

RF TEST REPORT

Applicant	New H3C Intelligence Terminal Co., Ltd.
FCC ID	2BNRD-BX54
Product	Dual-Band Gigabit Wi-Fi 6 Router
Brand	H3C
Model	H3C Magic BX54
Report No.	EFTA25010260-IE-06-R2
Issue Date	July 28, 2025

Eurofins TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR47 Part 15E (2024)**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

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TABLE OF CONTENT

1. Test Laboratory	4
1.1. Notes of the test report	4
1.2. Test facility	4
1.3. Testing Location.....	4
2. General Description of Equipment under Test	5
2.1. Applicant and Manufacturer Information	5
2.2. General information	5
3. Applied Standards.....	7
4. Test Configuration.....	8
5. Test Case Results.....	12
5.1. Occupied Bandwidth.....	12
5.2. Average Power Output	70
5.3. Frequency Stability	95
5.4. Power Spectral Density	99
5.5. Unwanted Emission	669
5.6. Conducted Emission.....	808
6. Main Test Instruments	811
ANNEX A: The EUT Appearance.....	812
ANNEX B: Test Setup Photos	813

Summary of measurement results

Number	Test Case	Clause in FCC rules	Verdict
1	Average output power	15.407(a)	PASS
2	Occupied bandwidth	15.407(e)	PASS
3	Frequency stability	15.407(g)	PASS
4	Power spectral density	15.407(a)	PASS
5	Unwanted Emissions	15.407(b)	PASS
6	Conducted Emissions	15.207	PASS
Date of Testing: January 20, 2025 ~ June 3, 2025			
Date of Sample Received: January 20, 2025			
Note: PASS: The EUT complies with the essential requirements in the standard. FAIL: The EUT does not comply with the essential requirements in the standard. All indications of Pass/Fail in this report are opinions expressed by Eurofins TA Technology (Shanghai) Co., Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only.			

1. Test Laboratory

1.1. Notes of the test report

This report shall not be reproduced in full or partial, without the written approval of **Eurofins TA Technology (Shanghai) Co., Ltd.** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support regulatory compliance of the applicable standards stated above.

1.2. Test facility

FCC (Designation number: CN1179, Test Firm Registration Number: 446626)

Eurofins TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

A2LA (Certificate Number: 3857.01)

Eurofins TA Technology (Shanghai) Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform electromagnetic emission measurement.

1.3. Testing Location

Company: Eurofins TA Technology (Shanghai) Co., Ltd.
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City: Shanghai
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2. General Description of Equipment under Test

2.1. Applicant and Manufacturer Information

Applicant	New H3C Intelligence Terminal Co., Ltd.
Applicant address	Room 406-100, 1 Yichuang Street, China-Singapore Guangzhou Knowledge City, Huangpu District, Guangzhou.
Manufacturer	New H3C Intelligence Terminal Co., Ltd.
Manufacturer address	Room 406-100, 1 Yichuang Street, China-Singapore Guangzhou Knowledge City, Huangpu District, Guangzhou.

2.2. General information

EUT Description	
Model	H3C Magic BX54
Lab internal SN	EFTA25010260-IE-06/S01
Hardware Version	A0
Software Version	R005
Power Supply	AC adapter
Antenna Type	Internal Antenna
Antenna Connector	A permanently attached antenna (meet with the standard FCC Part 15.203 requirement)
Antenna Gain	Antenna 1: 5dbi Antenna 2: 5dbi Antenna 3: 5dbi Antenna 4: 5dbi
Directional Gain	MIMO: 5 dBi Beamforming: 11.02 dBi
Operating Frequency Range(s)	U-NII-1: 5150MHz-5250MHz U-NII-2A: 5250MHz -5350MHz U-NII-2C: 5470MHz-5725MHz U-NII-3: 5725MHz -5850MHz
Modulation Type	802.11a: OFDM 802.11n (HT20/HT40): OFDM 802.11ac (VHT20/VHT40/VHT80/VHT160): OFDM 802.11ax (HE20/ HE40/ HE80/HE160): OFDM 802.11ax RU (HE20/ HE40/ HE80/HE160): OFDMA
Max. Output Power	29.86 dBm
Operating temperature range	0 ° C to 40 ° C
Operating voltage range	11.4 VDC to 12.6 VDC
Testing temperature range	-30 ° C to 50° C
Testing voltage range	11.4 VDC - 12 VDC - 12.6 VDC
State voltage	12 VDC

EUT Accessory	
Adapter	Manufacturer: Mentech Model: MAUS-1202002400
Note: 1. The EUT is sent from the applicant to Eurofins TA and the information of the EUT is declared by the applicant. 2. This device support automatically discontinue transmission, while the device is not transmitting any information, the device can automatically discontinue transmission and become standby mode for power saving. The device can detect the controlling signal of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission. 3. (a) Manufacturers implements security features in any digitally modulated devices capable of operating in any of the U-NII bands, so that third parties are not able to reprogram the device to operate outside the parameters for which the device was certified. The software prevents the user from operating the transmitter with operating frequencies, output power, modulation types or other radio frequency parameters outside those that were approved for the device. Manufacturers uses means including, but not limited to the use of a private network that allows only authenticated users to download software, electronic signatures in software or coding in hardware that is decoded by software to verify that new software can be legally loaded into a device to meet these requirements and must describe the methods in their application for equipment authorization. (b) Manufacturers take steps to ensure that DFS functionality cannot be disabled by the operator of the U-NII device.	

3. Applied Standards

According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

Test standards:

FCC CFR47 Part 15E (2024) Unlicensed National Information Infrastructure Devices

ANSI C63.10-2013

Reference standard:

KDB 789033 D02 General UNII Test Procedures New Rules v02r01

KDB 662911 D01 Multiple Transmitter Output v02r01

4. Test Configuration

Test Mode

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

The radiated emission was measured in the following position: EUT stand-up position (vertical), lie-down position (Horizontal). The worst emission was found in stand-up position (vertical) and the worst case was recorded.

In order to find the worst case condition, Pre-tests are needed at the presence of different data rate. Preliminary tests have been done on all the configuration for confirming worst case. Data rate below means worst-case rate of each test item.

Worst-case data rates are shown as following table.

Mode	Data Rate	
	4*4 MIMO	4*4 Beamforming
802.11a	6 Mbps	6 Mbps
802.11n HT20	MCS24	MCS24
802.11n HT40	MCS24	MCS24
802.11ac VHT20	MCS0	MCS0
802.11ac VHT40	MCS0	MCS0
802.11ac VHT80	MCS0	MCS0
802.11ac VHT160	MCS0	MCS0
802.11ax HE20	MCS0	MCS0
802.11ax HE40	MCS0	MCS0
802.11ax HE80	MCS0	MCS0
802.11ax HE160	MCS0	MCS0

The worst case Antenna mode for each of the following tests for Wi-Fi:

Test Cases	MIMO	Beamforming
Average conducted output power	O	O
Occupied bandwidth	O	--
Frequency stability	O	--
Power Spectral Density	O	O
Unwanted Emissions	O	O
Conducted Emissions	O	O

Note:

1. "O": test all bands.
2. Only the worst data was recorded in this report

RU Mode

Test Cases	MIMO	Beamforming
Average conducted output power	O	O
Occupied bandwidth	--	--
Frequency stability	--	--
Power Spectral Density	O	O
Unwanted Emissions	O	O
Conducted Emissions	O	O

Note:

1. "O": test all bands.
2. Only the worst data was recorded in this report

Wireless Technology and Frequency Range

Wireless Technology		Bandwidth	Channel	Frequency
Wi-Fi	U-NII-1	20 MHz	36	5180MHz
			40	5200MHz
			44	5220MHz
			48	5240MHz
		40 MHz	38	5190MHz
			46	5230MHz
		80 MHz	42	5210MHz
	U-NII-2A	160 MHz	50	5250MHz
		20 MHz	52	5260MHz
			56	5280MHz
			60	5300MHz
			64	5320MHz
		40 MHz	54	5270MHz
			62	5310MHz
		80 MHz	58	5290MHz
	U-NII-2C	20 MHz	100	5500MHz
			104	5520MHz
			108	5540MHz
			112	5560MHz
			116	5580MHz
			120	5600MHz
			124	5620MHz
			128	5640MHz
			132	5660MHz
			136	5680MHz
		40 MHz	140	5700MHz
			102	5510MHz
			110	5550MHz
			118	5590MHz
			126	5630MHz
			134	5670MHz
		80 MHz	106	5530MHz
			122	5610MHz
		160 MHz	114	5570MHz
	U-NII-3	20 MHz	149	5745MHz
			153	5765MHz
			157	5785MHz
			161	5805MHz
			165	5825MHz

RF Test Report		Report Ref: RF-142674269-12-00-01		
		40 MHz	151	5755MHz
			159	5795MHz
		80 MHz	155	5775MHz
Does this device support TPC Function? ☒ Yes ☐ No				
Does this device support TDWR Band? ☒ Yes ☐ No				

5. Test Case Results

5.1. Occupied Bandwidth

Ambient condition

Temperature	Relative humidity	Pressure
15°C ~ 35°C	20% ~ 80%	86 kPa ~ 106 kPa

Method of Measurement

The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable.

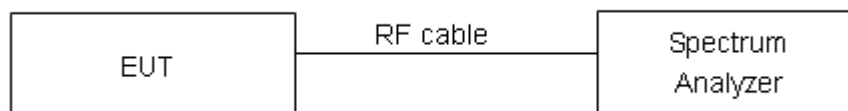
For U-NII-1/U-NII-2A/U-NII-2C, set RBW $\approx 1\%$ OCB kHz, VBW $\geq 3 \times$ RBW, measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 26 dB relative to the maximum level measured in the fundamental emission.

For U-NII-3, Set RBW = 100 kHz, VBW $\geq 3 \times$ RBW, measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

Note: The automatic bandwidth measurement capability of a spectrum analyzer or EMI receiver may be employed if it implements the functionality described above.

Use the 99 % power bandwidth function of the instrument

Test Setup



Limits

For U-NII-1/U-NII-2A/U-NII-2C

No specific occupied bandwidth requirements in Part 15.407.

For U-NII-3

Rule FCC Part §15.407(e)

Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 936$ Hz.

Test Results:
U-NII-1

Mode	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 26 dB bandwidth (MHz)	Conclusion
802.11a	5180	16.631	20.440	Pass
802.11a	5200	16.662	20.427	Pass
802.11a	5240	16.612	20.113	Pass
802.11ac(VHT20)	5180	17.857	21.277	Pass
802.11ac(VHT20)	5200	17.829	21.216	Pass
802.11ac(VHT20)	5240	17.847	21.377	Pass
802.11ac(VHT40)	5190	36.015	39.784	Pass
802.11ac(VHT40)	5230	36.015	39.744	Pass
802.11ac(VHT80)	5210	75.484	81.843	Pass
802.11ax(HE20)	5180	19.086	21.882	Pass
802.11ax(HE20)	5200	19.101	21.605	Pass
802.11ax(HE20)	5240	19.081	22.144	Pass
802.11ax(HE40)	5190	37.652	40.132	Pass
802.11ax(HE40)	5230	37.685	40.420	Pass
802.11ax(HE80)	5210	77.073	82.366	Pass
802.11n(HT20)	5180	17.828	21.729	Pass
802.11n(HT20)	5200	17.854	21.013	Pass
802.11n(HT20)	5240	17.836	21.095	Pass
802.11n(HT40)	5190	36.013	39.529	Pass
802.11n(HT40)	5230	35.994	39.492	Pass

U-NII-2A

Mode	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 26 dB bandwidth (MHz)	Conclusion
802.11a	5260	16.640	20.415	Pass
802.11a	5300	16.615	20.428	Pass
802.11a	5320	16.641	20.347	Pass
802.11ac(VHT160)	5250	153.815	164.538	Pass
802.11ac(VHT20)	5260	17.846	21.836	Pass
802.11ac(VHT20)	5300	17.862	21.586	Pass
802.11ac(VHT20)	5320	17.853	21.275	Pass
802.11ac(VHT40)	5270	36.008	39.805	Pass
802.11ac(VHT40)	5310	36.080	40.120	Pass
802.11ac(VHT80)	5290	75.496	81.470	Pass
802.11ax(HE160)	5250	155.148	165.445	Pass
802.11ax(HE20)	5260	19.115	21.317	Pass
802.11ax(HE20)	5300	19.075	21.802	Pass
802.11ax(HE20)	5320	19.120	21.668	Pass

802.11ax(HE40)	5270	37.667	40.762	Pass
802.11ax(HE40)	5310	37.625	40.549	Pass
802.11ax(HE80)	5290	75.468	82.069	Pass
802.11n(HT20)	5260	17.846	21.191	Pass
802.11n(HT20)	5300	17.863	21.263	Pass
802.11n(HT20)	5320	17.866	21.451	Pass
802.11n(HT40)	5270	35.998	39.546	Pass
802.11n(HT40)	5310	36.004	39.861	Pass

U-NII-2C

Mode	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 26 dB bandwidth (MHz)	Conclusion
802.11a	5500	16.628	20.590	Pass
802.11a	5580	17.871	21.582	Pass
802.11a	5700	17.841	21.038	Pass
802.11ac(VHT20)	5500	16.659	20.093	Pass
802.11ac(VHT20)	5580	17.835	21.610	Pass
802.11ac(VHT20)	5700	17.853	21.425	Pass
802.11ac(VHT40)	5510	36.045	39.877	Pass
802.11ac(VHT40)	5550	36.019	39.763	Pass
802.11ac(VHT40)	5670	36.018	39.948	Pass
802.11ac(VHT80)	5530	75.535	82.380	Pass
802.11ax(HE20)	5500	16.654	20.085	Pass
802.11ax(HE20)	5580	17.874	21.365	Pass
802.11ax(HE20)	5700	17.844	21.327	Pass
802.11ax(HE40)	5510	36.018	39.799	Pass
802.11ax(HE40)	5550	36.024	39.856	Pass
802.11ax(HE40)	5670	35.992	39.615	Pass
802.11ax(HE80)	5530	75.534	82.218	Pass
802.11n(HT20)	5500	16.638	20.534	Pass
802.11n(HT20)	5580	17.867	21.734	Pass
802.11n(HT20)	5700	17.830	21.389	Pass
802.11n(HT40)	5510	36.022	39.663	Pass
802.11n(HT40)	5550	36.020	39.609	Pass
802.11n(HT40)	5670	35.992	40.291	Pass
802.11ac(VHT160)	5570	153.879	165.588	Pass
802.11ax(HE160)	5570	153.849	165.488	Pass

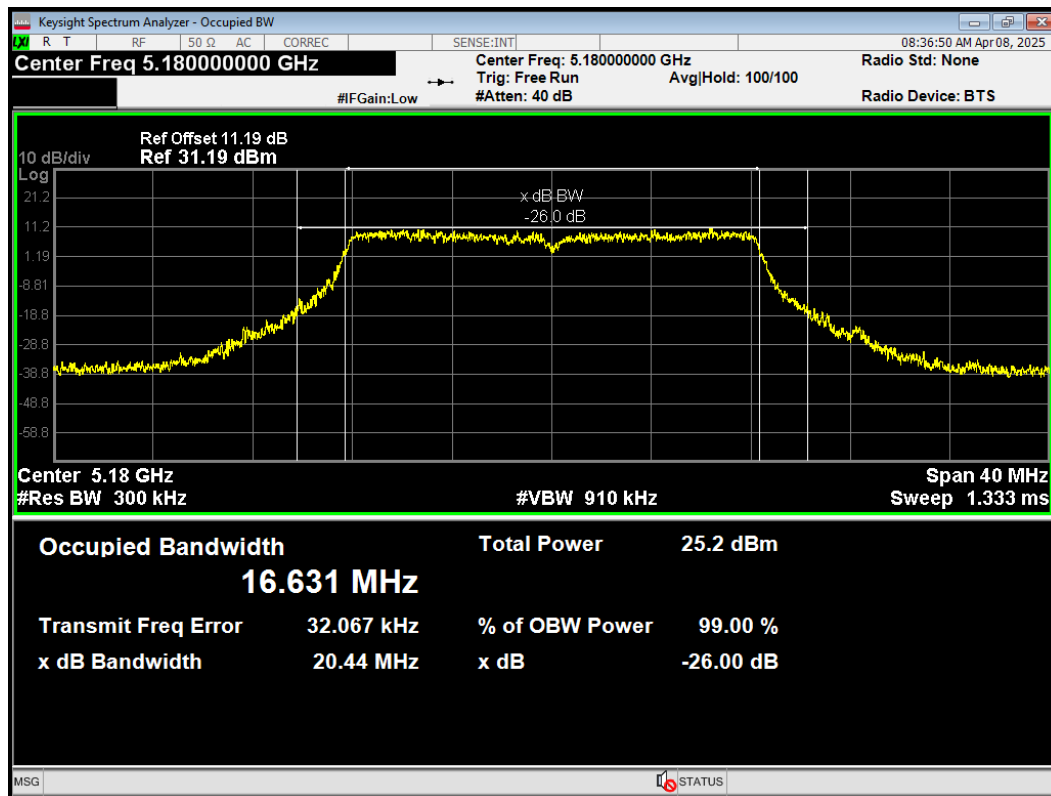
U-NII-3

Mode	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 6 dB bandwidth (MHz)	Limit (kHz)	Conclusion
802.11a	5745	17.823	17.677	500	Pass
802.11a	5785	16.616	16.410	500	Pass
802.11a	5825	17.860	17.726	500	Pass
802.11ac(VHT20)	5745	19.112	19.050	500	Pass
802.11ac(VHT20)	5785	17.882	17.613	500	Pass
802.11ac(VHT20)	5825	17.839	17.587	500	Pass
802.11ac(VHT40)	5755	36.018	36.312	500	Pass
802.11ac(VHT40)	5795	36.008	35.731	500	Pass
802.11ac(VHT80)	5775	75.579	74.679	500	Pass
802.11ax(HE20)	5745	19.147	19.148	500	Pass
802.11ax(HE20)	5785	19.135	19.006	500	Pass
802.11ax(HE20)	5825	19.092	19.079	500	Pass
802.11ax(HE40)	5755	36.017	36.010	500	Pass
802.11ax(HE40)	5795	37.696	37.473	500	Pass
802.11ax(HE80)	5775	75.500	74.763	500	Pass
802.11n(HT20)	5745	17.858	17.687	500	Pass
802.11n(HT20)	5785	17.838	17.765	500	Pass
802.11n(HT20)	5825	17.870	17.593	500	Pass
802.11n(HT40)	5755	36.030	34.702	500	Pass
802.11n(HT40)	5795	36.029	35.681	500	Pass

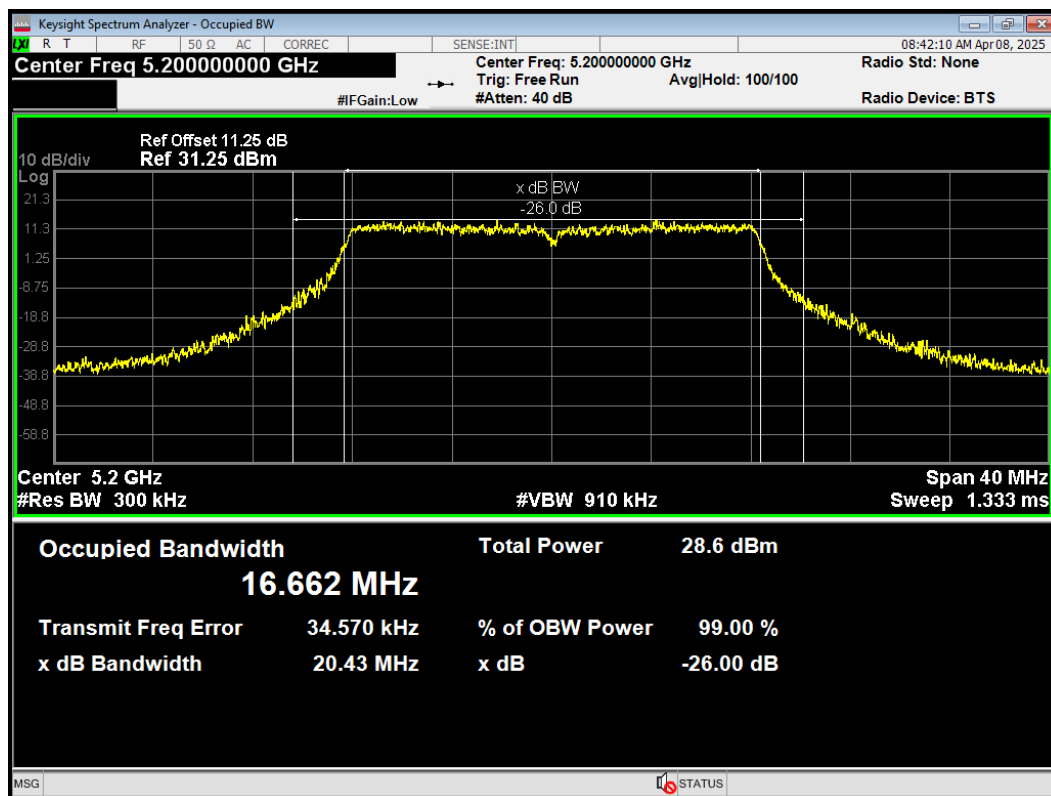
99% bandwidth

U-NII-1

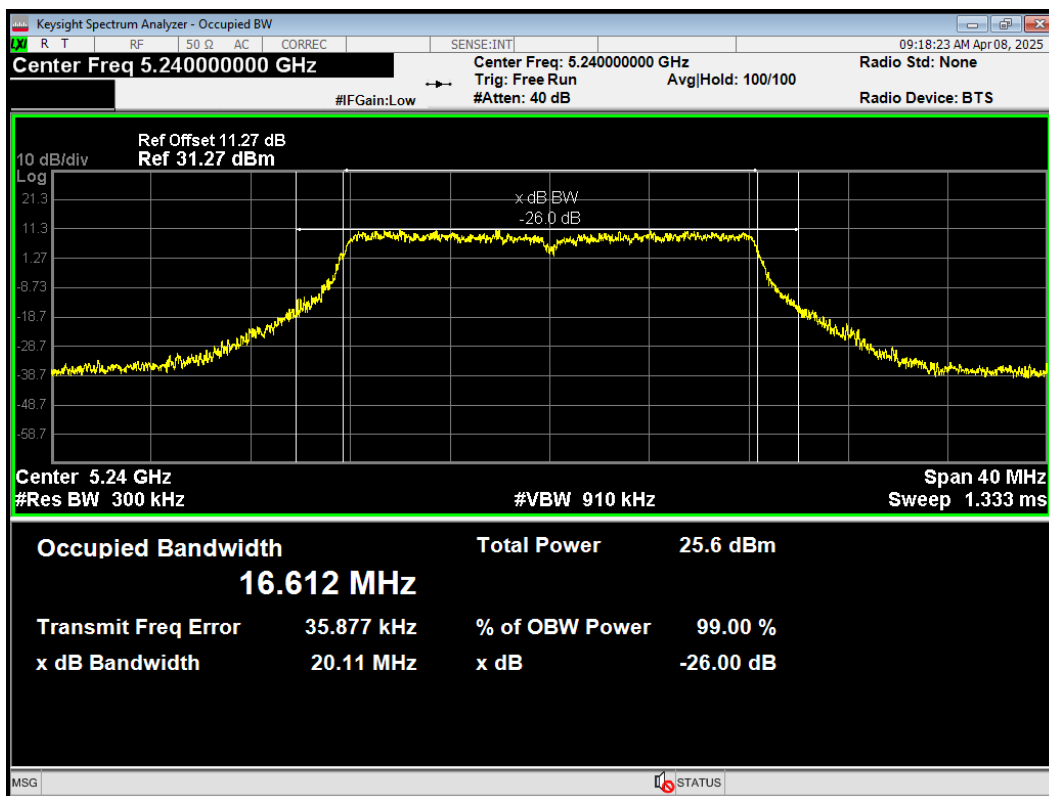
OBW 802.11a 5180MHz



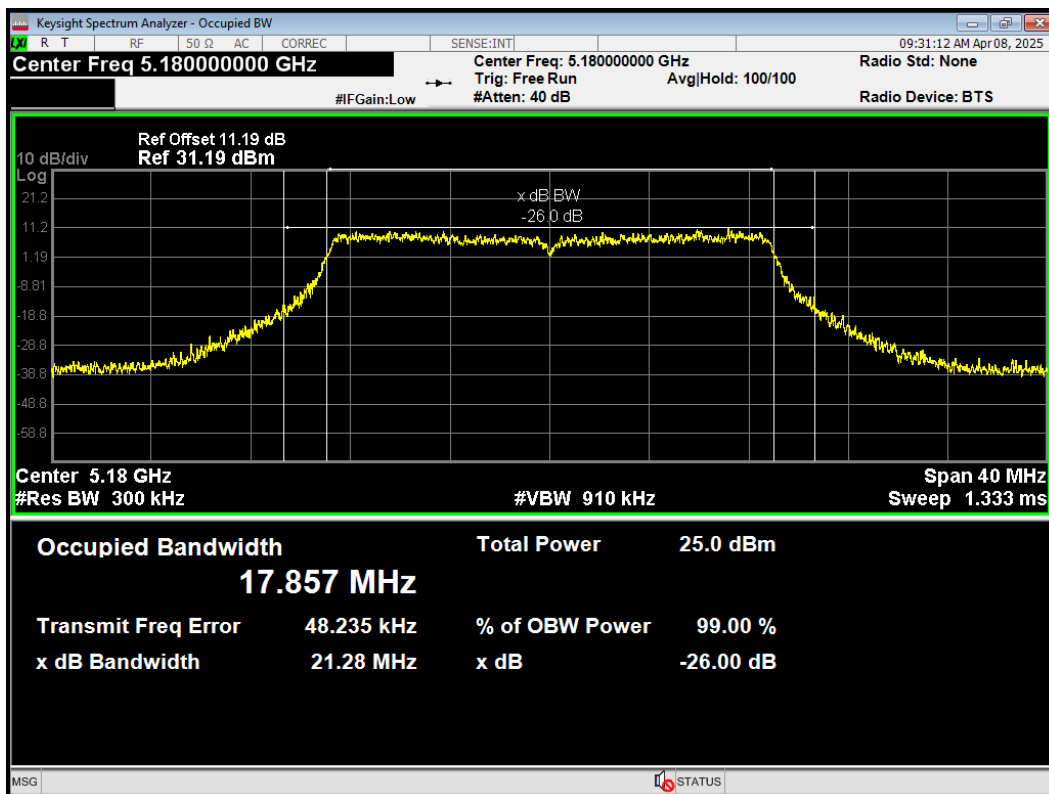
OBW 802.11a 5200MHz



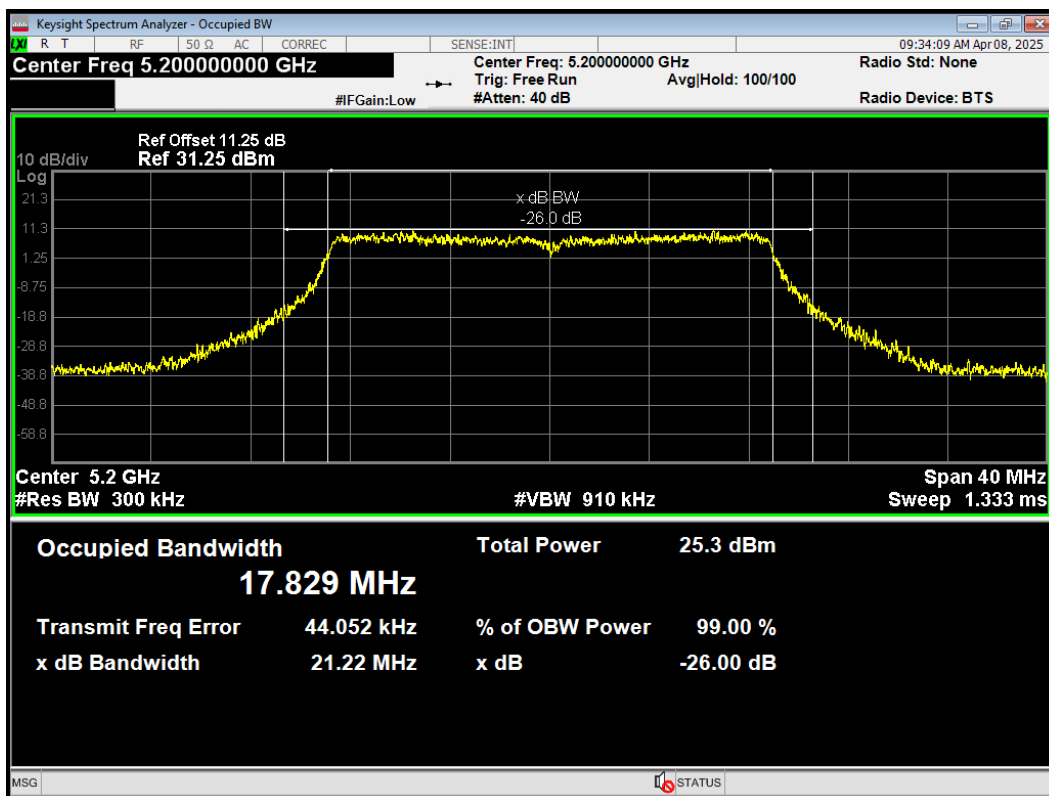
OBW 802.11a 5240MHz



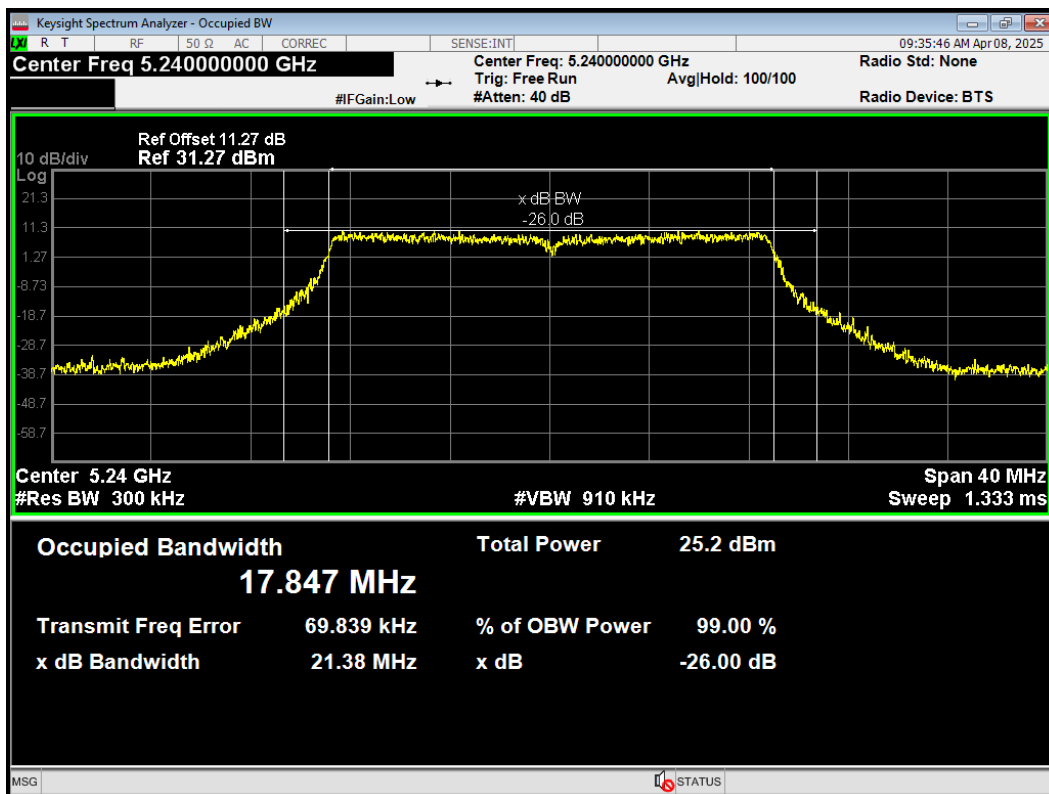
OBW 802.11ac(VHT20) 5180MHz



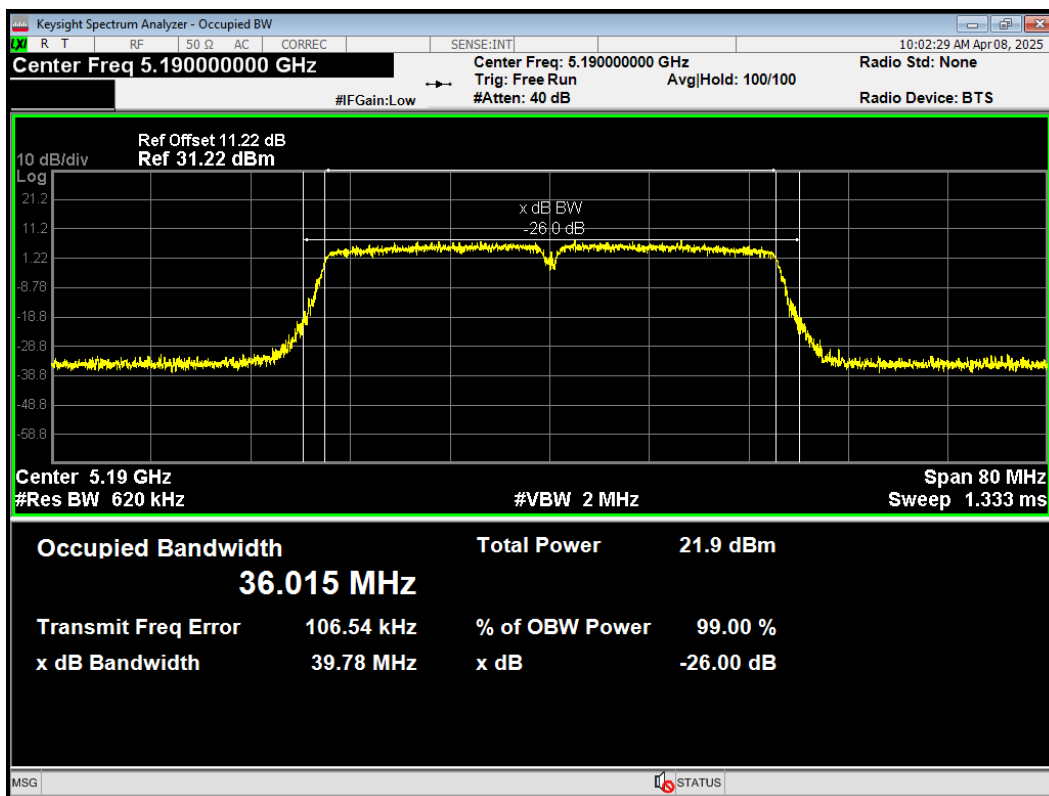
OBW 802.11ac(VHT20) 5200MHz



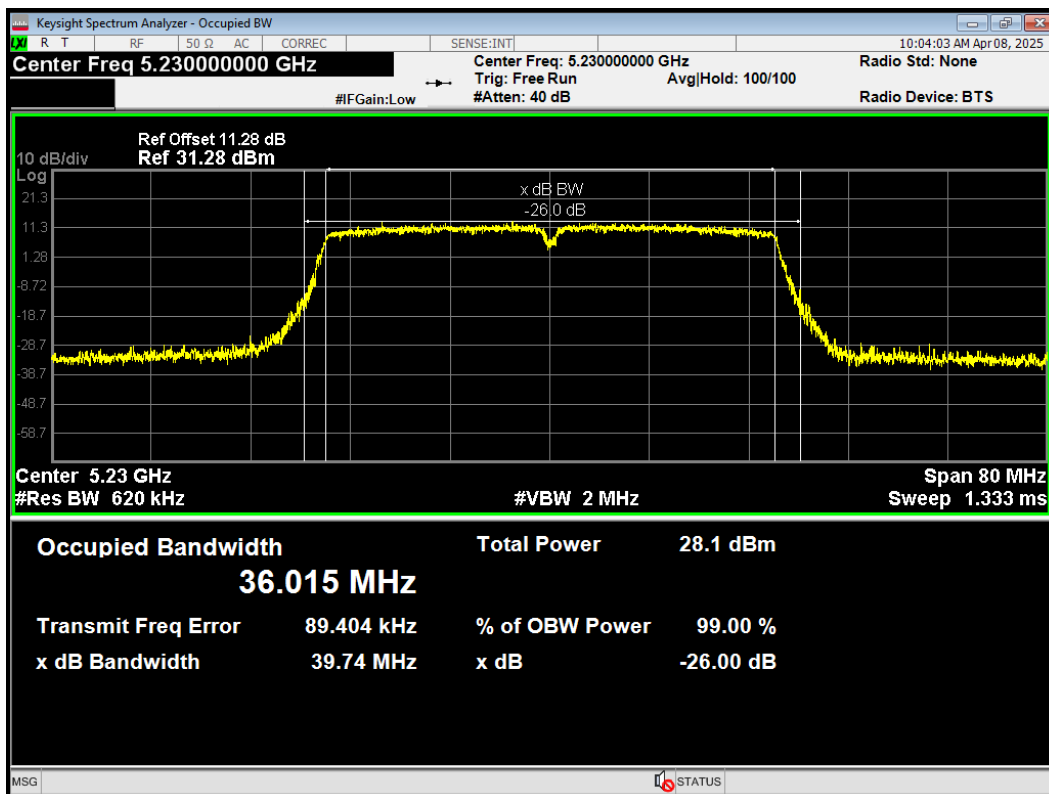
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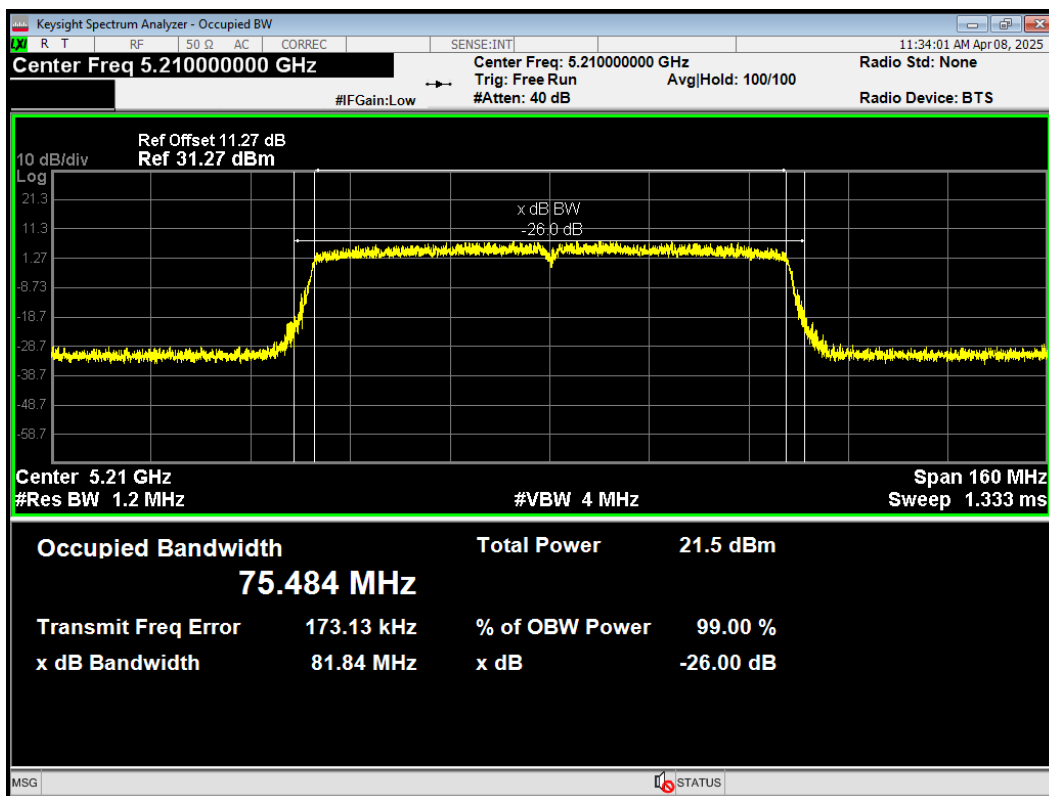
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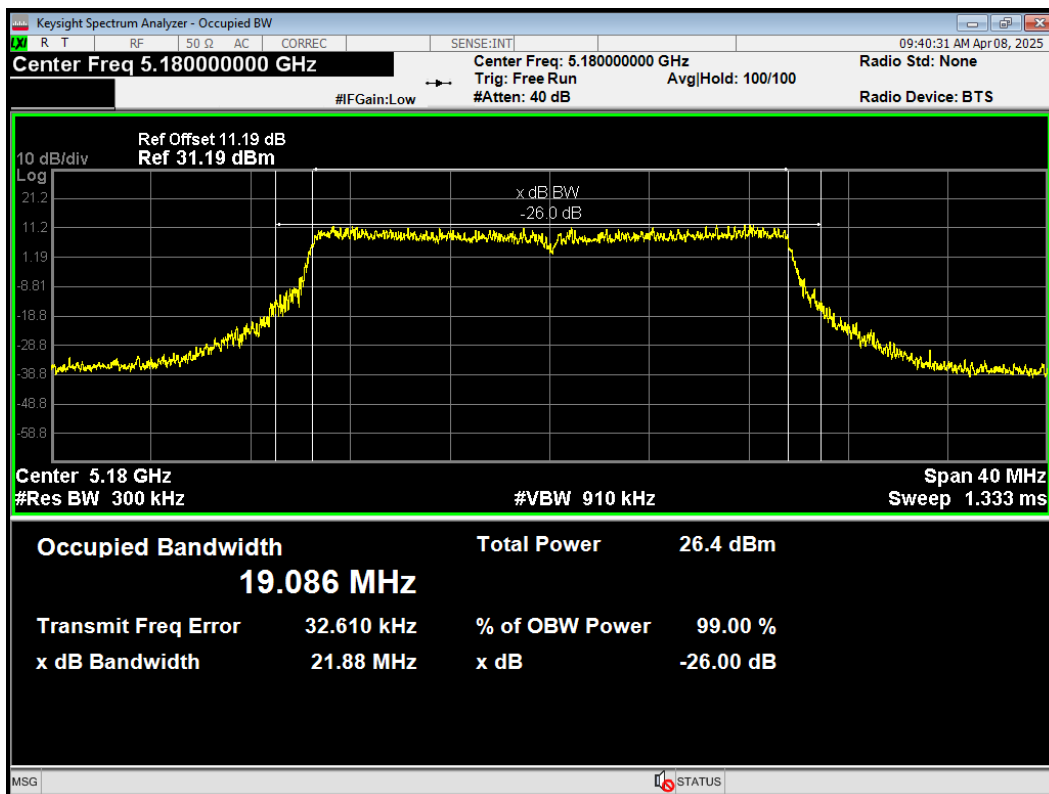
OBW 802.11ac(VHT40) 5230MHz



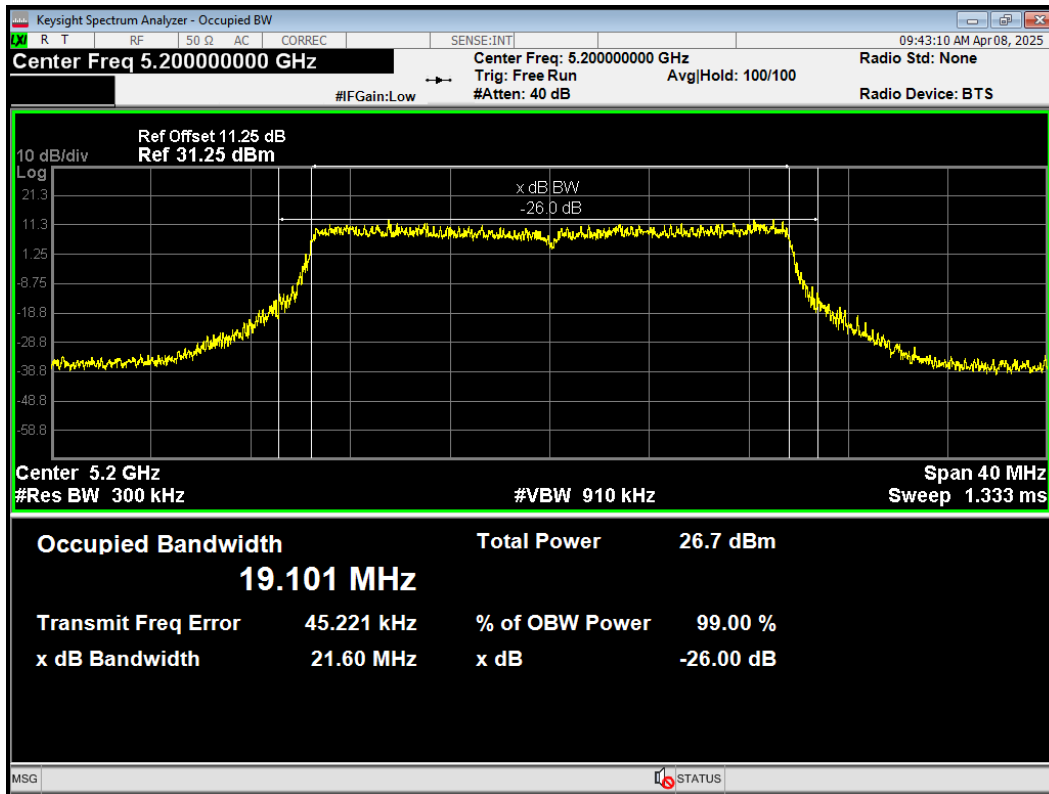
OBW 802.11ac(VHT80) 5210MHz



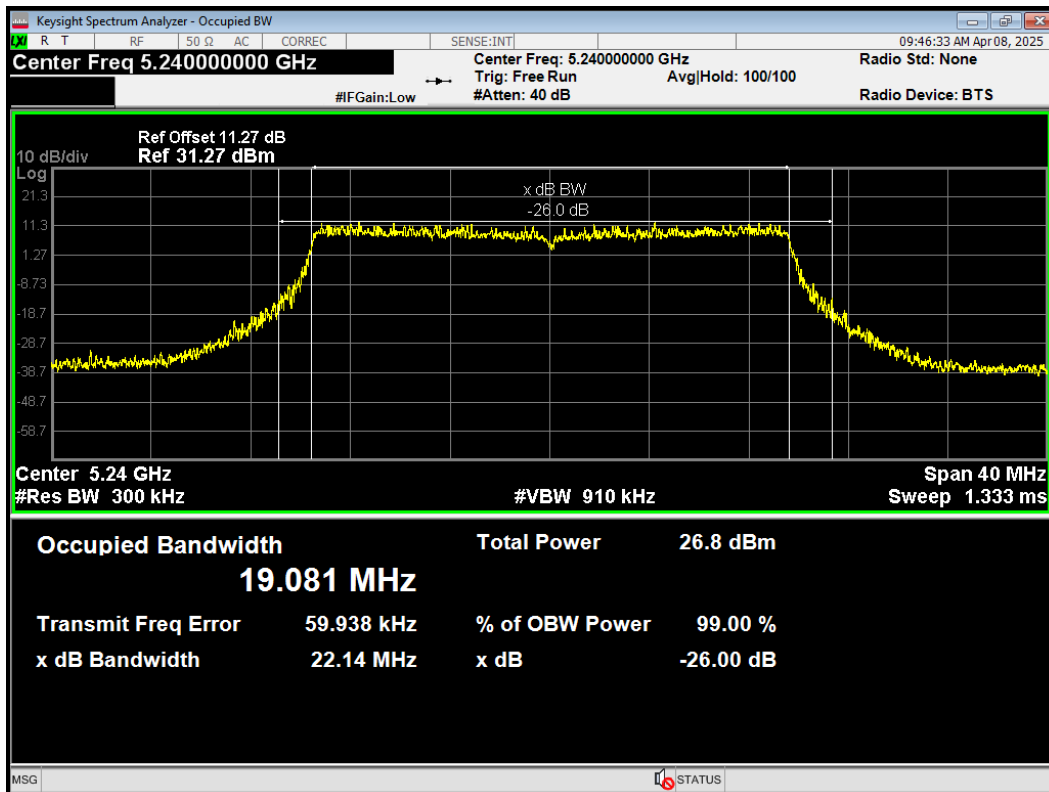
OBW 802.11ax(HE20) 5180MHz



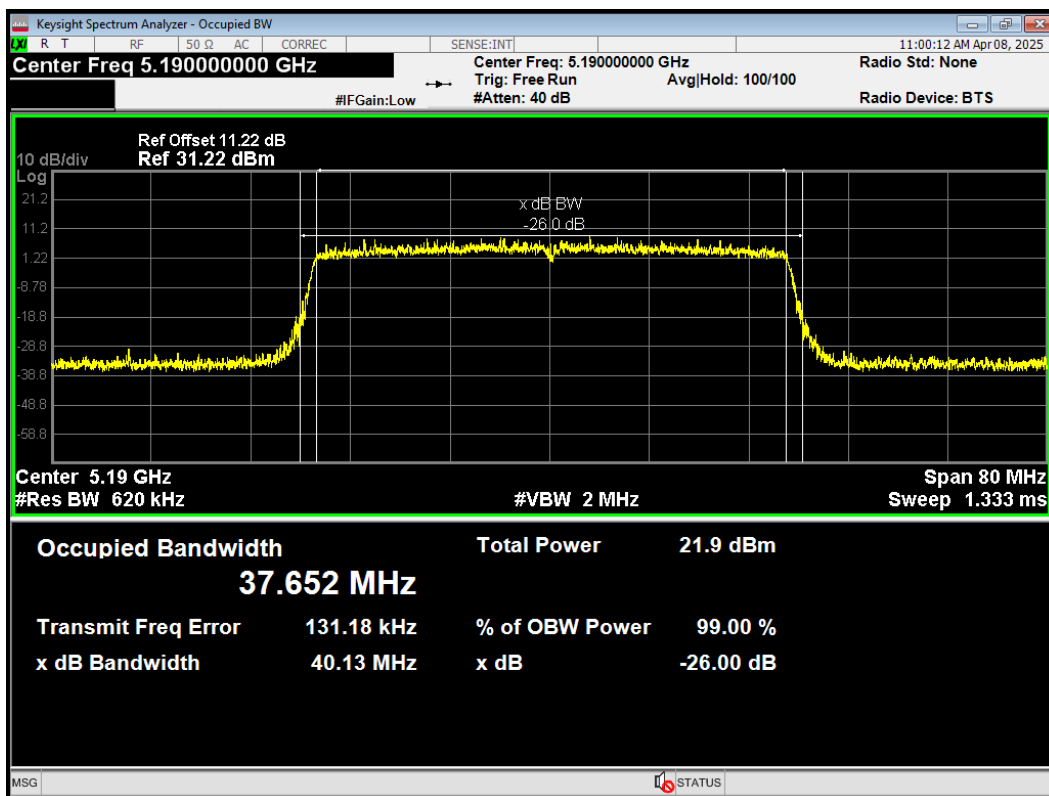
OBW 802.11ax(HE20) 5200MHz



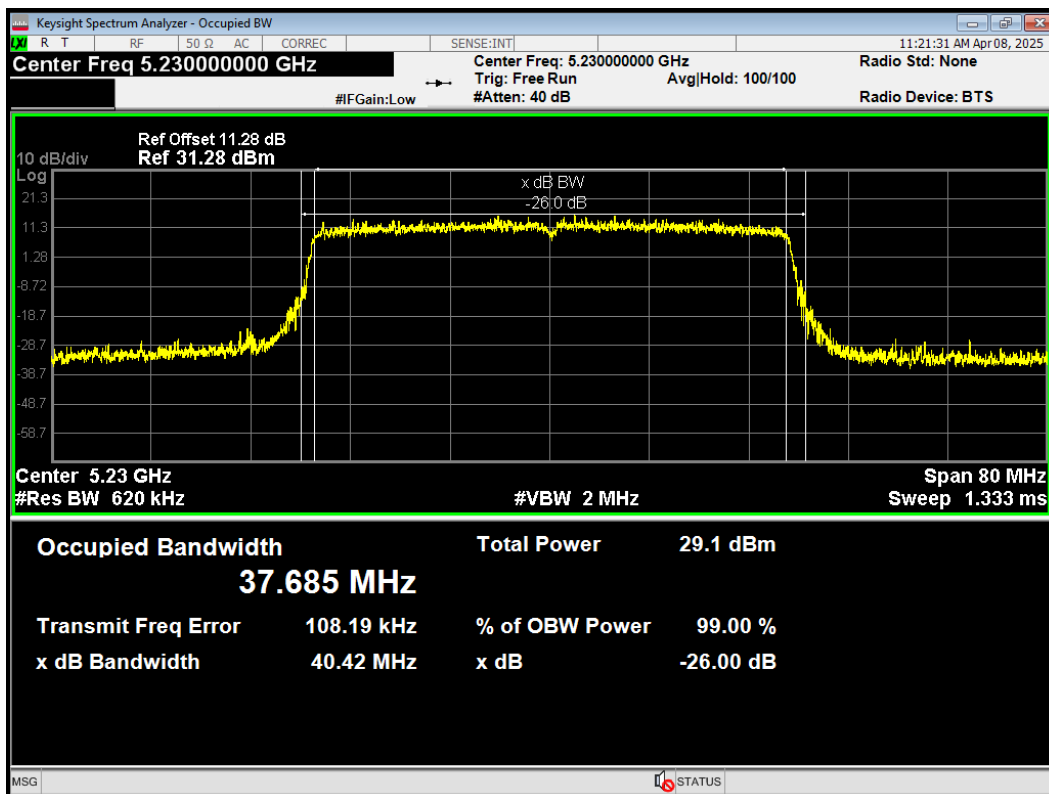
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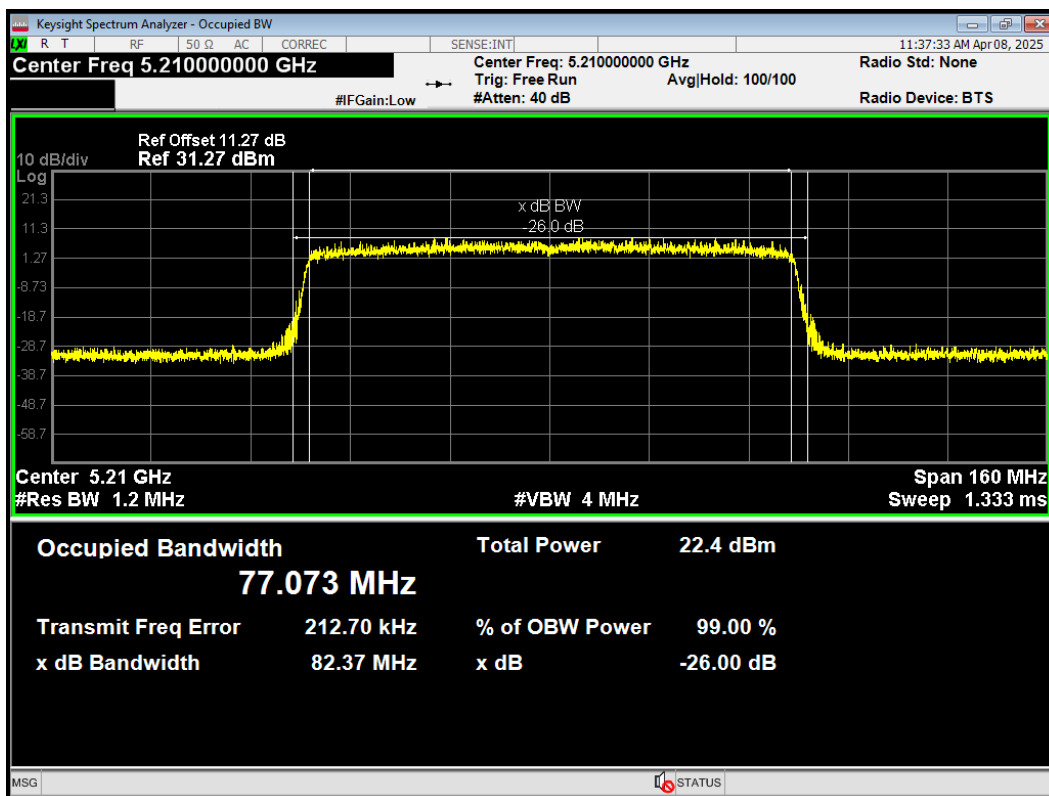
OBW 802.11ax(HE40) 5190MHz



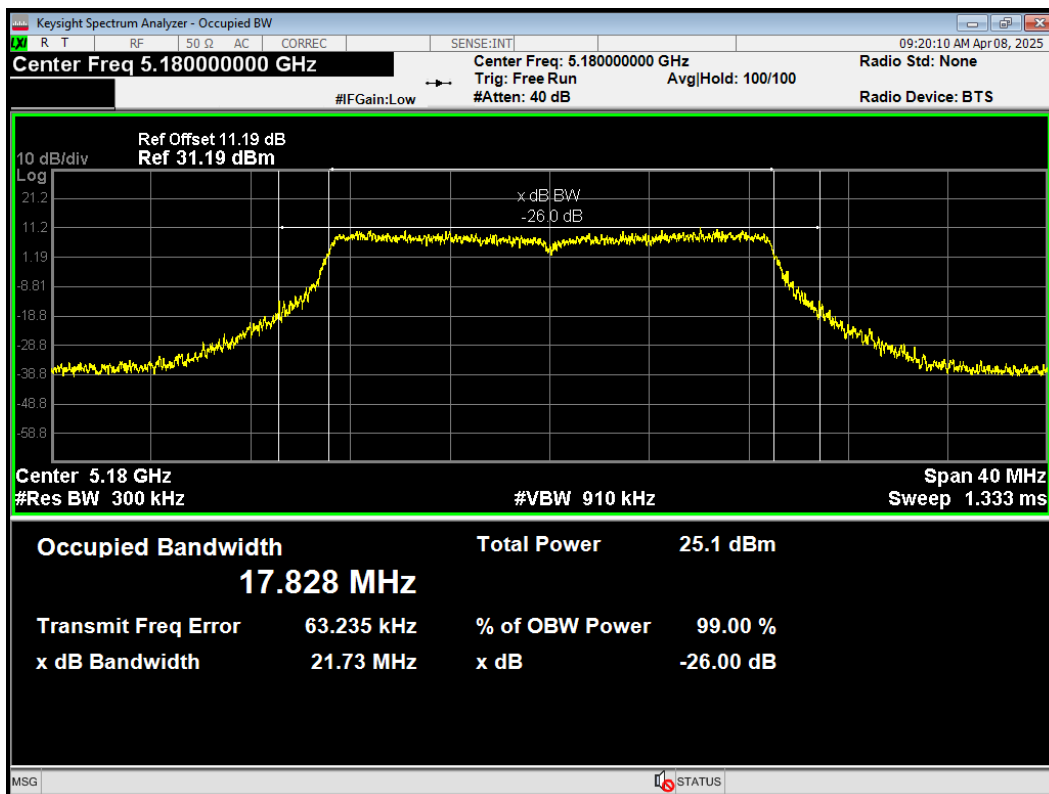
OBW 802.11ax(HE40) 5230MHz



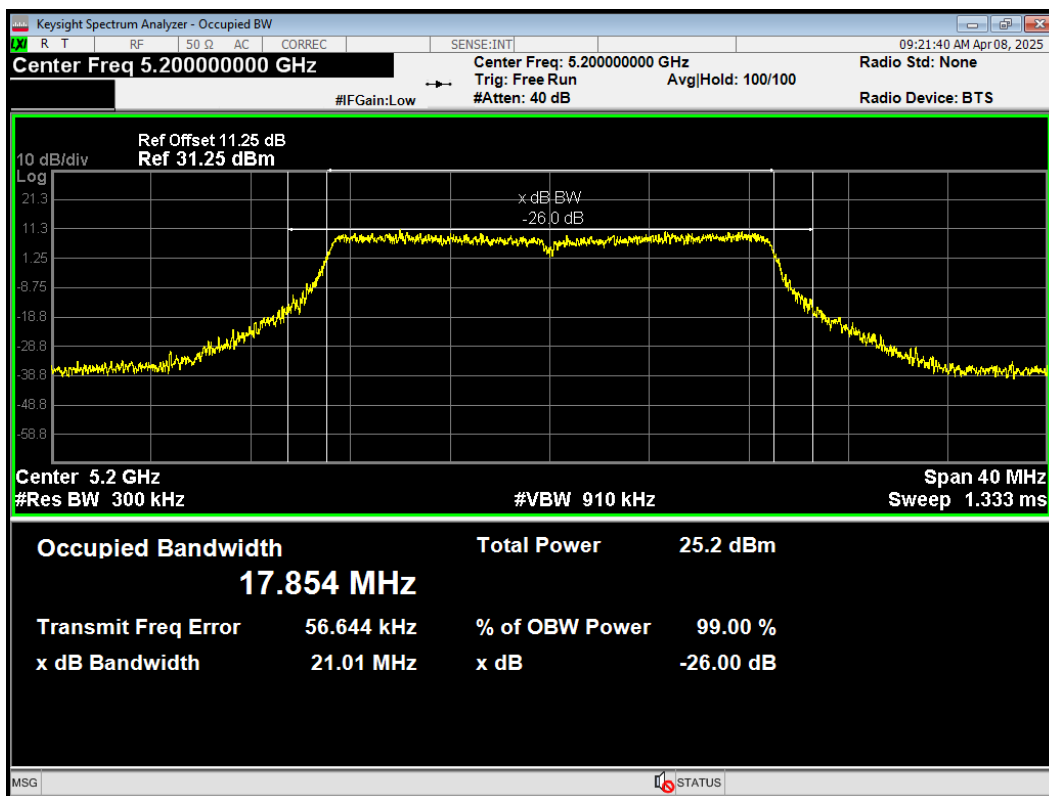
OBW 802.11ax(HE80) 5210MHz



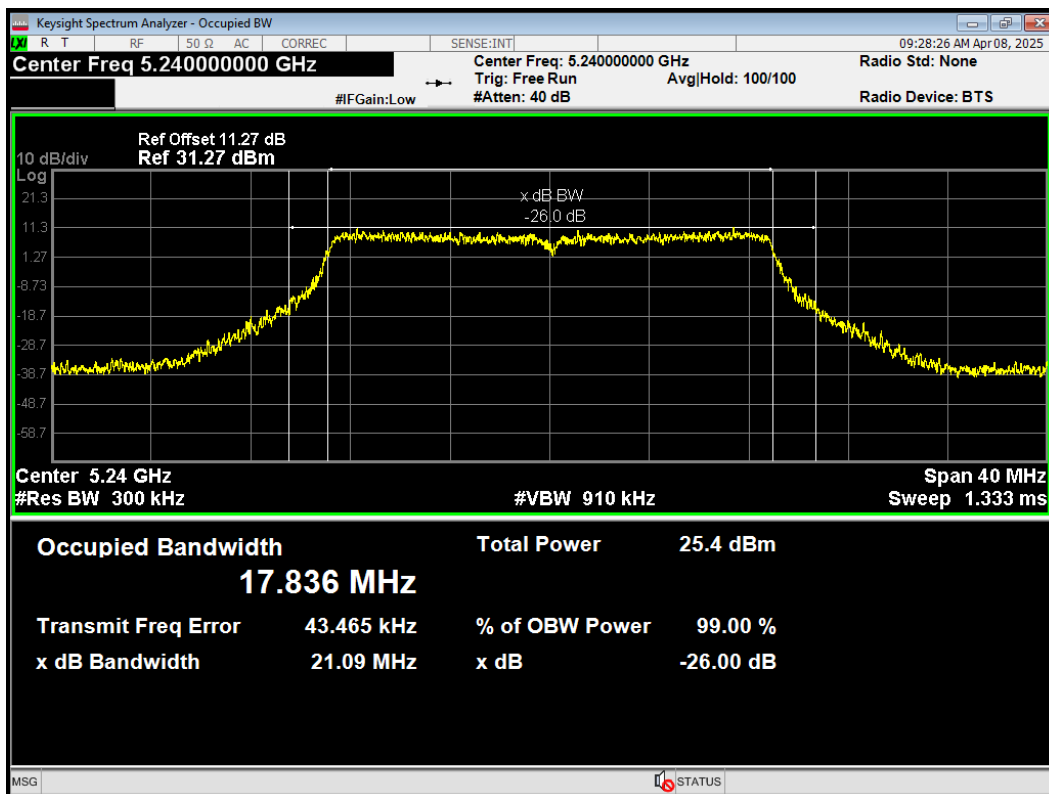
OBW 802.11n(HT20) 5180MHz



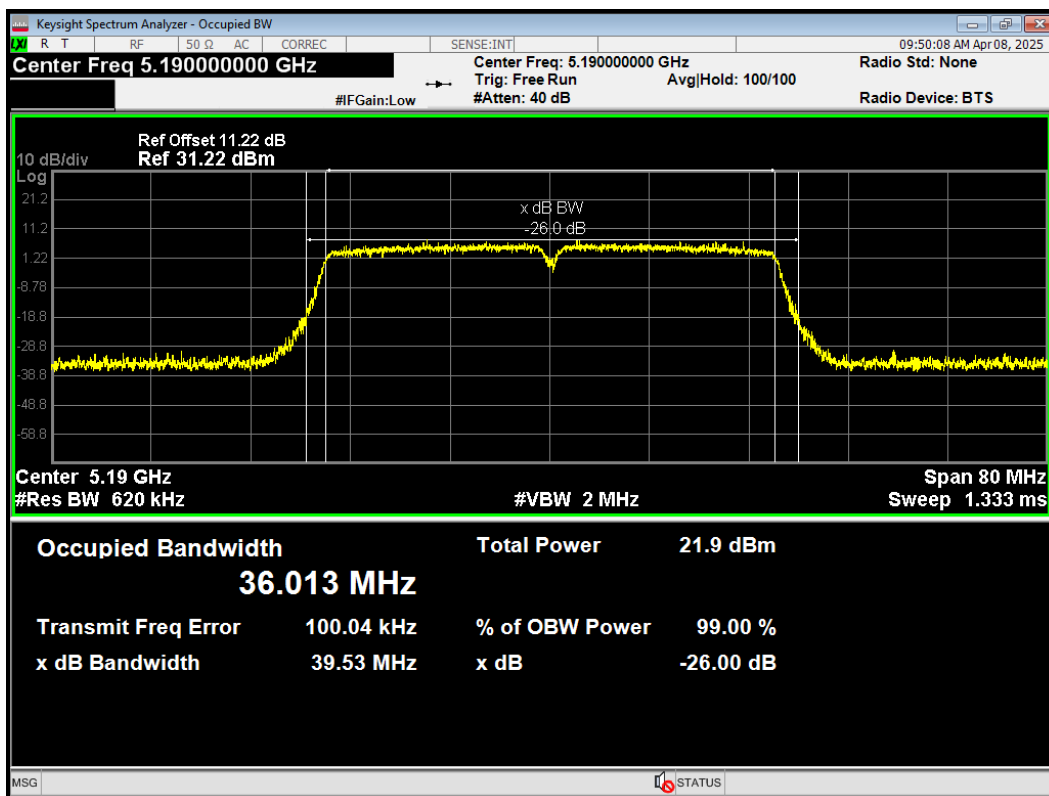
OBW 802.11n(HT20) 5200MHz



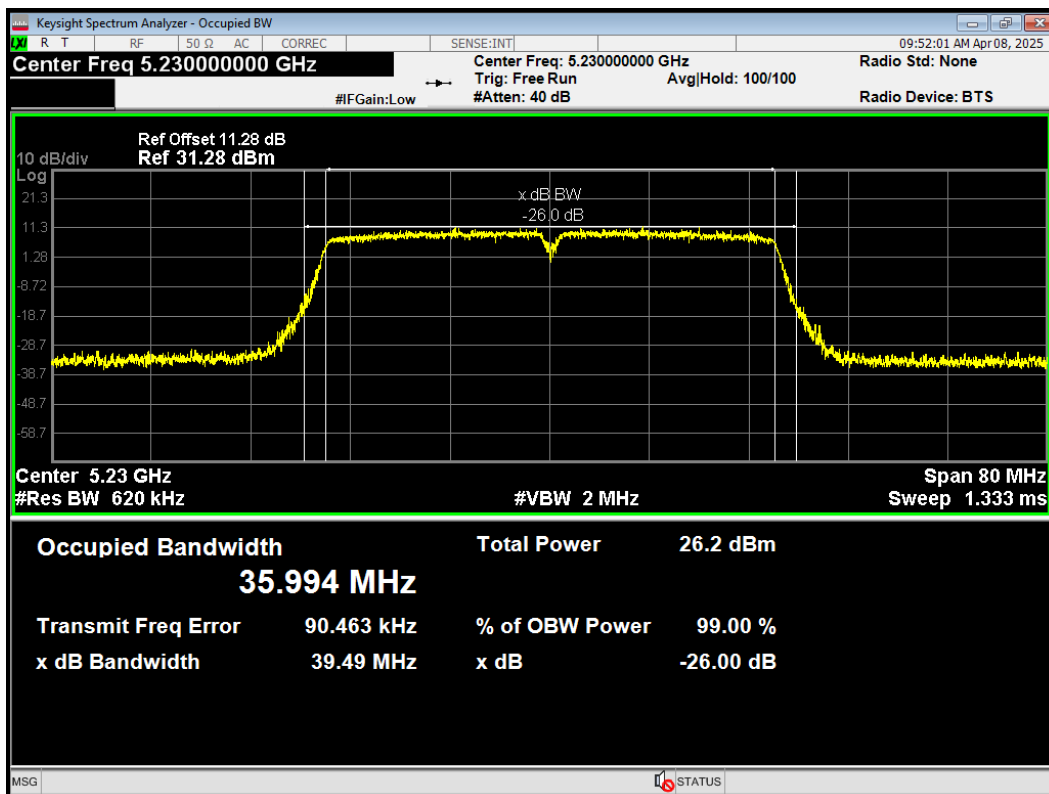
OBW 802.11n(HT20) 5240MHz



OBW 802.11n(HT40) 5190MHz

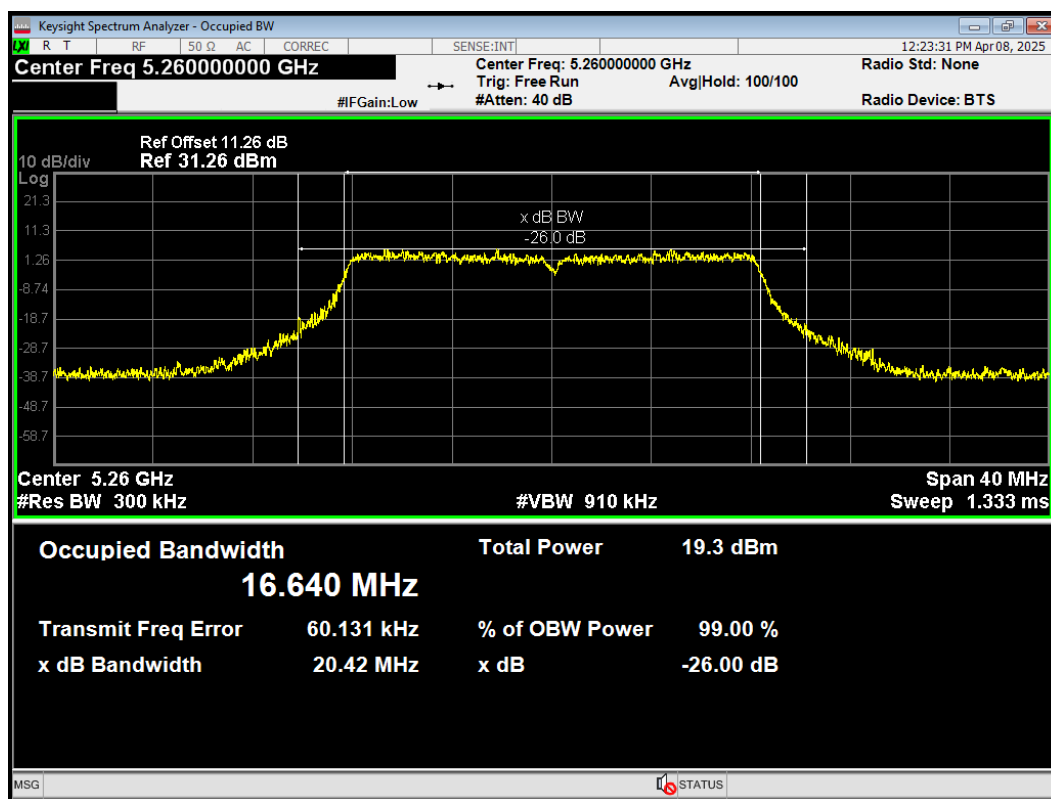


OBW 802.11n(HT40) 5230MHz

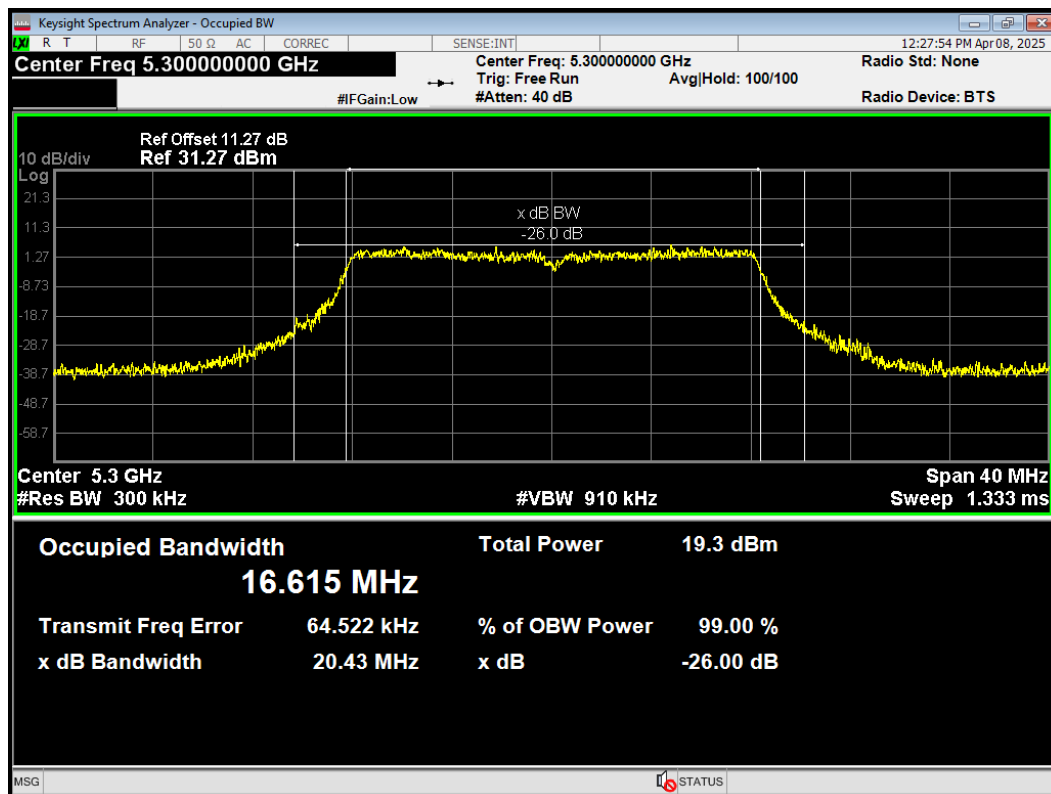


U-NII-2A

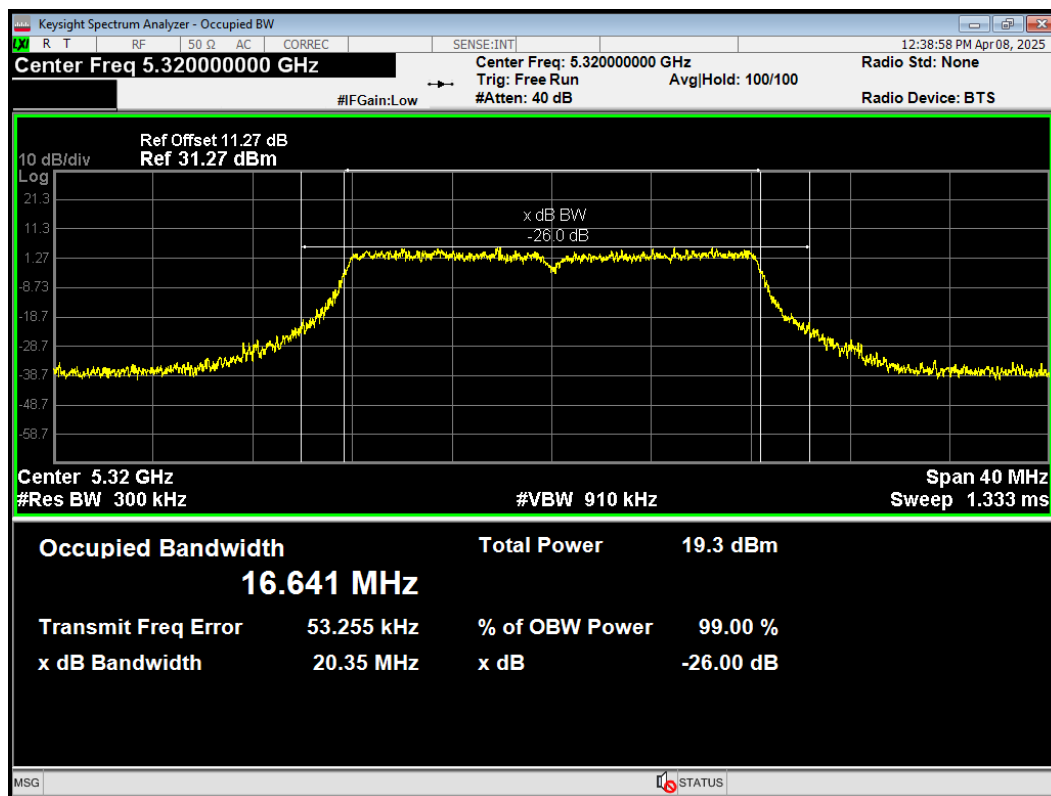
OBW 802.11a 5260MHz



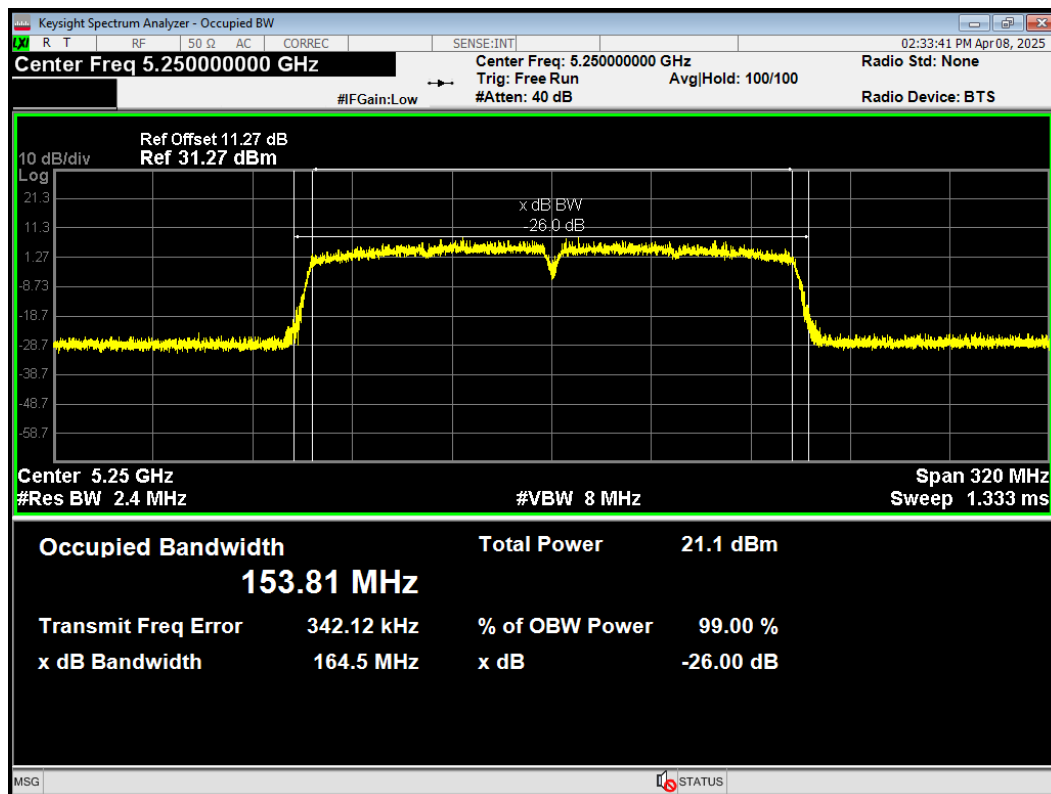
OBW 802.11a 5300MHz



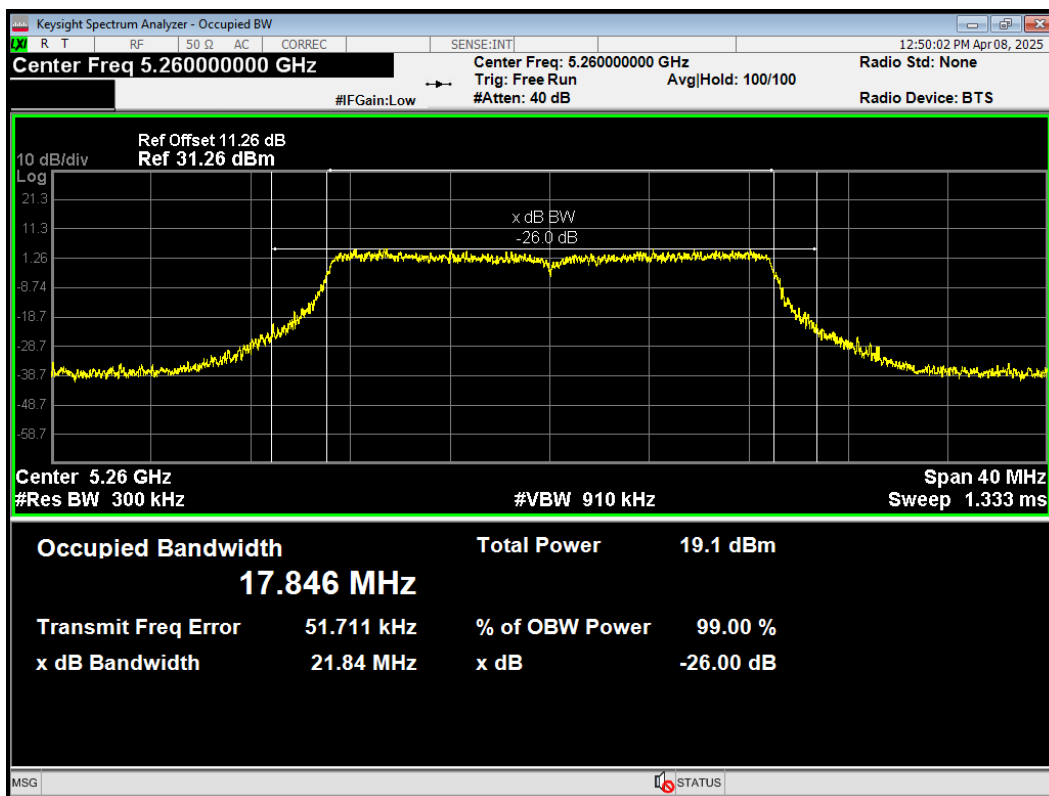
OBW 802.11a 5320MHz



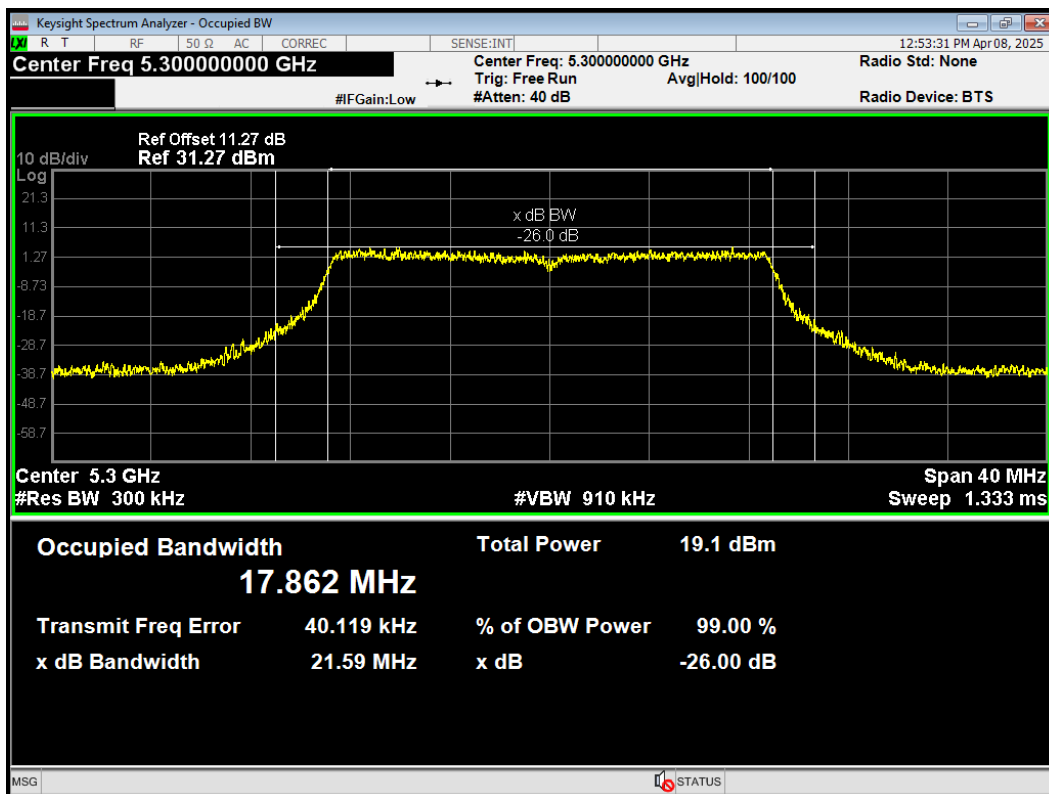
OBW 802.11ac(VHT160) 5250MHz



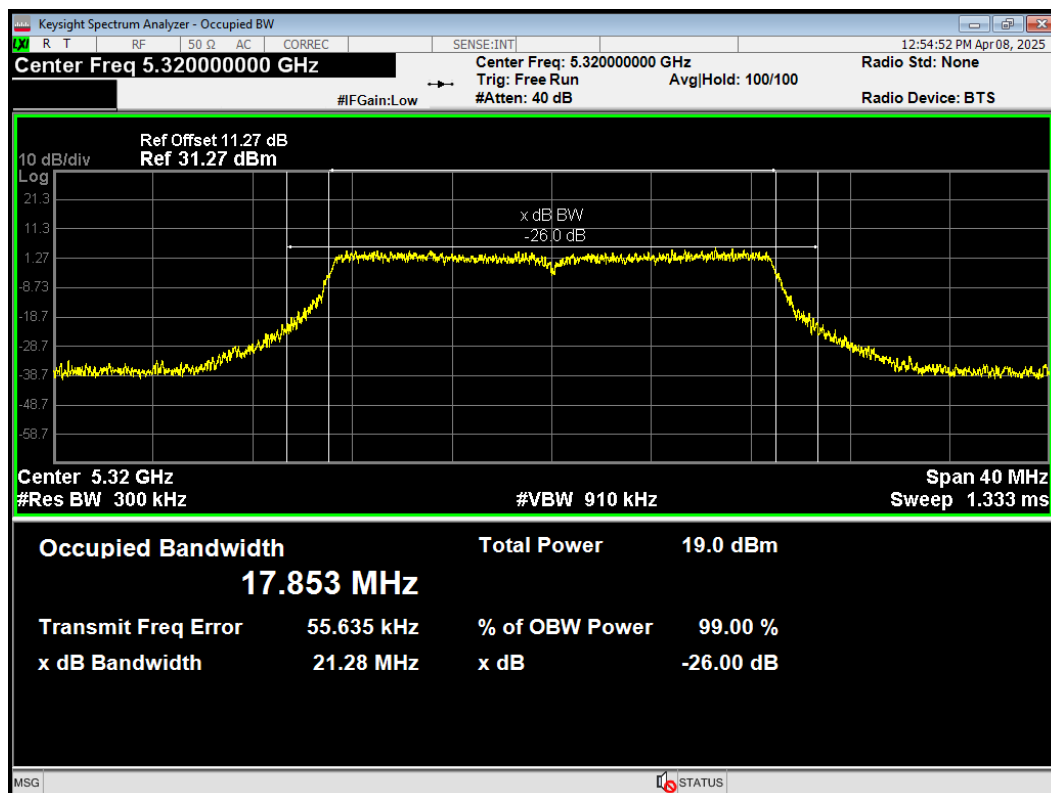
OBW 802.11ac(VHT20) 5260MHz



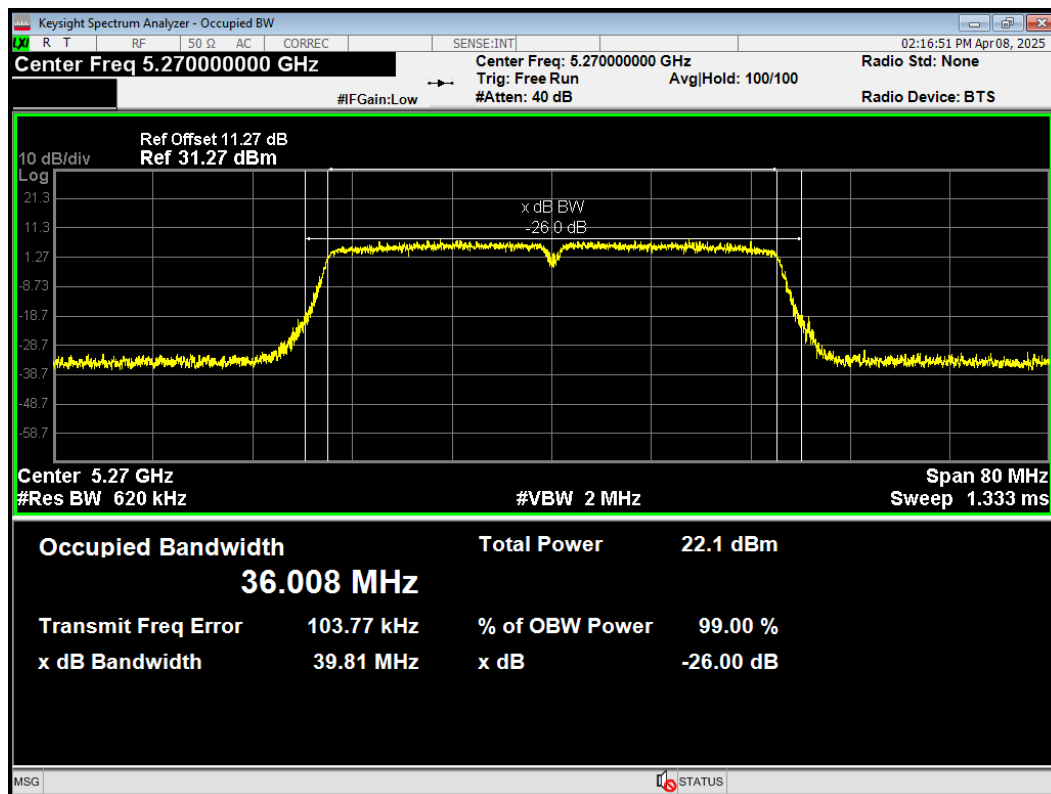
OBW 802.11ac(VHT20) 5300MHz



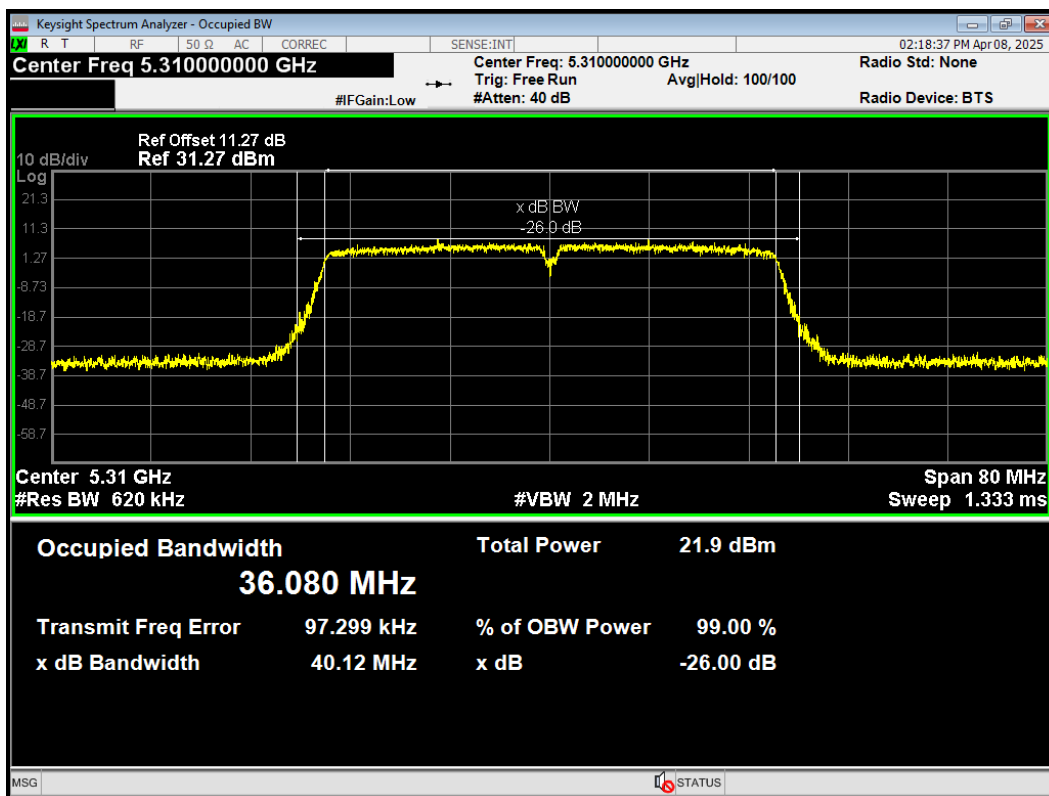
OBW 802.11ac(VHT20) 5320MHz



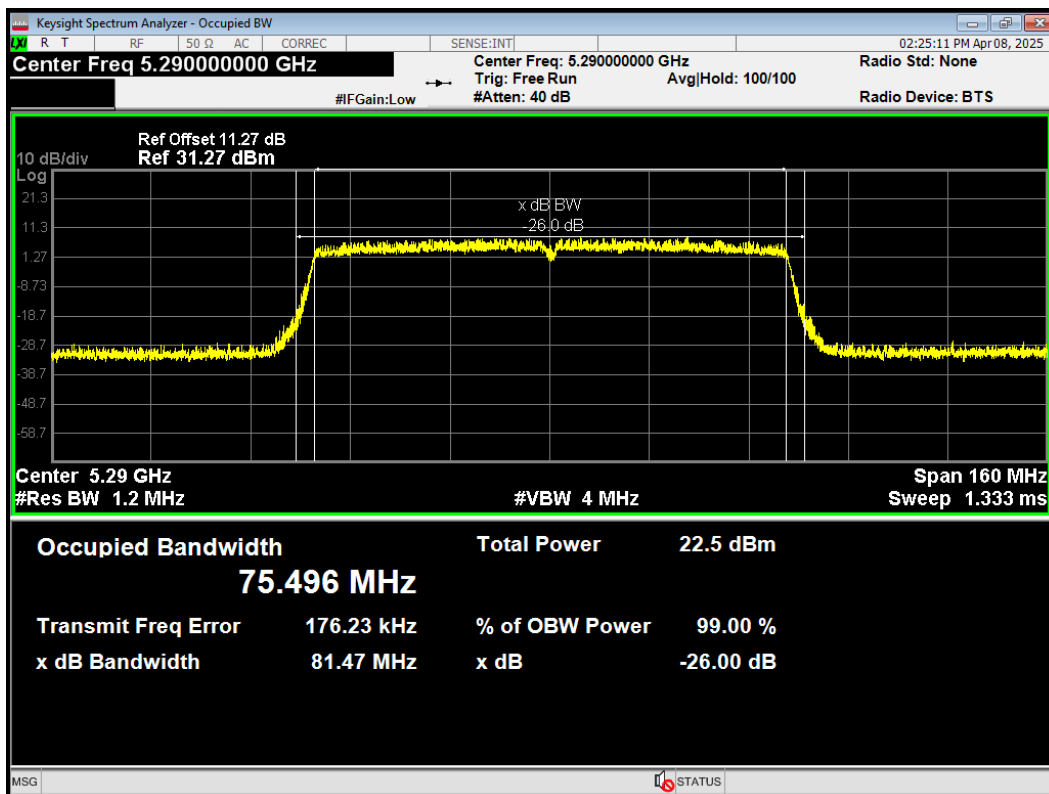
OBW 802.11ac(VHT40) 5270MHz



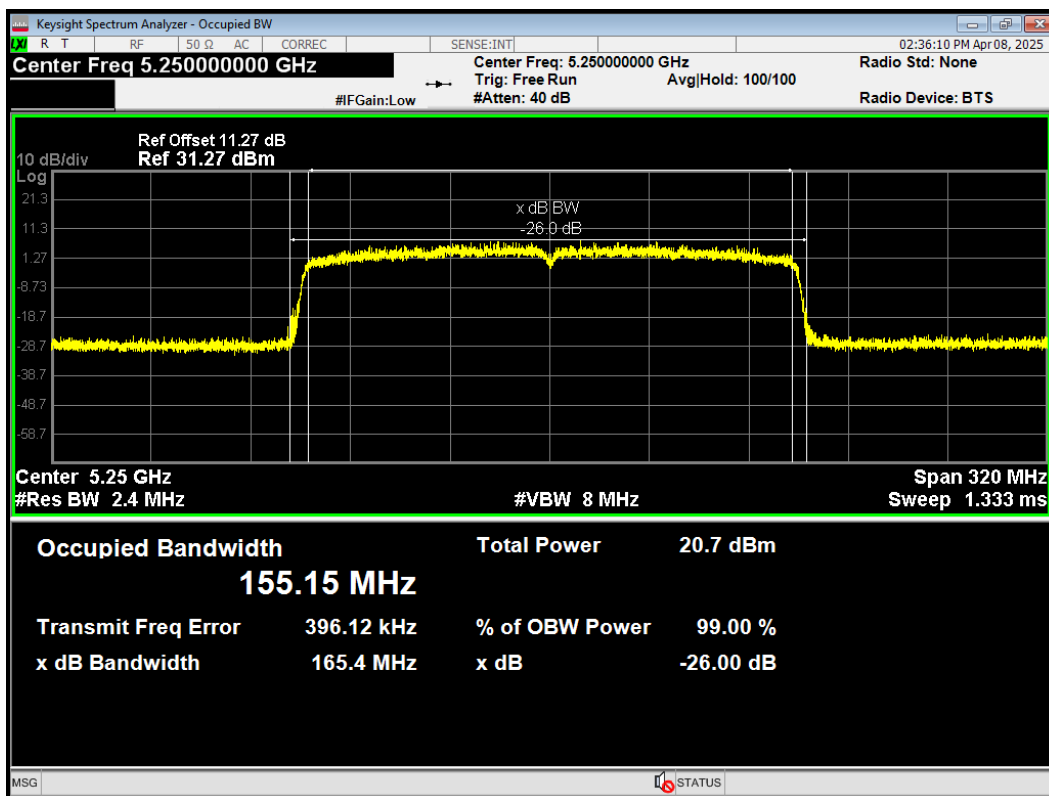
OBW 802.11ac(VHT40) 5310MHz



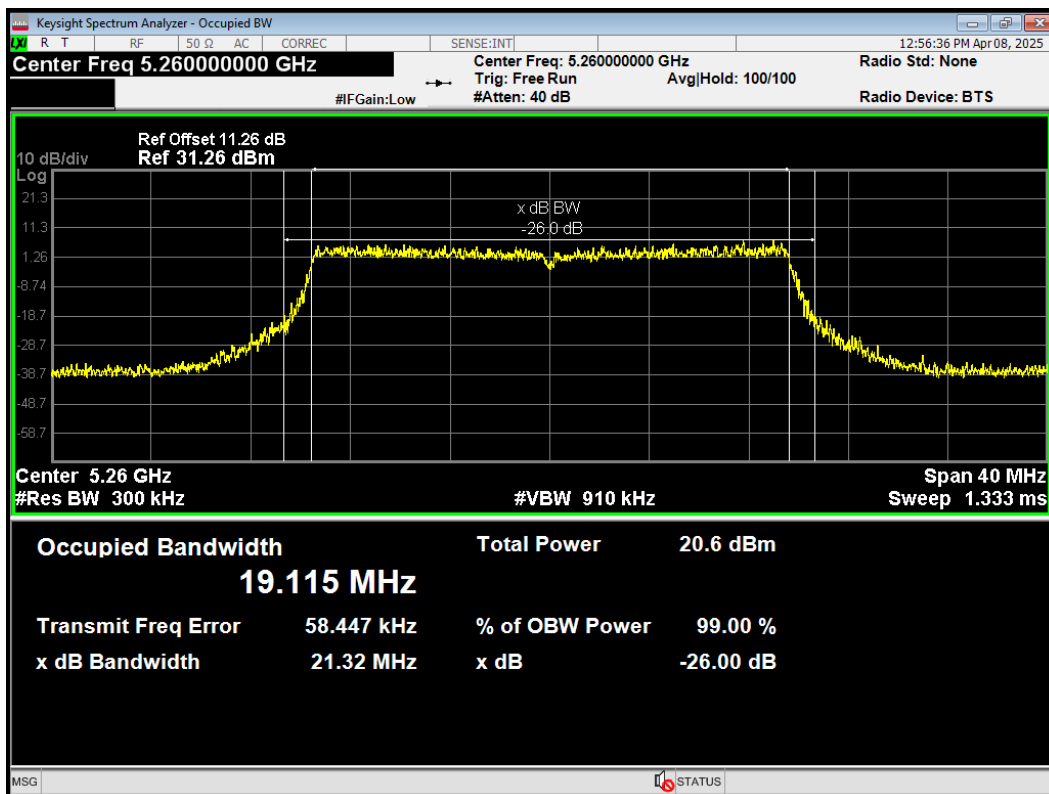
OBW 802.11ac(VHT80) 5290MHz



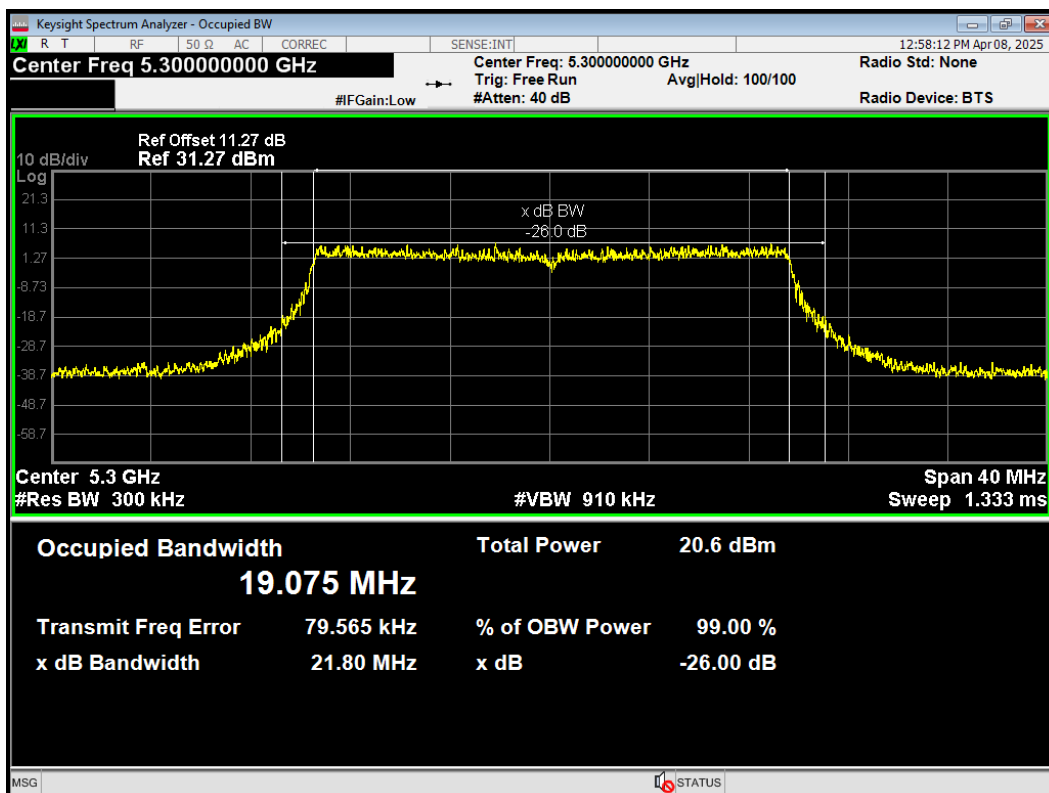
OBW 802.11ax(HE160) 5250MHz



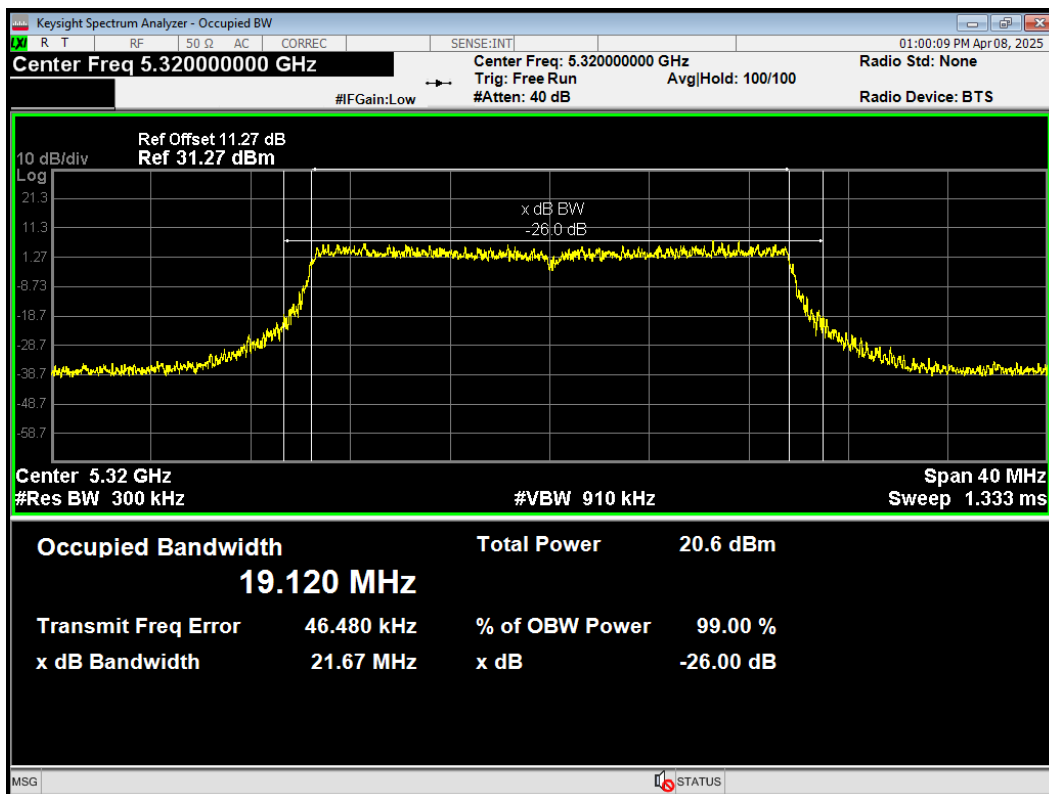
OBW 802.11ax(HE20) 5260MHz



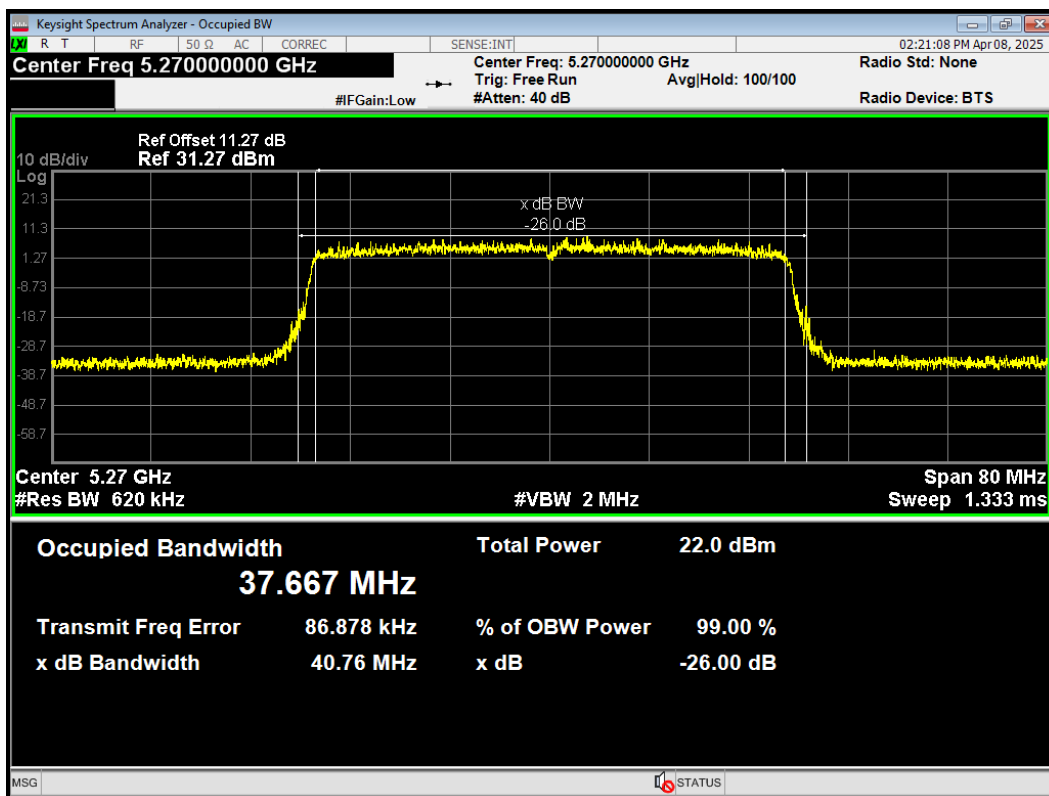
OBW 802.11ax(HE20) 5300MHz



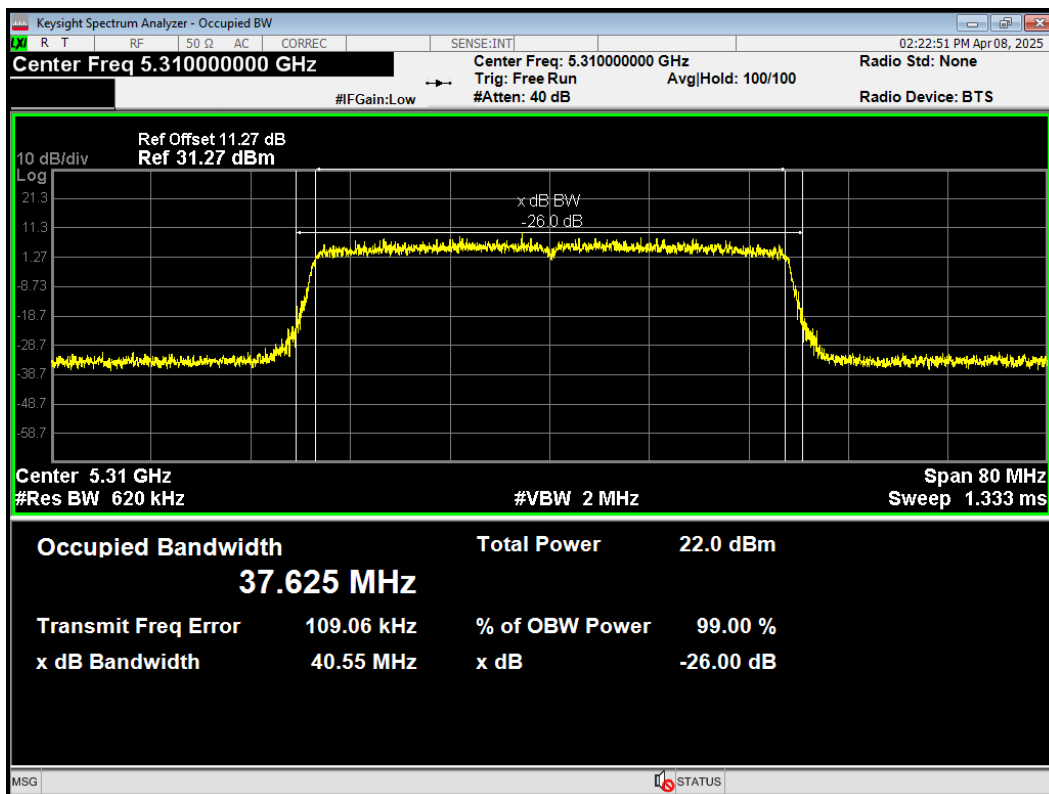
OBW 802.11ax(HE20) 5320MHz



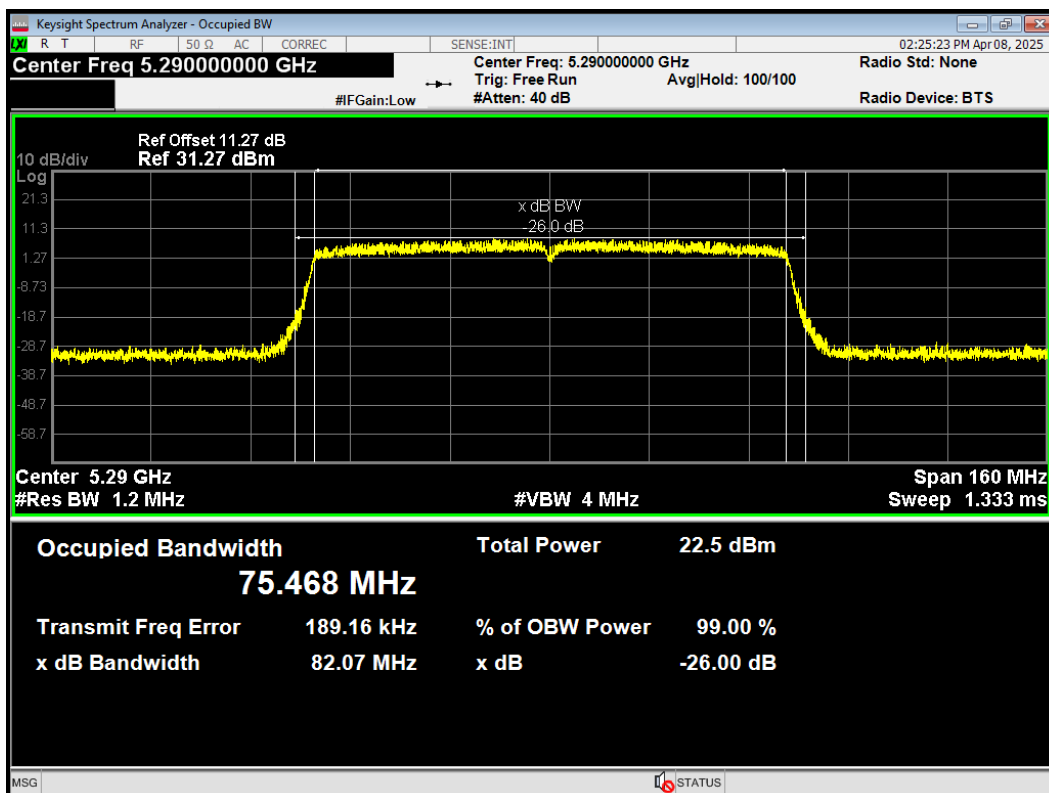
OBW 802.11ax(HE40) 5270MHz



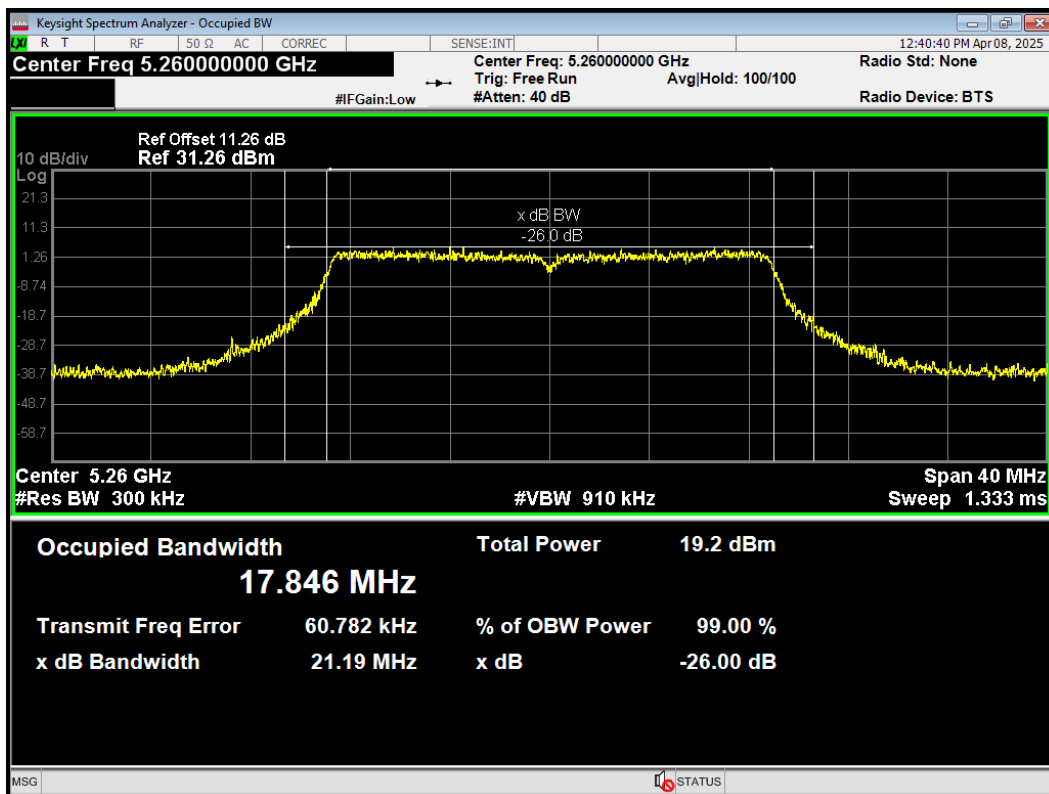
OBW 802.11ax(HE40) 5310MHz



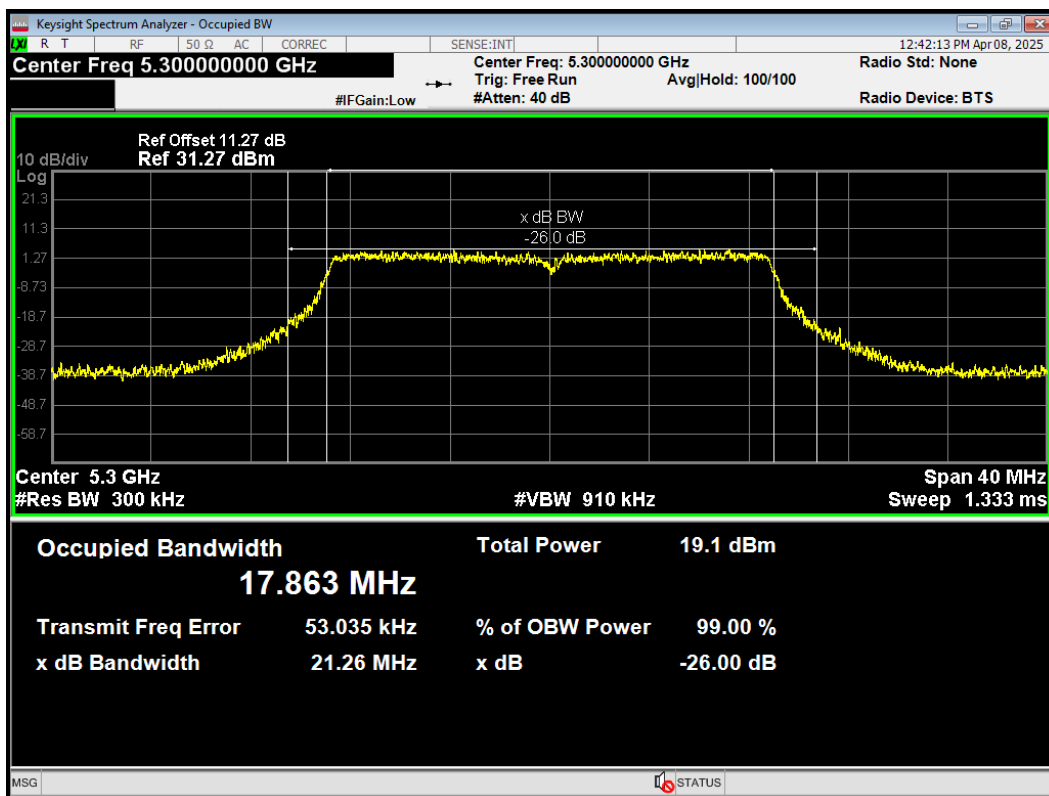
OBW 802.11ax(HE80) 5290MHz



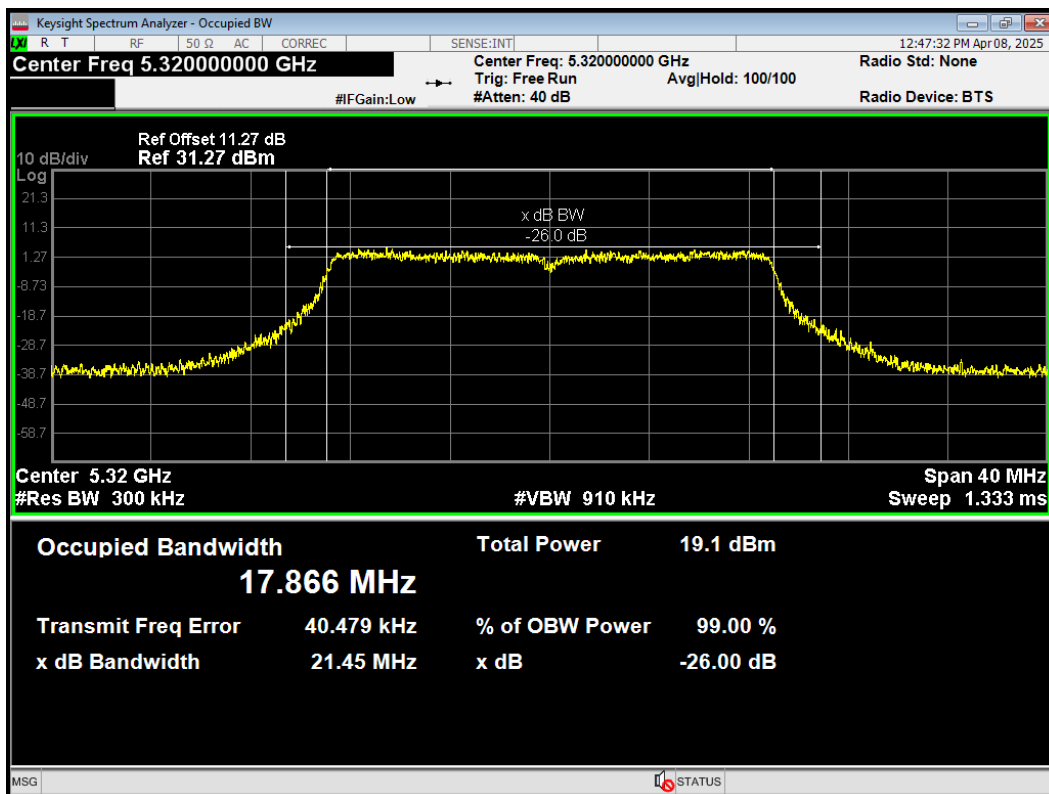
OBW 802.11n(HT20) 5260MHz



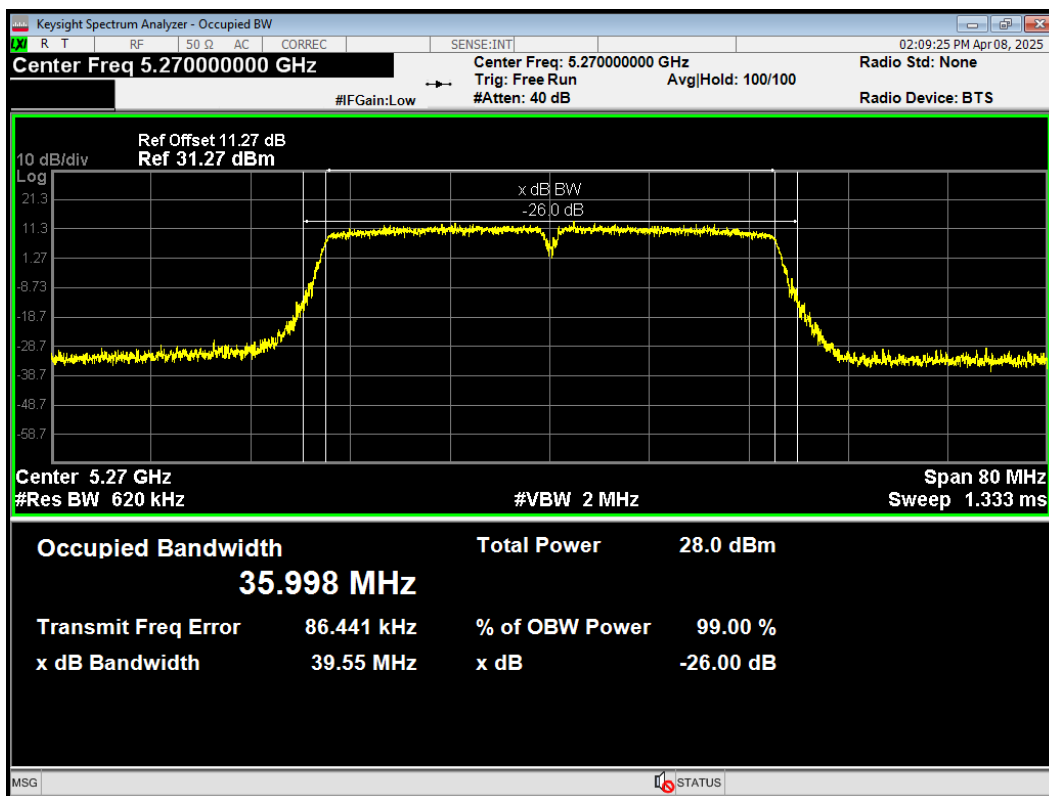
OBW 802.11n(HT20) 5300MHz



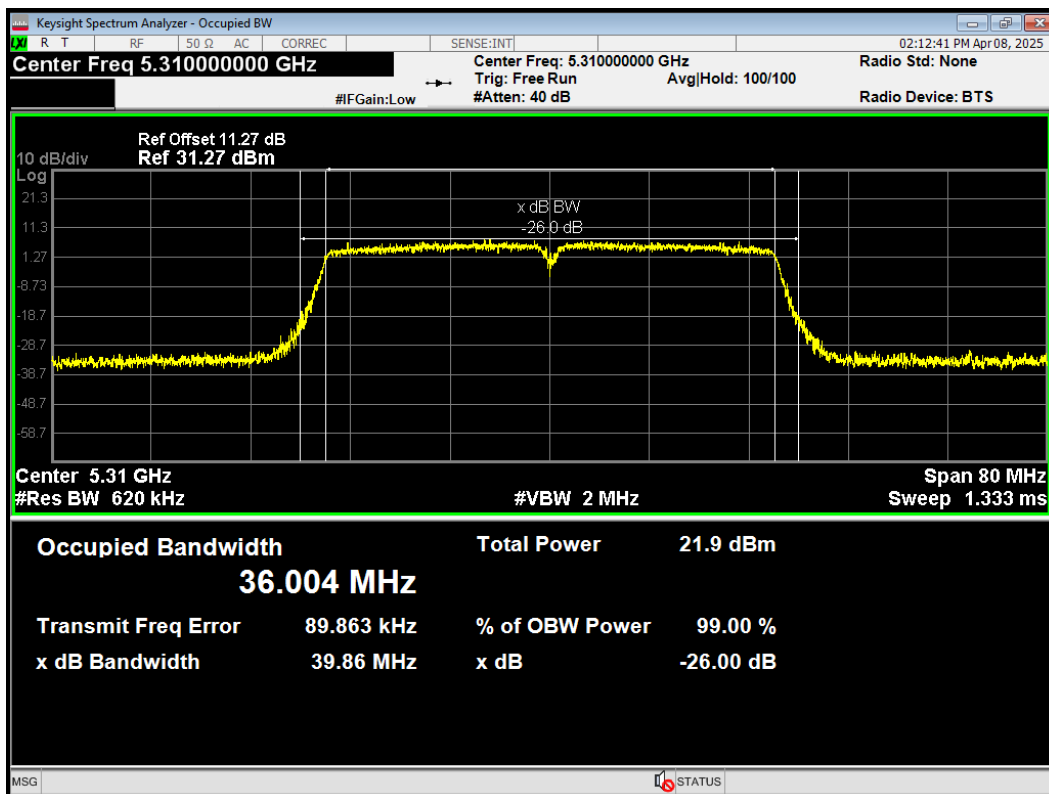
OBW 802.11n(HT20) 5320MHz



OBW 802.11n(HT40) 5270MHz

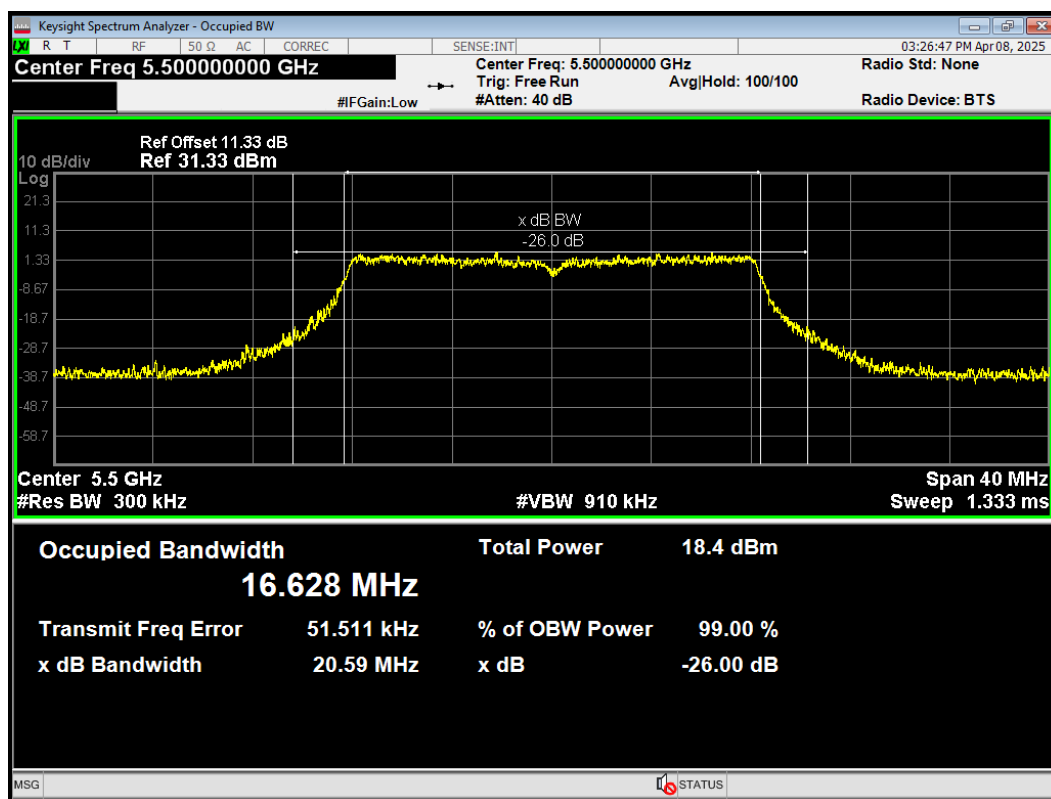


OBW 802.11n(HT40) 5310MHz

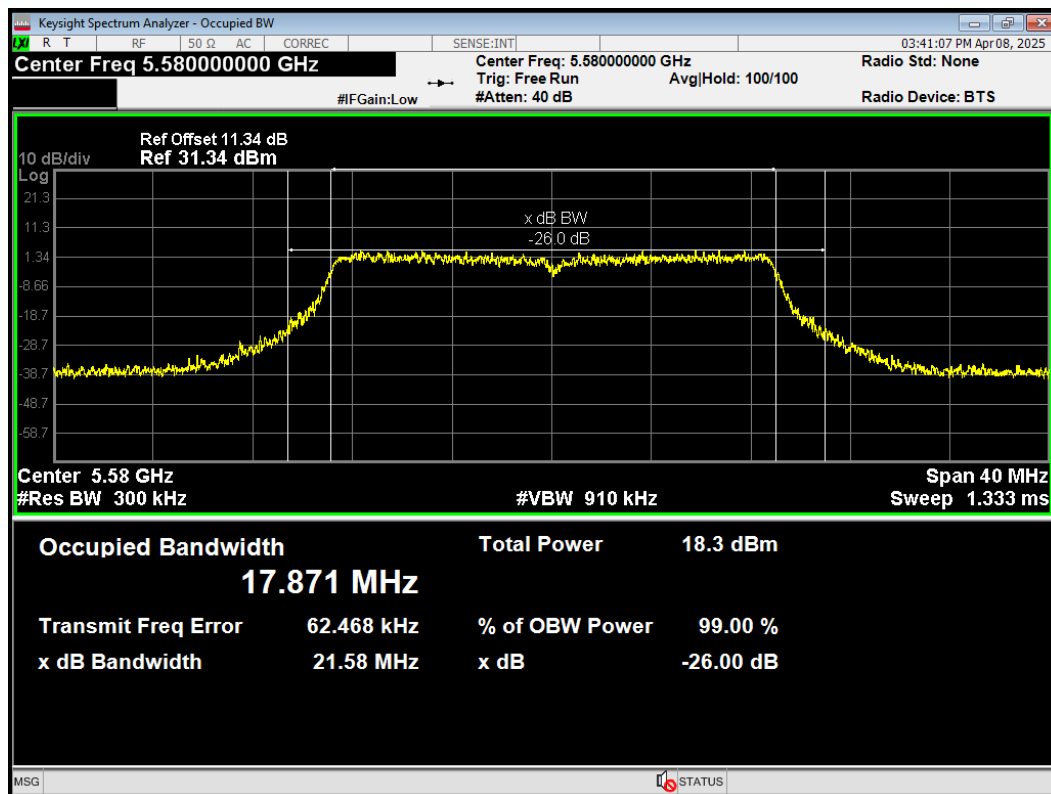


U-NII-2C

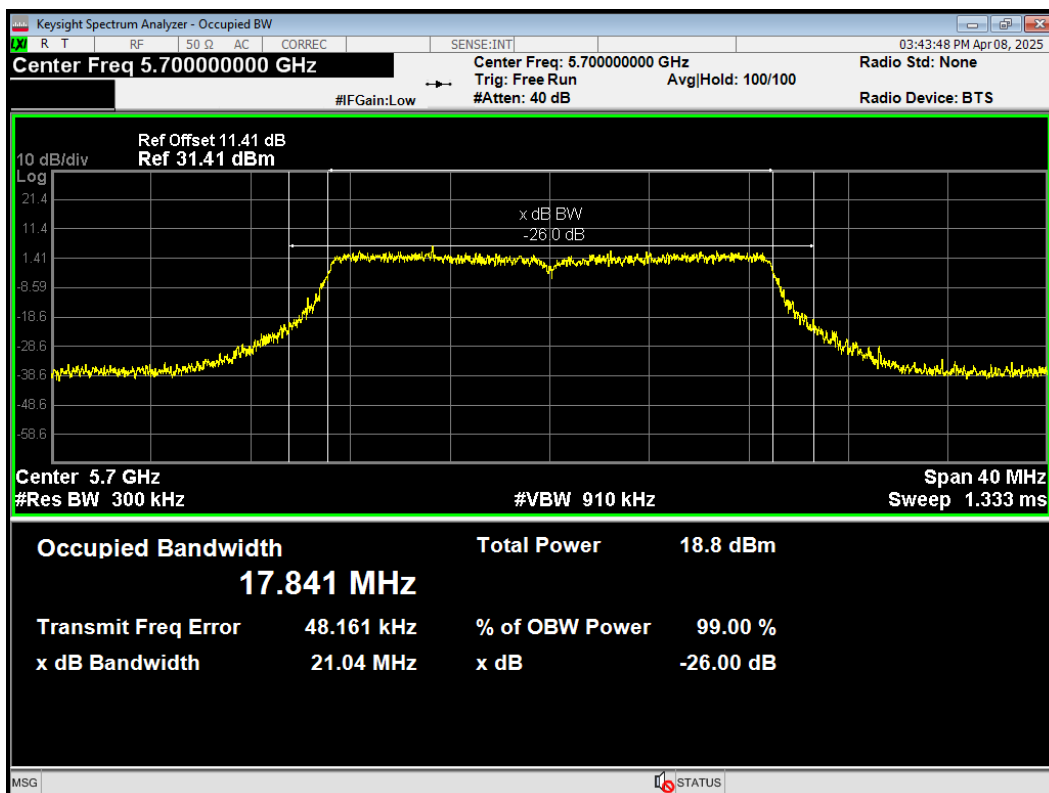
OBW 802.11a 5500MHz



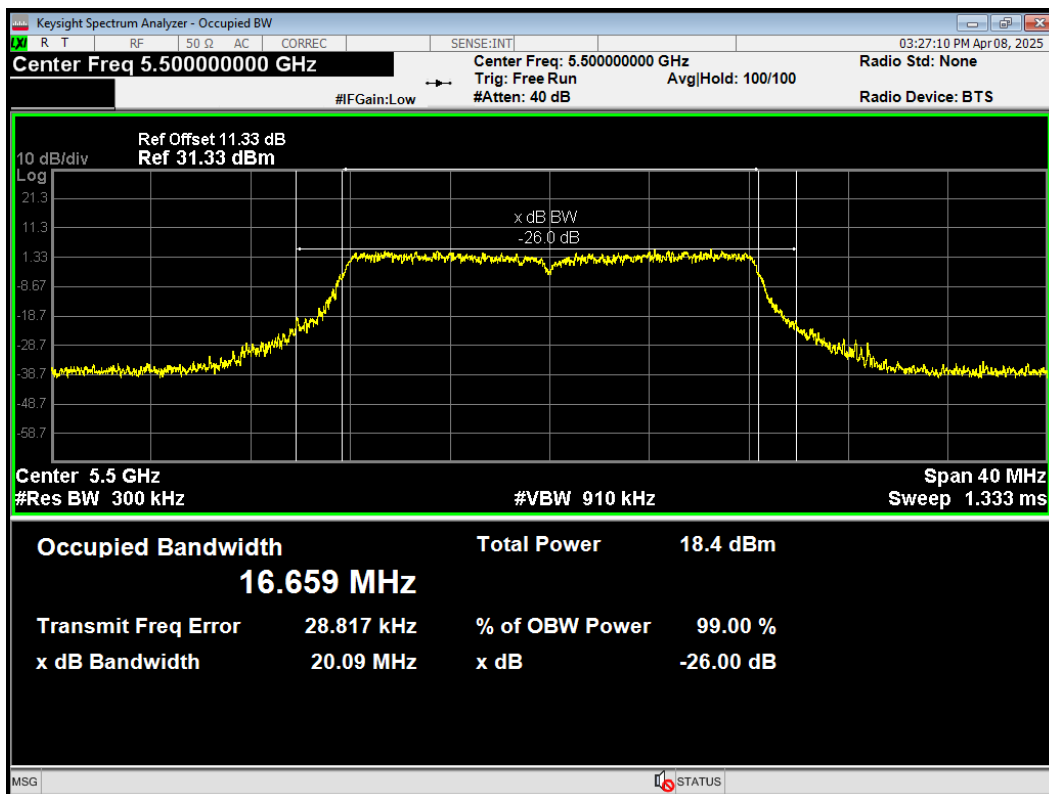
OBW 802.11a 5580MHz



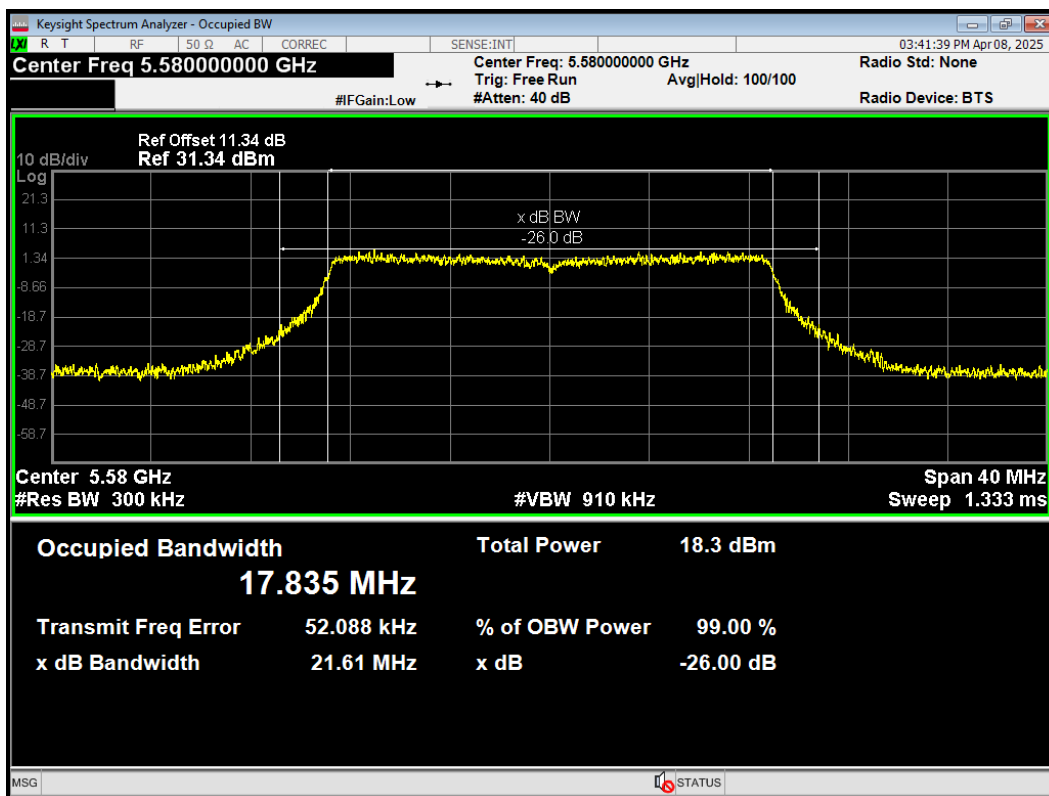
OBW 802.11a 5700MHz



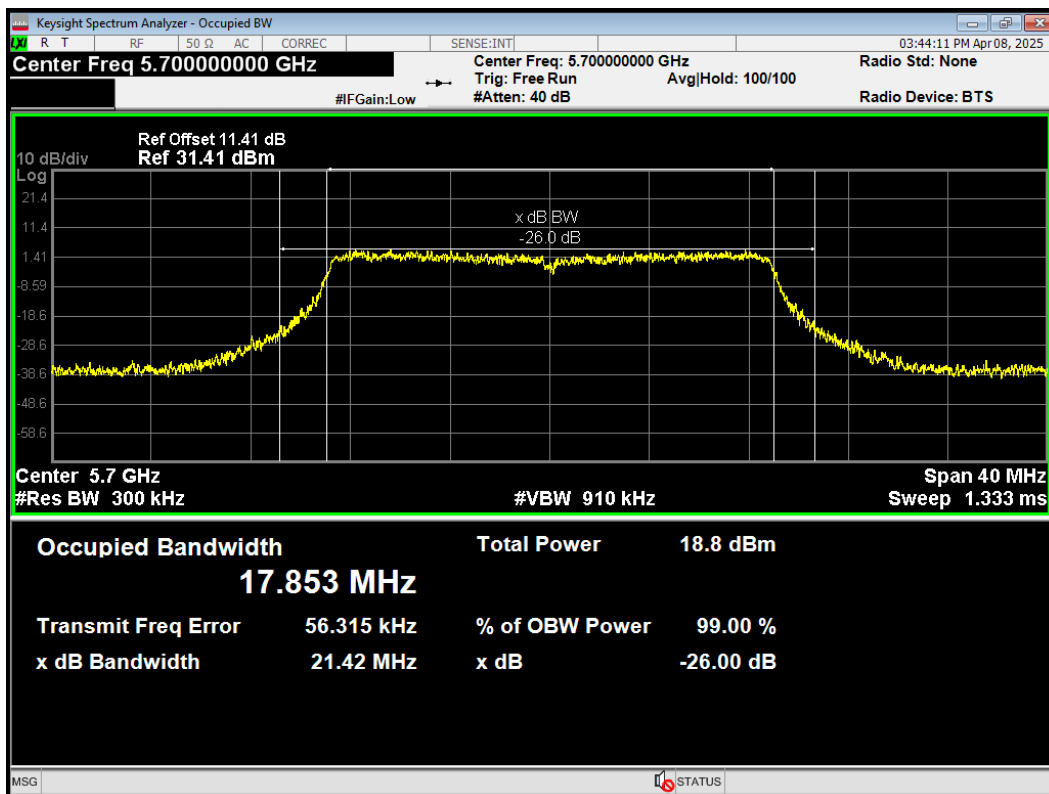
OBW 802.11ac(VHT20) 5500MHz



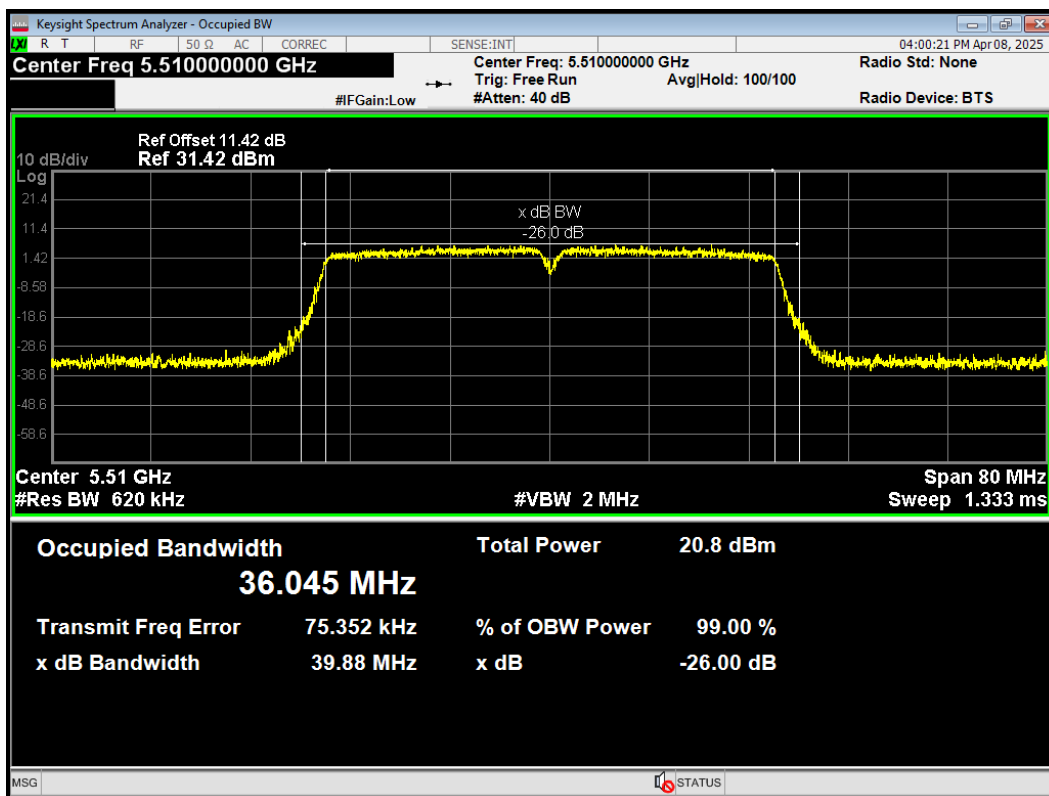
OBW 802.11ac(VHT20) 5580MHz



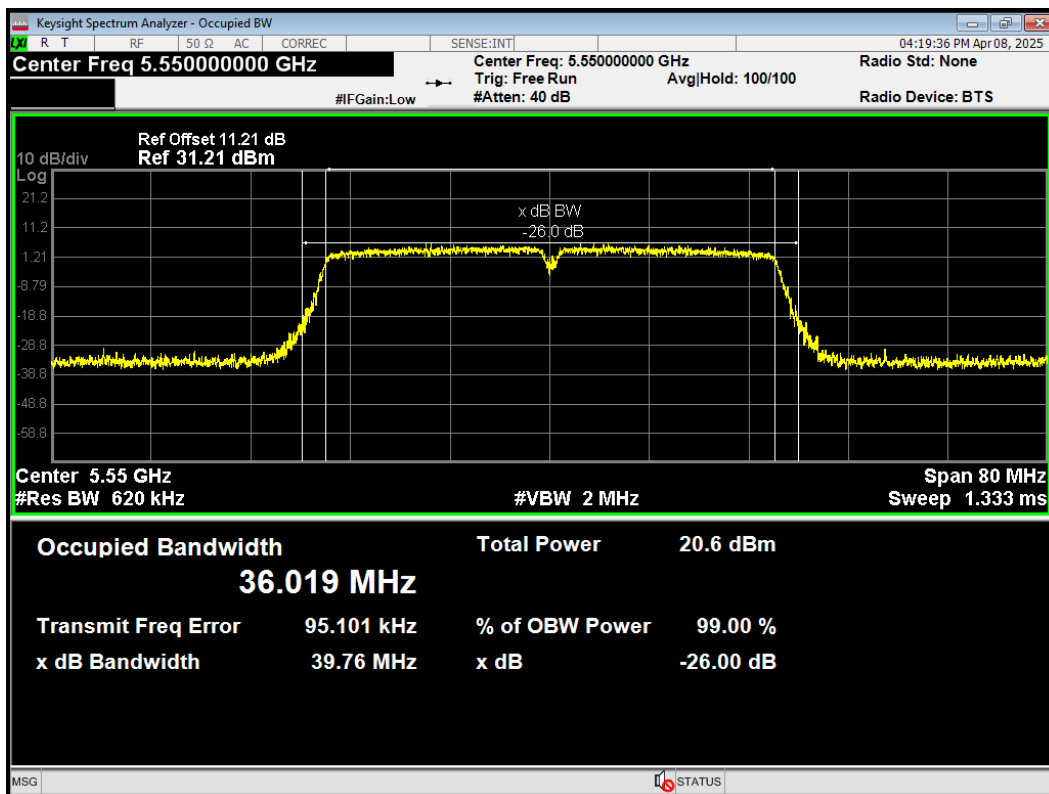
OBW 802.11ac(VHT20) 5700MHz



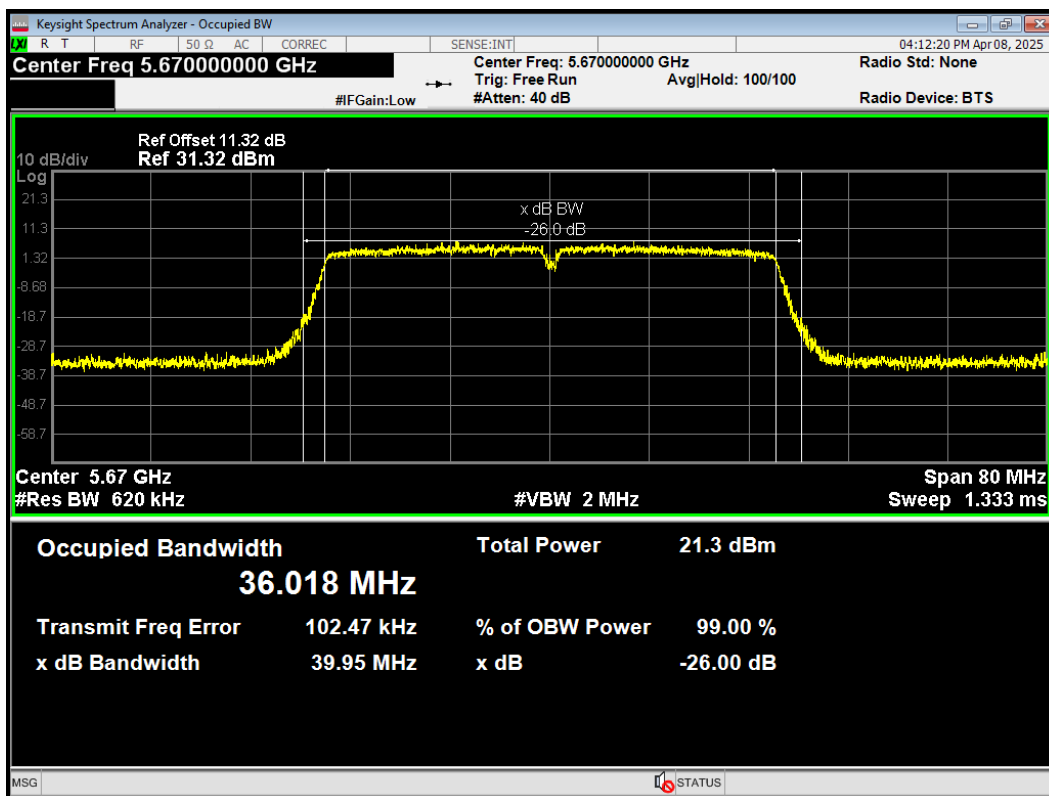
OBW 802.11ac(VHT40) 5510MHz



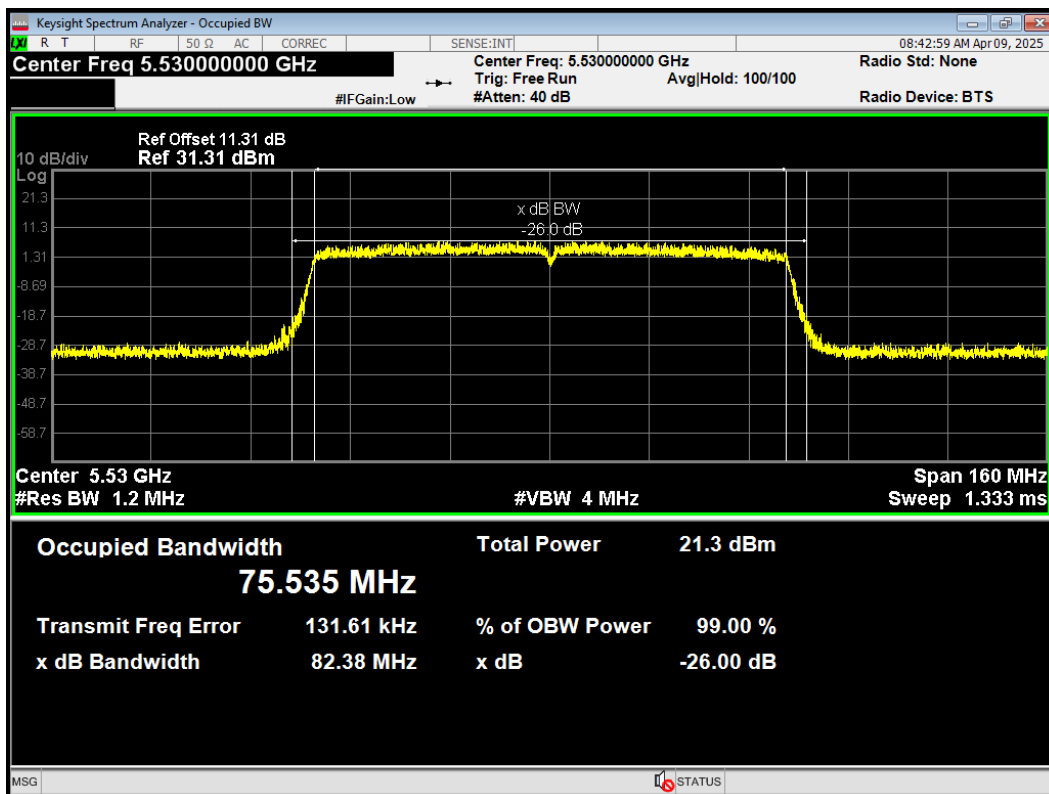
OBW 802.11ac(VHT40) 5550MHz



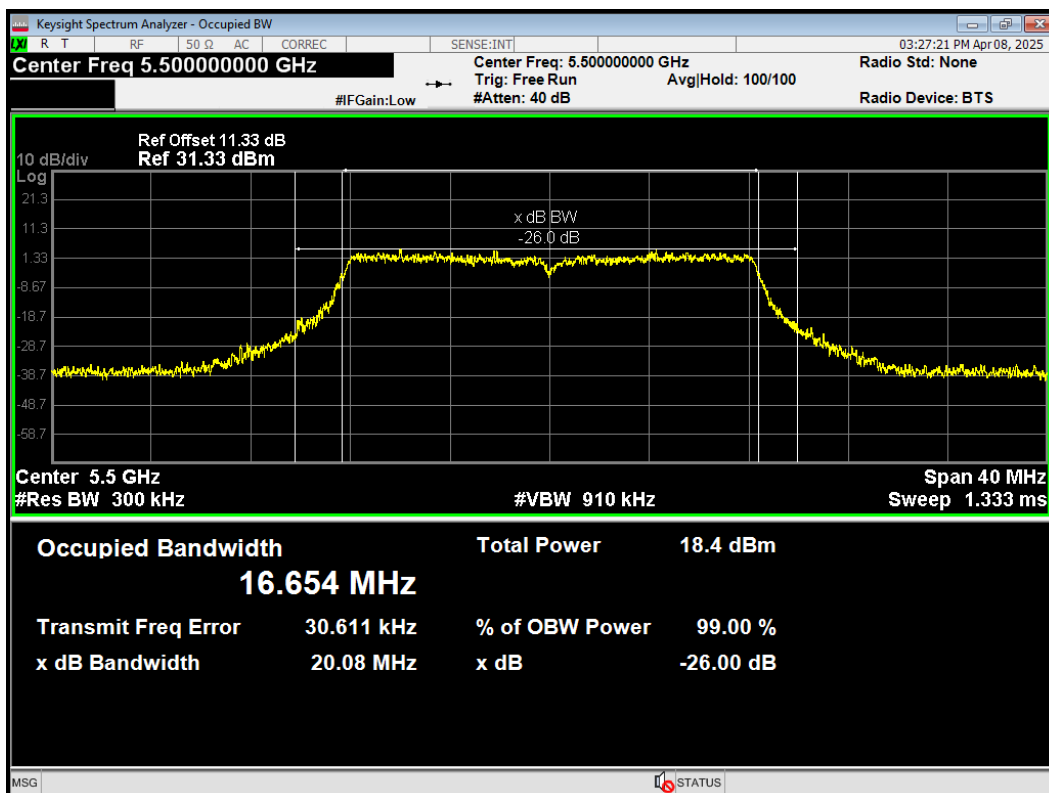
OBW 802.11ac(VHT40) 5670MHz



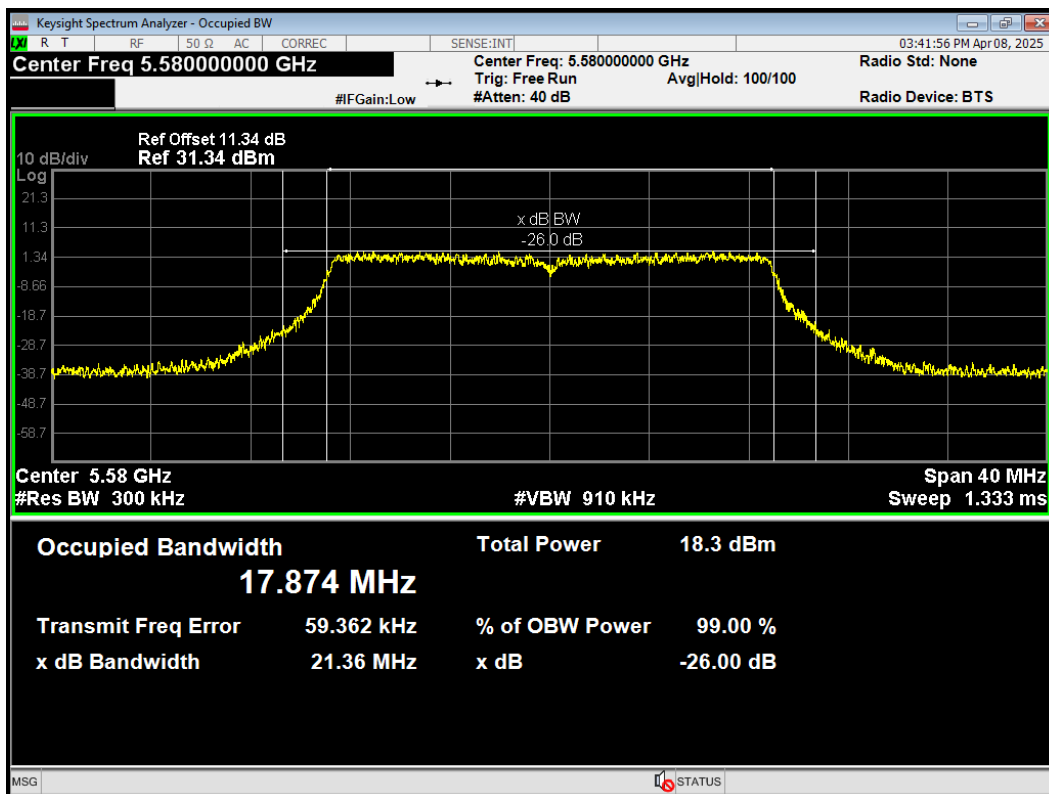
OBW 802.11ac(VHT80) 5530MHz



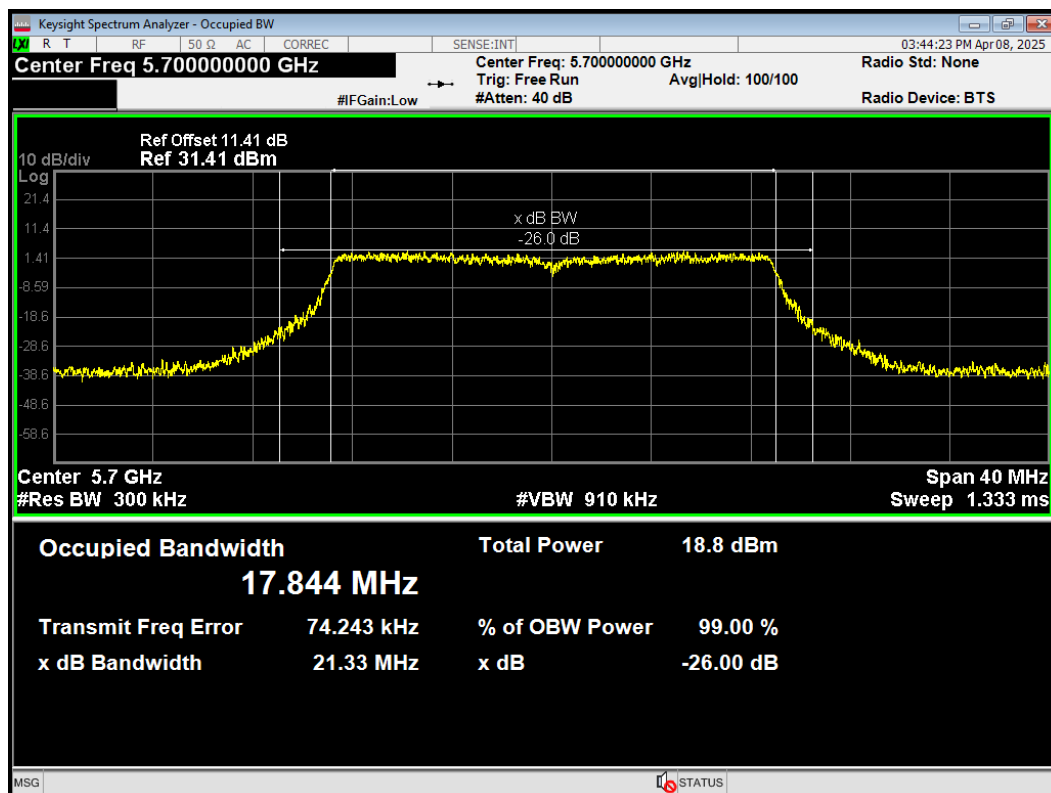
OBW 802.11ax(HE20) 5500MHz



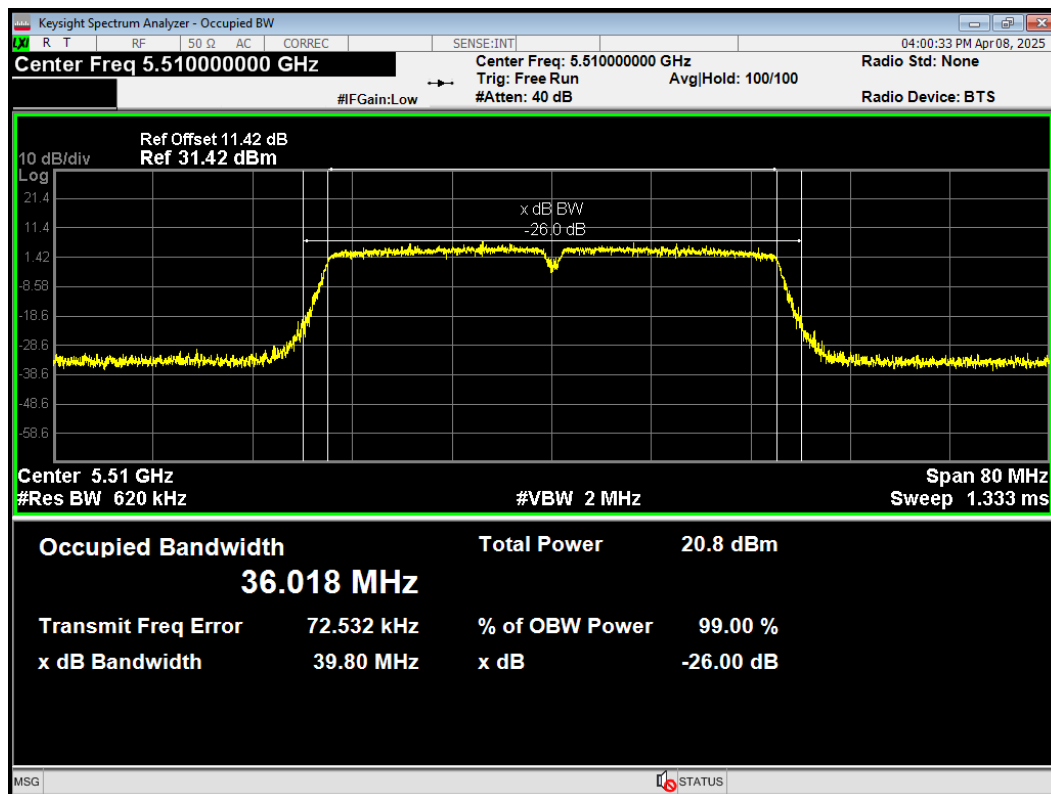
OBW 802.11ax(HE20) 5580MHz



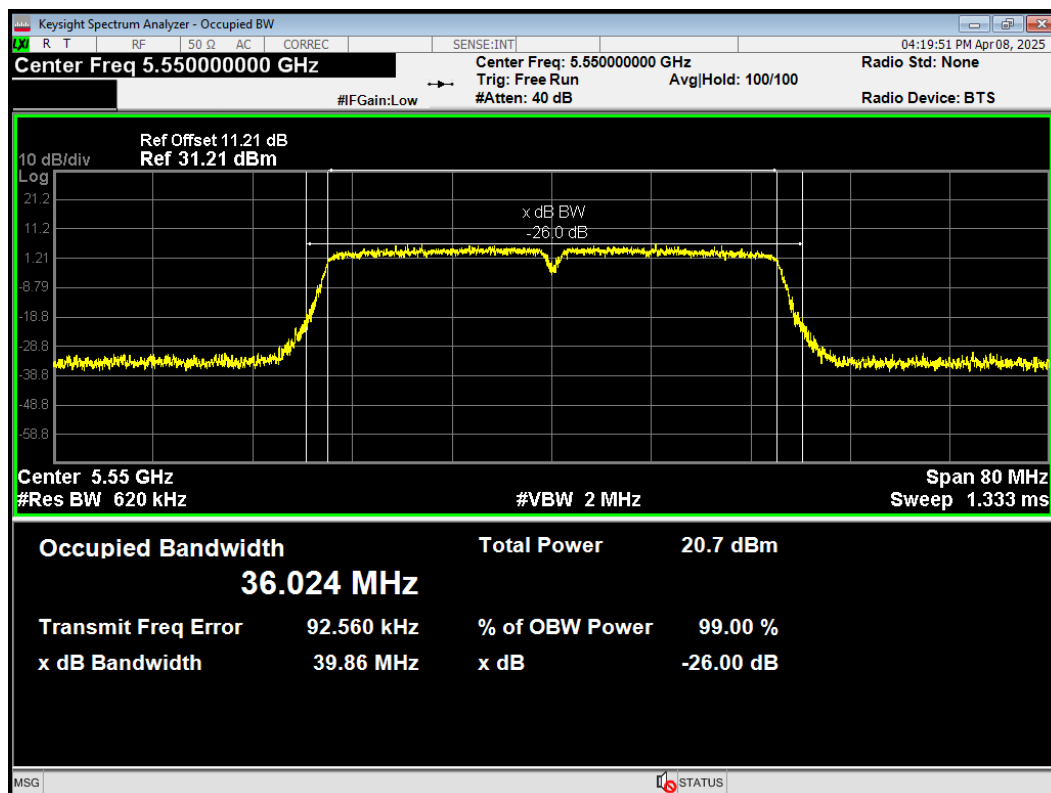
OBW 802.11ax(HE20) 5700MHz



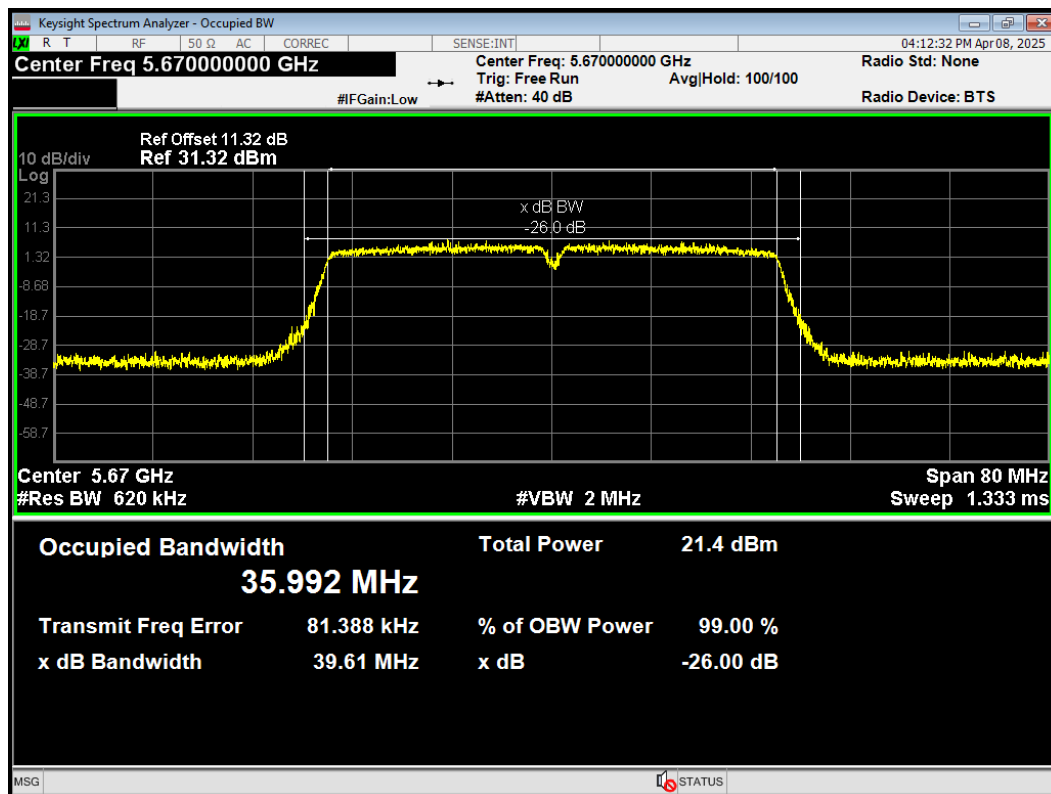
OBW 802.11ax(HE40) 5510MHz



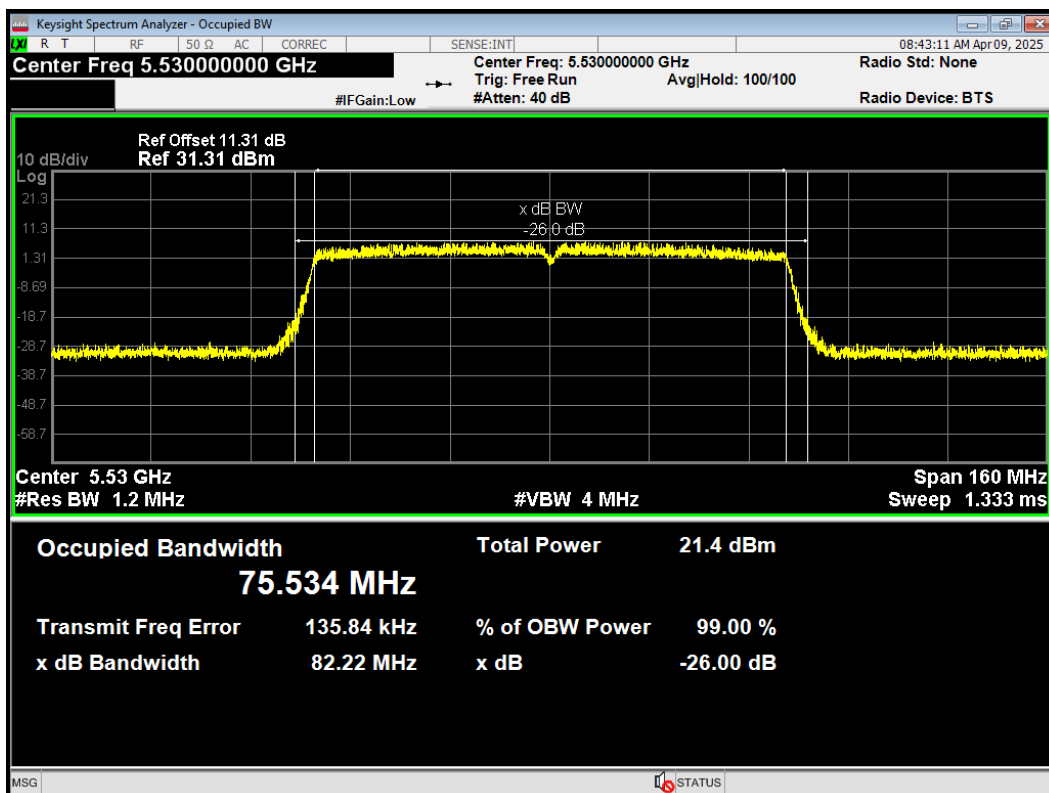
OBW 802.11ax(HE40) 5550MHz



OBW 802.11ax(HE40) 5670MHz



OBW 802.11ax(HE80) 5530MHz



OBW 802.11n(HT20) 5500MHz

