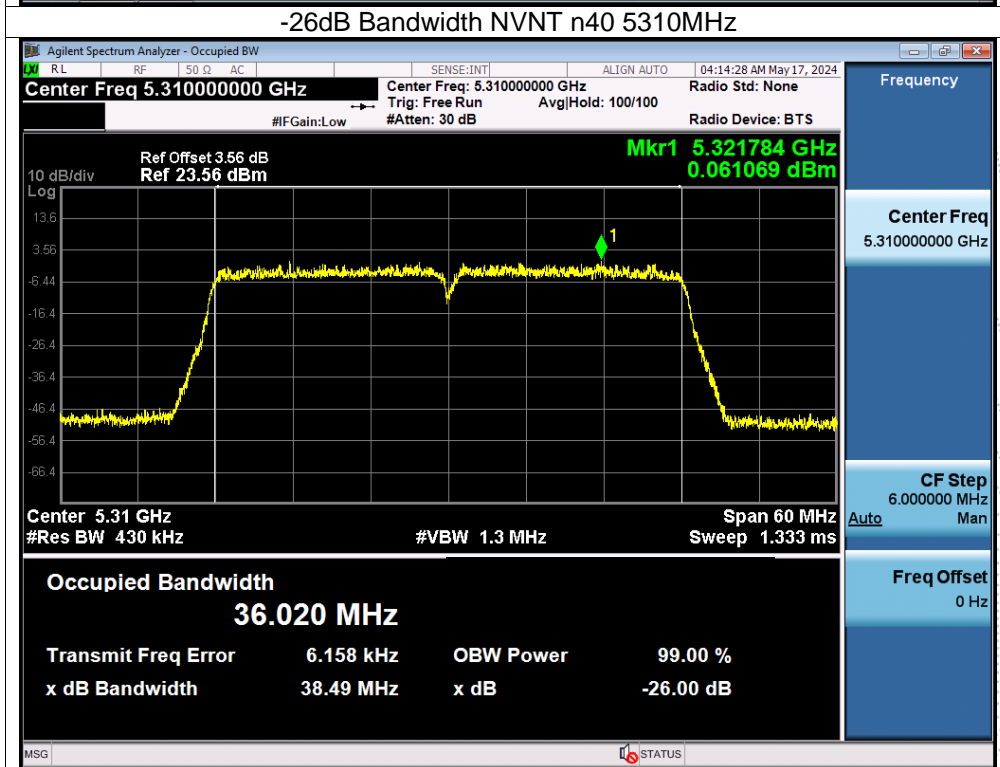
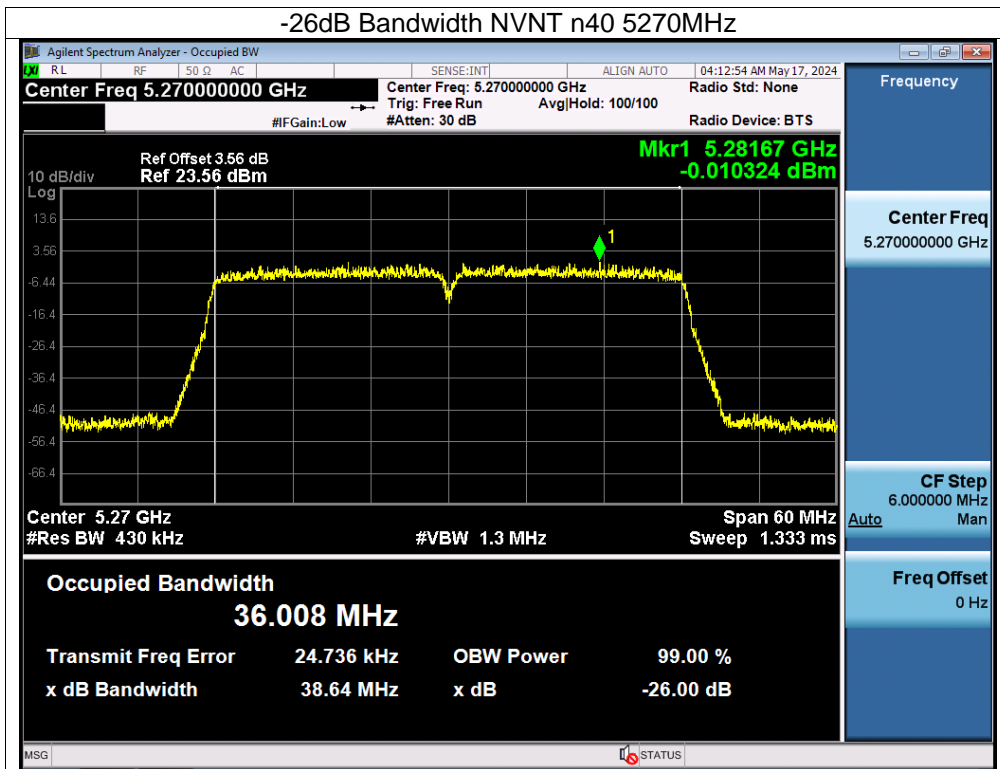
Condition	Mode	Frequency (MHz)	-26 dB Bandwidth (MHz)		99% OBW (MHz)		Verdict
			Ant A	Ant B	Ant A	Ant B	
NVNT	a	5260	18.307	18.21	16.339	16.336	Pass
NVNT	a	5280	18.115	18.353	16.334	16.346	Pass
NVNT	a	5320	18.156	18.357	16.348	16.334	Pass
NVNT	n20	5260	19.266	19.226	17.503	17.509	Pass
NVNT	n20	5280	19.346	19.238	17.51	17.515	Pass
NVNT	n20	5320	19.223	19.272	17.511	17.517	Pass
NVNT	n40	5270	38.638	38.692	36.023	36.072	Pass
NVNT	n40	5310	38.494	38.718	36.075	36.042	Pass
NVNT	ac20	5260	19.248	19.324	17.515	17.509	Pass
NVNT	ac20	5280	19.182	19.168	17.521	17.519	Pass
NVNT	ac20	5320	19.364	19.225	17.524	17.519	Pass
NVNT	ac40	5270	38.602	38.789	36.033	36.03	Pass
NVNT	ac40	5310	38.881	38.862	36.073	36.038	Pass
NVNT	ac80	5290	84.528	83.635	75.704	75.549	Pass
NVNT	ax20	5260	20.134	20.354	18.898	18.848	Pass
NVNT	ax20	5280	20.21	20.105	18.88	18.892	Pass
NVNT	ax20	5320	20.093	20.074	18.875	18.873	Pass
NVNT	ax40	5270	39.82	39.675	37.697	37.714	Pass
NVNT	ax40	5310	39.685	39.752	37.65	37.684	Pass
NVNT	ax80	5290	80.496	80.935	76.678	76.692	Pass

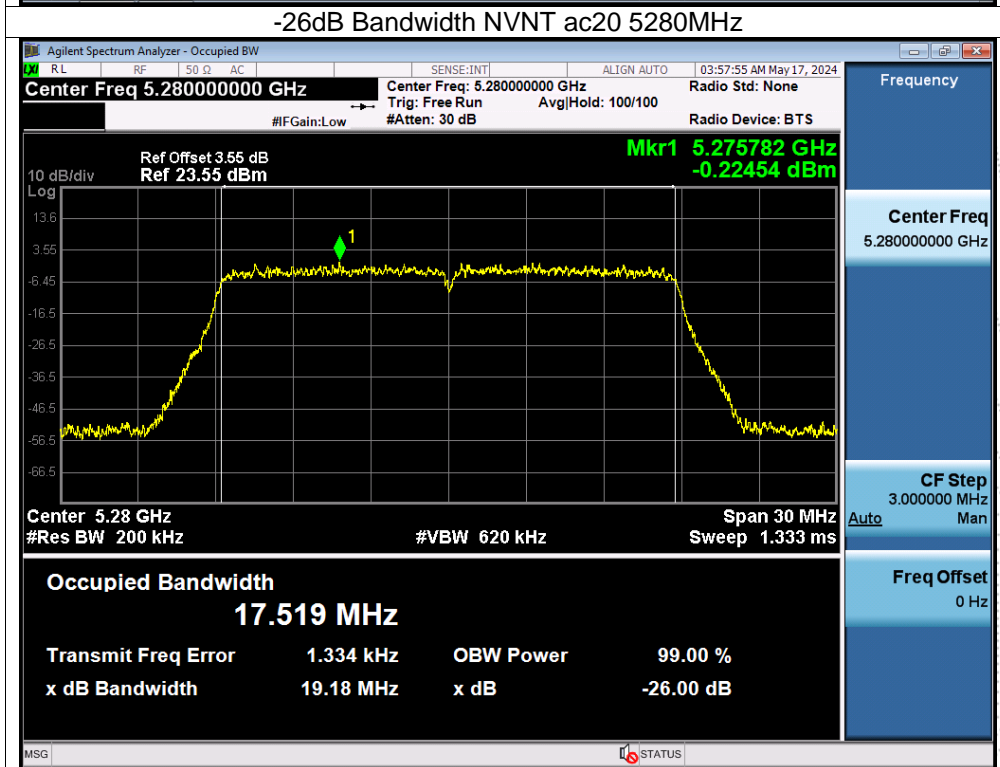
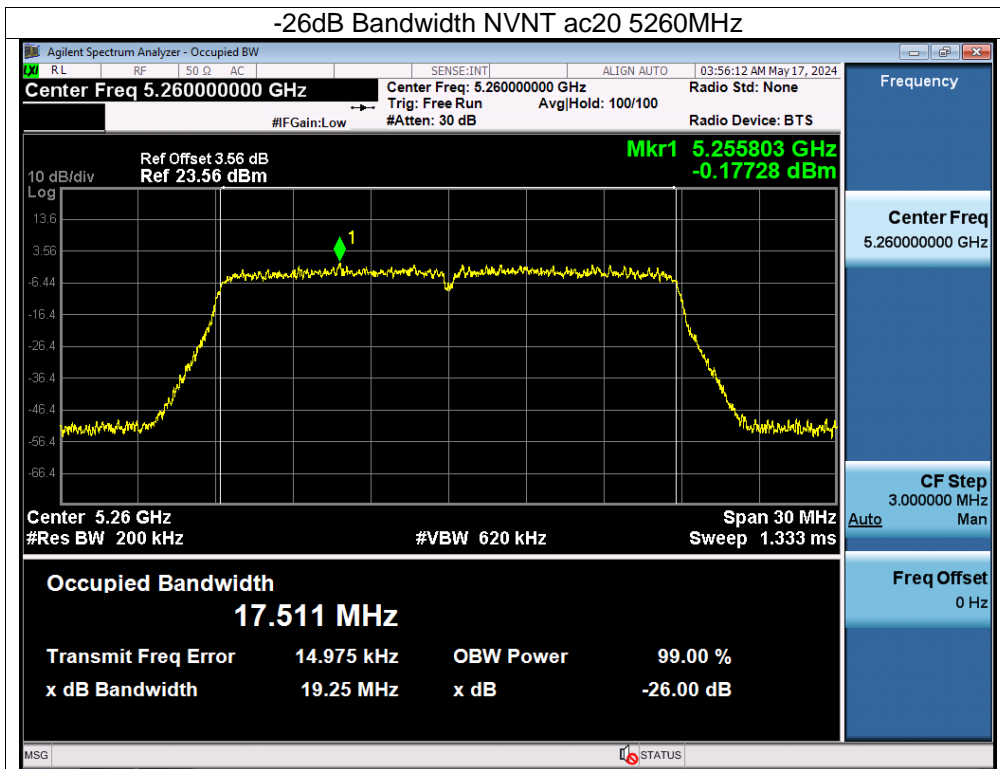
Note: A(B) Represent the value of antenna A and B, The worst data is Antenna A, only shown Antenna A Plot.

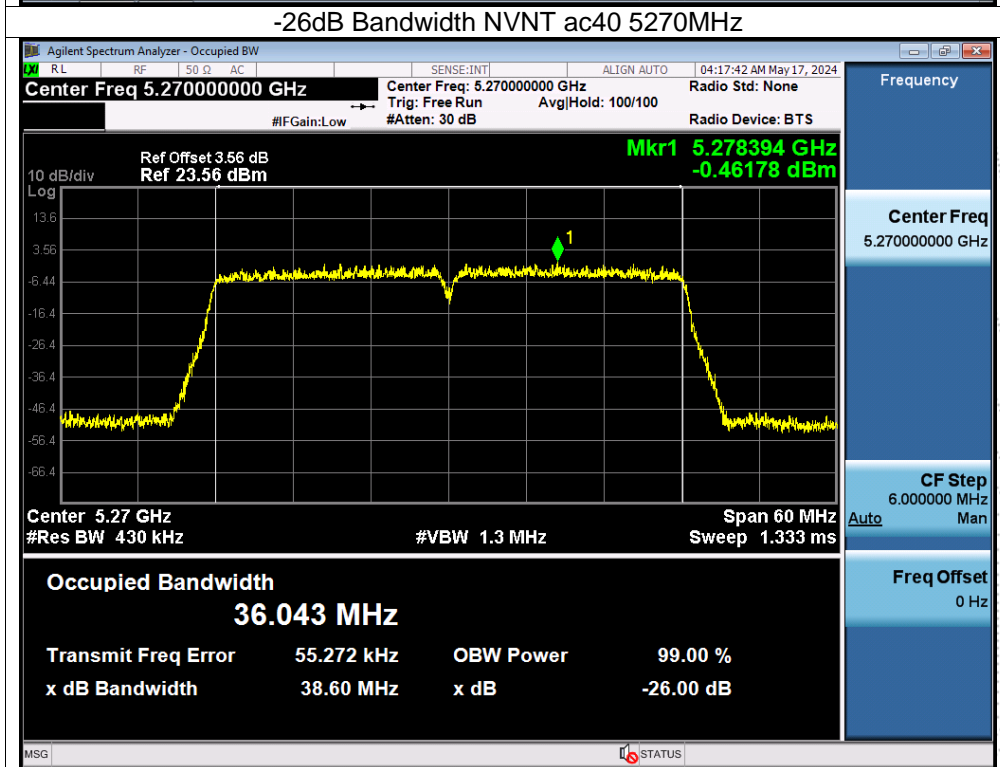
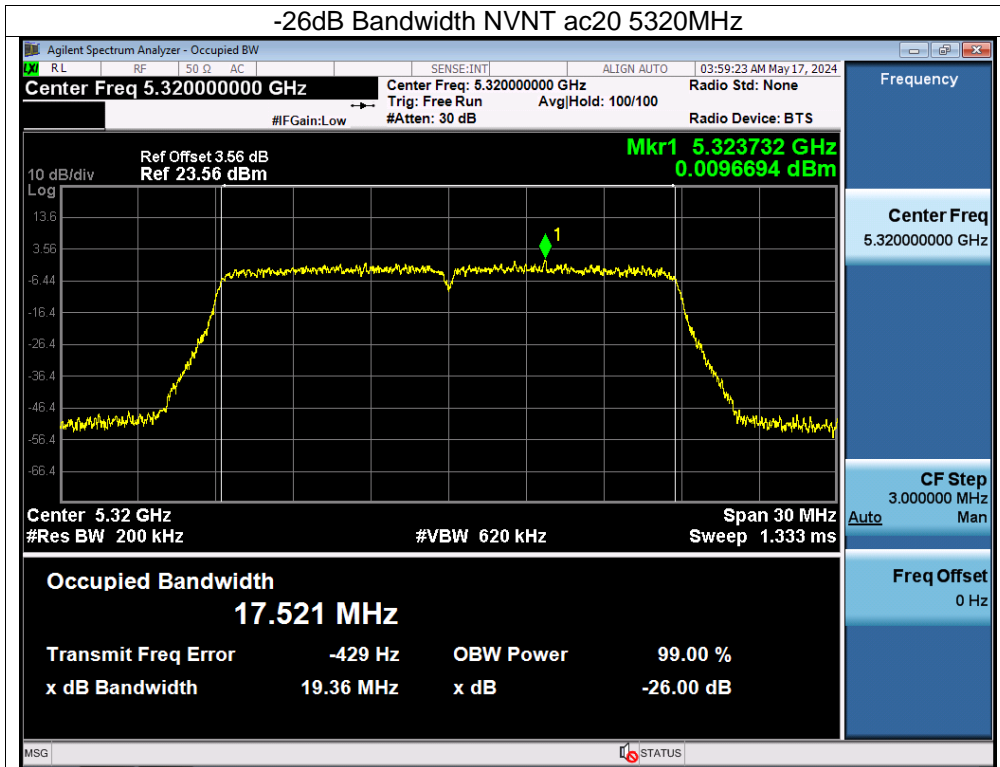


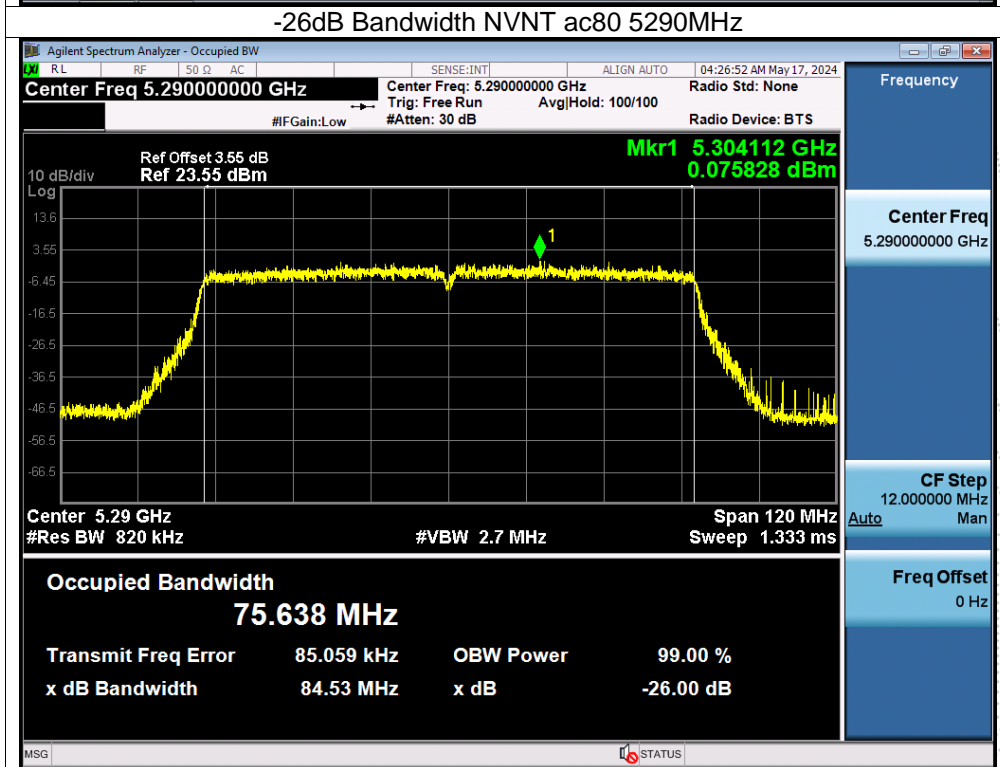
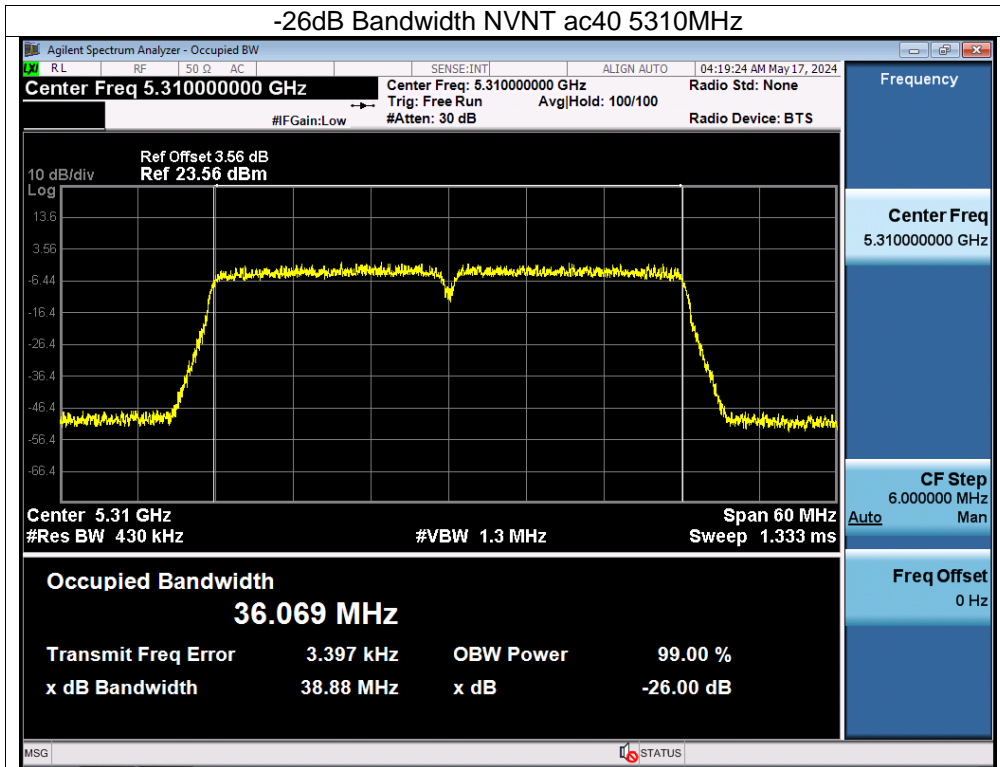


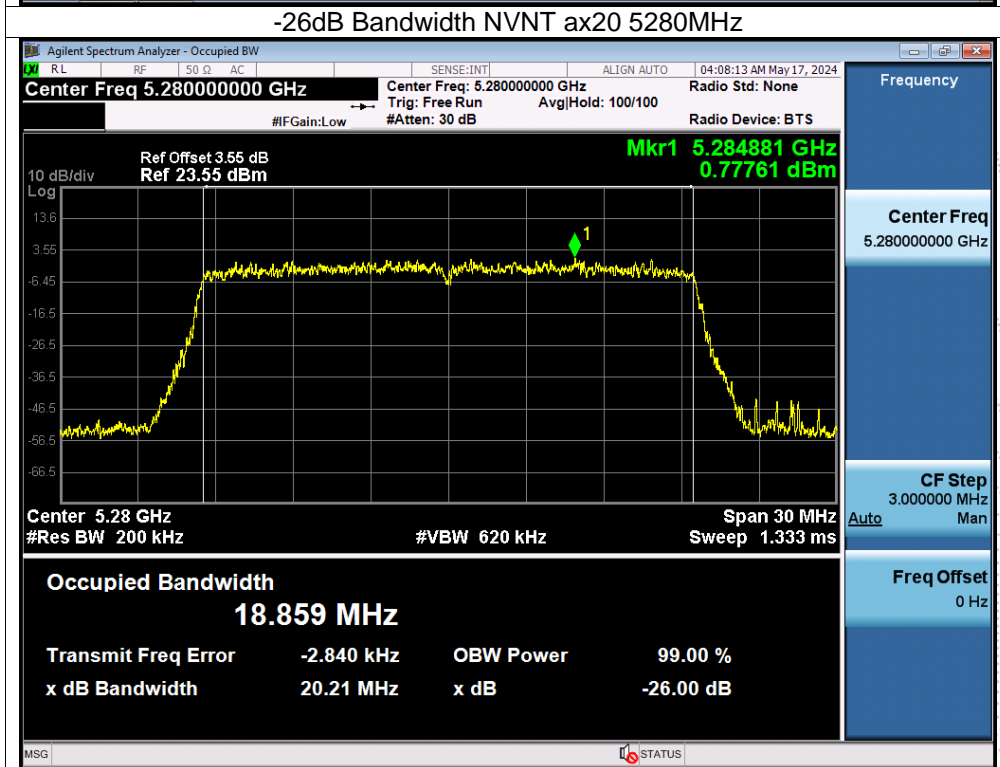
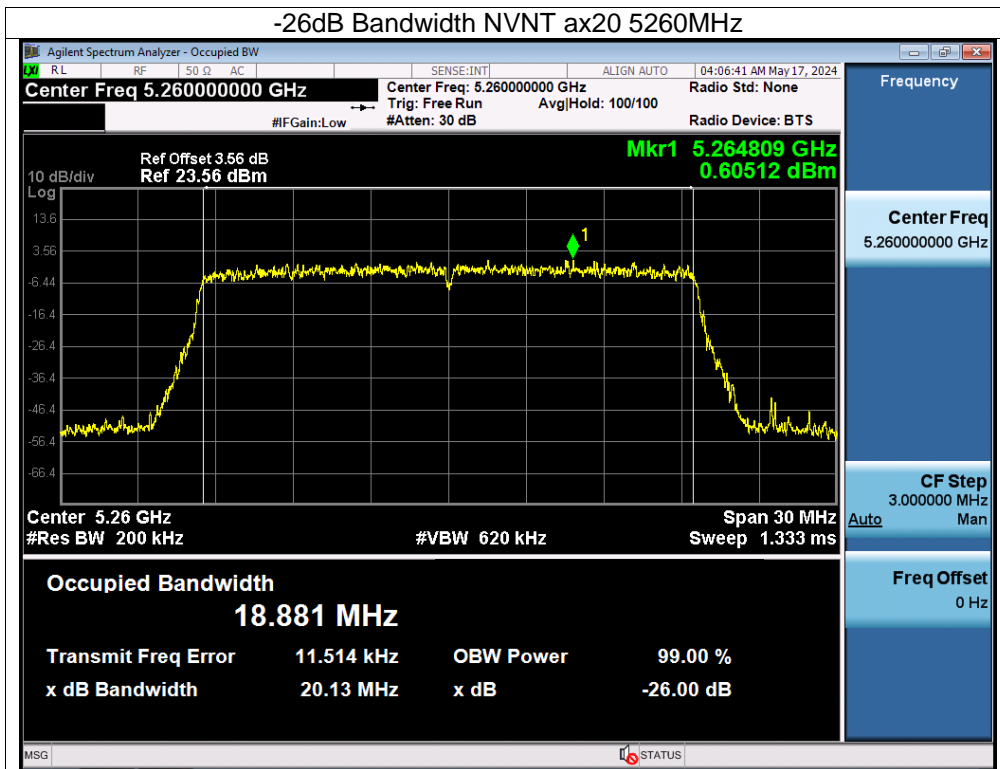


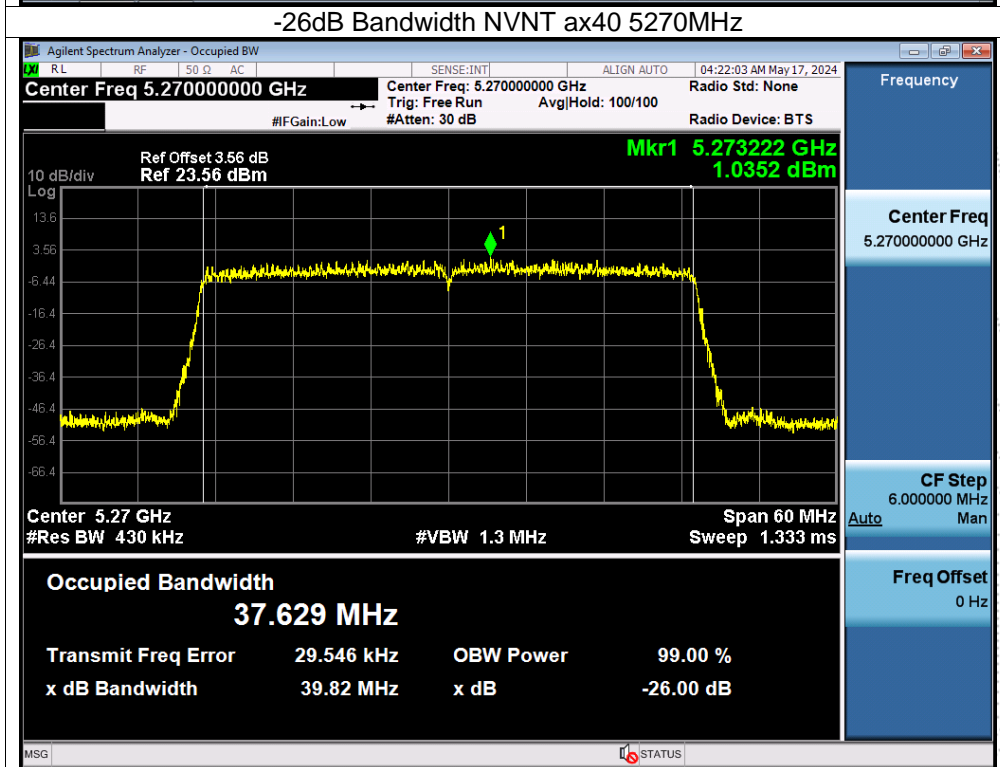
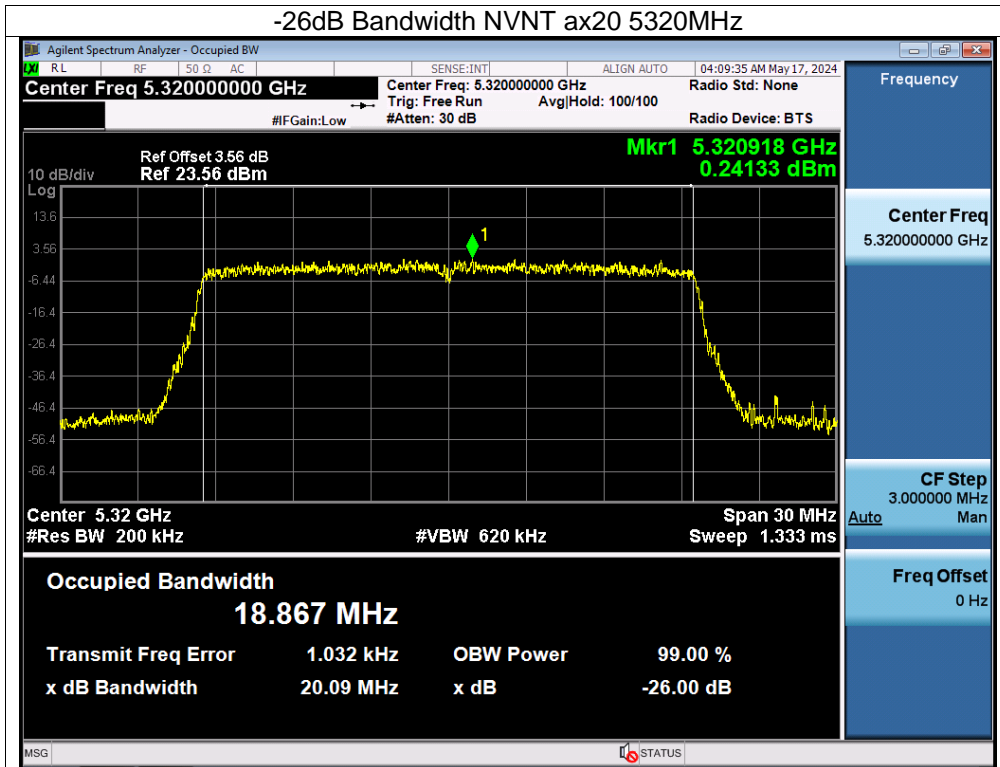


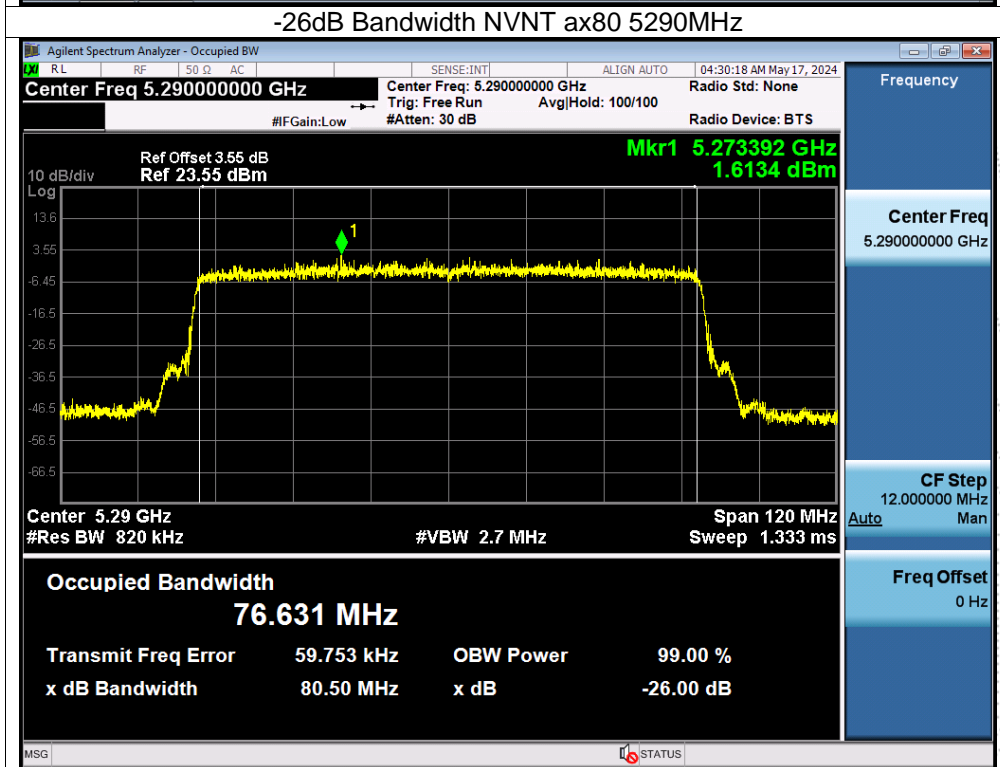
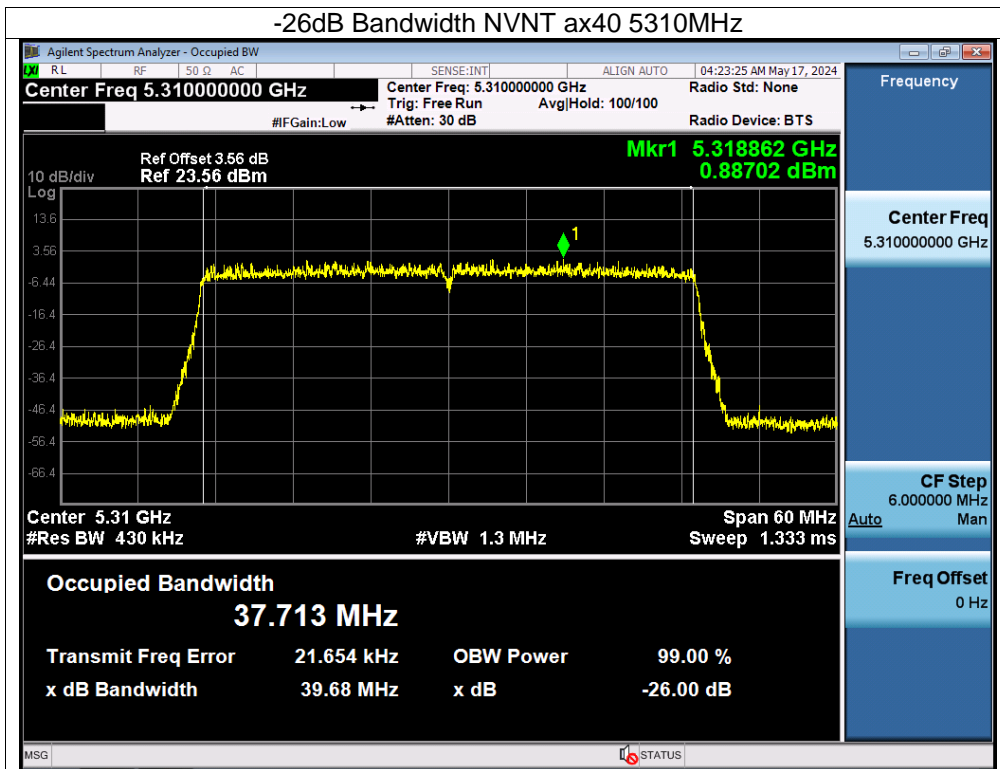












Note: A(B) Represent the value of antenna A and B, The worst data is Antenna B, only shown Antenna B Plot.

