

RF TEST REPORT

Applicant	Panasonic Corporation of North America
FCC ID	ACJ-TNPA7911
Product	Wireless module
Brand	Panasonic
Model	P24VS_01
Report No.	R2306A0670-R3V2
Issue Date	October 13, 2023

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR47 Part 15E (2022)**. 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	5
1.1. Notes of the test report.....	5
1.2. Test facility	5
1.3. Testing Location.....	5
2. General Description of Equipment under Test.....	6
2.1. Applicant and Manufacturer Information.....	6
2.2. General information.....	6
3. Applied Standards	8
4. Test Configuration	9
5. Test Case Results	13
5.1. Occupied Bandwidth	13
5.2. Average Power Output.....	110
5.3. Frequency Stability.....	138
5.4. Power Spectral Density	142
5.5. Unwanted Emission	452
5.6. Conducted Emission	627
6. Main Test Instruments.....	629
ANNEX A: The EUT Appearance	630
ANNEX B: Test Setup Photos	631

Version	Revision Description	Issue Date
Rev.0	Initial issue of report.	August 31, 2023
Rev.1	Update information.	September 15, 2023
Rev.2	Update information and description.	October 13, 2023
Note: This revised report (Report No.: R2306A0670-R3V2) supersedes and replaces the previously issued report (Report No.: R2306A0670-R3V1). Please discard or destroy the previously issued report and dispose of it accordingly.		

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	NA
Date of Testing: July 6, 2023 ~ August 28, 2023			
Date of Sample Received: June 12, 2023			
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 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 **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)

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)

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

1.3. Testing Location

Company: TA Technology (Shanghai) Co., Ltd.

Address: Building 3, No.145, Jintang Rd, Pudong Shanghai, P.R.China

City: Shanghai

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2. General Description of Equipment under Test

2.1. Applicant and Manufacturer Information

Applicant	Panasonic Corporation of North America
Applicant address	Two Riverfront Plaza, Newark, NJ 07102-5490, United States
Manufacturer	Panasonic Entertainment & Communication Co., Ltd.
Manufacturer address	1-10-12 Yagumo-higashi-machi, Moriguchi City, Osaka 570-0021, Japan

2.2. General information

EUT Description			
Model	P24VS_01		
Lab internal SN	R2306A0670/S03		
Hardware Version	1		
Software Version	1		
Power Supply	External power supply		
Antenna Type	Internal Antenna		
Antenna Connector	A permanently attached antenna (meet with the standard FCC Part 15.203 requirement)		
Antenna Gain	Band	Antenna 1	Antenna 2
	U-NII-1	-1.3 dBi	-1.5 dBi
	U-NII-2A	-1.3 dBi	-1.5 dBi
	U-NII-2C	-2.0 dBi	-0.9 dBi
	U-NII-3	-1.6 dBi	-0.7 dBi
Directional Gain	Band	For Power	For PSD
	U-NII-1	-1.3 dBi	1.71 dBi
	U-NII-2A	-1.3 dBi	1.71 dBi
	U-NII-2C	-0.9 dBi	2.11 dBi
	U-NII-3	-0.7 dBi	2.31 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): OFDM 802.11ax SU (HE20/ HE40/ HE80): OFDM 802.11ax TB (HE20): OFDMA		
Max. Output Power	19.73 dBm		

Testing temperature range	-20 ° C to 50° C
Operating temperature range	0 ° C to 40 ° C
Operating voltage range	4.5 V to 5.5 V
State DC voltage	5 V

Note:

1. The EUT is sent from the applicant to 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.
4. The EUT is connected to 5V DC power supply. And EUT is connected a computer was used to configure the DUT using the tool QA Tool_Dbg to transmit all different modes

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 (2022) 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 (Z axis), lie-down position (X, Y axis). The worst emission was found in stand-up position (Z axis) 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.

The test software is used MT7921.

Worst-case data rates are shown as following table.

Mode	Data Rate		
	Antenna 1	Antenna 2	MIMO
802.11a	6 Mbps	6 Mbps	6 Mbps
802.11n HT20	MCS 0	MCS 0	MCS 8
802.11n HT40	MCS 0	MCS 0	MCS 8
802.11ac VHT20	MCS 0	MCS 0	MCS 0
802.11ac VHT40	MCS 0	MCS 0	MCS 0
802.11ac VHT80	MCS 0	MCS 0	MCS 0
802.11ax HE20	MCS 0	MCS 0	MCS 0
802.11ax HE40	MCS 0	MCS 0	MCS 0
802.11ax HE80	MCS 0	MCS 0	MCS 0

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

Test Cases	Antenna 1	Antenna 2	MIMO
Occupied bandwidth	--	802.11a 802.11n HT20/40 802.11ac VHT20/40/80 802.11ax HE20/40/80	--
Average Power Output	802.11a 802.11n HT20/40 802.11ac VHT20/40/80 802.11ax HE20/40/80	802.11a 802.11n HT20/40 802.11ac VHT20/40/80 802.11ax HE20/40/80	802.11a 802.11n HT20/40 802.11ac VHT20/40/80 802.11ax HE20/40/80
Frequency stability	--	--	802.11a
Power Spectral Density	802.11a 802.11n HT20/40 802.11ac VHT20/40/80 802.11ax HE20/40/80	802.11a 802.11n HT20/40 802.11ac VHT20/40/80 802.11ax HE20/40/80	802.11a 802.11n HT20/40 802.11ac VHT20/40/80 802.11ax HE20/40/80

Unwanted Emissions	--	--	802.11a 802.11n HT20/40 802.11ac VHT80 802.11ax HE20/40/80
Conducted Emissions	--	--	--

TB Mode

Test Cases	Antenna 1	Antenna 2	MIMO
Occupied bandwidth	--	802.11ax HE20 (26-Tone, 52-Tone, 106-Tone)	--
Average Power Output	802.11ax HE20 (26-Tone, 52-Tone, 106-Tone)	802.11ax HE20 (26-Tone, 52-Tone, 106-Tone)	802.11ax HE20 (26-Tone, 52-Tone, 106-Tone)
Frequency stability	--	--	--
Power Spectral Density	802.11ax HE20 (26-Tone, 52-Tone, 106-Tone)	802.11ax HE20 (26-Tone, 52-Tone, 106-Tone)	802.11ax HE20 (26-Tone, 52-Tone, 106-Tone)
Unwanted Emissions	--	--	802.11ax HE20 (26-Tone, 52-Tone, 106-Tone)
Conducted Emissions	--	--	--

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	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
			140	5700MHz
			144	5720MHz
		40 MHz	102	5510MHz
			110	5550MHz
			118	5590MHz
			126	5630MHz
			134	5670MHz
			142	5710MHz
		80 MHz	106	5530MHz
			122	5610MHz
			138	5690MHz
	U-NII-3	20 MHz	149	5745MHz
			153	5765MHz
			157	5785MHz
			161	5805MHz
			165	5825MHz
		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
20°C ~ 25°C	45% ~ 50%

Method of Measurement

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

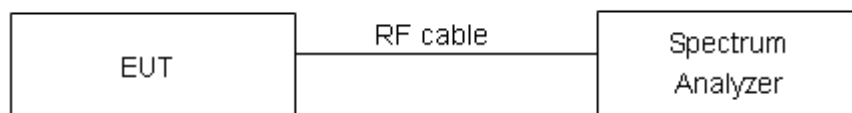
For U-NII-1/U-NII-2A/U-NII-2C, set RBW $\approx$ 1% OCB kHz, VBW $\geq 3 \times$ RBW, measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 26 dB relative to the maximum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

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	17.115	25.697	PASS
	5200	17.103	26.149	PASS
	5240	16.614	19.963	PASS
802.11n HT20	5180	18.200	27.645	PASS
	5200	18.233	28.139	PASS
	5240	17.640	20.365	PASS
802.11n HT40	5190	35.866	40.128	PASS
	5230	35.844	40.114	PASS
802.11ac VHT20	5180	18.242	27.991	PASS
	5200	18.189	27.431	PASS
	5240	17.674	20.304	PASS
802.11ac VHT40	5190	35.835	40.498	PASS
	5230	35.784	40.421	PASS
802.11ac VHT80	5210	75.400	79.576	PASS
802.11ax HE20	5180	18.967	28.334	PASS
	5200	19.043	28.140	PASS
	5240	18.827	19.865	PASS
802.11ax HE40	5190	37.513	39.451	PASS
	5230	37.450	39.409	PASS
802.11ax HE80	5210	76.643	80.331	PASS

U-NII-2A

Mode	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 26 dB bandwidth (MHz)	Conclusion
802.11a	5260	17.016	24.838	PASS
	5300	17.035	26.066	PASS
	5320	17.027	25.524	PASS
802.11n HT20	5260	18.143	28.018	PASS
	5300	18.226	27.037	PASS
	5320	18.134	29.864	PASS
802.11n HT40	5270	35.925	40.292	PASS
	5310	35.889	40.185	PASS
802.11ac VHT20	5260	18.215	27.372	PASS
	5300	18.181	28.267	PASS
	5320	18.123	26.983	PASS
802.11ac VHT40	5270	35.813	40.224	PASS
	5310	35.857	40.664	PASS
802.11ac VHT80	5290	75.466	79.949	PASS
802.11ax HE20	5260	18.973	23.982	PASS
	5300	19.005	24.498	PASS
	5320	18.998	23.709	PASS
802.11ax HE40	5270	37.526	39.536	PASS
	5310	37.494	39.652	PASS
802.11ax HE80	5290	76.888	80.340	PASS

U-NII-2C

Mode	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 26 dB bandwidth (MHz)	Conclusion
802.11a	5500	17.002	26.406	PASS
	5600	17.281	27.086	PASS
	5700	17.080	26.524	PASS
	5720	17.088	25.454	PASS
802.11n HT20	5500	18.170	26.885	PASS
	5600	18.424	28.818	PASS
	5700	18.171	26.645	PASS
	5720	18.197	27.235	PASS
802.11n HT40	5510	35.873	40.065	PASS
	5590	35.799	40.309	PASS
	5670	35.847	40.096	PASS
	5710	35.924	40.226	PASS
802.11ac VHT20	5500	18.194	30.960	PASS
	5600	18.243	28.086	PASS
	5700	18.206	27.404	PASS
	5720	18.168	27.022	PASS
802.11ac VHT40	5510	35.825	40.416	PASS
	5590	35.846	40.485	PASS
	5670	35.844	40.428	PASS
	5710	35.823	40.143	PASS
802.11ac VHT80	5610	75.173	79.502	PASS
	5690	75.308	79.594	PASS
802.11ax HE20	5500	19.026	22.837	PASS
	5600	19.067	30.365	PASS
	5700	19.007	23.460	PASS
	5720	18.989	22.821	PASS
802.11ax HE40	5510	37.457	39.458	PASS
	5590	37.478	39.593	PASS
	5670	37.543	39.536	PASS
	5710	37.512	39.495	PASS
802.11ax HE80	5610	76.957	80.428	PASS
	5690	76.971	80.612	PASS

U-NII-3

Mode	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 6 dB bandwidth (MHz)	Limit (kHz)	Conclusion
802.11a	5720	17.088	16.271	500	PASS
	5745	17.038	14.900	500	PASS
	5785	17.094	16.075	500	PASS
	5825	17.071	16.059	500	PASS
802.11n HT20	5720	18.197	17.348	500	PASS
	5745	18.232	17.109	500	PASS
	5785	18.197	17.559	500	PASS
	5825	18.228	16.787	500	PASS
802.11n HT40	5710	35.924	35.024	500	PASS
	5755	35.857	35.073	500	PASS
	5795	35.889	33.842	500	PASS
802.11ac VHT20	5720	18.168	17.016	500	PASS
	5745	18.241	16.494	500	PASS
	5785	18.285	17.564	500	PASS
	5825	18.187	16.333	500	PASS
802.11ac VHT40	5710	35.823	35.050	500	PASS
	5755	35.867	33.835	500	PASS
	5795	35.786	35.055	500	PASS
802.11ac VHT80	5690	75.308	75.033	500	PASS
	5775	75.374	75.050	500	PASS
802.11ax HE20	5720	18.989	17.645	500	PASS
	5745	18.962	18.090	500	PASS
	5785	19.026	17.443	500	PASS
	5825	19.008	18.440	500	PASS
802.11ax HE40	5710	37.512	35.079	500	PASS
	5755	37.550	35.062	500	PASS
	5795	37.600	35.118	500	PASS
802.11ax HE80	5690	76.971	75.088	500	PASS
	5775	76.740	73.849	500	PASS

TB Mode**U-NII-1**

Mode	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 26 dB bandwidth (MHz)	Limit (kHz)	Conclusion
802.11ax HE20 106-Tone Index 53	5180	18.351	23.117	500	PASS
802.11ax HE20 106-Tone Index 53	5200	18.171	23.279	500	PASS
802.11ax HE20 106-Tone Index 54	5240	18.123	19.396	500	PASS
802.11ax HE20 26-Tone Index 0	5180	18.761	20.611	500	PASS
802.11ax HE20 26-Tone Index 4	5200	16.323	18.014	500	PASS
802.11ax HE20 26-Tone Index 8	5240	17.518	18.408	500	PASS
802.11ax HE20 52-Tone Index 37	5180	18.194	20.834	500	PASS
802.11ax HE20 52-Tone Index 38	5200	17.045	18.470	500	PASS
802.11ax HE20 52-Tone Index 40	5240	18.158	19.202	500	PASS

U-NII-2A

Mode	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 26 dB bandwidth (MHz)	Limit (kHz)	Conclusion
802.11ax HE20 106-Tone Index 53	5180	18.121	21.162	500	PASS
802.11ax HE20 106-Tone Index 53	5200	18.307	21.352	500	PASS
802.11ax HE20 106-Tone Index 54	5240	18.313	21.926	500	PASS
802.11ax HE20 26-Tone Index 0	5180	17.648	19.186	500	PASS
802.11ax HE20 26-Tone Index 4	5200	16.697	18.100	500	PASS
802.11ax HE20 26-Tone Index 8	5240	18.441	21.108	500	PASS
802.11ax HE20 52-Tone Index 37	5180	18.255	21.093	500	PASS
802.11ax HE20 52-Tone Index 38	5200	16.523	18.529	500	PASS
802.11ax HE20 52-Tone Index 40	5240	18.074	19.936	500	PASS

U-NII-2C

Mode	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 26 dB bandwidth (MHz)	Limit (kHz)	Conclusion
802.11ax HE20 106-Tone Index 53	5500	18.283	21.664	500	PASS
802.11ax HE20 106-Tone Index 53	5600	18.167	21.123	500	PASS
802.11ax HE20 106-Tone Index 54	5700	18.249	20.415	500	PASS
802.11ax HE20 106-Tone Index 54	5720	18.221	20.382	500	PASS
802.11ax HE20 26-Tone Index 0	5500	18.427	20.590	500	PASS
802.11ax HE20 26-Tone Index 4	5600	17.164	18.124	500	PASS
802.11ax HE20 26-Tone Index 8	5700	18.259	19.959	500	PASS
802.11ax HE20 52-Tone Index 37	5500	18.191	21.369	500	PASS
802.11ax HE20 52-Tone Index 38	5600	17.200	18.686	500	PASS
802.11ax HE20 52-Tone Index 40	5700	18.162	20.265	500	PASS

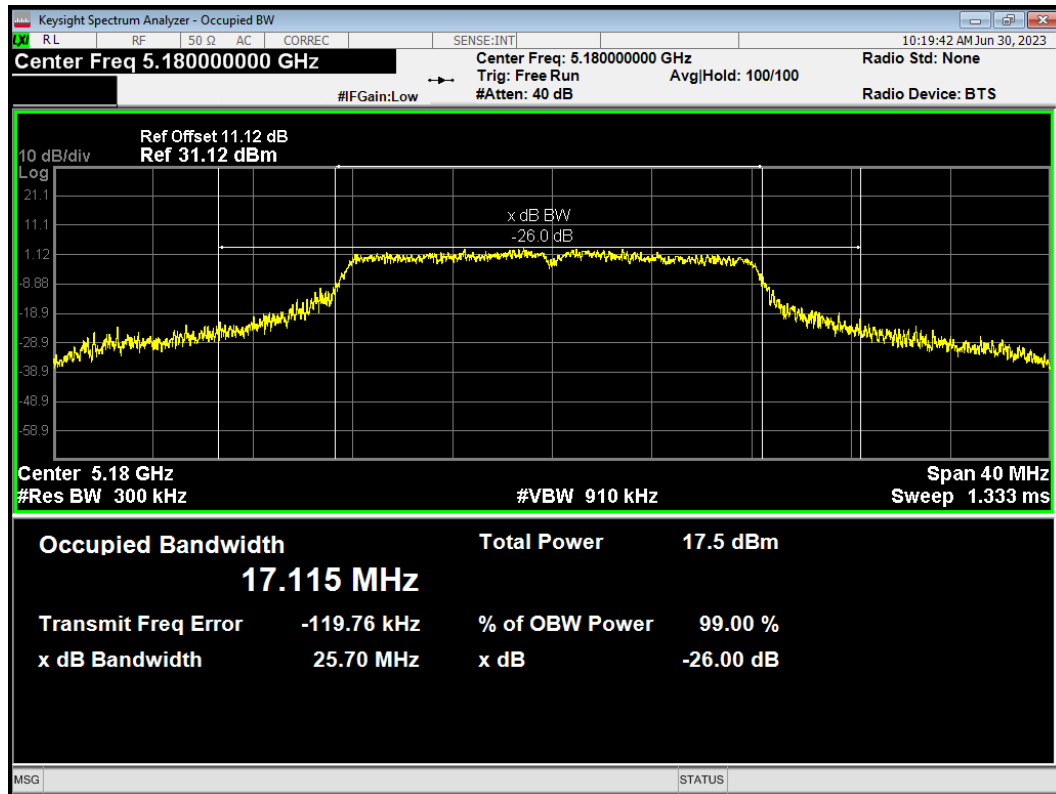
U-NII-3

Mode	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 6 dB bandwidth (MHz)	Limit (kHz)	Conclusion
802.11ax HE20 106-Tone Index 53	5745	18.108	17.717	500	PASS
802.11ax HE20 106-Tone Index 53	5785	17.770	17.729	500	PASS
802.11ax HE20 106-Tone Index 54	5720	18.221	17.343	500	PASS
802.11ax HE20 106-Tone Index 54	5825	18.348	17.112	500	PASS
802.11ax HE20 26-Tone Index 0	5745	18.320	2.044	500	PASS
802.11ax HE20 26-Tone Index 4	5785	16.958	2.665	500	PASS
802.11ax HE20 26-Tone Index 8	5720	18.168	2.077	500	PASS
802.11ax HE20 26-Tone Index 8	5825	18.334	2.122	500	PASS
802.11ax HE20 52-Tone Index 37	5745	18.271	17.031	500	PASS
802.11ax HE20 52-Tone Index 38	5785	17.036	15.052	500	PASS
802.11ax HE20 52-Tone Index 40	5720	18.168	17.109	500	PASS
802.11ax HE20 52-Tone Index 40	5825	18.180	15.766	500	PASS

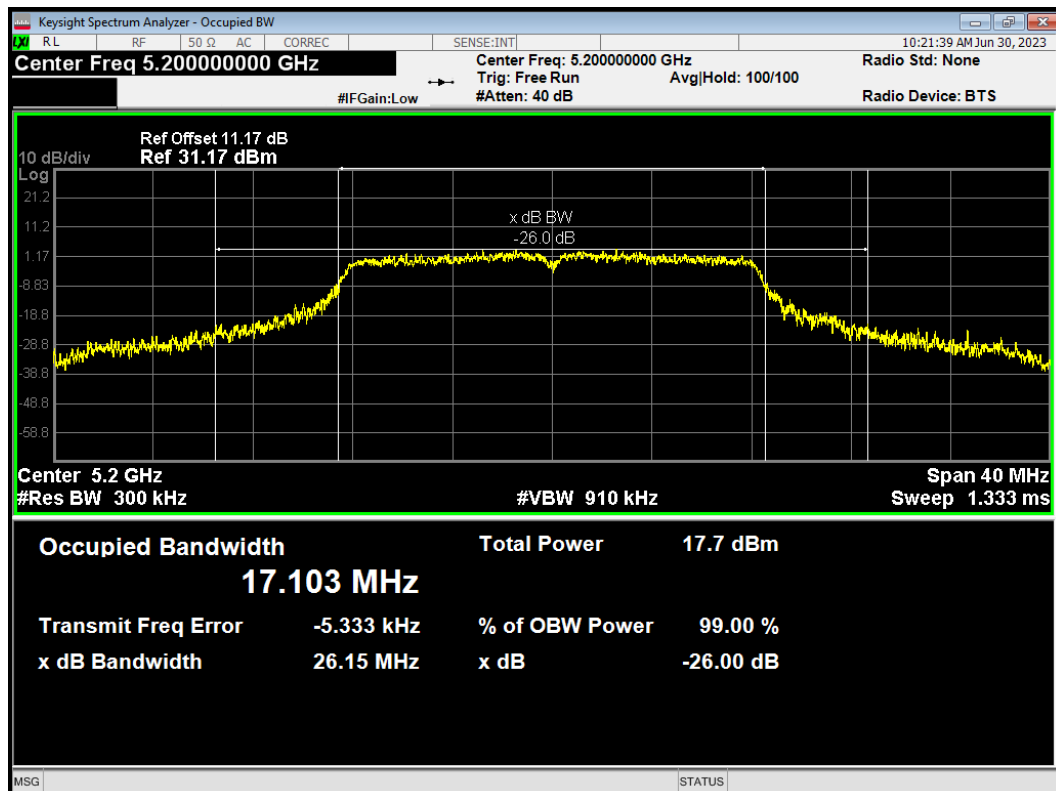
99% bandwidth

U-NII-1

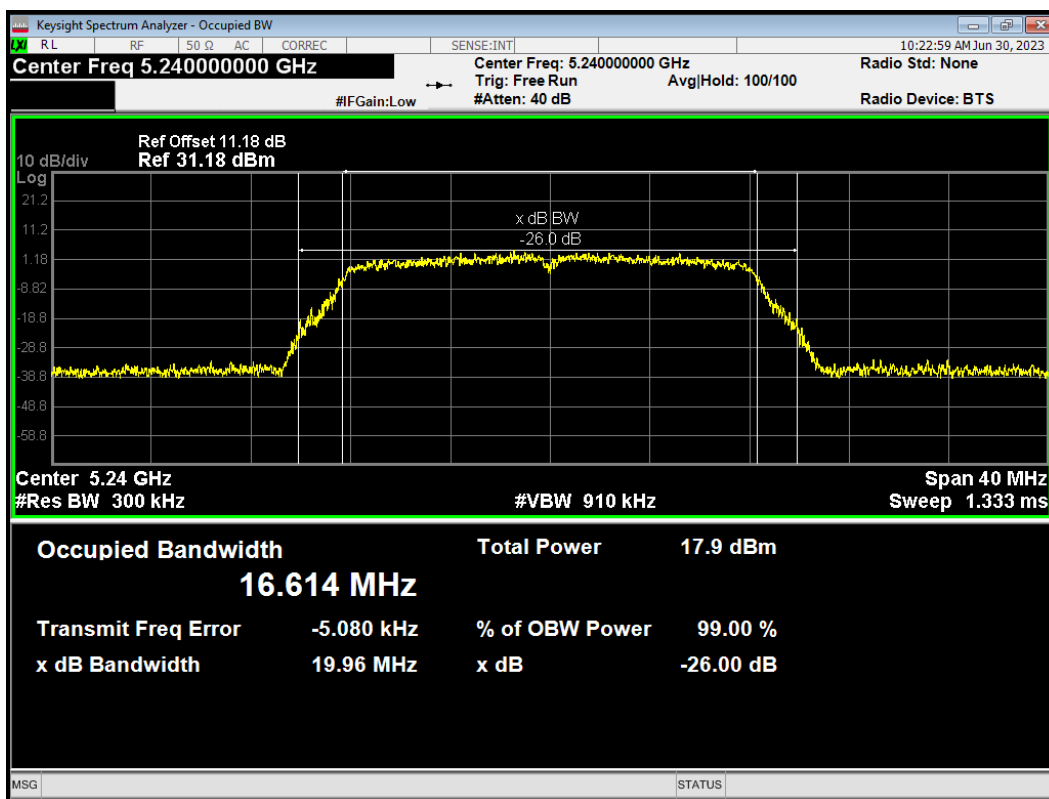
OBW 802.11a 5180MHz



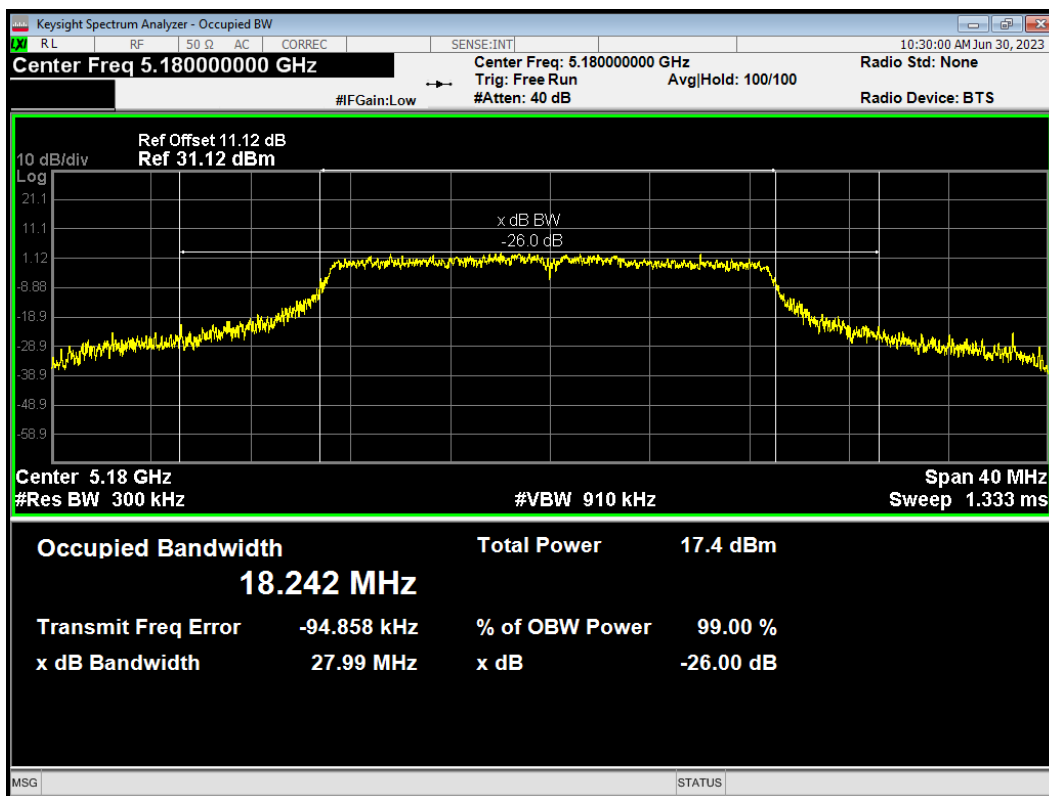
OBW 802.11a 5200MHz



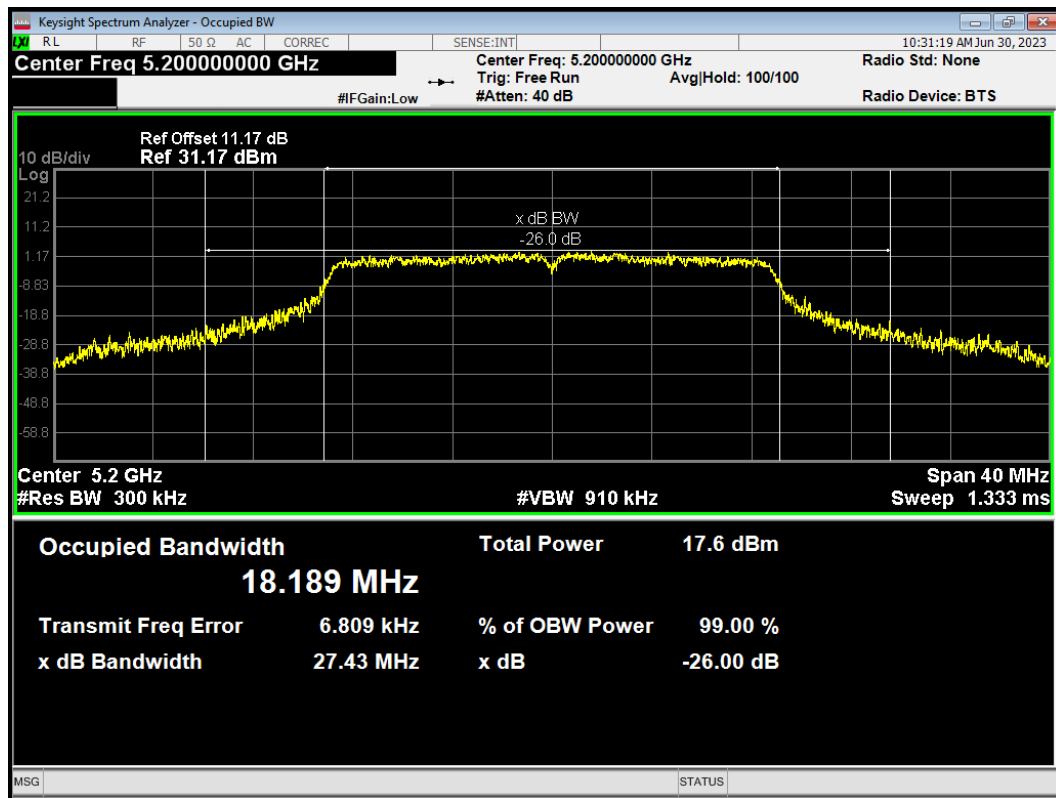
OBW 802.11a 5240MHz



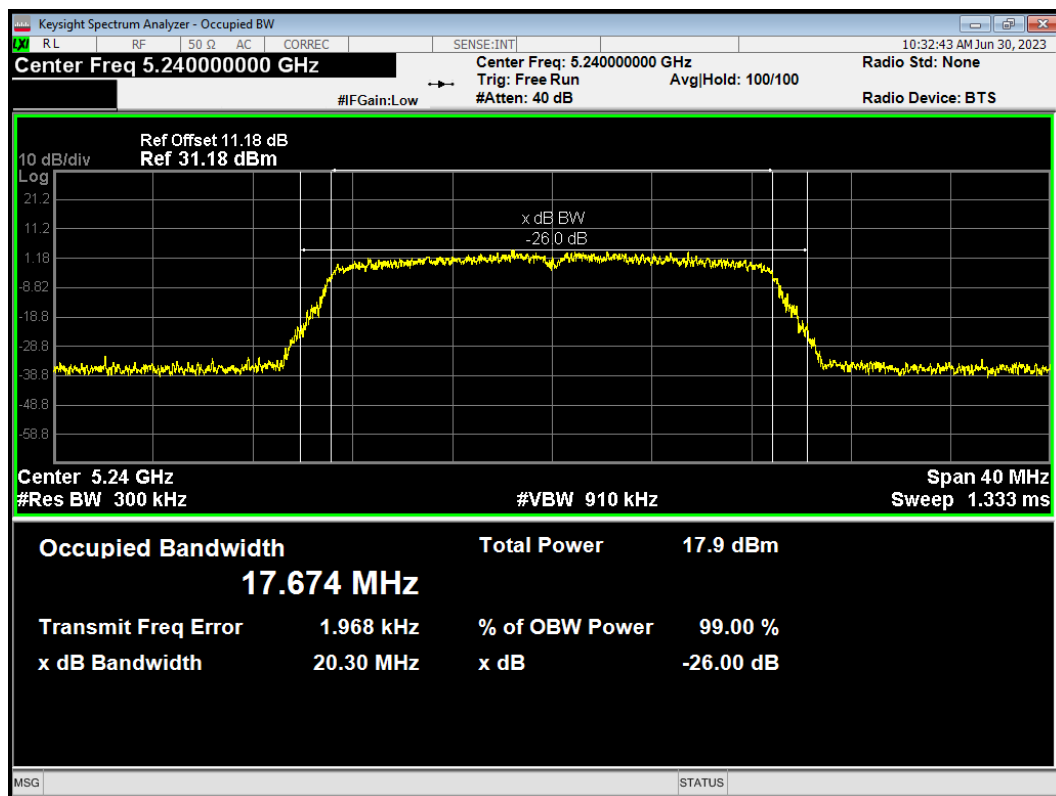
OBW 802.11ac(VHT20) 5180MHz



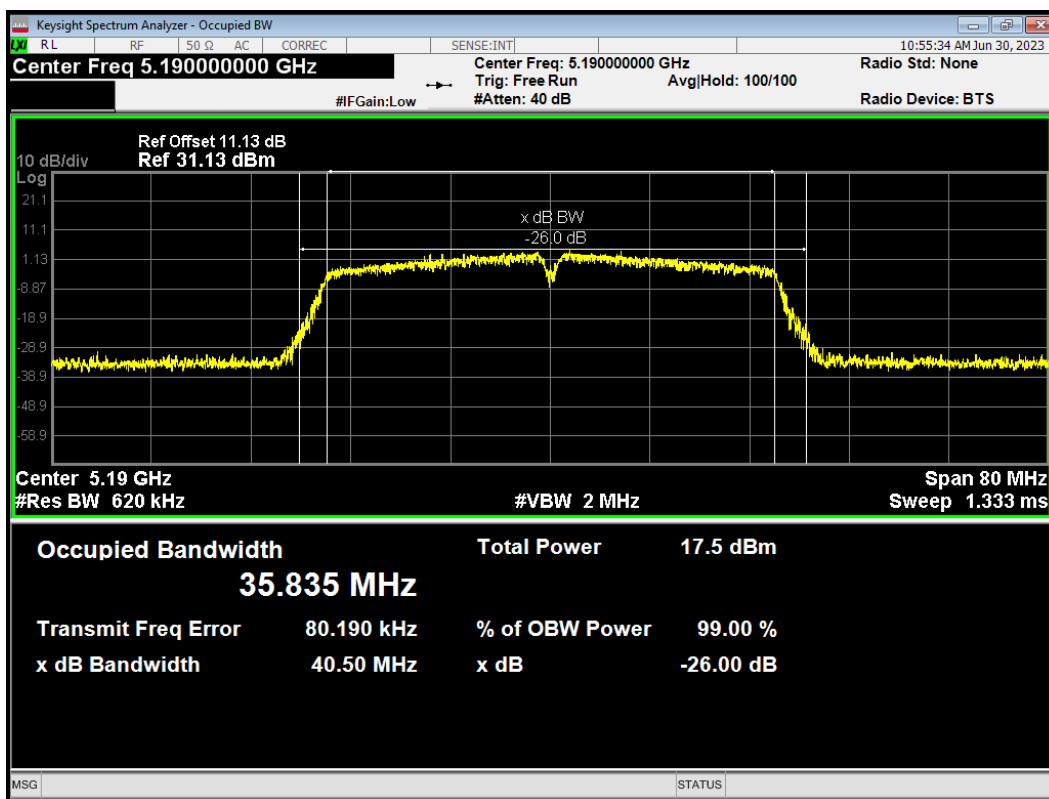
OBW 802.11ac(VHT20) 5200MHz



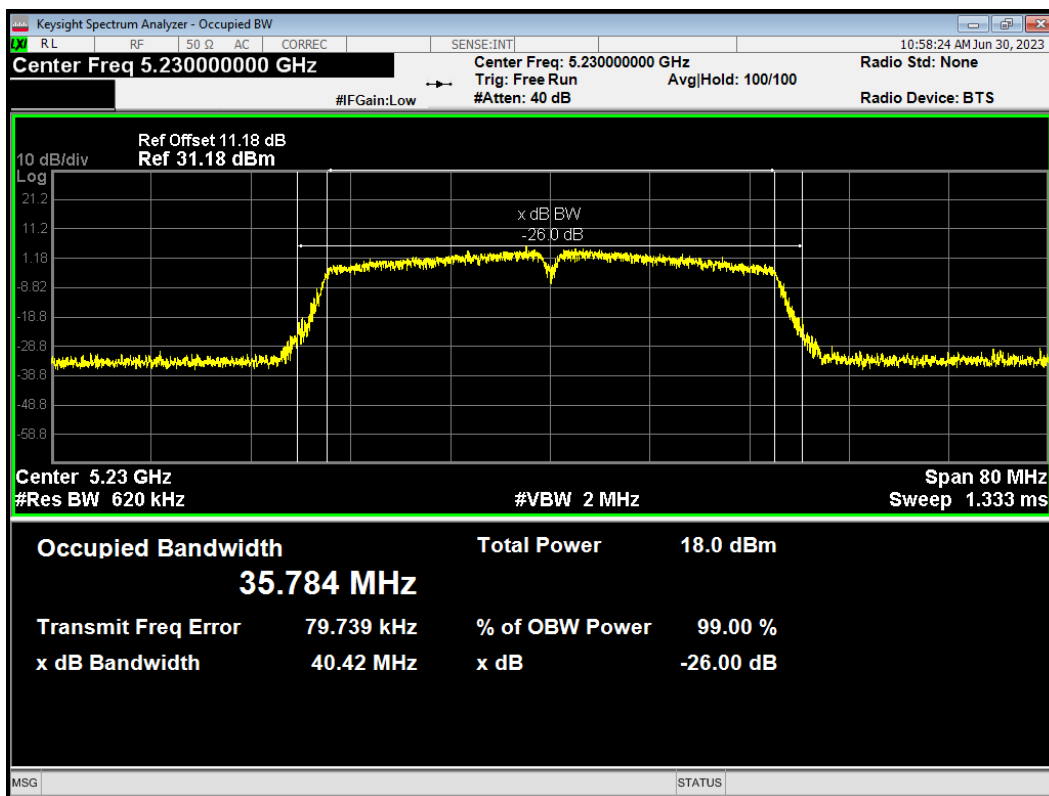
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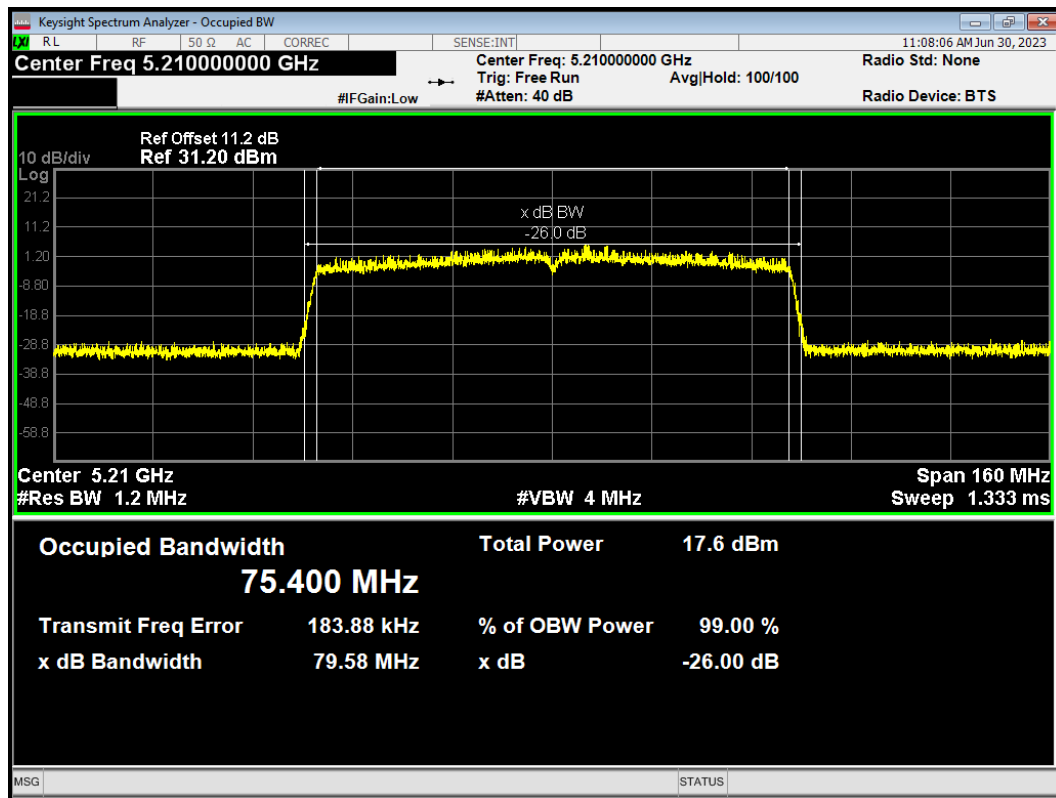
OBW 802.11ac(VHT40) 5190MHz



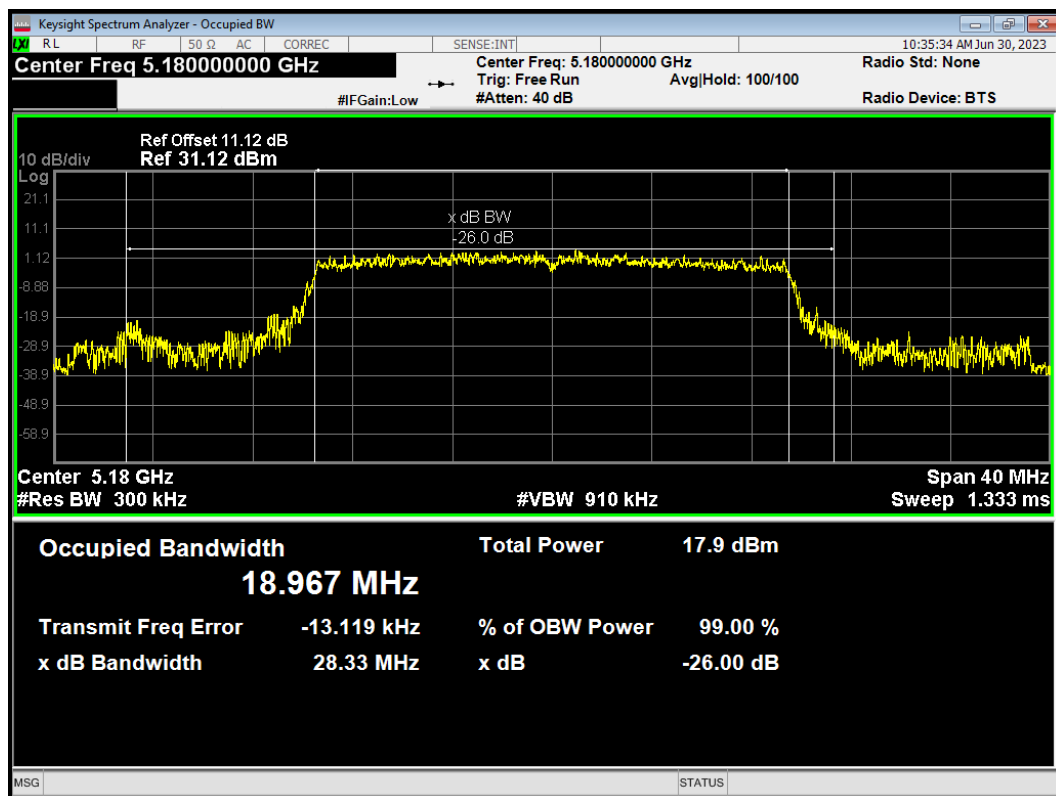
OBW 802.11ac(VHT40) 5230MHz



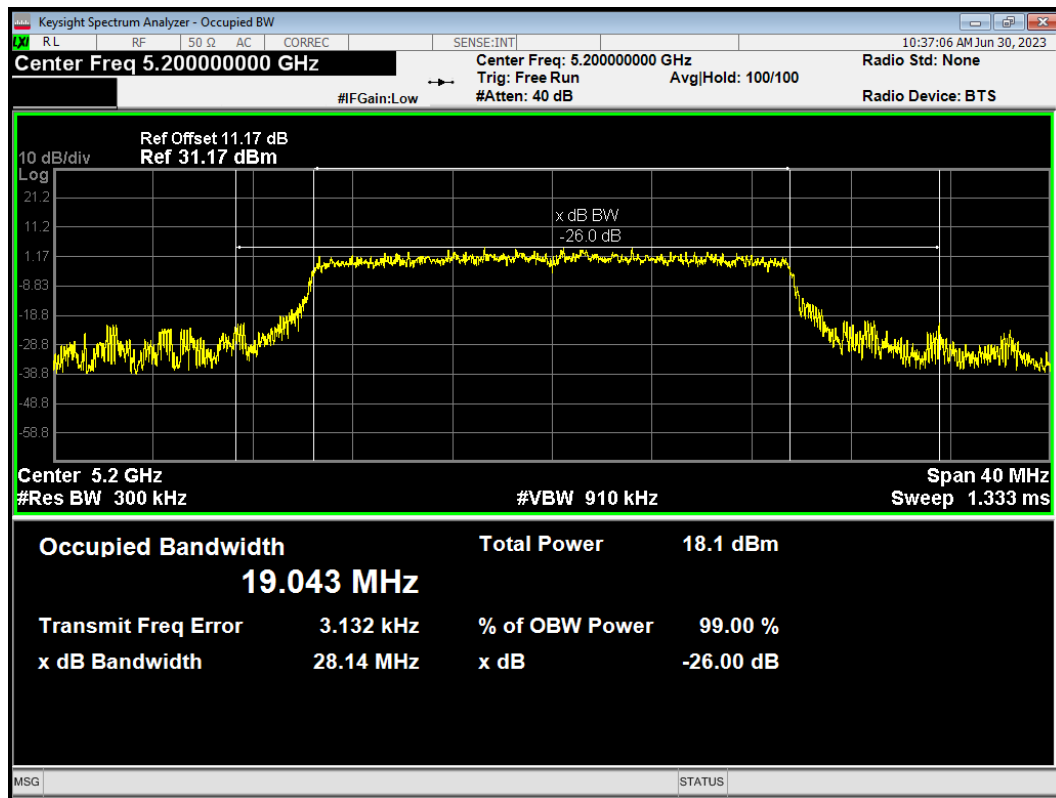
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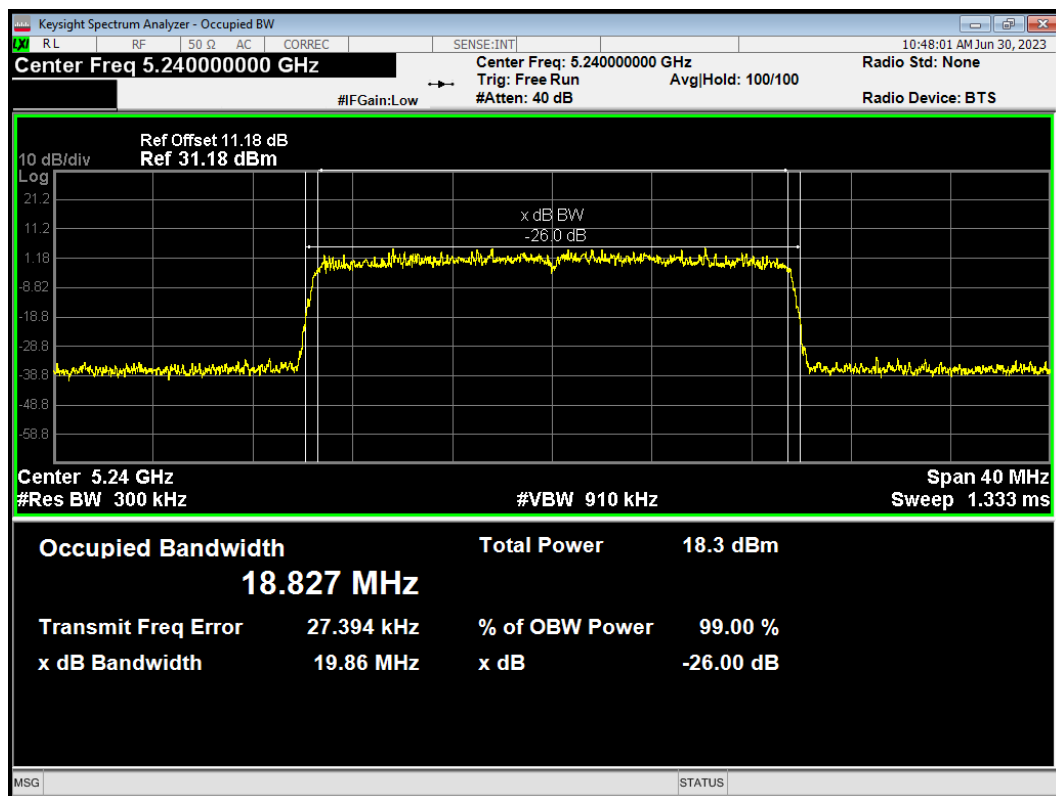
OBW 802.11ax(HE20) 5180MHz



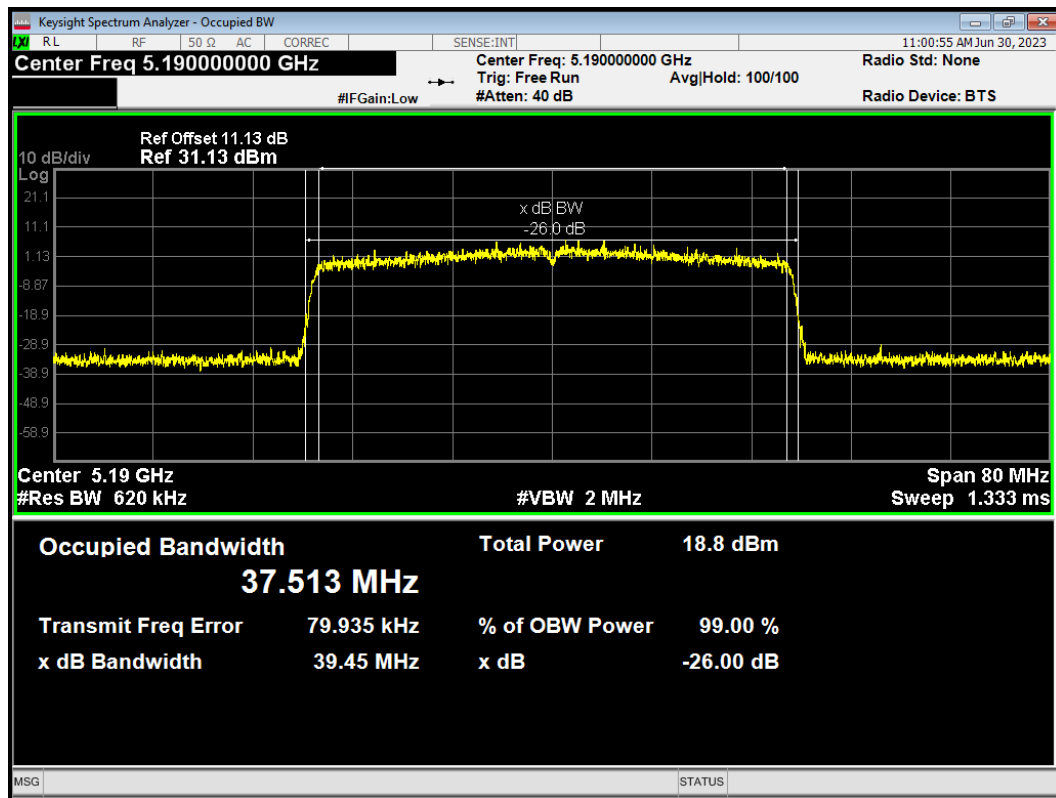
OBW 802.11ax(HE20) 5200MHz



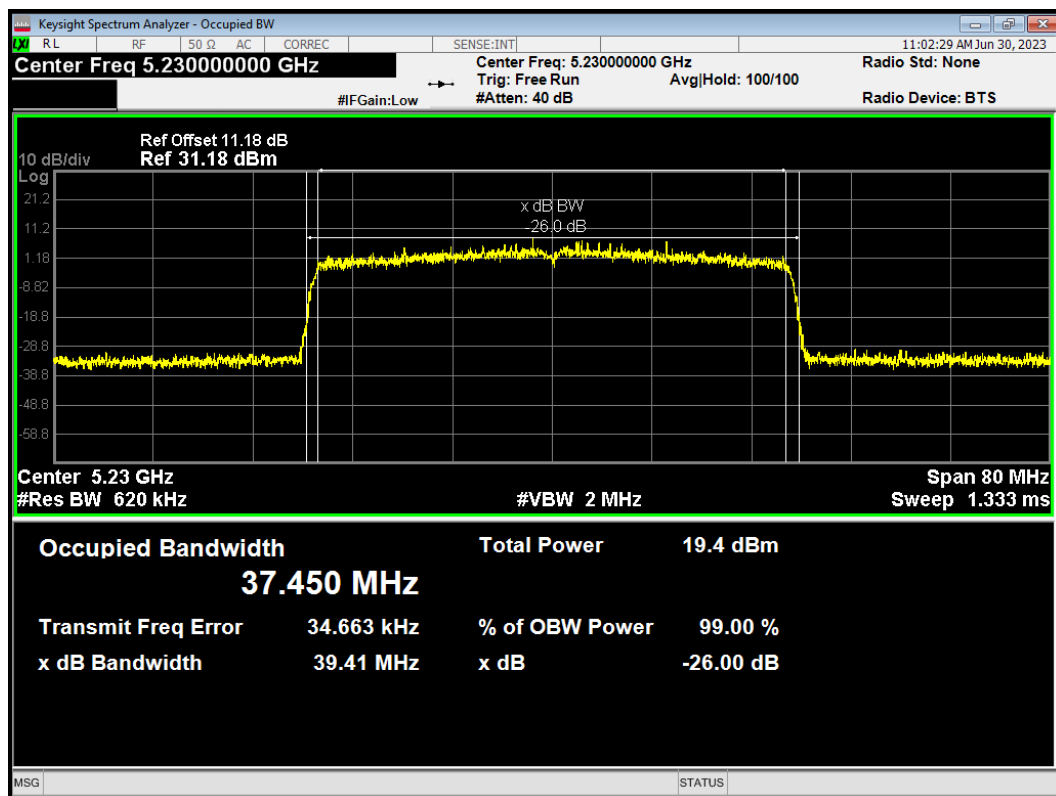
OBW 802.11ax(HE20) 5240MHz



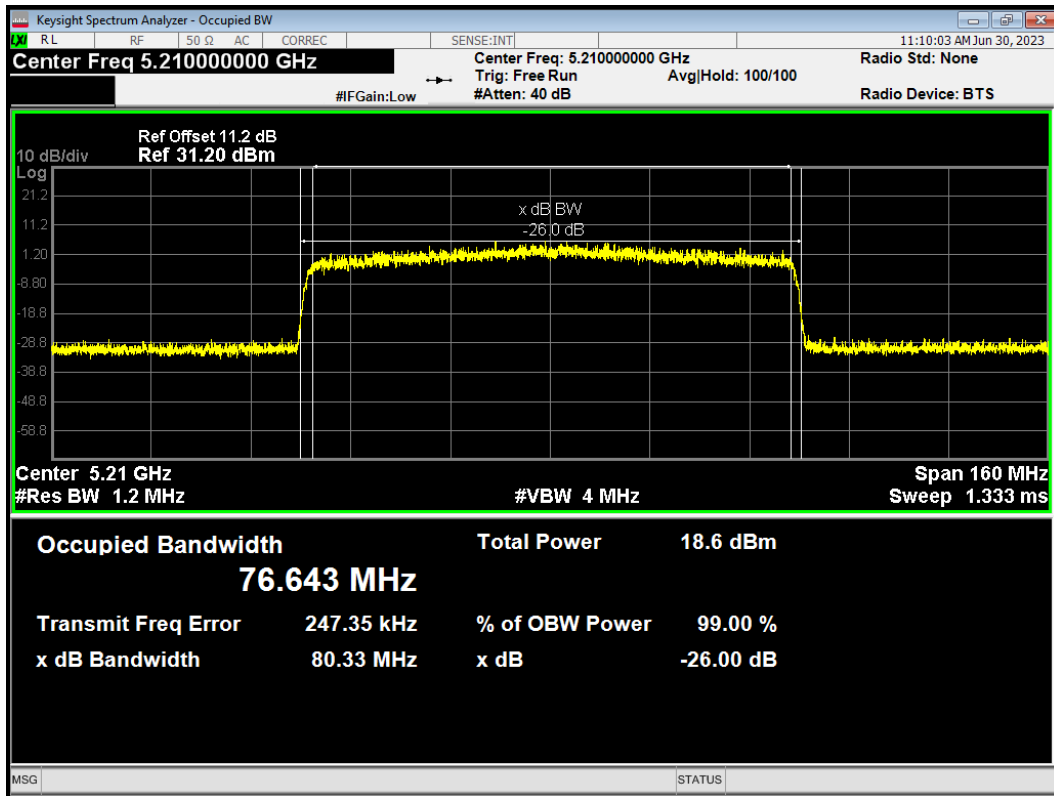
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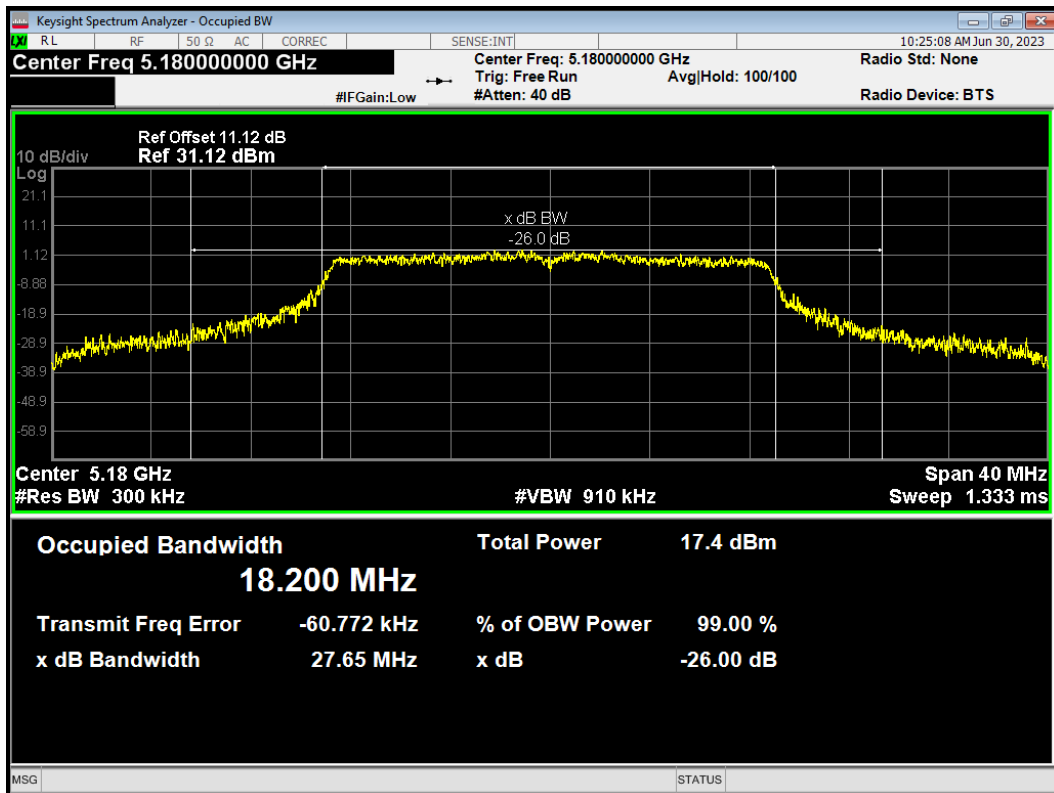
OBW 802.11ax(HE40) 5230MHz



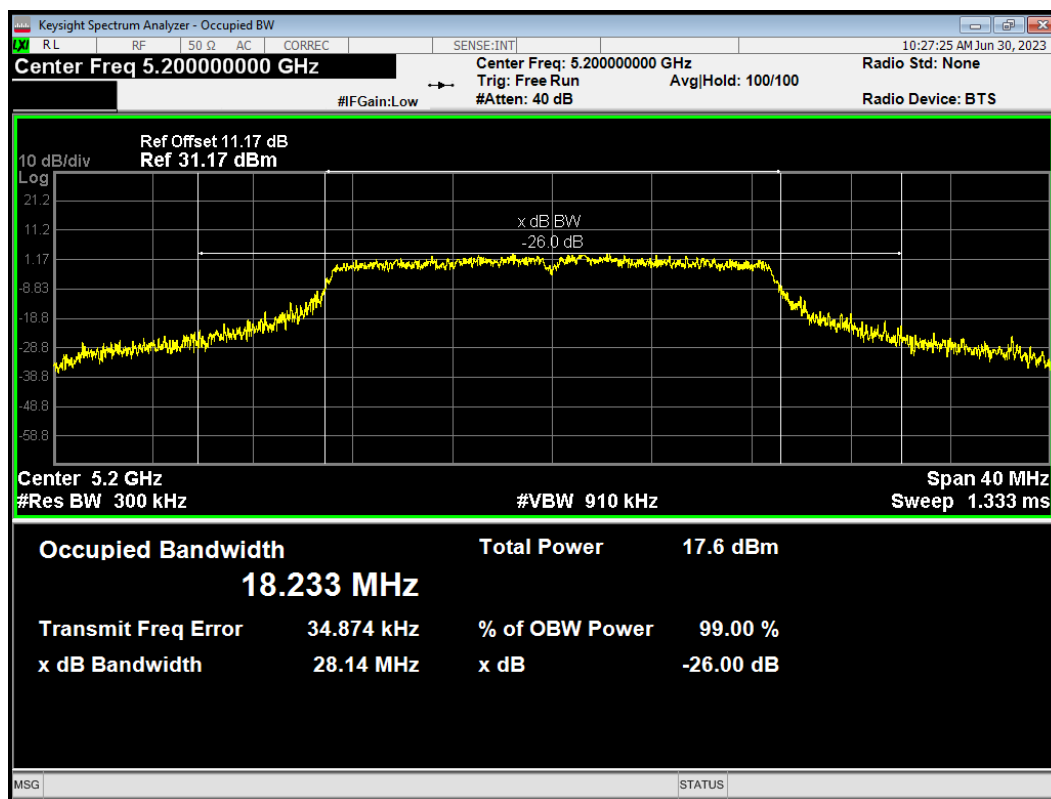
OBW 802.11ax(HE80) 5210MHz



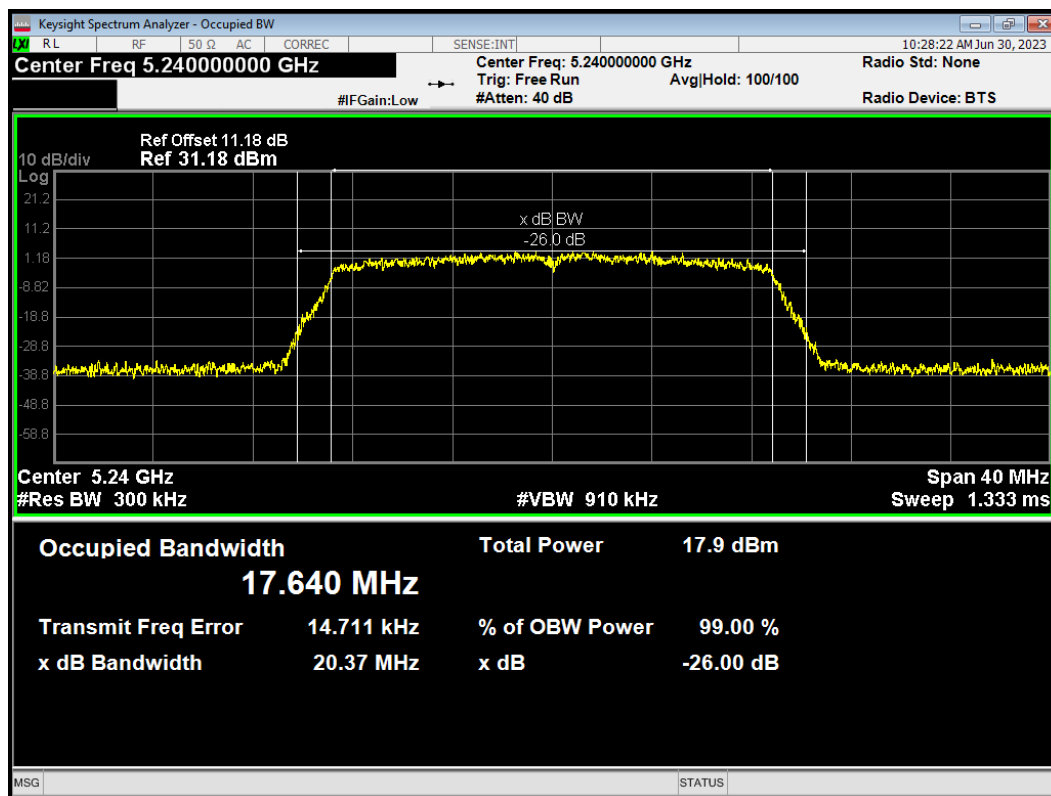
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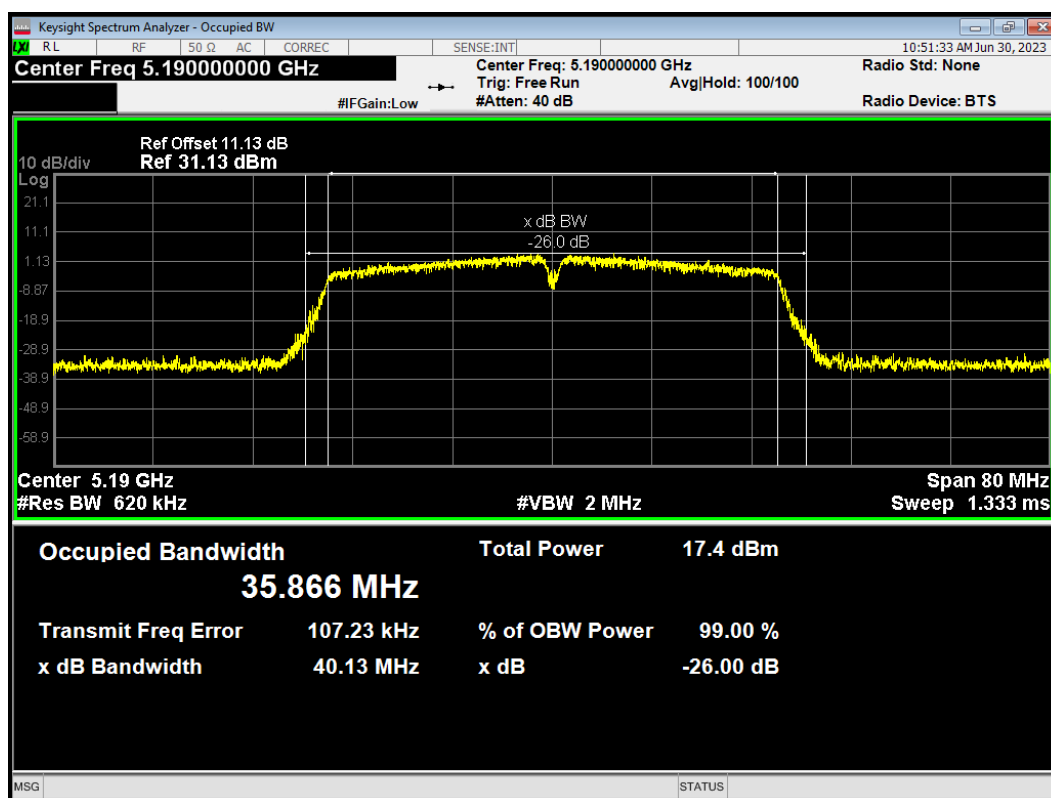
OBW 802.11n(HT20) 5200MHz



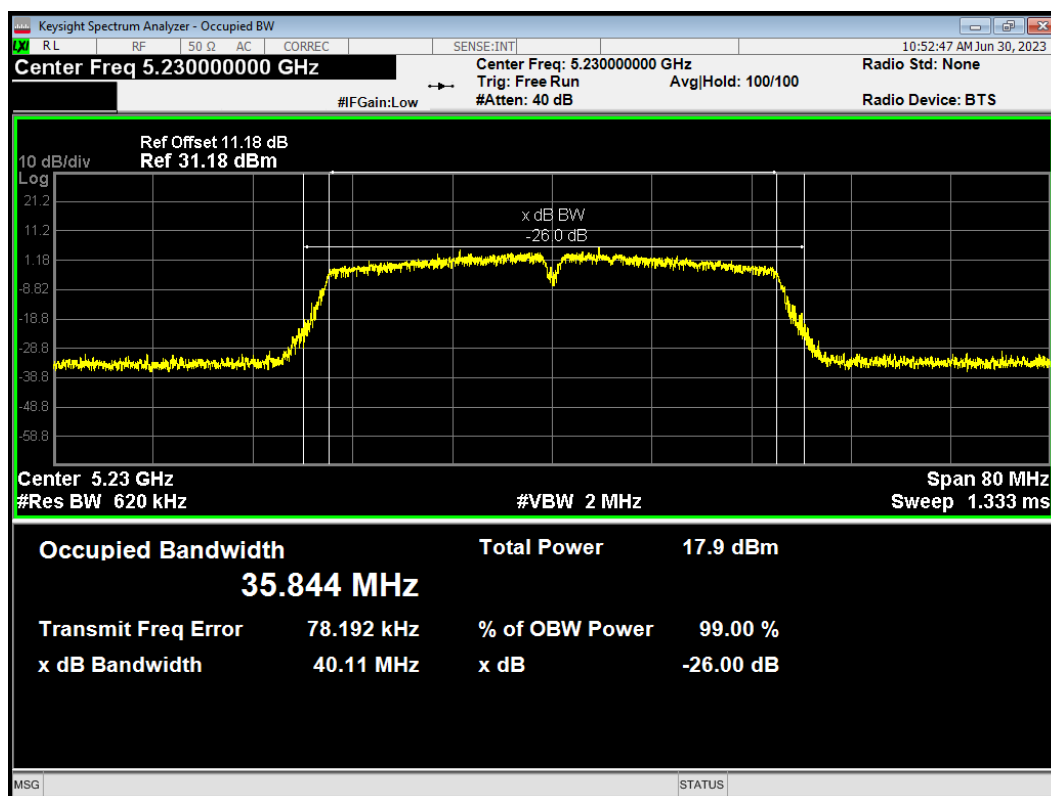
OBW 802.11n(HT20) 5240MHz



OBW 802.11n(HT40) 5190MHz

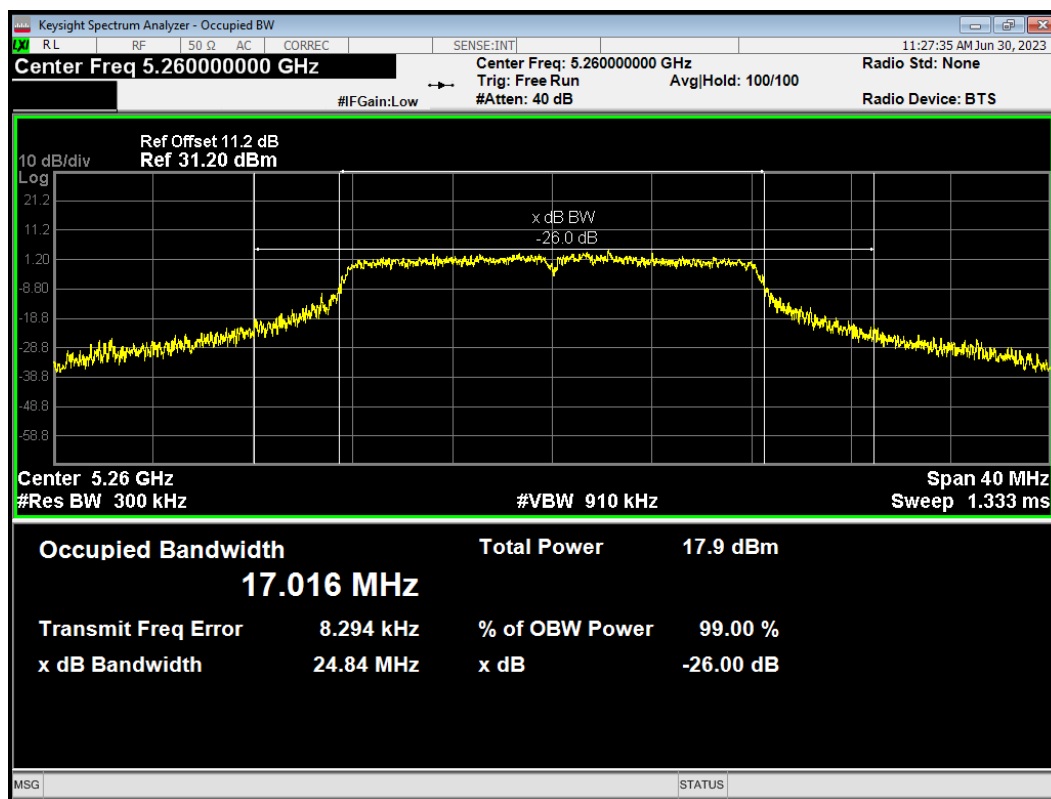


OBW 802.11n(HT40) 5230MHz

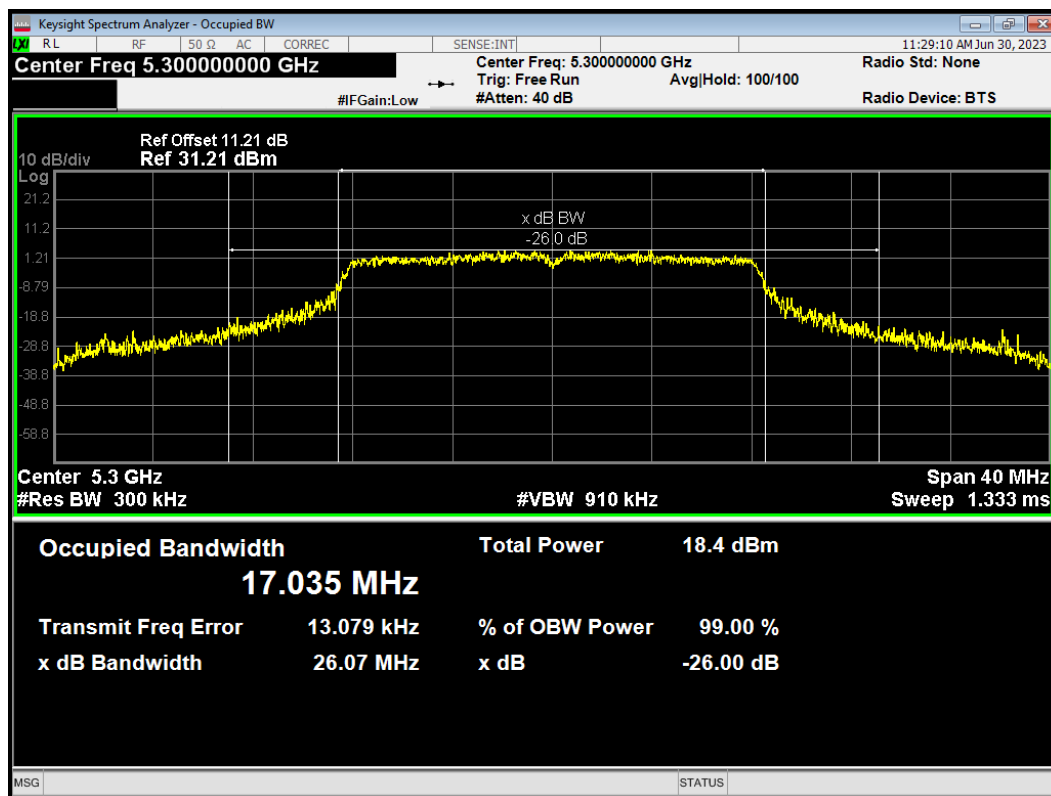


U-NII-2A

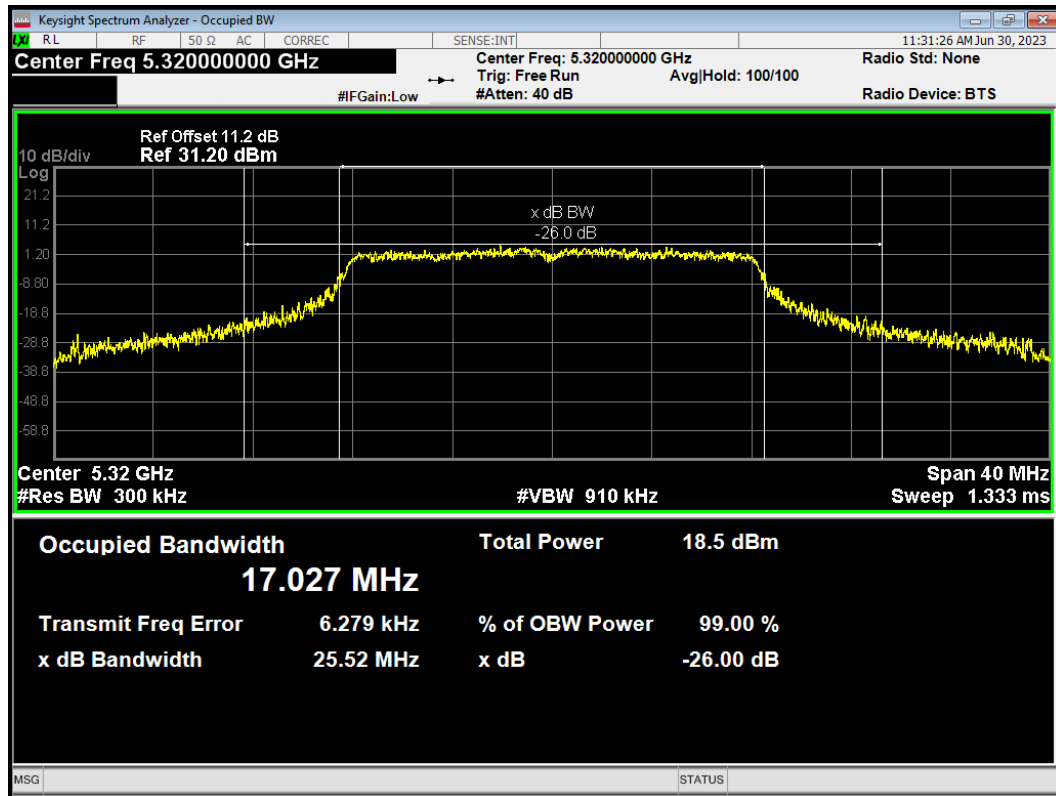
OBW 802.11a 5260MHz



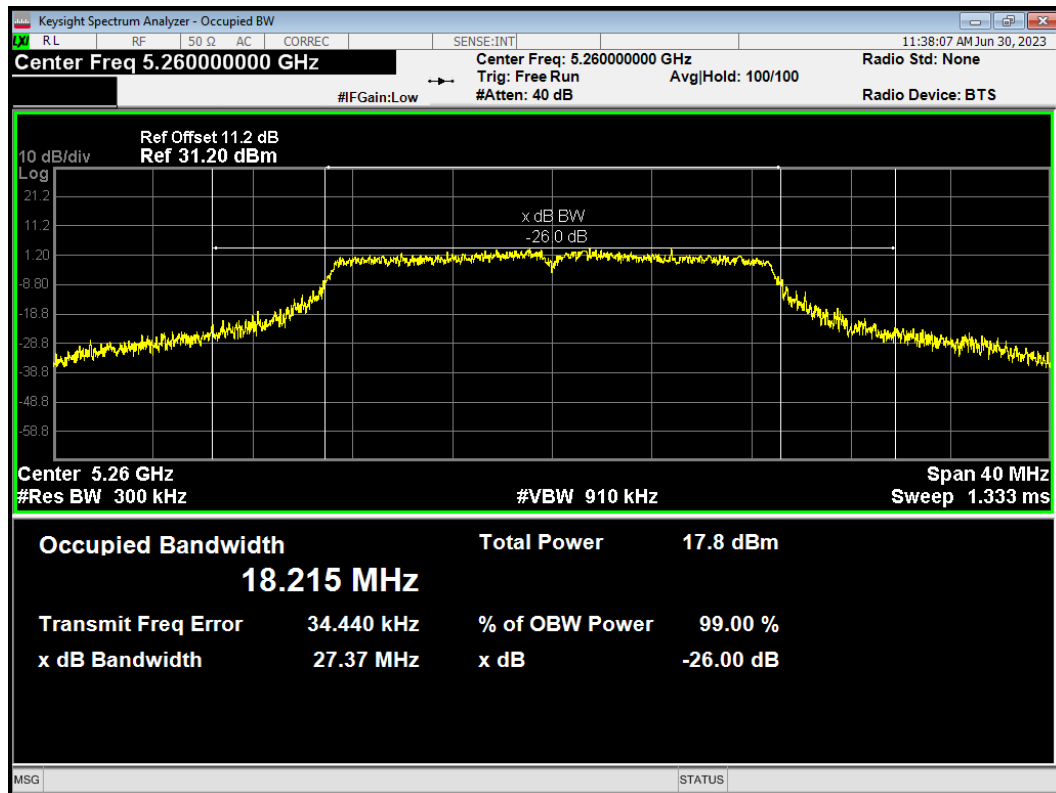
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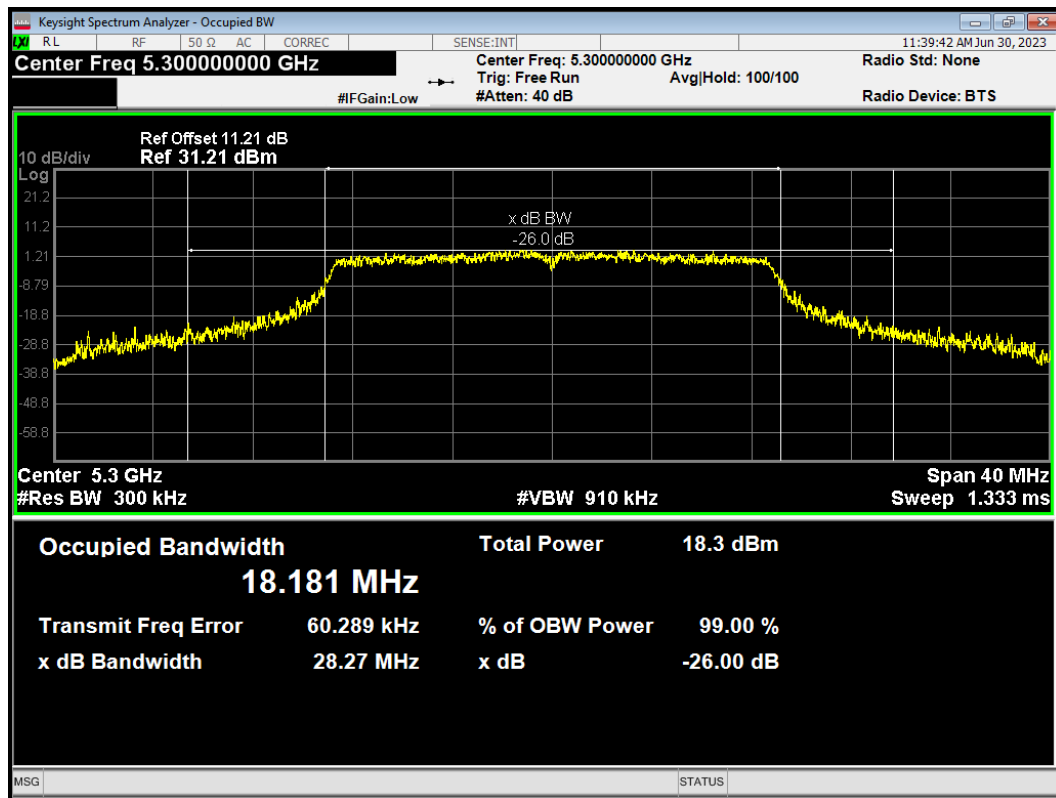
OBW 802.11a 5320MHz



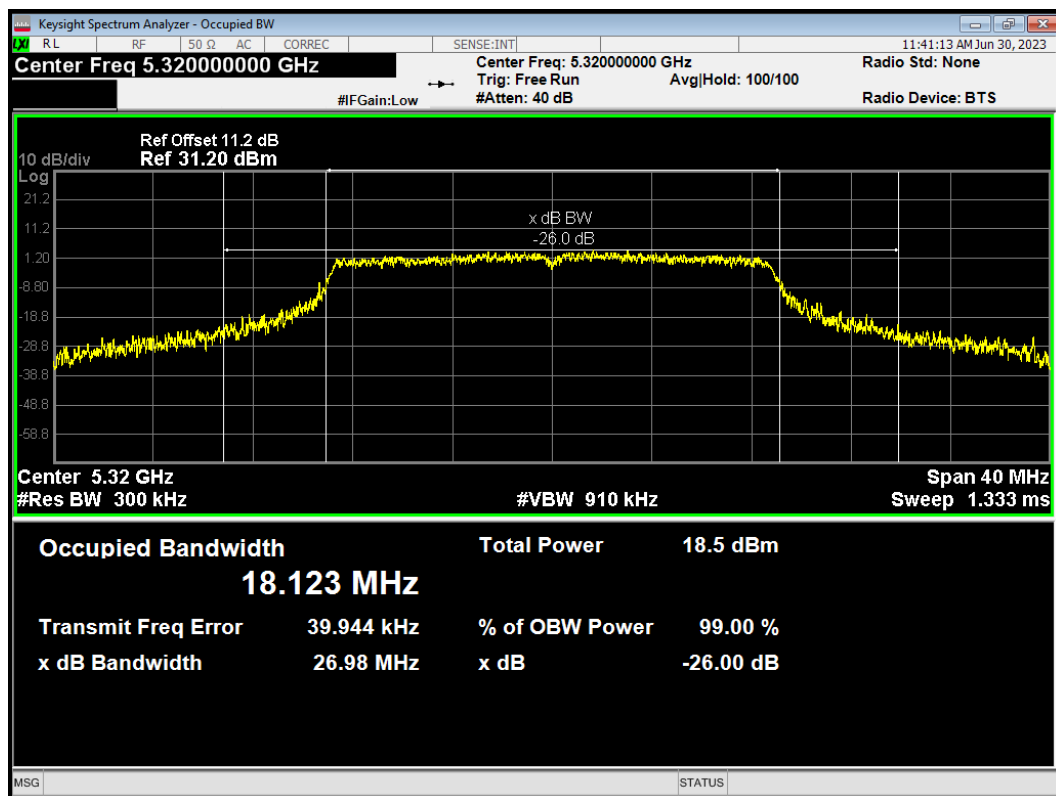
OBW 802.11ac(VHT20) 5260MHz



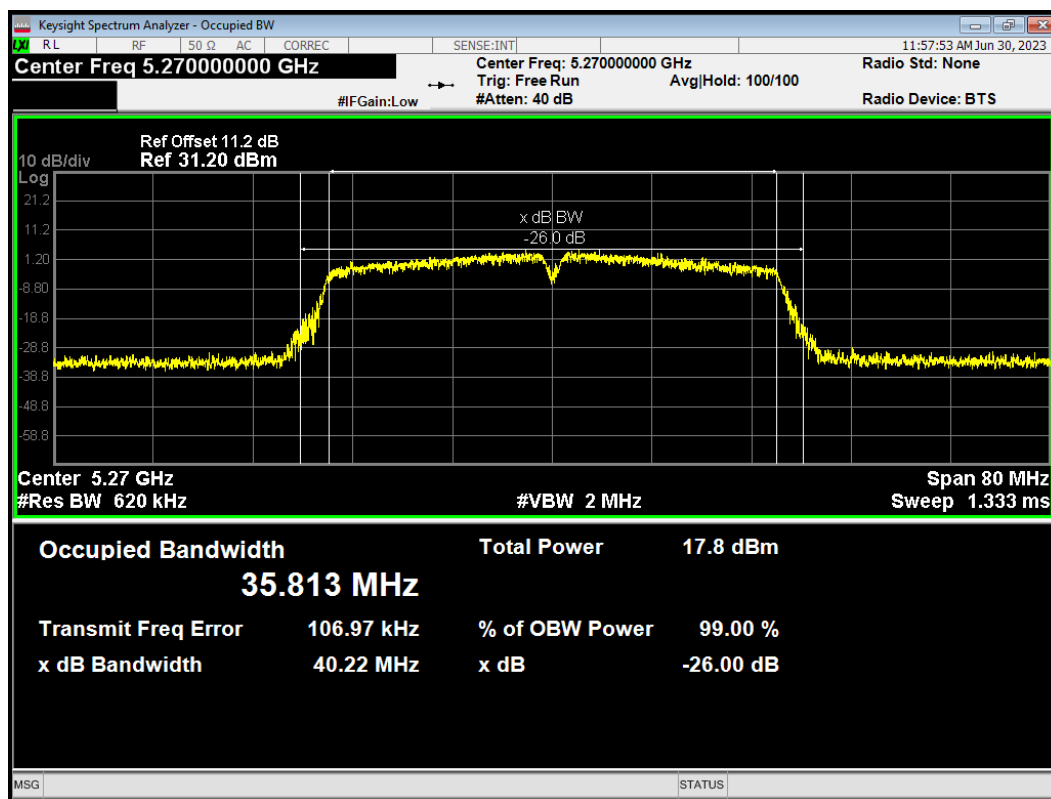
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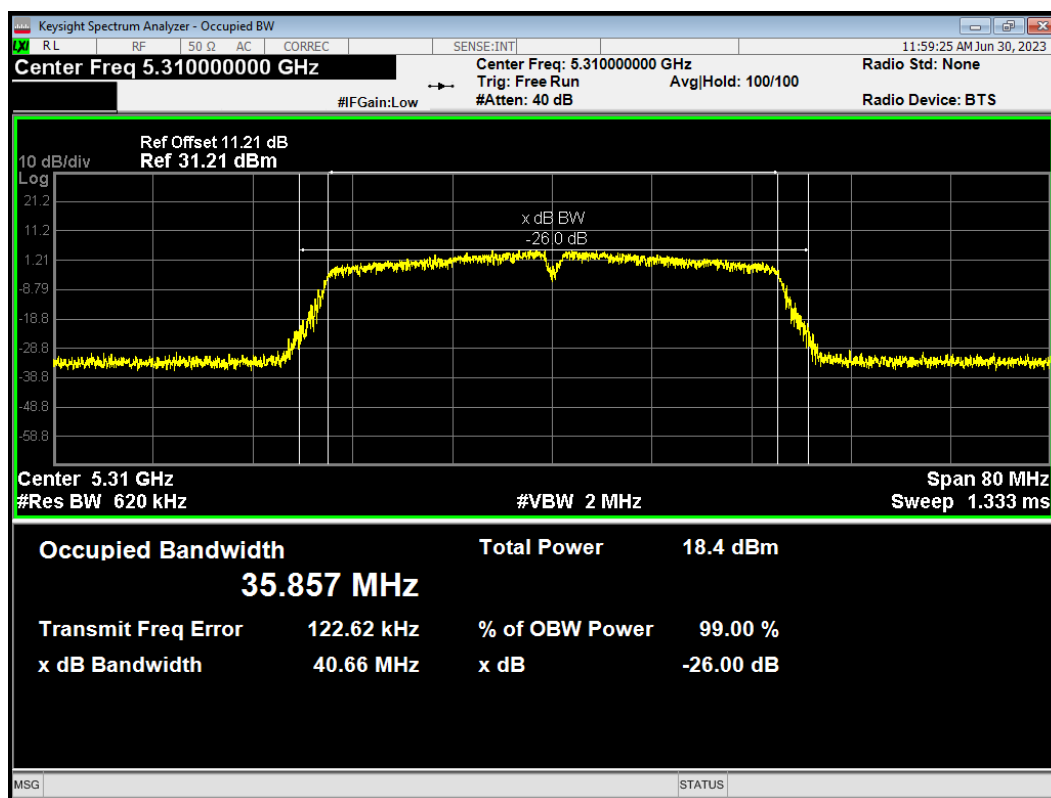
OBW 802.11ac(VHT20) 5320MHz



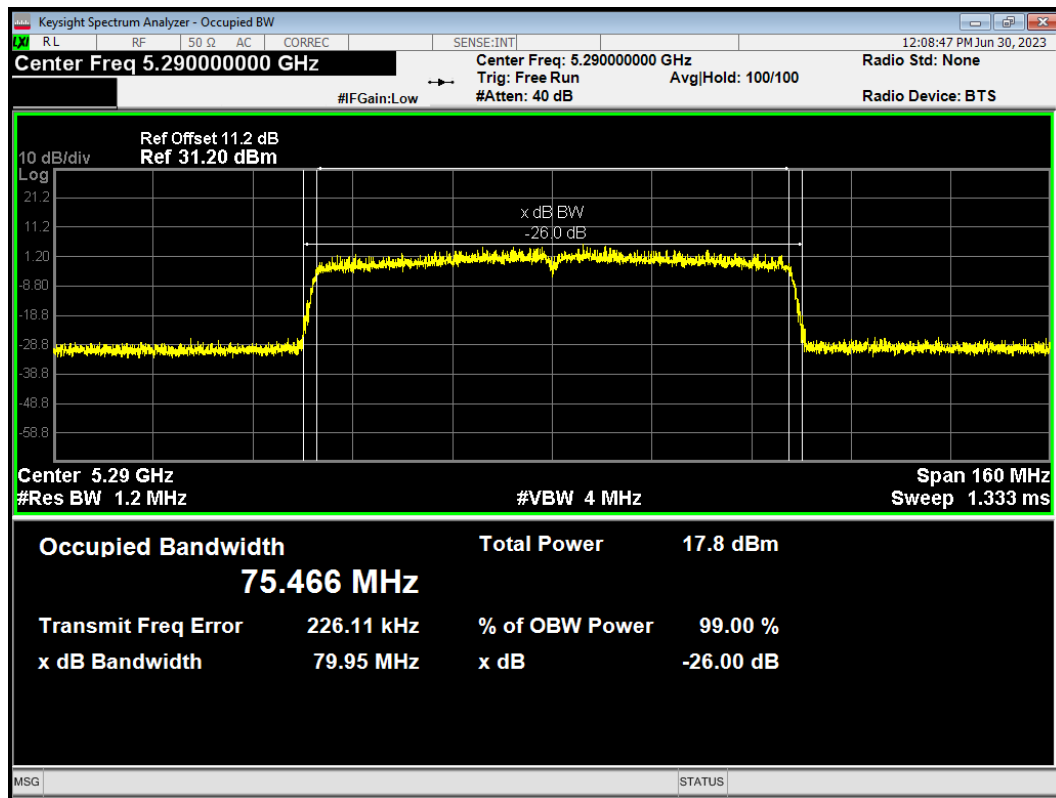
OBW 802.11ac(VHT40) 5270MHz



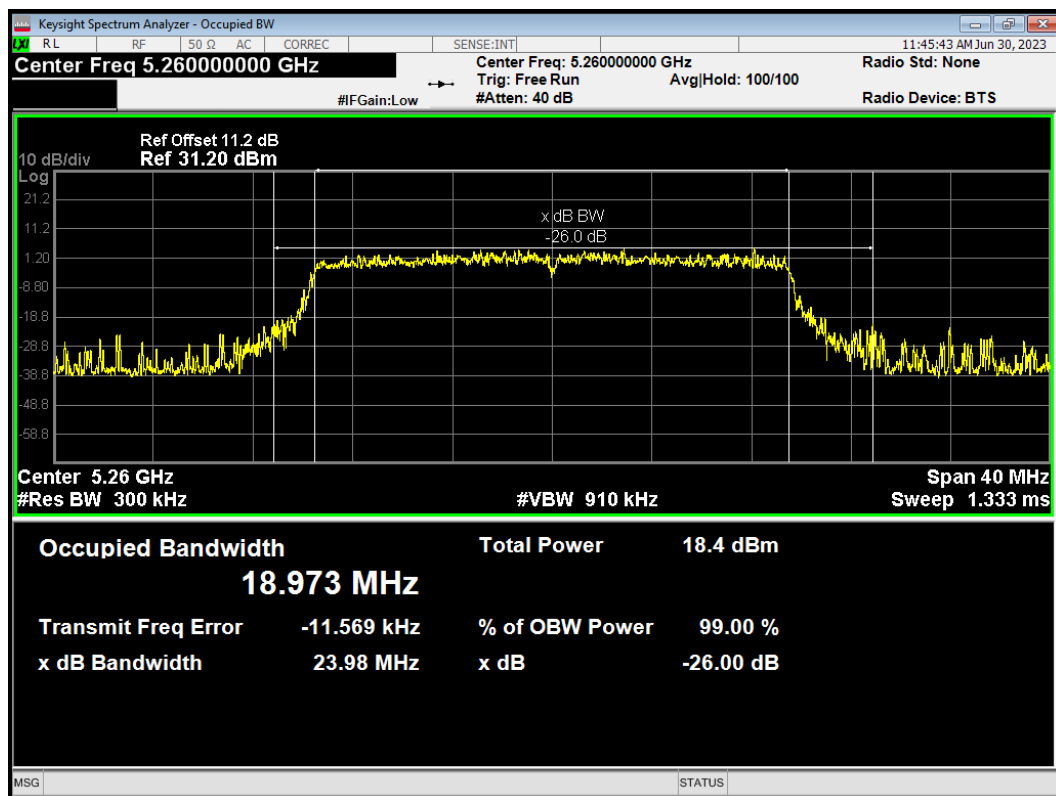
OBW 802.11ac(VHT40) 5310MHz



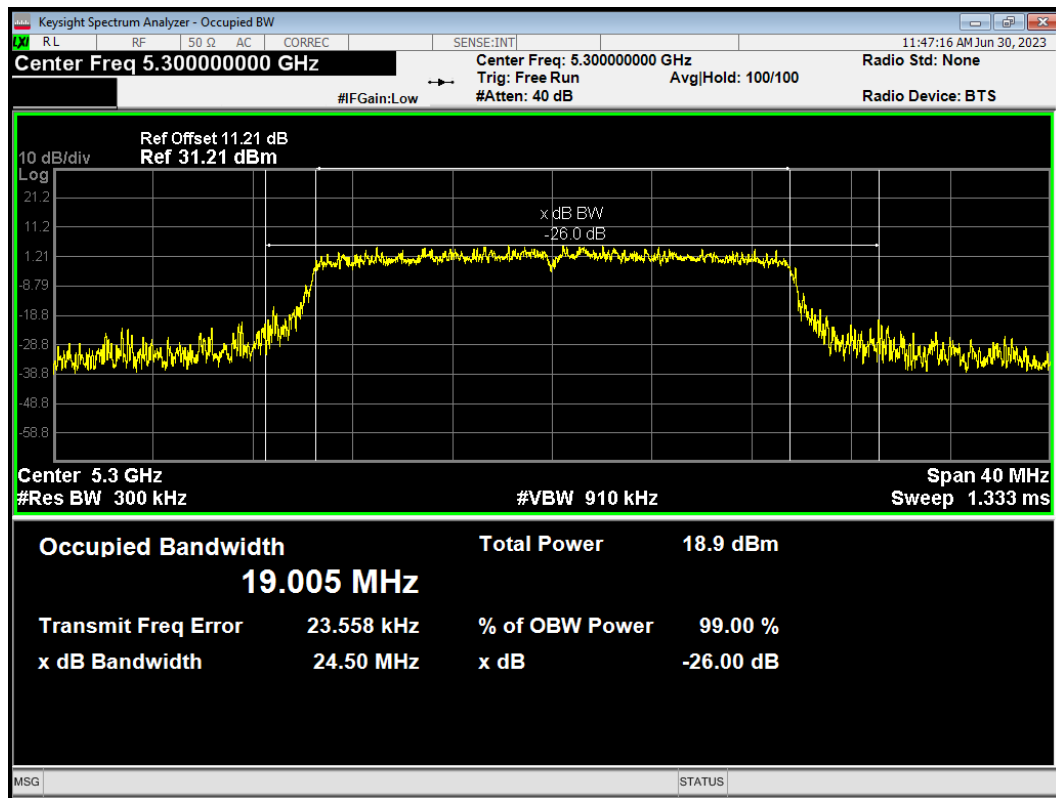
OBW 802.11ac(VHT80) 5290MHz



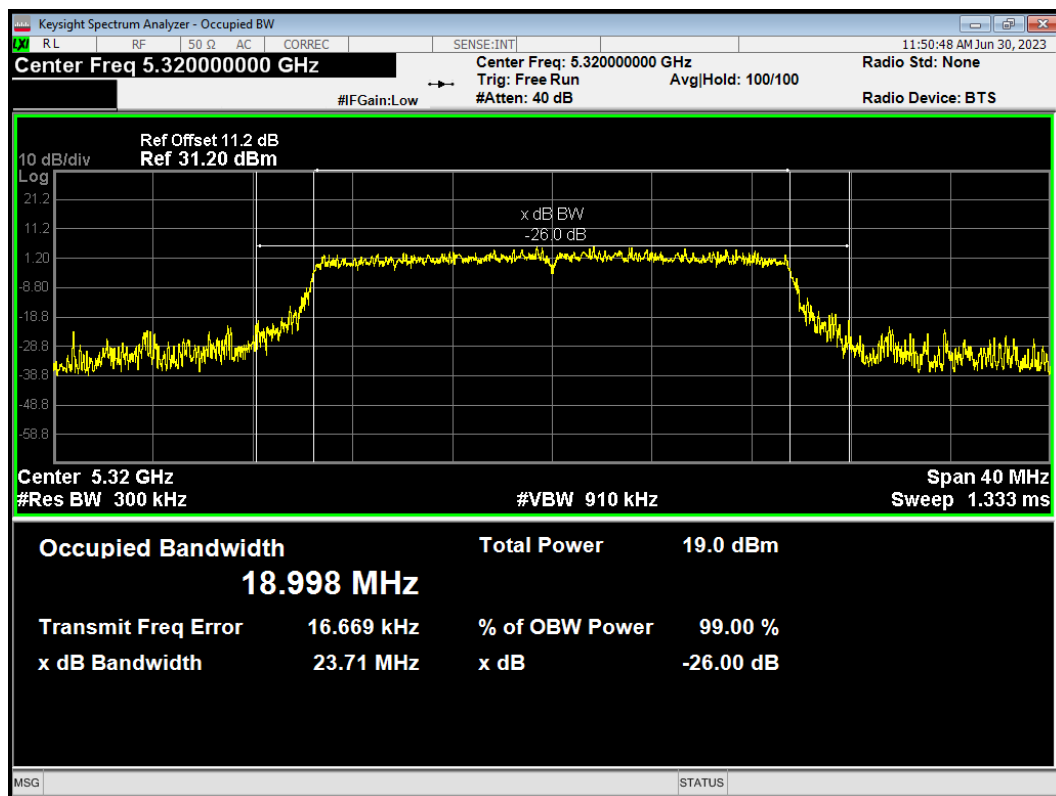
OBW 802.11ax(HE20) 5260MHz



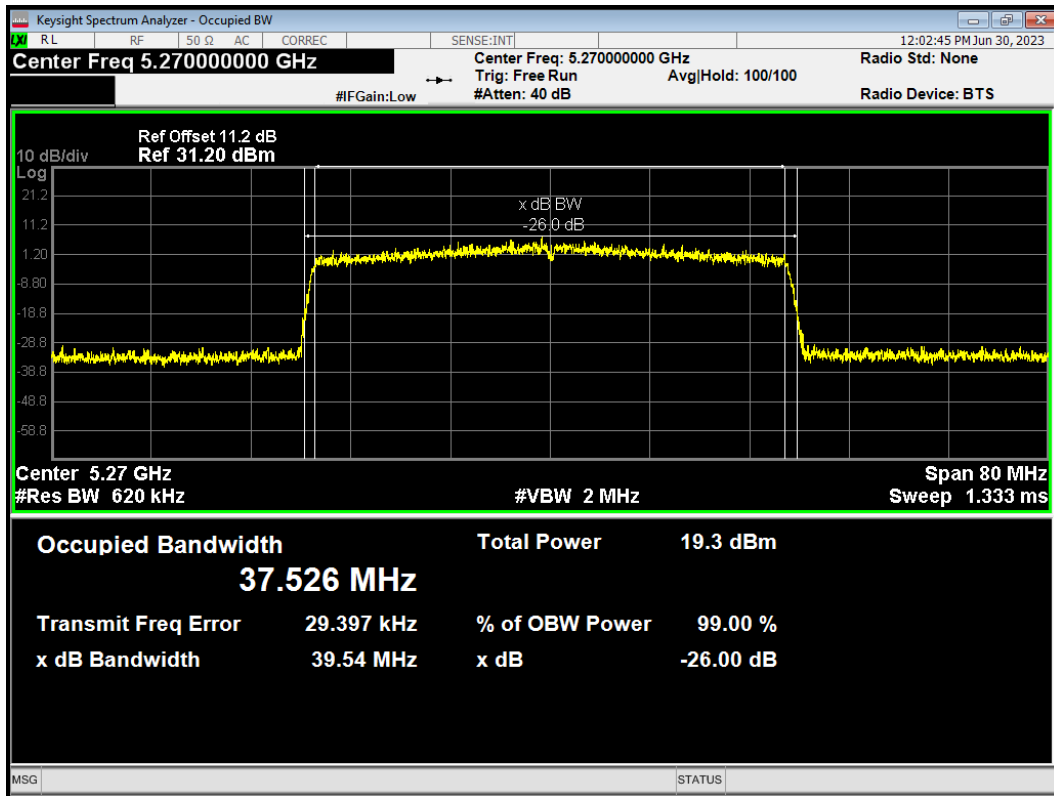
OBW 802.11ax(HE20) 5300MHz



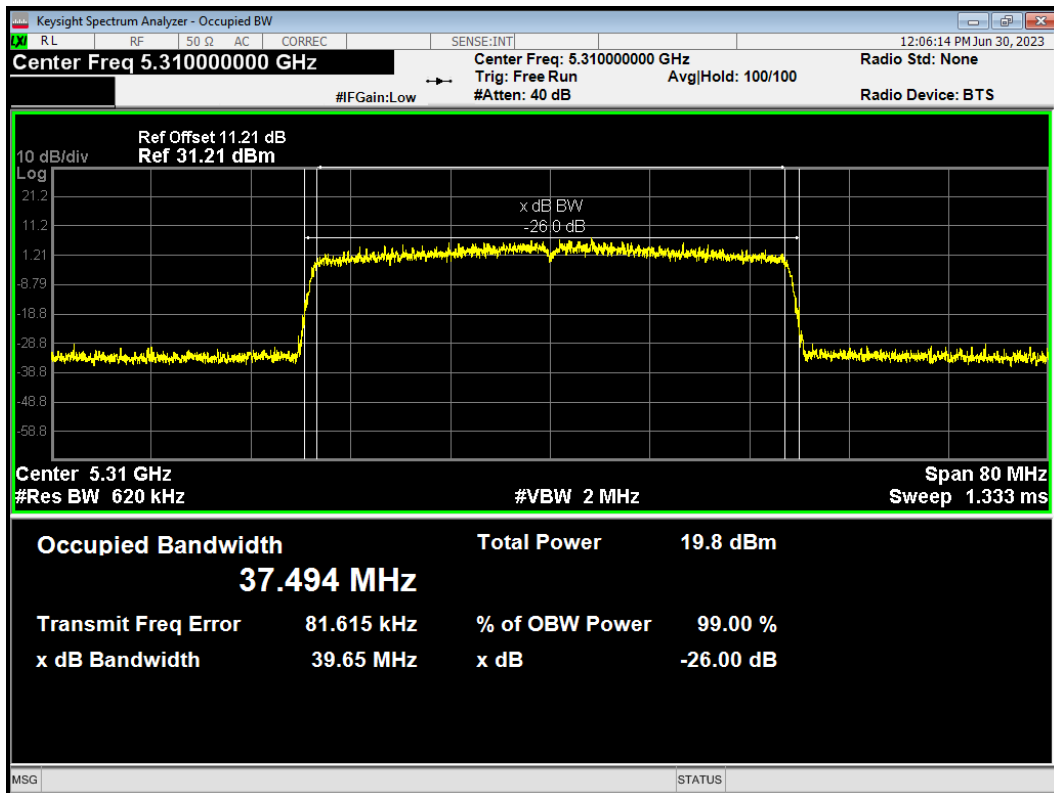
OBW 802.11ax(HE20) 5320MHz



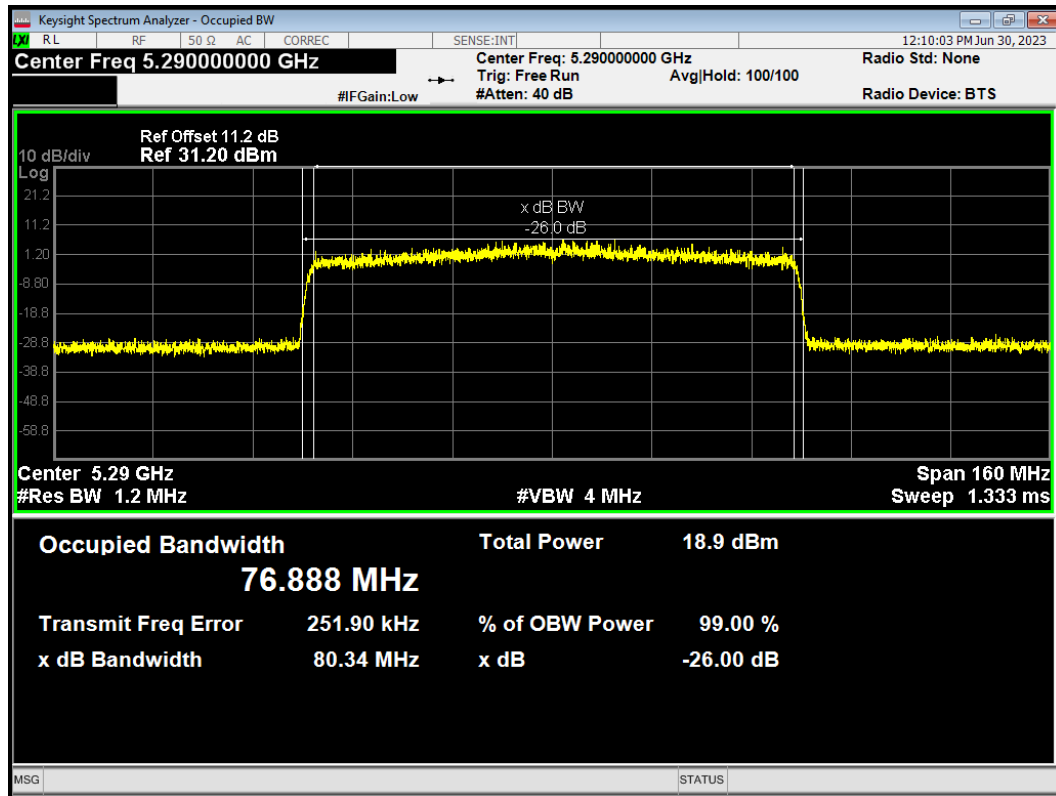
OBW 802.11ax(HE40) 5270MHz



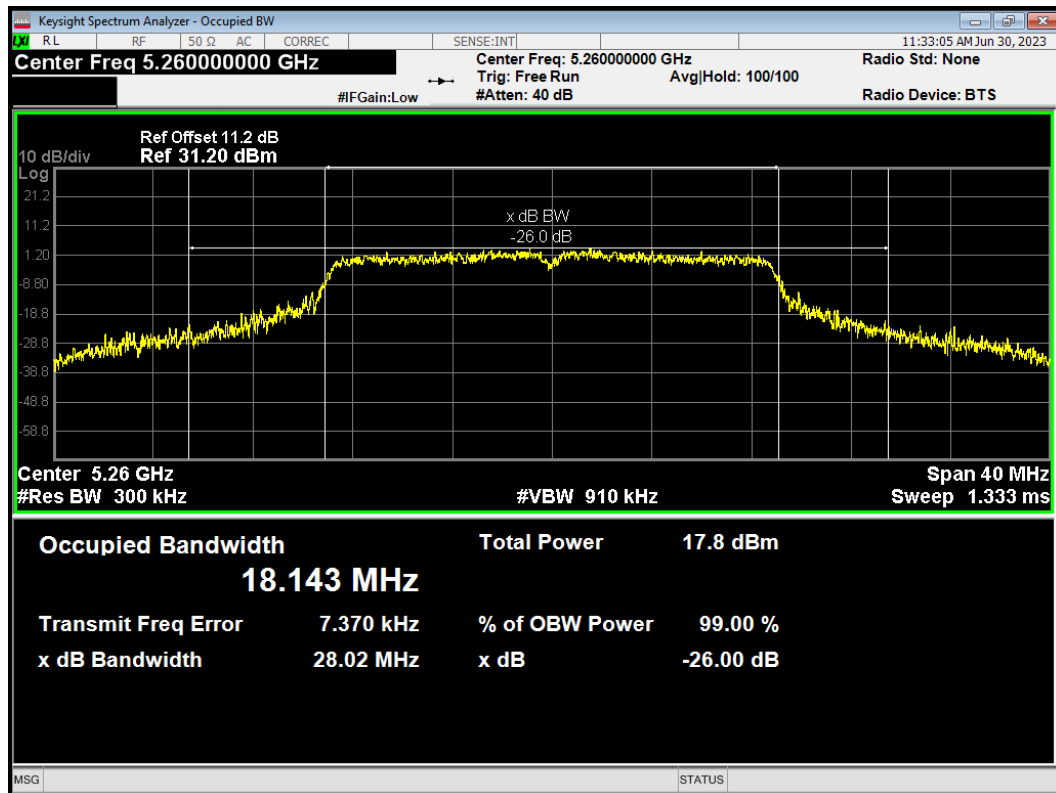
OBW 802.11ax(HE40) 5310MHz



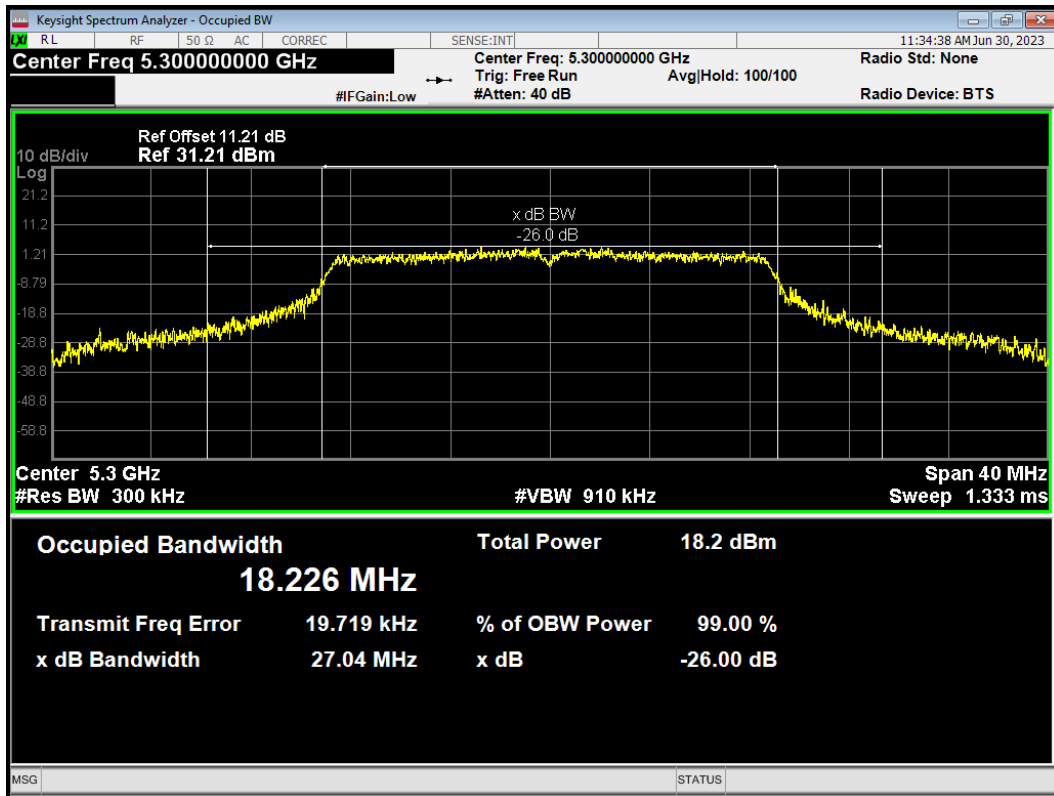
OBW 802.11ax(HE80) 5290MHz



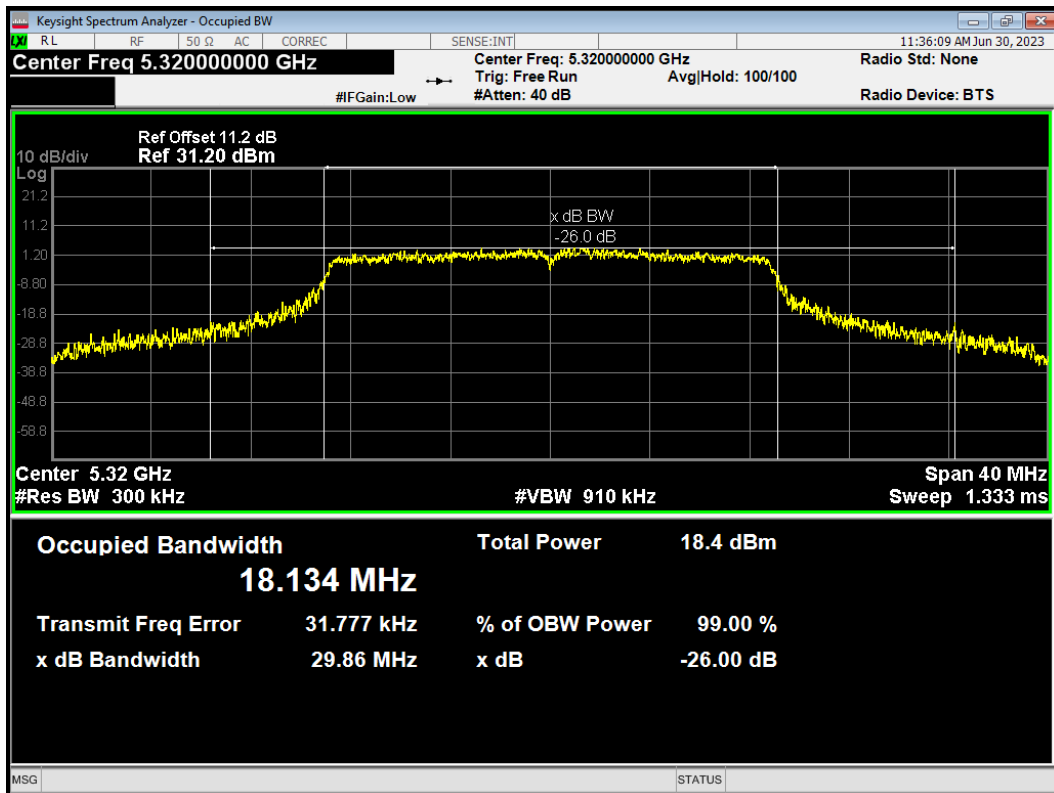
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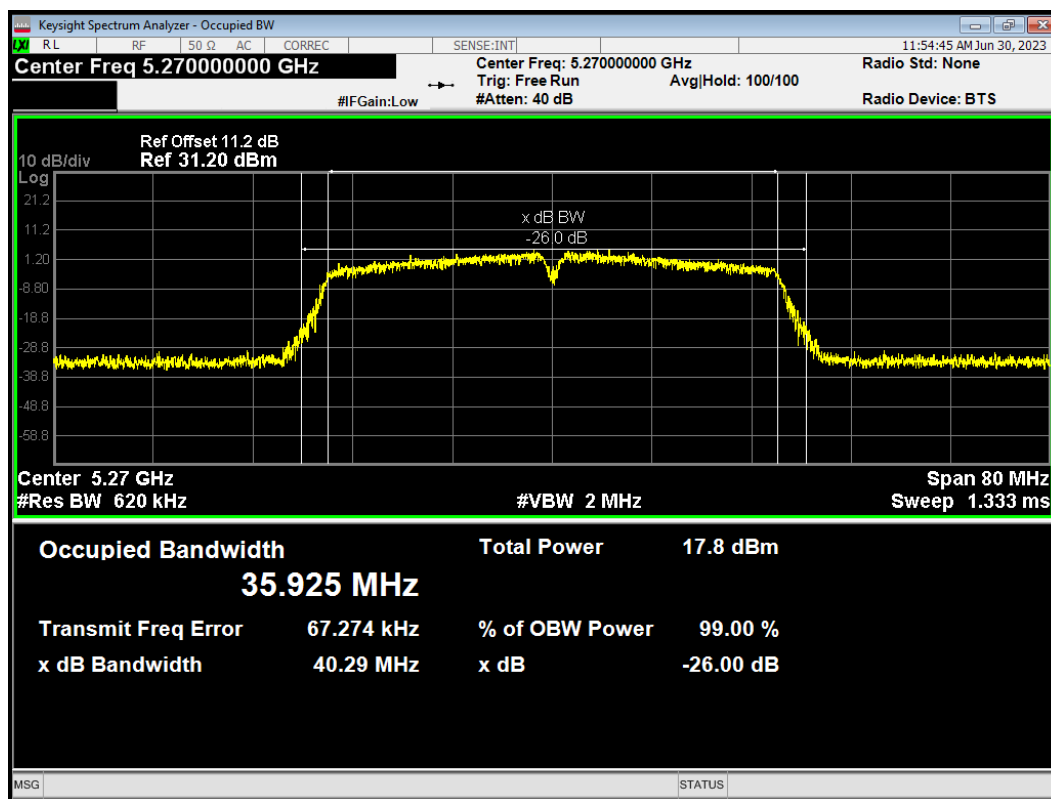
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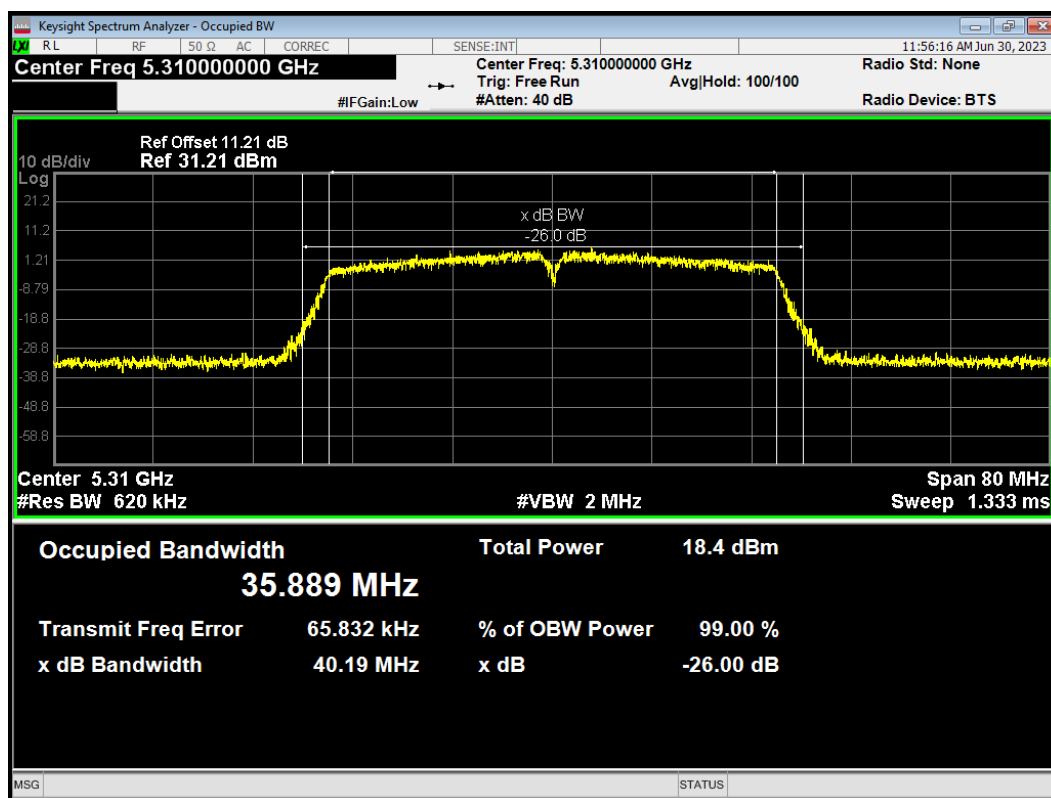
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OBW 802.11n(HT40) 5270MHz

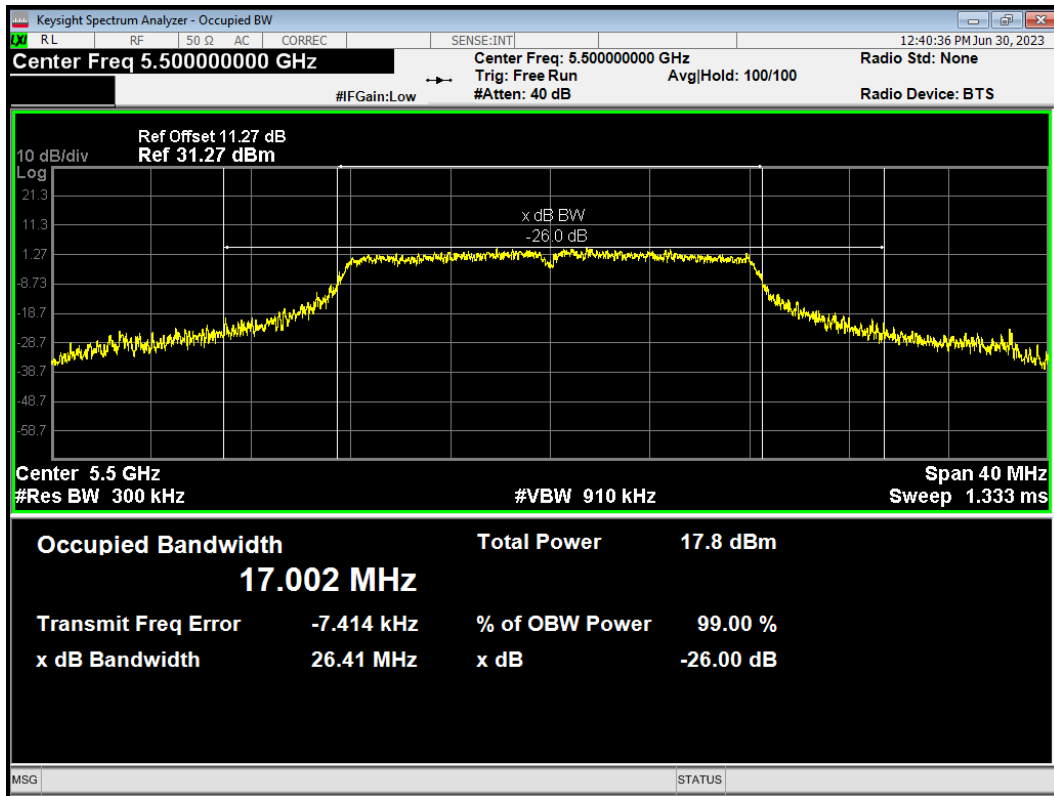


OBW 802.11n(HT40) 5310MHz

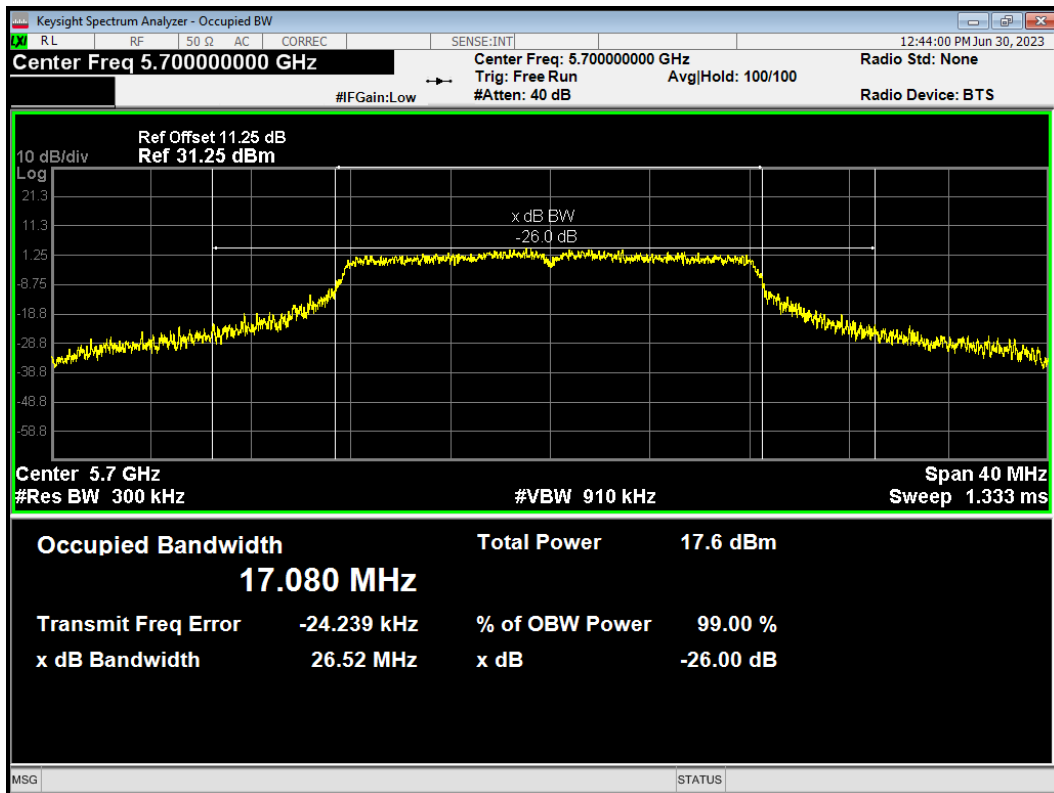


U-NII-2C

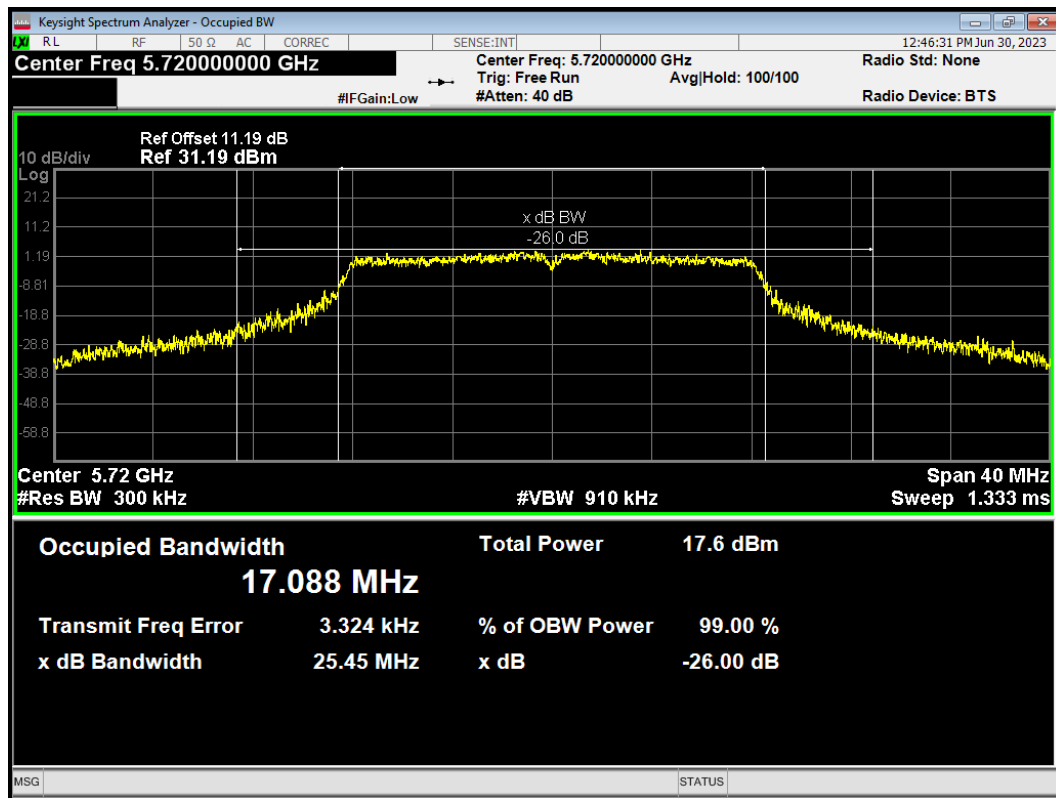
OBW 802.11a 5500MHz



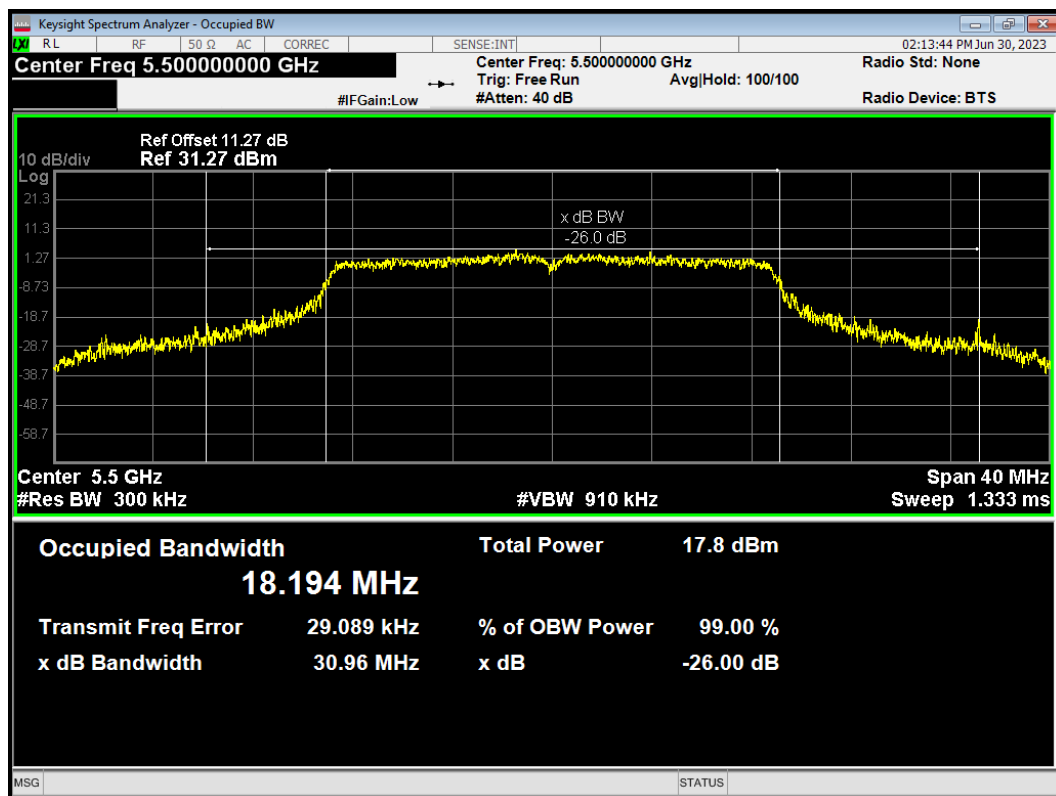
OBW 802.11a 5700MHz



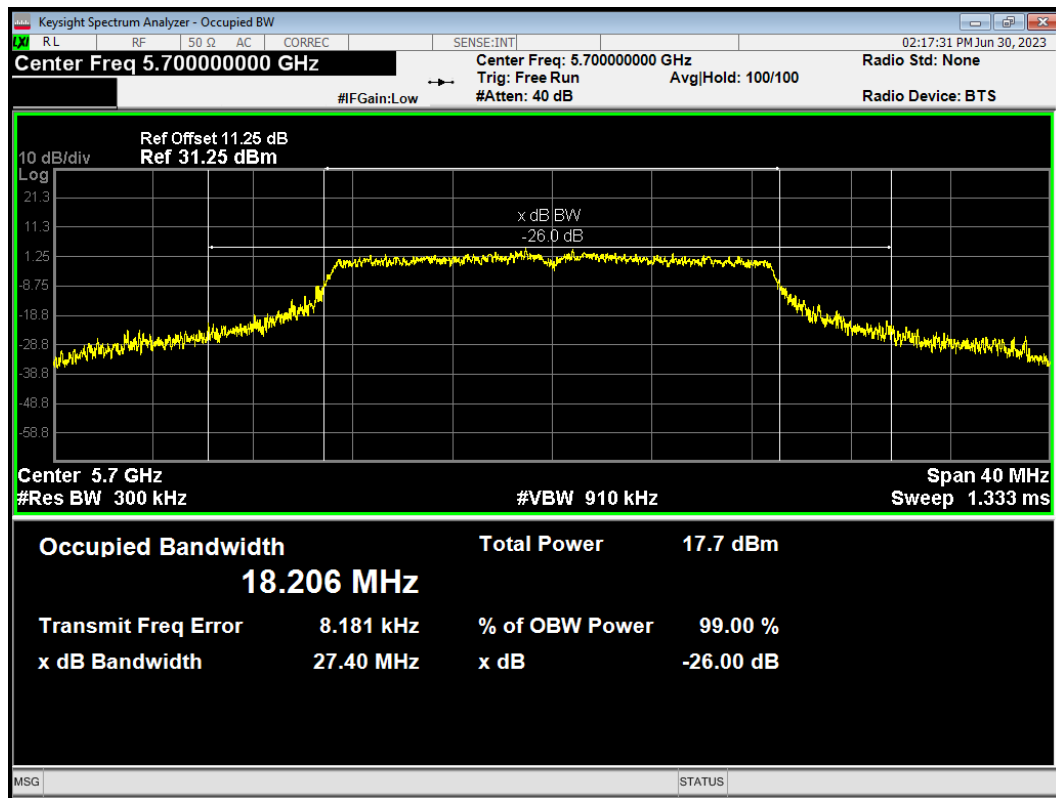
OBW 802.11a 5720MHz



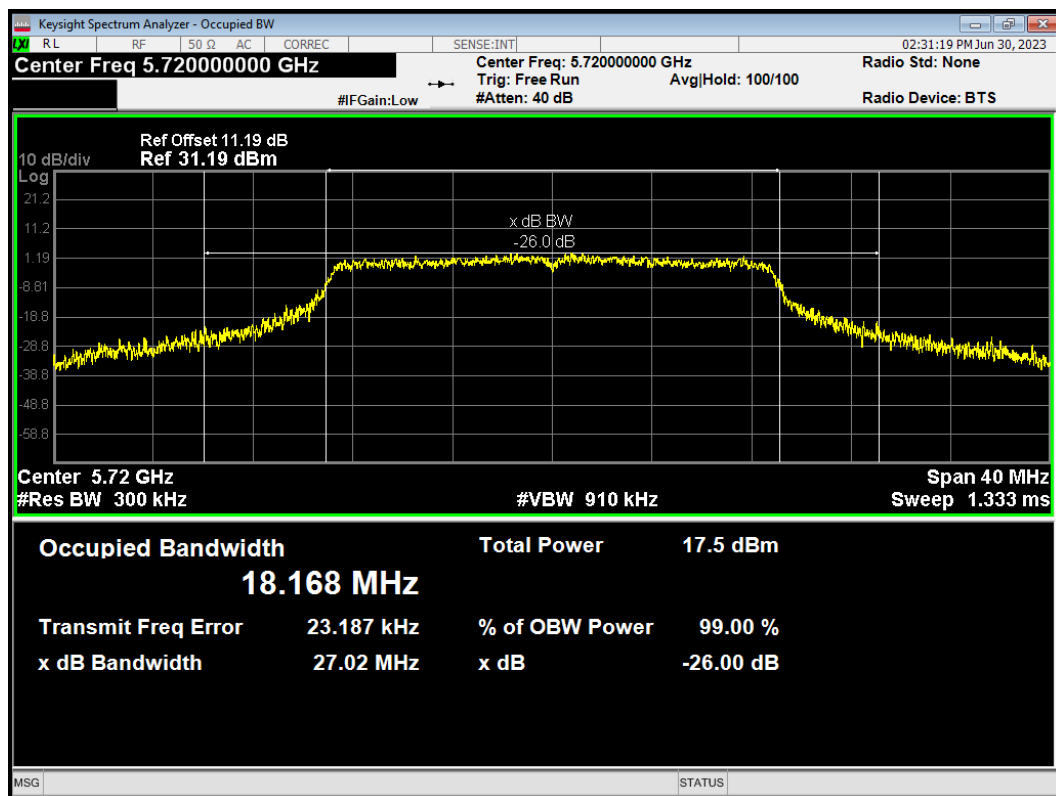
OBW 802.11ac(VHT20) 5500MHz



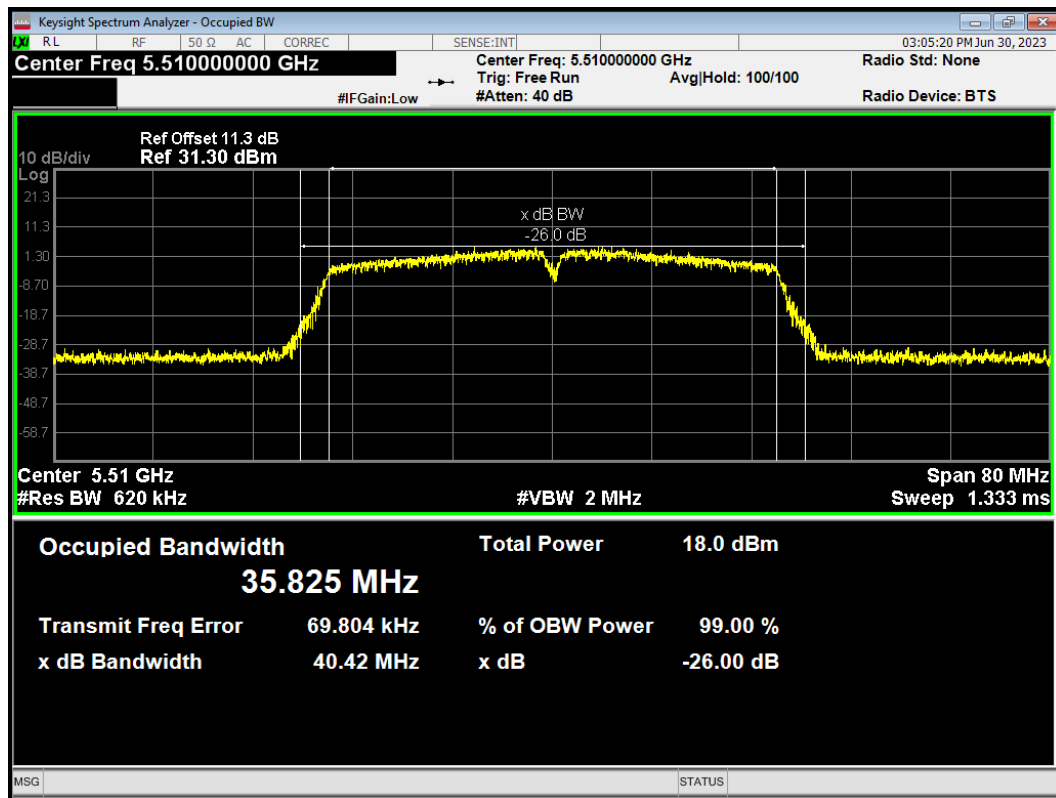
OBW 802.11ac(VHT20) 5700MHz



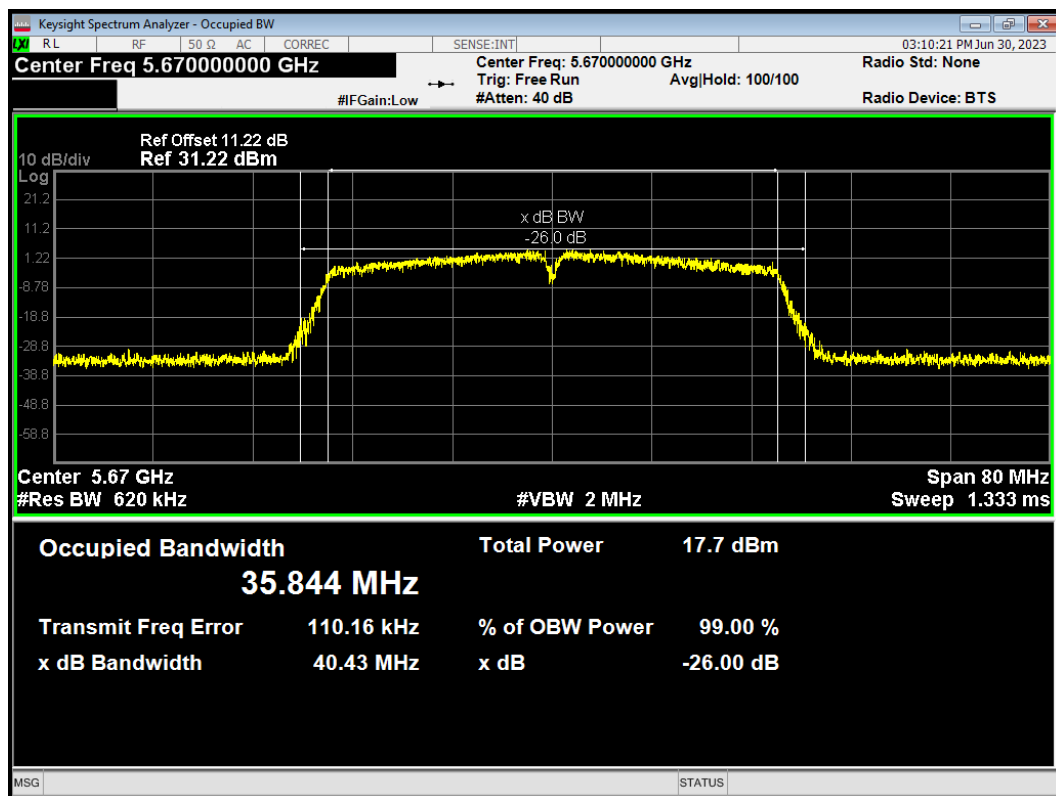
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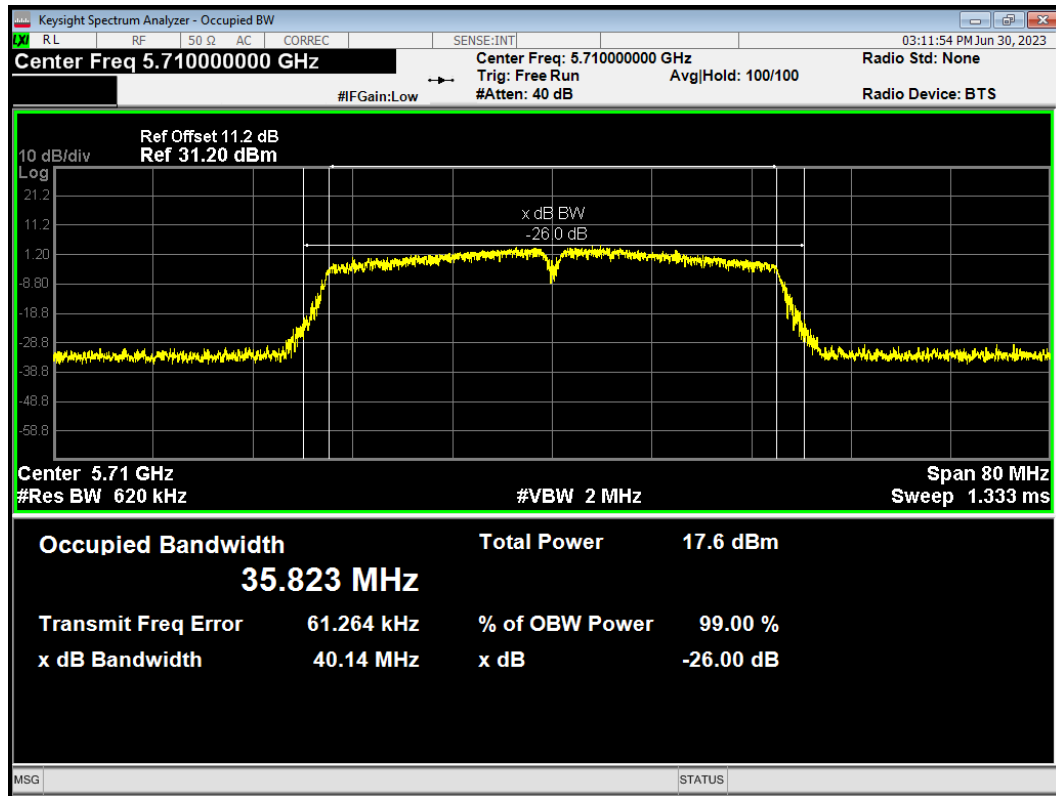
OBW 802.11ac(VHT40) 5510MHz



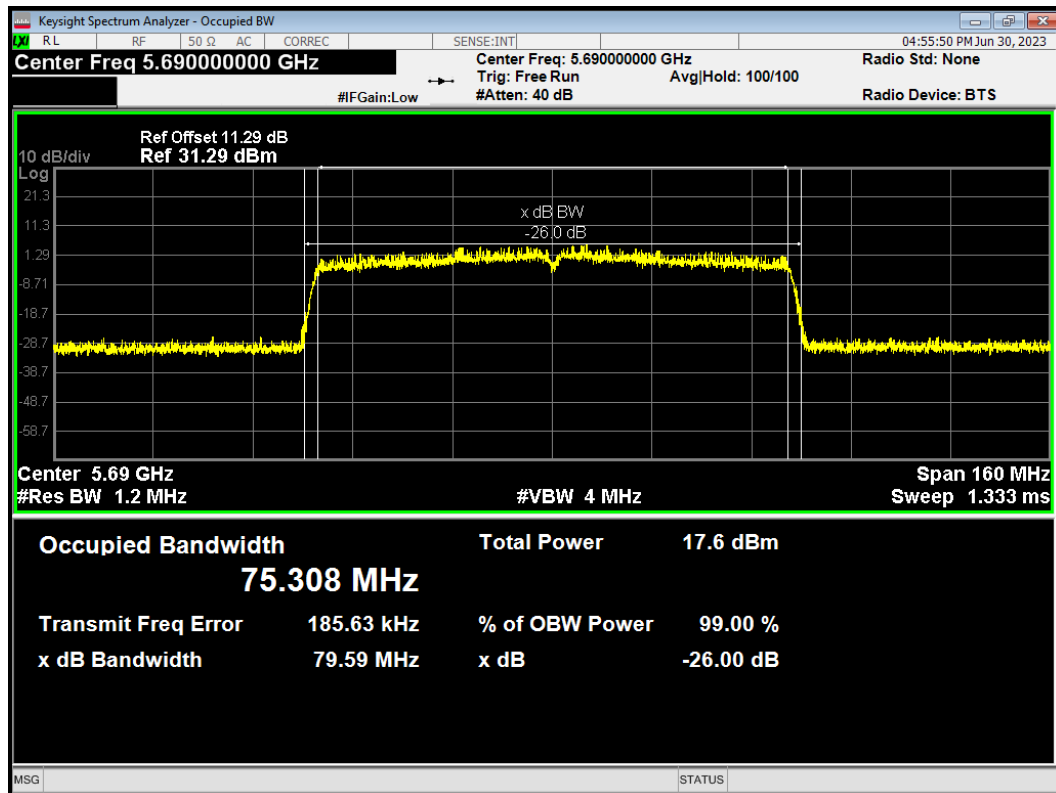
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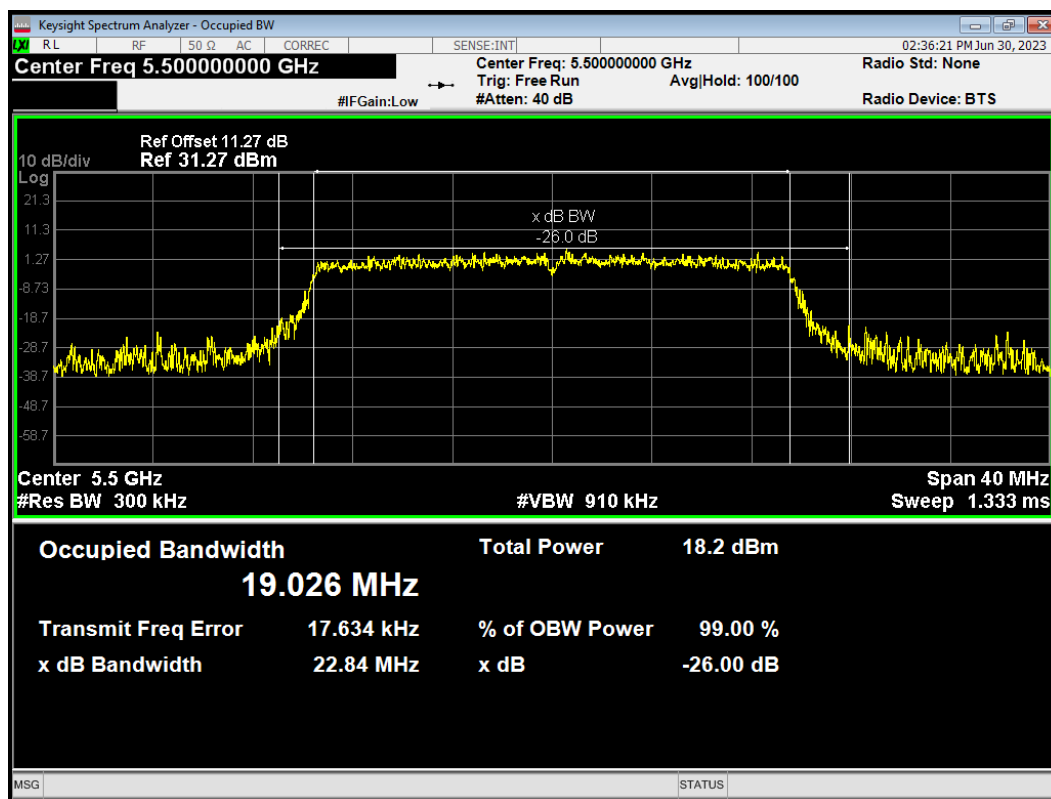
OBW 802.11ac(VHT40) 5710MHz



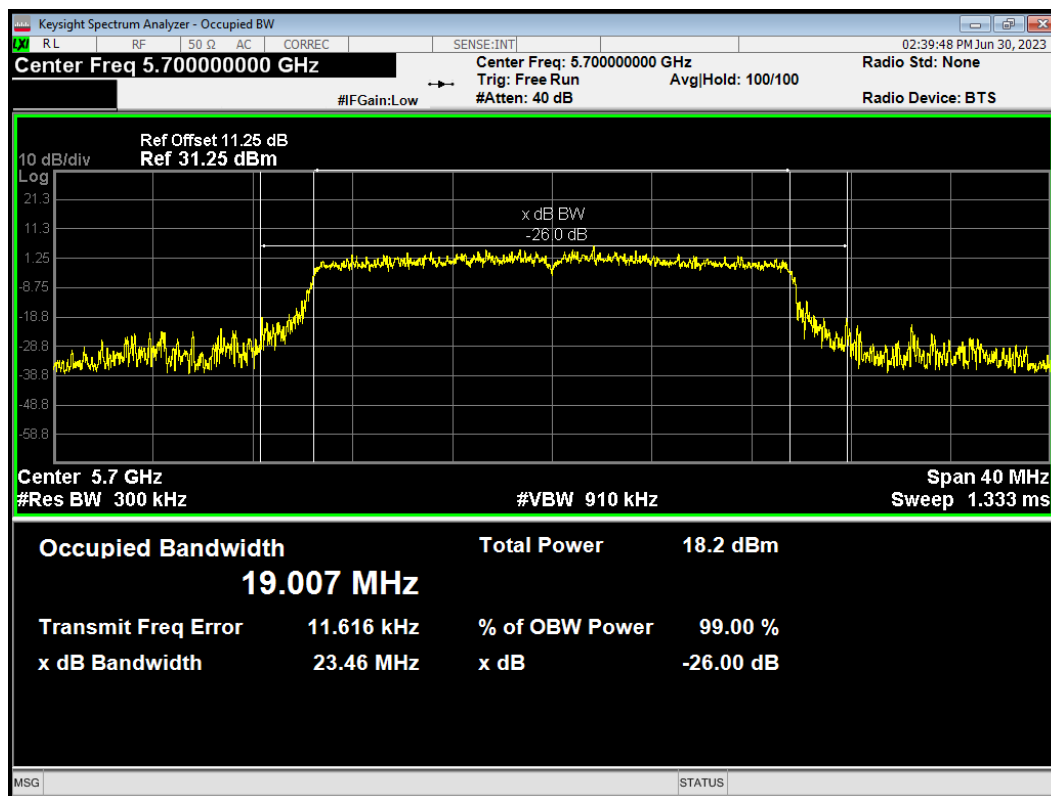
OBW 802.11ac(VHT80) 5690MHz



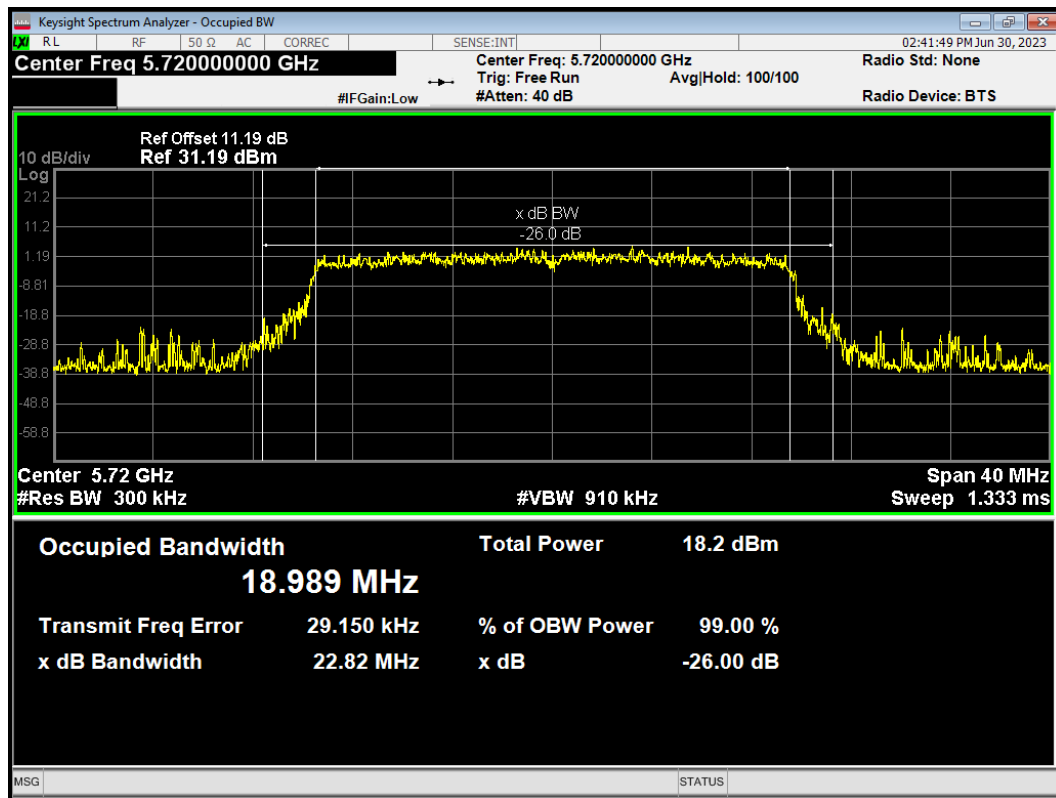
OBW 802.11ax(HE20) 5500MHz



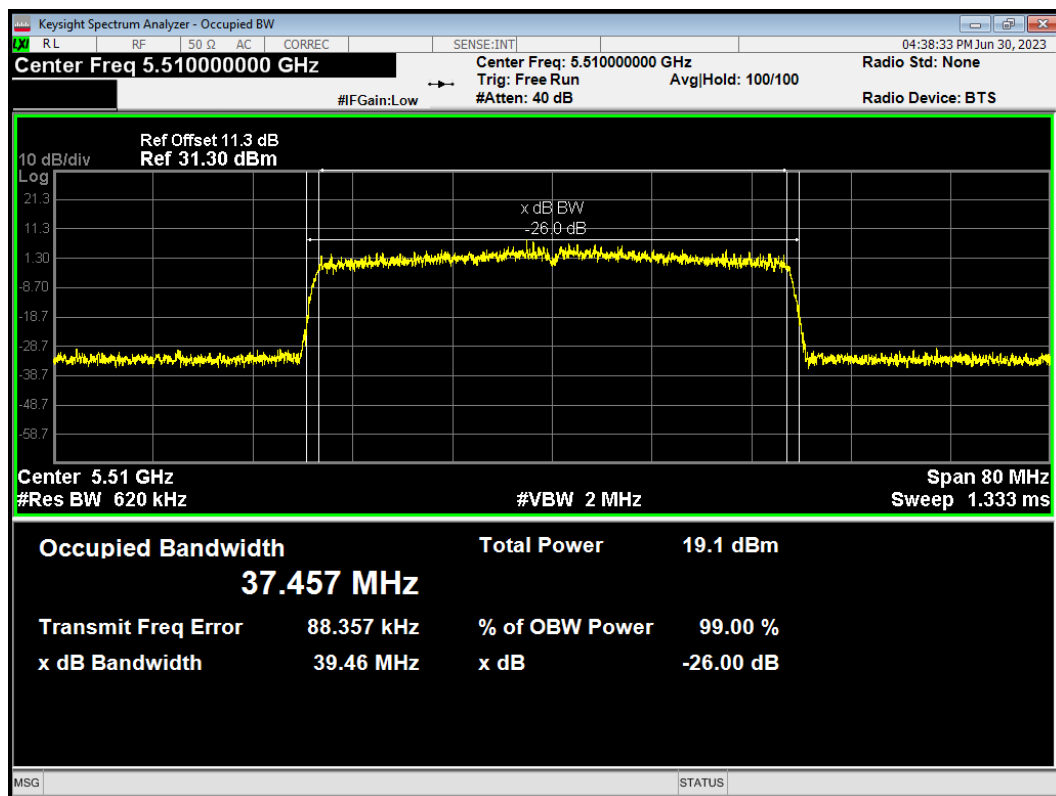
OBW 802.11ax(HE20) 5700MHz



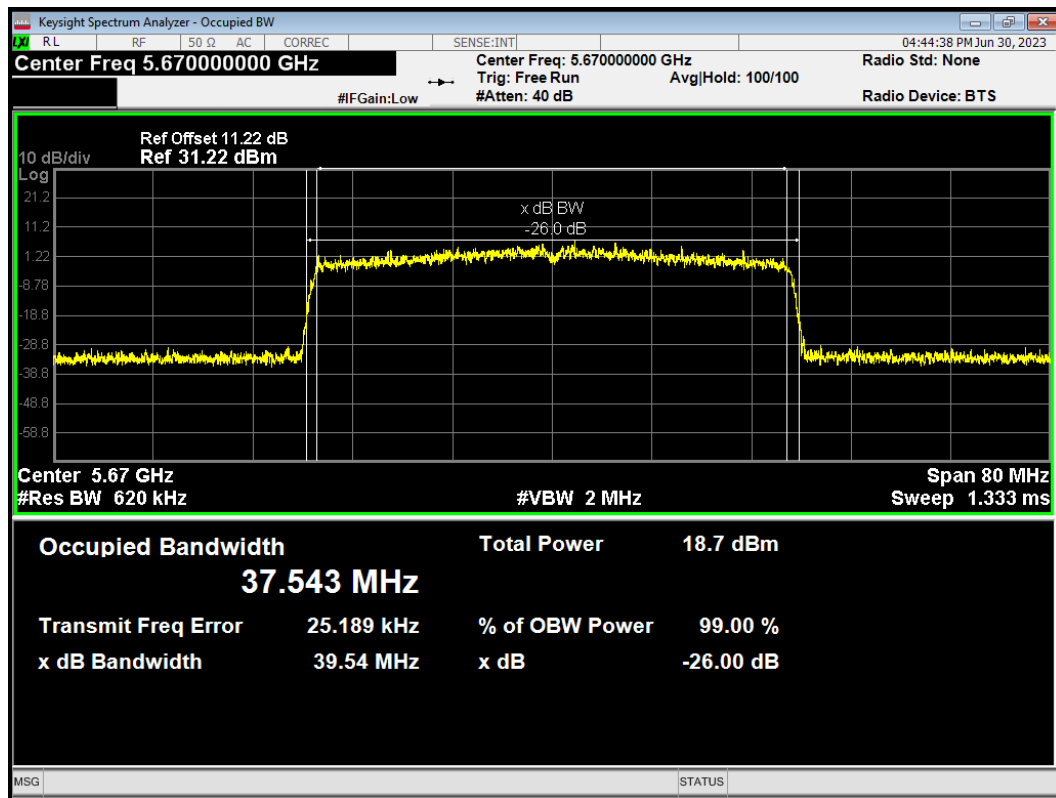
OBW 802.11ax(HE20) 5720MHz



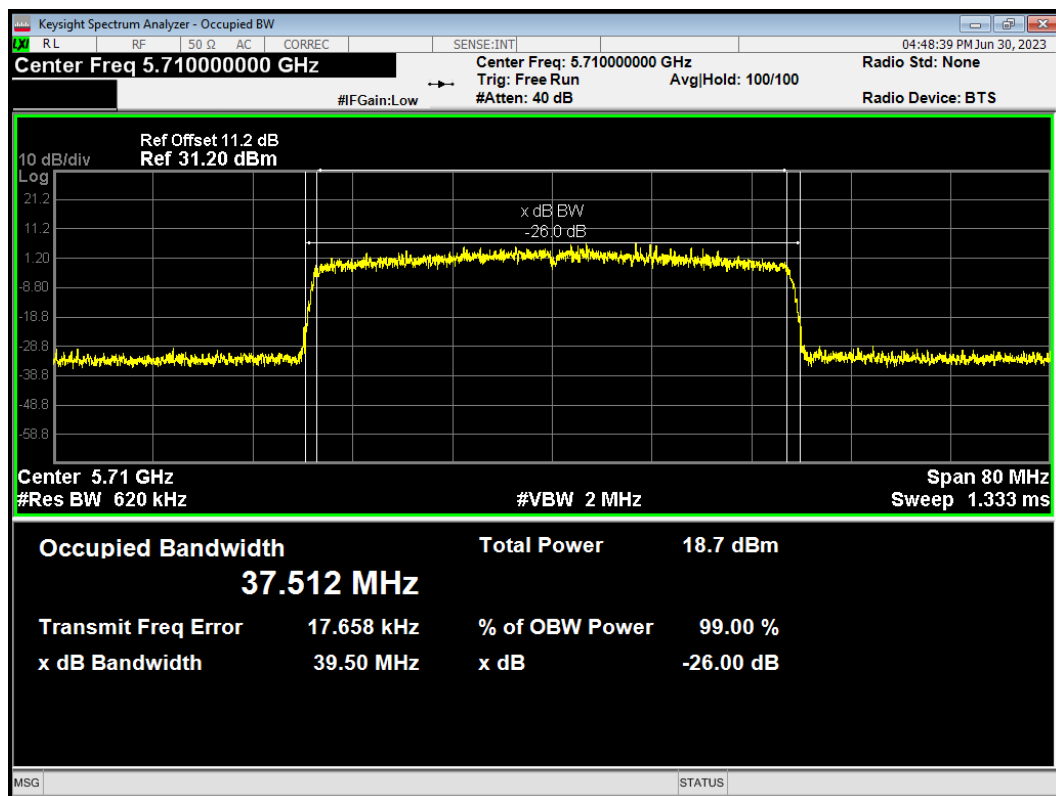
OBW 802.11ax(HE40) 5510MHz



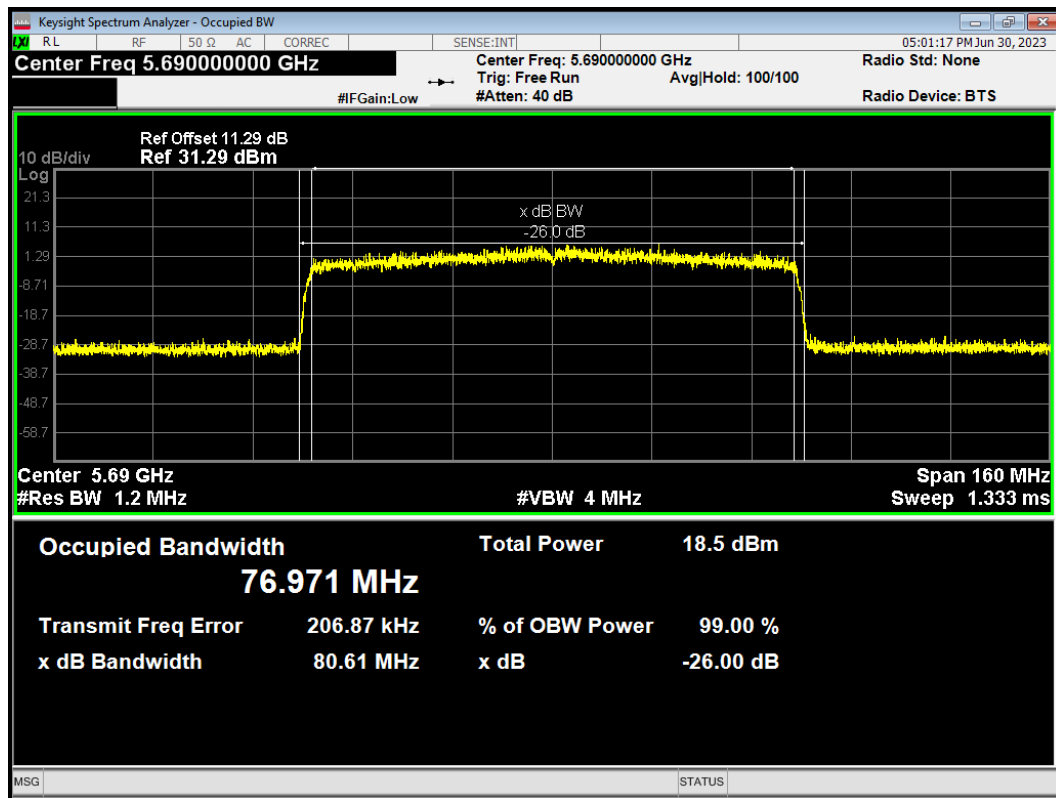
OBW 802.11ax(HE40) 5670MHz



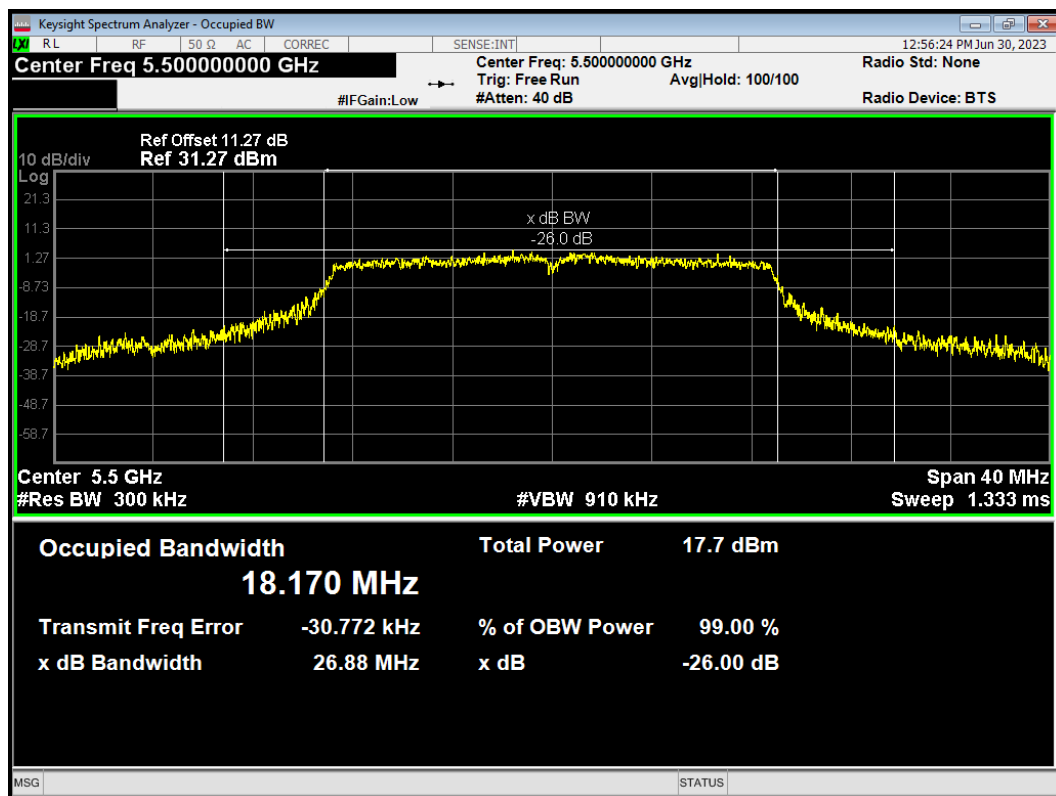
OBW 802.11ax(HE40) 5710MHz



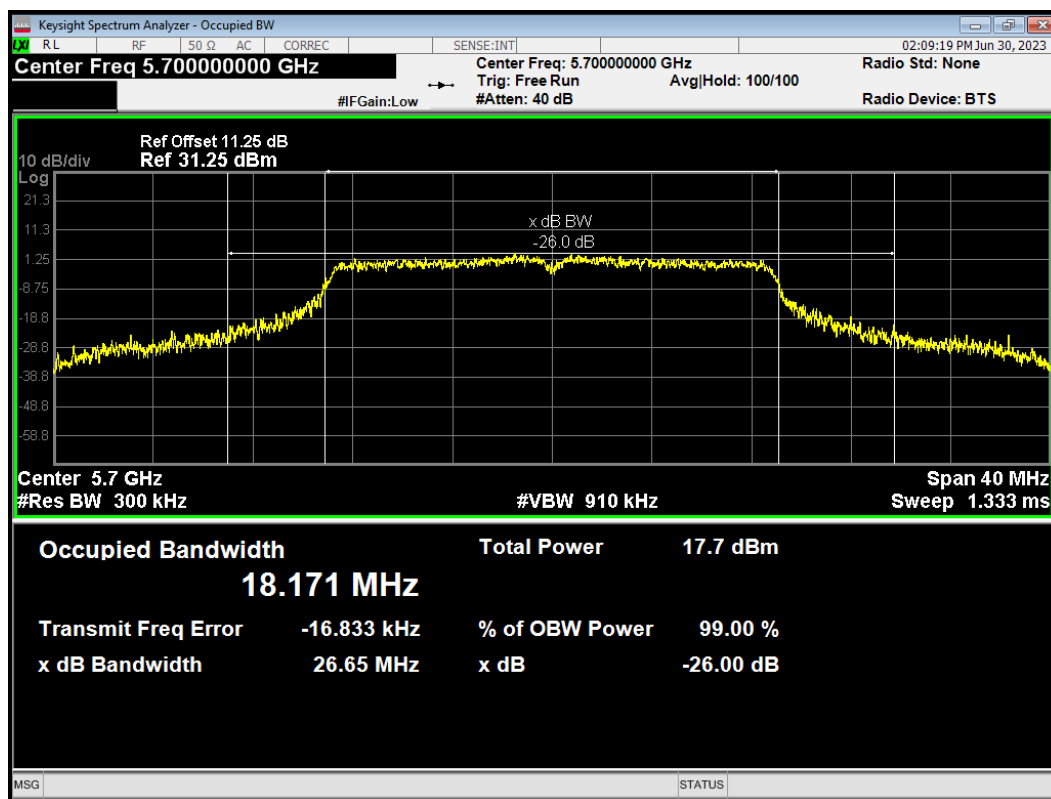
OBW 802.11ax(HE80) 5690MHz



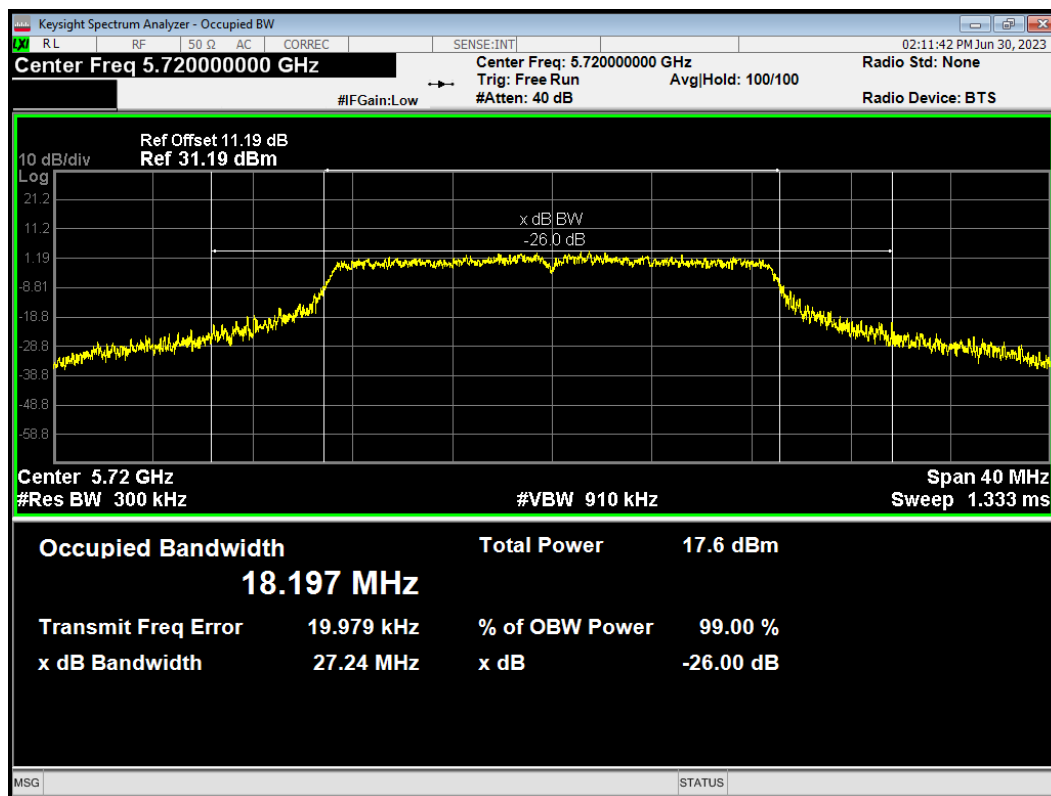
OBW 802.11n(HT20) 5500MHz



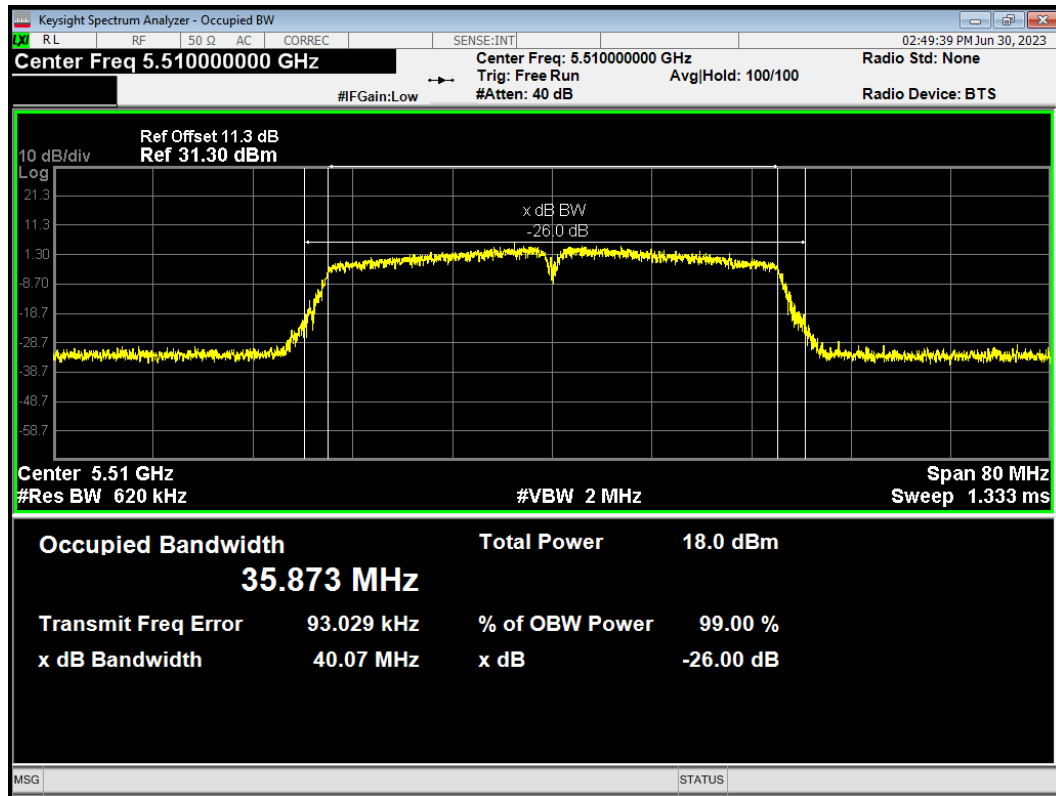
OBW 802.11n(HT20) 5700MHz



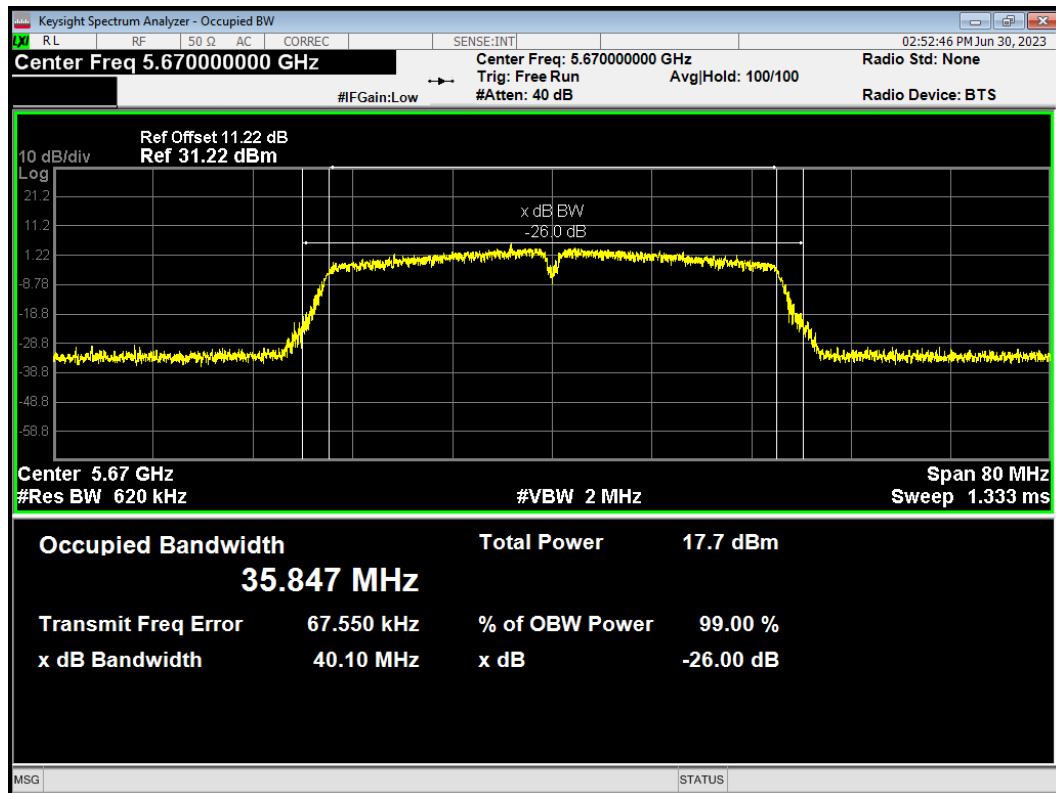
OBW 802.11n(HT20) 5720MHz



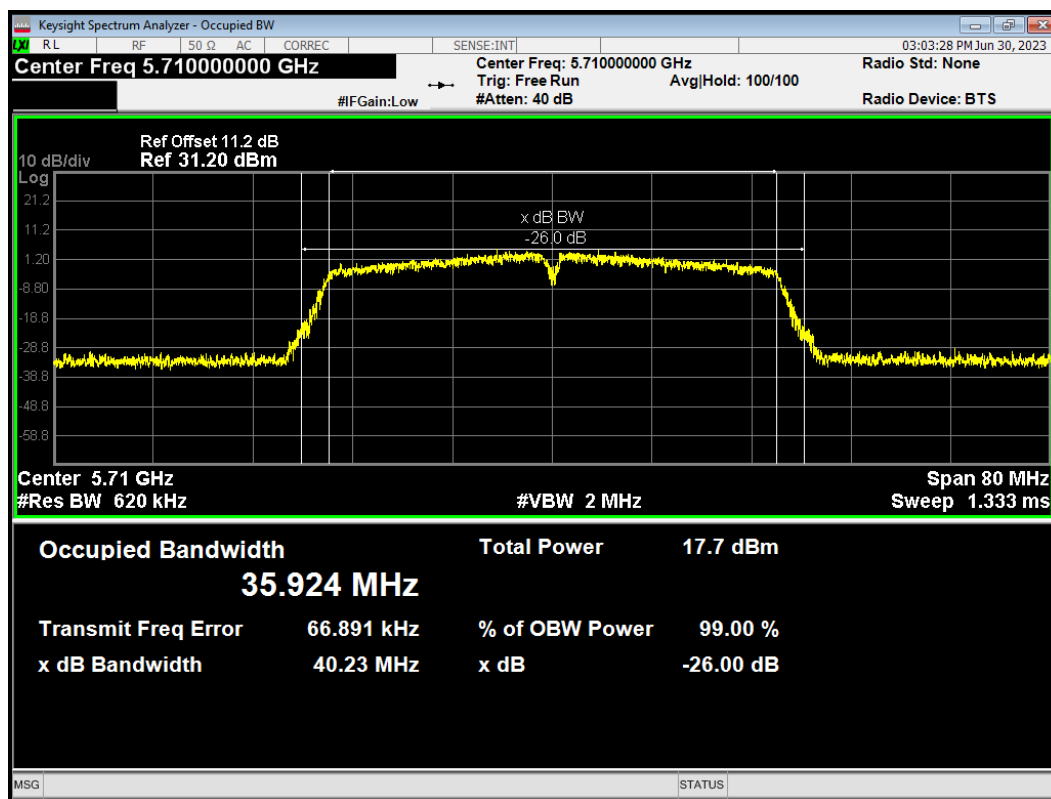
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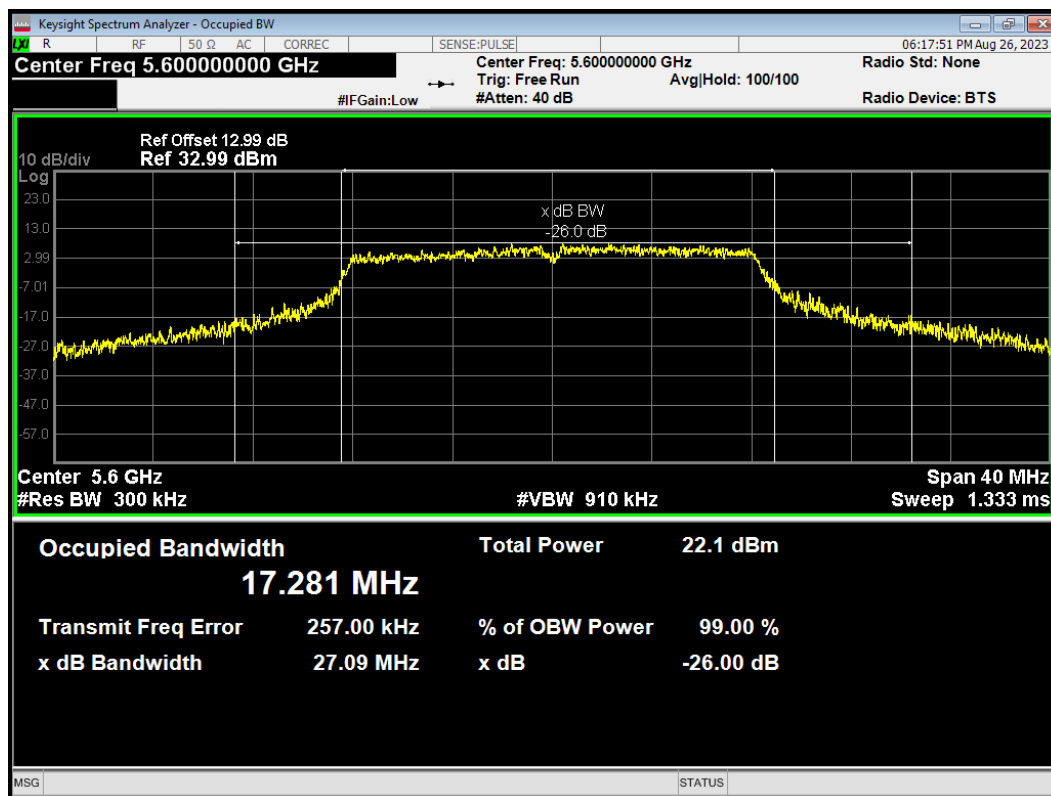
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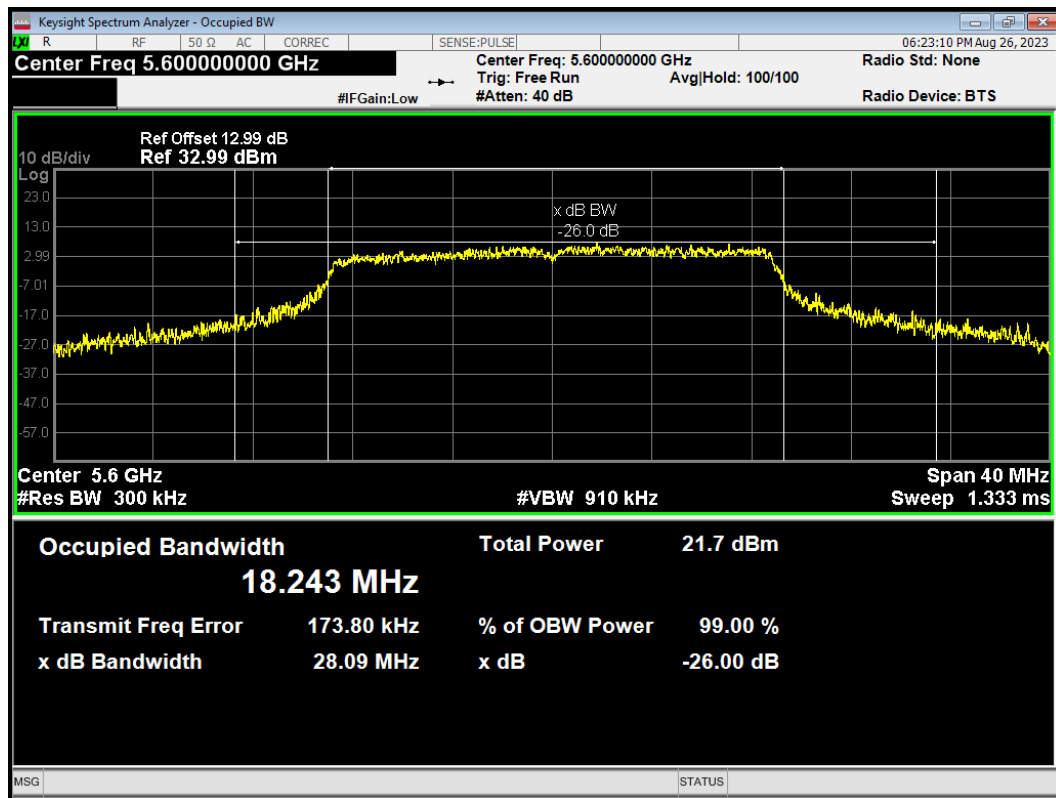
OBW 802.11n(HT40) 5710MHz



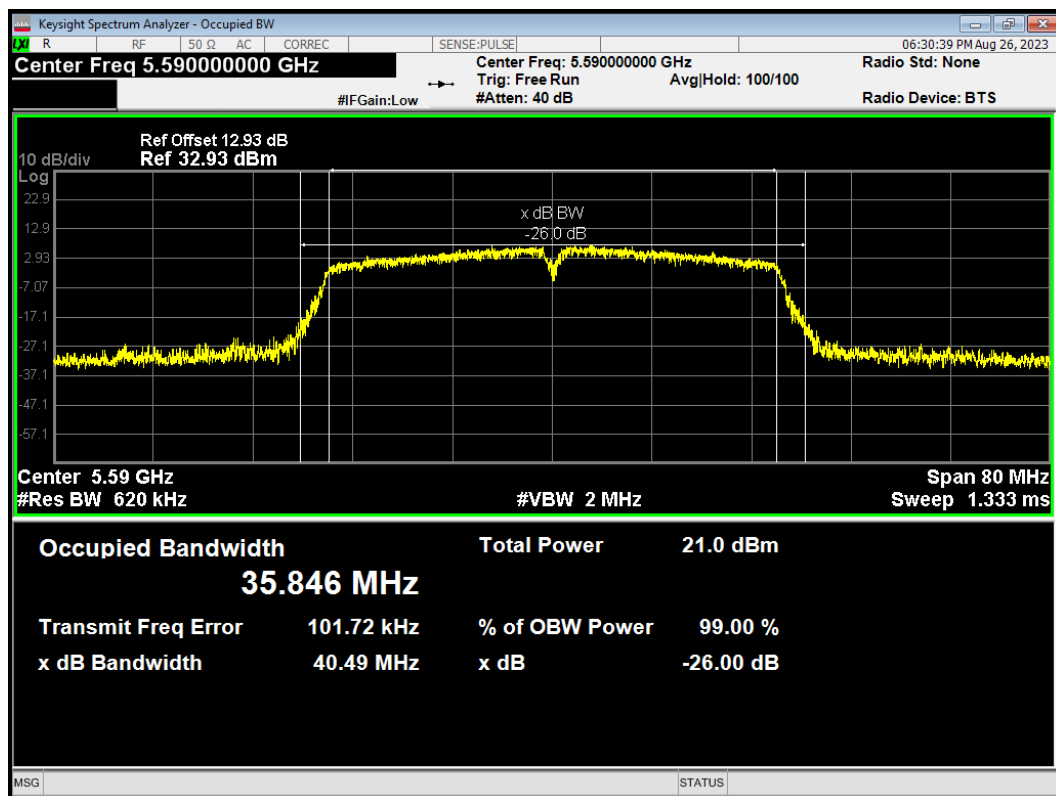
OBW 802.11a 5600MHz



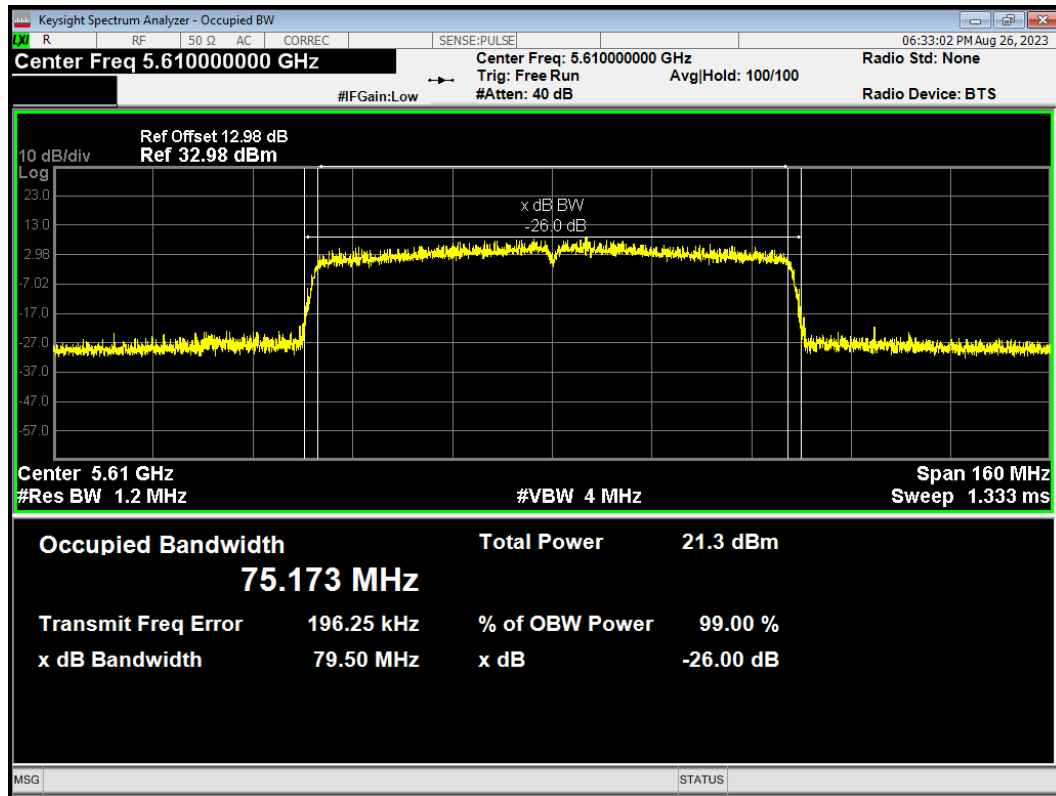
OBW 802.11ac(VHT20) 5600MHz



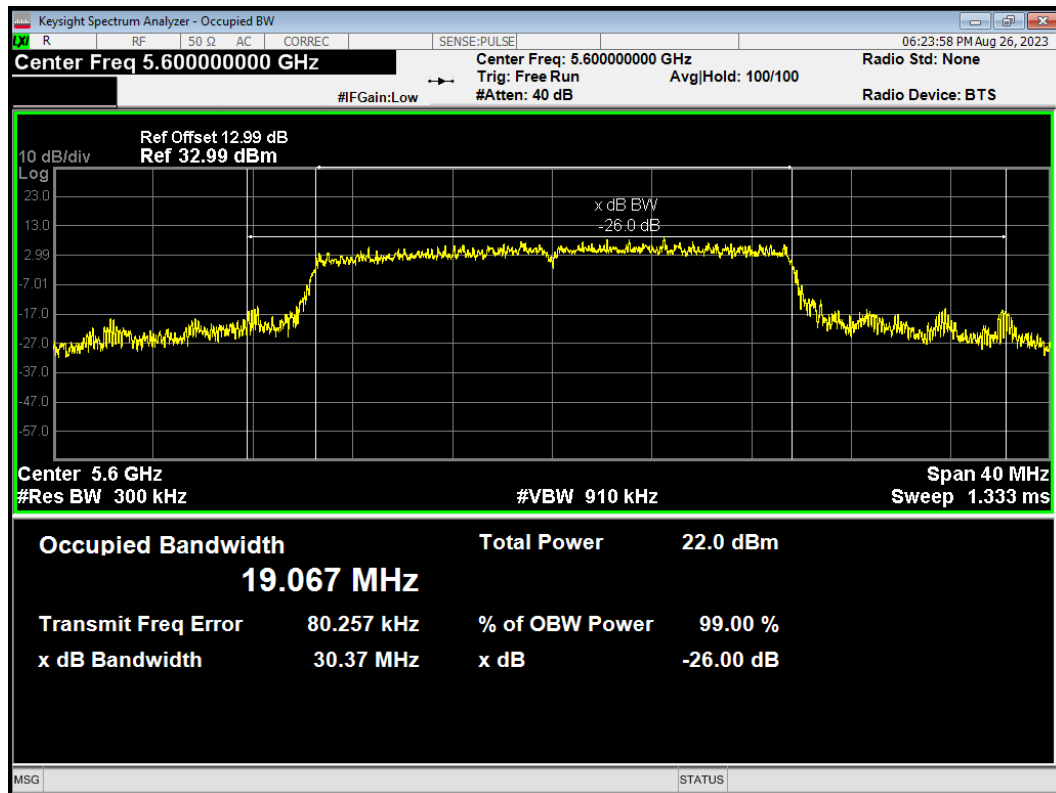
OBW 802.11ac(VHT40) 5590MHz



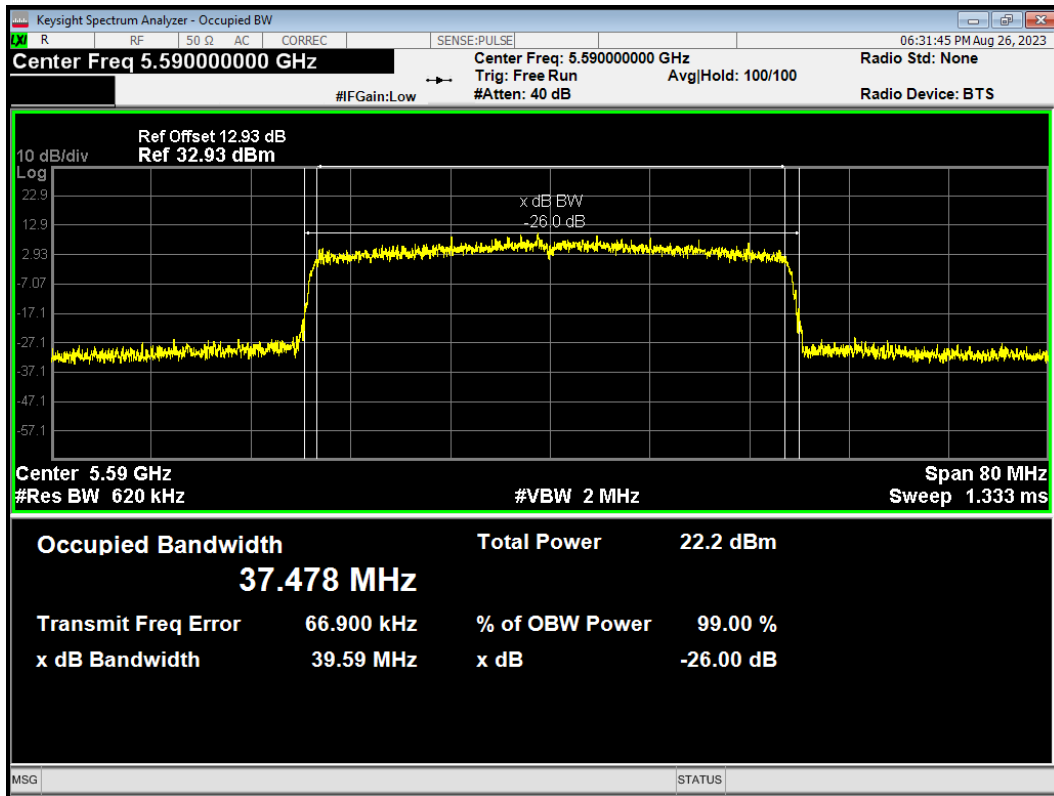
OBW 802.11ac(VHT80) 5610MHz



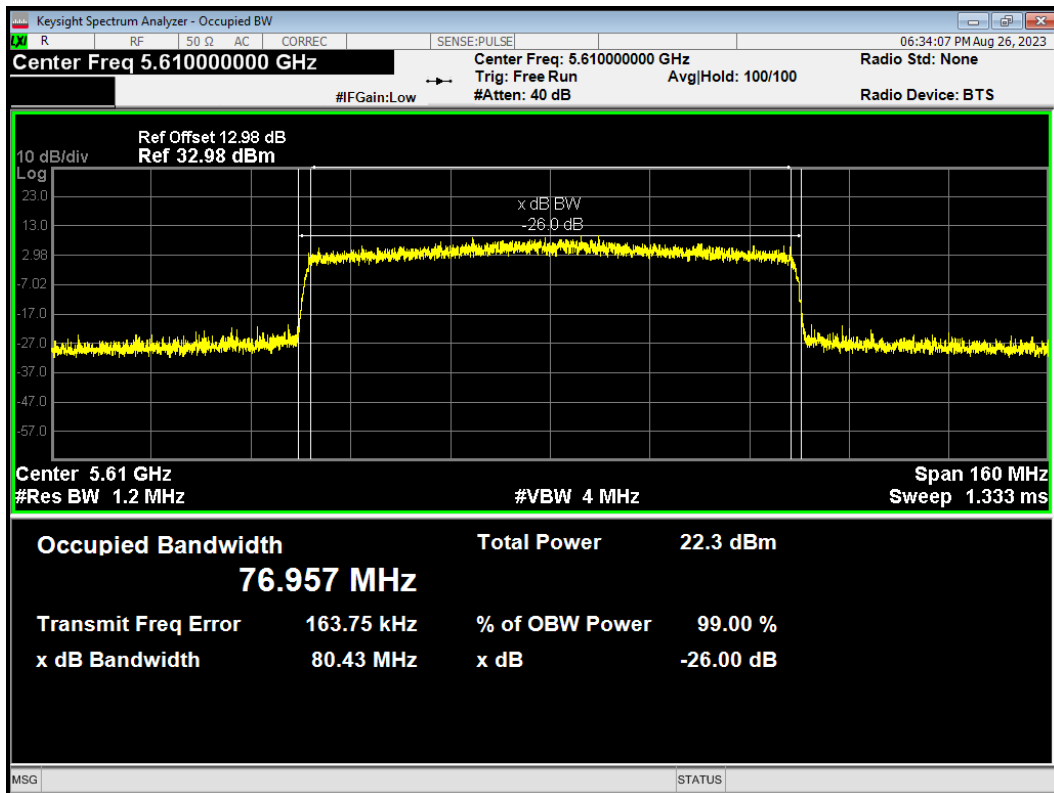
OBW 802.11ax(HE20) 5600MHz



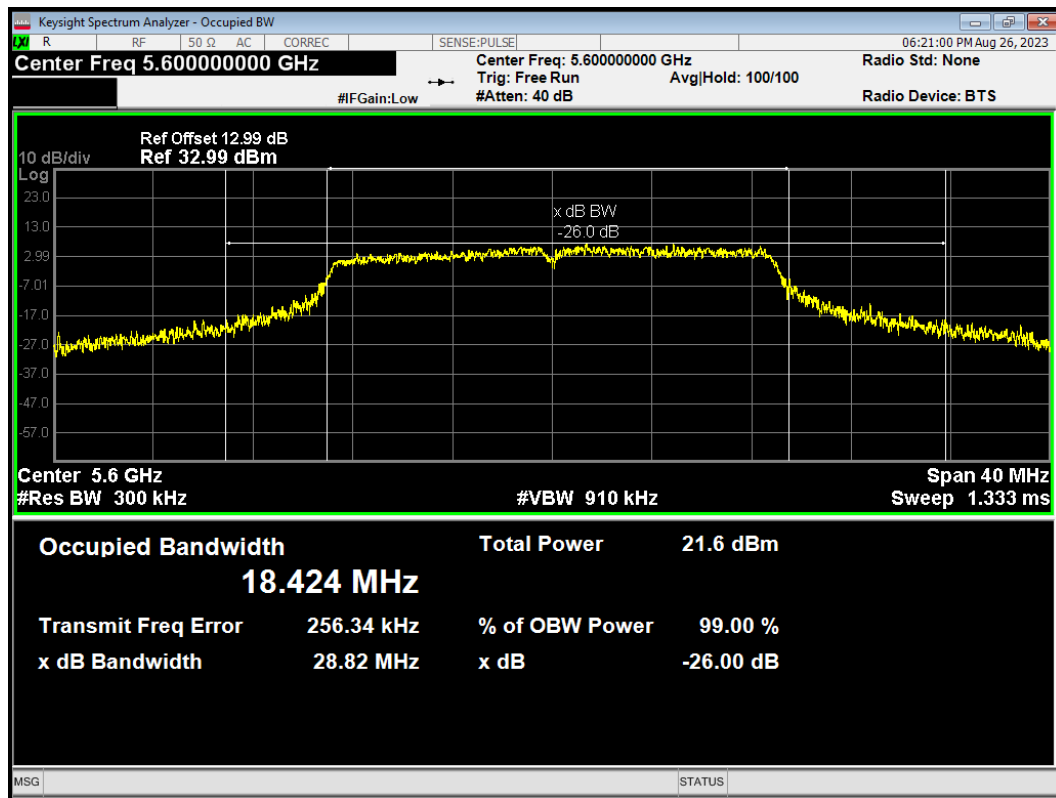
OBW 802.11ax(HE40) 5590MHz



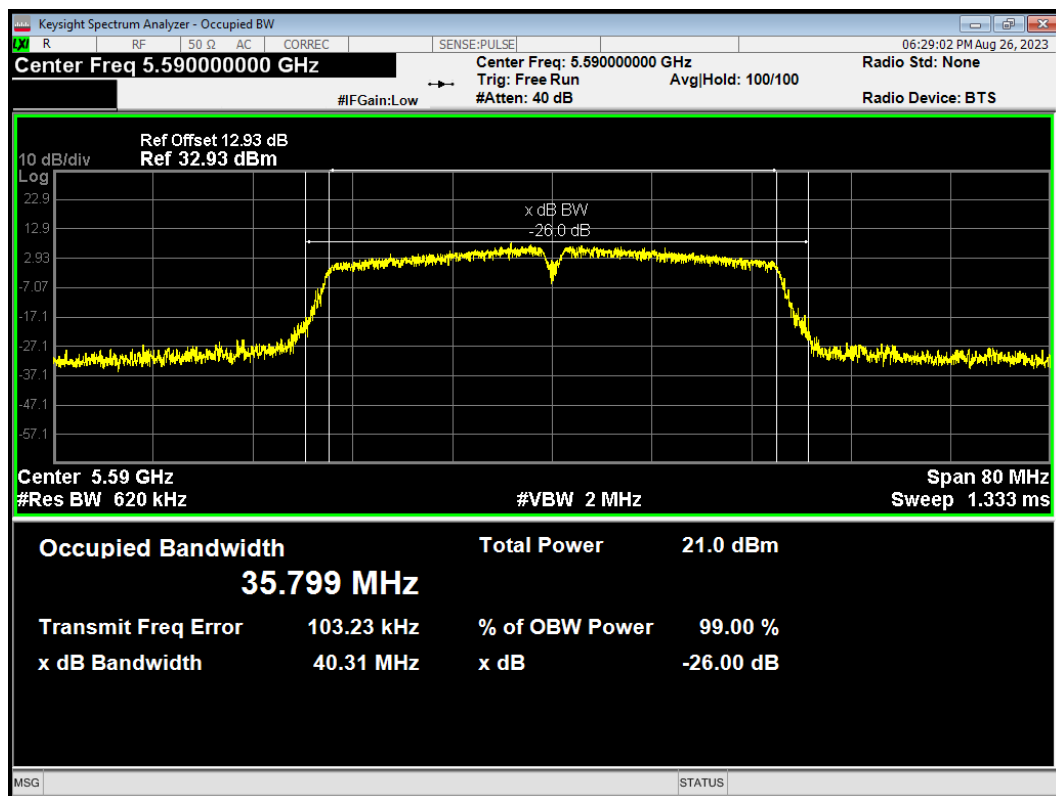
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OBW 802.11n(HT20) 5600MHz

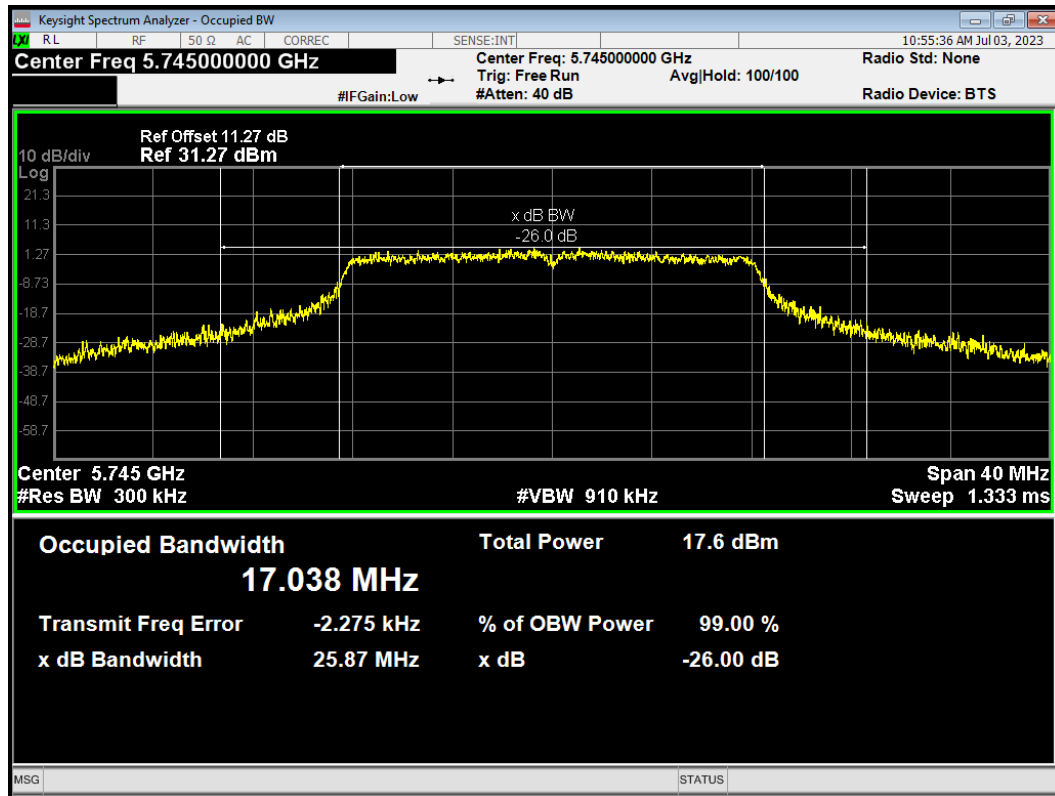


OBW 802.11n(HT40) 5590MHz

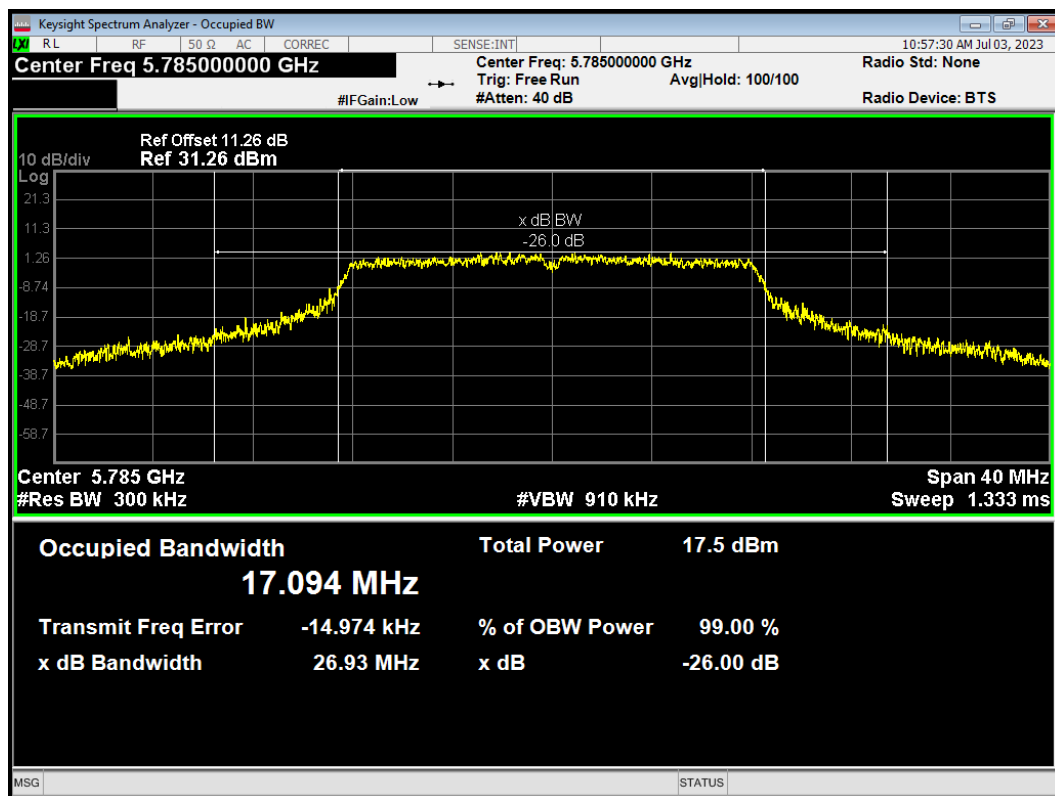


U-NII-3

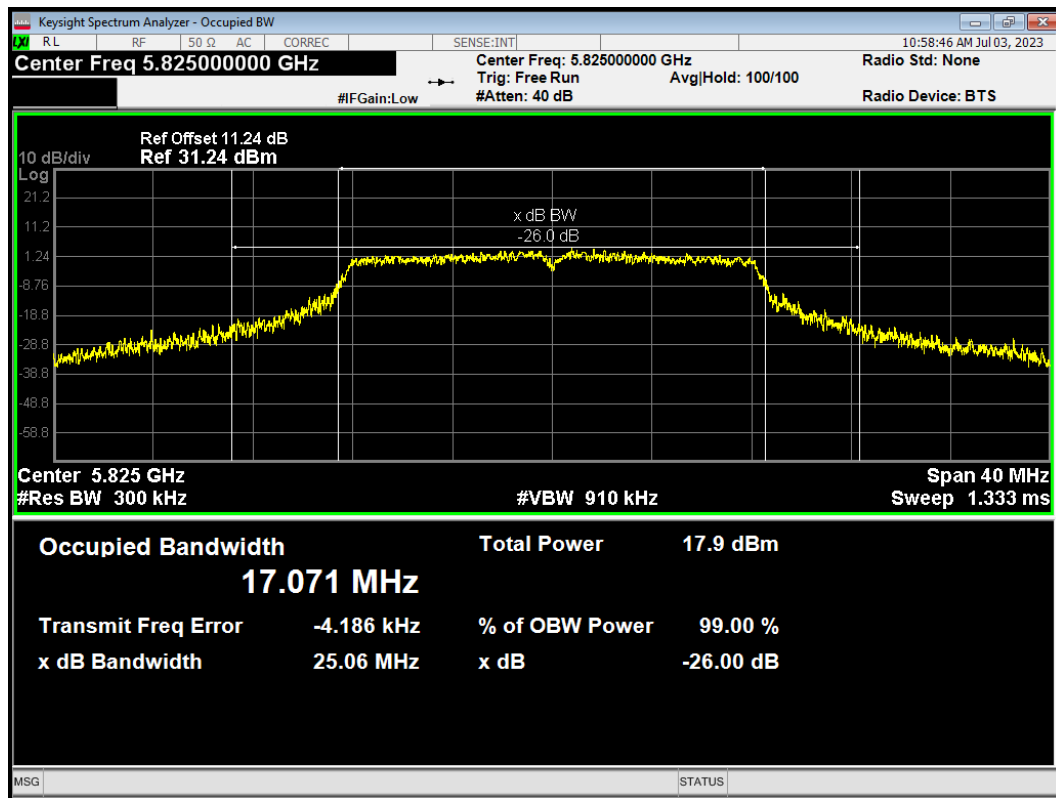
OBW 802.11a 5745MHz



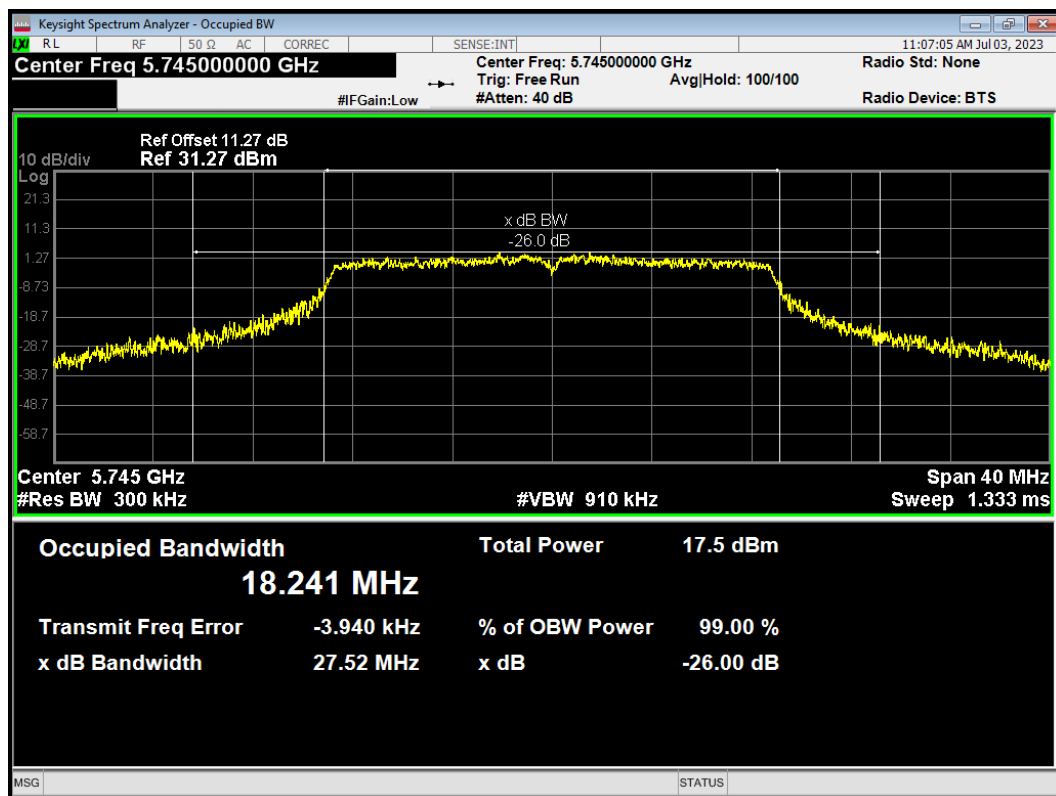
OBW 802.11a 5785MHz



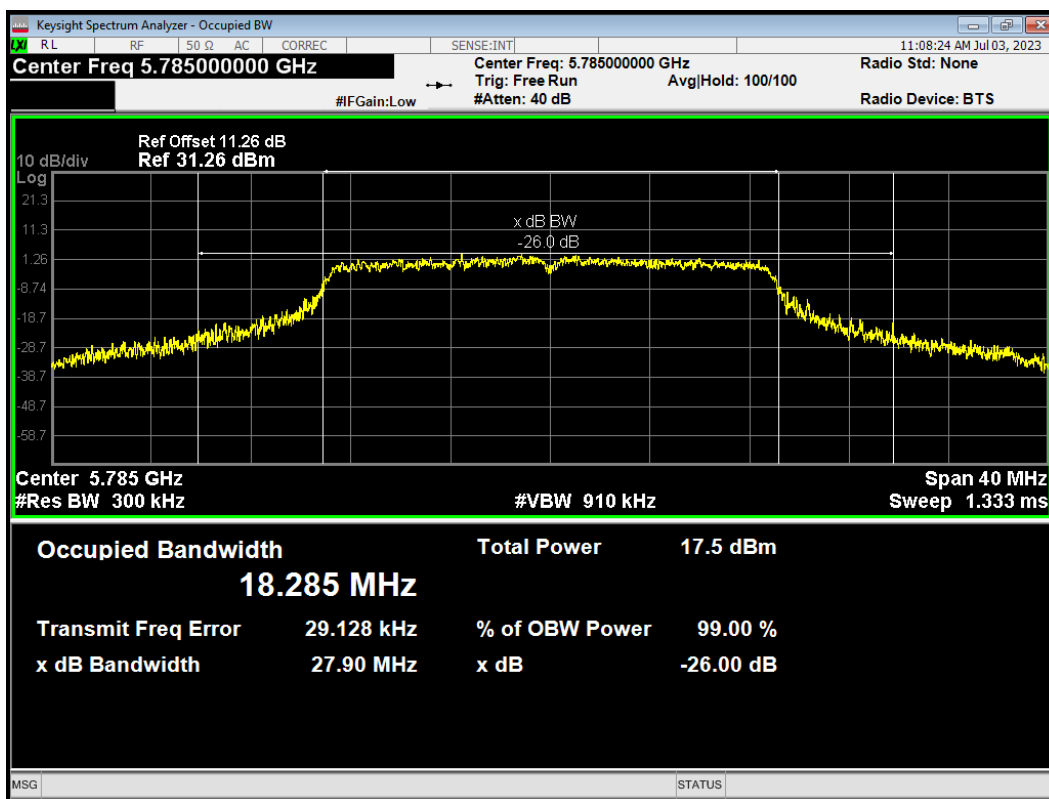
OBW 802.11a 5825MHz



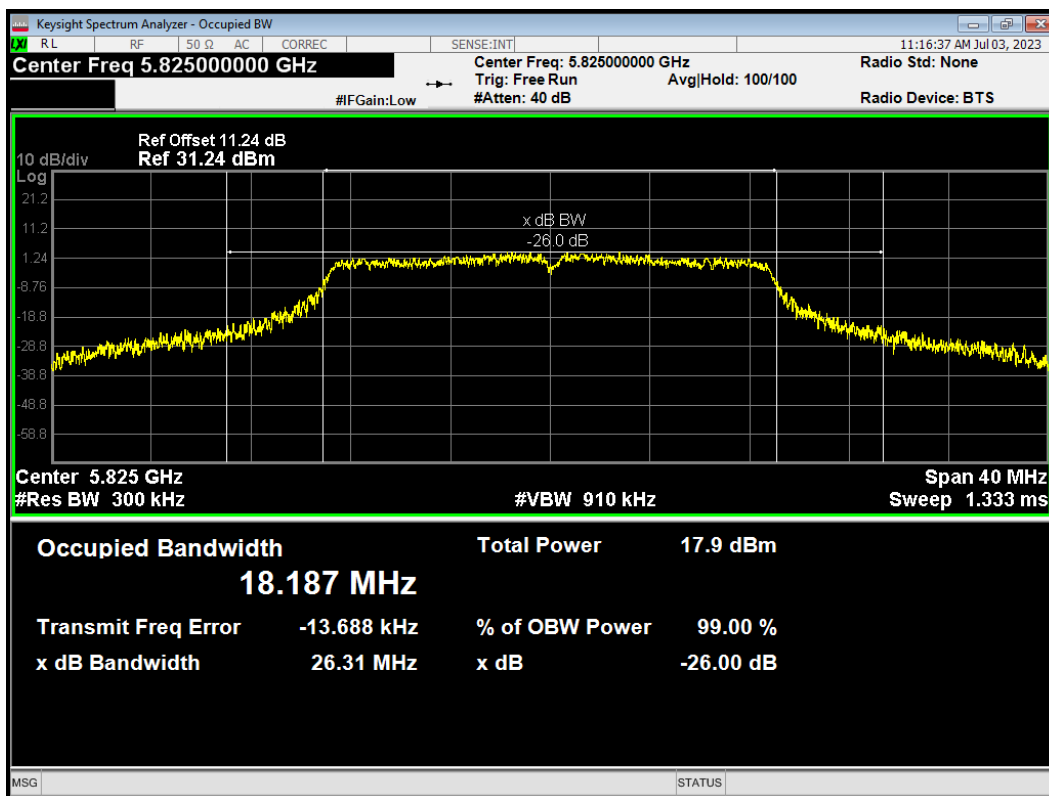
OBW 802.11ac(VHT20) 5745MHz



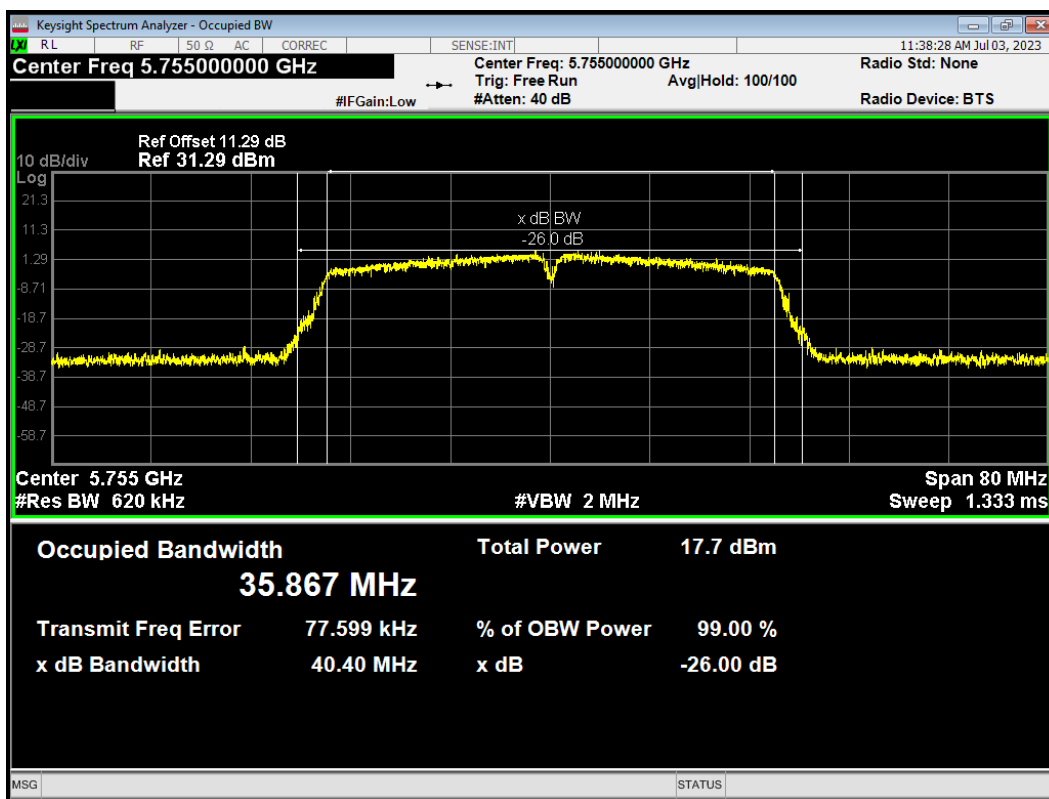
OBW 802.11ac(VHT20) 5785MHz



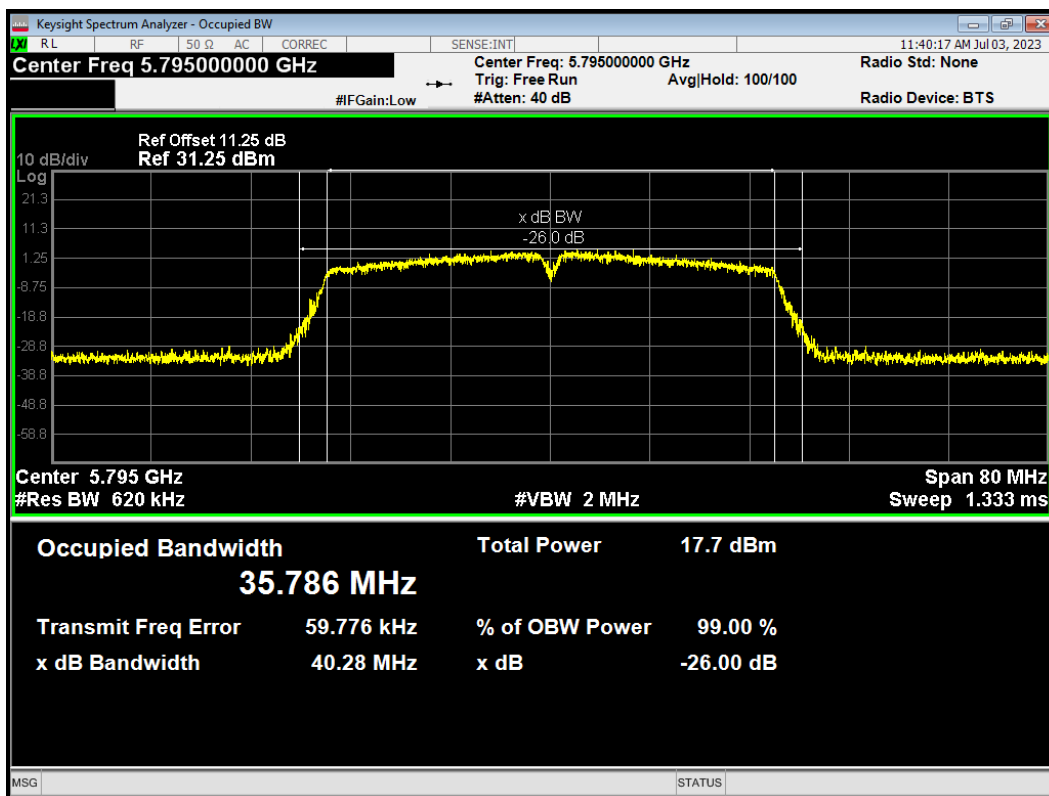
OBW 802.11ac(VHT20) 5825MHz



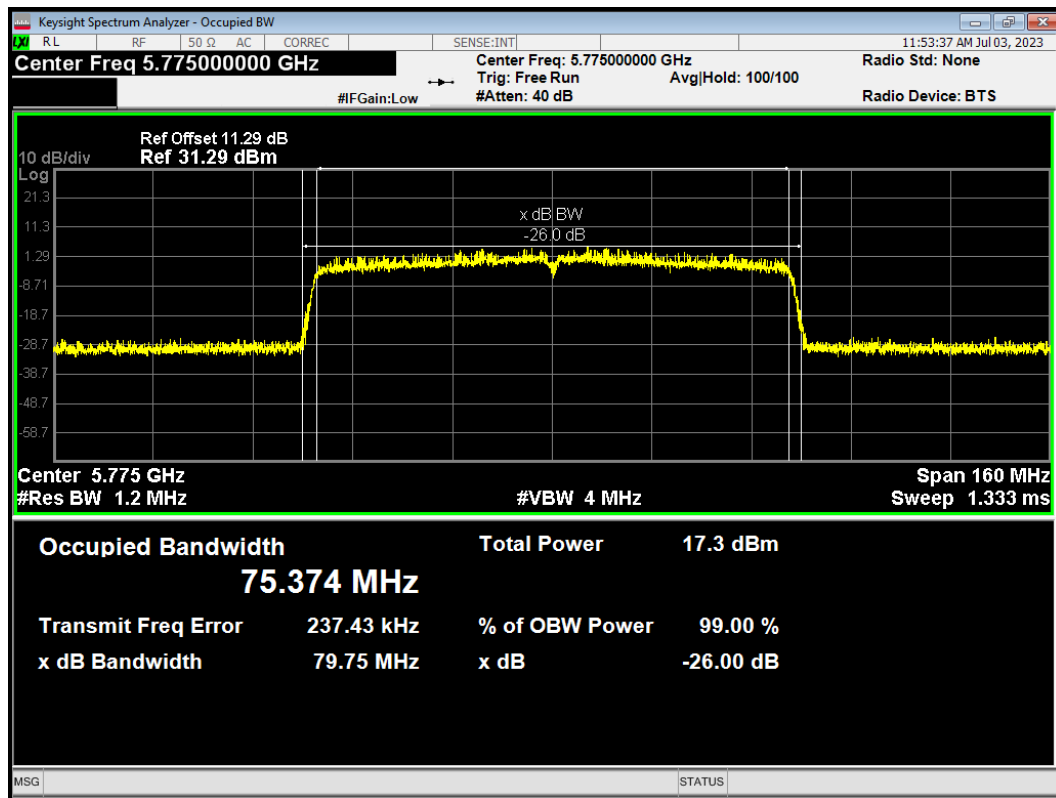
OBW 802.11ac(VHT40) 5755MHz



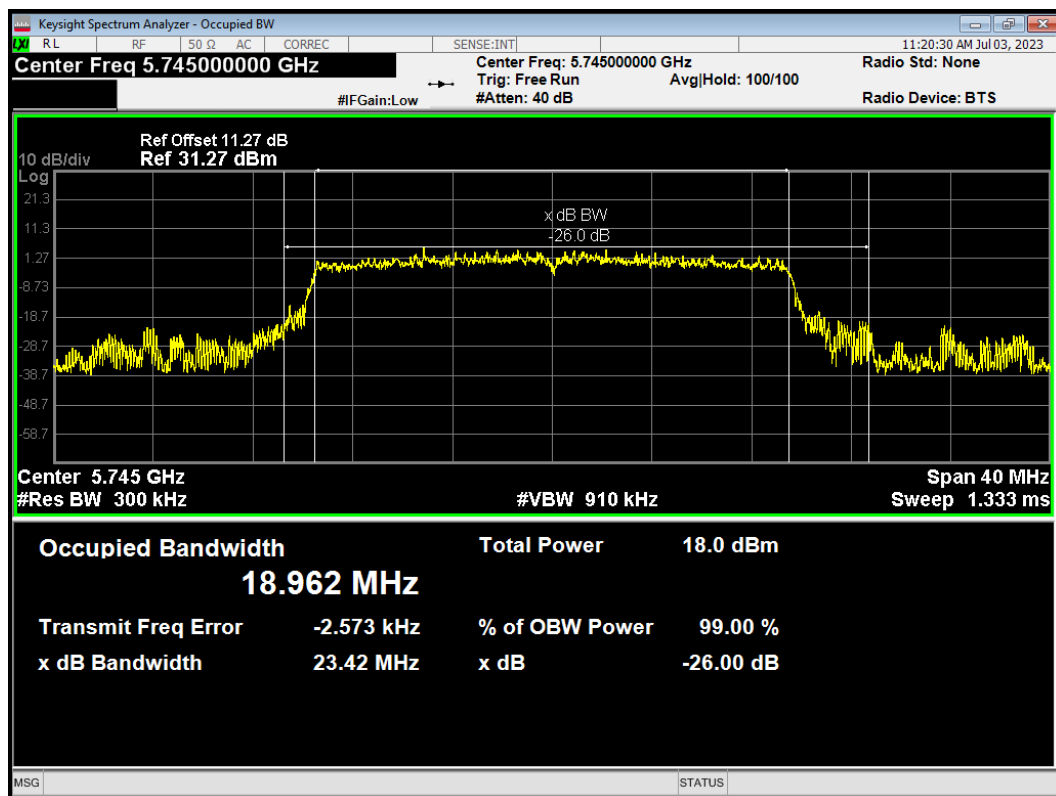
OBW 802.11ac(VHT40) 5795MHz



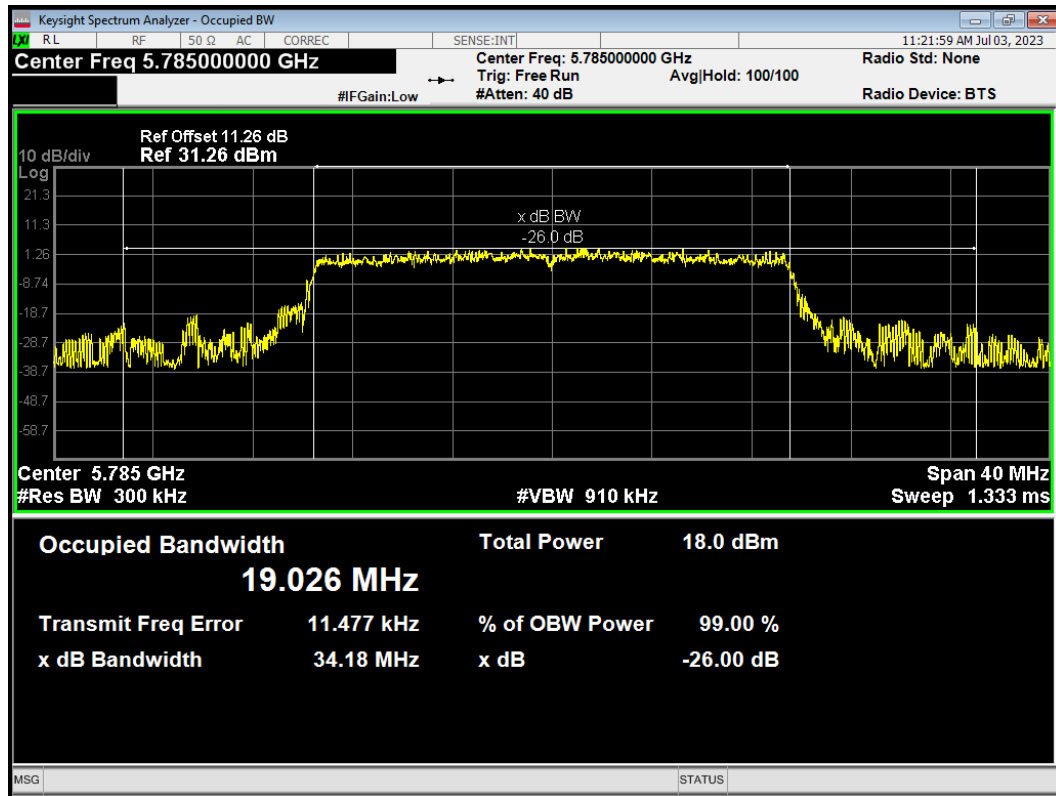
OBW 802.11ac(VHT80) 5775MHz



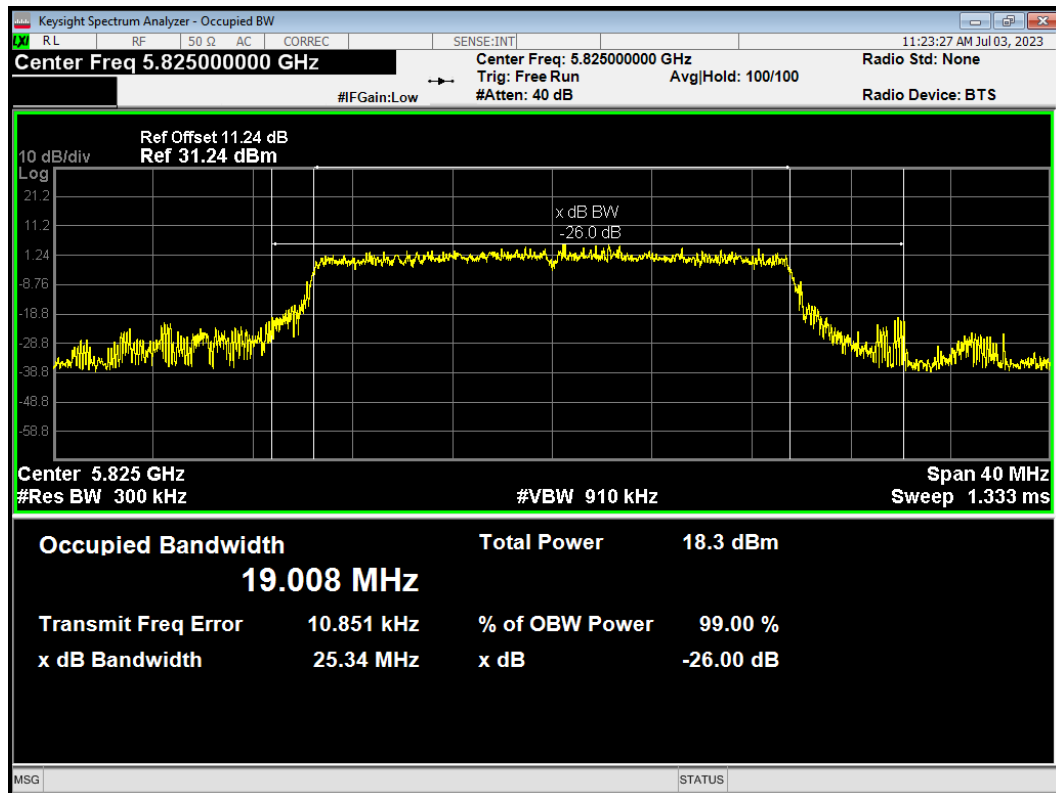
OBW 802.11ax(HE20) 5745MHz



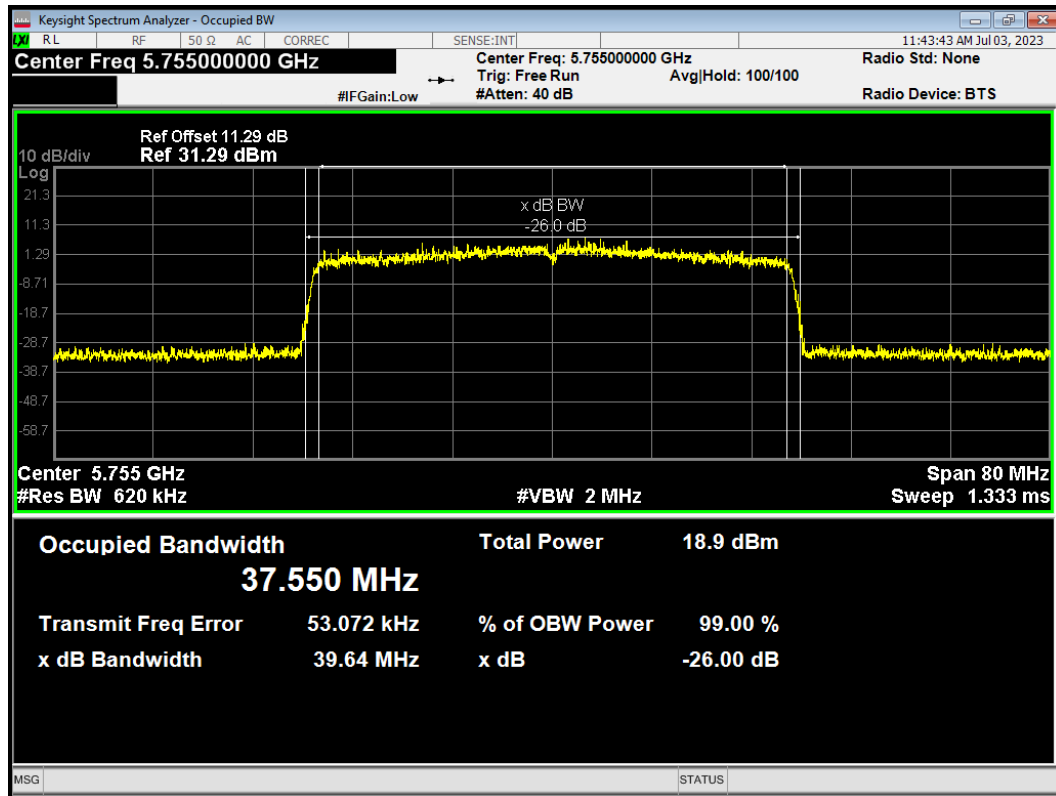
OBW 802.11ax(HE20) 5785MHz



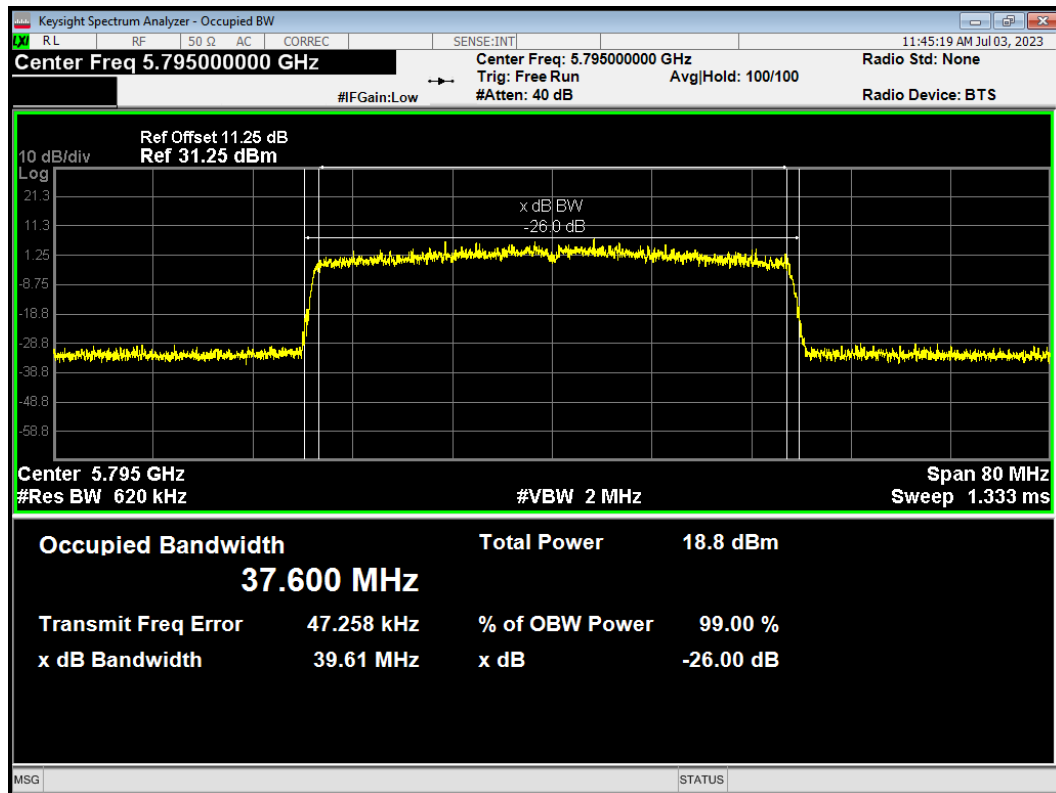
OBW 802.11ax(HE20) 5825MHz



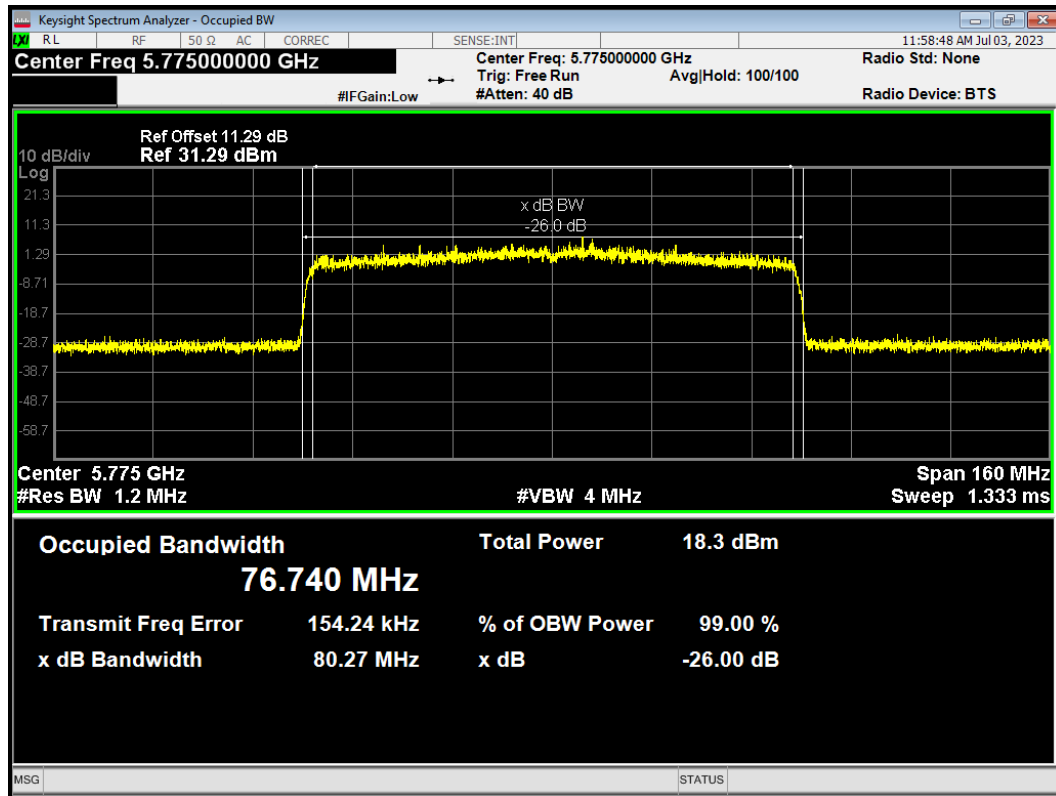
OBW 802.11ax(HE40) 5755MHz



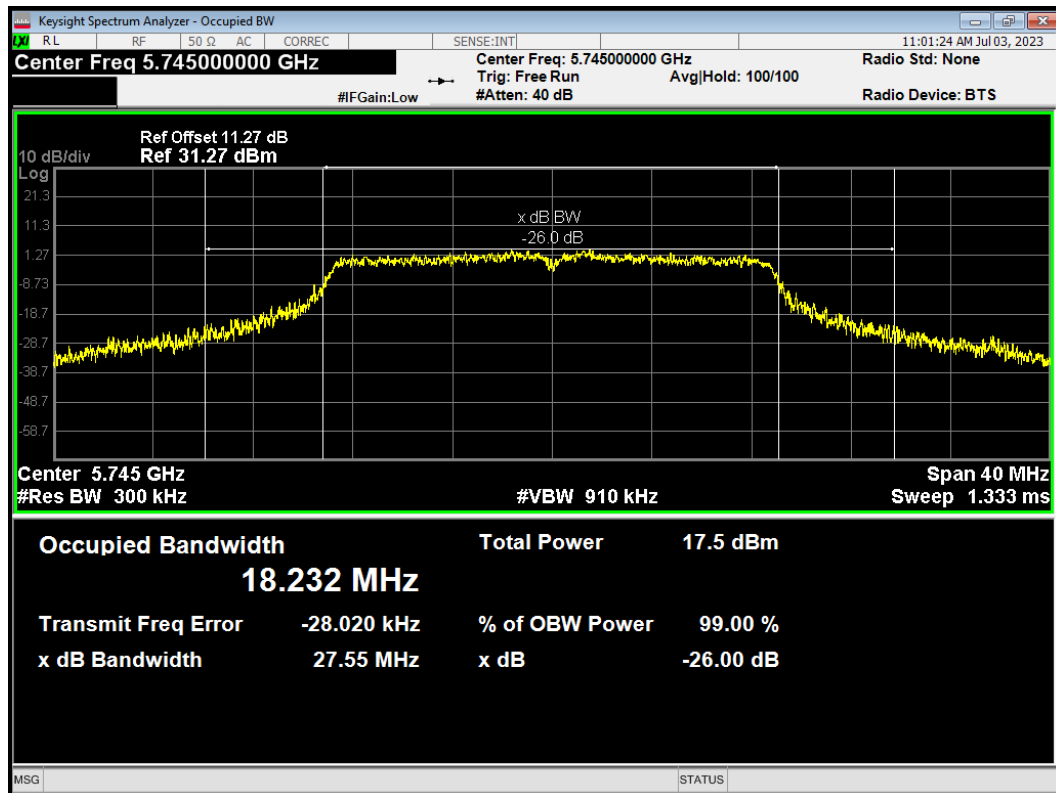
OBW 802.11ax(HE40) 5795MHz



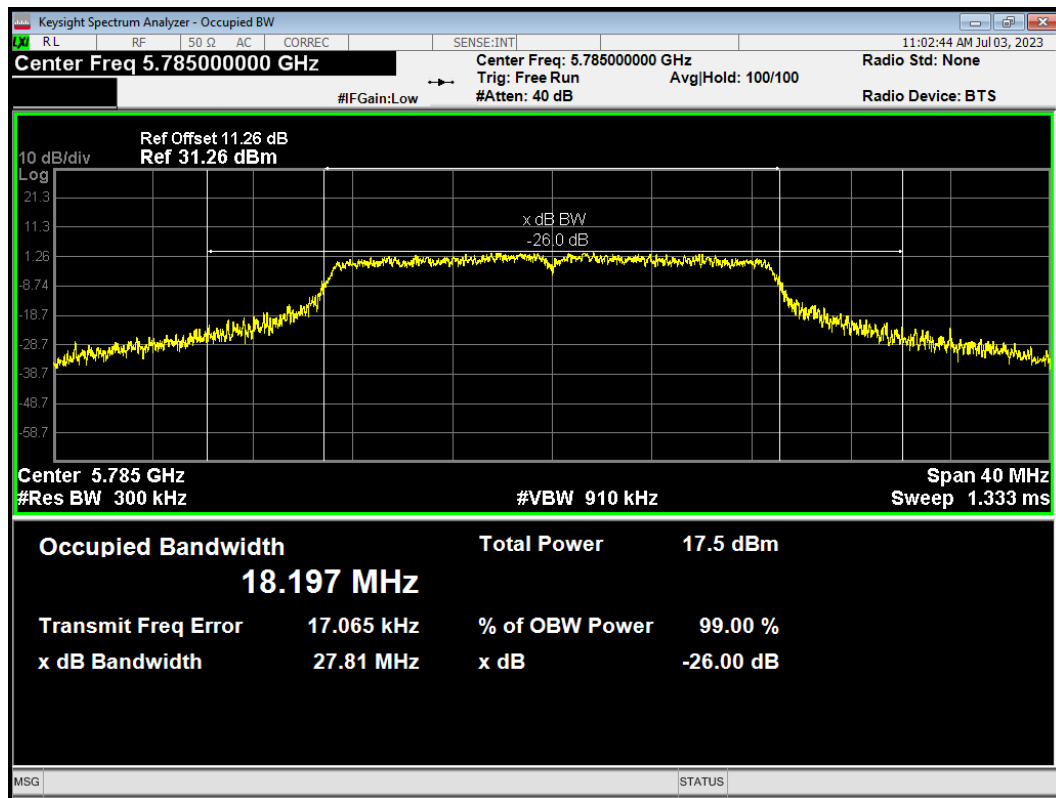
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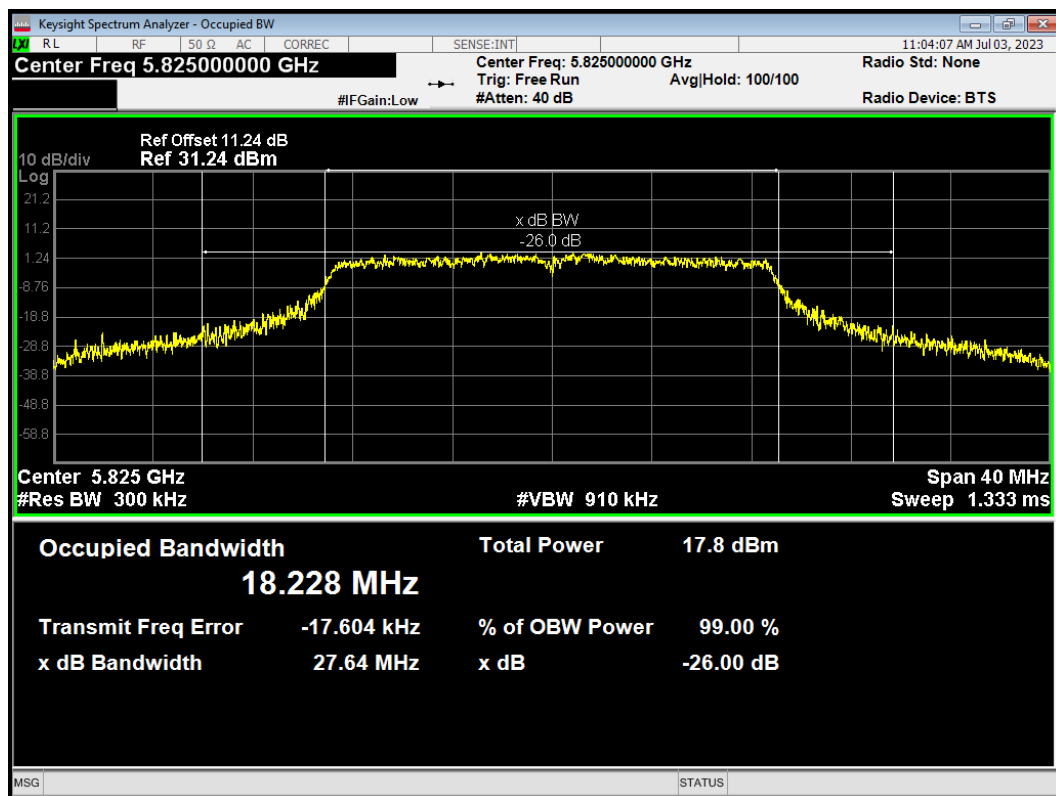
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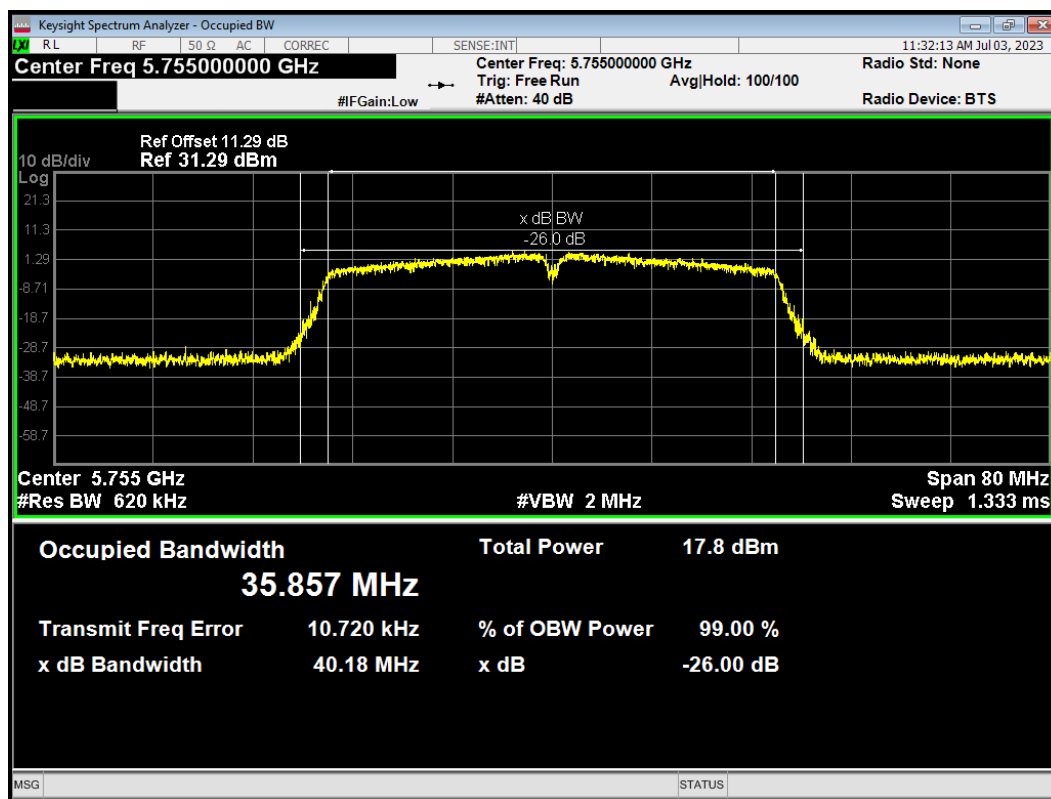
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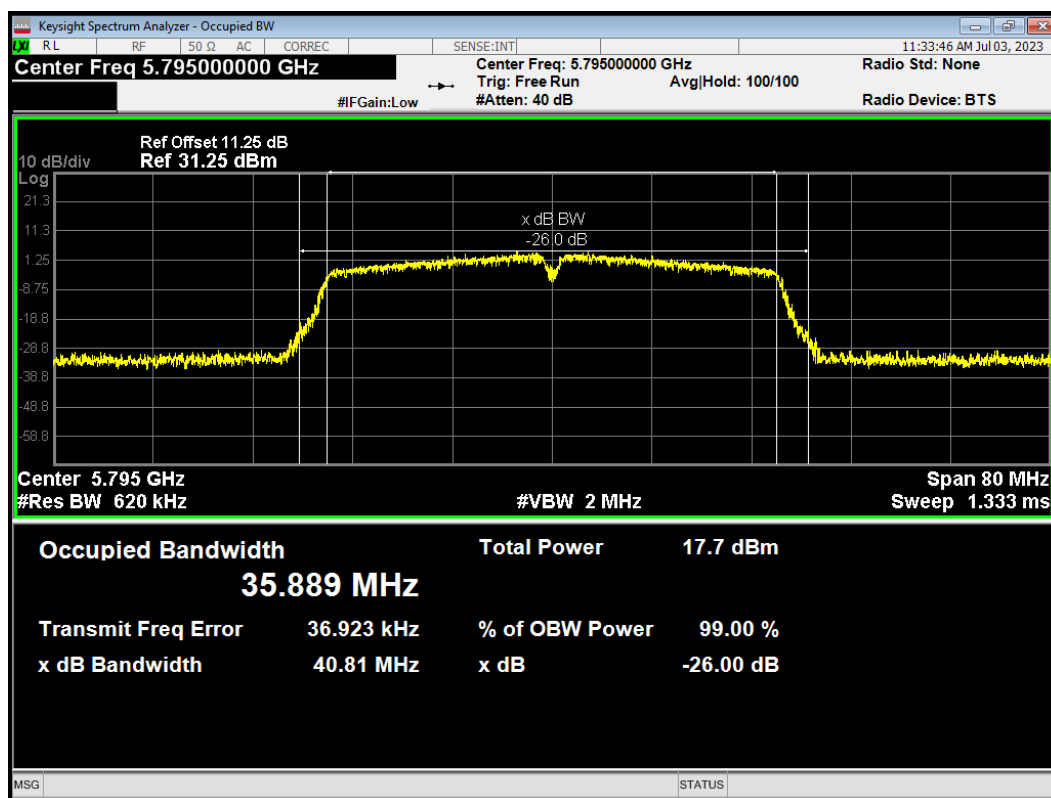
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OBW 802.11n(HT40) 5755MHz



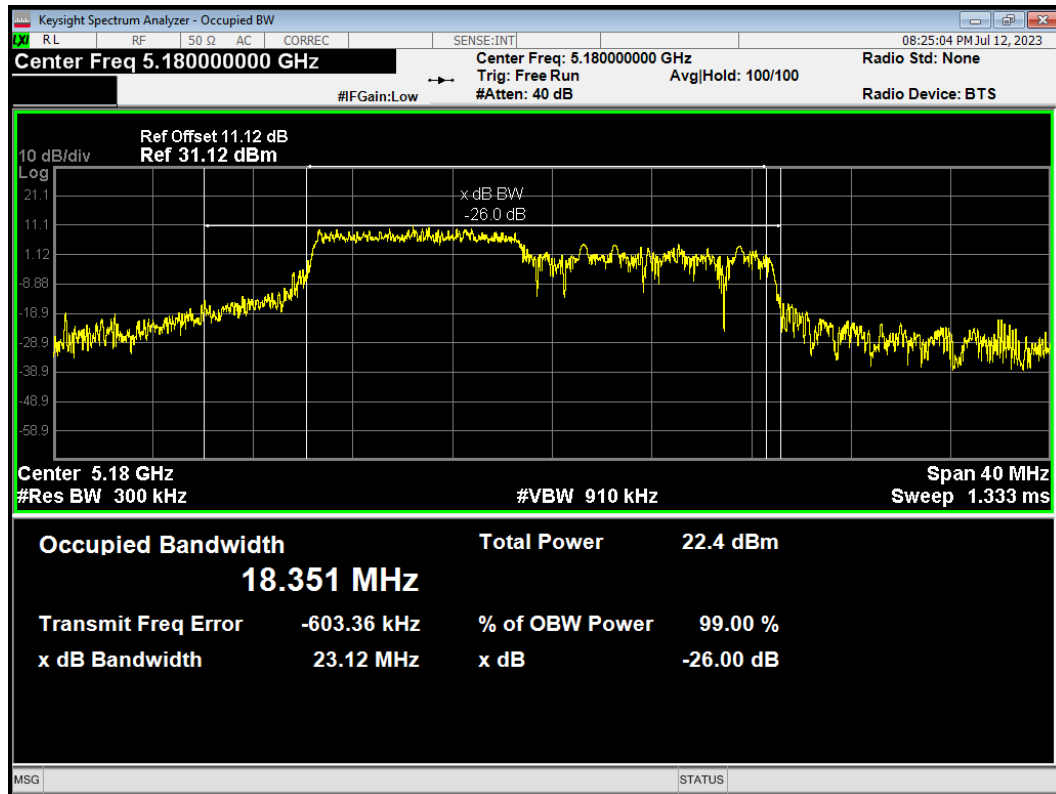
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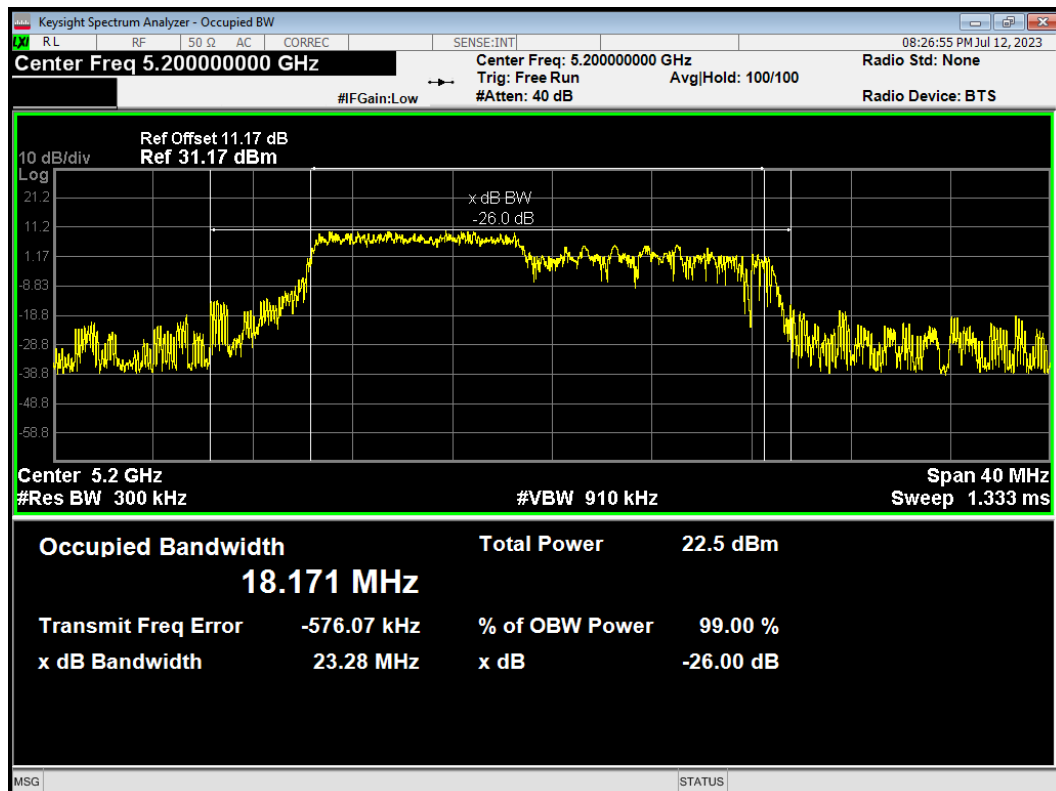
TB Mode

U-NII-1

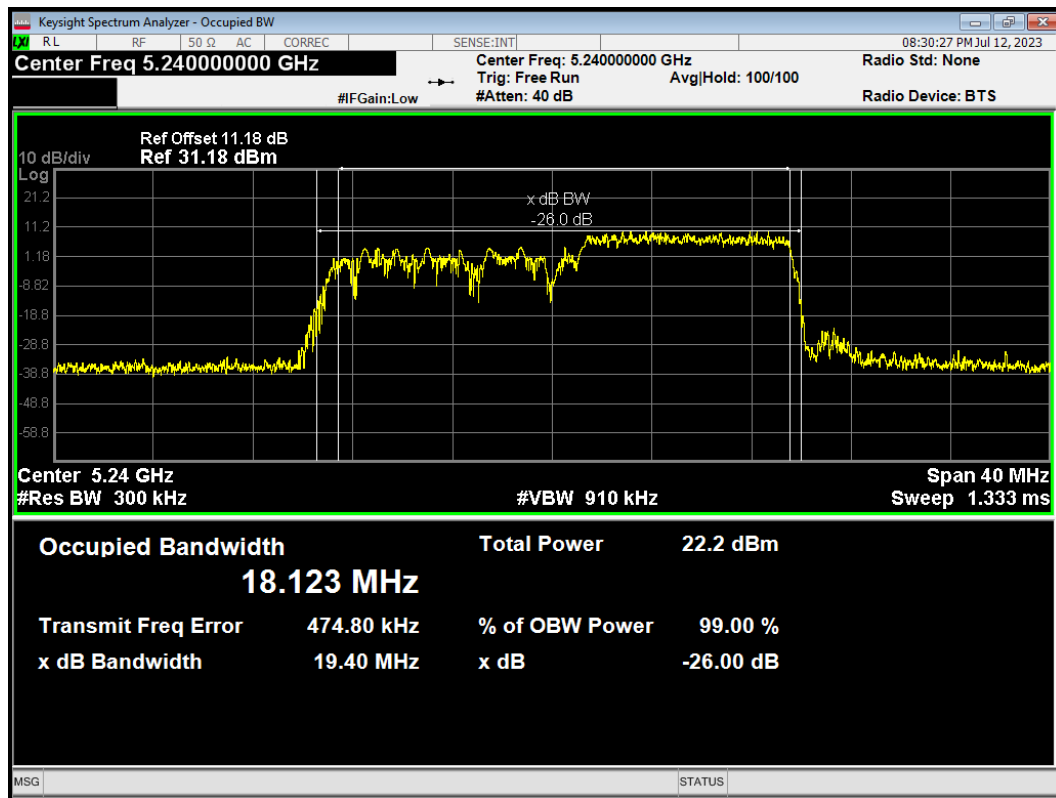
OBW 11ax(20M) RU106 IDX53 5180MHz



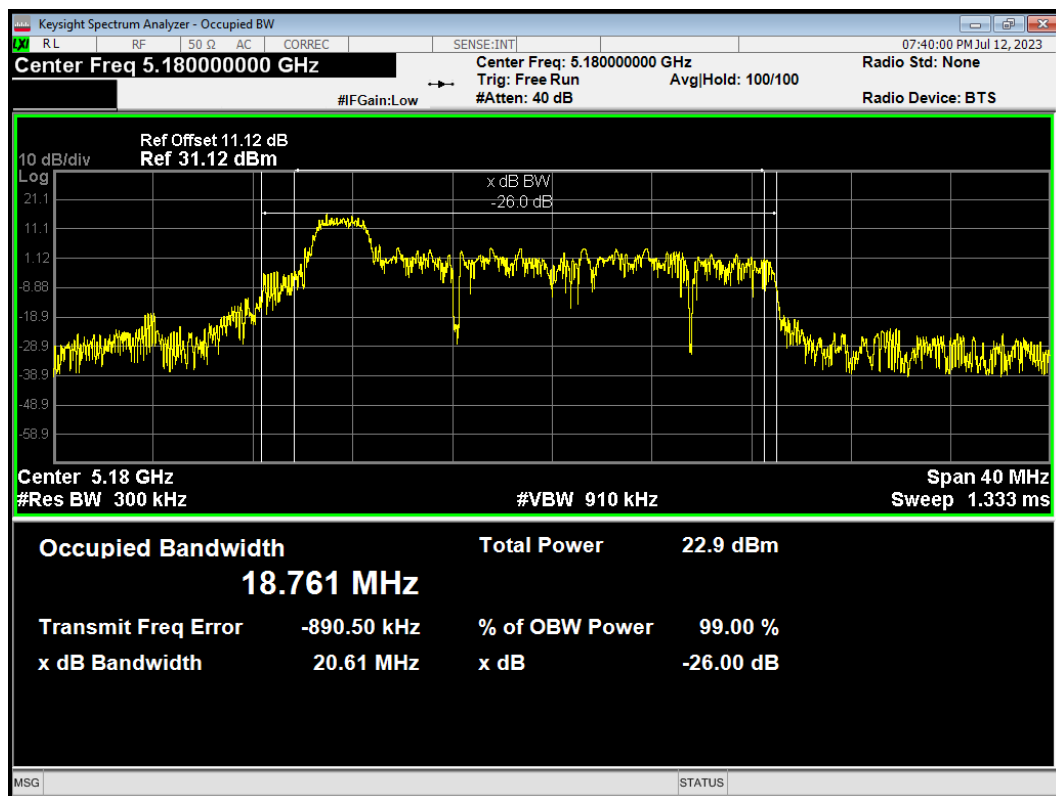
OBW 11ax(20M) RU106 IDX53 5200MHz



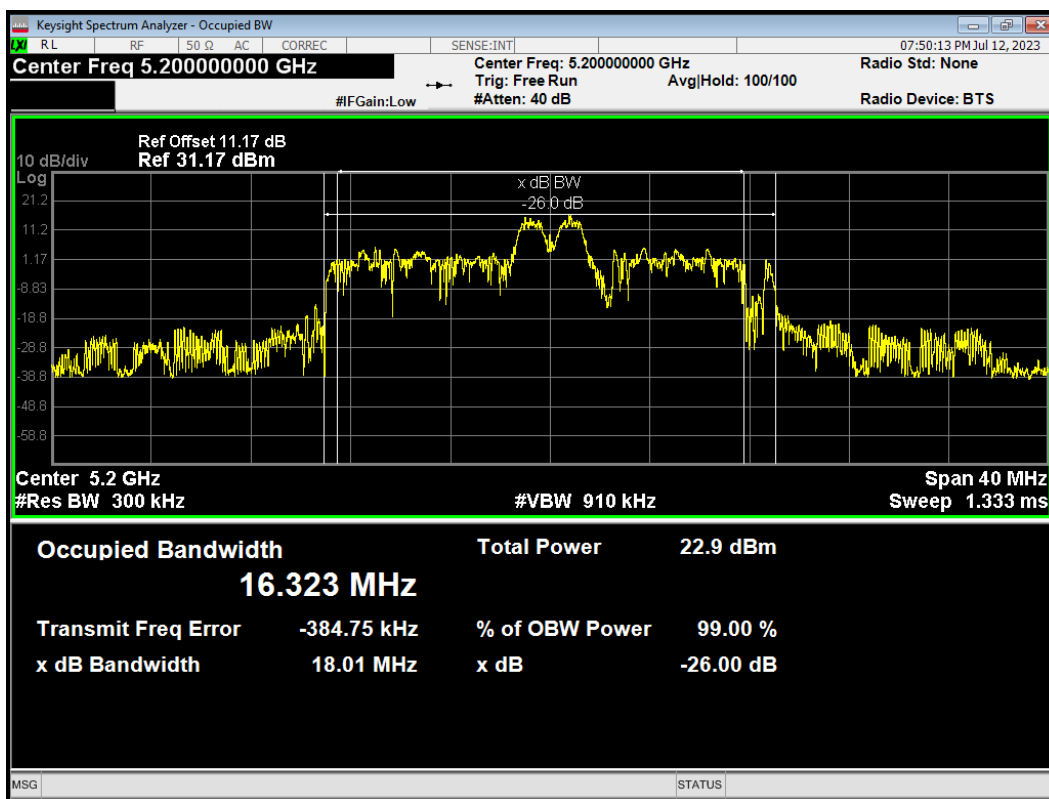
OBW 11ax(20M) RU106 IDX54 5240MHz



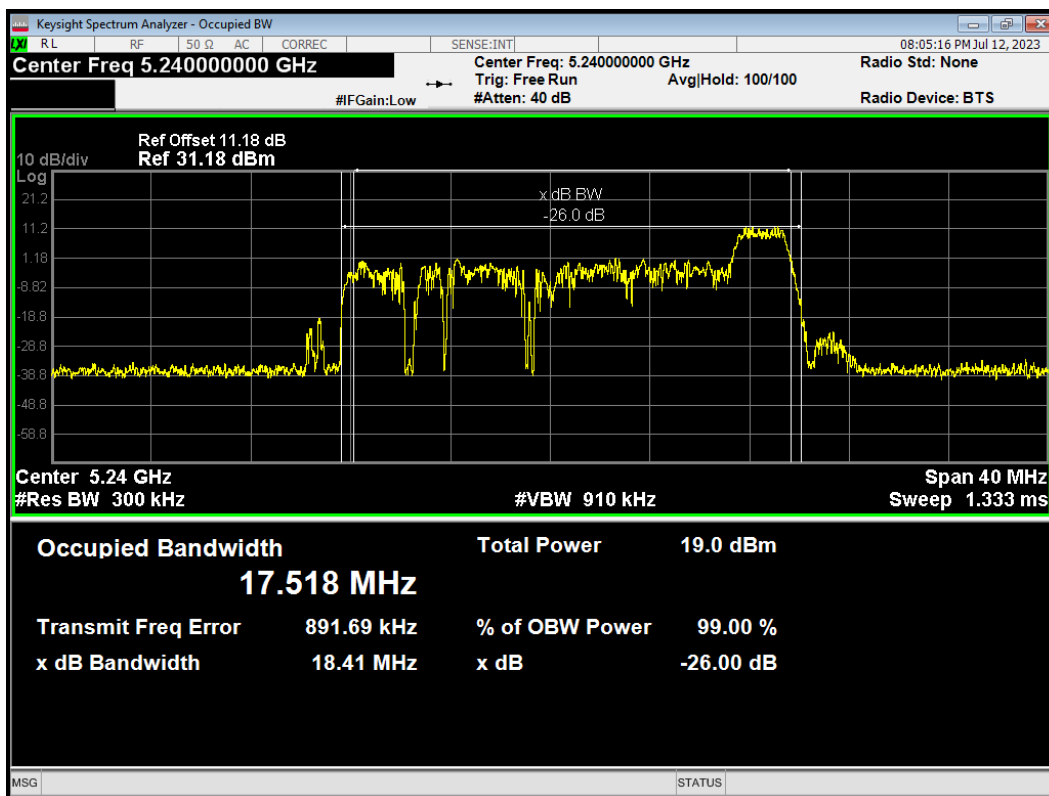
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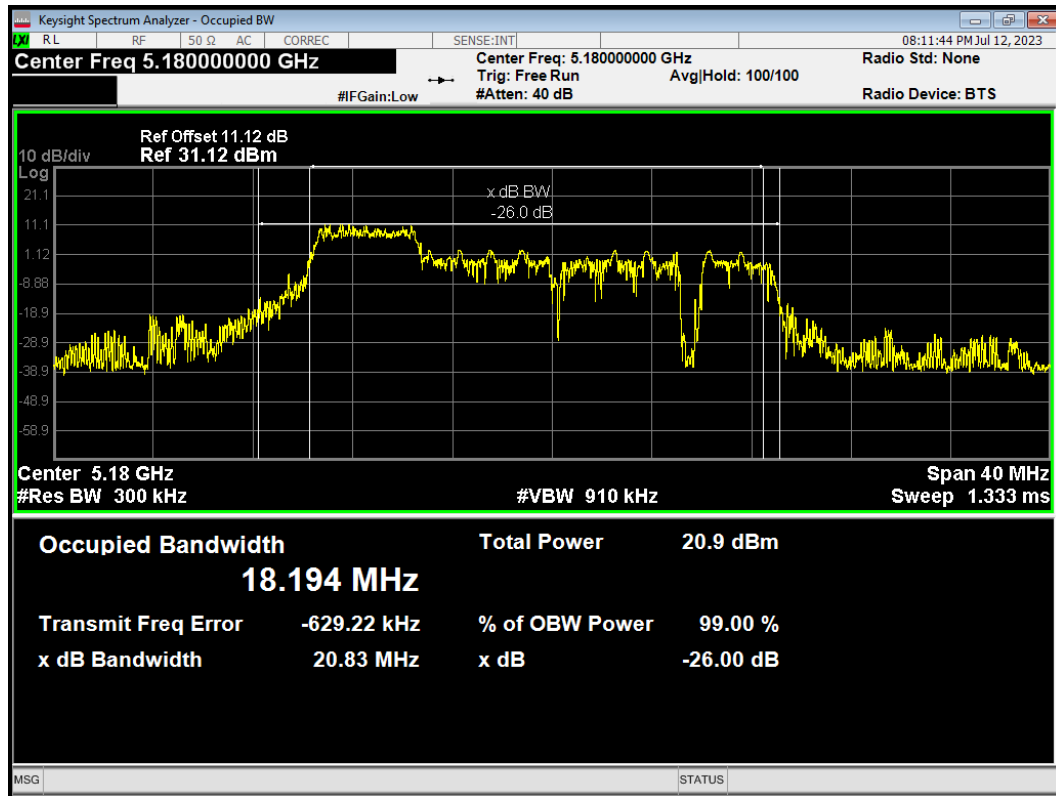
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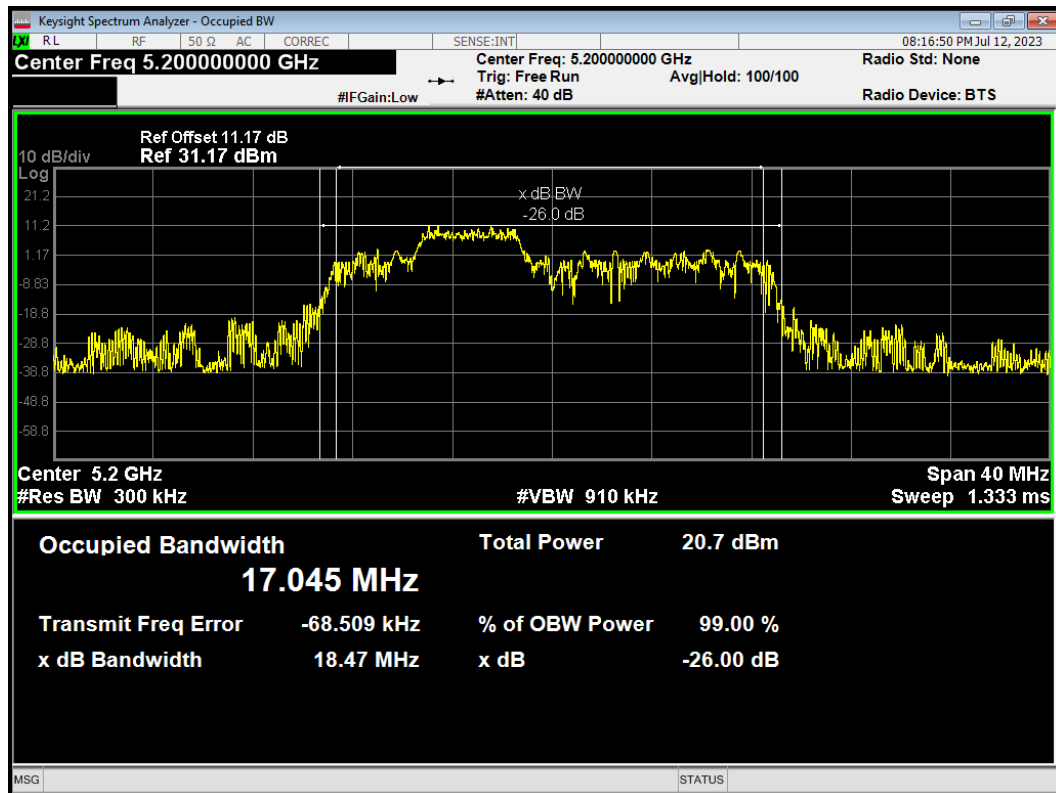
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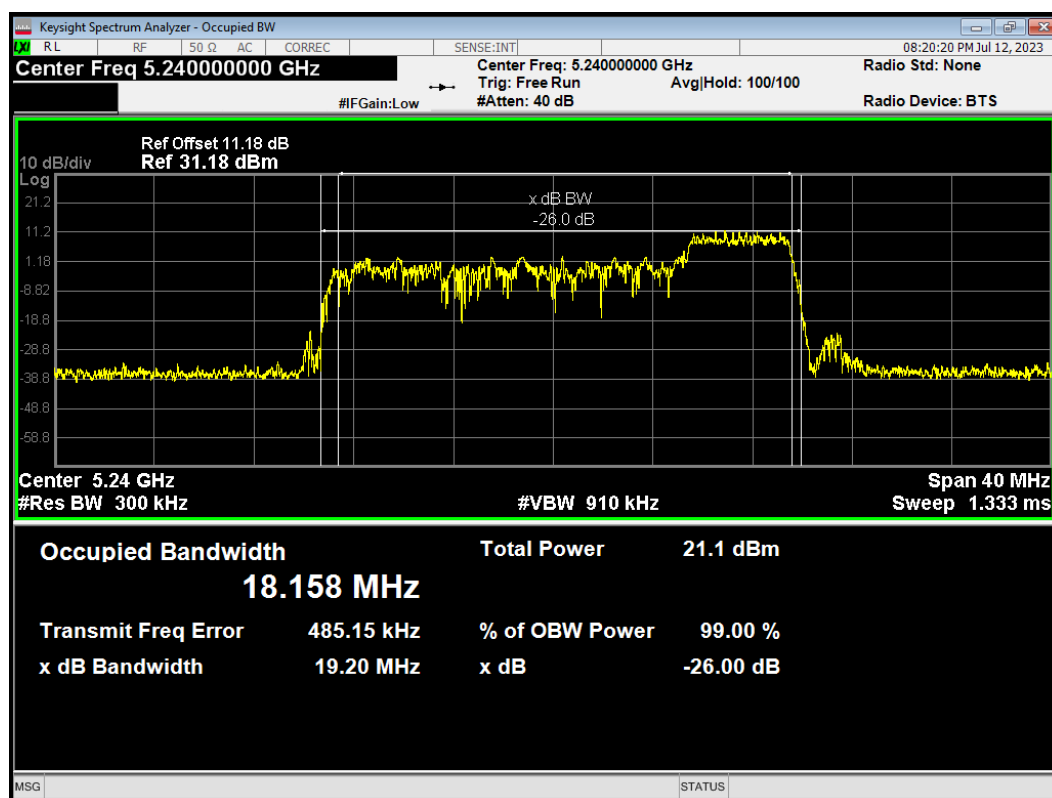
OBW 11ax(20M) RU52 IDX37 5180MHz



OBW 11ax(20M) RU52 IDX38 5200MHz

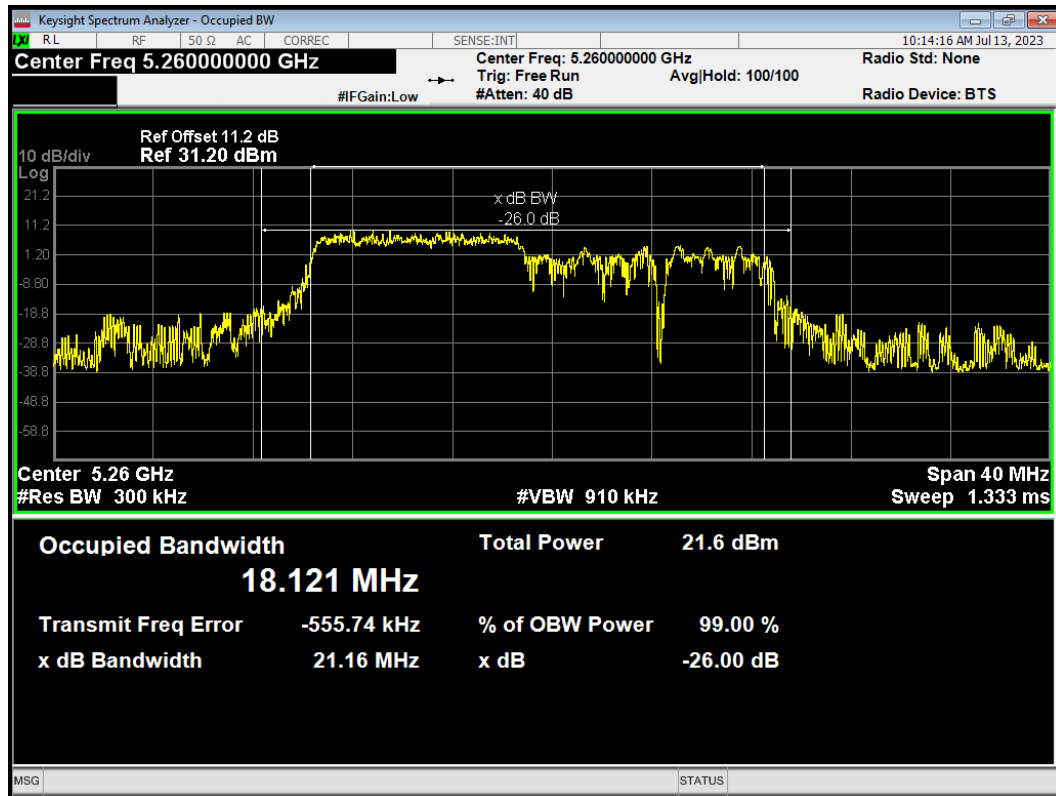


OBW 11ax(20M) RU52 IDX40 5240MHz

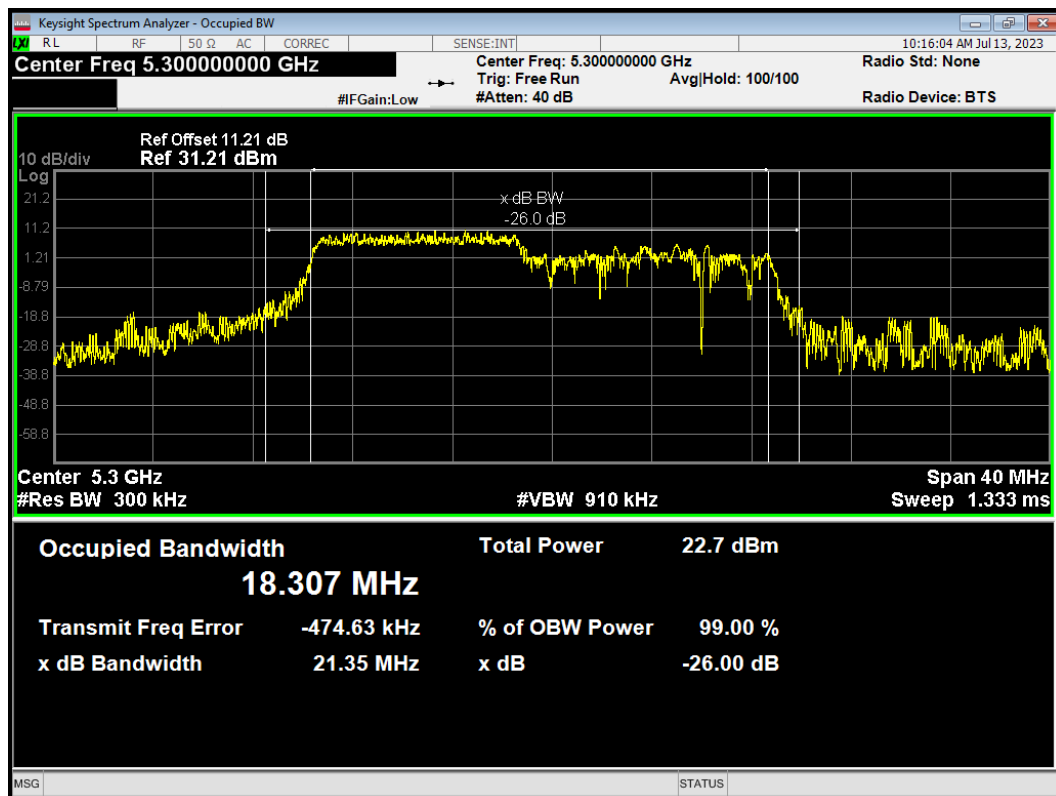


U-NII-2A

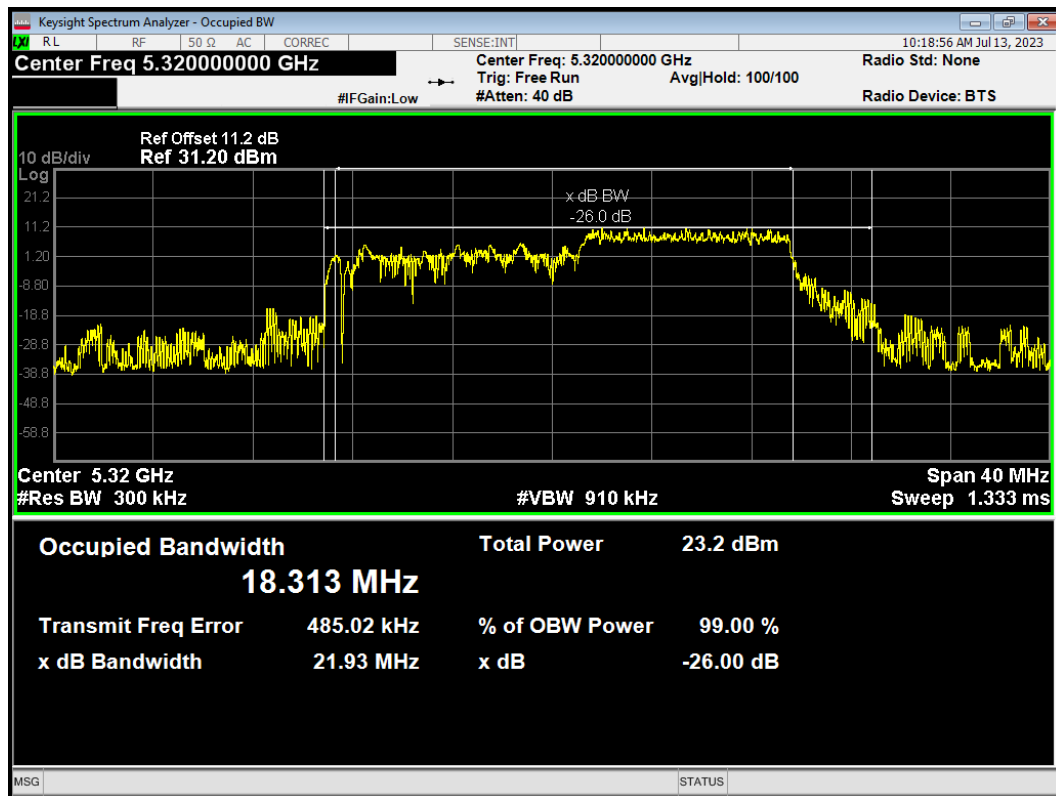
OBW 11ax(20M) RU106 IDX53 5260MHz



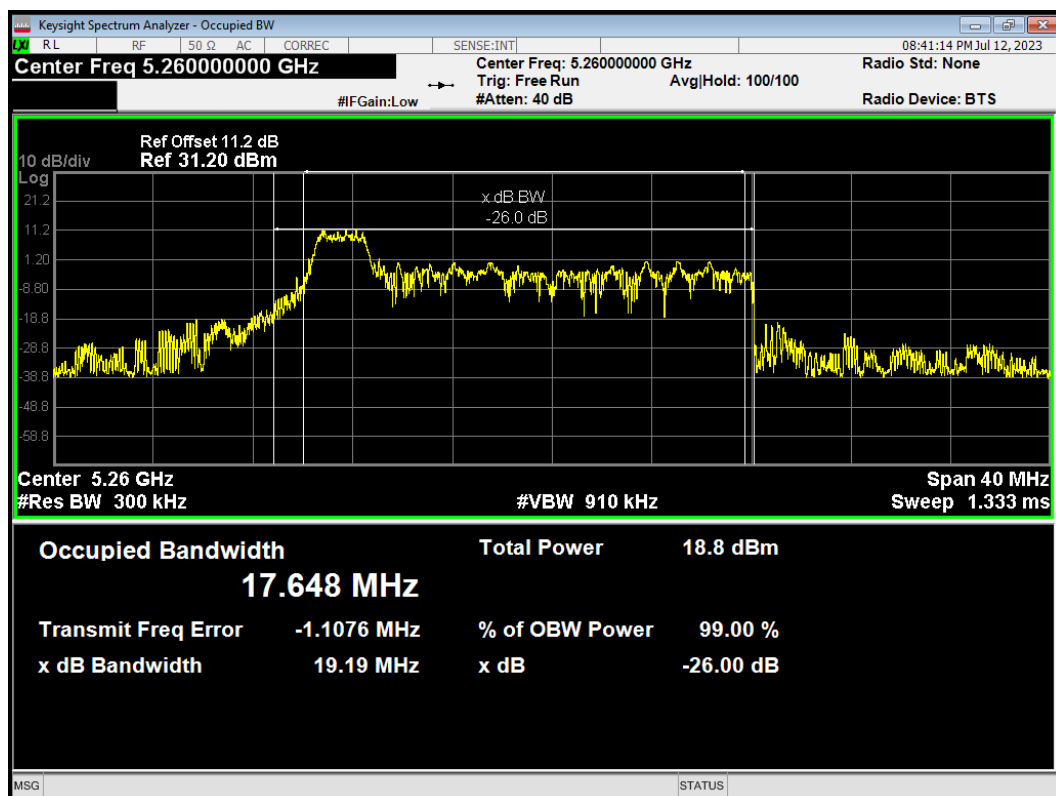
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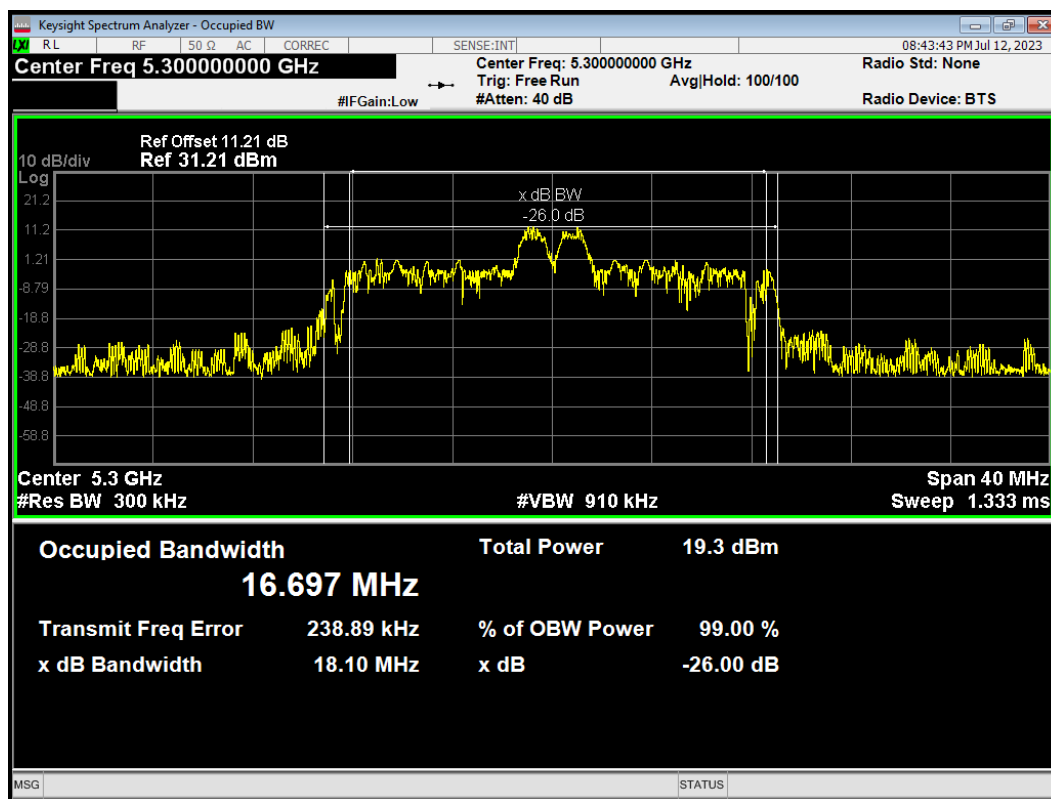
OBW 11ax(20M) RU106 IDX54 5320MHz



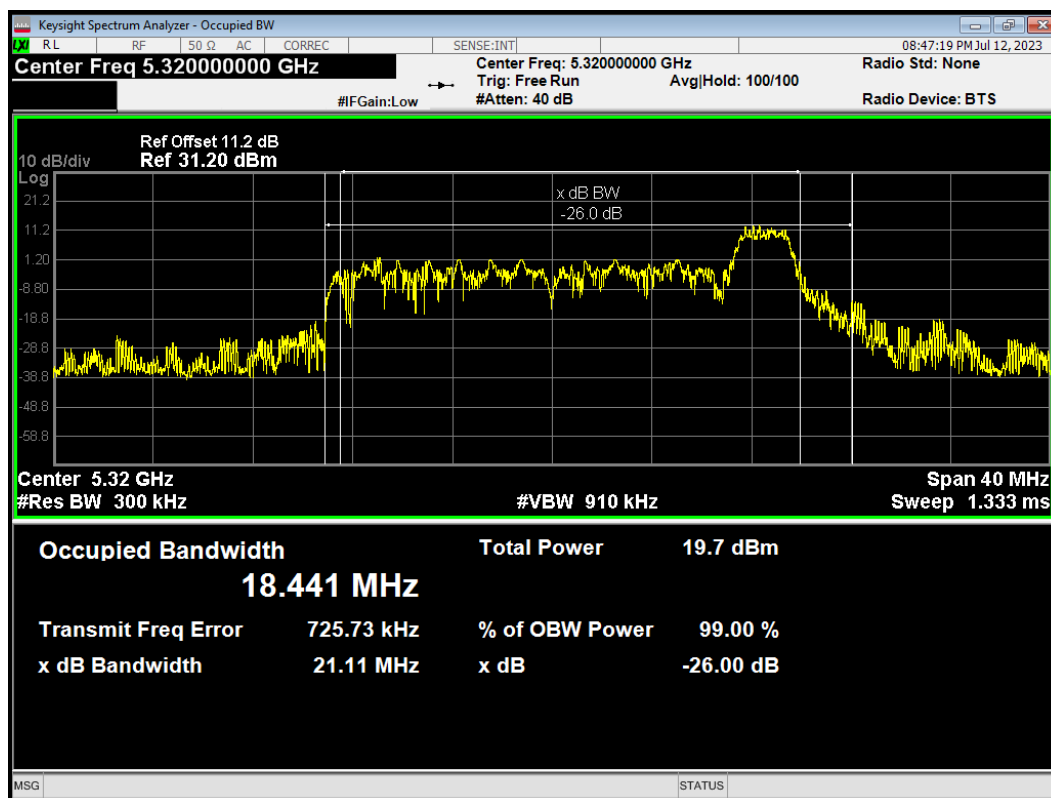
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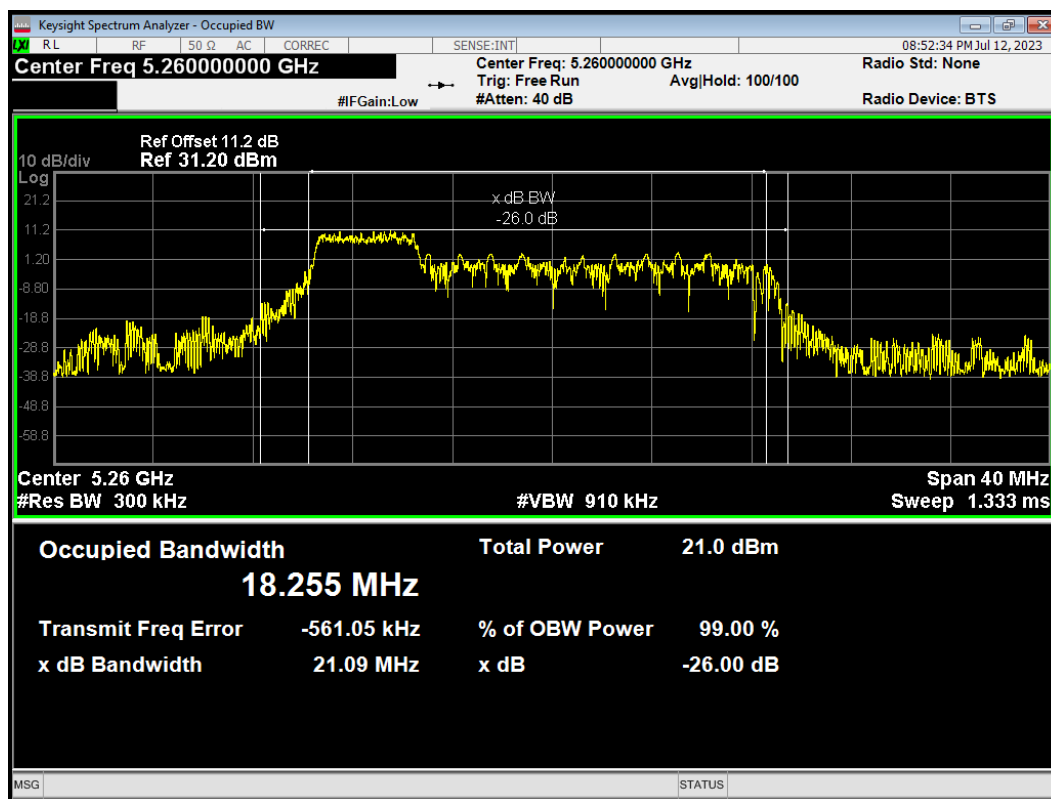
OBW 11ax(20M) RU26 IDX4 5300MHz



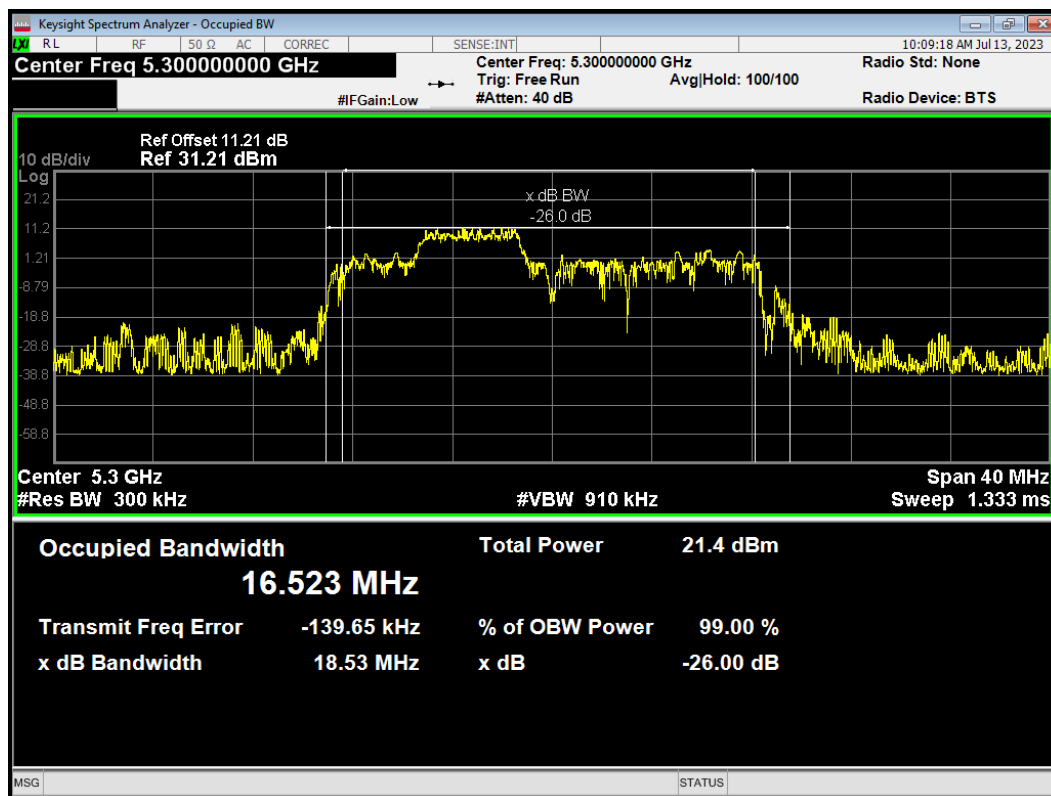
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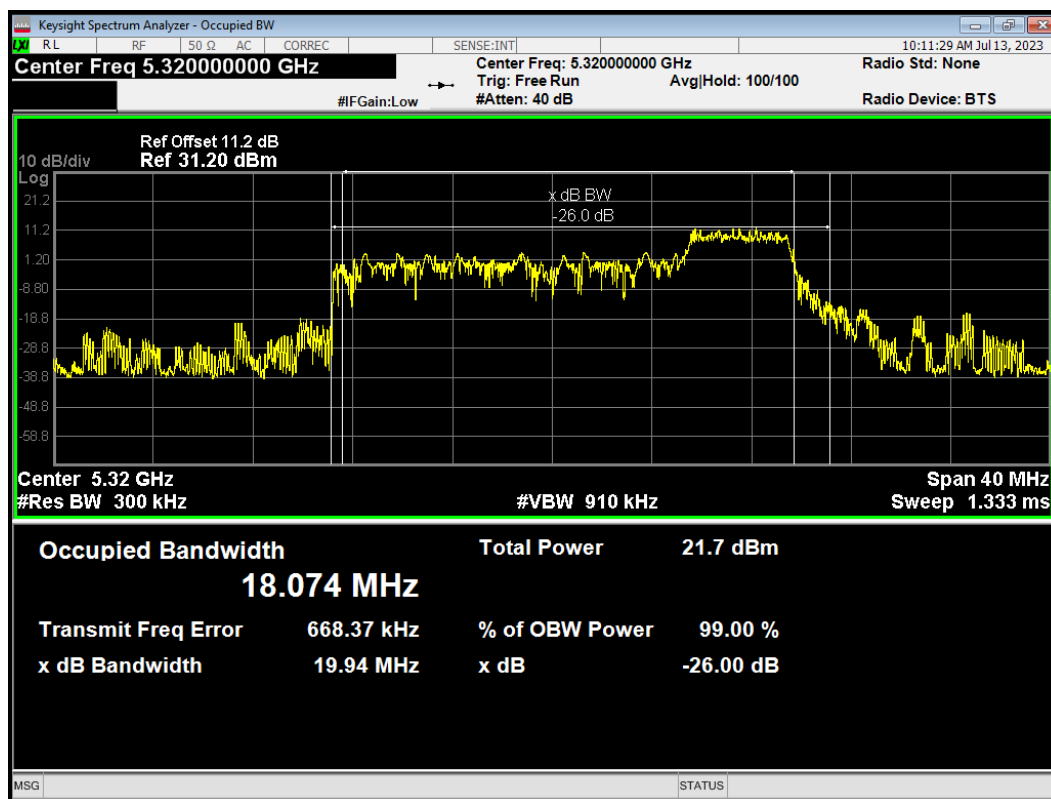
OBW 11ax(20M) RU52 IDX37 5260MHz



OBW 11ax(20M) RU52 IDX38 5300MHz

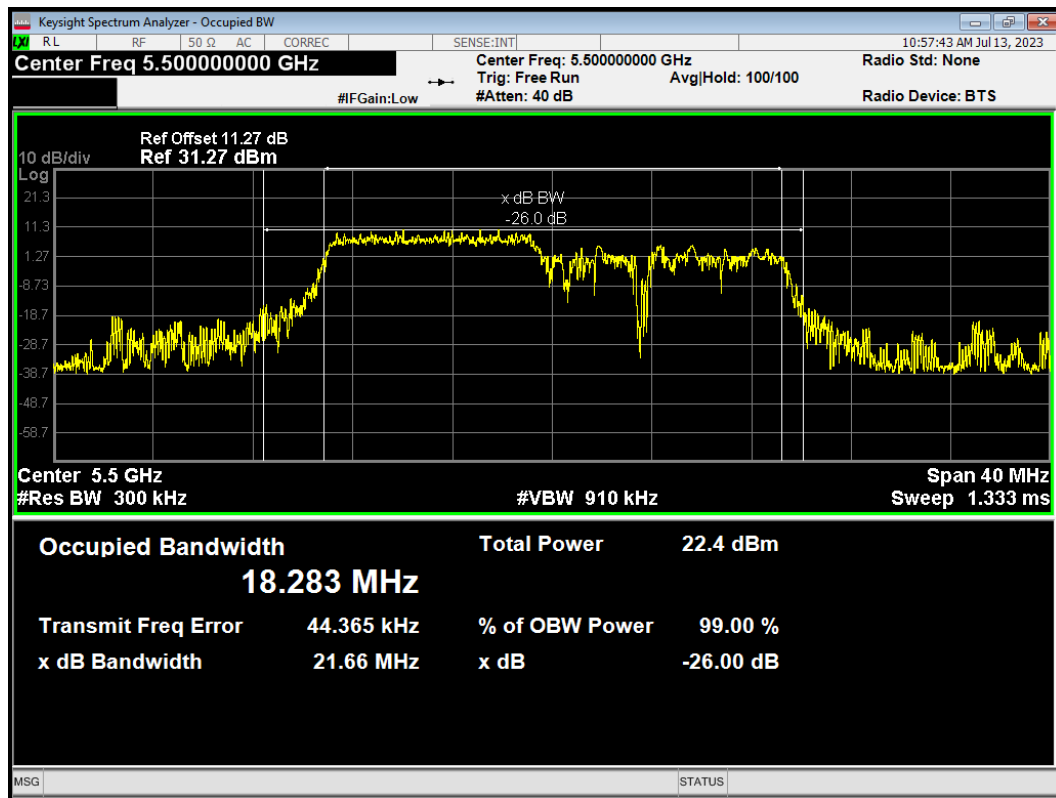


OBW 11ax(20M) RU52 IDX40 5320MHz

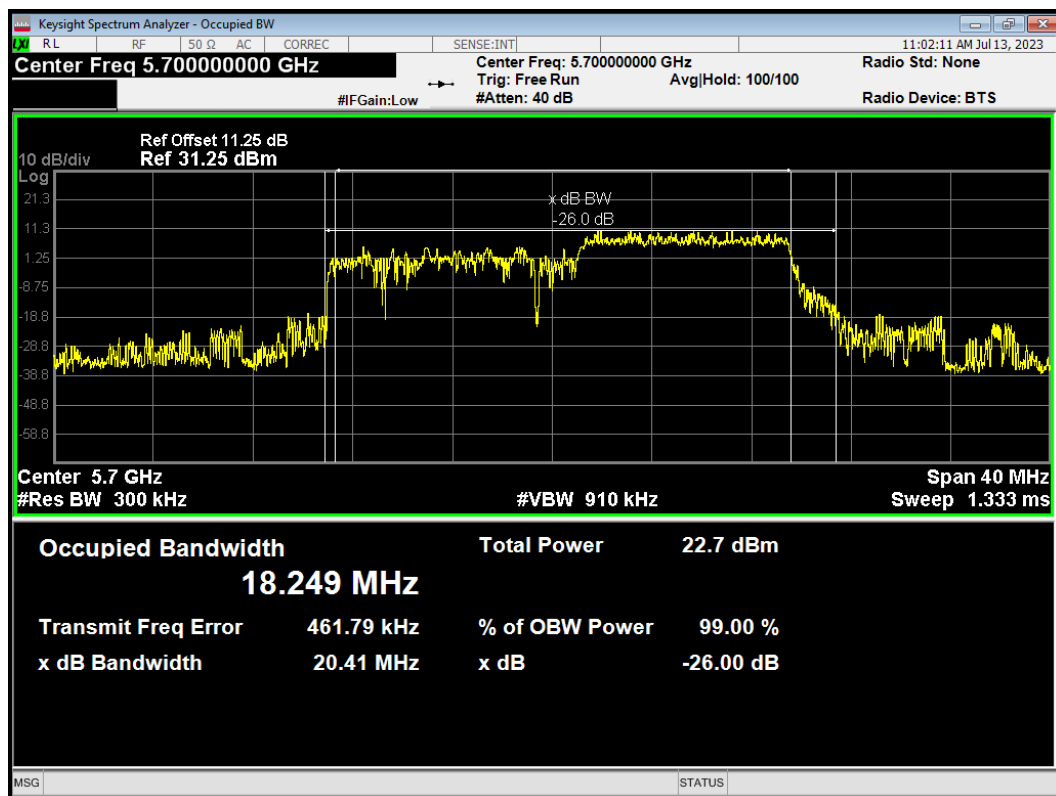


U-NII-2C

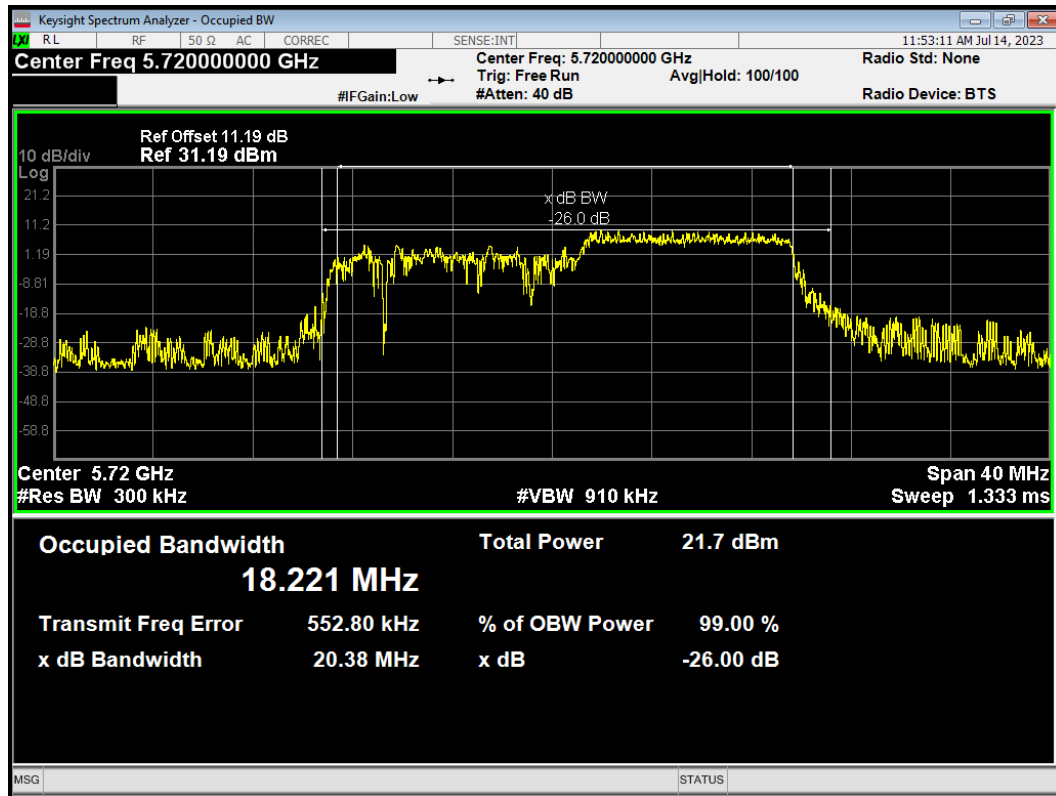
OBW 11ax(20M) RU106 IDX53 5500MHz



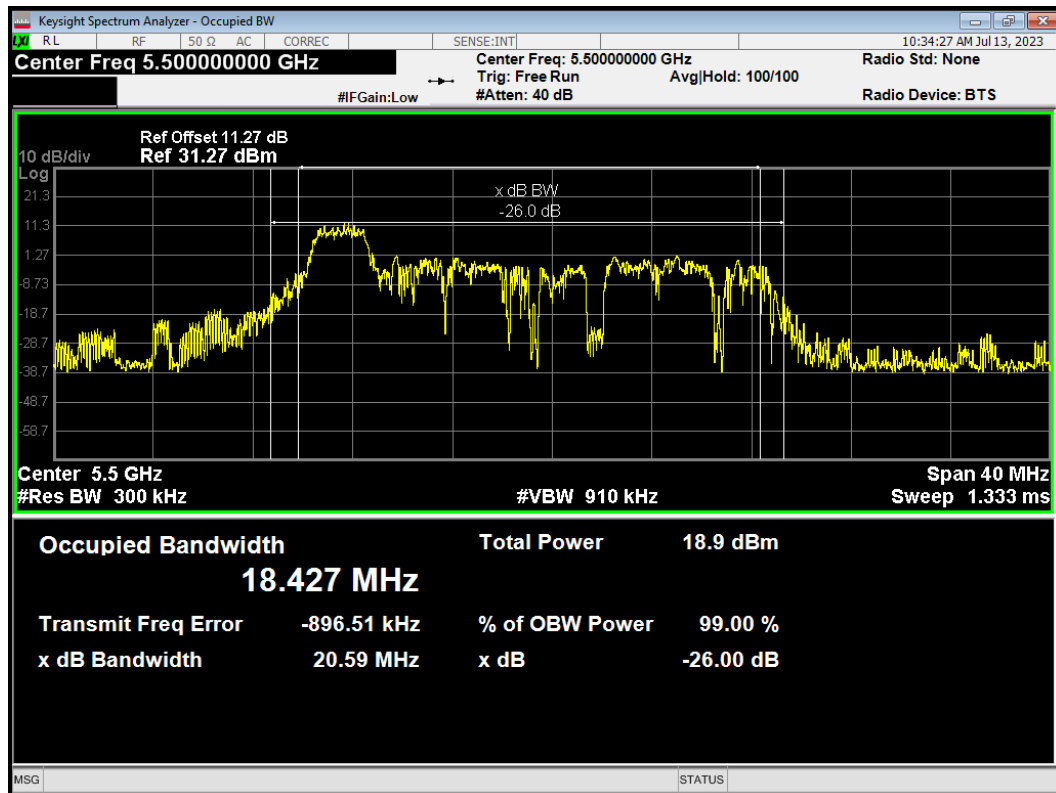
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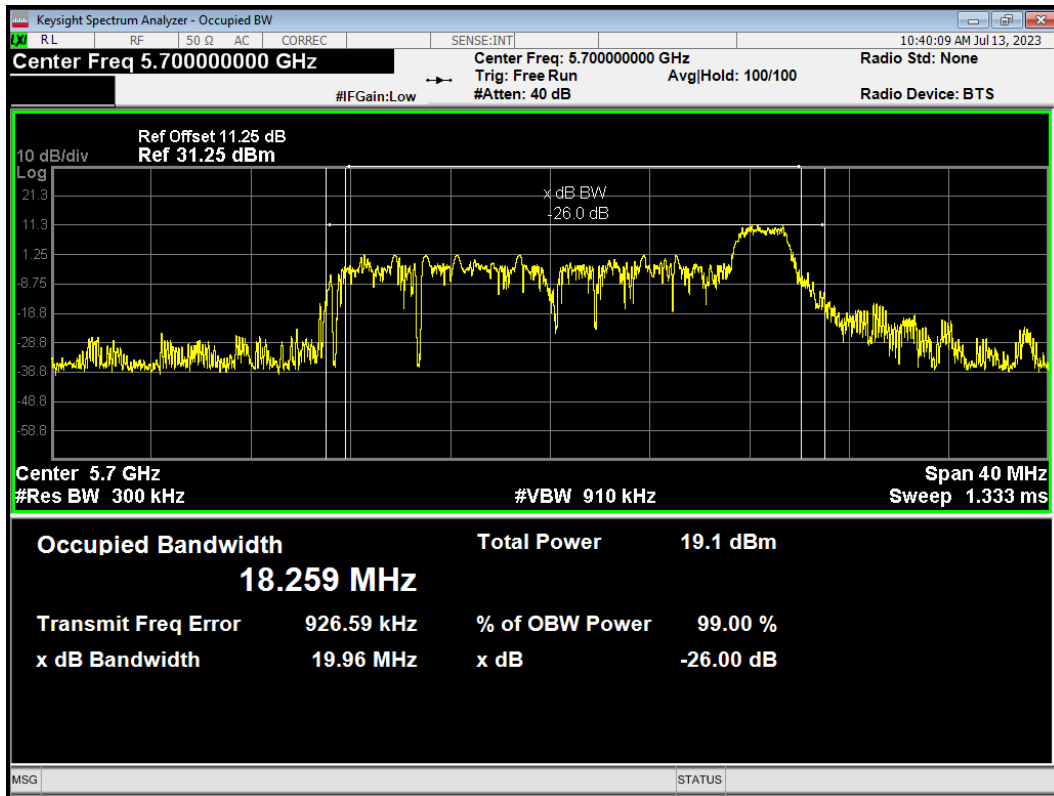
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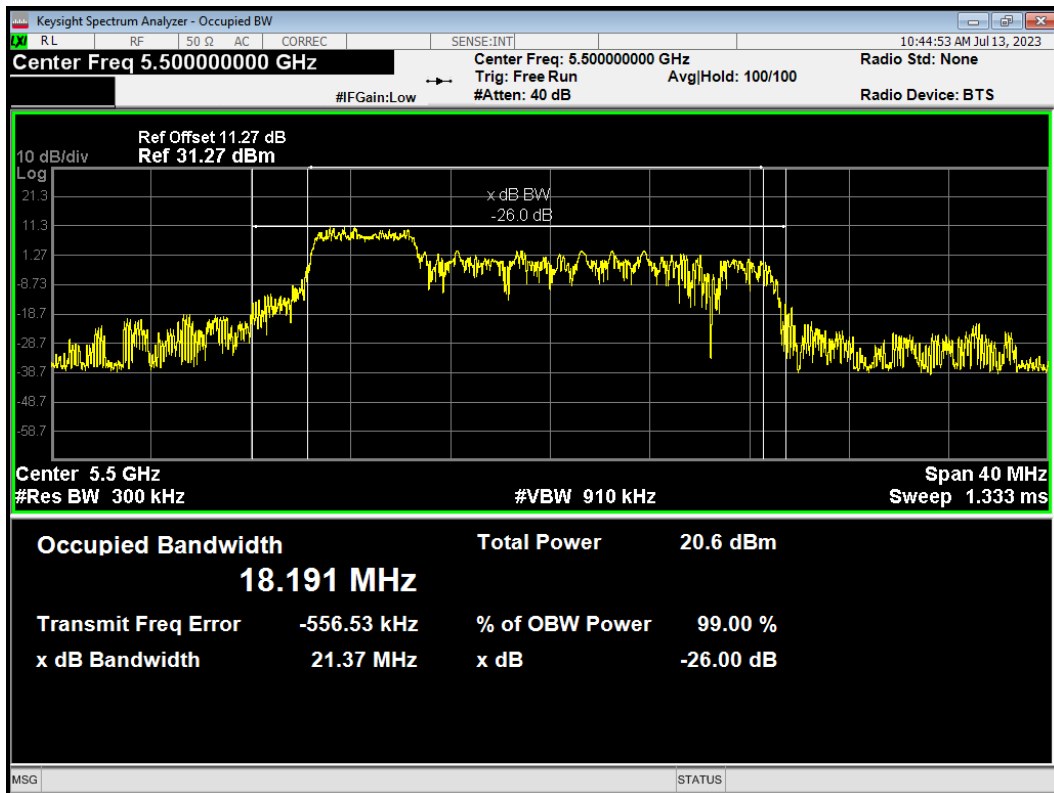
OBW 11ax(20M) RU26 IDX0 5500MHz



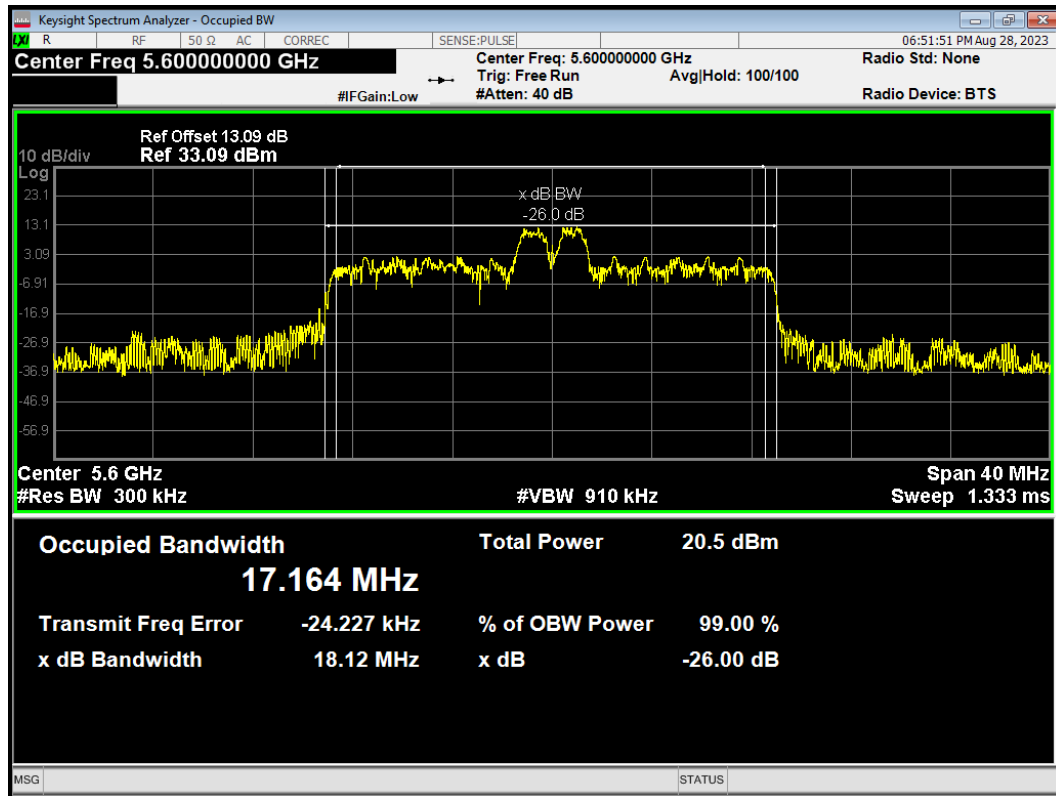
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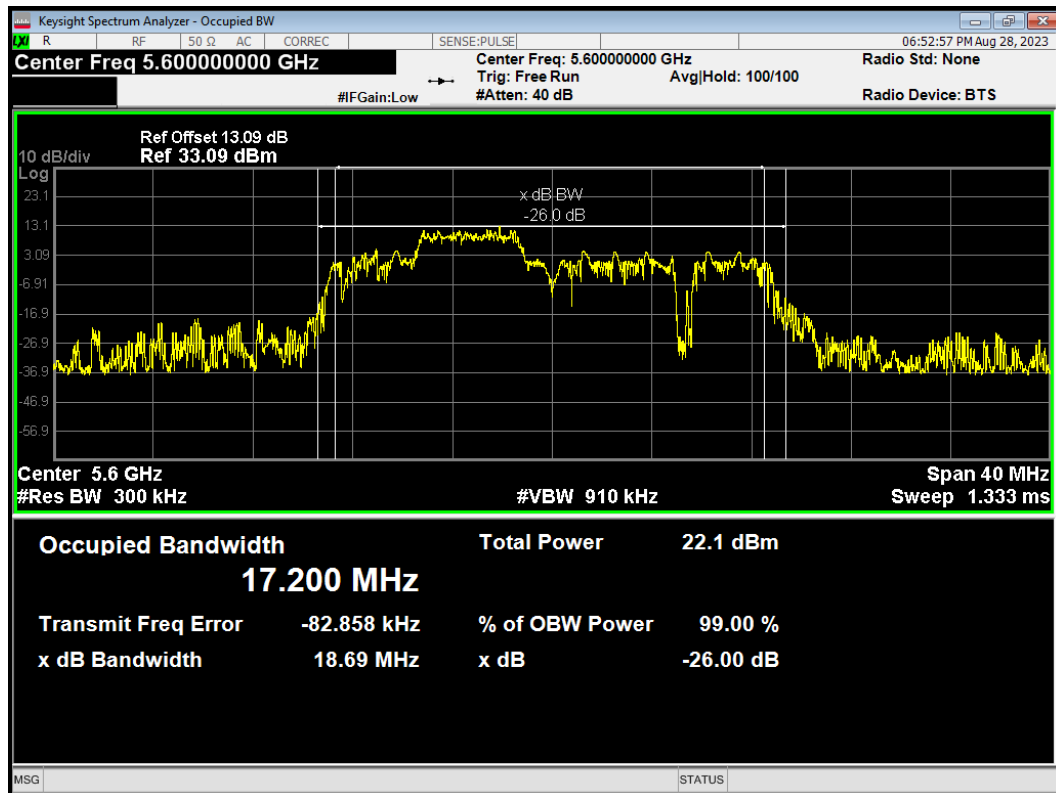
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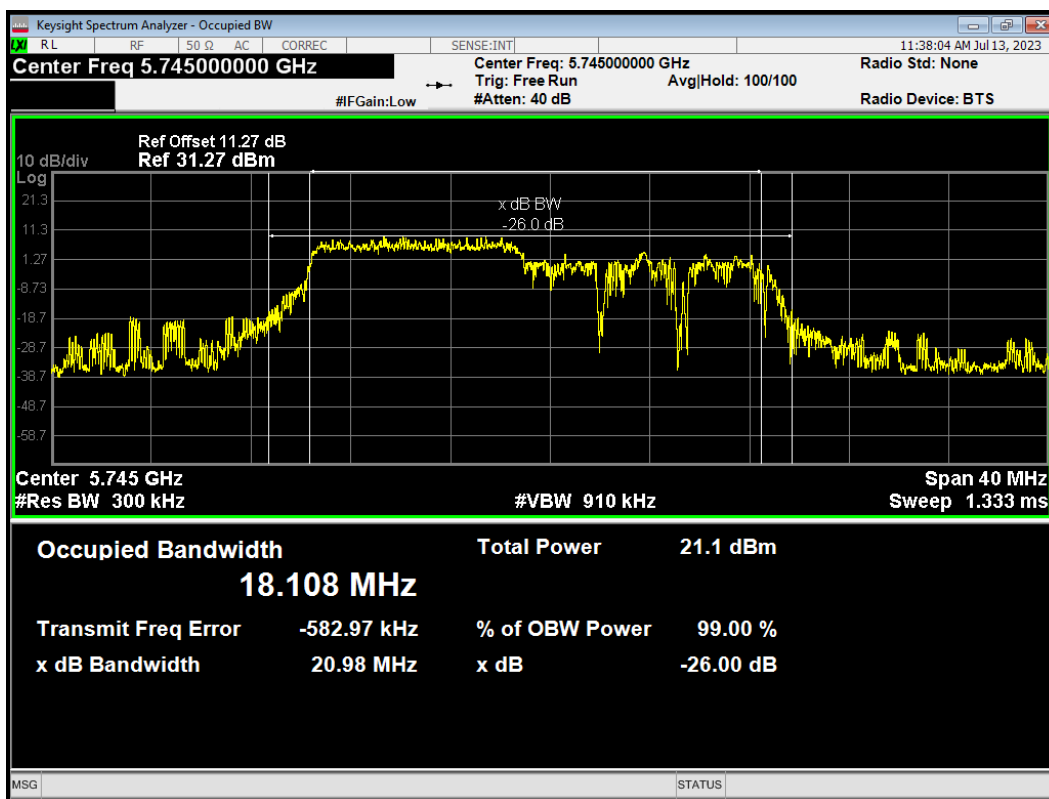


OBW 11ax(20M) RU52 IDX38 5600MHz

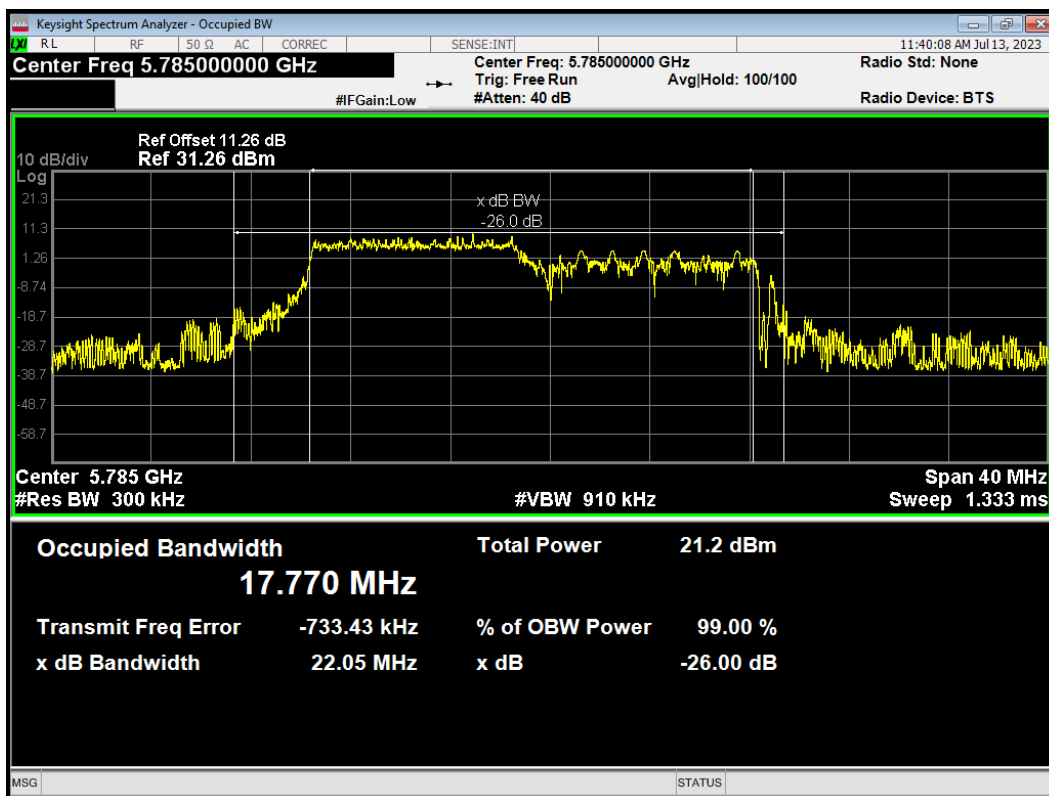


U-NII-3

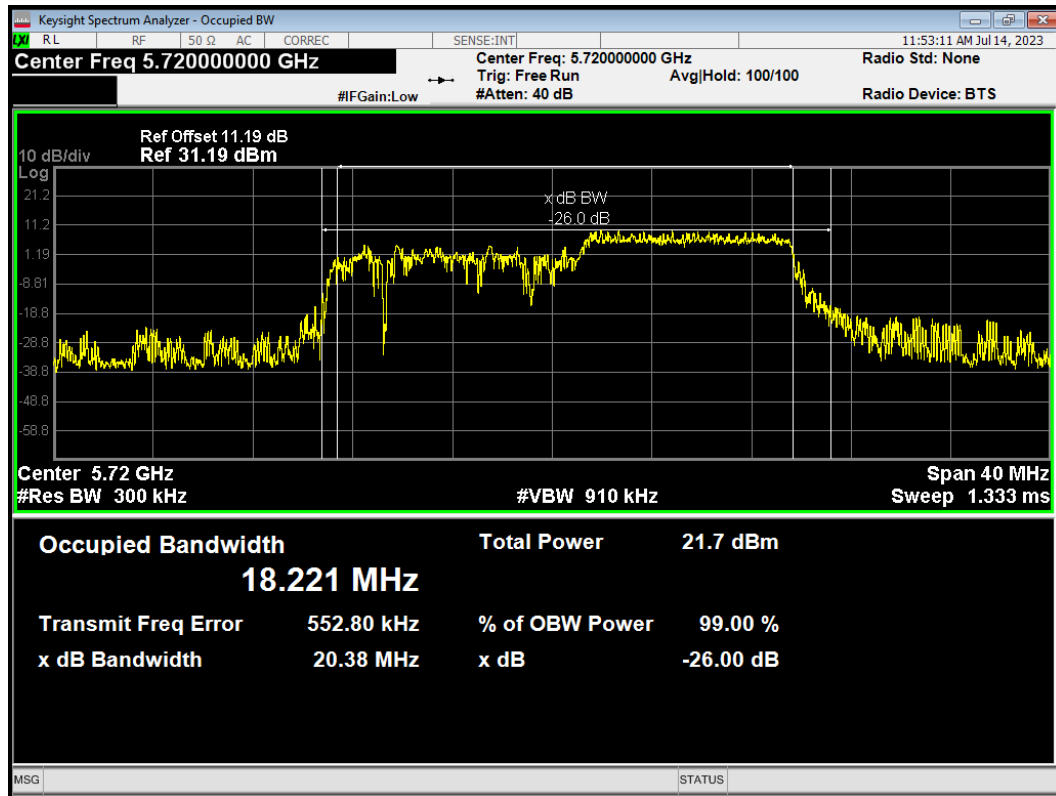
OBW 11ax(20M) RU106 IDX53 5745MHz



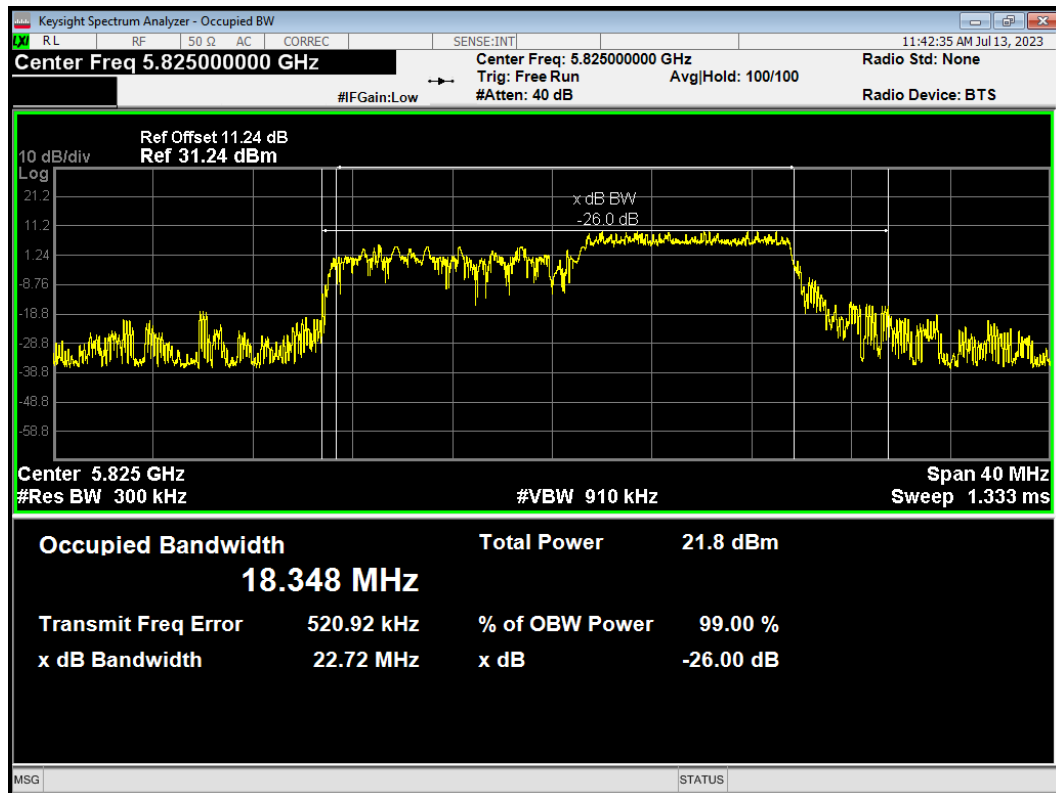
OBW 11ax(20M) RU106 IDX53 5785MHz



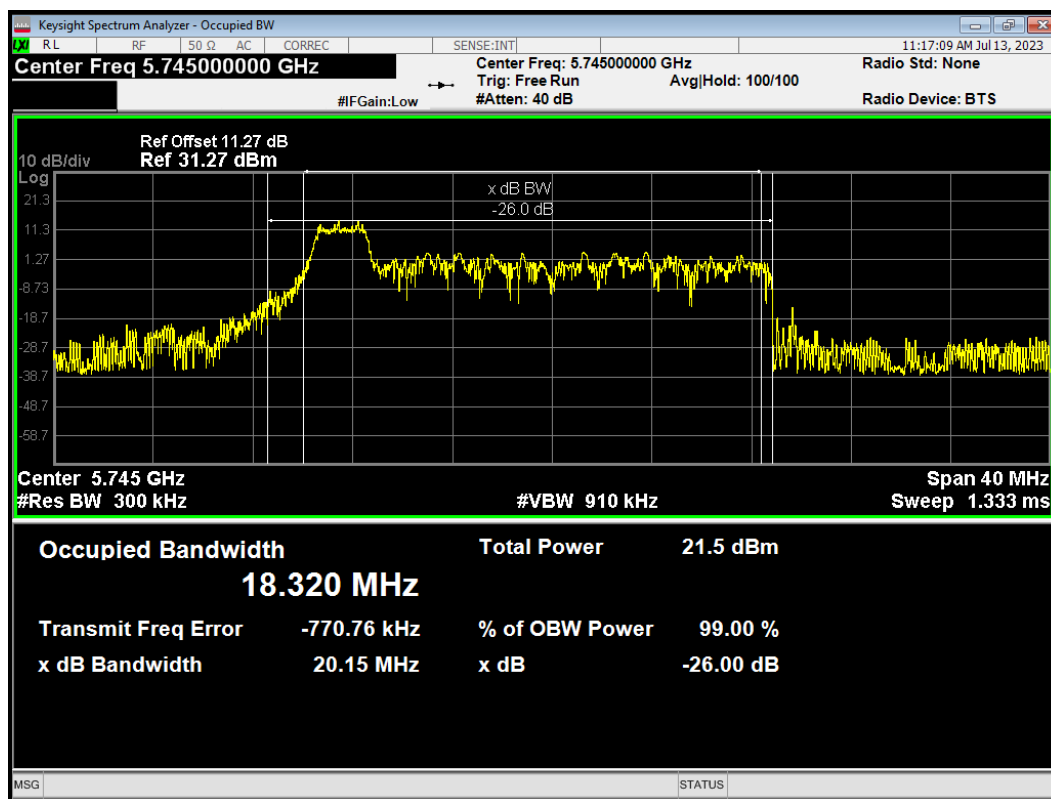
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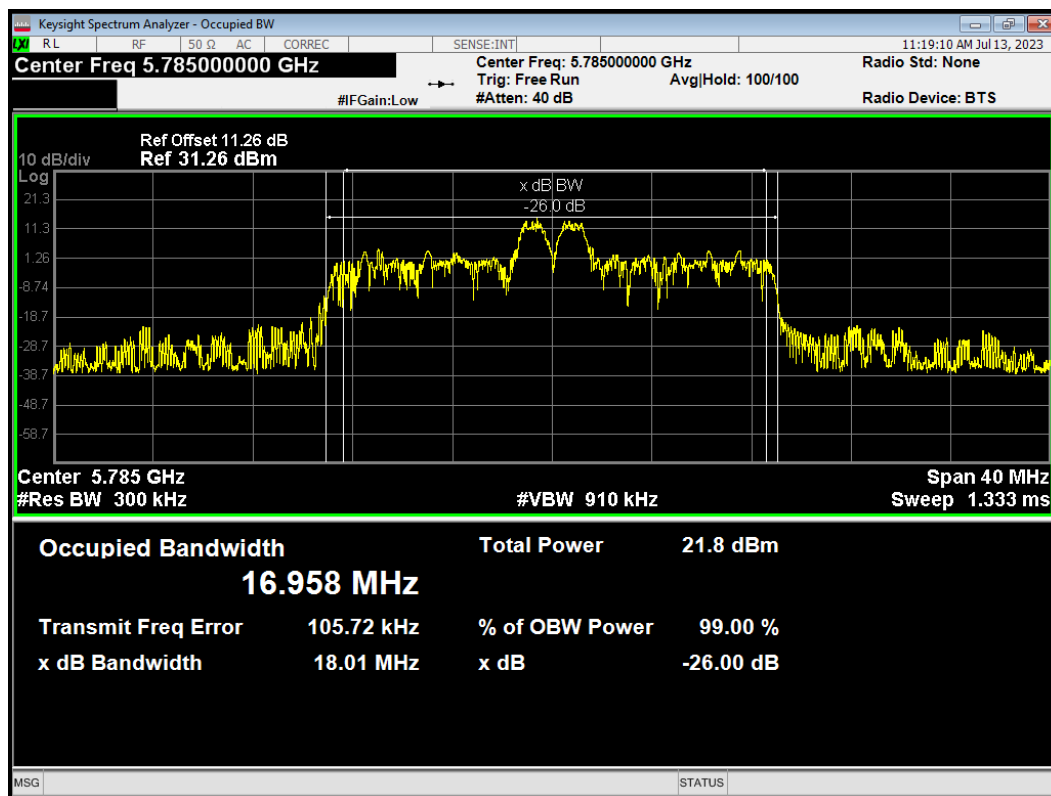
OBW 11ax(20M) RU106 IDX54 5825MHz



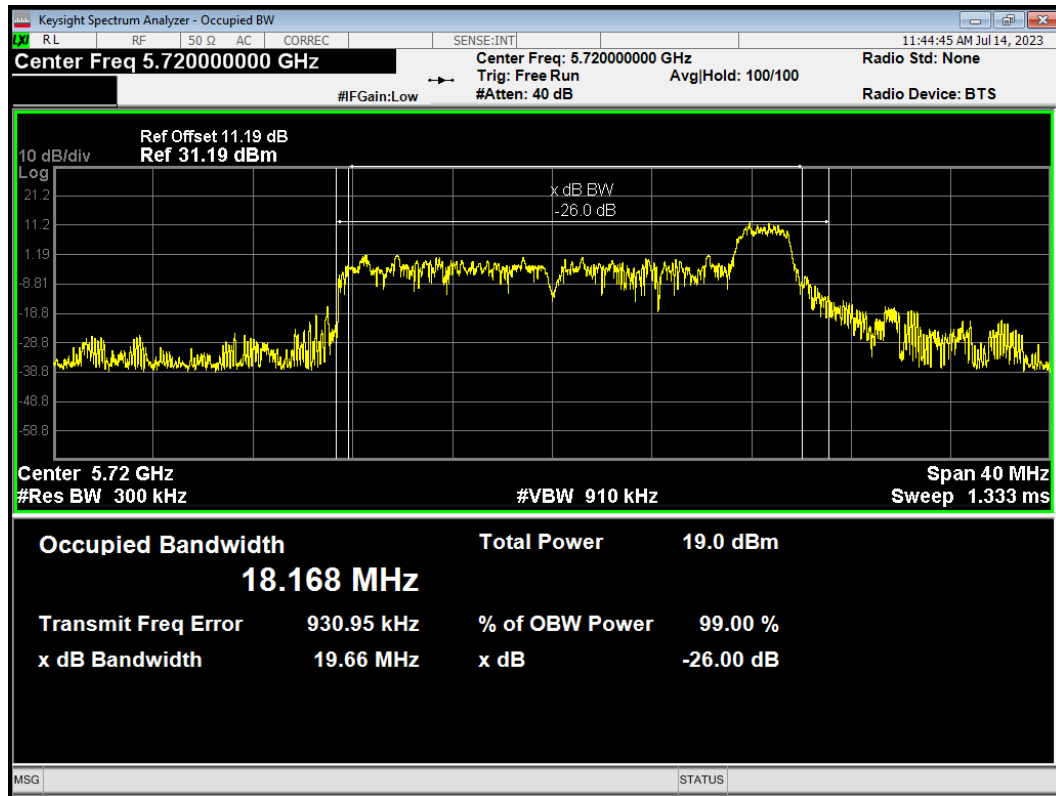
OBW 11ax(20M) RU26 IDX0 5745MHz



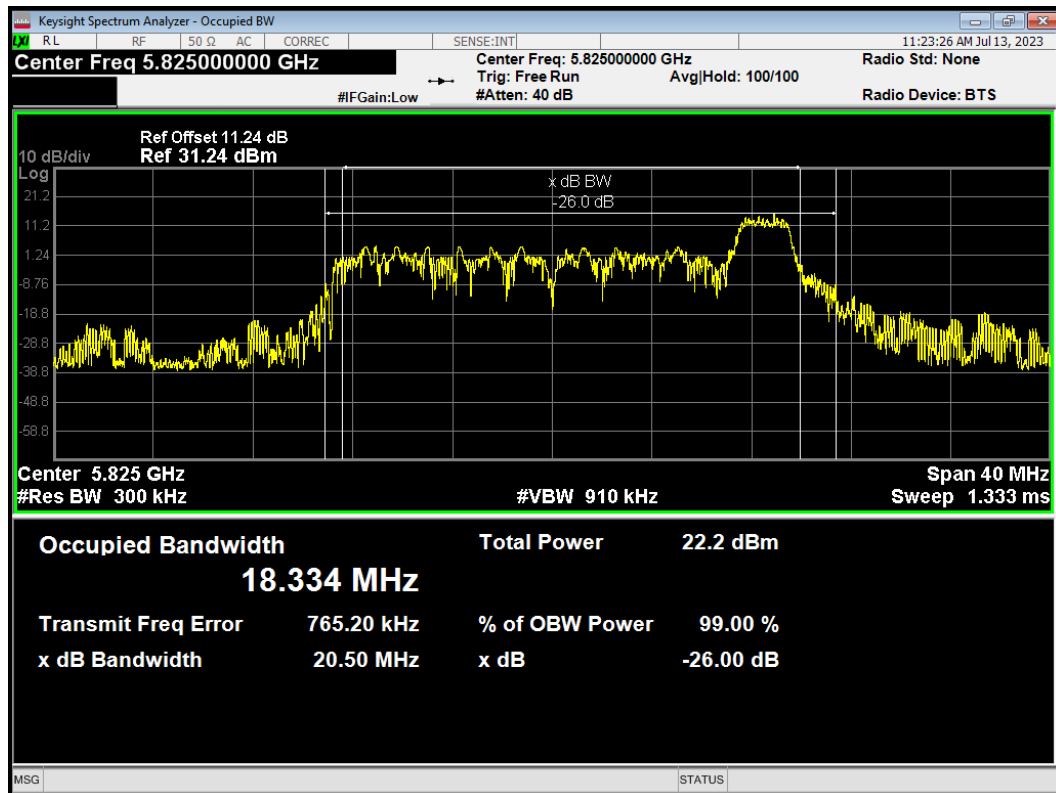
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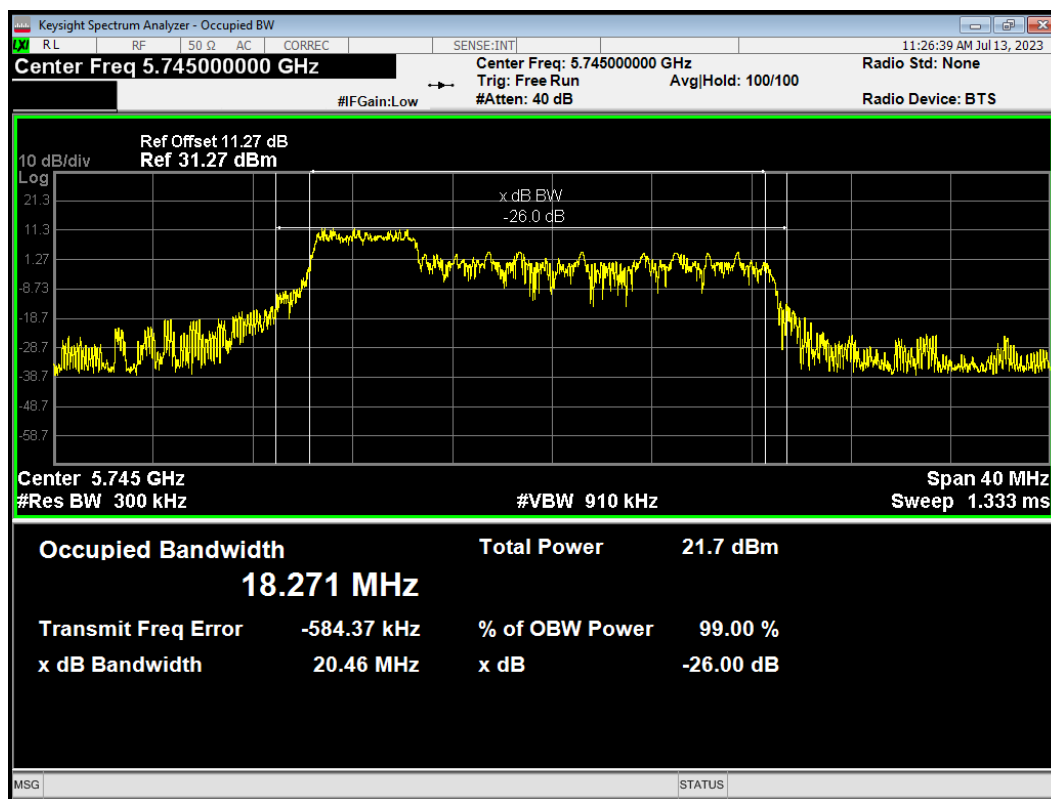
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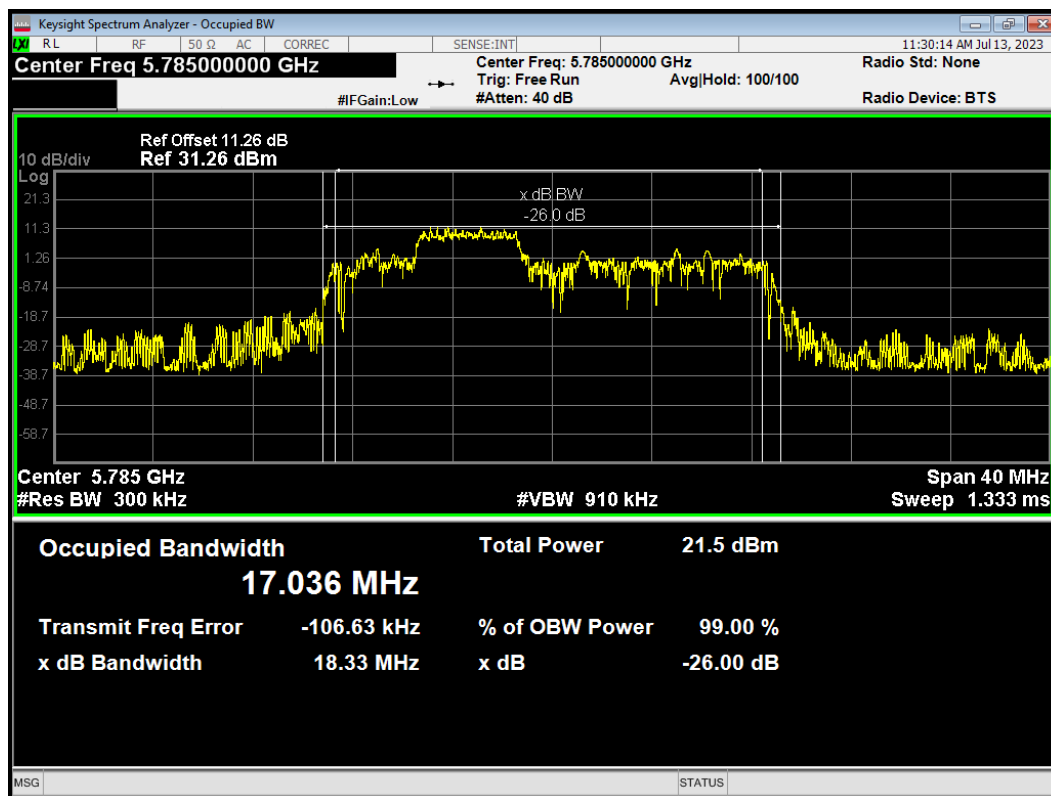
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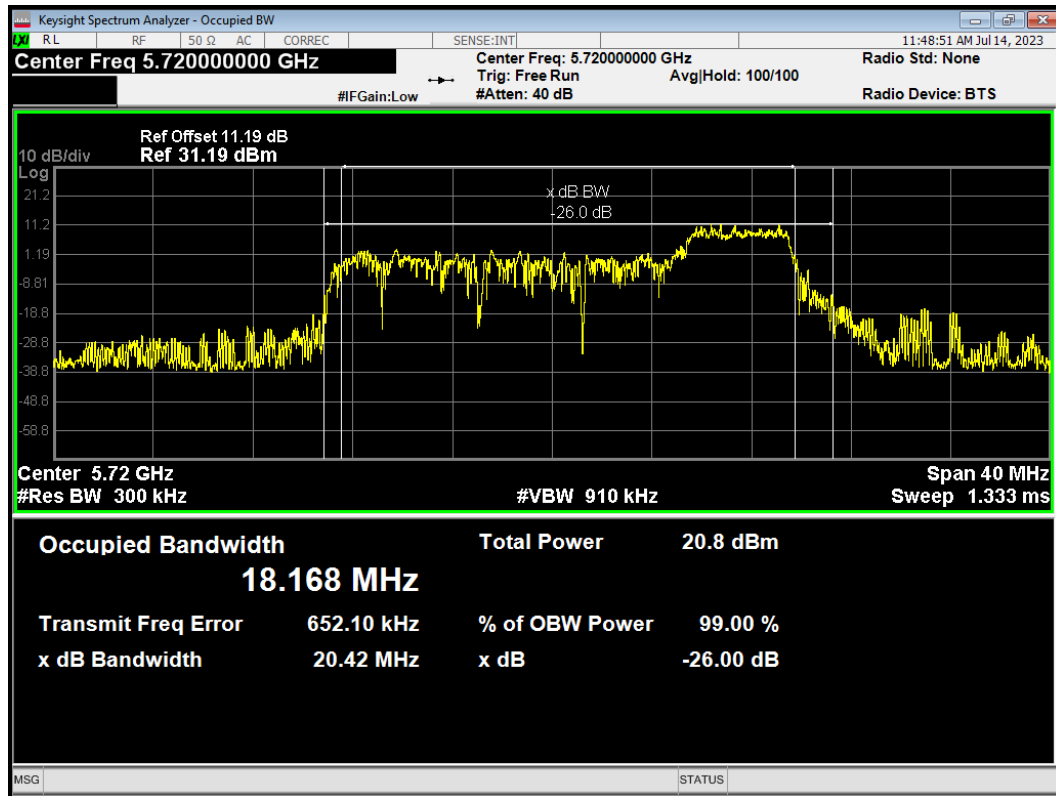
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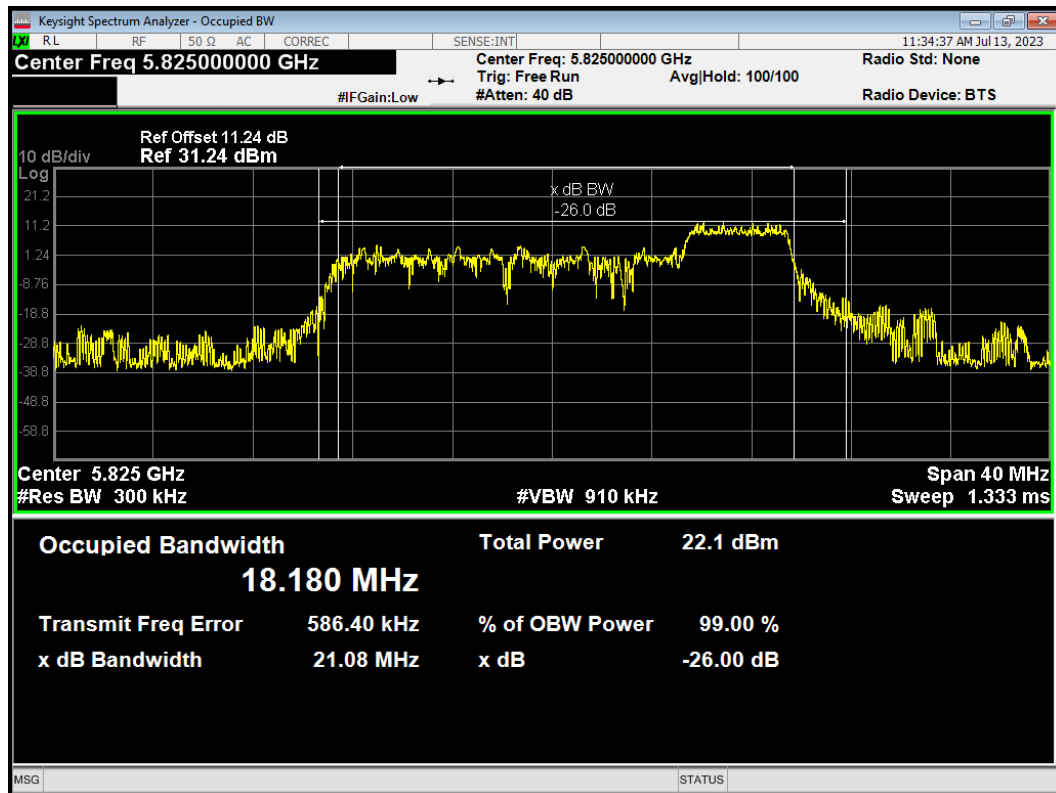
OBW 11ax(20M) RU52 IDX38 5785MHz



OBW 11ax(20M) RU52 IDX40 5720MHz



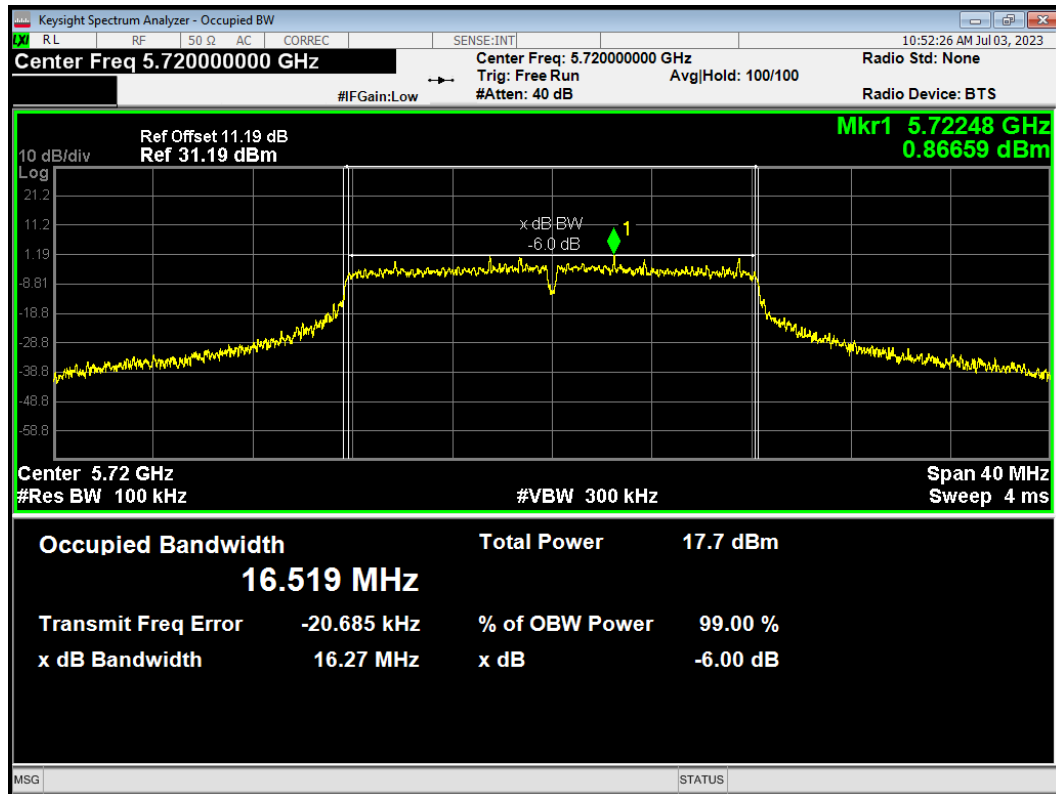
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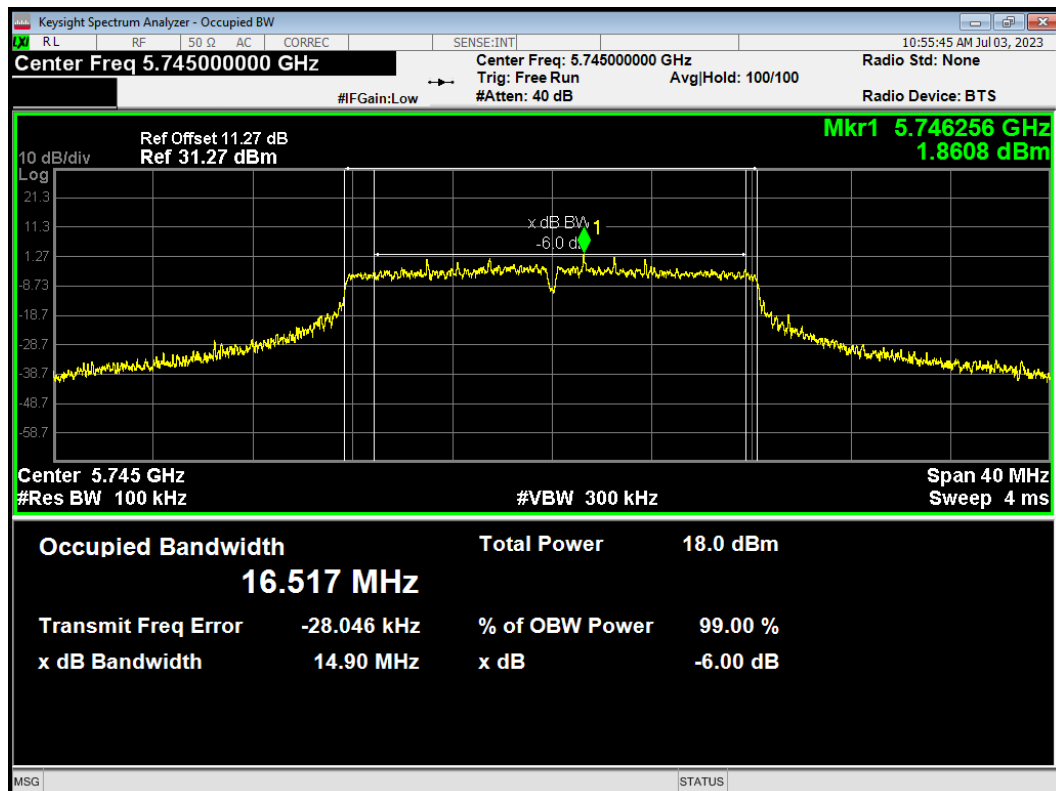
Minimum 6 dB bandwidth

U-NII-3

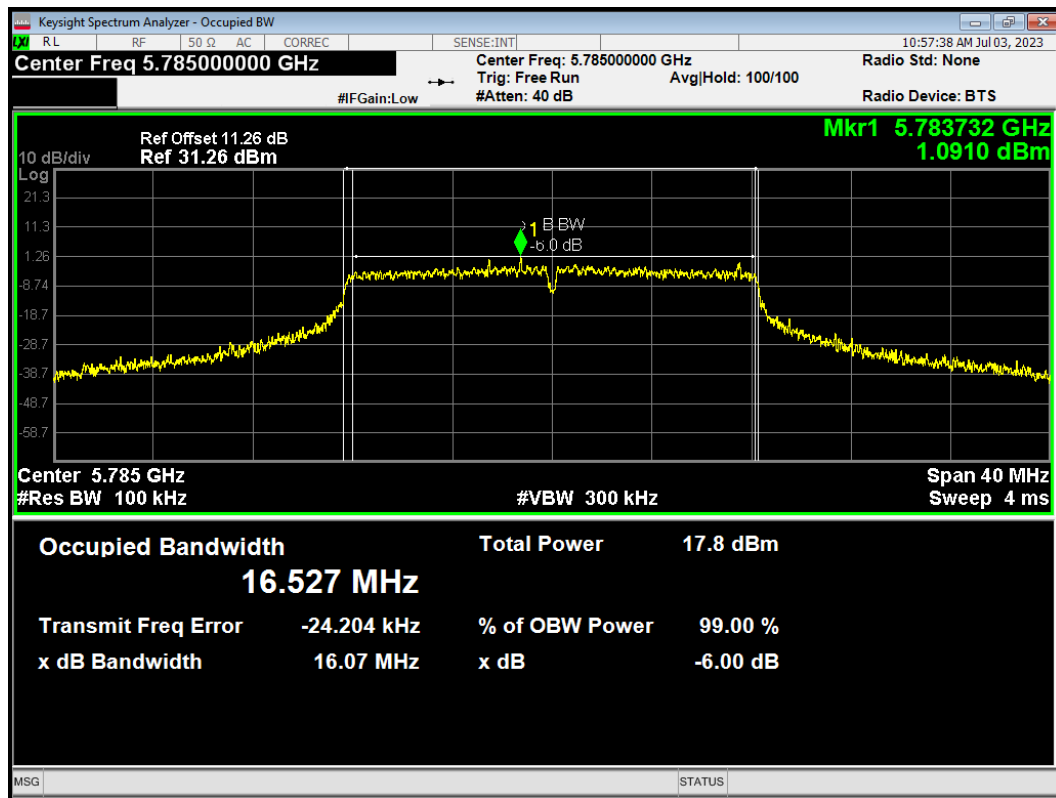
-6dB Bandwidth 802.11a 5720MHz



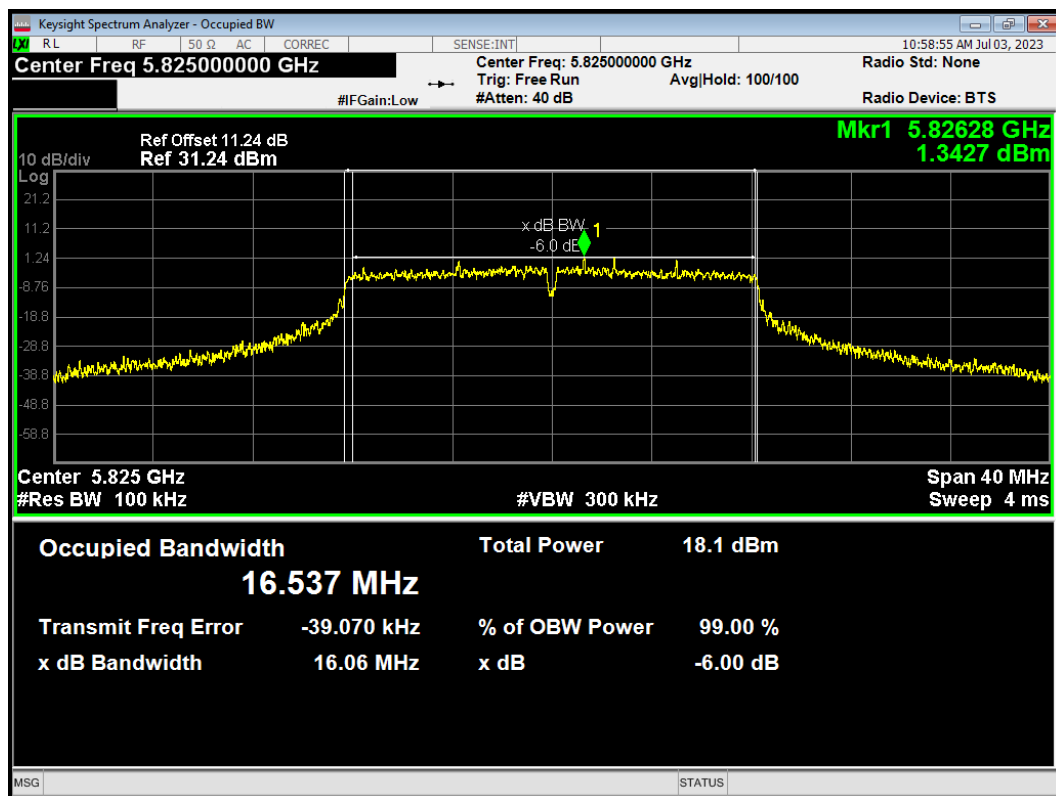
-6dB Bandwidth 802.11a 5745MHz



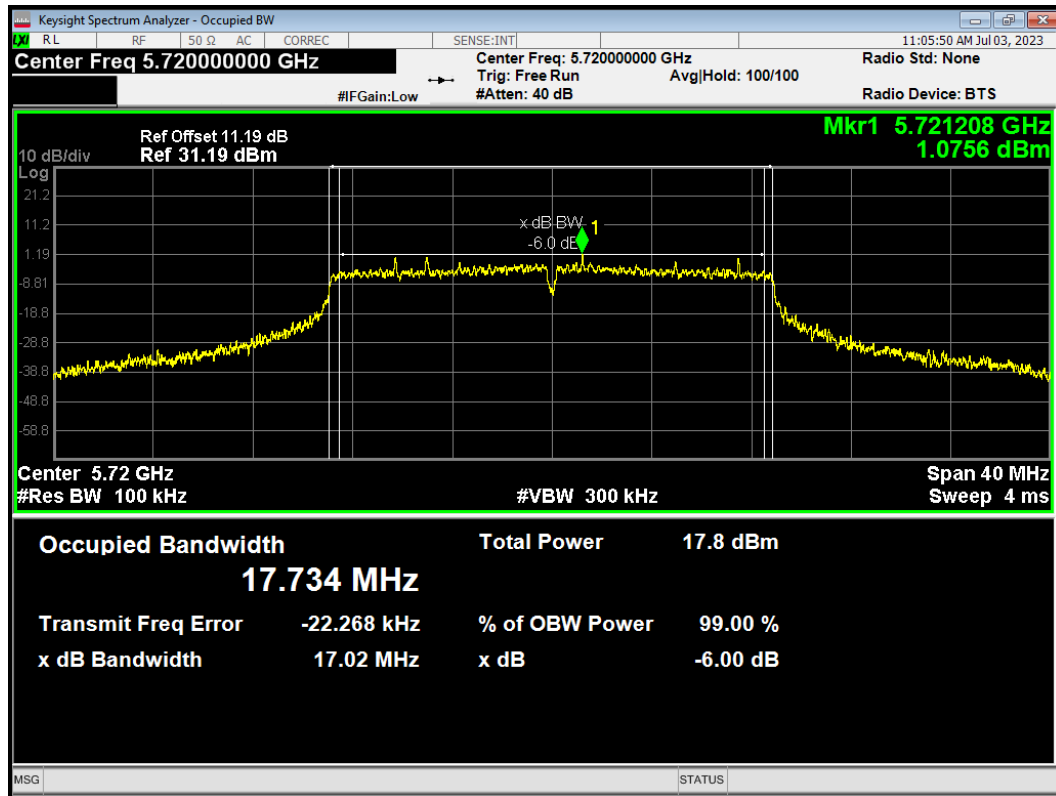
-6dB Bandwidth 802.11a 5785MHz



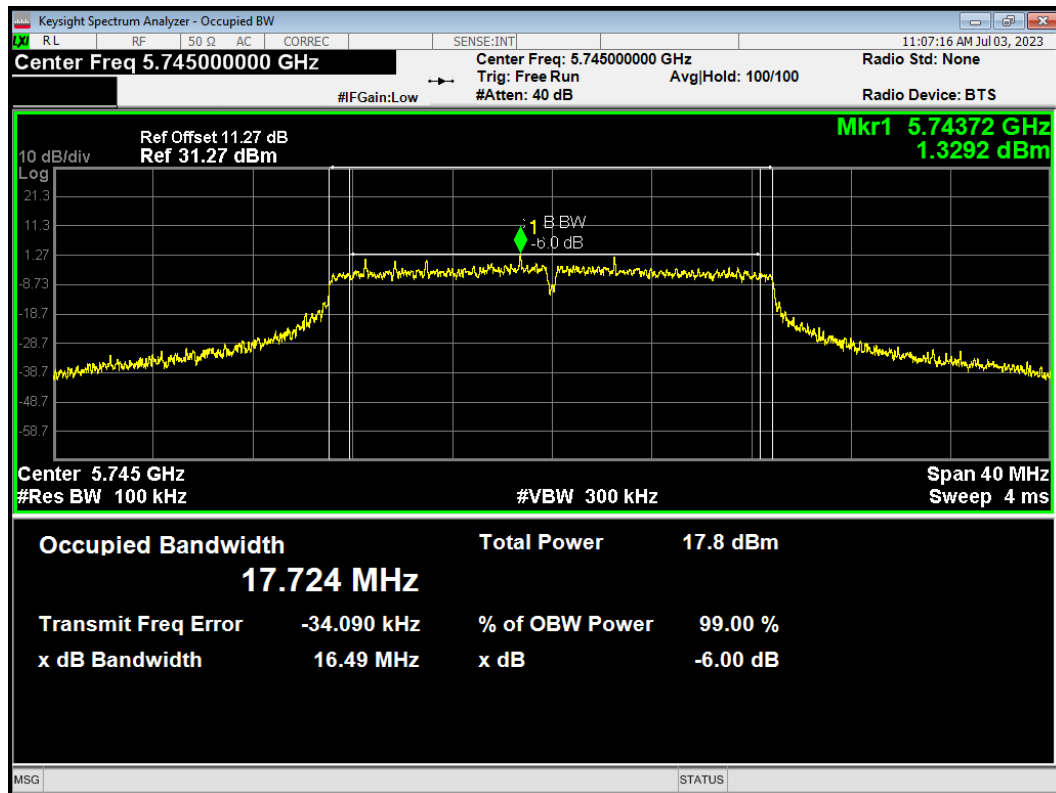
-6dB Bandwidth 802.11a 5825MHz



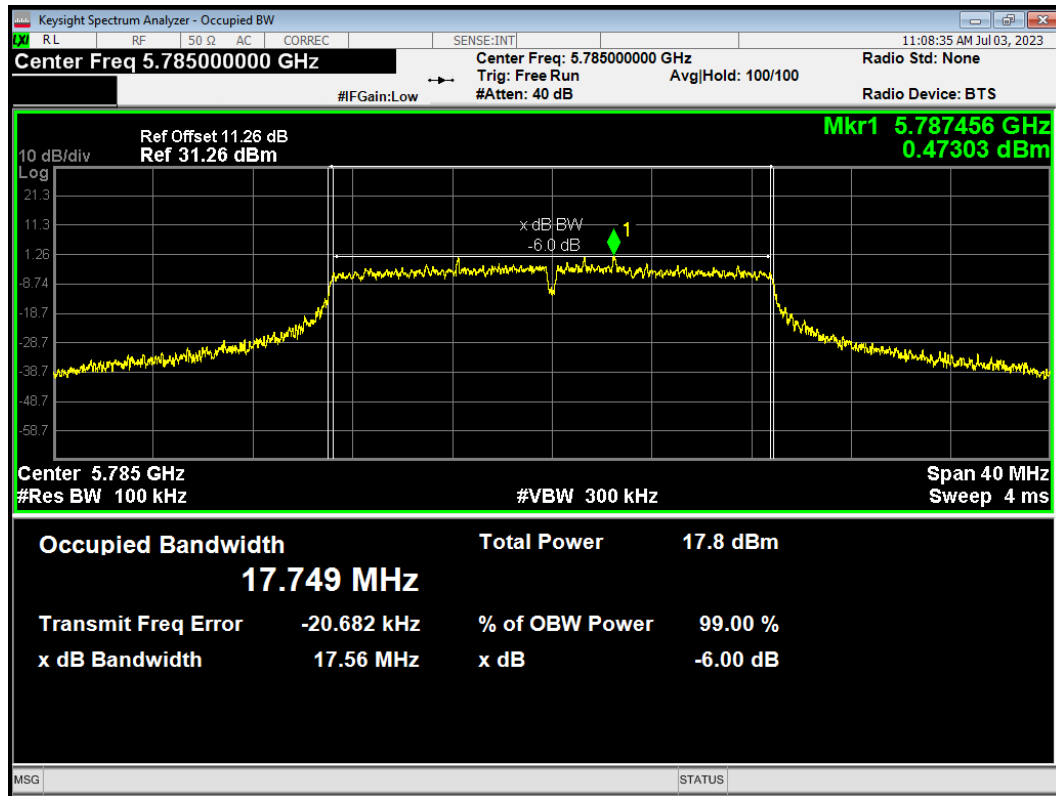
-6dB Bandwidth 802.11ac(VHT20) 5720MHz



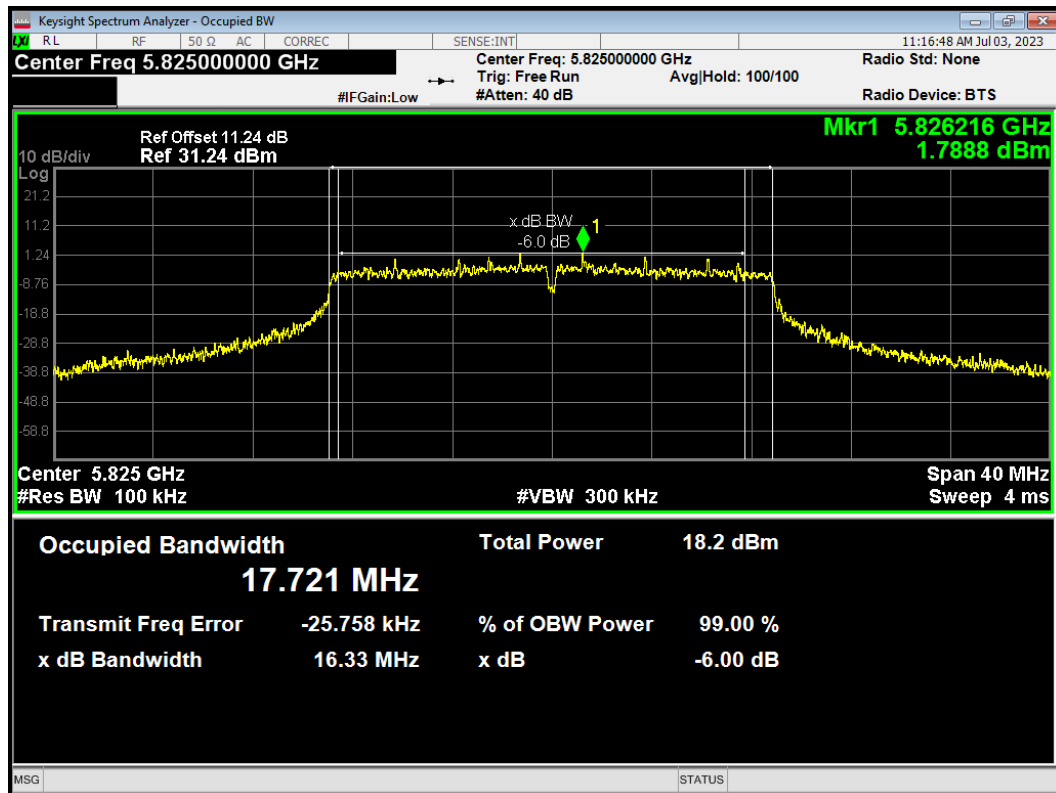
-6dB Bandwidth 802.11ac(VHT20) 5745MHz



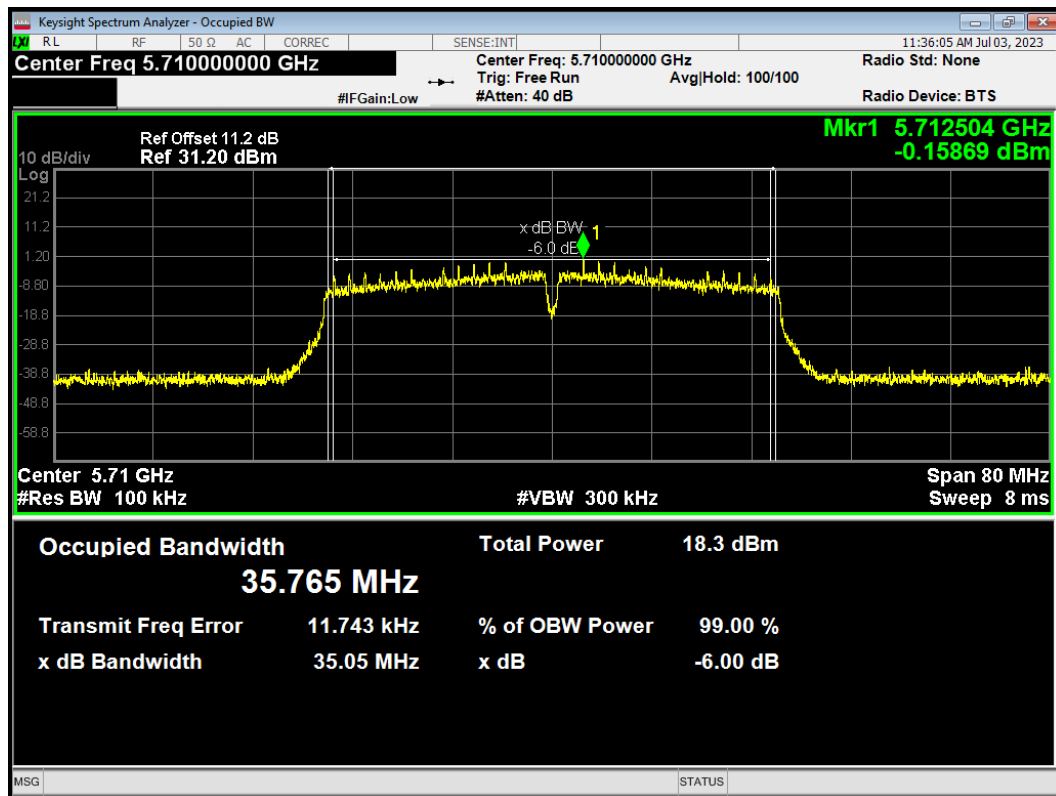
-6dB Bandwidth 802.11ac(VHT20) 5785MHz



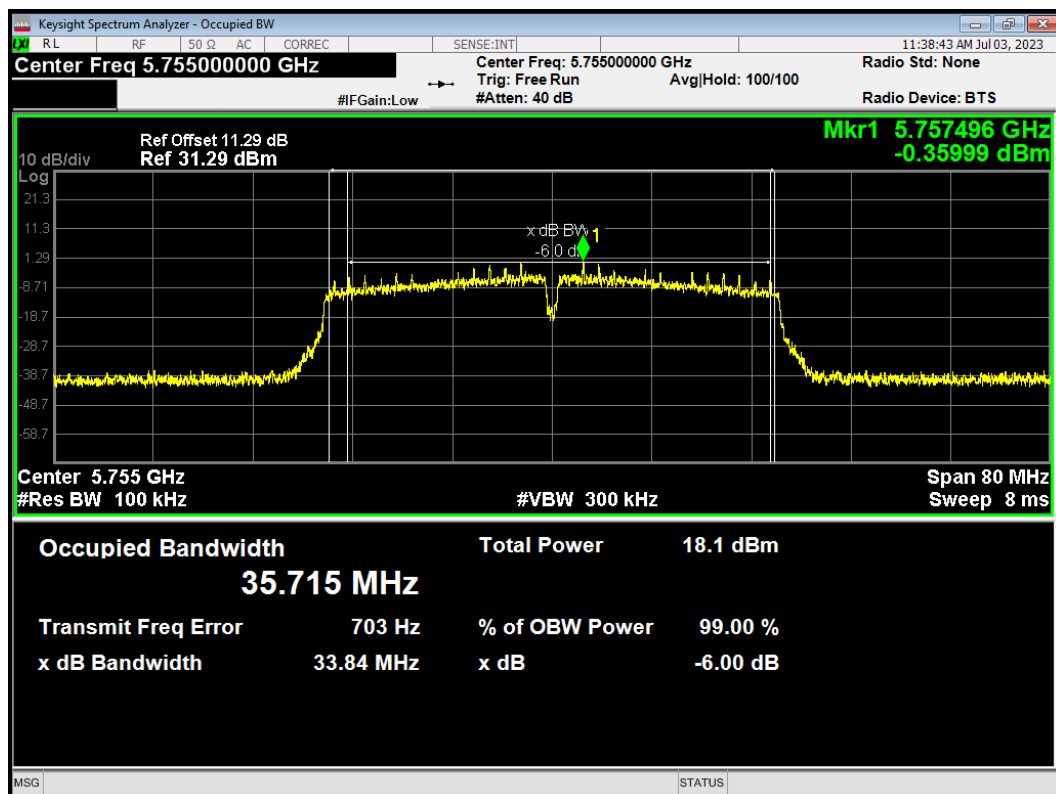
-6dB Bandwidth 802.11ac(VHT20) 5825MHz



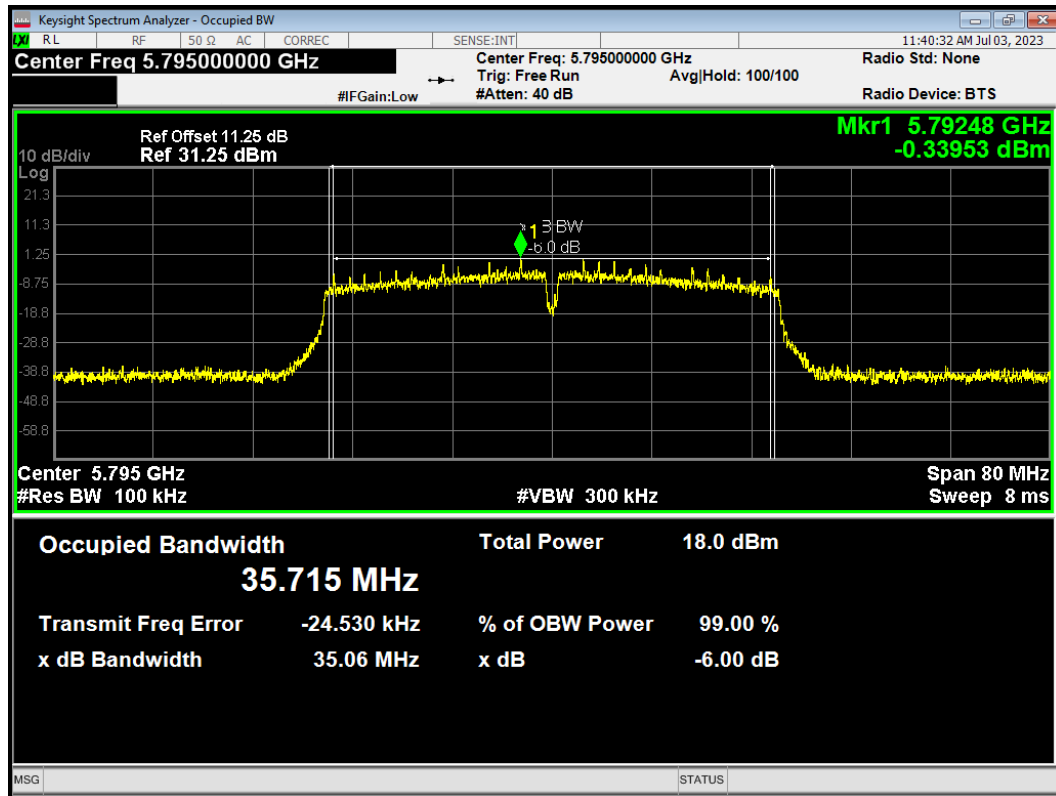
-6dB Bandwidth 802.11ac(VHT40) 5710MHz



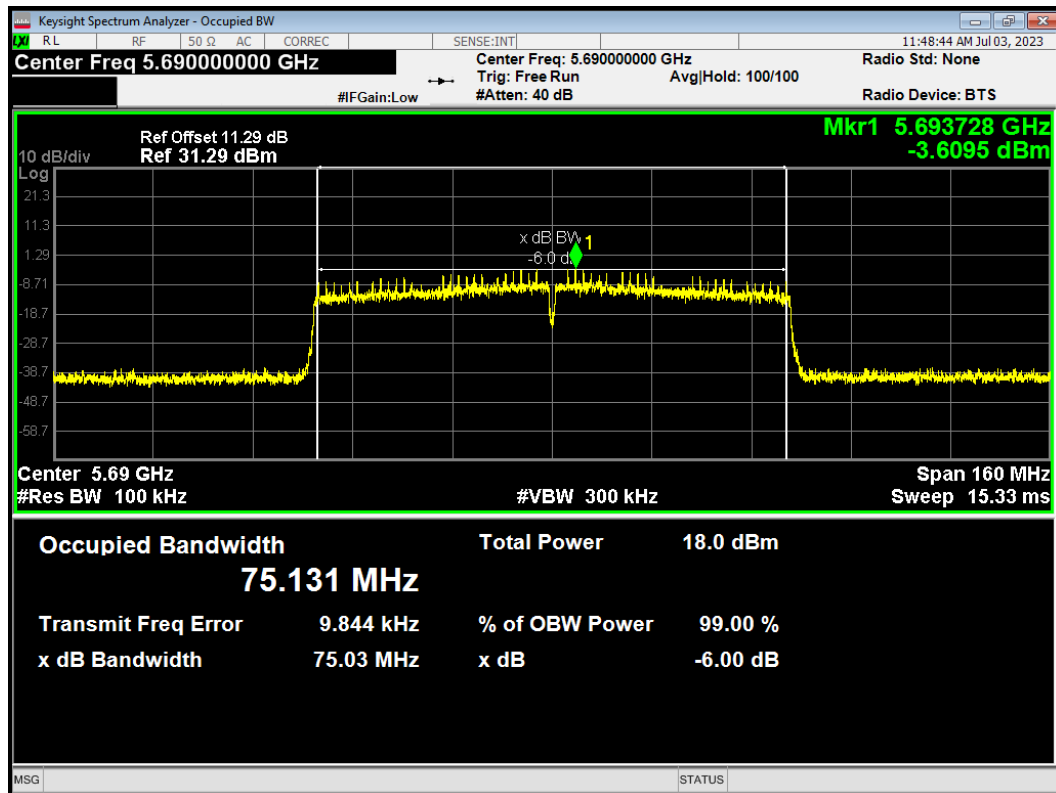
-6dB Bandwidth 802.11ac(VHT40) 5755MHz



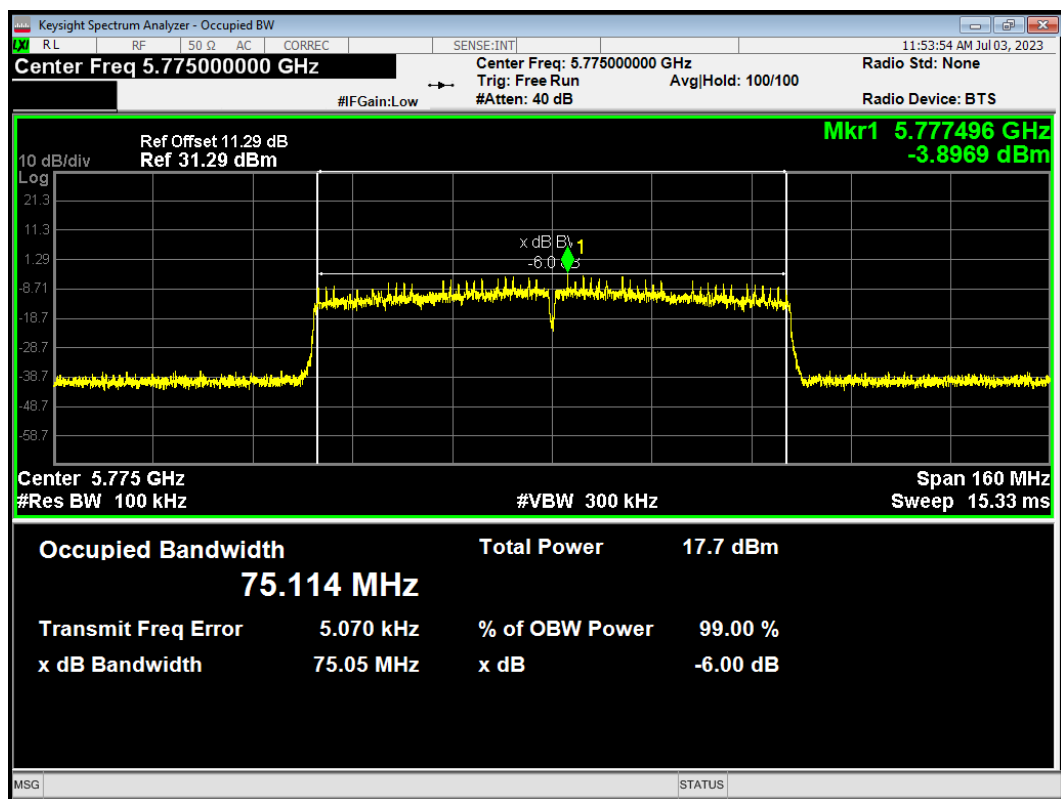
-6dB Bandwidth 802.11ac(VHT40) 5795MHz



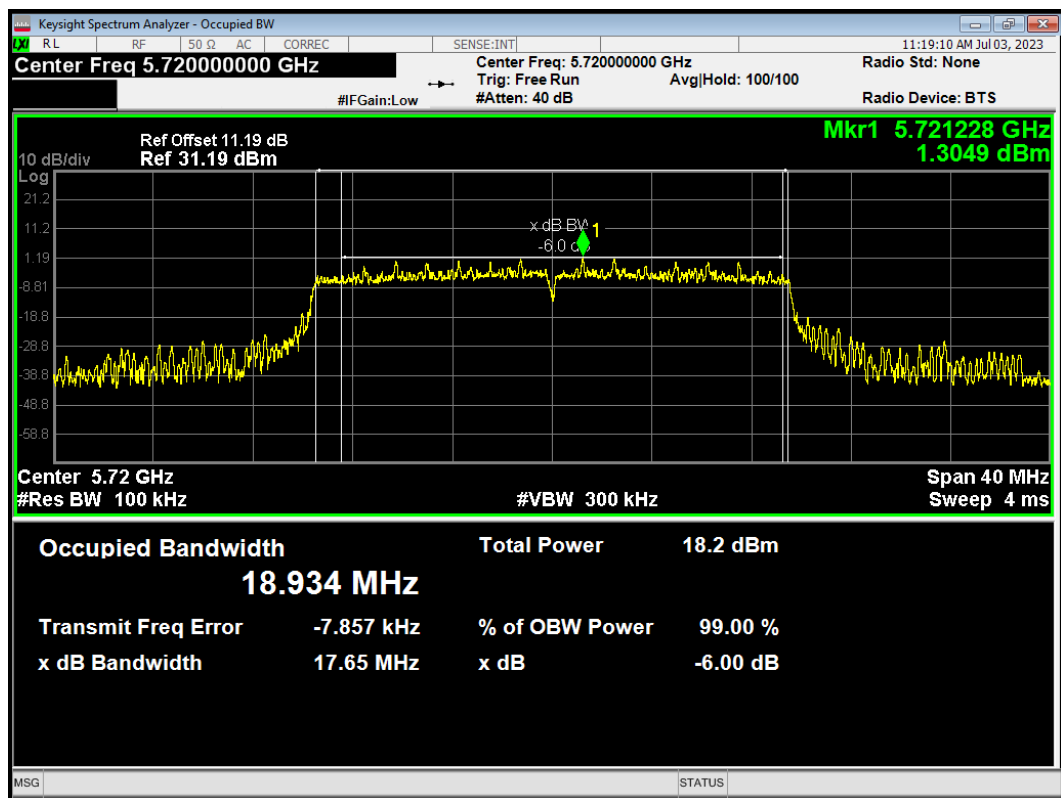
-6dB Bandwidth 802.11ac(VHT80) 5690MHz



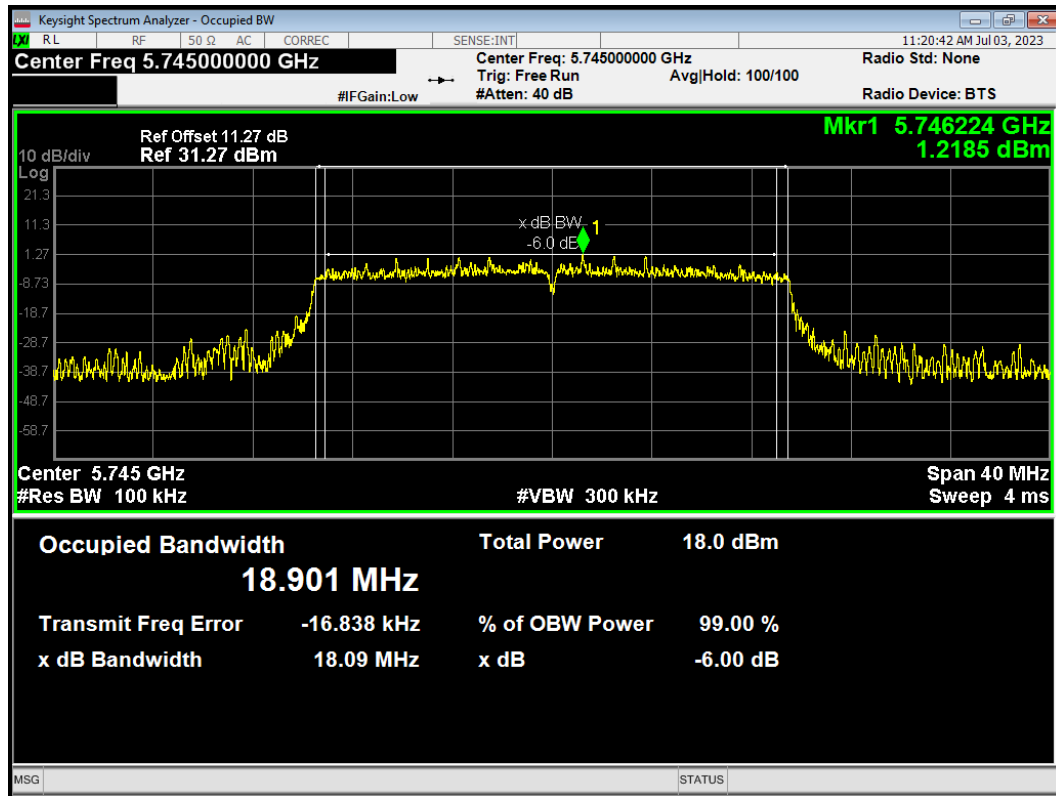
-6dB Bandwidth 802.11ac(VHT80) 5775MHz



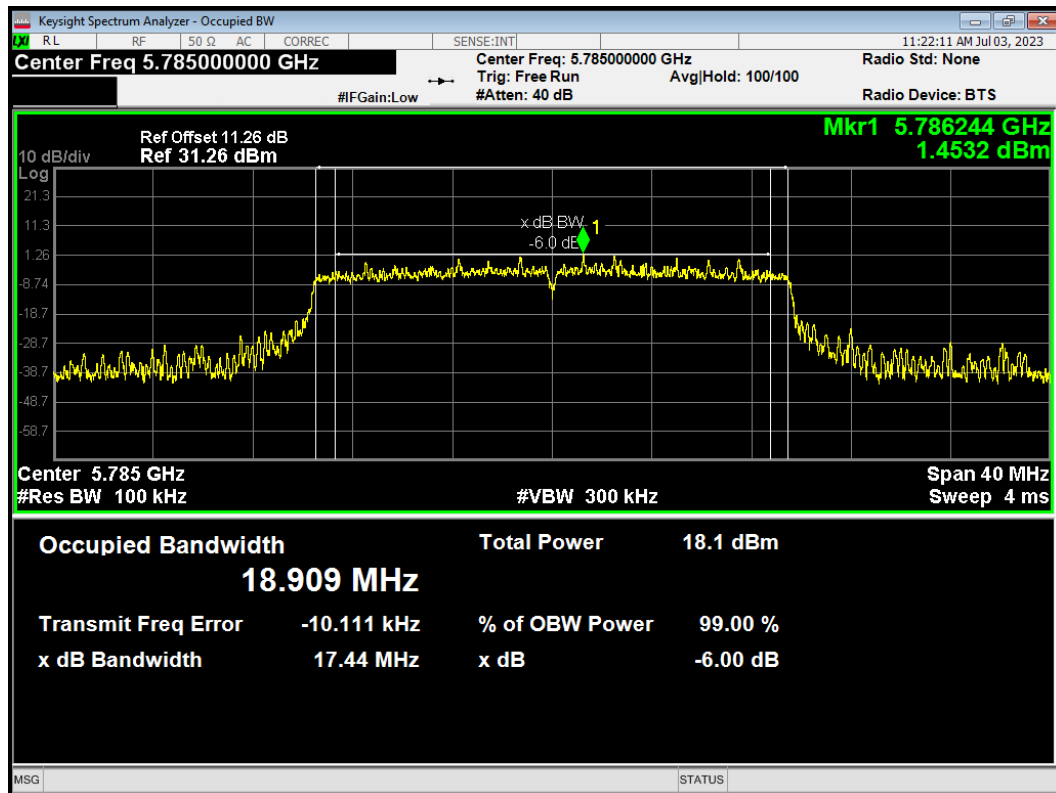
-6dB Bandwidth 802.11ax(HE20) 5720MHz



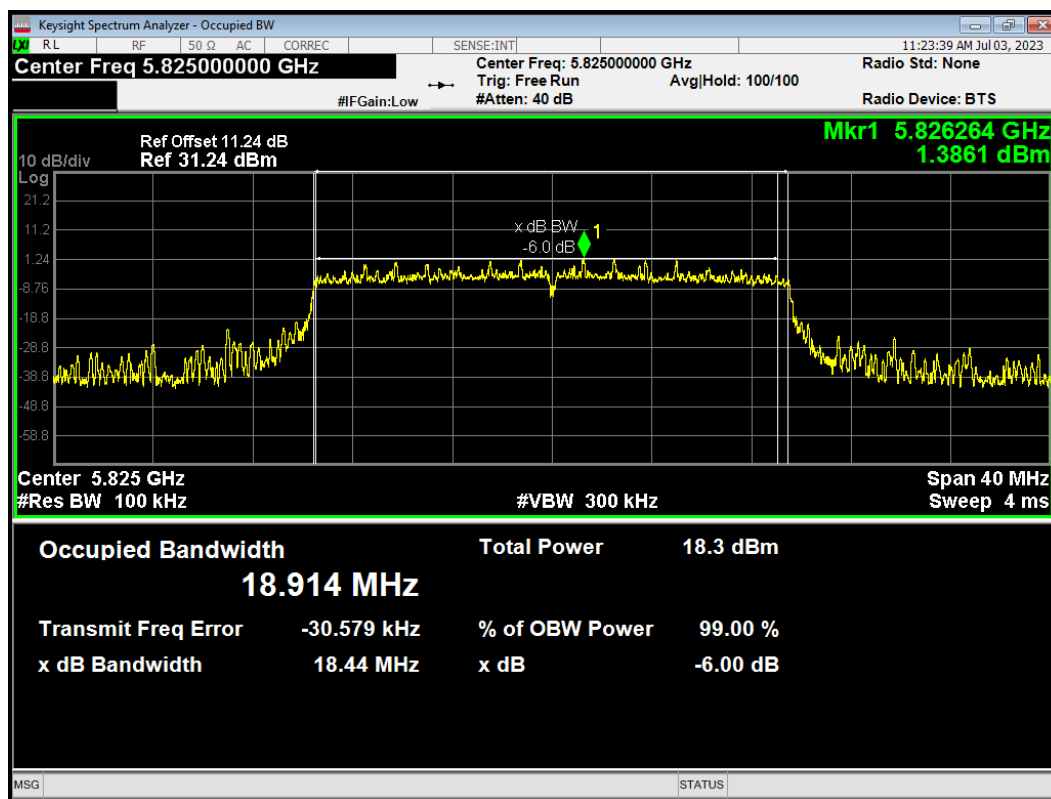
-6dB Bandwidth 802.11ax(HE20) 5745MHz



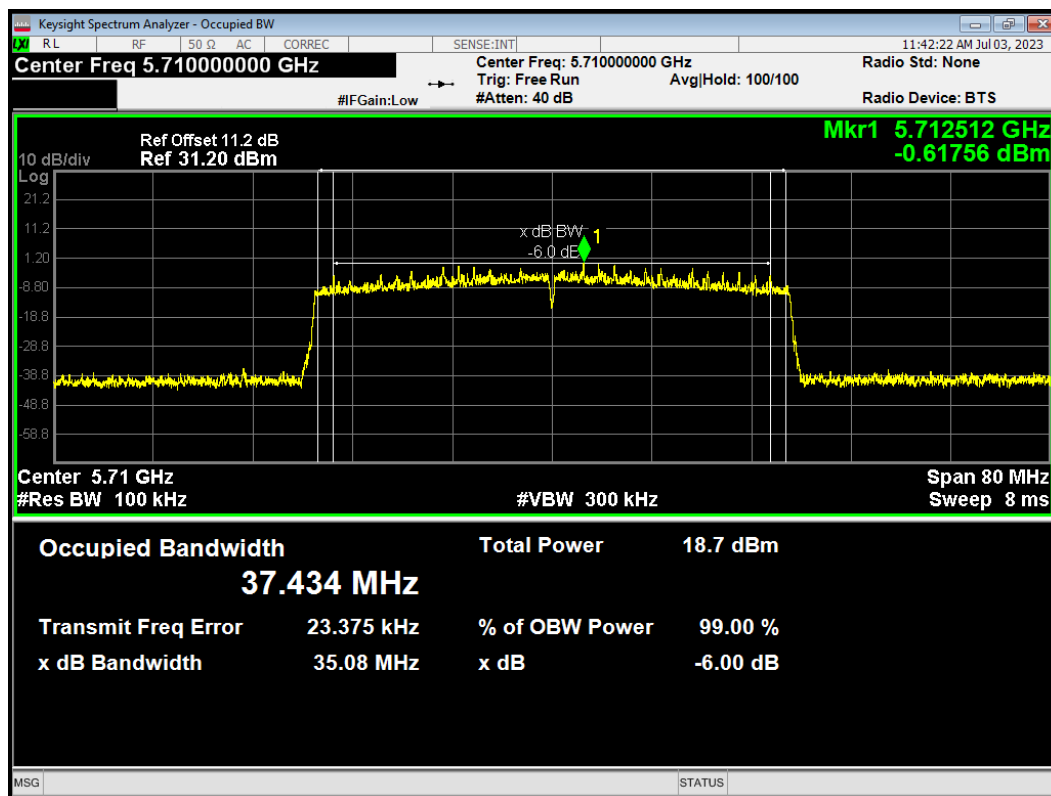
-6dB Bandwidth 802.11ax(HE20) 5785MHz



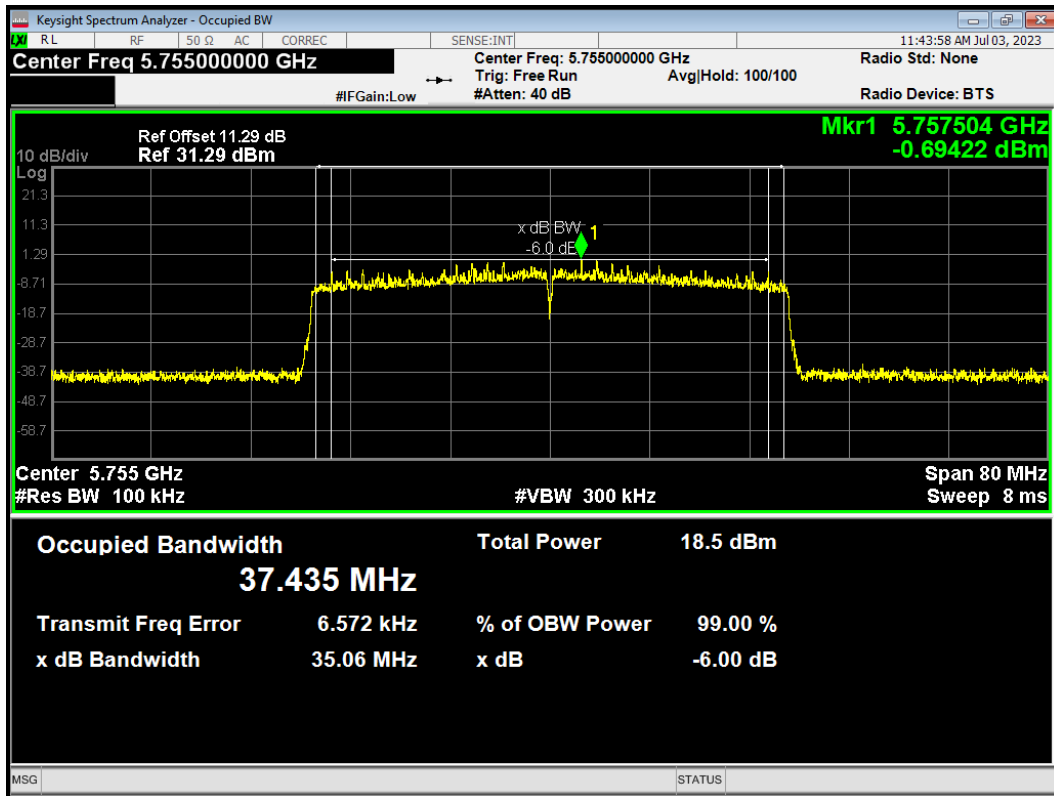
-6dB Bandwidth 802.11ax(HE20) 5825MHz



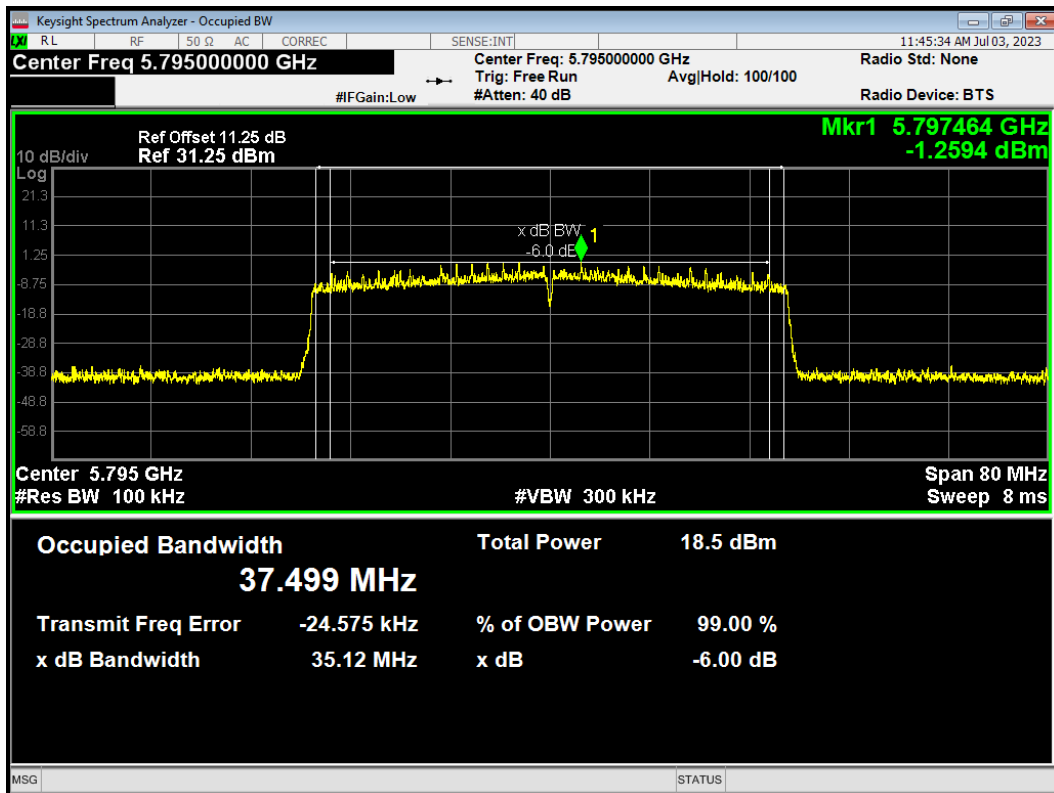
-6dB Bandwidth 802.11ax(HE40) 5710MHz



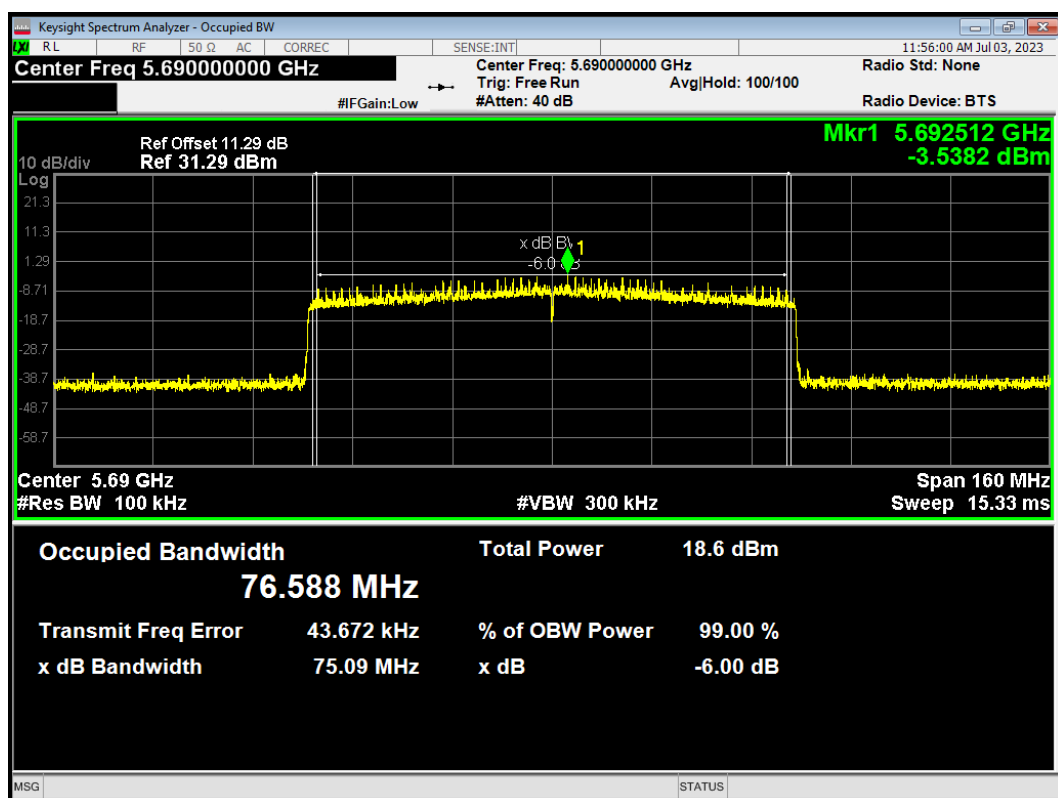
-6dB Bandwidth 802.11ax(HE40) 5755MHz



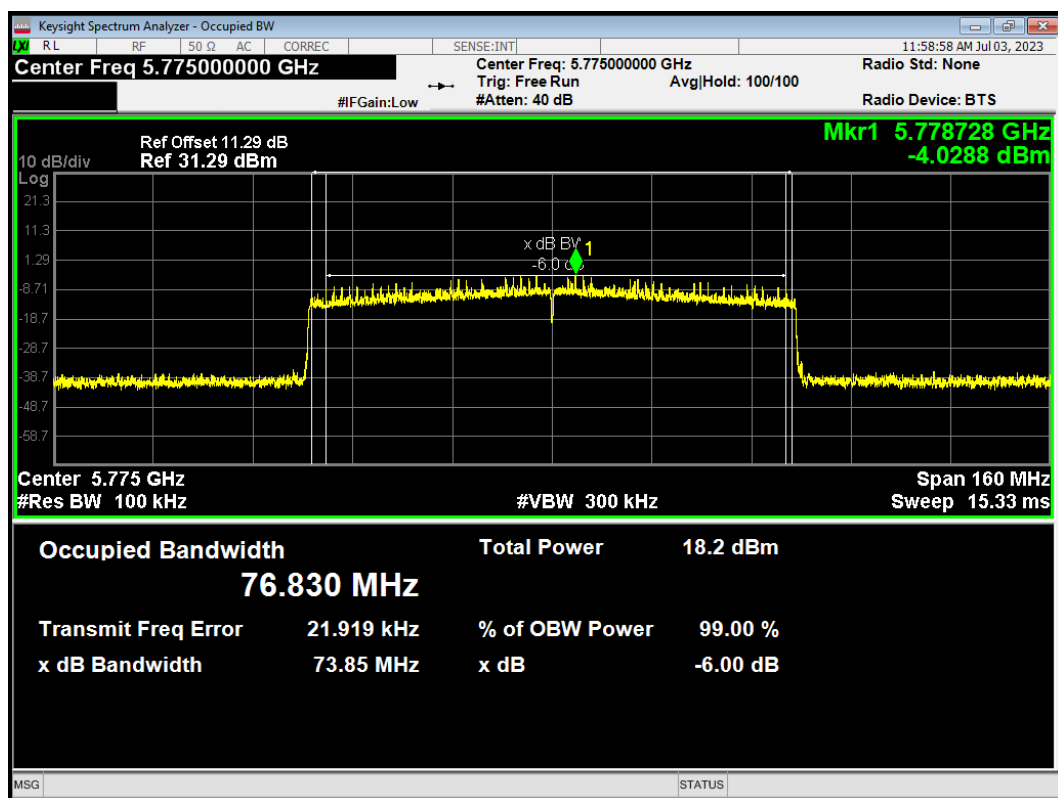
-6dB Bandwidth 802.11ax(HE40) 5795MHz



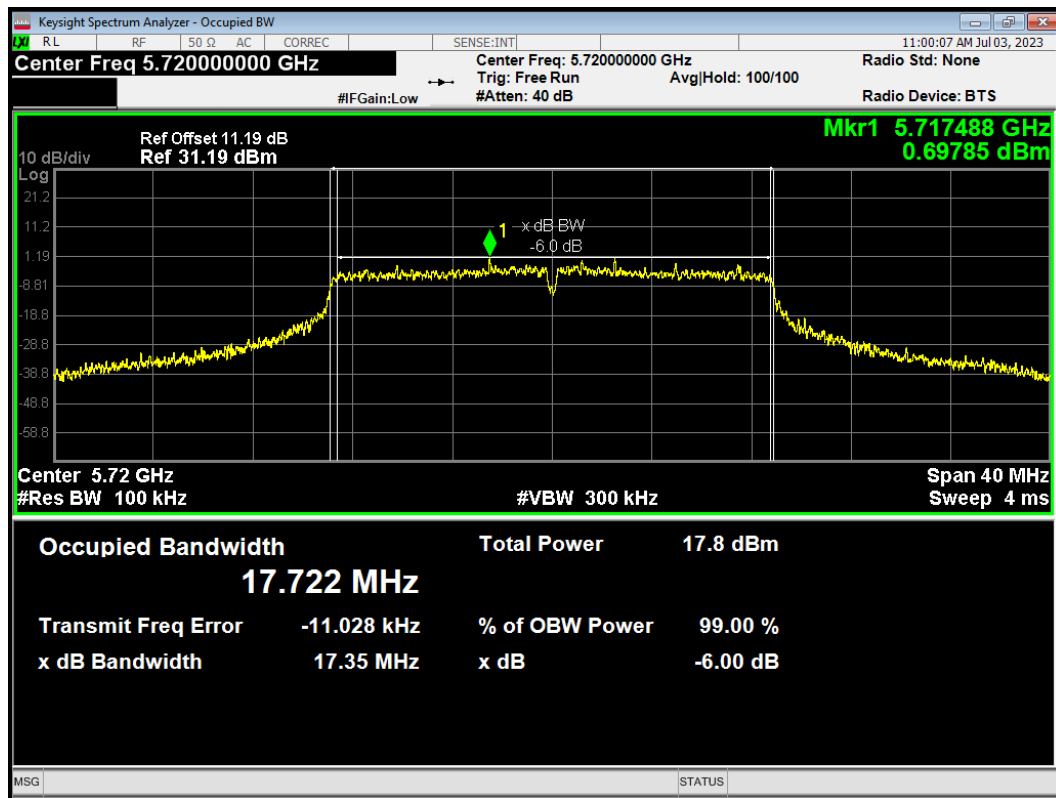
-6dB Bandwidth 802.11ax(HE80) 5690MHz



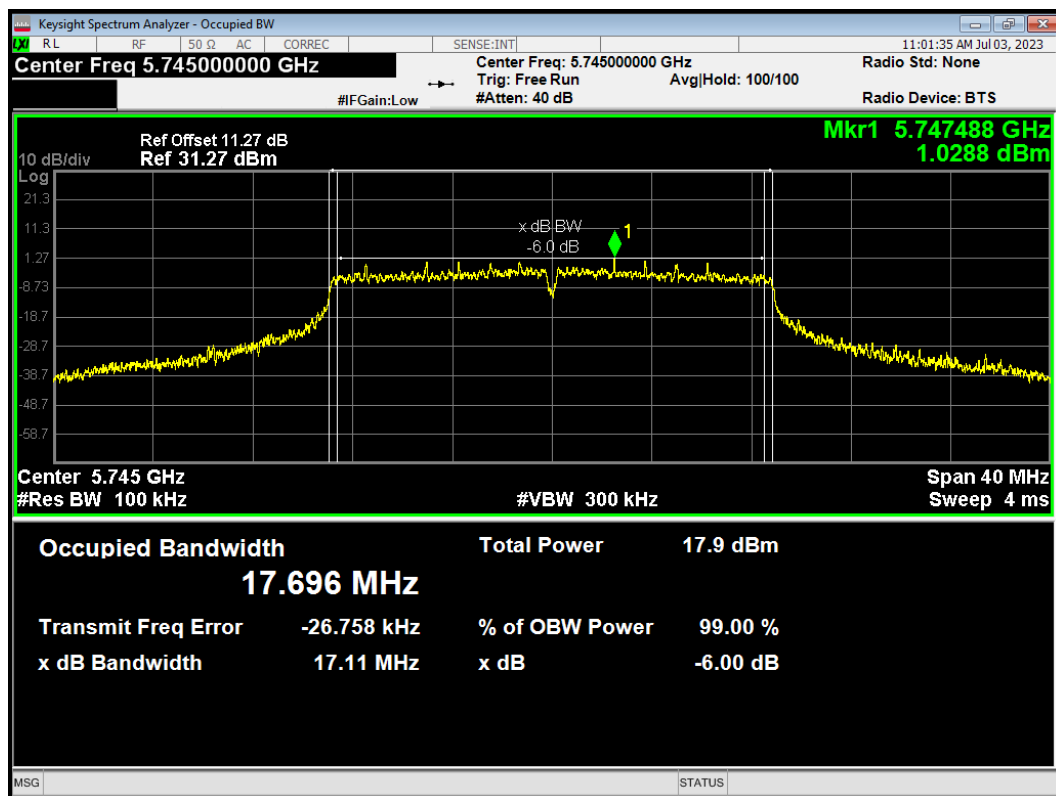
-6dB Bandwidth 802.11ax(HE80) 5775MHz



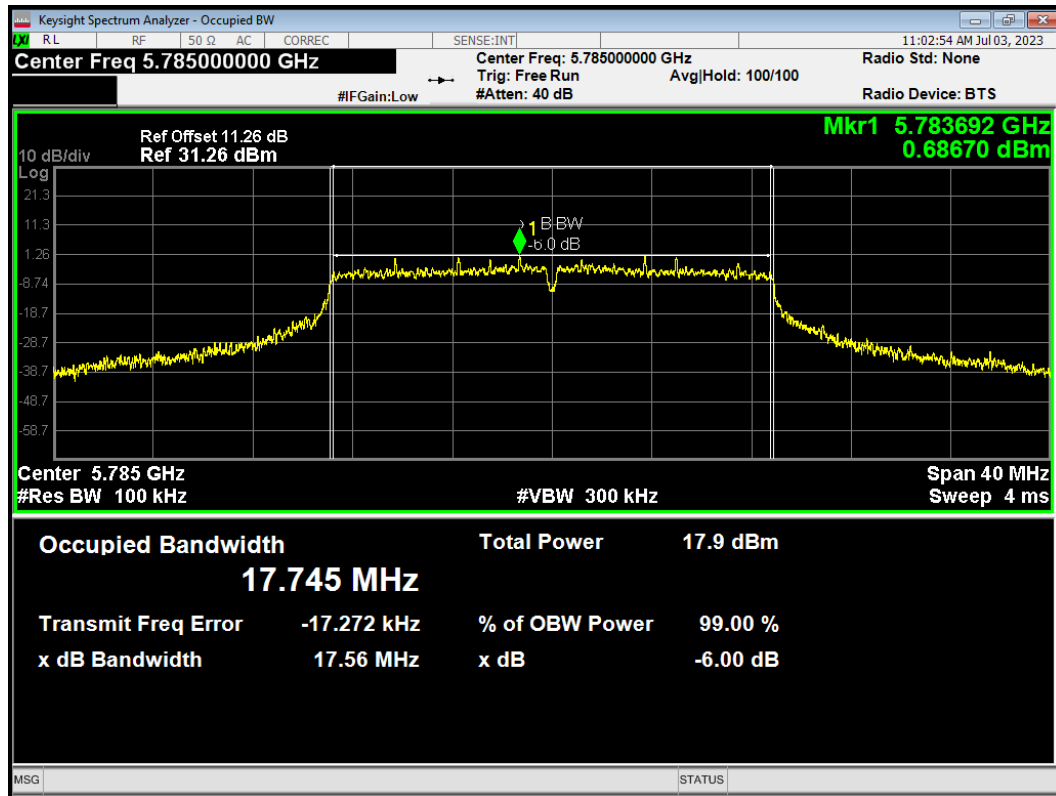
-6dB Bandwidth 802.11n(HT20) 5720MHz



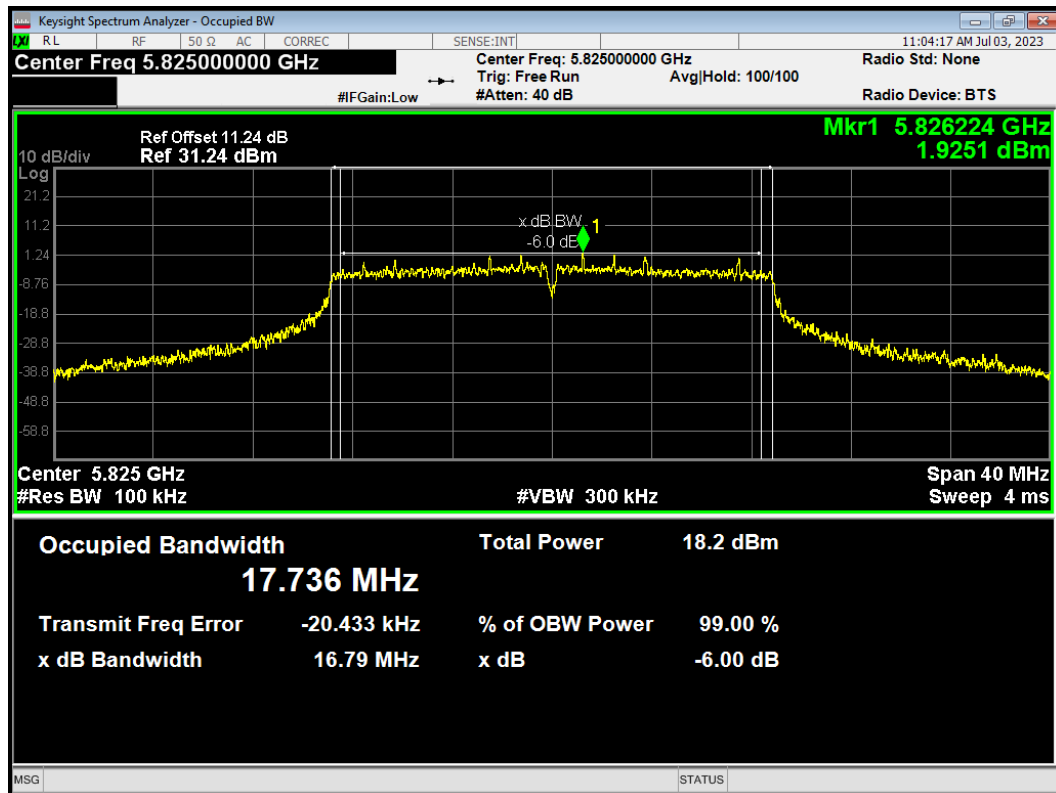
-6dB Bandwidth 802.11n(HT20) 5745MHz



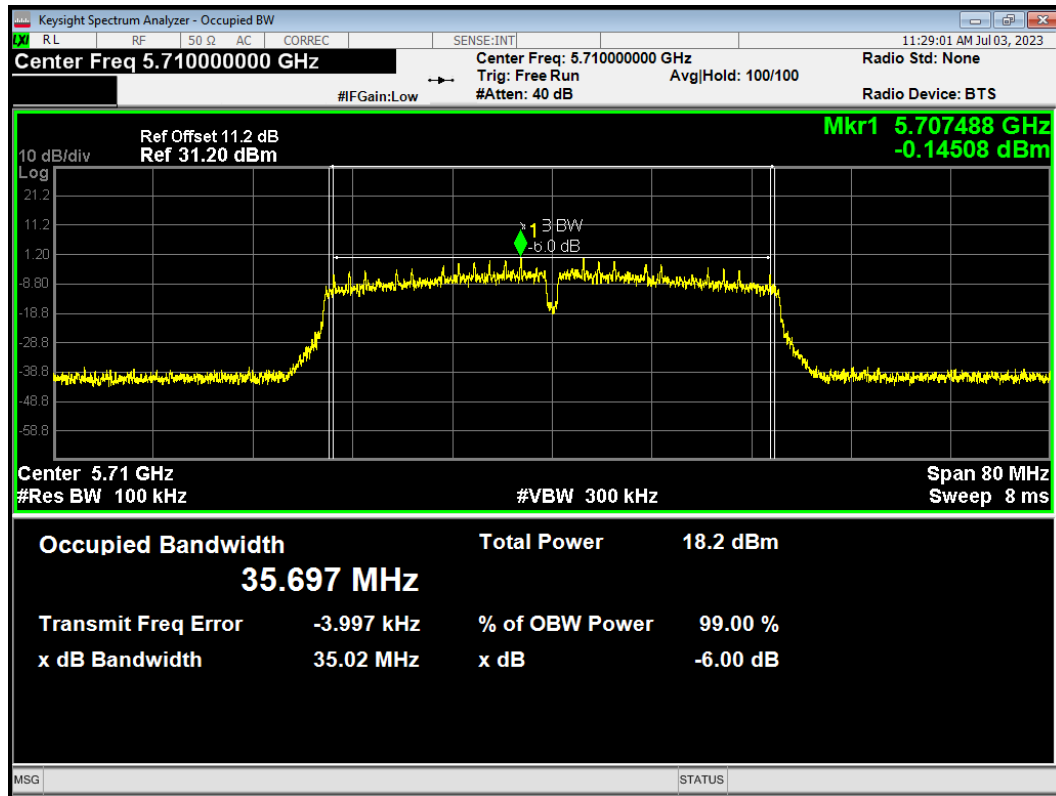
-6dB Bandwidth 802.11n(HT20) 5785MHz



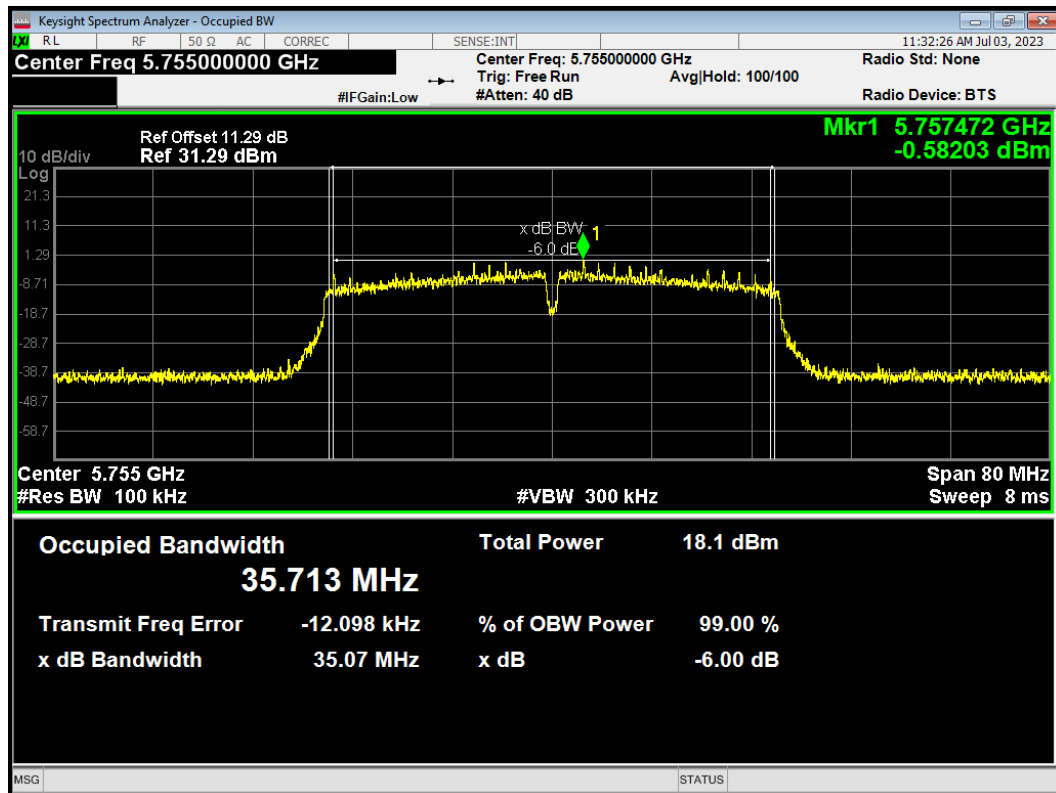
-6dB Bandwidth 802.11n(HT20) 5825MHz



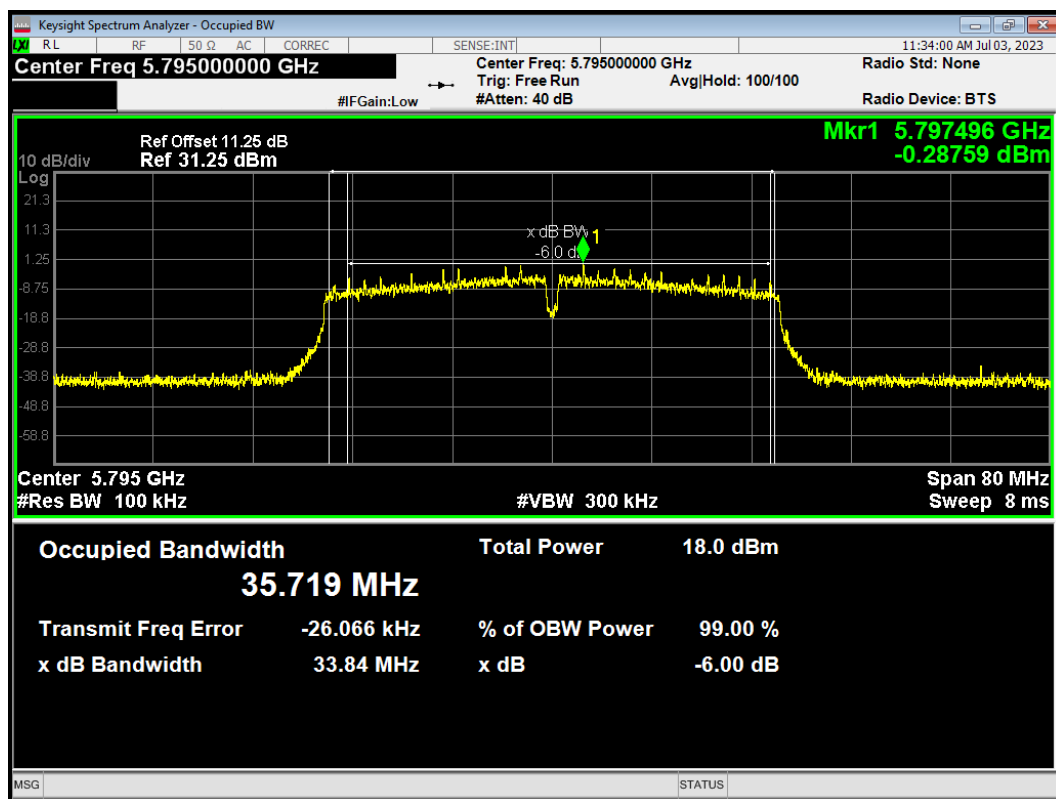
-6dB Bandwidth 802.11n(HT40) 5710MHz



-6dB Bandwidth 802.11n(HT40) 5755MHz



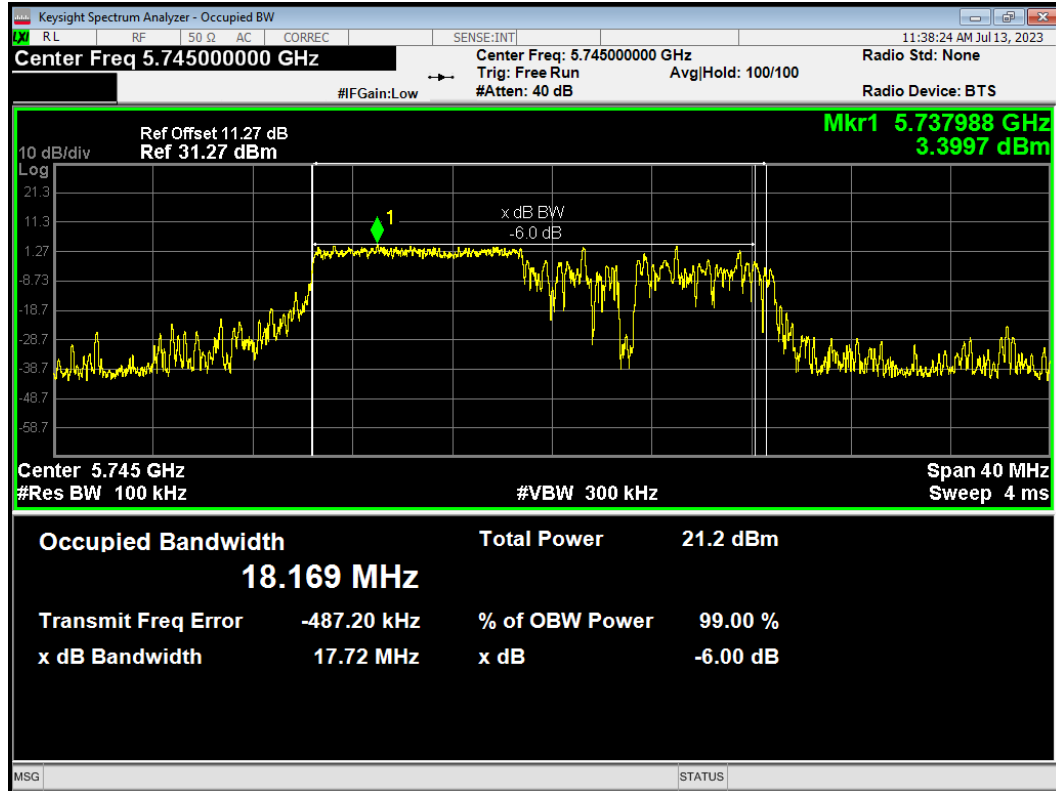
-6dB Bandwidth 802.11n(HT40) 5795MHz



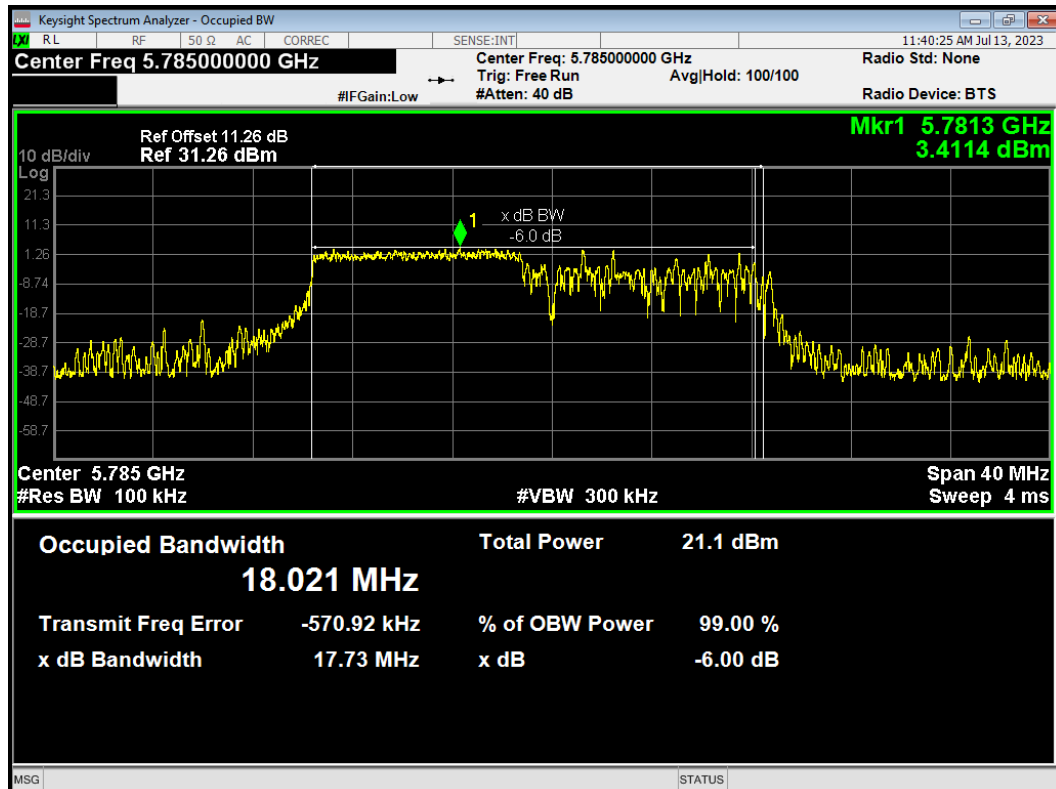
TB Mode

U-NII-3

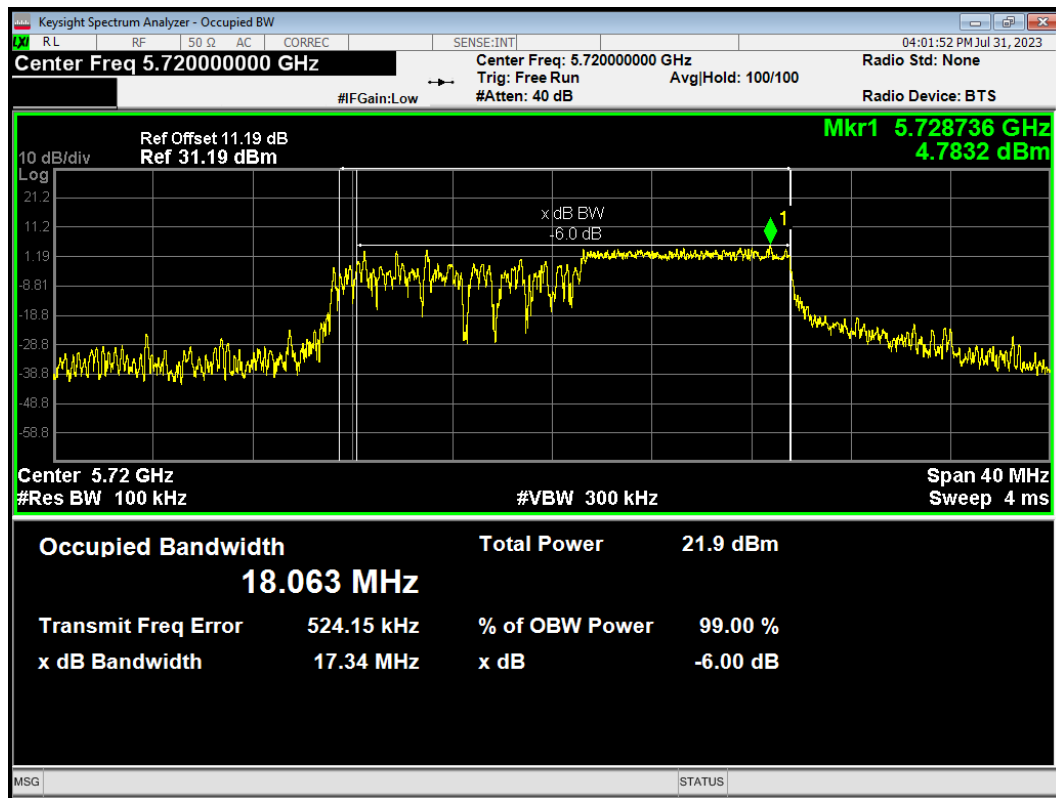
-6dB Bandwidth 11ax(20M) RU106 IDX53 5745MHz



-6dB Bandwidth 11ax(20M) RU106 IDX53 5785MHz



-6dB Bandwidth 11ax(20M) RU106 IDX54 5720MHz



-6dB Bandwidth 11ax(20M) RU106 IDX54 5825MHz

